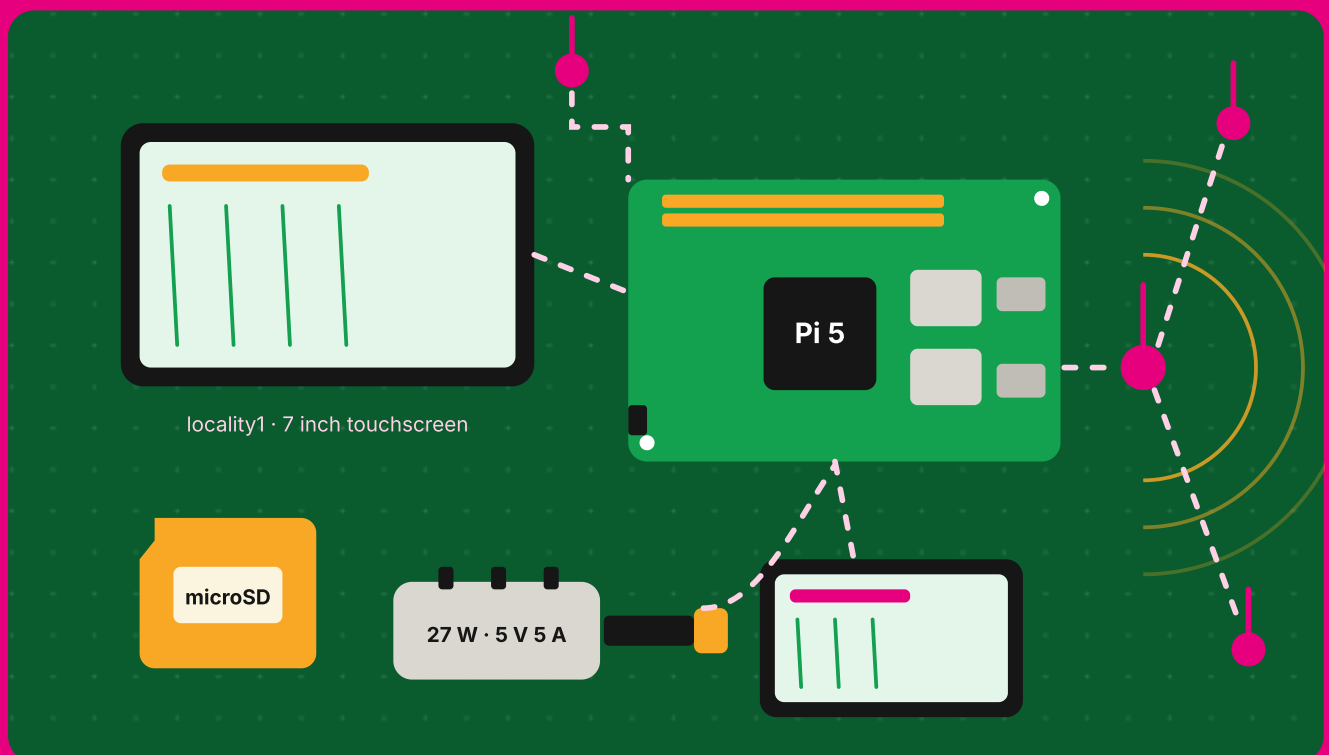


Small computers, local worlds.

Small computers you put together yourself, a network between them that needs no internet, and a radio mesh that carries messages across the street: what they are, how to connect them, and why it matters who owns the wires.



01 • Why small?

Why small computers and local worlds

Most of the computing in our lives happens somewhere else. The phone in your hand is a window onto machines you will never see, owned by a handful of companies and run under rules you did not write. This guide is about the opposite: a computer you can hold, assembled by your own hands, talking to the computer next to it without asking anyone's permission.

1

You can hold it, open it and fix it

A sealed device is finished the day it is sold; what it does afterwards is decided by whoever controls its updates. A small computer you assembled yourself can be opened, reimaged, repaired, lent and passed on. The knowledge of how it works stays with the people who built it.

3

No one sits in the middle

On a centralised service a company sits between every two people and keeps a copy of what passes. On a network you run, nothing is recorded unless the room decides to record it, and whatever is kept stays with the people who made it.

5

Small is a decision, not a shortfall

These computers use a few watts. They run from a wall socket today and from a solar panel tomorrow. A whole kit costs less than most phones. Choosing small keeps the thing understandable, repairable and ours, and it keeps the energy it needs within reach of a household or a community centre.

2

Two people in one room should not need a data centre

Send a message to the person beside you and it will usually travel to a server, often in another country, and back. That route works until it does not: an outage, a change of terms, a company sold or closed, a government ordering networks off. Digital rights groups document internet shutdowns every year. A local network keeps working because nothing in it depends on elsewhere.

4

Infrastructure can be held in common

A mesh has no owner and no centre. Every node someone adds extends the reach for everyone. The questions that matter (which channel, who holds the key, what we share and what we keep) are decided by the people using it, in conversation, the way communities have long decided about land, water and shared work.

6

It can be learned in an afternoon

The how is open: these pages, the settings and the diagrams are meant to be copied and remade. What stays with you is what you build. Like seeds, the point is that they are passed on and grow somewhere else, in whatever soil you have.

At this scale you can see what the technology does, who it talks to, and change it with the people around you.

02 · Why local?

