
WOSV

Introduction to Meshtastic (915 MHz)

Decentralized Mesh Communication for Everyone

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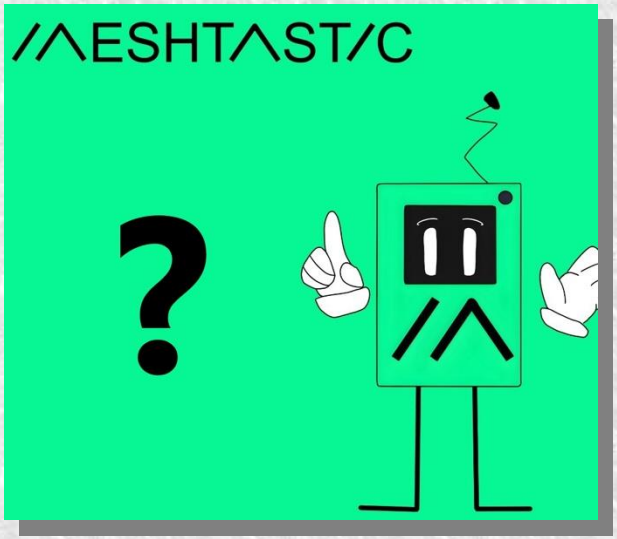
Date: Today

What is Meshtastic?



- Open-source communication platform
- Uses LoRa (LONG RANGE) radios to form mesh networks
- Enables text messaging and location sharing without cell towers or Wi-Fi
- Designed for off-grid and emergency communications

Why 915 MHz?

- Part of the ISM (Industrial, Scientific, Medical) band in North America
- Legal for unlicensed use under FCC Part 15
- Offers a good balance between range and data throughput
- Typically allows longer range than 2.4 GHz

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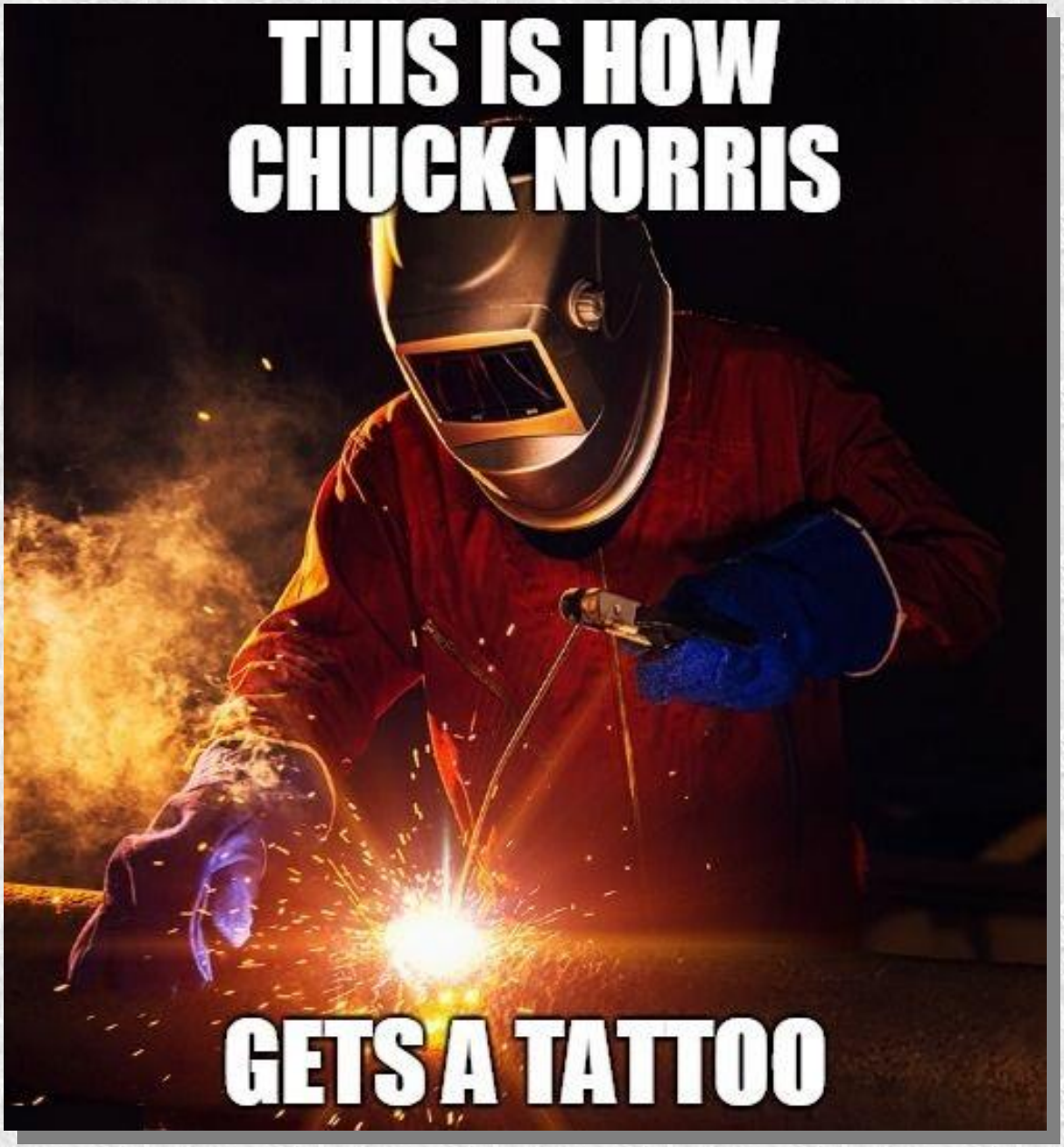
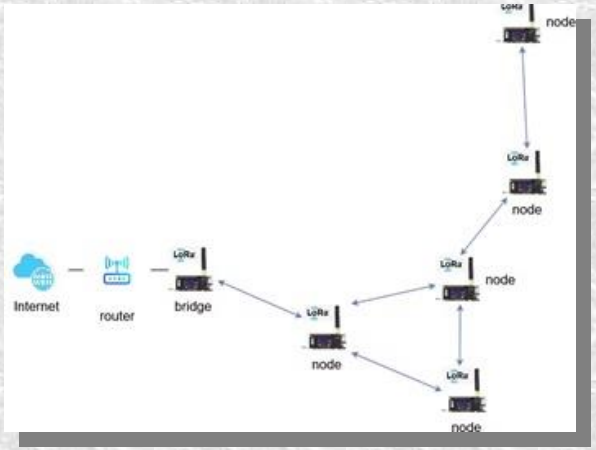

