

Optoelectronics

Prisma II™ Forward Optical Receivers

Description

The Prisma II™ optical network is an advanced transmission system designed to optimize network architectures and increase reliability, scalability, and cost effectiveness. The Prisma II Forward Optical Receivers are available in two form-factors; the original full-height Single Forward Receiver and the new half-height High Density Forward Receiver. Both are rated to 1 GHz to complement our full line of 1 GHz HFC products.

The High Density Forward Receiver (HDRx-F) module is primarily used to receive signals fed from a narrowcast (QAM) optical transmitter. Two HDRx-F modules can be vertically stacked in an associated Host Module which occupies a single wide slot in the Prisma II chassis. Up to 26 HDRX-F modules can operate in a standard 6RU chassis*. The ability to mix high density receivers with other Prisma II modules in the same chassis greatly enhances the flexibility of the platform.

The Full Height Single Forward Receiver module may be used to receive signals from either a broadcast optical transmitter or a narrowcast (QAM) optical transmitter. It contains a single forward optical receiver with one RF output port and occupies a single wide slot in the Prisma II chassis.

**The 56 connector version of the chassis is required to utilize all 4 receivers in one slot.*

Features

- Blind-mate (push-on) connections for RF, power, and data
- RF test points (one for each independent optical receiver)
- Adjustable RF output level - *HDRx*
- Multiple set-up and control options
- Local control via Local Craft Interface (LCI) and/or Intelligent Communications Interface Module (ICIM) - *HDRx*
- Remote monitoring via ROSA/TNCS
- Master / Slave Redundancy



**2 High Density Forward
Receivers in Host Module**



**Full Height
Single Forward Receiver**

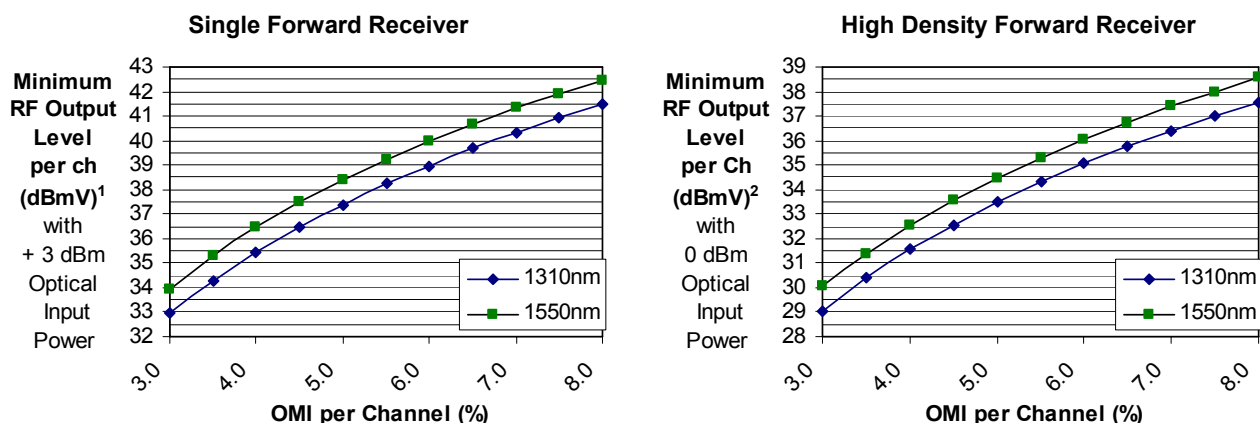
Specifications

Optical	Units	Single Forward Receiver	High Density Forward Receiver	Notes
Input Power	dBm	-4 to +5	-8 to +0	
Wavelength	nm	1280-1600	1280-1600	
Optical Return Loss	dB	> 40	> 40	
Optical Interface: SC/APC		Standard	Standard	