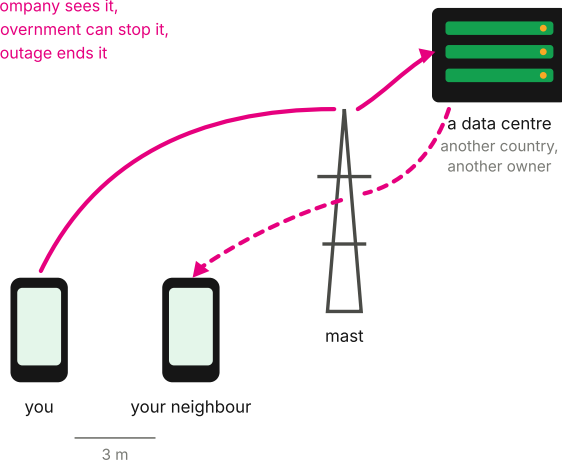
Two routes for the same message

The message is identical. What differs is who it passes through, who can switch it off, and who gets to keep a copy.

The usual route

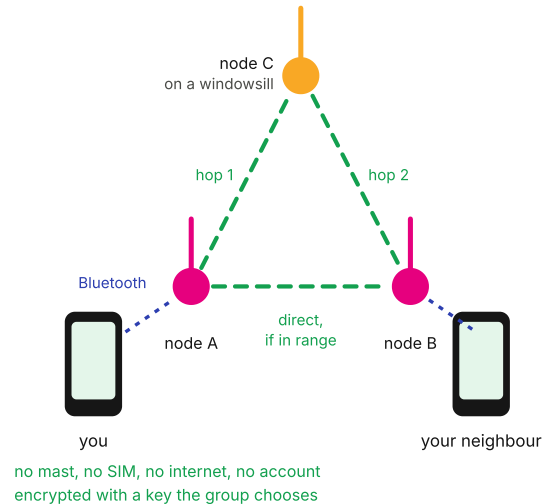
Two phones three metres apart.
The message goes to a data centre and back.

a company sees it,
a government can stop it,
an outage ends it



The local route

Radio to radio. A third node passes it on when two cannot hear each other.



Four words we use

WiFi is short range radio between devices in the same building. At home a router also joins it to the internet; here there is no internet behind it, only our computers.

Local means close enough to talk directly: computers on a table, nodes on a street, people in a building.

Offline means it works with no connection to the wider internet. Nothing stops when the broadband or the mobile signal does.

Mesh means every device can pass messages on for the others. There is no centre to switch off. Our WiFi network today is local and offline but not a mesh; the LoRa network is all three.

Two local networks

WiFi between the four computers, with no internet. Fast, a room or two in reach. One of the computers acts as the access point, the others join it, and they can chat and share files. If that one is switched off, the network disappears with it.

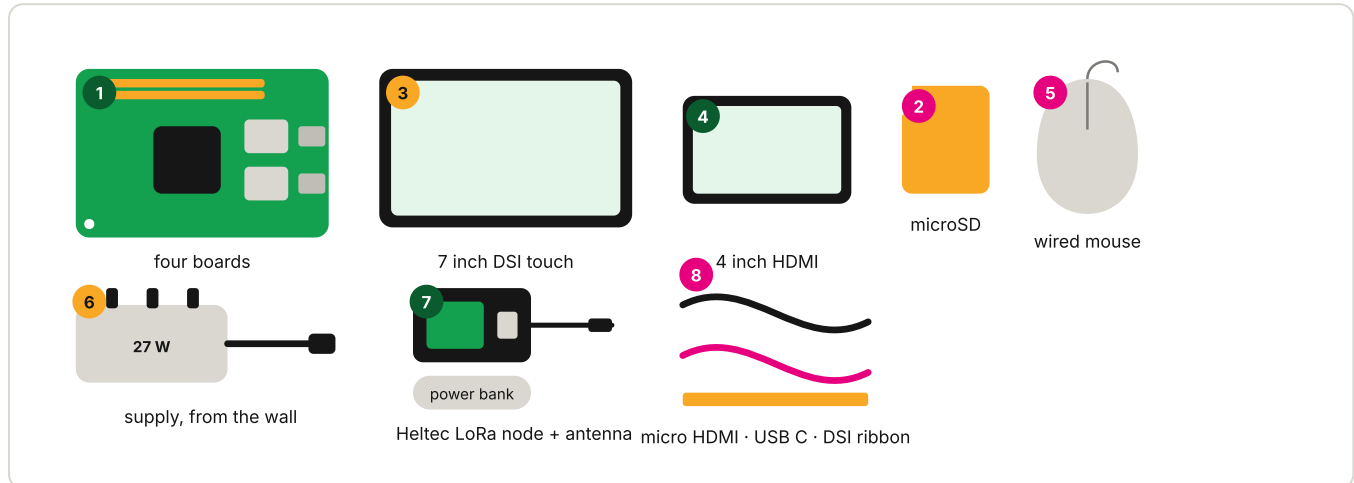
A LoRa mesh across the building and the street. Slow (short text, positions, sensor readings) but long range and low power, with no centre. Phones join a node by Bluetooth, two of the computers hold a node on USB, and any node relays for the rest.

None of this means abandoning the first route. We use the internet too. The point is to have the second route ready, understood and in our own hands, so that when the first one fails, is withdrawn or is turned against us, the conversation does not stop.

03 · What is on the table?

The kit on the table

What is on the table, what each part is for, and the page that shows how it connects.



1 Four computers

locality1, locality2, locality3 and locality4: one board each, the size of a hand. Two of them carry a LoRa node on a USB port.

2 microSD cards

One per computer, already written with the operating system and named locality1 to locality4. The card is the whole system (page 9).

3 DFRobot 7 inch DSI touchscreen

DFR0678: 800 × 480, five point capacitive touch, picture, touch and power all through one ribbon (page 6).

4 LCDWiki 4 inch HDMI screen

MPI4008: 800 × 480, picture through a rigid HDMI adapter, 5 V from the board's pin header. Its resistive touch stays off today (page 7).

