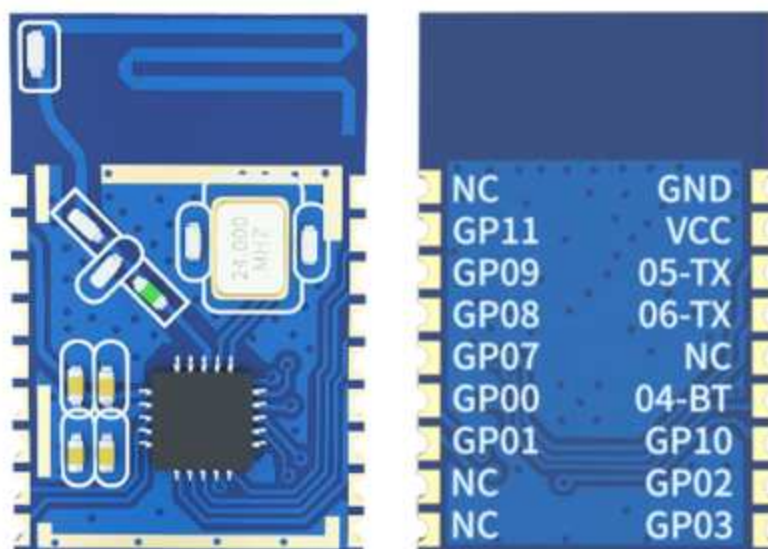Shenzhen Newbit Information Technology Co., Ltd.

FCC ID:2A8QD-XY-MBO21F

XY-MB021F Module User Manual

Ver:0.1.1

Part Number:XY-MB021F

Shenzhen Newbit Information Technology Co., Ltd.
ADD: Room 1612-1616, Global Logistics Center, Longgang District, Shenzhen

TEL: 0755-23320814
HTTP://WWW.newbitinfo.com

Integration instructions for host product manufacturers according to KDB 996369 D03 OEM Manual vO1

1.2 List of applicable FCC rules
FCC Part 15 Subpart C 15.247& 15.209

1.3 Specific operational use conditions
The module is a Bluetooth module
Operation Frequency: 2402-2480MHz
Number of Channel: 40
Modulation: GFSK
Type: PCB Antenna
Gain: -0.61dBi Max.

This module is stand-alone modular. If the end product will involve the Multiple simultaneously transmitting condition or different operational conditions for a stand-alone modular transmitter in a host, host manufacturer have to consult with module manufacturer for the installation method in end system.

1.4 Limited module procedures
Not applicable

1.5 Trace antenna designs
Not applicable. The module has its own antenna, and doesn't need a host's printed board microstrip trace antenna etc.

1.6 RF exposure considerations
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body

and if RF exposure statement or module layout is changed, then the host product manufacturer required to take responsibility of the module through a change in FCC ID or new application. The FCC ID of the module cannot be used on the final product. In these circumstances, the host manufacturer will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

1.7 Antennas
Antenna Specification are as follows:

Type: PCB Antenna

Gain: -0.61dBi

This device is intended only for host manufacturers under the following conditions:

The transmitter module may not be co-located with any other transmitter or antenna;

The module shall be only used with the internal antenna(s) that has been originally tested and certified with this module. The antenna must be either permanently attached or employa 'unique[1] antenna coupler.

As long as the conditions above are met, further transmitter test will not be required. However, the host manufacturer is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

2.8 Label and compliance information
Host product manufacturers need to provide a physical or e-label stating "Contains FCC ID: 2A8QD-XY-MBO21F"with their finished product.

2.9 Information on test modes and additional testing requirements

Operation Frequency: 2402-2480MHz

Number of Channel: 4 0

Modulation: GFSK

Host manufacturer must perfom test of radiated & conducted emission and spurious emission, etc according to the actual test modes for a stand-alone modular transmitter in a host, as well as for multiple simultaneously transmitting modules or other transmitters in a host product.

Only when all the test results of test modes comply with FCC requirements, then the end product can be sold legally.

2.10 Additional testing, Part 15 Subpart B disclaimer

The modular transmitter is only FCC authorized for FCC Part 15 Subpart C 15.247& 15.209 and that the 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. If the grantee markets their product as being Part 15 Subpart B compliant (when it also contains unintentional-radiator digital circuity), then the grantee shall provide a notice stating that the final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

Federal Communication Commission Statement (FCC, U.S.)

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 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.

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.

