Life Sciences Solution Guide

Flexible, Scalable and Economical

Pharmaceutical research, manufacturing and warehousing operations require reliable environmental monitoring solutions to comply with regulatory requirements while keeping data secure in accordance with FDA 21CFR part 11. Similarly hospitals and clinics must be prepared for accreditation inspections of their blood banks and laboratories. Data acquisition systems must be easy to install and maintain, economical and flexible. Adaptive's solution provides the following key features

Flexible

A wide range of sensors measures temperatures (and humidity) in conventional and cryogenic freezers, refrigerators, incubators and walk in coolers. Sensors such as particle counters and differential pressure are integrated through a standard analogue interface. The system can operate as a complete stand alone system or as part of a larger system by making measurements available through standard system interface protocols such as Modbus.

Scalable

Systems can start small and grow. Start with a stand -alone system for one lab and add as your needs grow without having to replace components. Simply add sensors, turn them on and the system does the rest. Ethernet enabled gateways leverage existing IT infrastructure making data available across the enterprise.

Economical

Eliminate manual systems cost effectively starting with just a few points. Wireless eliminates much of the cost, complexity and disruption of wired installations. System elements are very competitive with quality wired systems. As your needs grow the system expands simply within the existing area or extending it by adding additional infrastructure components to cover new areas.

Key solution features include:

- Monitor critical conditions
- Eliminate wiring costs
- Minimise human error
- Simplify sensor calibration
- Record performance indicators and trends

Wireless Sensor Network

The self-healing, self-forming features of wireless mesh sensor networks and battery powered sensors make installation quick and flexible whether for permanent use or temporary auditing spot checks.

Monitor multiple parameters

Wireless sensor nodes are available for monitoring most types of parameter but the most common are temperature, humidity, electrical energy consumption, air pressure, air quality and dust.

Monitoring and control options

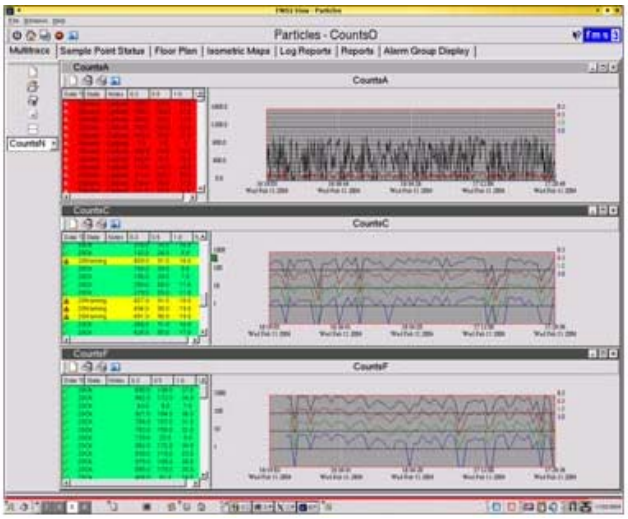
The wireless solution can be used either as a standalone monitoring or control system or by interfacing with an existing BMS, or SCADA system.

Standalone or integrated solutions

Wireless gateways allow sensor data to be easily integrated into existing monitoring systems.

Wireless System Interface Options

Monitored data can be easily integrated with virtually any external system through LON, Modbus, BACNet, SNMP or direct I/O interfaces.



Real Time Monitoring Software

Adaptive supplied software complies with the majority of regulatory requirements within the EU.

Topology views allow individual monitored point status and history to be displayed on floor plans.

Reports show data trending which can be archived for later analysis or printed for immediate trouble-shooting.

Alarms allow messages to be sent by email or SMS text message to key personnel.

Documentation allows full system validation.

