FSP 3000 AccessFlex™

Compact 1G/10G DWDM OTN terminal designed for deployment outside the central office

Benefits

- **Hardened and low-noise design**
  For optimum deployment at indoor offices and street cabinets

- **Minimum maintenance**
  Monolithic design without fans and with redundant, field-replaceable power supply modules

- **Front access**
  Modules and fiber/cable handling accessible from the front

- **Versatile installation options**
  Can be installed in 19/23 inch NEBS/ANSI and 300mm ETSI-compliant racks, as well as in weather-proof street cabinets

- **User-configurable operational modes**
  Can work in multiple modes, such as quadruple transponder, dual regenerator, and 6xGbE to 10G OTU2/2e muxponder

- **G.709 OTN-compliant mapping**
  Fully transparent transport of 1GbE and 10GbE client services. Transparent for SyncE and for PTP

- **Broad range of applications**
  Grey, CWDM, DWDM and bi-directional interfaces for dark fiber, passive and active DWDM applications
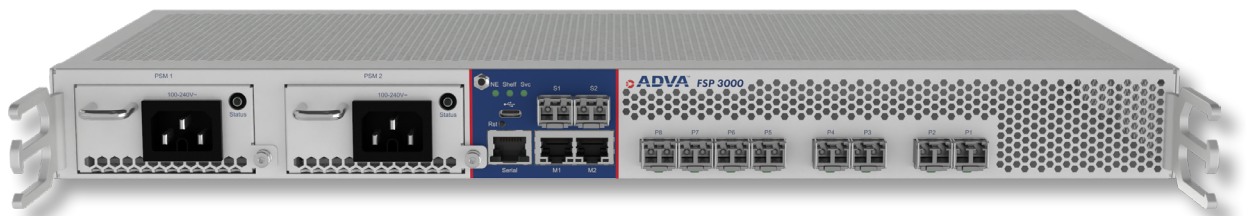
Overview

Our FSP 3000 AccessFlex™ is ideal for the deployment of compact, cost-efficient 1G/10G DWDM OTN access nodes at customer premises and in hardened environments, such as street cabinets. With growing demand for access node deployments outside the central office, operators need compact, low-power and low-noise equipment that is easy to install, set up and maintain. Moreover, equipment installed in street cabinets requires a wider operating range than equipment deployed in temperature-controlled environments. Our FSP 3000 AccessFlex™ has been engineered to meet these demands and more.

The FSP 3000 AccessFlex™ is a 1RU ETSI-compliant monolithic shelf for the transport of 1Gbit/s and 10Gbit/s Ethernet services over 10Gbit/s OTU2/2e C/DWDM or grey line signals. The FSP 3000 AccessFlex™ offers a high level of flexibility and versatility. With a 40Gbit/s total capacity, it can work in multiple modes such as quadruple transponder (4x10GbE), dual ODU2/2e transponder or regenerator for

OTU2/2e hand off, and muxponder multiplexing up to six GbE client services into a 10Gbit/s OTU2 line signal. Mapping and multiplexing of services is compliant with the ITU-T G.709 recommendation. This enables smooth interoperability with other FSP 3000 and third-party OTN equipment.
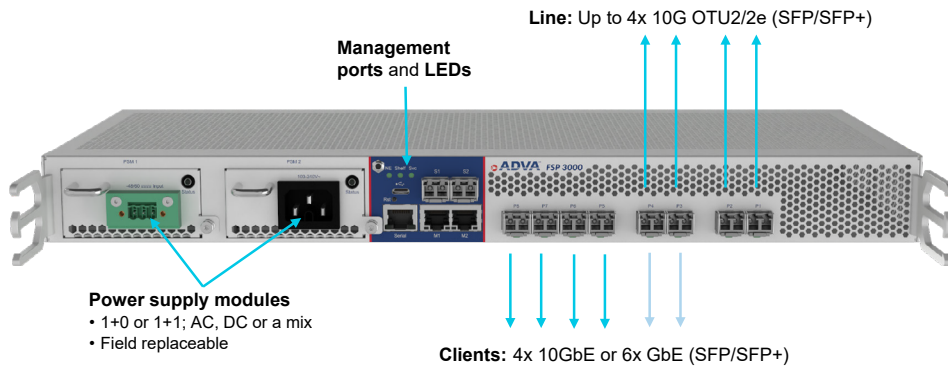
Our FSP 3000 AccessFlex™ has been designed for ease of use and minimal operational costs. With a front-access, monolithic and fanless design, the FSP 3000 AccessFlex™ consumes little power and space, produces low levels of noise and requires minimal maintenance. The device is easy to set up and manage through low-touch provisioning and both local and remote management capabilities. It supports inband ITU-T G.709-compliant general communication channels (GCC) and RJ45 and USB-C serial ports. It also supports facility loopback and terminal loopbacks on both the client and network interfaces, and provides comprehensive fault and performance monitoring. For highest system availability, power supply modules can be 1+1 redundant and are field-replaceable.

