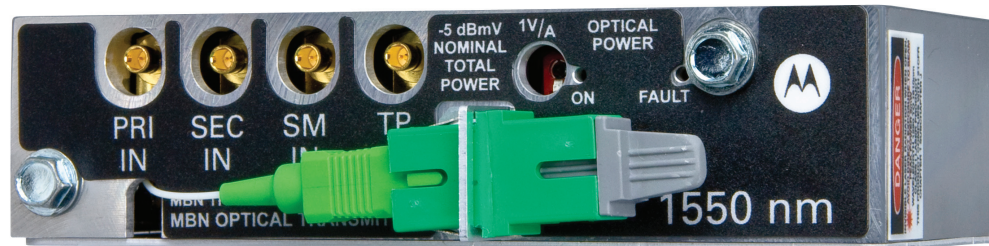




MBN100 and BTN100 Optical Node Analog Transmitters



MBN-IFPT, MBN-EIFPT, MBN-DFBT, MBN-DFBT3, and MBN-DFBT3-CWDM-* Analog Return Path Optical Transmitters

Featuring broad power ranges and performance, the integrated MBN Return Path Transmitters compliment various network architectures.

The MBN100 and BTN100 optical nodes offer five different analog return path transmitter module solutions to address the increasing demand for complete two-way interactive broadband communications systems. The MBN-IFPT and MBN-EIFPT modules use an isolated, un-cooled Fabry-Perot laser while the MBN-DFBT, MBN-DFBT3, and MBN-DFBT3-CWDM-* modules use a state-of-the-art isolated, un-cooled, Distributed Feedback (DFB) laser for improved link performance. All 16 CWDM wavelengths are available. Integrated optical bulkhead connector provides simple, quick connect module installation and allows for easy connector cleaning. All five transmitters are available SC/APC. The E2000 connector is available via an adaptor. Up to two transmitters can be used in a single MBN100 node providing additional flexibility for segmentation and redundancy applications.

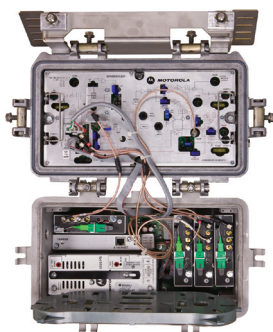
These transmitters have an integrated RF amplifier and all the active circuitry required to provide RF drive to the laser enabling optimized performance while minimizing set-up time. They all support a channel loading capacity of 80 MHz of digital data or up to two analog video channels or a mixture of both. All transmitters incorporate a microprocessor controlled circuit to minimize any variation in the optical modulation index (OMI) as the laser slope efficiency changes due to ambient temperature variations. An automatic power control (APC) circuit is also included to minimize the change in optical output power due to module temperature variations and laser aging effects.

The MBN-* transmitters can be hot-swapped in the field, providing true plug and play functionality. Module status indicators help reduce troubleshooting time. An optical output power DC voltage test point is provided along with an RF input test point. Laser RF drive level adjustments are accomplished with a JXP style pad attenuator in the RF EPACK of the node.

Benefits include:

- 1310 nm and CWDM (1270 to 1610 nm) models
- Modular design supports multiple configurations
- Automatic Power Control
- Integrated RF amplifier
- Thermal slope efficiency compensation
- SC/APC standard or E2000 connector adaptor
- Plug-n-Play installation and operation
- Work in both MBN and BTN nodes

Data Sheet
MBN100 and BTN100 Optical Node Analog Transmitters



Specifications

Parameter	MBN-IFPT	MBN-EIFPT	MBN-DFBT	MBN-DFBT3	MBN-DFBT3-CWDM-*
Optical Characteristics					
Laser Type	Fabry-Perot, Isolated, Uncooled		Distributed Feedback, Isolated, Uncooled		
Optical Wavelength	1310 nm				CWDM nm ¹
Optical Output Power	0.4 mW (-4 dBm)	1.0 mW (0 dBm)	1.0 mW (0 dBm)	2.0 mW (+3 dBm)	2.0 mW (+3 dBm)
Optical Power Test Point Scale Factor	1.0 V/mW				
Optical Connector Types	SC/APC				
RF Characteristics					
Operational Bandwidth	5 – 85 MHz				
Typical Payload	35 MHz digital data or 2 video channels plus limited data channels				
Recommended Total Input Power ²	+19.5 dBmV				
Optical Modulation Index (OMI), @ 25 + 5°C	0.35 + 0.020		0.20 + 0.020		
OMI Change Over Temperature	+ 2.0 dB Max.				
Flatness	1.0 dB P-V Max.				
RF Input Return Loss	18 dB Min., 5 – 85 MHz				
RF Input Impedance	75 Ω				
Performance					
Noise Power Ratio (NPR) ³	30 dB over 10 dB dynamic range	40 dB over 9 dB dynamic range	40 dB over 11 dB dynamic range	40 dB over 15 dB dynamic range	40 dB over 15 dB dynamic range
Single Second Order Distortion (SSO)	-36 dBc	-35 dBc	-39 dBc	-45 dBc	-45 dBc
Single Third Order Distortion (STO)	-52 dBc	-52 dBc	-55 dBc	-65 dBc	-65 dBc
Spurious Noise	-52 dBc				
General					
Dimensions	1.17 in W x 4.625 in L x 2.75 in H (3 cm x 11.7 cm x 7 cm)				
Weight	0.65 lbs.				
Operating Temperature Range	-40°C to +85°C (-40°F to +185°F)				
Current Draw @ 24 VDC	330 mA Max.			360 mA Max.	
Current Draw @ 5 VDC	15 mA Max.				
Power Consumption	8 W Max.			9 W Max.	
LED Indicators	Power (Green), Fault (Red)				

Specifications are subject to change without notice.

¹All 16 CWDM wavelengths are available from 1270 – 1610 nm

²All MBN transmitters operate with a nominal 28 dBmV total power at the node housing inputs.

³Specified at 25°C, 20km fiber, 9 dB total loss.

Ordering Information

Model Number	Part Number	Transmitter Module Description
MBN-IFPT/SC-R	558747-001-00	1310 nm Isolated Fabry-Perot, SC/APC, 0.4 mW
MBN-EIFPT/SC-R	558748-001-00	1310 nm Enhanced Isolated Fabry-Perot, SC/APC, 1.0 mW
MBN-DFBT/SC-R	558799-001-00	1310 nm Distributed Feedback, SC/APC, 1.0 mW
MBN-DFBT3/SC-R	558800-001-00	1310 nm Distributed Feedback, SC/APC, 2.0 mW
MBN-DFBT3-CWDM-*/SC-R	558802-xxx-00	CWDM nm Distributed Feedback, SC/APC, 2.0 mW, 16 wavelengths available



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