AE1000
FTTx Multi-Function Meter

Key Benefits

- Future-proof, all-in-one solution includes optical, cable TV analysis, and metallic testing for verifying the installation of FTTx, RFoG and RF PON networks

- Lightweight and compact design for easy mobility throughout the network

- Long battery life enables the user to test all day without stopping to charge the test equipment

- Easy learning curve with simple GUI

- FiberPath™ and Auto Test simplifies testing and reduces the need for OTDR trace interpretation

- Validate proper levels for both optical and cable TV installation, minimizing repair truck rolls and increasing customer satisfaction
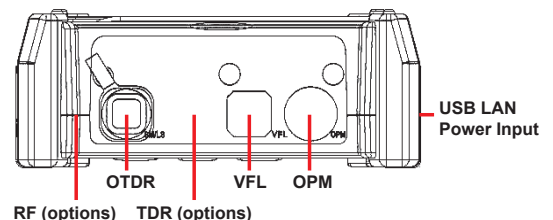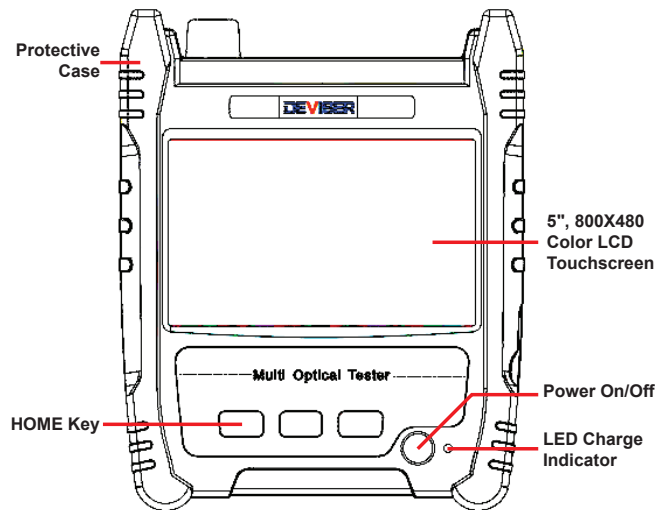
Overview

As the demand for bandwidth continues to soar, with higher-than-ever smartphone and streaming video usage, cable operators must face the challenge of deploying fiber deeper into the network. And because efficiency, speed, accuracy, and reliability metrics are key for increasing workforce productivity, the natural conclusion is simple: communications service providers (CSP) require a high-performance, efficient, yet affordable test equipment for installing future networks such as FTTx, RFoG and RF PON.

Brought to you by Deviser Instruments Inc, the AE1000 integrates cable TV analysis, metallic TDR testing and optical testing, including a fiberscope, OTDR, OPM, VFL and LS, future-proofing the investment in test equipment. The AE1000 enables faster, more efficient installations with only a single instrument, producing substantial savings to the CSP.

Key Features

- OTDR performance specifications with up to 3 wavelengths, perfect for FTTx, RFoG and RF PON installation

- FiberPath™ and Autotest: FiberPath™ analyzes the OTDR traces to clearly display the map of the fiber link and identifies possible faults, reducing the need for OTDR trace interpretation

- Digital QAM and analog measurements and constellation display for Cable TV installation verification

- Combines optical and metallic tests: OTDR, VFL, OPM, LS, Cable TV (RF) Test, TDR, and Fiberscope

- Fiberscope integration with FiberSpot software for identifying dirty spots of fiber connectors

- Easy Web-Based back office integration

Protective Case

5", 800X480 Color LCD Touchscreen

HOME Key

Power On/Off

LED Charge Indicator

RF (options)   OTDR   TDR (options)   VFL   OPM

USB LAN Power Input

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.
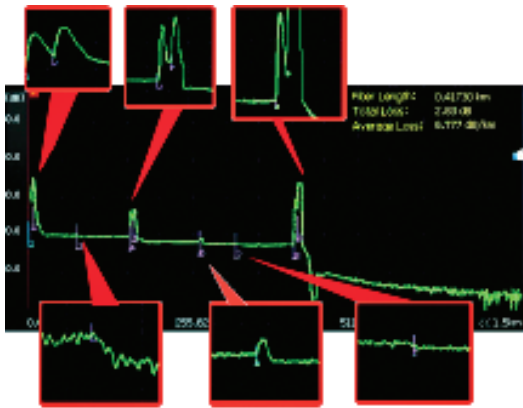

