



Remote Monitoring for Business



ALTA Water Detection Puck Sensor **USER GUIDE**

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I. ABOUT THE WATER DETECTION PUCK SENSOR

GENERAL DESCRIPTION

The [ALTA Wireless Water Detection Puck Sensor](#) detects the presence and absence of water. The convenient watertight puck design allows the sensor to be placed anywhere it's dry or wet. Note: water levels must be ~ 1.6mm high to trigger detection.

SENSOR FEATURES

- Waterproof and fully submersible
- Immediately detects water presence

PRINCIPLE OF OPERATION

The ALTA Wireless Water Detection Puck Sensor detects when water is present by completing the circuit between the two probe points (exposed stainless-steel metal screw heads) on the bottom of the puck sensor. When the detection state changes (water present or absent), the sensor will immediately turn on the radio and transmit the data to the wireless gateway and the iMonnit Online Sensor Monitoring and Notification System. Once data is received in iMonnit, the user-configurable notification system can send emails, text messages, and automated phone calls to alert you to any changes to the sensor. The sensor detects both presence and absence of water.

ALTA SENSOR FEATURES

- Wireless range of 1,200+ feet through 12+ walls ¹
- Frequency-Hopping Spread Spectrum (FHSS)
- Best-in-class interference immunity
- Best-in-class power management for longer battery life ²
- 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 = 3.5 days
 - 2-hour heartbeats = 42 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 and email
- Response time to iMonnit: ~ three seconds

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

- Water heater tank leak monitoring
- Plumbing leak detection
- Data center subfloor water detection
- Water intrusion / flood detection
- Crawl space water intrusion monitoring
- Reservoir / tank-level monitoring



II. SENSOR SECURITY

The ALTA Water Detection Puck has been designed and built to securely manage data. Monnit works to ensure your data security is handled with the utmost care. The same methods utilized by financial institutions to transmit data are also used in Monnit's security infrastructure. Security features from sensors to gateways include tamper-proof network interfaces, data encryption, and bank-grade security.

Monnit's proprietary sensor protocol uses low power and specialized radio equipment to transmit application data. Wireless devices listening on open communication protocols cannot eavesdrop on sensors. Packet-level encryption and verification is key to ensuring data traffic isn't altered between sensors and gateways. Paired with a best-in-class range and power consumption protocol, all data is transmitted securely from your devices, ensuring a smooth, worry-free experience.

SENSOR COMMUNICATION SECURITY

Monnit's sensor-to-gateway, secure wireless tunnel is generated using ECDH-256 (Elliptic Curve Diffie-Hellman) public key exchange to generate a unique symmetric key between each pair of devices. Sensors and gateways use this link-specific key to process packet-level data with hardware-accelerated 128-bit AES encryption, which minimizes power consumption to provide better battery life. Thanks to this combination, Monnit proudly offers robust bank-grade security at every level.

DATA SECURITY ON THE GATEWAY

The ALTA Gateways are designed to prevent prying eyes from accessing the data that is stored on the sensors. Gateways do not run on an off-the-shelf, multi-function operating system. Instead, they run on a purpose-specific, real-time, and embedded state machine that cannot be hacked to run malicious processes. There are also no active interface listeners that can be used to gain access to the device over the network. The fortified gateway secures your data from attackers and secures the gateway from becoming a relay for malicious programs.

iMONNIT SECURITY

The iMonnit system is the online software and central hub for configuring your device settings. All data is secured on dedicated servers operating Microsoft SQL Server. Access is granted through the iMonnit user interface, or an Application Programming Interface (API) safeguarded by 256-bit Transport Layer Security (TLS 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.

III. ORDER OF OPERATIONS

It is important to understand the order of operations for activating your device. If done out of order, your device may have trouble communicating with iMonnit. Please consult the steps below to make sure you are performing your setup correctly.

SETUP STEPS

1. Register your gateway in iMonnit.

Add sensor(s) and gateway(s) to the same network in iMonnit. The sensor must be on the same network as the gateway in iMonnit to work properly.

2. Power on the gateway.

After all of the gateways and sensors are registered to the same network in iMonnit, power on the gateway. If the gateway was already registered on the network and powered on, press the button on the gateway to force it to pick up a new sensor list or reform the gateway via iMonnit. (Wait until the gateway clears the reform command before powering on the sensor.)

3. Power on the sensor.

After the sensor is added and the gateway is communicating with iMonnit, you can power on the sensor. The ALTA Water Detection Puck comes with a magnetic switch, which when placed in the correct spot, activates the sensor. See the Setting Up the Water Detection Puck section for specific details on this process.

