



CWDM PRODUCTS

COURSE WAVELENGTH DIVISION MULTIPLEXING (CWDM)

CWDM & CONVERSION FOR OPTICAL NETWORKS

FROM THE NETWORK CONNECTIVITY EXPERTS



Transition Networks' new CWDM products help you to alleviate fiber exhaustion and increase bandwidth on your existing fiber infrastructure. Coupled with Transition's industry leading media conversion, CWDM can be utilized to transmit multiple protocols over an existing fiber link. All CWDM products from Transition Networks come with a lifetime warranty.

**ALLEVIATE FIBER EXHAUSTION
AND INCREASE BANDWIDTH**



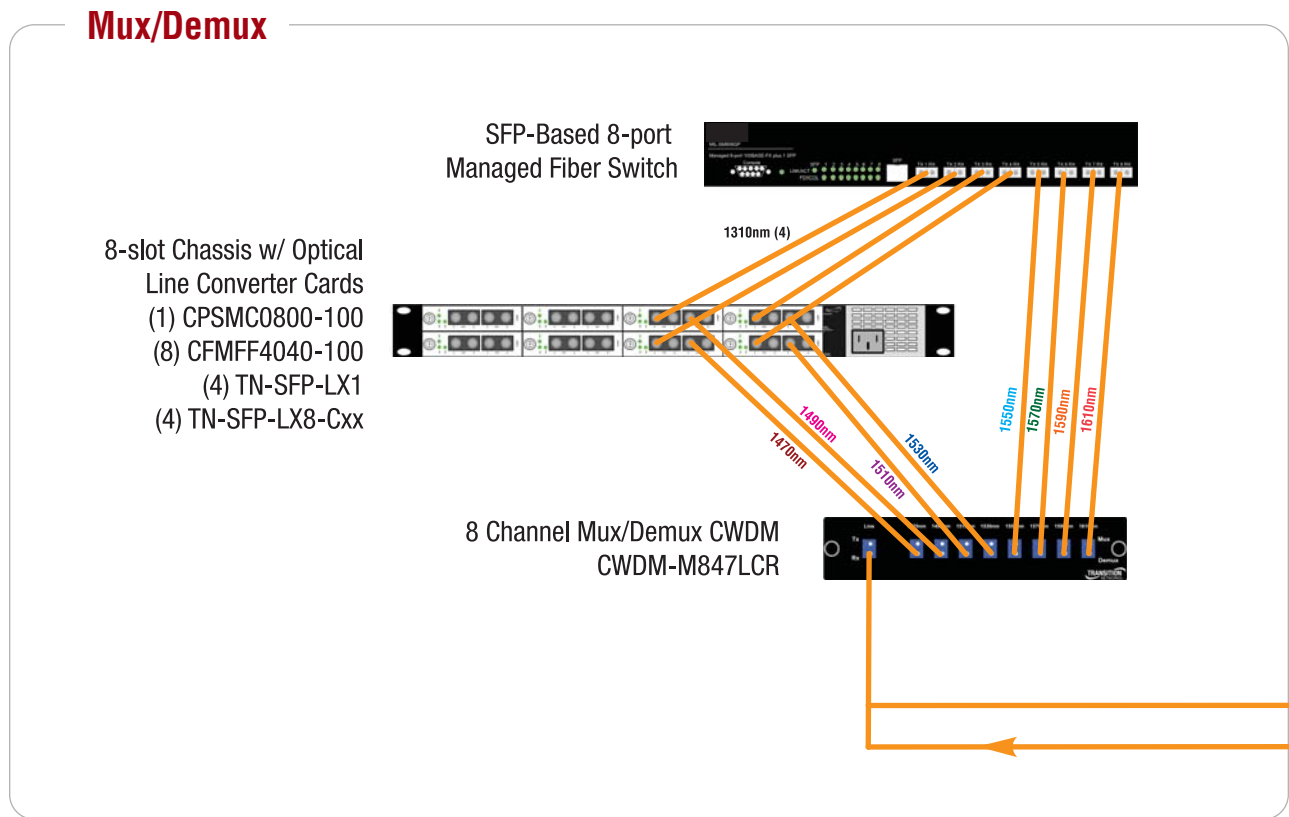
CWDM with media conversion as a transponder

Coarse wavelength division multiplexing (CWDM) is a technology which multiplexes multiple optical carrier signals on to a single optical fiber by using different wavelengths (colors) of light to carry each individual signal. Benefits of using CWDM include increased capacity on routes with fiber exhaustion and a more affordable alternative to installing more fiber or leasing additional fibers.

