Test & Inspection

FAFL

FlexScan® FS200 Single-mode OTDR

Pocket-sized, Performance-packed, User-friendly, and Affordable

FAFL
FlexScan App

ANDROID APP ON
Google play

Available on the
App Store

Features

- FleXpress® mode completes OTDR tests in <5 seconds
- Test up to 1:64 PON with 25 m PON dead zone
- Easy to understand LinkMap® results with pass/fail indications
- Single, dual or triple wavelength single-mode
- Single port for in- and out-of-service OTDR tests
- Integrated source, power meter, VFL (visual fault locator)
- Integrated MPO Switch control via USB
- Rugged, lightweight, hand-held for field use

Applications

- PON or point-to-point network verification or troubleshooting
- OTDR testing plus insertion loss and power measurements
- Locate faults exceeding industry or user pass/fail thresholds
- Visually pinpoint location of macro-bends or breaks

AFL's FlexScan FS200 OTDR is an all-in-one solution for detecting, identifying, locating, and resolving single-mode optical network issues. It is designed for both novice and expert technicians working in a range of environments, from FTTH PON to point-to-point networks. It applies industry-standard or user-set pass/fail criteria and displays results using LinkMap color-coded icons that immediately show the health of the network. The FlexScan FS200 automates test setup, shortens test time, and simplifies results interpretation improving efficiency and reducing costs.

All-in-one test capability: The FlexScan FS200 includes an integrated VFL, power meter, and light source. It can be easily paired to AFL's award-winning FOCIS family of inspection scopes, ensuring technicians have everything they need to locate and quickly resolve optical network issues.

Performance-packed: With SmartAuto multi-pulse acquisition, up to 37 dB dynamic range, and best-in-class 25 m PON dead zone, FlexScan FS200 PON OTDRs test FTTH PONs up to 1:64 while still detecting and measuring events only meters apart.
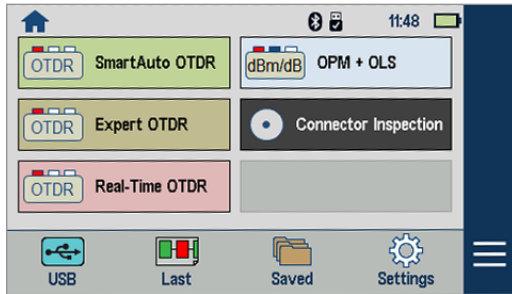
Fast! FleXpress mode completes dual-wavelength tests in <5 seconds – 10 x faster than conventional OTDRs! For multi-fiber testing, FS200s automatically control AFL's MFS Multi-Fiber Switch (12-fiber MPO switch) to further reduce multi-fiber test time.

Pocket-sized: At 3.5 x 6 x 1.75 in. (86 x 160 x 43 mm) and less than one pound (0.4 kg), FlexScan FS200 OTDRs truly fit in your pocket, yet still provide a large, bright indoor/outdoor touchscreen display, and all-day operation.

Multiple sharing and reporting options: Results can be stored internally, saved to a USB, or wirelessly uploaded via the free FlexScan App for real-time reporting using the included TRM® 3.0 Test Results Manager software.

Convenient cost-saving kits: Bundle the FlexScan FS200 with your choice of launch cable, FOCIS Flex connector inspection probe and tips, and/or AFL's universal optical fiber identifier (OFI-BIPM) for significant cost-savings!

FlexScan® FS200 Single-mode OTDR

Dramatically Reduces Test Time

In SmartAuto mode, FlexScan OTDRs automatically analyze and test the network using a variety of network-optimized settings to precisely locate, characterize and identify network events with one button push. Loss and reflectance are measured for connectors, splices, splitters and macro-bends. FlexScan even checks for live fiber and verifies OTDR launch quality before initiating a test.

FlexScan's new FleXpress mode completes dual-wavelength tests in seconds, reducing test time by a factor of 10x compared to conventional OTDRs. For multi-fiber testing, FleXpress mode automatically controls AFL's MPO Switch, testing 12 fibers at the touch of a single button.
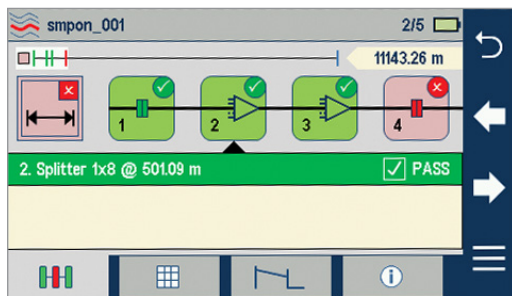
Simplifies Network Troubleshooting

LinkMap with pass/fail enables even novice users to easily and accurately troubleshoot optical networks. LinkMap presents an icon-based view of the tested network clearly identifying fiber start, end, connectors, splices, PON splitters, and macro-bends.

