

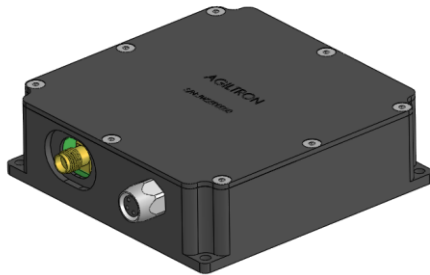
8 GHz Photoreceiver Module



Analog and Digital

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The FRXM Photoreceiver is designed for high-speed and high sensitivity analog and digital applications, featuring a high bandwidth PIN photodiode and a linear and low noise preamplifier. The module incorporates a highly stable optical coupling system. The RF output is differential, utilizing dual "+" and "-" SMA connectors, which reduces susceptibility to external noise and electromagnetic interference (EMI) while providing high common-mode rejection for superior signal integrity. Alternatively, either connector can be used as a single-ended output relative to ground, though without the advantages of differential operation. The FRXM includes a low-noise power supply for simple, plug-and-play operation.

Features

- 8 GHz Bandwidth
- InGaAs-PIN
- Differential Output

Applications

- RF Over Fiber
- Analog and Digital Link
- Other Optical Fiber Systems



Specifications

Parameter	Min	Typical	Max	Unit
Operation Wavelength	1100		1600	nm
Differential Conversion Gain				
PIN Responsivity	0.7	0.9		A/W
AC Transimpedance	2000	2500		Ω
Maximum Output Voltage Swing		250		mV
S21 Bandwidth	7.0	8.0		GHz
Output Return Loss		8.0		dB
Sensitivity	-19		--16	dBm
Maximum Overload		2		dBm
Optical Return Loss	27			dB
Storage Temperature	-40		85	$^{\circ}\text{C}$
Operating Temperature	-5		70	$^{\circ}\text{C}$

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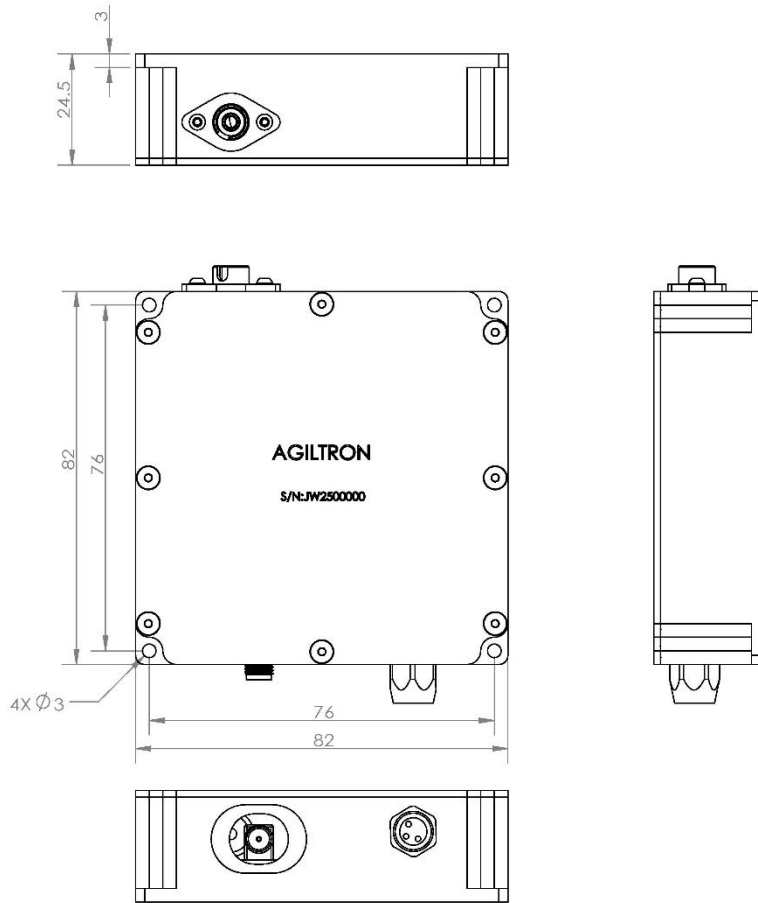
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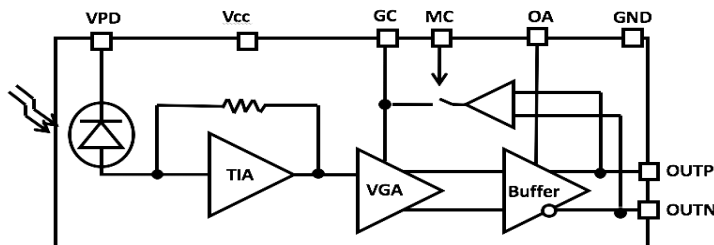
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Dimensions (mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Function Diagram



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S21 Graph

Ordering Information

	1	1	08	1	2	22	3
Prefix	Detector Type	Wavelength Range	Bandwidth	Coupling	Module *	Configuration	Connector
FRXM-	PIN = 1 APD = 2	1200-1600nm = 1	8GH = 08	DC = 1 AC = 2	Non = 1 Yes = 2	Differential = 22	FC/APC = 3 Special = 0

* Module contains driver and power supply.

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Operation Instruction

- **Power Connection** - Connect the included low-noise power supply to the DC power input connector on the HPRM.
- **Optical Input Connection** - Connect the optical signal to the FC/APC input connector on the HPRM. ⚠ Note: Ensure the input connector is FC/APC. Using a non-angled connector (e.g., FC/PC) may result in up to 7 dB insertion loss and increased back reflection.
- **RF Output Connection** - Connect the RF output using either: 1) Differential mode (preferred): Use both "+" and "-" GPPO connectors to a differential input for optimal noise immunity and common-mode rejection. 2) Single-ended mode (optional): Use one GPPO connector relative to ground, though this sacrifices differential noise rejection.
- **DC Output Considerations** - For most applications, the default DC-coupled RF output is sufficient. If your downstream equipment requires AC coupling, or if you need to eliminate the DC component of the output signal, insert an external DC block in the RF signal path.

Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All versions of this laser are Class 1M laser products, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 μm .

Maximum power = 30 mW.

