ACCESS OTDR

AXS-100

NETWORK TESTING - OPTICAL

Compact, lightweight handheld OTDR optimized for access/FTTx networktesting

- **Top user-friendliness:** one-button testing, combined with EXFO's proprietary FTTx software package (macrobend/fault finder, pass/fail indicators)
- **Multiple options,** including power meter, visual fault locator (VFL), fiber inspection probe, printer and IP testing
- **Fault Finder mode,** for quick identification/location of a fiber break
- **Complete connectivity flexibility:** USB stick compatibility and USB cable data download via ActiveSync*
- **Advanced TFT transflective color display,** for assured legibility under direct sunlight or in other demanding outside conditions
- **Handheld**, small, lightweight unit: 1 kg (2.2 lb)
- **Built-in ruggedness** for outside-plant usage
- **Troubleshooting option,** enabling in-service, out-of-band network testing

* Microsoft ActiveSync™

FTTx Test Solutions

The Definitive Handheld OTDR for FTTx Testing

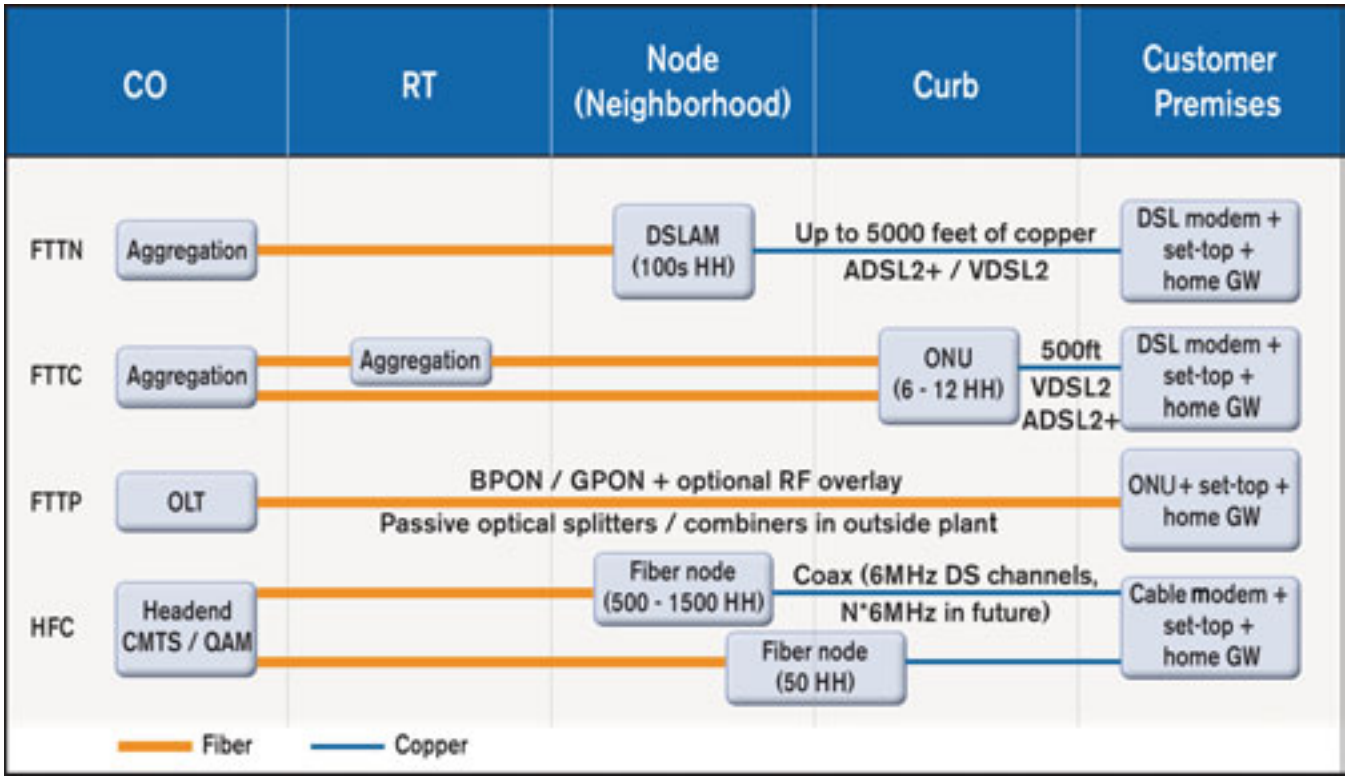
EXFO's AXS-100 Access OTDR combines the industry's leading OTDR technology with power meter functionalities in one powerful handheld unit. Optimized for testing passive optical networks (PON) within FTTx architectures, it offers several wavelength configurations and a wide range of options, for first-class flexibility. Use it at the optical network terminal (ONT), drop terminal or fiber distribution hub (FDH) for FTTH distribution (F2) fiber characterization, troubleshooting and fault locating.

