



|                     |   |
|---------------------|---|
| <b>Product Name</b> | <b>GAOTek OEM Language<br/>Customize Reflectometer OTDR</b>   |
| <b>Product SKU</b>  | <b>GAOTek-OTDR-203</b>  |
| <b>Product URL</b>  | <a href="https://gaotek.com/product/gaotek-oem-language-customize-reflectometer-otdr/">https://gaotek.com/product/gaotek-oem-language-customize-reflectometer-otdr/</a> |



## CONTENT

|   |   |
|---|---|
| <b>1. Introduction</b> .....                              | 3 |
| <b>2. Test Function Definition</b> .....                  | 4 |
| <b>3. Other Function Definitions</b> .....                | 5 |
| <b>4. Interface Function Description</b> .....            | 5 |
| <b>5. Technical Specification</b> .....                   | 6 |
| <b>OEM Language Customize Reflectometer OTDR F7</b> ..... | 6 |

## GAOTek OEM Language Customize Reflectometer OTDR

### 1. Introduction



F7 is a high-performance multi-function test instrument launched for optical fiber testing. It has an 8-inch high-definition capacitive screen and full-function buttons. The product has a starting dynamic range of 35/33dB and can achieve a maximum dynamic range of 45dB and a maximum measurement range of 0.05m. distance resolution, with a minimum test blind zone of 0.8m, and rich configuration function modules such as dual-wavelength, three-wavelength,

four-wavelength, and single-mode and multi-mode integration. The optional online test module can achieve lossless link light Test, the unique test result self-diagnosis function greatly ensures the reliability and validity of the test results

This product can realize various testing functions such as light source, optical power meter, VFL, 2 fiber end face detection, optical loss test, fault location, photoeye (MAP view), Bluetooth, single-mode and multi-mode testing according to user needs.



## 2. Test Function Definition

OTDR Functions: Supporting up to four wavelengths, the internal features of the OTDR are as follows: (1) Launch optical fiber and end optical fiber setting; (2) Pass/Fail threshold determination, threshold customization function, differentiated display of qualified/unqualified events; (3) Generation of PDF test report; (4) Turn on the comparison viewing function for multiple SOR curves, the default is 5; (5) Curve analysis functions such as four-point method and LSA method.

- Event Map: (1) Macro bending fault analysis function, and clearly indicates the macro bending event type; (2) Pass/Fail threshold determination, threshold customization function, differentiated display of qualified/unqualified events; (3) Generation of PDF test reports (including curve display, list display, and test information);
- Light Source Function: Generate CW, 270Hz, 1kHz, 2kHz laser light source.
- Optical Power Meter Function: -70~+6dBm (optional) or -50~+26dBm (standard) multi-wavelength power detection range, supporting the identification of light source modulation frequency. 3
- Red Light Function (VFL): Continuous, 1Hz, 2Hz visible red light to visually locate fiber faults.
- Optical Loss Test Function: Supports the light source and optical power meter to be turned on at the same time to test the insertion loss of devices and links.
- End Face Detection Function: visual fiber end face diagnosis. (The detection head of this function is optional).
- Remote Test Function: Remotely connect the instrument through Ethernet to realize remote control of the OTDR function (module OTDR function).
- Network Test Function: The network test function includes PING and IP scanning.
- Link Test Function: link speed test, network cable sequence and cable length (this function is optional).



### 3. Other Function Definitions

1. Bluetooth function: Connect the mobile APP to the device and control OT, red light, optical power testing and test file sending through Bluetooth (this function is optional).
2. Quick screenshot (screenshot) The convenient drop-down window provides a quick screenshot function to record the status of the instrument at any time.
3. Power-on password Users can set, modify, and delete power-on passwords.
4. Help

The device has built-in help documentation.

### 4. Interface Function Description

- (1) Power interface: DC12V~19V, external power input.
- (2) Power on/off: Short press for 2 seconds to soft power off, long press for 8 seconds to force power off.
- (3) Power/charging indicator light: The power indicator light is on after turning on the phone, and the charging indicator light is on when charging.
- (4) Network port 1: Reserved for testing network cable length and line sequence functions (option).
- (5) Network port 2: Equipment Ethernet communication interface, which can realize remote testing of instruments, network testing, data transmission and other functions.
- (6) OPM: optical power meter interface.
- (7) VFL: red light interface.
- (8) OTDR1: OTDR interface 1, commonly used 1310/1550 optical interface.
- (9) OTDR2: OTDR interface 2, multi-mode 850/1300, 1490, 1625 optical interface.
- (10) USB-A: external U disk, end face detector.



(11) USB-C (Type-C): Connect to the computer through a data cable to transmit data. Function indicators: They are the main function indicators of OTDR, LS (light source), VFL, and OPM. The corresponding indicators light up when the functions are working.

