

LONGBEN

Specification

LONGBEN

Long Ben(Dong Guan)Elec. Tech. Co., Ltd.

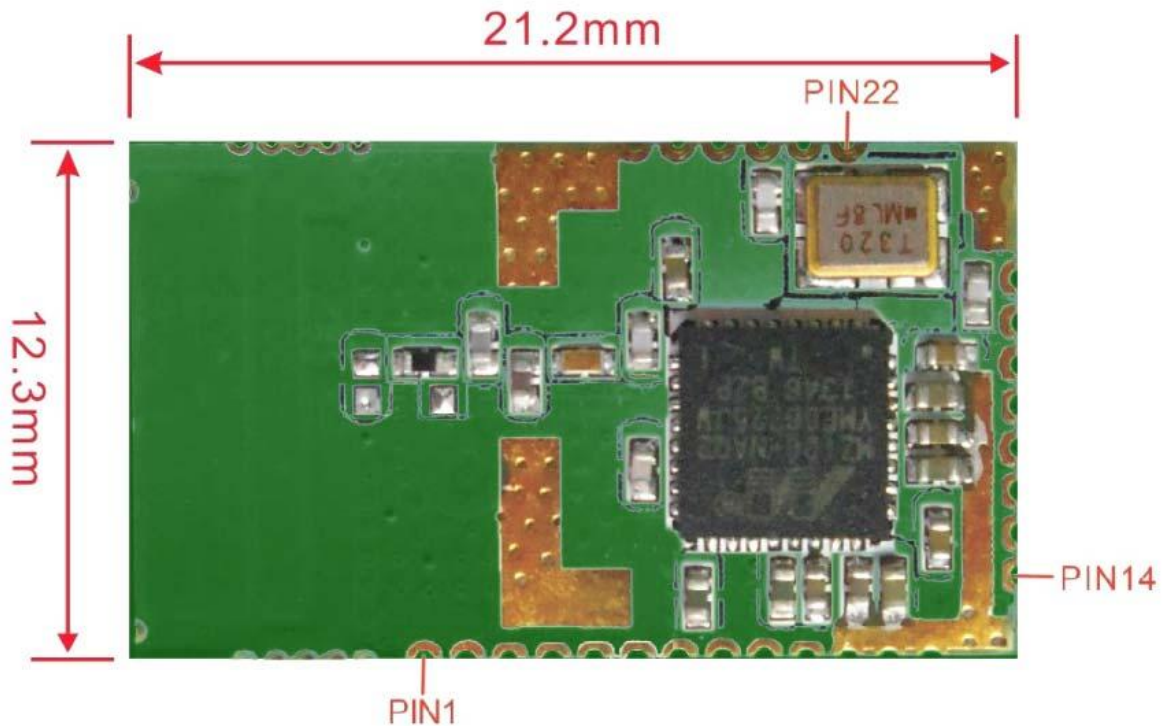
Specification

			Model :ZB0C	
Design	Hewei	2014-03-12	Description : Zigbee Module	
Verify	Wanghuanming	2014-03-12	Document No.: F20140312	Version : 1.0
Approve	Wenqing	2014-03-12	Release Date: 2014-03-12	Pagination: Of 5

Specification



1 .Photo



2 Product Description

ZB0C

ZB0C is a protocol based on the latest IEEE802.15.4 Zigbee wireless communication module, compared with the Bluetooth technology, with low complexity, self-organizing, low power, low cost and so on. It is based on IEEE802.15.4 standard, can be coordinated to achieve communication between the thousands of tiny sensors that require very little energy to relay the data through radio waves from one sensor to another sensor, thus with high communication efficiency.

Application ZB0C module is very wide stage to commercial building automation, home automation control (New installation) and instrument control as the focus. Commercial building can be completed automatically controlled ZB0C, administrators can effectively manage air conditioning, lighting, fire detection systems, the switch control system, to reduce energy costs, reduce management manpower saving purposes. For the consumer, if the family has installed ZB0C module system can easily monitor the overall operation of the home, effectively control

electricity, water, gas usage outside, they can have security features, for example, to install a wireless home sensors to monitor a variety of different situations, once the investigation into the abnormal automatically issue a warning.