THIS IS HOW
CHUCK NORRIS
GETS A TATTOO

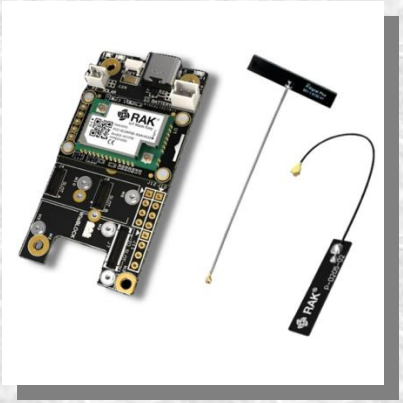
How It Works



- Devices send encrypted packets using LoRa modulation
- Messages hop from node to node until they reach the destination
- Each device acts as a router in the mesh network
- No central server or internet needed

Hardware Options (915 MHz)

- TTGO T-Beam: Built-in GPS, LoRa radio, and battery connector
- Heltec LoRa 32 V2: Compact and affordable
- RAKwireless WisBlock: Modular and expandable
- DIY options using ESP32 + LoRa modules (e.g., SX1262/SX1276)



Software & Apps

Meshtastic Firmware: Flash onto supported devices

- Mobile App (Android/iOS): Send/receive messages, configure nodes
- Desktop App / CLI / MQTT: Advanced configurations and integrations
- Meshsense

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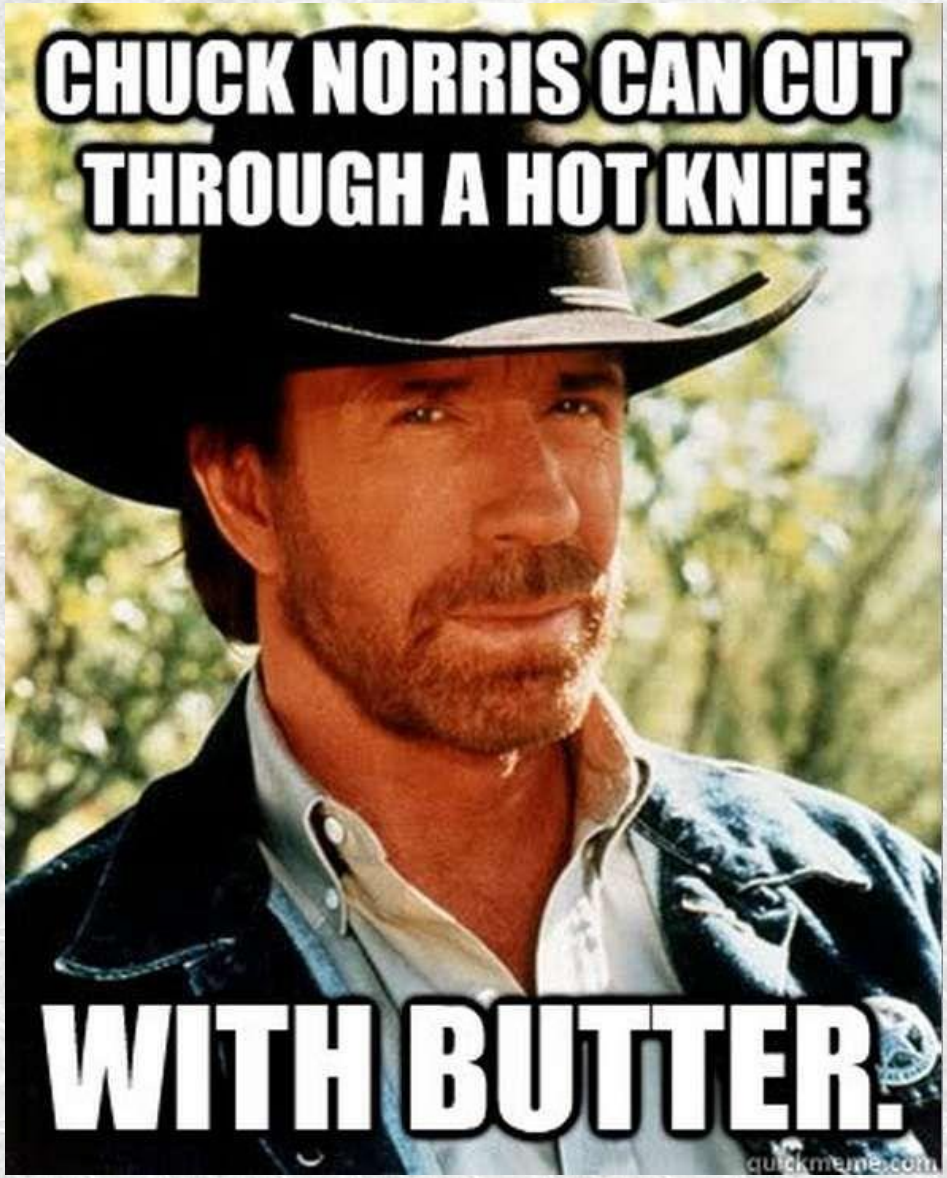

