



Bucket Meshnet Node

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This guide will walk you thru everything you need to know to set up and run an off grid, decentralized text communication network.

Platform

- Meshtastic:
- <https://www.meshtastic.org/>
- <https://meshtastic.discourse.group/>

Before you begin:

Here is an introductory video that explains how LoRa works, and what to expect.

[LoRa Mesh Communication without Infrastructure: The Meshtastic Project \(ESP32, BLE, GPS\)](#)

Sections

I. Getting the hardware setup:

First thing we'll get your Nodes ready to hang up in a tree, or screw to a high post, however you can get them high up.

II. Using the app & updating the firmware.

Next we'll walk thru installing and using the app, as well as updating the firmware on your nodes to add new features and stability as they are developed by the Meshtastic Community.

Section I.1 - Parts List:

From the hardware store:

1x 2 Gallon bucket \$4 | [Ace Hardware Link](#)

1x 2 Gallon Bucket Lid \$2 | [Ace Hardware Link](#)

1x Silicone RTV 3oz \$5 | [Ace Hardware Link](#)

(Note: 1 bottle of this will last for 10+ node builds)

50 ft Paracord \$5-10 | [Ace Hardware Link](#) | [Ebay Link](#)

Handful of rocks \$free | Look around on the ground. ;-)

Tech stuff:

1x LilyGo TTGO Meshtastic T-Beam 915mhz V1.1 \$40 | [Alibaba Link](#) | [Ebay Link](#)

(Note: Make sure it's 915mhz, other frequencies are available.)

1x 18650 Li-Ion battery \$10 for 4 pack | [Ebay Link](#)

(Note: (price drops dramatically with bulk order)

1x Renogy 10w Solar Panel \$20 | [Ebay Link](#)

(Optional) 1x Backup USB battery \$10-15 | [Ebay Link](#)

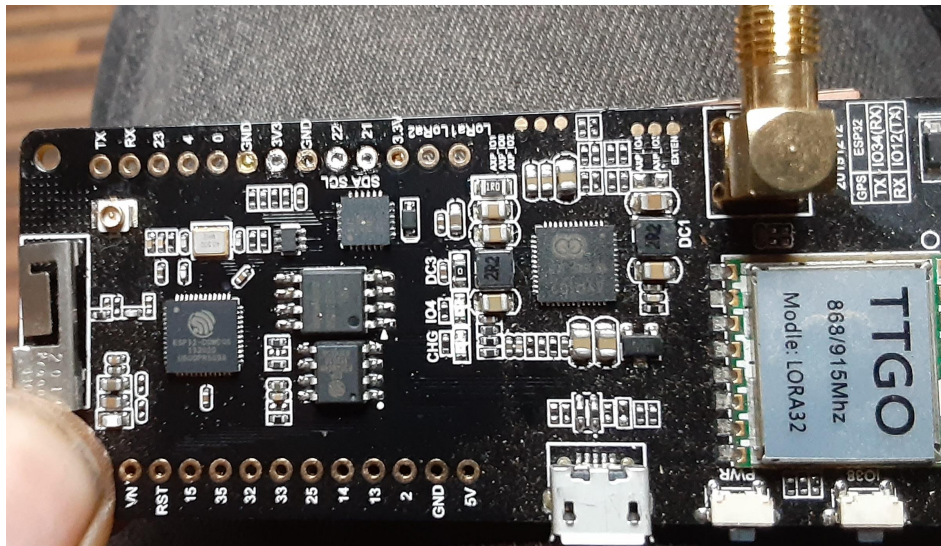
1x Micro USB to USB charge cable <\$1-\$2 | [Ebay Link](#)

Minimal build (just Node + Battery) \$45 (Will need a case, can 3d print and send it along however many you want.)