Electrical	Units	Single Forward Receiver	High Density Forward Receiver	Notes
RF Bandwidth	MHz	45 to 1002*	45 to 1002	
RF Output Level	dBmV	Use RF output level vs OMI graph (below)	Use RF output level vs OMI graph (below)	1,2
Maximum RF Output Level	dBmV	35/ch. For 110 ch's 36.5/ch. For 78 ch's	39/ch. for 16 QAM ch's 36/ch. for 32 QAM ch's	
RF Attenuation Range	dB	n/a	0 to 20	
RF Attenuation Control		n/a	via LCI or ICIM	
Module Responsivity	A/W dB	≥ 14 ≥ 22.9	≥ 17.8 ≥ 25.0	3
RF Frequency Response	dB	± 0.5 dB	± 0.5 dB	
RF Test Point	dB	-20 (± 1.0)	-20 (± 1.0)	
RF Return Loss	dB	≥ 16	≥ 16	
Tilt	dB	0 to +1	0 to +1	
Noise Equivalent Power	pA $\sqrt{\text{Hz}}$	≤ 7	≤ 7	
Power Consumption	W DC	≤ 15	≤ 7.5	

* 870 MHz Forward Receivers are still available

Forward Receiver RF Output Level Vs Optical Modulation Index (OMI)



Notes:

- For the Single Forward Receiver, the graph shows receiver RF output level for the stated Optical Modulation Index (OMI) %, with optical input power of +3 dBm. To determine RF output levels at other optical input power, add (or subtract) 2 dB in RF level for each 1 dB increase (or decrease) in receiver optical input power.
- For the High Density Forward Receiver, graph shows receiver RF output level for the stated Optical Modulation Index (OMI) %, with optical input power of 0 dBm and receiver RF attenuator set to 0 dB. To determine RF output levels at other optical input power, add (or subtract) 2 dB in RF level for each 1 dB increase (or decrease) in receiver optical input power.
- Module responsivity measured at 1310 nm with 0 dB RF attenuation, and may change at other wavelengths.

Unless otherwise noted, specifications reflect typical performance and are referenced to the ambient air temperature at the inlet to the Prisma II chassis. Specifications are based upon measurements made in accordance with SCTE/ANSI standards (where applicable), using standard frequency assignments.

Specifications, continued

Environmental	Units	Full Height Single Forward Receiver	High Density Forward Receiver	Notes
Temperature Range				
Full Specs	°C °F	-40 to +65 -40 to +149	-20 to +65 -4 to +149	
Operational	°C °F	-40 to +65 -40 to +149	-40 to +65 -40 to +149	
Humidity Range	%	0 to 95	0 to 95	1

Mechanical	Units	Full Height Forward Receiver	High Density Forward Receiver	Notes
Physical Dimensions				
Depth	in. cm	9.8 24.9	8.8 22.4	
Width	in. cm	1.03 2.6	1.03 2.6	
Height	in. cm	7.6 19.3	3.5 8.8	
Weight	lbs kg	2.2 1.0	0.9 0.4	
Module Width	slots	1 (full height)	1 (half height)	

Note:

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

Unless otherwise noted, specifications reflect typical performance and are referenced to the ambient air temperature at the inlet to the Prisma II chassis. Specifications are based upon measurements made in accordance with SCTE/ANSI standards (where applicable), using standard frequency assignments.

Prisma II Forward Optical Receivers

Ordering Information

Sample

P	2		R	X	F	-	G	H	Z		S	A		N	A*
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P	2					-									
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Platform

Product

Connectors

Options

SC/APC = SA*

* Standard Connector

NA=Non
Attenuator
(full height only)

Other connector options may be
available upon request - contact
Applications Engineering for more
info.

1 GHz Forward Receiver = RXF-GHZ-SA
High Density Forward Receiver = HD-RXF-GHZ

*1 GHz version available in non attenuator version

Ordering Matrix	SC/APC	SC/UPC	E2000
P2-RXF-GHZ-SA-NA	737861	-	-
P2-HD-RXF-GHZ-SA	4016523	-	-

Prisma II products include some of the industry's most complete range of high performance optical components:

Platform

1310 nm Transmitters

Prisma II 1310 HDTx Transmitters

Prisma II Reverse Optical Receivers

1550 nm Transmitters

1550 nm Optical Amplifiers

Ancillary Modules

bdr™ Digital Reverse 2:1 Multiplexing System

For more information please refer to:

Prisma II Data Sheet Part Number 739199

Prisma II Data Sheet Part Number 739200

Prisma II Data Sheet Part Number 7006768

Prisma II Data Sheet Part Number 7011888

Prisma II Data Sheet Part Number 739201

Prisma II Data Sheet Part Number 739202

Prisma II Data Sheet Part Number 739205

Prisma II Data Sheet Part Number 744484