Fiber Inspection Probe

The majority of performance faults in fiber-optics are caused by contaminated connectors. Keep fiber endfaces and bulkheads free of dirt with the AE1000's built-in fiberscope application and automatic Pass/Fail analysis.
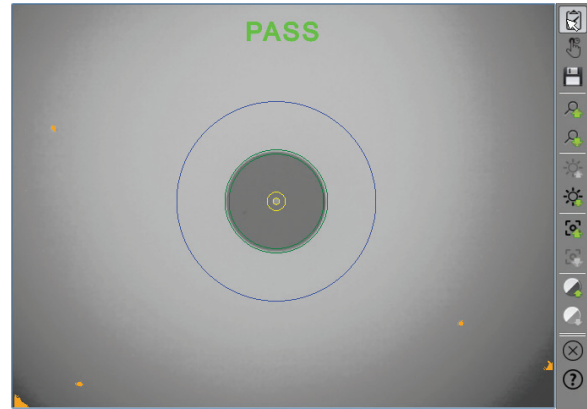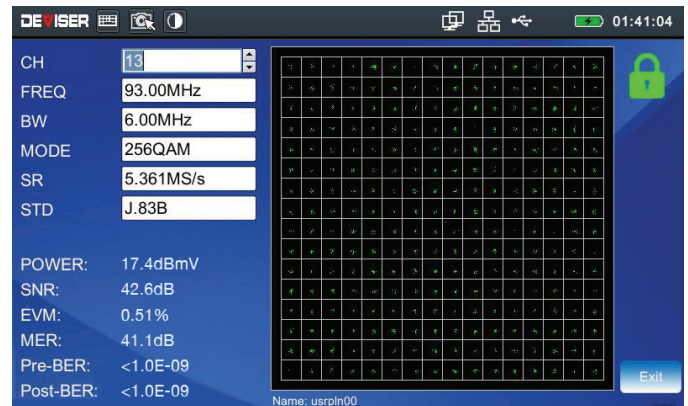

OTDR

The AE1000's high-performing OTDR supports up to three 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).

Optical Measurements

The AE1000 includes a suite of optical measurement tools, including a power meter, laser source, and visual fault locator (VFL). The unit is available in numerous wavelength configurations for ensuring proper levels in networks such as RFoG and FTTx.

Cable TV (RF) Measurements

The cable TV measurements included in the AE1000 include MER, PRE & Post BER measurements and BER statistics for verifying proper installation of cable TV services.

TDR Measurements

The TDR can easily identify and locate possible impairments, helping to gauge the quality of coaxial cable used in a Cable TV network.

Specifications

AE1000 Model		A	B	C	D	S-1625	S-1650	S-1490	P-1625	P-1650	P-1490
OTDR Key Parameters											
Dynamic Range* (typical)	1310nm ±20nm	≥ 29dB	≥ 33dB	≥ 36dB	≥ 36dB	-	-	-	≥ 34dB	≥ 34dB	≥ 34dB
	1550nm ±20nm	≥ 27dB	≥ 31dB	≥ 34dB	≥ 34dB	-	-	-	≥ 32dB	≥ 32dB	≥ 32dB
	1625nm ±20nm	-	-	-	-	≥ 35dB	-	-	≥ 32dB	-	-
	1650nm ±20nm	-	-	-	-	-	≥ 35dB	-	-	≥ 32dB	-
	1490nm ±20nm	-	-	-	-	-	-	≥ 35dB	-	-	≥ 32dB
Deadzone** (minimum value	Event	≤ 2m	≤ 1.5m	≤ 0.8m							
	Attenuation	≤ 7m	≤ 6m	≤ 4m							

OTDR Key Parameters	
Pulse Width	3ns, 5ns, 10ns, 30ns, 50ns, 100ns, 200ns, 500ns, 1μs, 2μs, 5μs, 10μs, 20μ
Measurement Time	5 secs. to 5 mins., real-time
Refresh Rate	4 times/sec

Distance	
Range	100m, 400m, 1.5km, 3km, 6km, 12km, 25km, 50km, 100km, 200km
Sampling Resolution	5cm ~ 12.8m
Max Sampling Points	256,000
Group Reflection Rate	1.00000 ~ 2.00000
Uncertainty (except for fiber group reflection)	±(0.75m+0.005% × Fiber Length + Sampling Res.) / ±(0.75m+0.001%×Fiber Length + Sampling Resolution)

OTDR Key Parameters	
Linearity	0.05 dB/dB / 0.03 dB/dB
Attenuation Threshold	0.01dB
Attenuation Resolution	0.001dB
Reflection Accuracy	±2 dB

Performance (1)		**Performance (2)**		**Performance (3)**	
Measurement Mode	Manual, Auto	SOR File Format	Bellcore GR 196 V1.1	Dual Wavelength Meas.	Yes
Threshold Settings	Manual, Auto	Loss Measurement	LSA, 2Pt and 4Pt	Trace Comparison	Yes
User-Defined Threshold Profiles	8	Screen Capture	Yes	Macro Bend Meas.	Yes
Distance Offset Setting	Yes	Soft Keyboard	Yes	Real-Time Meas.	Yes
Automatic Correction	Yes	Web Browser	Yes	FiberPath™ Link Mapper	Yes
Online Help	Yes	Auto Shutdown & Hibernation	Yes	Language Support	English, Chinese, Spanish, Portuguese, French, Russian, Italian, German, Korean, Arabic

* Conditions: 25°C ±5°C, 20μs pulse width, avg. time: 3min, SNR = 1.   ** Conditions: 25°C ±5°C, 5ns pulse width, Non-Saturated Event, distance resolution 5cm.

