Valodated Remote Monitoring Platform

The challenge to your cold chain
Companies that produce, transport or store temperature-sensitive products face many challenges and risks related to the storage and transportation of their products.
In the healthcare industry, therapeutics, medications, or blood bags exposed to temperature fluctuation can become ineffective or harmful.
In the pharmaceutical industry, temperature excursions may compromise the data in clinical trials, threatening the commercialization and availability of new, innovative medications, and impairing the investment dollars funding the research.
In the food industry, improper refrigeration or temperature control of food products can result in decreased shelf life and product recalls, not to mention the associated reputational and safety risk.

Building Monitoring
Monitor environmental conditions 24 hours a day, 365 days a year. Data management and secure Internet access allows users to store data in a centralized location, then securely access and analyze it from a fully validated web-based application.

Portable Monitoring
Real-time condition monitoring of shipments on-the-go, including temperature & location. System access & reporting with automated out-of-range alerts. Minimal installation required. Complies with stringent pharmaceutical and food regulations & guidelines.

Transport Monitoring
Real-time monitoring of fleet conditions, including geolocation, geofencing, reefer unit run times and door status. Product conditions such as temperature and humidity are also monitored in-transit.

Flexible solutions for all your cold chain needs: The Mesa Labs Remote Monitoring Solution
Mesa Labs provides real-time remote monitoring solutions that allow your company to monitor the complete environment (temperature, humidity, geo-location, and more) of its products either in a storage facility, during transportation, or as one integrated view of both environments.
It utilizes a proprietary data management and portal system that allows our users to store their data in a centralized location, then securely access and analyze it from our comprehensive fully validated web based application.
At the center of the Mesa solution is our robust array of battery-operated sensors and wireless data loggers. We can monitor a wide range of environmental conditions.

Geo-fencing and geo-location: Know where your products and vehicles are located at any time
Using geo-location and remote environmental monitoring to-gether, shippers can know when a carrier stops, changes routes, opens the cargo door, or when a temperature-sensitive product leaves a protected area.
Remote Monitoring

Web-Based Dashboard and Live Alert System
The Mesa Remote Monitoring Platform allows you to monitor your products 24/7 via a secure, web-based “dashboard”.
View your sensor readings and alarm conditions in real-time, or analyze historical data through a wide range of comparisons, reports and graphs, all of which are exportable to excel and can be emailed to you. You can view floor plans to get an overview of the current state of your system, and for even more detail, analyze live thermal imaging of your facilities. If you have multiple sites being monitored, all of your data is available in a seamless, unified portal for fast, easy access.

Reports & Graphs
Provide a snapshot of all monitored areas, including multiple locations. Reports generated for documentation & audits. Can be exported to excel or sent as a scheduled email. Two years historical data available.

Alerts and Audit Trail (Alarm Set up)
Notify multiple people of out-of-range events via email, SMS text or live phone call from our 24/7 call center. Tiered alerts provide enhanced notification options. Document alerts & corrective actions for compliance and regulatory requirements.

Min Max Reporting
Easily view and print min/max reports for documentation and audit purposes. Report on multiple storage areas and locations from one secure login. Stay compliant with governing regulations. Easily view one month worth of temperature logs.

Floorplan View with Thermal Imaging
Our floor plan view long with thermal imaging tells you where problem areas may need attention and helps you to understand the temperature distribution of your storage environment.

Standards Compliant
Fully validated to follow the US and Canadian guidelines on electronic records and electronic signatures (ERSA).
Wireless Components & Network Description
Mesa has developed a complete line of battery-operated digital sensors, with microprocessor controlled, FCC certified radio transmitters. All sensors have an on-board clock that allows it to remain in a low power quiescent (sleep) state. This allows the sensors to consume very low power resulting in a battery-life of up to 3 years.
Small, flexible, and equipped with distributed intelligence the Mesa system provides cost and performance benefits that rival and exceed those of hardwired systems, including:

- Can use existing Wi-Fi 802.11 network, or
- Available 900 & 418 MHz systems & sensors that enable faster installation and reduced costs
- Utilize multiple frequencies to operate in RF-dense environments
- Tolerates extended temperatures (-200° C to +200° C)
- Operating temperature: -40° to 60° C
- Small form factor fits inside space-constrained enclosures
- Device level logging for increased reliability and alerting (audio & visual for 900 MHz and Wi-Fi only)

Wireless networked systems differ from conventional centralized monitoring systems in that they employ a highly distributed architecture. Each sensor is independent and capable of collecting data on its own, without a reliance on a network or power connection. Its data is also highly accessible, on a historical and real-time basis which permits central monitoring and alarming. This architecture makes the Mesa system exceptionally easy to install, scalable, accessible, reliable, and cost-effective.

