

Development Boards

For easy prototyping and interfacing choose Espressif's development boards! Powered by our well-known SoCs, the all-in-one DevKits below are all you need to develop your own IoT applications.





[ESP32-C3 Series DevKits](#) [ESP32-S2 Series DevKits](#) [ESP32 Series DevKits](#) [ESP8266 Series DevKits](#) [Other IoT DevKits](#)

ESP32-C3 Series DevKits

32-bit RISC-V MCU & 2.4 GHz Wi-Fi & Bluetooth LE 5.0



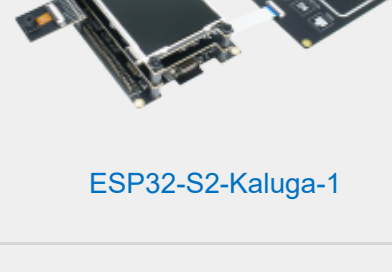

- PC connectivity: USB
- SDK: [ESP-IDF](#) source code and example applications

Boards	Description	Flash / PSRAM	Interfaces	UI	Related Products	Getting Started
 ESP32-C3-DevKitM-1	ESP32-C3-DevKitM-1 is an entry-level development board equipped with ESP32-C3-MINI-1. Most of the I/O pins are broken out to the pin headers on both sides for easy interfacing. Developers can either connect peripherals with jumper wires or mount ESP32-C3-DevKitM-1 on a breadboard.	4 MB Flash	I/O USB	Buttons, LEDs	ESP32-C3-MINI-1	N/A
 ESP32-C3-DevKitC-02	ESP32-C3-DevKitC-02 is an entry-level development board equipped with ESP32-C3-WROOM-02. Most of the I/O pins are broken out to the pin headers on both sides for easy interfacing. Developers can either connect peripherals with jumper wires or mount ESP32-C3-DevKitC-02 on a breadboard.	4 MB Flash	I/O USB	Buttons, LEDs	ESP32-C3-WROOM-02	User Guide

ESP32-S2 Series DevKits

32-bit MCU & 2.4 GHz Wi-Fi







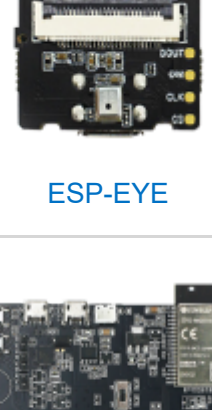
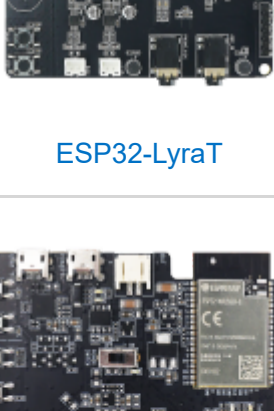




