

# Optical Node Series

SG4-R-\*

Optical Receiver Series

## FEATURES

- Enables bandwidth expansion via downstream node segmentation
- Supports CWDM, DWDM and CORWave® multiwavelength technologies
- Maximizes network flexibility with wide input range
- Reduces the need for costly optical amplifiers
- Easy Plug and Play installation and operation to minimize service time



## PRODUCT OVERVIEW

ARRIS SG4000 standard and high gain receivers use an integrated optical hybrid photo detector and Gallium Arsenide (GaAs) technology to improve RF performance over the entire 1 GHz passband. The high gain receiver provides a lower optical input range, enabling the receiver to overcome multiwavelength passive loss while maintaining typical RF output levels. Temperature compensation circuitry automatically responds to the receiver's gain and requires no set-up procedure.

The SG4-R-\* receivers feature a built-in microprocessor for monitoring the optical power, module current, and module enable status. An optical power DC voltage test point, along with a wave-length selection jumper facilitates accurate measurements of input power. A -20 dB test point enables you to measure carriers throughout the forward band, and gain adjustments are made with a JXP style interstage pad. Output slope is generated by the Linear Midstage Equalizer (LME) plug-in that is can be changed by removing the receiver cover. Module status indicators help reduce troubleshooting time, and the SG4-R-\* can be hot-swapped in the field, providing true plug and play functionality.

## SPECIFICATIONS

Parameter	Standard Gain	High Gain	
	SG4-R-100/SC	SG4-R-H-100/SC	
<b>Optical Performance</b>			
Optical Input Return Loss	40 dB minimum	40 dB minimum	
Absolute Maximum Optical Input Power	+ 3 dB maximum	+3 dB maximum	
Recommended Optical Input Power Range	-3 dBm to + 2.0 dBm	-6 dBm to + 2.0 dBm	
Optical Power Test Point Scale Factor	1.0 ± 0.20 V/mW	1.0 ± 0.20 V/mW	
<b>RF Performance</b>			
RF Passband	54 MHz to 1003 MHz	54 MHz to 1003 MHz	
Gain at 1003 MHz @ -3 dBm Input	46.5 dB minimum	50.5 dB minimum	
Flatness	1.3 dB P-V maximum	1.3 dB P-V maximum	
Slope (w/LME-100-8 Installed)	9 ± 1 dB	9 ± 1 dB	
RF Return Loss (52 to 900 MHz)	16 dB minimum	16 dB minimum	
Test Point Flatness	1 dB P-V maximum	1 dB P-V maximum	
Equivalent Input Noise Current	8 pA/Hz <sup>1/2</sup> maximum	5.5 pA/Hz <sup>1/2</sup> maximum	
<b>DC Performance</b>			
DC Supply Current (24 Volts)	525 mA maximum	525 mA maximum	
DC Supply Current (5 Volts)	50 mA maximum	50 mA maximum	
<b>Distortion</b>			
Composite Triple Beat (CTB)	-71 dBc minimum <sup>1</sup>	-72 dBc minimum <sup>2</sup>	-73 dBc minimum <sup>3</sup>
Composite Second Order (CSO)	-65 dBc minimum <sup>1</sup>	-67 dBc minimum <sup>2</sup>	-72 dBc minimum <sup>3</sup>
Carrier to Noise Ratio (CNR)	50.5 dB minimum <sup>1</sup>	48 dB minimum <sup>2</sup>	51 dBc minimum <sup>3</sup>
<b>Digital Distortion</b>			
Modulation Error Rate (MER)	Not specified	39	
Bit Error Rate (BER)*	Not specified	1x10 <sup>-9</sup>	
Carrier to Composite Noise (CCN)	Not specified	42	
<b>Optical Input Alarm Range</b>			
High (HIHI)	1.6 mW (2 dBm)	1.6 mW (2 dBm)	
Low (LOLO)	0.4 mW (-4 dBm)	0.2 mW (-7 dBm)	

**Notes:**

- Using GX2-LM1000B9, 20km optical link, -3 dBm optical input power, nominal wavelength of 1310 nm, and a LME 1-8. 79 channels CW plus noise to 1 GHz (-6 dB down from Analog) with a +40 dBmV maximum output level at 550 MHz.
- 79 analog NTSC channels 55.25 to 547.25 MHz, 75 digital NTSC channels 552 to 1002 MHz, using LM1000E9 transmitter (3.6% OMI per analog channel), 20 km, -6 dBm at receiver +44 dBmV output at 547.25 MHz.
- 79 analog NTSC channels 55.25 to 547.25 MHz, 75 digital NTSC channels 552 to 1002 MHz, using LM1000E9 transmitter (3.6% OMI per analog channel), 20 km, -3 dBm at receiver +44 dBmV output at 547.25 MHz.

## RELATED PRODUCTS

CHP Transmitters	Optical Patch Cords
SG4000 Modular Node	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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