35GHz Multimode Photoreceiver Module

Analog up to 35 GHz bandwidth, digital 40GHz, 50/125 fiber

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Return to the Webpage

The HPRM is a turnkey high-speed photoreceiver engineered for advanced analog and digital applications. It supports both single-mode and multimode fiber coupling configurations. With its high conversion gain and low input-referred noise, the HPRM delivers exceptional linearity and precision. The module offers 35 GHz analog bandwidth and 3000 V/W differential conversion gain, enabling digital modulation rates up to 40 Gbps. The differential RF output utilizes dual GPPO connectors (+ and −) to minimize susceptibility to external noise and electromagnetic interference (EMI), providing excellent common-mode rejection for superior signal integrity. For added flexibility, either connector can also be used as a single-ended output relative to ground. The unit includes a pluggable low-noise power supply, ensuring simple, reliable plug-and-play operation.

Features

- Up to 35 GHz Analog Bandwidth
- Up to 40 GHz Digital Rate
- High Linearity
- Differential Low Noise Output

Applications

- 40 Gbps DPSK
- Pulse Amplitude Modulation (PAM) Détection
- 30 GHz RF over fiber link

Specifications

Parameter	Min	Typical	Max	Unit
Optimized Operating Wavelength	1250		1650	nm
Optical Input Level			+7	dBm
S21 3 dB Bandwidth		35		GHz
Differential Conversion Gain		3000		V/W
Optical Return Loss		30		dB
Optical PDL @ 1550 nm			0.25	dB
Output Return Loss (up to 25 GHz)	-10			dB
Differential Output Voltage			1800	mVpp
Impedance		50		Ω
Output Coupling	DC (external AC coupling required)			V
Equivalent Input Noise Density			32	pA/√Hz
Noise Equivalent Power (NEP) @ 1GHz		17		pA/√Hz
Operating Temperature	0		50	°C
Storage Temperature	-55		85	°C
Power Supply Requirements	5			V
Optical Connector	FC/APC			
Electrical Output Connector	2.92 mm, Female (K/SMA Compatible)			
Input Optical Power			10	mW
Humidity		95		%

Rev 07/04/25

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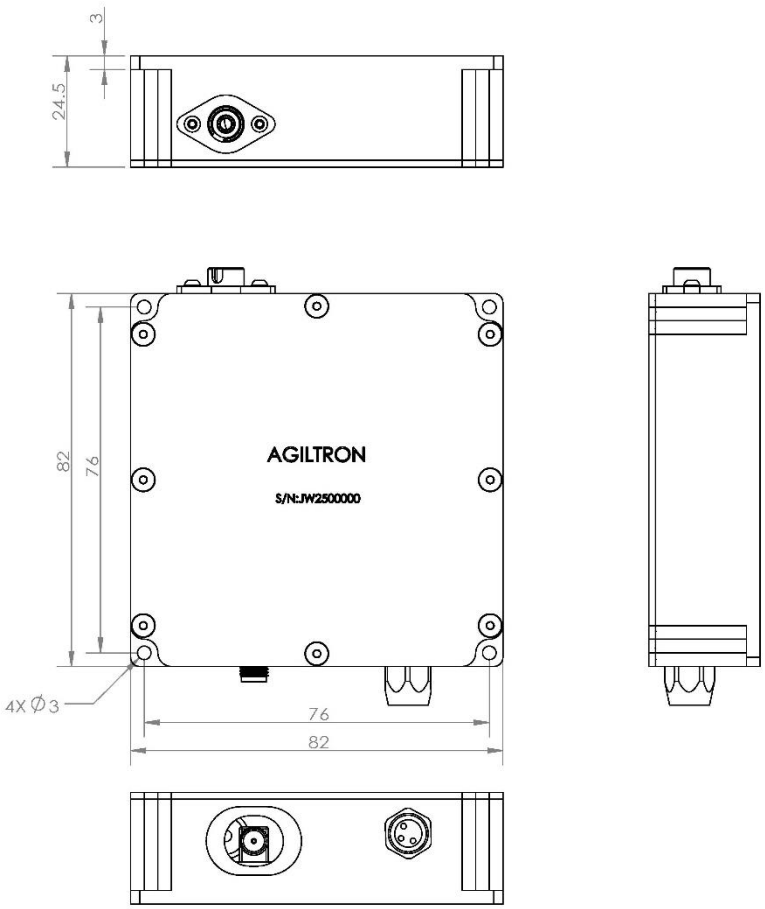
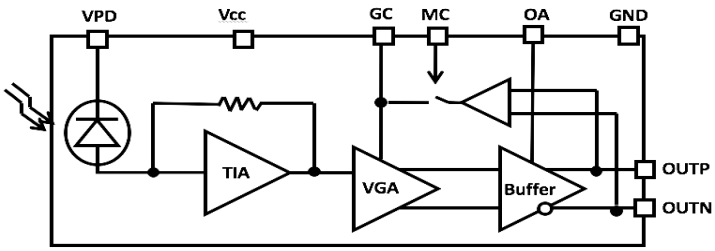
Dimensions (mm)



