iService/ColdChain

Uninterrupted temperature and humidity monitoring solution

Features

- Friendly dashboard design
- Real-time data transmission and alarms
- Supports downloading and exporting various reports
- Complete installation for a field in 15mins
- Cloud and on-premise deployment options
- RESTful API web service for 3rd party system integration
- Wireless data transmission, flexible equipment installation
- Rugged hardware design, suitable for various fields
- Supports mobile app management
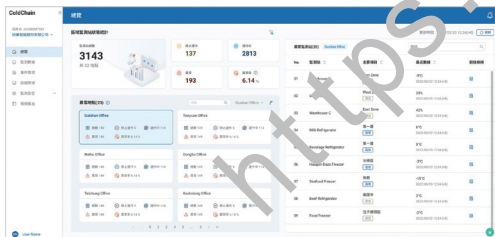- Smart defrosting detection reduces false alarms

Introduction

A cold chain is a temperature-controlled supply chain. An unbroken cold chain is an uninterrupted series of refrigerated production, storage and distribution activities, along with associated equipment and logistics, which maintain quality via a desired low-temperature range. Advantech's cold chain management solution spans temperature and humidity sensors, gateways, an APP for configuring the sensors and a backend dashboard that displays the data collected along the cold chain and presents a map indicating where the temperature is poorly controlled, leaving stocks at risk of being damaged. The temperature and humidity sensors pass data to a gateway, and the gateway uploads the data to the cloud. Users can monitor cold chain situations in different places simultaneously in real time on Advantech's cold chain management platform and the mobile app.
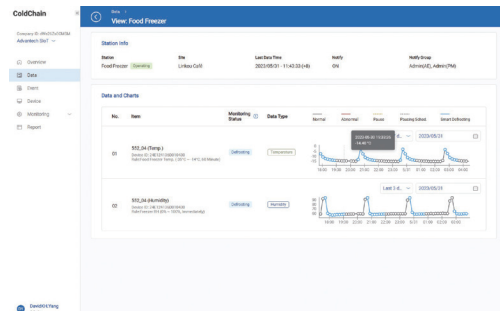
Key Functions of Web Service

Overview

- Statistics at a glance
- Statistics updated according to your selection
- Show the current abnormal event list

Latest and Historical Data

- Detailed cold chain status list
- Can be sorted according to user's preference
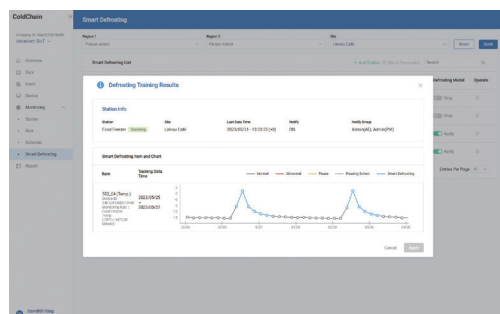- Display historical data through a line chart

Abnormal Event List

- Statistics at a glance
- Real-time notification and data export
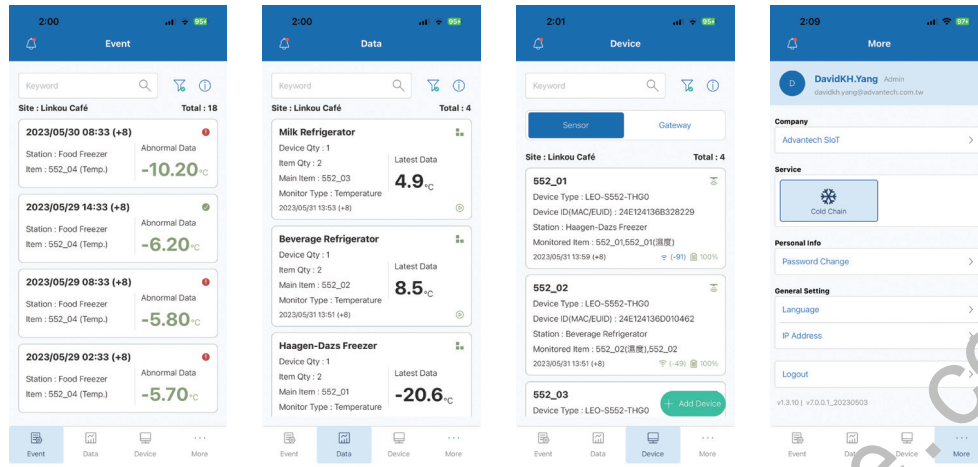- Root cause response system