Fully kitted out: \$89.50-\$107

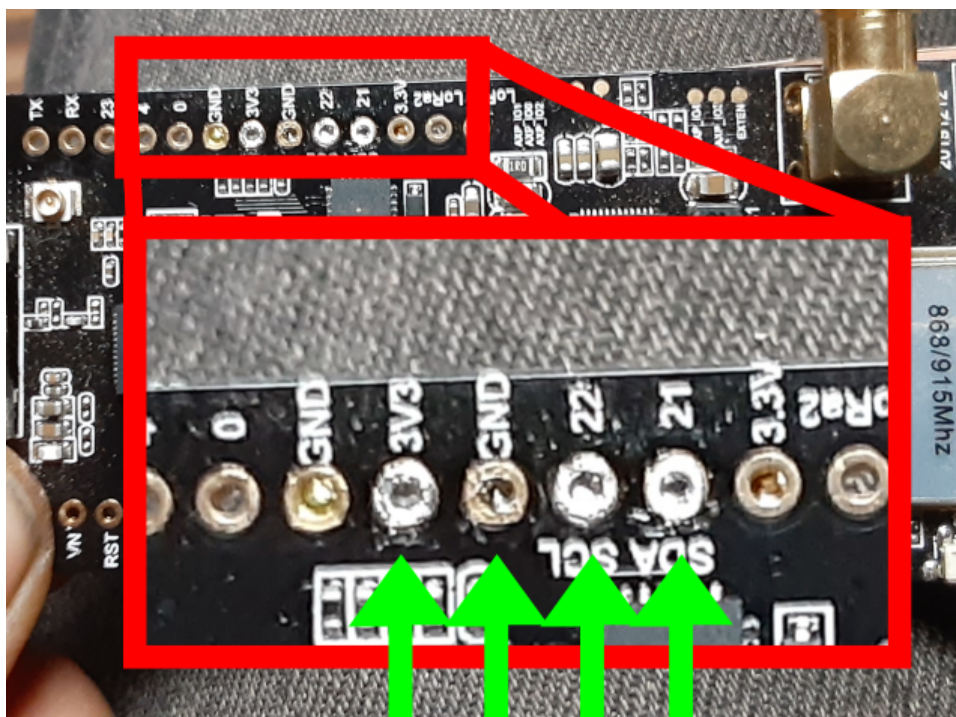
Section I.2 - Assembling your TTGO T-Beam:

Here's a new T-Beam:

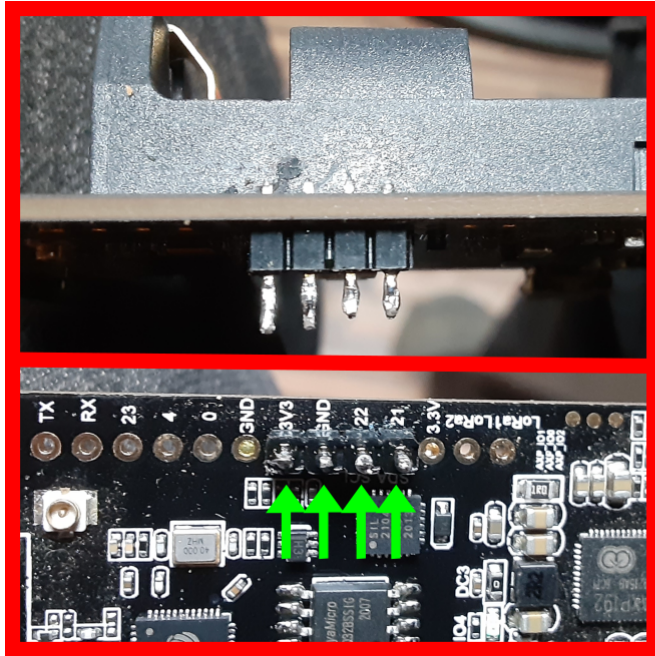


Locate these pin holes:

(Note: yours will look clean and new, I de-soldered mine for the demonstration)



Insert the 4 pins that came with into those holes and solder them to the board:



Push those pins thru the holes on the OLED and solder them in.

