

GIGAXEA

Ultrafast & Ultra Low Noise

NIR gated GHz Single Photon Counting Detection



The GIGAXEA is a game-changing ultra-fast, ultra-low noise telecom-wavelength Single Photon Counter, engineered to push the boundaries of what's possible in next-generation Quantum technologies and long-range LiDAR systems. Powered by cutting-edge cooled InGaAs/InP Geiger-mode Single-Photon Avalanche Diode (SPAD) technology, it achieves unprecedented photon counting speeds of up to 300 MHz, with a detection efficiency reaching up to 30%, ultra-low noise levels, and precise timing resolution down to 150 ps. With its air-cooled, room-temperature design, the GIGAXEA eliminates bulky cryogenic systems, offering a compact, scalable, and energy-efficient solution. In Quantum Key Distribution, it accelerates Quantum Bit Rate by up to 20 times compare to conventional fast quenching, enabling faster and more secure data transmission. The GIGAXEA integrates seamlessly with 1.25 GHz or 10 MHz synchronization and includes a pulse generator and an intuitive GUI for easy control over synchronization, photon detection settings, and alarm management, providing users with flexibility, precision, and full control.

Features

- 1.25 GHz or 10 MHz sync.
- Ultra Low Noise < 400 cps
- QE up to 30%
- Low jitter down to 150 ps
- Counting rate up to 300 MHz
- Polarization-independent
- Room temp. - No cryostat
- Rack-mountable
- USB & UART remote control
- GUI & DLL libraries

Applications

- Quantum Communications
- Quantum Networking
- Quantum Sensing
- Long-range LIDAR

Pairing Products

- Entangled Photon Source : TPS_1550
- Time Tagger : CHRONOXEA

TECHNICAL SPECIFICATIONS

Detection @ 1550 nm

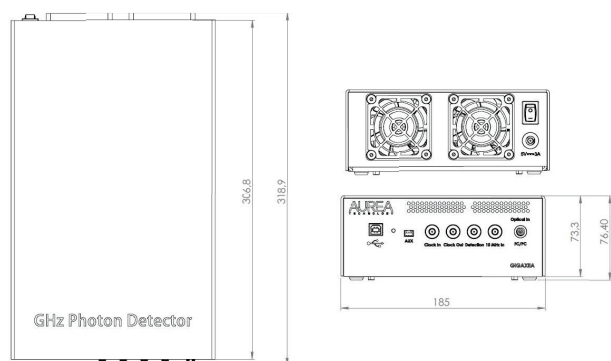
Spectral Range	900 nm to 1700 nm
Detection mode	Gated mode
Gate generation	Internally or Externally
Dark Count Rate@10% QE	< 400 cps (STD grade) [ULN on special request]
Quantum Efficiency	10%, 20% & 30%
Timing Jitter @30% QE	150 ps
Effective gate width	200 ps
Max Detection Rate @10% QE	300 MHz
Min. Dead-time	3 ns

Input/Output Signals

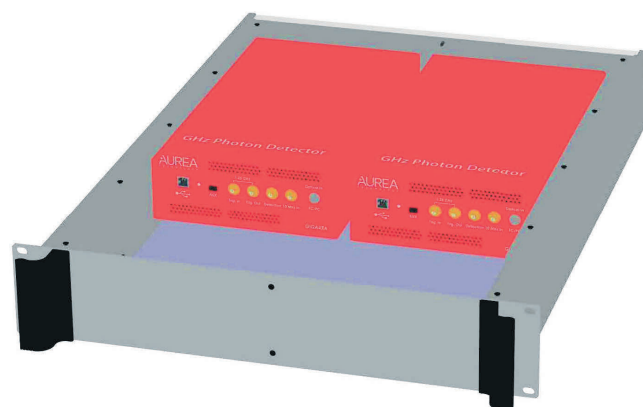
Photon detection Input	SMF or MMF optical fiber [FC/PC]
1.25 GHz Trigger Input	1.25 GHz +/- 0.02 GHz [SMA] Sinusoidal from - 10 to + 10 dBm
10 MHz Ref. Input	10 MHz +/- 50Hz [SMA] Square or Sinusoidal -10 dBm to +10 dBm
Detection Output	3V LVTTTL, 50 Ohms, < 5 ns [SMA]
Trigger Output	1.25 GHz , < 5 dBm [SMA]

Control Interfaces

Remote Control	USB & UART connections
Operating Systems	Linux & Windows



Dimensions : 319 x 185 x 74 mm³



GIGAXEA is designed for easy telecom-rack integration

QUANTUM PLATFORM

Build your custom quantum communication system now !

AUREA Technology provides a complete Quantum Package :

- TPS_1550_II : The Entangled Photon Source EPS
- CHRONOXEA : The Picosecond Time Tagger
- SPD_OEM_NIR : The best-in-class NIR Photon Counter

For an easy integration, all these instruments are provided with their GUI and DLL for remote control !

CUSTOMER SUPPORT

Integrating high-end technologies can be challenging, but AUREA Technology is here to help you achieve your goals!

Our specialists are available around the clock to provide the guidance and solutions you need.

Connect with our expert team today at sales@aureatechnology.com and let's turn your vision into reality!

ORDERING INFORMATION

GIGAXEA_A_1250_grade_x

ACCESSORIES

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

Please contact us at sales@aureatechnology.com for any requests for custom solutions and options.

WARRANTY

Any warranty is void if the Product has been damaged, disassembled, modified, misused, used in applications which exceed the Product specifications or rating, neglected, improperly installed or otherwise abused or is used in hazardous activities

DISCLAIMER

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