



Remote Monitoring for Business



Sensor Adapter USER GUIDE

Before You Plug In Your ALTA Wireless Sensor Adapter

- Unpack the contents of your kit(s) and become familiar with the types of sensors that are included. Double check that all packaged components are present.
- Before connecting the ALTA Wireless Sensor Adapter to your computer, you will need to create a Monnit account, add the sensor adapter and any wireless sensors to your account, and install the Monnit USB gateway software.

System Requirements

- An available USB port
- Windows 10, 8, 7 or Vista with 512 MB memory (1024 MB Rec.)
Windows XP or older not supported
- 20 MB free disk space
- ASP.NET 3.5

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I. ABOUT THE SENSOR ADAPTER

The [ALTA Wireless Sensor Adapter](#) allows ALTA long range wireless sensors to communicate with local or online wireless sensor monitoring systems by connecting to a PC or 3rd party IoT gateways via USB connection.

Easy plug & play support for PC use. If the PC has an active internet connection and you wish to use it with the iMonnit online software, install the free Monnit Gateway application to pass sensor data to the online system. If you wish to use your wireless sensors locally (collect and store sensor data on your PC), purchase and install the Monnit Express standalone software and all sensor data will be stored within the standalone software's database. The Monnit Express software allows you to export sensor data in a .csv format spreadsheet, and is also capable of sending SMS text and email alerts if the host computer has an active Internet connection.

With the online iMonnit software, you can easily configure your network, view collected sensor data and set alarms through SMS or e-mail, all from any web enabled browser. The system allows for complete configuration and customization at a sensor, local network, or client wide level.

The ALTA wireless sensor adapter is specifically designed to respond to the increasing market need for global technology that accommodates a variety of vertical M2M application segments and remote wireless sensor management solutions. With support for several leading 3rd party IoT gateways, it is easy to integrate ALTA long range wireless sensors with existing IoT platforms.

Enjoy reliable, low cost, wireless monitoring of your facilities or specific applications, with Monnit wireless sensor networks.

ALTA WIRELESS SENSOR ADAPTER FEATURES

- Wireless range of 1,000+ feet through 12-14 walls *
- 900 MHz Frequency Hopping Spread Spectrum (FHSS) 868 and 433 MHz Frequency Agile
- Improved interference immunity
- Encrypt-RF™ Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- 12,000 sensor message memory
- Over the air updates (future proof)
- Optional RS232 DB9 communication port
- USB, RS232, or external power options
- Can be used with both iMonnit Online Software or Monnit Express Standalone PC Software
- Uses standard FTDI driver so no driver installation required
- External USB cable allows gateway to be positioned for improved communication range
- Programmable heart-beat control
- Supports up to 100 wireless sensors per USB
- Windows 10, 8, 7, and Vista compatible

* Actual range may vary depending on environment.

EXAMPLE APPLICATIONS

- Facilities / Building Operations
- Restaurants / Food Service
- Server Rooms / Data Closets
- Pharmaceutical / Labs
- Heating and Cooling
- Agriculture Monitoring
- [Additional applications](#)



II. SENSOR ADAPTER SECURITY

The ALTA Sensor Adapter has been designed and built to securely manage data from sensors monitoring your environment and equipment. Hacking from botnets are in the headlines, Monnit Corporation has taken extreme measures to ensure your data security is handled with the utmost care and attention to detail. The same methods utilized by financial institutions to transmit data are also used in Monnit security infrastructure. Security features of the adapter include tamper proof network interfaces, data encryption, and bank-grade security.

Monnit's proprietary sensor protocol uses low transmit 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 traffic isn't altered between sensors and gateways. Paired with best-in-class range and power consumption protocol, all data is transmitted securely from your devices. Thereby ensuring a smooth, worry-free, experience.

SENSOR COMMUNICATION SECURITY

Monnit 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 industry best battery life. Thanks to this combination, Monnit proudly offers robust bank-grade security at every level.

DATA SECURITY ON A GATEWAY

Gateways are designed to prevent prying eyes from accessing the data that is stored on the sensors. A gateway does not run on an off the shelf multi-function OS (operating system). Instead it runs a purpose specific real-time 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.

