“Things” are talking.

**ALTA Remote Monitoring Systems** enable “things” to speak. Wireless sensors, gateways and software give a voice to the IoT (Internet of Things) and allow businesses to leverage data, protect resources & save money. For example, “things” can speak up when conditions are met that indicate an asset is at risk. The Monnit ecosystem (50+ sensor types) detects changes in variables (such as a temperature, water presence, door position, electrical current and voltages) to employ an **autonomous wireless sensing** solution that protects your bottom line.

### Kit Components

**Sensors**

- **Temperature**
  - AA Battery, +/- 1% accuracy @25°C
- **Temperature**
  - Industrial, 3.6V Lithium, +/- 1% accuracy @25°C
- **Open / Closed**
  - AA Battery, 0.75” operational gap

**Gateway (choose from the following types)**

- **3G Cellular** (pictured in the kit above)
  - AT&T (USA), Rogers (Canada), w/ Battery Backup

**Software**

- iMonnit Premiere Software
  - (45 days free trial, basic version always free)

**Accessories**

- Power Converter (12V > 5V), Quick Start Guide, Mounting Hardware, Power supplies, Antennas

**FAST System Setup**

Build an IoT sensor network in 15 minutes or less! Monnit IoT & RF experts are standing by to help you quickly establish your monitoring system.

Email: info@monnit.com, Phone: 801-561-5555, Web: www.monnit.com

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**The only 1000’ / 10-yr. IoT Sensors Platform in the World**

1000+ Wireless Range / 10-yr. Battery Life

**Enterprise-grade Performance**

- ✦ 1,000+ ft. Wireless Range (through 12+ walls or ceilings, non line-of-sight)*
- ✦ Frequency Hopping Spread Spectrum (FHSS) / Interference Immunity
- ✦ Improved power management for longer battery life.** (10+ years on AA batteries or Industrial)
- ✦ Encrypt-RF™ Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages).
- ✦ Onboard data memory - up to 512 readings / sensor
  - 10 minute heartbeats = 3.5 days
  - 2 hour heartbeats = 42 days
- ✦ Over-the-air updates (future proof)
- ✦ Free iMonnit basic online monitoring and notification software (configure sensors, view data and set alerts via SMS text, email and/or voice calls)

* Wireless range may vary according to environment.
** Battery life determined by sensor reporting & other variables
ALTA Wireless TEMPERATURE Sensors

The ALTA Wireless Temperature Sensor uses a type NTC thermistor to measure temperature.

♦ Accurate to ± 1°C (± 1.8°F)
♦ Increased accuracy by user calibration to ± 0.25°C (± 0.45°F)

Sensors shown with & without 3’ Leaded Prope options

**Technical Specifications**

<table>
<thead>
<tr>
<th>Feature</th>
<th>AA Batteries</th>
<th>Coin Cell</th>
<th>Industrial 3.6V Lithium (1800 mAh capacity)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supply Voltage</strong></td>
<td>2.0 - 3.8 VDC (3.0 - 3.8 VDC Using Power Supply) *</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Current Consumption</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sleep Mode</td>
<td>0.2 µA</td>
<td></td>
<td>2.5 mA (MCU Active)</td>
</tr>
<tr>
<td>RTC Sleep</td>
<td>0.7 µA</td>
<td></td>
<td>5.5 mA (Radio RX Mode)</td>
</tr>
<tr>
<td>MCU Idle</td>
<td>570 µA</td>
<td></td>
<td>22.6 mA (Radio TX Mode)</td>
</tr>
<tr>
<td><strong>Temperature Sensor</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermistor Temperature Range</td>
<td>-40° to +125°C (-40° to +257°F) Limited to Main Unit Circuitry, -7° to +60°C unless thermistor leads being used</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accuracy @ 25°C</td>
<td>+/- 1% (1°C or 1.8°F)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Calibrated Accuracy</td>
<td>+/- 0.25°C (± 0.45°F)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wireless Range (900 MHz)</strong></td>
<td>1,000'+ (through 12+ walls or ceilings / non line-of-sight)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td>Encrypt-RF™ (256-bit key exchange and AES-128 CTR)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Integrated Memory</strong></td>
<td>Up to 512 sensor messages</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Certifications</strong></td>
<td>FCC ID: ZTL-G2SC1</td>
<td></td>
<td>UL Listed (Industrial): UL508-4x specifications (File E194432)</td>
</tr>
<tr>
<td></td>
<td>IC: 9794A-G2SC1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Power Options / Form Factors**

