ZIGBEE WIRELESS MODULE

USER`S MANAUAL

CONTENT

RS-232 to Zigbee

RS-485 to zigbee

Ethernet to zigbee

1、PERFORMANCE DESCRIPTION

ZIGBEE wireless module is full zigbee wireless communication equipment，integrated with zigbee 2.4G RF modem and MCU，excellence with far distance communication, excellently anti-jamming capacity。

The zigbee network is constituted of the center node and access node, the center node is PAN_Coord, the access node is router or end device. you should install the PAN_Coord first, then install the access node

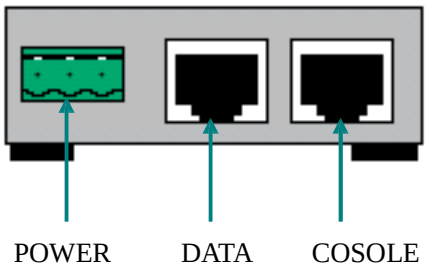
2、TECHNOLOGY PARAMETER

OPTION	PERFORMACE	PARAMETER
wireless	distance	2000m
	Net topo	star、line、mesh
	addressing	IEEE802.15.4/ZIGBEE standard addressing
	Anti-collision	CSMA-CA and GTS CSMA-CA
Data interface	Max packet	256 byte
	interface	RS232/485
	Physical interface	8-pin RJ45
	ESD protection	15 KV ESD
	Signal line	TxD, RxD, GND
	Baud rate	1200 ~ 38400 bps
	Parity type	None, Even, Odd
	Data bit	8, 9
	Parity bit	1
RF MODEM	modulation	DSSS (O-QPSK)
	frequency	2.405GHz~ 2.480GHz
	power	9V DC
	channel	16
	RX sensitivity	-94 dbm
	RF bandwidth	250kbps

	RF power out	-27dBm~25dBm
	antenna	SMA
POWER	max tx current	200 mA
	Max rx current	165 mA
	Hibernate	10 mA
	Low power	110 uA
	Wake	56 uA
ENVIRONMENT	Working temperature	-40°C ~ 85°C
	storage temperature	-55°C ~ 125°C

3、INTERFACE

PHYSICAL INTERFACE



POWER AND DATA INTERFACE

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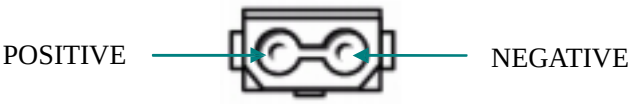
3.1 9V POWER INTERFACE

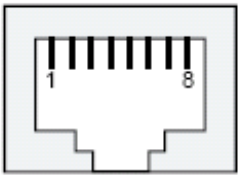
Standard working input power DC-9V。



POWER INTERFACE

3.2 DATA INTERFACE

SZ02 wireless zigbee module`s data interface is RS-232 or RS-485。



DATA INTERFACE PINS

RJ45-PIN	RS232	RS485
1	TxD	—
2	RxD	—
3	GND	—
4	—	—
5	—	Rx+
6	—	Rx-
7	—	—
8	—	—

DATA INTERFACE PIN ID

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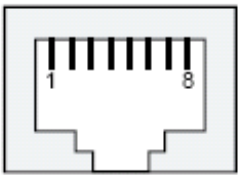
Data interface`s default config:

PARAMETER	DEFAULT
Baud rate	38400
parity	None
Data bit	8
Stop bit	1

DATA INTERFACE DEFAULT CONFIG

3.3 CONSOLE INTERFACE

Console interface can configure parameters of the module, the interface is RS232, the default configuration。



CONSOLE PIN

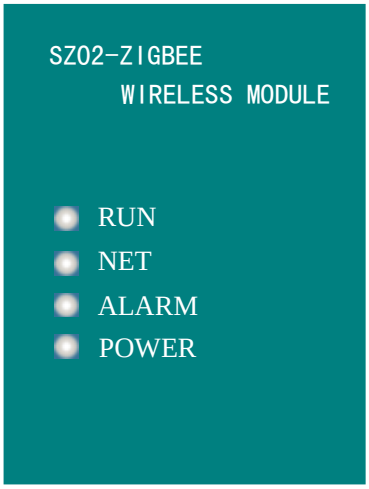
RJ45-PIN	RS232
1	TxD
2	RxD
3	GND
7	GND
8	GND

CONSOLE INTERFACE PIN

PARAMETER	DEFAULT
Baud rate	38400
Parity	None
Data bit	8
Stop bit	1

CONSOLE INTERFACE DEFAULT CONFIG

3.4 LED INDICATION



LED INDICATION

LED	INDICATION	指 示 含 义
RUN	TWINKLE	Run ok
	OFF	Not run
NET	ON	Connect net is ok
	OFF	Not connect net
ALARM	OFF	Run ok
	ON	System run error
POWER	ON	Power on
	OFF	No power

