

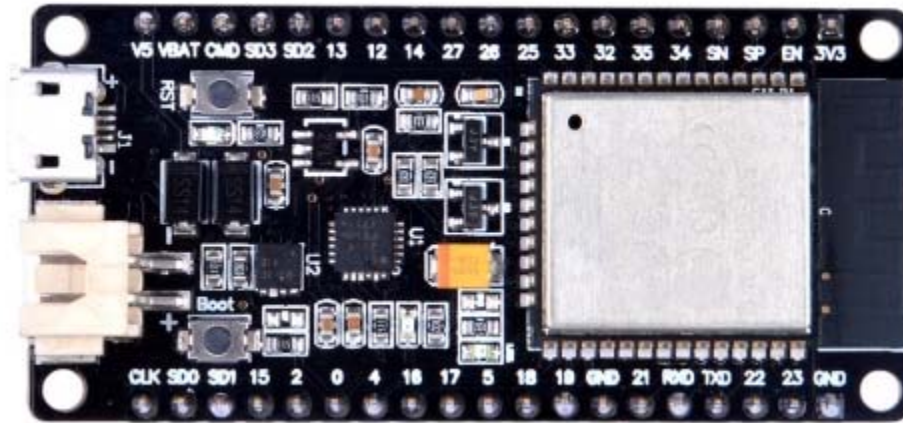
GeekNET ESP32 Development Board

SKU 102991009

GeekNET ESP32 Development Board is made with the official WROOM32 module. There is built in USB-to-Serial converter, automatic bootloader reset, Lithium Ion/Polymer charger. And just about all of the GPIOs brought out so you can use it with any sensor.

That module contains a dual-core ESP32 chip, 4 MB of SPI Flash, tuned antenna. And all the passives you need to take advantage of this powerful new processor. The ESP32 has both Wi-Fi and Bluetooth Classic/LE support. That means it's perfect for just about any wireless or Internet-connected project.

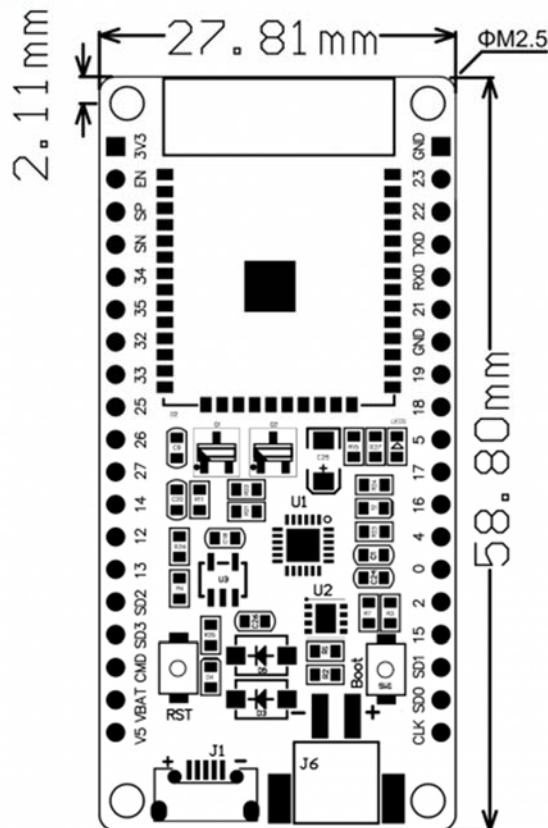
The ESP32 is a perfect upgrade from the ESP8266 that has been so popular. In comparison, the ESP32 has way more GPIO, plenty of analog inputs, two analog outputs, multiple extra peripherals (like a spare UART), two cores so you don't have to yield to the Wi-Fi manager, much higher-speed processor.



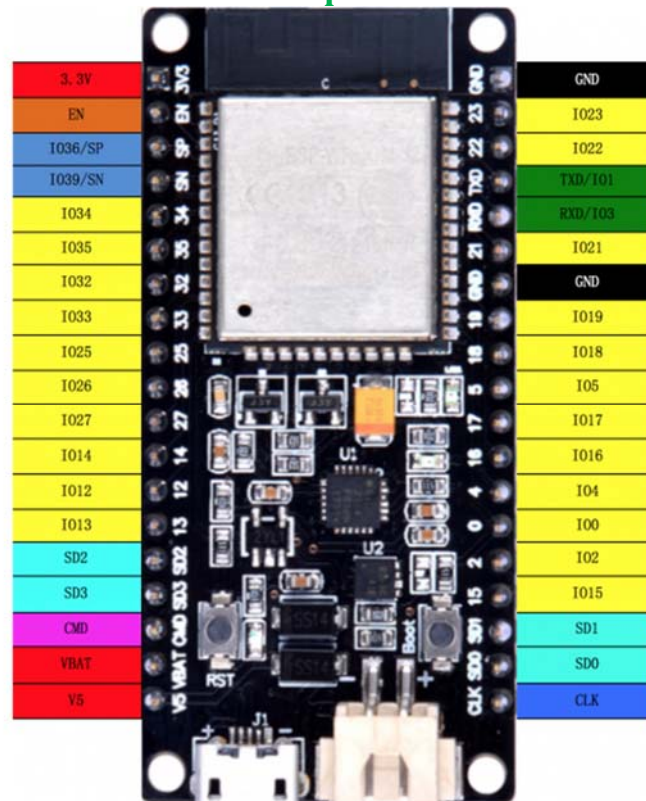
Please note: The ESP32 is still targeted to developers.