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

IMPORTANT NOTES

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

OEM integration instructions:
This device is intended only for OEM integrators under the following conditions:

The transmitter module may not be co-located with any other transmitter or antenna. The module shall be only used with the external antenna(s) that has been originally tested and certified with this module.

As long as the conditions above are met, further transmitter test 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 (for example, digital device emissions, PC peripheral requirements, etc.).

Validity of using the module certification:
In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization for this module in combination with the host equipment is no longer considered valid and the FCC ID of the module 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 Transmitter Module FCC

ID: 2A8QD-XY-MBO21F.

Information that must be placed in the end user manual:
The OEM integrator has to be aware not to 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.

Version History：

Version	Release Date	Editor	Reviewer	Des\ription
V0.0.5	2023.10.28	Cai Ruipeng	Luo Xin	Initial version

Note:

This document may be updated without notice due to continuous hardware and software improvements. Please refer to the latest version of the document on our website or contact us directly.(www.newbitinfo.com)

The package for this module has not been uploaded to JLCPCB. Please use the module package we provide.!!!

Shenzhen Newbit Information Technology Co., Ltd.
ADD: Room 1612-1616, Global Logistics Center, Longgang District, Shenzhen

TEL: 0755-23320814
HTTP://WWW.newbitinfo.com

目录

Overview

The XY-MB021F (BLE) module is designed based on the OM6621FB chip from Onrui Mi\roelectronics Technology Co., Ltd. The OM6621FB is a low-power Bluetooth chip aimed at SOC (System on Chip) that facilitates rapid development. With support from Freqchip's Bluetooth intelligent firmware and protocol stack, it fully complies with the Bluetooth V5.1 (LE mode) protocol. Users can develop various applications based on the high-performance ARM Cortex-M4 embedded 32-bit mi\rocontroller integrated within the chip. This module is mainly used in smart wearable devices, portable medical devices, sports and fitness equipment, smart homes, consumer electronics, and industrial control, meeting the requirements for low power consumption, low latency, and short-range wireless data communication.

The XY-MB021F (BLE) passthrough module allows developers to use it directly in a manner similar to serial communication without understanding the low-power Bluetooth protocol, thereby developing smart products that support low-power Bluetooth communication.

This document is the user manual for the XY-MB021F (BLE) passthrough module, covering its main functions, application scenarios, usage methods, logical structure, hardware interfaces, and various specifications.

Module Features

Hardware Features

- ➢ Module Package: 11.3mm x 16.4mm (Stamp hole) - 18PIN
- ➢ Operating Frequency Band: 2400MHz ~ 2483.5MHz
- ➢ Modulation Method: GFSK
- ➢ Frequency Offset: ±20kHz
- ➢ Transmit Power: -28dBm ~ +10dBm
- ➢ Receive Sensitivity: -97dBm
- ➢ Data Interface: UART
- ➢ Supports Internal RTC Real-Time Clock
- ➢ Ultra-Low Power Consumption

➤ Operating Voltage: 1.8V ~ 3.3V
➤ Operating Temperature: -40℃ ~

Software Features

➤ Supports full BT5.1
➤ Serial transparent transmission, no need for any Bluetooth protocol stack application experience
➤ Customizable software tailored to customer needs; CPU main frequency up to 64MHz, rich interface resources
➤ Supports AT commands, a rich set of commands for configuring module parameters
➤ Supports AT command software reset module, obtain MAC address
➤ Supports AT command to modify advertising interval, UART baud rate, module name

Default Factory Parameter Configuration

Parameter	Default Value
UART Configuration	9600bps
Module Name	NB-(MAC Address)
Advertising Interval	200ms
Connection Interval	30mS
Transmit Power	0dBm
BLE Primary Service, Read, Write Channels	FFF0/FFF1/FFF2
Connection UART Response	+CONNECTED:TYPE,MAC\r\n
Disconnection UART Response	+DISCONN:TYPE,MAC\r\n

