

Prisma II 1 GHz SuperQAM Transmitter

The Prisma® II optical networks allow for best in class architectures with increased reliability, scalability, and cost-effectiveness. The Prisma II 1 GHz SuperQAM Transmitter offers flexibility and ease of set up in channel plan migrations that include large narrowcast loads, particularly in multi-wavelength architectures.

Figure 1. Prisma II 1 GHz SuperQAM Transmitter (Two Transmitters in Host Module)



Features

- 1 GHz operation
- Designed to operate within the Prisma II platform, and Prisma XD platform
- Easy expansion to preset settings of 16, 32, 50, or 153 QAM channels
- Superior Fiber Dispersion Compensation
- High linearity for robust MER and BER performance, for high symbol rate QAM
- 100 GHz DWDM, channel availability
- 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 pre-set 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	Forward QAM Tx & High Density QAM Tx	Notes
Wavelength Range DWDM	nm ITU	1530 - 1562 20 - 59	1
Connector Type		Standard	
Output Power (minimum)	dBm	+10	
Modulation Type		Direct	1

Table 2. Electrical

Specification	Units	High Density QAM Tx	Notes
Bandwidth	MHz	50 - 1002	2
Required Nominal RF Input Level per Channel:			
16 Channel Setting	dBmV	22 ± 0.5	3
32 Channel Setting	dBmV	19 ± 0.5	3
50 Channel Setting	dBmV	19 ± 0.5	3
153 Channel Setting (All Digital)	dBmV	13 ± 0.5	3, 4
Front Panel RF Test Point Relative to Input	dB	-20 ± 1.0	
RF Input Return Loss			
50 - 1002 MHz	dB	16	
Frequency Response			
45 - 1002 MHz	dB	± 0.75	
Power Consumption (maximum)	W DC	7.5	

Notes:

1. See **Ordering Information** for available ITU wavelengths.
2. RF input frequency range is 50-1002 MHz for 16 and 153 contiguous channels, 550-1002 MHz for 32 and 50 contiguous channels.
3. RF input levels specified are 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 or Prisma XD chassis.

Table 3. Environmental

Specification	Units	High Density Forward QAM Tx	Notes
Temperature Range Operational, Full-Specification	°C °F	0 to 50 32 to 122	1
Humidity	%	0 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	High Density Forward QAM Tx	Notes
Depth	in. cm	8.80 22.35	
Width	in. cm	1.03 2.62	
Height	in. cm	3.48 8.84	
Weight	lb kg	0.90 0.41	
Module Width	slots	1	

Table 5. Link Performance

Channel Loading	MER†	BER	CNR‡	Notes
16 QAM	38	$\leq 1 \text{ e-9}$	53.5	1, 2, 3, 4, 6
32 QAM	38	$\leq 1 \text{ e-9}$	50.5	1, 2, 3, 4, 6
50 QAM	38	$\leq 1 \text{ e-9}$	48	1, 2, 3, 4, 6
153 QAM (all digital)	36	$\leq 1 \text{ e-9}$		5

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

‡ For links using Prisma II SuperQAM transmitter launched into 60 km SM fiber with -5 dBm optical input to the receiver (see note 5 below).

Notes:

1. With specified RF input levels and optical link conditions. CNR values referenced to CW carriers.
2. For use with 256 QAM modulation; use of 64 QAM modulation will exhibit improved performance.
3. Receiver with $\text{NEP} = 7 \text{ pa} / \sqrt{\text{Hz}}$; $\rho = 0.9 \text{ A/W}$.
4. BER is before Forward Error Correction (pre-FEC), with ITU-B J.83 Annex B QAM modulation.
5. 153 QAM channel loading (all digital) is only valid up to 40 km.
6. Mathematical modeling available for performance calculations in Broadcast / Narrowcast single receiver applications. Contact your Applications Engineering team.

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

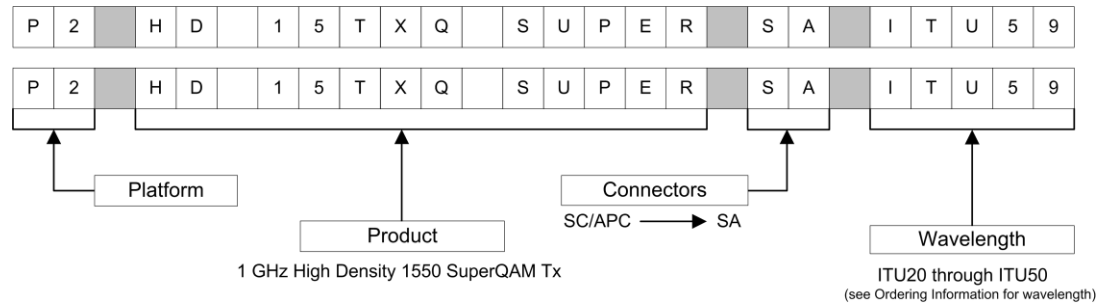


Table 6. Ordering Information - 1550 Forward High Density SuperQAM Tx 10 dBm Model P2-HD-15TXQ

ITU Channels	Wavelength (nm)	Part Number	ITU Channels	Wavelength (nm)	Part Number
20	1561.42	737635	40	1545.32	737655
21	1560.61	737636	41	1544.53	737656
22	1559.79	737637	42	1543.73	737657
23	1558.98	737638	43	1542.94	737658
24	1558.17	737639	44	1542.14	737659
25	1557.36	737640	45	1541.35	737660
26	1556.55	737641	46	1540.56	737661
27	1555.75	737642	47	1539.77	737662
28	1554.94	737643	48	1538.98	737663
29	1554.13	737644	49	1538.19	737664
30	1553.33	737645	50	1537.40	737665
31	1552.52	737646	51	1536.61	737666
32	1551.72	737647	52	1535.82	737667
33	1550.92	737648	53	1535.04	737668
34	1550.12	737649	54	1534.25	737669
35	1549.32	737650	55	1533.47	737670
36	1548.51	737651	56	1532.68	737671
37	1547.72	737652	57	1531.90	737672
38	1546.92	737653	58	1531.12	737673
39	1546.12	737654	59	1530.33	737674

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
- Receiver
- 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

Service and Support

Using the Cisco Lifecycle Services approach, Cisco and its partners provide a broad portfolio of end-to-end services and support that can help increase your network's business value and return on investment. This approach defines the minimum set of activities needed by technology and by network complexity to help you successfully deploy and operate Cisco technologies and optimize their performance throughout the lifecycle of your network.

For More Information

To learn more about this product, contact your local account representative.

To subscribe to receive end-of-life/end-of-sale information, go to <http://www.cisco.com/cgi-bin/Support/FieldNoticeTool/field-notice>.



Cisco and the Cisco Logo are trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and other countries. A listing of Cisco's trademarks can be found at www.cisco.com/go/trademarks.

Other third party trademarks mentioned are the property of their respective owners.

The use of the word partner does not imply a partnership relationship between Cisco and any other company.
(1005R)

Specifications and product availability are subject to change without notice.
© 2010 Cisco Systems, Inc. All rights reserved.

Cisco Systems, Inc.
1-800-722-2009 or 678-277-1000
www.cisco.com

Part Number 7019211 Rev B
July 2010