5 Wired mice, no keyboards

The on screen keyboard and the mouse do the typing. A wired mouse avoids 2.4 GHz dongles that can interfere with the board's own radios.

6 Power supplies

The official 27 W USB C supply, one per computer, plugged into the wall. A power bank cannot give the board what it asks for (page 8).

7 Heltec LoRa nodes and power banks

Two kinds, both with 868 MHz antennas: Mesh Node T114 and WiFi LoRa 32 V3. Two plug into a computer by USB; the others run from small power banks and pair with phones (pages 12 to 14).

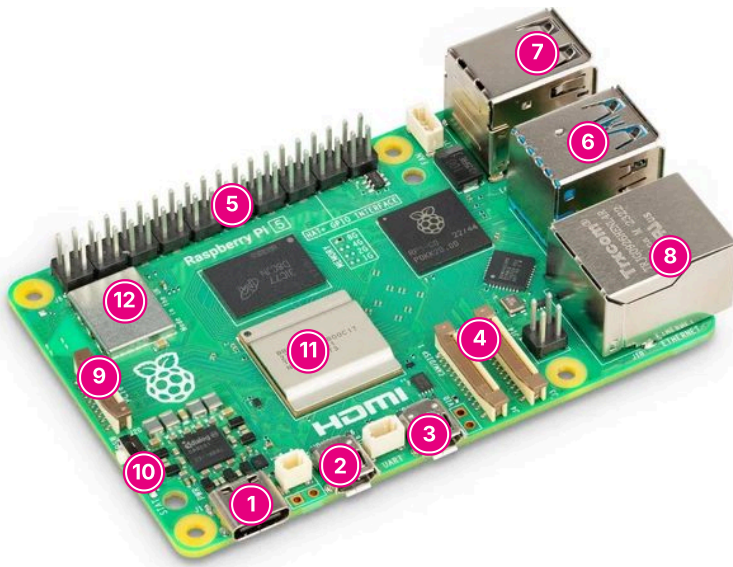
8 Cables and ribbons

The rigid micro HDMI to HDMI adapter for the 4 inch screen; the 22 pin to 15 pin DSI ribbon for the 7 inch; USB C to USB A for each node.

04 · What is in the computer?

A whole computer on one board

A complete computer on a board the size of a hand. It runs an operating system, drives a screen, stores files and talks to other machines over WiFi, Bluetooth, Ethernet, USB and whatever radio you plug into it. Ours is a Raspberry Pi 5; the parts are the same on most boards like it.



- 1 USB C power in, 5 V up to 5 A
- 2 Micro HDMI 0, picture for the 4 inch screen
- 3 Micro HDMI 1, a second monitor
- 4 Two 22 pin CAM/DISP sockets, ribbon to the 7 inch screen
- 5 40 pin header; the 4 inch screen sits on pins 1 to 26
- 6 Two USB 3 (blue): mouse, LoRa node
- 7 Two USB 2: a second node, a drive
- 8 Ethernet, wired network, not used today
- 9 PCIe, for an SSD, not used today
- 10 Power button
- 11 Processor (BCM2712), with memory beside it
- 12 WiFi and Bluetooth under the metal can; microSD slot underneath the board

Processor and memory

A quad core 64 bit processor at 2.4 GHz with up to 16 GB of memory depending on the model. It runs a full desktop comfortably on an 800 × 480 screen.

Storage and software

The operating system lives on the microSD card. Take the card out and the computer is a blank board; put another card in and it is a different computer.

Radios and ports

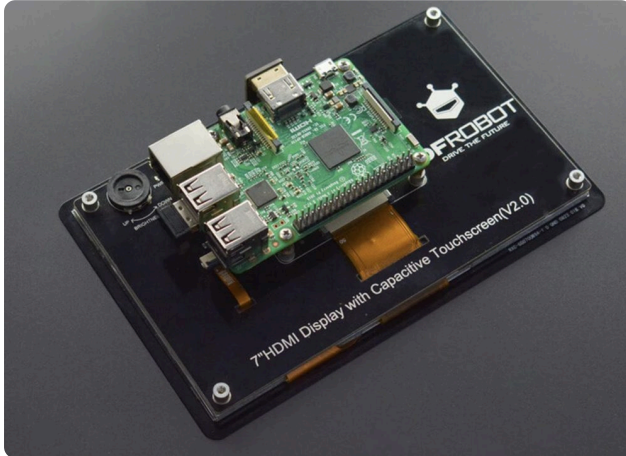
Dual band WiFi and Bluetooth on the board; four USB ports; two display ribbons; two HDMI outputs. The LoRa radio arrives on a separate node plugged into USB.

A local computer is still a complete computer. It writes and reads files, runs programs, shows artwork, serves web pages and exchanges messages. An internet connection is not required for any of that.

05 · How does the big screen connect?

DFRobot 7 inch touchscreen

Model DFR0678 · 800 × 480 · DSI ribbon · five point capacitive touch · powered through the ribbon at 3.3 V (up to 450 mA)



The board sits on the back of the screen, on four standoffs through the M2.5 holes, with the orange ribbon running from the screen's 15 pin connector to the board's 22 pin CAM/DISP socket.

One ribbon carries everything: picture, touch and the screen's 3.3 V supply. Nothing else to plug in.

Brightness is the small dial on the back, next to the ribbon.

Never force a 15 pin ribbon into the board's 22 pin socket.

1 Power off before touching the ribbon

Unplug the USB C supply from the board. Ribbons and connectors are fragile and a live board can be damaged by a slipped cable.

