

AQ7280 OTDR Advanced Features

Large LCD with Multi-touch touchscreen

8.4-inch high luminance color LCD

Large bright display shows trace details clearly even under outdoor sunlight.

Multi-touch capacitive touchscreen

Intuitive multi-touch operations such as pinch zooms and drag like a smartphone or tablet.



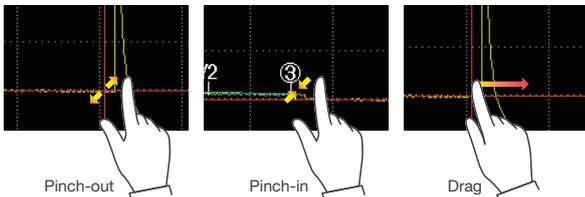
Icons on the main menu

Tap icon to run the feature

Zooming in the waveform

Zooming out of the waveform

Moving the cursor



Pinch-out

Pinch-in

Drag

Touch screen feature on/off

The touchscreen feature can be disabled for users who prefer the hardware key operations.

Multi-tasking

Revolutionize your test process

While the OTDR measurement is in progress, other functions such as optical power meter, visible light source, and optical fiber inspection probe can also be used at the same time by activating them from the OTDR measurement screen.

This unique multi-tasking feature reduces “idle time” during the measurements and can revolutionize the test process by enabling simultaneous “parallel testing” vs. “serial testing”.

For example, you can ...

Check one fiber while measuring another fiber with OTDR function

- Optical power meter → Optical power measurement
- Visible light source → Pair identification
- Optical fiber probe → Fiber surface inspection

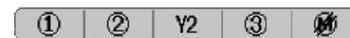
*The OTDR and the stabilized light source functions cannot be used simultaneously.

Handy shortcut icons

The shortcut icons for popular functions, such as one touch PDF file generation, the placement of markers, the initiation of OTDR measurement, and the storage of data, stay on the measurement screen, so that they can be executed directly without moving to another menu.



Shortcut icons (Initiation of measurement, file saving, etc.)



Icons for setting OTDR markers

Software keyboard

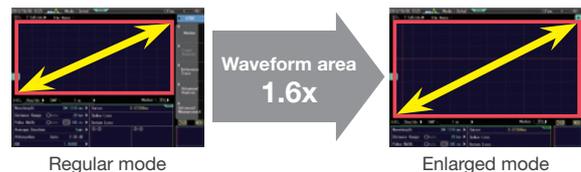
The on-screen software keyboard facilitates typing texts and symbols for labels and file names.



Software keyboard

Waveform display area expansion

The waveform display area can be expanded to 160% for viewing the waveform in greater detail.



Regular mode

Enlarged mode



Optical power meter

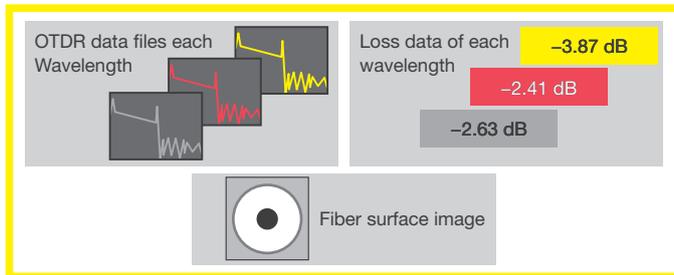
Stabilized Light source

Visible light source

Precision Making

Multi-fiber measurement

In the measurement of multi-core fiber, the OTDR measurements, loss measurements and fiber surface inspection are repeated numerous times to test all the cores. The multi-fiber measurement feature manages the complicated measurements of multi-core fiber and the massive measurement data using a simple table.



Measurement data per core



Core-based management from Measurement to data saving

Once a project file is created which defines the test conditions of each core in a tabular form on the OTDR or PC, the test of each core can be performed simply by selecting a core number. Each measurement data is saved in the project file associated with the core number.

51	Open	53
59	68	61
75	Delete	77
83		85

Display of when a core is selected

Colored cell indicates test status

Once the test is finished, the color of the cell changes to serve as an indicator to prevent omission and confusion. It also helps identify which cores have yet to be tested between test sessions. The core can be selected at will to perform the tests.



