



Wi-Fi Module RF-WM-C3B1

Hardware Datasheet

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● Device Overview

➤ Description

RF-WM-C3B1 module is a new embedded Wi-Fi module launched by RF-star. The module adopts ESP32-C3FH4 chip design, built-in high performance RISC-V MCU, and contains a variety of peripherals: UART, SPI, I2C, I2S, GPIO, etc.

The module supports 802.11b /g/n Wi-Fi standard, and has large capacity storage space (FLASH:4MB,FLASH is external, up to 128MB, OM:384KB) and running space (SRAM:400KB+RTC RAM:8KB).

➤ Functional Block Diagram

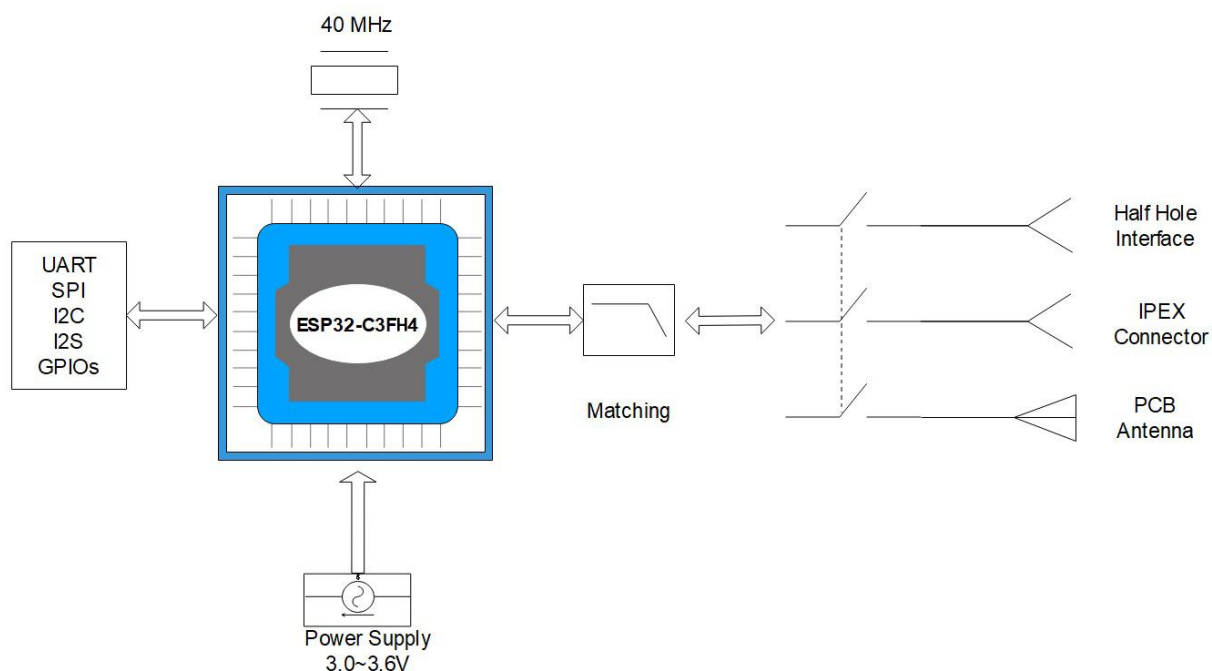


Figure 1. Functional Block Diagram

● Module Parameters

Supply Power Voltage	3.0 V~ 3.6 V
Operating Temperature	- 40 °C ~ + 85 °C
Storage Temperature	- 40 °C ~ + 125 °C
Package	SMT
Operating frequency	2.412—2.462GHz
Wireless network standard	802.11 b/g/n
Receiving sensitivity (typ)	11b(11Mbps@CCK): -88.6 dBm 11g(54Mbps@OFDM): -76.6 dBm 11n(HT20@MCS7): -74.8 dBm 11n(HT40@MCS7): -71.4 dBm



