

MP-8001-70 Series Unamplified Microwave Fiber Optic Transmitter

70 GHz Unamplified Microwave Fiber Optic Link Modules



70 GHz Microwave Photonic Link Modules Feature Industry Leading Broadband Performance, Bandwidth, and SWaP Characteristics

The MP-8001-70-UTX RF/Fiber Optic Transmitter modules are designed to provide electrical-to-optical (E/O) conversion of broadband RF signals over a frequency range of 10 MHz to 70 GHz.

The utilization of the MP-8001-70-UTX, in conjunction with the appropriate MP-8000-RX RF/Fiber Optic Receiver, forms a broadband link capable of supporting the transmission of RF signals over singlemode optical fiber for use in a wide array of scientific and communication applications. The link applications include antenna remoting, SATCOM, RF delay lines, telemetry tracking, and point-to-point RF transmission.

The transmitter utilizes a high efficiency Mach-Zehnder Lithium Niobate (LiNbO3) electro optic modulator, coupled with a high power Distributed Feedback (DFB) laser diode centered at 1550 nm or on customer specified ITU wavelengths. The laser temperature stability is microprocessor controlled using a thermal electric cooler and an advanced ditherless bias control loop. These features, coupled with the MP-8000-RX's companion Photonic Receiver's incorporation of a high-speed, low distortion PIN photodiode detector, assures low noise and high dynamic range link performance over varying frequency, temperature, and optical loss budgets.

The MP-8001-70-UTX series Transmitter application modules have advanced Built-In-Test (BIT) diagnostic capabilities which provides remote status and monitoring of critical parameters such as transmitted optical power, system power, modulator bias, temperature, amplifier current, attenuator setting and a summary alarm status.

Information: Call us toll-free at 888-868-8967 or email info@b2bphotronics.com

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Applications:

- SATCOM Interfacility Links
- Microwave Antenna Remoting
- Electronic Counter Measure Systems
- Test and Measurement Applications
- Wideband Delay Line Applications
- Phased array Antenna Systems
- Secure Communication Systems

Features:

- 10 MHz to 70 GHz Bandwidth
- Z-Cut LiNbO3 Modulator
- Extended Operating Temperature
- High Optical Output +20 dBm
- High Speed, Noise free, Bias Loop
- Single Fiber DWDM Operation
- Small Form Factor Flange Mount
- Hot Swappable, Plug-In Module
- Compatible with:

MPS-1911 Rack Chassis System
MPS-1914 Rack Chassis System



1914 Plug-In Style Module

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Specifications

Optical:

Operational Wavelength	1555 +/- 10 nm or Customer Specified ITU Grid Channel
Optical Output Power (nom)	10mW, 20 mW
Optical Fiber Type	Single Mode SMF-28
Optical Connector Type	FC/APC, SC/APC, E2000/APC, PC/APC, AVIM, Others
Optical Back Reflections	-55 dB

RF:

Frequency Response	10 MHz to 70 GHz
RF Input Impedance	50 Ohms
Input Return Loss	> -8 dB
RF Input Connector	1.85 mm (V) female
1 dB Input Comp. Level	+15.0 dBm ⁽¹⁾
Input IIP3	+25.0 dBm ⁽¹⁾
RF Link Gain	-30 dB ⁽¹⁾
RF Link Gain Flatness	12dB over Full Operating Bandwidth ⁽¹⁾ (Gain Equalized versions Available) ± 1 dB over any 500MHz Bandwidth ⁽¹⁾
RF Link Noise Figure	38.0 dB ⁽¹⁾
Spur Free Dynamic Range	106 dB Hz ^{2/3}
RF Input Power (max)	+25.0 dBm, non-damage

General

Power Supply	+8.0 to + 24 VDC, 9 Watts (max)
Operating Temperature (std)	-20°C to +50°C
Operating Temperature (extended)	-70°C to +70°C
Storage Temperature	-45°C to +85°C
Operating Humidity	95% Non-condensing
Storage Altitude	50,000 ft
Local Alarm	LED: Bit Fault & Optical Power Failure (Plug-In Version Only)
Remote Alarms	Open Collector and Serial Interface
Dimensions:	
Flange Mount TX	6.5" x 2.5" x 1.25"
Chassis Mount	MPS-1911 or MPS-1914 Compatible