<table>
<thead>
<tr>
<th>Feature</th>
<th>AA Batteries</th>
<th>Coin Cell</th>
<th>Industrial 3.6V Lithium (1800 mAh capacity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Constant @ 25°C</td>
<td>15 sec max</td>
<td>30 seconds</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature Range **</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(board circuitry + batteries)</td>
<td>0° to 130°F (18°-55°C) alkaline, 40° to 185°F (40° - 85°C) lithium</td>
<td>20° to +140°F, (-7° - 60°C) **</td>
<td>-40° to +185°F (-40° - 85°C)**</td>
</tr>
<tr>
<td>Optimal Operating Temperature Range (batteries) **</td>
<td>+10° to +50°C (+50° to +122°F)</td>
<td>-40° to +85°C (-40° to +185°F)</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>3.7 oz.</td>
<td>0.7 oz.</td>
<td>4.7 oz.</td>
</tr>
<tr>
<td>Enclosure</td>
<td>High impact ABS Plastic</td>
<td>High impact ABS Plastic (w/ PinchPower enclosure)</td>
<td>IP65, NEMA 4X, CE, sealed, weather &amp; shock proof</td>
</tr>
<tr>
<td>Dimensions (click #s to view dimensional drawings)</td>
<td>4.375” x 2.470” x 1.120”</td>
<td>2.000” x 1.125” x 0.875”</td>
<td>3.701” x 2.316” x 1.378”</td>
</tr>
</tbody>
</table>

* Hardware cannot withstand negative voltage. Please take care when connecting a power device.
** At temperatures above 100°C, it is possible for the board circuitry to lose programmed memory.

**Principle of Operation**

Sensor outputs ambient temperatures in degrees Fahrenheit. It is programmed to sleep for a user-given time interval (heartbeat); then wakeup, send power to the NTC Thermistor, wait for it to stabilize, convert the analog data, mathematically compute the temperature and transmit the data to the gateway. To stay within the abilities of the processor, the temperature is computed off a data table provided by the manufacturer.

Get IoT Started

801-561-5555
info@monnit.com
www.monnit.com
The ALTA Wireless Open / Closed Sensor uses a magnetic switch to detect when a door or window is opened or closed. The position of the contact provides the system data that can be purposed for applications such as access control, occupancy monitoring, energy management, etc.

**Technical Specifications**

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<tr>
<th>Parameter</th>
<th>Description</th>
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</table>
| **Supply Voltage** | 2.0 - 3.8 VDC (3.0 - 3.8 VDC Using Power Supply) *
| **Current Consumption** | 0.2 µA (Sleep Mode) 0.7 µA (RTC Sleep) 570 µA (MCU Idle), 2.5 mA (MCU Active) 5.5 mA (Radio RX Mode) 22.6 mA (Radio TX Mode) |
| **Magnet Contact** | Magnetic Switch: SPST, gold under-plating with Deactivated Rhodium outer-plating (capable of 50 million activations)  
| **Operational Gap** | Up to 0.75”  
| **Wire Leads** | 22 gauge / 15 inch length  
| **Magnet** | Alnico magnet / Weatherproof, high-impact ABS plastic covering with self-adhesive backing  
| **Temperature Range (Magnet)** | -15° to 160°F (-25° to 70°C)  
| **Wireless Range (900 MHz)** | 1,000’+ (through 12+ walls or ceilings / non line-of-sight)  
| **Security** | Encrypt-RF™ (256-bit key exchange and AES-128 CTR)  
| **Integrated Memory** | Up to 512 sensor messages  
| **Certifications** | Industry: 900 MHz product - FCC ID: ZTL-G2SC1 IC: 9794A-G2SC1  
| **UL Listed (Industrial)** | UL508-4x specifications (File E194432) |

**Power Options / Form Factors**

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<tr>
<th>Power Source</th>
<th>AA Batteries</th>
<th>Coin Cell</th>
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<td><strong>Operating Temperature Range</strong></td>
<td>0° to 130°F (-18° to 55°C) alkaline, -40° to 185°F (-40° to 85°C) lithium</td>
<td>20° to 140°F, (-7° to 60°C)**</td>
<td>-40° to 185°F (-40° to 85°C)**</td>
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* Hardware cannot withstand negative voltage. Please take care when connecting a power device.  
** At temperatures above 100°C, it is possible for the board circuitry to lose programmed memory.

**Principle of Operation**

The ALTA Open / Closed Sensor uses an external magnetic switch to detect the presence or removal of a trigger magnet. When the sensor detects that the magnet is removed or returned, it sends the information to the iMonnit Online Sensor Monitoring and Notification System. The data is stored in the online system and can be reviewed and exported. Notifications can be setup through the online system to alert the user when a magnetic source is present or not present - with the ability to specify notifications within time-of-day parameters.

