KOMSHINE QX70-P

Komshine QX70 Series OTDR User Manual

Model: QX70-P 1310/1550/1625nm | Brand: KOMSHINE

1. Introduction

This manual provides comprehensive instructions for the safe and efficient operation of the Komshine QX70 Series Optical Time Domain Reflectometer (OTDR). The QX70 is a versatile instrument designed for fiber optic network testing, featuring a 7.0-inch GUI touch screen, built-in Optical Power Meter (OPM), and Visual Fault Locator (VFL).
Please read this manual thoroughly before using the device to ensure proper functionality and to prevent damage.

2. Safety Information

Warning: Laser Radiation

- Do not stare directly into the optical output ports when the device is active. Invisible laser radiation may be present and can cause eye damage.
- Always use appropriate eye protection when working with fiber optic equipment.
- Ensure all connections are clean and free of debris before testing to prevent damage to the device and inaccurate readings.
- Operate the device within the specified environmental conditions to ensure optimal performance and longevity.

3. Package Contents

Verify that all items listed below are present in your Komshine QX70 package:

- Komshine QX70-P OTDR Unit (1)
- FC+SC+LC UPC Connectors (Set)

- Testing & Calibration Report (1)
- AC/DC Power Adapter (1)
- Quality Certification (1)
- Trace Analyzing Software CD (1)
- Internal Battery (Pre-installed) (1)
- User Manual (1)
- Carrying Case (1)

Figure 3.1: Komshine QX70 OTDR with its standard accessories, including the carrying case, user manual, and various fiber optic connectors.

4. Product Overview

The Komshine QX70 OTDR is a robust and feature-rich device designed for precise fiber optic network analysis. It integrates multiple functionalities into a single portable unit.

4.1 Key Features

- **Integrated Functions:** Combines OTDR, Optical Power Meter (OPM), and Visual Fault Locator (VFL) in one device.

- **High-Resolution Display:** 7.0-inch TFT-LCD touch screen (640x480 resolution) for clear data visualization.
- **Fast Processing:** Optimized for quick test times and efficient data analysis.
- **Short Dead Zones:** 0.5m event dead zone and 3m attenuation blind zone for accurate short-distance measurements.
- **Link Map Function:** Built-in iOLM-like link map for easy identification and characterization of network components.
- **Connectivity:** USB and Micro-USB interfaces for data transfer, printer connection, and PC synchronization.
- **Durable Design:** Features a silicone keypad and robust construction, offering shock, drop, water, and dust resistance.
- **Long Battery Life:** Equipped with a 6800mAh internal lithium battery providing over 8 hours of continuous operation.

Figure 4.1: Overview of the Komshine QX70 OTDR's primary features, highlighting its integrated functionalities and user interface.

Figure 4.2: The Komshine QX70 OTDR integrates OTDR, VFL, and OPM capabilities into a single device.

Figure 4.3: The device features a robust silicone keypad designed for durability and resistance to environmental factors.

Figure 4.4: The Komshine QX70 OTDR is built to withstand challenging environmental conditions, including shock, drops, water, and dust.

4.2 Device Layout and GUI

The QX70 features a user-friendly graphical interface accessible via its 7.0-inch touch screen. Physical buttons provide additional control for navigation and function selection.

Figure 4.5: Front view of the Komshine QX70 OTDR, highlighting the display and control panel.

