# XinaBox Datasheet CW01 - ESP8266 Wi-Fi Core



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### Overview

This xCHIP forms part of the core modules and is equipped with Wi-Fi (https://en.wikipedia.org/wik i/Wi-Fi). The Wi-Fi module offers internet connectivity which allows the user to store data on the cloud which enables remote data access and opens up for the world of IoT.

#### **Product highlights**

- 802.11 b/g/n 2.4 GHz WiFi
- Based on ESP8266/ESP-12-F
- 80 MHz processor
- 4 MB SPI Memory
- Arduino, Mongoose OS, NodeMCU and Lua compatible
- OTA capable through WiFi
- RGB LED

## **Applications**

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

## **Specifications**

- WiFi @ 2.4 GHz supports WPA / WPA2 security modes (non enterprise)
- Complete TCP / IP protocol stack
- On-board PCB antenna
- Processor: L106 32-bit RISC microprocessor core based on the Tensilica Xtensa Diamond Standard 106Micro running at 80 MHz
- 64 KB of instruction RAM, 96 KB of data RAM
- External QSPI flash: 4 MB
- IEEE 802.11 b/g/n Wi-Fi
- Integrated TR switch, balun, LNA, power amplifier and matching network
- WEP or WPA/WPA2 authentication or open networks

## **Getting Started**

- Arduino-ESP8266 (https://github.com/xinabox/Arduino-ESP8266)
  - Choose Board: "XinaBox CW01"
  - Choose default options for the rest.
- Mongoose OS (https://mongoose-os.com/docs/quickstart/setup.md)
- MicroPython (https://docs.micropython.org/en/latest/esp8266/tutorial/intro.html)

# Notes on programming

If the LED on your CW01 has the following colours:

- Faint GREEN
- Very faint RED
- No BLUE

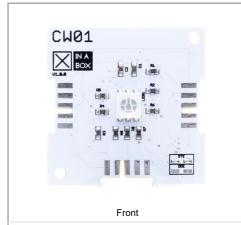
.. then it means that your CW01 is in programming mode.

- To make sure that it automatically starts your program after programming and is not stuck in programming mode, program/flash your CW01 by choosing "DIO" in the Arduino IDE.
- The memory on the CW01 is 4Mb, you can choose any of the 4Mb options in the Arduino IDE, with the size of SPIFFS that fits your project.

## **External Links**

#### **Datasheets**

#### CW01 - ESP8266 Wi-Fi Core





	Back	
	⊠CHIP	
Main Category	Core	
Sub Category	Wireless	
Introduced	1 August 2016	
Current version	1.0.0	
Current version date	14 July 2017	
Dimensions		
Size	2x2U (32x32mm)	
Weight	4.4 g	

Height 6.4/3/0.3 mm

Non-⊠BUS Connections

North PCB Antenna

Power

V<sub>cc</sub> (3.3v) Power 170 mAh

Consumption

Main Chip Set Main Chip EPS8266EX Architecture Tensilica L106 Core Size 32 bit Max. Frequency 80 MHz **Program Memory** 4 MB of External QSPI flash Size **RAM Memory Size** 64 kB of instruction RAM, 96 kB of data RAM I<sup>2</sup>C Speed 100 kHz

Programmer Setting

Programmer IP01
Settings DCE and B

- ESP8266 From Espressif (http://bbs.espressif.com/viewtopic.php?t=133)
- ESP-12F From AI (https://www.elecrow.com/download/ESP-12F.pdf)

## Shop

■ Buy CW01 (https://xinabox.cc/products/CW01)

## GitHub

CW01 on GitHub (https://github.com/xinabox/xCW01)

### Other

■ ESP8266 on Wikipedia (https://en.wikipedia.org/wiki/ESP8266)

### **Projects**

- Everything ESP (https://www.hackster.io/bwente/countdown-calendars-c75a3c?ref=chann
- el&ref\_id=4889\_trending\_\_\_&offset=1)
  Programming the ESP (https://www.hackster.io/Metavix/programming-the-esp8266-with-th e-arduino-ide-601c16)

Serial Configuration		
Default Setting	DTE	
Change Setting	DCE via solder pads	
UART Configuration		
RXD	RXD0	
TXD	TXD0	
I <sup>2</sup> C Configuration		
SDA	GPIO2	
SCL	GPIO14	
LED Configuration		
Red pin	GPIO12	
Green pin	GPIO13	
Blue Pin	GPIO5	