M700 Series OTDRs

Features

- Integrated OPM and VFL (650 nm)
- Full Auto, Expert, and Real-Time OTDR test modes
- Pass/Fail Event and Link Thresholds settings
- 6.5-inch transflective (indoor/outdoor) touch screen display
- Tool-free, switchable test port adapters
- Rechargeable Li-Ion battery (> 8 hours) or AC power
- USB host and function ports
- Bellcore (GR-196) .SOR file format
- Internal (1000s test results) and USB storage
- Windows® compatible software

Applications

- Tier 1 and 2 testing of premise networks
- Metro, FTTx, and Service Provider networks testing
- Interoffice networks
- Loss or power measurement storage
- Fault location with integrated VFL
- Splice verification
- Network documentation including Pass/Fail event analysis

The Noyes M700 from AFL Telecommunications is a compact, full-featured OTDR with an integrated Visual Fault Locator (VFL), an Optical Power Meter (OPM) capable of displaying up to three wavelengths simultaneously, and a large transflective touch screen display suitable for both indoor and outdoor operation. The M700 is offered in four models: 1310/1550 nm single-mode OTDR, 1310/1550/1625 nm single-mode OTDR, 850/1300/1310/1550 nm QUAD OTDR, and 850/1300/1310/1550nm Long Range QUAD OTDR.

The M700 OTDR supports Full Auto, Expert (manual), and Real-Time test modes, precision event analysis, dual-wavelength testing, rich file naming, and an intuitive job setup functionality. In addition to OTDR event analysis, pass/fail acceptance values can be set to alert the test operator of failing or marginal events. Using one of the Least Squares Approximation (LSA) loss methods, events may be added or deleted manually.

Thousands of OTDR and OPM test results can be stored internally or on the supplied USB drive, and are transferable via a USB cable or drive to a computer for viewing, printing and analyzing with supplied Windows® compatible software. Saved OPM loss values for a cable in one or two directions can be displayed in a table on the M700 for evaluation and comparison.

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M700 Series OTDRs

Specifications (All specifications valid at 25°C unless otherwise specified)

OTDR	SINGLE-MODE OTDR		LONG RANGE QUAD OTDR		QUAD OTDR	
	DUAL-WAVE	TRIPLE-WAVE	MULTIMODE	SINGLE-MODE	MULTIMODE	SINGLE-MODE
Emitter Type	Laser					
Safety Class	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03					
Center Wavelengths	1310/1550 nm	1310/1550/1625 nm	850/1300 nm	1310/1550 nm	850/1300 nm	1310/1550 nm
Wavelength Tolerance	± 25/25 nm	± 25/25/10 nm	± 25/25 nm	± 25/25 nm	± 20/30 nm	± 20/30 nm
Dynamic Range (SNR = 1)	40/38 dB	40/38/38 dB	24/24 dB [1]	39/37 dB	22 dB [1]	26 dB
Event Dead Zone	0.8 m [2]	0.8 m [2]	0.9 m [2]	0.9 m [2]	1.5 m [4]	1.5 m [4]
Attenuation Dead Zone	4.5 m [3]	4.5 m [3]	4.5 m [3]	4.5 m [3]	9 m [5]	9 m [5]
Pulse Widths	5, 10, 30, 100, 300 ns; 1, 3, 10, 20 µs		5,10, 30, 100, 300 ns; 1µs	5,10, 30, 100, 300 ns; 1, 3, 10, 20 µs	10, 30, 100, 300 ns; 1 µs	10, 30, 100, 300 ns; 1, 3, 10 µs
Range Settings	250 m to 256 km		250 m to 64 km	250 m to 256 km	250 m to 64 km	250 m to 208 km
Sampling Points	Max. 64,000 points		Max. 64,000 points		Max. 16,000 points	
Minimum Data Point Spacing	0.125 m		0.125 m		0.25 m	
Group Index of Refraction (GIR)	1.4000 to 1.6000		1.4000 to 1.6000		1.4000 to 1.6000	
Distance Uncertainty (m) [6]	± (1 + 0.0005% x distance + data point spacing)				± (1 + 0.005% x distance + data point spacing)	
Linearity [7]	± 0.05 dB/dB		± 0.05 dB/dB		± 0.05 dB/dB	
Trace File Format	SR-4731 (GR-196-CORE Appendix A & B and SR-4731)					
Trace File Storage Media	Internal flash memory					
	USB flash drive (2 USB host ports)					
	Downloadable from OTDR directly to PC					
Trace File Storage Capacity	Internal 1000 fibers					
Data Transfer to PC	USB					
OTDR Modes	Full Auto, Real Time, Expert					
Tool Free Adapters	SC/ST/FC/LC					