Options

Optical Power Meter (OPM)

Meas. Range	-70 ~ +10dBm	-50 ~ +27dBm	-60 ~ +3dBm
Accuracy	±0.17dB	±0.23dB	
Calibrated Wavelength	1310 / 1550 / 1490 / 1610nm		850 / 1300nm
Working Wavelength	850 ~ 1700nm		

Optical Laser Source (OLS)

AE1000 Model	A/B	C/D	P-1625	P-1650	P-1490
Wavelength (nm)	1310/1550		1310/1550/1625	1310/1550/1650	1310/1490/1550
Output Power	> -11dBm		> -4dBm		
Output Freq	CW / 1kHz / 2kHz / 1kHz+Flash / 2kHz+Flash				

Visual Fault Locator (VFL)

Wavelength (nm)	650 ±10
Output Power	≥ 10mW
Distance	> 10km
Safety Standard	IEC 60825-1: 2007

Fiber Inspection Probe

Scope Model	DS-100	DI-1000
Pass/Fail	No	Yes
Magnification	250X	
Resolution	0.5μm	0.5μm
Visible Range	400μm x 310μm	425μm x 320μm
Interface	USB 2.0/1.1	USB 2.0
Focus	Manual	Manual
Tips	2.5mm PC-M; SC-PC-F; 1.25mm PC-M; LC-PC-F; 2.5mm APC-M; FC-APC-F	PT2-U2.5/APC/M; PT2-FS/APC/F; DI1-CASE-S; CVF-CD

Digital Cable TV Module

Frequency	Range	5 MHz ~ 1050 MHz
	Accuracy	±50×10-6 (20°C ±5°C)
	Bandwidth	280kHz
Analog TV	Power Level	30 ~ 120dBμV
	Accuracy	±1.5dB
	Chan. Scan	Up to 150 channels
Digital TV	Power Level	30 ~ 110dBμV
	Accuracy	±2.0dB
	Symbol Rate	4 ~ 7 MS/s
	MER	39dB (typical) ±2.0dB
	BER	1E-3 ~ 1E-9 Pre/Post

AE1000 Specifications (continued)

TDR Module

Interface	50Ω or 75Ω coaxial
Range	5m ~ 1600m
Accuracy	±1% of distance
Resolution	<1% of distance

Other Options

FiberPath	OTDR Link Mapper
Fiber Cleaning Pen	200 uses
Remote Control	SYNCOR PC software

Test Interfaces

PC	Standard
APC Optional	Optional
Standard Connector	FC
Optional Connectors	SC/PC, SC/APC, ST, LC

Environmental & Maintenance

Display		5" 800x480 TFT touchscreen
Interface		1x USB 2.0; 1GB internal hard drive; 8GB SD card
Battery		7.4V/5Ah battery, 37Wh; ~10 hours
Visual Fault Locator (VFL)		10mW
Power Consumption		< 2.0 W
Power Supply	AC	100-240V 0.5A 50~60 Hz
	DC	12V/2A Max.
	Power	24W Max.
Dimensions (LxWxH)		7.0" x 5.7" x 2.1" (179mm x 144.7mm x 54mm)
Weight		< 2.2 lbs (1kg)
Operating Temp.		-14°F to +122°F (-10°C to +50°C)
Storage Temp		-40°F to +158°F (-40°C to +70°C)
Relative Humidity		0% to 95%, non-condensation

Ordering Information

FTTx Application									
Feature	**OPM**	**VFL**	**OLS**	**1625nm**	**1650nm**	**PC/APC**	**Probe**	**FiberPath**	**Remote**
AE1000A	Standard	Standard	Standard	N/A	N/A	Selectable	Optional	Optional	Optional
AE1000B	Standard	Standard	Standard	N/A	N/A	Selectable	Optional	Optional	Optional
AE1000C	Standard	Standard	Standard	N/A	N/A	Selectable	Optional	Standard	Optional
AE1000P	Standard	Standard	Standard	Selectable	Selectable	Selectable	Optional	Standard	Optional

RFoG Application							
Feature	**OPM, VFL, OLS, FiberPath, Remote**	**1625nm**	**1650nm**	**PC/APC**	**Probe**	**Digital TV**	**TDR**
AE1000D	Standard	N/A	N/A	Selectable	Optional	Standard	Optional
AE1000S	Standard	Selectable	Selectable	Selectable	Optional	Standard	Optional