

Libraries

Here is where the Libraries API's descriptions are located:

Supported Peripherals

Currently, the Arduino ESP32 supports the following peripherals with Arduino APIs.

Peripheral	ESP32	C3	C6	H2	P4	S2	S3	Notes
ADC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1.
BT Classic	Yes	N/A	N/A	N/A	N/A	N/A	N/A	
BLE	Yes	Yes	Yes	Yes	No	N/A	Yes	
DAC	Yes	N/A	N/A	N/A	Yes	Yes	N/A	
Ethernet	Yes	N/A	N/A	N/A	Yes	N/A	N/A	2.
GPIO	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Hall Sensor	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
I2C	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
I2S	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
LEDC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
MIPI	N/A	N/A	N/A	N/A	No	N/A	N/A	
Motor PWM	No	N/A	N/A	N/A	N/A	N/A	N/A	
MSPI	N/A	N/A	N/A	N/A	No	N/A	N/A	
Pulse Counter	No	No	No	No	No	No	No	
RMT	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
SDIO	No	No	No	No	No	No	No	
SDMMC	Yes	N/A	N/A	N/A	N/A	N/A	Yes	
Timer	Yes	Yes	Yes	Yes	Yes	Yes	Yes	

Peripheral	ESP32	C3	C6	H2	P4	S2	S3	Notes
Temp. Sensor	N/A	Yes	Yes	Yes	Yes	Yes	Yes	
Touch	Yes	N/A	N/A	N/A	Yes	Yes	Yes	
TWAI	No	No	No	No	No	No	No	
UART	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
USB	N/A	Yes	Yes	Yes	Yes	Yes	Yes	3.
Wi-Fi	Yes	Yes	Yes	N/A	Yes	Yes	Yes	4.

Notes

1. ESP32-P4 calibration schemes not supported yet in IDF and ADC Continuous also lacks IDF support.
2. SPI Ethernet is supported by all ESP32 families and RMII only for ESP32 and ESP32-P4.
3. ESP32-C3, C6, H2 only support USB CDC/JTAG
4. ESP32-P4 only supports Wi-Fi through another SoC by using `esp_hosted`.

Note

Some peripherals are not available for all ESP32 families. To see more details about it, see the corresponding SoC at Product Selector page.

Datasheet

- [ESP32 \(Datasheet\)](#)
- [ESP32-C2 \(Datasheet\)](#)
- [ESP32-C3 \(Datasheet\)](#)
- [ESP32-C6 \(Datasheet\)](#)
- [ESP32-H2 \(Datasheet\)](#)
- [ESP32-P4 \(Datasheet\)](#)
- [ESP32-S2 \(Datasheet\)](#)
- [ESP32-S3 \(Datasheet\)](#)

APIs

The Arduino ESP32 offers some unique APIs, described in this section:

! Note

Please be advised that we cannot ensure continuous compatibility between the Arduino Core ESP32 APIs and ESP8266 APIs, as well as Arduino-Core APIs (Arduino.cc). While our aim is to maintain harmony, the addition of new features may result in occasional divergence. We strive to achieve the best possible integration but acknowledge that perfect compatibility might not always be feasible. Please refer to the documentation for any specific considerations.

- ADC
- BLE
- Bluetooth
- DAC
- Deep Sleep
- ESP-NOW
- Ethernet
- GPIO
- I2C
- I2S
- ESP Insights
- LED Control (LEDC)
- Preferences
- Pulse Counter
- ESP Rainmaker
- Reset Reason
- RMT
- SDIO
- SD MMC
- SigmaDelta
- SPI
- Timer
- TOUCH
- USB API
- USB CDC
- USB MSC
- Wi-Fi API

Zigbee APIs 🔗

- Zigbee
- ZigbeeCore
- ZigbeeEP

- ZigbeeAnalog
- ZigbeeBinary
- ZigbeeCarbonDioxideSensor
- ZigbeeColorDimmableLight
- ZigbeeColorDimmerSwitch
- ZigbeeContactSwitch
- ZigbeeDimmableLight
- ZigbeeDoorWindowHandle
- ZigbeeElectricalMeasurement
- ZigbeeFanControl
- ZigbeeFlowSensor
- ZigbeeGateway
- ZigbeeIlluminanceSensor
- ZigbeeLight
- ZigbeeMultistate
- ZigbeeOccupancySensor
- ZigbeePM25Sensor
- ZigbeePowerOutlet
- ZigbeePressureSensor
- ZigbeeRangeExtender
- ZigbeeSwitch
- ZigbeeTempSensor
- ZigbeeThermostat
- ZigbeeVibrationSensor
- ZigbeeWindSpeedSensor
- ZigbeeWindowCovering