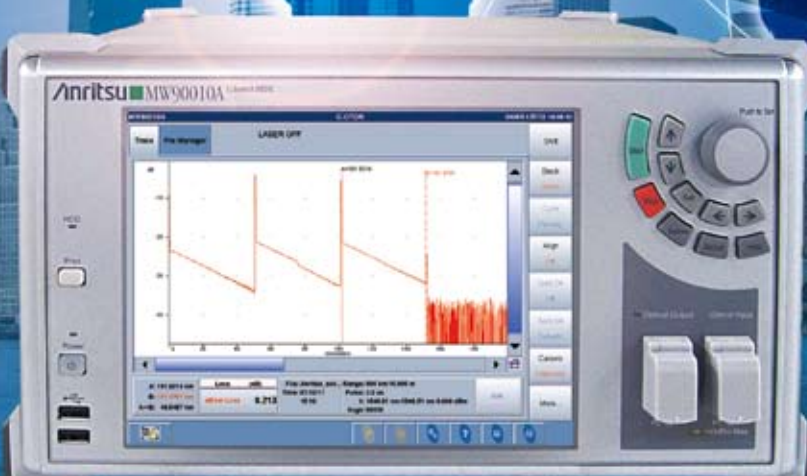


Anritsu

MW90010A

Coherent OTDR



- **Measure submarine cables up to 12,000-km long with 10-m resolution**
- **Unique Solution for Submarine Links Fault Detection**
- **Compact & Lightweight for Easy Transportation.**
- **Easy Operation**
- **Wide Dynamic Range**

The Anritsu MW90010A Coherent OTDR (C-OTDR) is a measuring instrument for detecting faults in ultra-long optical submarine cables of up to 12,000 km including multiple repeaters (EDFAs). It is the ideal solution for evaluating new cables at service deployment as well as for troubleshooting in-service faults.

Ultra-long optical submarine cables use optical amplifiers to boost signals. Successful OTDR measurement through the repeaters requires configuring a backscatter detection system using up and down links. The C-OTDR can measure the backscatter light through all repeaters by using coherent detection. As a result, it can display every fault condition, such as optical loss between repeaters, bending loss, distances, breaks, etc., on-screen for waveform data analysis.