3. Product Features:

- Low power consumption in low-power standby mode, the standby time is more than 10 times the Bluetooth communication devices
- Low cost, by dramatically simplifying the protocol (less than Bluetooth 1/10), reducing the requirement for communication controller, suitable for large-scale construction applications
- low rate, ZB0C work in the 2.4GHz band, providing about 250 kbps raw data throughput to meet the application needs of low-rate data transmission
- close quarters, the transmission range is generally between 10 ~ 100m, after increasing the transmission power can be increased to 1 ~ 3km. This is the distance between adjacent nodes. If the route and through the inter-node communication relay transmission distance will be farther
- short delay, faster response speed ZB0C, generally from sleep into working condition just 15ms, nodes are connected into the network just 30ms, further saving energy. Comparison, Bluetooth requires 3 ~ 10s, WiFi need 3 s
- high security, ZB0C provides three security modes, including no security settings, using access control lists (Access Control List, ACL) to prevent illegal access to data and the use of the Advanced Encryption Standard (AES 128) symmetric password to flexibly determine their security attributes.
- wide range of applications for home and building networks, industrial control, wireless meter reading, medical equipment, agricultural control and other occasions



4.Product Specification

Model	ZBOC
Chipset	88MZ100
WIRELESS STANDARDS	IEEE802.15.4
Radio Data Rate	250Kbps@2.4GHz
Channel	16
WIRELESS TRANSMIT POWER (dBm)	9dBm +/-1.5
Sensitivity @PER (dBm)	≤-101
FREQUENCYRANGE	2.405~2.480GHz
Interface	UART 1*4PIN
ANTENNA TYPE	Onboard 2dBi PCB antenna
Input Voltage	DVDD 3.3V
Max Current	<35mA
uA	<3uA
Communication Distance	Indoor ≥ 50m,Outdoor ≥ 500m
ENVIRONMENT	Operating Temperature: 0°C~125°C Storage Temperature: -20°C~125°C Operating Humidity: 10%~90% non-condensing Storage Humidity: 10%~90% non-condensing
Dimensions (mm)	21.2*12.3*2.0mm

Specification



5. pin is defined as follows:

Pin number	Signal assignment	Signal function for lighting
Pin1-2	GND	Ground
Pin3	GPIO12	PWM output-1(Timer1)
Pin4	GPIO13	PWM output-2(Timer1)
Pin5	GPIO14	SWD Clock
Pin6	GPIO15	SWD Data
Pin7	GPIO16	IIC SDA
Pin8	VIO	The IO power
Pin9	GPIO17	IIC CLK
Pin10	GPIO18	PWM output-3(Timer1)
Pin11-13	GND	Ground
Pin14	GPIO21	UART2 TXD
Pin15	GPIO22	UART2 TXD
Pin16	GPIO23	PWM output-4(Timer1)
Pin17	GND	Ground
Pin18	VBAT	The main power
Pin19	GND	Ground
Pin20	GPIO29	Reserve
Pin21	GPIO28	Enable
Pin22	GND	Ground
Pin23	RESET_N	The reset signal
Pin24	GPIO4	ADCx3 or ADCx1 and Wakeup INTx2
Pin25	GPIO5	
Pin26	GPIO6	
Pin27	GND	Ground



6. FCC Statement:

Federal Communication Commission Interference Statement

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.

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.

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 Radiation Exposure Statement:

"To comply with FCC RF exposure compliance requirements, the antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter."

Specification

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

(1) According to FCC Part 15 Subpart C Section 15.212, the radio elements of the modular transmitter must have their own shielding. This module is granted as a Limited Modular Approval.

(2) This device has been designed to operate with a PCB antenna having a maximum gain of 2.0dBi. Only this type of antenna may be used.

(3) Integration is typically strictly restricted to Grantee himself or dedicated OEM integrators under control of the Grantee.

However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

IMPORTANT NOTE: If the zigbee module which installed in the end product has no shielding, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

This module is intended for OEM integrator. The OEM integrator is still responsible for the FCC compliance requirement of the end product, which integrates this module. Due to missing shielding the module is strictly limited to integration by the Grantee himself or his dedicated OEM Integrator.

Specification

USER MANUAL OF THE END PRODUCT:

In the user manual of the end product, the end user has to be informed that the equipment complies with FCC radio-frequency exposure guidelines set forth for an uncontrolled environment.

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.

If the size of the end product is smaller than 8x10cm, then additional FCC part 15.19 statement is required to be available in the user manual: This device complies with Part 15 of 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.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains TX FCC ID: 2AANL-ZB0C ". If the size of the end product is larger than 8x10cm, then the following FCC part 15.19 statement has to also be available on the label: This device complies with Part 15 of 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.