YOKOGAWA

OTDR AQ7260

Optical Time Domain Reflectometer

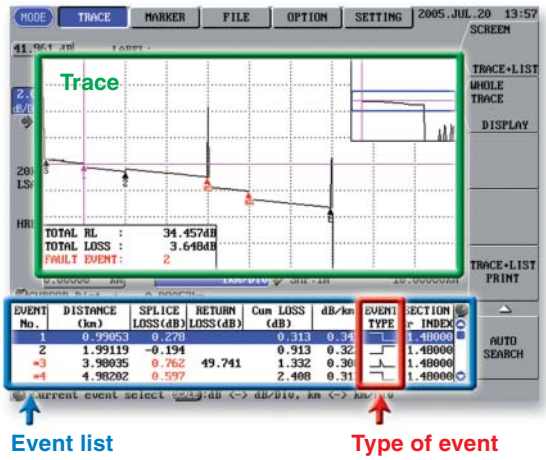
Speed, Ease-of-use Increased Efficiency of Optical Network Testing

The AQ7260 OTDR covers a wide range of applications for the installation and servicing of optical networks, with a variety of OTDR modules and optional units

- **Sampling resolution : min. 5cm**
- **Sampling points : max. 60,000**
- **8.4 inch TFT-LCD color display for easy viewing**
- **Large internal memory : 20MB**
- **USB ports for connectivity and data storage**
- **Compact and light weight : approx. 3kg**
- **A variety of optical modules**
  - AQ7261 SMF module (cost performance model)
  - AQ7264 SMF module (standard model)
  - AQ7265 SMF module (high dynamic range model) New
  - AQ7269 MMF/SMF module (both SMF and MMF model) New

Bulletin AQ7260-01E

Simultaneous Display of Trace and Event Table



After performing an Auto Event Search, the trace and event table are simultaneously displayed on the screen. Alternatively, you can choose to display just a trace or event table on the screen. In the event table, symbols enable you to identify the types of events.

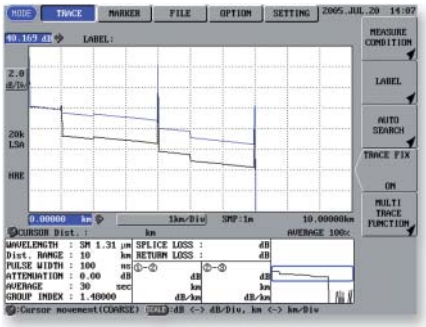
Auto Mode Measurement

By combining Auto Set and Auto Save functions, you carry out a chain of processes automatically such as the following:

Measurement procedure

- **Set measurement conditions** — Automatically detects the conditions of the fiber being measured and automatically sets the optimum measurement condition.
- **Start measurement** — Starts measuring the average automatically when the measurement conditions are set.
- **Search event** — Automatically detects the reflection values, positioning (distance) and the loss incurred when the threshold value exceeds the preset values.
- **Save data** — Stores the measurement results automatically Into the specified memory.

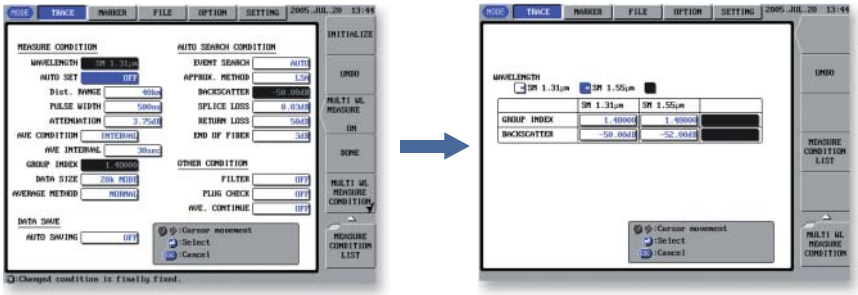
Trace Fix Function



Can quickly and easily compare traces with the trace fix function. This is a convenient function to observe the characteristic differences in multi-core fibers by core, and quickly check where the core was bended, and the loss characteristics.

