



ALTA Wireless Local Alert User Guide

IMPORTANT!

Powering off the Local Alert will delete any saved notifications or sensor readings; however, any configuration changes will be saved.

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I. ABOUT THE ALTA LOCAL ALERT

The ALTA Wireless Local Alert provides three additional ways to receive critical notifications and sensor readings from iMonnit. The Local Alert flashes a red LED, sounds an audible alarm, and displays the important message upon receiving a notification. The Local Alert can also be used to display sensor readings from any sensor on the same account.

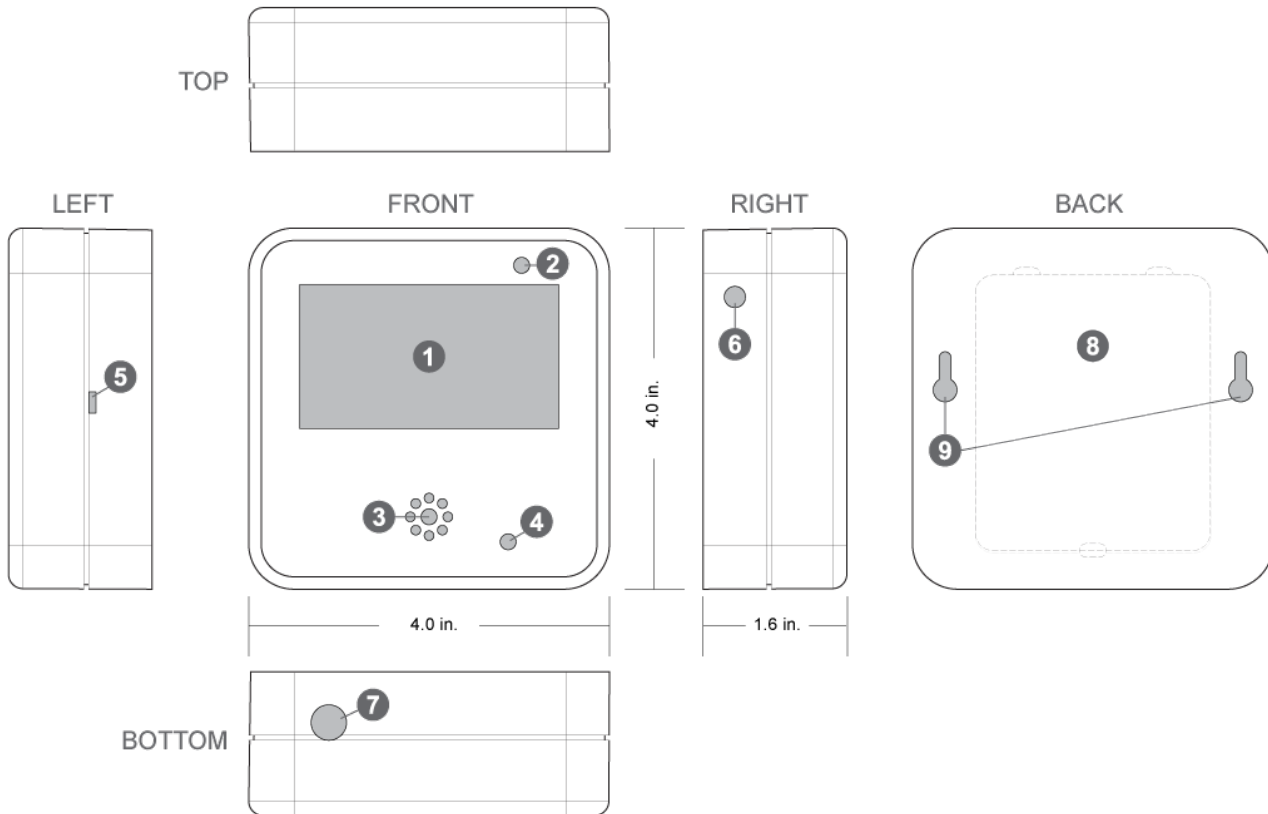
INSIDE THE BOX

You should find the following items in the box:

- ALTA Wireless Local Alert
- Antenna
- 5V Power Supply
- Four AA Batteries
- Mounting Screws

ALTA WIRELESS LOCAL ALERT QUICK START

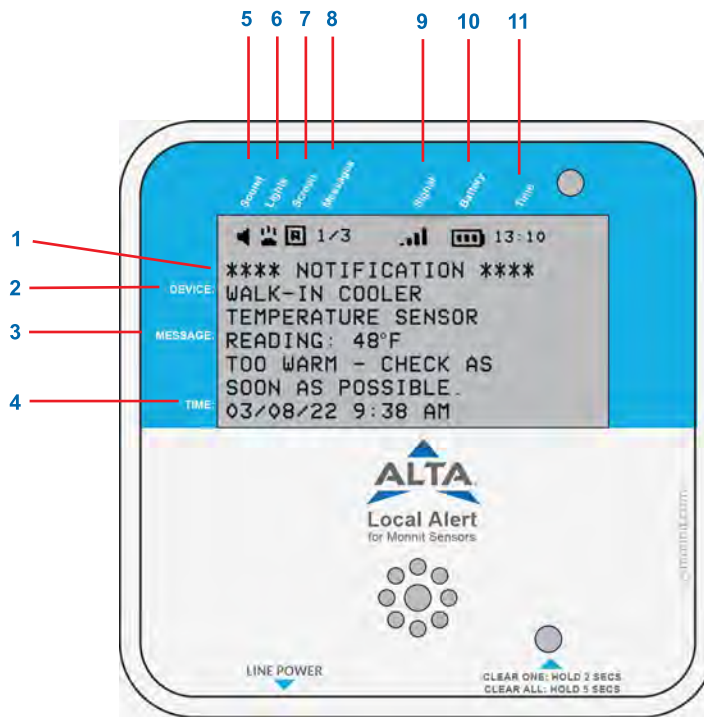
1. Create an iMonnit user account.
2. Add wireless gateway(s) and sensor(s) to the network.
3. Add the Local Alert device to the sensor network.
4. Power on the gateway and verify it checks into iMonnit.
5. Power on the sensors.
6. Power on the Local Alert (batteries or line power).
7. Set up notifications to use the Local Alert.
8. Test the Local Alert by triggering a notification.



