

File No.	File version	confidential
	V1.1	

## F8913D ZigBee Module TECHNICAL SPECIFICATION

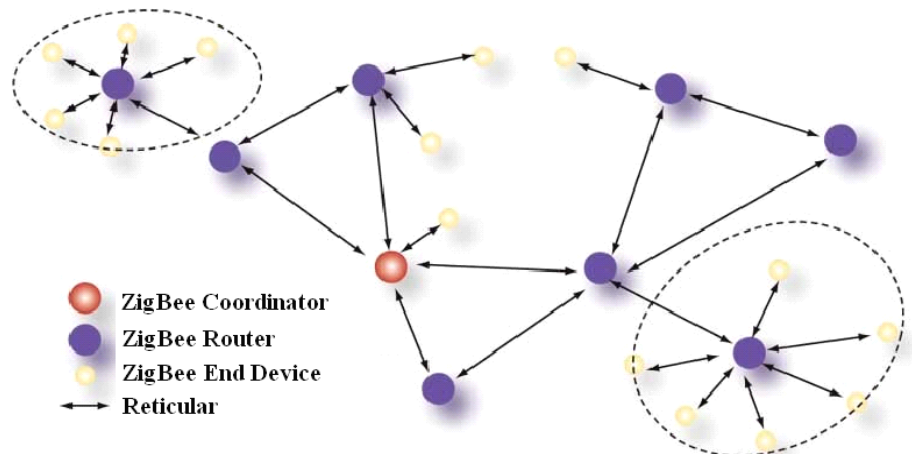


### General

F8913D ZigBee module is a kind of data terminal device that provides data transfer function by ZigBee network.

The product uses high-performance industrial-grade ZigBee solution, support transparent data transmission function; low power consumption design, the lowest working current can less than 1uA; supply 5 I/O channels, compatible 3 analog inputs and 2 pulse input counters.

It has been widely used on M2M fields, such as intelligent transportation, smart grid, industrial automation, telemetry, finance, POS, water supply, environment protection, post, weather, and so on.



### Product Feature

#### Design for Industrial Application

- ◆ High-powered industrial ZigBee chip
- ◆ Low power consumption design, support multi-sleep and trigger modes to reduce the power dissipation farthest
- ◆ Support UART
- ◆ Power range: DC 2.0~3.6V

#### Stability and Reliability

- ◆ Support hardware and software WDT
- ◆ Support auto recovery mechanism, including online detect, auto redial when offline to make it always online

#### High-performance

- ◆ Support ZigBee wireless data transmission
- ◆ Support repeater and end-device function
- ◆ Support Point-to-Point, Point-to-Multipoint, Peer-to-Peer and Mesh network
- ◆ Support 65000 nodes
- ◆ Support center node, route node and terminal node
- ◆ Support broadcast and target address transfer
- ◆ Wide communication range
- ◆ Supply 5 I/O channels, compatible 3 analog inputs and 2 pulse input counters.

**Standard and Convenience**

- ◆ Adopt a miniature package, support 2.0mm spacing through-hole pins simultaneous
- ◆ Support intellectual mode, enter into communication state automatically when powered, support several work modes.
- ◆ Convenient configuration and maintenance interface
- ◆ Support for serial software upgrades

**Product Specification****F8913D Model Sheet**

Model	Content
F8913D-N-NS	Without PA, DIP
F8913D-E-NS	With PA, DIP

**ZigBee Specification**

Item	Content
MCU	Industrial ZigBee Platform
Communication Protocol and Band	IEEE 802.15.4 ISM2.4~2.5GHz
Indoor/Urban Range	30m 90m(With PA)
Outdoor/RF Line-of-Sight Range	500m 2000m(With PA)
Transmit Power	2.82 mw (+4.5dBm) 100 mw (+20dBm) (With PA)
RF Data Rate	250Kbps
Receiver Sensitivity	-97dBm -103dBm (With PA)
Network Topologies	Point-to-Point, Point-to-Multipoint, Peer-to-Peer and Mesh
Channels	11 to 26
Max serial buffer size	300 Bytes

**Interface Type**

Item	Content
UART	Data bits: 8 Stop bits: 1, 2 Checksum: none,odd,even Baudrate: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400,57600, 115200 bps
Antenna	U.FL RF connector, impedance 50 ohm
Package	Support 2.0mm spacing stamp hole for SMT and 2.0mm spacing through-hole pins simultaneous

**Power Input**

Item	Content
Recommended Power	DC 3.3V/0.1A
Power Range	DC 2.0~3.6V

**Power Consumption**

Working States			Power Consumption
F8913D-N-N S	Coordinator	Idle Mode	28.3~28.4mA@3.3VDC
		RX Mode	27.5~27.8mA@3.3VDC
		TX Mode	28.8~29.1mA@3.3VDC
	Router	Idle Mode	28.2~28.4mA@3.3VDC
		RX Mode	27.5~27.8mA@3.3VDC
		TX Mode	28.9~29.1mA@3.3VDC
	EndDevice	Idle Mode	8.6~8.9mA@3.3VDC
		RX Mode	10.8~11.5mA@3.3VDC
		TX Mode	14.4~15.2mA@3.3VDC
		Timing wake up	1.1~1.2uA@3.3VDC
		Deep Sleep	0.3~0.4 uA@3.3VDC
F8913D-E-N S	Coordinator	Idle Mode	30.5~31.5mA@3.3VDC
		RX Mode	32.2~33.2mA@3.3VDC
		TX Mode	41.2~42.4mA@3.3VDC
	Router	Idle Mode	30.4~31.5mA@3.3VDC
		RX Mode	32.4~33.2mA@3.3VDC
		TX Mode	41.2~42.5mA@3.3VDC
	EndDevice	Idle Mode	9.0~9.6mA@3.3VDC
		RX Mode	13.1~14.3mA@3.3VDC
		TX Mode	24.5~26.5mA@3.3VDC
		Timing wake up	1.2~1.3uA@3.3VDC
		Deep Sleep	0.4~0.5 uA@3.3VDC

**Physical Characteristics**

<b>Item</b>	<b>Content</b>
Dimensions	37.5 x 22.1 x 2.8 mm
Weight	3.5 g

**Environmental Limits**

<b>Item</b>	<b>Content</b>
Operating Temperature	-40~+85°C (-104~+185 °F)
Storage Temperature	-40~+125°C (-104~+257°F)
Operating Humidity	95% ( unfreezing)