

EnergyNode Bridge

Bluetooth Mesh

Remoticom | EnergyNodeBridge | GlobiMesh | Bluetooth Mesh

EnergyNode Bridge.

The EnergyNode Bridge extends the capabilities of Remoticom's EnergyNode ecosystem by providing reliable connectivity for Bluetooth Mesh lighting and sensor networks. Many installations rely on mesh devices such as the EnergyNode Connect and EnergyNode Pulse to detect motion, relay triggers, adjust illumination, and share occupancy information across a site. The EnergyNode Bridge brings these devices online through an efficient NB-IoT/LTE-M uplink, enabling remote monitoring, configuration, and full device lifecycle management through the Remoticom Device Management backend(RTM-DM).

The EnergyNode Bridge forms the central link between the Bluetooth Mesh network in the field and the remote management environment. Within the mesh, it functions as the coordination point that allows each connected device to be represented as an individual entity inside RTM-DM.

Once connected to RTM-DM via NB-IoT or LTE-M, the bridge maintains a secure communication channel using CoAP and OSCORE. This channel is optimized for extremely low data consumption, allowing entire networks to operate on a single subscription.

The bridge plays a key role in device onboarding and maintenance. When a new EnergyNode Connect or EnergyNode Pulse device is powered on within range, the bridge can automatically provision it into the mesh network, distribute the appropriate network keys, and synchronize configuration profiles prepared in advance by installers or planners. This approach reduces installation time and minimizes field errors, as the bridge ensures that every device joins the correct network with the correct parameters.

Because the system is fully model-driven, each mesh device is represented by a well-defined data model that ensures predictable, uniform interaction regardless of device type or firmware generation.

In environments such as tunnels, campuses, industrial facilities, bicycle paths, and public buildings, the EnergyNode Bridge establishes a connected backbone that retains the strengths of a decentralized mesh while adding the reach and management benefits of modern cellular networks. The result is a unified platform where mesh devices become seamlessly integrated participants in a larger connected infrastructure.

ADVANTAGES.

- ✓ Up to 150× reduction in SIM/data costs
- ✓ Reliable coverage in underground and indoor spaces
- ✓ Predictable, structured data flow
- ✓ Secure by design
- ✓ Remote provisioning
- ✓ Scalable architecture
- ✓ OTA via gateway -> Mesh devices
- ✓ Flexible installation

PRODUCT DATA EnergyNode Pulse.

Physical information

Dimensions (in mm)	38 x 33 x 30 mm
Color (REAL)	Light Grey

Electrical information

Rated voltage	12 to 22.5 VDC (According to DALI standard)
Average current	15 mA
Absolute min/max voltage	9 - 26 VDC
Settings via	Bluetooth or Gateway
Application	Installation in fixture
Connection	Two-pin connector
Mounting location	Wall or ceiling
Mounting height max.	4 meters
Dali Certification	D4i Type-D (single master)
Bus power required	Yes
Compatible drivers	DALI-2 and D4i
Twilight switch level	50 lux
Radar technology	5.8 GHz

Environment and quality

Operating temperature	-20 to 70 degrees Celsius
Humidity	10% to 80% (non-condensing)
Storage temperature	-25 to 70 degrees Celsius
Storage humidity	10% to 80% (non-condensing)
IP class	IP20

Commercial

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