A LinkMap summary provides end-to-end link length, loss and ORL. Loss and reflectance and displayed with clear pass/fail indications. Users can instantly toggle between LinkMap and Trace views.

Connectivity

FlexScan OTDRs easily pair with AFL's ward-winning FOCIS® family of connector inspection probes for fast, easy single-fiber and/or multi-fiber connector end-face inspection.

FlexScan results can then be transferred wirelessly via the free FlexScan App to a smart device for real-time reporting using the included Test Results Manager (TRM 3.0) PC-based software. This real-time monitoring can help avoid mistakes in the field that will require future truck rolls.

OTDR, OLTS, and VFL Testing with a Single Tool

FlexScan optionally includes a Wave ID optical light source (OLS) and optical power meter (OPM). With Wave ID, the OPM auto-synchronizes to a single or multi-wavelength Wave ID optical signal transmitted by an AFL light source. The OPM reports detected wavelengths and measures power and loss at each wavelength, saving significant test time and eliminating setup errors.

The integrated VFL's eye-safe red laser enables users to visually pinpoint the location of macro-bends and fiber breaks often found in splice closures and fiber cabinets.
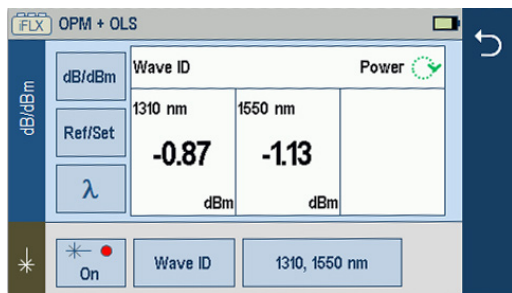
FlexScan® FS200 Single-mode OTDR

FlexScan OTDRs are available with 1310/1550/1625, 1310/1550/1650, 1310/1550, and 1550 or 1650 nm only wavelengths. The 1310 and 1550 nm versions are available with integrated optical light source (OLS), optical power meter (OPM), visual fault locator (VFL) and Bluetooth/WiFi.

Specifications[a]

MODEL: FS200-XXX	-50	-60	-100	-300	-303	-304
OTDR						
Emitter Type	Laser					
Safety Class [b]	Class I					
Fiber Type	Single-mode					
Wavelengths (nm)	1550	1650	1310/1550	1310/1550	1310/1550/1625	1310/1550/1650
Center λ Tolerance [c]	1310/1550/1650: ± 20 nm; 1625 +30/-5 nm					
Dynamic Range [d] (dB)	28	37	32/30	37/36	37/36/37	37/36/37
Event Dead Zone [e] (m)	1.0	0.8	0.8	0.8	0.8	0.8
Atten. Dead Zone [f] (m)	6.0	3.5	3.6	3.5	3.5	3.5
PON Dead Zone [g] (m)	N/A	30	N/A	25/25	25/25/30	25/25/30
Pulse Widths	3, 5, 10, 20, 30, 50, 100, 200, 300, 500 ns; 1, 2, 3, 10 µs; 20 µs (FS200-300/300/304 only)					
Range Settings	250 m to 240 km					
Data Points	Up to 300,000 (Expert mode .SOR file)					
Data Spacing	5 cm to 16 m					
Index of Refraction	1.3000 to 1.7000					
Distance Uncertainty	±(1 + 0.003% x distance + data point spacing) m					
Linearity (dB/dB)	±0.05					
Trace File Format	Telcordia SR-4731 Issue 2 compatible .SOR					
Trace Storage Medium	4 GB internal memory (> 5000 traces typical); External USB memory stick					
Data Transfer to PC	USB cable or Bluetooth® (option)					
OTDR Modes	SmartAuto, Expert, Real-time					
FleXpress Fast Test	FS200-300/303/304					
Display Modes	LinkMap Summary, LinkMap Events, Trace					
Refresh Rate	Up to 4 Hz (Real-time mode)					
Live Fiber Protection	No OTDR damage with input power ≤ +15 dBm for wavelength(s) in range 1260 to 1675 nm					
Live Fiber Detection	Reports live fiber with input signal ≥ -35 dBm for wavelength(s) in range 1260 to 1675 nm					
PON Filter Isolation	>50 dB for 1260 nm ≤ wavelength ≤1600 nm					
Live PON OTDR Test	1625 or 1650 nm using filtered detector					