Smart Defrosting Detection

- Select any device you want to enable the function
- No need to manually set the defrosting time precisely
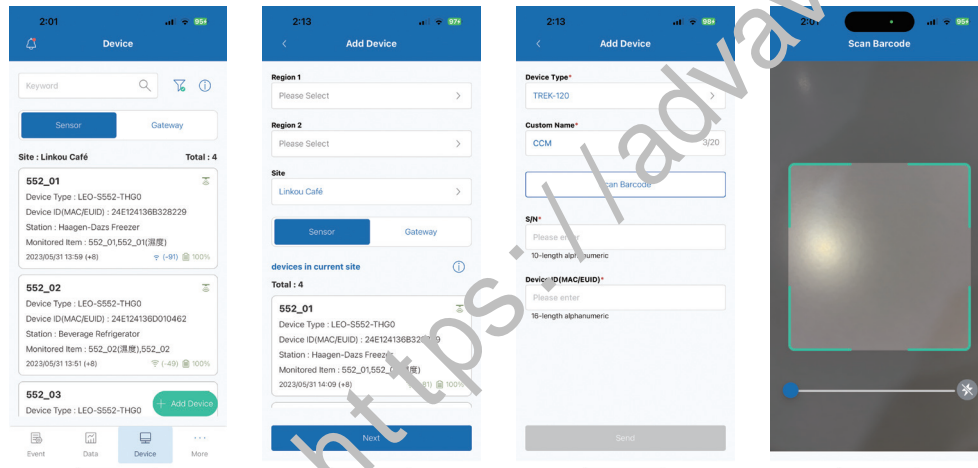- Reduce false alarms due to temperature rise from defroster
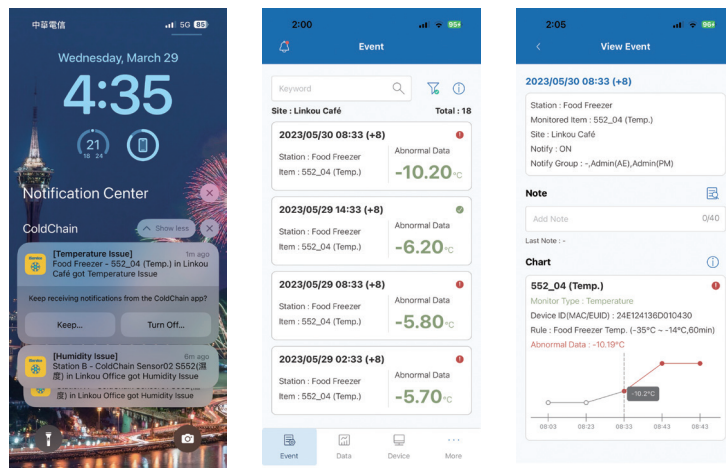
Key Functions of Mobile App

Dashboard

Equipment Registration

Push Notification

LEO-S55

LEO-S57

Specifications

Frequency	US915/AU915/KR920/AS923/CN470
NFC	Y (Configuration)
Button	1 x Power Button (Internal)
Battery	2 x 4000 mAh battery (ER18505)
Battery Life	5 years (10 min interval, @25°C)*
Working Temperature	-30 ~ 70°C
Working Humidity	0 ~ 100% (non-condensing) at 25°C (77°F)
Wireless Range	100 meters+ (Line of Sight)*
Dimension	88.5 x 85.3 x 27 mm (3.48 x 3.36 x 1.06 in)
Weight	130g
IP	67
Certification	FCC, TELEC, CE**

Temperature	Range	-30°C ~ 70°C
	Accuracy	0°C ~ 70°C (± 0.3°C), -30°C ~ 0°C (± 0.6°C)
	Resolution	0.1°C
Humidity	Range	0~100% RH
	Accuracy	10% to 90% RH (±3%), below 10% and above 90% RH (±5%)
	Resolution	0.5%

* Test under laboratory conditions and for guideline purposes only
**CE by project

Specifications

Frequency	US915/AU915/KR920/AS923/CN470
NFC	Y(Configuration)
Button	1 x Power Button (Internal)
Battery	1 x 19000 mAh battery (ER34615)
Battery Life	5 years (10 min interval, @25°C)*
Working Temperature	-30°C ~ 70°C
Working Humidity	0 ~ 100% (non-condensing) at 25°C (77°F)
Wireless Range	100 meters+ (Line of Sight)*
Dimension	105.4 x 71 x 69.5 mm (4.1 x 2.8 x 2.7 in)
Weight (KG)	1kg
IP	67
Certification	FCC, TELEC, CE**
Connection Type	3-wire connection
Cable Length	1.5m
Probe Type	Stainless steel 304