4. Position the sensor.

Place the sensor in the desired location within range of the gateway, assemble as needed, and orient the radio antenna for optimal range.

Note: Each step is covered in more detail in the following sections.



IV. SETUP AND INSTALLATION

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.

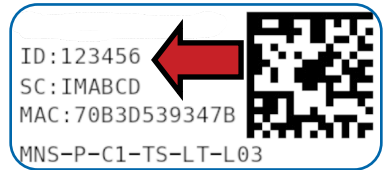


Figure 1

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.

- 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.



Figure 2

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 aware state settings (see page 10 for definitions) .

Select the **Skip** button when completed.

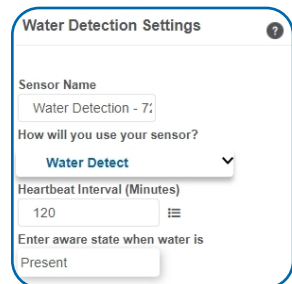


Figure 3

STEP 3: VALIDATION

Check your signal. See Figure 4.

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. See section V of this user guide to learn how to power on the puck sensor via the magnetic reed switch.

Once powered on, the sensor will communicate with the gateway every 30 seconds for the first few minutes.

Select the **Save** button when completed.

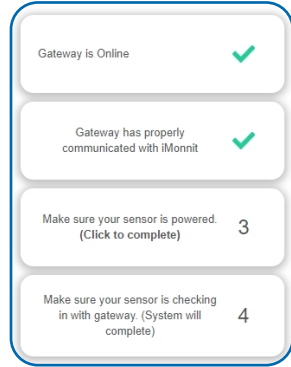


Figure 4

STEP 4: ACTIONS

Choose your Actions. See Figure 5.

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 11 for how to set Actions for your sensor.

Select the **Done** button when completed.

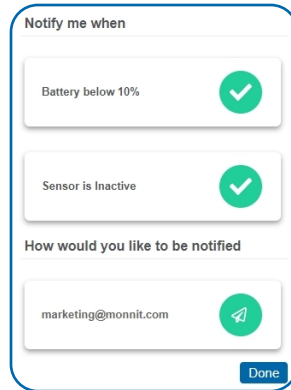


Figure 5

V. POWERING ON AND PLACEMENT

MAGNETIC REED SWITCH

When the Water Detection Puck Sensor is shipped to you, it comes with a small but powerful magnet. This is used to control the power state of the puck. See Figure 6.

Using the magnet will trigger the following reactions from the embedded LED, visible from the underside of the puck (B).

The area marked by the label on the top of the water puck indicates the hot spot location for effective use of the magnetic power control (A).

- Bring the magnet in range of (A) and the LED will illuminate indicating the power state.

- Solid Green: Powered ON, connected to the gateway
- Flash Red, then Solid Green: Powered ON, not connected to the gateway
- Solid Red: Powered OFF, not connected to the gateway

- If the magnet is held in place for two seconds after the LED illuminates, then the LED will flash rapidly.

- Flash Green: Will turn ON after magnet is removed
- Flash Red: Will turn OFF after magnet is removed

- If the magnet is removed after holding it on the hot spot for over two seconds, then the sensor will change its power state.

- Single, Slow Green Flash: Turning ON or powered ON
- Single, Slow Red Flash: Turning OFF

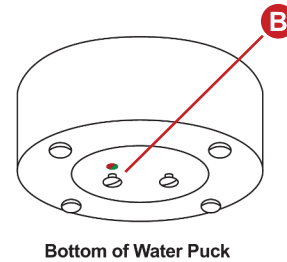
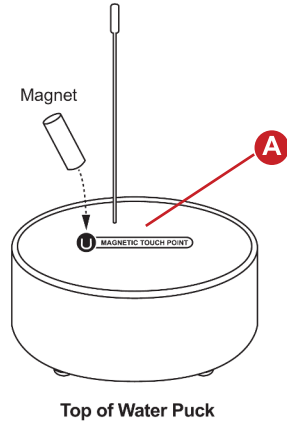
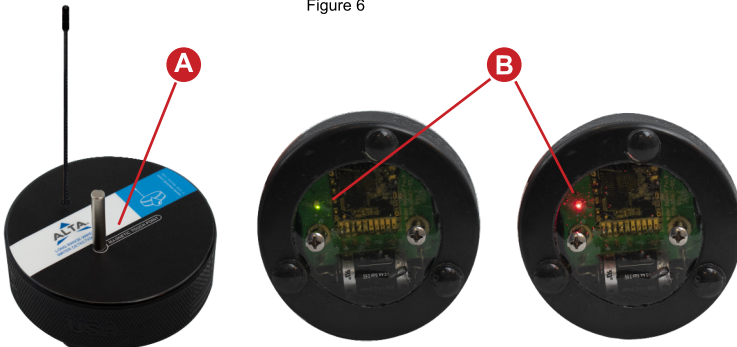


Figure 6



ANTENNA ORIENTATION

Get the best performance out of ALTA devices by correctly positioning antennas. Standard Monnit antennas emit the strongest signal outward (perpendicular) from the sides of the antenna and the weakest signal out of the top or bottom tips of the antenna. See Figure 7.