1. Backlit LCD shows sensor readings, notifications, and status
2. Red LED for visual alerts
3. Speaker for audible alerts
4. Control button for viewing/deleting messages
5. Power on/off switch
6. SMA antenna port
7. Line-power supply port
8. Battery compartment (four 1.5V AA type batteries)
9. Screw slots for wall mounting



THE LOCAL ALERT INTERFACE



1. Message Type	This line will either indicate a notification or sensor message.
2. Device	The name of the sensor in iMonnit.
3. Message	For notifications, these three lines will contain a custom or auto-generated message identifying the notification. For sensor messages, these three lines will contain the sensor data. These messages can be up to 63 characters long, beyond that the message will be clipped.
4. Time	The time the notification or sensor message was generated. This will align with the account time zone.
5. Sound	When this icon is present, the buzzer alarm is enabled.
6. Lights	When this icon is present, the LED alarm is enabled.
7. Screen	When this icon is present, text LCD alarms are enabled.
8. Messages	The left number indicates the current message being displayed. The right number indicates how many total messages are on the Local Alert.
9. Signal Strength	This icon indicates the signal strength between the ALTA Gateway and the Local Alert with up to four bars. Each bar indicates 25%. If there is a small x appearing above the signal bars, there is less than 0% signal strength. If the signal bars are replaced with a large X , the Local Alert is not connected to a gateway and will be unable to receive new messages from iMonnit.
10. Battery	This icon indicates the battery level of the Local Alert. There are six bars or three pairs of bars. Each bar represents 16%. At 0% there will be 0 bars.
11. Time	Current time in military format with hours and minutes. The time zone is a configuration matched to the time zone of the Local Alert's account. This configuration is sent when any configuration is set in iMonnit, then saved.



ALTA WIRELESS LOCAL ALERT FEATURES

- Three alarm types: Flashing red LED, alarm tones, and custom message display
- Sounds a unique alarm tone sequence when it receives multiple notifications
- Each alarm setting is configurable in iMonnit.
- The LCD shows device name, custom message or sensor reading, and notification time
- Stores up to 10 notifications/readings
- Reports the number of notifications and sensor readings saved on the Local Alert to iMonnit
- Battery-powered, line-powered, or both
- Configurable alarm and snooze intervals
- Configurable Heartbeat and Poll Rate (how often the Local Alert checks the gateway for notifications)
- Displays the status bar while on line power
- Instantly receives notifications from the gateway when using line power and in a sleep state
- Power-saving features automatically enabled to extend battery life
- 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.

LOCAL ALERT - PRINCIPLE OF OPERATION

The ALTA Wireless Local Alert device receives messages (notifications and sensor readings) from iMonnit and delivers alarms via a flashing red LED, tones, and LCD. The Local Alert receives messages, generated in iMonnit, wirelessly through a gateway connected to the iMonnit server, so notifications can be received locally where someone is most capable of responding to a critical condition.

The Local Alert displays notifications and sensor messages. Notifications are messages generated by iMonnit's notification system when a sensor sends data through an ALTA Gateway after it detects a change to a user-defined condition. Notifications can be triggered by sensor specific conditions or even conditions in the iMonnit system. Sensor messages are sensor data messages forwarded from iMonnit to the Local Alert through the Local Alert's gateway. These sensor messages can be generated when data from any ALTA Sensor is received in iMonnit.

When the Local Alert receives a notification, it can set off an audio-visual alarm comprised of a loud 85 dB buzzer, an ultra-bright red flashing LED, and an LCD displaying a custom message to alert the user of a critical condition in their sensor network. After the alarm sounds, with a press of the button, the user can clear the alarm, view a custom notification, the time the notification was sent, and which device detected the critical condition. The button can also be used to clear notifications and reset the device.

When notifications are cleared on the Local Alert an acknowledgment message is also sent from the Local Alert to iMonnit through the Local Alert's gateway. Be aware that acknowledging/clearing notifications in iMonnit will not clear notifications already received on the Local Alert. Messages already received can only be removed from the Local Alert by button holds, resetting the Local Alert, power cycling, or being overridden by more recent messages.

The Local Alert can be set as a device to receive notifications using iMonnit's standard notification interface. Within this interface the Local Alert's specific alarms (LED, buzzer, scrolling message, backlight) can be set along with all of the other standard notification features already available. The Local Alert can also be set up to display sensor messages from other sensors on your iMonnit account. The Local Alert does not communicate directly with sensors. The Local Alert receives all messages (notifications and sensor messages) from iMonnit.

When the Local Alert hasn't received any notifications and is on line power, it will display the status bar indicating the state of the Local Alert and the local time in military format.

The Local Alert can also display sensor readings from any sensor on the same account. Sensor readings, unlike notifications, do not cause alarms to trigger, do not display automatically, and can't override notifications already saved in memory. To view and scroll through sensor readings the user must press the button.



The Local Alert can save up to 10 messages in memory at any given time. If it exceeds 10 messages, the oldest message is deleted. Notifications take priority over sensor readings in the memory, so when the memory is full and a new notification is received, sensor readings are deleted before deleting notifications. If the memory is full of notifications sensor readings will be ignored until there is an unoccupied memory slot or a slot with an older sensor reading.

The Local Alert can be reset by pressing and holding the button for 10 seconds. This is the preferred reset method because this will send a clear-all message to the server prior to the reset. Turning the switch off only clears messages locally, thus the messages on the server may remain unacknowledged.

LOCAL ALERT BEHAVIORS

1. Refer to **Appendix A** for more detailed information on the Local Alert's behaviors.



II. ORDER OF OPERATIONS

It's important to understand and follow the order of operations for activating the ALTA Local Alert. If performed out of sequence, the device may have trouble communicating with iMonnit Software. Please complete the steps below in the order indicated for best results.

SETTING UP A NEW NETWORK

1. **Create an iMonnit Account (If new user).**
2. **Register your gateway(s), sensor(s), and Local Alert in iMonnit.**
3. **Power on / connect the gateway and verify it checks into iMonnit.**
4. **Power on the sensor and verify it checks into iMonnit.**
We recommend powering sensors on near the gateway, then moving to the installation location, checking signal strength along the way.
5. **Power on the Local Alert and verify it checks into iMonnit.**
6. **Configure the gateway, sensors, and Local Alert for use.**

ADDING THE LOCAL ALERT TO AN EXISTING NETWORK

1. **Register the Local Alert in iMonnit.**
2. **Press the button on your gateway to download the Local Alert just registered in iMonnit to the gateway. The gateway can also be powercycled to download the Local Alert.**
3. **Power on the Local Alert and verify it checks into iMonnit.**
4. **Configure the Local Alert for use.**

Note: For information on setting up iMonnit and the gateway, refer to the iMonnit User Guide and the gateway's user guide.