2 Use the right ribbon

Screens made after May 2024 ship with a 22 pin to 15 pin ribbon. Gently lift the latch on each connector, slide the ribbon in with the metal contacts facing the connector's contacts, then press the latch closed. Older screens need the adapter cable DFRobot sells for this board.

3 Boot and test

Plug the power back in. Picture, touch and power all arrive through the ribbon; nothing else is needed. If the screen stays black, power off, reseal both ends and try the other CAM/DISP socket.

4 Type with your finger

Tap any text field and the on screen keyboard appears (page 9). Set brightness with the small dial on the back.

Touch feels sluggish? DFRobot asks for at least 1.5 A to be available to the board for good touch response. On the official 27 W supply that is always the case; on a weaker supply or a power bank the touch slows down first.

06 · And the small one?

LCDWiki 4 inch screen

Model MPI4008 (4inch HDMI Display C) · 800 × 480 · picture over HDMI through the rigid adapter in the box · 5 V from the 26 pin header, 0.16 A · XPT2046 resistive touch over SPI, left off today



Picture: the rigid adapter in the box. Its full size HDMI plug goes into the screen, its micro HDMI plug into micro HDMI 0 on the board. With the screen seated on the header the two sockets line up and the adapter bridges them. No cable.

Power: the 26 pin socket on the back of the screen seats on pins 1 to 26 of the board's header and takes 5 V from it. Pin 1 is at the end nearest the microSD slot.

Touch: travels over the same header (SPI) but needs a driver script. Left off today.

1

With the board unplugged, seat the screen on the header

Line the 26 pin socket up with pins 1 to 26 of the 40 pin header, at the end nearest the microSD slot and the USB C port. Press down evenly. The screen now draws its 5 V from the header.

2

Connect the picture

The small rigid adapter from the screen's box: its full size HDMI plug goes into the screen, its micro HDMI plug into micro HDMI 0 on the board (the one nearest the USB C power). With the screen seated on the header the two line up; push both ends home. HDMI carries picture and sound, never power.

3

Power on and check

It behaves as an ordinary 800 × 480 monitor. If the desktop does not fit, open Preferences → Screen Configuration and pick 800 × 480. Use the mouse; the on screen keyboard works with clicks too.

4

Leave touch for another day

Touch here is resistive (a stylus or a firm press) and depends on the LCD-show driver script, which rewrites system files and has broken newer installs. Picture only is the right first test.

Leave the screen's micro USB socket empty. It is a second way of powering the screen; on the header the screen is already powered. The board itself is powered only by its USB C supply.

07 · Where does the power come from?

Two kinds of power

Today the computers plug into the wall and the handheld radios run from power banks. With the right battery the computers can leave the wall too.

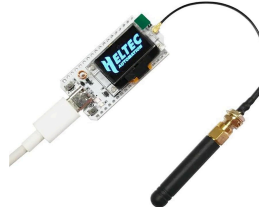
The computers: wall socket



The official supply: a UK plug and a captive USB C lead, 5.1 V at 5 A. The board negotiates the full 5 A with it; both screens draw from the board.

A phone power bank was not enough for ours: most give 3 A at 5 V, the board throttles its USB ports and warns, and some banks cut out.

The handheld radios: power bank



Antenna on, then USB C from any small bank. A node sips tens of milliamps awake and far less asleep; a bank runs one for a day.

Banks switch off when the load is tiny. If the node's screen goes dark, press the bank's button, or use its low current mode.

What the board asks for

5 V at 5 A over USB C Power Delivery, which its own 27 W supply gives. Almost no phone bank offers 5 A at 5 V: the "65 W" on the box comes from 20 V, which the board does not use. Given less, the board assumes 3 A, limits its USB ports to 600 mA and warns on the desktop. With a touchscreen and a radio attached that is not enough, so today every locality has a socket.

Switching on and off. Screen, mouse and node first; the supply last. To switch off: Menu → Shutdown, wait for the screen to go dark, then unplug. Pulling the plug on a running computer can corrupt the card.

The nodes on the move

1

Antenna first, then power

Screw the 868 MHz antenna on before the USB cable goes in. Transmitting without one can damage the radio.

2

USB C from a small bank

A 5,000 mAh bank lasts a day. The two nodes on the computers take their power from a USB port instead.

3

If the node goes dark

The bank has decided nothing is connected and switched itself off. Press its button, or use its low current mode if it has one. A node with its screen on keeps most banks awake.

Portable power

Three ways to run a computer away from a socket.

A UPS board with 18650 cells

Geekworm X1202: four 18650 cells under the board, 5.1 V at up to 5 A through pogo pins, charged from USB C or 6 to 18 V DC (a small solar panel will do). Switches to the cells the moment the mains goes.

A 12 V battery and a converter

A household solar kit battery through a buck converter set to 5.1 V, rated 5 A or more, into USB C. The board cannot negotiate with a converter, so set `PSU_MAX_CURRENT=5000` in its EEPROM settings.

A power station

An EcoFlow or similar with a mains socket: plug the 27 W supply into it as at home. Heavy, but it charges from a panel and runs several boards for a day.

08 · What is on the SD card?

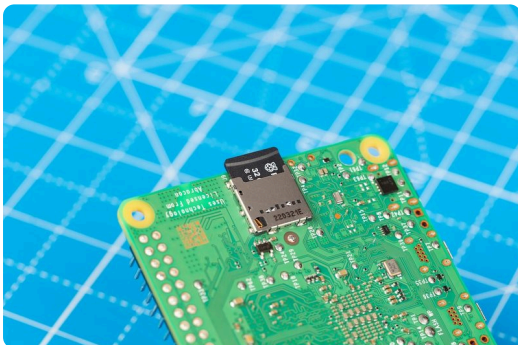
From parts to a working computer

The microSD card is the computer's whole system. Ours are already written and named.

