

NPH-1

DELTA PLUS NEPHILIM

Persistent Mesh Node - User Quick Reference

Revision B | Draft reference manual

Delta Plus Proto

Critical Warnings

WARNING - ATTACH ANTENNAS FIRST

Do not wake, power, or transmit with the LoRa antenna removed. Operating without the correct antenna may damage the RF output stage.

WARNING - USE CORRECT PORTS

Follow the engraving on the back of the unit: Bluetooth antenna on BLE, LoRa antenna on LORA.

CAUTION - USB POWER

Use 5 V USB-C power/data only. Do not use high-voltage trigger cables, bench supplies, or unknown adapters.



Antenna placement:

The back engraving identifies each antenna connector. Install the Bluetooth antenna on the port marked **BLE**. Install the long LoRa antenna on the port marked **LORA**.

Before every field use:

- Both antennas installed and snug
- USB-C cap installed before exposure to water/dust
- Correct Meshtastic region selected before transmitting
- No visible damage to antennas, SMA connectors, cap, or enclosure

First-Time Setup

1. **Install antennas**
   Follow the back engraving: BLE antenna to BLE, LoRa antenna to LORA.

2. **Wake the device**
   The NPH-1 has no power button. Plug in USB-C power or data to wake it from shutdown mode.

3. **Open Meshtastic**
   Use the Meshtastic mobile app or compatible RAK4631 software.

4. **Pair and configure**
   Pair over Bluetooth, set region, set channel, and send a test message.

5. **Seal for field use**
   Disconnect USB if desired and reinstall the USB-C sealing cap before field deployment.



Figure 2-1. USB-C connection wakes the device from shutdown mode and supports charging/data.

Exterior Identification



Figure 3-1. Back engraving identifies antenna ports.



Figure 3-2. Rear mounting/clip side.

LAYOUT NOTES

Key exterior items:

- BLE antenna port - install Bluetooth antenna here
- LORA antenna port - install LoRa antenna here
- USB-C sealed cap - install before field exposure
- Rear clip / mounting side - keep antennas clear of body and metal
- No external power button - wake through USB-C

Power Behavior

NO POWER BUTTON

The NPH-1 has no external power button.
Units may be shipped in software shutdown mode. To turn the device back on, connect USB-C power or USB-C data. Power behavior after wake is managed by the installed firmware/software.

State	User Action
Shipped / shutdown	Connect USB-C power or data to wake
Charging	Use 5 V USB-C only
Firmware update	Use a data-capable USB-C cable
Field use	Install USB-C cap and antennas before exposure

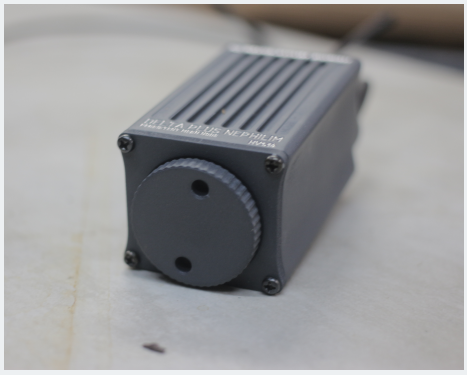


Figure 4-1. USB-C sealing cap. Reinstall the cap before field use or exposure to water/dust.

Firmware / DFU

COMPATIBILITY

The NPH-1 is based on RAK4631-compatible hardware. It ships with Meshtastic firmware and may be used with software or firmware intended for the RAK4631 platform. Delta Plus Proto support applies to shipped firmware and recommended tools.

RECOMMENDED METHOD

Use DeltaMeshFlasher to place the NPH-1 into DFU mode. Current functionality is DFU entry only. After the device appears as a DFU/mass-storage device, drag suitable RAK4631-compatible firmware onto the device. Additional flashing and firmware-management functions are planned for a later release.

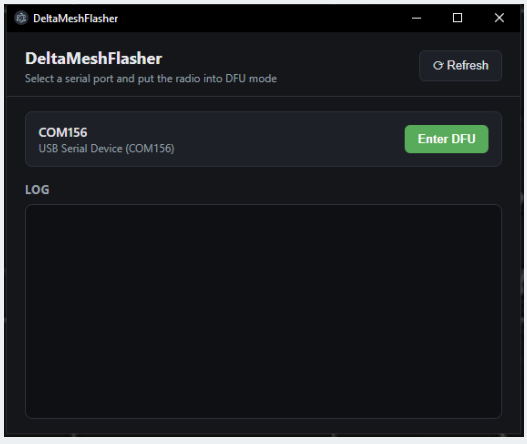


Figure 5-1. DeltaMeshFlasher.

MANUAL DFU

An internal DFU button may be used for recovery. Opening the enclosure can affect sealing if reassembled incorrectly.

DeltaMeshFlasher GitHub releases

Product page and support

Battery, Sealing, and Field Care

BATTERY

Internal 5200 mAh Li-ion battery. The battery is **not user-removable**. Do not open the device for battery replacement unless directed by Delta Plus Proto support.

BEFORE FIELD USE

- Antennas installed and finger-tight
- USB-C cap fully installed
- No visible cracks or damaged seals
- Correct software region and channel set

AFTER EXPOSURE

- Dry before charging
- Remove dirt from cap area
- Do not charge with moisture in USB-C port
- Inspect antenna connectors



Figure 6-1. Rear mounting/clip and sealed cap areas for field inspection.

Quick Troubleshooting

Issue	Check / Action
Will not wake	Connect USB-C power or data. Confirm the cable is not charge-only.
Phone cannot find radio	Restart app, keep radio near phone, reconnect USB, retry Bluetooth pairing.
No messages	Confirm same Meshtastic channel, region, modem preset, and network settings.
Poor range	Keep LoRa antenna vertical, raise the node, avoid body/metal blocking, use relay nodes.
Firmware update fails	Use DeltaMeshFlasher and a USB-C data cable. Enter DFU if needed.
Wet USB-C area	Do not charge. Dry fully, clean cap area, reinstall cap before field use.
Used without antenna	Stop transmitting and contact support. RF output damage may have occurred.

SUPPORT / REFERENCE

For firmware tools, product information, or support, use the QR codes in Section 5.0 or contact Delta Plus Proto through the product page. Include the device model, firmware/software used, symptoms, and photos if physical damage or water exposure is involved.

REMINDER

Attach antennas before power/wake. BLE antenna goes to BLE. LoRa antenna goes to LORA.