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



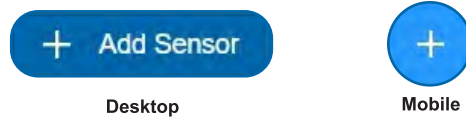
III. SETUP

If this is your first time using the iMonnit online portal, 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 Local Alert to iMonnit.

Add the Local Alert to your account by choosing **Sensors** in the main menu. Then, navigate to the **Add Sensor** button. The Local Alert is added to your account similar to the way a sensor or gateway is added.



2. Find the device ID.

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.



3. Adding your device.

You will need to enter the Device ID and the Security Code from your 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 Security Code manually.



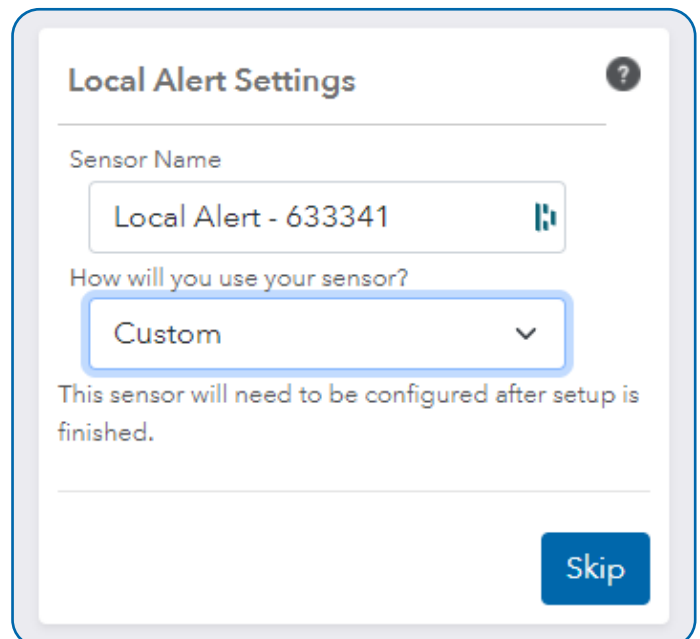
- The Device ID is a unique number located on each device label.
- Next, you'll be asked to enter the Security Code from your device. A security code consists of letters and must be entered in upper case (no numbers). It can also be found on the barcode label of your device.

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

STEP 2: SET UP

Select your use case.

Select **Custom** from the drop-down menu. Then select **Skip**. You will complete these steps later in the setup



STEP 3: VALIDATION

Check your signal.

The validation checklist will help you ensure the Local Alert is communicating with the gateway properly and has a strong signal.

1. Check that your gateway is powered on. If not, press (do not hold) the button. Make sure there are lights on (System will complete): Ensure that the gateway is registered to iMonnit and is connected to power with antenna(s) or an Ethernet cable allowing it to communicate with the Internet.

2. Make sure your gateway has communicated with the iMonnit portal. If not, press (do not hold) the button on the gateway to reset. (System will complete): This step will autocomplete if the gateway is communicating with iMonnit. Press the gateway utility button to ensure the gateway has an updated sensor list and to speed up this process.

3. Make sure Local Alert is powered: Attach the included antenna and switch on the Local Alert (see the [Powering Sensor On and Attach Antenna](#) sections for help in this area). Once you power the Local Alert on by flipping the switch, the device will communicate with the gateway every 30 seconds for the first few minutes.

4. Make sure your Local Alert is checking in with the gateway: Checkpoint 4 will only complete when the Local Alert achieves a solid connection to the gateway. Press the action button on your cellular gateway or Ethernet gateway to force communication.

Select the **Save** button when completed.

Check that your gateway is powered on. If not, press (do not hold) the button make sure there are lights on. (System will complete) 1

Make sure your gateway has communicated with the portal. If not, press (do not hold) button on gateway to reset. (System will complete) 2

Make sure your sensor is powered. (Click to complete) 3

Make sure your sensor is checking in with gateway. (System will complete) 4

Skip These Steps

STEP 4: ACTIONS

Choose your actions.

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 the [Actions Overview](#) section for how to set actions for your Local Alert.

Select the **Done** button when completed.

