



Remote Monitoring for Business



ALTA Motion+ Sensor **USER GUIDE**

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I. ABOUT THE ALTA WIRELESS MOTION+ SENSOR

The three-in-one [ALTA Wireless Motion+ Sensor](#) combines sensing components to measure movement, ambient temperature, and relative humidity (RH) in a wide variety of facilities. Facility managers can easily install the AA battery-powered multi-sensor within 15 minutes. You can monitor environments in office buildings, warehouses, factories, hospitals, clinics, labs, kennels, restaurants, farms, greenhouses, and many more.

Detect motion and occupancy of people or small animals with the sensor's passive infrared (PIR) element. The sensor detects up to 4.5 meters or 15 feet and within an 80-degree viewing angle. The sensor can help you boost facility security, detect room or area occupancy, safeguard inventory, optimize cleaning services, and more with actionable data.

Track ambient room or area temperature between -40°F to +257°F (-40°C to +125°C). Ensure climate conditions remain within your defined parameters to maintain comfort and protect people, equipment, inventory, and other assets.

Monitor 0–100% RH with a built-in scientific-grade humidity element. Data centers, manufacturing facilities, life science labs, food processing plants, art galleries, grow houses, and many more are perfect use cases for the ALTA Motion+ Sensor.

FEATURES OF MONNIT ALTA SENSORS

- Wireless range of 1,200+ feet through 12+ walls¹
- Frequency-Hopping Spread Spectrum (FHSS)
- Best-in-class interference immunity
- Best-in-class power management for longer battery life²
- Encrypt-RF® Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- Data logs 2000 to 4000 readings if the gateway connection is lost (non-volatile flash, persists through the power cycle):
 - 10-minute heartbeats = ~ 22 days
 - 2-hour heartbeats = ~ 266 days
- Over-the-air updates (future-proof)
- Free iMonnit Basic Online Wireless Sensor Monitoring and Notification System to configure sensors, view data, and set alerts to be sent via SMS text, email, or call.

¹ Actual range may vary depending on the environment.

² Battery life is determined by the sensor reporting frequency and other variables. Other power options are also available.

EXAMPLE APPLICATIONS

- Full-featured room/area monitoring
- Hospital rooms
- Senior care monitoring
- Pet care monitoring
- Animal welfare monitoring
- Data centers
- Manufacturing
- Art galleries
- Greenhouses and grow houses
- Life science labs
- Food processing plants

II. ORDER OF OPERATIONS

It is important to understand the order of operations for activating your sensor. If performed out of sequence, your sensor may have trouble communicating with iMonnit. Please perform the steps below in the order indicated to ensure success.

- 1. Create an iMonnit account (If a new user).**
- 2. Register all sensors and gateways to a network in iMonnit.**
Sensors can only communicate with gateways on the same iMonnit network.
- 3. Connect/power on the gateway and wait until all three LEDs on the gateway device are green.**
- 4. Power on the sensor and verify it checks into iMonnit.**
We recommend powering the sensor on near the gateway then moving to the installation location.
- 5. Configure the sensor for use. (This can be done at any point after step 2.)**
- 6. Install the sensor in the final location.**

Note: For information on setting up iMonnit and the gateway, refer to the iMonnit user guide and the gateways user guide.

Note: Device specific setup is covered in more detail in the following user guide sections.

III. PORTAL AND SENSOR SETUP

If this is your first time using iMonnit, you will need to create a new account. If you have already created an account, start by logging into iMonnit. For instructions on how to register and set up your iMonnit account, please consult the [iMonnit user guide](#).

STEP 1: ADD DEVICE

1. Add the sensor in iMonnit.

Add the sensor to your account by choosing **Sensors** in the main menu. Navigate to the **Add Sensor** button.



Desktop



Mobile

2. Find the Device ID. See Figure 1.

The Device ID (ID) and Security Code (SC) are necessary to add a sensor. These can both be located on the label on the side of your device.

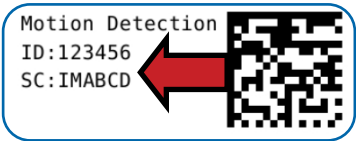


Figure 1

3. Adding your device. See Figure 2.

You will need to enter the Device ID and the SC from the sensor in the corresponding text boxes. Use the camera on your smartphone to scan the QR code on your device. If you do not have a camera on your phone, or the system is not accepting the QR code, you may enter the Device ID and SC manually.



Figure 2

- The Device ID is a unique number located on each device label.
- Next, you'll be asked to enter the SC from your device. An SC consists of letters and must be entered in upper case (no numbers). It can also be found on the barcode label of your device.

When completed, select the **Add Device** button.

STEP 2: SETUP

Select your use case. See Figure 3.

