

MeshNetics®

Easy Wireless for Things

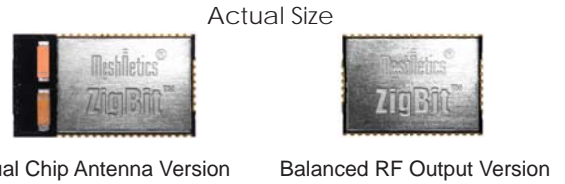


ZigBit™ Modules

2.4 GHz Modules for IEEE802.15.4/ZigBee

Wireless Mesh Networking Applications

ZigBit is a low-power, high-sensitivity 802.15.4/ZigBee module. ZigBit packs impressive functionality into less than a square inch of space and offers superior radio performance with exceptional ease of integration. The ZigBit module eliminates the need for costly and time-consuming RF development, and shortens time to market for a wide range of wireless applications.



Key features	Benefits
Outdoor Range: Over ½ mile (1000m)	Best in class un-amplified range
Battery lifetime: 10 years*	Software architecture optimized for low power
Network topology: Point-to-Point, Star, Tree, Mesh	Flexible network options for every application
Serial AT-commands for easy prototyping and quick setup	No need to program the module
Agency approvals: FCC, CE (ETSI), IC, ZigBee	Ready for integration in any product

* TX/RX every 5 minutes with 2500 mAh battery



Industry-leading Atmel® Hardware

ZigBit is based on the industry leading Atmel Z-link hardware platform. The powerful ATmega 1281v MCU features 128kb of flash memory and 8kb of RAM. The transceiver boasts -101dBm of Rx sensitivity and up to +3dBm of Tx power. A link budget of 104 dB gives the ZigBit a much longer range than competitive modules with lower link budgets.

Software Options: eZeeNet™, SerialNet and OpenMAC

The ZigBit module ships with robust 802.15.4/ZigBee stack that supports a self-healing, self-organizing mesh network, while optimizing network traffic and minimizing power consumption. MeshNetics offers three stack configurations: eZeeNet, SerialNet and OpenMAC. eZeeNet is a robust 802.15.4/ZigBee software stack that is tailored for easy-to-use networking in sensing, control, monitoring and data acquisition applications. SerialNet allows programming of the module via serial AT-command interface. OpenMAC is MeshNetics' open source implementation of IEEE802.15.4 MAC layer intended for embedded software experts and enthusiasts.

ZigBit™ Development Kits

Development Kit is a convenient way to assess range performance and power consumption of modules in-field. It also enables developers to write custom embedded applications using the eZeeNet API. Each kit includes development boards with sensors, accessories, software and documentation.



Competent Support

Over the years, MeshNetics has accumulated a unique range of expertise in hardware, firmware, RF design and development. This combination of experience-based knowledge enables MeshNetics to provide vastly superior support and customer care.

Contact us at info@meshnetics.com for further information.

ZigBit Applications

- Building automation & monitoring
- Automated Meter Reading (AMR)
- HVAC monitoring & control
- Industrial monitoring
- Predictive maintenance
- Asset tracking



Professional customization services are available by request.

Parameter	ZigBit Module with Balanced RF Port (for Use with PCB Antenna / External Antenna)	ZigBit Module with Dual Chip Antenna
Part number	ZDM-A1281-B0	ZDM-A1281-A2
Module Operating Conditions		
Supply Voltage (Vcc)	1.8V to 3.6 V	
Current Consumption RX/TX mode	19 mA/18 mA	
Current Consumption Power Save /Deep Sleep Mode	6 µA/1.5 µA	
RF Characteristics		
Max Output Power	+3 dBm	
Receiver Sensitivity (PER 1%)	- 101 dBm	
Microcontroller Characteristics (AVR Atmega)		
On-Chip Flash Memory Size	128 kBytes	
On-Chip RAM Size	8 kBytes	
On-Chip EEPROM Size	4 kBytes	
Physical/Environmental Characteristics		
Size	18.8 x 13.5 x 2.8 mm 0.53" x 0.74"	24.0 x 13.5 x 2.8 mm 0.53" x 0.95"
Weight	1.3 g	1.5 g
Operating Temperature Range	-40°C to +85°C	
Block Diagrams		
Mechanical Drawings		<p>All dimensions are in millimeters</p>
Availability	Mass produced & ready to order	

Low supply voltage (vs. standard 2.1V) extends battery life by as much as 20%.

Best in class sensitivity allows RF link ranges competitive with amplified modules. It ensures bidirectional RF link in the worst conditions.

More RAM means more robust stack performance and more space for user software applications.

Ultra compact size for easy integration.

Stable operation through the indicated temperature levels.

**PRECISION
MANUFACTURED
IN GERMANY**



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