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## QIIRUN AUAFTTHKIT-2024-US

# QIIRUN Fiber Optic Tool Kit Instruction Manual

Model: AUAFTTHKIT-2024-US

## 1. INTRODUCTION

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This instruction manual provides detailed guidance for the proper use, maintenance, and troubleshooting of your QIIRUN Fiber Optic Tool Kit. This comprehensive kit is designed for FTTX/FTTH quick connection tasks and includes essential tools for fiber optic installation and testing.



Image 1.1: Overview of the QIIRUN Fiber Optic Tool Kit components.

### Kit Contents:

- Optical Power Meter with RJ45 Network Test Function
- Visual Fault Locator (VFL)
- High Precision Fiber Cleaver
- FTTH Drop Cable Stripper
- 3-Hole Fiber Optic Stripper
- Fiber Optic Length Fixer
- Pumping Bottle (empty)
- Water-proof Carry Bag
- Hex Key
- Ceramic Tube
- Fiber Cleaning Wipes

# Visual Fault Locator



- **Fiber Optic VFL**
- **650nm  $\pm$ 10nm**
- **2.5mm Universal Interface**
- **Support FC SC ST LC Connectors**
- **Powered by 2\*AA battery**



Image 1.2: Visual representation of all items included in the kit.

## 2. SETUP

### 2.1 Battery Installation

Both the Optical Power Meter and the Visual Fault Locator require batteries for operation.

- **Optical Power Meter:** Requires 2 AAA batteries. Locate the battery compartment on the back of the device, open it, insert the batteries according to the polarity markings, and close the compartment securely.
- **Visual Fault Locator:** Requires 2 AAA batteries. Unscrew the bottom cap of the VFL, insert the batteries according to the polarity markings, and screw the cap back on tightly.

### 2.2 Initial Inspection

Before first use, carefully inspect all tools for any signs of damage. Ensure all components listed in Section 1.1 are present. Familiarize yourself with the basic controls and interfaces of each device.

### 3. OPERATING INSTRUCTIONS

#### 3.1 Optical Power Meter with RJ45 Network Test

The Optical Power Meter (OPM) is designed to measure optical power across various wavelengths and includes an integrated RJ45 network test function.



Image 3.1: Front view of the Optical Power Meter with RJ45 test capabilities.

#### Optical Power Measurement:

1. **Power On:** Press the power button to turn on the OPM.
2. **Select Wavelength:** Use the " $\lambda$ " button to cycle through the available wavelengths (850, 980, 1270, 1300, 1310, 1490, 1550, 1577, 1625, 1650nm) to match your fiber optic system.
3. **Connect Fiber:** Insert the fiber optic connector (2.5mm Universal or FC/PC) into the OPM's input port.
4. **Read Measurement:** The display will show the optical power in dBm.
5. **Reference Setting (REF):** For relative measurements, connect a known power source, press the "REF" button to set the current reading as the reference. Subsequent readings will show the difference (dB).
6. **Self-Calibration:** The device supports user-self calibration for accuracy. Refer to the detailed calibration

procedure in the full product manual if needed.

7. **Auto-Off:** The OPM features a 10-minute auto-off function to conserve battery life.

### RJ45 Network Test:

1. **Connect RJ45 Cables:** Connect one end of the RJ45 cable to the OPM's RJ45 port and the other end to the remote RJ45 tracker (if included and detachable).
2. **Initiate Test:** Press the "dB/RJ45" button to switch to RJ45 test mode. The display will show the status of each wire pair, indicating continuity or faults.
3. **Interpret Results:** The OPM will indicate if the cable is correctly wired, open, shorted, or crossed.



Image 3.2: Details of the OPM interface and RJ45 tracker.

### 3.2 Visual Fault Locator (VFL)

The VFL is used to quickly locate breakpoints, poor connections, bending, or cracking in fiber optic cables by emitting a bright red laser light.

## High Quality Bag & Packing



Image 3.3: The Visual Fault Locator and compatible connector types.

1. **Connect Fiber:** Remove the dust cap from the VFL and insert the fiber optic connector (SC/FC/ST/LC compatible with 2.5mm universal interface) into the VFL's output port.
2. **Activate Laser:** Press the power button to activate the red laser. The VFL typically offers Continuous Wave (CW) and Pulsed modes. Select the desired mode using the switch.
3. **Locate Faults:** Observe the fiber along its path. Red light escaping from the fiber indicates a fault location.
4. **Safety Precaution:** **Never look directly into the VFL's output port or into a fiber connected to an active VFL.** The laser light can cause eye damage.

