

Optical Node Series (NC)

NC4000H4

1.2 GHz Fiber Deep Node

FEATURES

- 60.5 dBmV (virtual analog) high output at 1.2 GHz via GaN technology for Fiber Deep applications
- Drop-in upgrade for the NC4000HG range of Fiber Deep nodes
- Four RF outputs, two auxiliary ports for power or video, and two fiber ports
- Multiple forward/return frequency split options
- Uses automotive blade fuses and JXP pads and equalizers
- Superior upstream performance via advanced universal digital return modules
- Integrated, all-digital node status monitoring
- Redundant power supply option
- Strand or pedestal mounting



PRODUCT OVERVIEW

The ARRIS 1.2 GHz NC4000H4 series node is designed to provide the utmost reliability, flexibility, and adaptability in an outdoor optical node platform, and is ideal for Fiber Deep applications.

The NC4000H4 node has a high output level of up to 54.5 dBmV (60.5 dBmV virtual analog) at 1218 MHz, available on all four RF output ports of the OA4324HE RF Output Amplifier. It is designed as a “drop-in” replacement for the NC4000HG range of Fiber Deep nodes with an output level of 57 dBmV to extend the frequency range of the coax distribution network in Fiber Deep architectures. The standard or high gain optical receivers feature optical automatic level control, and support optical inputs between -7 and +2 dBm.

The flexible and rugged platform is segmentable in the return path. For the return this is achieved using the universal digital return transceiver, the DT4250, supporting multiple modes of operation, a single return ("1-fer"), dual independent returns ("2-fer") or enhanced single return with increased performance and the option to cascade returns. Upstream transmission is enabled with plugin SFP modules supporting 1310 nm, 1550 nm, and CWDM or DWDM options, further expanding the deployment of advanced "bandwidth-hungry" services into fiber-poor areas while reducing real estate and powering requirements in the field.

The NC4000H4 supports deployment of a wide range of field-hardened EDFAs and optical switches for extending fiber reach, routing options, and system reliability. Integrated remote monitoring is provided through the digital return transceiver with remote network management capability, eliminating the added cost of a third-party status monitoring transponder.

The NC4000H4 optical node platform also supports next-generation architectures and technologies such as Node PON, Remote PHY, and more, providing a seamless migration to support tomorrow’s services.



RELATED PRODUCTS

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

SPECIFICATIONS

Characteristics	Specification	
Physical		
Dimensions	20" L x 9.5" W x 10.75" H (50.8 cm x 24.1 cm x 27.3 cm)	
Weight	38 lbs (17.1 kg)	
Housing Ports	4 AC/RF ports, 2 AC Only Ports, and 2 fiber ports	
Environmental		
Operating Temperature Range	-40°C to +65°C (-40°F to +149°F)	
Storage Temperature Range	-40°C to +85°C (-40°F to +185°F)	
Humidity	5% to 95% non-condensing	
General		
Passband options	Return 5 - 45 MHz 5 - 60 MHz 5 - 65 MHz 5 - 85 MHz	Forward 54 - 1218 MHz 72 - 1218 MHz 85 - 1218 MHz 102 - 1218 MHz
RF Test Points (Fwd and Rtn)	-20 dB	
Flatness	± 1.25 dB	
Thermal stability	± 1.5 dB	
Output return loss (at the node output)	> 16 dB	
Optical input range	-7 to +2 dBm into AR4x14E receiver (ALC range)	
Power Requirements		
Operating Input voltage range	44 to 95 V _{RMS} (50-60 Hz Quasi-Square Wave)	
Power passing (see Note 1)	15 A _{RMS}	
Power supply start-up input voltage	38-42 V _{RMS}	
Power supply turn off input voltage	34-38 V _{RMS}	
Power supply efficiency	83% typical	
DC power consumption	<ul style="list-style-type: none"> 78 W (standard configuration of 4 RF outputs, 1 optical Rx, and 1 digital return Tx) 6 W (Return Transceiver, DT4250 with TR4000 SFP) 11.5 W (Forward Receiver, AR4x14E) 	
RF Performance for HFC Applications (See Note 2)		
Fiber Deep Application		
Channel Loading	102-1218 MHz	QAM + OFDM
Nominal output level (per port)		
	at 1218 MHz	54.5 dBmV QAM (60.5 dBmV analog)
	at 105 MHz	33.5 dBmV QAM (39.5 dBmV analog)
	at 54 MHz	32.5 dBmV QAM (38.5 dBmV analog)
Nominal slope	54 / 1218	22 dB linear
Link performance (see Note 2)		
	MER	> 38 dB
	BER	< 1x10 ⁻⁶

NOTES:

- Maximum current through any port.
- Performance with 0.0 dBm input to node's Optical Receiver from a HT33xx Analog 1310 nm Transmitter with 1.2 GHz loading.

ORDERING INFORMATION

A typical configuration of the NC4000H4 series optical node includes the NH4000-H housing with external test ports, one PS4101 power supply, one 51-1218 MHz optical receiver module (AR4x14E) with SC/APC connectors, the OA4324HE 4-port RF amplifier module, and JXP equalizers and pads. A backup PS4101 power supply may be separately ordered. Also available are additional optional plug-in modules that are described on separate data sheets; FA4500 series Optical Amplifiers, DT4250 Universal Digital Return Transceivers, optical or RF redundancy switches, and return ingress switch options. Please contact your ARRIS sales representative for information regarding specific equipment configuration options to meet your particular requirements.

Note: Specifications are subject to change without notice.

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