

# MeshCore

## A Mesh Radio Network



Simplex Repeater



Simplex Repeater



Simplex Repeater



Simplex Repeater

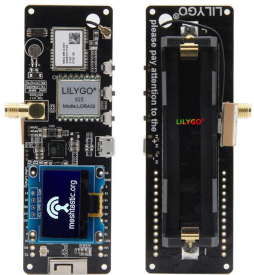
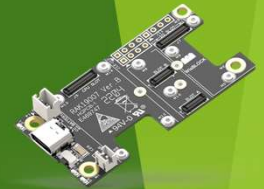
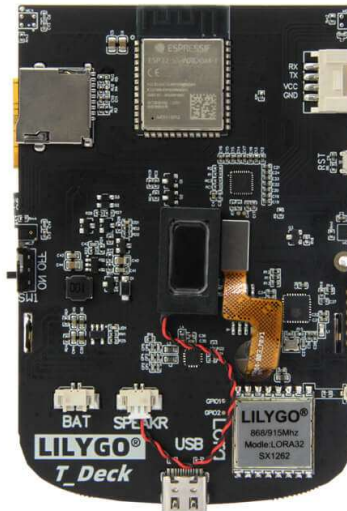
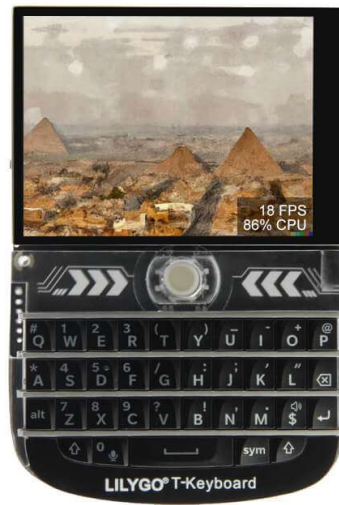
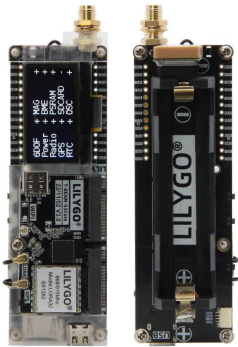
\*All trademarks are the property of their respective owners.



[BirminghamMesh.org](http://BirminghamMesh.org)

# MeshCore

## A Mesh Radio Network



Several device types are available, from all-in-one devices, to bare bones components, as well as modular platforms with multiple sensors and sub-components.



[BirminghamMesh.org](http://BirminghamMesh.org)

# MeshCore

## A Mesh Radio Network

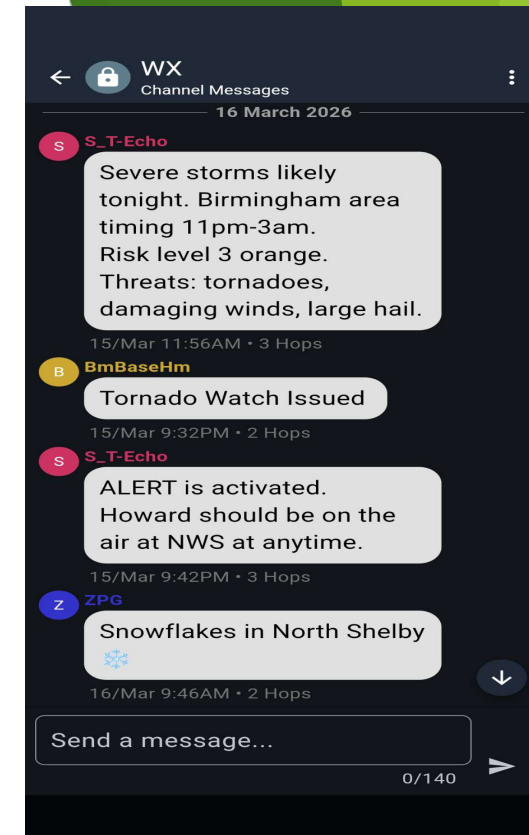
### WHAT IS MESH CORE?

