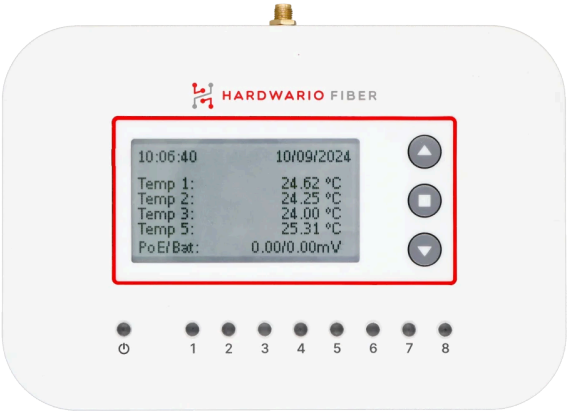
FIBER

Edge gateway for multi-point temperature monitoring over 1-Wire and wireless sensors



DOCUMENTATION

docs.hardwario.com/fiber

Configuration, firmware updates and integration, step by step.

Intended use

FIBER is an industrial gateway with embedded Linux for multi-point temperature monitoring. It reads temperature sensors on eight 1-Wire inputs and wireless sensors over its 868 MHz radio, and sends the data over Ethernet, Wi-Fi or an optional LTE or LoRaWAN module. FIBER is designed for indoor installation.

ACCESSORIES AND SOFTWARE

The gateway is powered from a PoE switch or injector (IEEE 802.3af), ships with its software installed (dashboard, ChirpStack, Node-RED, InfluxDB, Grafana) and is operated through its web interface.

Safety

- Read this manual before installing the device and keep it for later reference.
- Use the device only for its intended use and within the operating conditions given in this manual.
- Do not modify the device beyond what the documentation describes. Do not use a visibly damaged device.
- The device is not designed for potentially explosive atmospheres.
- Power the gateway only over Ethernet from a PoE source to IEEE 802.3af.
- Change the default passwords of the gateway's services before you connect it to a shared network.
- The gateway contains a lithium-ion backup battery: keep it within the operating temperature range, and open the enclosure only as the documentation describes.
- Keep a distance of at least 20 cm between the device and people while it operates.

First start

1. Connect the 1-Wire temperature sensors to the inputs 1 to 8 and the 868 MHz antenna to the SMA connector on the rear.
2. Connect the Ethernet port to a PoE switch or injector (IEEE 802.3af). The gateway starts; its backup battery bridges short power cuts.
3. Find the gateway's IP address among the leases of your DHCP server and open it in a web browser: the dashboard shows the readings.
4. Register the gateway and the wireless sensors as the documentation describes.
5. Each 1-Wire input has an LED that shows sensor presence, activity and errors.

Technical data

Power supply	Power over Ethernet, IEEE 802.3af, 36–57 V; lithium-ion backup battery 3.6 V
Operating temperature	−20 to +60 °C
Storage temperature	−20 to +60 °C
Installation	Indoors
Inputs	8 × 1-Wire
868 MHz antenna	External, SMA connector on the rear
Dimensions	175 × 120 × 35 mm

Radio equipment

The device operates in the following frequency bands:

INTERFACE	FREQUENCY BAND	MAXIMUM POWER
Wi-Fi 2.4 GHz	2400–2483.5 MHz	19.6 dBm
Wi-Fi 5 GHz	5150–5350 MHz 5470–5725 MHz	20.5 dBm
Bluetooth	2400–2483.5 MHz	8.4 dBm
LoRa, GFSK	863–870 MHz	14 dBm
LoRaWAN (option)	863–870 MHz	27 dBm
LTE	bands 1, 3, 7, 8, 20, 28, 38, 40	23 dBm
UMTS (3G)	bands 1, 8	24 dBm
GSM (2G)	900 MHz	33 dBm
DCS (2G)	1800 MHz	30 dBm

Optional: either the cellular module (LTE, UMTS, GSM) or the LoRaWAN module.

⚠ In the EU member states, Norway, Iceland, Liechtenstein, Switzerland, Türkiye and the United Kingdom, operation in the 5150–5350 MHz band is restricted to indoor use.

Batteries

The device contains the following batteries:

Backup cell 18650, soldered in the lid
Lithium-ion, rechargeable · 3.6 V · 3 350 mAh

- ⚠ Use only the battery types listed here and insert them with the correct polarity (+ and –).
- ⚠ A rechargeable battery is charged by the device itself; do not charge it in another charger.
- ⚠ Do not short-circuit, open, crush or heat a battery and do not throw it into fire.
- ⚠ Keep batteries out of the reach of children.
- ⚠ A damaged or leaking battery can overheat or catch fire: take it out of service and do not touch leaking electrolyte.
- ⚠ Lithium batteries are dangerous goods in transport. When shipping the device, follow the carrier's rules for lithium batteries.

Replacing the battery

The backup cell is soldered into the lid, so it is replaced by a qualified technician or by HARDWARIO, never by the user: disconnect the Ethernet cable, open the enclosure (four screws under the rubber feet), unsolder the cell and solder in a new 18650 lithium-ion cell of the same type, observing the polarity. Contact HARDWARIO for a replacement cell.

Disposal and take-back

The crossed-out wheeled bin on the product, on its batteries or on the packaging means that at the end of their life they must not be disposed of with unsorted municipal waste: they must be collected separately.

The symbols Cd or Pb beneath the bin on a battery would mean cadmium or lead above the legal limit.

THE DEVICE

Hand the device in free of charge at a take-back point for electrical equipment, or return it to HARDWARIO.

BATTERIES

Take the batteries out first, where this is possible without damaging them, and hand them in free of charge at a battery collection point or to a battery retailer. Cover the terminals of lithium batteries with tape; do not open, puncture or burn them, and keep damaged batteries away from flammable materials.

WHY IT MATTERS

By handing them in you enable re-use, recycling and other recovery of their materials. Electrical equipment and batteries contain substances (metals, lithium compounds, flammable or corrosive electrolytes, flame retardants) that harm the environment and human health when littered or put into unsorted waste. Discarded lithium batteries can start fires in waste bins, collection vehicles and sorting plants.

LESS WASTE

You help prevent waste by using the device for its full service life. Operating it within the stated temperature range and with a reporting interval no shorter than needed extends the battery life; replace the battery, not the device.

TAKE-BACK POINTS

Take-back of electrical equipment and batteries
hardwario.com/legal/take-back

Declaration of conformity

EUROPEAN UNION

Hereby, HARDWARIO a.s. declares that the radio equipment type **FIBER** is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address:

Declarations of conformity
hardwario.com/resources/declarations/#fiber

The device also complies with Directive 2011/65/EU on the restriction of hazardous substances (RoHS).

GREAT BRITAIN

Hereby, HARDWARIO a.s. declares that the radio equipment type **FIBER** is in compliance with the relevant statutory requirements. The full text of the declaration of conformity is available at the following internet address:
hardwario.com/resources/declarations/#fiber

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The type designation and the serial number are given on the product label.

For products placed on the market from December 11, 2027, HARDWARIO provides free security updates for at least five years from placing on the market (Regulation (EU) 2024/2847).

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