aurora NETWORKS

NC4000SG

1 GHz Fiber Node Platform
with Scalable OA4444SG RF Amplifier for HFC Applications

Features

- A variety of forward/return frequency split options
- Four RF outputs, two auxiliary ports for power or video, and two fiber ports
- 4x4 segmentable (forward and return)
- Output level – 53 dBmV at 1002 MHz
- Optical capabilities: 1310nm, 1550nm, DWDM or CWDM
- Accommodates up to 6 optical transport or Ethernet modules
- Broadcast/narrowcast receiver option
- EDFA and optical switching options available
- Forward optical or RF redundancy switching, and return redundancy options
- Return ingress switch options
- A family of advanced digital return modules
- Fast Ethernet add/drop capability for commercial business applications
- Fully integrated network management
- Redundant power supply option
- Pedestal or strand mounting

The Aurora NC4000SG series outdoor optical outdoor platform is designed to support a wide range of advanced architectures and is ideal for traditional HFC applications.

With an output level of up to 53 dBmV (at 1002 MHz) available on the four RF output ports of the OA4444SG RF Output Amplifier, the NC4000SG can be used to extend the reach of the coax distribution network. Furthermore, this flexible and rugged platform has the capability of segmenting four downstream paths (each with its own receiver) and four upstream paths using Aurora's patented digital return solutions, including ITU CWDM and DWDM (on the 100 GHz-spaced ITU Grid), further expanding the deployment of advanced "bandwidth-hungry" services (including 100 Mbps Ethernet for commercial services) in fiber poor areas while reducing real estate requirements in the field.

The NC4000SG supports deployment of field-hardened EDFAs to cost effectively extend fiber reach into new service areas. For optimal performance and reliability in a wide range of applications, Aurora offers EDFAs at various power levels, and optical switches are available for different routing applications.

Status monitoring capability is provided via an integrated network management plug-in, eliminating the need for added-cost status monitoring transponders. An optional narrowcast receiver is available for split-band applications.

NC4000SG Product Specifications

Physical:

- Dimensions:
  20" L x 9.5" W x 10.75" H (50.8 x 24.1 x 27.3 cm)
- Weight: 38 lbs (17.1 kg)
- Housing Ports: 6 AC/RF ports and 2 fiber ports

Environmental:

- Operating temperature range:
  –40º to +65ºC (–40º to 149ºF)
- Storage temperature range:
  –40º to +85ºC (–40º to 185ºF)
- Humidity: 5% to 95% non–condensing

General:

- Passband options:

Reverse	Forward
5–42 MHz	51–1002 MHz

- RF Test Points (Fwd and Rtn): –20 dB
- Flatness: ±1 dB
- Output return loss (at the node output): > 16 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: 73% typical
- DC power consumption:

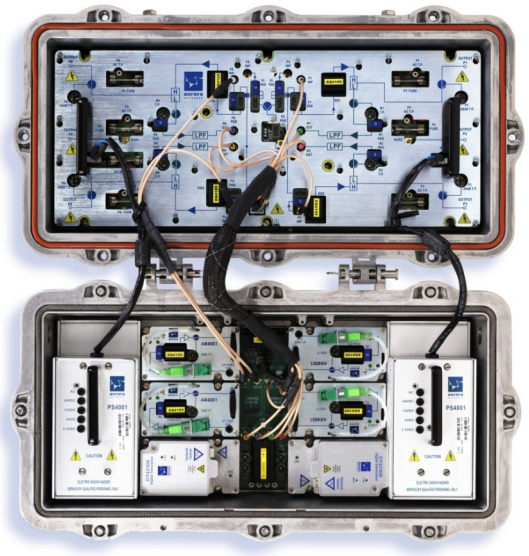
  57 W (standard configuration of 4 RF outputs and 1 optical Rx)
  11 W (second Optical Receiver, AR4201G)
  6 W (Digital Transponder, DX4515)
  6 W (Return Transceiver, DT4x30 with TR4000 SFP)
  9 W (Node EDFA, single-width FA4500 series)

RF Performance for HFC Applications

(Note 1: Performance with 0.5 dBm input to node's Optical Receiver from a 1 GHz Model AT33xxG-N-1-AS Analog 1310nm Transmitter)

	High Level HFC Application	Typical Level HFC Application
• Channel loading:		
Up to 550 MHz	Analog NTSC	Analog NTSC
550-1002 MHz	256QAM at -6 dBc	256QAM at -6 dBc
• Nominal output level (per port):		
at 1002 MHz	53 dBmV	49 dBmV
at 54 MHz	39 dBmV	35 dBmV
• Nominal slope:		
54 / 1002	14 dB linear	14 dB linear
• Link performance (*see Note 2*)		
CCN (CNR + CIN)	51 dB	51 dB
CSO	62 dB	63 dB
CTB	64 dB	66 dB

Note 2: Link performance, including transmitter (with CW channel loading to 550 MHz and 256QAM loading above 550 MHz at -6 dBc)



Ordering Information

A typical configuration of the NC4000SG series optical node includes the NH4000-H housing with external test ports, one PS4001 power supply, one 51–1002 MHz optical receiver module (AR4201G) with SC/APC connectors, the OA4444SG 4-port RF amplifier module, and standard equalizers and pads. A backup PS4001 power supply may be separately ordered. Also available are additional optional plug-in modules that are described on separate data sheets. These include FA4500 series Optical Amplifiers, DT4000 and DT4200 series Digital Return Transceivers, DX4515 series Digital Return Transponders (ITU Grid), optical or RF redundancy switches, and return ingress switch options. Please contact your Aurora Networks sales representative for information regarding specific equipment configuration options to meet your particular requirements.

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