What is on the card

Raspberry Pi OS with the desktop, the board's own Linux, written with Raspberry Pi Imager on any computer. In Imager each card got its name (`locality1` to `locality4`), a user and password, GB keyboard and time zone. No WiFi details: these machines make their own network.

To make another locality later, that is the whole recipe: Imager, a card, a name. Take the card out and the computer is a blank board.

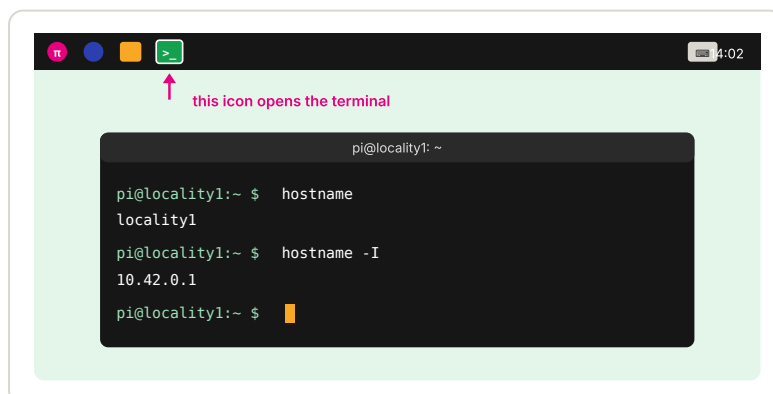


The slot is on the underside, contacts facing the board.

First boot

- 1 Connect, then power on**
Screen, mouse and node first; the supply last. A first boot is slow. Do not pull the card while it writes.
- 2 Find the on screen keyboard**
Tap a text field and it appears; the keyboard icon at the top right shows and hides it. To keep it visible: Preferences → Raspberry Pi Configuration → Display.
- 3 Fix a sideways or oversized desktop**
Preferences → Screen Configuration: Orientation, or Resolution 800 × 480. Apply, confirm.
- 4 Check which computer you are**
Open the terminal (below) and type `hostname` . It answers `locality1`, `2`, `3` or `4`.
- 5 Switch off properly**
Menu → Shutdown, wait for the screen to go dark, then unplug. Pulling power from a running computer can corrupt the card.

The terminal: talk to your own computer



A terminal is a window where you type instructions to the computer and it writes its answers back. On these computers it opens from the black `>` icon in the top bar, from Menu → Accessories → Terminal, or with Ctrl+Alt+T. The line ending in `$` is the computer waiting for you.

Type a command, press Enter, read the reply. Linux is case sensitive. Ctrl+C stops whatever is running.

```
hostname
```

What is this computer called?

```
hostname -I
```

Which network addresses does it have?

```
ls
```

What files are here?

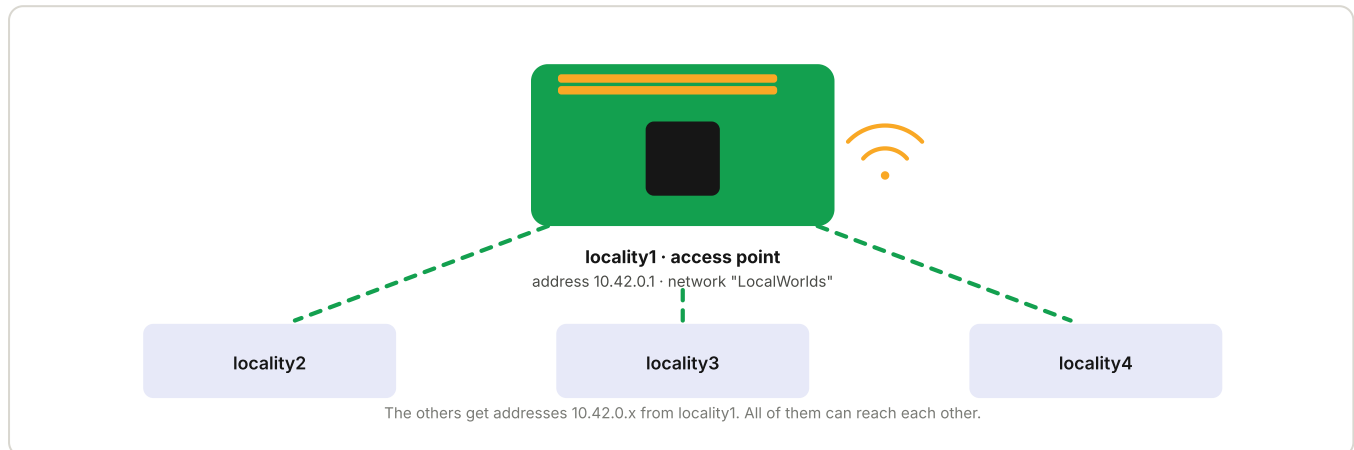
```
nmcli connection show --active
```

Which networks am I connected to?

09 · How do four computers talk?

Four computers, no internet

Each board has its own WiFi radio. One computer becomes the access point and the other three join it. No router, no subscription, no building network: a world of four machines that can talk, chat and share files.



On locality1 · create the hotspot

```
sudo nmcli device wifi hotspot ifname wlan0 ssid LocalWorlds password LocalWorlds2026
```

On locality2, locality3 and locality4 · join it

```
sudo nmcli device wifi connect "LocalWorlds" password "LocalWorlds2026" ifname wlan0
```

Check the link

```
hostname -I            # my address  
ping -c 3 10.42.0.1   # reach locality1?
```

Three replies with a time in milliseconds means the two machines can hear each other. Write each computer's address on a sticky note; the next page needs them.

