

# FSP 3000 S-Flex™

Encrypted 400G muxponder for SAN and mission-critical networks

## Benefits

- Industry-first DWDM transport of 64GFC**  
 400G muxponder with multi-service support and a CFP2-DCO pluggable coherent interface
- Extensive Fibre Channel feature set**  
 Engineered for highest SAN performance featuring low latency, Brocade trunking support and FC performance monitoring
- Multi-rate, multi-service client flexibility**  
 Full support of Ethernet (from 1GbE to 100GbE), Fibre Channel (from 16G to 64GFC) and IBM Z connectivity services with just one card
- 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**  
 Interworking was confirmed with all major DCI/SAN vendors such as IBM GDPS, Dell-EMC and Brocade

## Overview

**As digital transformation and digitalization gain momentum, robust and secure high-capacity optical networks are invaluable for meeting bandwidth demand and protecting against cyberattacks.**

Our FSP 3000 S-Flex™ muxponder has been engineered to grow storage area networks and mission-critical infrastructure. It offers ultra-high capacity, unprecedented performance, and quantum-safe line-rate encryption.



The ever-increasing volume of hosted data creates demand for more transport capacity with enterprise data centers and mission-critical networks. Data center interconnect (DCI) solutions, storage area networks (SAN), and critical infrastructure must continuously extend the bandwidth of their networks. Moreover, 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™ has been designed to provide high-capacity transport and protect traffic against the emerging quantum threat.

FSP 3000 S-Flex™ is a 400Gbit/s DWDM muxponder that supports a wide range of services, including 64GFC as well as a wide range of Ethernet line rates. With an ultra-low latency design and comprehensive SAN services such as rich Fibre Channel features and FC trunking, the FSP 3000 S-Flex™ addresses essential SAN DCI interconnect requirements with just a single interface card. With post-quantum cryptography and crypto-agility, the FSP 3000 S-Flex™ is designed to protect mission-critical networks against future quantum computer attacks.

Our FSP 3000 S-Flex™ delivers robust and secure high-capacity transport in a compact two-slot package designed to complement the robust and comprehensive FSP 3000 platform.

# FSP 3000 S-Flex™

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## High-level technical specifications

### General information

- 400G muxponder
- 2-slot card for 1RU to 12RU chassis
- Multi-rate, multi-services
- ConnectGuard™ encryption

### Client interfaces

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

### Line interface

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

### Client services

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

### Security

- Line-rate, quantum-safe encryption
- Two AES modes
- Post-quantum key exchange
- QKD and PKI support
- Crypt-agility for in-field upgrade

### Fibre Channel feature set

- Brocade trunking support
- FC performance monitoring
- FC CRC check and FEC support
- FC port ID detection

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## Applications in your network

### High-capacity, quantum-safe transport for SAN DCI and mission-critical networks

FSP 3000 S-Flex has been designed for:

- Secure, robust, feature-rich SAN data center interconnect in combination with the modular and flexible FSP 3000 DWDM platform for ultra-low latency, simple installation and ease of operations
- High-capacity transport with mission-critical networks featuring quantum-safe protection for governments, defense, finance, energy and transportation, among others.

## Multi-protocol data center interconnection