Notify me when

Battery below 10%

Sensor is Inactive

How would you like to be notified

marketing@monnit.com

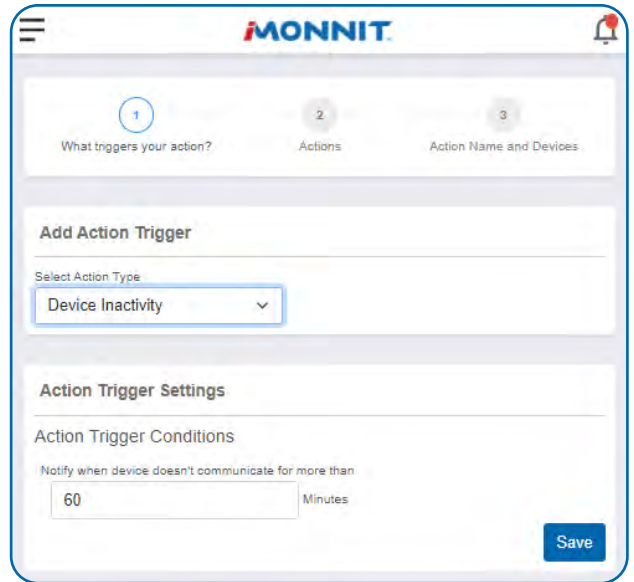
Done



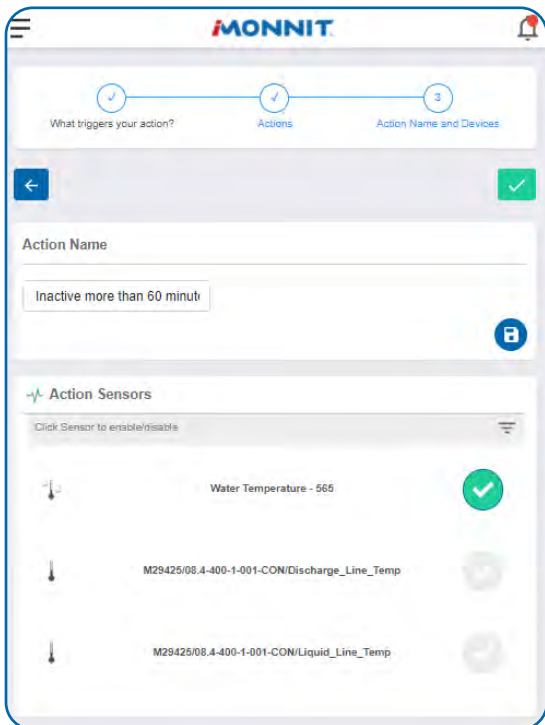
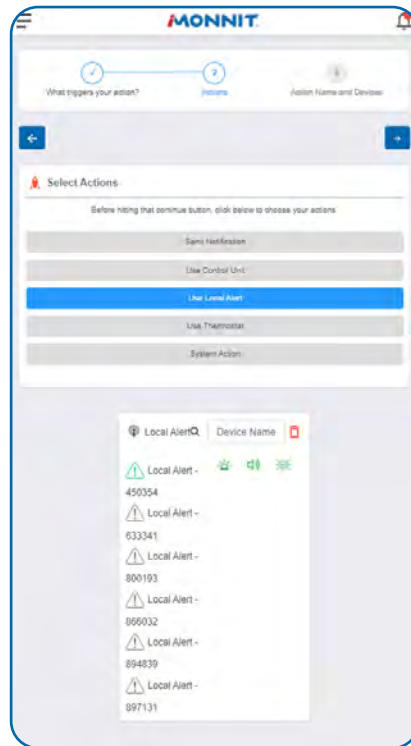
STEP 5: NOTIFICATIONS FOR LOCAL ALERT

Go to Actions in iMonnit and select add (+).

1. Select what Action triggers the notification and press the **Save** button.



2. Press the **Local Alert** button then select one or more Local Alert devices to receive the notification. Click the icons next to the selected Local Alert to activate/deactivate different alarms. Click the **right arrow** button to advance to the sensor selection screen. The message sent to the Local Alert can be customized by clicking **Send Notification** and populating the **SMS Message** then pressing **Save**.



3. Select the sensors or gateways that will trigger the notification when the action trigger condition is met, then press the **Save** button.



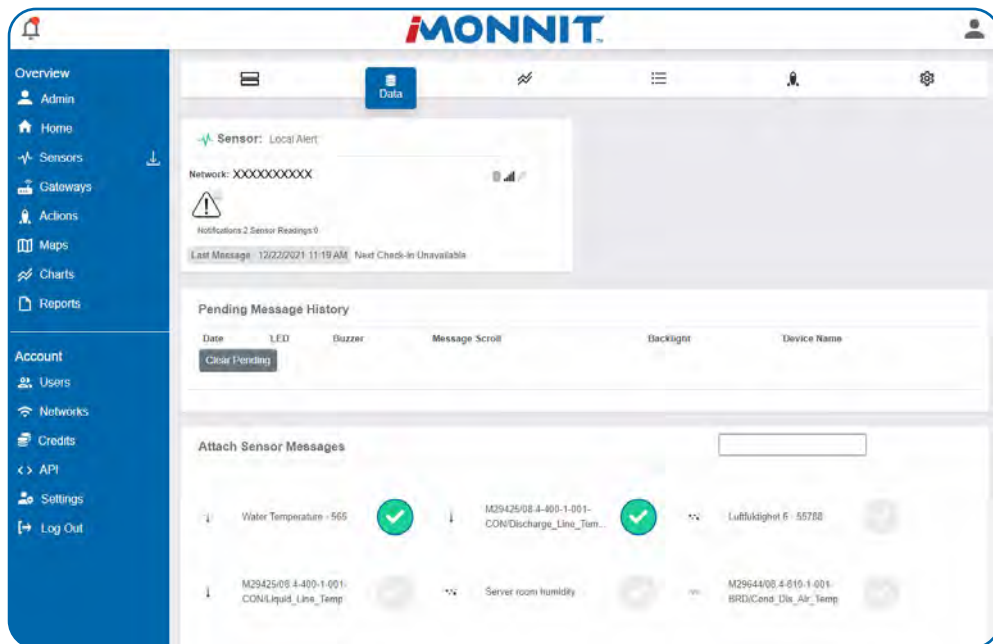
STEP 6: SENSOR READINGS FOR LOCAL ALERT

1. Select the **Local Alert** device in the **Overview** screen.

2. Go to the **Data** tab.

3. Add sensors using the **Attach Sensor Messages** screen.

Note: Pending Message History displays all notifications and sensor readings that have not yet been received by the Local Alert. The **Clear Pending** button will clear everything in the **Pending Message History** list.



POWERING THE LOCAL ALERT ON AND INSTALLING THE ANTENNA

Attach Antenna

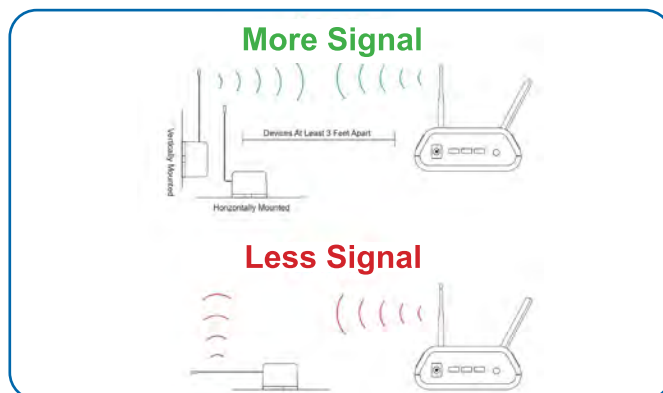
In order for the Local Alert to function properly, you will need to attach the included antenna. Simply screw the antenna onto the barrel connector on the side of the device. Make sure the antenna connection is snug, but do not overtighten. Refer to Antenna Orientation guide below for best performance.

Powering On the Local Alert

Insert batteries and/or line power and slide the switch on left side to the "On" position.

Antenna Orientation

In order to get the best performance out of your ALTA device, it is important to note proper antenna orientation and device positioning. Radio performance is best when device and gateway antenna are pointing in the same direction and installed on the same plane. For devices installed on the same horizontal plane this means the antenna should be pointed straight up. If devices are installed on the same vertical plane antenna should be aligned on the same horizontal plane and still pointing in the same direction.



Resetting Sensor

If the sensor needs to be reset for any reason, you can simply cycle the power by toggling the switch to the "Off" position and waiting 30 seconds before powering back on. Holding the tactile button for 10+ seconds will also cause a reset.