To get up and running fast, your sensor comes with preset use cases. Choose from the list or create your own custom settings. You will see the **Heartbeat Interval** and **Event Aware State** settings (see page 8 for definitions).

Select the **Skip** button when completed.

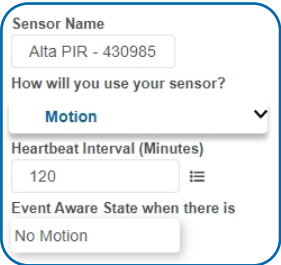


Figure 3

STEP 3: INSTALL BATTERIES

When you are finished adding the sensor to your account, the next step is to insert the batteries. The type of battery you use will depend on the category of your sensor. ALTA Wireless Motion+ Sensors are powered by AA batteries. Monnit encourages customers to recycle all old batteries.



Figure 4

If installing in a new sensor, rotate lid around the partially tightened case screw and insert the batteries into the battery holder. Then, rotate the lid back in place, insert the other three case screws and tighten. If replacing batteries, remove the four case screws, remove the lid, and insert the batteries into the battery holder. See Figure 5.

Complete the process by opening up iMonnit and selecting **Sensors** from the main navigation menu. Verify that iMonnit shows that the sensor has a full-battery level.

AA Batteries; See Figure 4.

Standard Version - Viewing angle of 80°

Two replaceable 1.5V AA-sized batteries (included with purchase) power the standard version of this sensor. The typical battery life is up to 10 years.

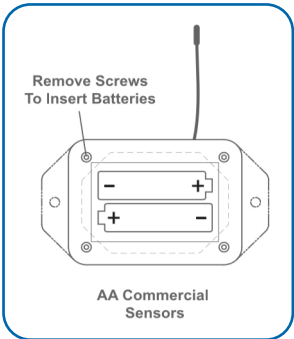


Figure 5

STEP 4: VALIDATION

Check your signal. See Figure 6.

The validation checklist will help ensure your sensor is communicating with the gateway properly and you have a strong signal.

Checkpoint 4 will only complete when your sensor achieves a solid connection to the gateway. Once you insert the batteries (or flip the switch on an industrial sensor) the sensor will communicate with the gateway every 30 seconds for the first few minutes.

Select the **Save** button when completed.

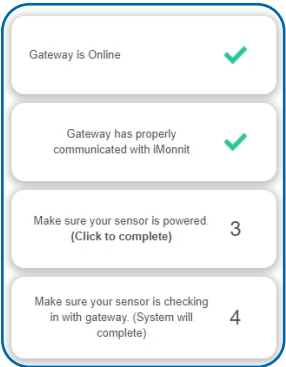


Figure 6

STEP 5: ACTIONS

Choose your Actions. See Figure 7.

Actions are the alerts that will be sent to your phone or email in the event of an emergency. Low battery life and device inactivity are two of the most common Actions to have enabled on your device. See page 9 for how to set Actions for your sensor.

Select the **Done** button when completed.

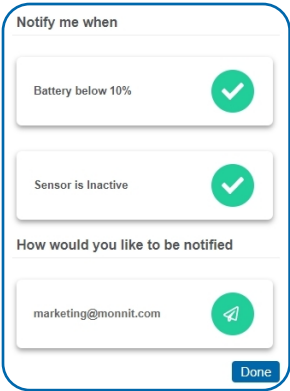


Figure 7

INSTALLATION

Mounting the Sensor

The location and orientation of a sensor and its antenna can effect the sensor's ability to consistently communicate data and stay connected to the gateway. Refer to the Antenna Orientation instructions below for best practices. The sensor features mounting flanges and can be mounted or attached to most surfaces using appropriate mounting screws or other mounting material (not included). When mounting the sensor, consider its viewing area. Make sure the detection area of the application is within the detection area of the sensor.

Antenna Orientation

Get the best performance out of ALTA devices by properly positioning antennas. Point sensor and gateway antennas in the same direction, vertically from the device. If the sensor is mounted flat on a horizontal surface, bend the antenna as close to the sensor housing as possible, with most of the antenna pointing vertically. Make the antenna wire as straight as possible, avoiding any kinks and curving of the wire. Sensors must be at least three feet away from other sensors and the wireless gateway to function. See Figure 8.

