

Opti Max™ Optical Node Series

OM1111 1 GHz Single Output Node

FEATURES

- 1 GHz GaN technology delivers higher output and enhanced reliability for last mile and fiber deep designs
- Supports CWDM, DWDM, and CORWave® multiwavelength technologies
- Lid upgrades enable Philips amplifiers to be seamlessly converted to nodes for cost saving cascade reductions
- Supports 1310/1550 nm DFB and CWDM transmitters technologies for flexible network designs
- Premise powering option enables hospitality installations and new revenue opportunities



PRODUCT OVERVIEW

The ARRIS Opti Max™ OM1111 provides cable operators with a compact, single high output node to service small subscriber groups, small/medium business customers and MDUs.

The OM1111's 1 GHz bandwidth enables cable operators to increase downstream capacity for HDTV, Video on Demand, VoIP, high speed data/internet, and other value-added services. Return bandwidth options extend to 85 MHz to support additional revenue generating service offerings. CWDM transmitters allow multiple nodes to be combined onto a single fiber with ruggedized optical passives, maximizing the optical spectrum that is available in fiber-scarce architectures.

The OM1111's 9-LH 2-port housing base is backwards compatible with a wide range of Phillips, C-COR, and ARRIS line extender Flex Max® 320/321 and MMLE line extender amplifier housings. Operators can utilize amplifier to node upgrades as an effective cascade reduction tool. The OM1111 housing lid has an extended depth that can manage two separate fiber service cable entries. The node's fiber tray has two tiers, which manages separate fiber entry service cables in the lower level and optical bulkheads and ruggedized optical passive devices in the upper level.

GENERAL NODE SPECIFICATIONS

Forward Path Optical

Optical Input Wavelength, nm	1100 to 1600
Optical Input Range, without optical AGC, dBm	-3 to +3
Optical Input Range, with optical AGC, dBm ¹	-6 to 0 or -3 to +3
Equivalent Input Noise, pA/Hz ^{0.5}	7

Forward Path RF Specifications

Operating Passband, MHz	54 to 1002	105 to 1002
Minimum Output Level, @1002 MHz ²	58	58
Factory Aligned Tilt, dB ³	17.5 ± 1	16.5 ± 1
Flatness, ± dB	1.0	1.0
Return Loss, dB, min.	16.0	16.0
Thermal Level Stability, ± dB max. ⁴	1.5	1.5
Optical AGC Accuracy, ± dB max. ⁵	1.0	1.0
Downstream Output RF Test Point Level, dB	-20 ± 1.0	-20 ± 1.0

NTSC Channel Performance^{6,7,8}

Channel Loading, Number of Channels, NTSC	79	74
Reference Frequency, MHz	1002/547/54	1002/547/105
Output Level, dBmV	56/47.5/38.5	56/47.5/39.5
Carrier to Noise Ratio, 4 MHz, dB	57	57
Composite Triple Beat, -dBc	72	72
Composite 2IM, -dBc	66	66
Cross Modulation, dB (per NCTA std.)	66	66
Composite Intermodulation Noise CIN, dB ⁹	55	55

Hum Modulation (Time Domain @ 10A)

54 to 1002 MHz, dB	65	N/A
105 to 1002 MHz, dB	N/A	65

RELATED PRODUCTS

CHP CORView™ EMS	Optical Patch Cords
CHP Chassis	Optical Passives
Fiber Service Cable	Installation Services

GENERAL NODE SPECIFICATIONS (CONTINUED)

Return Path RF Specifications

Operating Passband, MHz	5–42	5–85
Optimum RF Input Level, dBmV/6 MHz	10	7
OMI per channel @ Optimum Input Level, % typ.	10	7.1
Gain Slope, ± dB	1.0	1.0
Flatness @ slope, ± dB	1.0	1.0
Return Loss, dB, min.	16	16
Upstream Input RF Test Point Level, dB	-20 ± 0.75	-20 ± 0.75

Hum Modulation (Time Domain @ 10A)

5 – 42 MHz, dB	60	N/A
5 – 85 MHz, dB	N/A	60

Mechanical/Environmental

Dimensions	8.9 x 6.9 x 7.5 inches (22.6 x 17.5 x 19.1 cm.)	
Weight	8.60 lbs. (3.90 kg)	
Mounting	Aerial	
International Protection Rating	IP68	
RF Connector Types	SCTE-compliant housing, accepts 1.6" 5/8 stinger	
Operating Temperature Range	-40 °F to 140 °F (-40 °C to 60 °C)	

NOTES:

- Output levels are reduced by 6 dB when -6 to 0 dBm Optical AGC mode is selected.
- Minimum output level with EQ installed and an optical input of -3 dBm from a transmitter with 3.5% OMI. Optical AGC mode does not compensate for changes in transmitter OMI. Nodes with optical AGC selected will maintain these output levels over the optical input range.
- Linear tilt with 8.5dB on-board EQ and plug-in EQ GEQL-1GHZ-100. Tilt is measured from 54 to 1002 MHz and is determined using a best fit/least squares formula.
- Referenced to 23°C with a fixed optical input.
- Output level variation with respect to output level at 0 dBm input.
- The distortion values listed are for the node only. To obtain a particular link performance, combine the listed node performance values along with the applicable transmitter performance values.
- Analog channels occupying the 54 to 547 MHz frequency range with digitally compressed channels or equivalent broadband noise to 1002MHz at levels 6 dB below equivalent video channels.
- Node configured with a plug-in GEQL-1GHZ-100 and the onboard 8.5 dB EQ. Optical input of 0 dBm, 3.5% OMI.
- Systems operating with digitally compressed channels or equivalent broadband noise from 547 to 1002 MHz will experience a composite distortion (CIN) appearing as noise in the 54–547 MHz frequency spectrum.

Note: Specifications are subject to change without notice.

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Nodes-OM1111