

Prisma II Long Reach Multiwave Transmitter

The Prisma® II optical networks allow for best-in-class architectures with increased reliability, scalability, and cost-effectiveness. The Prisma II Long Reach Multiwave (LRMW) Transmitter offers a 1 GHz full spectrum plus QAM DWDM transport solution for node segmentation, fiber reclamation, and fiber-deeper architectures.

Figure 1. Prisma II Long Reach Multiwave Transmitter



Features

- 8 wavelengths supported, with future migration to 16
- 100 GHz DWDM channel availability
- Designed to operate within the Prisma II Platform
- Superior fiber dispersion compensation
- High linearity for robust MER and BER performance, for high symbol rate QAM
- Small CO₂ footprint: lowest power consumption per transmitter in the industry
- Status LEDs indicate module condition and simplify troubleshooting
- Blind-mate (push-on) RF and DC connectors
- RF input test points
- Nonvolatile storage of preset operating parameters simplifies installation procedures
- User selectable automatic gain control (AGC)
- Multiple setup and control options
 - Local control via Local Craft Interface (LCI)
 - Local control via Intelligent Communications Interface Module (ICIM)
 - Remote monitoring via Transmission Network Control System (TNCS)
 - SNMP remote monitoring

Product Specifications

Table 1. Optical

Specification	Units	LRMW Tx	Notes
Wavelength Range DWDM	ITU	Ch A - Ch D 100 GHz ITU Ch E - Ch H Offset by 25 GHz	1
Connector Type		SC/APC, E-2000	2
Output Power (minimum)	dBm	+12.5	
Modulation Type		Externally Modulated (EM)	1

Table 2. Electrical

Specification	Units	LRMW Tx	Notes
Bandwidth	MHz	45 - 1000	
Required Nominal RF Input Level per Channel, Broadcast	dBmV	Analog: 18 ± 0.5 Digital: 12 ± 0.5	3 3
Required Nominal RF Input Level per Channel, Narrowcast	dBmV	Digital: 24 ± 0.5	3
Front Panel RF Test Point Relative to Input	dB	-20 ± 0.5	
RF Input Return Loss 45 - 1000 MHz	dB	16	
Frequency Response 45 - 550 MHz 550 - 1000 MHz	dB	± 0.50 ± 0.75	
Power Consumption (maximum)	W DC	15	

Notes:

1. See **Ordering Information** for available ITU wavelengths.
2. E-2000 connector available as an option.
3. RF input levels are specified with Tx AGC off.

Unless otherwise noted, specifications are based on measurements made in accordance with NCTA Practices for Measurements made on Cable Television Systems using standard frequency assignments, and are referenced to the ambient air temperature at the inlet to the Prisma II chassis.

Product Specifications, cont'd.

Table 3. Environmental

Specification	Units	LRMW Tx	Notes
Temperature Range	°C	0 to 50	1
Operational, Full Specification	°F	32 to 122	
Humidity, Non-Condensing	%	5 to 95	1

Note:

1. Recommended for use in non-condensing environments only.

Unless otherwise noted, specifications are based on measurements made in accordance with NCTA Practices for Measurements made on Cable Television Systems using standard frequency assignments, and are referenced to the ambient air temperature at the inlet to the Prisma II chassis.

Table 4. Mechanical

Specification	Units	LRMW Tx	Notes
Depth	in. cm	8.80 22.35	
Width	in. cm	1.03 2.62	
Height	in. cm	7.63 19.60	
Weight	lb kg	1.5 0.68	
Module Width	slots	1	

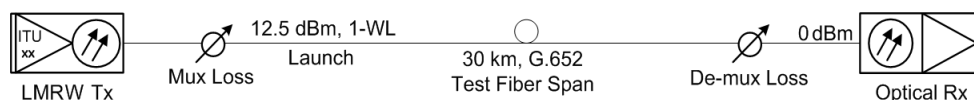
Table 5. Link Performance (Based on Figure 2 Test Setup)

Channel Loading	MER †	BER	CNR ‡	Notes
78 Analog Plus 75 QAM	38 dB	$\leq 1.2 \text{ e-}8$	52 dB	1, 2, 3, 4, 5

† All MER measurements are equalized; test equipment may limit measured performance.

