

## ZM Series ZigBee / 802.15.4 2.4 GHz Module

### Applications

For home and commercial buildings, industry and utilities

#### Smart Energy and Building Automation

Clock and sensors  
Lighting systems  
Security systems  
Thermostat systems

#### Utilities

Automatic meter reading  
Smart energy home area networks  
Street light monitoring  
Data loggers  
Traffic light controls



ZM series is a low cost, small form factor module that provide a reliable, wireless data communication over Zigbee PRO/ 802.15.4 networks.

ZM series is compliant with ZigBee PRO protocol. It supports different network topologies: point-to-point / point-to-multipoint star network topologies, and self-organizing / self-healing mesh networks topologies. It offers network

scalability and is ideal for the rapidly growing energy management systems, building automation, lighting control, automated meter reading and security system.

Currently, there are three models: ZM101, ZM101PA, and ZM102. Both ZM101 and ZM101PA are identical and use RP-SMA connector, with the exception that ZM101PA contain Power Amplification. ZM102 uses U. Fl connector. All PNI's ZigBee Module uses the NEC Electronics 16-bits microcontroller (uPD78F1146) and UBEC's UZ2400 2.4GHz 802.15.4 RF chip. The ZM series provides plenty of peripheral such as GPIO, ADC, clock, counter, and PWM for control and sensor network application. ZM's parameters can be configured through an user friendly wizard, a management utility, and AT command.

### Features

- Zigbee/802.15.4 compatible RFmodule.
- 2.4~3.6V Operation.
- Industrial temperature (-40C to 85C).
- RF Receiver Sensitivity: -95dBm.
- RF TX power available in 0dBm and 20dBm.
- 8 GPIO.
- 8 channel 10bits ADC.
- Watchdog timer.
- Hardware security engine (AES-128)
- 2 channel timer/counter/PWM IO.
- Real time counter provide flexible sleeping cycle from monthly, weekly, down to a few seconds.
- UART, SPI, IIC interface to communicate with the module.
- Support AT-command and management utility
- Support transparent and API format communication mode.

# ZM Series ZigBee / 802.15.4 2.4 GHz Module



ZM101



ZM102



ZM101PA

## Pin out of ZM

pin	Name	Direction	Description
1	P60/SCL0	I/O	Serial clock input/output
2	P61/SDA0	I/O	Serial data input/output
3	P15/RTCDIV/RTCCL	Output	Real-time counter clock 32 kHz output or 32 kHz divided frequency output
4	VDD	-	Power supply
5	P13/TxD3	Output	UART3 Data Out
6	P14/RxD3	Input	UART3 Data In
7	P06/TI06/TO06	I/O	Timer input or Output
8	RESET	Input	Module Reset
9	P05/TI05/TO05	I/O	Timer input or Output
10	P40/TOOL0	I/O	Data input/output for tool
11	P41/TOOL1	Output	Clock output for tool
12	P120/INTP0/EXLVI/R	Input	External interrupt input, External low-voltage detector or Data-Terminal-Ready Control
13	GND	-	Ground
14	P20/ANI0	Input	Analog input 0
15	P21/ANI1/CTS	Input	Analog input 1 or Clear-to-Send Flow Control
16	P22/ANI2	Input	Analog input 2
17	P23/ANI3	Input	Analog input 3
18	P24/ANI4	Input	Analog input 4
19	P25/ANI5/RTS	I/O	Analog input 5 or Request-to-Send Flow Control
20	FLMD0	-	Flash programming mode
21	P26/ANI6	Input	Analog input 6
22	P27/ANI7	Input	Analog input 7
23	P140/PCLBUZ0/INTP6	I/O	Programmable clock/buzzer output or External interrupt input
24	P12/SO00/TxD0	Output	UART0 Data Out
25	P11/SI00/RxD0	I/O	UART0 Data In
26	P10/SCK00	I/O	Serial clock input/output

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