

Optical Node Series (NC)

NC2000

Scalable Node Platform
for HFC and Fiber Deep Applications
(5-85/102-1002 MHz)

FEATURES

- Bottom entry ports for vertical mounting
- Mains plug-in AC powering option
- High-level outputs: 53 dBmV for HFC or 57 dBmV for Fiber Deep
- 2x2 segmentable
- Third RF output port enabled with splitter
- Forward path redundancy with RF switching in applications with 1x2 configuration
- Digital return technology with integrated SNMP monitoring and management
 - Two return segments on a single wavelength
 - Daisy chaining capability for added savings
 - No status monitoring transponders needed
- Multiple options for output level and slope
- Expansion slot available for 2nd receiver, optical switch, or EDFA
- Return ingress switch options
- Based on ARRIS's proven NC4000 platform, utilizing common modules and accessories



PRODUCT OVERVIEW

The NC2000 Optical Node Platform is designed for various applications in either HFC or Fiber Deep architectures. With its bottom entry fiber port and three coaxial output ports, the node's modular design features high RF output levels and 2x2 segmentation, and can be wall or pedestal mounted as needed. Of particular note is the platform's use of ARRIS's Digital Return technology with integrated SNMP monitoring and management features.



Available options include optical automatic level control, when used with the AR4514 receiver, alternate route switching, third output via plug-in splitter.

The NC2000 includes an RF module and three module slots that can be populated according to network architecture requirements—flexibility being a key feature of this node. Two of these slots are used for a forward receiver and a universal digital return module, with the third slot commonly used for forward path redundancy or segmentation. The node can also be populated with other single-slot ARRIS node modules such as an optical switch or EDFA, optimizing performance and reliability for a wide range of applications.

The platform can be equipped with one of two types of plug-in universal digital return path transceivers models DT4250N-50 or DT4250E-99 which support a 5-85 MHz return passband. Upstream wavelength is set with user-selectable plug-in 2.125 or 4.125 Gbps SFP modules, offering 1310 nm, 1550 nm, CWDM or DWDM ITU 20-59 wavelengths for transmission up to 80 km. The DT4250N-50 universal transceiver can be used in either "1-fer" mode for a single RF return segment, or "2-fer" mode accepting dual RF inputs for two independent returns (requires 4.125 Gbps SFP) on the same wavelength. The DT4250E-99 offers an E mode with enhanced return performance in "1-fer" mode and cascade ability (requires 4.125 Gbps SFP).

The NC2000 includes ARRIS's integrated monitoring and management system, eliminating the need for costly status monitoring transponders and the allocation of forward and return bandwidth for the transponder's communicating frequencies.

SPECIFICATIONS

Characteristics	Specification	
Physical		
Dimensions	45.9 cm L x 27.9 cm W x 15.0 cm D (18.7" x 11.0" x 5.9")	
Weight	11.5 kg (25.4 lbs)	
Housing ports	1 AC power port, 1 fiber entry port, 3 RF/AC output ports	
RF connectors	5/8" (PG11 adapter optional)	
Protection class	IP67	
Environmental		
Operating Temperature Range	-40° to +65°C (40° to +149°F)	
Storage Temperature Range	-40° to +85°C (-40° to +185°F)	
Relative Humidity	5% to 95% non-condensing	
Powering and Power Passing		
Operating Input voltage		
• to PS4002 (from cable powering)	44-95 VAC (47-63 Hz)	
• to PS4003 (from AC Mains plug-in)	90-250 VAC (47-63 Hz)	
Max current for RF and AC IN ports	10 A, 15 A respectively	
Power consumption, fully loaded	approximately 65 W (with redundant optical receivers and model DT4250 dual input return transmitter)	
AC test point	TP at AC entry port	
General		
Passband split option	• 5-85 MHz Reverse, 102-1002 MHz Forward	
Other Accessories		
RF switch for alternate routing		
RF splitter for third port		
Forward Path		
Performance (see Note 1)		
	HFC Application	Fiber Deep
• Channel Loading		
	Up to 550 MHz	Analog NTSC
	550-1002 MHz	256 QAM at -6 dBc
• Nominal output level (per port)		
	at 1002 MHz	53 dBmV
	at 102 MHz	39.7 dBmV
• Nominal slope		14 dB linear
• Link performance		18 dB linear
	CNR	51 dB
	CSO	62 dB
	CTB	65 dB
		48 dB
		58 dB
		56.5 dB
Optical interface	SC/APC connector on optical receiver	
Gain control range	0-18 dB (plug-in attenuators)	
Slope control	0-18 dB in 1 dB steps (plug-in equalizers, typ factory set)	
Flatness	± 1.0 dB	
Return Loss (all ports and test points)	16 dB	
Test points, directional	-20 ± 0.5 dB	
Return Path		
Passband	5-85 MHz	
Nominal input	-63 dBmV/Hz (at the Digital Transceiver input)	
Built-in node monitoring		
Daisy-chaining capability		
Digital Transceiver model options	DT4250N-50 and DT4250E-99	
Representative link specifications (for model DT4250)		
• Return path system gain	30 dB (from DT input to HE receiver output, with ARRIS's Tx and Rx)	
• For DT4250E-99 "1-fer"		
NPR dynamic range @ 47 CNR	10 dB	
Peak NPR	52 dB	
• For DT4250N-50		
NPR dynamic range @ 40 CNR	11 dB	
Peak NPR	48 dB	

Please refer to the individual product data sheets for DT4250 Digital Transceivers for additional information.

NOTE:

- Performance for HFC application with 0 dBm input to the node's optical receiver from a 1 GHz Model AT3312G Analog 1310 nm Transmitter, 27 km fiber. Performance for Fiber Deep application with -3 dBm input to the node's optical receiver from a 1 GHz Model AT3553 Analog 1550 nm Transmitter, 65 km fiber.

ORDERING INFORMATION

Order Part Number: NC2000 (5-85/102-1002 MHz)

A typical configuration of the NC2000 series optical node includes the NH2000 housing with external test ports, one PS4002 power supply, one optical receiver module (AR4503 or AR4514G) with SC/APC connectors, an OA2223 series 3-port RF amplifier module, and standard equalizers and pads. Also available are additional optional plug-in modules that are described on separate data sheets. These include DT4250N-50 and DT4250E-99 Digital Return Transceivers. For further information please contact your ARRIS sales representative.

RELATED PRODUCTS

Digital Return Transmitter	Optical Patch Cords
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SFPs	Optical Passives
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Fiber Service Cable	Installation Services
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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.

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