Pin Definitions and Dimensions
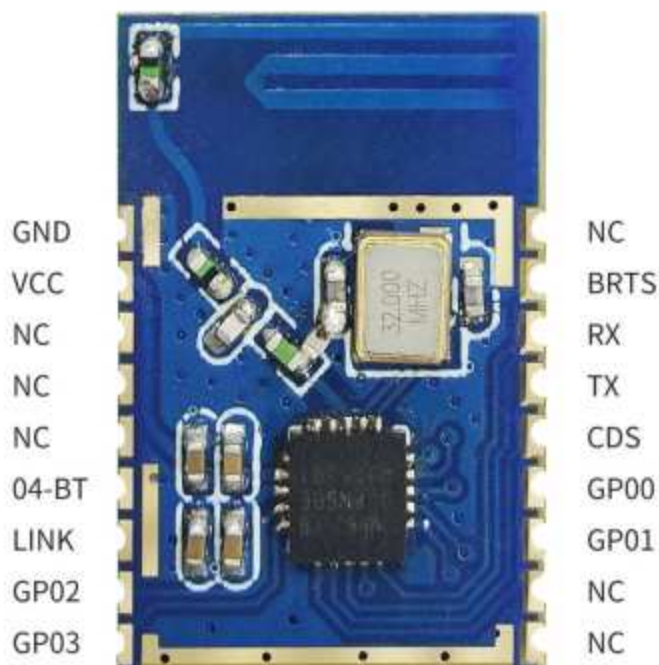
Figure 1-Module Pin Diagram

XY-MB021F Pin Definitions

Pin Number	Pin Name	I/O	Description
Pin1	GND	-	Ground
Pin2	VCC	-	External Power Input, typically 3.3V
Pin3	05-TX	O	Programming Pin
Pin4	06-RX	I	Programming Pin
Pin5	NC	I/O	Reserved
Pin6	04-BT	I/O	Reserved
Pin7	LINK	O	Bluetooth connected, high level output; Bluetooth not connected, low level output
Pin8	IO1	O	IO1 control channel, 0xF001; Input: one byte, 1 for high level, 0 for low level
Pin9	IO2	O	IO2 control channel, 0xF002; Input: one byte, 1 for high level, 0 for low level
Pin10	NC	O	Reserved
Pin11	NC	I/O	Reserved
Pin12	GP01	I/O	Reserved
Pin13	GP00	I/O	Reserved

Pin14	CDS	I	AT command enable pin: High level or floating - AT command valid, non-AT command passthrough; Low level - AT command invalid, all data passthrough
Pin15	GP08	O	Data UART TX
Pin16	GP09	I	Data UART RX
Pin17	BRTS	I	Sleep pin: High level or floating - module enters sleep mode; Low level - module exits sleep mode. If low power is not needed, it can be grounded. In sleep mode, the module UART can only send data, not receive data. MCU can control the module to enter or exit sleep mode via GPIO
Pin18	NC	I/O	Reserved

Module Dimensions

The module is in stamp half-hole package. The dimensions are shown in the figure below.