1 62.5µm fiber.

2 Typical distance between the two points 1.5 dB down each side of an event with reflection < -45 dB for SM and <-40 dB (unsaturated) for MM using a 5 ns pulse width.

3 Typical distance from event location to point where trace is within 0.5 dB of backscatter caused by an event with reflection < -45 dB for SM and <-40 dB (unsaturated) for MM using a 5 ns pulse width.

4 Typical distance between the two points 1.5 dB down each side of an event with reflection < -45 dB for SM and <-40 dB (unsaturated) for MM using a 10 ns pulse width.

5 Typical distance from event location to point where trace is within 0.5 dB of backscatter caused by an event with reflection < -45 dB for SM and <-40 dB (unsaturated) for MM using a 10 ns pulse width.

6 Does not include GIR uncertainty.

7 Typical.

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M700 Series OTDRs

Specifications (All specifications valid at 25°C unless otherwise specified)

POWER METER	SINGLE-MODE OTDR		LONG RANGE QUAD OTDR		QUAD OTDR	
	DUAL-WAVE	TRIPLE-WAVE	MULTIMODE	SINGLE-MODE	MULTIMODE	SINGLE-MODE
Calibrated Wavelengths	850, 980, 1300, 1310, 1490, 1550, 1625 nm (displays up to 3 simultaneously)		850, 980, 1300, 1310, 1490, 1550, 1625 nm (displays up to 3 simultaneously)		850, 980, 1300, 1310, 1490, 1550, 1625 nm (displays up to 3 simultaneously)	
Detector Type	Filtered InGaAs detector		InGaAs 2mm		InGaAs 2mm	
Measurement Range (dBm)	+26 to -50 dBm		+6 to -70 dBm		+6 to -70 dBm	
Accuracy [1]	±0.25		±0.25		±0.25	
Measurement Units	dB, dBm, mW		dB, dBm, mW		dB, dBm, mW	
Wavelength ID [2]	Yes		Yes		Yes	
Set Reference	Yes		Yes		Yes	
Data Storage	Yes		Yes		Yes	
Tone Detection	270 Hz, 330 Hz, 1 kHz, 2 kHz		270 Hz, 330 Hz, 1 kHz, 2 kHz		270 Hz, 330 Hz, 1 kHz, 2 kHz	

1 Accuracy measured at 25ºC and -10 dBm per N.I.S.T. standards.

2 Automatic wavelength identification and switching when used with Noyes Wave ID Series Light Sources.

VISUAL FAULT LOCATOR	SINGLE-MODE OTDR	LONG RANGE QUAD OTDR	QUAD OTDR
Emitter Type	Laser		
Safety Class	Class II FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03		
Wavelength	650 nm		
Output Power (nominal)	0.8 mW		