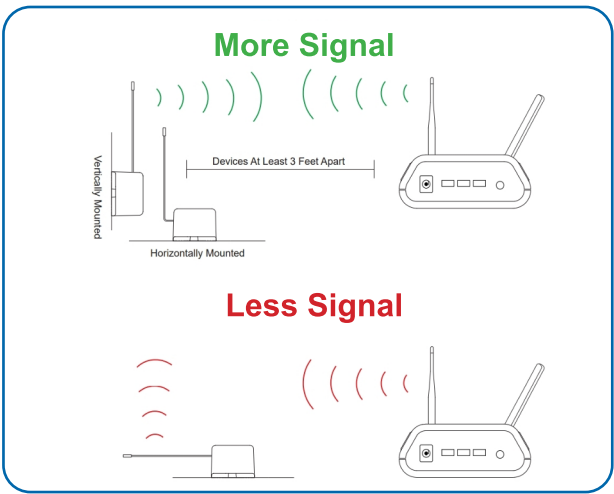


Figure 8

IV. SENSOR OVERVIEW IN iMONNIT

Select **Sensors** from the main navigation menu on iMonnit to access the Sensor Overview page and begin to configure the settings of the Motion+ Sensor, See Figure 9.

MENU SYSTEM

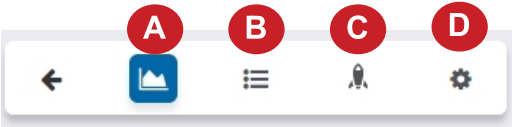


Figure 9

- A. Details** - Displays a graph of recent sensor data
- B. History** - List of all past heartbeats and readings
- C. Events** - List of all events attached to this sensor
- D. Settings** - Configurable levels for a sensor

Directly under the top horizontal tabbed menu bar is an overview of your sensor. You can see the signal strength and the battery level of the selected sensor. A colored dot in the left corner of the sensor icon denotes its status.

- Green** indicates the sensor is checking in and is within user-defined safe parameters.
- Red** indicates the sensor has met or exceeded a user-defined threshold or triggered event.
- Gray** indicates that no sensor readings are being recorded, rendering the sensor inactive.
- Yellow** indicates that the sensor reading is outdated, due to perhaps a missed heartbeat check-in.

Details View

The **Details View** will be the first page you see upon selecting which sensor you would like to modify. See Figure 10.

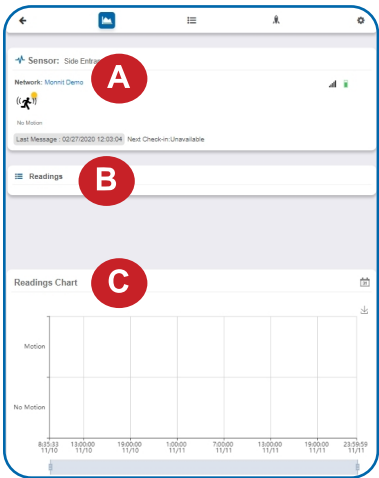


Figure 10

- A. The Sensor Overview** section will be above every page. This will consistently display the present reading, signal strength, battery level, and status.
- B. The Readings** section shows the most recent data received by the sensor.
- C.** This graph charts any changes throughout a set date range. To change the date range displayed in the graph, navigate up to the top of the **Readings Chart** section on the right-hand corner to change the date range.

Readings View

Select the **Readings** tab within the top horizontal menu bar to view the sensor's data history as time-stamped data.

- On the far right of the **Sensor History Data** is a cloud icon . Selecting this icon will export an Excel file of sensor data into your downloads folder.

Note: Make sure you have the date range for the data you need input in the "From" and "To" text boxes. This will be the previous day by default. Only the first 2,500 entries in the selected date range will be exported.

The data file will have the following fields:

Message ID: Unique identifier of the message in our database.

Sensor ID: If multiple sensors are exported, you can distinguish between the sensors using this number — even if the names are the same.

Sensor Name: The name you gave the sensor.

Date: The date the message was transmitted from the sensor.

Value: Data presented with transformations applied, but without additional labels.

Formatted Value: Data transformed and presented as it is shown in the monitoring portal.

Raw Data: Raw data as it is stored from the sensor.

Sensor State: Binary field represented as an integer containing information about the state of the sensor when the message was transmitted. (See **Sensor State** explained below.)

Alert Sent: Boolean indicating if this reading triggered a notification sent from the system.

Sensor State

The value presented here is generated from a single byte of stored data. A byte consists of eight bits of data that we read as Boolean (True (1) / False (0)) fields.

When broken into individual bits, the State byte contains the following information:

aaaabcde

STS: This value is specific to the sensor profile and is often used to indicate error states and other sensor conditions.

UNUSED: This sensor does not use these bits.

AWARE: Sensors become aware when critical sensor-specific conditions are met. Going aware can cause the sensor to trigger and report before the heartbeat and cause the gateway to forward the data to the server immediately, resulting in near immediate transmission of the data

TEST: This bit is active when the sensor is first powered on or reset and remains active for the first nine messages when using default configurations.

STS Specific Codes:

STS Value	UI Presentation
Bit: xxx1	Humidity Fault
Bit: xx1x	Motion Fault
Bit: x1xx	Humidity Range Error
Bit: 1xxx	Temperature Range Error

Settings View

To edit the operational settings for a sensor, choose the **Sensors** option in the left main navigation menu, and then select the **Settings** tab to access the configuration page. See Figure 11.

