

Convenience store case study — **COLD CHAIN MONITORING**

A franchise convenience store in Tallinn, Estonia, offers food and snacks for the folks on the road. The business is good because the brand is well known and the store is in a good location. Despite quick turnover of product some losses are created because of spoilage of packaged food. While it wasn't a major issue, it still raised concerns as the quality of the food is paramount and nobody likes to waste food, especially if the loss has to be covered by the owner. The food was correctly handled during logistics, so the problem had to be elsewhere. The owner of the store had to find a way increase visibility into

local operations. Thinnect offered the Temp-Sense system to the franchise owner who contacted the store as they were aware of the issues. The wireless Temp-Sense system is easy to adopt, it causes no work interruptions and doesn't alter the work processes. The web-based user interface is easy to use for the staff to keep an eye on the storage conditions of the food.

The results were simple — adjusted setpoints and replacement of two fridges. These actions eliminated food spoilage caused by equipment malfunction.

System setup is simple — wireless sensors are placed in open display cases and refrigerators. The collected data is presented in a web-based user interface that raises alerts and provides reports. All data is located at a cloud server and is accessible from anywhere. The gateway passes data from the sensors periodically to the cloud. The mobile sensors can store readings for more than a month and the battery lasts for over a year.

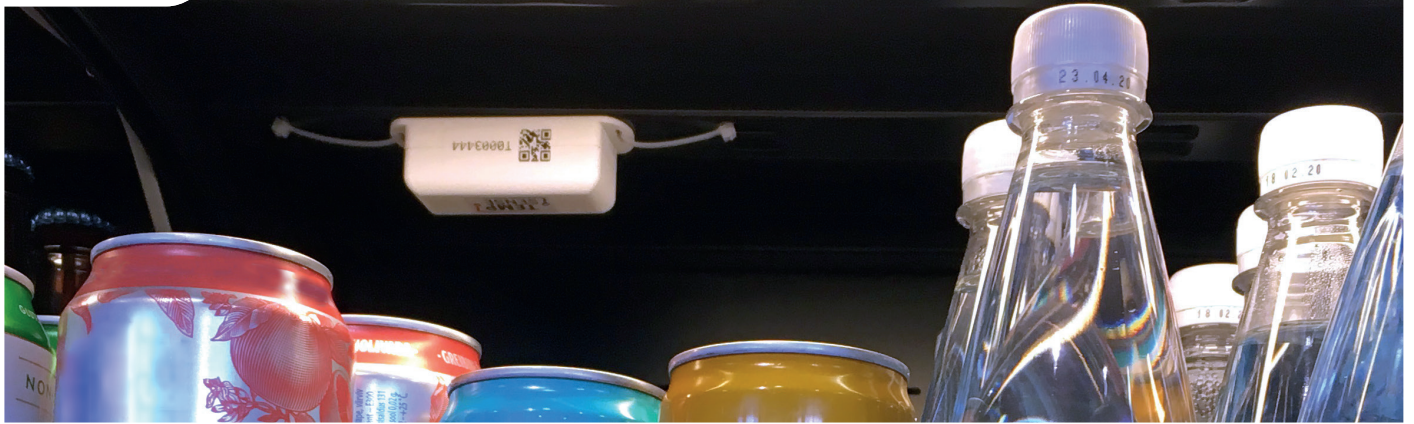
The solution is completely self-contained — no IT or other support is needed from the customer.

SOLUTION AT A GLANCE

- Wireless battery-powered sensors placed in appliances or areas
- Data delivered seamlessly to the cloud
- Real-time and historic data available at a click of a button
- Configurable alerts notify of any issues and give a peace of mind that everything is OK

The temperature monitoring solution is based on Thinnect's field-proven technology, which has been used in Border Patrol and Intelligent Lighting applications across the globe. Thinnect's self-configuring technology and automated system management services ensure that all temperature sensors are able to report data from the moment they are powered and continue reliable operation for years.

info@thinnect.com
Thinnect OÜ
Pärnu mnt 238
11624 Tallinn, Estonia



TEMP-SENSE IN ACTION

Thinnect staff equipped all appliances with wireless sensors to monitor temperatures in the critical spots. Useful results were delivered immediately – the open display cases were not able to maintain the temperature in the front of the top rows of the shelves. Using the information collected by the Temp-Sense solution, the staff was able to better understand the characteristics of the fridges—dairy products were re-located to the lower shelves, maintaining also a lower density, allowing cool air to flow within the refrigerator. Lowering the temperature setpoint

gave an improvement to the temperatures of the products with high turnover. Similar minor adjustments were made to two refrigerators where the temperature increased too much between compressor cycles. Blocking the warm air channel of the air heater solved the question about one 'suspect' fridge. Temp-Sense also identified a freezer, which maintained too low temperatures which reduces energy efficiency and the lifespan of the appliance, resulting in higher total costs.



THE RESULTS

- Temp-Sense provides peace of mind to the staff – all appliances are monitored 24/7 and everyone can rely on the quality of the product. The periodic reports free the staff from the duty of manual temperature recording.
- Less food waste is generated as correct storage temperatures ensure that all products maintain their quality until the best-before date.
- Quality and safety can be improved and energy efficiency increased in many cases by implementing only minor adjustments – having full real-time and historic visibility into actual storage conditions provides the input needed or adjusting the refrigerators for optimal storage conditions.