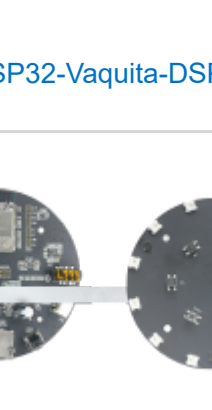

- PC connectivity: USB
- SDK: [ESP-IDF](#) source code and example applications

Boards	Description	Flash / PSRAM	Interfaces	UI	Related Products	Getting Started
 ESP32-S2-DevKitM-1	ESP32-S2-DevKitM-1 is an entry-level development board based ESP32-S2-MINI-1 or ESP32-S2-MINI-1U. It has all the ESP32-S2 pins exposed and is easy to connect and use.	4 MB Flash	I/O USB	Buttons, LEDs	ESP32-S2-MINI-1 ESP32-S2-MINI-1U	User Guide
 ESP32-S2-Saola-1	ESP32-S2 general-purpose development board, based on ESP32-S2-WROVER, ESP32-S2-WROVER-I, ESP32-S2-WROOM or ESP32-S2-WROOM-I, with 4 MB flash and pin header.	4 MB Flash / 4 MB Flash + 2 MB PSRAM	I/O USB	Buttons, LED	ESP32-S2-WROOM ESP32-S2-WROOM-I ESP32-S2-WROVER ESP32-S2-WROVER-I	User Guide Demo Code
 ESP32-S2-Kaluga-1	The new multimedia development board ESP32-S2-Kaluga-1 based on ESP32-S2 has various functions, such as an LCD screen display, touch panel control, camera image acquisition, audio playback, etc. It can be flexibly assembled and disassembled, thus fulfilling a variety of customized requirements.	4 MB Flash + 2 MB PSRAM	SPI I2C I2S UART ADC DAC PWM	touch, LCD Screen, Mic, Speaker, Camera	ESP32-S2-WROVER ESP32-S2-WROVER-I	User Guide Demo Code
 ESP32-S2-HMI-DevKit-1	ESP32-S2-HMI-DevKit-1 is an HMI development board designed based on the ESP32-S2. The board is equipped with a 4.3-inch TFT-LCD capacitive touch screen. The maximum resolution can reach 800 x 480. Rich onboard sensors and interfaces allow for easy customized development. What's more, it supports LVGL GUI development, speaker, microphone and ultra low power consumption.	4 MB Flash + 2 MB PSRAM	USB I2C TWAI SPI Prog & UART +5V & 3.3V Power interface SD Card	LCD screen, LED, Buttons, Speaker, Mic	ESP32-S2-WROVER	User Guide Demo Code

ESP32 Series DevKits

32-bit MCU & 2.4 GHz Wi-Fi & BT/Bluetooth LE

- PC connectivity: USB
- Power supply options: USB (by default), or 5V/GND header pins, or 3V3/GND header pins
- SDK: [ESP-IDF](#) source code and example applications