PIRHumidity Settings

Sensor Name

PIRHumidity - 200161

Heartbeat Interval (Minutes)

120

Aware State Heartbeat (Minutes)

120

Assessments per Heartbeat

1

Motion:

Enter Aware State

On Motion

Off On

Re-Arm Time (Minutes)

1

Sensitivity

15 Feet

Temperature:

Enter Aware State

Below (°F)

-58

Above (°F)

302

Aware State Buffer (°F)

0

Humidity:

Enter Aware State

Below (%)

0

Above (%)

100

Aware State Buffer (%)

0

Synchronize

Off On

Failed transmissions before link mode

3

A. The **Sensor Name** is a unique name you give the sensor to easily identify it in a list and in any notifications.

B. The **Heartbeat Interval** is how often the sensor communicates with the gateway if no activity is recorded.

C. **Aware State Heartbeat** is how often the sensor communicates with the gateway while in an Aware State.

D. **Assessments per Heartbeat** is how many times between heartbeats a sensor will check its measurements against its thresholds to determine whether it will enter an Aware State.

E. **Enter Aware State** determines if the sensor enters Aware State or not when motion is detected.

F. **Time to Re-Arm** is the time in seconds after a triggering event that the sensor will wait before re-arming itself.

G. **Sensitivity** dictates the distance at which the sensor registers motion. Your options are 9 feet, 12 feet, or 15 feet.

H. **Aware State Buffer** is a buffer to prevent the sensor from bouncing between Standard Operation and Aware State when the assessments are very close to a threshold. For example, if a Maximum Threshold is set to 90° and the buffer is 1°, then once the sensor takes an assessment of 90.1° it will remain in an Aware State until dropping to 89.0°.

I. **Synchronize** In small sensor networks the sensors can be set to synchronize their communications. The default setting off allows the sensors to randomize their communications therefore maximizing communication robustness. Setting this will synchronize the communication of the sensors.

Figure 11

J. Failed transmissions before link mode is the number of transmissions the sensor sends without response from a gateway before it goes to battery-saving link mode. In link mode, the sensor will scan for a new gateway, and if not found, it will enter battery-saving sleep mode for up to 60 minutes before trying to scan again. A lower number will allow sensors to find new gateways with fewer missed readings. Higher numbers will enable the sensor to remain with its current gateway in a noisy RF environment. Zero will cause the sensor to never join another gateway. To find a new gateway, the battery will have to be cycled out of the sensor.

Finish by selecting the **Save** button.

Note: Be sure to select the Save button anytime you make a change to any of the sensor parameters. All changes made to the sensor settings will be downloaded to the sensor on the next sensor heartbeat (check-in). Once a change has been made and saved, you will not be able to edit that sensor's configuration again until it has downloaded the new setting.

V. ACTIONS OVERVIEW

Device notifications can be created, deleted, and edited by selecting the **Actions** tab in the tab bar.

You can toggle the **Action Trigger** On or Off by selecting the switch under **Current Action Triggers**. See Figure 12.

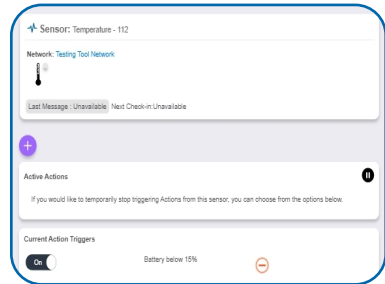


Figure 12

CREATING AN ACTION

- Actions are triggers or alarms set to notify you when a sensor reading identifies that immediate attention is needed. Types of Actions include sensor readings, device inactivity, and scheduled data. Any one of these can be set to send a notification or trigger an Action in the system. See Figure 13.



Figure 13

Choose **Actions** in the main navigation menu.

A list of previously created Actions will display on the screen. From here, you have the ability to filter, refresh, and add new Actions to the list.

Note: If this is your first time adding an Action, the screen will be blank.

From the **Actions** page, tap **Add Action** in the lower right-hand corner. See Figure 14.

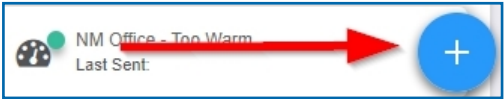


Figure 14

Step 1: What triggers your Action?

The drop-down menu will have the following options for Action Types (See Figure 15):

- **Sensor Reading:** Set Actions based on activity or reading.
- **Device Inactivity:** Actions when the device doesn't communicate for an extended period of time.
- **Advanced:** Actions based on advanced rules, such as comparing past data points with current ones.
- **Scheduled:** These Actions are performed at a set time basis.