MeshCore (MC) is a **FREE APP** that pairs with a LoRa transceiver for sending texts when cellular networks are not available.

MC implements a **MESH ROUTING** network\* on the **915 MHz** band in the USA. Radios automatically link with each other to find the best path.\*

MC technology is still very new, and infrastructure is not completely built-out yet, so **MC should not be considered a consumer-level application.**

\*Mesh routing sends a text packet that is repeated only by devices in repeater role, which decrement the packet's hop count by 1.



# MeshCore

## A Mesh Radio Network

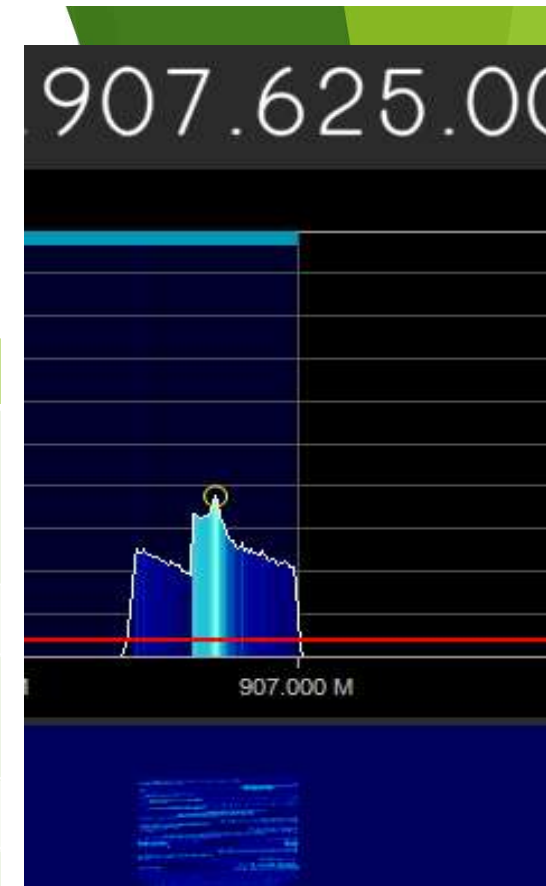
### WHAT IS THE MODULATION AND PROTOCOL?

LoRa protocol is named for **Long Range!** A distance of **203 miles** achieved with **LoRa at 250 mW** with **2.8dB** antennas from one mountaintop to another.

MC utilizes the LoRa Peer-to-Peer '**CHIRP**' modulation technique [**NOT LORAWAN**] on the **915 MHz** band in USA / **868 MHz** band in Europe.\*

MC can be configured for various bandwidths, spreading factors, and coding rates, but we utilize custom parameters at **907.375 MHz** with a bandwidth of **62.5 kHz**, **Spread Factor = 9** and **Coding Rate = 5**.