### 3.3 High Precision Fiber Cleaver

The fiber cleaver is used to achieve a precise, clean cut on optical fibers, essential for proper splicing and termination.

# Fiber Strippers

- **3 Hole Fiber Stripping Plier**
- **FTTH Drop Cable Stripper**
- **Accurate aperture, no damage to fibers**
- **Ergonomic design with rubber coated handle, reduce hand fatigue**



- **Color in Blue or Green, shipped randomly.**



Image 3.4: The High Precision Fiber Cleaver in open position.

1. **Prepare Fiber:** Strip the fiber coating using the appropriate fiber stripper (see Section 3.4) to expose the bare fiber. Clean the bare fiber with alcohol wipes.
2. **Place Fiber:** Open the cleaver's top clamp and place the bare fiber into the V-groove of the fiber holder. Ensure the fiber is positioned correctly according to the length scale. This cleaver supports 0.25mm, 0.9mm, and 3.0mm fibers.
3. **Close Clamp:** Gently close the top clamp to secure the fiber.
4. **Cleave Fiber:** Push the cleaving blade mechanism forward along the guide rail. The blade will score and cleave the fiber. The cleaver features an automatic rebound design.
5. **Remove Fiber:** Open the clamp and carefully remove the cleaved fiber. Dispose of the fiber scrap safely.
6. **Note:** The typical cleave angle is  $90^\circ \pm 0.5^\circ$ . The blade has 16 cleave spots for extended life (up to 36,000 cleaves).

## 3.4 Fiber Strippers

The kit includes two types of strippers for preparing fiber optic cables: a 3-hole fiber optic stripper and an FTTH drop cable stripper.

# High Precision Fiber Cleaver

- **3 in 1 Fiber Holder**
- **Applicable to 0.25mm  
0.9mm 3.0mm Single Fiber**
- **High quality slide rail**
- **Automatic rebound design**
- **36000 times blade life**
- **65\*79\*61mm / 273g**



Image 3.5: The 3-Hole Fiber Stripper and FTTH Drop Cable Stripper.

## 3-Hole Fiber Optic Stripper:

This tool is designed for precise stripping of fiber coatings without damaging the fiber itself. It features three distinct holes:

- **First Hole (1.6-3mm jacket):** For stripping the outer jacket of 2-3mm fiber cables.
- **Second Hole (600-900 $\mu$ m buffer):** For stripping the 600-900 $\mu$ m buffer coating.
- **Third Hole (250 $\mu$ m coating):** For stripping the 250 $\mu$ m buffer coating from 125 $\mu$ m fiber.

To use, insert the fiber into the appropriate hole, gently close the handles, and pull the stripper along the fiber to remove the coating. The tool is pre-set at the factory, requiring no adjustments.

## FTTH Drop Cable Stripper:

This stripper is specifically designed for FTTH drop cables and can cut cables horizontally or vertically. It features a length positioning guide for consistent strip lengths.

- **Horizontal Stripping:** Place the drop cable into the designated slot for horizontal cutting.
- **Vertical Stripping:** Place the drop cable into the designated slot for vertical cutting.

Close the handles firmly to cut and strip the cable. The ergonomic design with rubber-coated handles on both strippers helps reduce hand fatigue.

### 3.5 Other Tools

- **Fiber Optic Length Fixer:** Used for high-precision alignment and consistent length preparation of fibers before cleaving.
- **Pumping Bottle:** An empty bottle designed for dispensing cleaning solutions (e.g., isopropyl alcohol) without contamination. Push down on the dispenser to bring liquid to the surface.
- **Carry Bag:** A water-proof bag for organizing and transporting all kit components.

## 4. MAINTENANCE

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Proper maintenance ensures the longevity and accuracy of your fiber optic tools.

