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LIAMOS NF-8508

LIAMOS NF-8508 Optical Power Meter and Network Cable Tester User Manual

Model: NF-8508

1. Introduction

The LIAMOS NF-8508 is a versatile multi-function device designed for network and fiber optic cable testing. It integrates an optical power meter, visual fault locator (VFL), cable length measurement, wiremap testing, cable tracking, and Power over Ethernet (POE) testing capabilities. This manual provides detailed instructions for the safe and effective operation of the NF-8508.

2. Safety Information

Please read and understand all safety warnings and operating instructions before using this device. Failure to do so may result in injury or damage to the device.

- Do not expose the device to moisture or extreme temperatures.
- Avoid direct eye exposure to the red light from the VFL function, as it can cause eye damage.
- Use only the specified charging cable and power adapter.
- Do not attempt to disassemble or repair the device yourself. Contact qualified personnel for service.
- Keep the device away from strong electromagnetic fields.

3. Package Contents

Verify that all items are present in the package:

- NF-8508 Main Unit (Transmitter)
- NF-8508 Receiver Unit
- USB Type-C Charging Cable
- RJ45 Adapter Cable
- Earphone
- User Manual

4. Product Features

- **Optical Power Meter:** Measures optical power in dBm, dB, mW, uW, nW across wavelengths: 850nm, 1300nm, 1310nm, 1490nm, 1550nm, 1625nm.
- **Red Light Pencil (VFL):** Three modes: fast flash, slow flash, steady light for fiber optic fault location.
- **Cable Length Measurement:** Accurately measures cable length from 2.5m to 200m.
- **Wiremap & Fault Testing:** Detects open, short, crossover, and split pair wires.
- **Cable Tracking:** Two scanning modes (normal/anti-interference) with adjustable sensitivity to locate target cables.
- **POE Function:** Tests standard POE equipment information including voltage, power supply polarity, power mode, and PSE type.
- **Port Blinking:** Identifies network ports on hubs/switches by flashing the port light.
- **LCD Display:** Clear display for test results and settings.
- **Rechargeable Battery:** Integrated 1500mAh lithium polymer battery for extended operation.
- **Lighting Function:** Built-in light for working in dark environments.
- **Headset Function:** For use in noisy environments or long-distance tracking.

5. Product Overview: Buttons and Ports

Familiarize yourself with the main unit (transmitter) and receiver unit components.



Figure 5.1: Main Unit (Transmitter) and Receiver Unit with labeled buttons and ports. The main unit features an LCD screen, OK, Power, Up, Down, and Back buttons, OPM, SCAN, VFL ports, and a Type-C interface. The receiver unit has an OFF/ON dial, SCAN, NCV, and Power buttons, a Lamp, Anti-jamming probe, Type-C interface, and RJ45 port.

Main Unit (Transmitter)

- **Display Screen:** Shows test results and menu options.
- **OK Button:** Confirms selections.
- **Power Button:** Turns the device on/off.
- **Up/Down Buttons:** Navigates menu options.
- **Back Button:** Returns to the previous menu.
- **OPM Port:** Optical Power Meter input.
- **SCAN Port:** For cable tracking.

- **VFL Port:** Visual Fault Locator output.
- **Type-C Interface:** Charging port.
- **RJ45 Port:** For network cable testing.

Receiver Unit

- **OFF/ON Dial:** Powers the receiver on/off and adjusts sensitivity.
- **SCAN Button:** Initiates cable scanning.
- **NCV Button:** Non-Contact Voltage detection.
- **Power Button:** Turns on/off the receiver's power.
- **Lamp:** Built-in flashlight.
- **Anti-jamming Probe:** For accurate cable tracing.
- **Type-C Interface:** Charging port.
- **RJ45 Port:** For network cable connection.

6. Setup

6.1 Charging the Device

Before first use, fully charge both the main unit and the receiver. Connect the provided USB Type-C cable to the charging port on each unit and to a standard USB power adapter (not included). The power indicator will show charging status.

6.2 Powering On/Off

- **Main Unit:** Press and hold the **Power** button until the screen illuminates. To power off, press and hold the **Power** button again.
- **Receiver Unit:** Rotate the **OFF/ON** dial clockwise to power on. Rotate counter-clockwise to power off.

6.3 Initial Settings

From the main menu, navigate to the **Settings** option using the **Up/Down** buttons and press **OK**. Here you can adjust:

- **Language:** Select your preferred language.
- **Backlight:** Adjust backlight brightness and duration.
- **Auto Off Time:** Set the time for automatic power-off to conserve battery.
- **Information:** View device version number and other details.

7. Operating Instructions

7.1 Optical Power Meter (OPM) Function

This function measures the power of optical signals.

1. From the main menu, select **OPM**.
2. Connect the fiber optic cable to be tested to the **OPM** port on the main unit.
3. The display will show the measured optical power in dBm, dB, mW, uW, or nW.
4. Use the settings menu to select the desired wavelength (850nm, 1300nm, 1310nm, 1490nm, 1550nm, 1625nm) for accurate measurement.

7.2 Red Light Pencil (VFL) Function

The VFL function helps locate breaks or bends in fiber optic cables by emitting a visible red laser light.



Figure 7.1: The NF-8508 main unit demonstrating the Visual Fault Locator (VFL) function, with a red laser beam visible from the connected fiber optic cable.

