

Cisco Prisma II SuperQAM 1.2 Transmitters

Cisco® Prisma® II optical networks allow for best in class architectures with increased reliability, scalability, and cost-effectiveness. The Cisco Prisma II SuperQAM 1.2 transmitter offers increased bandwidth and uses existing directly-modulated QAM transmitter designs to support DOCSIS® 3.1 networks. This transmitter combines the enhanced channel carrying capacity of the Prisma II 1-GHz SuperQAM Full Spectrum transmitter with the narrowcast support in multi-wavelength systems inherent in the original Prisma II 1-GHz SuperQAM transmitter to provide unprecedented performance in a directly modulated transmitter (Figure 1).

Figure 1. Cisco Prisma II SuperQAM 1.2 Transmitter (Two Shown in Host Module)



Features

- RF channels up to 1.218 GHz
- Designed to operate in the Prisma II and Prisma XD platforms
- Superior fiber dispersion compensation
- Excellent modulation-error-rate (MER) and bit-error-rate (BER) performance supports high-symbol-rate QAM
- ITU compatible with 100 GHz channel spacing for dense wavelength division multiplexing (DWDM) systems
- Small CO2 footprint with the lowest power consumption 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)
- Local control via Local Craft Interface (LCI)
- Local control via Intelligent Communications Interface Module (ICIM)
- SNMP remote monitoring

Product Specifications

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 1. Cisco Prisma II SuperQAM 1.2 Specifications

Optical	
Wavelength	DWDM ITU compatible between ITU 20 and 62
Output power	10 dBm
Modulation type	Directly modulated laser
RF	
Operating bandwidth	54 to 1218 MHz
Nominal channel loading (note 1)	30 channels, NTSC CW analog [54-258 MHz] 96 channels, J.83 ITU Annex B, 256 QAM (6 MHz) [258-834 MHz] 2 channels, 192-MHz OFDM (834-1218 MHz)
RF input levels for nominal channel loading:	
• Broadcast port, analog channels	18 dBmV/ch
• Broadcast port, QAM channels	12 dBmV/ch
• Broadcast port, OFDM signal	27 dBmV total power (matches QAM level - note 2)
• Narrowcast port, QAM channels	12 dBmV/ch (note 3)
• Narrowcast port OFDM signal	27 dBmV total power (matches QAM level - note 2)
Total composite RF input	36.5 dBmV (nominal channel loading)
RF input return loss	16 dB
Digital link performance @ 60-km fiber (one of the following):	MER: ≥38 dB BER: < 1.0 x 10 ⁻⁹ Pre-FEC < 1.0 x 10 ⁻¹² Post-FEC
• 50 QAM channels	
• 50 QAM channels plus 384-MHz OFDM	
• 130 QAM channels plus 384-MHz OFDM	
Mixed link performance @ 40-km fiber (all of the following):	CNR: 50 dB CSO, CTB: -62 dBc MER: ≥38 dB BER: <1.0 x 10 ⁻⁸ Pre-FEC <1.0 x 10 ⁻¹² Post-FEC
• 30 analog channels	
• 96 QAM channels	
• 2 OFDM channels (384 MHz)	
Electrical, Mechanical, and Environmental	
Power consumption	7.5W
Connector type	SC/APC
Management and control	Web interface SNMP
Dimensions (H x W x D)	3.48 in x 1.03 x 8.80 in. (8.84 x 2.62 x 22.35 mm)
Weight	<0.90 lb (<0.41 kg)
Operating temperature	32 to 122°F (0 to 50°C)
Humidity	5 to 95% noncondensing

Notes:

1. Input level to read 0 dB in the GUI or CLI parameter table.
2. Level shown represents the total power of a 192 MHz OFDM signal. It is equivalent to the power per 6 MHz Consumer Electronics Association (CEA) channel + $10 \log_{10}$ (number of occupied CEA channels); that is: $[12 \text{ dBmV} + 10 \log_{10}(32)] = 27 \text{ dBmV}$.
3. QAM channel level in the narrowcast port must be 6 dB below those of the analog channels in the combined channel load.

Ordering Information

Part numbers for the Cisco Prisma II SuperQAM 1.2 transmitters are shown in Table 2. Please consult with your Cisco account representative, customer service representative, or system engineer to determine the best configuration for your application.