Boards	Description	Flash / PSRAM	Interfaces	UI	Related Products	Getting Started
 ESP32-DevKitC	ESP32-DevKitC is an entry-level development board. It has all the ESP32 pins exposed and is easy to connect and use.	4 / 8 MB Flash	I/O USB	Buttons, LEDs	ESP32-WROOM-32E ESP32-WROOM-32UE ESP32-WROOM-32SE ESP32-WROVER-E (8 MB) ESP32-WROVER-IE (8 MB) ESP32-SOLO-1	Getting Started Demo Code
 ESP32-DevKitM-1	ESP32-DevKitM-1 is a ESP32-MINI-1-based development board produced by Espressif. Most of the I/O pins are broken out to the pin headers on both sides for easy interfacing. Developers can either connect peripherals with jumper wires or mount ESP32-DevKitM-1 on a breadboard.	4 MB Flash	I/O USB	Buttons, LEDs	ESP32-MINI-1	N/A
 ESP-WROVER-KIT	The ESP-WROVER-KIT comes with an ESP32-WROVER-E module by default. This board features support for an LCD and MicroSD card. The I/O pins have been broken out from the ESP32-WROVER-E for easy extension. The board carries an advanced multi-protocol USB bridge (the FTDI FT232RL), enabling developers to use JTAG directly to debug the ESP32 module through the USB interface. The development board makes secondary development easy and cost-effective.	4 MB Flash + 8 MB PSRAM	I/O JTAG USB Camera UART SPI MicroSD Card	LCD Screen, Buttons, RGB LED	ESP32-WROVER-E	Getting Started Demo Code
 ESP32-PICO-KIT	ESP32-PICO-KIT is Espressif's smallest development board, as it fits into a mini breadboard. It is fully functional with the minimum number of discrete components, while it has all the ESP32 pins exposed.	4 MB Flash	I/O USB	Buttons, LEDs	ESP32-PICO-D4	Getting Started Demo Code
 ESP32-PICO-V3-ZERO-DevKit <small>Alexa Connect Kit (ACK) DevKit</small>	ESP32-PICO-V3-ZERO-DevKit is a development board based on ESP32-PICO-V3-ZERO (ACK) module. Its pin layout is compatible with that of Arduino Zero development board, therefore, this ESP32-PICO-V3-ZERO-DevKit can directly plug in Arduino Zero board, or connect with other host boards and peripherals via jumper.	4 MB Flash	I/O USB	Buttons, LED	ESP32-PICO-V3-ZERO	Getting Started Demo Code
 ESP32-PICO-DevKitM-2	ESP32-PICO-MINI-02-based development board produced by Espressif. Most of the I/O pins are broken out to the pin headers on both sides for easy interfacing. Developers can either connect peripherals with jumper wires or mount ESP32-DevKitM-1 on a breadboard.	8 MB Flash + 2 MB PSRAM	I/O USB	Buttons, LEDs	ESP32-PICO-MINI-02	N/A
 ESP-EYE	ESP-EYE is a development board for image recognition and audio processing, which can be used in various AIoT applications. It features an ESP32 chip, a 2-Megapixel camera and a microphone. ESP-EYE offers plenty of storage, with an 8 MB PSRAM and a 4 MB flash. It also supports image transmission via Wi-Fi and debugging through a Micro-USB port.	4 MB Flash + 8 MB PSRAM	I/O USB	Buttons, LEDs	ESP32	Getting Started Demo Code
 ESP32-LyraT	The ESP32-LyraT development board is designed for the speech and voice recognition market. It integrates the ESP32-WROVER-E module, which includes a dual-core processor and 4.5 MB of operating memory. With this development board, only few peripheral devices are required for implementing a highly-integrated audio solution.	4 MB Flash + 8 MB PSRAM	Micro SD Card Audio Output USB Speaker	Touch Buttons, Keys, LEDs	ESP32-WROVER-E	Getting Started Demo Code
 ESP32-LyraT-Mini	ESP32-LyraT-Mini is a lightweight audio development board based on ESP32-WROVER-E, which implements AEC, AGC, NS WVE (wake word engine) and other audio signal processing technologies.	8 MB Flash + 8 MB PSRAM	I2S I2C SDIO ADC UART GPIO	Button, LED	ESP32-WROVER-E	Getting Started Demo Code
 ESP32-LyraTD-MSC	ESP32-LyraTD-MSC, one of Espressif's Audio Development Boards, is an Acoustic Echo Cancellation (AEC) solution supporting voice recognition, near-field and far-field voice wake-up. Audio files in the format of AAC, FLAC, OPUS and OGG can be decoded and output without quality loss. It also supports connection to Baidu's DuerOS and Amazon's Alexa Voice Service (AVS).	4 MB Flash + 8 MB PSRAM	USB I2S SPI Earphone Jack Speaker Micro SD Card JTAG Programming	LEDs, Keys	ESP32-WROVER-E	Getting Started Demo Code
 ESP32-LyraTD-SYNA	ESP32-LyraTD-SYNA is one of Espressif's Audio Development Board based on ESP32 MCU and Synaptics (AEC) solution, supporting voice recognition and voice wake-up. It also supports connection to Amazon's AVS (Alexa Voice Service), Google's Dialogflow and Google's GVA (Google Voice Assistant).	16 MB Flash + 8 MB PSRAM	I2S I2C ADC UART GPIO	Buttons, LED	ESP32-WROVER-E	User Guide Demo Code
 ESP32-LyraTD-DSPG	ESP32-LyraTD-DSPG is based on ESP32-WROVER-B, a BT/Wi-Fi combo module, and a digital signal processor (DSP) that features a three-microphone array for noise reduction, echo cancellation, beamforming and wake-word detection. ESP32-LyraTD-DSPG is integrated with peripheral devices and consists of two development boards. The sub board mainly consists of the microphone array, function keys and LEDs. The main board is integrated with power management, Wi-Fi and audio modules like dsp, codec and power amplifier. The two boards can be connected with FPC.	16 MB Flash + 8 MB PSRAM	USB FPC Speaker Phone Jack	Button, Microphone, LED	ESP32-WROVER-B	User Guide Demo Code
 ESP32-Vaquita-DSPG	ESP32-Vaquita-DSPG is Espressif's new Alexa built-in solution powered by ESP32 and DSP Group's DBMD5P audio SoC. With a 2-Mic array which allows for a 360-degree pick-up, the solution provides a superior far-field voice recognition performance. The new ESP32-Vaquita-DSPG development kit is a turn-key solution for easily creating Alexa built-in connected devices that provide out-of-the-box voice enablement and AWS-IoT cloud connectivity.	16 MB Flash + 8 MB PSRAM	USB 2x DMIC input 1x earPhone Jack 1x Speaker	5x RGB LEDs, 2x Function Keys	ESP32-WROVER-E	User Guide Demo Code
 ESP32-Korvo	ESP32-Korvo is an ESP32-based audio development board with microphone array, together with Espressif's speech recognition SDK ESP-Skainet, ESP32-Korvo is suitable for far-field speech recognition applications with low power consumption. ESP32-Korvo is composed of two boards connected by an FPC cable: the main board contains ESP32-WROVER-E module, power port, micro SD card slot, earphone and speaker connectors, the sub board contains microphone array, function buttons and LEDs.	16 MB Flash + 8 MB PSRAM	USB Earphone Jack Speaker Micro SD card	Buttons, Speaker, LEDs	ESP32-WROVER-E	User Guide Demo Code