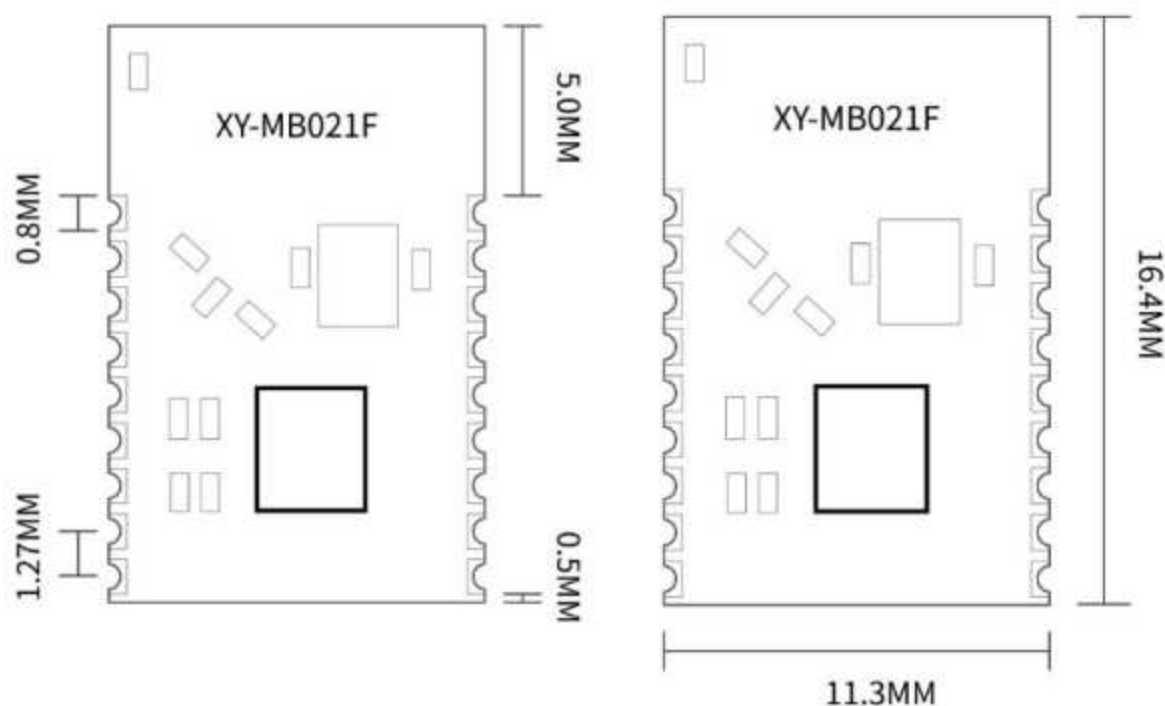

Figure 2-Module dimension Diagram

Performance Specifications

Data Transmission Rate

Test Environment: Data transmission and reception between master (XY-MBA32A) and slave (XY-MBO21F_BLE) modules at a baud rate of 230400bps. The test results are shown below.

No.	Direction	Total Sent Data	Total Received Data	Packet Loss Rate	Time/Seconds	Actual Rate KB/s
1	Slave to Master	1015463	1011780	0.3627%	81.08	12.23
2	Master to Slave	1015463	1014638	0.0813%	65.13	15.22

Test Environment: Data transmission and reception between master (mobile phone) and slave (XY-MBO21F_BLE) modules at a baud rate of 230400bps. The test results are shown

below.

No.	Direction	Total Sent Data	Total Received Data	Packet Loss Rate	Time/Seconds	Actual Rate KB/s
1	Slave to Master	1179012	1179012	0.0000%	123.12	9.3608
2	Master to Slave	1015463	1014638	1.3735%	65.13	15.22

Electrical Characteristics

Absolute Maximum Ratings

Parameter	Min	Max	Unit
Storage Temperature	-40	+105	℃
VDD	-0.3	3.9	V
Other Pins	-0.2	VDD+0.3≤3.9	V

Recommended Operating Conditions

Parameter	Min	Typical	Max	Unit
Operating Temperature	-40	–	+85	℃
VDD	1.8	3.3	3.6	V

AT Command Set

Command	Description
AT+MAC=MAC\r\n	Set Bluetooth Module MAC Address
AT+MAC?\r\n	Query Bluetooth Module MAC Address
AT+NAME=String\r\n	Set Device Name
AT+NAME?\r\n	Query Device Name
AT+ADV=NUM\r\n	Set Advertising State
AT+ADV? \r\n	Query Advertising State
AT+UART=NUM\r\n	Set UART Baud Rate*
AT+UART?\r\n	Query UART Baud Rate
AT+DISCONN=NUM\r\n	Disconnect Bluetooth Connection
AT+DEV?\r\n	Query Currently Connected Devices
AT+AINTVL=NUM\r\n	Modify Advertising Interval
AT+AINTVL?\r\n	Query Advertising Interval
AT+VER? \r\n	Read Software Version
AT+RESET=1\r\n	Restore Factory Settings
AT+REBOOT=1\r\n	Software Reset
AT+TXPOWER=NUM\r\n	Modify Module Transmit Power
AT+TXPOWER?	Query Module Transmit Power
AT+UUIDS=UUID\r\n	Set BLE Primary Service Channel
AT+UUIDS?\r\n	Query BLE Primary Service Channel
AT+UUIDN=UUID\r\n	Set BLE Notify Service Channel
AT+UUIDN?\r\n	Query BLE Notify Service Channel
AT+UUIDW=UUID\r\n	Set BLE Write Service Channel
AT+UUIDW?\r\n	Query BLE Write Service Channel
AT+AMDATA=HEX\r\n	Set Custom Advertising Data
AT+AMDATA?\r\n	Query Custom Advertising Data

Note:\r\n corresponds to ASCII codes 0x0d and 0x0a;The UART prompt after power-on or successful reboot (+READY\r\n) must be received by the HOST MCU before it can execute commands and data transmission operations.

Detailed Description of AT Commands

Set Bluetooth Module MAC Address

Command Description:Set the Bluetooth module address code, effective after reboot.
Read/Write: Write-only
Command Code:AT+MAC=MAC\r\n
Supported Parameters:000000000000-FFFFFFFFFFFF
Setting/Response：

Read/Write	Command Format	Response	Note
W	AT+MAC=MAC\r\n	OK\r\n	Bluetooth MAC address set successfully.
		ERROR\r\n	Failed to set Bluetooth MAC address.

