

Item no.: 356556

## BPI-LEAF-S3 - Microcontroller with ESP32-S3 design for STEAM education and IoT design

from **5,80 EUR**

Item no.: 356556  
shipping weight: 0.10 kg  
Manufacturer: BPI



### Product Description

The Banana Pi Leaf is a low-power microcontroller designed for the Internet of Things, Makers and STEAM education. The Leaf-S3's onboard ESP32-S3 chip is powered by an Xtensa® 32-bit LX7 dual-core processor with a main frequency of up to 240 MHz. It supports 2.4 GHz Wi-Fi and Bluetooth® LE dual-mode wireless communication, the peripheral is compatible with low-power hardware design, and the power consumption is only 10 uA in deep sleep mode.

The main controller supports two power supply modes: USB and external 3.7 V Lithium battery, which can realize the function of automatic power switching under dual power supply, and supports USB charging mode. Small size, convenient interface, easy to use, and can be directly applied to low-power IoT projects. In terms of programming, Leaf-S3 motherboard supports ESP-IDF, Arduino, micropython and other methods for programming and development. All I/O pins corresponding to the chip are marked on the Leaf-S3 motherboard, which lowers the threshold for use.

- SoC: ESP32-S3?Xtensa® dual-core 32-bit LX7 microprocessor
- Clock frequency: 240 MHz max.
- Ambient temperature: -40°C ~ +85°C
- Internal ROM: 384 KB
- Internal SRAM: 320 KB
- External Flash ROM: 8 MB
- External PSRAM: 2 MB
- WiFi: IEEE 802.11 b/g/n?2.4 GHz?150 Mbps
- Bluetooth: Bluetooth 5?Bluetooth Mesh
- GPIO: BPI-Leaf-S3 has led out 36 available GPIOs
- ADC: 2x 12-bit SAR ADCs, up to 20 channels
- Touch sensor: 14
- SPI: 4
- I2C: 2
- I2S: 2
- LCD: 1x LCD interface (8-bit ~ 16-bit parallel RGB, I8080 and MOTO6800)
- Camera: 1x DVP 8-bit ~ 16-bit camera interface
- UART: 3
- PWM: 8 channels 14 bits
- MCPWM: 2
- USB: 1x full-speed USB OTG?female Type-C socket
- USB serial/JTAG controller: 1?CDC-ACM?JTAG
- Temperature sensor: 1?range of -20°C to 110°C
- SD/MMC: 1x SDIO host controller with 2 slots, SD 3.0, SD 3.01, SDIO 3.0, CE-ATA 1.1, MMC 4.41, eMMC 4.5, eMMC 4.51
- TWAI® controller: 1?compatible with ISO 11898-1 (CAN specification 2.0)
- General DMA controller (GDMA): 5x transmit channels and 5x receive channels
- RMT: 4x TX channels, 4x RX channels, 8x channels share a 384 x 32-bit RAM
- Pulse count controller: 4x independent pulse counters (units), each unit consists of two independent channels
- Timers: 4x 54-bit general-purpose timers, 1x 52-bit system timer, 3x watchdog timers
- External crystal oscillator: 40 MHz
- RTC and lowpower management: Power Management Unit (PMU) + UltraLowPower Co-processor (ULP)
- Deep-sleep consumption current: 10 uA
- Operating voltage: 3.3 V
- Input voltage: 3.3 V ~ 5.5 V
- Maximum discharge current: 2 A @ 3.3 V LDO
- USB charge: Support
- Maximum charging current: 500 mA
- Neopixel LED: 1

## Specifications

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