Access Networks–Bringing New Testing Requirements

FTTx networks are becoming a worldwide solution for offering high-speed triple-play services, as carriers must ensure the same level of reliability and availability as that of traditional twisted-pair copper-based accessnetworks.

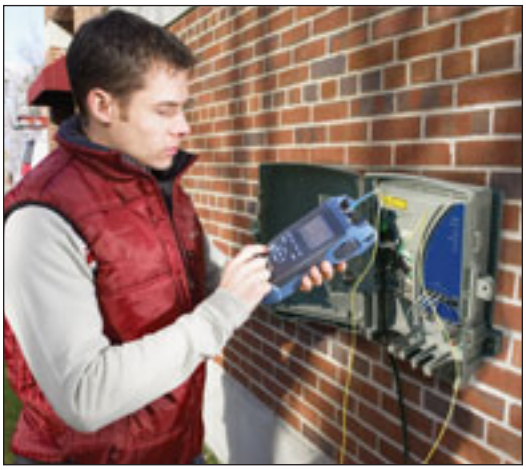
Increased fiber deployment within access networks brings new requirements and the need for highly efficient testing strategies. As most of the work is performed in ever-changing outside conditions (cold/warm/hot, day/night, etc.), working space is often limited and access technicians are getting acquainted with the latest FTTx technologies, choosing a simple, reliable testing tool is key.

High-Speed Access Technologies

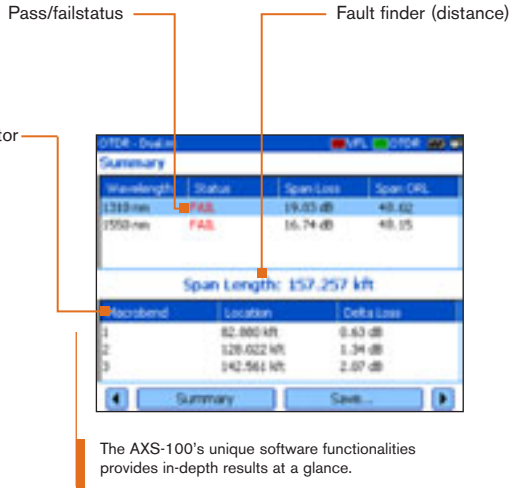


Reliable and Simple FTTx Testing—EXFO's Proprietary FTTx Functionalities and Software Package

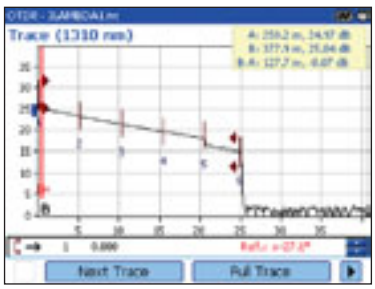
The AXS-100 Access OTDR makes testing an FTTx network an easy task. Simply connect the fiber, press FasTrace, and view the result. This handheld unit provides unparalleled ease of use, even for technicians with little background in optical/OTDR testing. Its proprietary FTTx software package enables you to view all results at once and easily assess link status. Without further analysis, you can view fiber length data and detailed pass/fail status, and even verify the presence of macrobendings.



With its Auto, Manual, Fault Finder and real time modes, the AXS-100 is really the FTTx test instrument of choice.



The AXS-100's unique software functionalities provides in-depth results at a glance.



The more experienced user can also use the AXS-100's OTDR trace and event features.