Query Bluetooth Module Address

Command Description:Query Bluetooth module address code
Read/Write: Read-only
Command Code:AT+MAC?\r\n
Supported Parameters:N/A
Setting/Response:

Read/Write	Command Format	Response	Note
R	AT+MAC?\r\n	+MAC:000102030405\r\n	Returns the Bluetooth address code of the device：00:01:02:03:04:05.

Set Device Name

Command Description:Set the device name, effective immediately.
Read/Write: Write-only
Command Code:AT+NAME=String\r\n
Supported Parameters:User-defined, total length not to exceed 20 bytes.
Setting/Response：

Read/Write	Command Format	Response	Note
W	AT+NAME=string\r\n	OK\r\n	Setting successfully
		ERROR\r\n	Setting failed

Query Device Name

Command Description:Query device name

Read/Write: Read-only
Command Code:AT+NAME?\r\n
Supported Parameters:N/A
Setting/Response：

Read/Write	Command Format	Response	Note
R	AT+NAME?\r\n	+NAME: String\r\n	"String" is the current BLE device name.

Set Advertising State

Command Description:Set device Bluetooth broadcast status to take effect immediately. Broadcast will reset after reboot.
Read/Write: Write-only
Command Code:AT+ADV=NUM\r\n
Supported Parameters:"0 - Disable broadcast   1 - Enable broadcast"
Setting/Response：

Read/Write	Command Format	Response	Note
W	AT+ADV=NUM\r\n	OK\r\n	Setting successfully
		ERROR\r\n	Setting failed

Query Advertising State

Command Description:Query device Bluetooth broadcast status
Read/Write: Read-only
Command Code:AT+ADV?\r\n
Supported Parameters:N/A
Setting/Response：

Read/Write	Command Format	Response	Note
R	AT+ADV?\r\n	+ADV: X\r\n	X=0 Device broadcasting is now off. X=1 Device broadcasting has been enabled.

Set UART Baud Rate

Command Description:Set device baud rate
Read/Write: Write-only
Command Code:AT+UART=NUM\r\n
Supported Parameters:0:9600/ 1:14400/ 2:19200/ 3:38400/ 4:57600/ 5:115200 /6：230400
Setting/Response：

Read/Write	Command Format	Response	Note

| W | AT+UART=NUM\r\n | OK\r\n | Setting successfully |
| | | ERROR\r\n | Setting failed |

Query UART Baud Rate

Command Description:Query UART Baud Rate
Read/Write: Read-only
Command Code:AT+UART?\r\n
Supported Parameters:N/A
Setting/Response：

Read/Write	Command Format	Response	Note
R	AT+UART?\r\n	+UART: NUM\r\n	0:9600; 1:14400; 2:19200; 3:38400; 4:57600; 5:115200;

Disconnect Bluetooth Connection

Command Description:Disconnect Bluetooth Connection

Read/Write: Write-only
Command Code:AT+DISCONN=NUM\r\n
Supported Parameters:1 - Actively disconnect from the host device
Setting/Response：

Read/Write	Command Format	Response	Note
W	AT+DISCONN=NUM\r\n	+DISCONN: CONN TYP,MAC\r\n	CONN TYP=1 indicates the device is in master mode, and MAC represents the master device's address.

Query Currently Connected Devices

Command Description:Query Currently Connected Devices
Read/Write: Read-only
Command Code:AT+DEV?\r\n
Supported Parameters:N/A
Setting/Response：

Read/Write	Command Format	Response	Note
R	AT+DEV?\r\n	+DEV:CONN TYP,MAC\r\n	CONN TYP=1 indicates the device is in master mode, and MAC represents the master

			device's address.

Modify Advertising Interval

Command Description:Modify broadcast interval, effective after reboot
Read/Write: Write-only
Command Code:AT+AINTVL=NUM\r\n
Supported Parameters:20-10000 milliseconds
Setting/Response：

Read/Write	Command Format	Response	Note
W	AT+AINTVL=NUM\r\n	OK\r\n	Setting successfully
		ERROR\r\n	Setting failed

Query Advertising Interval

Command Description:Query Advertising Interval
Read/Write: Read-only
Command Code:AT+AINTVL?\r\n
Supported Parameters:N/A
Setting/Response：

Read/Write	Command Format	Response	Note
R	AT+AINTVL?\r\n	+AINTVL:NUM\r\n	Unit for reading parameters is milliseconds.

Read Software Version

Command Description:Read Software Version
Read/Write: Read-only
Command Code:AT+VER?\r\n
Supported Parameters:N/A
Setting/Response：

Read/Write	Command Format	Response	Note
R	AT+VER?\r\n	+VER:V0.0.1\r\n	V0.0.1 is the software version number.

