

MP-8000-22 Series Low NF Amplified Microwave Fiber Optic Transmitter

22 GHz Low Noise Figure Amplified Microwave Fiber Optic Transmitter



Broadband Microwave Analog Fiber Optic Transmitter Modules Provides >100km Transport Capability.

The MP-8000-22-ATX RF/Fiber Optic Transmitter modules are designed to provide electrical-to-optical (E/O) conversion of broadband RF signals over a frequency range of 0.02 to 22 GHz.

The utilization of the MP-8000-22-ATX, 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. Use of a X-cut modulator ensures near zero chirp characteristics that enables >100km fiber lengths and predictable dispersion control implementations. 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 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-8000-22-ATX 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

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:

- 20 MHz to 22 GHz Bandwidth
- X-Cut LiNbO3 Modulator
- Extended Operating Temperature
- High Optical Output +20 mW
- High Speed Noise free Bias Loop
- Single Fiber DWDM Operation
- Small Form Factor Flange Mount
- Hot Swappable, Plug-In Module
- Compatible with MPS-1911 and MPS-1914 Rack Chassis Systems



1914 Plug-In Style Module

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General Specifications

Optical

Parameter	Min	Typ	Max	Unit	Notes
Operational Wavelength	1545	1550	1555	nm	ITU Grid Available
Optical Output Power	9	11	15	mW	20mW Output Available
Optical Fiber Type	Single Mode SMF-28				Or Equivalent
Optical Connector Type	FC/APC, SC/APC, E2000, PC/APC, AVIM				Others Available
Optical Back Reflection	-55			dB	

Electrical - RF

Parameter	Min	Typ	Max	Unit	Notes
Frequency Response	0.02		22	GHz	
Input/Output RF Impedance	50			Ohms	
Input/Output VSWR			2.0:1		
RF Connector Type	2.92 mm (K) female				Others Available
RF Link Gain		0		dB	Higher Link Gains Available
RF Link Gain Flatness		+/- 3		dB	0.1 to 22 GHz Bandwidth ⁽²⁾
		+/- 1		dB	Over any 500 MHz Bandwidth
RF Link Noise Figure		+19.0		dB	
Input 1dB Compression Point		0.0		dBm	IP1dB
Input Third Order Compression Point		+9.0		dB	IIP3
Spur Free Dynamic Range		108		dB*Hz ^{2/3}	SFDR
RF Input Power			+25.0	dBm	No Damage

