

Optical Node Series (NC)

DT4250

Digital Transceiver, Dual RF Inputs, Three Bandwidth Ranges

FEATURES

- Operates in 3 RF bandwidth ranges: 5-50 MHz, 5-75 MHz, or 5-100 MHz, (firmware selectable)
- Single channel “1-fer” or dual channel “2-fer” links (user selectable, front panel button)
- Optical transmission at 1310 nm, 1550 nm, 1 of 15 CWDM wavelengths, or 1 of 40 DWDM wavelengths
- Concatenated or point to point applications
- Remote status monitoring
- Hot plug-in/out
- Fully compatible with existing digital return platform
- Designed for NC2000, NC4000, and VH-Series VHub Platforms



PRODUCT OVERVIEW

The ARRIS DT4250 Digital Transceiver is a component of ARRIS’s fifth generation Universal Digital Return Platform. It digitizes either one or two discrete legacy RF return path signals from separate inputs. The module’s optical transmit/receive ports are implemented with 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 1310 nm and 1550 nm, CWDM (15 wavelengths), and DWDM (40 wavelengths). There are three data rate options of 2.125, 3.1875, or 4.250 Gbps with their selection being dependent upon bandwidth and transceiver configuration.

The DT4250 can support 5-45 MHz, 5-65 MHz, 5-85 MHz up to 5-100 MHz return bandwidths, and a simple upgrade enables the operator to convert any module to a higher return bandwidth, driven by their network needs.

The transceiver can operate in single channel (“1-fer”) or in dual channel/dual segment (“2-fer”) mode, via a simple switch that converts between the two operating modes. In “2-fer” mode, two discrete return channels are independently digitized, with the two data streams being transmitted by an SFP optical transceiver on a single wavelength. At the Headend or hub the digital return receiver separates and decodes the two channels and each is routed through a discrete RF return output. This maximizes fiber-efficiency with up to 80 returns on a single fiber. ARRIS’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 DT4250 is designed as a plug-in module for ARRIS NC2000 and NC4000 series Optical Node and VHub Platforms. ARRIS supplies DT4250 transceivers either as part of a fully configured and tested node or as modules that can be installed directly in the field.

SPECIFICATIONS

Characteristics	Specification							
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)							
Micro USB port for firmware update and local management								
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 Requirement								
Input voltage	24 V _{DC}							
Module power consumption	4 W							
SFP power consumption (max)	2 W							
General								
Hot plug-in/out								
Optical interface connectors	LC/UPC Duplex on the SFP transceiver							
Optical transmission bit rates	2.125 Gbps, 3.1875 Gbps, 4.250 Gbps, depending on the configuration							
Number of RF channels	1 or 2 (manually selectable on module)							
Mode selection	Via the on-board push-button on the module							
RF Path and Distortions (each channel)								
Frequency response	± 0.5 dB							
Input return loss, min	16 dB							
Level stability	± 0.5 dB							
RF Path Loading								
	5 - 50 MHz		5 - 75 MHz			5 - 100 MHz		
Operation Mode	“1-fer”	“2-fer”	“1-fer”	“2-fer”	“1-fer” (1)	“2-fer”	“1-fer” (E)	
SFP Data Rate (Gbps)	2.125	2.125	2.125	3.1875	2.125	4.250	4.250	
Isolation between channels, (in dB), (Includes RX)	NA	>60	NA	>60	>55	>55	NA	
Input Nominal dBmV/Hz	-60 > 47 dB NPR	-60 > 40 dB NPR	-62 > 40 dB NPR	-62 > 40 dB NPR	-63 > 40 dB NPR	-63 > 40 dB NPR	-63 > 40 dB NPR	
Dynamic range (in dB)	>11 @47 dB NPR	>11 @40 dB NPR	>11 @40 dB NPR	>11 @40 dB NPR	>11 @40 dB NPR	>11 @40 dB NPR	>10 @47 dB NPR	
Peak NPR (in dB)	54	49	49	49	48	48	52	
Optical								
<i>The optical ports facility of the DT4250X-XX can be populated with a variety of SFP (plug-in) transceivers depending on the network application, supporting 2.125, 3.1875, and 4.250 Gbps data rates. The data rates depend on the configuration and specific RF Range selected. Please contact ARRIS Sales to review the available SFP transceivers and obtain the appropriate data sheets for the required application.</i>								
LED Indicators								
Operating Mode	N: Normal, or E: Enhanced 50, 75, or 99; Upstream bandwidth 5-50, 5-75, or 5-100 MHz 1 or 2: Single (“1-fer”) or 2 channel (“2-fer”), user selectable (1)Note: 100 MHz operation in 1-fer mode supports 2x single returns but requires a second SFP (2.125 Gbps)							
SFP Status								
Tx; Green ON = OK, Off = faulty SFP or unit not powered Rx; Green ON = Signal good, Off = LOS Blinking = excessive BER (Bit Error Rates)								

ORDERING INFORMATION

Model Number	Description
DT4250N-50-00	Supplied with 5-50 MHz and 5-100 MHz firmware pre-loaded
DT4250N-75-00	Supplied with 5-65 MHz and 5-100 MHz firmware pre-loaded
DT4250E-99-00	Supplied with Normal and Enhanced 5-100 MHz firmware pre-loaded

Transceiver Plug-in Modules:

SFP modules must be ordered separately.

Please contact ARRIS Sales to review the available SFP transceivers and obtain the appropriate data sheets for the required application.

RELATED PRODUCTS

NC2000/4000 Nodes	Optical Patch Cords
SFPs	Optical Passives
Fiber Service Cable	Installation Services

Customer Care

Contact Customer Care for product information and sales:

- United States: 866-36-ARRIS
- International: +1-678-473-5656

Note: Specifications are subject to change without notice.

Copyright Statement: ©ARRIS Enterprises, LLC, 2017. All rights reserved. No part of this publication may be reproduced in any form or by any means or used to make any derivative work (such as translation, transformation, or adaptation) without written permission from ARRIS Enterprises, LLC ("ARRIS"). ARRIS reserves the right to revise this publication and to make changes in content from time to time without obligation on the part of ARRIS to provide notification of such revision or change. ARRIS and the ARRIS logo are registered trademarks of ARRIS Enterprises, LLC. Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks or the names of their products. ARRIS disclaims proprietary interest in the marks and names of others. The capabilities, system requirements and/or compatibility with third-party products described herein are subject to change without notice.