WaveReady™

100 GHz Dense Wavelength Division Multiplexing Optical Add/Drop Module

Key Features

- **MUX/DEMUX of one, four, or eight ITU 100 GHz spaced channels onto a fiber pair**
- **Add/drop up to eight channels at remote sites**
- **Upgradeable to 32 channels per fiber**
- **Low pass-through insertion loss for C-band channels**
- **Fits into standard LGX™-mounting solutions**
- **Thermally stable passive optics require no power**

Applications

- Improves capacity exhaust in fiber-constrained situations
- Conserves or reclaims fiber with DWDM
- Supports point-to-point multichannel
- Supports linear (bus) add/drop and hub-and-spoke ring architectures

Compliances

- Telcordia GR-1221
- RoHS compliant (exemptions 7b, 8a)

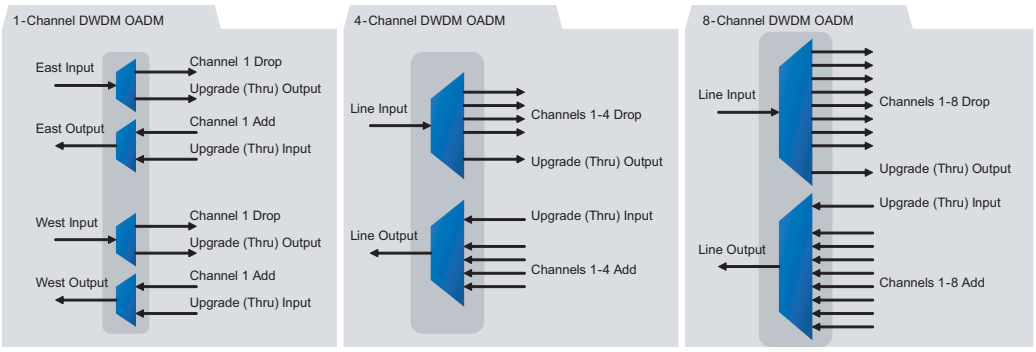
The JDSU WaveReady 100 GHz Optical Add/Drop Modules (OADM) comprise a family of flexible, low-cost solutions to enable capacity expansion of existing fiber. Through use of dense wavelength division multiplexing (DWDM) technology, a single optical fiber can carry up to 32 discrete optical channels.

The 100 GHz DWDM OADM is configurable as both an OADM and a terminal multiplexer and demultiplexer (MUX/DEMUX) to support a broad range of architectures ranging from scalable point-to-point links to four-fiber protected rings. Innovative band upgrade ports allow for in-service pay-as-you-grow capacity scaling in multiples of one, four, or eight channels, allowing for lowest first-day cost without limiting growth. Market standard LGX packaging is readily deployed in existing LGX-compatible frames or can be adapted into the WaveReady line of shelves.

The 100 GHz OADM is designed to operate with both the WaveReady line of transponder and optical regenerator solutions and ITU transponder cards of widely available transmission equipment.

2

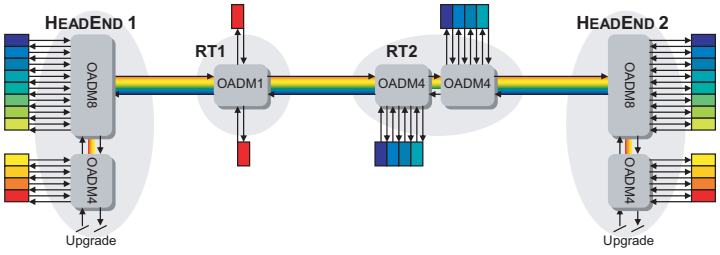
Functional Diagrams



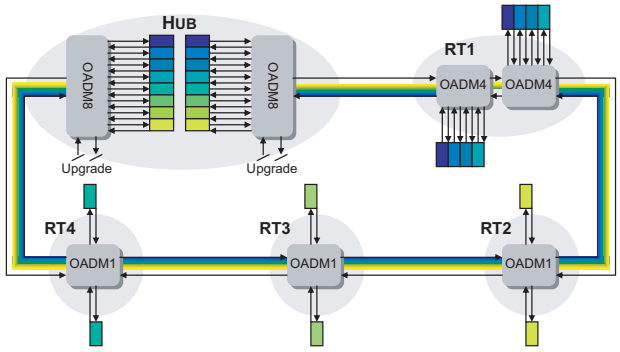
Sample Configurations

Point-to-Point DWDM

Protected Linear (Bus) Network



Protected Ring (Hub and Spoke)



3

Specifications[1]

