Optical Node Series (NC)  
NC4000S4  
4x4 Fully Segmentable 1.2 GHz Node

FEATURES

- Output level of 56 dBmV at 1218 MHz
- Drop in upgrade for NC4000SG or NC4000S2 nodes
- 4x4 fully segmentable for HFC applications
- 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
- Pedestal or strand mounting

PRODUCT OVERVIEW

The ARRIS NC4000S4 series optical node platform supports a wide range of advanced architectures and is ideal for traditional HFC applications.

With an output level of up to 48 dBmV (56 dBmV virtual analog) at 1218 MHz on each of the four RF ports of the OA4344EG RF Output Amplifier, the NC4000S4 is designed as a “drop-in” replacement for the NC4000S2 and NC4000SG and can be used to extend the frequency range of the coaxial network in standard HFC architectures. The high gain optical receivers feature automatic level control and support optical inputs between -7 and +2 dBm.
### SPECIFICATIONS

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<tr>
<th>Characteristics</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical</strong></td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>20” L x 9.5” W x 10.75” H (50.8 cm x 24.1 cm x 27.3 cm)</td>
</tr>
<tr>
<td>Weight</td>
<td>38 lbs (17.1 kg)</td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>–40° to +65°C (–40° to +149°F)</td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td>–40° to +85°C (–40° to +185°F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>5% to 95% non-condensing</td>
</tr>
<tr>
<td><strong>General</strong></td>
<td></td>
</tr>
<tr>
<td>Passband options</td>
<td></td>
</tr>
<tr>
<td>Reverse</td>
<td>5 – 42 MHz</td>
</tr>
<tr>
<td></td>
<td>5 – 65 MHz</td>
</tr>
<tr>
<td></td>
<td>5 – 85 MHz</td>
</tr>
<tr>
<td>Forward</td>
<td>51 – 1218 MHz</td>
</tr>
<tr>
<td></td>
<td>85 – 1218 MHz</td>
</tr>
<tr>
<td></td>
<td>102 – 1218 MHz</td>
</tr>
<tr>
<td>RF Test Points (Fwd and Rtn)</td>
<td>–20 dB</td>
</tr>
<tr>
<td>Flatness</td>
<td>± 1 dB</td>
</tr>
<tr>
<td>Output return loss (at the node output)</td>
<td>&gt; 16 dB</td>
</tr>
<tr>
<td><strong>Power Requirements</strong></td>
<td></td>
</tr>
<tr>
<td>Operating Input voltage range</td>
<td>44 to 95 V_{peak} (47–70 Hz Quasi-Square Wave)</td>
</tr>
<tr>
<td>Power passing 1</td>
<td>15 V_{peak}</td>
</tr>
<tr>
<td>Power supply start-up input voltage</td>
<td>40–44 V_{peak}</td>
</tr>
<tr>
<td>Power supply turn off input voltage</td>
<td>34–38 V_{peak}</td>
</tr>
<tr>
<td>Power supply efficiency</td>
<td>83% typical</td>
</tr>
<tr>
<td>DC power consumption</td>
<td>- 61 W (standard configuration of 4 RF outputs and 1 optical Rx)</td>
</tr>
<tr>
<td></td>
<td>11.5 W (second Optical Receiver, AR4214e)</td>
</tr>
<tr>
<td></td>
<td>6 W (Return Transceiver, DT4250 with TR4000 SFP)</td>
</tr>
</tbody>
</table>

### RF Performance for HFC Applications 2

<table>
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<tr>
<th>Channel Loading</th>
<th>Mixed</th>
<th>All Digital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 278 MHz</td>
<td>Analog (30 Channels)</td>
<td>QAM/OFDM</td>
</tr>
<tr>
<td>284-1218 MHz</td>
<td>256 QAM/OFDM at -6 dBC</td>
<td></td>
</tr>
<tr>
<td>Nominal output level (per port)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analog</td>
<td></td>
<td></td>
</tr>
<tr>
<td>at 1218 MHz</td>
<td>56 dBmV</td>
<td>50 dBmV</td>
</tr>
<tr>
<td>at 100 MHz</td>
<td>39.7 dBmV</td>
<td>33.7 dBmV</td>
</tr>
<tr>
<td>at 51 MHz</td>
<td>39 dBmV</td>
<td>33 dBmV</td>
</tr>
<tr>
<td>Nominal slope</td>
<td>51/1218</td>
<td>17 dB linear</td>
</tr>
<tr>
<td>Link performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCN (CNR + CIN)</td>
<td>51 dB</td>
<td></td>
</tr>
<tr>
<td>CSO</td>
<td>62 dB</td>
<td></td>
</tr>
<tr>
<td>CTB</td>
<td>64 dB</td>
<td></td>
</tr>
<tr>
<td>MER</td>
<td>&gt; 40 dB</td>
<td>&gt; 40 dB</td>
</tr>
<tr>
<td>BER</td>
<td>&lt; 1x10^{-6}</td>
<td>&lt; 1x10^{-6}</td>
</tr>
</tbody>
</table>

**NOTES:**

1. Maximum current through any port
2. Performance with 0.0 dBm input to node's Optical Receiver from a 1.2 GHz Model HT33xxH-D-1310-2-AS Analog 1310 nm Transmitter
3. Measured at 25°C
ORDERING INFORMATION

A typical configuration of the NC4000S4 series optical node includes the NH4000-H housing with external test ports, one PS4101 power supply, one optical receiver module; AR4x14E with SC/APC connectors, the OA4344EG 4-port RF amplifier module, and standard 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. These include 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.

RELATED PRODUCTS

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<td>Installation Services</td>
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Customer Care

Contact Customer Care for product information and sales:

- United States: 866-36-ARRIS
- International: +1-678-473-5656

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