MODEL: FS200-XXX	-50	-60	-100	-300	-303	-304
VISUAL FAULT LOCATOR (VFL)						
Emitter Type	Visible red laser, 650 ±20 nm					
Safety Class [b]	Class II					
Output Power	0.8 mW into single-mode fiber (-1 dBm ±0.5 dB)					
Modes	CW, 2 Hz flashing					
OPTICAL LASER SOURCE - OLS (Optional)						
Emitter Type	Laser					
Safety Class [b]	Class I					
Fiber Type	Single-mode					
Wavelengths (nm)	1550	N/A	1310/1550	1310/1550	1310/1550	1310/1550
Center λ Tolerance	±20 nm (CW mode)					
Spectral Width (FWHM)	5 nm (maximum)					
Internal Modulation	270 Hz, 330 Hz, 1 kHz, 2 kHz, CW, Wave ID					
Wave ID	Compatible with AFL OPM/OLS					
Output Power Stability	≤ ±0.1 dB (15 minutes); ≤ ±0.15 dB (8 hours)					
Output Power	-3 dBm ±1.5 dB					
OPTICAL POWER METER -OPM (Optional)						
Calibrated Wavelengths	1310, 1490, 1550, 1625, 1650 nm					
Detector Type	InGaAs, 1 mm diameter					
Measurement Range	+23 to -50 dBm					
Tone Detect Range	+3 to -35 dBm					
Accuracy	±0.25 dB					
Resolution	0.01 dB					
Measurement Units	dB, dBm or Watts (nW, µW, mW)					
GENERAL						
Size (in boot)	86 x 160 x 43 mm					
Weight	0.4 kg					
Operational Temperature [h]	-10 °C to +50 °C, 0 to 95 % RH (non-condensing)					
Storage Temperature	-40 °C to +70 °C, 0 to 95 % RH (non-condensing)					
Power	Rechargeable Li-Pol or AC adapter					
Battery Life	>12 hours, Telcordia test conditions					
Display	4.3 in color touchscreen LCD, 480x272, backlit					
USB Ports	1 host; 1 micro-USB function					
Bluetooth (optional)	Compatible with Windows PC, Android					

Notes:

a. All specifications valid at 25 °C unless otherwise specified.
b. FDA 21 CFR 1040.10 & 1040.11, IEC 60825-1: 2014.
c. Using 10 ns pulse width.
d. SNR=1, longest range and pulse width, 3-minute averaging.
e. Maximum distance between two points 1.5 dB down each side of a reflective peak caused by an event with reflectance ≤ -45 dB using 3 or 5 ns pulse.
f. Maximum distance from the start of a trace spike caused by an event with a -45 dB (or smaller) reflectance, to the point where the trace returns to and stays within ±0.5 dB of backscatter. Test pulse width is 3 or 5 ns.
g. Recovery to within 0.5 dB of backscatter after 1:16 splitter (≤13 dB loss) using 100 ns pulse width.
h. Max temperature while charging is +45 °C.

FlexScan® FS200 Single-mode OTDR

FlexScan Kit Configurations

All kits include a FlexScan FS200 with AC charger, battery, carry strap, SC/2.5 mm connector adapters, TRM® 3.0, USB cable, and carry case.

Ordering Information

FS200-[MOD]-[KIT]-[PW]-[C]-[CC]-[LNG]-[AC]-[FR]-[TIP] where:

[MOD]	FS200 FlexScan OTDR Configuration
50	1550 nm only Troubleshooting OTDR
60	1650 nm filtered Live PON Troubleshooting OTDR
100	1310/1550 nm Verification and Troubleshooting OTDR
300	1310/1550 Pt-to-Pt & PON Verification and Troubleshooting OTDR
303	1310/1550/1625 Pt-to-Pt and PON Verification and Troubleshooting OTDR
304	1310/1550/1650 Pt-to-Pt and PON Verification and Troubleshooting OTDR