Utilizing passive optical CWDM technology along with CWDM wavelength-specific optical ports on Transition's complete line of media converters and switching products allows customers the full benefit of CWDM technology, scaled to their exact needs, by using a simple, modular, building-block approach to its deployment.

CWDM can be used in conjunction with a fiber switch and media conversion to combine multiple fiber lines from the switch over one fiber. The example below is showing how an optical line media converter can act as a transponder by changing the wavelength of the optics of the fiber line from the switch to match the CWDM device. From the CWDM, all fibers are combined for transmission over one fiber.

- ▶ Utilize Optical Line Converter as a transponder to “clean up” or change wavelength of optics to match CWDM device
- ▶ Allows for transport of multiple protocols over a duplex pair of backbone fibers when combined with media conversion



CWDM as an add/drop multiplexer (OADM)

The optical add/drop multiplexer modules provide the ability to add or drop a single wavelength or multi-wavelengths from a fully multiplexed optical signal. This allows intermediate locations between remote sites to access the common, point-to-point fiber segment linking them. Wavelengths not dropped, pass-through the OADM and continue on in the direction of the remote site. Additional selected wavelengths can be added or dropped by successive OADMs as needed.

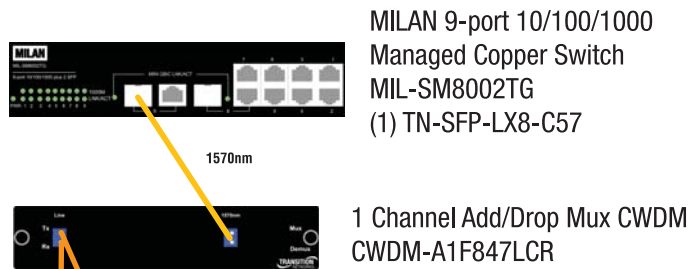
Active CWDM Media Converters

Active CWDM media converters are those that either convert a copper-based signal to a CWDM wavelength specific optical signal or convert a multimode optical signal to a CWDM wavelength specific single mode optical signal. Transition Networks CWDM media converters are available for the managed, Point System™ chassis-based platform or unmanaged stand-alone models covering various protocols including: Fast Ethernet, Gigabit Ethernet, T1/E1, T3/E3/DS3, RS232, RS422, RS485, SONET and ATM.

▶ **Add/drop a single wavelength or multi-wavelengths from a fully multiplexed optical signal**

▶ **Easy deployment and flexible implementation with “Plug and Play” - no configuration of CWDM components**

Add/Drop Mux



CWDM as a mux/demux with media conversion

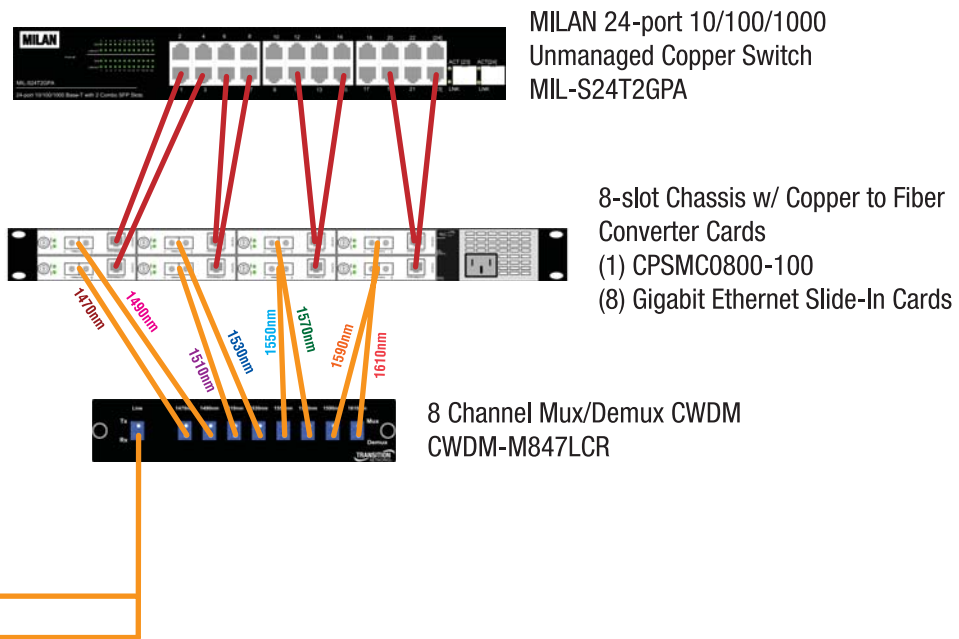
The Mux/Demux devices are available in 4, 5, 8 and 9-channel configurations with the capability of expanding up to 16 channels. These modules passively multiplex the optical signal outputs from 4 or more electronic devices, send them over a single optical fiber and then de-multiplex the signals into separate, distinct signals for input into electronic devices at the other end of the fiber optic link.

