

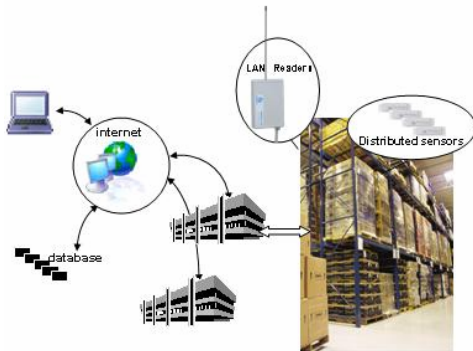
### Wireless Temperature Sensor

STA-434-01 temperature sensor, part of Pultronics Wireless Temperature Monitoring System, provides highly accurate, real-time sensor-to-database data collection without human intervention in multiple wireless applications such as:

- identification
- tracking and tracing
- localization
- **temperature monitoring**

Using an advanced UHF radio frequency technology, Sensor Tag transmits the data at distances of up to 100 meters (300 feet) from a fixed antenna. The RF transmission does not require a line-of-sight, Sensor data can be received through walls or other obstacles. Using a highly sophisticated anti-aliasing algorithms, system can simultaneously handle over 16 millions uniquely identifiable sensors.

Pultronics system is built for fixed position sensing in temperature controlled environment (refrigerators, laboratories, warehouses) and/or for monitoring assets moving through a supply chain.



**Figure 1 Internet based remote temperature monitoring**

### Technical Specifications

Parameter	Value
<b>Wireless Performance</b>	
Type	Wireless
Operating frequency	433.92 MHz, ISM Band
Transmission length	Below 20 ms
Maximum number of unique transmitters	16 mln
Read rate	Over 50 tag/s
Reading distance	100 m outdoors
<b>Temperature</b>	
Measurement rate	Programmable rate, typical every 3 min
Temperature resolution	Max 0.0625 °C
Metering range	-55 to +100°C (external sensor)
Temperature accuracy	±0.5°C, from -10°C to +85°C
Temperature sensor	Internal, Or external 'pig-tail' sensor, Fast or integrating sensor
<b>Electrical</b>	
Operating voltage	3 V
Life expectancy	Typical over 3 years
Operating temperature	-20 to +70 °C (optional -30 to 80 °C)
Dimensions	60 x 35 x 20 mm
Package	Plastic, ABS
<b>Other features</b>	
High/low temperature alarm	Yes
Battery low alarm	Yes
<b>Certifications and compliance</b>	FCC part 15.231(b), (c) FCC part 15.231(b), (e) FCC part 15.205 & 15.209 IC RSS-210 Issue 5, Part 6 IC RSS-102 EN 300 220-2 2000 EN 300 489-3 2000 EN61000-6-4 EN55022, EN55024



Figure 2 Sensor Tag and Reader devices

### System components

- Sensor Tag STA-434-01,
- Reader TR-434A;
- Software tools

### Applications

- Remote temperature monitoring, real-time and history of temperature profiles inside refrigeration equipment, cold-room, containers, laboratory, server rooms, warehouse, or other facilities
- Temperature monitoring and temperature related alarms without human intervention
- Permanent or portable temperature monitoring solutions
- Transportation

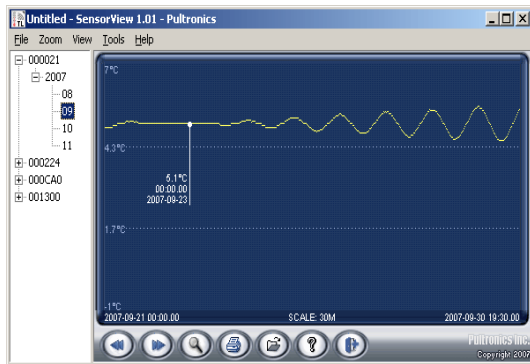


Figure 3 Recorded item temperature

### About Pultronics

With over 10 years of experience Pultronics is a proven expert in the micro-transmitter system design including design of ASICs (Application Specific Integrated Circuit) resulting in smallest existing active tags.

### Contact Pultronics

phone (514) 341-7001 or toll-free 1-877-997-7007, visit [www.pultronics.com](http://www.pultronics.com), or e-mail: [support@pultronics.com](mailto:support@pultronics.com)

The Wireless Temperature Monitoring System offers a continuous monitoring without human intervention. Not only the measured data is documented and reports are available, but also the appropriate alarms are sent if allowable temperature range was exceeded. Pultronics software package enables users to achieve high-speed control and acquisition of real-time data from anywhere in the world.

### Benefits

Features	Benefits
Read range 100m (outdoors)	Allows automated measurements without human intervention. Antennas can be placed far from Sensor Tags, where the internet access is already available. In most locations Antenna does not require electrician to install.
Operating frequency, 433.92 MHz, ISM (Industrial Medical and Scientific) Band	Allows low-power, long range and high data rate with minimal interference from other instruments
Maximum number of unique transmitters, 16 mln	Allows a world wide deployment
Read rate 50 tag/s	Allows high throughput and reliable identification of fast moving-objects
Wireless sensors, battery powered	No cables required; Can be placed anywhere even inside a package, refrigerator or container; Can be instantaneously installed and setup; Does not require electrician to install.
Sensor to database technology	Temperature versus time profiles available for each sensor. When temperature exceeds high or low limits, System can automatically generate and send alarms to the person in charge. Software definable low and high temperature limits.

