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MeshWorks OpenTether Sensor Node



PART NUMBER

ZMW-SENSOR-1

DESCRIPTION

The MeshWorks OpenTether Sensor Node is the starting point for evaluation of CEL's MeshWorks platform. It has 10 built-in sensor capabilities to quickly prototype many common applications. Additionally, it contains a built-in I/O expansion port to connect to any external sensor or control node using I2C, analog, or digital I/O. The Sensor Node comes pre-loaded with CEL's MeshWorks firmware, which allows users to quickly write Python scripts to customize the hardware for their particular needs.

Utilizing CEL's Mini Module line of Ember EM35x-based transceivers from Silicon Labs, the Sensor Node contains the industry's premier ZigBee stack, EmberZNet PRO™. This 802.15.4 mesh networking solution has been successfully deployed in millions of residential and commercial installations to date.

The MeshWorks OpenTether Sensor Node can be combined with CEL's MeshWorks wireless modules and gateways to create a complete solution for almost any wireless networking application.

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KEY FEATURES

- **Available peripherals:**
 - o Temperature and humidity sensor
 - o Proximity and ambient light sensor

- o 9-axis motion sensor
 - o Reed switch
 - o Red/green LED
 - o Buzzer
 - o Push-button switch
 - o I/O expansion port
- Power options:
 - o 2xAAA battery
 - o Micro USB connector
 - o DC input (2.1 - 3.6V)
- Operates in the 2.4GHz license-free ISM band
- Over-the-air PAN network speed: 250kbps
- Small 2.95" x 3.19" x 0.91" form factor
- Conveniently packaged in the OpenTether plastic housing
- Omni-directional integrated PAN antenna (no accidental external antenna disconnections)
- FCC & IC Certified

KEY DOCUMENTS

 [MeshWorks Brochure](#)

KEY SPECS



Part Number	ZMW-SENSOR-1
Wireless Standard	Proprietary 802.15.4
Frequency of Operation	2.4GHz (License-Free ISM Band)
Over-the-Air Data Rate	250kbps
RF Channels	16
Network Type	Mesh
Max Number of Hops	8
Number of Nodes in Network	50 recommended, 255 max
Outdoor (LOS) Range (Node to Node)	5000 ft
Indoor Range (Node to Node)	150 - 300 ft
SoC	EM3588
Embedded RAM	64kB
Embedded Flash	512kB
PAN Security	Network layer, optional application (APS) layer
PAN Encryption Type	AES-128
Over-the-Air (OTA) Updates	Yes, both base firmware image and application script
Application Throughput, P2P through 2 hops	TBD
Peripherals (available to application)	Temperature and humidity sensor, proximity and ambient light sensor, 9-axis motion sensor, reed switch, red/green LED, buzzer, push-button, and I/O expansion port
Power Supply Options	2xAAA battery, Micro USB, DC Input (2.1 - 3.6V)
Dimensions	2.95" x 3.19" x 0.91"
Operating Temperature	-30°C to 70°C
Regulatory Certifications	FCC, IC

DOCUMENTATION & VIDEOS	□
EVALUATION KITS	□
DEV TOOLS & SOFTWARE	□
COMPLEMENTARY SOLUTIONS	□