

AQ7280 OTDR  
New OTDR Units

# Three new OTDR units enhance the AQ7280 Optical Time Domain Reflectometer

The AQ7280 series OTDR has been well-received due to its excellent operability and versatile functions such as the multi-touch screen, multi-fiber application, one tap report generation.

The three new OTDR units broaden the application coverage of the AQ7280 OTDR and provide more options for customers to choose a suitable solution for their needs. The AQ7283J, AQ7283E, and AQ7282G are especially designed for the water-peak testing of optical fibers, the monitoring of live communications lines, and the service of FTTH networks, respectively. Additionally, a new “MULTIMODE” stabilized light source option became available for the AQ7282M OTDR units.



## AQ7283J Supports 1383 nm for optical fiber cable inspection

1-port OTDR 1310/1383/1550/1625 nm

- Supports the water-peak wavelength of 1383 nm where water ions (OH) in optical fibers absorb light.
- Suitable for the inspection of optical fiber production and the cabling process of optical fibers.
- Its portability allows the on-site testing of communications network lines when CWDM networks are introduced.

## AQ7283E Equipped with “FILTERED” 1625 nm port for live-line maintenance

2-port OTDR 1310/1550 and 1625 nm

- A built-in 1625 nm port with a cut filter to isolate from the communications wavelength enables the measurement of live-lines without being disturbed by active communications signals.
- The wavelength accuracy of 1625 nm ±10 nm is guaranteed to enable maintenance of 10 GE-PON. Whereas other OTDRs with a broader wavelength tolerance could disturb the 10GE-PON transmission signals.

Note: The AQ7283F is another three-wavelength model with 1310/1550 and filtered 1650 nm.

## AQ7282G Three-wavelength model for FTTH network testing

1-port OTDR 1310/1490/1550 nm

- Successor model of the AQ7275 OTDR (735035)
- Suitable for the installation check of FTTH networks that requires the measurement at 1490 nm.
- More affordable price than the AQ7283K that is a four-wavelength model with 1310/1490/1550/1625 nm.

### SLS option for AQ7282M

“Multimode” stabilized light source



- Wavelength: 850/1300 nm
- Stability: ±0.15 dB
- Suitable for the loss measurement of multimode fibers.

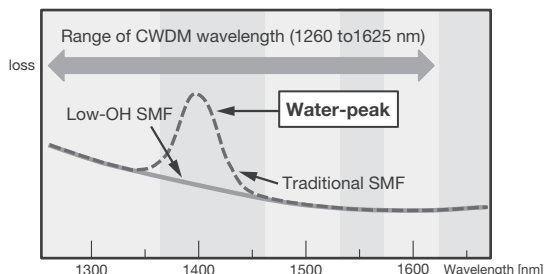
Models	Suffix codes	Descriptions
AQ7283E		3WL 1310/1550, 1625 nm 42/40, 40 dB <sup>*1</sup>
AQ7282G		3WL 1310/1490/1550 nm 38/36/36 dB
AQ7283J		4WL 1310/1383/1550/1625 nm 42/39/40/40 dB
AQ7282M		2WL 850/1300 nm (MM) 25/27 dB
Options	/PC	Power checker <sup>*2 *3</sup>
	/SLS	Stabilized light source <sup>*4</sup>

<sup>\*1</sup> The port for 1625 nm is equipped with the built-in filter. <sup>\*2</sup> Not available for AQ7282M.

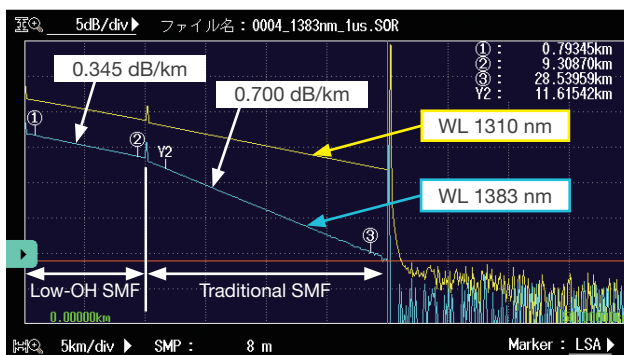
<sup>\*3</sup> Not applicable to the Port2 of AQ7283E. <sup>\*4</sup> Not applicable to the wavelength of 1383 nm of AQ7283J.

## AQ7283J OTDR unit

Traditional single-mode fibers (SMF) contain a large amount of water ions (OH). Since water ions (OH) absorb light at 1383 nm, the optical loss of single-mode fibers increases at 1383 nm, this characteristic is known as the water-peak. The AQ7283J was designed with the 1383 nm wavelength capability to specifically test the water-peak in SMF.



The loss-wavelength characteristics of single-mode fibers



The effect of OTDR measurement at 1383 nm

### Quality inspection of low-OH optical fibers/cables

Low-OH single mode fibers<sup>\*1</sup> are available for CWDM applications. They are tested at 1383 nm in each process of production.

Having four wavelengths in one port, the AQ7283J can measure at four wavelengths without switching the optical connector by just pressing one single button. It can be controlled remotely via a USB or Ethernet interface.<sup>\*2</sup>

\*1: ITU-T G.657 standard \*2: AQ7280 option (/LAN)

### Loss test of existing networks before introducing CWDM transmission system

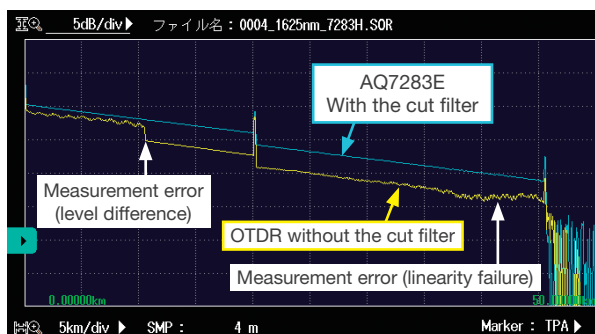
When the introduction of the CWDM transmission system to existing optical fiber networks is considered, the optical loss of the network at 1383 nm needs to be measured because a traditional optical fiber may be used.

Thanks to its portable design, the AQ7283J OTDR unit can measure the loss at 1383 nm on-site where optical fibers are installed.

## AQ7283E OTDR unit

### Measurement of live communications lines

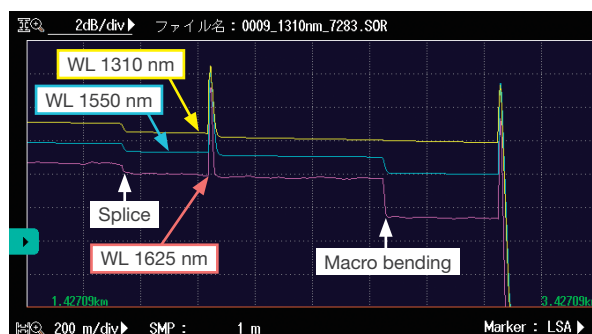
The built in communications wavelength cut filter in a dedicated 1625 nm port enables testing of fiber where live communications traffic wavelengths (1310, 1490, 1550 nm) exist.



OTDR waveforms of live communications lines

### Macro bending measurement

The optical transmission loss of optical fibers at long wavelengths like 1625 nm increases at the point where the macro-bending occurs. By comparing OTDR waveforms measured in each wavelength, the macro bending can be detected. \*Other OTDR units with 1625 nm: AQ7283H, AQ7283K, etc.



OTDR waveforms with macro bending



YMI-KS-MI-SE02

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