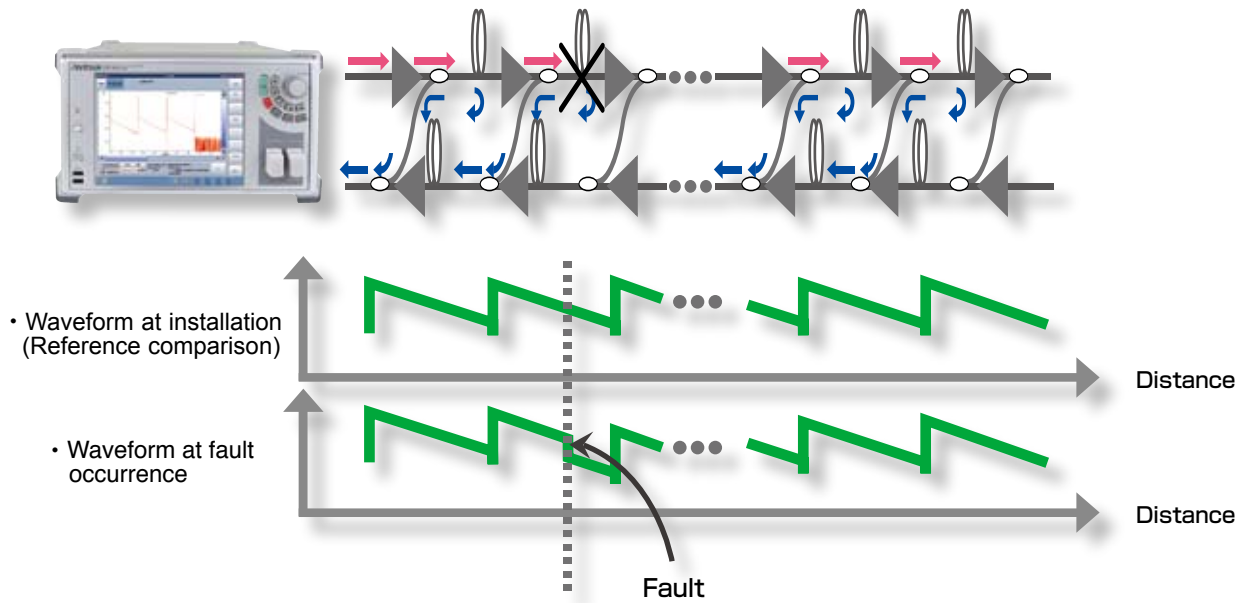
Features

- Fault detection with 10-m distance resolution
- Compact and lightweight all-in-one design for on-site portability (320 (W) × 177 (H) × 451 (D) mm, 17 kg max.)
- Simple and easy touch-panel operation for easy first-time use by any operator
- Wide dynamic range supporting fault detection and troubleshooting of submarine cables with repeaters at 80 km or wider intervals
- Built-in tunable light source with high wavelength accuracy of ± 0.2 nm for wavelength setting range of 1535.03 to 1565.08 nm
- Adjustable output power from 0 to +13 dBm

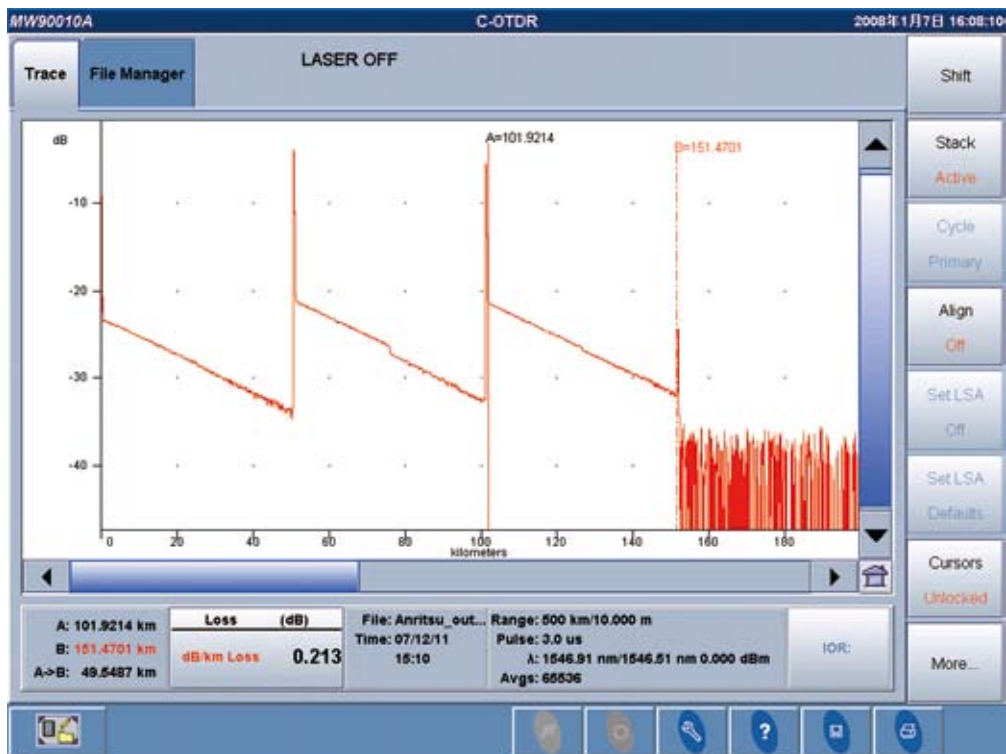
External Appearance



Application



C-OTDR Measurement Example



The unsurpassed, compact, lightweight (17 kg max.), all-in-one design supports every stage of optical submarine cable management from cable installation to fault detection or past data analysis

- **Measure submarine cables up to 12,000-km long with 10-m resolution**

The MW90010A can capture data from up to 1.2 million points on the horizontal axis at a fixed resolution of 10 m with no dependency on measured distance. As a result, faults can be located with very high resolution even in fibers longer than 10,000 km.