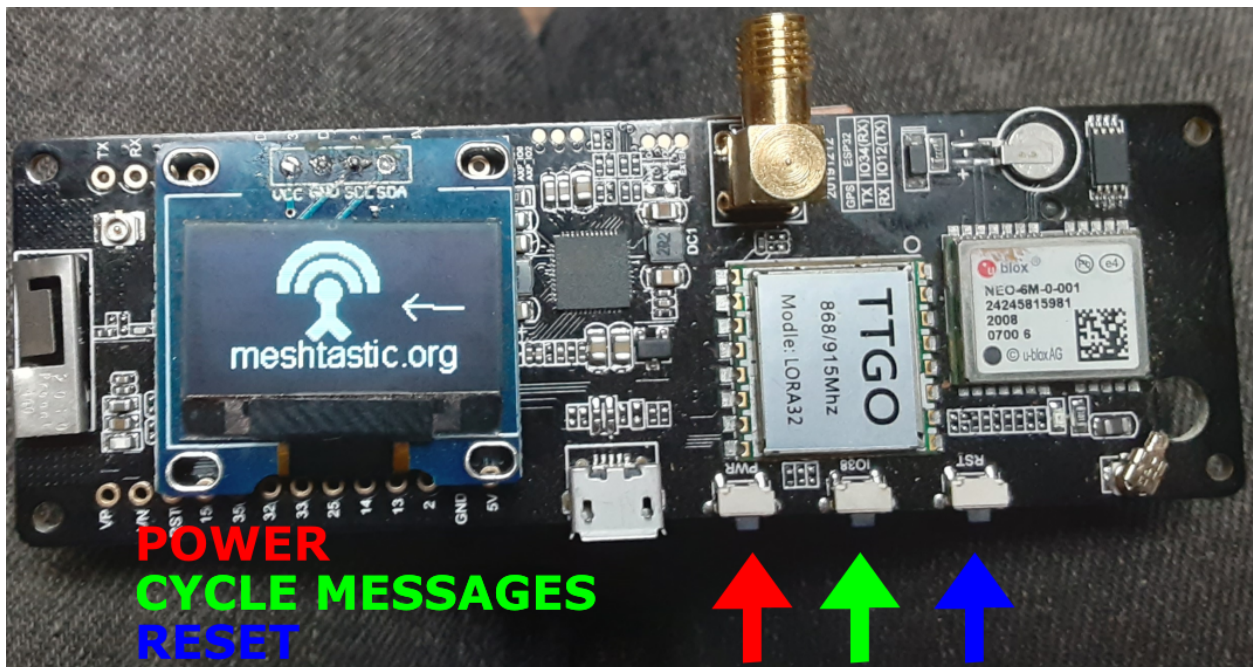


Congrats! Your screen is installed!

Make sure the + and - match on your battery & TBeam!



Here's what these Buttons do:



Your T-Beam is all Set up!

Section 1.3 - Prepping The Bucket

Cut a bunch of holes in the bucket:

Notice the orientation of the handle with the holes.



Prep the lid and pass thru the Solar Panel Carabiners:

Notice the orientation of the openings of the carabiners, make sure they open outwardly or they won't grab the panel.

