

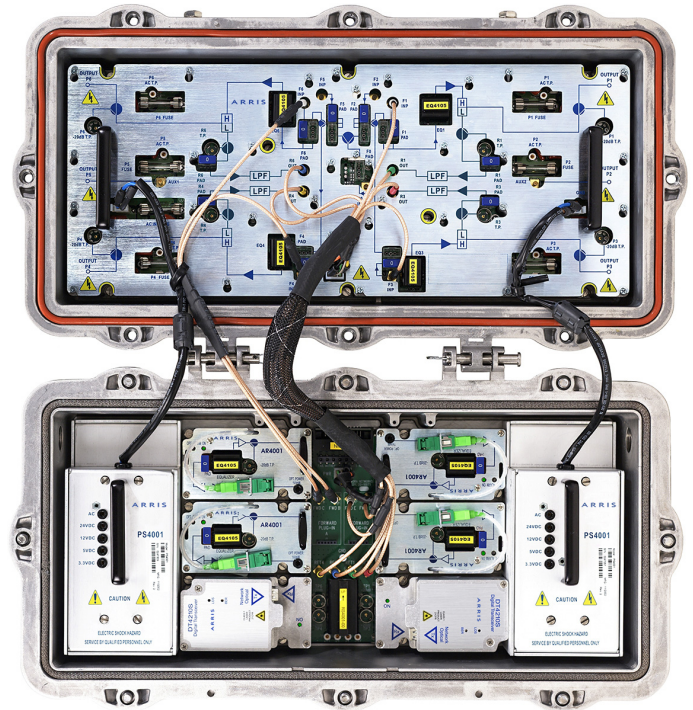
# Optical Node Series (NC)

## 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 of 53 dBmV at 1002 MHz
- Optical capabilities: 1310 nm, 1550 nm, 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



### PRODUCT OVERVIEW

The ARRIS 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 ARRIS'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, ARRIS 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.

## SPECIFICATIONS

| Characteristics   | Specification   |                                      |
|---|---|--------------------------------------|
| <b>Physical</b>   |   |                                      |
| 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   |                                      |
| <b>Environmental</b>                                    |   |                                      |
| Operating Temperature Range                             | -40° to +60°C (-40° to 140°F)   |                                      |
| Storage Temperature Range                               | -40° to +85°C (-40° to 185°F)   |                                      |
| Humidity  | 5% to 95% non-condensing  |                                      |
| <b>General</b>  |   |                                      |
| Passband options  | <b>Reverse</b><br>5-42 MHz  | <b>Forward</b><br>51-1002 MHz        |
| RF Test Points (Fwd and Rtn)                            | -20 dB  |                                      |
| Flatness  | ± 1 dB  |                                      |
| Output return loss (at the node output)                 | > 16 dB   |                                      |
| <b>Power Requirements</b>                               |   |                                      |
| Operating Input voltage range                           | 44 to 95 V <sub>RMS</sub> (47-70 Hz Quasi-Square Wave)  |                                      |
| Power passing   | 15 A <sub>RMS</sub>   |                                      |
| Power supply start-up input voltage                     | 40-44 V <sub>RMS</sub>  |                                      |
| Power supply turn off input voltage                     | 34-38 V <sub>RMS</sub>  |                                      |
| Power supply efficiency                                 | 73% typical   |                                      |
| DC power consumption                                    | <ul style="list-style-type: none"> <li>• 57 W (standard configuration of 4 RF outputs and 1 optical Rx)</li> <li>• 11 W (second Optical Receiver, AR4203G)</li> <li>• 6 W (Digital Transponder, DX4515)</li> <li>• 6 W (Return Transceiver, DT4x30 with TR4000 SFP)</li> <li>• 9 W (Node EDFA, single-width FA4500 series)</li> </ul> |                                      |
| <b>RF Performance for HFC Applications (See Note 1)</b> |   |                                      |
|   | <b>High Level HFC Application</b>   | <b>Typical Level HFC Application</b> |
| Channel Loading   |   |                                      |
| Up to 550 MHz   | Analog NTSC   | Analog NTSC                          |
| 550-1002 MHz  | 256 QAM at -6 dBc   | 256 QAM at -6 dBc                    |
| Nominal output level (per port)                         |   |                                      |
| at 1002 MHz   | 53 dBmV   | 49 dBmV                              |
| at 51 MHz   | 39 dBmV   | 35 dBmV                              |
| Nominal slope   |   |                                      |
| 51/1002   | 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                                |

### NOTES:

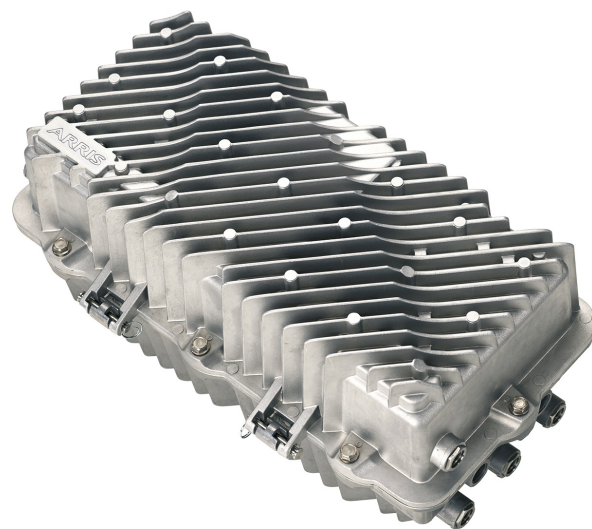
1. Performance with 0.5 dBm input to node's Optical Receiver from a 1 GHz Model AT33xxG-N-1-AS Analog 1310 nm Transmitter
2. Link performance, including transmitter (with CW channel loading to 550 MHz and 256 QAM loading above 550 MHz at -6 dBc)

**ORDERING INFORMATION**

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 (AR4203G) 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 ARRIS sales representative for information regarding specific equipment configuration options to meet your particular requirements.

**RELATED PRODUCTS**

|                            |                       |
|----------------------------|-----------------------|
| Digital Return Transmitter | 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.

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