[Products](#) [DevKits](#) [All](#)

	<p>This board is designed not only to provide advanced end-to-end audio solutions with highly efficient integrated AI capabilities as well as a Cloud + End integrated device-level AIoT platform, significantly lowering the barrier to entry for IoT devices to AI capability.</p>	<p>8 MB Flash + 8 MB PSRAM</p>	<p>SDIO SPI UART I2C IR</p>	<p>SD Card, Mic, LED, LCD</p>	<p>ESP32-DU1906</p>	<p>Getting Started Demo Code</p>
	<p>ESP32-LCD-Kit is an HMI (Human Machine Interface) development board based on ESP32-DevKitC (need to purchase if you didn't have one). ESP32-LCDKit is integrated with such peripherals as SD-Card, DAC-Audio, and can be connected an external display. The board is mainly used for HMI-related development and evaluation. Development board reserved screen interface type: SPI serial interface, 8-bit parallel interface, 16-bit parallel interface.</p>	<p>N/A</p>	<p>I/O USB</p>	<p>LCD, Speaker</p>	<p>ESP32-DevKitC</p>	<p>Getting Started Demo Code</p>
	<p>ESP32-Ethernet-Kit is an ESP32-based development board produced by Espressif. It consists of two development boards, the Ethernet board A and the PoE board B. The Ethernet board contains Bluetooth / Wi-Fi dual-mode ESP32-WROVER-E module and IP101GR1, a Single Port 10/100 Fast Ethernet Transceiver (PHY). The PoE board (B) provides power over Ethernet functionality. The A board can work independently, without the board B installed. Key Features 10/100 Fast Ethernet with RJ45 interface PoE power Wi-Fi 802.11b/g/n JTAG debug</p>	<p>4 MB Flash+ 8 MB PSRAM</p>	<p>RMII</p>	<p>N/A</p>	<p>ESP32-WROVER-E</p>	<p>Getting Started Demo Code</p>

ESP8266 Series DevKits

32-bit MCU & 2.4 GHz Wi-Fi

- PC connectivity: USB
- SDK: [ESP8266 RTOS](#) SDK source code and example applications