Not all of the peripherals are fully documented with example code, and there are some bugs still being found and fixed. We got it working under Arduino IDE, so you can expect things like I2C and SPI and analog reads to work. And also we got it working under MicroPython, so you can test it with the command line console, it will be nice to programmer. But other elements are still under development. For that reason, we recommend this module for makers who have some experience with microcontroller programming, and not as a first dev board.

Mechanical Drawing



GeeekNET ESP32 Development Board Pin Layout



Product Details

Voltage: 5V

Current: 80mA

Battery: 3.7V

Dimension: 59.76mmx28.05mmx12.60mm

Wi-Fi

- 802.11 b/g/n/e/i
- 802.11 n (2.4 GHz), up to 150 Mbps
- 802.11 e: QoS for wireless multimedia technology
- WMM-PS, UAPSD
- A-MPDU and A-MSDU aggregation
- Block ACK
- Fragmentation and defragmentation
- Automatic Beacon monitoring/scanning
- 802.11 i security features: pre-authentication and TSN
- Wi-Fi Protected Access (WPA)/WPA2/WPA2-Enterprise/Wi-Fi Protected Setup (WPS)
- Infrastructure BSS Station mode/Soft AP mode
- Wi-Fi Direct (P2P), P2P Discovery, P2P Group Owner mode and P2P Power Management
- UMA compliant and certified
- Antenna diversity and selection

Bluetooth

•Compliant with Bluetooth v4.2 BR/EDR and BLE specification
•Class-1, class-2 and class-3 transmitter without external power amplifier
•Enhanced power control
•+12 dBm transmitting power
•NZIF receiver with -97 dBm sensitivity
•Adaptive Frequency Hopping (AFH)
•Standard HCI based on SDIO/SPI/UART
•High speed UART HCI, up to 4 Mbps
•BT 4.2 controller and host stack
•Service Discover Protocol (SDP)
•General Access Profile (GAP)
•Security Manage Protocol (SMP)
•Bluetooth Low Energy (BLE)
•ATT/GATT
•HID
•All GATT-based profile supported
•SPP-Like GATT-based profile
•BLE Beacon
•A2DP/AVRCP/SPP, HSP/HFP, RFCOMM
•CVSD and SBC for audio codec
•Bluetooth Piconet and Scatternet

CPU and Memory

•Xtensa® Single-/Dual-core 32-bit LX6 microprocessor(s), up to 600 DMIPS
•448 KB ROM
•520 KB SRAM
•16 KB SRAM in RTC
•QSPI flash/SRAM, up to 4 x 16 MB • Power supply: 2.3V to 3.6V
Clocks and Timers
•Internal 8 MHz oscillator with calibration
•Internal RC oscillator with calibration
•External 2 MHz to 60 MHz crystal oscillator (40 MHz only for Wi-Fi/BT functionality)
•External 32 kHz crystal oscillator for RTC with calibration
•Two timer groups, including 2 x 64-bit timers and 1 x main watchdog in each group
•RTC timer with sub-second accuracy
•RTC watchdog

Advanced Peripheral Interfaces

•12-bit SAR ADC up to 18 channels
•2 × 8-bit D/A converters
•10 × touch sensors
•Temperature sensor
•4 × SPI
•2 × I2S
•2 × I2C
•3×UART
•1 host (SD/eMMC/SDIO) • 1 slave (SDIO/SPI)
•Ethernet MAC interface with dedicated DMA and IEEE 1588 support • CAN 2.0
•IR (TX/RX)
•Motor PWM
•LED PWM up to 16 channels
•Hall sensor
•Ultra-low-noise analog pre-amplifier

Security

•IEEE 802.11 standard security features all supported, including WPA, WPA/WPA2 and WAPI
•Secure boot
•Flash encryption
•1024-bit OTP, up to 768-bit for customers

Cryptographic hardware acceleration

•AES
•HASH (SHA-2) library
•RSA
•ECC
•Random Number Generator (RNG)

Development Support

•SDK firmware for fast on-line programming
•Open source toolchains based on GCC

Technical Details

Dimensions	60mm x 28mm x 12.6mm
Weight	G.W 9.75g
Battery	Exclude

Part List

GeeekNET ESP32 Development Board	1
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