

## WaveReady® 40- and 44-Channel Multiplexer/Demultiplexer with Test Channel MDX-40MD101CB and MDX-44MD101CB



### Key Features

- High-density packing for the full C-band
- ITU-T G.694.1, 100-GHz DWDM transceiver compliant
- Integrated 1625 nm optical test path
- Fits into EIA 19-in, 23-in, and ETSI 300-mm racks
- Eliminates the need for electrical power, and immune to EMI/EMC and ESD

### Applications

- Provides terminal mux/demux in high-capacity optical transmission systems
- Performs in-service optical test of DWDM interconnect
- Terminates linear and ring networks in conjunction with add/drop optics

### Compliance

- ITU-T G.694.1
- GR-1221 and 1209

The WaveReady 40- and 44-Channel Multiplexer/Demultiplexer (DWDM Mux/Demux-40 and -44) are scalable high-capacity terminal dense wavelength division multiplexing (DWDM) solutions that allows multiplexing of up to 44 wavelengths to a fiber pair.

These multiplexers maximize the capacity of the C-band range with access to 40 or 44 x 100-GHz spaced channels. In conjunction with the WaveReady line of transponders and amplifiers, the DWDM Mux/Demux-40 and -44 support a wide range of architectures from simple point-to-point to amplified ring configurations with dynamic add/drop.

An integrated test path is built into each module allowing for in-service integration of optical line diagnostics.

With high channel uniformity, low insertion loss, and low chromatic dispersion, the DWDM Mux/Demux-40 and -44 are compatible with all digital transmission formats and data rates up to 40 Gb/s.

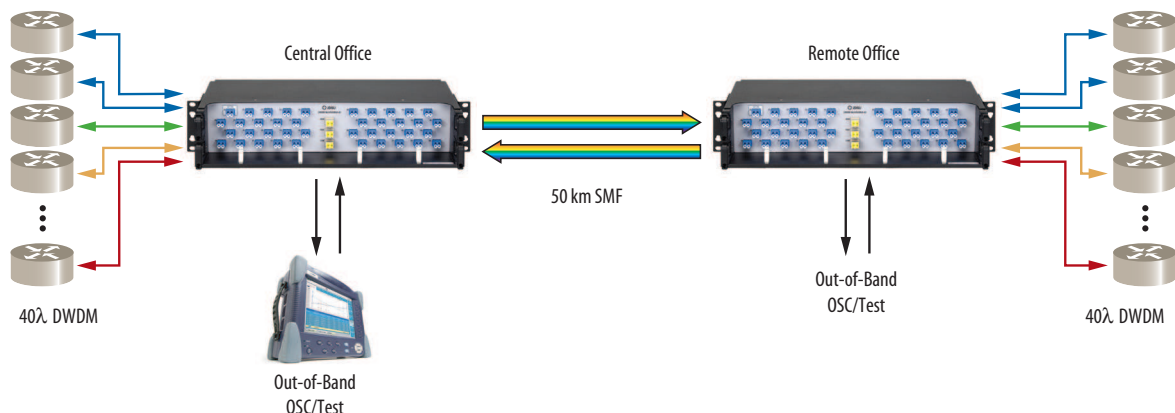
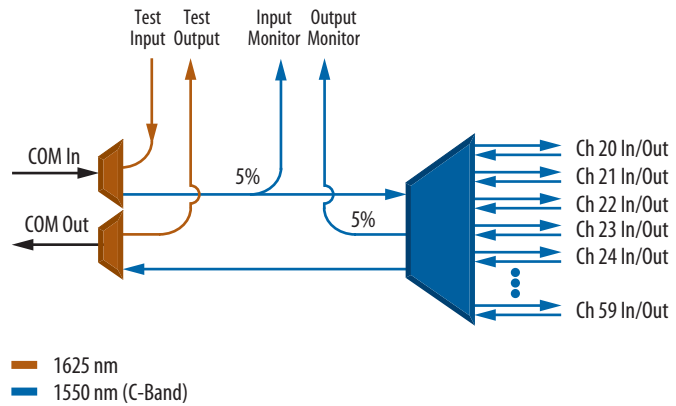