‡ For links using Prisma II LRMW Transmitter launched at 10 dBm per wavelength into 30 km SM fiber with 0 dBm optical input to the receiver (see note 4 on the following page).

Figure 2. Reference LRMW Link for Performance Specifications (Including Passive MUX/DEMUX Losses)



Notes:

1. Specifications above are based on a single transmitter; link performance for a multi-wavelength system will differ. Consult with Cisco Systems Engineering for system performance.
2. With specified RF input levels and optical link conditions. CNR values referenced to CW carriers.
3. Specifications assume 256 QAM modulation; use of 64 QAM modulation may exhibit improved performance.
4. Receiver with $EIN \leq 6.5 \text{ pA}/\sqrt{\text{Hz}}$, $R = 0.95 \text{ A/W}$
5. BER is before Forward Error Correction (pre-FEC), with ITU-B J.83 Annex B QAM modulation.

Unless otherwise noted, specifications are based on measurements made in accordance with NCTA Practices for Measurements made on Cable Television Systems using standard frequency assignments, and are referenced to the ambient air temperature at the inlet to the Prisma II chassis.

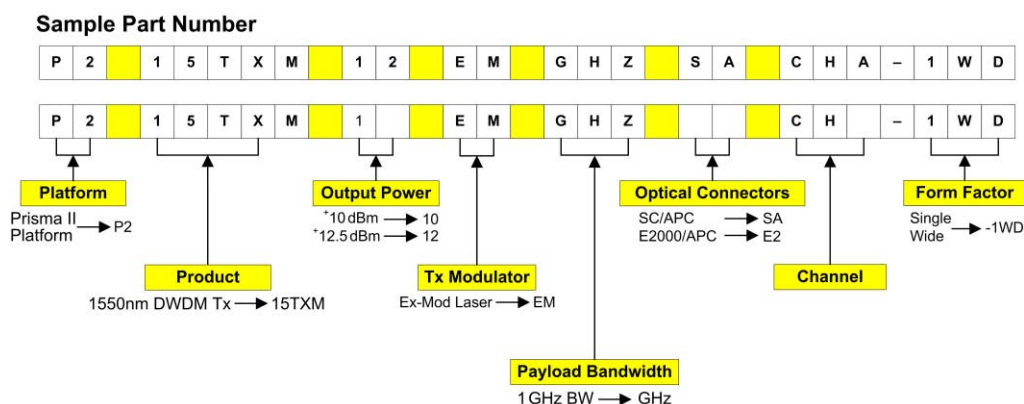
Ordering Information

Table 6. Ordering Information - LRMW Tx 12.5 dBm Model P2-15TXM

12.5 dBm LRMW Tx	
Channel No.	Part Number
Ch A	4039501
Ch B	4039502
Ch C	4039503
Ch D	4039504
Ch E	4039505
Ch F	4039506
Ch G	4039507
Ch H	4039508

Prisma II products include some of the industry's most complete range of high-performance optical components. See list below.

Platform

- 1310 Transmitters
- Forward Optical Receivers
- Reverse Optical Receivers
- 1550 nm Optical Amplifiers
- Optical Switches
- Ancillary Modules
- bdr Digital Reverse 1:2 Multiplexing System

For more information, refer to the following documents:

- Prisma II Data Sheet, part number 739199
- Prisma II Data Sheet, part number 739200
- Prisma II Data Sheet, part number 7011887
- Prisma II Data Sheet, part number 7011888
- Prisma II Data Sheet, part number 739202
- Prisma II Data Sheet, part number 739203
- Prisma II Data Sheet, part number 739205
- Prisma II Data Sheet, part number 744484

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