

Power Optimization Settings

Repeater and Router role nodes keep the LoRa radio on continuously, which draws significantly more power than a client device that sleeps between uses. These settings minimize everything else to extend runtime on battery or solar power.

Disable Bluetooth

Once configured, a dedicated repeater does not need Bluetooth. Disabling it saves power and removes an unnecessary wireless interface.

```
meshtastic --set bluetooth.enabled false
```

Disable GPS (REPEATER role handles this automatically)

The REPEATER role does not broadcast position data, but the GPS module may still draw power unless you disable it explicitly in the Position config. If your board has a GPS module, disable it to save power:

```
meshtastic --set position.gps_mode DISABLED
```

Disable the screen

If your device has a display, minimize the screen-on time. Display backlights draw meaningful power. Note that `display.screen_on_secs 0` does **not** turn the screen off - 0 means the 10-minute default. To minimize screen-on time, set a small non-zero value instead:

```
meshtastic --set display.screen_on_secs 1
```

Set appropriate transmit power

Transmit power is the largest variable power draw. In most cases, leave `tx_power` at its default of **0**, which tells the firmware to use the maximum power your region legally permits for this hardware - the region setting is what enforces the legal cap. Only set an explicit value if you are deliberately reducing power (for example, to limit interference with nearby nodes). Higher power is not always better.

```
meshtastic --set lora.tx_power 0
```

If you do set an explicit value, `tx_power` is conducted PA power; stay at or below 30 dBm. If you use an antenna over 6 dBi gain, you **MUST** reduce conducted power by 1 dB for every dB of gain above 6 dBi (47 CFR 15.247(b)(4)). Actual radiated power also depends on your board's PA capability and feedline loss, so tie any fixed value to your antenna-gain / EIRP calculation rather than picking a number arbitrarily.

Use the right modem preset - but match your local network

Modem preset affects how long the radio is transmitting each packet, which directly impacts power consumption:

- Slower, longer-range presets (Long Slow, Long Moderate) keep the radio transmitting longer per packet - higher average power draw
- Faster presets (Medium Slow, Medium Fast) transmit each packet more quickly - lower average power draw, and better network capacity in dense areas
- Long Fast (firmware default) sits in the middle

Do not choose a preset based on power alone - you must use the same preset as the rest of your local network. Check what preset your local community or regional network uses before deploying. See the [Choosing a Modem Preset](#) page for guidance.

Managed Mode (optional)

For a deployed repeater that should not be reconfigured by whoever is near it, you can enable Managed Mode (`security.is_managed`). This blocks client apps from writing config; changes must then come via PKC Remote Admin (firmware 2.5+) or the legacy Admin channel. **Verify that remote admin works before enabling this, or you risk locking yourself out** - once managed

mode is on, you cannot reconfigure the node from a normal client app.

```
meshtastic --set security.is_managed true
```

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