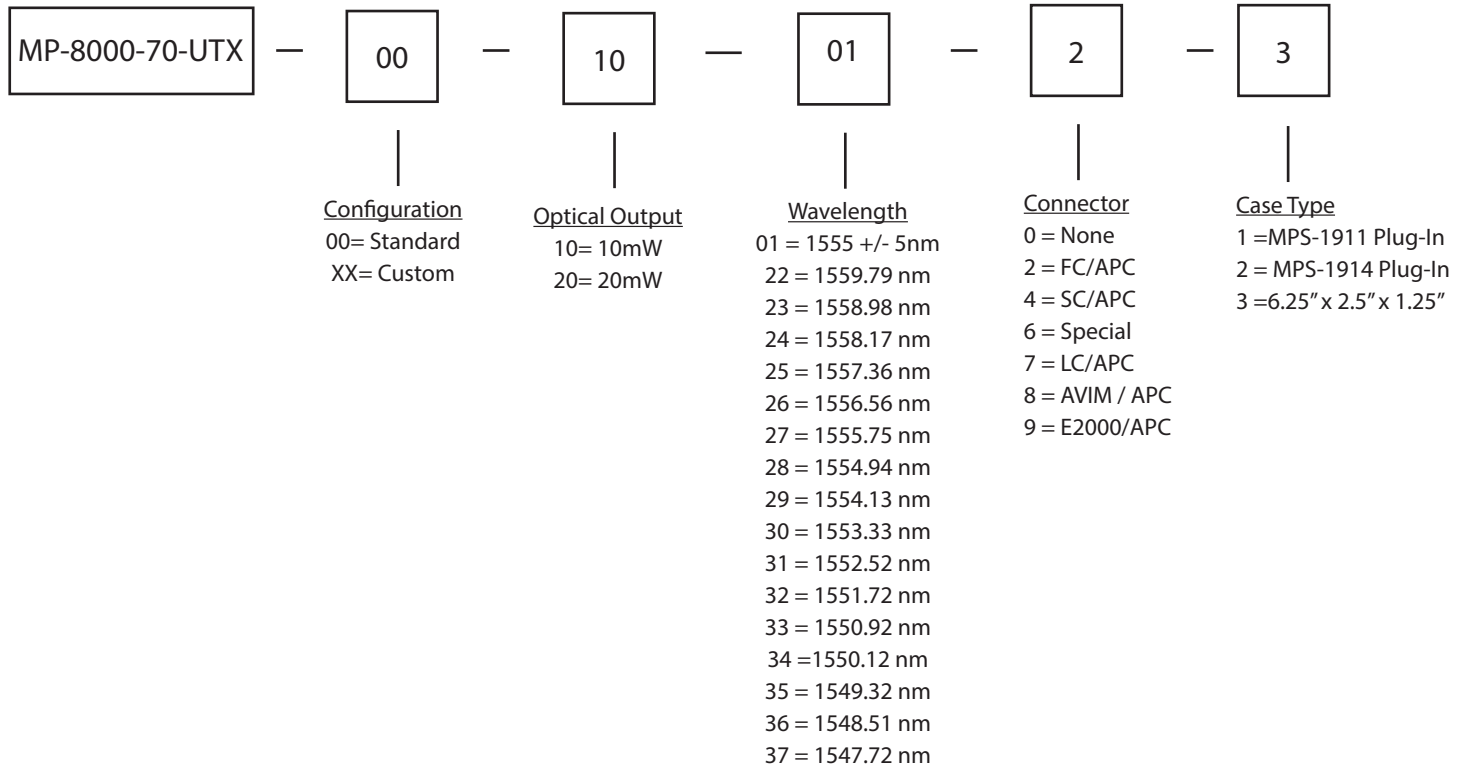
Note (1) : Typical performance at 25C ambient with 10mW dBo RX Optical Input applied to MP-8000-RX-08 Receiver Module

Note (2) : All parameters tested to 67 GHz. Performance from 67 GHz to 70 GHz is not guaranteed.

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Transmitter Part Number Generator



Note (1) : Other Frequency Bandwidths Available on Request

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