

PRODUCT DATASHEET

CHESTER Range

Remote fill-level and distance monitoring for tanks, silos, bins, and waterways — battery-powered, cloud-connected, deployed in days.

REFERENCE NUMBER HPD.260706.16-R1 DATE July 6, 2026

**0.2–10 m**

measuring range

1 cm

accuracy

up to 4

external thermometers

± 0.2 °C

temperature accuracy

Why integrators pick it

■ Ultrasonic & laser sensing

Supports both ultrasonic and laser time-of-flight distance sensors for different range and accuracy requirements — the MaxBotix MB7066 ultrasonic sensor covers 0.2 to 10 m with 1 cm accuracy.

■ Threshold alerts

Triggers notifications when levels cross configurable thresholds — low level, high level, or rate-of-change alerts — so refills and pickups happen before they become emergencies.

■ Fill level, not just distance

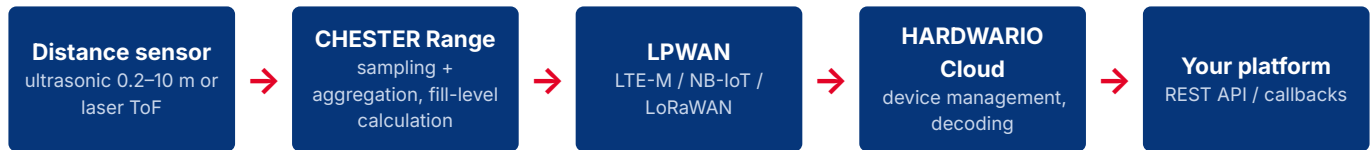
Automatically converts distance measurements to fill-level percentages based on container dimensions — your client sees how full the tank is, not how far the surface is.

■ Outdoor & industrial rated

IP67 enclosure with sensors rated for harsh outdoor and industrial environments, running on batteries with LPWAN connectivity — no cabling, no gateway, no mains power on site.

Where it fits

CHESTER Range replaces manual level checks with an automated data feed: fuel tanks, silos, and reservoirs monitored remotely to prevent outages and optimize delivery schedules; waste containers reporting fill state for smart route planning that cuts collection costs by up to 30 %; rivers, retention basins, and drainage systems watched for early flood warnings; and hoppers, bins, and storage containers feeding real-time inventory levels with automated reorder triggers.



From tank to your client's dashboard — each device samples, aggregates (min/max/average/median), and reports in configurable batches.

The device samples every sensor on a configurable period, aggregates the samples locally, and transmits timestamped batches — radio time stays low, batteries last, and no reading is lost between reports. Alongside distance, it reads up to four external DS18B20 thermometers and an optional CHESTER-S2 hygrometer for humidity. Local commissioning and firmware updates run over Bluetooth Low Energy from a phone with HARDWARIO Manager; fleets are managed remotely through HARDWARIO Cloud with data handover via REST API or HTTP callbacks to any platform you run.

Technical specification

MEASUREMENT

Distance sensor options	Ultrasonic or laser time-of-flight (ToF)
Ultrasonic sensor	MaxBotix MB7066
Ultrasonic sensor range	0.2 to 10 m
Ultrasonic sensor accuracy	1 cm
Thermometer (built-in)	−20 °C to +65 °C, ± 0.2 °C (0 to 65 °C)
External thermometers	Up to 4 × DS18B20 (1-Wire)
External thermometer range	−55 °C to 125 °C
External thermometer accuracy	± 0.5 °C (−10 °C to +85 °C)
External hygrometer	Optional CHESTER-S2 humidity sensor
Data processing	Minimum / maximum / average / median per sensor, timestamped batches

CONNECTIVITY

Cellular	LTE-M / NB-IoT
LoRaWAN	Public and private LoRaWAN networks
Local access	Bluetooth Low Energy — configuration and firmware updates via HARDWARIO Manager

POWER

Power supply	Battery-powered
Battery life	3+ years in typical applications
Idle consumption	100 to 200 μ A typical
External power (Range Z)	DC 6 V to 28 V with rechargeable Li-Ion backup battery

ENVIRONMENT & MECHANICAL

Operating temperature	–20 to +60 °C
Storage temperature	–30 to +70 °C
Ingress protection	IP67
Enclosure	130 × 175 × 45 mm

Ordering information

Two application variants cover the common deployment scenarios: **CHESTER Range** runs fully on batteries; **CHESTER Range Z** adds the CHESTER-Z1 backup module for DC powering with a rechargeable backup battery.

Ordering code	Description
CHESTER-M-CGLS	CHESTER mainboard — LTE-M/NB-IoT, LoRaWAN, BLE, GNSS
CHESTER-X0A:A	Input module — 4 channels with 5 V boost, slot A
CHESTER-Z1	Backup module — DC 6–28 V input + rechargeable Li-Ion cell (Range Z variant)

COMPLIANCE

CE

UKCA

CHESTER Range conforms to the Radio Equipment Directive 2014/53/EU — including the EN 18031-1 cybersecurity requirements mandatory since August 2025 — and the RoHS Directive 2011/65/EU, and to the equivalent UK statutory requirements. The built-in radio modules additionally carry FCC certifications for the US market.

Declaration of Conformity: HDC.260706.15

Scope a level-monitoring pilot

A CHESTER Range evaluation unit is measuring your client's tank and reporting to your platform in an afternoon. Tell us about the application — container geometry, medium, environment, and connectivity on site — and we will configure a pilot kit that matches it, including integration support for your first deployment.

- [Explore CHESTER Range in the HARDWARIO store](#)
- [Read the developer documentation](#)

ABOUT HARDWARIO

HARDWARIO a.s. designs and manufactures industrial IoT devices in Liberec, Czech Republic. Founded in 2016 and listed on the Prague Stock Exchange, the company does more than 80 % of its business through its partners.

HARDWARIO a.s.

HEADQUARTERS

U Jezu 525/4
460 01 Liberec
Czech Republic

HARDWARIO LTD

LONDON OFFICE

10 John Street
London WC1N 2EB
United Kingdom

HARDWARIO LLC

HOUSTON OFFICE

2500 Wilcrest Dr, Suite 624
Houston, Texas 77042
USA