MODEL

MBN100

1 GHZ OPTICAL NODE

FEATURES

- 1 GHz GaN technology delivers higher output and enhanced reliability for fiber deep designs
- Shared optics modules and accessories with VSN200 node leverage sparing and training
- Supports CWDM, DWDM, and CORWave® multiwavelength technologies
- SFP based 85 MHz digital return expands upstream bandwidth
- Lid upgrades enable amplifiers to be seamlessly converted to nodes for cost saving cascade reductions

PRODUCT OVERVIEW

The versatile ARRIS MBN100 optical node is an ideal compliment for evolving fiber-deep networks. It is equally suited for new fiber builds and extensions or cascade reductions as an amplifier-to node-conversion. The MBN100 provides operators with the flexibility to enable return segmentation in the future as demand increases, utilizing a wide variety of transmitter technologies. The MBN100 uses the same housing base as the ARRIS MB100 amplifier, so operators can leave the hard line coax cable in place when upgrading the amplifier to a node location.

The compact MBN100 can be configured with up to two redundant receivers and up to two analog transmitters in a redundant or segmented configuration. The optics modules are common to the VSN200 2x2 optical node for ease of sparing; while the power supply is the same power supply used in the SG4000 node platform. The MBN100 also supports a 2X Time Domain Multiplexed (TDM) 85 MHz digital return transmitter that is a double-wide optics module. This SFP-based TX is available in 1310, CWDM, or DWDM options to tailor performance depending on network and link requirements. At the headend, the complementary digital return receiver is available in both the GX2 and CHP platforms.

The node set-up is straightforward, as there are no configuration boards to change; upgrades are configured through RF cable connections and module jumper settings. An optional DOCSIS transponder provides control and monitoring options, including Ingress Control Switching (ICS).

GENERAL NODE SPECIFICATIONS

Characteristics	Specifications	
Forward Path Optical		
Optical Input Wavelength, nm	1270 to 1610	
Optical Input Range, dBm[1]	−3 to +2	
Equivalent Input Noise (HG Rx), pA/Hz[0.5]	5.0	
Forward Path RF		
Operating Passband, MHz	**5-42/54-1002**	**5-85/105-1002**
Output Level @ 1006 MHz, −3 dBm input, 3% OMI, dBmV, min.[2]	55	55
Level Stability, dB, max.	± 2.0	± 2.0
Forward Aligned Tilt[3]	14.5 ± 1.0	15.0 ± 1.0
Flatness @ Gain Slope	± 1.0	± 1.0
Return Loss, dB, min. (All RF Ports)	16.0	16.0
NTSC Channel Performance[4]	**79 Channels**	**71 Channels**
Frequency, MHz	1002/870/550/54	1002/870/550/105
Output Level, dBmV[2]	55/53.5/48/40.5	55/53.5/48/40
Composite Triple Beat, −dBc	68	68
Composite Second Order, −dBc	64	64
Carrier to Composite Noise, dB	50.5	50.5
Hum Modulation (Time Domain @ 15 A)		
85 to 870 MHz, dB	65	65
871 to 1003 MHz, dB	60	60
Return Path RF		
Operating Passband, MHz	5-42	5-85
Optimum RF Input Level, dBmV/6 MHz	12	9
Flatness @ Gain Slope, dB	± 1.0	± 1.0
Return Loss, dB (All RF Ports)	16.0	16.0

GENERAL NODE SPECIFICATIONS (CONTINUED)

Characteristics	Specifications
Mechanical/Environmental	
Dimensions	15.4 in L x 9.6 in W x 8.5 in D (39.1 cm x 24.4 CM x 21.6 CM)
Weight	22 lbs (9.97 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:

1. Circuit resiliency to +3 dBm.
2. At the specified operational tilt, the maximum Enhanced GaN output level for 870 MHz or 1002 MHz loading is 59.0 dBmV at the highest frequency.
   Do not operate above 59 dBmV @ 1 GHz analog equivalent
3. Equalizers configured for 14.5 dB tilt.
4. Measured with 79 channels NTSC at 48 dBmV @ 547.25 MHz with digital loading 6 dB below analog, 550 to 1003 MHz, 20 km optical link, 0 dBm optical input power, GX2 LM transmitter.

RELATED PRODUCTS

Digital Return Transmitter	Optical Patch Cords
SFPs	Optical Passives
Fiber Service Cable	Installation Services

Note: Specifications are subject to change without notice.

MBN100 Node_DS_03MAR15

www.amt.com

Advanced Media Technologies®Inc. · 3150 SW 15th Street Deerfield Beach, FL 33442
(888) 293-5856 · (954) 427-5711 · Fax (954) 427-9688