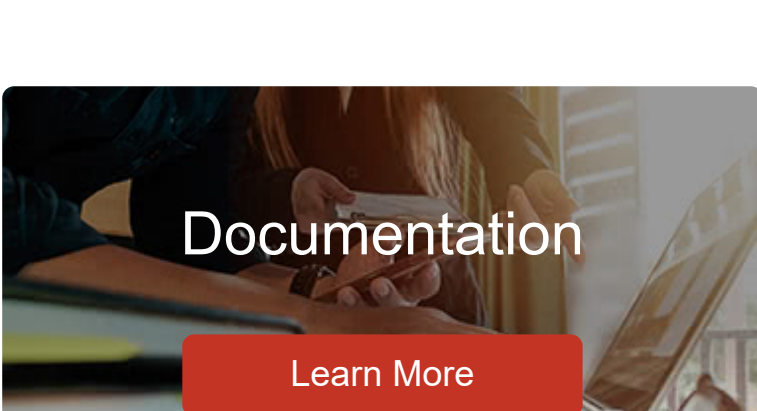
Boards	Description	Flash / PSRAM	Interfaces	UI	Related Products	Getting Started
	<p>ESP-Launcher is a Micro USB-powered development board that allows access to all 32 pins of ESP8266. It integrates the commonly-used peripherals.</p>	<p>4 MB SPI Flash + 4 MB HSPI Flash</p>	<p>I/O USB</p>	<p>Buttons, LEDs</p>	<p>ESP8266EX</p>	<p>Getting Started Demo Code</p>
	<p>ESP8266-DevKitC is an Espressif compact development board based on ESP8266 modules. All of the I/O pins of the module are broken out to the female header connectors on both sides of the board for easy interfacing. Developers can connect these pins to peripherals as needed.</p>	<p>2 MB Flash</p>	<p>HSPI PWM IR I/O ADC UART I2S I2C USB</p>	<p>Buttons</p>	<p>ESP-WROOM-02D ESP-WROOM-02U</p>	<p>Getting Started Demo Code</p>

Other IoT DevKits

32-bit MCU & 2.4 GHz Wi-Fi & BT/Bluetooth LE & Sensor

- PC connectivity: USB
- SDK: [ESP-IOT-SOLUTION](#) source code and example applications

Boards	Description	Flash / PSRAM	Interfaces	UI	Related Products	Getting Started
	<p>The ESP32 touch sensor development kit, ESP32-Sense Kit, is used for evaluating and developing ESP32 touch sensor system. ESP32-Sense Kit consists of one motherboard and multiple daughterboards. The motherboard contains a display unit, a main control unit and a debug unit. The daughterboards have touch electrodes in different combinations or shapes, such as linear slider, wheel slider, matrix buttons and spring buttons, depending on the application scenarios.</p>	<p>4 MB Flash</p>	<p>I/O USB ESP-Prog</p>	<p>Touch sensors, LEDs, RGB, 7-segment, displays</p>	<p>ESP32-WROOM-32D ESP32-WROOM-32 ESP-Prog</p>	<p>Getting started Demo Code</p>
	<p>ESP-Prog is one of Espressif's development and debugging tools, with functions including automatic firmware downloading, serial communication, and JTAG online debugging. ESP-Prog's automatic firmware downloading and serial communication functions are supported on both the ESP8266 and ESP32 platforms, while the JTAG online debugging is supported only on the ESP32 platform. ESP-Prog uses FT2232RL as its USB Bridge Controller chip.</p>	<p>N/A</p>	<p>I/O USB Header connectors</p>	<p>LED, Keys</p>	<p>ESP32-Sense Kit ESP32-MeshKit-Sense</p>	<p>Getting started Demo Code</p>
	<p>ESP32-MeshKit-Sense is a development board with an ESP32 module at its core. It features peripherals, such as a temperature and humidity sensor, an ambient light sensor, etc. The board can be interfaced with screens. The board is mainly used to detect the current consumption of ESP32 modules in a normal operation state or in sleep mode, when connected to different peripherals.</p>	<p>4 MB Flash</p>	<p>I/O USB LCD ESP-Prog</p>	<p>LEDs, Buttons</p>	<p>ESP32-WROOM-32D ESP32-WROOM-32 ESP-Prog ESP32-MeshKit-Light</p>	<p>Getting started Demo Code</p>



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