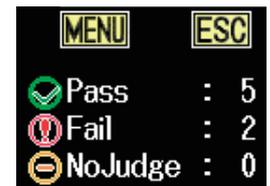
Waveform preview

Waveform preview facilitates file search

Simply tap the core number to review the measured data in a preview area at the bottom of the screen. Cumbersome work such as searching for files, matching core number and file name, is no longer required.

Auto PASS/FAIL judgment

PASS/FAIL judgment is performed according to the result of OTDR measurement of each core. Since the OTDR performs the judgment based on predefined criteria, there are no human errors. A failed cell is indicated in red, so it is easy to spot which cells have to be retested.



Pass/fail judgment result

Test conditions table for up to 2000 cores

One project file can hold a table of test conditions, OTDR measurement data, loss measurement data, and fiber surface image for up to 2000 cores.

OTDR measurement data	SOR file (up to 4 files per core)
Loss measurement data	CSV file (up to 4 files per core)
Fiber surface image	JPG/BMP file

Fiber surface inspection

Visual inspection of fiber connector surface

The scratches and dirt on the fiber connector surface cause communications network failures, especially in the high power communications paths such as WDM and PON. Therefore, the connector surface inspection became indispensable for the installation and maintenance of optical fibers, and the judgment criteria of the inspection are standardized.

*The visual inspection requires an optical fiber scope. (Recommended product: DI-1000-B2 from Lightel)

Auto PASS/FAIL judgment

The Fiber Surface Tet function automatically analyzes scratches and dirt on the fiber surface and makes PASS/FAIL judgment based on IEC61300-3-35 compatible or arbitrary decision criteria. The judgment results can be saved in a file and included in the PDF report.

*The auto PASS/FAIL judgment requires /FST option of the AQ7280 and the optical fiber scope (DI-1000-B2 from Lightel).

Smart Mapper (SMP option is required)

Mapping network events

Pressing one button executes the OTDR measurement, detects events in the network and displays the event icons with measured data such as event locations, event loss, and return loss on a map. Complicated network topology is displayed as an intuitive graphical layout.

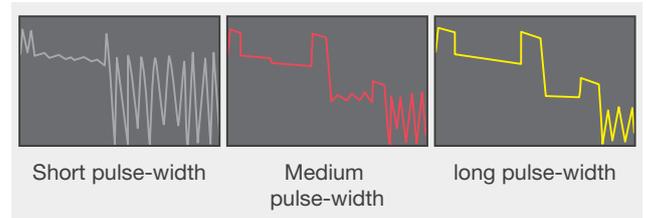
Advanced measurement in a single-button operation

- **Multi wavelength measurement**

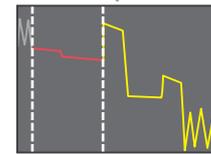
The OTDR performs measurement several times changing wavelength, analyzes events, and displays the result in a map format in one operation. It detects macro bending automatically according to the differences between the loss of each wavelength.

- **Multi pulse width measurement**

The OTDR performs measurement several times changing pulse-width, takes a certain part of the measured waveforms, links them together, analyzes it, and displays the result in a map format in one operation. It offers the “best of both worlds” in a sense by enabling the accurate far-end measurement of a long pulse-width and the precise near-end measurement of a short pulse-width in one trace.



Trace linkage



Event Analysis



Easy evaluation of measurement results

- **Auto PASS/FAIL judgment for each event**

PASS/FAIL judgment for each event is performed automatically based on a threshold specified in advance. Since failed events are displayed in red, the failure location can be easily identified at a glance.

- **PDF reporting**

The result of event analysis can be output as PDF data in a map format.

Intermittent Connection Monitoring (MNT option is required.)

Capturing intermittent interruption

When a network fault occurs, the fault point is usually sought by measuring the fiber with an OTDR. However, a network connection interruption caused by intermittent events such as a temporary freeze or rainfall may recover before an operator arrives at the faulty location. The OTDR schedule measurement function is an ideal tool for detecting such intermittent interruptions.