SERVER COMMUNICATION SECURITY

Communication between your gateway and iMonnit is secured by packet level encryption. Similar to the security between the sensors and gateway, the gateway and server also establish a unique key using ECDH-256 for encrypting data. The packet level data is encrypted end to end removing additional requirements to configure specialized cellular VPN's. The gateway can still operate within a VPN if it is present. Because all traffic is initiated from the gateway there is no special IP configuration needed for the gateway allowing it to operate with any enabled SIM provider.



III. ADAPTER REGISTRATION

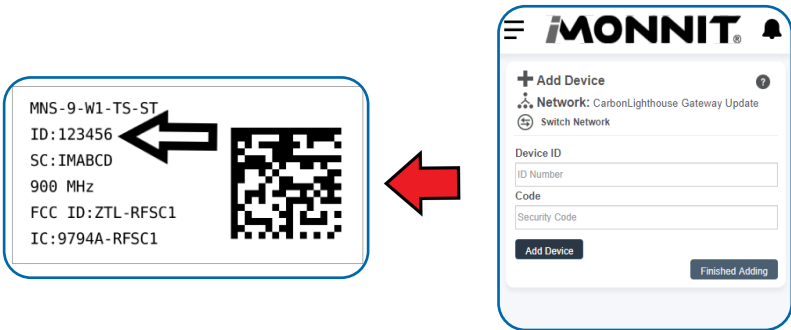
If this is your first time using the iMonnit online portal, you will need to create a new account. If you have already created an account, start by logging in. For instructions on how to register for an iMonnit account, please consult the iMonnit User Guide viewable at .

REGISTERING THE SENSOR ADAPTER

You will need to enter the **Device ID** and the **Security Code** from your Sensor Adapter in the corresponding text boxes. Use the camera on your smartphone to scan the QR code on your Gateway. If you do not have a camera on your phone, or you are accessing the online portal through a desktop computer, 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 (SC)** on your device. A security code will be all letters, no numbers. It can also be found on the barcode label of your gateway.

When completed, select the **"Submit"** button.



IV. INSTALLING THE ALTA USB PRO GATEWAY SOFTWARE

The Gateway Application uses your computer's Internet connection to pass wireless sensor data to the iMonnit online sensor monitoring and notification system. (The online system allows you to view all your sensor data, sensor status' and configure all sensor parameters as well as setup notifications or alerts via SMS text and email.)

To install the software, select "Support" on the main navigation bar or go to www.monnit.com/support. From the downloads page, click on "USB Gateway Installer" to launch the web installer download. If prompted to save the file, select a location that is easily accessible and click "Save".

When the file has completed downloading, browse to the folder where the file was saved. Double click the "MonnitGatewaySetup.msi" file, select "Run" when prompted then follow the on-screen instructions to complete the installation.

When installation is complete the program will automatically launch. You can now begin using your wireless sensors online.



Note: The gateway application needs to be running on your computer in order for the sensor data to be transmitted to the online system. If the gateway is not running your sensor data is not being recorded online and notifications based on sensor data cannot be sent from the system.

V. USING YOUR ALTA SENSOR ADAPTER

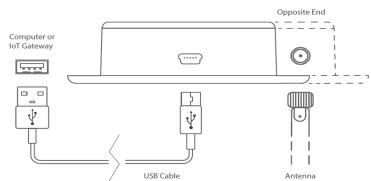
1. Start the Gateway Software:

Double click on the iMonnit Gateway program icon on your desktop or select the program from the Windows “Start Menu” under All Programs > Monnit.

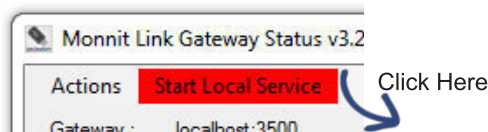
Note: Sensor data will only be transmitted to the Online Sensor Monitoring System when the gateway software is running.

2. Connect Your ALTA Wireless Sensor Adapter

With the iMonnit Gateway application running, connect the ALTA wireless sensor adapter to your computer via USB cable.



In the iMonnit Gateway application, click on “Start Local Service”. The network status in the software should change to “Active” shortly (~30 seconds) after starting the service. The LED on the ALTA sensor adapter will also illuminate green when the radio is active and ready to accept sensor transmissions.



Note: If the status does not change, try unplugging and reinserting the USB gateway.



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, 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.

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 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 nonconforming 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 one year 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 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, 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.



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 environment 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 itself.

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/rtte/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 the iMonnit Online System, please visit us on the web at <https://www.monnit.com/support/documentation>.



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