[KIT]	FS200 FlexScan Kit Configuration
BAS	Includes: FS200, soft case, TRM 3.0 Basic, USB cable [a]
PLUS	Includes: BAS kit plus 150 m SMF & MMF Fiber Rings, One-Click Cleaner, upgrade to TRM 3.0 Advanced, user-selected soft or hard carry case
PRO	Includes: PLUS kit plus FOCIS Flex with two user-selected adapter tips
BIPM	Includes: PRO kit plus OFI-BIPM
MPO	MPO kit includes FlexScan plus MFS Multi-Fiber Switch, MPO launch cable, OTDR-to-Switch patch cord, OTDR-to-Switch USB cable

[PW]	Power Meter / Wireless Option
P0-W0	No Source, Power Meter, or Bluetooth/WiFi (FS200-50/60/100 only)
P0-W1 [b]	No Source or Power Meter; Includes Bluetooth/WiFi (FS200-300/304 only)
P1-W0	No Bluetooth/WiFi (-303/304 only); Includes Source, Power Meter
P1-W1 [b]	Includes Source, Power Meter, Bluetooth/WiFi (all models except -50)

[C]	OTDR / Source Connector Type
A	APC (recommended)
U	UPC

[CC] [c]	Carry Case Option (PLUS, PRO, BIPM Kits)
S1	Large soft case for FS200, fiber ring, FOCIS Flex, OFI-BIPM, accessories
S2	Medium soft case for FS200, fiber ring, FOCIS Flex, accessories
H1	Hard carry case for FS200, fiber ring, FOCIS Flex, OFI-BIPM, accessories

[LNG]	Language	[LNG]	Language	[LNG]	Language
ENG	English	FIN	Finnish	POL	Polish
CHS	Chinese Simp.	FRA	French	POR	Portuguese
CHT	Chinese Trad.	ITA	Italian	SPA	Spanish
CZE	Czech	JPN	Japanese	TUR	Turkish
DEU	German	KOR	Korean	VNM	Vietnamese
DNK	Danish	NOR	Norwegian		

[AC]	Destination Country	AC Plugs
US	USA	2-pin, US
EU	European Union	2-pin, EU
UK	United Kingdom	3-pin, UK
CN	China, Australia	2-pin, SAA

[FR]	150 m SMF Fiber Ring
Blank	N/A in Basic kits
SC/SC	FR-SMF-150-SC-SC
SC/FC	FR-SMF-150-SC-FC
SC/LC	FR-SMF-150-SC-LC
SC/ST	FR-SMF-150-SC-ST
SC/ASC	FR-SMF-150-SC-ASC
SC/AFC	FR-SMF-150-SC-AFC
SC/ALC	FR-SMF-150-SC-ALC
LC/LC	FR-SMF-150-LC-LC
LC/ASC	FR-SMF-150-LC-ASC
LC/ALC	FR-SMF-150-LC-ALC
ASC/FC	FR-SMF-150-ASC-FC
ASC/ST	FR-SMF-150-ASC-ST

[FR]	150 m SMF Fiber Ring
ASC/ASC	FR-SMF-150-ASC-ASC
ASC/AFC	FR-SMF-150-ASC-AFC
ASC/ALC	FR-SMF-150-ASC-ALC
ALC/ALC	FR-SMF-150-ALC-ALC
FC/FC	FR-SMF-150-FC-FC
FC/ST	FR-SMF-150-FC-ST
FC/LC	FR-SMF-150-FC-LC
FC/AFC	FR-SMF-150-FC-AFC
AFC/AFC	FR-SMF-150-AFC-AFC
ASC-AE2000	FR-SMF-150-ASC-AE2000
SC-E2000	FR-SMF-150-SC-E2000

[TIP]	FOCIS Flex Tips and Cleaning (PRO only)
Blank	Option not available in Basic & PLUS kits
SC	SC-UPC bulkhead tip, 2.5 mm UPC ferrule tip, 2.5 mm cleaning
FC	FC-UPC bulkhead tip, 2.5 mm UPC ferrule tip, 2.5 mm cleaning
LC	LC-UPC bulkhead tip, 1.25 mm UPC ferrule tip, 1.25 mm cleaning
ASC	SC-APC bulkhead tip, 2.5 mm APC ferrule tip, 2.5 mm cleaning
AFC	FC-APC bulkhead tip, 2.5 mm APC ferrule tip, 2.5 mm cleaning
ALC	LC-APC bulkhead tip, 1.25 mm APC ferrule tip, 1.25 mm cleaning

