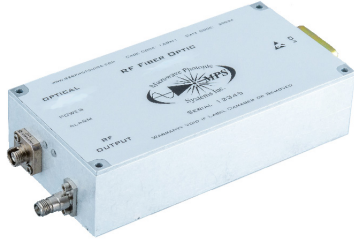


MP-9000-22 Series Low Noise Microwave Fiber Optic Transmitter

New SWaP-C Optimized Broadband Fiber Optic Transmitter



New “Disruptive” Optical Conversion Technology enables industry leading Optical Transmitter Performance in a miniaturized package!

The MP-9000-22 microwave fiber optic transmitters represent the next generation of RF Over Fiber (RfOF) electrical-to-optical (E/O) transducers. The MP-9000-22 product family supports broadband RF signals over a frequency range of 0.01 to 22 GHz.

These new transmitters leverage a newly developed, disruptive, electric to optical (E/O) conversion technology. The use of this new technology, along with MPS proprietary RF circuits, reduces system noise figures while also reducing the physical size and cost of the transmitter.

These new transmitters are especially useful in high density applications such as Phased Array, aerospace and DWDM multi-wavelength applications.

The MP-9000 series of externally modulated transmitters represents the next generation in performance and economy.

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-9000-22 series application modules have advanced Built-In-Test (BIT) diagnostic capabilities which provides remote status and monitoring of critical parameters.

Information: Call us toll-free at 888-868-8967 or email info@b2bphotonics.com

Applications:

- Inter-facility Links
- Microwave Antenna Remoting
- Electronic Counter Measure Systems
- Test and Measurement Applications
- Wideband Delay Line Applications
- Phased array Antenna Systems
- Secure Communication Systems
- Signal Processing Systems
- Phased Antenna Arrays

Features:

- DC to 22 GHz Bandwidth
- High Efficiency / Low Noise
- Wide Operating Temperature
- High Optical Output +10 mW
- Fiber Lengths > 100kms
- 5”x2.5”x1.25” Form Factor
- Hot Swappable, Plug-In Module
- Compatible with MPS-1911 and MPS-1914 Rack Chassis Systems



1911 Plug-In Style Module



1914 Plug-In Style Module

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General Specifications

Optical

Parameter	Min	Typ	Max	Unit	Notes
Operational Wavelength	1545	1550	1555	nm	
Optical Output Power	9	11	15	mW	
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	0.01		22	GHz	
Input/Output RF Impedance	50			Ohms	
Input/Output VSWR		1.5:1	2.0:1		
RF Connector Type	2.92 mm (K) female				
RF Link Gain		-19		dB	
RF Link Gain Flatness		+/- 2		dB	0.1 to 40 GHz Bandwidth
			+/- 1	dB	Over any 500 MHz Bandwidth
RF Link Noise Figure		+29		dB	
Input 1dB Compression Point		+13		dBm	IP1dB
Input Third Order Compression Point		+21		dBm	IIP3
Spur Free Dynamic Range		110		dB*Hz ^{2/3}	SFDR
RF Input Power			+23.0	dBm	No Damage

