

WaveReady™

Modular 20 to 80-channel C-band and L-band DWDM System



Key Features

- High-density packing for full C- and L-bands
- High-channel uniformity
- In-service capacity upgrade from 20 to 80 channels in 20-channel increments
- Flexible mounting: 19" or 23" EIA racks
- Thermally stable passive optics; no power required

Applications

- Terminal mux/demux applications
- High capacity optical transmission systems
- Bidirectional transmission on a single fiber
- Linear and ring architectures requiring wavelength reuse

Compliance

- ITU-T G694.1; GR-1209; GR-1221
- RoHS compliant

The WaveReady™ 20- to 80-channel mux/demux system is a scalable, high-capacity Dense Wavelength Division Multiplexing (DWDM) solution allowing up to 80 channels in the C- and L-bands to be multiplexed to a single fiber.

In-service upgradeable in 20-channel increments, the 80-channel Mux/Demux system provides the benefits of low first-channel cost without limiting total system capacity. The upgrades include (with model numbers):

- The MDX-20UX10xxB supports 20 C- or L-band channels
- The MDX-02UXW001B supports 20 or 40 C1 and C2 channels
- The MDX-04UXW001B supports 20 or 40 C1 and C2 channels and 20 or 40 L1 and L2 channels

Using JDSU's industry-leading passive DWDM technology, the 20- to 80-channel DWDM system requires no electrical power and generates no heat, noise or radiated emissions.

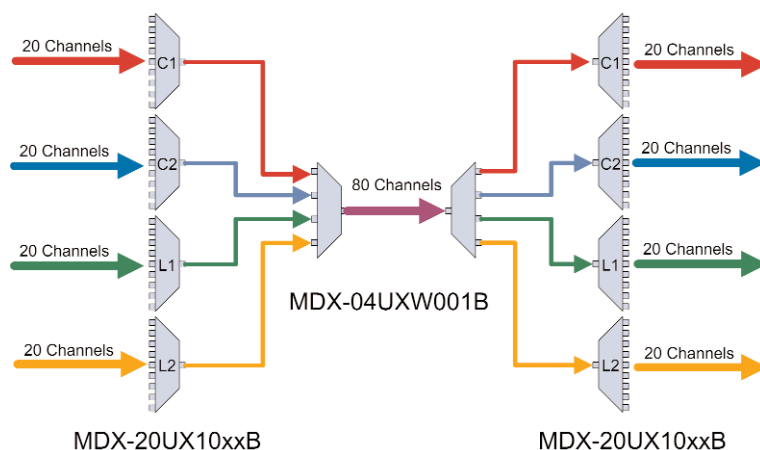


Figure 1 80-channel Mux/Demux Application

Specifications¹**MDX-04UXW001B and MDX-02UXW001B**

Parameter	Min	Typical	Max
Optical Characteristics			
Channel center frequencies: MDX-04UXW001B (C and L bands) and MDX-02UXW001B (C band only)	1528.68 nm	C1	1543.83 nm
	1547.62 nm	C2	1563.15 nm
	1570.31 nm	L1	1586.31 nm
	1590.31 nm	L2	1606.71 nm
Channel Spacing	—	100 GHz	—
Insertion loss – C/L-band splitter/combiner	—	1.2 dB	2 dB
Insertion loss – C-band combiner	—	0.6 dB	1.3 dB
Combined insertion loss – MDX-04UX or MDX-02UX with MDX-20UX	—	5.5 dB	8 dB
Channel non-uniformity – 20 channel UMUX	—	—	2 dB
Monitor tap ratio	14 dB	17 dB	19.5 dB
Channel bandwidth	ITU λ ±12.5 GHz		
C or C/L Band isolation			
Adjacent channels	20 dB	—	—
Non-adjacent channels	40 dB	—	—
Polarization dependent loss	—	—	0.2 dB
Polarization mode dispersion	—	—	0.2 ps
Optical return loss, all ports including connectors	40 dB	—	—
Input optical power – sum of all channel ports	—	—	500 mW
Physical Characteristics			
Size (H x W x L)	129.5 x 28.4 x 160.3 mm (5.10 x 1.12 x 6.31 in)		
Optical connector type (all ports)	LC/PC bulkhead		
Fiber type	SMF-28 or equivalent		
Weight	0.45 kg (1 lb)		
Environmental Characteristics			
Normal operating ambient temperature	–5°C	—	55°C
Storage temperature	–40°C	—	85°C
Relative humidity (non-condensing)	5%	—	95%

¹ Specifications are worst case end-of-life over specified temperature and wavelength range.

