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.

Actual Size



Dual Chip Antenna Version

Balanced RF Output Version

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







Building automation & monitoring



Automated meter reading (AMR)



HVAC monitoring & control



Industrial monitoring



Asset tracking



Professional customization services are available by request.

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: ZigBeeNet, 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: ZigBeeNet, SerialNet and OpenMAC. ZigBeeNet is a certified, ZigBee PRO software development platform supporting reliable, scalable, and secure wireless applications running on MeshNetics ZigBit modules. 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 ZigBeeNet 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.



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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 Conditi	ons		Low supply voltage (vs.
Supply Voltage (Vcc)	1.8 to 3.6 V		standard 2.1v) extends battery life by as much as
Current Consumption:	19 mA/18 mA		20%.
Current Consumption: Power Save /Deep Sleep Mode	6 μΑ/1.5 μΑ		
RF Characteristics		Best in class sensitivity allows RF link ranges	
Max Output Power	+3 dBm		competitive with ampli- fied modules. It ensures
Receiver Sensitivity (PER 1%)	- 101	- 101 dBm worst conditions	
Microcontroller Characteri	istics (AVR Atmega)		
On-Chip Flash Memory Size	128 kBytes 8 kBytes		More RAM means more
On-Chip RAM Size			and more space for user
On-Chip EEPROM Size	4 kBytes		software applications.
Physical/Environmental C	haracteristics		
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"	Ultra compact size for easy integration.
Weight	1.3 g	1.5 g	Chable an emotion through
Operating Temperature Range	-40°C to	o +85°C	the indicated temperature levels.
Block Diagrams	VCC (1.8 – 3.6V) UART USART/SPI I2C JTAG Analog I-Wire GPIO SPI Bus	VCC (1.8 – 3.6V)	
Mechanical Drawings	18,8 ^{s.2} 17,3 ^{s.2} 18 17,3 ^{s.2} 18 10, 19p-+ -0,7 ^{s.1} + 2,0 ^{s.1} + + All dimensions	24.0 = 2	PRECISION MANUFACTURED IN GERMANY
Availability	Mass produced a	& ready to order	
MeshNetics			

EMEA

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