advanced media technologies®

MODEL

NC4000EG

OPTICAL NODE SERIES (NC), ESSENTIAL FEATURES FIBER DEEP NODE PLATFORM

aurora NETWORKS | ARRIS

FEATURES

- Single integrated node module supports all essential features
- Segmentation options for 1x1 (1 forward and 1 return) and 1x2 (1 forward and 2 returns)
- Four ultra high level RF outputs (57 dBmV at 1GHz)
- Upgrade options support subscriber growth and deployment of new services
- 6 RF-port housing with 2 optical ports and 4 test ports
- Optical capabilities:
  - 1310 nm (fwd and rtn)
  - 1550 nm (fwd and rtn)
  - DWDM (fwd)
  - *Lc*WDM™ (fwd)
  - CWDM (fwd and rtn)
- ARRIS's patented advanced digital return technology, supporting daisy-chaining or "2-fer" technology
- Fully integrated network management
- 60/90 VAC operation
- Redundant power supply option
- 15 Ampere power passing at each RF output port
- Pedestal or strand mounting

PRODUCT OVERVIEW

ARRIS's NC4000EG series "second generation" fiber deep node platform has been optimized to provide all of the essential features required by today's state-of-the-art Fiber Deep (HFC Node+0) architectures that typically serve 50 to 200 homes passed per node. This node platform is based on our extensive experience in system design and customer support for tens of thousands of miles of high bandwidth per homes passed deployments.

These “Essential Features” nodes enable fiber deep architectures to be cost-effective (equal or less than traditional HFC) and extremely reliable (~75% less actives and requiring minimal maintenance). The platform maintains the industry’s highest RF output capability with its 4-output design, one forward and one or two return segmentation capability, status monitoring and control, and digital return technology with daisy-chain capability – all designed to complement ARRIS’s premium featured “Fiber Deep” nodes.

NC4000EG series Fiber Deep Nodes utilize the time tested NC4000 housing as its 1.5 GHz foundation to house a collection of all new modules. All essential node functions have been maintained and designed into a single integrated node module, the NM4114EG-xx, that includes a forward optical receiver, RF amplification for four ultra high level RF outputs, and one return segment digital transceiver. (A second basic module configuration is available to support two return segments using ARRIS’s patented “2-fer” technology.) Return path transmission is supported with pluggable transceivers (TR or TS series, depending on the required transmission rate), and must be ordered separately. Three return/forward passband versions are enabled using plug-in filter designs for frequency splits of 5–45 MHz / 54–1002 MHz, 5–60 MHz / 72–1002 MHz, and 5–65 MHz / 85–1002 MHz. The NC4000EG also supports injection of a local channel for security monitoring, event announcements, and advertising for applications such as gated communities, MDUs, etc.

Integrated status monitoring capability is provided with ARRIS’s patented advanced digital return technology that improves monitoring reliability and eliminates the need for added-cost status monitoring transponders and forward and return bandwidth allocation requirements of the transponders communicating frequencies.

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

SPECIFICATIONS

Characteristics		Specification	
Physical			
Dimensions		20" L x 10" D x 11.7" H (51 cm x 25.5 cm x 30 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° to +65°C (–40° to 149°F)	
Storage Temperature Range		–40° to +85°C (–40° to +185°F)	
Humidity		5% to 95% non-condensing	
General			
Passband		• Reverse: 5–45 MHz • Forward: 54–1002 MHz	
Return loss (at the node output, across passband)		• 5–45 MHz: > 18 dB • 54–1002 MHz: > 18 dB	
Power Requirements			
Operating Input voltage range		44 to 95 V_{RMS} (47–70 Hz Quasi-Square Wave)	
Power passing		15 A_{RMS}	
Power supply start-up input voltage		40–44 V_{RMS}	
Power supply turn off input voltage		34–38 V_{RMS}	
Power supply efficiency		85% typical	
DC power consumption for node configured with		• Single return segment (SFP included): 75 W • Two return segments (SFP included): 77 W	
RF Performance (See Note 1)			
		Forward Specifications	
		1 GHz	**870 MHz**
Channel Loading			
	Up to 552 MHz	Analog NTSC	Analog NTSC
	550-870 MHz or 870-1002 MHz	256QAM at -6 dBc	256QAM at -6 dBc
Nominal forward output level (per port, see Note 2)			
	at 1002 MHz	57 dBmV	—
	at 870 MHz	—	58 dBmV
	at 54 MHz	39 dBmV	42 dBmV
Nominal slope			
	54 / 870	—	16 dB linear
	54 / 1002	18 dB linear	—
Forward link performance (see Note 3)			
	CNR (see Note 2)	49 dB	49 dB
	CSO	58 dB	58 dB
	CTB	56.5 dB	56.5 dB
Return Specifications			
Required minimum input level		–62 dBmV/Hz (at housing input)	
Recommended input level		–56 dBmV/Hz (for increased ingress protection)	
Loading, nominal		5–45 MHz (QAM carriers or equivalent Gaussian noise)	
		1 RF Return Segment	2 RF Return Segments
Peak NPR		53 dB	47 dB
NPR with 11 dB dynamic range		47 dB	40 dB
Optical		*The optical port facility can be populated with a variety of 2.125 Gbps SFP (plug-in) transceivers depending on the network application. Please refer to the appropriate data sheets for the selected transceivers for detailed specifications, including 1310 nm models for links up to 10 km and 1310 nm, 1550 nm, and CWDM models 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)	

NOTES:
1. Performance with input to node's Optical Receiver from an Enhanced grade Model AT33xxG-A-E-AS Analog 1310 nm Transmitter
2. Performance with input level to optical receiver of -3 dBm for Fiber Deep application
3. Link performance, including transmitter (with CW channel loading to 552 MHz and 256QAM loading above 552 MHz at -6 dBc)

ORDERING INFORMATION

A typical configuration of the NC4000EG series optical node includes the NH4000-L housing with external test ports, one PS4002 power supply, one NM41EEG-00-45-00 integrated node module (comprised of a forward optical receiver, RF amplifier for 4 output ports, and one segment return transmitter), and standard equalizers and pads. A backup PS4002 power supply may be separately ordered. For a two return segment application, replace the NM41EEG-00-45-00 module with an NM41LEG-00-45-00 integrated node module. 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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