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

Function Diagram



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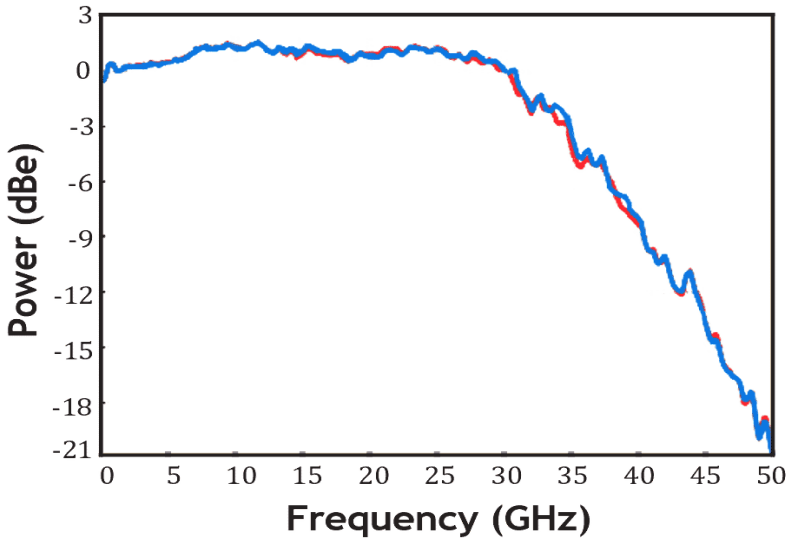
S21 Graph



Ordering Information

	1	1	35	1	2	2	2	☐
Prefix	**Detector Type**	**Wavelength Range**	**Bandwidth**	**Coupling**	**Module ***	**Configuration**	**Fiber**	**Connector ***
HPRM-	PIN = 1 APD = 2	1200-1600nm = 1	35GHz = 35	DC = 1 AC = 2	Non = 1 Yes = 2	Differential = 2	SM28 = 1 50/125 = 2	FC/APC = 3 FC/PC = 2 Special = 0

* Default connector for SM is FC/APC, and For MM is FC/PC

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Operation Instruction

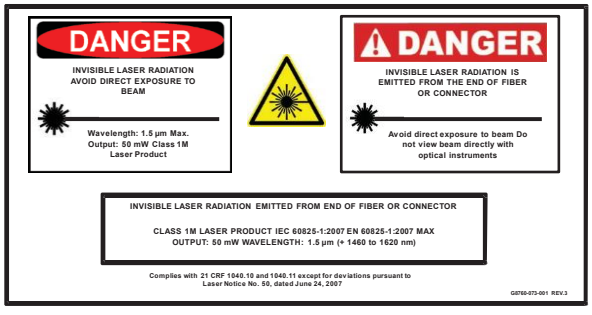
- **Power Connection** - Connect the included low-noise power supply to the DC power input connector on the HPRM.
- **Optical Input Connection** - Connect the optical signal to the FC/APC input connector on the HPRM. ⚠ Note: Ensure the input connector is FC/APC. Using a non-angled connector (e.g., FC/PC) 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.



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