CONNECTOR ADAPTER	AFL NO.		
	OTDR/OLS PORT	OPM PORT	VFL PORT
FC	2900-50-0002MR	2900-52-0001MR	N/A
SC	2900-50-0003MR	2900-52-0002MR	N/A
ST	2900-50-0004MR	2900-52-0003MR	N/A
LC	2900-50-0006MR	2900-52-0004MR	N/A
SC/APC	2900-50-0011MR	N/A	N/A
2.5 mm Universal	N/A	2900-52-0005MR	2900-50-0007MR
1.25 mm Universal	N/A	2900-52-0006MR	2900-50-0010MR

Notes:

a. Results can be transferred from FlexScan OTDR to TRM® 3.0 using USB cable, or performed wirelessly (W1 option) after downloading free FlexScan App. The FlexScan App is available as a free download from 'Google play' or 'App Store'.

b. FlexScans equipped with Bluetooth option (W1) support Bluetooth transfer of results via FlexScan App for remote reporting using TRM 3.0.

c. Basic kit always ships with S2 (Medium Soft Case); MPO kit always ships with MPO-specific soft case.

FlexScan® FS200 Single-mode OTDR

Test Management and Reporting Software

DESCRIPTION	AFL NO.
TRM 3.0 with Basic License (OTDR Trace/OLTS Viewer, Batch Editor and Reports), USB delivery (included with all FS200 kits)	TRM3-BASIC
TRM 3.0 upgrade from Basic to Advanced License, USB delivery	TRM3-UPGRADE
TRM 3.0 upgrade from Basic to Advanced License, email delivery	TRM3-UP-EMAIL
FlexScan App (Android Google play)	Free Download

Recommended Products

FOCIS Flex and FOCIS Lightning (Multi-Fiber) Connector Inspection

- Self-contained, tether-free, hand-held inspection solution
- Auto-focus and auto-centering for fast, easy inspection
- IEC, IPC and user-defined pass/fail analysis
- FOCIS Lightning: extremely fast multi-fiber auto-analysis for datacom and telecom inspection applications

OFI-BIPM Optical Fiber Identifier

- Works on all fiber types including BIF
- Trigger lock, positive stop for optimum detection
- Integrated optical power meter

Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
Safety/EMC/EMI	IEC	Compliant to IEC 61010-1 for safety requirements for electrical equipment
	EN	Compliant to EN 61010-1 for safety requirements for electrical equipment
	IEC	Compliant to IEC 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment
	Telcordia	Compliant to GR-196-CORE 4.5.1 for requirements on electromagnetic interference
	FCC	Compliant to code of federal regulations FCC 47 CFR 15 on unlicensed transmissions
	FDA	Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products
	IEC	Compliant to IEC 60825-1 for safety of laser products
RoHS	EU	Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3)
Test Method	TIA	Compliant to TIA-568.3-D for test and measurement requirements for premises optical fiber cabling and components
	IEC	Compliant to IEC 11801 for test and measurement requirements for optical fiber cabling for use within premises
	AS/NZS	Compliant to AS/NZS 3080 for test and measurement requirements for optical fiber cabling for use within premises
	TIA	Compliant to TIA-526-7 for test procedures for installed optical fiber cable plant
	TIA	Compliant to TIA-526-14 for test procedures for installed optical fiber cable plant
	IEC	Compliant to IEC 14763-3 for systems and methods for the inspection and testing of installed optical fiber cabling
	AS/NZS	Compliant to AS/NZS 14763.3 for systems and methods for the inspection and testing of installed optical fiber cabling
	IEC	Compliant to IEC 61280-4-1 for test procedures for installed optical fiber cable plant
	IEC	Compliant to IEC 61280-4-2 for test procedures for installed optical fiber cable plant
Generic Requirement	Telcordia	Compliant to GR-196-CORE for generic requirements for OTDR-type equipment
	Telcordia	Compliant to SR-4731 Issue 2 for OTDR data format
	IEC	Compliant to IEC 61746-1 for requirements on calibration of OTDR

Contact Sales@AFLglobal.com to schedule a demonstration or learn how to buy.

Visit www.AFLglobal.com/Test to learn more about FlexScan FS200 OTDR.

International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts