ALM Series

Fiber monitoring solution for lean operations

In recent decades, optical fiber has become the predominant choice for operators to run their services across. But with the rapid expansion of fiber networks, many have found that ensuring fast and accurate fiber fault location is now a major challenge. Our ALM addresses these requirements by providing fiber health information in a matter of seconds.

In the digital age, when people expect to be able to work efficiently from anywhere in the world, fiber operators are under constant pressure to deliver more bandwidth with better service level agreements (SLAs). Trends such as fiber deep make it possible to transform our homes into home offices, creating value for both for employees as well as enterprises. In this complex environment, any disruption to the fiber quality poses a serious inconvenience. Our ALM is an in-service fiber monitoring solution that allows operators get real-time insight into the quality of their fiber infrastructure. In the event of abnormal attenuation, fiber break or a tapping attempt, the user is immediately notified about the issue with the exact geographic location of the event via the ADVA Ensemble Fiber Director or third-party GIS. What's more, with a very small footprint, power consumption, and self-calibration capabilities, our ALM doesn't require any regular maintenance.

Your benefits

- **Improved service quality**
  Real-time information on fiber integrity for fast failure detection and short repair cycles
- **Universal solution**
  Monitoring of point-to-point and point-to-multipoint networks to monitor any type of network, including PON architectures
- **Non-intrusive monitoring**
  Inherent compatibility of demarcation reflectors with any user data protocol as well as multi-wavelength transmission systems
- **Simplified demarcation**
  Passive demarcation reflectors for operation without power supply even under harsh environmental conditions
- **Streamlined operations**
  In-service fiber monitoring for immediate separation between failures of active devices and problems with the fiber plant
- **Intuitive management interface**
  Integrated with market-leading geographic information systems (GIS) to quickly and easily localize fiber issues

High-level specifications

Fiber link monitoring

- Two ALM variants for supervision of 16 (16ALM) or 64 fibers (64ALM) per ALM device
- In-service monitoring at an ITU-T standardized wavelength
- Suitable for dark fiber infrastructure

Demarcation reflector

- Optional demarcation for the remote site
- No power and no additional space required
- Industry-leading solution for premium accuracy

Management capabilities

- Ensemble management suite for full network visibility
- Integrated with market-leading GIS solutions
- Robust and reliable protocols for remote control

Opex advantage

- Passive cooling requires no regular maintenance (e.g., air filter replacements)
- Self-calibration scheme without the need to decommission the unit
- RF tone generation for fiber identification

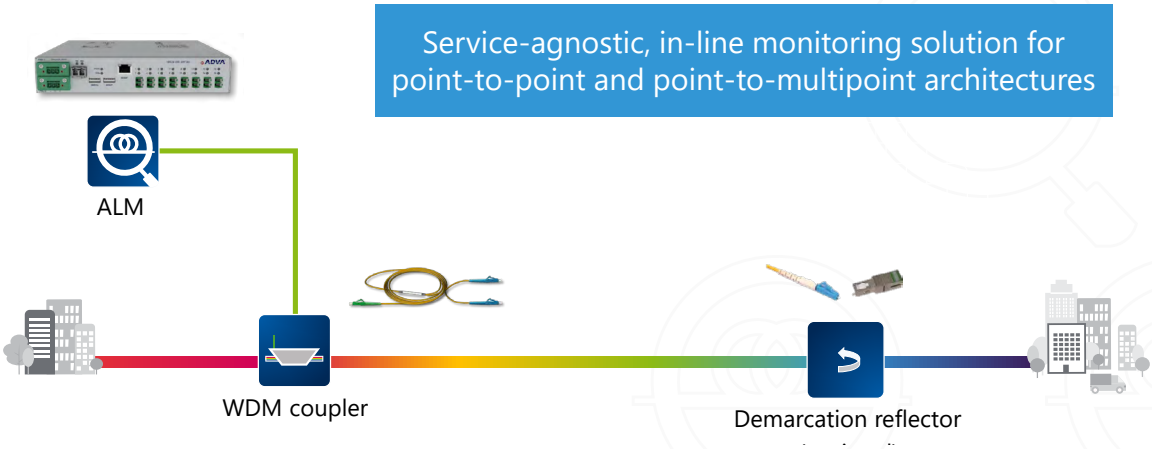
Optical performance

- Up to 320km distance range for access, metro and core applications
- High dynamic range over the complete temperature range

Operational requirements

- Power consumption <13W
- Fanless operation
- Wide operating temperature range (-5°C to 55°C)
- Ultra-compact ETSI solution: up to 64 ports per 1RU chassis

Applications in your network



Simplifying operations and creating more value from fiber networks

- Proactive fiber monitoring instead of post-failure problem analysis with field services engagement
- Support for KMZ files to enhance operations with geographic coordinates
- Built-in SOR viewer in the web browser environment
- Passive demarcation minimizing operational cost at customer premises with powerless operation
- Non-intrusive fiber monitoring for assured service delivery enabling service modifications and upgrades without on-site visits
- Remote access to passive fiber sensors for monitoring of unpowered sites

For more information please visit us at www.adva.com

Product specifications are subject to change without notice or obligation.

ALM16 / ALM64 general information

Parameter		Specification	Units
Dimensions	Height	1	RU
	Width	42 or 84	HP
	Depth	215	mm
Power (typical / maximum)		10 / 13	W
Power supply options		AC or DC (-72 to -36V)	
MTBF at 30°C ambient temperature		>20	years

Environmental specification

Parameter	Specification	Units
ALM temperature operating range(*)	-5 to 55	°C
Storage temperature range	-40 to 85	°C
Relative humidity (non-condensing)	85	%

(*) Passive components available for I-TEMP operation -40 to 85 °C

Equipment management

Management method	Supported protocols
Embedded GUI	HTTP, HTTPS
Northbound interfaces	SNMP v1, v2c, v3, NETCONF, REST API
Command line	SSH, RS-232
Remote authentication	RADIUS, TACACS+
Geographic data	Embedded KML/KMZ reader ADVA Ensemble FIber Director Third-party GIS systems

OTDR specification

Parameter		Specification	Units
Number of ports		16 or 64	ports
Laser safety		Class 1	
RF tone frequencies		270, 330, 1k, 2k	Hz
Dynamic range(**)	OTDR core	41	dB
	module	39(***)	dB
Wavelength		1650	nm
Pulse width		5 to 20,000	ns
Number of data points		up to 256,000	points
Distance range	unidirectional	up to 160	km
	bidirectional	up to 320	km
Sampling resolution		0.1 to 1.6	meter
Event dead zone		0.8	meter
Attenuation dead zone		4	meters
Distance accuracy		± (0.8 + sampling resolution + 9.5 x 10^{-6} x distance)	meter
Optical switch lifetime		1 x 10^9	cycles
Scanning time per port		2-5	s

(**) Specification over the complete temperature range. No separation from the noise floor required in the network design

(***) Depending on pulse width and resolution

Certification and RoHS compliance

Description	Compliance
NEBS level 3	Compliant
ETSI EN 300019-1-3	Compliant
Protection class IP20	Compliant
CE, FCC, NRTL, VCCI	Compliant

Ordering information

Product code	Product name	Product description
1043709841-02	16ALM/#1650D/AC	ALM 16 ports with LC/APC connectors, AC powered
1043709842-02	16ALM/#1650D/-48VDC	ALM 16 ports with LC/APC connectors, -48V DC powered
1043709846-01	64ALM/#1650D/AC	ALM 64 ports with LC/APC connectors, AC powered
1043709847-01	64ALM/#1650D/-48VDC	ALM 64 ports with LC/APC connector, -48V DC powered