AE3100M Series
Quad MM/SM Handheld OTDR

Key Features

- High-performance single- and multimode OTDR for FTTx networks
- 7", 800x480 LCD touchscreen places power and convenience at your fingertips
- Excellent short-distance performance with 0.8m event dead zone and 4m attenuation dead zone
- Dual or quad-wavelength testing with broad dynamic range coverage (25 - 43 dB)
- Minimum 5cm resolution
- Intelligent event analysis
- Excellent stability and repeatability
- "FiberPath" fiber link mapping mode
- Multiple options for your measurement needs, including VFL, power meter, light source, and optical fiber microscope
- Complete user data ports: supports LAN, USB, SD, & more

Applications

Construction, deployment, maintenance, and authentication of the following networks:

- Local Area Networks
- Data Centres
- Long Haul Networks
- Metropolitan Area Networks (MAN)
- Process Plants and Industrial Sites

Overview

From Deviser Instruments' 4th generation of OTDR, the field-portable AE3100 marks a giant leap forward in fiber-optic measurement performance and utility. The new M series adds multi-mode testing capabilities up to 4 wavelengths and 43dB dynamic range.

Featuring intuitive touchscreen controls and real-time data analysis, the AE3100 is the ideal test instrument for constructing, deploying, maintaining, and authenticating FTTx networks - as well as verifying access networks. Multiple models and configuration options ensure your unique measurement needs are covered.

Also see AE3100 models A~F, CP, DP, and G for single-mode dual-, triple-, and quadruple wavelength measurements with dynamic range up to 45dB.

Model Guide

Model	Wavelengths (nm)	Dynamic Range* (dB)	Event Deadzone** (m)		Attenuation Deadzone** (m)	
			Single	Multi	Single	Multi
M	850 / 1300	25 / 27		≤ 0.8m		≤ 5.0m
CM	850 / 1300 / 1310 / 1550	25 / 27 / 37 / 35	≤ 0.8m		≤ 4.0m	
DM	850 / 1300 / 1310 / 1550	25 / 27 / 40 / 38				
EM	850 / 1300 / 1310 / 1550	25 / 27 / 43 / 41				

* At 25°C ± 5°C; 20µs pulse width; avg. 3min, initial backscatter SNR = 1.

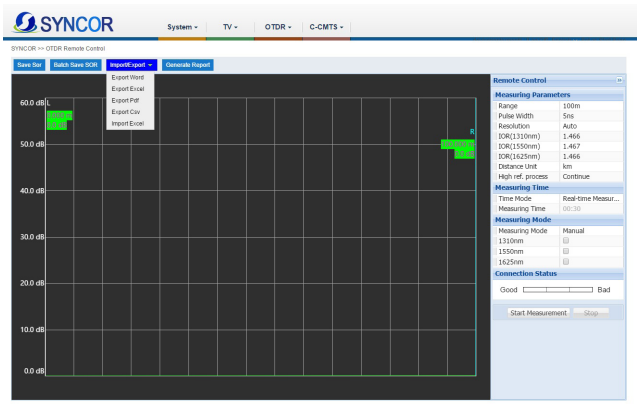
** At 25°C ± 5°C; 5ns pulse width; non-saturated reflective event; 5cm distance resolution.

FiberPath™

FiberPath simplifies the interpretation of OTDR traces by identifying link elements and displaying the link map in an easy-to-understand format. Experienced and inexperienced technicians alike will appreciate the simplified display.

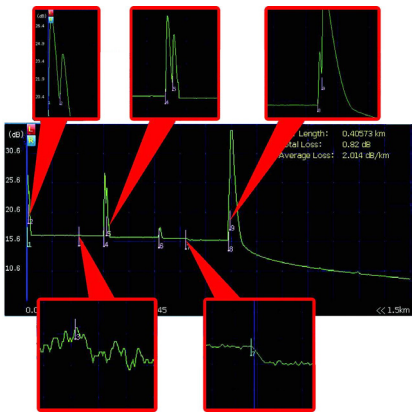
Remote Control

In conjunction with the SYNCOR PC-based asset and test data management system, users can issue test orders and collect measurement data remotely from AE3100 units deployed to the field.