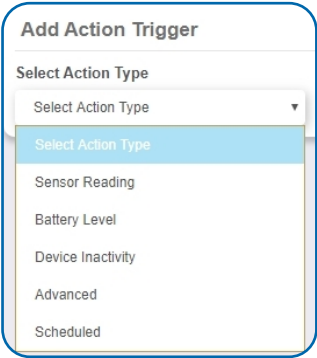


Figure 15

- Select **Sensor Reading** from the drop-down menu.
- A second drop-down menu will appear. From here, you will be able to see a list of the different type of sensors registered to your account. Choose **PIR** in the drop-down menu.
- Next, you will be asked to input the **Trigger** settings. You have the option of setting the Triggers for Motion, Temperature, and Humidity. See Figures 16a through 16c.

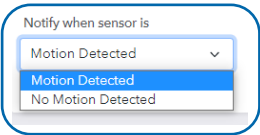


Figure 16 a

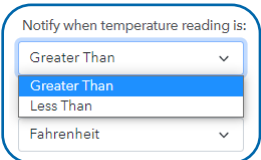


Figure 16 b

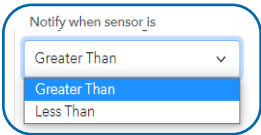


Figure 16 c

Press the **Save** button.

Step 2: Actions

- Press the **Add Action** button under the information header, available Action types will then be presented in a select list.
- **Notification Action:** Specify account users to receive notification when this event triggers.
- **System Action:** Assign Actions for the system to process when this event triggers.
- Choose **Notification Action** from the notification list.

A. Input the subject for the notification.
See Figure 17.

B. Customize the message body
for the notification. See Figure 17.

C. The **Recipient** list identifies who will
receive the notification.
See Figure 18.

Notification Settings

Subject: MotionDetect Equal True

Message: MotionDetect Equal True
Device: {Name} ({ID})
Reading: {Reading}

Figure 17

Recipient Email SMS Voice

Click on icon to enable or disable

John Doe			
Monnit Marketing			
Test Test		5m	

Figure 18

- Select the icon next to a user to specify how they will be notified.
- Choose if you want notifications sent immediately, when triggered, or if you want a delay before sending, and press **Set**.
- A **green** icon indicates that the users will receive the notifications.
- If a delay has been selected, the delay time will display beside the icon.

Select **System Action** from the **Add Action** list. See Figure 19.

- Scroll down to the **System Action** section.
- The **Action to be done** select list has the following options:

Acknowledge: Automatically signals that you have been notified of an Action. When an Action has been triggered, alerts will continue processing until the Action returns to a value that no longer triggers an Action.

Full Reset: Reset your trigger so it is armed for the next reading.

Activate: Enable an Action trigger.

Deactivate: Disable an Action trigger.

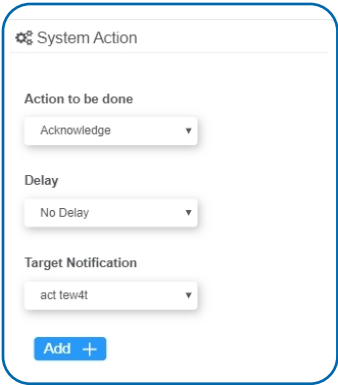


Figure 19

Step 3: Action Name and Devices

- By default, the sensor(s) will not be assigned to the Action conditions you've just set. To assign a sensor, find the device(s) you want to designate for this Action and select. Selected sensor boxes will turn **green** when activated. Choose the sensor box again to unassign the sensor from the Action. See Figure 20.
- Continue toggling the sensor(s) corresponding to this new Action until you are satisfied with your selection. These can be adjusted later by returning to this page.

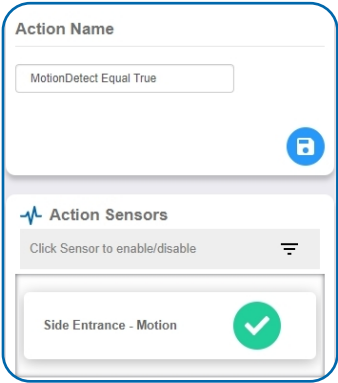


Figure 20

Press the **Check Mark** button to complete the process.

VI. SECURITY

Data security and integrity is paramount at Monnit. Each layer of the system is secured using encryption and protocols designed to protect customer data and information. The system consists of sensor(s), gateway(s), and iMonnit software. One or more sensors communicate with iMonnit software through a gateway.

SENSOR TO GATEWAY

Sensor and gateway radio modules are purpose-built devices with proprietary unreadable firmware, which means the sensor cannot be physically hacked or re-purposed for malicious purposes. This adds a strong level of inherent security even before considering encryption. Data transmission between the sensor and gateway are secured using Encrypt-RF Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages). Beyond the encryption, data transmissions are also structurally verified and given a cyclic redundancy check (CRC) before they are passed up to iMonnit or down to the sensor. This ensures the integrity of the data.