Temperature	Range	-200 °C ~ 50 °C
	Accuracy	±0.5°C
	Resolution	0.1°C

* Test under laboratory conditions and for guideline purposes only
**CE by project

LEO-S59

USM-S67

Specifications

Frequency	US915/AU915/KR920/AS923/CN470
NFC	Y (Configuration)
LED	R/G
Button	1 x Reset Button (Internal) 1 x Tampering Button
Battery	1 x 1200 mAh battery (ER14250)
Battery Life	5 years (1080 min interval + 30 triggers per day)*
Working Temperature	-20°C ~ 60°C
Working Humidity	0 ~ 90% (non-condensing) at 25°C (77°F)
Wireless Range	50 meters+ (Line of Sight)*
Dimension	Sensor: 50.5 x 31 x 18.5 mm (1.99 x 1.22 x 0.73 in) Magnet: 30 x 13.5 x 10 mm (1.18 x 0.53 x 0.39 in)
Weight (KG)	11g
IP	20
Certification	FCC,CE**
Detection Distance	15~20mm
Alarms	Open/Close Status, Tamper
Installation	Sensor and magnet installation plane distance <15mm, height difference <7.5mm

* Test under laboratory conditions and for guideline purposes only
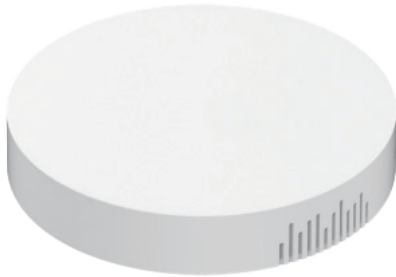**CE by project

Specifications

General	CPU	Quad-core 1.5 GHz, 64-bit ARM Cortex-A53
	Memory	512 MB DDR4
	Flash	8 GB eMMC
	LED Indicators	1 x POWER, 1 x STATUS, 1 x LoRa, 1 x Wi-Fi, 1 x Ethernet
LoRaWAN	Frequecny	US915/AU915/KR920/AS923/CN470
	Antenna	2 x Internal Antennas 1 x External Antenna
	Wireless Range	100 meters+ (Line of sight)**
	Connect Q'ty	Support up to 100 x LEO-S sensors*
Connectivity	Ethernet	10/100/1000 Base-T
	Wifi	IEEE 802.11 b/g/n, 2.4GHz
Others	Button	1 x Reset Button
	Power	1. DC Jack Connector for 9-24 V_{DC} power supply 2. 1 x 802.3 af PoE input
	Working Temperature	-40 ~ 70°C (-40 ~ 158°F)
	Storage Temperature	-40 ~ 85°C (-40 ~ 185°F)
	Operating Humidity	0 ~ 95% (non-condensing) at 25°C (77°F)
	dimension	180 x 110 x 56.5 mm (7.09 x 4.33 x 2.22 in)
	IP	65
	Certification	FCC, TELEC, CE***

* Dependent on usage scenario
** Test under laboratory conditions and for guideline purposes onl
***CE by project

USM-S67

Specifications

General	CPU	528 MHz, ARM Cortex-A7
	Memory	256 MB DDR4
	Flash	4 GB eMMC
	LED Indicators	1 x SYS, 1 x LoRa
LoRaWAN	Frequecny	US915/AU915/KR920/AS923/CN470
	Antenna	2 x Internal Antennas
	Wireless Range	100 meters+ (Line of sight)**
	Connect Q'ty	Support up to 20 x LEO-S sensors*
Connectivity	Ethernet	10/100 Base-T
Others	Button	1 x Reset Button
	Power	1.802.3 af PoE input 2.5V/1A by Type-C Port
	Working Temperature	-20 ~ 50°C (-4 ~ 122°F)
	Storage Temperature	-40 ~ 85°C (-40 ~ 185°F)
	Operating Humidity	0 ~ 95% (non-condensing) at 25°C (77°F)
	dimension	Ø115 x 21 mm (Ø4.52 x 0.83 in)
	IP	30
	Certification	FCC, TELEC, CE***

* Dependent on usage scenario
** Test under laboratory conditions and for guideline purposes only
***CE by project

