

BC204

BLE5.0 Bluetooth Module

Specification Book

Version information

version	Date	Author	Description
V1.0	Apr 20,2020	Rong wang	Create the document
V1.1	Jul 15,2020	Xiaofei Zhou	Add module package description

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Important announcement

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1. Descriptions

1.1、 Image of the module

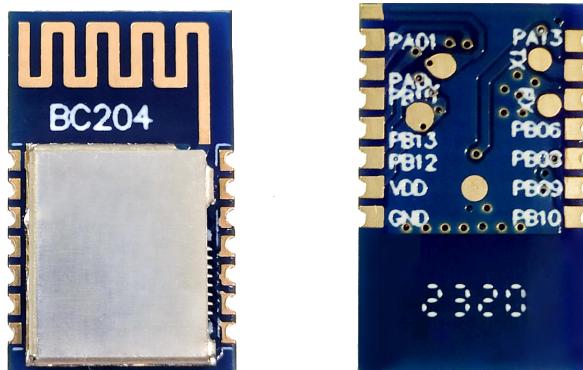


Fig. 1: Image of BC204

1.2、 Function Description

BC204 is a low-power Bluetooth 5.0 integrated module, based on the M0 core, which can support master-slave switching. It includes full function Bluetooth 5.0 / 5.1. It Can develop a variety of applications based on 32-bit high-performance .

This module has rich peripherals, such as UART, SPI, IIC, GPIO, ADC, PWM, and so on. BC204 has many features, such as easy to develop, BLE connection stability.

1.3、 Basic parameter

1.3.1、 Bluetooth 5.0 / 5.1

Support 125Kbps/500Kbps/1Mbps/2Mbps/

Receiving sensitivity: -99dbm @1Mbps

Transmit power: Max:+12dBm

Link Gain: 117dB@125Kbps (Max)

Bluetooth mesh: Support SIG Mesh, Private mesh, Through transmission

1.3.2、 MCU core

ARM 32-bit Cortex-M0 CPU

Highest frequency: 64MHz

Max Data SRAM: 64KB

Maximum Data Flash storage: 512KB

RX mode: 4.5mA @3.3V

TX mode: 4.3mA @3.3V 0dBm



SLEEP mode: 1uA

One broadcast for 1s in standby: 36uA

2、Hardware application

Table 2.1 Recommended operating conditions

Rating	Min	Typ	Max	Unit	Remarks
Operating temperature	-40	20	85	°C	
VDD	2.4	3.3	3.6	V	
Operating current	-	8	-	mA	VDD: 3.3V

3、Size

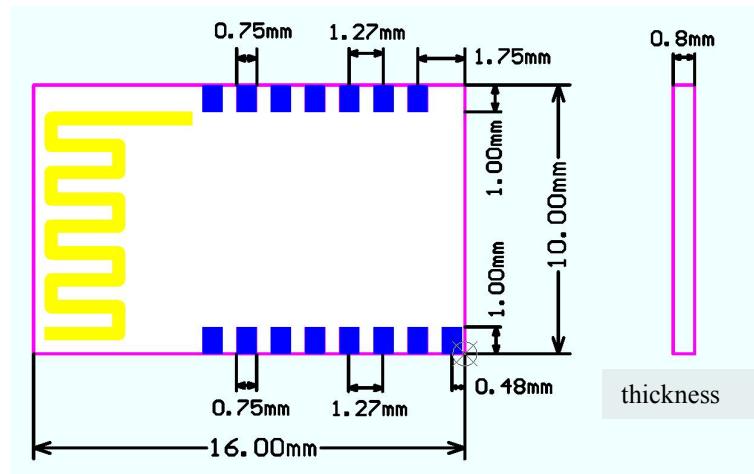


Fig 3.1 Package size chart (The overall maximum thickness of the module is 2.6mm)

Please find the corresponding business interface to provide the package information of the corresponding backplane of the module.

4、Pin definition

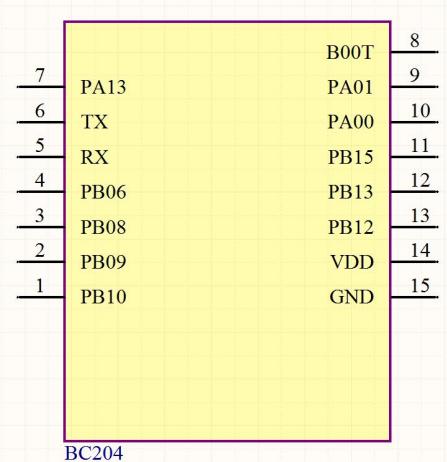


Fig 4.1 Pin Diagram

Table 4.1 Description of pin definition

Number	Name	definition	Description
1	PB10	PB10	GPIO
2	PB09	PB09	GPIO
3	PB08	PB08	GPIO
4	PB06	PB06	GPIO
5	RX	PB01	GPIO Serial burning RX
6	TX	PB00	GPIO Serial burning TX
7	PA13	PA13	GPIO
8	BOOT	BOOT	During serial programming, the BOOT pin is pulled high (the programming point is reserved)
9	PA01	PA01	GPIO
10	PA00	PA00	GPIO Wake Up Connect to external MCU
11	PB15	PB15	GPIO RX Connect to the TX of external MCU
12	PB13	PB13	GPIO TX Connect to the RX of external MCU
13	PB12	PB12	GPIO
14	VDD	VDD	Positive electrode of module power
15	GND	GND	negative electrode of module power (3.3V)

Notice: The red mark is the programming pin. When designing, it is recommended to reserve a burning point.

5、Module MOQ and packaging information

Name	MOQ(PCS)	Packing
BC204	1600	tray

6、Sales and technical support information

If you need to consult or purchase this product, please call Bestcore during office hours.

Office hours: Monday to Friday

morning: 08:30-12:00, afternoon: 13:30-18:00

Address:

Room605-609, Area B, Huachuangda Qianhai Maker Innovation Base, 38 District, Baoan District, Shenzhen

Phone Num: 0755-23201496

Room 1011, 10F, ShuMao Building, 6 Xiangxing Road, Torch Development District ,Zhongshan

Phone Num: 0760-85288175

7、FCC 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.

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

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 difference from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Important Note:

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with



minimum distance 5 mm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Country Code selection feature to be disabled for products marketed to the US/Canada.

1. The antenna must be installed such that 5 mm is maintained between the antenna and users, and
2. The transmitter module may not be co-located with any other transmitter or antenna.

As long as the three conditions above are met, further transmitter testing will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

Important Note:

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling:

The final end product must be labeled in a visible area with the following
“Contains FCC ID: 2AW3Q-BC204

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 Transmitter Module FCC ID: 2AW3Q-BC204

Manual Information to the End User:

The OEM integrator has to be aware not provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

When the module is installed inside another device, the user manual of this device must contain below warning statements;

1. 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,
 - 2) this device must accept any interference received, including interference that may cause undesired operation.
2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product.