

AE1000

FTTx Multi-Function Meter

Key Benefits

- Future-proof, all-in-one solution includes optical, cable TV (RF), 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

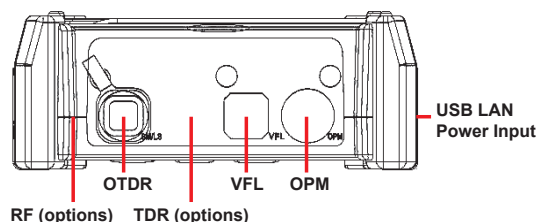
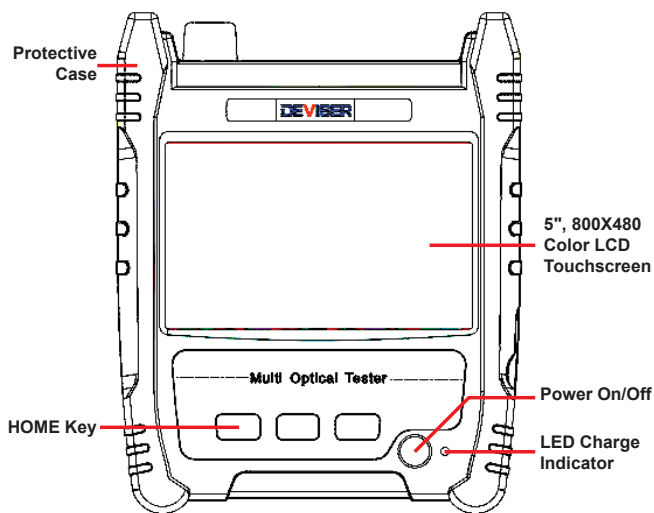
Overview

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. Although it is contested whether any single technology is best for the task, one thing is clear: operators will continue installing both fiber and cable into the foreseeable future. And because efficiency, speed, accuracy, and reliability metrics are key for increasing workforce productivity, the natural conclusion is simple: cable TV installers 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 new AE1000 OTDR is the next generation cable TV installation meter on the market. The AE1000 integrates digital and analog cable TV (RF) testing, metallic TDR testing and optical testing, including a fiberscope, OTDR, OPM, VFL and LS, future-proofing the investment in test equipment, regardless of which technology is determined to be best. The AE1000 enables faster, more efficient installations with only a single instrument, producing substantial savings to the MSO.

Key Features

- OTDR performance specifications comparable to bigger and more expensive OTDRs – optional 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



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.



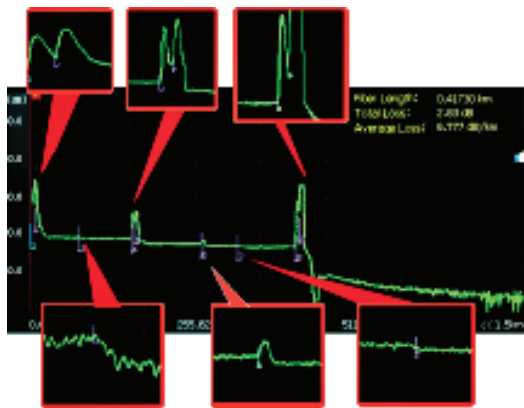
Fiber Inspection Probe

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).



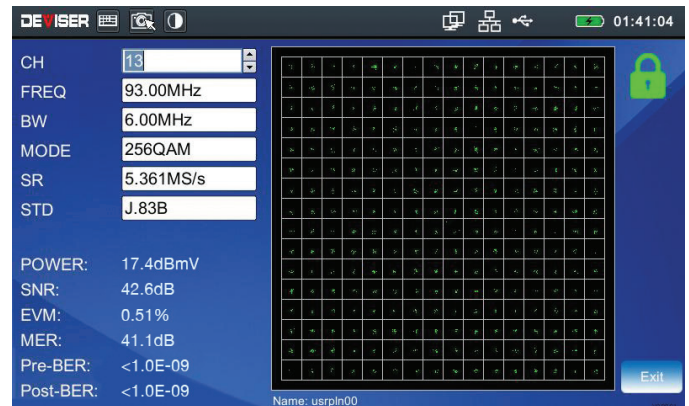
Optical Measurements

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.



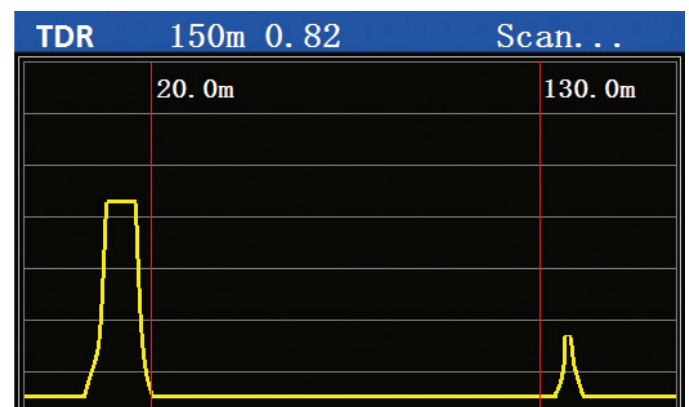
Cable TV (RF) Measurements

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	S1650	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.					
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-1	P-2	P-3
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		USB 2.0x1; USB DC5V ±0.05V@500mA
Battery		1GB internal hard drive; 8GB SD card
Visual Fault Locator (VFL)		7.4V/5Ah battery, 37Wh; ~10 hours
Power Consumption		< 2.0W
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