Figure 1: Point-to-point Link with Optical Monitoring

## 2

### Functional Diagram

Figure 2: Functional Diagram



### Sample Applications

Figure 3: T-BERD/MTS-8000 Optical Fiber Test Integration

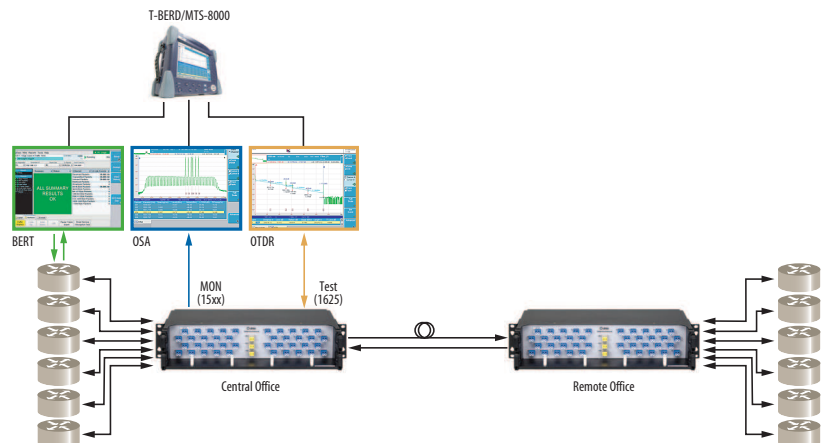
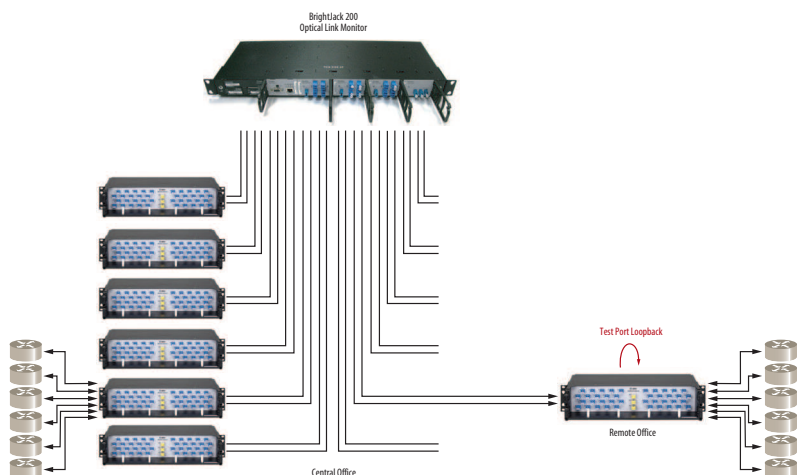


Figure 4: BrightJack 200 Optical Link Monitoring



Specifications<sup>1</sup>**Optical Characteristics**

Parameter	Minimum	Typical	Maximum
DWDM channel spacing		100 GHz	
DWDM channel bandwidth		ITU $\lambda$ $\pm$ 0.1 nm	
DWDM mux/demux insertion loss		4 dB	6 dB
DWDM channel non-uniformity			1.5 dB
Adjacent DWDM channel isolation	24 dB		
Non-adjacent DWDM channel isolation	33 dB		
DWDM monitor tap ratio	11 dB	13 dB	15 dB
Test channel wavelength range	1600 nm		1650 nm
Test channel insertion loss		0.7 dB	1 dB
Polarization dependent loss			0.5 dB
Polarization mode dispersion			0.5 ps
Optical return loss	40 dB		
Input optical power—sum of all DWDM channel ports			250 mW
Test port optical power			500 mW

**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)
Rack mounting options	ETSI, 19- or 23-inch rack mount
Optical connector type (all ports)	Duplex LC/PC bulkhead

**Environmental Characteristics**

Operating ambient temperature (short term)	–5 to +55°C
Operating ambient temperature (extended term)	+10 to +40°C
Storage temperature	–40 to +85°C
Relative humidity (non-condensing)	5 to 95%

<sup>1</sup> Specifications are worst case, end-of-life over specified temperature and wavelength range.

**Channel Plan**

Channel	Frequency (THz)	Wavelength (nm)	Channel	Frequency (THz)	Wavelength (nm)
<b>18<sup>1</sup></b>	<b>191.8</b>	<b>1563.05</b>	40	194.0	1545.32
<b>19<sup>1</sup></b>	<b>191.9</b>	<b>1562.23</b>	41	194.1	1544.93
20	192.0	1561.42	42	194.2	1543.73
21	192.1	1560.61	43	194.3	1542.94
22	192.2	1559.79	44	194.4	1542.14
23	192.3	1558.98	45	194.5	1541.35
24	192.4	1558.17	46	194.6	1540.56
25	192.5	1557.36	47	194.7	1539.77
26	192.6	1556.55	48	194.8	1538.98
27	192.7	1555.75	49	194.9	1538.19
28	192.8	1554.94	50	195.0	1537.40
29	192.9	1554.13	51	195.1	1536.61
30	193.0	1553.33	52	195.2	1535.82
31	193.1	1552.52	53	195.3	1535.04
32	193.2	1551.72	54	195.4	1534.25
33	193.3	1550.92	55	195.5	1533.47
34	193.4	1550.12	56	195.6	1532.68
35	193.5	1549.32	57	195.7	1531.90
36	193.6	1548.51	58	195.8	1531.12
37	193.7	1547.72	59	195.9	1530.33
38	193.8	1546.92	<b>60<sup>1</sup></b>	<b>196.0</b>	<b>1530.33</b>
39	193.9	1546.12	<b>61<sup>1</sup></b>	<b>196.1</b>	<b>1528.77</b>

<sup>1</sup> These channels are available in the 44-channel version of the module.

**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](mailto:sales@jdsu.com).

Product Code	Description
MDX-40MD101CB	40-Channel Multiplexer/Demultiplexer with Test Channel, ITU Channels 20-59
MDX-44MD101CB	44-Channel Multiplexer/Demultiplexer with Test Channel, ITU Channels 18-61