XinaBox Datasheet CW01 - ESP8266 Wi-Fi Core

Contents

Overview

This xCHIP forms part of the core modules and is equipped with Wi-Fi (https://en.wikipedia.org/wiki/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

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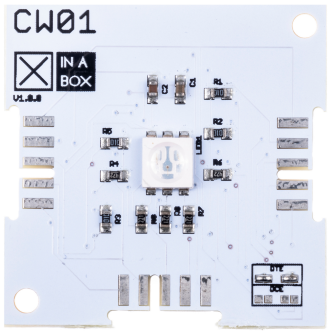
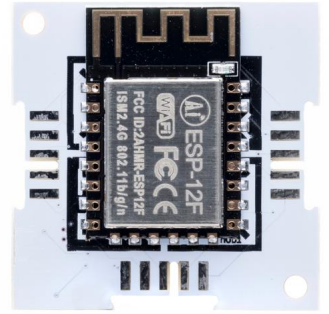
- To make sure that it automatically starts your program after programming and is not stuck in programming mode, program/flash your CW01 by choosing "DIO" in the Arduino IDE.
- The memory on the CW01 is 4Mb, you can choose any of the 4Mb options in the Arduino IDE, with the size of SPIFFS that fits your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

CW01 - ESP8266 Wi-Fi Core



Front



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☒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_{cc} (3.3v) Power Consumption	170 mAh
Main Chip Set	
Main Chip	EPS8266EX
Architecture	Tensilica L106
Core Size	32 bit
Max. Frequency	80 MHz
Program Memory Size	4 MB of External QSPI flash
RAM Memory Size	64 kB of instruction RAM, 96 kB of data RAM
I^2C Speed	100 kHz
Programmer Setting	
Programmer	IP01
Settings	DCE and B

External Links

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=channel&ref_id=4889_trending___&offset=1)
- Programming the ESP (https://www.hackster.io/Metavix/programming-the-esp8266-with-the-arduino-ide-601c16)

Serial Configuration	
Default Setting	DTE
Change Setting	DCE via solder pads
UART Configuration	
RXD	RXD0
TXD	TXD0
I²C Configuration	
SDA	GPIO2
SCL	GPIO14
LED Configuration	
Red pin	GPIO12
Green pin	GPIO13
Blue Pin	GPIO5