Flexible Configurations and Options

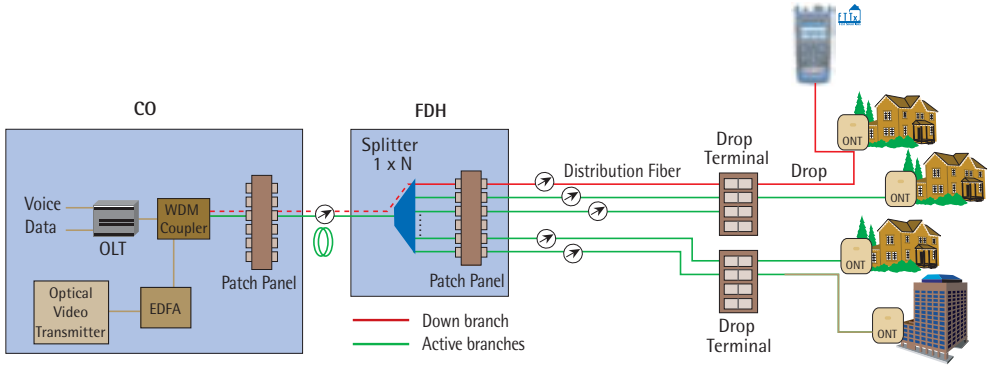
Multiple Wavelengths, Large Storage Capacity

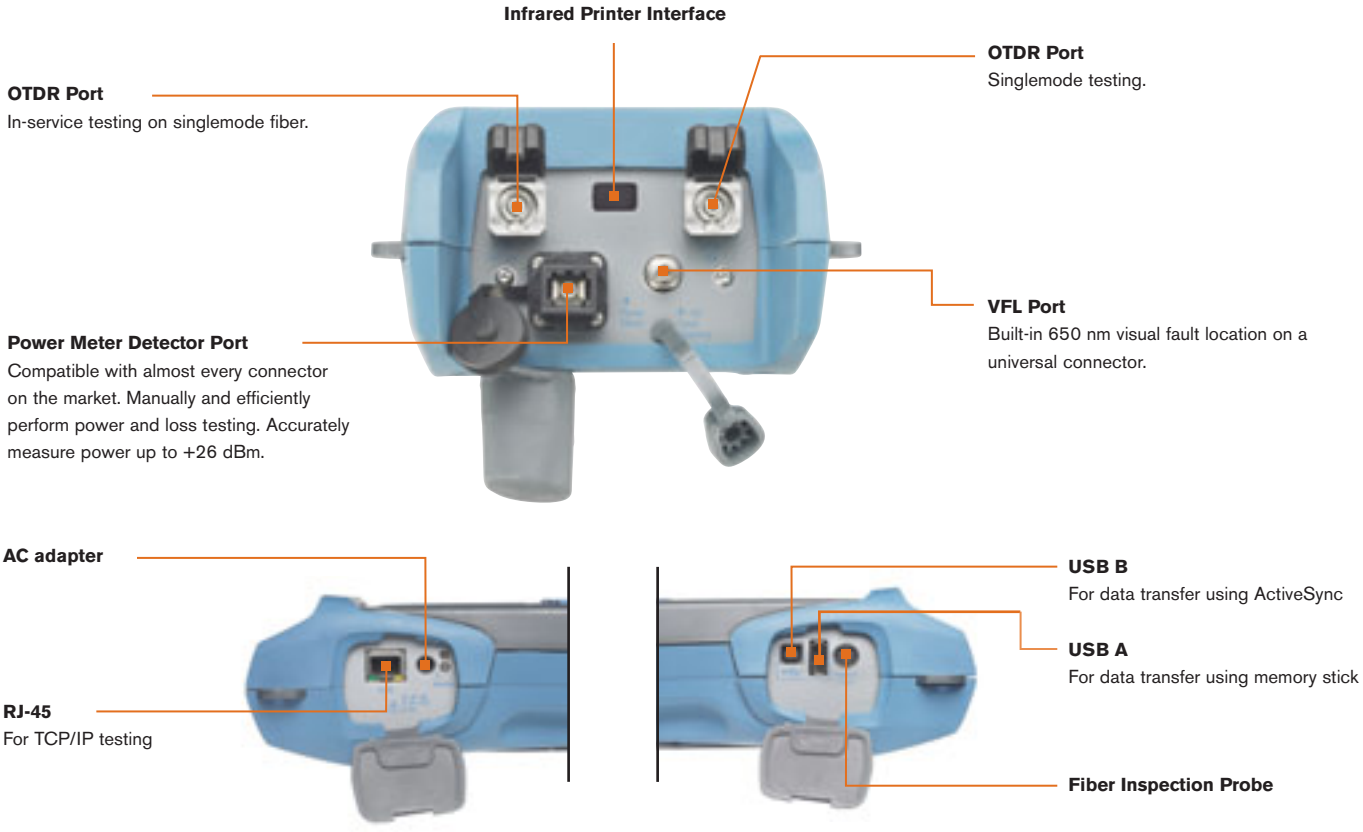
Choose the OTDR model that meets your wavelength requirements: 1550 nm, 1310/1550 nm, 1550/1625 nm and filtered 1625 nm, for in-service FTTH troubleshooting. What's more, the AXS-100 lets you save up to 500 traces.

