

# Adtran

## FSP 3000 open line system for OIF interoperability demonstration (1,000km)

At OFC 2024, Adtran is participating in demonstrations at the OIF booth, showcasing 400Gbit/s 0dBm OpenZR+ MSA transceiver interoperability over a disaggregated Adtran FSP 3000 open line system (OLS).

The FSP 3000 OLS provides an open, compact and cost-efficient optical layer engineered to meet ever-increasing bandwidth demands. The configuration featured in this demonstration has been designed for high-performance transport of **400Gbit/s 16QAM OpenZR+ 0dBm** (classification 60HA) interfaces **over 1,000km**. Maximum performance and ease of use are facilitated by integrated monitoring and diagnostic functions, as well as by a high level of automation and optimization.

The FSP 3000 OLS configuration is able to interconnect up to 33 OpenZR+ 0dBm pluggable transceivers from different suppliers over a bidirectional link that extends up to 1,000km, comprising eight spans and utilizing Corning's SMF-28 ULL and Contour fibers. As illustrated in Figure 1, the configuration consists of the following network elements:

- Two terminal nodes with high-resolution flexgrid ROADMs using 150GHz bandwidth slots, 33 add/drop service capacity and optical pre- and booster amplification (EDFA and Raman)
- Six in-line amplifier nodes (ILA) using compact amplifier modules integrating EDFA and Raman amplification
- An intermediate ROADM node for power equalization

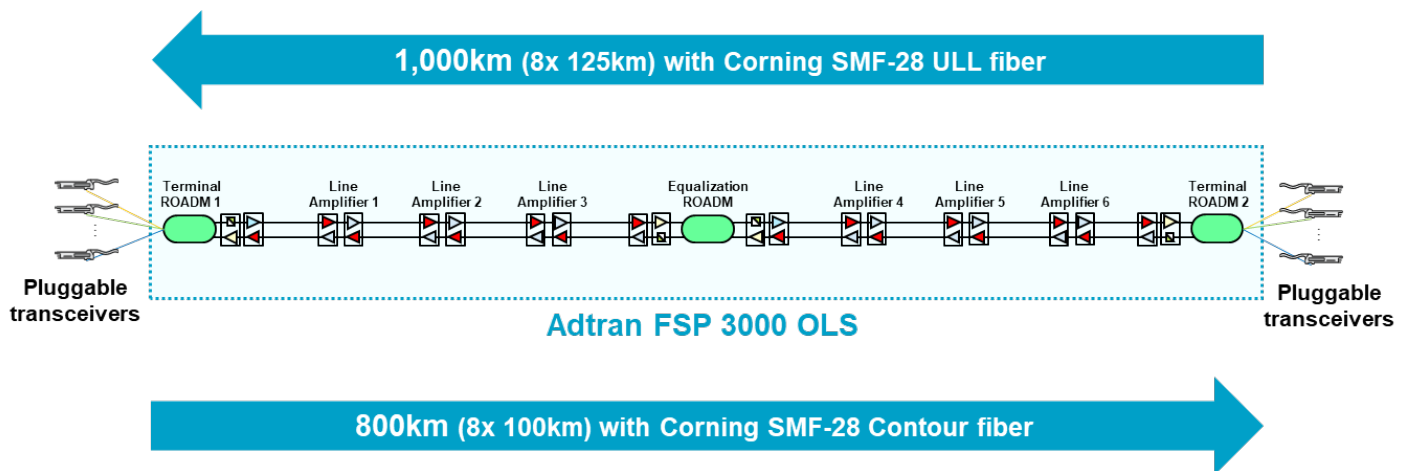


Figure 1 – OIF demo setup featuring a high-power, multi-span Adtran FSP 3000 OLS



The demo uses the following key FSP 3000 components:

- 1) The AM-S23LR15 integrates a variable-gain EDFA with a switchable gain range and a Raman module and is used in terminal and ILA nodes. It supports auto-span equalization and provides an optical supervisory channel (OSC), monitor and OTDR ports for system, channel power, and fiber monitoring – all on a compact card that enables a bidirectional ILA node in a 2RU chassis
- 2) The RD-12RS, a reconfigurable optical add-drop multiplexer module that supports up to 13 degrees and provides 12 client ports for add/drop services
- 3) The FD-33U, a 1RU, rack-mountable, 33-port multiplexer/demultiplexer shelf that provides an add/drop capacity of up to 33 services in terminal nodes

Figure 2 shows the complete FSP 3000 OLS configuration featured in this demonstration.

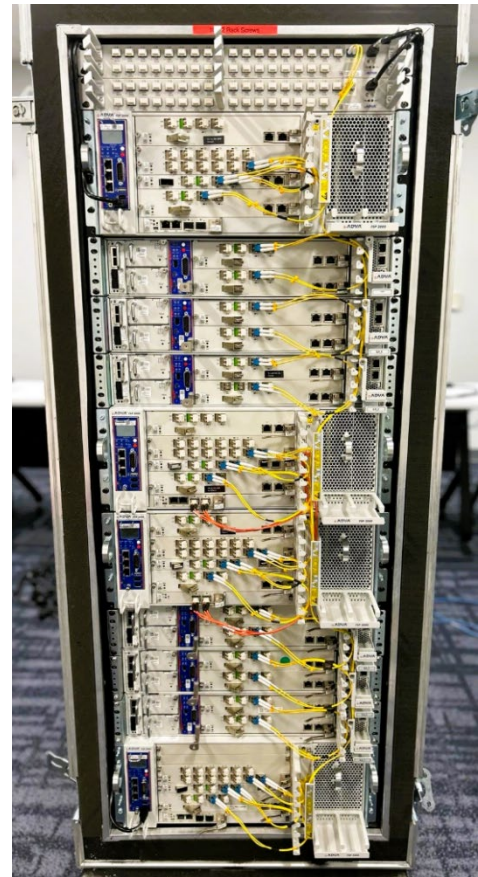


Figure 2 – Complete FSP 3000 OLS configuration with the nine nodes of the 1,000km DWDM link featured in this demonstration

### Key features and benefits

- Open line system configured for 400G OpenZR+ 0dBm interoperability demonstration; compatible with other data rates and modulation formats, and with a potential upgrade to 800G
- High-performance transport of up to 33 OpenZR+ 0dBm (classification 60HA) interfaces over a 1,000km point to-point multi-span link
- Open hardware and open programmable interfaces (APIs)
- High degree of integration offered with hybrid Raman, switchable EDFA and OSC in a 2-slot card
- Ease of use and best transmission performance enabled by automatic, optimal adjustment of amplifier gain, tilt and channel power at all network nodes
- Built-in OCM, OTDR and OSC functions for accurate and comprehensive channel, system and fiber monitoring

### About Adtran

Adtran has the industry's most comprehensive fiber networking toolbox that empowers operators to build a converged infrastructure from metro core to customer premises. The company's solutions serve a wide range of networking applications including residential, business, wholesale and mobile. In 2022, Adtran merged with ADVA. Learn more at [adtran.com](https://www.adtran.com)