Be precise about what this is. An offline local network with a centre. If locality1 is switched off, the network disappears. That is one reason we also bring a mesh.

Four words on this page

Access point (or hotspot): the device that creates a WiFi network for others to join. Here it is locality1, doing what a home router normally does.

SSID: the network's name as it appears in a list of WiFi networks. Ours is LocalWorlds.

Address: each computer's number on the network, such as 10.42.0.105. locality1 hands them out as the others join; `hostname -I` shows yours.

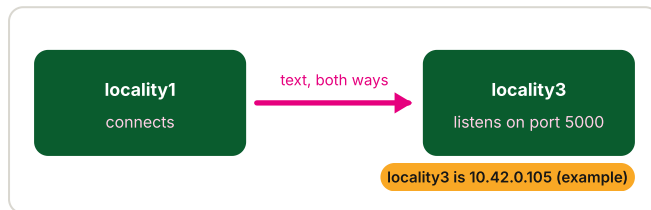
ping: a tiny "are you there?" sent to another address. A reply with a time in milliseconds means the link is alive.

10 • How do we chat and share?

Send a message, move a file

Two of the oldest tools on any Linux machine are enough: netcat to open a text line between two computers, and Python's built in web server to publish a folder.

A chat between two tables



On locality3 • listen

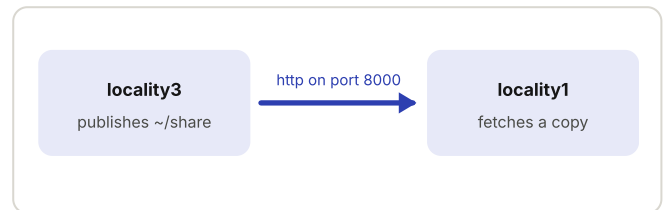
```
nc -l 5000
```

On locality1 • connect

```
nc 10.42.0.105 5000
```

Type anything and press Enter; it appears on the other screen. The listener can answer in the same window. Ctrl+C ends it. If port 5000 is already taken, use 5001 on both ends.

Share a folder



On locality3 • make a folder and publish it

```
mkdir -p ~/share && cd ~/share  
echo "Hello from locality3" > hello.txt  
python3 -m http.server 8000
```

On locality1 • fetch it

```
wget http://10.42.0.105:8000/hello.txt
```

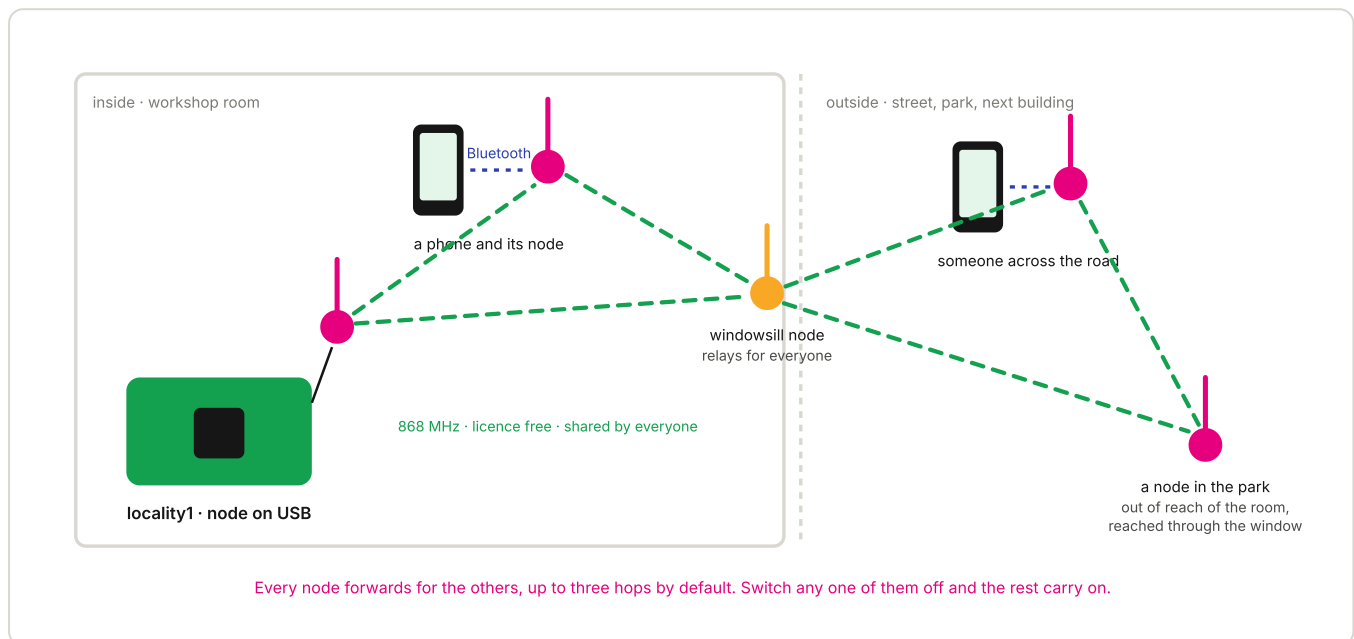
Or open `http://10.42.0.105:8000` in the browser and click. It works only while the server runs; Ctrl+C stops it. Anyone on the network can see what is in that folder, so share deliberately.

Try next: put a photo, a sound file or a one page HTML gallery in `~/share` and let the other three browse it. A local gallery, a message station, a small archive: all of it runs on this network with nothing beyond the room.