- **Cleaning Fiber Optic Connectors:** Always clean fiber optic connectors before connecting them to the Optical Power Meter or Visual Fault Locator. Use lint-free fiber cleaning wipes and appropriate cleaning solution (e.g., isopropyl alcohol from the pumping bottle).
- **Fiber Cleaver Blade:** The cleaver blade is a critical component. While it has 16 cleave spots, regular inspection for wear is recommended. If cleaves become inconsistent or poor, rotate the blade to a new spot using the provided hex key. Replace the blade when all spots are used. Keep the cleaver free of fiber debris.
- **Strippers:** Keep the stripper blades clean and free of debris. If stripping performance degrades, inspect the blades for damage or wear.
- **Battery Replacement:** Replace AAA batteries in the Optical Power Meter and Visual Fault Locator when the low battery indicator appears or performance diminishes. Always use fresh batteries.
- **Storage:** Store all tools in the provided water-proof carry bag when not in use. Keep them in a clean, dry environment away from extreme temperatures and direct sunlight.

## 5. TROUBLESHOOTING

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This section addresses common issues you might encounter with your fiber optic tool kit.

- **Optical Power Meter Not Powering On:**
  - Check if batteries are correctly inserted with proper polarity.
  - Replace with fresh AAA batteries.
- **Inaccurate OPM Readings:**
  - Ensure the correct wavelength is selected on the OPM.
  - Clean the fiber optic connector and the OPM's input port.
  - Perform user-self calibration if available and necessary.
- **Visual Fault Locator Light is Dim or Off:**
  - Check battery installation and replace batteries if needed.
  - Ensure the VFL output port is clean.
- **Fiber Cleaver Producing Poor Cleaves (Angled, Chipped, or Uneven):**

- Ensure the fiber is properly stripped and cleaned before cleaving.
  - Verify the fiber is correctly seated in the V-groove and clamped securely.
  - Rotate the cleaver blade to a new, unused cleave spot.
  - If all spots are used, the blade needs replacement.
  - Ensure the cleaver's slide rail is clean and moves smoothly.
- **Fiber Strippers Not Stripping Cleanly or Damaging Fiber:**
    - Ensure you are using the correct hole/slot for the fiber diameter.
    - Clean the stripper blades.
    - Inspect blades for wear or damage; replace the stripper if blades are dull or nicked.

## 6. SPECIFICATIONS

### 6.1 Optical Power Meter with RJ45 Test

| Feature                | Specification  |
|------------------------|--|
| Measuring Range        | -70~+10dBm   |
| Calibrated Wavelengths | 850, 980, 1270, 1300, 1310, 1490, 1550, 1577, 1625, 1650nm (10 wavelengths)        |
| Connecting Adapter     | 2.5mm Universal & FC/PC  |
| Power Supply           | 2*AAA Battery  |
| Dimensions             | 111*69*30mm  |
| Additional Features    | RJ45 Network Test, Backlight, LED Light, 10-minute Auto-off, User-self Calibration |

### 6.2 Visual Fault Locator

| Feature         | Specification                                 |
|-----------------|---|
| Output Power    | Bright red light at 650nm                     |
| Operation Modes | Pulsed and CW (Continuous Wave)               |
| Connector       | 2.5mm Universal (compatible with SC/FC/ST/LC) |
| Power Supply    | 2*AAA Battery                                 |
| Dimensions      | 175*20*20mm                                   |

### 6.3 Fiber Cleaver

| Feature              | Specification                  |
|----------------------|--------------------------------|
| Applicable Fiber     | 0.25mm, 0.9mm, 3.0mm           |
| Typical Cleave Angle | 90° ±0.5°                      |
| Blade Service Life   | 36,000 times (16 cleave spots) |
| Dimensions           | 65*76*61mm                     |

## 6.4 Fiber Strippers

| Feature                  | Specification   |
|--------------------------|---|
| 3-Hole Stripper          | Strips 1.6-3mm jacket, 600-900µm buffer, 250µm coating from 125µm fiber |
| FTTH Drop Cable Stripper | Cuts horizontally or vertically, with length positioning                |
| Handle Design            | Ergonomic with rubber coated handle                                     |

## 7. WARRANTY AND SUPPORT

QIIRUN is committed to providing high-quality products. While specific warranty details are not provided in this manual, please retain your proof of purchase. For any product inquiries, technical support, or warranty claims, please contact your retailer or the manufacturer directly.

**Manufacturer:** T&M Tools Co

**Brand:** QIIRUN

For further assistance, you may visit the QIIRUN Store on Amazon.