In-Service PON Troubleshooting Option

The AXS-100 Access OTDR is specifically designed for in-service PON troubleshooting. It features an optional dedicated port for testing at 1625 nm incorporating a filter that rejects all unwanted signals (1310, 1490 and 1550 nm) that could contaminate the OTDR measurement. The filter only lets through the 1625 nm OTDR signal, ensuring accurate OTDR measurements.

In-service OTDR troubleshooting of optical fiber does not interfere with the normal operation and expected performance of the information channels. EXFO's AXS-100 does not interfere with the CO's laser transmitters, as it uses an out-of-band wavelength, as per the ITU-T L.41 (Maintenance Wavelength on Fibers Carrying Signals) recommendation.

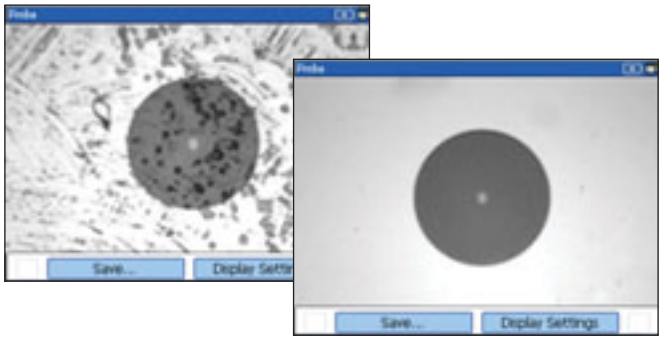




[1] *Additional filtering may be required at the transmission equipment.*

Fiber Inspection Probe Option

In any optical network, connectors should be kept clean and in good condition–which is not always easy in outside conditions. Using a fiber inspection probe (enabling quick, easy inspection of fiber ends or connectors using the AXS-100's high-resolution display) is the best way to perform this critical connector check.



View fiber ends and connector endfaces on the AXS-100's high-resolution display

Flexible Configurations and Options (Cont'd)

IP Testing Option

Performing complete access network testing also means testing the delivered service. With the AXS-100's IP testing option, you can perform basic IP verification that will facilitate future troubleshooting operations.

Visual Fault Locator

Ideal for easily identifying macrobend, bad splices or bad connectors. Built-in 650 nm visual fault location on a universal connector.

Power Meter GeX Option

The AXS-100's optional power meter covers the 800 to 1650 nm range, offering a power range of –60 to 26 dBm (GeX 2 mm). It comes with a three-year recommended calibration interval, providing for a very low cost of ownership.

USB Interfaces

Easily transfer your OTDR data files thanks to the AXS-100's two USB ports:

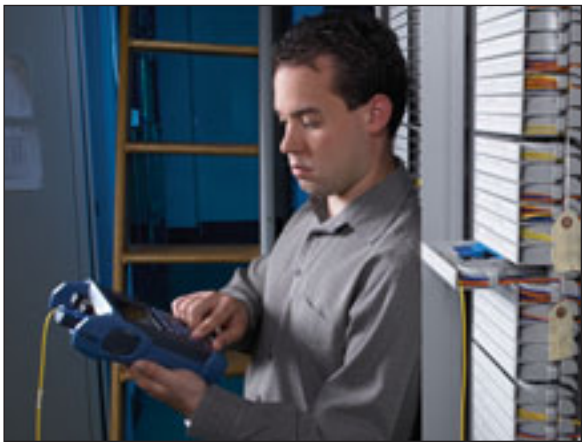
- Main USB port used to interface with a USB stick
- Secondary USB port allowing direct cable dowload to your PC using ActiceSync

Infrared Interface

Achieve fast, on-the-spot OTDR trace printing by using this standard infrared interface to send your file to any portable printer equipped with an infrared interface.

Fault Finder Option

When working in a central office (CO), it is critical to choose a device that will easily and quickly locate a fault, a simple tool that requires as little manipulation as possible, such as the AXS-100 Access OTDR. Equipped with the Fault Finder mode option, the AXS-100 automatically sets itself up for optimal, quick and reliable detection of the distance to the end of the fiber.