### 5. Technical Specification

| Module                 | OEM Language Customize Reflectometer OTDR F7 |       |       |                            |                            |                            |                                      |                      |                                     |
|------------------------|--|-------|-------|----------------------------|----------------------------|----------------------------|--------------------------------------|----------------------|-------------------------------------|
|                        | S1   | S3    | S4    | T1                         | T2                         | T3                         | F1                                   | M1                   | SM1                                 |
| Fiber Type             | Single Mode                                  |       |       |                            |                            |                            |                                      | Multi Mode           | Single/Multi Mode                   |
| Wavelength             | 1310/1550nm                                  |       |       | 1310nm<br>1550nm<br>1490nm | 1310nm<br>1550nm<br>1625nm | 1310nm<br>1550nm<br>1650nm | 1310nm<br>1490nm<br>1550nm<br>1625nm | 850nm<br>1300nm<br>m | 850nm<br>1300nm<br>1310nm<br>1550nm |
| Max Dynamic Range (dB) | 35/33  | 42/40 | 45/43 | 38/36/36                   | 38/36/3<br>6               | 38/36/3<br>6               | 37/35/35/3<br>5                      | 26/28                | 26/28/35/3<br>3                     |



|                                   |  |      |      |      |      |    |    |
|-----------------------------------|--|------|------|------|------|----|----|
| Event Blind Area                  | 1m   | 0.8m | 0.8m | 0.8m | 0.8m | 1m | 1m |
| Attenuation Blind Area            | 5m   | 4m   | 4m   | 4m   | 4m   | 5m | 5m |
| Test Range                        | 100m/500m/1.25km/2.5km/5km/10km/20km/40km/80km/125km/260km/420km                             |      |      |      |      |    |    |
| Test Pulse Width                  | 3ns/5ns/10ns/20ns/30ns/50ns/80ns/100ns/200ns/300ns/500ns/800ns/1us/2us/3us/5us/8us/10us/20us |      |      |      |      |    |    |
| Ranging Accuracy                  | $\pm(0.75m + \text{sampling interval} + 0.0025\% \times \text{test distance})$               |      |      |      |      |    |    |
| Loss Resolution                   | $\pm 0.001\text{dB}$   |      |      |      |      |    |    |
| Loss Threshold                    | 0.01dB   |      |      |      |      |    |    |
| Linearity                         | $\pm 0.03\text{dB/dB}$   |      |      |      |      |    |    |
| Maximum Number of Sampling Points | $\geq 256\text{k}$   |      |      |      |      |    |    |
| Sampling Resolution               | 0.03m~4m   |      |      |      |      |    |    |



|                       |                                      |
|-----------------------|--------------------------------------|
| File Format           | SOR standard file format             |
| Loss Measurement Mode | 4 point method                       |
| Laser Safety Level    | Class II                             |
| Data Storage          | Standard configuration: $\geq 12$ GB |
| Optical Connector     | FC/UPC (interchangeable SC, ST)      |

| Optical Power Meter |  |
|---------------------|--|
| Wavelength Range    | 800nm~1700nm                             |
| Connector           | Universal Connector FC/SC/ST             |
| Measuring Range     | -50dBm ~ +26dBm (Standard Configuration) |

Based in New York City & Toronto, GAO Tek Inc. is ranked as one of the top 10 global B2B technology suppliers. GAO ships overnight within the U.S. & Canada & provides top-notch support thanks to its 4 decades of experience.





|                           |   |
|---------------------------|---|
| Uncertainty               | ±5%   |
| Calibration<br>Wavelength | 850nm/1300nm/1310nm/1490nm/1550nm/1625nm/1650nm |
| <b>Laser Source</b>       |   |
| Laser Type                | FP-LD   |
| Output Wavelength         | Consistent with OTDR output wavelength          |
| Output Power              | ≥-5dBm (single mode)                            |
| Operating Mode            | CW/270Hz/1kHz/2kHz                              |
| Stability                 | CW, ±0.5dB/15min (tested after 15min warm-up)   |
| Optical Connector         | FC/UPC (interchangeable SC, ST)                 |



### Visual Fault Locator

|                    |                                 |
|--------------------|---------------------------------|
| Working Wavelength | 650nm±20nm                      |
| Output Power       | ≥10mW                           |
| Operating Mode     | CW/1Hz/2Hz                      |
| Optical Connector  | FC/UPC (interchangeable SC, ST) |

The optical loss test indicators refer to the above light source and optical power meter indicators.

### Overall Machine Indicators

|                       |  |
|-----------------------|--|
| Show                  | 8-inch color touch screen 1024X600   |
| Power Supply          | Power adapter: input 100V~240V 50/60Hz, output 12V~19V; built-in lithium-ion battery: 3.7V, 15600mAh |
| Data Interface        | USB-A, Type-C port, RJ45 LAN 100/1000Mbit/s  |
| Operating Temperature | -10°C ~ 50°C   |
| Storage Temperature   | -40°C ~ 70°C   |
| Relative Humidity     | 0 ~ 95% no condensation  |



|              |              |
|--------------|--------------|
| Total Weight | 1.7KG        |
| Volume       | 292*191*75mm |

**Note:**

- a. Using 3ns pulse, the reflection coefficient is -35dB to -55dB typical value.
- b. Using 3ns pulse, the reflection coefficient is a typical value of -55dB (1310nm).
- c. Non-reflective FUT fiber under test, non-reflective beam splitter, 13dB loss, 50ns pulse, typical value.
- 8
- d. Does not include uncertainty caused by the refractive index of light.
- e. The output power of multi-mode 850/1300nm light source is about -24dBm, and the output power of special 1650nm (38dB) light source is about -24dBm