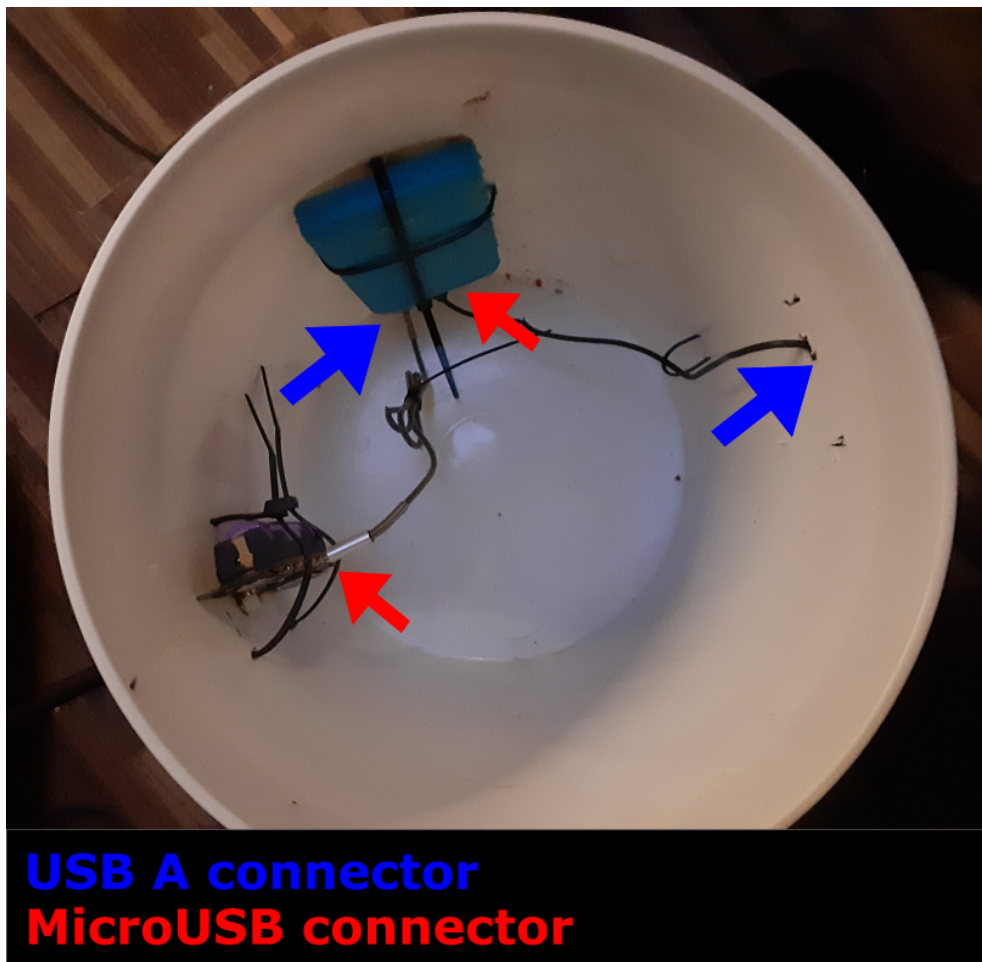


**1/8" Hole for the
Solar Panel Carabiners**



Section 1.4 - Assembly

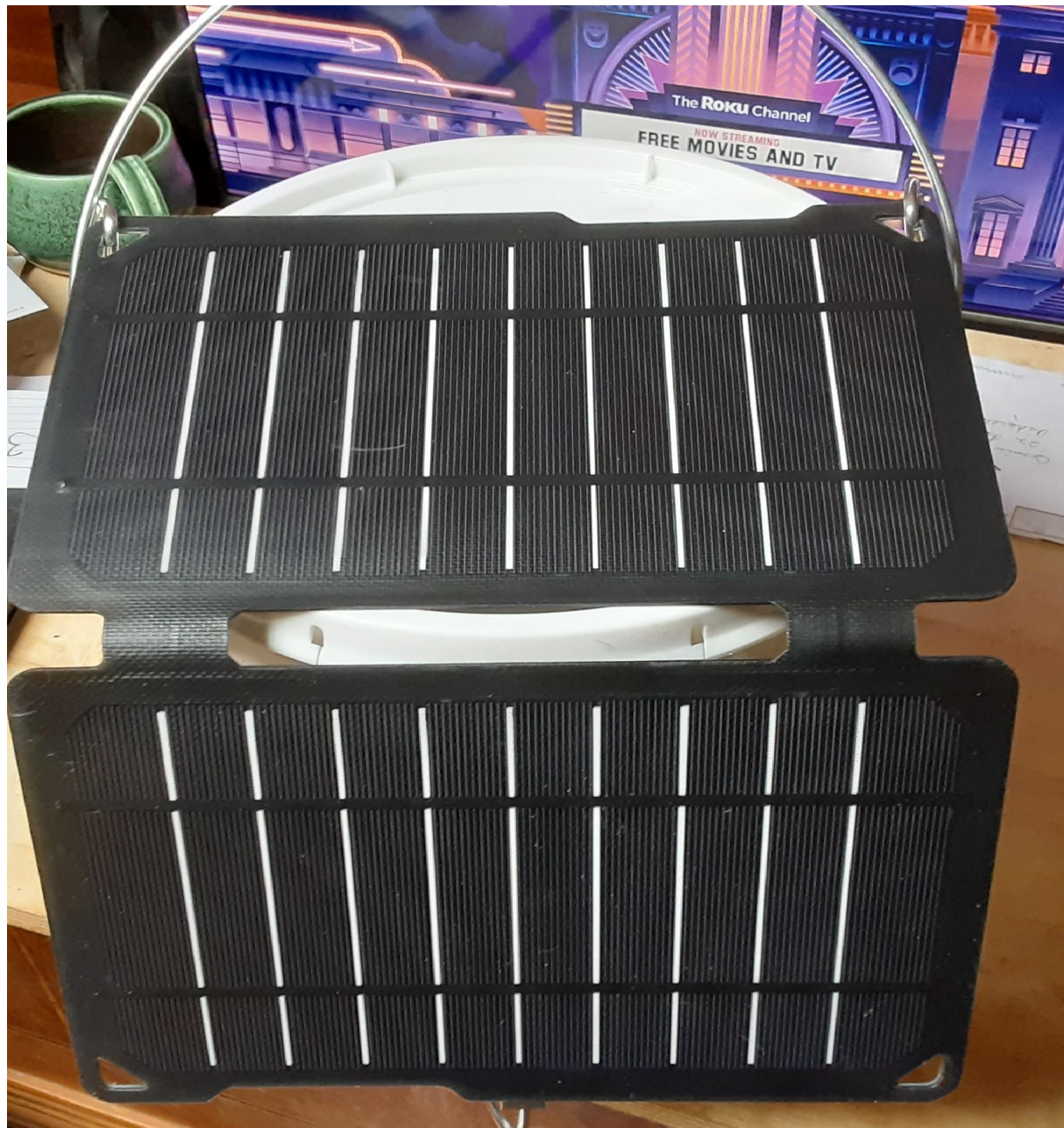
- Pass the Antenna port thru the 1/4 " hole and screw on the Antenna.
- Pass the MicroUSB side of the Panel>Battery cable thru the 3/8" hole from the outside.
- Insert battery and plug it in, then tighten all the zip ties EXCEPT for the one under the 3/8" square hole.



If you're going to leave this out on a flat space, now is the time to chuck the rocks in the bottom.

Hook the Solar panel to the 2 carabiners on the lid, and pop it on the bucket:

Notice the USB port of the panel is facing down.



Pass the wire thru the ½" spaced zip tie and tighten it down.

I used some of the silicone glue on the back of the USB box to keep it in place.

You could use a bungee wrapped around the bucket hooked to the bottom mounting holes.

Take your RTV silicone and put a little dab on all the holes you cut thru the walls of the bucket.

A little dab will do ya, wear some disposable gloves and smush the silicone into the holes to get a good seal.

Cut off the loose ends of your zip ties and you're all set up!

For best results, face the solar panel southward and make sure you're not shaded by tree limbs or other obstructions.