Storage

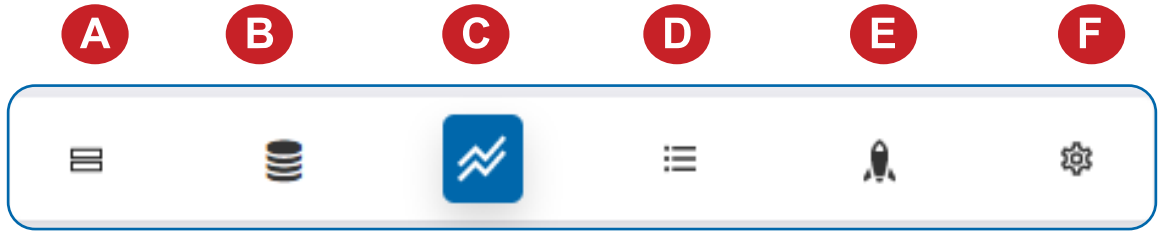
Always set the power switch to the "Off" before storing the Local Alert to preserve battery life.



IV. LOCAL ALERT OVERVIEW IN iMONNIT

Select **Sensors** from the main navigation menu on iMonnit to access the sensor overview page and begin making adjustments to your Local Alert.

MENU SYSTEM



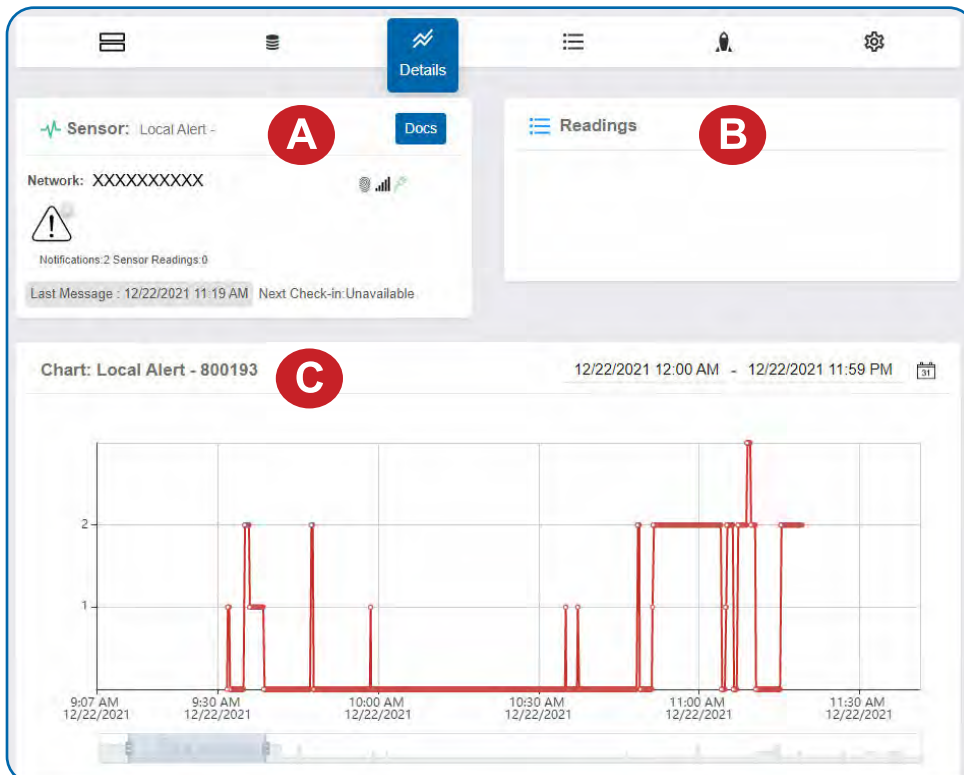
- A. Sensors** - Returns to the list of sensors and Local Alert devices on your account
- B. Data** - Lists sensors that iMonnit can send data back to the Local Alert
- C. Details** - Displays a graph or recent message counts from the Local Alert
- D. Readings** - List of message counts received by the Local Alert over time
- E. Actions** - List of Actions that the Local Alert is configured to trigger
- F. Settings** - Configurations you can make to how the Local Alert functions

Directly under the tab bar is an overview of the Local Alert. This allows you to see the signal strength and the battery level of the selected sensor or Local Alert. A colored dot in the left corner of the sensor icon denotes its status.

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

Details View

The Details View will be the first page you see upon selecting which sensor or Local Alert you would like to modify.



A. The sensor or Local Alert 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 below the chart shows your most recent data received by the Local Alert.

C. This graph charts how the Local Alert fluctuates throughout a set date range. To change the date range displayed in the graph, navigate to the top of the Readings Chart section on the right-hand corner to change the from and/or to date.



Readings View

Selecting the **Readings Tab** within the tab bar allows you to view the Local Alert'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 your Local Alert into your download 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:

MessageID: Unique identifier of the message in our database.

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

Sensor Name: The name you have given the Local Alert.

Date: The date the message was transmitted from the Local Alert.

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

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

Raw Data: Raw data as it is stored from the Local Alert.

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

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

Sensor State

The value presented here is generated from a single byte of stored data. A byte consists of 8 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 and Local Alert devices become aware when critical sensor-specific conditions are met. Going aware can cause the Local Alert 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 Local Alert is first powered on or reset and remains active for the first nine messages when using default configurations.

STS Specific Codes (aaaa -> bit 4321):

1. The Local Alert does not have any specific STS codes this value will always be 0.



Settings View

To edit the operational settings for the Local Alert, choose the **Sensor** option in the main navigation menu and then select the **Settings** tab to access the configuration page.

A. Sensor Name is the unique name you give the Local Alert to identify it in a list along with any notifications.

B. Heartbeat Interval is how often the Local Alert communicates with the server if no activity is recorded.

C. Poll Rate: How often the Local Alert checks the gateway for notifications.

D. Alarm Time: How long the alarm sounds before it snoozes.

E. Snooze Time: How long the alarm is turned off before alarming again (a new notification will force the device back into the alarm state).

F. Enable Backlight: This controls the LCD backlight when displaying time and when scrolling messages during alarms.

G. Enable LED Alarm: Enables flashing LED in the Alarm On state.

H. Enable Buzzer Alarm: Enables buzzer alarm in the Alarm On state.

I. Enable Scrolling Display Message: Enables notification messages in the Alarm On state.

J. Message Scroll Speed: How long a message is displayed in the Alarm On state before scrolling to the next message.

K. Time Zone Offset: Sets the time on the Local Alert to the same time zone as the iMonnit account.

L. LCD Contrast: Increasing LCD contrast will darken the LCD pixels and decreasing will lighten them. Increasing the contrast too much can saturate the display making the display unreadable. Decreasing the contrast too much can lighten the pixels to the point where the screen appears blank.