SPECIFICATIONS [a]

Dynamic range [b] (dB), (1310/1550/1625)	29/28/28
Pulse width (ns)	10, 30, 100, 275, 1000, 2500, 10 000
Event dead zone [c] (–45 dB), typ. (m)	2.5
Attenuation dead zone [c] (–45 dB), typ. (m)	11/12/12
Linearity (dB/dB)	± 0.05
Loss threshold (dB)	± 0.05
Loss resolution (dB)	0.01
Sampling resolution (m)	0.16 to 5
Sampling points	Up to 30 000
Distance uncertainty [d] (m)	± (1 + 0.005 % x distance + sampling resolution)
Distance range (km)	0.65 to 160
Typical real-time refresh (s)	0.5
Memory capacity	500 traces
Measurement time	User-defined
Stable source output power [g] (dBm)	–9
Visual fault locator (optional)	Laser, 650 nm ± 10 nm CW Typical P_{out} in 62.5/125 µm: 3 dBm (2 mW)

OPTIONAL POWER METER [e]

Calibrated wavelengths (nm)	850, 1300, 1310, 1490, 1550, 1625, 1650
Power range (dBm)	26 to –64 (GeX 2 mm)
Uncertainty	±5 % ± 0.4 nW (up to 5 dBm)
Display resolution (dB)	0.01 (–54 dBm to P_{max}) 0.1 (–54 dBm to –64 dBm) 1 (–64 dBm to min)
Automatic offset nulling range [f]	Maximum power to –39 dBm
Tone detection (Hz)	270/1000/2000

GENERAL SPECIFICATIONS

Size (H x W x D)		250 mm x 125 mm x 75 mm (9 $^{7}/_{8}$ in x 4 $^{15}/_{16}$ in x 3 in)
Weight		1 kg (2.2 lb)
Temperature	operating	–10 °C to 50 °C (14 °F to 122 °F)
	storage	–40 °C to 70 °C (–40 °F to 158 °F)
Relative humidity		0 % to 95 % non-condensing
Power		Li-ion batteries 8 hours of continuous operation as per Bellcore TR-NWT-001138
Warranty (years)		1

Notes

a. All specifications valid at 23 °C ± 2 °C (73.4 °F ±3.6 °F) with an FC/PC connector, unless otherwise specified.
b. Typical dynamic range with 10 µs pulse and three-minute averaging at SNR = 1.
c. Typical dead zone for singlemode reflectance below –45 dB, using a 10 ns pulse.
d. Does not include uncertainty due to fiber index.
e. At 23 °C ± 1 °C, 1550 nm and with FC connector. With OTDR in idle mode, battery operated.
f. For ±0.05 dB, from 18 °C to 28 °C
g. Typical output power value at 1550 nm. For AXS-100-023B-04B typical value is –6 dBm.

LASER SAFETY

21 CFR 1040.10 AND IEC 60825-1:1993+A2:2001
CLASS 1M WITHOUT VFL OPTION
CLASS 3R WITH VFL OPTION

ORDERING INFORMATION

AXS-100-XX-XX-XX-XX-XX-XX-XX-XX-XX

Model
AXS-100-003B = Access OTDR 1550 nm, 28 dB
AXS-100-023B = Access OTDR 1310/1550 nm, 29/28 dB
AXS-100-034B = Access OTDR 1550/1625 nm, 28/28 dB
AXS-100-000 = None [a]

Connector
EA-EUI-28 = APC/DIN 47256
EA-EUI-89 = APC/FC, narrow key
EA-EUI-91 = APC/SC
EA-EUI-95 = APC/E-2000
EI-EUI-28 = UPC/DIN 47256
EI-EUI-76 = UPC/HMS-10/AG
EI-EUI-89 = UPC/FC, narrow key
EI-EUI-90 = UPC/ST
EI-EUI-91 = UPC/SC
EI-EUI-95 = UPC/E-2000

Second port
00 = None
04B = Filtered 1625 nm [b]

Second connector
EA-EUI-28 = APC/DIN 47256
EA-EUI-89 = APC/FC, narrow key
EA-EUI-91 = APC/SC
EA-EUI-95 = APC/E-2000
EI-EUI-28 = UPC/DIN 47256
EI-EUI-76 = UPC/HMS-10/AG
EI-EUI-89 = UPC/FC, narrow key
EI-EUI-90 = UPC/ST
EI-EUI-91 = UPC/SC
EI-EUI-95 = UPC/E-2000