**\*UNLICENSED MODE IS PROHIBITED ON 433 MHz IN USA!!**



# MeshCore

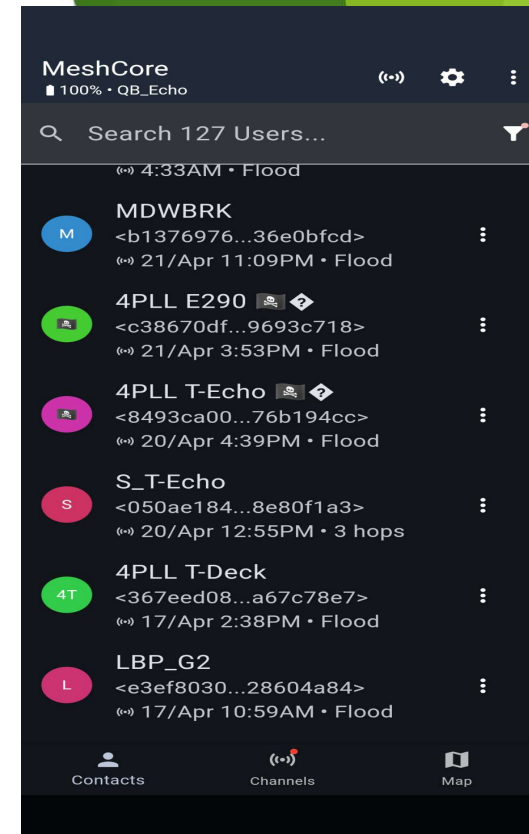
## A Mesh Radio Network

### FCC PART 15

MC can be utilized in low power **UNLICENSED MODE** up to 4W EIRP as an FCC Part 15 device under Industrial, Scientific and Medical [ISM] rules.\*

MC can utilize **AES256 ENCRYPTION LEGALLY** in UNLICENSED ISM mode.

\*The legality of MeshCore under FCC Part 97 IS NOT CLEAR, so the recommendation is to avoid using amateur radio call signs!



BirminghamMesh.org

# MeshCore

## A Mesh Radio Network

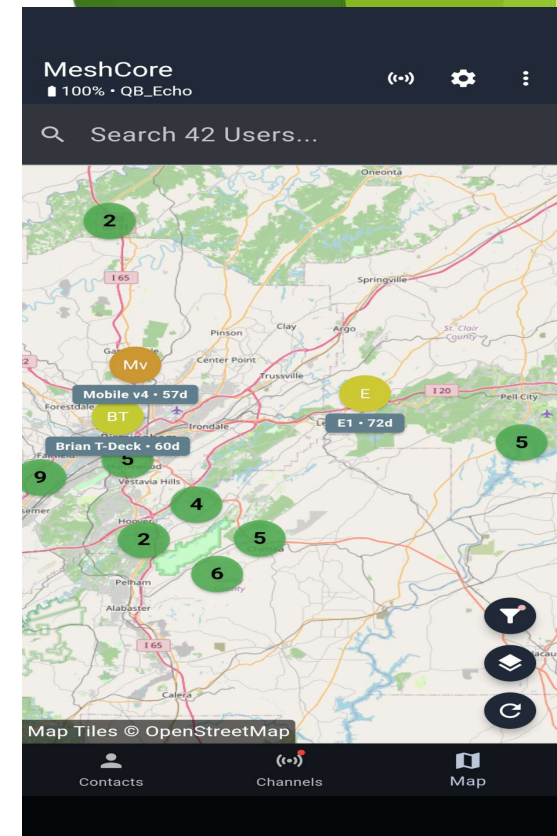
### WHAT ARE THE BENEFITS OF MESHCORE IN UNLICENSED MODE?

MC can be utilized by family members who may never become licensed amateur radio operators.

MC may spark an interest in getting licensed for the amateur radio hobby.

MC devices, and the application itself, are easy to use, building on the familiar texting paradigm.

Device configuration is easy, with no need to understand mesh routing.



[BirminghamMesh.org](http://BirminghamMesh.org)

# MeshCore

## A Mesh Radio Network



Bessemer



S. Shades Crest



Bluff Park



Double Oak



Bald Rock



Helena



Pinnacle Point



Wilsonville  
(TBA)



