CHESTER CLIME

Product Name: CHESTER Clime

Power Type: Battery or DC adapter

Manufacturer: HARDWARIO

Product Type: IoT Gateway

SERIES OVERVIEW

Launched by HARDWARIO, CHESTER Clime is a configurable battery-operated NB-IoT/LTE-M/LoRa WAN environmental sensor that samples, aggregates, and reports temperature and humidity.

CHESTER Clime has 3 built-in sensors. Thermometer used to measure internal temperature, Accelerometer to measure device orientation and ADC used to measure battery.

The CHESTER Clime catalog application allows for setting optional temperature low/high alerting. Also, it comes with several firmware variants offering 1-Wire thermometer (DS18B20), or connection to a Soil Sensor from HARDWARIO (measuring soil moisture and temperature), or RTD thermometers such as Pt 100 / Pt 1000.

CHESTER Clime typical use case:

- Precise control of the environmental conditions
- Create ideal living and working conditions by monitoring indoor air quality with respect to temperature, humidity
- Avoid outages caused by equipment deterioration and report the environmental conditions of switchboards
- Reduce waste of food and medicine by tracking and managing refrigerator temperatures

MAIN COMPONENTS

CHESTER-M-CGLS

- CHESTER mainboard
- Connects sensors, actuators, PLC controllers
- Controls outputs and relays
- Instant messages by NB-IoT/LTE-M or LoRaWAN
- Low-power design
- Open- source Zephyr-based SDK
- Easy setup with HARDWARIO Manager
- Simple integration through HARDWARIO Cloud service

CHESTER-S2

- External hygrometer and thermometer

KEY FEATURES

Low Power Consumption

CHESTER Clime operates on minimal power, extending battery life up to 5 years and reducing operational costs.

Wireless Connectivity

The device supports wireless communication using LTE-M / NB-IoT or LoRaWAN connectivity, ensuring reliable data transmission over long distances.

For local setup the CHESTER Platform includes bluetooth communication, where the user can update the firmware and change the parameters like sampling, aggregation, report, backlight button and many others in HARDWARIO Manager.

Easy Integration

CHESTER Clime seamlessly integrates with various IoT platforms and data processing systems.

Using HARDWARIO Cloud the user has access to the management of IoT devices and provides access to the transmit device data via REST APIs or Callbacks, also can be used with any Dashboard where the user can see and visualize all the data.

Measurement and Behavior

All sensors are sampled with a configurable period. Samples are then aggregated in the configurable interval.

Minimum, maximum, average, and median are computed from buffered samples for each sensor.

Each aggregated value has its timestamps and are sent in a batch in a report interval period.

Open-source SDK

Ability to create your own applications or update the existing one by your self.

VARIANTS

CHESTER Clime

CHESTER Clime is capable of temperature and humidity measurement.

The hardware of this application consists of the following ordering codes:

- CHESTER-M-BCGLS - CHESTER mainboard with C battery holder
- CHESTER-E1-LP - Enclosure with PG9 gland, SMA antenna pigtail and light pipe
- CHESTER-S2 - External thermometer and hygrometer
- Battery SAFT LS26500

CHESTER Clime Z

CHESTER Clime Z is capable of temperature and humidity measurement.

CHESTER Clime Z is powered from external power supply from 6 to 28 VDC and includes backup Battery Lithium-ion battery Charger to be used in the case of failure of external power supply.

The hardware of this application consists of the following ordering codes:

- CHESTER-M-CGLS - Standard mainboard
- CHESTER-S2 - External hygrometer and thermometer
- CHESTER-E1-LP - Enclosure with PG9 gland, DC weipu connector, SMA antenna pigtail and light pipe
- CHESTER-Z - Power source module with backup battery
- Power supply 24 V / 0.5 A with Weipu connector

CHESTER Clime 1W

The catalog application CHESTER Clime 1W supports multiple external DS18B20 1-Wire temperature sensors.

The hardware of this application consists of the following ordering codes:

- CHESTER-M-BCGLS - CHESTER mainboard with C battery holder
- CHESTER-E8-LP - Enclosure with 8 cable glands, SMA antenna pigtail and light pipe
- Up tu eight DS18B20 1-Wire temperature sensors
- Battery SAFT LS26500

CHESTER Clime 1WH

The catalog application CHESTER Clime 1WH supports CHESTER-S2 + multiple external DS18B20 1-Wire temperature sensors.

The hardware of this application consists of the following ordering codes:

- CHESTER-M-BCGLS - CHESTER mainboard with C battery holder
- CHESTER-S2 - External thermometer and hygrometer
- CHESTER-E10-LP - Enclosure with PG9 gland, four small glands SMA antenna pigtail and light pipe
- Battery SAFT LS26500

TECHNICAL SPECIFICATION

Structure	
Enclosure material	ASA
Dimension	130×175×45 mm
Environment	
Operating Temperature	-20 to 60+ °C
Storage Temperature	-20 to 60+ °C
Enclosure Protection	IP 67
Power	
Nominal battery voltage	3.6 V
Nominal battery capacity	7700 mAh
Idle power consumption	< 180 µA
Peak power consumption	> 250 mA
CHESTER-S2	
Thermometer	
Measurement range	-20 to +80 °C
Measurement accuracy	±0,2 % (0 to 65 °C)
Hygrometer	
Measurement range	0 to 100 %
Measurement accuracy	±2 % (from 10 to 90 %)
DS18B20	
Measurement range	-40 to +105 °C
Measurement accuracy	±0,5 % (-10 to 85 °C)