GATEWAY TO IMONNIT

Data transmissions between the gateway and iMonnit software are secured using 256-bit Diffie-Hellman Key Exchange + AES-128 CBC for data packet encryption.

IMONNIT

Access is granted through the iMonnit user interface, or an Application Programming Interface (API) safeguarded by 256-bit Transport Layer Security (TLS 1.3/1.2) encryption. TLS is a blanket of protection to encrypt all data exchanged between iMonnit and you. The same encryption is available to you whether you are a Basic or Premiere user of iMonnit. You can rest assured that your data is safe with iMonnit.

SENSORPRINTS™

Monnit SensorPrints software uses a shared key between the software and the sensor to ensure that once the data comes to iMonnit it is guaranteed to be from the device identified by the sensor "fingerprint" or encryption token. If this feature is purchased for the device (via iMonnit software), the device's data becomes impossible to spoof by any malicious device.

VII. TROUBLESHOOTING

Symptoms	Detailed Problem Description	Solution
Not Checking into iMonnit	The Sensor lost the radio link to the gateway or never connected to the gateway.	<p>Power-cycle the sensor by removing the batteries for 60 seconds then replacing them.</p> <ol style="list-style-type: none"> 1. Ensure the network is set up correctly in iMonnit (the sensor and gateway are on same network). Press the button on the gateway. 2. If the network is set up correctly, reform the gateway. See how to reform it here. 3. Move the sensor ~10 feet from the gateway. 4. Move progressively further from the gateway, ensuring at least two signal bars are showing. Keep in mind that the signal bars represent the signal from the previous message, not the current message. We recommend taking two readings to verify the signal strength. 5. Check the antenna on the gateway.
Low Signal	The radio signal strength in iMonnit is lower than expected.	<ol style="list-style-type: none"> 1. Ensure the gateway antenna is properly connected. 2. Ensure the gateway antenna is optimally oriented with respect to the position of the sensor. (See the Antenna Orientation guide in the Portal and Sensor Setup section).
Trouble Detecting Motion	Motion detection is either delayed or not working at all.	<ol style="list-style-type: none"> 1. Check the Report Immediately On and Time to Re-Arm configurations. If Report Immediately On is set to Aware Reading, motion triggers can be delayed by up to an aware heartbeat. Sensor activation may be delayed by Re-Arm time. 2. Ensure there are no obstructions between the sensor and objects of interest. The sensor cannot detect motion through solid or infrared-blocking surfaces such as glass. 3. Heavy insulating clothing may reduce sensor sensitivity to movement.
Range of Detection Lower Than Expected	The range of detection is lower than expected.	<ol style="list-style-type: none"> 1. Ensure the range configuration in the online software is set to 15 feet. 2. Ensure objects of interest are not covered with insulating material. The sensor needs to detect a change in infrared energy compared to the background and insulating material may maintain the same temperature as the background.

Symptoms	Detailed Problem Description	Solution
Humidity Fault or STS Bit xxx1 Set	Sensor is having trouble communicating with the humidity/temperature element.	Most likely a hardware error requiring repair. Contact support@monnit.com.
Motion Fault or STS Bit xx1x Set	Sensor is having trouble communicating with the PIR motion element.	Most likely a hardware error requiring repair. Contact support@monnit.com.
Humidity Range or Temperature Range Error or STS Bit x1xx Set or STS Bit 1xxx Set	Outside sensors max operating range.	<ol style="list-style-type: none"> 1. Set default calibration. Sensor may have been calibrated in such a way that the sensor can exceed the normal sensing range. 2. If problem persists contact support@monnit.com.
Questionable humidity accuracy.	Humidity reads much higher or lower than expected or than a known good reference.	<ol style="list-style-type: none"> 1. Ensure the sensor is given plenty of time to acclimate in an environment and ensure the breath holes in the sensor enclosure are not obstructed. 2. Set default calibration. Sensor may have been calibrated in such a way that the sensor can exceed the normal sensing range. 3. Recondition sensor: Cook sensor at 55 to 60 degrees Celsius with the lid off for 48 hours. Then place sensor in 75% humidity environment for 24 hours. NOTE: A super saturated salt water solution in an enclosed container will produce an ~75% humidity environment. 4. If problem persists contact support@monnit.com.
Questionable temperature accuracy.	Temperature reads much higher or lower than expected or than a known good reference.	<ol style="list-style-type: none"> 1. Ensure the sensor is given plenty of time to acclimate in an environment and ensure the breath holes in the sensor enclosure are not obstructed. 2. Set default calibration. 3. If problem persists contact support@monnit.com.

