

## Warning!

Please read the user manual included in this work as it contains important information related with safety of installation and use of the device.

Only persons who read the user manual may use the device.

The user manual must be kept because it may be required in the future. The device is to be used exclusively for purposes specified in this user manual.

The device must be unpacked prior to starting-up. After removing the packaging make sure the device is in working order.

If the product has defects, it should not be used until it is repaired.

The product is intended for use at home and commercial use and may not be used for other than intended use.

The manufacturer is not liable for damages resulting from not adhering to the rules contained in the user manual, therefore, we recommend to follow the aforementioned safety rules for operation and maintenance of the device. In this way you will ensure yourself safety and avoid causing damage to the device.

The manufacturer and the supplier are not liable for losses or damages arising out of the product, including financial or intangible losses, loss of profits, income, data, pleasure from use of the product or other products related with it - indirect, incidental or consequential loss or damage. The above provisions apply whether the loss or damage concerns:

1. Deterioration of quality or the lack of operation of the products or products related with it due to damage as well as the lack of access to the product when it is undergoing repair, which results in stoppage the loss of user's time or a break in business activity;
2. Improper results of operation of the product or products related with it;
3. It applies to losses and damages according to any legal category, including negligence and other losses, termination of a contract, expressed or implied guarantee and strict liability (even if the manufacturer or the supplier was notified about the possibility of occurrence of such damages).

### Safety measures:

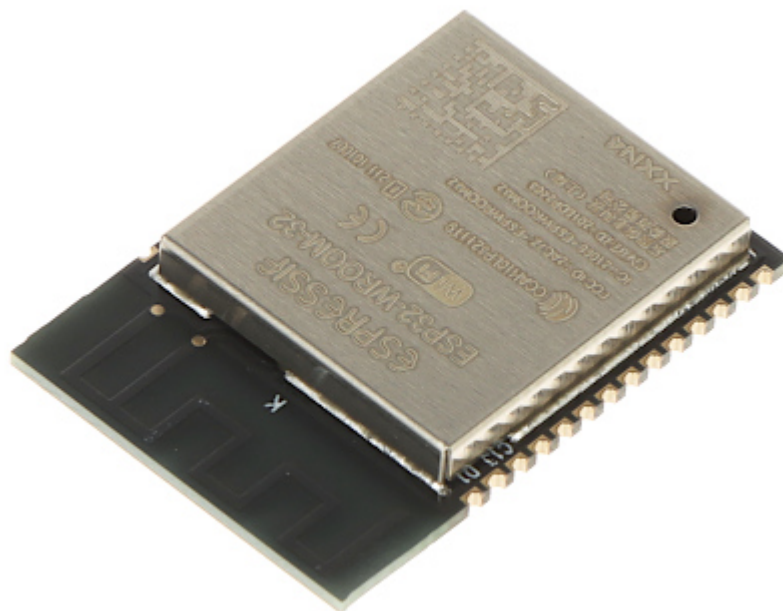
Particular attention at designing was directed to quality standards of the device where ensuring safety of operation is the most important factor.

The device must be secured against contact with caustic, staining and viscous fluids.

The ESP-WROOM-32 radio communication module allows you to extend projects based on various microcontrollers with wireless communication in the 2.4 GHz band. The device allows you to use Wi-Fi (802.11 b/g/n), Bluetooth / Bluetooth LE protocols and, if necessary, your own protocols written by the user.

The system is equipped with two Xtensa® 32-bit LX6 microprocessors and an additional low-power auxiliary processor that allows performing simple operations (e.g. listening for transmissions, timer, waiting for a wake-up signal) without using the main processors. The integrated 4 MB Flash memory will also help in using the additional capabilities of the controller. Everything can be programmed via the appropriate USB -> UART 3.3V interface using the Arduino IDE or Eclipse IDE environment.

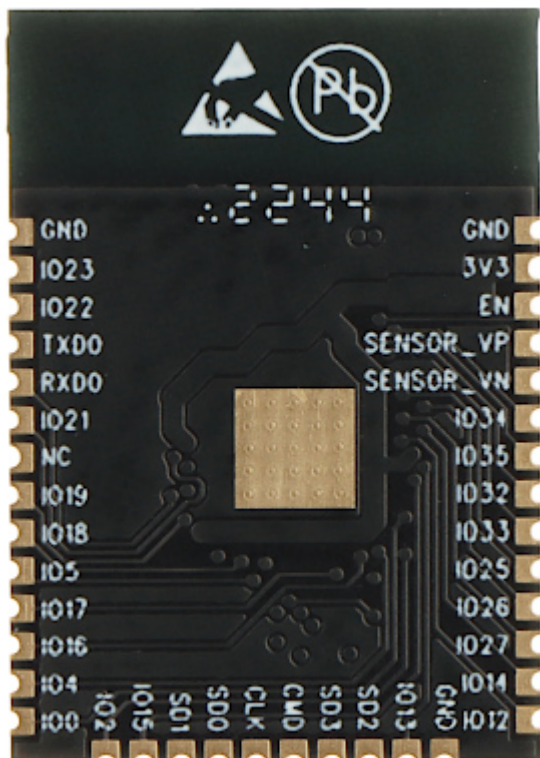
**Attention!** During programming and using the module, pay attention to the voltage levels of the logic circuits. The module has been designed for use with a voltage of 3.3 V<sub>DC</sub> both on the supply side of the device and in the logical layer. Supplying 5 V<sub>DC</sub> voltage to the inputs may cause permanent damage to the module.



Supported standards:	IEEE 802.11 b/g/n, Bluetooth LE
Processor:	2 x Xtensa® 32-bit LX6

Supported transmission speeds:	max. 150 Mbps
Operation modes:	Station / Soft AP / Station + Soft AP
Antenna type:	Indoor
Interface:	UART 3.3 V, SDIO, SPI, I2C, I2S, GPIO, ADC, DAC, PWM, TWAI®, RMT
Frequency range:	2.4 GHz
Receiver sensitivity:	<ul style="list-style-type: none"> <li>• 11b 11M : -88 dBm</li> <li>• 11g 54M : -75 dBm</li> <li>• 11n HT20 MCS0 : -93 dBm</li> <li>• 11n HT20 MCS7 : -70 dBm</li> <li>• 11n HT40 MCS0 : -90 dBm</li> <li>• 11n HT40 MCS7 : -70 dBm</li> <li>• Bluetooth : -94 dBm</li> </ul>
Security measures:	WEP / TKIP / AES, Hash (SHA-2), RSA, ECC
Operation temp:	-40 °C ... 85 °C
Weight:	0.001 kg
Dimensions:	25.5 x 18 x 3.2 mm
Manufacturer / Brand:	Espressif
Guarantee:	2 years





## PACKAGE

Dimensions (L x W x H): 0x0x0 mm	Gross Weight: 0 kg
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