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[1] OTM**	**Standard/Expandable (ST/EX)**	**Optical Test Access Units (OTAUs)**
Key Characteristics	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	**ST:** Fixed number of ports: 1, 4, 8, 12, 24 or 32 in SC-APC **EX:** Scalable ports from 8 (min.) to 96 (max.)	**M-OTAUs:** 8-to-96 port remote optical switch **Node OTAU:** 576- or 720-port switch, MPO 12 fibers
Key Benefits	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	**ST:** Best value, low maintenance **EX:** Scalable, pay as you grow, reconfigurable, high density	**M-OTAUs:** Reduce fiber utilization for metro-edge, scalability over ST ports **Node OTAU:** Highest density, lower cost per port, large port count
APPLICATIONS									
ACCESS — **FTTx Cable Monitoring** (dark) using dedicated PON splitters and fibers to reach and monitor all distribution cables					✓ Using HRDs; no need for TAMs[2].			ST or EX	
ACCESS — **FTTx Certification** 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)	
ACCESS — **FTTH** in-service surveillance on PON					✓ Using HRDs			ST (1-port)	Node OTAUs used with single port FG-750
METRO — **Business Services/SLA in Metro Access** 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)
METRO — **Carrier Ethernet Metro Rings** such as W- backhaul, cloud services, triple play, HFC, FTTN, etc.			✓ DWDM traffic (not amplified); active/dark fiber mix	✓ Out-of-band[3] CWDM traffic		✓ In-band[4] 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 — **FO Core Network Cable Monitoring** One to two fibers per cable span; maintenance fiber	✓	✓						ST	
CORE — **Long Distance Amplified Links** Active, remote fiber testing and monitoring				✓ As per ITU recommendation				ST	
CUSTOM — **Central and Fixed Remote Fiber Characterization** during deployment and/or prior to service activation on P2P fibers							✓	ST or EX	

[1] Custom models are treated on a request basis. Typically dual, or more wavelength modules for dark fiber characterization or similar applications.
[2] 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.
[3] Out-of-band involves coupling the OTDR wavelength onto the fiber carrying traffic in other wavelength bands using a WDM or broadband coupler.
[4] 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.