SUPPORT

For technical support and troubleshooting tips, please visit our support library online at monnit.com/support/. If you are unable to solve your issue using our online support, email Monnit support at support@monnit.com with your contact information and a description of the problem. A support representative will call you within one business day.

For error reporting, please email a full description of the error to support@monnit.com.

WARRANTY INFORMATION

(a) Monnit warrants that Monnit-branded products (Products) will be free from defects in materials and workmanship for a period of one (1) year from the date the Products arrive at the Customer's shipping address with respect to hardware and will materially conform to their published specifications for a period of one (1) year with respect to software. Monnit may resell sensors manufactured by other entities and are subject to their individual warranties; Monnit will not enhance or extend those warranties. Monnit does not warrant that the software or any portion thereof is error free. Monnit will have no warranty obligation with respect to Products subjected to abuse, misuse, negligence, or accident. If any software or firmware incorporated in any Product fails to conform to the warranty set forth in this Section, Monnit shall provide a bug fix or software patch correcting such non-conformance within a reasonable period. Monnit shall provide the fix or patch after Monnit receives from the Customer (i) notice of such non-conformance, and (ii) sufficient information regarding such non-conformance so as to permit Monnit to create such bug fix or software patch. If any hardware component of any Product fails to conform to the warranty in this Section, Monnit shall, at its option, refund the purchase price less any discounts, or repair or replace nonconforming Products with conforming Products or Products having substantially identical form, fit, and function. Monnit will then deliver the repaired or replacement Product to a carrier for land shipment to the Customer within a reasonable period after Monnit receives from the Customer (i) notice of such non-conformance, and (ii) the non-conforming Product provided; however, if, in its opinion, Monnit cannot repair or replace on commercially reasonable terms, it may choose to refund the purchase price. Repair parts and replacement Products may be reconditioned or new. All replacement Products and parts become the property of Monnit. Repaired or replacement Products shall be subject to the warranty, if any remains, originally applicable to the product repaired or replaced. The Customer must obtain from Monnit a Return Material Authorization (RMA) number prior to returning any Products to Monnit. Products returned under this Warranty must be unmodified.

The Customer may return all Products for repair or replacement due to defects in original materials and workmanship if Monnit is notified within one year of the Customer's receipt of the Product. Monnit reserves the right to repair or replace Products at its own and complete discretion. The Customer must obtain from Monnit a valid RMA number prior to returning any Products to Monnit. Products returned under this Warranty must be unmodified and in original packaging. Monnit reserves the right to refuse warranty repairs or replacements for any Products that are damaged or not in original form. For Products outside the one-year warranty period, repair services are available at Monnit at standard labor rates for a period of one year from the Customer's original date of receipt.

(b) As a condition to Monnit's obligations under the immediately preceding paragraphs, the Customer shall return Products to be examined and replaced to Monnit's facilities, in shipping cartons which clearly display a valid RMA number provided by Monnit. The Customer acknowledges that replacement Products may be repaired, refurbished or tested, and found to be complying. The Customer shall bear the risk of loss for such return shipment and shall bear all shipping costs. Monnit shall deliver replacements for Products determined by Monnit to be properly returned, shall bear the risk of loss and such costs of shipment of repaired Products or replacements, and shall credit the Customer's reasonable costs of shipping such returned Products against future purchases.

(c) Monnit's sole obligation under the Warranty described or set forth here shall be to repair or replace non-conforming Products as set forth in the immediately preceding paragraph, or to refund the documented purchase price for non-conforming Products to the Customer. Monnit's Warranty obligations shall run solely to the Customer, and Monnit shall have no obligation to the customers of a Customer or other users of the Products.

Limitation of Warranty and Remedies

THE WARRANTY SET FORTH HEREIN IS THE ONLY WARRANTY APPLICABLE TO PRODUCTS PURCHASED BY THE CUSTOMER. ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. MONNIT'S LIABILITY WHETHER IN CONTRACT, IN TORT, UNDER ANY WARRANTY, IN NEGLIGENCE, OR OTHERWISE SHALL NOT EXCEED THE PURCHASE PRICE PAID BY CUSTOMER FOR THE PRODUCT. UNDER NO CIRCUMSTANCES SHALL MONNIT BE LIABLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES. THE PRICE STATED FOR THE PRODUCTS IS A CONSIDERATION IN LIMITING MONNIT'S LIABILITY. NO ACTION, REGARDLESS OF FORM, ARISING OUT OF THIS AGREEMENT MAY BE BROUGHT BY CUSTOMER MORE THAN ONE YEAR AFTER THE CAUSE OF ACTION HAS ACCRUED.

