

44-Channel On-Grid and Off-Grid DWDM Mux/Demux

MDX-44MD1F1CB and MDX-44MD1N1CB



Key Benefits

- Improves fiber-constrained capacity exhaust by conserving or reclaiming capacity through DWDM
- Provides an easy upgrade path to 88 channels per fiber
- Lowers first-day costs without limiting growth
- Multiplexes and demultiplexes up to 44 ITU 100-GHz-spaced channels onto a single fiber pair
- Thermally stable passive optics require no power

Key Features

- Low pass-through insertion loss for C-band channels
- Fits into standard LGX™-mounting solutions
- “Even” model handles on-grid 100 GHz channels. “Odd” model handles off-grid 100 GHz channels offset by 50 GHz.

Applications

- Point-to-point multichannel in linear (bus) add/drop and hub-and-spoke ring architectures

Compliance

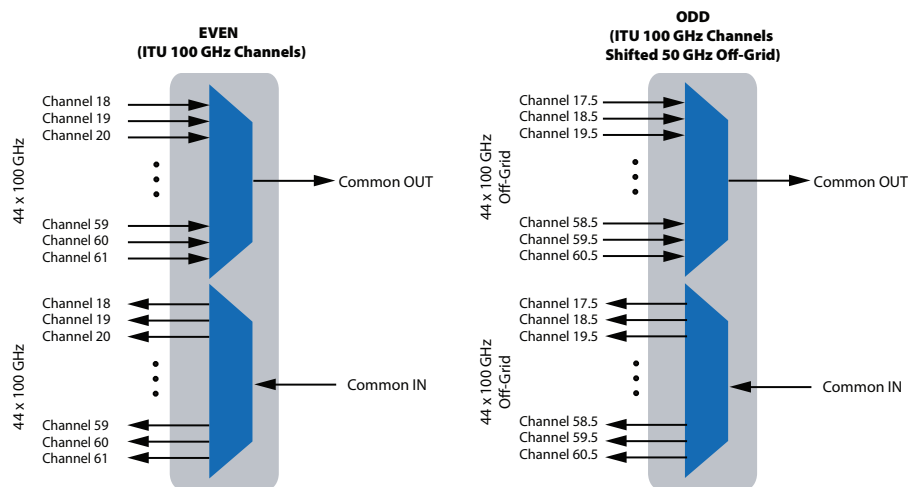
- ITU-T G694.1
- GR-1221 and 1209
- RoHS (exemptions 7b, 8a)

The WaveReady™ 44-channel multiplexer/demultiplexer is a scalable high-capacity terminal dense wavelength division multiplexing (DWDM) solution that can individually multiplex up to 44 wavelengths on a fiber pair.

These multiplexers/demultiplexers maximize the capacity of the C-band range with access to 44 ITU 100 GHz spaced channels. The “even” model (MDX-44MD1N1CB) accepts on-grid signals while the “odd” model (MDX-44MD1F1CB) accepts the same 50 GHz offset ITU channels. They support full 88 channels per fiber when deployed with the WaveReady 50/100 GHz Dual Optical Frequency Interleaver (OFI) Module (MDX-02FS50C1B).

Deployed with other modules from the WaveReady line of transponders and amplifiers, these DWDM multiplexer/demultiplexer solutions support a wide range of architectures from simple point-to-point to amplified ring configurations with dynamic add/drop.

With high channel uniformity, low insertion loss, and low chromatic dispersion, these DWDM multiplexer/demultiplexers are compatible with all digital transmission formats and data rates up to 40 G.



Specifications¹**Optical²**

Parameter	Conditions	Minimum	Maximum
Operating frequency range	For DWDM channels	1528.6 nm	1563.6 nm
Channel center wavelengths		See Channel Plan	
Passband		$f_c \pm 12.5$ GHz (± 0.1 nm)	—
DWDM channel IL over passband ³	COM IN → Channel xx OUT Channel xx IN → COM OUT	—	5.8 dB
Ripple	Over channel passband	—	1.5 dB
DWDM IL uniformity	At channel centers	—	1.6 dB
Isolation	Adjacent channels	23 dB	—
	Non-adjacent channels	30 dB	—
Optical return loss ⁴	All ports including connectors	40 dB	—
Directivity ⁴	Between any two channel ports	50 dB	—
PDL ⁴	All DWDM channel ports	—	0.60 dB
PMD ⁴	All ports	—	0.5 ps
Optical power handling	Worst case, any optical port	—	250 mW
Operating temperature range		−5°C	65°C
Storage temperature range		−40°C	85°C
Operating humidity range	Noncondensing	5% RH	95% RH