1. From the main menu, select **VFL**.
2. Connect the fiber optic cable to the **VFL** port.
3. Press **OK** to cycle through the VFL modes: steady light, fast flash, slow flash.
4. Observe the fiber optic cable for red light leakage, which indicates a fault.
5. **Caution:** Avoid direct eye exposure to the VFL laser.

7.3 Cable Length Measurement

This function measures the length of network cables (RJ45).



Figure 7.2: The NF-8508 main unit showing the cable length measurement function, indicating a length of 200m for pairs 1-2, 3-6, 4-5, and 7-8 of a connected network cable.

1. From the main menu, select **Length**.
2. Connect one end of the network cable to the **RJ45** port on the main unit. The other end of the cable should be open or connected to the receiver.
3. The device will automatically measure and display the length of each wire pair (1-2, 3-6, 4-5, 7-8) in meters. The measurement range is 2.5m to 200m.

7.4 Wiremap & QC Test

This function tests the continuity and wiring sequence of network cables, identifying open, short, crossover, and split pair faults. The results are updated automatically, with a flag indicating a normal channel and another indicating an abnormal channel.



Figure 7.3: The NF-8508 main unit performing a QC Test, showing green checkmarks for all 8 wire pairs, indicating a correctly wired cable.

1. From the main menu, select **QC Test**.
2. Connect one end of the network cable to the **RJ45** port on the main unit and the other end to the **RJ45** port on the receiver unit.
3. The display will show the wiring status for each pair. Green checkmarks indicate correct wiring, while other symbols or missing checks indicate faults (open, short, crossover, split pair).

7.5 Cable Tracking (SCAN)

This function helps locate a specific cable among a bundle of cables.



Figure 7.4: The NF-8508 main unit and receiver unit in use for cable tracking. The receiver emits "Beep Beep Beep" sounds, indicating it has located the target cable connected to the main unit.

1. Connect one end of the target cable to the **SCAN** port on the main unit.
2. Turn on the receiver unit and select the **SCAN** mode.
3. Use the receiver's probe to trace the cables. The receiver will emit an audible tone when it detects the signal from the target cable.
4. Adjust the sensitivity using the receiver's dial for better accuracy. Two scanning modes (normal/anti-interference) are available on the main unit.
5. For noisy environments, connect the provided earphone to the receiver.

7.6 POE Function

Tests Power over Ethernet (POE) information.

1. From the main menu, select **POE**.
2. Connect the network cable from the POE source (e.g., POE switch) to the **RJ45** port on the main unit.
3. The display will show POE voltage, power supply polarity, power supply mode (e.g., 802.3af/at), and PSE type.

7.7 Port Blinking Function

Helps identify a specific port on a network hub or switch.

1. From the main menu, select **Flash** (or Port Blinking).
2. Connect the network cable from the main unit's **RJ45** port to the desired port on the hub/switch.
3. The corresponding port light on the hub/switch will flash, allowing for easy identification.

7.8 Lighting Function

The main unit has a built-in light for working in dark environments. Activate it from the main menu or a dedicated button if available (refer to Figure 5.1).

8. Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the device. Do not use abrasive cleaners or solvents.
- **Storage:** Store the device in a cool, dry place away from direct sunlight and extreme temperatures.
- **Battery:** Recharge the battery regularly, even if the device is not in use, to maintain battery health. If storing for extended periods, charge to approximately 50%.
- **Fiber Optic Ports:** Keep the OPM and VFL ports clean. Use appropriate fiber optic cleaning tools if necessary to avoid inaccurate readings or damage.

9. Troubleshooting

Problem	Possible Cause	Solution
Device does not power on.	Low battery.	Charge the device fully.
Inaccurate OPM readings.	Dirty OPM port or incorrect wavelength setting.	Clean the OPM port. Verify the correct wavelength is selected in settings.
VFL red light is dim or absent.	Dirty VFL port or damaged fiber.	Clean the VFL port. Inspect the fiber optic cable for damage.
Cable length measurement is incorrect.	Poor cable connection or cable outside measurement range.	Ensure cable is properly connected. Verify cable length is within 2.5m-200m.
Cable tracking signal is weak or noisy.	Low receiver sensitivity or strong interference.	Adjust receiver sensitivity. Switch to anti-interference mode on the main unit.

10. Specifications

Feature	Specification
Optical Power Meter Wavelengths	850nm, 1300nm, 1310nm, 1490nm, 1550nm, 1625nm
Red Light Pencil (VFL) Modes	Fast flash, Slow flash, Steady light
Cable Length Measurement Range	2.5m ~ 200m
Wiremap Test	Open, Short, Crossover, Split Pair

Feature	Specification
Cable Tracking Frequency	455KHz
Cable Tracking Distance (RJ45)	Up to 300m
Power Supply	1500mAh Lithium Polymer Battery
Main Unit Dimensions	Approximately 148mm x 70mm x 32mm
Receiver Unit Dimensions	Approximately 198mm x 50mm x 28mm
Item Weight	1.76 pounds (total package weight)



Figure 10.1: Dimensions of the NF-8508 main unit (148mm x 70mm x 32mm) and receiver unit (198mm x 50mm x 28mm).

11. Warranty and Support

LIAMOS products are designed for reliability and performance. For warranty information, technical support, or service

inquiries, please refer to the contact information provided with your purchase or visit the official LIAMOS website. Do not attempt to repair the device yourself, as this may void the warranty.

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