Signal Mountain



Clanton



Sylacauga

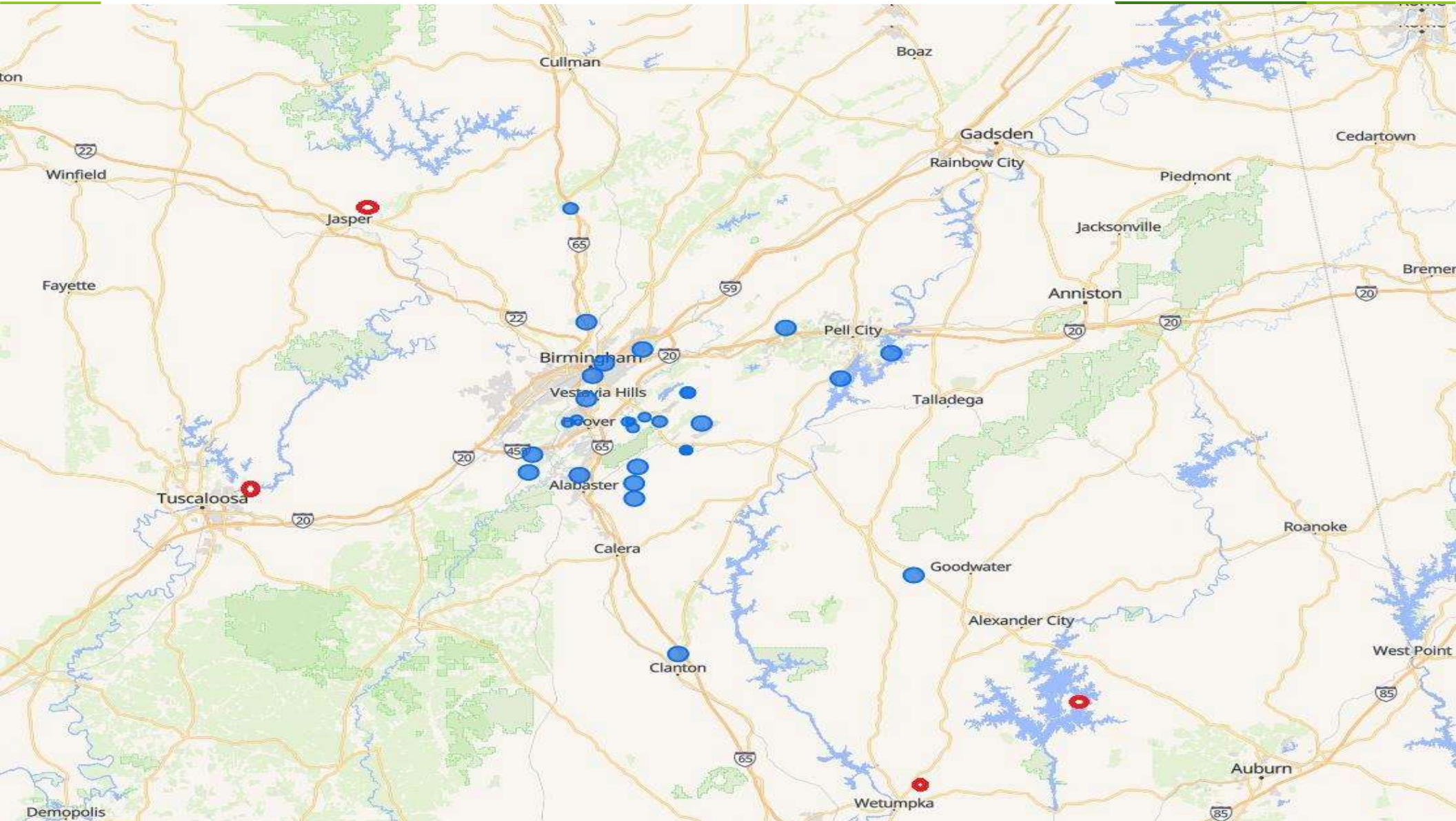
PHASE I  
DEPLOYMENT



Ruffner



BirminghamMesh.org



# MeshCore

## A Radio Mesh Network

### RELATED WEBSITES OF INTEREST

<https://meshcore.co.uk/>

<https://flasher.meshcore.co.uk/>

<http://AustinMesh.org/similar-networks/>

<https://docs.rakwireless.com/Product-Categories/WisBlock/>

<https://store.rokland.com/pages/meshtastic-hardware-rak-lilygo>

<https://analyzer.letsmesh.net/packets?region=BHM>

<https://live.tenmesh.com/#/live>



BirminghamMesh.org

# MeshCore

A Radio Mesh Network

Q & A



[BirminghamMesh.org](http://BirminghamMesh.org)