Physical Characteristics

Size (H x W x L), including 19-in mounting brackets	8.84 x 48.3 x 28 cm (3.48 x 19.0 x 11.02 in)
Optical connector type	Common: Shuttered duplex LC/PC DWDM input/output ports: Duplex LC/PC
Fiber	9/125 μ m

Environmental Characteristics

Operating ambient temperature (short term)	−5°C	—	+55°C
Operating ambient temperature (extended term)	+10°C	—	+40°C
Storage temperature	−40°C	—	+85°C
Relative humidity (noncondensing)	5%	—	95%

1. Specifications are worst case end-of-life over the specified temperature and wavelength range.
2. Unless otherwise stated, parameters are specified for the whole passband over the full operating temperature range and states of polarization.
3. Insertion loss includes loss from LC/PC connectors and is typically 0.15 dB.
4. Guaranteed by design.

Channel Power

On-Grid			Off-Grid		
Freq. (THz)	Wavelength (nm)	ITU Channel#	Freq. (THz)	Wavelength (nm)	ITU Channel#
196.1	1528.77	61.0	196.05	1529.16	60.5
196.0	1529.55	60.0	195.95	1529.94	59.5
195.9	1530.33	59.0	195.85	1530.72	58.5
195.8	1531.12	58.0	195.75	1531.51	57.5
195.7	1531.9	57.0	195.65	1532.29	56.5
195.6	1532.68	56.0	195.55	1533.07	55.5
195.5	1533.47	55.0	195.45	1533.86	54.5
195.4	1534.25	54.0	195.35	1534.64	53.5
195.3	1535.04	53.0	195.25	1535.43	52.5
195.2	1535.82	52.0	195.15	1536.22	51.5
195.1	1536.61	51.0	195.05	1537	50.5
195	1537.4	50.0	194.95	1537.79	49.5
194.9	1538.19	49.0	194.85	1538.58	48.5
194.8	1538.98	48.0	194.75	1539.37	47.5
194.7	1539.77	47.0	194.65	1540.16	46.5
194.6	1540.56	46.0	194.55	1540.95	45.5
194.5	1541.35	45.0	194.45	1541.75	44.5
194.4	1542.14	44.0	194.35	1542.54	43.5
194.3	1542.94	43.0	194.25	1543.33	42.5
194.2	1543.73	42.0	194.15	1544.13	41.5
194.1	1544.53	41.0	194.05	1544.92	40.5
194	1545.32	40.0	193.95	1545.72	39.5
193.9	1546.12	39.0	193.85	1546.52	38.5
193.8	1546.92	38.0	193.75	1547.32	37.5
193.7	1547.72	37.0	193.65	1548.11	36.5
193.6	1548.51	36.0	193.55	1548.91	35.5
193.5	1549.32	35.0	193.45	1549.72	34.5
193.4	1550.12	34.0	193.35	1550.52	33.5
193.3	1550.92	33.0	193.25	1551.32	32.5
193.2	1551.72	32.0	193.15	1552.12	31.5
193.1	1552.52	31.0	193.05	1552.93	30.5
193	1553.33	30.0	192.95	1553.73	29.5
192.9	1554.13	29.0	192.85	1554.54	28.5
192.8	1554.94	28.0	192.75	1555.34	27.5
192.7	1555.75	27.0	192.65	1556.15	26.5
192.6	1556.55	26.0	192.55	1556.96	25.5
192.5	1557.36	25.0	192.45	1557.77	24.5
192.4	1558.17	24.0	192.35	1558.58	23.5
192.3	1558.98	23.0	192.25	1559.39	22.5
192.2	1559.79	22.0	192.15	1560.2	21.5
192.1	1560.61	21.0	192.05	1561.01	20.5
192.0	1561.42	20.0	191.95	1561.83	19.5
191.9	1562.23	19.0	191.85	1562.64	18.5
191.8	1563.05	18.0	191.75	1563.455	17.5

Ordering Information

For more information on this or other products and their availability, please contact your local JDSU account manager or JDSU directly at 1-800-498-JDSU (5378) in North America and +800-5378-JDSU worldwide or via e-mail at sales@jdsu.com.

Product Code	Description
MDX-44MD1F1CB	Off-grid 44-channel full C-band multiplexer/demultiplexer, ITU channels 17.5 to 60.5
MDX-44MD1N1CB	On-grid 44-channel full C-band multiplexer/demultiplexer, ITU channels 18.0 to 61.0

Related Products

Product Code	Description
MDX-02F550C1B	50/100 GHz Dual optical frequency interleaver (OFI) module