Parameter		1-Channel[2]	4-Channel	8-Channel
Network Optical				
Mux/add insertion loss	Maximum	1.4 dB	3.7 dB	4.0 dB
	Typical	1.0 dB	2.6 dB	3.2 dB
Demux/drop insertion loss	Maximum	1.4 dB	3.7 dB	4.0 dB
	Typical	1.0 dB	2.6 dB	3.2 dB
Upgrade path insertion loss	Maximum	0.9 dB	0.9 dB	1.2 dB
Optical pass-through insertion loss	Maximum	1.8 dB	1.8 dB	2.4 dB
Channel passband	Minimum	±0.1 nm	±0.1 nm	±0.1 nm
Channel flatness	Minimum	0.5 dB	0.5 dB	0.5 dB
Channel loss uniformity		—	1 dB	1 dB
Isolation				
Adjacent ITU 100 GHz channel	Minimum	25 dB	25 dB	25 dB
Non-adjacent ITU 100 GHz channel	Minimum	50 dB	50 dB	50 dB
Through channel add/drop	Minimum	30 dB	30 dB	30 dB
Optical return loss	Minimum	40 dB	40 dB	40 dB
Maximum input optical power – Sum of all ports		1 W	1 W	1 W
Polarization dependent loss (PDL)	Maximum	0.2 dB	0.2 dB	0.2 dB
Polarization mode dispersion (PMD)	Maximum	0.2 ps	0.2 ps	0.2 ps
Physical				
Size (H x W x L)		129.5 x 28.4 x 160.3 mm (5.10 x 1.12 x 6.31 in) single-slot LGX	129.5 x 28.4 x 160.3 mm (5.10 x 1.12 x 6.31 in) single-slot LGX	129.5 x 57.7 x 160.3 mm (5.10 x 2.27 x 6.31 in) double-slot LGX
Optical connector type, all ports		Duplex LC/PC	Duplex LC/PC	Duplex LC/PC
Weight, approximate		0.45 kg (1 lb)	0.45 kg (1 lb)	0.91 kg (2 lb)
Environmental				
Operating ambient temperature			–5 to 70°C	
Storage temperature			–40 to 85°C	
Relative humidity, non-condensing			5 to 85%	

1. All specifications are guaranteed over the life, operating temperatures, and wavelength range specified.
2 One-channel DWDM OADM provides add/drop functionality for two fiber pairs. Optical specifications for east and west interfaces are identical.

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, +1 800-5378-JDSU worldwide or via e-mail at sales@jdsu.com.

Sample: MDX-04MD1001B

MDX- ☐☐☐☐ **10** ☐☐ **B**

Code	Channels
01AD	1
04MD	2
08MD	3

Channel Plan

Codes			ITU Number	Frequency (THz)	Wavelength (nm)
61	—	—	61	196.10	1528.77
60	01	0A	60	196.00	1529.55
59	01	0A	59	195.90	1530.33
58	01	0A	58	195.80	1531.12
57	01	0A	57	195.70	1531.9
56	—	—	56	195.60	1532.68
55	02	0A	55	195.50	1533.47
54	02	0A	54	195.40	1534.25
53	02	0A	53	195.30	1535.04
52	02	0A	52	195.20	1535.82
51	—	—	51	195.10	1536.61
50	03	0B	50	195.00	1537.4
49	03	0B	49	194.90	1538.19
48	03	0B	48	194.80	1538.98
47	03	0B	47	194.70	1539.77
46	—	—	46	194.60	1540.56
45	04	0B	45	194.50	1541.35
44	04	0B	44	194.40	1542.14
43	04	0B	43	194.30	1542.94
42	04	0B	42	194.20	1543.73
41	—	—	41	194.10	1544.53
40	—	—	40	194.00	1545.32
39	—	—	39	193.90	1546.12
38	05	0C	38	193.80	1546.92
37	05	0C	37	193.70	1547.72
36	05	0C	36	193.60	1548.51
35	05	0C	35	193.50	1549.32
34	—	—	34	193.40	1550.12
33	06	0C	33	193.30	1550.92
32	06	0C	32	193.20	1551.72
31	06	0C	31	193.10	1552.52
30	06	0C	30	193.00	1553.33
29	—	—	29	192.90	1554.13
28	07	0D	28	192.80	1554.94
27	07	0D	27	192.70	1555.75
26	07	0D	26	192.60	1556.55
25	07	0D	25	192.50	1557.36
24	—	—	24	192.40	1558.17
23	08	0D	23	192.30	1558.98
22	08	0D	22	192.20	1559.79
21	08	0D	21	192.10	1560.61
20	08	0D	20	192.00	1561.42
19	—	—	19	191.90	1562.23
18	—	—	18	191.80	1563.05

Note: Contact your JDSU representative for required ITU wavelengths in the range of 1563.86 to 1527.99 nm.

 September 2008 10143156 002 0908 DWDMOADM.DS.CMS.TM.AE