11 • Beyond the room

A mesh that reaches outside

The WiFi network reaches a room or two and depends on locality1 staying on. The second network is radio. LoRa is long range and low power; it carries small things slowly: a line of text, a position, a sensor reading. Meshtastic is the free software that turns a handful of these radios into a network with no centre, where every node passes messages on for the others.



What it carries

Text messages of a few hundred characters, positions, telemetry (battery, temperature, air quality from a sensor). No photos, no voice, no web pages. Think telegram, not telephone.

How far

Tens of metres through walls indoors; hundreds of metres along a street; kilometres with a clear line of sight or a node up high. A node on a windowsill or a roof extends everyone's reach.

Who may use it

Anyone. In the UK and Europe it uses the 868 MHz licence free band: region EU_868 in Meshtastic, 869.4 to 869.65 MHz, at most 27 dBm, and each node may transmit for 10% of the time. The firmware enforces the limit.

The nodes we use



Heltec Mesh Node T114.

nRF52840 microcontroller, Bluetooth, a 1.14 inch colour screen, USB C. Sleeps on microamps; runs for days on a small bank.



Heltec WiFi LoRa 32 V3.

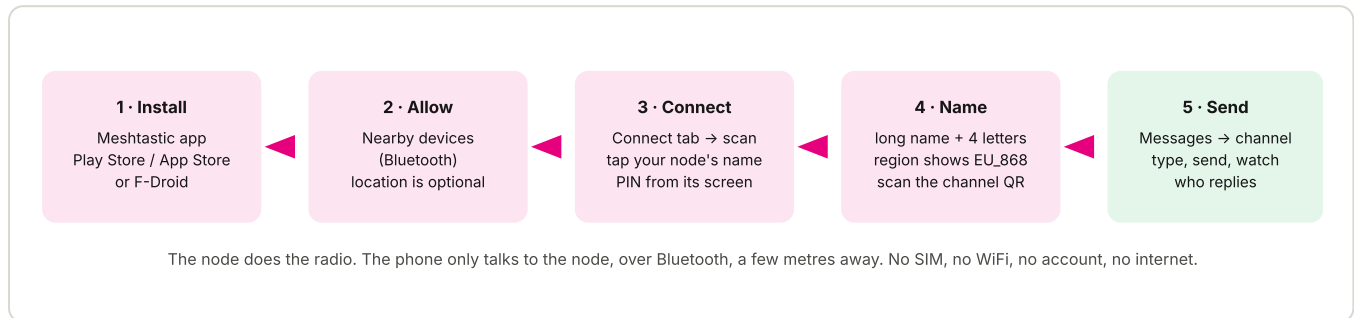
ESP32-S3 with WiFi and Bluetooth, a 0.96 inch OLED, USB C. Hungrier, so it keeps a bank awake; can also join the WiFi network.

Both carry the same SX1262 LoRa radio and an 868 MHz antenna. Flashed with Meshtastic, either is a complete node on its own: in a pocket, on a windowsill or plugged into a computer.

12 · How do I talk through a node?

Talk through a node

The node is the radio and it is the one on the mesh. Your phone, over Bluetooth, is its screen and keyboard. The handheld nodes are flashed with Meshtastic and set to the UK region.



On Android

- 1 Install Meshtastic**
Google Play or F-Droid, free. Open it, tap Get started.
- 2 Allow Nearby devices**
That is Bluetooth. Location only matters if you want to share your position; skip is fine.
- 3 Connect**
Node on (antenna first). Connect tab → Scan for Bluetooth devices → your node's name. Type the six digit PIN from the node's screen (123456 if it has none).
- 4 Region and name**
If a "Set your region" card appears, choose EU_868 (ours are set; a node with no region stays silent). Settings → User: a long name and a four letter short name.
- 5 Join the workshop channel**
Channels → scan the QR code we show you. Its key stays in this room; the default LongFast channel is shared with every stranger in range.
- 6 Send**
Messages → the channel → type → send. Nodes shows who hears you, how strongly, over how many hops.

On iPhone

- 1 Install Meshtastic**
App Store, free. Open it and allow Bluetooth when asked.
- 2 Connect**
Tap the antenna icon (Connect). Wait a few seconds, tap your node's name, enter the PIN from its screen (123456 if it has none). The indicator turns green.
- 3 Check the region**
Settings → LoRa → Region should read EU_868.
- 4 Name yourself**
Settings → User → Long Name and Short Name (four characters or an emoji) → Save.
- 5 Join the channel, then send**
Scan the workshop QR code from the Channels screen. Then Messages → the channel → type → send.

If it does not pair: Bluetooth on; forget any old pairing of that node in the phone's settings; one phone per node at a time; stand close. A dark node is asleep or its bank has switched off: press the node's button, then the bank's.

Then go outside with node, bank and phone and watch the hop count change in Nodes as the windowsill node relays for you.

13 · How do the computers join?

The computer as a mesh station

Two of the localities carry a node on a USB port. From the terminal, the computer can read the mesh, speak on it and keep a record of what passes. A station that belongs to the room it sits in.

From the terminal

Plug the node into a USB port; it appears as `/dev/ttyACM0`. Then:

```
python3 -m venv ~/mesh
source ~/mesh/bin/activate
pip install meshtastic
meshtastic --info
meshtastic --set-owner "locality1"
meshtastic --nodes
meshtastic --sendtext "hola, locality1"
```

`--info` shows the node and its region, `--nodes` lists everyone it can hear, `--sendtext` speaks on the channel. "Permission denied" on the port: `sudo usermod -aG dialout $USER`, then log out and in.

With buttons instead

Open Chromium on the computer, go to `client.meshtastic.org`, choose Serial and pick the node. The same Nodes list, channels and messages as on a phone. Only one program may hold the port at a time, so close the web client before using the terminal, and the other way round.