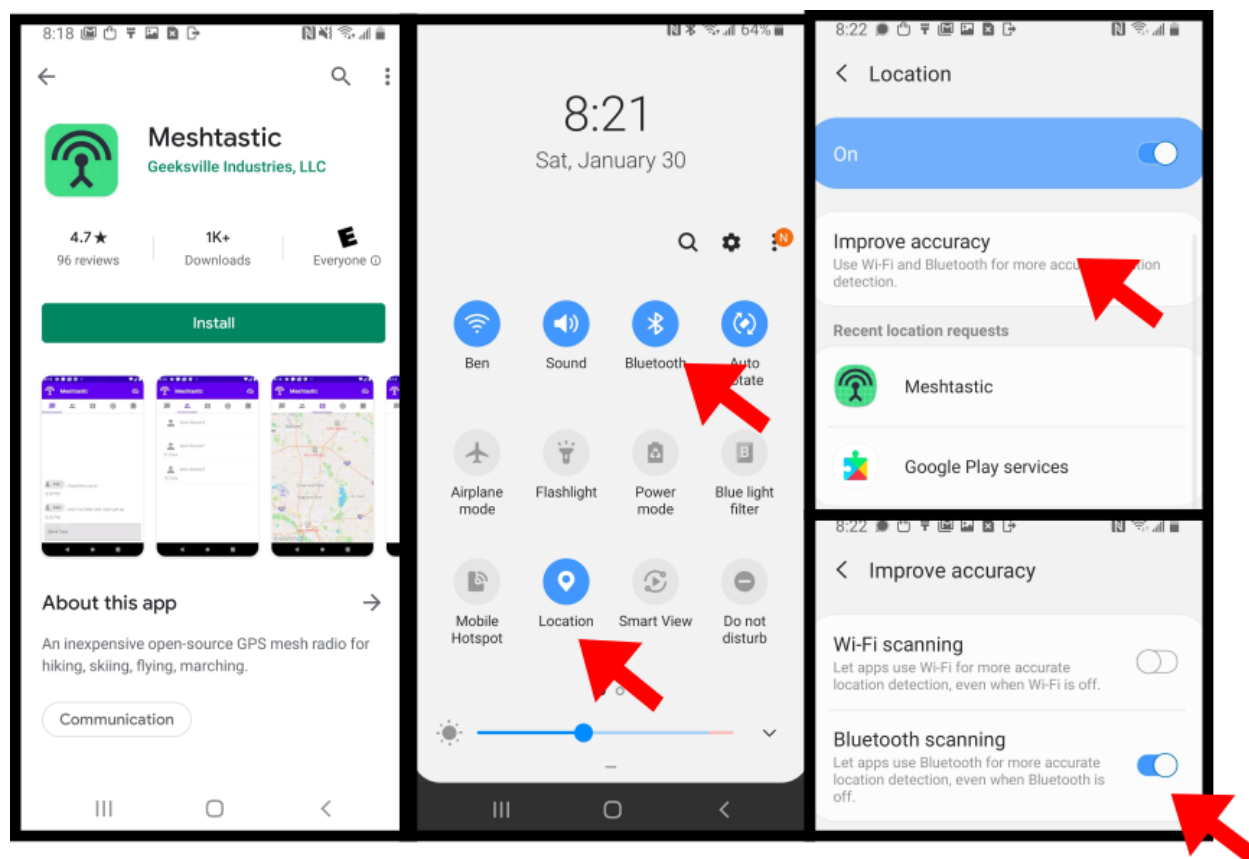
Hang it up a tree, screw it to your roof, leave it in your car, it's ready to deploy!

Section II.1 - Installing the App

Search the Google Play Store for Meshtastic.

Enable Location & Bluetooth.