GENERAL	SINGLE-MODE OTDR		LONG RANGE QUAD OTDR		QUAD OTDR	
Display	16.51 cm (6.5 in), color, transflective (indoor/outdoor) touch screen display					
Anti-Reflective (AR) Coating	Yes	Yes	Yes	Yes	—	—
Size	190.5 x 269.2 x 69.8 mm (7.5 x 10.6 x 2.75 in)					
Weight	2.36 kg (5.22 lb)					
Operating Temperature	-10 to +50°C, 0 to 90% RH (non-condensing)					
Storage Temperature	-20 to +60°C, 0 to 90% RH (non-condensing)					
Power	Rechargeable Li-Ion or AC power adapter					
Battery Life [1]	> 8 hours continuous OTDR testing					
Recharge Time [2]	4 hours					

1 Typical, depending on display brightness.

2 Typical, from fully discharged to fully charged state, unit may be operating. External battery charger available.

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M700 Series OTDRs

Ordering Information

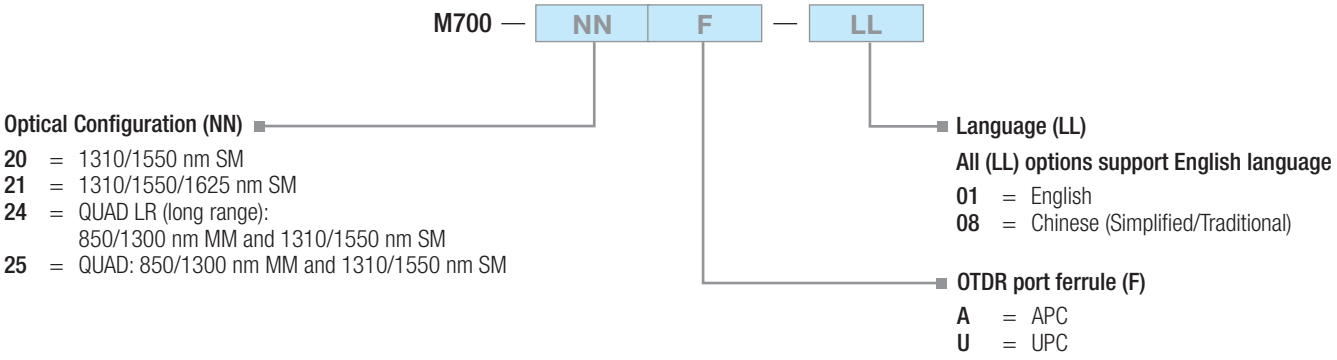
Each M700 model includes the M700 OTDR, USB Flash drive, PC software for OTDR trace analysis and OPM loss reporting, AC adapter, switchable test ports adapters, and cleaning accessories in a soft carry case (see table below).

OTDR	CARRY CASE	CLEANING PRODUCTS	OTDR PORT ADAPTERS	OPM PORT ADAPTERS	VFI PORT ADAPTERS
M700-20, M700-21	Soft case	One-Click Cleaner SC/ST/FC, 2.5mm	SC, FC, LC	SC, 2.5mm, 1.25mm	2.5mm 1.25mm
M700-24, M700-25	Soft case	One-Click Cleaner SC/ST/FC, 2.5mm	SC, ST, LC	SC, 2.5mm, 1.25mm	2.5mm 1.25mm

Model Configurator

When placing an order, select options as follows: Optical Configuration (NN), OTDR port ferrule (F), and Language (LL).

Example: M700 — 25U — 01 The model number M700 — 25U — 01 indicates M700 QUAD with UPC OTDR port ferrule, and English language option.



Specify power cord type (country) when ordering an M700 OTDR. One power cord is included with each AC adapter at no charge.
Additional power cords may be purchased separately.

