

4 Channel DWDM Fiber Mux Demux

Variants

Mux (A) Demux (B)

Details

4 Channel DWDM Fiber Mux Demux – Single Fiber (8 Wavelengths)

Product Overview

The 4 Channel DWDM Fiber Mux Demux is a single-fiber, bi-directional DWDM solution designed to transmit 4 independent services using 8 DWDM wavelengths over one optical fiber. It operates on C25–C28 and C53–C56 wavelengths, following ITU-T G.694.1 (100 GHz grid) standards, maximizing utilization of the C-band spectrum.

This solution is ideal for ISP backbone, data centers, cloud networks, broadcasting, finance, and government networks, where fiber resources are limited and high capacity is required.

Key Features

- 4 Channels over Single Fiber (Bi-Directional)
- 8 DWDM Wavelengths (C25–C28 / C53–C56)
- ITU-T G.694.1 100 GHz Grid Compliant
- Thin Film Filter (TFF) Technology
- Low Insertion Loss ? 2.4 dB
- High Channel Isolation (up to 45 dB)
- Expansion (EXP) Port for Future Capacity Upgrade
- Supports Custom DWDM Wavelength Design

Working Principle (Single Fiber BIDI)

MUX Side (Side-A)

Combines C25–C28 and C53–C56 wavelengths

Sends multiple services into one single fiber

DEMUX Side (Side-B)

Separates the same wavelengths at receiving end

Ensures stable point-to-point transmission

Expansion Port (EXP)

Allows cascading with another DWDM Mux/Demux
Increases bandwidth without adding new fiber

Supported Wavelengths

C25 – 1557.36 nm
C26 – 1556.55 nm
C27 – 1555.75 nm
C28 – 1554.94 nm
C53 – 1535.04 nm
C54 – 1534.25 nm
C55 – 1533.47 nm
C56 – 1532.68 nm

Optical Specifications

Channel Spacing: 100 GHz (0.8 nm)
Channel Passband: ± 0.11 nm
Insertion Loss: ≤ 2.4 dB
Return Loss: ≥ 45 dB
Directivity: ≥ 45 dB
Polarization Dependent Loss: ≤ 0.3 dB
Polarization Mode Dispersion: ≤ 0.1 ps
Channel Isolation:
Adjacent ≥ 30 dB
Non-Adjacent ≥ 45 dB
Center Wavelength Accuracy: ± 0.05 nm

Mechanical & Environmental Specifications

Operating Temperature: -20°C to $+70^{\circ}\text{C}$
Storage Temperature: -40°C to $+85^{\circ}\text{C}$
Dimensions (HxWxD): $44 \times 440 \times 230$ mm
Net Weight: Approx. 3.5 kg
Mounting Type: 19-inch 1U Rack Mount
Slot Support: $4 \times$ LGX Plug-in Modules

Connector & Interface

Fiber Type: Single Mode OS2
Connector Type: LC-UPC (LC-APC optional)
Line Port: Single Fiber BIDI

EXP Port: Available for expansion

Application Areas

ISP & Telecom Backbone

Data Centers & IDC

Broadcasting & TV Networks

Cloud & Massive Data Transmission

Banking & Financial Networks

Government & Enterprise Networks