Software summary kit [c]
SK1 = Smart Kit including macrobending detection, pass/fail and fault finder
SK2 = IP testing
SK3 = Fiber Inspection Probe software [d]

Probe
FP = Probe option
FP1 = Probe connector cable and 200X probe
FP5 = Probe connector cable and 200X/400X probe

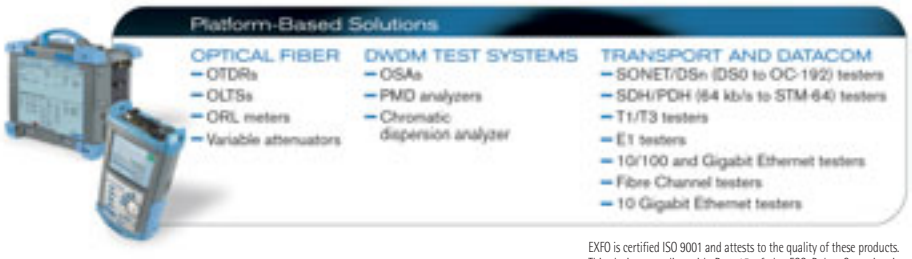
VFL
00 = Without visual fault locator
VFL = With visual fault locator

Connector adapter
FOA-12 = Biconic
FOA-14 = D4, D4/PC
FOA-16 = SMA/906
FOA-22 = FC, FC (PC/SPC/UPC/APC), NEC-D3
FOA-28 = DIN 47256 (LSA): DIN 47256 (PC/APC)
FOA-32 = ST, ST (PC/SPC/UPC)
FOA-40 = Diamond HMS-0, HFS-3 (3.5 mm)
FOA-54 = SC (PC/SPC/UPC/APC)
FOA-76 = FSMA HMS-10/AG, HFS-10/AG
FOA-78 = Radiall EC
FOA-84 = Diamond HMS-10, HFS-13
FOA-96B = E-2000/APC
FOA-98 = LC
FOA-99 = MU

Power meter
00 = Without power meter
PM2X = With power meter Gex

Note
a. Available with second port only.
b. Not available with 1550/1625 nm.
c. A set of software options is also available.
d. Mandatory with FP1 or FP5.

Example: AXS-100-023B-EI-EUI-89-04B-EA-EUI-91-PM2X-FOA-22-VFL-FP1-SK1-SK2-SK3



EXFO Corporate Headquarters > 400 Godin Avenue, Quebec City (Quebec) G1M 2K2 CANADA | Tel.: 1 418 683-0211 | Fax: 1 418 683-2170 | info@EXFO.com

Toll-free: 1 800 663-3936 (USA and Canada) | www.EXFO.com

EXFO Montreal	2650 Marie-Curie	St-Laurent (Quebec) H4S 2C3 CANADA	Tel.: 1 514 856-2222	Fax: 1 514 856-2232
EXFO Toronto	160 Drumlin Circle	Concord (Ontario) L4K 3E5 CANADA	Tel.: 1 905 738-3741	Fax: 1 905 738-3712
EXFO America	3701 Plano Parkway, Suite 160	Plano, TX 75075 USA	Tel.: 1 800 663-3936	Fax: 1 972 836-0164
EXFO Europe	PARIS > Le Dynasteur, 10/12 rue Andras Beck	92366 Meudon la Forêt Cedex FRANCE	Tel.: +33.1.40.83.85.85	Fax: +33.1.40.83.04.42
	SOUTHAMPTON > Omega Enterprise Park, Electron Way	Chandlers Ford, Hampshire S053 4SE ENGLAND	Tel.: +44 2380 246810	Fax: +44 2380 246801
EXFO Asia	151 Chin Swee Road, #03-29 Manhattan House	SINGAPORE 169876	Tel.: +65 6333 8241	Fax: +65 6333 8242
EXFO China	No.88 Fuhua, First Road Central Tower, Room 801, Futian District	Shenzhen 518048, CHINA	Tel.: +86 (755) 8203 2300	Fax: +86 (755) 8203 2306
	Beijing New Century Hotel Office Tower, Room 1754-1755 No. 6 Southern Capital Gym Road	Beijing 100044 P. R. CHINA	Tel.: +86 (10) 6849 2738	Fax: +86 (10) 6849 2662

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