Available Sensor Configurations
418 MHZ Sensors (Data logging at the receiver)
- Temperature sensor with internal thermistor
- NEMA sealed temperature sensor with internal thermistor
- Temperature and humidity internal sensors (external probe option available)
- External 6’ platinum RTD probe (single and dual probe available)
- Flood detection sensor
- Pressure differential sensor
- 4 to 20 mA universal input sensor
- 0v to 10C universal input sensor

900 MHz (has internal logging on the sensor and receiver), optional AC power adapter
- Temperature sensor with internal thermistor
- NEMA sealed temperature sensor with internal thermistor (extended battery and range)
- Temperature and humidity internal sensors (external probe option available)
- External 6’ platinum RTD probe (single and dual probe available)
- Flood detection sensor
- Pressure differential sensor
- 4 to 20 mA universal input sensor
- 0v to 10C universal input sensor

Wi-Fi b & g (has internal logging on the sensor and receiver), optional AC power adapter
- Temperature sensor with internal thermistor
- NEMA sealed temperature sensor with internal thermistor
- Temperature and humidity internal sensors (external probe option available)
- External 6’ platinum RTD probe (single and dual probe available)
- Flood detection sensor
- Pressure differential sensor
- 4 to 20 mA universal input sensor
- 0v to 10C universal input sensor
Remote Monitoring

Mesa Labs Sensors Work Together as Part of a Complete Web-based Monitoring Solution

Options for Validated and Non-Validated Markets
For products using non-validated platforms, the Mesa Communications Manager is an RF transceiver with an integrated web server. It receives CRC-16 error-checked data packets from system sensors, processes the data and makes the data available to be queried through dynamic HTML which can be viewed with any standard browser.

Mesa Communications Manager - Key Specifications
For highly regulated markets requiring validated platforms, The Mesa Link Manager provides the capabilities of both a web server and networked repeater.

- Wi-Fi 802.11 b & g radio
- Simple ASCII command/response protocol
- 900 MHz transceiver
- 15,000 historical record capacity
- Optional 418 MHz receiver
- 14,000 event logging capacity
- TCP/IP, UDP, XML, RS232, and/or RS485
- Two level password security
Remote Monitoring

Key Features and Benefits
Our remote monitoring system offers the following benefits to clients:

Product Quality
• Provides real-time information about products in facilities or in transit
• Improves your company’s ability to respond quickly to temperature excursions
• Alerts you about any out-of-tolerance conditions
• Alerts you about transit-related issues (e.g. door being open/closed, reefer on/off)

Compliance and Security
• Provides automated reports on a daily, weekly, or monthly basis
• Generates un-editable reports that can be used for audits (complies with current 21 CFR part 11 requirements)
• Secure user access, logins, audit trail and reporting
• Documents alerts and corrective actions
• Provides access to two years of historical data
• Provides geo-locating and geo-fencing (in transit) technologies
• Integrates transit and warehouse monitoring solutions to provide complete visibility

Improved Efficiency
• Eliminates manual temperature collection
• Identifies out-of-range locations
• Notifies tiered responders
• Allows you to view daily historical temperature/route information (in transit)
• Portable and reusable option with rechargeable battery (in transit)

In addition to monitoring technology, we can also help you think through ways to mine your company’s product temperature data and use it to improve the quality and efficiency of your supply chain.

Mesa Cold Chain & Technology Expertise
Mesa Labs Inc. is a leading provider of intelligent, web-enabled, wired and wireless environmental monitoring systems to highly regulated industries, including hospitals, health care providers, pharmaceutical companies, logistics firms and food companies. Mesa provides out-of-the-box and customized monitoring solutions to meet ongoing changes in technological, regulatory and customer environments. As well, Mesa provides a comprehensive array of cold chain services to assist clients in meeting regulatory and compliance requirements.