Experiments, inside and out

1 Who hears whom

Send from the far corner, the corridor, then the street. When does the hop count change?

2 Antennas have a direction

Hold a node horizontal, then vertical. Watch the signal strength (SNR) in the Nodes list.

3 No centre

Switch the windowsill node off. Who disappears? Switch it back on.

4 Relay through the room

Two people take nodes to opposite ends of the block and talk to each other only through the nodes inside.

5 Phone to computer

Send from a phone outside to locality1 inside. locality1 receives it with `meshtastic --nodes` or in the web client, and can answer.

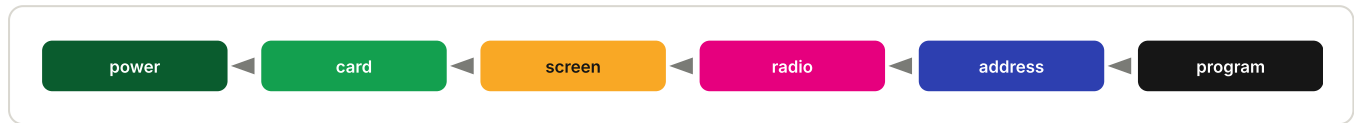
Why a station matters

Phones come and go. A computer with a node can sit on a shelf for months, log every message and sensor reading that crosses the mesh, and serve the record to the room over WiFi (page 11). Memory that stays where it was made.

14 · What if it breaks?

When something does not work

Go one layer at a time and change one thing at a time.



● Computer does not finish booting

Check the supply is the official one and seated (page 8), reseal the microSD, then try another card.

● Screen is black

DSI: power off, reseal both ribbon ends, try the other CAM/DISP socket. HDMI: check the adapter is fully home at both ends, in micro HDMI 0, and the header is seated.

● Screen is sideways or spills over

Preferences → Screen Configuration → Orientation or Resolution → Apply.

● Touch is slow or jumpy

Usually power. Check the official supply is in use. On the 4 inch screen there is no touch today; use the mouse.

● Low voltage warning on the desktop

The board is not getting 5 A: wrong supply, or a cable extension in the way. Use the official supply straight into the board.

● "No network with SSID found"

On locality1 confirm the hotspot is up (`nmcli connection show --active`); on the client scan again.

● Password rejected

Spelling, exactly: LocalWorlds2026, capital L, capital W, with the s.

● Ping works but chat does not

Run `nc -l 5000` first on the receiver; use its current address; try port 5001 on both ends.

● A download fails

Is the server still running? Is the address right? Does the file name match, including case?

● Node silent, nobody in the list

Region EU_868? Antenna on? Same channel? Bank still awake? Give it a minute; LoRa is slow and patient.

● Phone cannot see the node

Bluetooth on; forget the old pairing; the PIN is on the node's screen or 123456; one phone per node at a time.

● Computer cannot open /dev/ttyACM0

Add yourself to dialout, log out and in. Only one program may hold the port: close the web client before using the CLI.

Inspect the layers from the terminal. `vcgencmd get_throttled` (power: 0x0 is healthy) · `hostname -I` (name and address) · `nmcli connection show --active` (WiFi) · `meshtastic --info` (node and region). Fix a wrong layer before looking at the next one.

Manufacturer guides and further reading

Raspberry Pi documentation

raspberrypi.com/documentation

USB Power Delivery on Raspberry Pi 5

white paper at pip.raspberrypi.com

DFRobot DFR0678 7 inch DSI touchscreen

wiki.dfrobot.com/dfr0678

LCDWiki 4inch HDMI Display C (MPI4008)

lcdwiki.com

Meshtastic

meshtastic.org/docs · flasher.meshtastic.org · client.meshtastic.org

Heltec Mesh Node T114 and WiFi LoRa 32 V3

wiki.heltec.org

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Translocal networks

Everything here can be rebuilt from the parts list in an afternoon: a local network where you are, linked to others by the people who carry the practice between places. What a network of your own needs, and where to find us.

If you want to set up a network

- 1 Decide the band**
In the UK: 868 MHz, region EU_868 . A node sold for 915 MHz will not talk to ours.
- 2 Decide where nodes live**
Height beats power: a windowsill, a top shelf, a shed roof, a tree with a small solar panel. Three or four well placed nodes cover a neighbourhood.
- 3 Decide who holds the keys**
A channel is a name and a key, shared as a QR code. Decide together what the network is for, who joins, what is shared and what is kept off it. Write it down; revisit it.
- 4 Add a computer when you need one**
A computer with a node keeps the messages, the sensor readings, the gallery. A station that belongs to the room it sits in, not a server somewhere else.

Ideas to try next

- 1 A local gallery**
Each computer serves pages, photos and sound from its share folder: a room full of small websites.
- 2 A sensor on a node**
Air quality, temperature or soil moisture, sent over the mesh to a computer that keeps the record.
- 3 A solar node on a roof**
A node, a small 5 V solar panel and a battery in a weatherproof box. The mesh gains a mile and nobody pays a bill.
- 4 A neighbourhood message board**
One channel for the street, decided in a meeting, kept by the people on it.

Questions, parts, a network of your own

Write to us about builds, about the mesh, or about setting up something like this where you live or work. We make this with tecnomilpa, a community technology collective built from the practices and knowledges of the territories we come from.

tecnomilpa

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Photographs: the microSD card and the power supply from the Raspberry Pi documentation (Raspberry Pi Ltd, CC BY-SA 4.0); the board, screens and nodes from their makers' product pages (Raspberry Pi Ltd, DFRobot, LCDWiki, Heltec Automation).