Modules can also be configured with a single wideband 1310nm port to accommodate existing, non-CWDM single mode ports on switches and media converters. In addition, certain models are available with an expansion port, providing a means to add additional wavelengths or channels to an existing mux/demux by daisy-chaining the modules together. This unique feature allows the CWDM to be cost-effectively tailored to current needs, while providing a flexible, scalable path to increase the number of channels in the future as your network grows.

▶ Alleviate fiber congestion by reducing backbone fiber used by a factor of 4, 8 or 16

▶ Provide scalable Ethernet bandwidth between 100Mb and 8 Gbps over existing fiber links

Mux/Demux

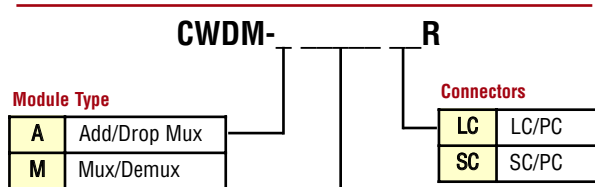


ordering information

Transition’s CWDM devices are available in two main configurations: Optical Add/Drop Multiplexer (OADM) modules and Multiplexer/Demultiplexer (Mux/Demux) modules. Each module is a pluggable device that slides into a one rack unit (1RU) chassis that can hold 2 modules and mount into a 19” equipment rack.

Channel Configuration
(Module Type A Only)

| | |
|-------|-----------------------------------|
| 1A451 | 1 Ch. Add/Drop 1510nm (group 451) |
| 1B451 | 1 Ch. Add/Drop 1530nm (group 451) |
| 1C451 | 1 Ch. Add/Drop 1550nm (group 451) |
| 1D451 | 1 Ch. Add/Drop 1570nm (group 451) |
| 1A453 | 1 Ch. Add/Drop 1530nm (group 453) |
| 1B453 | 1 Ch. Add/Drop 1550nm (group 453) |
| 1C453 | 1 Ch. Add/Drop 1570nm (group 453) |
| 1D453 | 1 Ch. Add/Drop 1590nm (group 453) |
| 1A455 | 1 Ch. Add/Drop 1550nm (group 455) |
| 1B455 | 1 Ch. Add/Drop 1570nm (group 455) |
| 1C455 | 1 Ch. Add/Drop 1590nm (group 455) |
| 1D455 | 1 Ch. Add/Drop 1610nm (group 455) |
| 1A847 | 1 Ch. Add/Drop 1470nm (group 847) |
| 1B847 | 1 Ch. Add/Drop 1490nm (group 847) |
| 1C847 | 1 Ch. Add/Drop 1510nm (group 847) |
| 1D847 | 1 Ch. Add/Drop 1530nm (group 847) |
| 1E847 | 1 Ch. Add/Drop 1550nm (group 847) |
| 1F847 | 1 Ch. Add/Drop 1570nm (group 847) |
| 1G847 | 1 Ch. Add/Drop 1590nm (group 847) |
| 1H847 | 1 Ch. Add/Drop 1610nm (group 847) |