Set up antennas so that the strong signal from the gateway and sensor antennas intersect. If you install the sensors at the same elevation, orient all antennas vertically for the best performance. In a multilevel structure, where the sensors are immediately above or below the gateway, orient the antennas horizontally for the best performance.

If there are multiple sensors, with some parallel and some perpendicular to the gateway, setting the gateway antenna to a 45-degree angle may give good signal strength for both. However, install two gateways and orient one gateway antenna vertically and the other horizontally for the best performance.

The signal performance will generally improve if the sensor and gateway are mounted farther from the ground. When surrounded by non-RF blocking material (metal, water, and thick, dense material like concrete), surrounded by open-air is ideal. If the sensor has a wire antenna, bend as needed (without twisting) for the greatest signal intersection between the gateway and sensor(s).

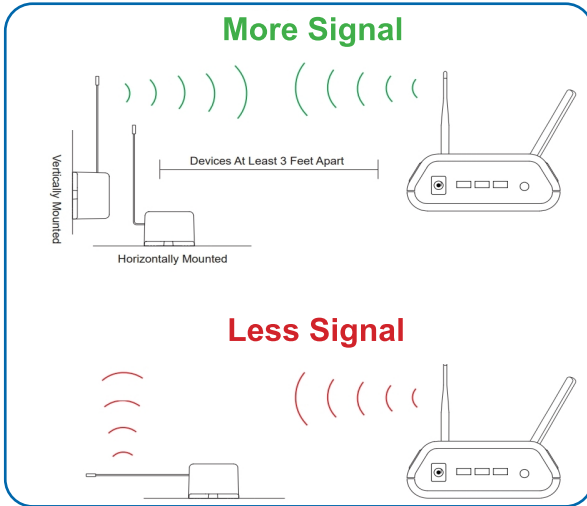


Figure 7

VI. SENSOR OVERVIEW IN iMONNIT

Select **Sensors** from the left main navigation menu on iMonnit to access the **Sensor Overview** page and begin making adjustments to your Water Detection Puck Sensor.

MENU SYSTEM

Details - Displays a graph of recent sensor data

Readings - List of all past heartbeats and readings

Actions - List of all events attached to this sensor

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 8.

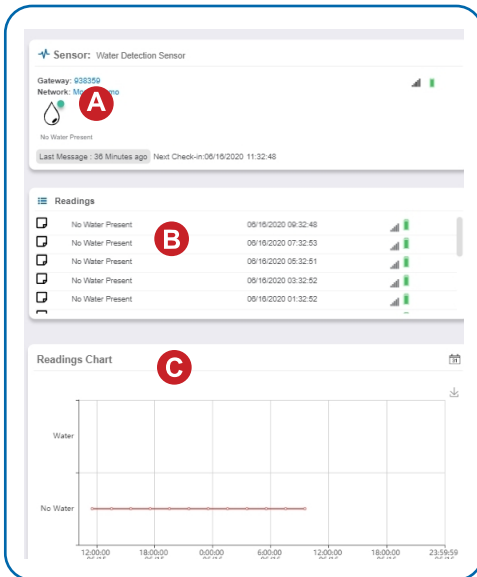


Figure 8


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 recent 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

Selecting the **Readings** tab within the top menu tab bar allows you 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 for 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 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.

Battery: Estimated life remaining of the battery.

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).

Gateway ID: The Identifier of the gateway that relayed the data from the sensor.

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

Signal Strength: Strength of the communication signal between the sensor and the gateway, shown as a percentage value.

Voltage: Actual voltage measured at the sensor battery used to calculate the battery percentage. It's similar to **Received Signal** and you can use one or the other or both.

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.

Using a temperature sensor as an example: If the sensor is using factory calibrations, the Calibrate Active field is set as True (1) so the bit values are 00010000 and it is represented as 16.

If the sensor is outside the Min or Max threshold, the Aware State is set as True (1) so the bit values are 00000010 and it is represented as 2.

If the sensor has just been powered on or reset for any reason, the Test bit is set as True (1) so the bit values are 00000001 and it is represented as 1.

