

# Fiber Guardian—Test Modules Selection Chart

		OTDR TEST MODULE SELECTION (OTM)							PORT TYPE SELECTION		
		Dark Metro (DMET)	Dark Core (DCOR)	Active Metro (AMET)	Active Core (ACOR)	NODE OTDR/ iOLM (FTTx/PON)	CWDM (CDXX)		Custom <sup>1</sup> OTM	Standard/Expandable (ST/EX)	Optical Test Access Units (OTAUs)
<b>Key Characteristics</b>		1550 nm, 42 dB	1550 nm, 46 dB	1625 nm, 42 dB, live port (filtered)	Narrow 1650 nm, 43 dB, live port (filtered)	1625/1650 nm, high-resolution, PON optimized iOLM (Link-Aware) or OTDR mode	Narrow 1550 nm, 41 dB filtered on CWDM grid	Narrow, single-lambda 41 dB at: • 1310 nm or • 1490 nm or • 1510 nm or • 1610 nm	Typically, OTDR with more than one wavelength	<b>ST:</b> Fixed number of ports: 1, 4, 8, 12, 24 or 32 in SC-APC <b>EX:</b> Scalable ports from 8 (min.) to 96 (max.)	<b>M-OTAUs:</b> 8-to-96 port remote optical switch <b>Node OTAU:</b> 576- or 720-port switch, MPO 12 fibers
<b>Key Benefits</b>		Best value, multipurpose	Longest reach; highest measurement range on all pulses	Immune to live power noise in nonamplified links; can serve for mix of dark/lit fiber cases	Immune to live power noise in amplified or high-power transmission links	Test in PON using specific termination filter called a high-reflectance demarcation (HRD) filter (using Node iOLM application)	Pass into passive CWDM channels to save on additional couplers and associated losses/costs related to establishing optical monitoring routes		Flexibility, specific performance or usage	<b>ST:</b> Best value, low maintenance <b>EX:</b> Scalable, pay as you grow, reconfigurable, high density	<b>M-OTAUs:</b> Reduce fiber utilization for metro-edge, scalability over ST ports <b>Node OTAU:</b> Highest density, lower cost per port, large port count
APPLICATIONS											
ACCESS	<b>FTTx Cable Monitoring</b> (dark) using dedicated PON splitters and fibers to reach and monitor all distribution cables					Using HRDs; no need for TAMs <sup>2</sup> .				ST or EX	
	<b>FTTx Certification</b> Connectivity validation and E2E loss during provisioning or auditing activities					Using HRDs; E2E loss measured at 1650 nm on dark or lit (using TAMs) PONs				EX (reconfigurable)	
	<b>FTTH in-service surveillance</b> on PON					Using HRDs				ST (1-port)	Node OTAUs used with single port FG-750
METRO	<b>Business Services/SLA in Metro Access</b> Active, remote fiber testing and monitoring			Traffic at 1310 or 1550, or WDM (1310 and 1550)	Out-of-band CWDM traffic	Out-of-band (if PON is also used or will be used in future)				ST or EX	M-OTAUs (optional, typical with ST)
	<b>Carrier Ethernet Metro Rings</b> such as W- backhaul, cloud services, triple play, HFC, FTTN, etc.			DWDM traffic (not amplified); active/dark fiber mix	Out-of-band <sup>3</sup> CWDM traffic		In-band <sup>4</sup> CWDM typical on an express channel	In-band CWDM on a reserved channel		ST or EX	M-OTAUs (optional, typical with ST); Node OTAU for high-count, e.g., FTTN or HFC (optional for ST)
CORE	<b>FO Core Network Cable Monitoring</b> One to two fibers per cable span; maintenance fiber	✓	✓							ST	
	<b>Long Distance Amplified Links</b> Active, remote fiber testing and monitoring				As per ITU recommendation					ST	
CUSTOM	<b>Central and Fixed Remote Fiber Characterization</b> during deployment and/or prior to service activation on P2P fibers							✓		ST or EX	

<sup>1</sup> Custom models are treated on a request basis. Typically dual, or more wavelength modules for dark fiber characterization or similar applications.  
<sup>2</sup> TAMs: Test access modules are set; e.g., 24 WDMs are used to combine multiple OLTs and the OTDR signal to test/monitor live PONs.  
<sup>3</sup> Out-of-band involves coupling the OTDR wavelength onto the fiber carrying traffic in other wavelength bands using a WDM or broadband coupler.  
<sup>4</sup> In-band involves usage of the existing/planned CWDM couplers, and exclusive or temporary usage of a channel for remote testing and/or monitoring purposes.