Multi Wavelength Continuous Measurement

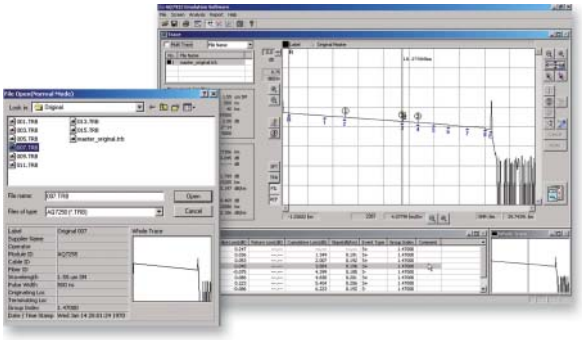
Select the wavelength to be measured



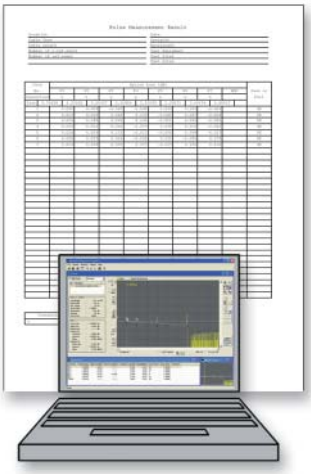
Multi Wavelength Continuous Measurement is a function that allows you to switch the wavelength being measured while keeping the same measurement conditions. This is convenient when you need to measure two wavelengths in a single fiber.

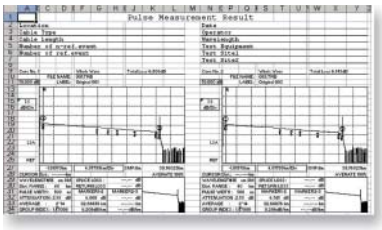
AQ7932 OTDR Emulation software (option)

The AQ7932 OTDR Emulation Software can be used to create and edit waveform analyses and reports (total tables and waveform graphs) based on data acquired by the AQ7260 OTDR. And this software can be run on a Windows-based PC.



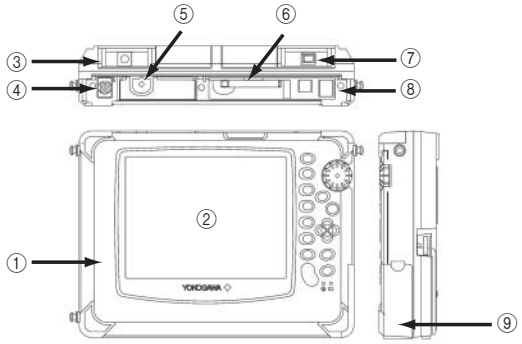
AQ7932 supports the AQ7260 (TRD) and Telcordia (SOR) formats.
You can check file information before opening the file by the Preview Function.
With the output layout display, you can check the contents of reports as you create them.





Report data (total data and trace) can be output to a file in Excel (XLS) format.

Appearance (AQ7260 main frame)



① Main frame
② 8.4 inch TFT-LCD Color display
③ Slot for Optional unit
④ DC in
⑤ Power switch
⑥ PCMCIA slot
⑦ Optical connector
⑧ USB ports
⑨ Battery pack

Specifications

■ AQ7260 OTDR main frame

Display 1)		8.4 inch color TFT (640 × 480 dots)
Horizontal axis	Full-scale	25m, 50m, 100m, 250m, 500m, 1km, 2km, 2.5km, 5km, 10km, 20km, 40km, 80km, 160km, 240km, 320km, 640km (depend on the optical unit)
	Shift	0 to distance range
	Readout resolution	min. 1cm
	Sample data count	max. 60,000 points
	Group refractive index setting	1.00000 to 1.99999 in 0.00001 steps
	Distance measurement	Displays the relative one-way distance between any two given points, in eight digits
Vertical axis	Scale	0.2dB/div, 0.5dB/div, 1dB/div, 2dB/div, 5dB/div, 7.5dB/div
	Shift	0 to 68dB
	Read Resolution	Min 0.001dB
	Loss measurement	Displays one-way losses in steps of 0.001dB to a maximum of 5 digits
		Displays the relative one-way loss, loss per unit length, and splice loss between any two given points on the waveform.
Return-loss measurement function		Return loss at mechanical connectors can be measured Total return loss of a fiber cable or between any two points can be measured
Memory	Internal Memory	20MB
	PCMCIA	For stored measurement waveforms and measurement conditions. (A PCMCIA memory card must be purchased separately.)
Interface	USB (Host Interface)	2 ports, conforms to USB Rev. 1.0, USB memory (Supports memory without security functions.), keyboard, printer
	Printer / FDD	Can mount cable less on the back of the optical module cover. (Must purchase an optional unit separately.)
Power requirement	AC Adapter	AC100 to 240V, max. 60W (When using optional printer unit during charging battery)
	Battery	Li-Ion, Operating time : approx. 6 hours (measurement for 30 seconds in every 3 minutes, using AQ7261 without any optional units, in Power Save Mode) charging time : < 5 hours (Room temperature is 23 °C when the power is OFF.)
Environmental conditions	Operating Temperature	-10 to +50°C (During charging : +5 to +35°C)
	Storage Temperature	-20 to +60°C
	Relative humidity	95% or less (no condensation)
Dimensions and mass		Approx. 299 (W) × 225 (H) × 62 (D) mm (Has no projections) Approx. 3kg (Included optical modules. The weight is 3.3kg when AQ7269 is mounted.)
Accessories		Battery Pack, Shoulder Strap and User's Manual

1) Liquid crystal display may include few defective pixels (within 0.002% with respect to the total number of pixels including RGB).
There may be few pixels on the liquid crystal display that do not emit all the time or remains ON all the time. Note that these are not malfunctions.

