



HIGH PRECISION HIGH PERFORMANCE



The GD200 is a compact, high-performance detector, used in optical ground stations, currently capable of receiving data rates up to 1 Gbps. It converts data contained in digital laser signals into a digital bitstream, ready to be processed by a high-speed data handling system. Its plug-and-play electrical interfaces and easy mounting make it ideal for use in optical communication ground stations as well as experimental setups for optical communication. AAC Hyperion is working with known Optical Modem suppliers to ensure compatibility with the laser communication supply chain. If required, an integrated Modem & Detector Solution can be made available. It will allow easy integration and provide a convenient one-stop-shop experience. The GD200 has been developed together with TNO. TNO is a Dutch research institute with a strong heritage in high-performance optics, amongst others in optical communication.

KEY HIGHLIGHTS:

- High-speed optical-to-digital converter
- 1 Gbps (0.1 - 1.25 Gbps)
- 10 Gbps (1-10 Gbps)
- Optical sensitivity for 1GB (BER 10^{-10} , 1550nm): -38 dBm
- Optical sensitivity for 10GB (BER 10^{-6} , 1550nm) : -28 dBm
- Output: differential SMAs
- Command & telemetry interface: RS422/RS485, USB-C



FLEXIBLE MOUNTING

The GD200 is versatile in its mounting and is easy to integrate into almost any setup. Four mounting options are available to cover various scenarios and meet differing user needs.



EASY COMMUNICATION

A standard USB Type-C port ensures easy connection to any computer, whilst a D-SUB 9 connection enables using longer cables and the popular RS485 communication standard.



CONFIGURABILITY

The GD200's output amplitude can be configured to different voltages. This allows for easy adaptations to modems of a variety of suppliers.

TECHNICAL SPECIFICATIONS

Performance (typical)	1 Gbps	10 Gbps	
Optical wavelength	1000-1600	1000-1600	nm
Data rate	0.1 – 1.25	1-10	Gbps
Analog -3dB bandwidth	0.85	9	Ghz
Optical sensitivity	- 38 (BER 10 ⁻¹⁰ , 1550nm) ¹	-28 (BER 10 ⁻⁶ , 1550nm)	dBm
Detector active area diameter	75	26 ²	µm
Detector wakeup time	1	tbd	s

External Connections	
Mounting options	(M6 at 50 mm x50 mm) (#4-40 30 mm)
Control and telemetry interface	RS422/RS485
High-speed data interface	Differential SMA's
Input interface	Multi-Mode, graded index-fiber with FC/APC connector
Physical Interface	USB-C, DSub-9

Fibre	
Length of fibre	50 cm
Diameter of fibre	0.9 mm
Bending Radius	30 mm

Dimensions	
Outer dimensions	59.5 x 72.1 x 24.2 mm
Mass (excluding adapter board)	133 ³ g

Environment	Min.	Typ.	Max.	
Performance tested	15	20	35	°C
Absolute max			+85	
Absolute minimum	-20			

Electrical	Min.	Typ.	Max.	
Supply voltage	4.5	5	5.5	V
Supply current	70	100	500	mA
RS422 input signal levels	+/- 0.2	n/a	+/- 5	V
RS422 output signal levels		+/- 3		V
Incident optical power			0.1	mW

¹ At 100 Mbps Optical sensitivity is -40.5 dBm

² Preliminary

³ Optionally available with adapter board (150g), to be used with M6 bolts

To make an enquiry, request a quotation or learn about AAC Clyde Space's other products and services, please contact:
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