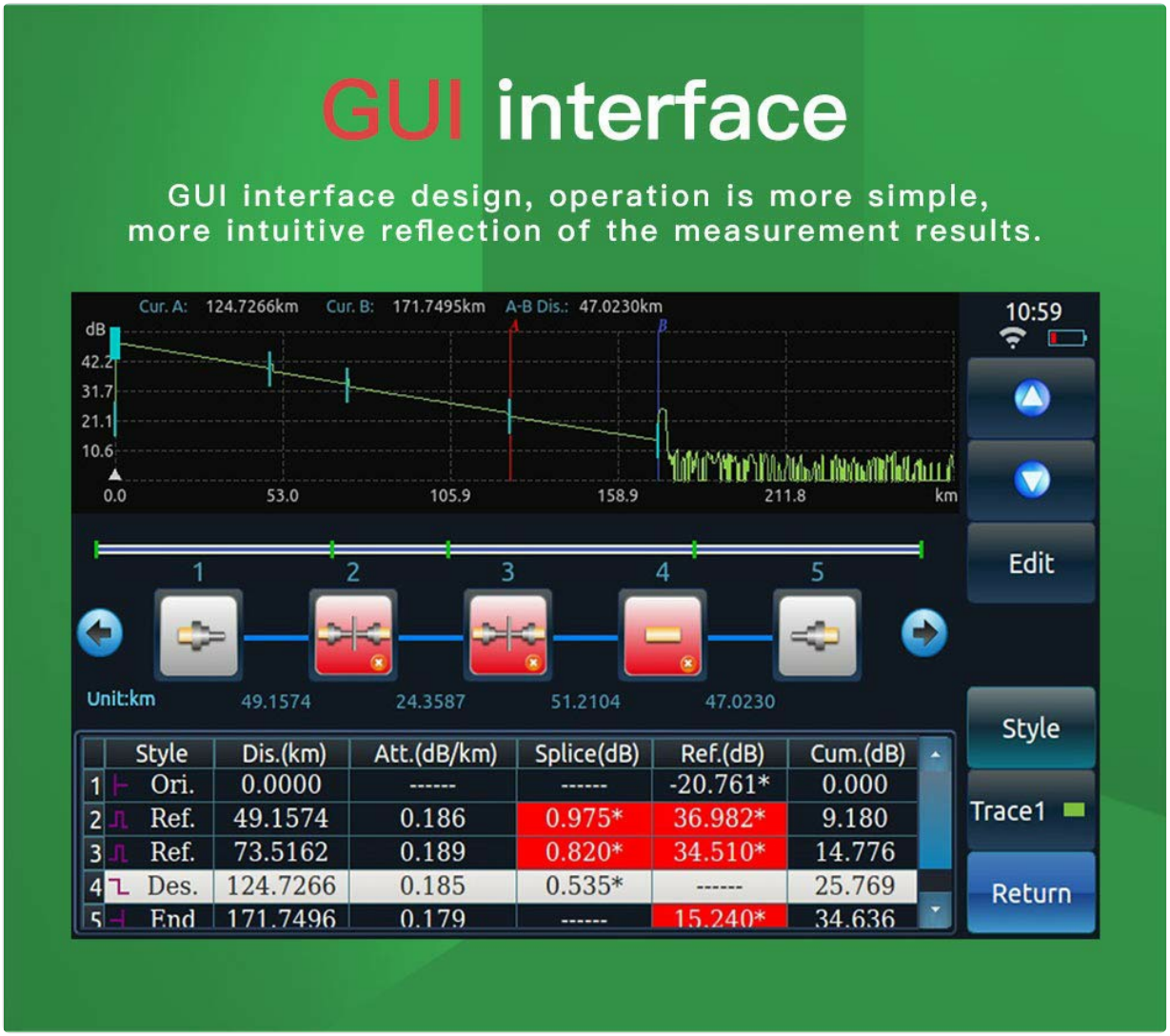

Figure 4.6: The intuitive GUI interface simplifies operation and provides clear visualization of measurement results, including event tables and trace graphs.

5. Setup

5.1 Initial Charging

Before first use, fully charge the internal lithium battery. Connect the AC/DC adapter to the device's charging port and plug it into a power outlet. The charging indicator will show the charging status. A full charge provides over 8 hours of operating life.

Figure 5.1: The QX70 OTDR features a high-capacity 6800mAh battery, providing extended operational time.

5.2 Powering On/Off

- **To Power On:** Press and hold the power button (usually located on the side or front panel) until the screen illuminates.
- **To Power Off:** Press and hold the power button until a shutdown prompt appears, then confirm. Alternatively, a quick press might bring up a power menu.

5.3 Connecting Fiber Optic Cables

The QX70 comes with FC, SC, and LC UPC adapters. Select the appropriate adapter for your fiber connector type.

1. Ensure the fiber end-face and the OTDR's optical port are clean. Use a fiber optic cleaner if necessary.
2. Attach the correct adapter to the OTDR's optical port.
3. Carefully insert the fiber optic cable into the adapter. Avoid excessive force.

6. Operating Instructions

The Komshine QX70 offers multiple testing modes. Navigate through the touch screen interface to select

the desired function.