■ Optical modules

Model name		AQ7261 SMF Module	AQ7264 SMF Module	AQ7265 SMF Module	AQ7269 MMF/SMF Module	
Measured wavelength (nm)		1310/1550 +/-25	1310/1550 +/- 20		850/1300 +/- 30	1310/1550 +/-25
Measured fiber		SM (ITU-T G.652)			GI (62.5/125µ, 50/125µ)	SM (ITU-T G.652)
Distance range (km)		2, 5, 10, 20, 40, 80, 160, 240, 320, 640 6)			1, 2, 5, 10, 20, 40, 80 7)	2, 5, 10, 20, 40, 80, 160, 240
Pulse width (sec) 5)		10n, 20n, 50n, 100n, 200n, 500n, 1µ, 4µ, 10µ, 20µ, 50µ 3)			10n, 20n, 50n, 100n, 200n, 500n, 1µ8)	10n, 20n, 50n, 100n, 200n, 500n, 1µ, 4µ, 10µ, 20µ
Distance sampling resolution		min. 5cm				
Distance sampling points		max. 60,000 points				
Distance measurement accuracy (m)	Offset error	+/- 1m				
	Scale error	Measured distance × 2 × 10-5				
	Sampling error	+/- 1 sampling resolution				
Dead zone (m)	Event 1)	2 typ.	2 typ.	2 typ.	2 typ. 10)	2 typ.
	Attenuation 2)	15/20 typ.	7/8 typ.	7/8 typ.	7/8 typ. 10) 11)	7/8 typ.
Dynamic range (dB) SNR=1, for 3 minutes		34/32 9) 35/33 typ.	40/38 9) 42/40 typ.	43/41 9) 45/43 typ.	22.5/24 10) 12)	34/32 9)
Loss measurement accuracy		+/-0.05 dB/dB 13)				
Stabilized Light Source	Wavelength (nm)	—	1310/1550	1310/1550	—	—
	Max. output (dBm)	—	-3 +/- 2	-3 +/- 2	—	—
	Stability (dB) 4)	—	+/- 0.1	+/- 0.1	—	—
Optical connector		Optional AQ9441(*) Universal Adapter 14)				
Environmental condition	Operating Temperature	-10 to +50°C			0 to +40°C	
	Storage Temperature	-20 to +60°C				
	Humidity	95% or less (no condensation)				

1) Distance width between the event peak point, where the return loss is 40 dB or higher (event is not saturated), and the point where the level is 1.5 dB smaller than the event peak.
At pulse width 10ns.
2) Distance width at points where the optical connector's return loss is 45 dB or higher and the back scatter level is within +/- 0.5 dB of the normal level. At pulse width 10ns.
3) 50µs is only 1550nm of AQ7264/AQ7265.
4) 5minutes measurement at constant temperature.
5) 1µs can be set at a distance range of over 10km, and 4µs can be set at a distance range of over 40km.
6) When measuring 1310nm, the maximum is 320km. When measuring 1550nm, the maximum is 640km. (AQ7264/AQ7265 only)
7) 40km, 80km is only 1300nm.
8) 500ns, 1µs is only 1300nm.
9) At pulse width 20µs and filter ON.
10) At GI 62.5/125µm
11) Distance width at points where the optical connector's return loss is 40 dB or higher and the back scatter level is within +/- 0.5 dB of the normal level. At pulse width 10ns.
12) At pulse width 200ns (850nm), 1µs (1300nm) and filter ON.
13) For AQ7269 MMF at 62.5/125µm
14) * mark is connector type. Selectable connector type. (FC, SC, ST, DIN)

Laser Safety Information

* These laser sources are classified IEC60825-1 : Class 1M
* The laser products comply with 21CFR1040.10 except for deviations pursuant to Laser Notice No.50, dated May 27 2001
* Viewing the laser output with certain optical instruments such as loupe, magnifying glass or telescope within 100mm may cause damage to the eyes.