Restore Factory Settings

Command Description:Set to factory reset. This command takes effect after restart. MAC address changes cannot be reverted
Read/Write: Write-only
Command Code:AT+RESET=1\r\n
Supported Parameters:1

Setting/Response：

Read/Write	Command Format	Response	Note
W	AT+RESET=1\r\n	OK\r\n	Setting successfully
		ERROR\r\n	Setting failed

Software Reset

Command Description:Set module to restart
Read/Write: Write-only
Command Code:AT+REBOOT=1\r\n
Supported Parameters:1
Setting/Response：

Read/Write	Command Format	Response	Note
W	AT+REBOOT=1\r\n	OK\r\n,+READY\r\n	Setting successfully
		ERROR\r\n	Setting failed

Modify Module Transmit Power

Command Description:Set the transmission power of the module. Effective after restart
Read/Write: Write-only
Command Code:AT+TXPOWER=NUM?\r\n
Supported Parameters:N/A
Setting/Response： 0:10dbm/ 1:8dbm/ 2:6dbm/ 3:4dbm/ 4:2dbm/ 5:0dbm/ 6:-2dbm/ 7:-5dbm/ 8:-10dbm/ 9:-16dbm

Read/Write	Command Format	Response	Note
W	AT+TXPOWER=NUM\r\n	OK\r\n	Setting successfully
		ERROR\r\n	Setting failed

Query Module Transmit Power

Command Description:Query Module Transmit Power
Read/Write: Read-only
Command Code:AT+TXPOWER?\r\n
Supported Parameters:N/A
Setting/Response：

Read/Write	Command Format	Response	Note
R	AT+TXPOWER?\r\n	+TXPOWER:NUM\r\n	The unit for reading parameters is dBm.

Set BLE Primary Service Channel

Command Description:Set BLE primary service channel. Effective after restart
Read/Write: Write-only
Command Code:AT+UUIDS=UUID?\r\n
Supported Parameters:in either 16-bit or 128-bit forma
Setting/Response：

Read/Write	Command Format	Response	Note
W	AT+UUIDS=UUID\r\n	OK\r\n	Setting successfully
		ERROR\r\n	Setting failed

Note：An example of a 16-bit format UUID：FFF0.An example of a 128-bit format UUID：

11223344556677889900112233445566

Query BLE Primary Service Channel

Command Description:Query BLE primary service channel
Read/Write: Read-only
Command Code:AT+UUIDS?\r\n
Supported Parameters:N/A
Setting/Response：

Read/Write	Command Format	Response	Note
R	AT+UUIDS?\r\n	+UUIDS:UUID\r\n	UUID values, in either 16-bit or 128-bit format.

Set BLE Read Service Channel

Command Description:Set BLE notify service channel. Effective after restart
Read/Write: Write-only
Command Code:AT+UUIDN=UUID\r\n
Supported Parameters:in either 16-bit or 128-bit forma
Setting/Response：

Read/Write	Command Format	Response	Note
W	AT+UUIDN=UUID\r\n	OK\r\n	Setting successfully
		ERROR\r\n	Setting failed

Note：An example of a 16-bit format UUID：FFF1.An example of a 128-bit format UUID：

11223344556677889900112233445566

Query BLE Read Service Channel

Command Description:Query BLE notify service channel
Read/Write: Read-only
Command Code:AT+MAC?\r\n
Supported Parameters:N/A
Setting/Response：

Read/Write	Command Format	Response	Note
R	AT+UUIDN?\r\n	+UUIDN:UUID\r\n	UUID values, in either 16-bit or 128-bit format.

Set BLE Write Service Channel

Command Description:Set BLE write service channel. Effective after restart
Read/Write: Write-only
Command Code:AT+UUIDW=UUID\r\n
Supported Parameters:in either 16-bit or 128-bit forma
Setting/Response：

Read/Write	Command Format	Response	Note
W	AT+UUIDW=UUID\r\n	OK\r\n	Setting successfully
		ERROR\r\n	Setting failed

Note：An example of a 16-bit format UUID：FFF2.An example of a 128-bit format UUID：

11223344556677889900112233445566

Query BLE Write Service Channel

Command Description:Query BLE write service channel
Read/Write: Read-only
Command Code:AT+UUIDW?\r\n
Supported Parameters:N/A
Setting/Response：

Read/Write	Command Format	Response	Note
R	AT+UUIDW?\r\n	+UUIDW:UUID\r\n	UUID values, in either 16-bit or 128-bit format

Set Custom Advertising Data

Command Description:Set custom broadcast data
Read/Write: Write-only
Command Code:AT+AMDATA=HEX?\r\n

Supported Parameters:User-defined: HEX is a HEX value with a length of 0-29 bytes. For example, if the broadcast data is set to 5 bytes '12345', the corresponding command is 'AT+AMDATA=3132333435\r\n'.