If the user has calibrated the sensor, this field, the **Calibrate Active** field, is set as False AND the sensor is operating inside the Min and Max Thresholds, the bits look like 00000000 this is represented as 0.

Settings View

To edit the operational settings for a Water Detection Puck, choose the **Sensor** option in the main navigation menu, then select the **Settings** tab to access the configuration page. See Figure 9.

Water Settings

Sensor Name
Water Puck Sensor **A**

Heartbeat Interval (Minutes)
120 **B**

Aware State Heartbeat (Minutes)
120 **C**

Enter aware state when water is
Present **D**

Time to Re-Arm (seconds)
1 **E**

Synchronize **F**
 Off

Failed transmissions before link mode
3 **G**

Schedule Sensor

Save Default

Figure 9

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

B. 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. Enter aware state when water is field allows you to set whether you want to be alerted when water is either Present, Absent, or when there is a State Change.

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

F. Synchronize In small sensor networks (less than seven sensors), 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 setting to "On" will synchronize the communication of the sensors.

G. Failed transmissions before link mode is the number of transmissions the sensor sends without a 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.

VII. ACTIONS OVERVIEW

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

You can toggle the **Action Trigger** On or Off by selecting the switch under **Current Action Triggers**. See Figure 10.

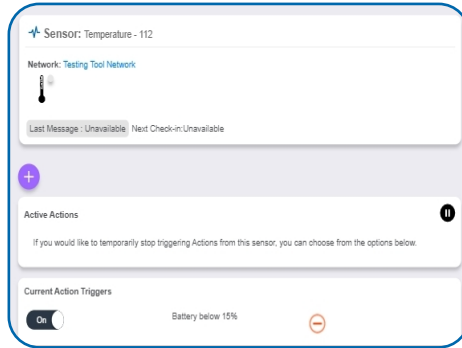


Figure 10

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.

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



Figure 11

- 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.



Figure 12

Step 1: What triggers your Action?

The drop-down menu will have the following options for Action Types (See Figure 13):

- **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.

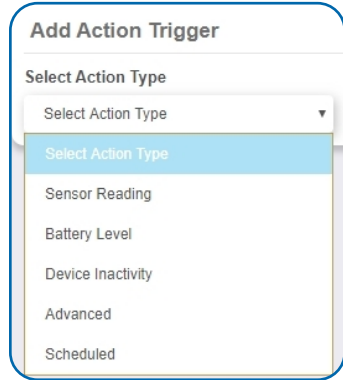


Figure 13

- 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 **Water** in the drop-down menu.
- Next, you will be asked to input the **Trigger** settings. You have the option of setting this Trigger to detect when water is present or alert you when water is not present.

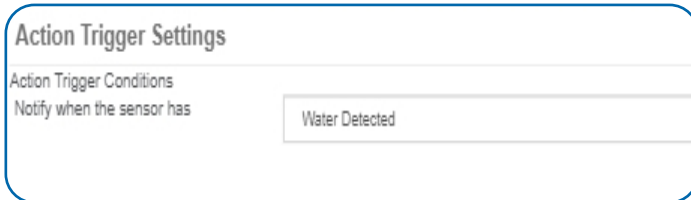


Figure 14

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 15.

B. Customize the message body for the notification. See Figure 15.

C. The **Recipient** list identifies who will receive the notification.
See Figure 16.

Figure 15

Figure 16

- 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 17.

- 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.

Figure 17

Activate: Enable an Action trigger.

Deactivate: Disable an Action trigger.

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 18.
- 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.

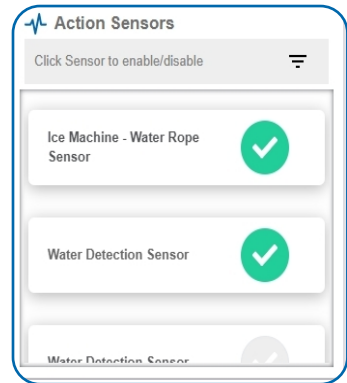


Figure 18

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

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.

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 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 THE 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:

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

- 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 license-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 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's is available on the European Community website: <http://ec.europa.eu/enterprise/sectors/rte/documents/>

The text of the Directive 99/05 regarding telecommunication equipment is available, while the applicable Directives (Low Voltage and EMC) are available at: <http://ec.europa.eu/enterprise/sectors/electrical>

Additional Information and Support

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

Change Log

Revision	Author	Date (yyyy/mm/dd)	Change
1	D. Hill	2021/10/07	Grammatical updates. Added Actions overview section. Removed language about puck antenna. Updated ToC.