LoRa Mesh vs. LoRaWAN

Both use the same LoRa radio chips but operate completely differently. This is the most common source of newcomer confusion.

LoRaWAN

A **hub-and-spoke** network designed for IoT sensors reporting to the cloud. End devices transmit to fixed gateways; gateways forward over the internet to a server. No direct device-to-device communication. No gateway in range = no connectivity. Examples: The Things Network, Helium.

LoRa Mesh (Meshtastic, MeshCore)

A **peer-to-peer** network where nodes communicate directly and relay each other's messages. Works completely offline - no internet required. Messages hop: A → B (relay) → C → D. Adding nodes usually extends coverage and adds redundant paths, though very large or chatty meshes can congest the shared channel. Examples: Meshtastic, MeshCore.

Comparison table

Feature	LoRaWAN	LoRa Mesh
Architecture	Hub-and-spoke	Peer-to-peer
Network server required	Yes (usually internet-hosted; private offline servers are possible but uncommon)	No
Direct messaging	No	Yes
Multi-hop relay	No	Yes
Works without infrastructure	No	Yes
Typical use case	Sensor data to cloud	Off-grid comms, group coordination

They cannot communicate with each other. Different packet formats, addressing, and network stacks - they share hardware but speak different protocols.

Important: LoRaWAN gateways won't build a mesh

LoRaWAN gateways ($100 - $300) are internet-backhaul radios, not mesh relays - they pass traffic between devices and a network server (in both directions, including downlinks to devices) but never peer-to-peer. To build a LoRa mesh network you need Meshtastic- or MeshCore-compatible devices, not LoRaWAN gateways.

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