- **Lightweight and Compact**

In comparison to previous optical submarine cable measuring equipment, the MW90010A is less than half the weight (17 kg max.) and size. The all-in-one design incorporates a tunable light source for easy on-site portability and troubleshooting.

- **Excellent GUI**

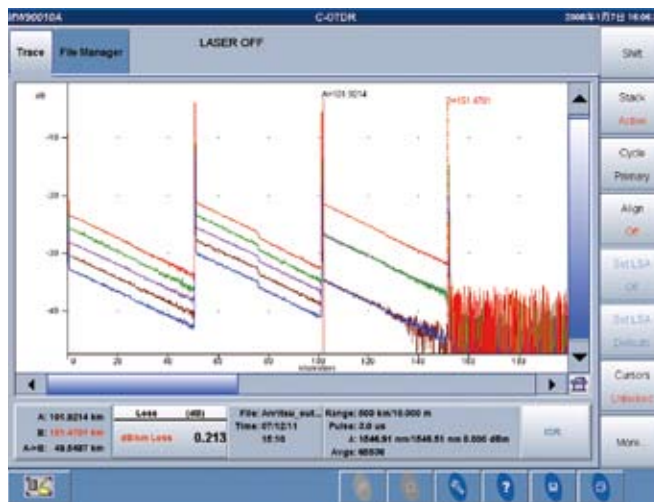
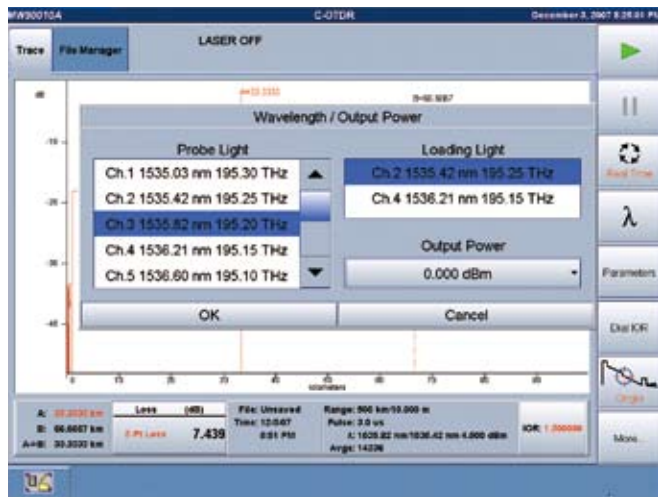
Every stage from setting parameters to starting measurement is made easy using the touch-screen. The rotary knob and keypad can be used for operation too. The easy-to-use design coupled with standard interfaces for USB memory, USB mouse and keyboard, and VGA OUT, makes measurement simple even for novice OTDR operators.

- **Wide Dynamic Range**

Typical optical submarine cables are designed with repeaters every 50 to 60 km but the high resolution of the MW90010A easily supports fiber loss measurement of these systems as well as fault location of cables with repeaters spaced at more than 80 km.

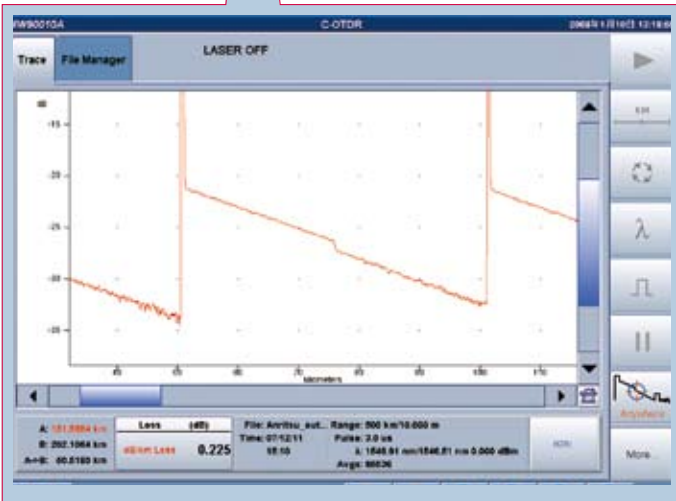
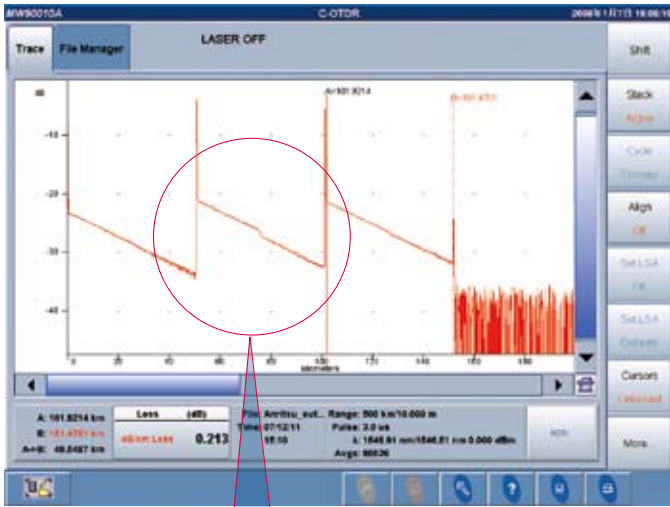
- **Simultaneous Display of 8 Waveforms (max.)**

