NOYAFA NF-909

Noyafa NF-909C Fiber Optic Tester User Manual

Model: NF-909C | Brand: NOYAFA

1. Introduction

The Noyafa NF-909C is a compact and easy-to-use 2-in-1 testing instrument designed for optical fiber networks. It integrates both an optical power meter and an optical light source, making it suitable for absolute optical power measurements and insertion loss tests. This device offers a wide range of power measurement, high accuracy, and stable output, providing a cost-effective solution for fiber optic testing.

2. Safety Information

- **Read the Manual:** Before operating the device, thoroughly read and understand this user manual.
- **Battery Safety:** Use only specified 1.5V batteries (3x AAA). Do not mix old and new batteries or different types of batteries. Remove batteries if the device will not be used for an extended period.
- **Laser Safety:** The optical light source emits laser radiation. **DO NOT** look directly into the optical output port or into a fiber connected to the light source. Direct exposure to laser light can cause severe eye damage.
- **Environmental Conditions:** Operate the device within the specified operating temperature range (-10°C to +60°C). Avoid exposure to extreme temperatures, humidity, or dust.
- **Cleaning:** Keep optical connectors clean. Use only approved cleaning methods and materials to avoid damaging the fiber end-faces.
- **Maintenance:** Do not attempt to open or repair the device. Refer all servicing to qualified personnel.

3. Package Contents

Verify that all items are present and in good condition upon unpacking:

- Noyafa NF-909C Fiber Optic Tester Unit
- User Manual
- Protective Cap for Optical Ports
- *(Batteries may or may not be included depending on the retailer)*

4. Product Overview

The NF-909C features a clear LCD display, intuitive control buttons, and standard optical connectors for versatile use.

Figure 1: Front view of the Noyafa NF-909C Fiber Optic Tester. This image shows the device's display screen, the red control buttons (Power, REF, dBm/W, λ, Hz), and the two optical input/output ports on the front, protected by a red cap. The device is black and red.

Figure 2: Side view of the Noyafa NF-909C Fiber Optic Tester. This image highlights the micro USB port located on the side of the device, which may be used for power or data transfer, though its primary function is typically for charging or external power supply. The red protective cap is shown detached.

Key Components:

- **LCD Display:** Shows measurement readings, selected wavelength, unit, and battery status.
- **Control Buttons:** Power On/Off, Reference (REF), Unit (dBm/W), Wavelength (λ), Frequency (Hz).
- **Optical Power Meter Input:** Typically supports SC, ST, LC connectors (optional).
- **Optical Light Source Output:** Typically FC connector (SC, ST, LC optional).
- **Battery Compartment:** Located on the rear, for 3x 1.5V batteries.
- **Micro USB Port:** For power supply or charging (refer to Figure 2).

5. Setup

5.1 Battery Installation

1. Locate the battery compartment cover on the back of the device.
2. Slide or unclip the cover to open it.
3. Insert three (3) 1.5V AAA batteries, ensuring correct polarity (+/-) as indicated inside the compartment.
4. Replace the battery compartment cover securely.

5.2 Initial Power On

Press and hold the **Power** button to turn on the device. The LCD display will illuminate, showing the current mode and settings.

6. Operating Instructions

6.1 Optical Power Meter Mode

This mode measures the absolute optical power or relative loss in optical fiber networks.

1. **Connect Fiber:** Connect the optical fiber to be tested to the Power Meter input port. Ensure the connector is clean.
2. **Select Wavelength:** Press the **λ** button to cycle through the available calibrated wavelengths: 850nm, 1300nm, 1310nm, 1490nm, 1550nm, 1625nm. Select the wavelength matching your light source.
3. **View Measurement:** The display will show the optical power in dBm.
4. **Change Unit:** Press the **dBm/W** button to switch between dBm and W (Watts) units.
5. **Set Reference (REF):** For relative measurements (loss), connect a known good fiber to a stable light source and the power meter. Press the **REF** button to set the current power reading as the reference (0dB). Subsequent measurements will show the loss relative to this reference.
6. **Frequency Identification:** The power meter can identify modulation frequencies from 10Hz to 60KHz. If the incoming signal is modulated, the frequency will be displayed.

6.2 Optical Light Source Mode

This mode provides a stable optical signal for testing fiber optic cables.

1. **Connect Fiber:** Connect the optical fiber to be tested to the Light Source output port. Ensure the connector is clean.

2. **Select Wavelength:** Press the **λ** button to cycle through the available wavelengths: 1310nm and 1550nm. Select the desired wavelength.
3. **Select Modulation Frequency:** Press the **Hz** button to cycle through modulation frequencies: 270Hz, 1KHz, 2KHz, or continuous wave (CW).
4. **Output Signal:** The device will emit a stable optical signal at the selected wavelength and modulation.

6.3 Auto-Off Function

The device features an auto-off function to conserve battery life. If no operation is performed for approximately 15 minutes, the device will automatically power off. Press the **Power** button to turn it back on.

7. Maintenance

- **Cleaning Optical Connectors:** Always ensure optical connectors are clean before use. Use lint-free wipes and appropriate optical cleaning solutions. Dirty connectors can lead to inaccurate measurements and damage to the device or fiber.
- **Battery Replacement:** When the battery indicator on the display shows low power, replace all three 1.5V AAA batteries promptly.
- **Storage:** When not in use, store the device in a dry, cool place, away from direct sunlight and extreme temperatures. Always replace the protective caps on the optical ports to prevent dust and damage.
- **External Cleaning:** Clean the exterior of the device with a soft, damp cloth. Do not use abrasive cleaners or solvents.

8. Troubleshooting

- **Device does not power on:**
  - Check if batteries are installed correctly with proper polarity.
  - Replace with fresh batteries.
- **Inaccurate power meter readings:**
  - Ensure optical connectors are clean.
  - Verify the selected wavelength on the power meter matches the light source wavelength.
  - Check if the fiber under test is properly connected and not damaged.
- **No light output from light source:**
  - Ensure the device is powered on and in light source mode.
  - Check battery level.
  - Verify the fiber is properly connected to the output port.
- **Auto-off activates too quickly:**
  - The auto-off is fixed at 15 minutes of inactivity. This is normal operation.

9. Specifications

Feature	Specification
Optical Power Meter Module	
Detector Measurement Range	-50 ~ +26 dBm
Calibrated Wavelengths	850, 1300, 1310, 1490, 1550, 1625 nm
Resolution	0.01 dBm
Identification Frequency Range	10 Hz ~ 60 KHz
Optical Connector	SC, ST, LC (optional)
Optical Light Source Module	
Emitter Wavelengths	1310 / 1550 nm (other wavelengths customizable)
Output Power	-7 dBm
Output Stability	0.05 dB / 15 mins; 0.1 dB / 8 hours
Modulation Frequencies	270 Hz, 1 KHz, 2 KHz
Optical Connector	FC (SC, ST, LC optional)
General Specifications	
Power Supply	3 x 1.5V AAA batteries
Auto-off Time	15 minutes (approx.)
Operating Temperature	-10°C ~ +60°C
Dimensions (L x W x H)	160 x 75 x 32 mm
Weight	400 g (unit only) / 150 g (item weight from specs)
Minimum Operating Voltage	1.5 Volts
Maximum Operating Voltage	5 Volts
Specification Met	UL 61010-1, IEC 61010-2-030
Manufacturer	Shenzhen Noyafa Electronic

10. Warranty and Support

For warranty information, technical support, or service inquiries, please refer to the warranty card included with your product or contact your authorized Noyafa dealer or the manufacturer directly. Keep your purchase receipt as proof of purchase.