ESP-WROOM-32

1. Dual-core, 32-Bit microcontroller module.
2. CPU cores can be individually controlled.
3. Clock frequency up to 240MHz.
4. Multiple power modes.
5. Integrated Wi-Fi, Bluetooth and BLE.
6. Multiple digital and analog I/O pins.
7. One of the ESP32 series of microcontrollers.
8. Manufactured by Espressif Systems.
9. Successor to the ESP8266.
10. Up to eighteen 12-bit ADC.
11. Two 8-bit DAC.
12. 10 Capacitive touch-sensor inputs.
13. 4 SPI bus channels.
14. 2 I2C bus connections.
15. 2 I2S bus connections.
16. 3 UARTs.
17. SD card host controller.
18. IR remote controller, up to 8 channels.
19. Motor PWM.
20. LED PWM, up to 16 channels.
21. Hall-effect sensor.
22. Ultra-low-power analog preamp.
23. Real time clocks.
24. Most pins on ESP-WROOM-32 have multiple functions.
25. Some function conflicts not all can be used simultaneously.
26. Not all development boards expose all pins.
27. Some pins not recommended for use.
28. Some digital I/O pins are input only.
29. Built in LED on pin 2

ESP32 WIFI

1. ESP32 supports Wi-Fi protocols 802.11 b/g/n
2. Operates at 2.4GHz.
3. Data rate up to 150 Mbps.
4. Adjustable transmit power up to 20.5dBm.
5. Supports antenna diversity, GPIO controls RF switch.
6. In Arduino IDE use the WiFi.h library.
7. Supports ESP32 used as a station or as a Soft Access Point.
8. In STA mode ESP32 gets IP address from router DHCP.
9. In SAP mode ESP32 assigns IP addresses to clients.
10. Maximum of 5 clients in SAP mode.
11. Both modes allow ESP32 to act as a web server.

ESP32 Bluetooth

1. ESP32 has both classic Bluetooth and BLE.
2. Can act as a client or as a server.
3. Classic Bluetooth for continuous data streaming.
4. BLE for short bursts of data.
5. Arduino libraries for Bluetooth and BLE installed by default.