Channel Configuration
(Module Type M Only)

| | |
|-----|--------------------------------------|
| 451 | 4 Ch. 1510/1530/1550/1570nm |
| 453 | 4 Ch. 1530/1550/1570/1590nm |
| 455 | 4 Ch. 1550/1570/1590/1610nm |
| 551 | 5 Ch. 1510/1530/1550/1570nm + 1310nm |
| 553 | 5 Ch. 1530/1550/1570/1590nm + 1310nm |
| 555 | 5 Ch. 1550/1570/1590/1610nm + 1310nm |
| 847 | 8 Ch. 1470 ~ 1610nm |
| 947 | 9 Ch. 1470 ~ 1610nm + 1310nm |

Examples

- CWDM-M455LCR**
CWDM Mux/Demux Module,
4 channel, 1550 nm ~ 1610nm
- CWDM-1D847SCR**
CWDM Add/Drop Mux Module,
1 channel drop (1530nm)
pass 1470nm ~ 1510nm &
pass 1500nm ~ 1610nm

* Note: 1310nm channel is wideband (+/- 50nm)

Other channel configurations may be available upon request. Please contact Transition Networks.

SFPs - CWDM Wavelengths

Ordering Info

- TN-SFP-OC3S8-Cxx**
SFP 100BASE-FX/OC-3 (LC) SM
[80 km/49.7 mi.] Link Budget: 29.0 dB
- TN-SFP-OC12S-Cxx**
OC-12/STM-4 (LC) SM
[80 km/49.7 mi.] Link Budget: 29.0 dB
- TN-SFP-LX8-Cxx**
1000BASE-LX/Fibre Channel 1x (LC) SM
[80 km/49.7 mi.] Link Budget: 24.0 dB
- TN-SFP-OC48S-Cxx**
OC-48/STM-16/Fibre Channel 2x/1x/1000BASE-LX (LC) SM
[40 km/24.9 mi.] Link Budget: 18.0 dB

xx = center wavelength (λ_c)

| | |
|-------------|-------------|
| 27 = 1270nm | 45 = 1450nm |
| 29 = 1290nm | 47 = 1470nm |
| 31 = 1310nm | 49 = 1490nm |
| 33 = 1330nm | 51 = 1510nm |
| 35 = 1350nm | 53 = 1530nm |
| 37 = 1370nm | 55 = 1550nm |
| 39 = 1390nm | 57 = 1570nm |
| 41 = 1410nm | 59 = 1590nm |
| 43 = 1430nm | 61 = 1610nm |

featured products and contact information

Featured Products

CWDM-M847LCR
8 Channel Mux/Demux CWDM



CWDM-A1F847LCR
1 Channel Add/Drop Mux CWDM



CFMFF4040-100
Line Converter Card



MIL-S24T2GPA
MILAN 24-port 10/100/1000
Unmanaged Copper Switch



MIL-SM8002TG
MILAN 9-port 10/100/1000
Managed Copper Switch



CWDM-MB19R1
19" Rack Mount Bracket, 1RU High,
holds 2 CWDM Modules



CPSMC0800-100
8-slot Point System™ Chassis



Contact Us

Worldwide Headquarters & U.S. Sales

6475 City West Parkway
Eden Prairie, MN 55344 USA
tel: 952.941.7600
toll free: 800.526.9267
fax: 952.941.2322

sales@transition.com
info@transition.com
techsupport@transition.com
www.transition.com

Sales Offices

North America

Canada - Eastern (ON, PQ, NB, NS, PEI, NF/LB)
tel +1-603-750-7169
fax +1-815-360-7401

Canada - Western (YT, NT, NU, BC, AB, SK, MB)
tel +1-425-487-6788
fax +1-360-234-9170

Latin America

Mexico, Central America, Caribbean
tel: +1-952-996-1517
fax: +1-952-941-2322

South America

Office: +1-727-812-9656
Mobile: +1-954-376-1037
Fax: +1-952-941-2322

Brazil

tel: +55 11 8244-7630

Europe

EMEA Headquarters / Germany
tel +49 611 974 8460
fax +49 611 950 4672

Eastern Europe

tel +420 2 2426 6901
fax +420 2 2426 6854

Sweden

tel/fax +46 8 243 454

United Kingdom

tel +44 1691-830016
fax +44 1691-830876

Asia

China / Hong Kong
tel +1-952-941-7600
fax +1-952-941-2322

India

tel +65 6288-9810
fax +65 6234-0564

Japan

tel +81 03 3357 9980
fax +81 03 5360 4480

Southeast Asia

tel +65 6288-9810
fax +65 6234-0564