TREK-120

Specifications

		TREK-120	TREK-120 Probe
Temperature	Measurement Range	-40 ~ 70 °C	
	Accuracy Range	± 0.2 °C from 0~70 °C ± 0.3 °C from -40~0 °C	
	Resolution	0.01 °C	
Relative Humidity	Measurement Range	0~100% RH	
	Accuracy Range	± 2% from 0~100% at 25 °C	
	Resolution	0.01%	
NFC	Frequency	13.56 MHz	
	Function	Bulk download configuration and sensor data	
LoRa	Wireless Technology	Advantech LoRa technology	
	Frequency	920 ~ 925 MHz for Taiwan, 902 ~ 928 MHz for US, 863 ~ 870 MHz for Europe, 470 ~ 510 MHz for China, 921~922 MHz for Japan	
	Wireless Range	>500 meters (Line of Sight)**	
	Topology	Star	
Data Storage Capacity		5000 data log readings	
LED Indicators		1 x Power status, 1 x Alarm	
Buttons		1 x Start button	
Battery		3V/2400mAh wide-temperature primary (non-rechargeable) battery	
Data Transmissions		NFC + LoRa	
Mechanical	Mount Options	Fixed by adhesive tape, magnet, fastener, screws	
	Dimensions (W x D x H)	123.47 x 65 x 24.5 mm (4.88 x 2.56 x 0.91 in)	
	Weight	108 g (0.23 lb)	248 g (0.55lb)
	Probe Cable Length	N/A	2 meter
Environmental	Operating Temperature	-40 ~ 70 °C	
	Storage Temperature	-40 ~ 85 °C	
	IP Rating	IP65	
	Drop Tolerance	4 ft. drop onto concrete	
	Certifications	CE, FCC, NCC	

**Dependent on usage scenario

USM-S62

Specifications

General	Storage	8GB micro SD card (default), supports up to 32GB
	I/O	2 x USB 2.0 host 1 x SIM card slot 1 x Micro SD card slot (supports SDHC cards) 1 x 10/100 Ethernet RJ45 connector 1 x Reset button 1 x Lockable DC jack
	Indicators	Orange: Power and GW status Blue: Uplink status/activity
LoRa	Wireless Technology	920 ~ 925 MHz for Taiwan 902 ~ 928 Mhz for US 863 ~ 870 MHz for Europe 470 ~ 510 MHz for China 921~922 MHz for Japan
	Wireless Range	>500 meters (Line of sight)**
	Topology	Star
Connectivity	Ethernet	10/100 RJ45 connector
	Backhaul Support	802.11ac/a/b/g/n Wi-Fi (2.4 + 5 GHz) or LTE cat. 4
Power	Input Voltage	9 ~ 30 V via lockable DC jack
Mechanical	Dimensions (W x H x D)	128 x 156 x 27.8 mm (5.03 x 6.14 x 1.09 in)
	Weight	524 g/1.15 lb
	Mount Options	VESA, wall, desktop, pole, magnet, DIN rail
Certification	EMC	CE/FCC/NCC/TELEC/CCC*
	EMI	Class B
Environment	Vibration/Shock	10 G, IEC 60068-2-27, half sine, 11 ms duration
	Operating Temperature	-20 ~ 65 °C/-4 ~ 149 °F
	Storage Temperature	-40 ~ 85 °C/-40 ~ 185 °F
	Operating Humidity	90% @ 40 °C/104 °F (non-condensing)

*by project based.

Ordering Information

Part Number	Description
TREK-120CCTW-01E-C	LoRa Temp/RH Sensor with Battery for TW
TREK-120CCUS-01E-C	LoRa Temp/RH Sensor with Battery for US
USM-S62CCG00-E1E-C	LoRa Gateway (LAN Only)
USM-S62CCG0W-E1E-C	LoRa Gateway with WiFi
USM-S62CCG20-E1E-C	LoRa Gateway with EU LTE
LEO-S552THG0-01E-C	LEO-S LoRaWAN Temp/Humi sensor 915
LEO-S572TPG0-01E-C	LEO-S LoRaWAN Temp Probe sensor 915
LEO-S595MSG0-01E-C	LEO-S LoRaWAN Magnetic Switch 915
USM-S67CCG0W-E1E-C	USM-S67 LoRaWAN & WIFI Gateway 915
USM-S67CCG00-E1E-C	USM-S67 LoRaWAN Gateway 915
36CSISCCWV1001	ColdChain Public Cloud License for 365days
36CSCCPRSR1001	ColdChain On-premise Cloud License for Sensor
9808CCPCS00	ColdChain On-premise Cloud Service
TREK-120-ANR000A00	Cold Chain NFC Reader
TREK-120-SENBDBAT	TREK-120 Battery+ Sensor Board (10 sets)
TREK-120-G2BATT	TREK-120 Battery (10 pcs)
1700001524	Power Cord (US/TW) for LoRa Gateway