Installation and maintenance of optical submarine cables requires comparison of current waveform data with data at cable installation to monitor aging changes. The MW90010A makes this comparison easy because it can display up to 8 waveforms simultaneously, allowing faults to be seen at glance by comparing the install waveform with the fault waveform on one screen.



Built-in Standard OTDR Functions

Of course, the MW90010A has the full range of versatile built-in applications, including real-time measurement, zoom/shift function, 2-point loss analysis, etc.



Support for Telcordia format (SR-4731)

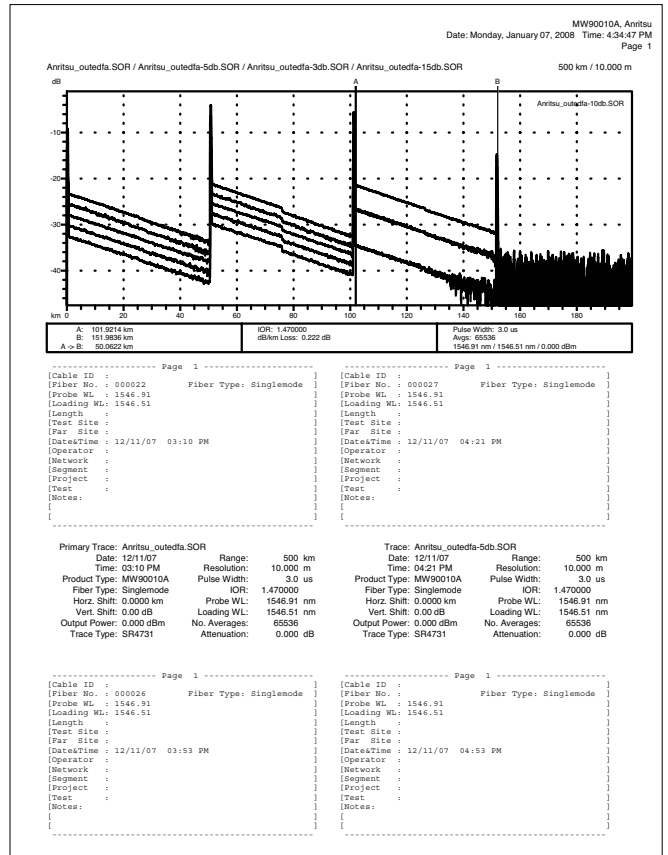
The Telcordia format shared by OTDR is supported.

2.8-GB internal memory

Measured data is saved in the 2.8-GB internal memory and can be copied to external USB memory stick for processing on a PC.

