APPLICATION NOTE

CAS DATALOGGERS

Vaccine Temperature Monitoring Via WiFi at a Haitian Hospital

Lascar Data Loggers Monitor Storage of Vaccines in Refrigerator

CAS DataLoggers provided the vaccine temperature monitoring solution for Hôpital Sacré-Coeur (HSC), a 122-bed tertiary hospital located in Milot, Haiti. Founded nearly 30 years ago, HSC is the largest private hospital in the north of Haiti, providing premier care including badly-needed vaccination programs. HSC Technical Advisor Stewart Simonson explains, “Routine vaccination of our staff is a priority for us. We are presently focused on vaccinating staff against Hepatitis B and tetanus.”

The hospital’s pharmacy has about ten employees including pharmacists and technicians, and houses two combination refrigerator/freezer storage units. The tetanus toxoid and Hepatitis B vaccine will be stored in these units which also contain other healthcare products such as antitoxin and critical drugs which have the same stringent temperature storage requirements. To help protect these products, the hospital needed a vaccine temperature monitoring and alarm system allowing them to record, view, and save temperature data. With this in mind the technical advisor wanted a wireless solution: “We’re on a big campus and we have a reliable WiFi network, so a hard-wired system didn’t seem cost-effective.”

Installation

CAS DataLoggers provided HSC hospital with a Lascar EasyLog WiFi Temperature Data Logger. Now hospital staff are using their two Lascar data loggers to continually monitor the pharmacy's pair of refrigerator storage units. HSC's shipment of new vaccines is donated by various pharmaceutical companies and must be continually maintained within a narrow temperature range of 2-8 degrees Celcius. Stewart Simonson at HSC explains, "For most staff, these will be primary vaccinations and will require the full series to give immunity." For example a particular vaccination might be given in a series of three shots over a ten-month period. Automated vaccine temperature monitoring gives the hospital's pharmacy a way to ensure that their storage method is reliable over long periods of time: "Checking the temperatures manually wouldn't give me much peace of mind."

Usage

The Lascar dataloggers are compact and were easy to install on the outside of each refrigerator, taped to the side of the unit. When these devices are first set up, they automatically search for an existing wireless network while connected to a PC. They can then be placed anywhere within network range for standalone operation. If a sensor temporarily loses connectivity with the network, it will keep logging until it can communicate again with the PC application (for a max of 120 days at a 10-second sample interval).

The loggers each include an external temperature probe for use in a wide range of environments including cold storage. These sensors measure the ambient temperature within the refrigerators across a measurement range of -40 to +125°C (-40 to +257°F), and each device's current temperature reading is visible on its integrated LCD display. Here the wireless dataloggers have been set to sample and record a temperature reading once every minute.

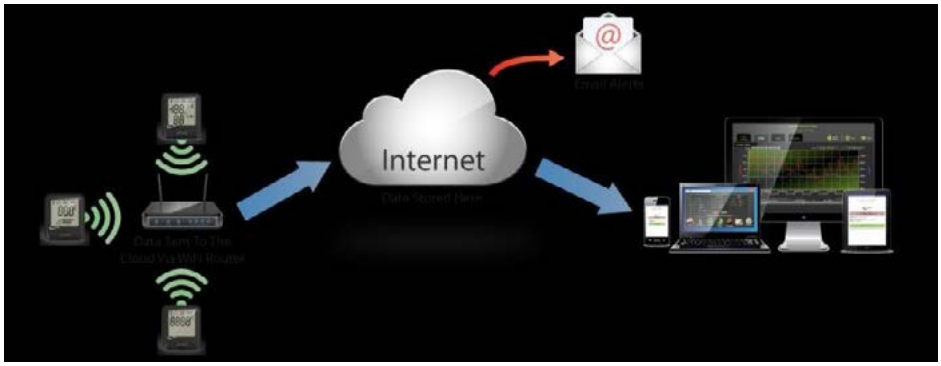
Each low-powered data logger operates on a rechargeable internal lithium polymer battery. At the chosen sampling rate of once a minute, the sensor will operate for over a year. The battery can then be quickly recharged via PC or a USB +5V wall adapter using the USB lead provided.

Cloud Storage & Real-time Viewing

The temperature data loggers are WiFi-capable for remote temperature monitoring. Each data logger utilizes wireless connectivity to transmit its recorded data over the hospital's WiFi network to a PC where users can then view the data using Lascar's free software package. Since the recorders don't have to be connected to a PC to send their data, staff can monitor and manage them over the network from any location.

Personnel don't have to waste time hunting for files on a PC nor for hardcopy records as they would with a paper chart recorder. All data is automatically uploaded to Lascar's FilesThruTheAir™ cloud service. This storage service is compatible with Lascar's entire series of EasyLog WiFi data loggers. After downloading the WiFi sensor software onto a PC and signing up for a Cloud account, the pharmacy's data collection, alarming, storage and accessibility are all automated. The WiFi router sends all data to the cloud for storage where it is protected and secure.

Users can communicate with the WiFi dataloggers from their smartphone, tablet or PC. This gives them a convenient way to view data in real time, change sensor settings and receive alarms from any Internet-enabled device.



Immediate Alarm Notification

HSC needed a solution that would be easy for all pharmacy staff to learn and operate. Lascar's automated alarm capability is simple: if a refrigerator's temperature goes outside the 2-8°C temperature window, its connected data logger will automatically send out an email alarm to multiple staffers. The data loggers will also display indications for a low battery, an AC mains disconnection or a probe malfunction. Simonson noted, "We have some backup capability here. If a unit were to fail, we would need to act fast to ensure temperature integrity." With automated alarming, staff have the time to take these corrective actions rather than waiting until someone opens the door only to find out that the fridge failed hours ago.

Free Control & Setup Software

Lascar's control software is available as a free download and is compatible with Windows 10 (including 64-bit operating systems). When installed on a PC the software enables set-up, data logging and data review. Users can configure sensor name, specify Celsius or Fahrenheit, select sample rate, and set high/low alarms. Historic data can then be viewed via the graphing tool or exported to Excel.

Benefits

The ability to log, view and archive data at any time--all in the same device--makes the wireless Lascar dataloggers an ideal way for HSC hospital to send its temperature data and alarms online without having to spend a lot of time or money. This functionality helps to protect its critical supply of vaccine and other life science products. Stewart Simonson explains, "I particularly liked the WiFi capability and the automated alarms—they're very convenient features for us."

Simonson considers the system's biggest benefit to be: "…Peace of mind. We needed to keep a temperature record so the archiving feature is nice." Otherwise two or three people would have needed to take manual measurements throughout the day using a thermometer. Simonson noted that "That seemed to be a less reliable approach than an automated system like the one we purchased."

Easy to use and maintain, the dataloggers each have an LCD making it easy to do a quick temperature check, and unlike other sensors, Lascar data loggers have a rechargeable battery so they can be used again and again for many years.
You can learn more about HSC hospital at http://crudem.org/.

For further information on the Lascar Wifi Temperature Data Loggers, vaccine temperature monitoring, or to find the ideal solution for your application-specific needs, contact a CAS Data Logger Application Specialist at **(800) 956-4437** or www.DataLoggerInc.com.