aurora NETWORKS

DR3021

Dual Return Channel Digital Receiver

Features

- Dual D-A conversion provides discrete RF signals from two return segments per optical input
- High RF output (–32 dBmV/Hz typical)
- Superior noise performance
- RF output level independent of optical input power provides output level stability in alternate routing applications
- Front access –20dB test points for each return path
- Hot plug-in/out
- Local and remote status monitoring
- Occupies one full-depth slot

DR3021 Dual Return Channel Digital Receiver

Associated BP-3104C-AS Optical Receiver Back Plate (supporting up to four dual receiver modules)

The DR3021 Dual Return Channel Digital Receiver utilizes state-of-the-art technology for digital return path applications, and its capabilities allow deployment of compact and robust high-speed digital broadband systems. The advanced design provides simultaneous conversion of digital return path traffic from two RF return segments to two discrete RF output ports. Used in combination with DT4230N-00 Digital Transceivers in optical nodes or DT3500 series Digital Transmitters, the DR3021 allows quick and cost effective doubling of the amount of return bandwidth available from any node in the network. These dual-segment digital return receiver modules are primarily used in traditional HFC systems, where larger node sizes are the norm. Two dual-channel transceivers, when used in a fully segmented node in combination with DWDM techniques, and two DR3021 dual-channel digital return path receivers can provide four discrete return paths from a single node location over a single return fiber.

The DR3021 receiver interfaces with the BP-3104C-AS Optical Receiver Back Plate, enabling the equivalent of up to eight digital receivers to be installed in four adjacent module slots of Aurora's 3RU CH3000 chassis. A total 24 receivers (and three associated BP-3104C back plates), with provision for redundant chassis power supplies, can therefore be accommodated in each chassis.

Each DR3021 terminates one return path optical fiber through an SC/APC-type optical connector. Data extracted from the optical link is converted through high-speed DACs to two analog RF signal outputs. Additionally, messaging traffic from the node-mounted transceiver and the receiver is multiplexed with messaging signals received from the adjacent receiver module and forwarded to the next receiver module in the chain.

DR3021 Product Specifications

Physical:
- Dimensions: 13.0" D x 4.3" H x 1.0" W (3RU) (33 cm x 11 cm x 2.5 cm)
- Weight: 1.6 lbs (0.72 kg)

Environmental:
- Operating temperature range: –20º to +65ºC (–4º to 149ºF)
- Storage temperature range: –40º to +85ºC (–40º to 185ºF)
- Humidity: 5% to 95% non-condensing

Optical Interface:
- Optical connectors: SC/APC (on Back Plate BP-3104C-AS)

Electrical Interface:
- Main RF outputs (each channel):
  F-type female connector (on Back Plate BP-3104C-AS)
- Output test points (each channel):
  G-type female connector (front panel, –20 dB)

Power Requirements:
- Input voltage: 12 V_{DC} (provided via chassis mid-plane connection)
- Power consumption: 14.5 W (excluding 1.5 W power feed to BP-3104C-AS)

General:
- Hot plug-in/out
- Manual gain alignment
- External RF A/B switch support (Model AB02S1S)

Electrical (RF path - each channel):
- Passband: 5–42 MHz
- Frequency response: ±0.5 dB
- Nominal output level: –31 dBmV/Hz with 5-40 MHz loading and –60 dBmV/Hz input to digital transceiver
- Output RF level adjustment range: 0–26 dB (1 dB increments)
- Output return loss: 18 dB min
- Isolation between RF channels: –70 dB
- Level stability: ±0.5 dB
- Level repeatability: ±1.0 dB
- System minimum full gain: 28 dB
  (from node transceiver input to digital receiver output)

Optical:
- Wavelength: 1300nm – 1620nm
- Input return loss: 30 dB
- Optical power input range:

  P_{IN} min : –19 dBm

  P_{IN} max: –3 dBm

Ordering Information

Module Part Number

D	R	3	0	2	1	–	A	S

Dual Digital Receiver

AS = SC/APC Connector

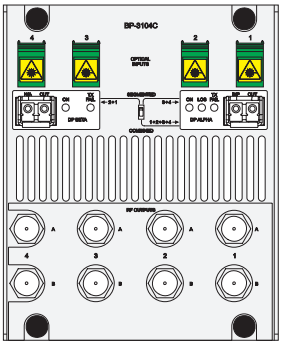
Module Back Plate
(Back plate must be ordered separately.)

B	P	–	3	1	0	4	C	–	A	S

Optical Receiver Back Plate

AS = SC/APC Connector

Module Back Plate



Model BP-3104C-AS

Each back plate accommodates up to four DR3021 receiver modules.

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