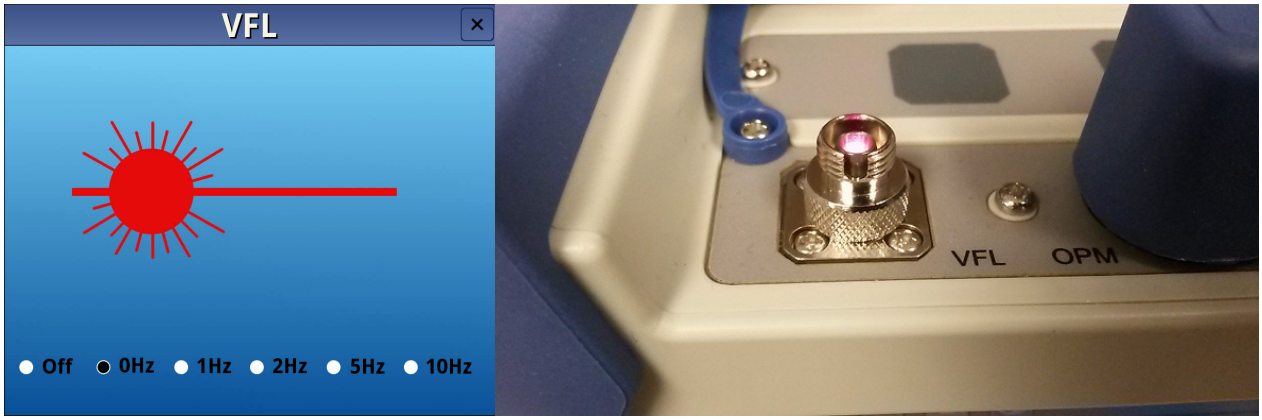
OTDR

This high-performing OTDR supports up to four wavelengths and is the ideal solution for testing the fiber in RFoG and FTTx applications. The OTDR can identify and locate link impairments and measure the insertion loss by LSA, 2Pt and 4Pt methods. The unit also measures optical return loss (ORL). display.



Optical Measurements

The AE3100 includes a suite of optical measurement tools, including a power meter, laser source, and visual fault locator (shown below). The unit is available in numerous wavelength configurations for ensuring proper levels in networks such as RFoG and FTTx.



Pictured: Visual Fault Locator (VFL) beam illuminates bends, splices, and faults in optical fibers, with an effective range of up to 10km.

Specifications

AE3100 Model		M	CM	DM	EM
General					
Wavelength Accuracy		± 20nm			
Event Dead Zone	Single-mode		≤ 0.8m		
	Multi-mode	≤ 0.8m			
Attenuation Dead Zone	Single-mode		≤ 4m		
	Multi-mode	≤ 5m			
Distance Range	Single-mode	100m, 400m, 1.5km, 3km, 6km, 12km, 25km, 50km, 100km, 200km, 400km			
	Multi-mode	100m, 400m, 1.5km, 3km, 6km, 12km, 25km, 50km			
Pulse Width	Single-mode	3ns, 5ns, 10 ns, 30 ns, 50 ns, 100 ns, 200 ns, 500 ns, 1µs, 2µs, 5µs, 10µs, 20µs			
	Multi-mode	5ns, 10ns, 30ns, 50ns, 100ns, 200ns, 500 ns, 1µs			
Sampling Resolution		5cm ~ 6.4m			
Sampling Points		256,000 max			
Distance Accuracy (m)		± (0.75m + 0.005% x Distance + Sampling Resolution)			
Group Refractive Index		1.300000 ~ 1.700000			
Loss Threshold		0.01dB			
Loss Resolution		0.001 dB			
Refresh Rate		4 fields/second			
Reflectance Accuracy		± 2dB			
Measurement Time Range		5s ~ 5min, real time			
Data Storage		>10,000 OTDR traces, exportable to USB or PC			
Calibration Period		Valid for 1 year			
Quality Compliance		Complies with ISO-9001:2015			

Functions & Accessories			
Test Modes	Manual; Auto	File Formats	Compatible with Bellcore GR 196 v1.1 (*.SOR)
Limit Settings	Manual; Auto	Loss Test Type	LSA, 2pt, 4pt
Limit Profiles	8 customizable profiles	UI Style	4 styles available
Distance Shift	Yes; display negative events	FiberPath Linear View	✓
Real-Time Testing	✓	Touchscreen Keyboard	✓
Self-Correcting	✓	Web Browser	✓
Online Help	✓	Auto Shutdown/Sleep	✓
Factory Reset	✓	Macrobending Test	✓
Multi-Lingual File Naming	✓	Dual Wavelength Test	✓
Screenshots	✓	Multi-Trace Comparison	✓

Specifications (cont'd)

Functions & Accessories (cont'd)		
Optical Power Meter	Operating λ	850, 980, 1300, 1310, 1490, 1550, 1610, 1625, 1650nm
	Range	Select either [-70 ~ +10dBm] or [-50 ~ +26dBm]
	Resolution	± 0.17dB
Laser	Wavelength	*Same as OTDR; see model guide*
	Output Power	> -4dBm
	Modes	CW, 1kHz, 2kHz, 1kHz + Flash, 2kHz + Flash
VFL	Wavelength	650 ± 10nm
	Power	1mW
	Compliance	Laser Safety Class II
USB FiberSpot Mode		Available by option only
FiberPath		Available by option only
Fiber Cleaning Pen		Up to 200 uses
Remote Testing		Requires SYNCOR software configuration
Cloud Asset Management		Requires SYNCOR software configuration
Optical Port Type		PC (default); APC (optional)
Optical Adapter Type		FC (default); SC, ST, LC, SC/APC (optional)

