XinaBox Datasheet CW02 - Wi-Fi & Bluetooth Core

Contents

Overview

An xCHIP core Wi-Fi & Bluetooth module. CW02 is based on the ESP32 which is a single 2.4 GHz Wi-Fi and Bluetooth combo chip designed with TSMC ultra-low-power 40 nm technology and an Xtensa® Dual-core 32-bit LX6 microprocessor.

Product highlights

- Based on ESP-WROOM-32
- 2.4Ghz Wifi and Bluetooth
- 4 MB SPI Memory
- Arduino, Mongoose OS, NodeMCU and Lua compatible
- OTA capable through WiFi
- Supports WPA Personal and Enterprise
- RGB LED

Applications

- Internet-of-Things sensing and control applications
- Wireless sensing
- Mobile Application Control

Getting Started

- Arduino (https://github.com/espressif/arduino-esp32)
  - Choose **Board: "XinaBox CW02"**
  - Choose default options for the rest.
- Mongoose OS (https://mongoose-os.com/docs/quickstart/setup.md)

Specifications

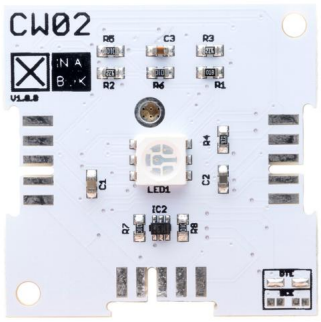
- WiFi:
  1. RF certification:
     - FCC/CE/IC/TELEC/KCC/SRRC/NCC
  2. Protocols:
     - 802.11 b/g/n/e/i (802.11n up to 150 Mbps)
     - A-MPDU and A-MSDU aggregation and 0.4 µs guard interval support
- Bluetooth:
  1. Protocols:
     - Bluetooth v4.2 BR/EDR and BLE specification
  2. Radio:
     - NZIF receiver with -97 dBm sensitivity
     - Class-1, class-2 and class-3 transmitter
     - AFH
- Built-board PCB antenna
- Processor: L106 32-bit RISC microprocessor core based on the Tensilica Xtensa Diamond Standard 106Micro running at 80 MHz
- External QSPI flash: 4 MB
- On-board Hall sensor and temperature sensor
- WiFi Modes:
  1. Station/SoftAP/SoftAP+Station/P2P
- WiFi Security:
  1. WPA/WPA2/WPA2-Enterprise/WPS
- Encryption:
  1. AES/RSA/ECC/SHA
- WiFi OTA Capable
- Network protocols:
  1. IPv4, IPv6, SSL, TCP/UDP/HTTP/FTP/MQTT

External Links

Datasheet

- ESP-WROOM-32 From Espressif Systems (http://espressif.com/sites/default/files/documentation/esp-wroom-32_datasheet_en.pdf)

CW02 - Wi-Fi & Bluetooth Core (ESP-WROOM-32)



Front

Back

☒CHIP	
Main Category	Core
Sub Category	Wi-Fi
Introduced	1 August 2017
Current version	1.0.0
Current version date	1 February 2018
Dimensions	
Size	2x2U (32x32mm)
Weight	5.5 g
Height	6.4/1.7/3.0 mm
Non-☒BUS Connections	
North	Wi-Fi antenna
Main Chip Set	
Main Chip	ESP-WROOM-32
Architecture	Xtensa®
Core Size	32 bit
Max. Frequency	240 MHz Core, 40 MHz only for Wi-Fi/BT functionality
Program Memory Size	4 MB SPI Flash
EEPROM Memory Size	448 kB
RAM Memory Size	520 kB SRAM
I^2C Speed	100/400 kHz
Programmer Setting	
Programmer	IP01

Shop

- Buy CW02 (https://xinabox.cc/products/CW02)

GitHub

- CW02 on GitHub (https://github.com/xinabox/xCW02)

Serial Configuration	
Default Setting	DTE
Change Setting	DCE
UART Configuration	
RXD	RXD0
TXD	TXD0
I²C Configuration	
SDA	IO21
SCL	OP22
LED Configuration	
Red pin	IO25
Green pin	IO26
Blue Pin	IO27