

PRODUCT DATASHEET

EMBER

A private LoRaWAN network your client owns — one gateway covers the site, with no per-device fees and no dependency on public coverage.

REFERENCE NUMBER HPD.260706.19-R1 DATE July 6, 2026


100s

of devices per gateway

3+ km

line-of-sight range

8

LoRa channels

IP67

indoor & outdoor

Why integrators pick it

■ The network belongs to your client

A private LoRaWAN network with no per-device, per-month charges and no dead zones dictated by a public operator. HARDWARIO optionally provides the services around it — SIM connectivity, a managed network server, and secure remote access over OpenVPN.

■ Backhaul that fits the site

LTE Cat 4 with 3G/2G fallback for roofs, fields, and construction sites; Gigabit Ethernet where cabling exists. Antennas for both LTE paths (main + diversity) can be built in.

■ Carrier-grade LoRa radio

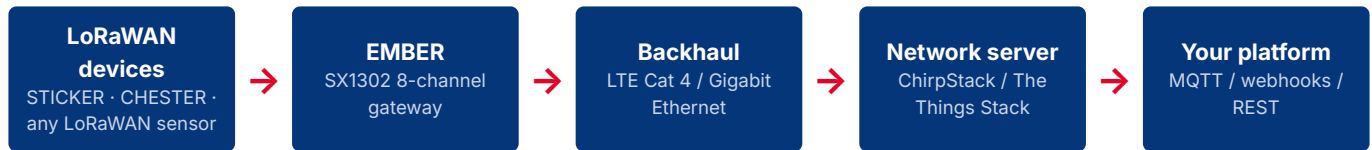
The Semtech SX1302 concentrator receives on 8 channels in the EU868 band with sensitivity down to -141 dBm at SF12, supports device classes A and C, and implements Listen Before Talk.

■ Proven platform, minutes to deploy

Built on the MikroTik platform and configured through a web interface — mount it, power it, and forward traffic to ChirpStack or The Things Stack, self-hosted or operated by HARDWARIO as a managed service.

Where it fits

EMBER is the connectivity backbone for sensor deployments your client wants to own: private networks across commercial buildings, factory floors and warehouses, farms and grain storage, cold-chain hubs, multi-site retail, and temporary construction-site coverage. One IP67-rated gateway covers hundreds of STICKER sensors or any LoRaWAN-compliant device — indoors and outdoors — and additional gateways extend the same network as the deployment grows.



From field sensors to your client's dashboard — the network server manages devices and decodes payloads, then routes data to the platform your solution runs on.

The LoRaWAN network is managed in ChirpStack or The Things Stack — running on your infrastructure or operated by HARDWARIO as a service. Define JavaScript payload decoders, route data via MQTT or webhooks, and integrate through Node-RED with ThingsBoard, a purpose-built application, or any REST endpoint. Independent VPN tunnels separate LoRaWAN data from remote management traffic.

Technical specification

LORAWAN RADIO

Concentrator	Semtech SX1302, 8 channels
Frequency band	863–870 MHz (EU868)
TX power	Up to 14 dBm (EU limit)
RX sensitivity	Down to –141 dBm (SF12)
Device classes	A and C
Listen Before Talk	Supported
LoRa antenna	External, N-type connector

BACKHAUL

Cellular	LTE Cat 4 (150/50 Mbps) with 3G/2G fallback
LTE bands (EU)	FDD 1/3/5/7/8/20/28, TDD 38/40/41
LTE antennas	Main + diversity connectors; optional built-in antennas
Ethernet	2× RJ45, 10/100/1000 Mbit/s (WAN + LAN)

SOFTWARE & MANAGEMENT

Network server	ChirpStack or The Things Stack — self-hosted or operated by HARDWARIO as a managed service
Data routing	JavaScript payload decoders, MQTT, webhooks, Node-RED
Configuration	Web interface (MikroTik RouterOS platform)
Remote access	Secure VPN tunnels (OpenVPN) — separate tunnels for LoRaWAN data and management

POWER, ENVIRONMENT & MECHANICAL

Power supply	DC 11–28 V; 24 V DC adapter with international plugs included
Power over Ethernet	24 V DC passive PoE via the WAN port
Ingress protection	IP67 — waterproof enclosure and connectors
Operating temperature	–20 to +60 °C
Storage temperature	–30 to +70 °C
Mounting	DIN rail or wall mount

Ordering information

The EMBER Hotspot is ordered as one part number combining the LoRaWAN band, the optional LTE modem, and the optional Onomondo SIM card. A 24 V DC power adapter with international plugs is always included.

Ordering code	Description
EMBER-H1-8	EMBER Hotspot — LoRaWAN card for 868 MHz
EMBER-H1-9	EMBER Hotspot — LoRaWAN card for 915 MHz
EMBER-H1-C8	EMBER Hotspot — LoRaWAN 868 MHz + LTE modem (2G/3G/4G)
EMBER-H1-C9	EMBER Hotspot — LoRaWAN 915 MHz + LTE modem (2G/3G/4G)
EMBER-H1-C8-S1	EMBER Hotspot — LoRaWAN 868 MHz + LTE modem + Onomondo SIM card
EMBER-H1-C9-S1	EMBER Hotspot — LoRaWAN 915 MHz + LTE modem + Onomondo SIM card

COMPLIANCE

EMBER 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.

Declaration of Conformity: HDC.260706.19

CE
UKCA

Stand up a private network pilot

An EMBER pilot covers one site: mount the gateway, register the first sensors in the network server, and watch data land on your platform the same day. Tell us about the deployment — site layout, backhaul options, sensor count — and we will configure a pilot kit that matches it, including the network server setup.

- [Explore EMBER 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.

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