PDF-format reports

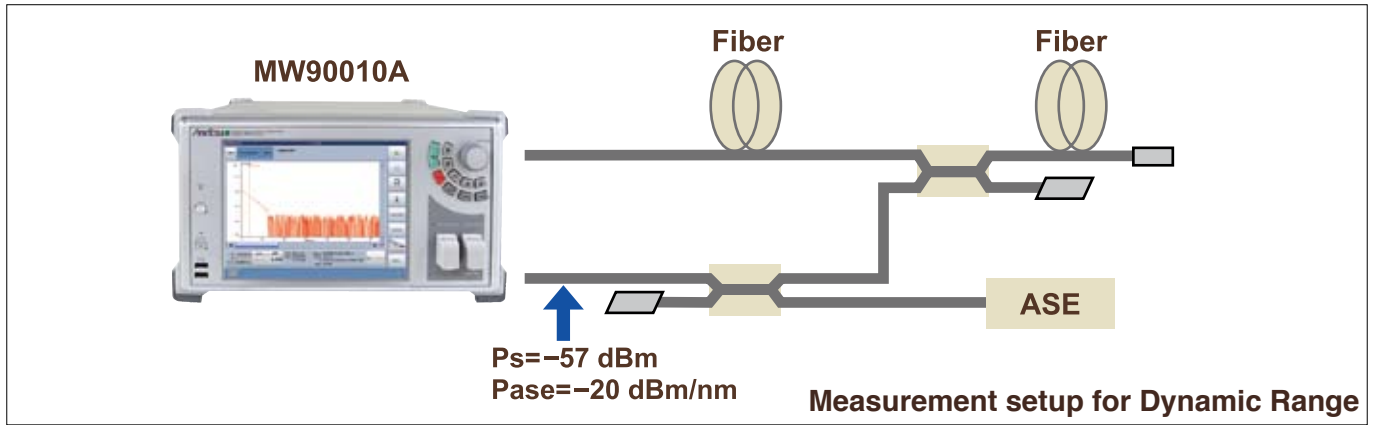
Measured data can be saved in PDF format for confirming measurement date, conditions, and waveform data on a single report.



Specifications

MW90010A Coherent OTDR

Items	Specifications	Remarks
Model Name	MW90010A	
Fiber under test	ITU-T G.653 (DSF)	
Optical connector	FC, SC, DIN, HSM-10/A, ST,LC	Replaceable, PC type
Wavelength (Probe light)	1535.03 to 1565.08 nm	ITU-T Grid Wavelength in vacuum setting with 50 GHz steps
Wavelength accuracy	±0.2 nm	20 to 30°C
Warm-up time	30 minutes	20 to 30°C
Loading light source (Dummy)	" wavelength of probe light " +50 GHz or -50 GHz	The loading wavelength can be selectable at +50 GHz or -50 GHz of the probe (OTDR) wavelength.
Pulse width	3/10/30/60/100 μs	
Optical output power	0 to +13 dBm, 0.5 dB Steps	
Dynamic range (S/N=1) (See the block diagram on P7)	>17 dB (one way, S/N=1)	Measurement Conditions: <ul style="list-style-type: none"> • Pulse width: 10 μs • Average times: 2¹⁶ • Distance range: 1000 km • Smoothing: On • Ps: -57 dBm @ Pin *1 • Pase: -20 dBm/ nm @ Pin *1
Dead zone	0.5 km	Pulse width: 3 μs
Distance measurement accuracy	±10m ±0.5 x 10 ⁻⁶ x measurement value (m)	This does not include optical fiber refraction index (IOR) based uncertainty.
Vertical scale	0.02, 0.05, 0.1, 0.2, 0.5, 1.0, 2.0, 5.0, 10.0 dB/div	
Distance range	100 km., 500 km to 12,000 km (in 500 km steps)	
Sampling resolution (IOR=1.500000)	10 m	
Measurement time	15 minutes	Distance Range: 1000 km Average times: 2 ¹⁶
Average times	2 ⁹ to 2 ²⁴	
IOR settings	1.300000 to 1.700000 (0.000001 steps)	
Monitor output	-25 to -15 dBm	For OTDR Wavelength Monitor
Other functions	<ul style="list-style-type: none"> • Real Time Measurement • Multiple Trace Display (8 Waveforms maximum) • Zoom & Shift • Loss Calculation Splice Loss, 2Pt Loss, 2Pt LSA, dB/ km Loss, dB/ km LSA, 2Pt & dB/ km, 2Pt & dB/ km LSA • File Save formats GR-196, SR4731 • USB Memory support 	<ul style="list-style-type: none"> • Internal Memory (2.8 Gbyte) • Print External printer, Hard Copy (file: PDF) • Distance Unit miles, feet, kilofeet, meters, kilometers • File Utility File: Copy, Paste, Delete Folder: Create New • Help function
Display	8.4 inch, XGA (1024 x 768) color LCD with touch panel	
Interface	USB (2ports, REV1.1), Mouse (USB), Keyboard (PS/2), VGA	
Power supply	AC100 to 120/200 to 240 V, 50 to 60 Hz, ≤300 VA	
Dimensions and mass	320 (W) x 177 (H) x 451 (D)mm,<17 kg	
Enviromental conditions	Operating temperature and Humidity: 10 to +35°C, <85% RH Storage temperature and Humidity: -10 to +50°C, <85%RH Vibration: Conforms to MIL-STD-810D	
EMC	EN61326	
Laser safety level	IEC Pub 60825-1: 2001 Class 1M: Optical Output Port Class 1: Monitor Port THIS PRODUCT COMPLIES WITH 21 CFR 1040.10 AND 1040.11 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE. NO.50, DATED JUNE 24, 2007.	



