

## Features

- Digitizes 5–50 MHz legacy RF return
- Highly flexible, easily configurable support for transmission at 1310nm, 1550nm, or 1 of 15 CWDM wavelengths
- Concatenated or point-to-point applications
- Remote status monitoring and management
- Hot plug in/out
- Supports single rings
- Fast Ethernet to single mode optical converter implemented with optional SFP transceivers
- Compliant with IEEE 802.1P, 802.1Q, 802.3u, VLAN, ToS

## Digital Transceiver (5–50 MHz)



*DT4030N with an array of some available SFP options  
(for transmission at 1310nm, 1550nm, or CWDM wavelength)*

Aurora Networks' DT4030N Digital Transceiver is a component of Aurora's Integrated Digital Transport System that combines two major functions into one compact package: digitization of legacy 5–50 MHz RF return path signals and an Ethernet Access Device. The DT4030N transceiver digitizes the legacy RF return path and multiplexes native Ethernet traffic from the optical receiver port of a plug-in (SFP) transceiver module into the return transport system. By providing virtual pipes for Fast Ethernet services and legacy RF return on a single fiber, the DT4030N Digital Transceiver alleviates fiber exhaustion, greatly simplifies the network and provides distinct time-to-market advantages in turning up new revenue bearing services, including voice, video and data services.

The DT4030N transceiver supports both point-to-point and concatenated applications. For concatenated applications, multiple DT4030Ns can be designed into a daisy-chained configuration. 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.

The DT4030N is designed as a plug-in module for Aurora Networks' NC4000 series Optical Nodes. Aurora Networks supplies DT4030N 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.

# DT4030N

## 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:  $-40^{\circ}$  to  $+85^{\circ}\text{C}$  ( $-40^{\circ}$  to  $185^{\circ}\text{F}$ )
- Storage temperature range:  $-40^{\circ}$  to  $+85^{\circ}\text{C}$  ( $-40^{\circ}$  to  $185^{\circ}\text{F}$ )
- Humidity: 5% to 95% non-condensing

### Power Requirements:

- Input voltage:  
3.3  $V_{\text{DC}}$ : 875 mA max (with SFP installed)  
5  $V_{\text{DC}}$ : 360 mA max
- Power consumption: 4.7 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

### RF Path and Distortions:

- Pass band: 5–50 MHz

#### NOTE

The DT4030N 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:  $\pm 0.5$  dB
- Input return loss, min: 16 dB
- Level stability:  $\pm 0.5$  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 @ 47 dB CNR: 11 dB (single link)
- Peak NPR: 53 dB

### Optical:

The optical ports facility of the DT4030N 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

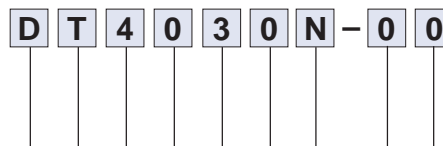
- TR4000-PI (transmit at 1310nm for links up to 10 km)
- TR4040-PI (transmit at 1310nm for links up to 40 km)
- TR4540-0000-PI (transmit at 1550nm for links up to 40 km)
- TR4440B-xxxx-PI (transmit at CWDM wavelength of xxxx = 1270, 1290, . . . , 1350 or 1430, 1450, 1470, . . . , 1610 nm for links up 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, Single Ring,  
5–50 MHz RF Input 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.



### Corporate Headquarters

5400 Betsy Ross Drive  
Santa Clara, CA 95054  
Tel 408.235.7000  
Fax 408.845.9045