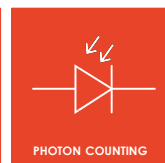
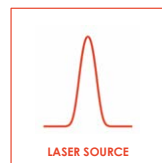


GIGAXEA

GHz-Gated SPAD

Ultra-fast NIR Detection Module

1.25 GHz · 900 – 1700 nm · Low Noise



AUREA Technology's **GIGAXEA** is an ultra-fast, non-cryogenic single-photon detector covering the **900 – 1700 nm telecom band**. Powered by a cooled InGaAs SPAD, it synchronizes with **1.25 GHz and 10 MHz clocks** to achieve typical photon **count rates up to 280 MHz**, **30% calibrated QE**, and 150 ps timing resolution.

Featuring active gate-phase control, it **accelerates QKD Secret Key Rates by up to 25×**, delivering turnkey gigahertz performance for **high-rate quantum communications** and **long-range LiDAR**.

Features

- 1.25 GHz gate generator
- Detection rate typ. 280 MHz
- Calibrated QE up to 30%
- Dark Count Rate typ. 400 cps
- Gate width down to 200 ps
- Timing jitter down to 150 ps
- Active phase control & ext. sync

Applications

- High-Speed QKD
- Quantum Networks & MDI-QKD
- High-Rate Photon Counting
- Eye-Safe Long-Range LiDAR
- High-Speed TCSPC

Related Products

- TPS_1550_TYPE_S Entangled Photon Source
- CHRONOXEA Time Tagger

TECHNICAL SPECIFICATIONS

DETECTION PERFORMANCE ¹	
Spectral Range	900 nm – 1700 nm
Optical Fiber Type	MMF SMF
Operating Mode	Gated Geiger-mode
Gate Generation	Internal External
Calibrated QE	10% 20% 30%
Dark Count Rate (DCR) ²	400 cps typ.
Timing Jitter ³	100 ps typ.
Effective Gate Width	200 ps typ.
Count Rate	280 MCounts/s max.
Dead Time	4 ns typ.

¹ Detection performance measured at 1550 nm and 25 °C.

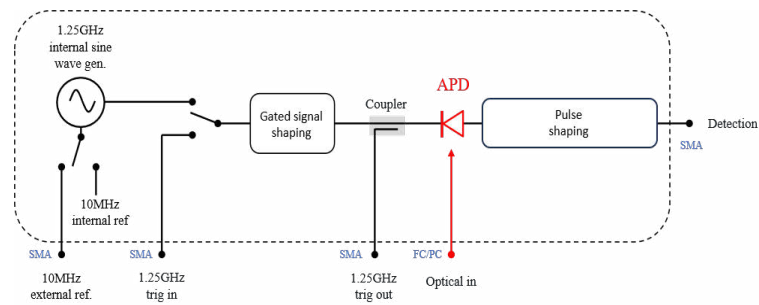
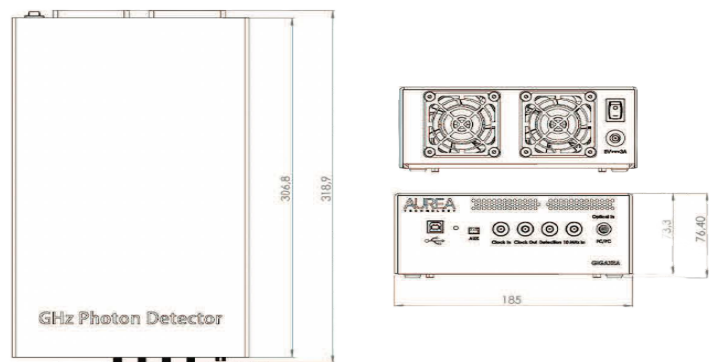
² DCR measured at 10% QE.

³ Timing Jitter measured at 30% QE.

MECHANICAL – POWER – ENVIRONMENTAL	
Form Factor	Compact standalone
Dimensions (L x W x H)	319 x 185 x 74 mm
Weight	3.8 kg
Cooling System	Air-cooled
Operating Temperature	+10 °C to +35 °C

DIGITAL INTERFACES – INPUT/OUTPUT – SOFTWARE	
Optical Input	FC/PC
1.25 GHz Sync Input	SMA Sine (-10 to +10 dBm)
10 MHz Ref. Input	SMA Sine / Square (-10 to +10 dBm)
Detection Output	SMA 3V LVTTTL (50 Ω, < 2 ns)
Trigger Output	Dedicated SMA 1.25 GHz (< 5 dBm)
Embedded Interface	Dedicated UART port
Host Interface	Dedicated Mini-USB 2.0 port
Programming APIs	Python C++
Supported OS	Windows Linux

MECHANICAL DRAWING AND INTERFACE OVERVIEW (all measurements in mm)



Designed for seamless telecom-rack integration with synchronous GHz gating for high-rate QKD.

QUANTUM PLATFORM	CUSTOMER SUPPORT
Build your custom quantum communication system now!	Integrating advanced technologies can be challenging, but AUREA Technology is here to help you achieve your objectives.
AUREA Technology provides a complete Quantum platform: - TPS_1550_TYPE_S: The Narrow bandwidth EPS Source - CHRONOXEA: The picosecond Time Tagger - SPD_OEM_NIR: The best-in-class NIR Photon Counter	Work with AUREA Technology and benefit from our dedicated technical support team. Our experts in single-photon detection, low-light detection, and QKD systems are available to support you throughout your integration.
For a seamless integration, all instruments are provided with their GUI and DLL for remote control!	Contact our technical support team and receive an answer within a day at sales@aureatechnology.com .

ORDERING INFORMATION

GIGAXEA_1550

Contact us at sales@aureatechnology.com for custom solutions and options.

WARRANTY

Any warranty shall be void if the Product has been damaged, disassembled, modified, misused, neglected, improperly installed, used beyond its specified ratings or operating conditions, otherwise abused, or used in hazardous activities.

DISCLAIMER

The manufacturer reserves the right to modify this document at any time without prior notice and disclaims liability for editorial, pictorial, or typographical errors.

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ACCESSORIES ON REQUEST

- + 12 V, 60 W, AC/DC power adapter, with AC power cord