



Solar Mesh Baseboard (revision E)

Quick Start Guide

Thank you for purchasing the Solar Mesh Baseboard with the RAK4630 module. The board is compatible with Meshtastic, MeshCore, Reticulum, and any firmware that supports RAK4630/RAK4631.

Each board is assembled, tested, and configured before shipping. The RAK4630 module ships with Meshtastic (latest stable at the time of testing), set to 868 MHz with the Medium/Fast preset. Connect antennas, battery, and a solar panel to join the network. The default Meshtastic Bluetooth PIN is **123456**.

Firmware Update / Change

You are free to use any firmware you like. The RAK4630 and RAK4631 are electrically identical, so choose the build for either RAK4630 or RAK4631. To flash new firmware:

1. Connect USB-C to your computer.
2. Press the RESET button twice. The green LED starts pulsing and a new mass-storage drive appears.
3. Copy the firmware file to that drive. The board will flash it and reboot.

Before installing outdoors, review settings and test thoroughly. On the PCB, verify charging current, solar panel voltage, and battery chemistry selected via solder jumpers. Default configuration: 12 V solar panel, Li-Ion/Li-Po battery, 120 mA charge current. Adjust by changing the jumpers if needed.

First Power Checklist

- Connect the antenna(s) before powering the module.
- Connect a battery first for stable 3.3 V power to the RAK4630.
- Connect the solar panel last and verify correct polarity.
- USB-C can power the board for nor-

mal operation or testing, but it does *not* charge the battery.

Warning

- Do not power the module without connected antennas. This may damage the radio.
- A connected battery is required for normal operation. Without it, the 3.3 V power for RAK4630 may be unstable.
- Observe battery polarity. The board has no reverse-polarity protection for a battery.

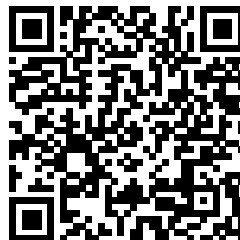
Basic Parameters

- Solar panel voltage: 7–30 V
- Battery voltage: 2.0–5.6 V
- Max charge current: 480 mA
- 2x Qwiic connectors (I2C)
- Board dimensions: 70 x 43 mm
- USB-C for programming and operation (no battery charging)
- Battery charges only from the solar panel

Additional Information

Detailed setup, 3D model, schematic, and more: <https://uart.cz/en/2534/>

Thank you for your support. I am a hobby developer and build everything myself from design and manufacturing to documentation and shipping. Your purchase helps fund new projects.



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