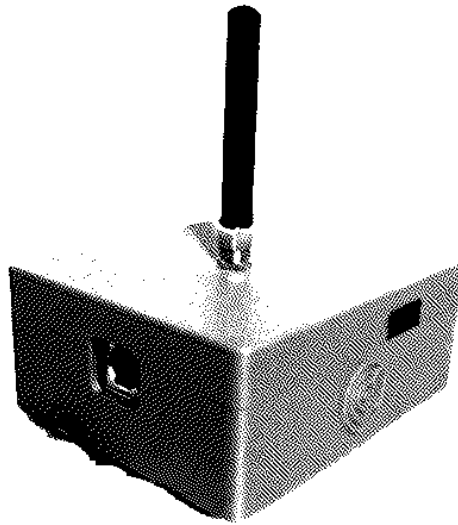


MacMesh

A vintage Macintosh, on a LoRa mesh network.
Manual for version 1.1.



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1 What this is

MacMesh puts a vintage Macintosh on a LoRa mesh network. A small board adapts the Mac's modem port to a Heltec V4 radio, and an application on the Mac gives you the network as plain text in a window. The Mac is a terminal: the radio holds the mesh protocol, the encryption and the routing, and nothing about the Macintosh has to be modified to use it.

There are two applications because there are two networks, and they are not compatible with each other:

Application	Talks to	Port speed
MacMesh MeshCore 1.1	A radio running MeshCore	57600 baud
MacMesh 1.1	A radio running Meshtastic	38400 baud

Use the one that matches the firmware on your radio. A radio can carry both firmwares and choose at power-on; see section 5.

What you need

- A Macintosh with a modem port, running System 6 with at least 1 MB of memory, or System 7 with at least 2 MB. The applications ask the system for a 320 KB partition.
- A USB power supply for the radio — a phone charger is ideal. The Macintosh supplies no power to it.
- A way to get an 800 KB disk image onto the machine, if you did not get the floppy in the box.

The radio's region is set for where the unit ships before it leaves us, and its channel names and keys are set from a current MeshCore or Meshtastic client — a phone is easiest — before it is moved to the Macintosh.

Tested on a Macintosh Classic II and a Performa 200 under System 7.5. Other machines with a modem port are expected to work and have not been tried; if you are the first to run it on something else, we would like to hear how it went.

2 Connecting it

Do these three things with both the Macintosh and the radio switched off.

- **Serial.** A straight-through mini-DIN-8 cable from the Mac's modem port to the socket on the unit. The unit performs the crossover internally, so a crossed cable is wrong and can put the Mac's line driver against the unit's.
- **Power.** USB-C from a wall adapter or battery pack. Powering the unit from a mains-earthed computer puts the Mac's signal ground and the computer's ground at slightly different potentials, with the mini-DIN's ground pin carrying the difference.
- **Antenna.** Fitted before power is applied. Transmitting without one is hard on the radio.

Never connect the Macintosh's serial port directly to a 3.3 V UART. The Mac's port is RS-422 at higher voltages; the unit exists to convert between them.

3 Getting the software onto the Macintosh

A unit bought from us comes with a floppy. If you need to make your own, the disk images are at macmesh.xyzy.computer, under Downloads:

File	What it is
MacMesh-MeshCore.dsk	MeshCore client, 800 KB floppy image
MacMesh-Meshtastic.dsk	Meshtastic client, 800 KB floppy image

Write one to a real disk from a Macintosh with a floppy drive, or mount it in an emulator such as Mini vMac. Drag the application to your hard disk and double-click it.

4 Using the applications

Both open a window the size of the screen, connect to the modem port, and start listening. Type into the box at the bottom and press Return to send. The transcript above fills from the bottom, and the line under the title tells you what the link is doing.

The application never invents traffic: if a message appears, the radio reported it. Opening the serial port is not by itself reported as being on the network.

Menus, MeshCore client

Menu	Items
Apple	About MacMesh...
File	Reconnect Command-R · Send Flood Advert Command-D · Save Transcript... Command-S · Quit Command-Q
Edit	Clear Transcript Command-K · Message Sound Command-B
Channel	The channels the radio carries; pick one to read and write it
Nodes	Contacts the radio knows; pick one for a direct message
Servers	Repeaters and room servers, kept apart from people
Setup	Node name, radio settings, transmit power, WiFi, battery, packet monitor, route trace, log in and out of a server

Menus, Meshtastic client

Menu	Items
Apple	About MacMesh...
File	Reconnect Command-R · Quit Command-Q
Edit	Clear Transcript Command-K · Message Sound Command-B
Channel	The channels the node reports as usable
Nodes	Everyone the node has heard
Setup	Long and short name, serial pins, the node's baud, region, modem preset, transmit power, read settings back, reboot, and the Macintosh port speed

Where a menu item asks for a value, the question appears in the message box: type the answer and press Return, or press Escape to leave it alone.

5 Both firmwares on one radio

A radio can hold MeshCore and Meshtastic at once and choose between them at power-on. One command does the whole job, downloading what it needs and checking it:

```
chmod +x flash_macmesh_dualboot.sh && ./flash_macmesh_dualboot.sh
```

It needs python3 and the radio connected by USB, and it erases the board first. Afterwards, a reset boots the selector: it waits about two seconds and then starts whichever firmware ran last. Press PRG during those two seconds to switch.

You usually will not have to press anything, as long as you do it in this order: **open the application you want first, then power the unit up**. While the selector waits it announces itself over the serial port, and an application that is already running and listening answers by asking for the firmware it speaks — so the MeshCore client brings up MeshCore on a radio that was last used with Meshtastic, by itself.

That exchange happens inside the couple of seconds after power-on, so an application started afterwards has missed it. If the radio is already running, leave the application open and reset the radio — press RST or pull its power — and it will ask again.

6 When something is wrong

What you see	What it usually is
Nothing arrives, and nothing sends	The firmware on the radio does not match the application. Check that a MeshCore radio has the MeshCore client, and a Meshtastic radio the other one.
A notice reading “Serial 0x..”	The serial hardware reported its own error. hw-overflow means the line is faster than the Macintosh can empty it; sw-overflow means the application did not read for a while, which a held-open menu will do. One now and then costs a message; a steady stream of them means the machine is not keeping up with the link.

What you see	What it usually is
Messages arrive chopped into fragments	The same thing, one step further on: lost bytes break the frame the radio is sending.
Flashing fails the first time	The board drops its USB port and comes back in download mode under another name. Look for the port again and retry.
The board sits quiet after flashing	A reset over USB does nothing on this board. Press RST, or pull the power.

7 Reference

Macintosh port	Modem port, 8N1, no flow control
Speed, MeshCore	57600 baud
Speed, Meshtastic	38400 baud
Memory asked for	320 KB minimum, 512 KB preferred
Memory actually used	About 190 KB (MeshCore), 150 KB (Meshtastic)
Disk images	800 KB, System 6 and System 7
Checksums	macmesh.xyzyzy.computer/downloads/SHA256.txt

Changes

1.1 — 15 September 2026. Both applications ask for a 320 KB partition instead of 1 MB, which is what stopped them opening on a small machine. The Meshtastic client no longer rebuilds its Nodes menu every time the menu bar is touched: on a mesh of ninety-odd nodes that took seconds on a 68030, with nothing read from the radio meanwhile. In the MeshCore client, Save Transcript no longer uses calls that arrived with System 7, so it saves the file on an older system instead of failing.

1.0 — 7 September 2026. First release, and what the units at VCFMW were running.