AFEI400 Auto Fiber Endface Inspector			
Field of View	425 x 360µm	Compatibility	Use with AE3100, AE1000, or Windows PC
Resolution	< 1.5µm	Magnification	400x
Fault Size Detection	0.75µm	Camera	1.3 million megapixel, 1/2" CMOS
Focus Range	±1mm (max ±3mm), auto-focus	Live Image	800 x 800, JPEG
Light Source	Blue LED	Storage Temp.	-20 ~ +70°C
Power Source	USB 2.0 port	Measure speed	< 1s
Dimensions (HxWxL)	1.9" × 1.0" × 7.1" (47mm × 24.5mm × 181mm)	Weight	5.4oz (152g)

General Specifications		
Display		7" 800x480 dot matrix TFT LCD touchscreen
Boot Time		20 seconds
Interface		2x USB 2.0; 1x RJ45 LAN (10M/100M); 1x SD card slot (64GB max)
Power	Supply	100 ~ 240V, 1.5A, 50~60Hz (AC); max 12V / 2Ah (DC); total max power 24 W
	Consumption	< 3.5W
Battery		~15 hrs on standby; 7.4V / 5300mAh Li-ion battery, 39.22 Wh
Car Charger Adapter		12 VDC
Operating Time		~ 11 hrs on full charge
Languages		Chinese, English, Spanish, Portuguese, French, Russian, Italian (German, Korean, Arabic optional)
Operating Temperature		-10°C ~ +50°C
Storage Temperature		-40°C ~ +70°C
Relative Humidity		0 ~ 95%, non-condensing
Dimensions (LxWxH)		8.1" x 6.7" x 3.0" (206mm x 171mm x 75mm)
Weight		< 4.4 lbs (< 2kg)

Ordering Information

Included with all AE3100 Handheld OTDR Models:

- Visual Fault Locator, 650nm (1mW)
- Optical Light Source
- Li-Ion Battery & AC/DC Adapter
- Carrying Case & Stylus
- Optical Power Meter (select either [-70 ~ +10dBm] or [-50 ~ +26dBm])
- Calibration & Quality Certificates
- Quick Reference Guide
- Cleaning Swab
- CD with Instruction Manual
- Cleaning Swab
- FC/PC or APC Connectors

SKU No.	Wavelengths	Dynamic Range	Event Deadzone	Attenuation Deadzone
AE3100M	850, 1300nm	25 / 27dB	≤ 0.8m (MM; no SM)	≤ 5.0m (MM; no SM)
AE3100CM	850, 1300, 1310, 1550nm	25 / 27 / 37 / 35dB	≤ 0.8m (SM & MM)	≤ 4.0m (SM), ≤ 5.0m (MM)
AE3100DM	850, 1300, 1310, 1550nm	25 / 27 / 40 / 38dB	≤ 0.8m (SM & MM)	≤ 4.0m (SM), ≤ 5.0m (MM)
AE3100EM	850, 1300, 1310, 1550nm	25 / 27 / 43 / 41dB	≤ 0.8m (SM & MM)	≤ 4.0m (SM), ≤ 5.0m (MM)

FC/PC	FC Connector and PC Physical Type		
SC/APC	SC Connector and APC Physical Type		
AE3100-701	Optical Power Meter; select either [**-70 ~ +10dBm**] or [**-50 ~ +26dBm**]		
AFEI400	Auto Fiber Endface Inspector & FiberSpot™ Inspection Software		
AE4000-801	FiberPath™ Link Mapper		
AE1000-009	150 Mbps USB Wi-fi Dongle	AE4000-737P	Fiber Cleaning Pen
AE1000-820	Remote Measurement	DS2400-703	2-Prong Power Cord plus Ground (Europe except UK)
AE4000-750	FC Connector	308-0022-01	3-Prong Power Cord plus Ground (US)
AE4000-753	SC Connector	DS2400-704	3-Prong Power Cord plus Ground (Australia)
AE4000-751	LC Connector	DS2400-705	3-Prong Power Cord plus Ground (UK)
AE4000-752	ST Connector		

©2018 Deviser Instruments Incorporated. 780 Montague Expressway, Suite 701, San Jose, CA 95131. All rights reserved. Specifications subject to change without notice. All product and company names are trademarks of their respective corporations. Deviser Instruments manufacturing facilities are ISO 9001 certified. Do not reproduce, redistribute, or repost without written permission from Deviser Instruments. AE3100M 180926