FSP 3000 ACCESSFLEX™

High-level technical specifications

Parameter	Value
Dimensions (width x height x depth)	443mm (17.4") x 44.5mm (1.8") x 215mm (8.5")
Racks/Mounting options	19"/23" and ETSI racks; cabinets
Front accessible	Yes
Field replaceable modules	Power supply units (1+1), and pluggable transceivers
Power configurations	1+0, 1+1. AC, DC or a mix
Power consumption	35W typ./50W max.
Earth ground connections	Two chassis ground and one ESD ground connection
Cooling	Natural convection (fanless)
Traffic ports	8x SFP/SFP+ used as client or network signals dependent on application
Client interfaces	Up to 6x 1GbE or up to 4x 10GbE
Network interfaces	Up to 4x 10G OTU2/2e
OTN compliance	OTN G.709 compliant mapping and multiplexing Interoperable with FSP 3000 and third-party OTN devices Non-intrusive monitoring on OTN layer All standard PM/Faults as defined in G.709 are supported
FEC	G.709 FEC settable on OTU2/2e
Timing transparency	10GbE service transparency for PTP (IEEE1588v2, frequency and fase) and SyncE
Management ports	2x electrical 1Gbit/s RJ45 for connecting to external DCN 1x RJ45/RS232 and 1x USB-C serial ports Remote mgmt. via OTN GCC channels (OTN-based inband DCN)
Management SW	ENC (NMS), WebGUI, REST, CLI, SNMP, Netconf
Environmental operational conditions	ETS 300-019-1-3 class 3.2 and modified class 3.3 (−40ºC to+65ºC) NEBS GR-3108 class 2 (−40ºC to +65ºC) ETS 300-019-1-3 class 3.1E (−5ºC to +45ºC) NEBS level 3 GR-63 (−5ºC to +50ºC) IEC 60529 IP20, indoor office

Line: Up to 4x 10G OTU2/2e (SFP/SFP+)

Management ports and **LEDs**

Power supply modules
• 1+0 or 1+1; AC, DC or a mix
• Field replaceable

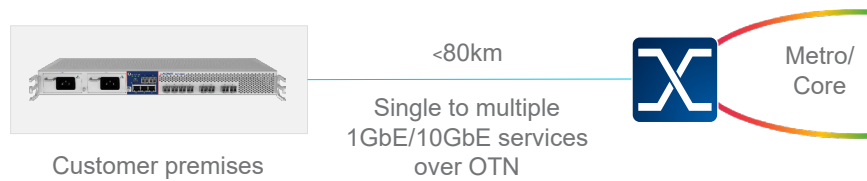**Clients:** 4x 10GbE or 6x GbE (SFP/SFP+)

FSP 3000 ACCESSFLEX™

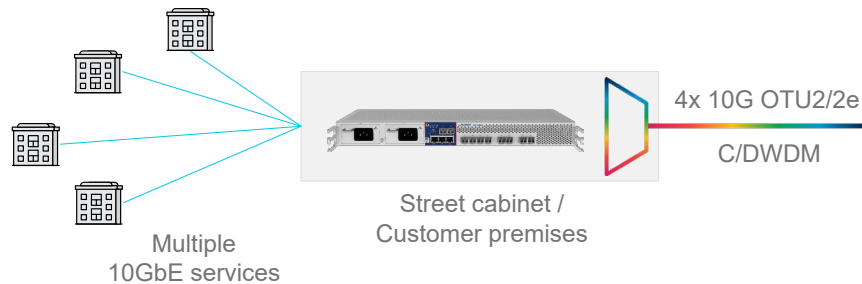## Applications in your network

Compact, hardened 1G/10G DWDM OTN access nodes in street cabinets or customer premises

- Numerous use cases, such as 1G/10G OTN network terminal or 1GbE client traffic multiplexer onto 10G OTU2/2e in dark fiber, passive DWDM or active DWDM acess solutions for business services, wholesale and mobile applications
- G.709 OTN-compliant, transparent and low-latency transport
- Versatile deployment in both the central office and outside the central office, in hardened environments such as street cabinets and in indoor customer offices
- The images below show some of the major use cases:

Network extension to customer premises (NT)

Customer premises

<80km

Single to multiple 1GbE/10GbE services over OTN

Metro/ Core

Business park service distribution

Multiple 10GbE services

Street cabinet / Customer premises

4x 10G OTU2/2e

C/DWDM

Mobile network service offering

Multiple 10GbE services

RU/DU

Multiple sectors/ wavelengths

Street cabinet

4x 10G OTU2/2e

Active or passive WDM

Adtran

TL9000
TL19.1270

ADTRAN Certified Supplier
ISO 9001
ISO 14001
TL 9000