

Callsign and Identification in Mesh Networks

One of the most common questions from licensed amateur radio operators entering the LoRa mesh world is: *do I need to identify my mesh node with my callsign?* The short answer is no - but the longer answer involves understanding why, when identification is still a good practice, and the one important exception.

The Legal Framework: Part 15 and Identification

No Callsign Requirement Under Part 15

LoRa mesh networks operating on the 902 - 928 MHz ISM band in the United States are regulated under FCC Part 15. Part 15 governs unlicensed intentional radiators - devices that intentionally transmit radio frequency energy. Part 15 imposes no station identification requirement whatsoever. There is no rule requiring an ISM band device to identify itself with any callsign, serial number, or other identifier.

This is in contrast to Part 97 (amateur radio), which requires identification every 10 minutes during transmission and at the end of each communication. But because LoRa mesh is not operating under Part 97, Part 97's identification rules do not apply.

Why This Matters for Operators

Many licensed hams instinctively reach for their callsign when configuring any radio transmitter. For LoRa mesh, this habit is not legally required. You can name your node anything - your name, a location, a handle - and be fully compliant with FCC rules. Operators who are not licensed radio amateurs face no different standard: they also have no identification requirement.

Best Practices: Using Your Callsign Anyway

The Courtesy Tradition

While not legally required, many licensed amateur operators choose to include their callsign in their mesh node name as a matter of courtesy and community norms. This practice:

- Makes it easy for others to identify who operates a node and contact them through normal ham radio channels if needed
- Contributes to accountability in shared community networks
- Aligns with the general ham radio culture of identification and transparency
- Makes it easier to coordinate with ARES, RACES, or other ham radio emergency groups who maintain contact lists by callsign

Recommended Naming Formats

If you choose to use your callsign in your node name, common formats in the Meshtastic and MeshCore community include:

Format	Example	Use Case
<code>CALLSIGN</code>	<code>W6ABC</code>	Simple, short - best for node short name display
<code>CALLSIGN-location</code>	<code>K5XYZ-rooftop</code>	When operator has multiple nodes in different locations
<code>CALLSIGN-mesh</code>	<code>W6ABC-mesh</code>	Distinguishes mesh node from other callsign uses (APRS, etc.)
<code>CALLSIGN-type</code>	<code>N7QRT-router</code>	Indicates node role to other operators

Meshtastic's long name field (up to 39 characters) accommodates descriptive names well. The short name field (4 characters) is typically used for a short identifier - many operators use the suffix of their callsign (e.g., "ABC" for W6ABC) or a regional code.

When Operators Choose Not to Use Callsigns

There are legitimate reasons an operator might not include their callsign in their node name:

- **Privacy:** A callsign is a public record linked to your name and address in the FCC ULS database. Operators who prefer not to be identified by strangers on a community mesh may use a handle or location-based name instead.
- **Non-ham participants:** Mesh networks often include participants who are not licensed amateurs. A community mesh might have nodes named after locations, businesses, or personal handles rather than callsigns. There is no requirement for consistency.
- **Organizational nodes:** Nodes deployed by ARES groups, public safety auxiliaries, or businesses may use organizational identifiers rather than individual callsigns.

When Identification *Is* Required: The APRS Exception

APRS Operates Under Part 97

APRS (Automatic Packet Reporting System) on 144.390 MHz is a Part 97 amateur radio system. When a Meshtastic node acts as an APRS gateway - bridging position reports from the mesh onto the APRS network via a VHF radio transmitter - that VHF transmission is Part 97 operation and **full Part 97 identification requirements apply**.

This means:

- The APRS gateway must transmit under a valid amateur callsign
- The operator must hold at least a Technician class license (APRS on 144.390 MHz is a VHF system; the Technician class includes full privileges on 144 MHz)
- The station must identify every 10 minutes of transmission and at the end of each communication sequence
- APRS position packets automatically include the source callsign as part of the AX.25 packet format, so identification is inherent in the protocol

Practical Guidance for APRS Gateway Operators

If you run an APRS gateway node that bridges your mesh to APRS-IS (the internet-based APRS backbone) rather than directly transmitting on 144.390 MHz, the rules are different from RF, but obligations still apply. Connecting to APRS-IS requires a valid amateur callsign and passcode - this

is a condition of access, not merely a courtesy. Also note that data you inject into APRS-IS may be retransmitted on RF (Part 97) by third-party IGates, so only inject traffic you could lawfully originate on amateur frequencies under your own callsign. Improperly identified or unlicensed injections can result in Part 97 transmissions under other stations' callsigns, creating compliance exposure for both you and the gating stations.

The Question of Mesh Encryption and Part 97

A related identification question sometimes arises around encryption. Part 97 §97.113(a)(4) prohibits transmissions in which the meaning is obscured to others. Meshtastic uses AES256-CTR encryption on channels (the channel PSK can be 128- or 256-bit); direct messages use public-key cryptography since firmware 2.5.0. Because Meshtastic operates under Part 15 (not Part 97), this prohibition does not apply. However, it does mean that *you cannot claim to be operating under Part 97* while running standard encrypted Meshtastic channels - the two regulatory frameworks are separate and you must stay in Part 15 for encrypted mesh operation.

The practical upshot: stay on the ISM band, operate under Part 15, and identification is entirely optional. Run APRS bridging? Full Part 97 compliance required for that component.

Summary

- LoRa mesh on 902 - 928 MHz ISM band operates under FCC Part 15 - no callsign or identification required
- Many licensed hams use their callsign in node names as a courtesy - this is a good practice but not a legal obligation
- Common formats: `W6ABC`, `K5XYZ-rooftop`, `N7QRT-router`
- Privacy concerns and non-ham participants are valid reasons to use names other than callsigns
- APRS gateway operation (the VHF radio side) is Part 97 and requires a valid callsign and full identification

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