

Cold chain monitoring for retail store network

Challenge

[Grupo Bafar](#) is one of the most popular food manufacturers and distributors in Mexico. The company experienced problems with the cold chain monitoring in retail stores.

- Malfunction of refrigerators often resulted in product loss. The company wanted to have full temperature information at their hands to be able to timely plan preventive maintenance for refrigerators or act in case of equipment failure.
- Each refrigerator was equipped with only one temperature sensor. To check the temperature, staff had to visit the refrigerators physically.
- Bafar also wanted to monitor the operators of the chilling and freezing chambers. Sometimes, they just forgot to close the refrigerator door or kept it open for too long. It often led to critical temperature changes.

Solution

The Wialon partner [CTTMX](#), Mexico, armed Grupo Bafar with a temperature monitoring solution that allowed the company to ensure the cold chain in their retail stores.

- CTTMX equipped Bafar's cooling and freezing chambers with [Teltonika FMB125](#) GPS trackers and PUCK T ELA BLE temperature sensors. The sensors were installed in several parts of the refrigerators.
- PUCK MAG ELA BLE magnet sensors are used for detecting the events like opening/closing the doors. Alerts are activated in case the door is open for too long.
- Reports provide the client with the data on how long the door remains open and how it influences the temperature inside the chamber.
- 12 VCC 3 A voltage regulators allow controlling the refrigerator power supply.
- The GPS tracker collects the data from the voltage regulators, BLE temperature and magnet sensors and transmits it to [flespi](#). Then, the information is sent to the management system, where the client's employees can view it on the dashboard developed by CTTMX.
- [flespi streams](#) ensure continuous data flow from hundreds of devices (there are 300 units with several sensors installed in each) to the management platform.
- The specialists of the monitoring center generate maintenance reports. They also call the retail stores when they see that a door is open for too long.

Results

CTTMX provided Grupo Bafar with a solution for monitoring temperature in refrigerators located in their retail stores.

✓ Up to 80% losses reduction

Before, Bafar suffered losses of 200,000 USD per month due to product waste in the stores. This sum has been reduced by 40% already and is expected to decrease by 80%.

✓ Maintenance planning

Now, the client can plan the maintenance before the equipment fails and puts the goods at risk of becoming spoiled. Also, any current issues can be dealt with fast and with minimum product loss.

✓ Weak links detection

The client managed to detect the stores with malfunctioning refrigerator equipment and reduce employees' irresponsible attitudes.

✓ Improved decision-making

The unified solution allows the client to get full data on temperature, understand how various conditions affect it, analyze this information, and make important business decisions.

Company profile

 **IoT project of the year nomination:** Cold chain transportation

Country: Mexico

Industry: Stationary

Solutions

 flespi

Hardware

 Teltonika FMB125

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