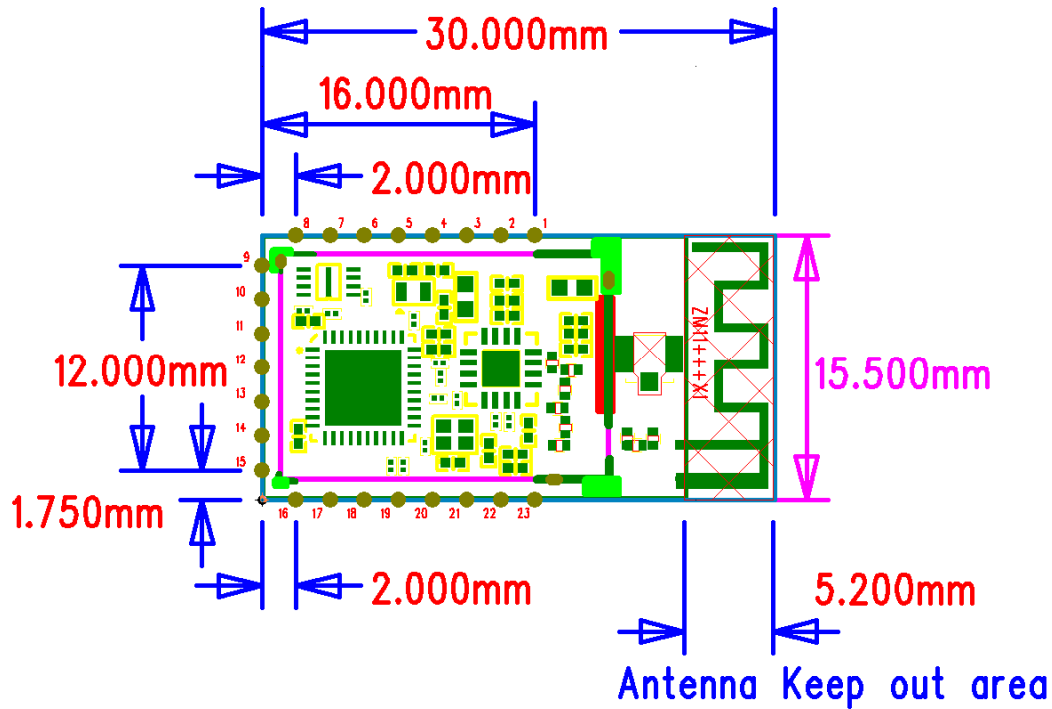


ZigBee Module ZM11

Product Manual

Mechanical Drawings



ABSOLUTE MAXIMUM RATINGS

VIN to GND-0.3~3.5 V
Other Pin to GND.....-0.3~3.5V

RECOMMENDED OPERATING CONDITIONS

Vcc to GND 3.3 V+- 5%
Operating temperature 0 to 40°C

ELECTRICAL CHARACTERISTICS

Power consumption when RF 100% TX 17dBm 150mA
Power consumption when RF continuous RX 45mA
Power consumption when Idle state 20mA

RF SPECIFICATIONS

Frequency Band ISM 2.4 GHz

TF Tx power.....17 dBm max

Antenna Efficiency..... 68% (Typical)

Antenna SPECIFICATIONS

SPECIFICATION	
Frequency Range	2400~2500MHz
Impedance	50Ω
V.S.W.R	≤ 2.5
Radiation	Omni
Gain	<5 dBi
Polarization	Vertical
Mechanical Properties	
Connector	I-PEX I

Pin Signals

1. Power Supply Pin and Common pin

Pin#	Pin Name	Pin Type	Description
2	VCC RF	PW	3.3V RF Power supply
4	VCC	PW	3.3V Digital Power Supply
1,3,5,9,23	GND	PW	Ground
21	BM	AI	Battery Monitor Pin
22	RST	DI	Module Reset Input
7	LED0	DO	LED0 pin (active 0,output current 4mA), controlled by module
6	LED1	DO	LED1 pin (active 0,output current 4mA)
20	KEY	DI	Push Button Input pin low-active

2. Function Select pin

Pin#	Pin Name	Pin Type	Description
11	FSL0	DO,PUS*	Function Select 0
10	FSL1	DO,PUS*	Function Select 1
8	FSL2	DO,PUS*	Function Select 2

*FSL0~FSL2 is Digital out signal for module Internal control signal,
 Strap for FSL2~FSL0 when power on or Reset- pin Low-> High ,
 Leave FSLx pin floating means FSLx =F
 Pull-up FSLx to VCC by 4.7k ohm means FSLx= U
 Pull-down FSLx to GND by 4.7k ohm means FSLx= D

