

PRODUCT DATASHEET

CHESTER Structure

Continuous structural monitoring for bridges, buildings, retaining walls, and remote infrastructure — an engineering package built on a proven industrial IoT platform.



REFERENCE NUMBER HPD.260706.17-R1 DATE July 6, 2026

custom

project-specific sensors

battery/DC

power options

24/7

continuous monitoring

Why integrators pick it

- **External sensor integration**
Connect project-specific sensors for displacement, strain, tilt, vibration, temperature, humidity, or other structural parameters — the sensors your project engineer specifies, not a fixed catalog set.
- **Custom firmware logic**
The CHESTER SDK supports application-specific sampling, filtering, thresholds, and payload formats — the device speaks the language of your engineering workflow.
- **Autonomous field operation**
Battery, DC, or solar-backed power with LPWAN connectivity — permanent monitoring where wired infrastructure is expensive or unavailable.
- **Cloud alerts and trend data**
Continuous measurements delivered to dashboards, APIs, and alerting workflows — changes become visible before the next scheduled inspection, not after.

Where it fits

CHESTER Structure moves asset owners from periodic inspection to continuous visibility: displacement, strain, tilt, and temperature on bridges and retaining walls where visual inspection misses early movement; cracks, support movement, and load changes during building reconstruction; long-term monitoring of roofs, towers, and sensitive elements of historic structures; and slopes, roads, mines, and other remote infrastructure beyond standard network coverage.



From structure to the engineering team — continuous trend data and threshold alerts for the parameters that should trigger action.

Each deployment pairs a rugged CHESTER unit with the sensor interfaces, firmware logic, and power setup matched to the site. For locations beyond cellular and LoRaWAN coverage, satellite-integrated deployments are available as a project-specific option outside the standard radio set. Local commissioning and firmware updates run over Bluetooth Low Energy; fleets are managed remotely through HARDWARIO Cloud with data handover via REST API or HTTP callbacks to the engineering platform of your choice.

Technical specification

CHESTER Structure is engineered per project — the values below describe the platform envelope; the exact sensor set, sampling plan, and power budget are specified during scoping.

MEASUREMENT

Supported sensors	Project-specific external sensors
Typical measurements	Displacement, strain, tilt, vibration, temperature
Firmware	Custom logic with the CHESTER SDK — sampling, filtering, thresholds, payload formats

CONNECTIVITY

Cellular	LTE-M / NB-IoT
LoRaWAN	Public and private LoRaWAN networks
Local access	Bluetooth Low Energy — local configuration and firmware updates
Satellite ¹	Available as a project-specific integration

POWER

Power options	Battery, external DC, or solar-backed
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ENVIRONMENT & DEPLOYMENT

Ingress protection	IP67 (electronics)
Deployment model	Pilot, project rollout, or OEM integration

¹ Satellite connectivity is a project-specific option outside the standard radio set covered by the Declaration of Conformity.

Ordering information

CHESTER Structure is an engineering package, not a fixed SKU — every deployment is specified around the structure, the sensors the project engineer selects, and the power and connectivity conditions on site. There are therefore no catalog ordering codes for this product. A typical starter configuration for validating permanent monitoring on one structure includes:

- **CHESTER gateway** — a rugged CHESTER unit configured as the data collector for the selected structural sensors.
- **Sensor interface** — inputs and firmware matched to the displacement, strain, tilt, vibration, or environmental sensors required by the engineer.
- **Power and connectivity package** — battery, DC, solar-backed, cellular, LPWAN, or satellite-integrated setup selected for the site conditions.
- **Alert and dashboard feed** — thresholds, trend exports, and alerts delivered to the engineering team or asset owner.

Instead of an order form, the first step is a scoping call: which structural parameter should trigger action, which sensor type or engineering partner is already selected, and how often measurements and alerts should be delivered.

COMPLIANCE

CE**UKCA**

CHESTER Structure 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.260706.17

Book a structural-monitoring scoping call

A starter configuration validates permanent monitoring on one structure before you expand to more bridges, buildings, walls, or remote assets. Tell us about the structure — the parameters that should trigger action, the sensors or engineering partner already involved, and the site conditions — and we will specify a pilot package with a validated sensor, power, and connectivity bill of materials.

→ [Learn more about the CHESTER platform](#)

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.

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