Setting/Response：

Read/Write	Command Format	Response	Note
W	AT+AMDATA=HEX\r\n	OK\r\n	Setting successfully
		ERROR\r\n	Setting failed

Query Custom Advertising Data

Command Description:Query custom broadcast data
Read/Write: Read-only
Command Code:AT+AMDATA?\r\n
Supported Parameters:N/A
Setting/Response：

Read/Write	Command Format	Response	Note
R	AT+AMDATA?\r\n	+AMDATA:HEX\r\n	Return native broadcast data

Note：Custom broadcast data is stored in the Manufacturer Specific Data field within the BLE broadcast protocol. The default broadcast data is 8 bytes long, with the first two bytes fixed as 00 00, and the following 6 bytes representing the module's MAC address (high byte first).

BLE protocol description (APP interface)

Transparent data channel [Service UUID：0xFFF0]

Characteristic value UUID	Executable operations	Default value	Note
0xFFF2	Write	None	The written data will be output from the serial TX.
0xFFF1	Notify	None	The data input from serial RX will generate notifications to the mobile device on this channel.

Note: The APP sends data to the MCU via channel 0xFFF2; the MCU sends data to the APP via channel 0xFFF1. Users can also customize read and write channels using AT commands.

IO1, IO2 control channels [Service UUID：0xF000]

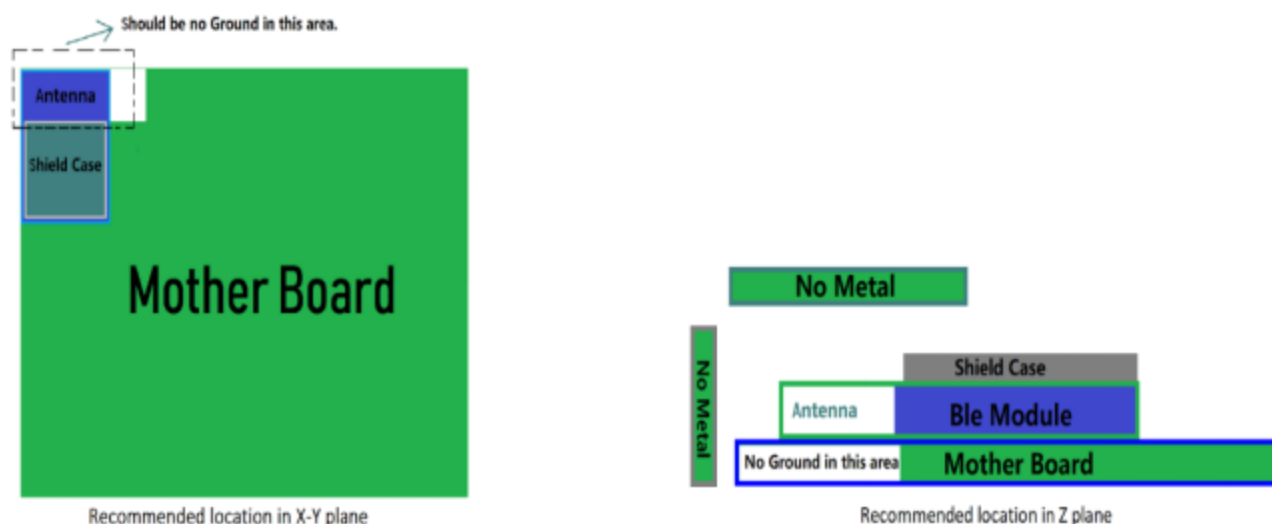| Characteristic value UUID	Executable operations	Default value	Note
0xF001	Write	00	IO1 control channel; input 01 is high level, 00 is low level.
0xF002	Write	00	IO2 control channel; input 01 is high level, 00 is low level.

Suggested module layout reference

Figure 3-Module layout reference diagram

➤ Module antenna should be kept away from other circuits, with no traces or copper below.

➤ User's final product casing near the antenna section must not use metal materials (including spray coatings containing metal particles).

➤ It is recommended to use ferrite beads for isolating the module's power supply.

➤ Please check power stability; voltage should not fluctuate significantly and frequently.