Simple monitoring system

- **Automated measurement**

OTDR measurement is automatically performed based on user-defined intervals. Measurement results are saved and the loss changes over time are displayed in the logging view to investigate problems.

- **Remote control**

Remote control via LAN connection is supported. (optional)
Remote data analysis and troubleshooting are available without stopping scheduled measurement.



Wireless LAN Solutions

AQ7280 is capable of data transfer and remote control in cooperation with wireless LAN capable devices.



Data transfer (using SD memory with embedded wireless LAN capability)

The AQ7280 can transfer measurement data files to PCs or smartphones through wireless LAN by inserting an SD card with embedded wireless LAN capability into the SD card slot inside the OTDR Mainframe.

- **OTDR data transporter**

OTDR data transporter is a free application software for smartphones and tablets. (Android/iOS)
It can acquire files stored in the SD card of AQ7280. It can display a preview of measured data as well.

- **Web browser**

Using a standard Web browser on a PC or smartphones, the files stored in the SD card of the AQ7280 can be acquired. The preview of measured data cannot be displayed on the browser.

Example	A) An on-site operator just measures and sends the measurement data to his office. Later, he analyzes them and creates a report in the office.
	B) When an on-site operator cannot determine if a measurement is good or not, he sends the data to an expert in the office.
	C) An on-site operator creates a PDF report and sends it directly to his office remotely before moving to the next site or heads home.

Remote control (using a wireless router)

The AQ7280 can be controlled remotely by a PC or smartphone through a wireless LAN by connecting a wireless router to the LAN port of the AQ7280.

- **OTDR remote controller**

OTDR data transporter is a free application software for Windows PCs. It replicates the instrument's screen on your browser. As the OTDR remote controller is designed for AQ7280, it can quickly respond to your operations.

- **Web browser**

The AQ7280 can be controlled remotely using a standard Web browser on a PC or smartphone. It replicates the instrument's screen on your browser. With a Universal Plug and Play (UPnP) device, the remote control via cellular networks is also possible.

Example	A) An on-site operator makes a fusion splice of an optical fiber and confirms the result of the splice work by remotely operating an OTDR in a central office.
	B) When the measurement work is too complicated for an on-site operator to perform, an expert in a central office does the work remotely.
	C) An operator sets up an OTDR in an unattended base station and executes the Monitoring function (scheduled measurement). He observes the measurement status on the OTDR remotely from his office.

	SD card with wireless LAN ^{*1}		Wireless router	
	OTDR data transporter (free software)	Web browser	OTDR remote controller (free software)	Web browser ^{*2}
Software	OTDR data transporter (free software)	Web browser	OTDR remote controller (free software)	Web browser ^{*2}
Applicable OS	Android/iOS	—	Windows (XP/Vista/7/8/8.1)	—
Data transfer	✓	✓	✓	✓ ^{*3}
Attach to email/upload to cloud sever	✓	✓ ^{*4}	✓ ^{*4}	✓ ^{*4}
Data file preview	✓	×	×	×
Remote control	×	×	✓	✓ ^{*5}
Required options of AQ7280	—	—	/LAN	/LAN

^{*1} Confirmed device: FlashAir from Toshiba ^{*2} AQ7280 firmware R1.03 or later ^{*3} Total file size 1.5 MB or less ^{*4} Only files saved on PC
^{*5} Control via cellular networks using UPnP device is possible. Confirmed device: Aterm MR03LN from NEC Platforms



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YOKOGAWA METERS & INSTRUMENTS CORPORATION

Global Sales Dept. /Phone: +81-422-52-6237 Facsimile: +81-422-52-6462
 E-mail: tm@cs.jp.yokogawa.com

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Phone: +1-770-253-7000 Facsimile: +1-770-254-0928
 Phone: +31-88-4641000 Facsimile: +31-88-4641111
 Phone: +86-21-6239-6363 Facsimile: +86-21-6880-4987
 Phone: +82-2-2628-3810 Facsimile: +82-2-2628-3899
 Phone: +65-6241-9933 Facsimile: +65-6241-2606
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 Phone: +55-11-5681-2400 Facsimile: +55-11-5681-4434
 Phone: +973-17-358100 Facsimile: +973-17-336100

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