Option

■ Printer/FDD Unit

Model name		Printer/FDD Unit for AQ7260	Printer Unit for AQ7260
Printer		576 dots/line, Thermal printer, Record paper: 80mm width	
FDD		3.5inch FD, 2HD	—
Environmental condition	Operating temperature	5 to 40 degree	
	Storage temperature	-20 to 60 degree	
	Humidity	85% or less (no condensation)	

■ AQ7932 OTDR Emulation Software

Model name		AQ7932 OTDR Emulation Software	
functions	Function	File format	.trb (AQ7250), .trd (AQ7260), .sor (Bellcore GR-196-CORE), .sor (Telcordia SR-4731)
		Batch file conversion	For file format and label
		Print out format	AQ7260 image output, color output
		Trace function	Up to 8 traces are sown same screen, switchable one trace or multi trace display
		Analysis function	Auto event search, two traces analysis (Subtract analysis, 2-way analysis)
		Event edit function	Insert, delete and move events
	Report Wizard	Layout setting (with image viewer), Item setting and edit (Item names are editable), Data selection function, Master setting function (Event edit, Total loss, Trace), Table edit and preview (Table and Trace)	
		Output format	Print out, CSV file, XLS file
Operating Environment	PC	PC/AT compatible, with CD-ROM drive, CPU clock:Requirement by OS, Display : 1024 × 768 dots or more, Memory : 128MB or more, Hard disk : Free area 20MB or more	
	OS	Microsoft Windows XP, Microsoft Windows 2000	
	Excel	Microsoft Excel 2000 or later (When using the XLS file output function.)	
Supply media		CD-ROM	

■ Soft carrying case

Model name	Soft carrying case for AQ7260
Packing item	AQ7260, AC Adapter, Printer/FDD Unit, Print roll, AC power cable, Battery pack, Instruction Manual

Ordering Information

Model name	Suffix code	Descriptions
813920300		AQ7260 OTDR
	-ESTD	Standard software in English
	-KSTD	Standard software in Korean
	-CSTD	Standard software in Chinese
	-020M	Memory capacity : 20MB
	-STD	Standard Spec (liquid crystal)
	/PKA	Pack with main frame when delivering
	/CE	With CE markings

Model name	Suffix code	Descriptions
813920301		AC adapter for AQ7260 OTDR
	-A	JIS standard (2P)
	-C	UL and CSA standard (UL2P)
	-F	VDE standard (CEE-C2)
	-G	SAA standard (AS2P)
	-H	BS standard (BS546 2P)
	-J	BS standard (BS2P)
	/PKA	Pack with main frame when delivering

Model name	Suffix code	Descriptions
813920302		Printer/FDD unit for AQ7260
	-N	Normal Standard (Printer and Floppy Disk)
	-P	Printer only
	/Y	Yokogawa name plate
	/CE	With CE markings
955-892900215		Rolling paper (TP-312C) Unit of sales : 10 rolls

Model name	Suffix code	Descriptions
813920305		Soft carrying case for AQ7260

Model name	Suffix code	Descriptions
813920306		Battery pack (spare) for AQ7260
	/PKA	Pack with main frame when delivering

Model name	Suffix code	Descriptions
813920303	-STD01	AQ7264 SMF module
	/PKA	Pack with main frame when delivering
	/PKD	Pack with module when delivering
	/CE	With CE markings
813920304	-STD01	AQ7261 SMF module
	/PKA	Pack with main frame when delivering
	/PKD	Pack with module when delivering
	/CE	With CE markings
735010	-STD00	AQ7265 SMF module
	/PKA	Pack with main frame when delivering
	/PKD	Pack with module when delivering
	/CE	With CE markings
735011	-STD00	AQ7269 MMF/SMF module
	/PKA	Pack with main frame when delivering
	/PKD	Pack with module when delivering
	/CE	With CE markings

Model name	Suffix code	Descriptions
813917321		AQ9441 (***) Universal Adapter
	-FCC	FC connector
	-SCC	SC connector
	-STC	ST connector
	-DIN	DIN connector
	/PKA	Pack with main frame when delivering
	/PKD	Pack with module when delivering

Two adapters (AQ9441) are necessary for AQ7269 MMF/SMF modules.

Model name	Suffix code	Descriptions
735070		AQ7932 OTDR Emulation Software
	-EN	English installer, English display, for 813920300-ESTD
	-CH	English installer, Chinese display, for 813920300-CSTD
	-KO	English installer, Hangul display, for 813920300-KSTD

NOTICE

● Remarks : Export condition is subject to Japanese governmental approval.
Specifications are subject to change without notice.

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