Case Study

Smart IoT Remote Refrigeration Monitoring System for Pharma Industry

To Ensure Compliance With Temperature Regulations

PROJECT OVERVIEW

A leading provider of data loggers and remote monitoring solutions turned to Rishabh Software to develop an IoT-based freezer temperature monitoring system for pharma industry. Our team was engaged for integrating Bluetooth Low Energy (BLE) beacons and IoT connectivity to ensure that pharma products are stored at specified temperature ranges.

Capability	Industry	Country
IOT Application	Pharmaceutical	USA

KEY FEATURES

Conventional temperature monitoring methods typically involve manual checks and paper logs which lack real-time visibility and are susceptible to errors. To address these issues, we implemented an IoT based remote refrigeration monitoring system with the following key features:

▷ **Remote Freezer Temperature Monitor**

The system provides continuous temperature monitoring of freezers, displaying real-time data on the logger devices.

▷ **Configuration Management**

Configuration of the remote freezer temperature alarm with defined thresholds and user permissions.

▷ **Comprehensive Data Analysis**

Detailed reports are generated daily and monthly, providing insights into temperature trends and deviations.

▷ **Remote access and control**

Users can remotely access and manage data, configure alerts, and receive notifications from anywhere with a wireless freezer temperature monitoring system.
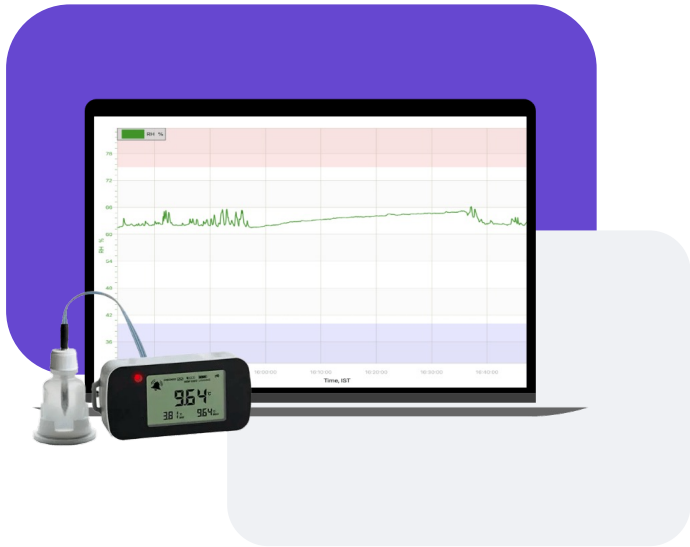
CHALLENGES WITH EXISTING SYSTEM

▷ Constantly monitoring and maintaining commercial refrigeration equipment for optimal temperature levels across locations

▷ Manual monitoring increased the risk of human error, potentially leading to compromised medical supplies and increased waste

▷ Wireless temperature monitoring system with remote access and real-time monitoring required robust IoT infrastructure.

▷ Securing data transmission, ensuring safe storage compliance and effectively reporting these conditions for certification.

▷ Effectively collecting, managing, and extracting actionable insights from the vast amount of data generated by the loggers.

SOLUTION

We developed an IoT-based freezer temperature monitoring system for pharma industry that enables continuous temperature monitoring. Integration of BLE beacons with temperature sensor offers a robust solution for data logging and extraction. This solution enables remote monitoring to ensure the quality and efficacy of vital medical supplies.

IoT Integration for Fridge Check Functionality

The fridge check application integrates IoT devices, sensors, BLE beacons and actuators to detect variations and instantly transmits the data via a logger.

Alert Mechanism and User Interface

Seamless integration with logger device ensures instant notifications for proactive management of temperature-sensitive medications and facilitates compliance.

TECHNOLOGIES & TOOLS

App Center

Microsoft Authenticator

BENEFITS

25%

fewer temperature
deviation incidents

30%

reduction in pharmaceutical
waste

20%

jump in compliance with
minimal risk

PROJECT SNAPSHOTS

ABOUT RISHABH SOFTWARE

We are a global provider of enterprise-grade web, mobile, cloud, and analytics solutions. As ISO 9001 and 27001 certified software development company, we have two decades of service excellence delivering 1000+ successful projects globally, including the USA, UK, Europe, Middle East, and Australia.

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