Router Multi Function pin Table

	FS1	FS2	FS3	FS4	FS5	FS6	FS7	FS8	FS9	FS10
	UUU	UUF	UFU	UFF	FUU	FUF	FFU	UUD	UDU	FFF
ADC	4		2				2		1	
PWM	4		2	2					1	
DI		2	2	4	4	4	6	8	1	
DO			2	2	4				1	
I2C		1								
UART		1				1			1	
Pin										
14	PWM3	I2C SDA	DI1	DI1	DI1	DI1	DI1	DI1	PWM0	
15	PWM2	I2C SCL	DI0	DI0	DI0	DI0	DI0	DI0	ADC0	
16	ADC3	UART RT	DO1	DI3	DI3	UART RT	DI3	DI3	UART RT	
17	ADC2	UART CT	DO0	DI2	DI2	UART CT	DI2	DI2	UART CT	
18	ADC1	UART TX	ADC1	DO1	DO1	UART TX	ADC1	DI5	UART TX	
19	ADC0	UART RX	ADC0	DO0	DO0	UART RX	ADC0	DI4	UART RX	
12	PWM1	DI1	PWM1	PWM1	DO3	DI3	DI5	DI7	DO0	
13	PWM0	DI0	PWM0	PWM0	DO2	DI2	DI4	DI6	DI0	

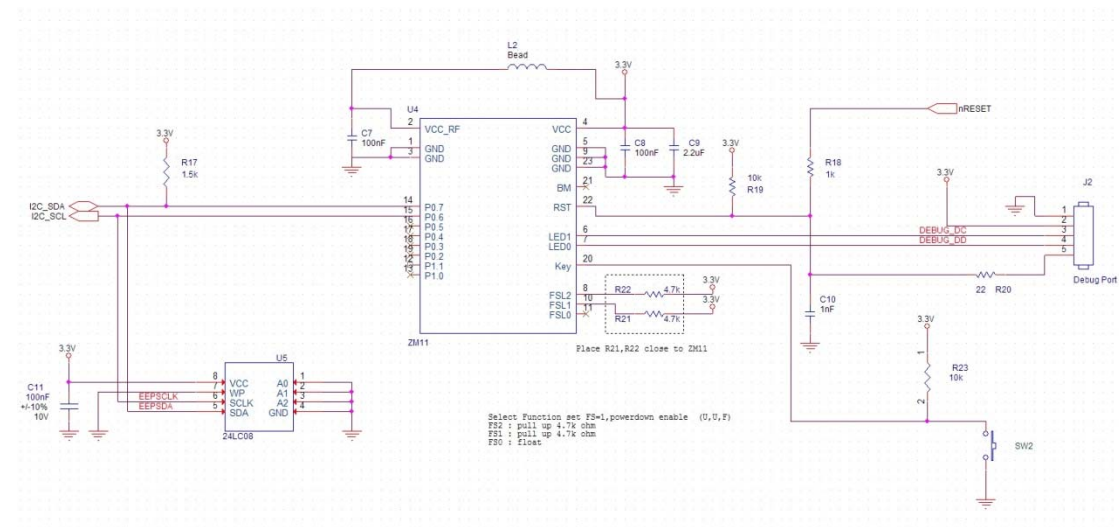
Note : Router mode is always non-sleep. FS0 (DUU) is reserved for manufacture

End Device Multi Function pin Table

	FS6:LS	FS6:DS	FS7:LS	FS7:DS	FS8:LS	FS8:DS
	FDF	FDD	DDF	DDD	DFF	DFD
ADC			2	2		
PWM						
DI	4	4	6	6	8	8
DO						
I2C						
UART	1	1				
Pin#						
14	DI1	DI1	DI1	DI1	DI1	DI1
15	DI0	DI0	DI0	DI0	DI0	DI0
16	UART RT	UART RT	DI3	DI3	DI3	DI3
17	UART CT	UART CT	DI2	DI2	DI2	DI2
18	UART TX	UART TX	ADC1	ADC1	DI5	DI5
19	UART RX	UART RX	ADC0	ADC0	DI4	DI4
12	DI3	DI3	DI5	DI5	DI7	DI7
13	DI2	DI2	DI4	DI4	DI6	DI6

Note : LS=Light Sleep mode, DS=Deep Sleep mode

Typical application for Function set 2



Analog Input pin (BM,ADC) CHARACTERISTICS

Input resistance, signal 200k ohm (Typ)

ADC full scale range 0~1.15 V

Digital output(DO,PWM,UART TX,UART RT,LED) DC CHARACTERISTICS

Logic-0 output voltage 0.5V(max) @ output load 4mA

Logic-1 output voltage 2.4V (min) @ output load 4mA

Digital Input(DI,UART RX,UART CT, KEY ,Reset) DC CHARACTERISTICS

Logic-0 input voltage(VIL max).....0.5V

Logic-1 input voltage(VIH min).....2.5V

Federal Communications Commission (FCC) Statement

15.21

You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

15.105(b)

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.

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 of the device.

FCC RF Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Note:

- ✧ **The end product shall has the words “Contains Transmitter Module FCC ID: 2AOWSIWAZBZM11”**

- ✧ **Further instruction to OEM relating to Part 15B/RF exposure subject to be re-evaluating while the module is installed to the host shall be given**

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