4、MODULE CONFIGURATION

Module configuration step：

1、 Open computer hyper terminal， the config is：

Baud rate: 38400、data bit: 8、parity : NONE；

2、 Connect module`s console interface and computer with console cable;

3、 Power on；

4、 Enter configuration mode。

MODULE CONFIGURATION PARAMETERS：

OPTION	ABOUT	CONFIG OUTLINE	REMARK
CHANNEL	RF channel	same net, same channel	
NET_TYPE	Net type		
NODE_TYPE	Module type		
NET_ID	Net ID	same net, same ID	
TX_TYPE	DATA Tx mode		
MAC_ADDR	Module address	Must exclusive	
DATA_TYPE	Data type		
DATA_BIT	Data bit		
BAUD_RATE	Baud rate		
PARITY	parity		
TIME_OUT	Time-out		

4.1 CHANNELCONFIG

CHANNEL	CONFIG	REMARK
0-F	HEX，0—15channel（2.405G Hz—2.480G Hz）	recommend to using NO.4、NO.9、NO.14、NO.15 channel。
G	AUTO mode，select the best channel auto。	

4.2 NET_TYPE CONFIG

NET_TYPE	OPTION	OUTLINE	REMARK
MESH	Mesh net		Same net, same net type.
STAR	Star net		
LINE_1	line net ID=1		
LINE_2	Line net ID=2		
LINE_3	line net ID=3		
LINE_4	Line net ID=4		
PEER	Peer net		

4.3 NODE_TYPE CONFIG

NODE_TYPE	OPTION	OUTLINE	REAMRK
PAN_Coord	Center node		
ROUTER	router		
END_DEVICE	End device		

4.4 NET_ID CONFIG

NET_ID	OPTION	OUTLINE	REMARK
NET_ID	00—FF	Same net , same net ID.	If ID is FF，can join other net。

After enter 2 byte NET ID, then press “ENTER”。

4.5 TX_TYPE CONFIG

TX_TYPE	OPTION	OUTLINE	REMARK
BROADCAST	broadcast		Address is 4 byte MAC address。
MASTER—SLAVE	Master and slave		
POINT—POINT	Point to point,according address.		

4.6 MAC_ADDR CONFIG

MAC_ADDR	OPTION	OUTLINE	REMARK
MAC_ADDR	0000—FFFE	PAN_Corrd is 0000。	Must exclusive in same net。

After enter 4 byte MAC address, then press “ENTER”。

4.7 DATA_TYPE CONFIG

DATA_TYPE	OPTION	OUTLINE
ASCII	ASCII	Only in point to point tx mode。
HEX	HEX	

4.8 DATA_BIT CONFIG

DATA_TYPE	OPTION	OUTLINE
7+1	Data 7 bit +parity 1 bit	
8+1	Data 8 bit +parity 1 bit	

4.9 BAUD_RATE CONFIG

BAUD_RATE	OPTION	OUTLINE
1200	1200-38400	
38400		

4.10 DATA_PARITY CONFIG

DATA_PARITY	OPTION	OUTLINE
NONE	No parity	
EVEN	Even parity	
ODD	Odd parity	

4.11 TIME_OUT CONFIG

TIME_OUT	OPTION	REMARK
TIME_OUT	10-255MS	RS232 output timeout, min interval time。

5、MODULE INSTALL

The zigbee network is constituted of the center node and access node, the center node is PAN_Coord, the access node is router or end device. you should install the PAN_Coord first, then install the access node。

After PAN_Coord power on, it build_up the net auto, when the NET LED is ON, show the net is build_up successfully, waiting the access node to join; when the acces node is power on, the access node will search the net , and join the net , when the NET LED is ON, meaning joining net is ok, then can communication with each other through RS232。

INSTALL STEPS：

（1）Fixing the module；

（2）Connet the antenna；

（3）Connet the cable；

（4）DC 9V power on；

（5）When POWER LED is ON, power is ok；

（6）When RUN LED is twinkle, module running is ok；

（7）When NET LED is ON, PAN_Coord build_up net is ok, access node join net is ok；

（8）Install successfully。

CAUTION：

1、SHOULD NOT INSTALL IN METAL BOX；

2、IF IN METAL BOX, SHOULD PUT THE ANTENNA OUT OF THE BOX；

3、DURING INSTALL, ACCORDING TO THE LED INDICATION, TREAT WITH THE ERROR STEP。