M. Volume Control: The buzzer on the Local Alert can be set to High, Medium, or Low levels to better suit the application needs.

N. Failed transmissions before link mode is the number of transmissions the Local Alert sends without response from a gateway before it goes to battery-saving link mode. In link mode, the Local Alert 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 Local Alert devices to find new gateways with fewer missed readings. Higher numbers will enable the Local Alert to remain with its current gateway in a noisy RF environment. Zero will cause the Local Alert to never join another gateway. To find a new gateway, the battery will have to be cycled out of the Local Alert.

Finish by selecting the **Save** button.

The screenshot shows the 'Local Alert Settings' page. The settings are as follows:

- A:** Sensor Name: Local Alert - 894839
- B:** Heartbeat Interval (Minutes): 15
- C:** Poll Rate (Minutes): 0.5
- D:** Alarm Time (Minutes): 0.25
- E:** Snooze Time (Minutes): 10
- F:** Enable BackLight: Enabled
- G:** Enable LED Alarm: Enabled
- H:** Enable Buzzer Alarm: Enabled
- I:** Enable Scrolling Display Alarm: Enabled
- J:** Message Scroll Speed (Sec): 5
- K:** Timezone Offset (Minutes): -360
- L:** LCD Contrast: 32
- M:** Volume Control: High
- N:** Failed transmissions before link mode: 10

Buttons at the bottom: Schedule Sensor, Default, Save.

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



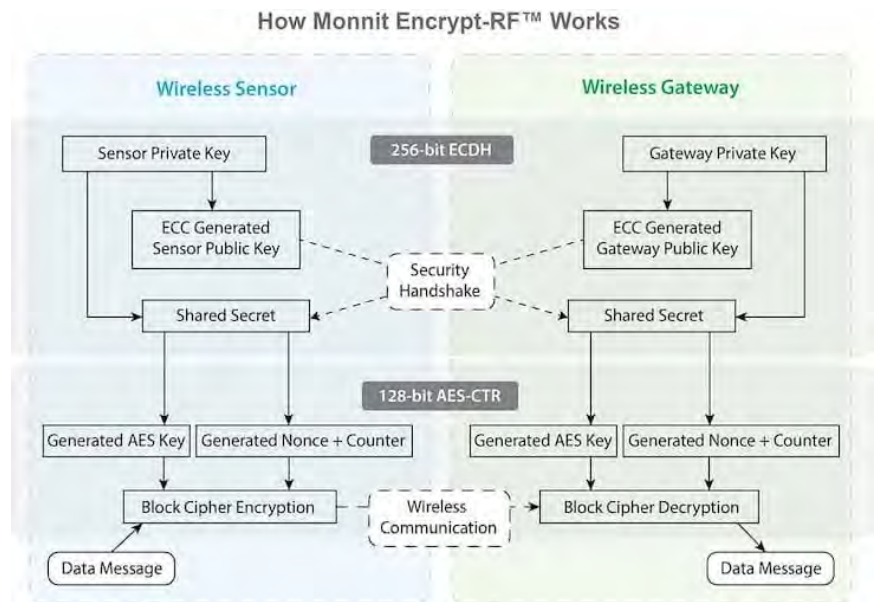
V. SECURITY

Monnit ALTA Wireless, PoE•X (Power over Ethernet), and MoWi (Wi-Fi) Sensors are 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 to Local Alert devices 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 or Local Alert devices. 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, **Encrypt-RF™**, is generated using ECDH-256 (Elliptic Curve Diffie-Hellman) public key exchange to generate a unique symmetric key between each pair of devices. Sensors, Local Alert devices, 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



DATA SECURITY ON THE GATEWAY

ALTA Gateways are designed to prevent prying eyes from accessing the data that is stored on the sensors and Local Alert devices. 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.

OPTIONAL DATA AUTHENTICATION

SensorPrints is the industry's only end-to-end Internet of Things (IoT) data authentication platform for low-power wireless sensors. SensorPrints authenticates data by issuing a unique fingerprint for each device within the IoT. Data is secured from the point of generation to the point of consumption. Easy to install and use, SensorPrints is the definitive IoT security solution for any enterprise.

SensorPrints authenticates data at both the point of generation and consumption, creating trust between the sensor and server levels. Implementing 256-bit SHA 3 authentication, SensorPrints creates a "fingerprint" for a Monnit Wireless Sensor that contains an authenticated sensor message. When data is transmitted from the sensor, it is accompanied by a generated authentication token. Upon receipt by the application, the token is evaluated via cryptographic hash function against a unique per sensor secret key. This step provides an unprecedented level of full-coverage security for any Monnit user wishing to secure their IoT devices and data. More information can be found at <https://www.monnit.com/products/software/sensorprints-data-authentication/>.



VI.TROUBLESHOOTING

Symptoms	Detailed Problem Description	Solution
Not Checking into iMonnit	The Local Alert lost the radio link to the gateway or never connected to the gateway.	<p>Power cycle the Local Alert by turning the switch off for 60 seconds then toggling it on.</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. 3. Move the Local Alert ~10 feet from the gateway. 4. Move progressively further from the gateway, ensuring at least two signal bars are showing. Keep in mind the signal bars represent signal from the previous message, not the current message. We recommend taking two readings to verify signal strength. 5. Check antenna on the gateway and the Local Alert.
Low Signal	Radio signal strength in iMonnit is lower than expected.	<ol style="list-style-type: none"> 1. Ensure the gateway/Local Alert antenna is properly connected. 2. Ensure the gateway/Local Alert antenna is optimally oriented with respect to the position of the Local Alert. (See Antenna Orientation section in the User Guide).
Notifications Delayed	Notifications are taking longer than expected to appear on the Local Alert after the notification was generated in iMonnit.	<ol style="list-style-type: none"> 1. Check the Heartbeat on the gateway that the Local Alert is connected to in iMonnit. The notification must get to the gateway before being sent to the Local Alert and messages are only sent down to the gateway when the gateway talks into iMonnit so a shorter gateway Heartbeat will shorten this potential point of delay. 2. If the Local Alert is on battery power only try reducing the Poll rate on the Local Alert. Similar to the gateway, the Local Alert will pick up notifications already sent to the gateway when it communicates with the gateway, reducing the Poll rate will reduce the delay in this process. 3. If the Local Alert is on line power, the Local Alert's radio is always listening for traffic from the gateway. When the gateway receives a notification from iMonnit it will transmit the notification immediately without first communicating with the Local Alert. If the Local Alert hears this message it will quickly pick up the notification. If for some reason the Local Alert does not hear this message the message will still be received on Local Alert's next Poll or Heartbeat. 4. Is the Local Alert consistently connected to the gateway. If the Local Alert loses connection to the gateway it will not be able to receive notifications until this connection is reestablished. Refer to "Not Checking into iMonnit" to troubleshoot connection issues.



