Modules Comparison

Including:

ESP32-WROOM Series

ESP32-WROVER Series

ESP-WROOM Series

Version 1.2
Espressif Systems
Copyright © 2018

1. ESP32-WROOM Series of Modules

	ESP32-WROOM-32D	ESP32-WROOM-32U	ESP32-WROOM-32
Main Chip	ESP32-D0WD (5×5 mm)	ESP32-D0WD (5×5 mm)	ESP32-D0WDQ6 (6×6 mm)
Flash	32 Mbit 3.3 V SPI Flash		
Crystal	40 MHz Crystal		
Size	18×25.5×3.1 mm	18×19.2×3.1 mm	18×25.5×2.8 mm
Pin define	Pin (pin to pin compatible)		
Antenna	TYPE-A PCB Antenna	IPEX	PCB Antenna (earlier design)
Components	0201/0402 packages	0201/0402 packages	0402/0603 packages
Firmware	Firmware compatible		
Certification List			
SRRC	Yes	Yes	Yes
FCC	Yes	Yes	Yes
CE (RED)	Yes	Yes	Yes
IC	Yes	Yes	Yes
NCC	Yes	Yes	Yes
KCC	Yes	Yes	Yes
MIC	Yes	Yes	Yes
Wi-Fi Alliance	Yes	Yes	Yes
BT SIG	Yes	Yes	Yes

> 📖 *Note:*
>
> *ESP32-WROOM-32D, compared with ESP32-WROOM-32, has been improved in the following aspects: TX Power, RX sensitivity, EVM, Band Edge and Spurious Emission.*

2. ESP32-WROVER Series of Modules

	ESP32-WROVER-B	ESP32-WROVER-IB	ESP32-WROVER	ESP32-WROVER-I
Main Chip	ESP32-D0WD (5×5 mm)	ESP32-D0WD (5×5 mm)	ESP32-D0WDQ6 (6×6 mm)	ESP32-D0WDQ6 (6×6 mm)
Flash	32 Mbit 3.3 V SPI Flash		32 Mbit 1.8 V SPI Flash	
PSRAM	64 Mbit 3.3 V PSRAM		64 Mbit 1.8 V PSRAM	
Crystal	40 MHz Crystal			
Size	18×31.4×3.3 mm			
Pin define	Pin (pin to pin compatible)			
Antenna	TYPE-A PCB Antenna	IPEX	PCB Antenna (earlier design)	IPEX
Components	0201/0402 packages	0201/0402 packages	0402/0603 packages	0402/0603 packages
Firmware	Firmware compatible			
Certification List				
SRRC	Yes	Yes	Yes	Yes
FCC	Yes	Yes	Yes	Yes
CE (RED)	Yes	Yes	Yes	Yes
IC	Yes	Yes	-	-
NCC	Yes	Yes	-	-
KCC	Yes	Yes	-	-
MIC	Yes	Yes	Yes	Yes
Wi-Fi Alliance	Ongoing	Ongoing	Yes	Yes
BT SIG	Yes	Yes	Yes	Yes

📖 *Note:*

1. *ESP32-WROVER-B, compared with ESP32-WROVER, has been improved in the following aspects: TX Power, RX sensitivity, EVM, Band Edge and Spurious Emission.*
2. *ESP32-WROVER-B and ESP32-WROVER-IB: You should make sure the GPIO12 is set at low level, when the module boots up.*
3. *ESP32-WROVER and ESP32-WROVER-I: You should make sure the GPIO12 is set at high level, when the module boots up.*

3. ESP-WROOM Series of Modules

	ESP-WROOM-02D	ESP-WROOM-02U	ESP-WROOM-02
Mian Chip	ESP8266EX (5×5 mm)		
Flash	32 Mbit 3.3 V SPI Flash		
Crystal	26 MHz Crystal		
Size	18×20×3.2 mm	18×14.3×3.2 mm	18×20×3 mm
Pin define	Pin (pin to pin compatible)		
Antenna	TYPE-A PCB Antenna	IPEX	PCB Antenna (earlier design)
Components	0201/0402 packages	0201/0402 packages	0402/0603 packages
Firmware	Firmware compatible		
Certification List			
SRRC	Yes	Yes	Yes
FCC	Yes	Yes	Yes
CE (RED)	Yes	Yes	Yes
IC	Yes	Yes	Yes
NCC	Yes	Yes	Yes
KCC	Yes	Yes	Yes
MIC	Yes	Yes	Yes
Wi-Fi Alliance	Plan	Plan	Yes

📖 ***Note:***

ESP-WROOM-02D, compared with ESP-WROOM-02, has been improved in the following aspects: TX Power, RX sensitivity, EVM, Band Edge and Spurious Emission.

Espressif IoT Team

www.espressif.com