➤ The device grounding should be good to minimize parasitic inductance.

Surface mount production considerations

When mass soldering in batch production, do not exceed 245°C for reflow soldering temperature. Please refer to Temperature Curve in Figure 4.
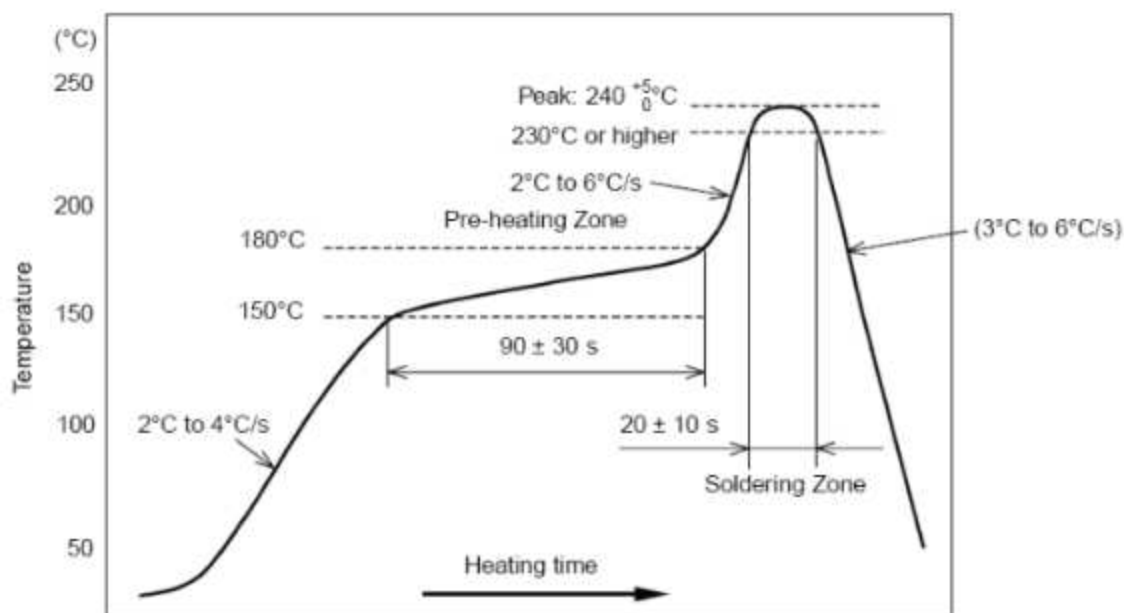

Figure 4-Component soldering heat resistance temperature curve (solder join

Contact us

SHENZHEN NEWBIT INFO TECHNOLOGY CO.,LTD.

Tel：0755–2332 0814   Web: WWW.newbitinfo.com

Fax：0755–2332 0814   E-mail：sales@newbitinfo.com

Add：Room1612- Room 1616, Global Logistics Center Building ,Longgang Dist.Shenzhen

3. When this Module is installed into the Special host,defined in page 19 appendix 1a
Class II Pemissive Change Test Plan will act as following:
The specified host Device install this limited modular which has no shield.
The hostshall still apply C2PC change:
The hostshall not change the module's hardware and software parameters.Modulation modes shall keep consistent with the certified modular.
The hostshall still meet the rule section part 15.519,part 15.521,part 15.209 standard
The host's fundamental maximum output powershall be confirmed under the worst case from module.
Host's AC Conducted emissions andradiated spurious emissions including radiate band edges shall be test to be confim no parasitic emissions ie.,compliance emissions due to ingress.Band edge compliance test shall also tobe verified underthe worst case from module.Host cannot change the RF Exposure use conditions.If use conditions is changed, the separate Approval shall be required.

Moudleintegrated in other host need new FCC ID application.

4. ATTENTION
This device is intended onlyforOEM integrators underthe following conditions:The antenna must be installed andoperation without restriction is maintained between the antenna and users,and

1)This device and itsantenna(s)must not be co-located with any othertransmitters except in accordance with FCC multi-transmitter product procedures.Refering to the multi-transmitterpolicy,multipletransmitter(s)and module(s)can be operated simultaneously without C2PC.
2)For all products market in US,OEM has to limit the Operating Frequency.
6500-8000MHz by supplied fimware programming tool.OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.

5. USERS MANUAL OF THE END PRODUCT:
The device has been evaluated to meet general RF exposure requirement.The devicecan be used in portable exposure condition without restiction.The end user has to be informed that the FCC radio -frequency exposure guidelines for an uncontrolled environment can be satisfied.The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.