Cold Chain Management

Uninterrupted temperature 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

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

Real-time Dashboard

- Statistics at a glance
- Statistics updated according to your selection
- Easy-to-understand function 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
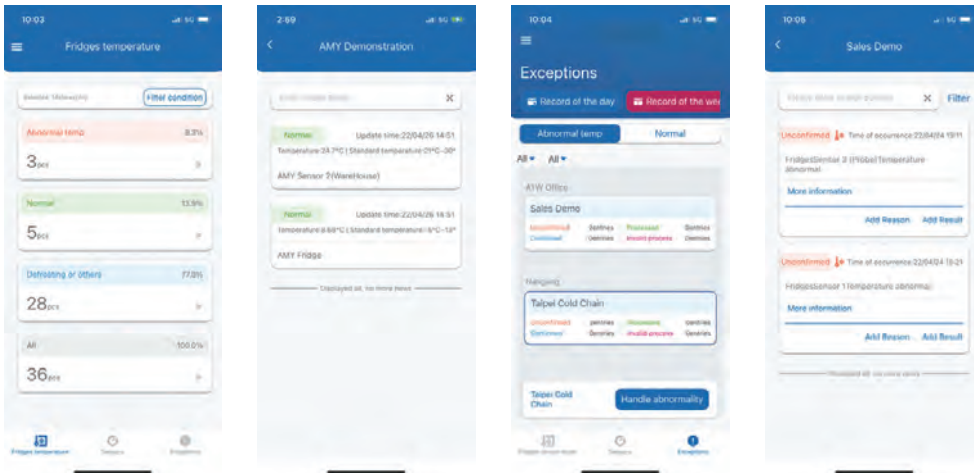- Root cause response system

Various Setting Functions

- Monitoring point setting
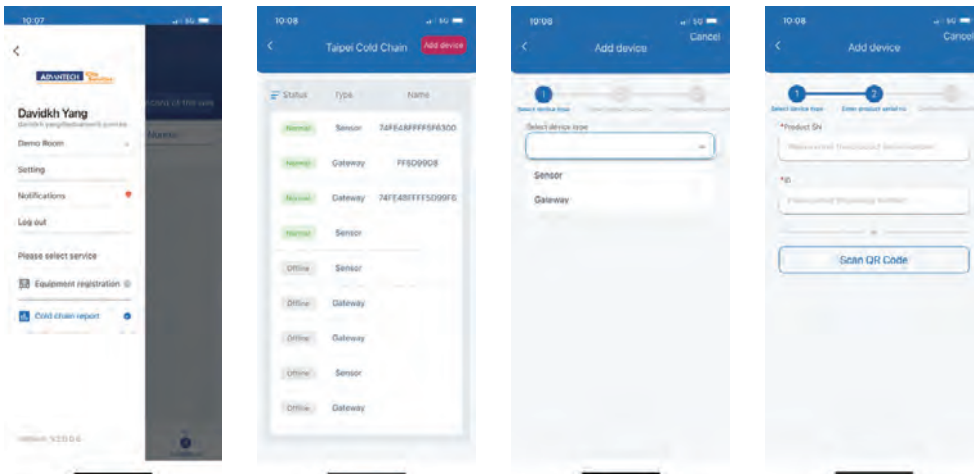- Equipment settings
- Abnormal event condition setting

Key Functions of Mobile App

Dashboard

Equipment Registration

Push Notification

Specifications

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Temperature	Measurement Range	-40 ~ 70 °C
	Accuracy Range	± 0.2 °C from 0~90 °C ± 0.3 °C from -30~0 °C
	Resolution	0.01 °C
Relative Humidity	Measurement Range	0–100% RH
	Accuracy Range	± 2% from 0~100% at 25 °C
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)
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

Specifications

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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, up to 32GB) 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 ~ 20V$_{DC}$ 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/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.

Dimensions

Unit: mm
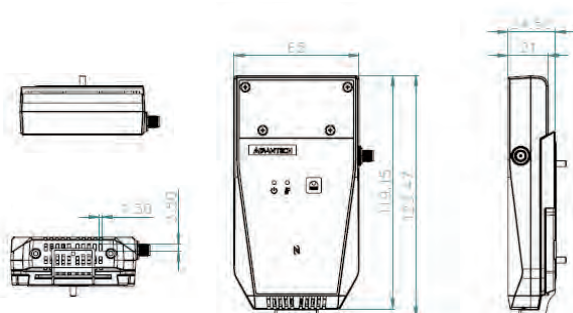
Dimensions

Unit: mm
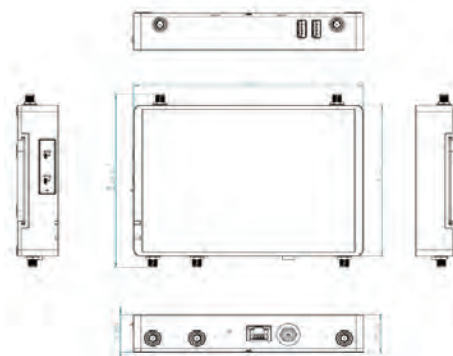
Specifications

Processor	Intel 9th Gen CPU	i5-9500TE
	Max Speed	2.2GHz
	TDP	65W(non-refresh)
	Chipset	Q370
Memory	Technology	Dual Channel DDR4 2400MHz Non-ECC SDRAM
	Capacity	16GB
	Socket	4 x 288 pin U DIMM
Physical Characteristics	Dimension	320 x 132 x 310 mm
	Weight	10kg (without MB and HDD)
Environment	Operating Temperature	0 ~ 40 °C (32 ~ 104 °F)
	Humidity	10 ~ 95% @ 40 °C, non-condensing
	Vibration	1Grms
	Shock	10G (with 11ms duration, half sine wave)
Rear I/O	HDMI	1, Supportmax resolution 4096 x 2160 @ 60Hz
	DP	2, Supports max resolution 4096 x 2304 @ 60 Hz
	Serial	1 RS232
	Ethernet	2 RJ45 (Intel I219LM/Intel I211AT)
	USB2.0	4
	USB3.1	4
	Audio	2(Mic-in/Line-out)
Storage	SATA 3.0	2 x Micron 1300 M.2 2280 256G SATAIII 3DTLC
Software	OS	Win10

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
USM-S66CCG00-E1E-C	LoRa Dongle
36CSSCCMSR1001	Public Cloud License for 1 Sensor, Annual Fee
36CSSCCMSR1002	Public Cloud License for 10 Sensors, Annual Fee
USM-500CCM-G1E-C	On-Premise Server with 50 Licenses, USM-R500
36CSIQMCCM1001	On-Premise License for 100 Sensors
TREK-120-ANR000A00	Cold Chain NFC Reader
TREK-120-SENBDBAT	TREK-120 Battery+ Sensor Board (10 sets)
TREK-120-G2BATT	Battery+ Sensor Board (10 pcs)
1700001524	Power Cord (US/TW) for LoRa Gateway

Dimensions

Unit: mm