

# ARRIS SG 4000

## MODULAR OPTICAL NODE PLATFORM

Arris' 1 GHz SG 4000 Modular Node provides the network segmentation solutions required by today's expanding broadband communication networks. As a true 4x4 node, the SG4000 allows operators to independently and incrementally segment the downstream and upstream paths.



As the focus of a fiber deep collector node topology, the SG4000 supports advanced modules such as optical amplifiers, optical switches and ruggedized optical passives. The node accepts the new DOCSIS based status monitor transponder to allow operators to monitor and control node parameters using their existing DOCSIS infrastructure.

- Enables bandwidth expansion via downstream and upstream segmentation
- Modular design for maximum flexibility
- GaN technology delivers higher output and enhanced reliability for fiber deep designs
- SFP based 85 MHz digital return expands upstream bandwidth
- 10 Gbps Carrier Ethernet services
- Supports CWDM, DWDM, and CORWave® multiwavelength technologies
- One of the most widely deployed optical nodes, trusted by operators around the world to deliver advanced voice, video, and data services

## SPECIFICATIONS

OPTICAL RECEIVER	UNITS	STANDARD SLOPE	ULTRA SLOPE
Optical Wavelength	nm	1310 ± 20 nm, 1550 ± 30 nm	
Optical Input Power Range	dBm	-3.0 to +2.0 continuous	
Optical Connector Type		SC/APC	
Optical Return Loss	dB	45 min.	
RF			
Operational Bandwidth <sup>17</sup>	MHz	104 to 1002 MHz	
Flatness <sup>1</sup>	dB	±0.75	
Output Linear Tilt	dB	14.0 ± 1.0 18.0 ± 1.0	
Level Stability <sup>2</sup>	dB	± 1.5	
RF Output Test Points <sup>7</sup>	dB	-20 ± 1.0	
RF Output Impedance <sup>4</sup>	Ohms	75	
RF Output Return Loss <sup>8</sup>	dB	16	
STATION PERFORMANCE			
Reference Frequency	MHz	1002/550/104	
Reference Output Level 79 analog chs/450 MHz QAM dBmV <sup>3</sup>	dBmV	55/48/41	60/51/43
Distortion Performance Composite Triple Beat (CTB) <sup>5, 13</sup> Composite Second Order (CSO) <sup>5, 6, 13</sup>	dBc dBc dBc	-67 -64 50.5	-62 -60 50.0
Carrier to Composite Noise (CCN)			
Reference Frequency	MHz	1002/54	
Reference Output Level 948 MHz QAM <sup>3</sup>	dBmV	55/41	60/42
Distortion Performance NPR <sup>13, 15</sup> MER <sup>13, 16</sup>		44 41	- -
AC Input Current @90 VAC <sup>10, 12</sup> @44 VAC <sup>10, 12</sup>	Ampere	3.57 5.82	
Hum Modulation <sup>9</sup>	dBc	-60	
Port-to-Port Isolation <sup>11</sup>	dB	65	
AC Bypass Current (all ports)	Ampere	15	

MECHANICAL/ENVIRONMENTAL			
Dimensions (L x W x D)	inches	22.8 x 11 x 10.6	17.9 x 15.8 x 7.9
	mm	579.12 x 279.40 x 269.24	454.66 x 401.32 x 200.66
Weight	lb	48	37.4
	kg	21.77	16.96
Mounting		Aerial	Pedestal
Protection Class		IP68	
Operating Temperature Range	°C	-40 to +60	
	°F	-40 to 140	

**Notes:**

1. Operating passband of station
  2. Over the stated Operating temperature range
  3. @ 0 dBm optical input power, 20 km optical link, 0 dBm optical input, GX2 transmitter
  4. Specified at the housing cable entry facility.
  5. Measured with CW carriers and spectrum analyzer over specified temperature range. References are typical across the band of interest. \*
  6. Refers only to beat clusters that fall 0.75 MHz and 1.25 MHz above the subject picture carrier.
  7. Test points should be used with GFAL adapter.
  8. Match measurement at the station input and output, cable- entry facilities, at the specified passbands for operational gain.
  9. Measured with the AC bypass current for a passband of 11 MHz to 1002 MHz
  10. Measured at the power connector.
  11. Fmin to 1002 MHz
  12. Stated in RMS continuous.
  13. Typical performance over the stated temperature range in a cascade.
  14. Stated specification and performances are referenced with the use of ARRIS accessories. The noted parameters will not be supported when third party accessories are employed.
  15. NPR (Noise Power Ratio) is measured at the at center frequency of the band of interest with a full noise load
  16. MER (Modulation Error Ratio) is measured with a BER/MER analyzer and a source using an J.83, Annex C datastream.
  17. Roll-off from 105 MHz to 102 MHz is < 1.0 dB. Group Delay from 103.25 MHz to 105.25 MHz is < 10 ns.
- Specifications are compliant with the test methods as stated in NCTA Recommended Practices for Measurements on Cable.  
All specifications are stated as worst-case over temperature unless otherwise noted.