MODEL	COUNTRY	DESCRIPTION
6000-00-0001MR	USA	3-conductor, IEC320, 115V, Type K
6000-00-0012MR	Euro	3-conductor, IEC320, 250V, Type B
6000-00-0015MR	UK	3-conductor, IEC320, 250V, Type D
6000-00-0016MR	Australia, China	3-conductor, IEC320, 250V, Type C
6000-00-0017MR	Denmark	3-conductor, IEC320, 250V, Type E
6000-00-0018MR	Japan	2-conductor, IEC320, 125V, Type M
6000-00-0019MR	Swiss	3-conductor, IEC320, 250V, Type L
6000-00-0020MR	Italy	3-conductor, IEC320, 250V, Type I
6000-00-0021MR	Israel	3-conductor, IEC320, 250V, Type H
6000-00-0022MR	India	3-conductor, IEC320, 250V, Type G

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M700 Series OTDRs

Ordering Information (continued)

Custom kits may be created by ordering the M700 OTDR model with H1 carry case option along with separately ordered accessories from the OTDR Accessories table and/or Cleaning Accessories table.

OTDR Accessories

MODEL	DESCRIPTION
M700-H1	Hard case with One-Click Cleaner SC/ST/FC (2.5mm), One-Click Cleaner LC/MU (1.25mm), and Cletop-SB white tape
FR1-M5-150-x1-x2	Standard, one fiber, 50/125µm, multimode, 150 m (492 ft)
FR1-L5-150-x1-x2	Standard, one fiber, Laser Optimized, 50µm multimode, 150 m (492 ft)
FR1-M6-150-x1-x2	Standard, one fiber, 62.5/125µm multimode,150 m (492 ft)
FR1-SM-150-y1-y2	Standard, one fiber, single-mode, 150 m (492 ft)
FR1-SM-500-y1-y2	Standard, one fiber, single-mode, 500 m (1640 ft)
FR1-SM-1000-y1-y2	Standard, one fiber, single-mode, 1000 m (3280 ft)
OLS2-Dual	OLS2-Dual laser light source with Wave ID, 1310/1550 nm
OLS4	OLS4 integrated LED and laser light source with Wave ID, 850/1300/1310/1550 nm
OFS 300-200C	Optical microscope, 200X magnification

x1, x2 — connectors for multimode cables, specify type [ST, SC, ASC (angled SC), FC, AFC (angled FC), LC]
y1, y2 — connectors for single-mode cables, specify type [ST, SC, ASC (angled SC), FC, AFC (angled FC), LC]
Other connector types, fiber types, and fiber lengths will be quoted upon request.

Cleaning Accessories

MODEL	DESCRIPTION	INCLUDES
8500-20-0900	Wet cleaning kit for SC/FC/ST/LC connectors	Cletop-SB, connector cleaning tips for 2.5mm ferrule in adapters or sockets (SC, FC, ST in adapters), connector cleaning tips for 1.25mm ferrule in adapters or sockets (LC, MU in adapters), optical quality cleaning fluid for fiber connector end faces
8500-20-0901	Dry cleaning kit	Cletop-SB, ACT-01 2.5mm adapter cleaning tips
8500-20-0902MZ	Fiber cleaning refill kit	FiberWipes™, Fiber Prep cleaning fluid
8500-05-0001MZ	One-Click Cleaner SC/ST/FC, 2.5mm	Qty = 1 cleaner
8500-05-0002MZ	One-Click Cleaner LC/MU, 1.25mm	Qty = 1 cleaner
8500-10-0016MZ	Cletop-SB with white tape	Qty = 1 cleaner
8500-10-0017MZ	Replacement tape for Cletop (white)	Qty = 1 reel

Preconfigured Accessories Kit M700 - H9

The M700 - H9 is a preconfigurated accessories kit (M700 OTDR is not included) for QUAD OTDR models M700-24 and M700-25.

CASE MODEL	CARRY CASE AND ACCESSORIES	FIBER RINGS [1] & TEST CORDS [2]	CLEANING PRODUCTS	ADAPTERS	
				OLS	OFS
M700 - H9	Hard cases, OLS4, OFS300-200C	SC/ST	One-Click Cleaner SC/ST/FC (2.5mm), Cletop-SB white tape	SC	2.5mm

1 (2) each - 150m (62.5µm, 50µm, SM)
2 (2) each - 2m (62.5µm, 50µm, SM)

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