IN ADDITION TO THE WARRANTIES DISCLAIMED ABOVE, MONNIT SPECIFICALLY DISCLAIMS ANY AND ALL LIABILITY AND WARRANTIES, IMPLIED OR EXPRESSED, FOR USES REQUIRING FAIL-SAFE PERFORMANCE IN WHICH FAILURE OF A PRODUCT COULD LEAD TO DEATH, SERIOUS PERSONAL INJURY, OR SEVERE PHYSICAL OR ENVIRONMENTAL DAMAGE SUCH AS, BUT NOT LIMITED TO, LIFE SUPPORT OR MEDICAL DEVICES OR NUCLEAR APPLICATIONS. PRODUCTS ARE NOT DESIGNED FOR AND SHOULD NOT BE USED IN ANY OF THESE APPLICATIONS.

CERTIFICATIONS

United States FCC

This equipment has been tested and found to comply with the limits for a Class B digital devices, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of more of the following measures:

- *Reorient or relocate the receiving antenna.*
- *Increase the separation between the equipment and receiver*
- *Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*
- *Consult the dealer or an experienced radio/TV technician for help.*

WARNING: *Changes or modifications not expressly approved by Monnit could void the user's authority to operate the equipment.*

RF Exposure



WARNING: To satisfy FCC RF exposure requirements for mobile transmitting devices, the antenna used for this transmitter must not be co-located in conjunction with any antenna or transmitter.

Monnit and ALTA Wireless Sensors:

This equipment complies with the radiation exposure limits prescribed for an uncontrolled environment for fixed and mobile use conditions. This equipment should be installed and operated with a minimum distance of 23 cm between the radiator and the body of the user or nearby persons.

All ALTA Wireless Sensors Contain FCC ID: ZTL-G2SC1. Approved Antennas

ALTA devices have been designed to operate with an approved antenna listed below, and having a maximum gain of 14 dBi. Antennas having a gain greater than 14 dBi are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

- *Xianzi XQZ-900E (5 dBi Dipole Omnidirectional)*
- *HyperLink HG908U-PRO (8 dBi Fiberglass Omnidirectional)*
- *HyperLink HG8909P (9 dBd Flat Panel Antenna)*
- *HyperLink HG914YE-NF (14 dBd Yagi)*
- *Specialized Manufacturing MC-ANT-20/4.0C (1 dBi 4" whip)*

Canada (IC)

English

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the Equivalent Isotropically Radiated Power (E.I.R.P.) is not more than that necessary for successful communication.

The radio transmitters (IC: 9794A-RFSC1, IC: 9794A-G2SC1, IC: 4160a-CNN0301, IC: 5131A-CE910DUAL, IC: 5131A-HE910NA, IC: 5131A-GE910 and IC: 8595A2AGQN4NNN) have been approved by Industry Canada to operate with the antenna types listed on previous page with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

French

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la Puissance Isotrope Rayonnée Équivalente (P.I.R.É) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Le présent émetteurs radio (IC: 9794A-RFSC1, IC: 9794A-G2SC1, IC: 4160a-CNN0301, IC: 5131A-CE910DUAL, IC: 5131A-HE910NA, IC: 5131A-GE910 et IC: 8595A2AGQN4NNN) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne figurant sur la page précédente et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

SAFETY RECOMMENDATIONS - READ CAREFULLY

Be sure the use of this product is allowed in the country and in the environment required. The use of this product may be dangerous and has to be avoided in the following areas:

- *Where it can interfere with other electronic devices in environments such as hospitals airports, aircraft, etc.*
- *Where there is risk of explosion such as gasoline stations, oil refineries, etc.*

It is the responsibility of the user to enforce the country regulation and the specific environmental regulation.

Do not disassemble the product; any mark of tampering will compromise the warranty validity. We recommend following the instructions of this user guide for correct setup and use of the product.

Please handle the product with care, avoiding any dropping and contact with the internal circuit board as electrostatic discharges may damage the product. The same precautions should be taken if manually inserting a SIM card, checking carefully the instruction for its use. Do not insert or remove the SIM when the product is in power-saving mode.

Every device has to be equipped with a proper antenna with specific characteristics. The antenna has to be installed with care in order to avoid any interference with other electronic devices and has to guarantee a minimum distance from the body (23 cm). In case this requirement cannot be satisfied, the system integrator has to assess the final product against the Suspicious Activity Reports (SAR) regulations.

The European Community provides some Directives for the electronic equipment introduced on the market. All the relevant information is available on the European Community website: <http://ec.europa.eu/enterprise/sectors/rte/documents/>.

Additional Information and Support

For additional information or more detailed instructions on how to use your Monnit Wireless Sensors or iMonnit, please visit us on the web at Monnit.com.



Monnit Corporation

3400 South West Temple • Salt Lake City, UT 84115 • 801-561-5555
www.monnit.com