Symptoms	Detailed Problem Description	Solution
Sensor Messages Going Down to the Local Alert are Delayed	Sensor Messages Going Down to the Local Alert are Delayed	<ol style="list-style-type: none"> 1. Sensor messages are not sent down urgently to the Local Alert. These messages will be delayed by up to the gateway Heartbeat + Local Alert Poll Rate after the message is generated by iMonnit.
Misc Hardware Issues	Display, LED, buzzer, backlight, or power input issues.	<ol style="list-style-type: none"> 1. Double check configurations in iMonnit and make sure the display, LED, buzzer, and backlight are activated in the Local Alert settings page as well as in the notifications. 2. Power cycle the Local Alert. Upon power up, the Local Alert activates the LED, display (all pixels darkened), buzzer (all three volume levels), and the backlight. If any of these does not appear to be working contact Monnit Support. 3. The Local Alert can be powered from battery and/or line power. When on battery only, a battery icon will appear in the status bar at the top of the display. If this icon has 0 bars filled, check the batteries. If on line power, a line power icon will appear in place of the battery, if this icon appears then line power is working properly.
Alarms are not Firing as Expected	Either, alarms that are not set are firing or alarms that are set are not firing as expected.	Alarms (LED, Buzzer, Text Message, Backlight) are controlled by the Local Alert's settings and active alarms in notifications. When a notification is received by the Local Alert, it will activate alarms based on Settings AND (Notification1 OR Notification2 OR ...NotificationN). In simpler terms, if the alarm setting is off, that alarm will not be able to activate regardless of what notifications are set. If the setting is on and at least one notification received by the Local Alert has that alarm active, that alarm will activate.

