

# FSP 3000 S-Flex™

Highly-secure SAN, Ethernet, mainframe DCI and mission-critical networks

## Benefits

- Single card for all DCI applications**  
 Full support of Ethernet (from 1GbE to 400GbE), Fibre Channel (from 16G to 64GFC) and IBM Z mainframe connectivity services with just one card
- Industry-first DWDM transport of 64GFC**  
 400G muxponder enabling 16G, 32G and 64G Fibre Channel extensions over DWDM
- Extensive Fibre Channel feature set**  
 Engineered for highest SAN performance featuring low latency, Brocade trunking support and FC performance monitoring
- Quantum-safe optical transport**  
 Built-in Layer 1 encryption, quantum-safe key exchange and crypto-agility for uncompromised security of data in motion
- Proven security technology**  
 Designed to meet stringent security standards for use with government, defense and critical infrastructure
- Verified interoperability**  
 Proven interworking with all major DCI/SAN vendors such as IBM GDPS, Dell-EMC and Brocade at Adtran's qualification lab and IBM vendor solutions connectivity labs

## Overview

As digital transformation gains momentum, **robust and secure high-capacity optical networks are crucial for meeting growing bandwidth demand and protecting data in motion against cyberattacks.** Our FSP 3000 S-Flex™ muxponder has been engineered to enhance data center interconnects (DCI) of any type as well as mission-critical infrastructure. It delivers ultra-high capacity, unprecedented performance, and quantum-safe line-rate encryption.



DCI solutions, storage area networks (SAN), mainframe GDPS environments and critical infrastructure must continuously extend the bandwidth of their networks. At the same time, the advent of quantum computers poses a new threat to data security, generating the need for a quantum-safe key exchange. Our FSP 3000 S-Flex™ is purpose-built to meet these challenges, providing high-capacity, multi-service transport while protecting traffic against the emerging quantum threat.

The FSP 3000 S-Flex™ is a 400Gbit/s DWDM muxponder that supports a wide range of services, including Fibre Channel up to 64Gbit/s, Ethernet up to 400Gbit/s as well as mainframe protocols and OTN. With its ultra-low latency design and application-optimized features, such as FC trunking, the FSP 3000 S-Flex™ addresses essential DCI interconnect requirements with a single card.

A highly secure variant, enhanced with ConnectGuard™ encryption technology from Adva Network Security, is also available. Specifically engineered to guard mission-critical networks against cyber threats, it integrates advanced post-quantum cryptography (PQC) and quantum key distribution (QKD) along with a crypto-agile architecture, enabling in-fields updates to protect data in motion - even against future quantum computer attacks.

Our FSP 3000 S-Flex™ delivers secure high-capacity transport in a compact two-slot card. It can be housed in any active FSP 3000 chassis, allowing for flexible deployment across a wide range of application environments.

# FSP 3000 S-Flex™

## High-level technical specifications

### General information

- 400G muxponder
- 2-slot card for FSP 3000 1RU to 12RU chassis, including AC/DC PSU and 300mm/600mm depth variants
- Multi-rate, multi-service support
- ConnectGuard™ encryption

### Client interfaces

- Wide support of pluggable interfaces: SFP, SFP+, SFP28, SFP56, QSFP28 and QSFP56-DD

### Line interface

- 400Gbit/s SW-defined coherent interface
- Flexgrid DWDM support
- CFP2-DCO pluggable module
- OpenROADM 3.0 compliant
- G.709 compliant

### Client services

- Fibre Channel (FC): 16G, 32G and 64G FC
- IBM:
  - RoCE: 10G RoCE and 25G RoCE,
  - CE LR: 10G CE LR and 25G CE LR
- Ethernet: 1GbE, 10GbE, 25GbE, 100GbE and 400GbE
- OTN: OTU4

### Security

- Line-rate, quantum-safe encryption
- Post-quantum key exchange (PQC)
- QKD and PKI support
- Hybrid key exchange: DH4096 + ML-KEM-1024
- Crypto-agility for in-field upgrades

### Fibre Channel feature set

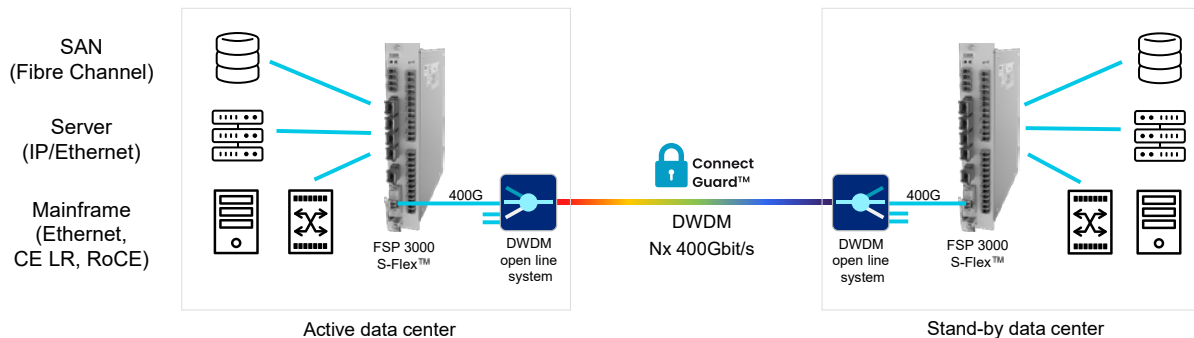
- Brocade trunking and QoS support
- Fibre Channel performance monitoring

## Applications in your network

### High-capacity, quantum-safe transport for all types of DCI and mission-critical networks

The FSP 3000 S-Flex™ is designed for:

- Secure, robust and feature-rich SAN, Ethernet and mainframe DCI connectivity, delivered in combination with the modular and flexible FSP 3000 DWDM platform for ultra-low latency, simple installation and ease of operation
- High-capacity transport for mission-critical networks featuring quantum-safe protection for government, defense, finance, energy, transport and other sensitive sectors



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