CHUCK NORRIS CAN CUT
THROUGH A HOT KNIFE
WITH BUTTER.

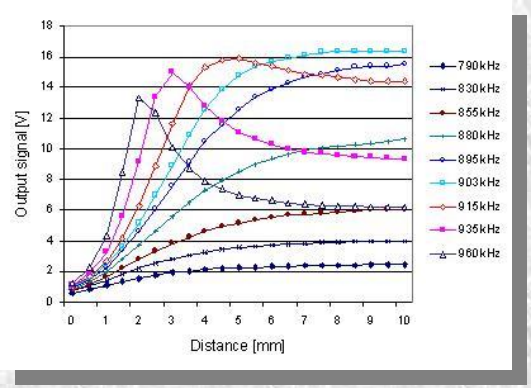
Real-World Use Cases

- Emergency communications (EMCOMM)
- Hiking and outdoor adventures
- Community networking
- Disaster preparedness
- Events without infrastructure

Range Expectations

- Urban areas: 0.5–2 miles
- Suburban: 2–5 miles
- Rural/Open terrain: 5–20+ miles
- With directional antennas: Even farther!

Legal & Operational Considerations



- 915 MHz is unlicensed, but still regulated (stay under power limits)
- Avoid interference with other ISM devices
- Encryption is enabled by default for privacy
- Ideal for non-commercial, personal, or educational use

How to Get Started

- Buy a 915 MHz LoRa board (e.g., Heltec v3)
- Flash Meshtastic firmware
- Connect with the mobile app
- Join or build your own mesh
- Share and grow your network

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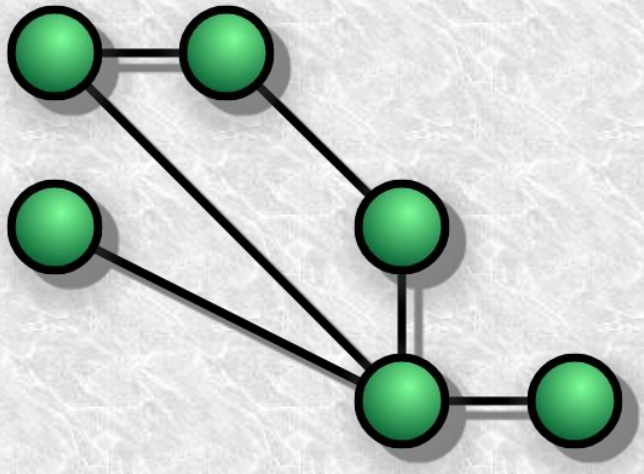
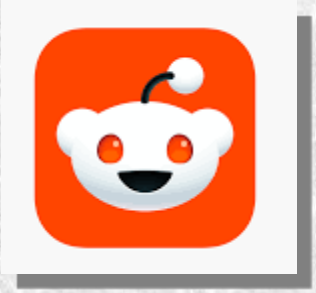


Chuck Norris can rub two pieces of fire together and make wood.

Resources & Community

- https://meshtastic.org
- Meshtastic on GitHub
- Discord, Reddit, Telegram groups
- YouTube tutorials and blogs



WQSV

W0SV Mesh

Coverage is approx. 6 miles in either direction

Max Dist achieved was 16 miles

If all nodes were online we have 42 total

Network channel utilization is minimal

W0SV Mesh

Our mesh was designed for EMCOMM

It is a closed network

Not on the default freq 915.xx

Unique security code

2 primary repeaters are located on Sauk Rapids water tower and W0SV club house

W0SV Mesh

We did venture into the UHF side of the house

Using Malaysia 433

In testing it was faster.

But we had already laid the foundation with VHF freq

THE END

Q & A