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Specifications²

MDX-20UX10xxB

Parameter	Min	Typical	Max
Optical Characteristics			
Channel center frequencies	See “Channel Plan for MDX-20UX10xxB”		
Channel spacing	—	100 GHz	—
Operating frequency range	1528.67 nm		1606.71 nm
Insertion loss – 20 channel UMUX	—	4 dB	6 dB
Combined insertion loss – MDX-04UX or MDX-02UX with MDX-20UX	—	5.5 dB	8 dB
Channel non-uniformity – 20 channel UMUX	—	—	2 dB
Monitor tap ratio	14 dB	17 dB	19.5 dB
Channel bandwidth	ITU λ $\pm$ 12.5 GHz		
20-channel UMUX isolation			
Adjacent channels	25 dB	—	—
Non-adjacent channels	45 dB	—	—
Polarization dependent loss	—	—	0.2 dB
Polarization mode dispersion	—	—	0.2 ps
Optical return loss	40 dB	—	
Input optical power – sum of all channel ports	—	—	500 mW
Physical Characteristics			
Size (H x W x L) excluding mounting brackets	44.5 x 443.0 x 279.4 mm (1.75 x 17.4 x 11 in)		
Rack mounting options	19 or 23 inch EIA rackmount		
Optical connector type (all ports)	LC/PC bulkhead		
Fiber type	SMF-28 or equivalent		
Weight (excluding mounting brackets)	2.7 kg (6 lb)		
Environmental Characteristics			
Normal operating ambient temperature	–5°C	—	55°C
Storage temperature	–40°C	—	85°C
Relative humidity (non-condensing)	5%	—	95%

² Specifications are worst case end-of-life over specified temperature and wavelength range.

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Channel Plan

MDX-20UX10xxB

MDX-20UX10C2B C2 Band

Channel	Frequency (THz)	Wavelength (nm)
C1	191.8	1563.05
C2	191.9	1562.23
C3	192	1561.42
C4	192.1	1560.61
C5	192.2	1559.79
C6	192.3	1558.98
C7	192.4	1558.17
C8	192.5	1557.36
C9	192.6	1556.55
C10	192.7	1555.75
C11	192.8	1554.94
C12	192.9	1554.13
C13	193	1553.33
C14	193.1	1552.52
C15	193.2	1551.72
C16	193.3	1550.92
C17	193.4	1550.12
C18	193.5	1549.32
C19	193.6	1548.51
C20	193.7	1547.72

MDX-20UX10C1B C1 Band

Channel	Frequency (THz)	Wavelength (nm)
C21	194.2	1543.73
C22	194.3	1542.94
C23	194.4	1542.14
C24	194.5	1541.35
C25	194.6	1540.56
C26	194.7	1539.77
C27	194.8	1538.98
C28	194.9	1538.19
C29	195	1537.40
C30	195.1	1536.61
C31	195.2	1535.82
C32	195.3	1535.04
C33	195.4	1534.25
C34	195.5	1533.47
C35	195.6	1532.68
C36	195.7	1531.90
C37	195.8	1531.12
C38	195.9	1530.33
C39	196	1529.55
C40	196.1	1528.77

MDX-20UX10L2B L2 Band

Channel	Frequency (THz)	Wavelength (nm)
L1	186.6	1606.60
L2	186.7	1605.74
L3	186.8	1604.88
L4	186.9	1604.03
L5	187	1603.17
L6	187.1	1602.31
L7	187.2	1601.46
L8	187.3	1600.60
L9	187.4	1599.75
L10	187.5	1598.89
L11	187.6	1598.04
L12	187.7	1597.19
L13	187.8	1596.34
L14	187.9	1595.49
L15	188	1594.64
L16	188.1	1593.79
L17	188.2	1592.95
L18	188.3	1592.10
L19	188.4	1591.26
L20	188.5	1590.41

MDX-20UX10L1B L1 Band

Channel	Frequency (THz)	Wavelength (nm)
L21	189	1586.20
L22	189.1	1585.36
L23	189.2	1584.53
L24	189.3	1583.69
L25	189.4	1582.85
L26	189.5	1582.02
L27	189.6	1581.18
L28	189.7	1580.35
L29	189.8	1579.52
L30	189.9	1578.69
L31	190	1577.86
L32	190.1	1577.03
L33	190.2	1576.20
L34	190.3	1575.37
L35	190.4	1574.54
L36	190.5	1573.71
L37	190.6	1572.89
L38	190.7	1572.06
L39	190.8	1571.24
L40	190.9	1570.42

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Ordering Information

For more information on this or other products and their availability, please contact your local JDSU account manager or JDSU directly at 1-800-254-3684 in North America and +800-5378-JDSU worldwide or via e-mail at sales@jdsu.com.

Sample: MDX-04UXW001B

Associated Parts

MDX-  UXW001B

Code	Module Configuration
02	C-band Universal Mux/Demux (C1/C2), up to 40 channels
04	C and L-band Universal Mux/Demux (C1,C2,L1,L2), up to 80 channels

Product Code	Description
MDX-MN0102	2-slot 1RU shelf
MDX-MN0204	4-slot 2RU shelf
MDX-MN0412	12-slot 4RU shelf
MDX-MNWM02	2-slot wall-mount shelf

Sample: MDX-20UX10C1B

MDX-20UX10  B

Code	Channel Plan
C1	C band (196.1 to 194.2 THz)
C2	C band (193.7 to 191.8 THz)
L1	L band (190.9 to 189.0 THz)
L2	L band (188.5 to 186.6 THz)

Test & Measurement Regional Sales

NORTH AMERICA TEL: 1 866 228 3762 FAX: +1 301 353 9216	LATIN AMERICA TEL: +55 11 5503 3800 FAX: +55 11 5505 1598	ASIA PACIFIC TEL: +852 2892 0990 FAX: +852 2892 0770	EMEA TEL: +49 7121 86 2222 FAX: +49 7121 86 1222	www.jdsu.com/test
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