Mechanical and Environmental

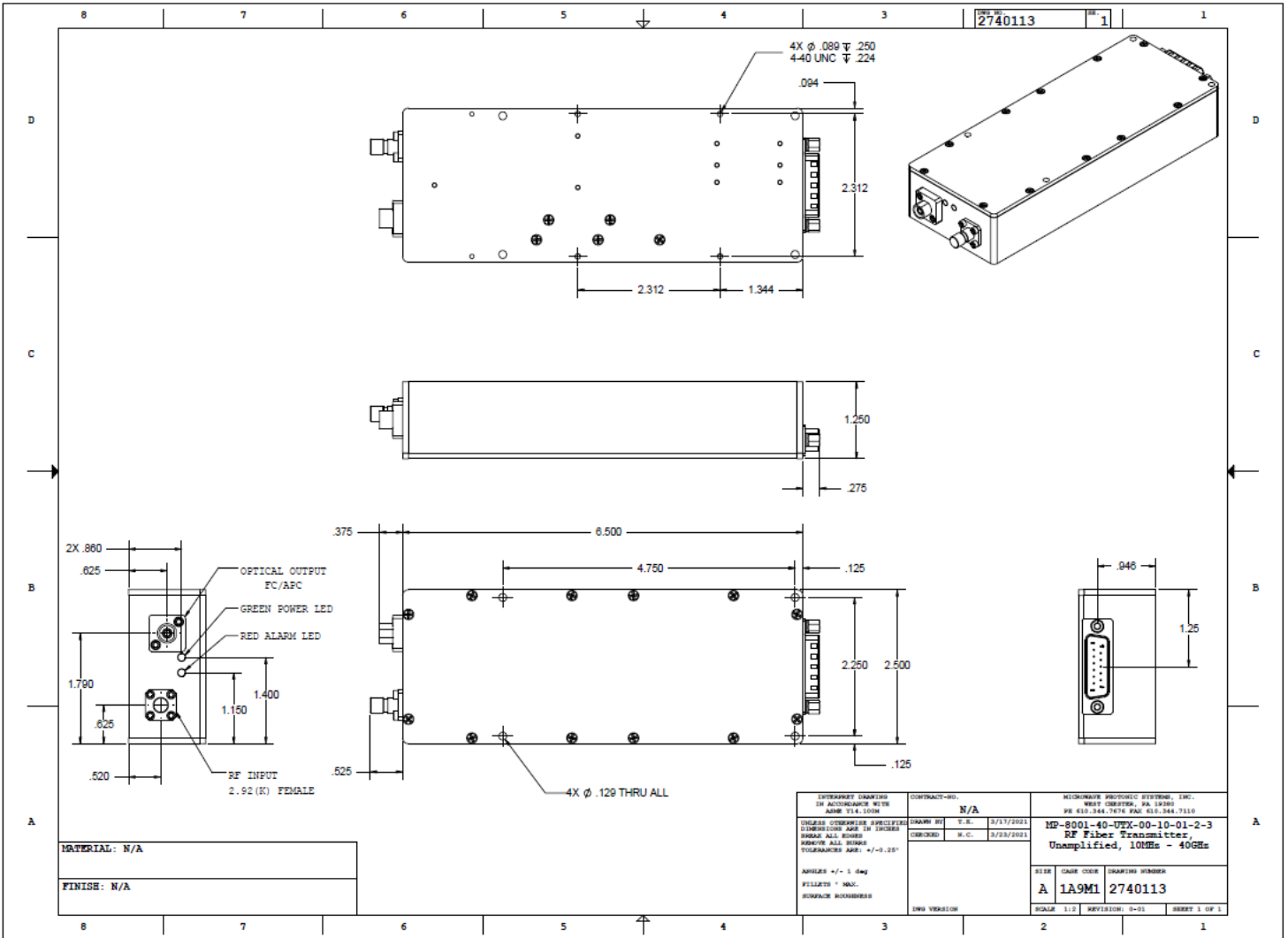
Parameter	Min	Typ	Max	Unit	Notes
Power Supply	10	15	24	VDC	12 Watts
Operating Temperature	-20		+50	°C	Extended Range Available
Storage Temperature	-45		+85	°C	
Operating Humidity			95	%	Non-Condensing
Operating Altitude			50,000	ft	3 Places
Dimensions	6.5 x 2.5 x 1.25 165.1 x 50.8 x 31.75			in mm	Flange Mount
Local Alarms	LED: Power and BIT Fault (Plugin Units)				
Remote Alarms	Open Collector, RS-232				
Power & I/O Connector	DB15 Male				Flange Mount

Note (1) : Performance stated with 10mW dBo RX Optical Input applied to MP-8000-RX Receiver Module. TX pre-amp =15 dB, RX postamplifier =15 dB. Higher Gains available

Note (2) : Gain Equalized Versions Available

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Outline Drawing



DB15 Male Pinout
(Flange Mount)

Pin	Function	Notes	Pin	Function	Notes
1	Power Return		9	Signal Return	
2	Open Collector Alarm		10	Analog Monitor	
3	RS-232_RX Data		11	RS-422_RS-485_TA	
4	RS-232_TX Data		12	RS-422_RS-485_TB	
5	RS-422_RS-485_RA		13	RS-422_RS-485_RB	
6	Discrete I/O_A0	L=0-0.8 VDC H=2.5-7VDC	14	Discrete I/O_A1	L=0-0.8 VDC H=2.5-7VDC
7	Discrete I/O_A2	L=0-0.8 VDC H=2.5-7VDC	15	Discrete I/O_A3	L=0-0.8 VDC H=2.5-7VDC
8	Input Power	+9 to +24VDC			

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Part Number Generator

MP-8000-22-ATX	C	O	G	W	CN	CT
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Example PN: **MP-8000-22-ATX-00-10-15-01-2-3**

Standard Configuration
 10mW Optical Output
 15 dB Preamplifier
 1550+/- 5nm Optical Wavelength
 FC/APC Optical Connector
 Flange Mount Case

C Configuration

00 = Standard
 XX = Custom

O Optical Output

10 = 10mW
 20 = 20mW

G Gain

15 = 15 dB
 30 = 30 dB

W Wavelength

01 = 1550 +/- 5 nm
 28 = 1554.94 nm
 29 = 1554.13 nm
 30 = 1553.33 nm
 31 = 1552.52 nm
 32 = 1551.72 nm
 33 = 1550.92 nm
 34 = 1550.12 nm
 35 = 1549.32 nm
 36 = 1548.51 nm
 37 = 1547.72 nm
 XX = ITU Wavelength

CN Connector

0 = None
 2 = FC/APC
 4 = SC/APC
 6 = Special
 7 = LC/APC
 8 = AVIM / APC

CT Case Type

1 =MPS-1911 Plug-In
 2 = MPS-1914 Plug-In
 3 =6.25" x 2.5" x 1.25"