6.1 OTDR Measurement

1. From the main menu, select the "OTDR" function.
2. Configure measurement parameters such as wavelength (1310/1550/1625nm), pulse width, distance range, and measurement mode (e.g., Auto, Manual).
3. Connect the fiber under test to the OTDR port.
4. Press the "Start" or "Measure" button to begin the test.
5. The OTDR trace will be displayed on the screen, showing events like splices, connectors, and fiber ends. The iOLM link map function provides a simplified graphical representation.
6. Analyze the results using the on-screen tools. Save the trace data for later analysis using the included software.

6.2 Optical Power Meter (OPM) Function

1. Select the "OPM" function from the main menu.
2. Choose the desired wavelength (850/1300/1310/1490/1550/1625nm).
3. Connect the fiber carrying the optical signal to the OPM port.
4. The optical power level will be displayed in dBm or mW.

6.3 Visual Fault Locator (VFL) Function

1. Select the "VFL" function from the main menu.
2. Connect the fiber to the VFL port.
3. Activate the VFL. A visible red laser light will be emitted into the fiber.
4. Inspect the fiber along its path for light leakage, which indicates breaks, tight bends, or faulty connectors.

7. Maintenance

7.1 Cleaning Optical Ports and Connectors

Regular cleaning of optical ports and fiber connectors is crucial for accurate measurements and to prevent damage. Use only approved fiber optic cleaning tools and methods.

- Always power off the device before cleaning optical ports.
- Use lint-free wipes and isopropyl alcohol or specialized fiber optic cleaning solutions.
- Never use abrasive materials or solvents that are not specifically designed for fiber optics.

7.2 Battery Care

- Charge the battery regularly, even if the device is not in frequent use, to maintain battery health.
- Avoid fully discharging the battery frequently.
- Store the device in a cool, dry place when not in use.

7.3 Software Updates

Periodically check the Komshine official website for firmware updates. Keeping the device's software up-to-date ensures optimal performance and access to new features.

8. Troubleshooting

Problem	Possible Cause	Solution
Device does not power on.	Low or depleted battery.	Connect the AC/DC adapter and charge the device.
Inaccurate OTDR measurements.	Dirty optical connectors/ports; incorrect parameters.	Clean all optical connections. Verify OTDR settings (wavelength, pulse width, range).
VFL light is dim or absent.	Dirty VFL port; VFL not activated; fiber issue.	Clean the VFL port. Ensure VFL function is enabled. Check fiber for severe bends or breaks.
Touch screen unresponsive.	Temporary software glitch; screen calibration needed.	Restart the device. If issue persists, refer to the full user manual for screen calibration instructions.

If the problem persists after attempting these solutions, please contact Komshine customer support.

9. Specifications

The following table details the technical specifications of the Komshine QX70-P OTDR:

Figure 9.1: Physical dimensions of the Komshine QX70 OTDR.

Feature	Detail
Model	QX70-P

Feature	Detail
Measurement Type	OTDR, OPM, VFL
Applicable Fiber	Networks with PLC Splitters
Wavelengths (OTDR)	1310nm, 1550nm, 1625nm
Wavelengths (OPM)	850/1300/1310/1490/1550/1625nm
Dynamic Range	Up to 32/30/28dB
Event Dead Zone	<0.5m
Attenuation Blind Zone	3m
Distance Range	4, 8, 16, 32, 64, 128, 256km
Pulse Width	10, 30, 80, 160, 320, 640, 1280, 5120, 1024ns
Display	7.0 inch TFT-LCD (touch screen), 640x480 resolution
Interfaces	USB, Micro-USB
Memory Capacity	>10000 traces
Battery	Built-in lithium, 6800mAh, >8 hours operating life
Item Weight	4.54 g
Manufacturer	Komshine Technology Limited
Color	Blue

10. Warranty Information

The Komshine QX70 Series OTDR comes with a**one-year warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use.
The warranty does not cover damage caused by misuse, accident, unauthorized modification, or operation outside the specified environmental limits. Please retain your proof of purchase for warranty claims.

11. Customer Support

For technical assistance, troubleshooting, or warranty inquiries, please contact Komshine customer support.

- **Manufacturer:** Komshine Technology Limited
- **Website:** Refer to the official Komshine website for the latest support contact information, FAQs, and software downloads.
- **Email/Phone:** Specific contact details are typically provided on the manufacturer's website or in the included warranty card.

When contacting support, please have your product model (QX70-P) and serial number (if applicable) ready.