uTrust Sense Temperature Tracker

Third-Generation Smart Sensor Tag Solution

The Future of Goods in the IoT

Identiv's innovative uTrust Sense Temperature Tracker solution addresses the critical needs for applications that are temperature conscious. As a turnkey solution for the Internet of Things (IoT) market, the combined temperatue tag and mobile service delivers unique value to manage an entire population of near field communication (NFC) smart tags, measuring and storing precise temperature readings at any time to guarantee the control and integrity of goods.

The Solution

uTrust Sense Temperature Tracker is a portable powered smart sensor that tracks and stores temperature readings and can be read locally by radio frequency identification (RFID) readers, such as mobile phones, or uploaded to the Internet for analytic purposes. uTrust Sense Temperature Tracker empowers businesses in a broad range of market segments by providing low-cost temperature monitoring for virtually anything.

Typical Applications

Use cases include monitoring and tracking of temperature-sensitive products for cold chain applications, medical products, pharmaceutical logistics, and monitoring the transportation of fragile goods.

Details and Features

uTrust Sense Temperature Tracker contains a precise temperature sensor, digital storage, a flexible battery, and supports NFC. The tracker can communicate with a variety of local devices using an application on consumer mobile devices or industrial equipment to read the complete logged history recorded on the tracker.

Even after battery life has drained, the tracker can still be used as a passive temperature sensor label, providing the present ambient temperature. The entire memory content, including the measurement values, are still fully accessible, eliminating the risk of data loss and enabling further applications even after the data-logging capability has stopped.

The sensor is also configurable — enabling frequent measurements for detailed logging or longer intervals to provide logging for extended periods — and can be calibrated to a customer's application needs, providing a reliable and long read range using an ISO/IEC 14443 RFID interface (depending on the version of the sensor tag). The water-resistant sensor is easily attached with an adhesive backing that can be affixed to various surfaces. The front side of each label can be graphically personalized for specific customer branding, can be printed with offset CMYK and/or Pantone colors, and comes with a protective surface for enhanced protection against harsh environments

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Parameter	Details
RFID Interface	ISO/IEC 14443
Compatible Mobile Application	• Android • Custom application development possible with company logo
RFID Chip and Memory (for Temperature Records)	32 KB Flash (for program code and records)
Datalogging	• More than 10,000 records (depending on the size of the program code allocated to the firmware) • Temperatures are recorded in the Flash or EEPROM memory of the RFID chip and are readable even if the battery is end of life (fullly drained)
Datalogging Mode	Dense Logging Mode: Store all measured values in memory and give an alarm if customer configured temperature limits have been exceeded
Battery	3.0V non-rechargeable thin battery, non lithium-based, directly printed onto antenna
Label Dimensions	90 x 60 mm (3.543 x 2.362 in)
Label Thickness	Approximately 1.7 mm (66.93 mil)
Inlay Construction	Aluminum etched on PET substrate
Customization	CMYK digital or offset printing and/or Pantone colors
Protective Layers	Chip and battery are embedded in compensation layer(s) for maximum durability
Temperature Range	-15°C to 50°C (5° to 122°F) at relative humidity 40 - 60%
Temperature Accuracy	± 0.3° to 0.5°C depending on temperature range (i.e., 0.3°C absolute temperature accuracy between 0° to 40°C)
Measurement Intervals	Configurable every 5 to 32,768 seconds (> 9 hours)
Real-Time Clock Accuracy	± 3% over the full temperature range
Programmable	Fully programmable ARM Cortex M0+ microcontroller
Accreditations	• Temperature calibration procedure according to ISO/IEC 17025 • CRF21 part11 compliance (in progress)
Android/iOS Mobile Application	• Tag activation and setup • Online/offline • Local analytics (graph) • Available for Android on Google Play and for iOS on App Store