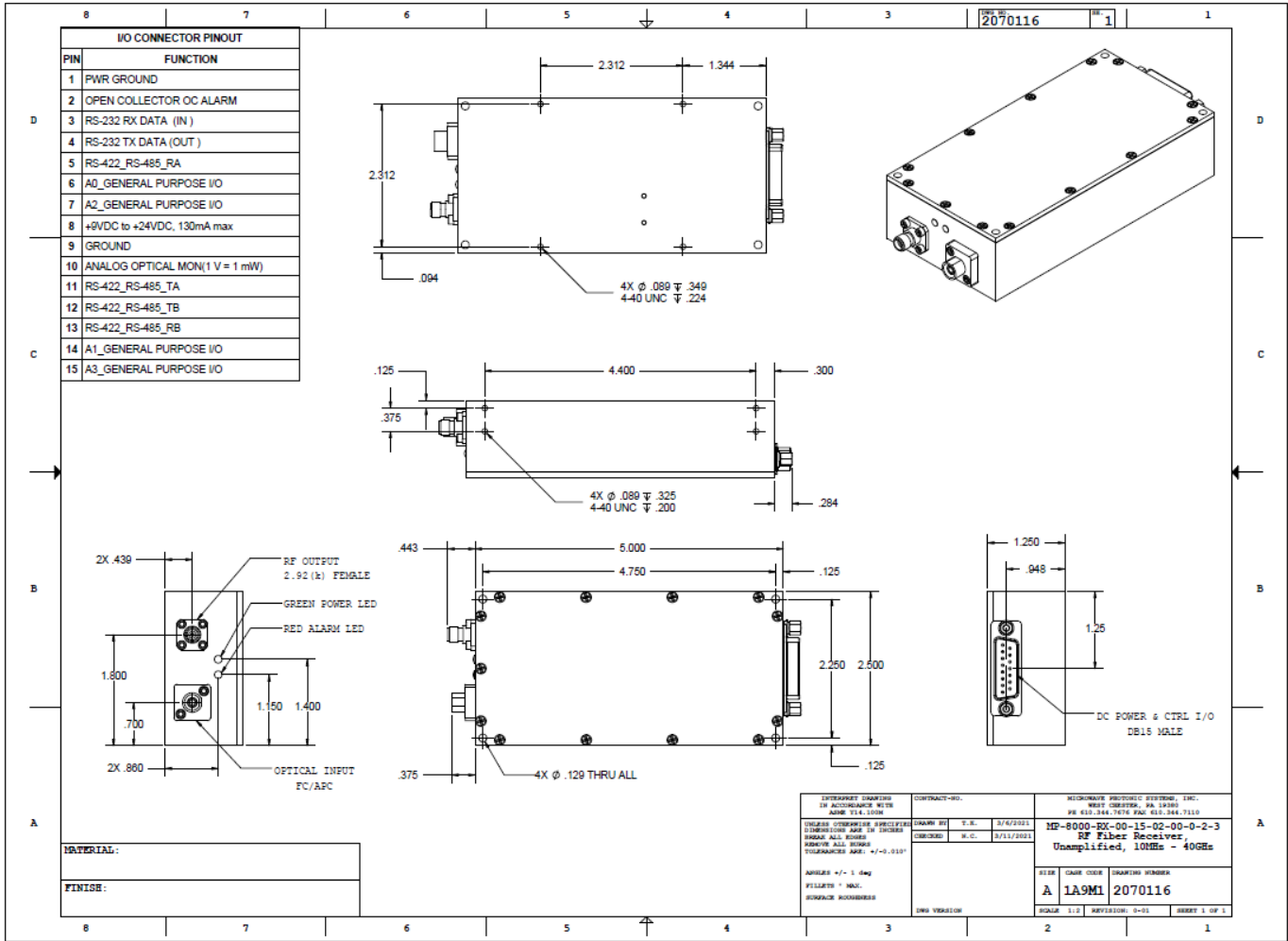
Mechanical and Environmental

Parameter	Min	Typ	Max	Unit	Notes
Power Supply	10	15	24	VDC	6 Watts
Operating Temperature	0		+50	°C	Baseplate
Storage Temperature	-45		+85	°C	
Operating Humidity			95	%	Non-Condensing
Operating Altitude			50,000	ft	
Dimensions	5 x 2.5 x 1.25 127 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 TX Optical Output applied to a MP-8000-RX-00-15-00-00-2-3 Receiver Module

MP-9000-22 Series Low Noise Microwave Fiber Optic Transmitter

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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MP-9000-22 Series Low Noise Microwave Fiber Optic Transmitter

Part Number Generator

MP-9000-22-UTX | C | O | W | CN | CT

Example PN: **MP-9000-22-UTX-00-10-01-2-3**

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

C Configuration
 00 = Standard
 XX = Custom

O Optical Output
 10 = 10mW
 20 = 20mW

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"

Typical Performance Curves

