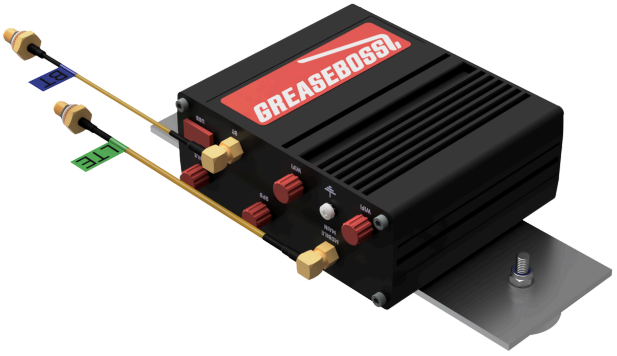
GreaseBoss HME Gateway GBLG20M • v1.0.1 • 21af192 Generated 2026-05-17 09:28

# GREASEBOSS HME GATEWAY USER MANUAL

This manual is for end users, operators and maintainers of the GreaseBoss HME Gateway deployed in the field.

The GreaseBoss HME Gateway is a compact, ruggedised gateway designed for connectivity and data transmission on heavy mobile equipment. It supports multiple backhaul options including 4G/LTE (dual-SIM), Wi-Fi and integration with an existing site OT network making it versatile in environments with or without cellular coverage. Bluetooth Low Energy is used to collect data from nearby GreaseBoss Endpoint devices and forward it to GreaseBoss Cloud.




## SAFETY

Read this manual before operating, servicing or removing the device.

- Isolate site DC power before disconnecting or reconnecting the gateway power cable.
- The gateway is rated for 9–50 VDC; do not connect it to mains voltage or to any source outside this range. Applying a voltage outside 9–50 VDC can damage the device. See *Powering options* below for the supported powering modes and their constraints.
- The gateway is a sealed unit with no user-serviceable parts. Do not open the housing.
- Do not modify the antennas, antenna cables or RF path. Damaged or modified antennas can degrade Bluetooth/Wi-Fi/LTE coverage and may void regulatory approvals.
- When working at height to inspect or replace the outdoor BLE or LTE antennas, follow the site's working-at-heights procedures.

**Intended use:** acting as the cellular/OT network backhaul for nearby GreaseBoss Endpoint devices on heavy mobile equipment, within the environmental and ingress limits in the *Tech Specs*.

## PRODUCT OVERVIEW

The HME Gateway is a ruggedised industrial gateway built around a Teltonika RUTX11 router in an aluminium housing. It collects data from nearby GreaseBoss Endpoint devices over Bluetooth Low Energy and forwards it to GreaseBoss Cloud via one of three backhaul options:

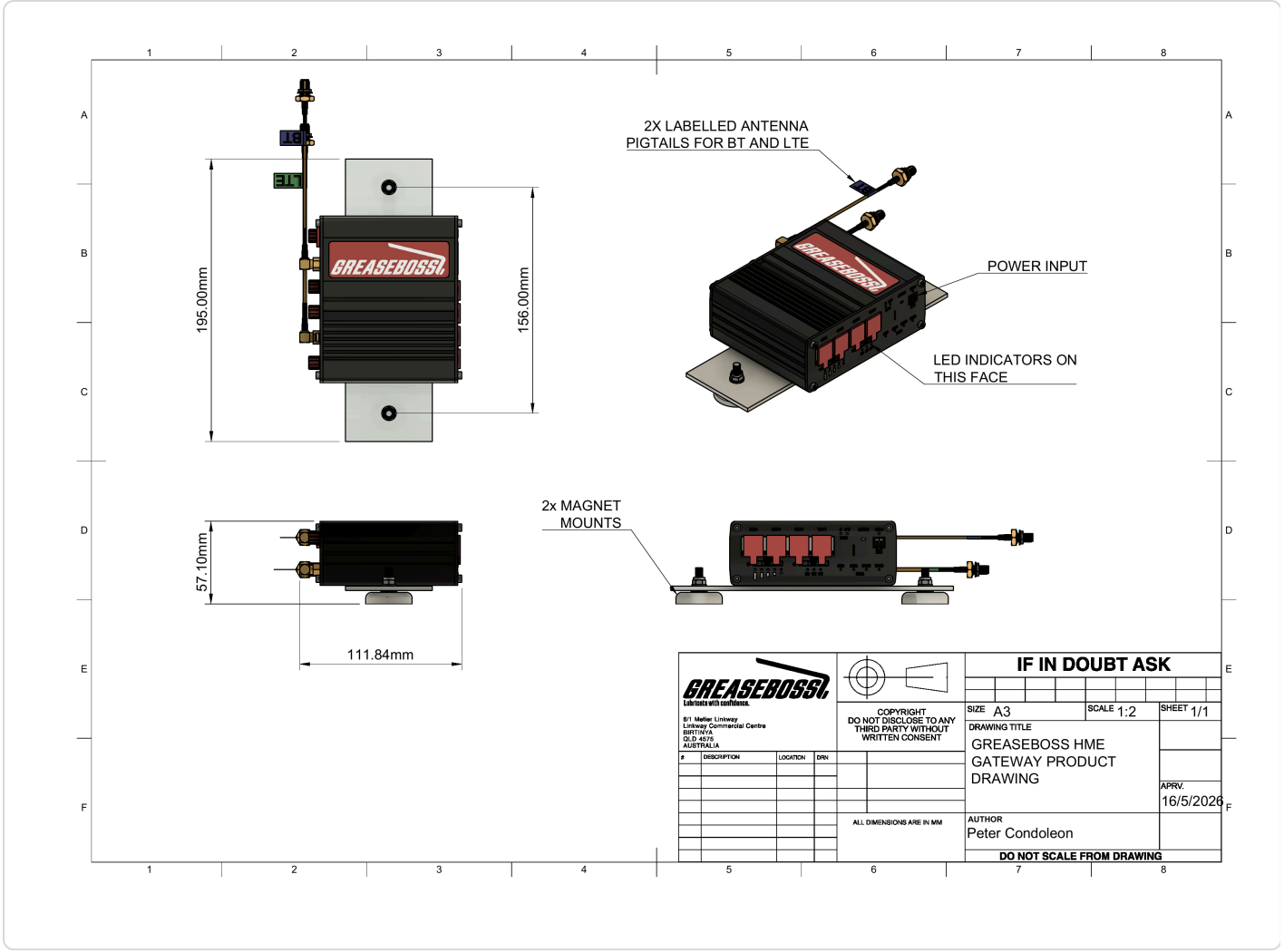
- **4G/LTE** with a SIM (single or dual). GreaseBoss may provide a Global SIM, or a user may supply their own. Private and Public LTE is supported.
- **Wi-Fi** to an existing site access point
- **OT network plug-in** to the customer's wired network (no SIM)

The unit has four wired RJ45 ports (WAN, LAN1, LAN2, LAN3), external connectors for the LTE and BLE/Wi-Fi antennas, and a dedicated DC power input. The antenna connectors are on the opposite face of the housing to the wired ports.



Each gateway is supplied with a label on the housing listing its **LAN1 Static IP**, **Username** and **Password** for first-time access.

External features, port identification and mounting geometry are shown in the product drawing below.




## SPECIFICATIONS

See *Tech Specs* for full mechanical, electrical and environmental data. Highlights:

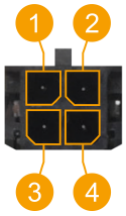
- Teltonika RUTX11 router, aluminium housing
- 4× RJ45 Ethernet ports
- 4G LTE (dual-SIM), Wi-Fi 2.4 / 5 GHz, Bluetooth Low Energy
- Power: 9-50 VDC, 14 W max (Passive PoE on LAN1 also supported)
- Operating temperature –40 °C to +75 °C
- 10–90 % RH non-condensing
- IP30

# POWERING OPTIONS

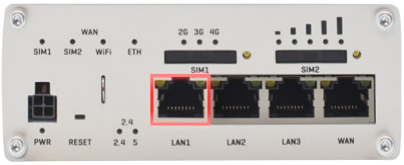
The Teltonika RUTX11 gateway device can be powered in two ways. The HME Gateway is shipped with a DC power cable terminated in a 2-pin Deutsch connector for the DC barrel input; field deployments can use either mode.

| MODE | VOLTAGE | PORT / PINS | NOTES |
|---|---|---|---|
| **DC barrel input (4-pin)** | 9-50 VDC | 4-pin DC socket on the router (factory-wired to the external Deutsch power cable) | Primary mode. Takes priority if both sources are connected. |
| **Passive PoE on LAN1** | 9-50 VDC | LAN1 only. DC+ on pins 4 & 5, DC- on pins 7 & 8 | Use a Passive PoE injector. Do **not** apply PoE to any other port. |

The router's 4-pin DC socket carries DC+ on pin 1 and DC- on pin 2 (pins 3 and 4 are reserved for special functions):

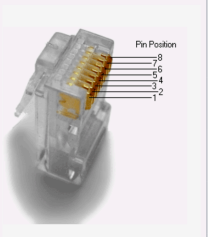



For Passive PoE, LAN1 is the only port that accepts power. Do not apply PoE to WAN, LAN2 or LAN3 as this will damage the device:




The PoE pin assignment on LAN1 follows the "mode B / DC on spares" convention — DC+ on pins 4 & 5 (blue / white-blue), DC- on pins 7 & 8 (white-brown / brown). T568A and T568B wiring orders both work:

**RJ45 pinout:**

| Pin | 10/100 mode B, DC on spares | | T568A Color | T568B Color | Pins on plug face (socket is reversed) |
|---|---|---|---|---|---|
| 1 | | TX+ | white/green stripe | white/orange stripe |  |
| 2 | | TX- | green solid | orange solid | |
| 3 | | RX+ | white/orange stripe | white/green stripe | |
| 4 | DC+ | 9-50 VDC | blue solid | blue solid | |
| 5 | DC+ | 9-50 VDC | white/blue stripe | white/blue stripe | |
| 6 | | RX- | orange solid | green solid | |
| 7 | DC- | | white/brown stripe | white/brown stripe | |
| 8 | DC- | | brown solid | brown solid | |



If both power sources are present simultaneously, the DC barrel input takes priority. When the device switches between sources it briefly loses power and may reboot.

**WARNING — NOT 802.3AF / 802.3AT COMPLIANT**

The RUTX11 is **not** compliant with the IEEE 802.3af-2003 (PoE) or 802.3at (PoE+) standards. Connecting the gateway to an 802.3af / 802.3at PoE switch or injector will damage the device. Use only a Passive PoE injector in the 9–50 VDC range.

**WARNING — HIGH-VOLTAGE SUPPLY PEAKS**

Some unregulated or low-quality DC supplies produce voltage spikes well above their rated output, especially on connect / disconnect. Use a high-quality regulated DC source. If feeding the unit from a >15 VDC supply, fit additional surge / transient protection upstream to suppress peaks.

**WARNING — AVOID GROUND LOOPS**

Do not bond the supply DC– to chassis or earth when another path (e.g. an antenna shield, a separately-earthed cable shield, or the host machine frame) is also bonded to earth. The

parallel earth path forces unintended current through the device PCB ground and may damage it. Reference the supply 0 V at a single point.

## INDICATORS

The RUTX11 router exposes a row of LEDs on its port-side face, alongside the four RJ45 ports and the power inlet:



The most useful indicators for day-to-day operation are:

| LED | MEANING |
|---|---|
| **Power** | Solid when the gateway has DC power. |
| **Mobile signal (1–5 bars)** | Indicates LTE signal strength (LTE configurations only). One or two bars means marginal coverage; investigate the LTE antenna placement. |
| **2.4 / 5 GHz Wi-Fi** | Solid when the Wi-Fi radio is active. |
| **Ethernet (per port)** | Solid when a link is established; flashes on traffic. |

Refer to the Teltonika RUTX11 documentation for the full LED reference.

## NORMAL OPERATION

Once installed and powered, the gateway runs unattended. It continuously monitors and accepts Bluetooth Low Energy connections from nearby GreaseBoss Endpoint devices, queues their sync data, and forwards it to GreaseBoss Cloud over the configured backhaul. No operator interaction is required during routine use.

Do not power-cycle the gateway as a first-line troubleshooting step in the field, contact GreaseBoss Support first, since a reboot can mask the underlying issue and delay diagnosis.

## MAINTENANCE

| ACTIVITY | INTERVAL | NOTES |
|---|---|---|
| Visual inspection | Per asset service interval | Confirm the housing, antennas and cabling are intact, mounting is secure, and connectors are seated. Check that the BLE/Wi-Fi antenna weatherproofing (amalgamating tape + electrical tape) is undamaged. |
| GreaseBoss Cloud health review | Weekly | Check the Health Tab for offline gateway status, weak RSSI from connected Endpoints, and LTE signal trend. |
| LTE antenna check | If signal degrades | Confirm the magnetic-mount antenna is firmly attached to a clean steel surface with clear sky view and that the SMA connector is finger-tight. |
| Firmware update | As advised by GreaseBoss | Performed remotely by GreaseBoss; no on-site action required. |

If the gateway reports offline in GreaseBoss Cloud, see *Troubleshooting* before any physical intervention.

## SUPPORT

Contact GreaseBoss Support with the following information ready:

- Asset name and Endpoint serial number (printed on the device label).
- Description of the issue and when it started.
- Screenshot of GreaseCloud showing Asset Health, Timeline and Diagnostics for the Endpoint.
- Photographs of the Endpoint and surrounding installation where physically accessible.

- Recent LED behaviour and any actions already attempted.

**Email:** support@greaseboss.com.au **Phone:** +61 7 3186 0203 **Web:** www.greaseboss.io

## DECOMMISSIONING AND DISPOSAL

Isolate site DC power before disconnecting the gateway. Unscrew the antenna cables at the router, cap the connectors to keep dust and moisture out, and remove the gateway from its mounting. Return the unit to GreaseBoss for refurbishment, failure mode analysis or controlled disposal.