Table 2. Cisco Prisma II SuperQAM 1.2 Transmitter Part Numbers

Description	Cisco Part Number
1.2 GHZ SUPERQAM, ITU20	P2HD1.2G15TXQ20=
1.2 GHZ SUPERQAM, ITU21 iWDM	P2HD1.2G15TXQ21i=
1.2 GHZ SUPERQAM, ITU22 iWDM	P2HD1.2G15TXQ22i=
1.2 GHZ SUPERQAM, ITU23	P2HD1.2G15TXQ23=
1.2 GHZ SUPERQAM, ITU24 iWDM	P2HD1.2G15TXQ24i=
1.2 GHZ SUPERQAM, ITU25	P2HD1.2G15TXQ25=
1.2 GHZ SUPERQAM, ITU26 iWDM	P2HD1.2G15TXQ26i=
1.2 GHZ SUPERQAM, ITU27	P2HD1.2G15TXQ27=
1.2 GHZ SUPERQAM, ITU28 iWDM	P2HD1.2G15TXQ28i=
1.2 GHZ SUPERQAM, ITU29	P2HD1.2G15TXQ29=
1.2 GHZ SUPERQAM, ITU30	P2HD1.2G15TXQ30=
1.2 GHZ SUPERQAM, ITU31	P2HD1.2G15TXQ31=
1.2 GHZ SUPERQAM, ITU32	P2HD1.2G15TXQ32=
1.2 GHZ SUPERQAM, ITU33 iWDM	P2HD1.2G15TXQ33i=
1.2 GHZ SUPERQAM, ITU34	P2HD1.2G15TXQ34=
1.2 GHZ SUPERQAM, ITU35	P2HD1.2G15TXQ35=
1.2 GHZ SUPERQAM, ITU36 iWDM	P2HD1.2G15TXQ36i=
1.2 GHZ SUPERQAM, ITU37	P2HD1.2G15TXQ37=
1.2 GHZ SUPERQAM, ITU38	P2HD1.2G15TXQ38=
1.2 GHZ SUPERQAM, ITU39 iWDM	P2HD1.2G15TXQ39i=
1.2 GHZ SUPERQAM, ITU40	P2HD1.2G15TXQ40=
1.2 GHZ SUPERQAM, ITU41	P2HD1.2G15TXQ42=
1.2 GHZ SUPERQAM, ITU42	P2HD1.2G15TXQ41=
1.2 GHZ SUPERQAM, ITU43	P2HD1.2G15TXQ43=
1.2 GHZ SUPERQAM, ITU44 iWDM	P2HD1.2G15TXQ44i=
1.2 GHZ SUPERQAM, ITU45	P2HD1.2G15TXQ45=
1.2 GHZ SUPERQAM, ITU46	P2HD1.2G15TXQ46=
1.2 GHZ SUPERQAM, ITU47	P2HD1.2G15TXQ47=

Description	Cisco Part Number
1.2 GHZ SUPERQAM, ITU48 iWDM	P2HD1.2G15TXQ48i=
1.2 GHZ SUPERQAM, ITU49	P2HD1.2G15TXQ49=
1.2 GHZ SUPERQAM, ITU50	P2HD1.2G15TXQ50=
1.2 GHZ SUPERQAM, ITU51	P2HD1.2G15TXQ51=
1.2 GHZ SUPERQAM, ITU52 iWDM	P2HD1.2G15TXQ52i=
1.2 GHZ SUPERQAM, ITU53	P2HD1.2G15TXQ53=
1.2 GHZ SUPERQAM, ITU54 iWDM	P2HD1.2G15TXQ54i=
1.2 GHZ SUPERQAM, ITU55	P2HD1.2G15TXQ55=
1.2 GHZ SUPERQAM, ITU56	P2HD1.2G15TXQ56=
1.2 GHZ SUPERQAM, ITU57 iWDM	P2HD1.2G15TXQ57i=
1.2 GHZ SUPERQAM, ITU58	P2HD1.2G15TXQ58=
1.2 GHZ SUPERQAM, ITU59	P2HD1.2G15TXQ59=
1.2 GHZ SUPERQAM, ITU60 iWDM	P2HD1.2G15TXQ60i=
1.2 GHZ SUPERQAM, ITU61 iWDM	P2HD1.2G15TXQ61i=
1.2 GHZ SUPERQAM, ITU62 iWDM	P2HD1.2G15TXQ62i=

Note: For 40 contiguous ITU channel deployments, non-iWDM and iWDM transmitters are interspersed.



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: www.cisco.com/go/trademarks. 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. (1110R)