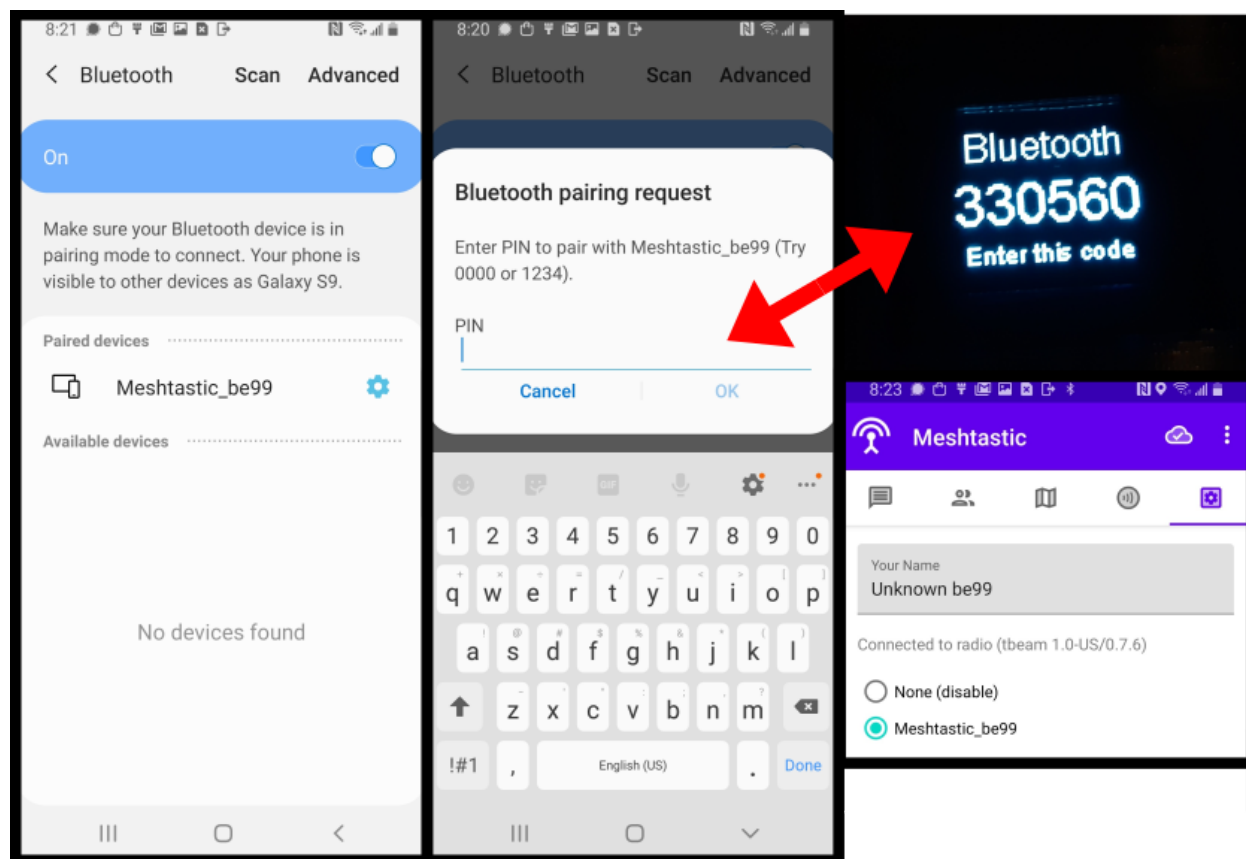
On the Location screen, look for “Improve accuracy” and click on it, turn on Bluetooth Scanning.