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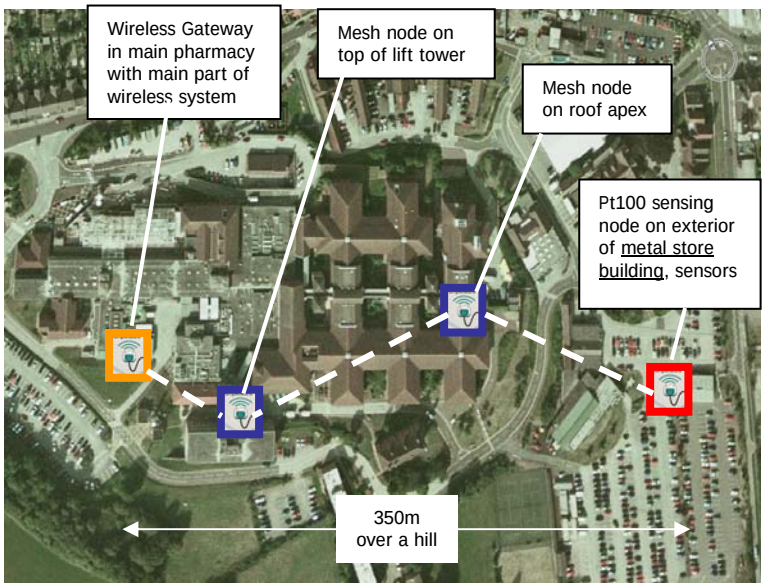
Example Applications

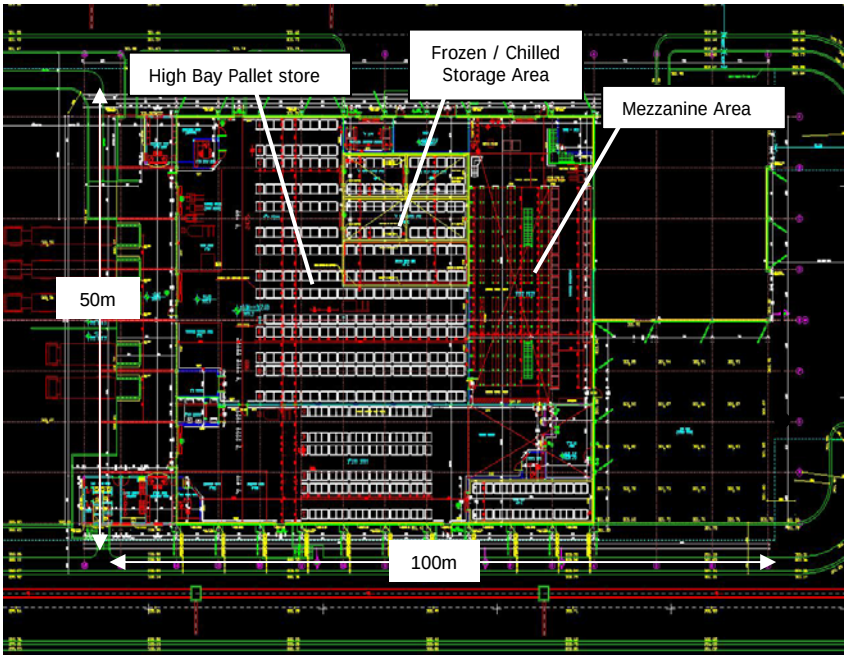
UK Hospital—Pharmacy and Remote Store

- Ambient and refrigerator temperature monitoring
- Stability cabinet monitoring
- Main Pharmacy with 10 monitoring points
- Integrated with monitoring software using OPC
- Key factors -speed and low cost of installed system with access to remote store
- Multi-hop mesh node connections to span site
- Installation meets FDA 21CFR part 11 compliance requirements



Generic Drugs Manufacturer—Warehouse & Production

- New build plant and warehouse
- Three temperature zones
  - ⇒ -25°C freezer
  - ⇒ 5°C chilled
  - ⇒ 25°C main warehouse
- Integrated with GE Fanuc Simplicity using OPC or Modbus TCP
- Key factors
  - ⇒ Low cost of installed system
  - ⇒ Flexibility to optimise sensor placement
- Mesh network coverage of whole facility is planned
- Installation meets FDA 21CFR part 11 compliance requirements



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