**Solar-Powered Option (available with “Industrial” version only)**

Solar Panel: 5VDC / 30mA (53mm x 30mm)  
Charging Temperature Range: 0° to 45°C (32° to 113°F)  
Max. Temperature Range: -20° to 60°C (-4° to 140°F)  
Rechargeable Battery (Included): 600 mAh / >2000 Charge Cycles (80% of initial capacity)
# ALTA 3G Cellular Gateway

- **True plug & play, no hassles for Internet configuration setup**
- **No PC required for operation**
- **Low-cost cellular service packages**
- **Local status LEDs with transmission and online status indicators**

## Technical Specifications

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cellular</strong></td>
<td></td>
</tr>
<tr>
<td>Carriers Support</td>
<td>AT&amp;T (USA), Rogers (Canada)</td>
</tr>
</tbody>
</table>
| Cellular Technology | UMTS  
Frequency Range: 850 / 1700 / 1900 MHz                               |
| Antenna           | Connector: SMA  
Gain (dBi): 1.5                                                          |
| SIM Card Compatibility | Mini-SIM (2FF)  
25 mm x 15 mm x 0.76 mm                                                  |
| **Power**         |                                                                         |
| Input Power       | 5.5 VDC @ 2.5 A                                                          |
| Optional Battery Backup | Battery Type: Rechargeable Lithium Polymer  
Battery Duration: Up to 24 hours  
Battery Cycle Life: 500 times                                     |
| **Mechanical**    |                                                                         |
| LEDs              | Cellular Status LED, Online Status LED, Sensor Network Status LED       |
| Device Memory:    | 50,000 sensor messages  
(Sensor messages will be stored in the event of Internet outage and transferred when connection is restored) |
| Enclosure         | ABS                                                                     |
| Dimensions        | 5.004 x 3.8 x 1.51 in.                                                  |
| Weight            | 7 ounces                                                                |
| **Environmental** |                                                                         |
| Operating Temperature | -10 to +70 °C (14 to 158 °F)                                            |
| Storage Temperature | -20 to +85 °C (-4 to 185 °F)                                             |
| **Wireless**      |                                                                         |
| Wireless Range    | 1,000+ ft. (through 12+ walls or ceilings / non-line-of-sight)          |
| Security          | Encrypt-RF™ (256-bit key exchange and AES-128 CTR)                      |
| Certifications    | FCC: ZTL- G2SC1, FCC: RI7HE910  
IC: 9794A-G2SC1 and IC: 5131A-HE910                                    |

### Principle of Operation

The ALTA Cellular Gateways are based on the latest Dual-band CDMA and 3G wireless protocols and come integrated with Monnit’s wireless access point network (WAN) for use with all Monnit wireless sensors.

The ALTA Cellular Gateway is an advanced all wireless M2M gateway that enables fast time-to-market solutions for a wide range of M2M and partner applications as well.

### Options & Add-ons

- **Carriers**:  
  - **CDMA**: Sprint, US Cellular, AT&T (USA)  
  - **3G**: Rogers (Canada)  
- **Protocol**:  
  - **Cellular**: CDMA  
  - **3G**: Ethernet  
  - **USB**: Operating Frequency  
  - **900 MHz**:
Durability Grades

Commercial Grade
If not specified as “Industrial Grade”, all ALTA sensors are commercial grade and are designed for applications in ordinary environments (normal room temperature, humidity and atmospheric pressure). Do not use these sensors under the following conditions as these factors can deteriorate the product characteristics or cause failures.

- Corrosive gas / De-oxidizing gas (chlorine, hydrogen sulfide, ammonia, sulfuric acid, nitric oxides, etc.)
- Volatile or flammable gas
- Dusty conditions
- Under low or high pressure
- Wet or excessively humid locations
- Places with salt water, oils chemical liquids or organic solvents
- Where there are excessively strong vibrations
- Other places where hazardous conditions exist

Use these product within the specified temperature range. Higher temperature may cause deterioration of the characteristics or the material quality.

Industrial Grade
Type 1, 2, 4, 4X, 12 and 13 NEMA Rated Enclosure
ALTA Industrial sensors are enclosed in reliable, weatherproof NEMA rated enclosures. Our NEMA rated enclosures are constructed for both indoor or outdoor use and protect the sensor circuitry against the ingress of solid foreign objects like dust as well as the damaging effects of water (rain, sleet, snow, splashing water, and hose directed water).

- Safe from falling dirt
- Protects against wind blown dust
- Protects against rain, sleet, snow, splashing water, and hose directed water
- Increased level of corrosion resistance
- Will remain undamaged by ice formation on the enclosure

Options & Add-ons

Sensor Power Sources

AA Battery
AA battery powered sensors are commercial grade and are ideal for indoor sensor networks. AA sensors achieve up to a 10-year battery life.

Line Power (w/ AA Battery Backup)
AA battery powered sensors can be upgraded to support line-powered operations in addition.

Coin Cell Battery
Coin cell battery powered sensors offer the smallest form factor of all power options. Coin cell sensors achieve up to a 5-year battery life.

Industrial Lithium Battery
Industrial sensors are powered by a replaceable lithium battery. Industrial sensors are ideal for indoor sensor networks. Industrial sensors achieve up to a 10-year battery life.

Solar
Industrial Grade Sensors can be upgraded to support solar powered operations.

RF Operating Frequency
In North America, ALTA wireless products operate using the license-free 900 MHz ISM band. Contact Monnit regarding products requiring 868 MHz, 433 MHz or 920 MHz operating frequencies.

For more information about our products or to place an order, please contact our sales department at info@monnit.com or 801-561-5555.