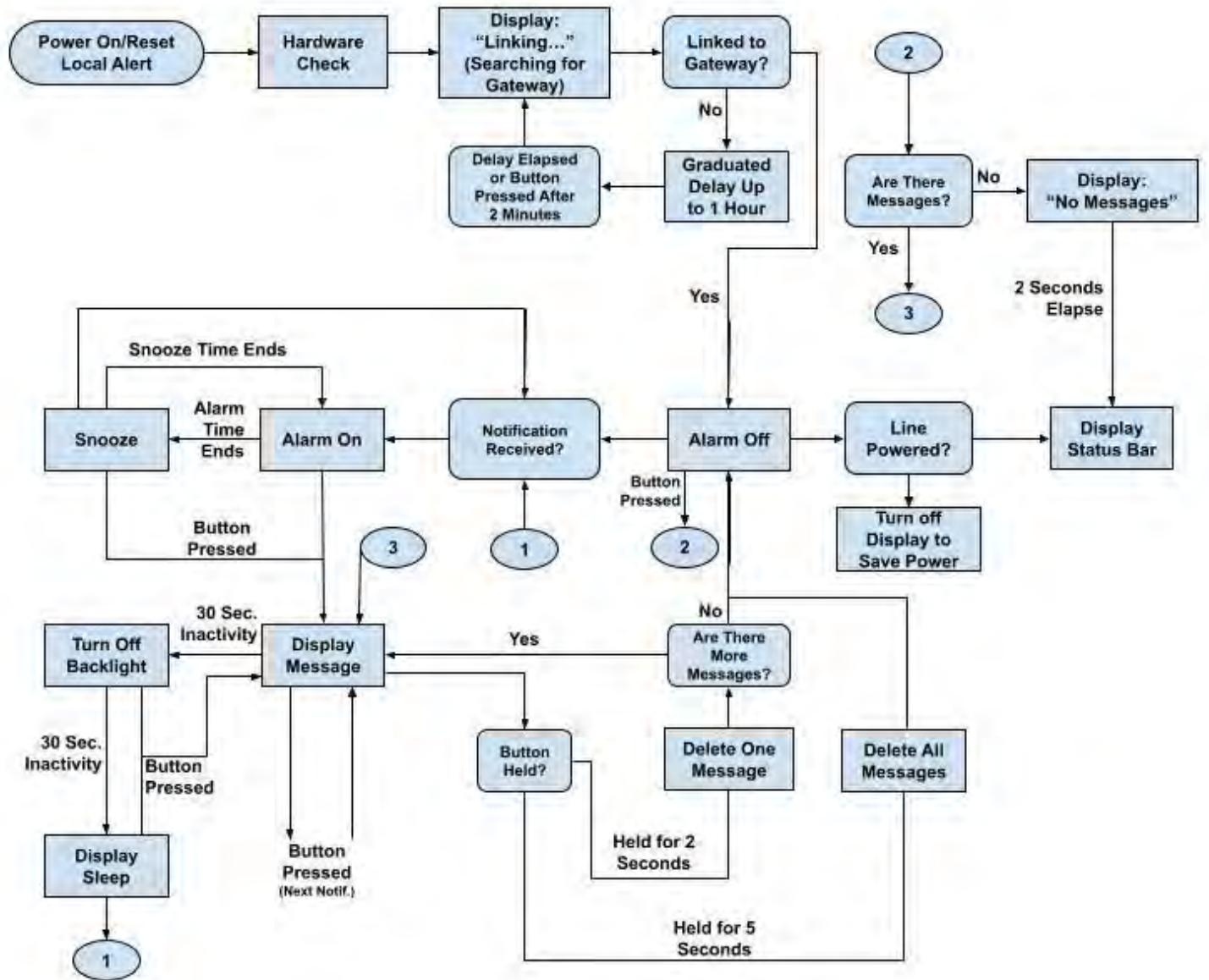


VII. APPENDIX A

<p>LED</p>	<p>The LED will flash three times per notification saved in memory when a notification is received and the LED alarm is enabled on the Local Alert and in the notification.</p> <p>It will flash twice after the button has been held for two seconds or five times after the button has been held while viewing notifications/readings (see “Button” section).</p> <p>It will flash three times slowly after being held for 10 seconds right before resetting.</p>
<p>Display</p>	<p>While the Local Alert is inactive and on line power the status bar will be displayed along with the current time.</p> <p>While the Local Alert is inactive and only on battery power the display will be off to save power.</p> <p>A notification message will appear on the display automatically after receiving a notification if the display alarm is enabled in the Local Alert configurations and in the notification.</p> <p>After a notification or sensor reading is received, pressing the button once will cause the notification/reading to be displayed.</p>
<p>Buzzer</p>	<p>If the buzzer alarm option is enabled in iMonnit and the buzzer alarm is enabled in the notification, the buzzer will turn on when the Local Alert receives a notification.</p>
<p>Backlight</p>	<p>The backlight will be on while information is displayed on the screen when the backlight configuration is enabled in the Local Alert's edit tab.</p> <p>While notifications/readings are being viewed after pressing the button, the backlight will always turn on for enhanced readability. After thirty seconds of viewing a notification/reading without any user interaction, the backlight will turn off automatically. Pressing the button at this point will turn it back on.</p>
<p>Button</p>	<p>Pressing the button while the Local Alert is alarming will turn the alarm off and display the most recent notification message. While viewing notifications/readings, pressing the button will scroll to the next notification/reading.</p> <p>Pressing the button while the device is sleeping (display and alarms off or only the status bar is visible), will cause the display status bar to appear along with a message indicating no messages.</p> <p>Holding the button for 2 seconds (until the LED flashes twice) will clear the current notification/reading being viewed.</p> <p>Holding the button for 5 seconds (until the LED flashes five times) while viewing notifications/readings will clear all notifications/readings. NOTE: The LED does not have to finish flashing when the button is held for the clear command to be accepted.</p>
<p>Memory</p>	<p>The Local Alert has 10 memory slots to hold notifications or sensor readings.</p> <p>The most recent notification takes priority in this memory space. If a new notification is received and the memory is full, the oldest sensor reading will be deleted first to make room for the notification. If there are no sensor readings, the oldest notification will be deleted. If there are open memory slots, nothing will be deleted unless the reading or notification is cleared by the user.</p> <p>If a new sensor reading is received and the memory is full, the oldest sensor reading will be deleted to make room for the new reading. But, if there are only notifications in memory, the sensor reading will be discarded.</p>



VIII. LOCAL ALERT BEHAVIORAL FLOW DIAGRAM



ALTA WIRELESS LOCAL ALERT SPECIFICATIONS

Power

Standard Operating Range	5 – 8 VDC (can be powered by line power or batteries.)	
Power Options	- 5.5 VDC @ 900 mA power supply (included) - 4 x AA sized 1.5V alkaline batteries (included)	
Current Consumption	10 uA (sleep mode) 20 mA (radio RX mode) 37 mA (radio TX mode)	20 mA (buzzer) 520 uA (LCD) 30 mA (LCD backlight)


Operation

Radio Frequencies	Available: 940, 900, 868, and 433 MHz
Antenna	Connector: RP SMA Female Gain: 3.0 dBi
Wireless Range	1200 ft. non-line-of-sight
Wireless Communication	Messages are sent from software through gateway (no direct sensor to device communication is supported) ¹
Message Storage / Memory	10 messages (notifications or sensor readings)

Mechanical

Display	LCD (8 lines of text) 128 x 32 pixels 71.55 mm (diagonal) Transflective (visible in sunlight without backlight)
LED	One Ultra Bright Red LED (1630 mcd, 110° x 45° Viewing Angle)
Buzzer	~85 dB @ 30 cm, 2.5 KHz +/- 500 Hz
Enclosure	ABS plastic
Dimensions	4.0 x 4.0 x 1.6 in. (101.6 x 101.6 x 40.64 mm) Excluding antenna
Weight	11.2 ounces (with batteries installed)

Environmental

Operating Temperature	-18° to +55°C (0° to +130°F) ²
Storage Temperature	-20° to +70°C (-4° to +158°F)
Certifications 	900 MHz product; FCC ID: ZTL-G2SC1 and IC: 9794A-G2SC1. 868 and 433 MHz product tested and found to comply with: EN 300 220-2 V3.1.1 (2017-02), EN 300 220-2 V3.1.1 (2017-02), and EN 60950

¹ ALTA Local Alert units require an ALTA Wireless Gateway for operation.

² At temperatures above 100°C, it is possible for the board circuitry to lose programmed memory.

INTERPRETING SENSOR DATA

User Interface: xx Notifications, xx Sensor Readings	Raw Data: (data type, conversion, units) Notifications: unsigned char, no conversion, NA Sensor Readings: unsigned char, no conversion, NA
Raw Data (Exported .csv Representation)	Notifications Sensor Readings Example: 1 3



WARRANTY INFORMATION

(a) Monnit warrants that Monnit-branded products will be free from defects in materials and workmanship for a period of one (1) year from the date of delivery 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 after Monnit receives from 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 non-conforming Products with conforming Products or Products having substantially identical form, fit, and function and deliver the repaired or replacement Product to a carrier for land shipment to customer within a reasonable period after Monnit receives from 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. Customer must obtain from Monnit a Return Material Authorization Number (RMA) prior to returning any Products to Monnit. Products returned under this Warranty must be unmodified.

Customer may return all Products for repair or replacement due to defects in original materials and workmanship if Monnit is notified within ninety (90) days of customer's receipt of the product. Monnit reserves the right to repair or replace products at its own and complete discretion. Customer must obtain from Monnit a Return Material Authorization Number (RMA) 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 ninety-day 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, 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. Customer acknowledges that replacement products may be repaired, refurbished or tested and found to be complying. 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 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 Customer. Monnit's warranty obligations shall run solely to Customer, and Monnit shall have no obligation to customers of 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 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

**Monnit Wireless Local Alert Contains:
FCC ID: ZTL-RFSC1**



This device has been designed to operate with an approved antenna listed below, and having a maximum gain of 5.1 dBi. Antennas not included in this list or having a gain greater than 5.1 dBi are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that required for successful communication.

Approved Antennas

The following antennas are approved for use with Monnit devices.

- Hyperlink HG905RD-RSP (5.1 dBi Rubber Duck)
- Pulse W1063 (3.0 dBi Rubber Duck)
- ChangHong GSM-09 (2.0 dBi Rubber Duck)

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 transmitter (IC: 9794A-RFSC1) has 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.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Le présent émetteur radio (IC: 9794A-RFSC1) 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.

Error Reporting, Troubleshooting and Support

For technical support and troubleshooting tips please visit our support library online at <http://www.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, and 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.

Additional Information and Support

For additional information or more detailed instructions on how to use your Monnit Wireless Sensors or the iMonnit Online System, please visit us on the web at <http://www.monnit.com/support/>.

For additional information or more detailed instructions on how to use your Monnit Wireless Sensors or sensor monitoring software, please visit us on the web at <http://www.monnit.com/support/>.



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