*1: Ps: Maximum backscatter level at the input [dBm]
Pase: ASE level at the input [dBm]

*2: Laser safety: This product conforms to laser safety standards IEC 60825-1 and 21CFR1040.10 as indicated by the following attached labels.



Ordering Information

Please specify the model/order number, name and quantity when ordering.
The names listed in the chart below are Order Names. The actual name of the item may differ from the Order Name.

Model/order No.	Name
	Main frame
MW90010A	Coherent OTDR
	Standard accessories
	Power cord
W3030AE	MW90010A Operation Manual (CD-ROM version)

Model/order No.	Name
	Options (Optical Connector)
MW90010A-033*1	LC Connector
MW90010A-037*1	FC Connector
MW90010A-038*1	ST Connector
MW90010A-039*1	DIN 47256 Connector
MW90010A-040*1	SC Connector
MW90010A-043*1	HMS-10/A Diamond Connector

*1: Required option

Specify the optical connector type. The same type of connector will be supplied for the optical output port, optical input port, and optical monitor port.

Model/order No.	Name	Remarks
	Application parts	
B0604A	RACK MOUNT KIT	
J0617B	Replaceable optical connector (FC-PC)	
J1409A	Replaceable optical connector (ST)	
J1410A	Replaceable optical connector (DIN)	
J1411A	Replaceable optical connector (SC)	
J1412A	Replaceable optical connector (HMS-10/A)	
J1413A	Replaceable optical connector (LC)	
J0057	Optical adapter FC type	
J0635	Optical fiber cord with FC-PC at both ends (SM, with FC-PC at both ends)	Specify the optical fiber length as A, B or C (A:1m, B:2m, C:3m)
J0952A	FC•PC-FC•APC(SG)-1M-SM	
Z0914A	Ferrule cleaner	
Z0915A	Replacement reel for ferrule cleaner	(6 pcs/set)
Z0284	Adapter Cleaner	Stick type, 200 pcs/set
W3024AE	MW90010A Operation Manual (Printed version)	
Z1043A	LC adapter cap	Monitor Output Port optical connector cap. Specify exchangeable optical connectors (J1409A, J1410A, J1411A, J1412A, J1413A, J0617B) as a pair.
Z0397A	FC adapter cap	
Z0411A	ST adapter cap	
Z0412A	DIN adapter cap	
Z0413A	SC adapter cap	
Z0414A	HMS-10 adapter cap	

Related Products

- Anritsu OTDR series -

Anritsu provides OTDR measurement solutions for every field, ranging from optical submarine cables to FTTx drop cables.

MU909011A DCFL Module for MT9090A 

Purpose-Built for Short Fiber Applications



MT9083A ACCESS Master Mini-OTDR

All in one test tool for fiber construction and maintenance.



CMA5000 Multi-Layer Network Testing Platform

Testing of 1 and 10 Gigabit Ethernet, DWDM, SONET/SDH, OTDR, ORL, PMD and CD Made Simple



Anritsu

Specifications are subject to change without notice.

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