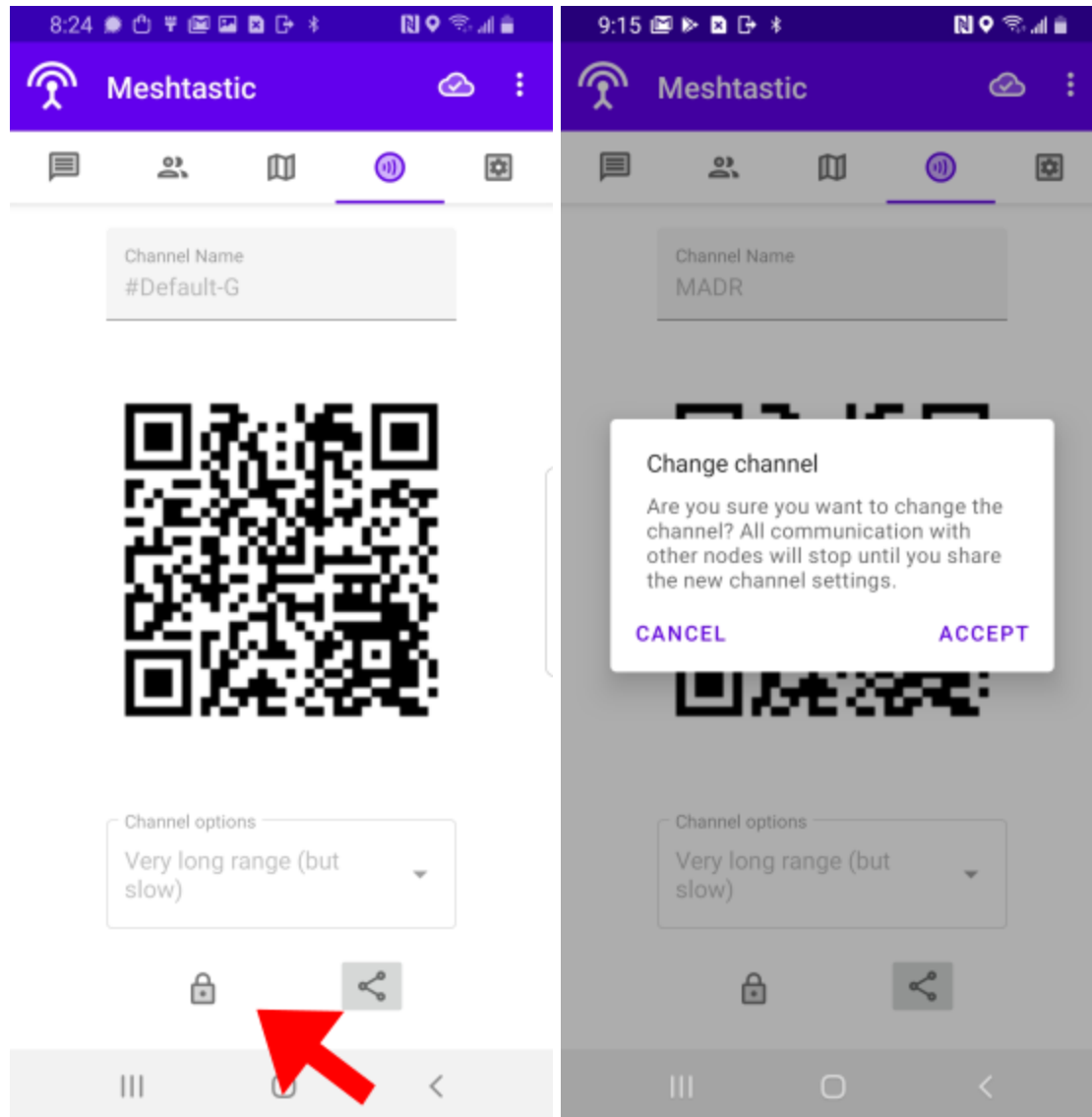
On the Bluetooth screen, try and pair with the Node.

When it prompts for a pin, look on the Node and enter the code.

You may have to close and reopen the Meshtastic App, but that should let you select your Node in the App.



The Default channel that it's set to is "Default-G", if you don't change it, anybody with a Meshtastic Node out of the box can communicate with your Node. This is cool if you want to connect with other tech nerds in your area, but isn't so secure.



If you unlock your channel, you can generate a new QR code, and keep your communications secure.

Note: Make sure you save your generated QR code for adding new Nodes if you change the channel. Otherwise you might have to go to all your Nodes and connect via Bluetooth to get them talking again.

Section II.2 Updating the firmware

Taken from <https://meshtastic.letstalkthis.com/>

This will outline the method for manually updating the version of Meshtastic on your board. This step is also necessary for any boards not pre-loaded with Meshtastic to install in on the board (the process is the same). If you run into any issues or are looking to update via the command line, please visit the [official GUI installation documentation](#).

1. [Go here](#) to see the latest Meshtastic firmware releases.
2. Click the latest **firmware-0.X.X.zip** to download the newest firmware for all supported boards and unzip it.
3. Download the [latest ESPHome Flasher](#) for your operating system.
4. Connect your radio to your PC via USB and then open **ESPHome Flasher**.
5. Click **Browse** and select the firmware for your board from the package we just downloaded.

*Note: Be careful to install the correct firmware for your board. In particular, the popular T-BEAM radios from TTGO do not use the **firmware-ttgo-lora32** files (they're **firmware-tbeam**). If you install the 'TTGO-Lora' build on a TBEAM it won't work correctly.*

6. Click **Flash ESP** and wait until it's finishing flashing the board.
7. You're done!

