

Features

- Dual RF inputs to digitize 5–50 MHz legacy RF return
- Highly flexible, easily configurable support for transmission at 1310nm, 1550nm, or 1 of 15 CWDM wavelengths
- Remote status monitoring and management
- Hot plug in/out
- Single mode optical converter implemented with optional SFP transceivers

Digital Transceiver (Dual RF Inputs, 5–50 MHz)



*DT4230N with an array of some available SFP options
(for transmission at 1310nm, 1550nm, or CWDM wavelength)*

Aurora Networks' DT4230N Digital Transceiver is a component of Aurora's Integrated Digital Transport System that digitizes two discrete legacy 5–50 MHz RF return path signals from separate inputs. The module's optical transmit/receive ports are implemented with optional plug-in transceivers for ultimate flexibility and affordability. Conforming to the Small Form Factor Pluggable (SFP) Multisource Agreement, these state-of-the-art transceivers are available in a variety of transmit/receive wavelengths, including dedicated 1310nm (for 10 and 40 km links), 1550nm (for links up to 40 km), and CWDM ITU grid (for links up to 40 km), all operating at data rates of 2.125 Gbps. Longer spans are supported by using Aurora's DX4515 Digital Transponder.

These dual channel/dual segment (or "2-fer") digital return transceivers allow twice the amount of information to be transmitted over the same fiber cable. Ideally suited for use in hybrid fiber/coax (HFC) and fiber deep architectures, Aurora's "2-fer" digital return path products (including node-hosted transceivers and headend dual channel receivers) support cost-effective growth in high-speed data and telephony penetrations by putting twice as much data onto the same fiber through two discrete return channels of upstream data from the optical node. Each channel is received independently by a dual channel receiver and routed through discrete RF return outputs. This operation provides fiber availability for additional return path bandwidth and rack space for additional return path receivers. Aurora's digital return products enable existing optical nodes to be fully segmented, with each RF input port treated as a discrete network, maximizing the available bandwidth per user, while at the same time conserving the cable operators' investment in the fiber network.

The DT4230N is designed as a plug-in module for Aurora Networks' NC4000 series Optical Nodes. Aurora Networks supplies DT4230N transceivers either with the NC4000 as a fully configured and tested node or as modules for existing customers of the NC4000 desiring to implement digital return and/or upgrade to Ethernet transport capability.

DT4230N

Product Specifications

Physical:

- Dimensions: 4.0" L x 1.8" H x 2.3" W
(10.2 cm x 4.6 cm x 5.8 cm)
- Weight: 0.8 lbs (0.4 kg)

Environmental:

- Operating temperature range: -40° to +85°C (-40° to 185°F)
- Storage temperature range: -40° to +85°C (-40° to 185°F)
- Humidity: 5% to 95% non-condensing

Power Requirements:

- Input voltage:
3.3 V_{DC}: 900 mA max (with SFP installed)
5 V_{DC}: 700 mA max
- Power consumption: 6.5 W max (with SFP installed)

General:

- Hot plug-in/out
- Optical interface connectors: LC Duplex on SFP
- Optical transmission bit rate: 2.125 Gb/s
- Number of RF channels: 2 (Channel A and Channel B)

RF Path and Distortions (each channel):

- Pass band: 5–50 MHz

NOTE

The DT4230N is a 5–50 MHz passband device. In systems operating with a lower cutoff frequency for the return spectrum, the actual passband is determined and controlled through the use of Diplexers and Low Pass Filters that precede the transceiver.

- Frequency response: ± 0.5 dB
- Input return loss, min: 16 dB
- Level stability: ± 0.5 dB
- Isolation between channels (combined with receiver): 60 dB
- System minimum full gain: 28 dB

- Loading, nominal: 5–40 MHz (QPSK carriers or equivalent Gaussian noise)
- Input, nominal: -60 dBmV/Hz
- Dynamic range @ 40 dB CNR: 11 dB
- Peak NPR: 47 dB

Optical:

The optical ports facility of the DT4230N can be populated with a variety of SFP (plug-in) transceivers depending on the network application. Please refer to the appropriate data sheets for the selected transceivers for detailed specifications. Following is a summary of available transceiver options (model numbers and brief descriptions) for these ports.

2.125 Gbps SFP Transceiver Options

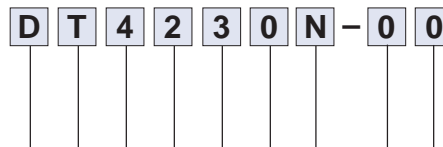
- TR4000-PI (transmit at 1310nm for links up to 10 km)
- TR4040-PI (transmit at 1310nm for links up to 40 km)
- TR4540-0000-PI (transmit at 1550nm for links up to 40 km)
- TR4440B-xxxx-PI (transmit at CWDM wavelength of xxxx = 1270, 1290, . . . , 1350 or 1430, 1450, 1470, . . . , 1610 nm for links up to 40 km)

LED Indicators (for SFP optical ports):

- TX: Green ON = OK; OFF = bad SFP or unit not powered
- RX: Green ON = signal good; OFF = LOS asserted; Blinking = high BER (excessive bit error rate)

Ordering Information

Digital Transceiver, Dual RF Inputs,
5–50 MHz RF Bandpass



Transceiver Plug-in Module

The SFP module must be ordered separately. Please refer to the above list of available transceivers and appropriate data sheets for specific complete model numbers and ordering information.



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