● Module dimensions and definitions

➤ Dimension

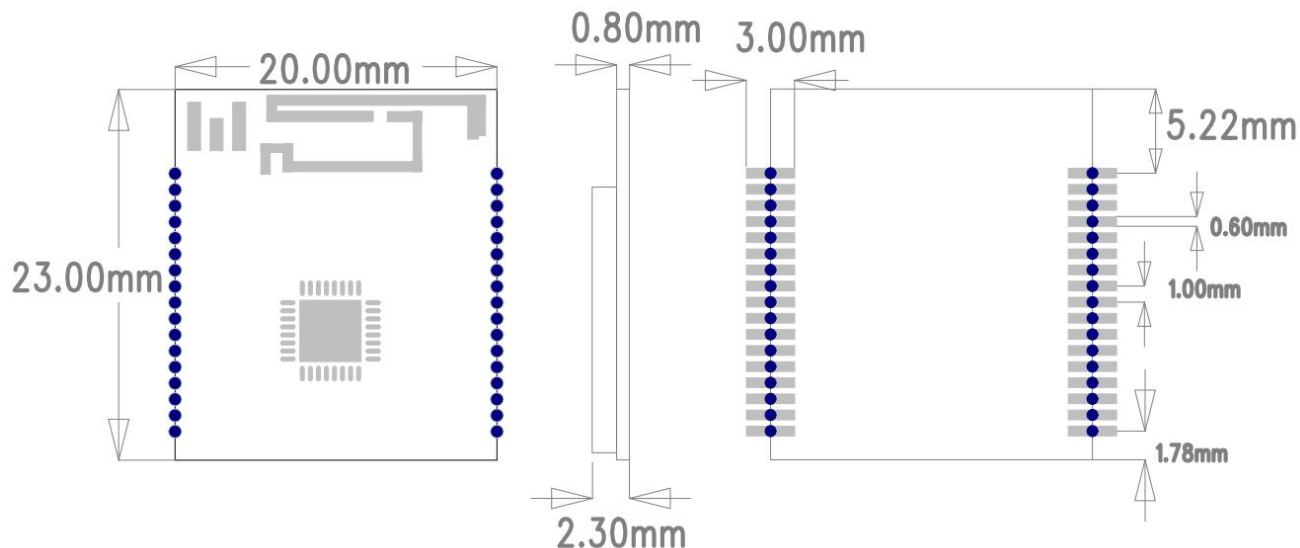


Figure 2. The dimension of module

➤ Pin figure

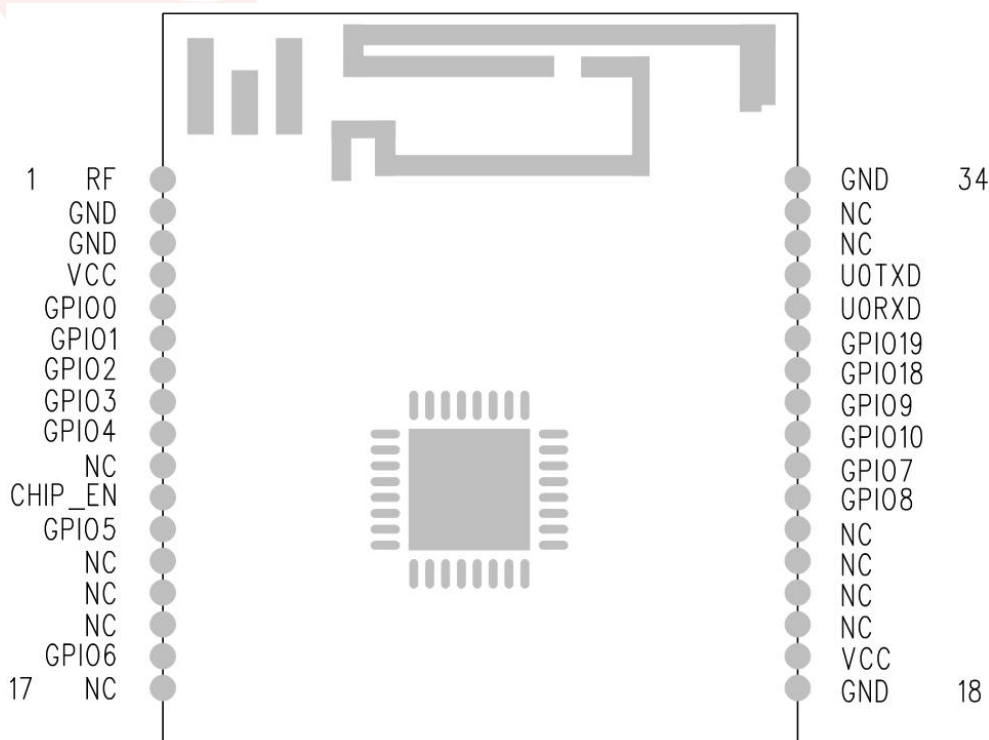


Figure 3. The pin figure of module

Pin	Name	Description
1	RFOUT	RF signal output pin
2	GND	Ground
3	GND	Ground
4	VCC	3.3 V power supply
5	GPIO0	
6	GPIO1	
7	GPIO2	
8	GPIO3	
9	GPIO4	
10	NC	
11	CHIP_EN	Chip enable pin
12	GPIO5	
13	NC	
14	NC	
15	NC	
16	GPIO6	
17	NC	
18	GND	
19	VCC	3.3 V power supply
20	NC	
21	NC	
22	NC	
23	NC	
24	GPIO8	
25	GPIO7	
26	GPIO10	
27	GPIO9	
28	GPIO18	USB_D-
29	GPIO19	USB_D+
30	U0RXD	UART RXD
31	U0TXD	UART TXD
32	NC	
33	NC	
34	GND	

● FCC Warning

FCC regulatory compliance statement

§15.19 Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

§15.21 Information to user

Warning: changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

- List of applicable FCC rules:

47 CFR Part 15.247

Summarize the specific operational use conditions

This module can be used in IOT devices, the input voltage to the module is nominally 3.3V.

- Limited module procedures

This module is a single module.

- Trace antenna designs

The antenna is not a trace antenna.

- RF exposure considerations

This Module complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

- Antennas

If you desire to increase antenna gain and either change antenna type or use same antenna type certified, a Class II permissive change application is required to be filed by us, or you (host manufacturer) can take responsibility through the change in FCC ID (new application) procedure followed by a Class II permissive change application.

- Label and compliance information

Please notice that if the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains FCC ID: 2ALZ7-WM260107" any similar wording that expresses the same meaning may be used.

§ 15.19 Labelling requirements shall be complied on end user device.

Labelling rules for special device, please refer to §2.925, § 15.19 (a)(5) and relevant KDB publications. For E-label, please refer to §2.935.

- Information on test modes and additional testing requirements

The OEM integrator is responsible for ensuring that the end-user has no manual instruction to remove or install module.

The module is limited to installation in mobile application, a separate approval is required for all other operating configurations, including portable configurations with respect to §2.1093 and difference antenna configurations.

- FCC other Parts, Part 15B Compliance Requirements for Host product manufacturer

This modular transmitter is only FCC authorized for the specific rule parts listed on our grant, host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification.

Host manufacturer in any case shall ensure host product which is installed and operating with the module is in compliant with Part 15B requirements.

Please note that For a Class B or Class A digital device or peripheral, the instructions furnished the user manual of the end-user product shall include statement set out in §15.105 Information to the user or such similar statement and place it in a prominent location in the text of host product manual. Original texts as

following:
For Class B

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.*
- Increase the separation between the equipment and receiver.*
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*
- Consult the dealer or an experienced radio/TV technician for help.*



● Contact Us

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