EKINOPS PM OTDR
Optical Time Domain Reflectometer

KEY FEATURES & BENEFITS

- Quickly identifies fiber cut locations
- Dual span monitoring from a single card
- Extreme receiver sensitivity for instantaneous fault detection
- Pluggable OTDR SFP
- WDM filters for easy insertion to existing line system
- Remotely manageable from the NOC

APPLICATIONS

- Remote fault detection and isolation
- Fiber level fault monitoring
- Span level fault monitoring
- Long span monitoring

OVERVIEW

The ability to quickly identify and isolate network outages is critical function for any network operator. Without it, operators not only have to explain to their customers why the outage occurred, they also must compensate them for any period of service unavailability in excess of their Service Level Agreement *(SLA)*. In an industry where Average Revenue per User *(ARPU)* is used as a key metric for evaluating an operator's financial health, the ability to avoid SLA penalties has measurable impact on the bottom line.

With the EKINOPS PM OTDR module, network operators have the ability to determine the fault location based on the reflection point of the OTDR signal. Depending on the Optical Return Loss *(ORL)* induced by the fiber defect, up to 65 dB round trip loss can be detected, corresponding to typically 40 kms from the terminal.
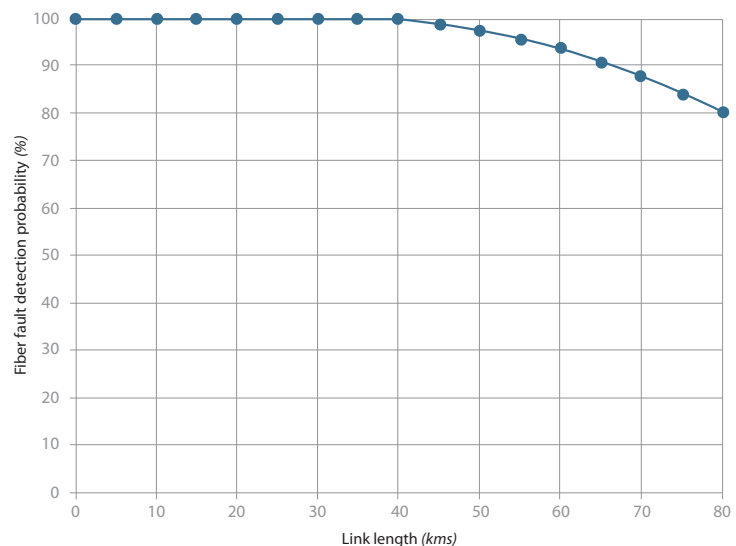

Figure 1: Fiber fault detection from one end — randomly distributed fault

This ability allows them to dispatch technicians to the correct location saving the time and effort normally associated with locating faults such as fiber cuts. The EKINOPS PM OTDR can be deployed in multiple configurations —per-span, per-cable or long span. In a per-span application, a PM OTDR is deployed at the beginning of each span allowing each fiber — East and West — to be monitored individually:
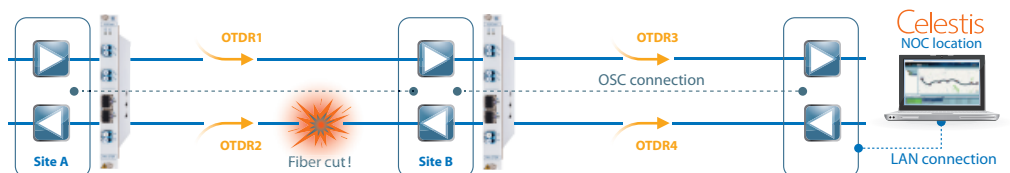

Figure 2: EKINOPS PM OTDR per-span monitoring

In a per-cable configuration, a single PM OTDR module can be used to monitor two spans on a fiber pair in the same cable:
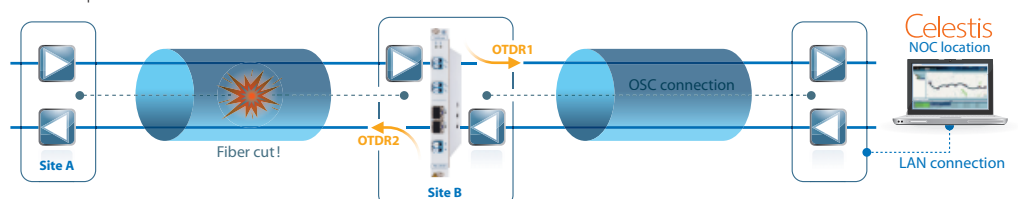

Figure 3: EKINOPS PM OTDR per-cable monitoring

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In long span applications, deploying a PM OTDR on each end provides fault detection and isolation at distances up to 80 kms, eliminating the need for mid-span access at an intermediate point without sacrificing network visibility:
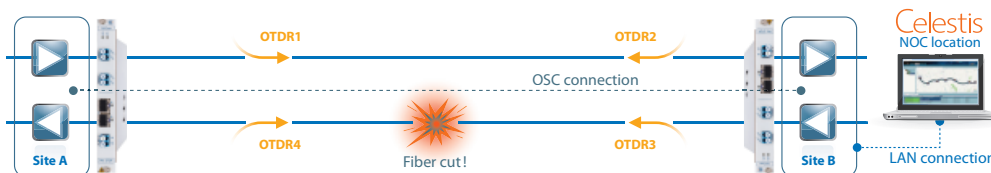

*Figure 4:
EKINOPS PM OTDR
long span monitoring*

MANAGEMENT

The EKINOPS PM OTDR can be managed through SNMP or via the Ekinops standard element level management interfaces, which include a CLI *(Command Line Interface)* and an Ekinops java-based GUI *(Graphical User Interface)*. The CLI is accessible via SSH and Telnet remotely or via a local serial port locally on the Management board.

Complete performance monitoring and management is provided, including laser shut off. Digital Diagnostics Management *(DDM)* is supported for the SFP interfaces. This includes link status, transmit *(TX)* and receive *(RX)* signal power monitoring, and operational temperature, as well as manufacturer and transceiver model. The module is also supported by Celestis**NMS**, the Ekinops Network Manager.

SPECIFICATIONS

• OTDR INTERFACES

Optical interface	SFP_OTDR
Number of ports	2

• LINE INTERFACES

Optical interface	LC/PC
Number of ports	2

• TERMINAL (TERM.) INTERFACE

Optical interface	LC/PC
Number of ports	1

• PERFORMANCE

Wavelength	1610 nm
Launch power	>+ 13 dBm
Receive sensitivity	<-52 dBm
Resolution	<10 m
Line insertion loss	<1 dB

• MANAGEMENT

MIB	SNMP V2c private MIB

• PHYSICAL SPECIFICATIONS

Module size	1 slot
Operating temperature	0°C to +50°C / +50°F to +122°F
Storage temperature	-20°C to +85°C / -4°F to +185°F
Typical power consumption	7W
Max. power consumption	15W *(includes client optics)*

• INDICATORS

Status	HW ready, SW ready
Alarm	Ports down

ORDERING INFORMATION

	PRODUCT CODE	DESCRIPTION
PLUGGABLE MODULE (PM)	PM_OTDR	OTDR SFP interface with 1610 nm add filter. Up to 2 ports for 2 fiber monitoring
	SFP_OTDR	OTDR SFP, 1610 nm, to be plugged inside PM_OTDR
EKINOPS CHASSIS	C600HC	High Capacity modular chassis 7RU
	C200HC	High Capacity modular chassis 2RU
	PM_MNGT4	Management card
	400EEM	Ekinops Java Craft interface

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