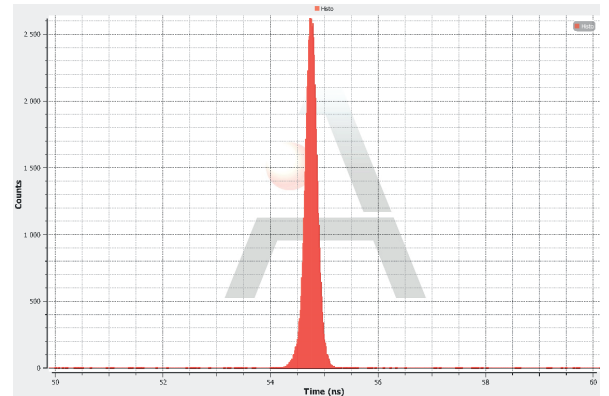


TPS_1550_TYPE_II

Quantum photon source

Polarization-entangled photon source
[Quantum Key Distribution]



The TPS_1550_TYPE_II is a new generation of turn-key quantum photon source working at room temperature generating polarization-entangled photons in the C-band. Based on a table-top design, the TPS_1550_TYPE_II generates entangled photons with high visibility optimized for Quantum Key Distribution set-ups such as BBM92.

Pairs of photons are produced by Spontaneous Parametric Down Conversion (SPDC) in Periodically Poled Lithium Niobate PPLN waveguide (Quasi Phase Matching-QPM) using a super stable pump laser without any additional bulky cooling system.

Very well-designed and remotely controllable, the compactness and the modern interfaces of the TPS_1550_TYPE_II makes it your essential analytical tool for the most demanding optical quantum communication and cryptography systems !

Features

- Photon pair generation at 1550 nm
- Polarization Entanglement HV/AD
- High brightness
- Adjustable pump power
- Bi-photon bandwidth < 2 nm
- High visibility
- Internal photon splitting
- Room temperature operation
- Software for remote control
- DLL library with examples for C, C++, LabView, Python

Applications

- Photon pairs generation
- Quantum Key Distribution
- Quantum communications
- Quantum tomography
- Quantum teleportation
- Atomic interferometry

Pairing products

- NIR Photon Counter
SPD_OEM_NIR_C
- Time Tagging electronics :
CHRONOXA

TECHNICAL SPECIFICATIONS

TYPICAL SPECIFICATIONS AT DEGENERACY

Central wavelength	1550 nm +/- 2 nm
Source bandwidth ¹	2 nm
Polarization type	Cross-polarized photons
Entanglement type	Polarization entanglement
Raw Coincidence Rate ²	100 000 coincidence/sec
Pair-Generation Rate (PGR) ³	40 000 pairs/sec
Normalized PGR	50 000 pairs/sec/mW/nm
Visibility ⁴ :	
- HV basis	typ. 99% (>95%)
- AD basis	typ. 99% (>90%)

¹ Bandwidth before splitting. After internal splitting : Out 1 = 600 pm / Out 2 = 2 nm

² @1 mW pump power and bandwidth of 600 pm for Out 1 and 2 nm for Out 2

³ @1 mW pump power and bandwidth of 600 pm for Out 1 and 600 pm for Out 2

⁴ @10 dB pump attenuation and bandwidth of 600 pm for Out 1 and 600 pm for Out 2

INPUT/OUTPUT- MECHANICAL - ENVIRONMENTAL

Photon Out 1	FC/APC for PM 1550 fiber
Photon Out 2	FC/APC for PM 1550 fiber
Computer connection	USB 2.0 type B
Power consumption	< 40 W
Dimensions (LxWxH)	250 x 280 x 70 mm ³
Weight	4.5 kg
Operating temperature	+ 10°C to + 30°C
Cooling time	< 2 min @ 25°C

SOFTWARE

Control the TPS_1550_II easily thanks to its user-friendly software interface ! Tune the brightness, cristal temperature and monitor your photon source live.

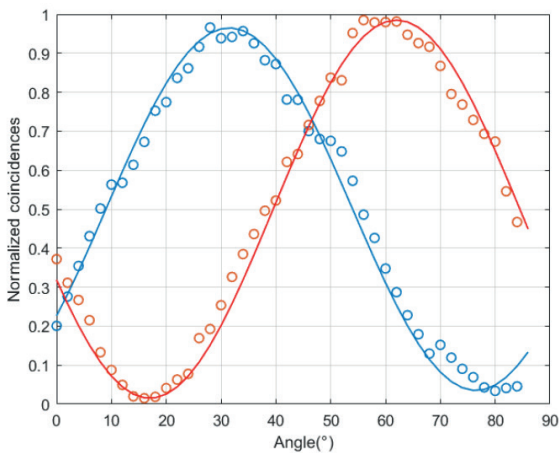
For an easy integration and monitoring of the TPS_1550_II in complex QKD systems, DLL with examples for Python and C++ are provided. The TPS_1550_II software is supported by LINUX, macOS and MS Windows.

CUSTOMER SUPPORT

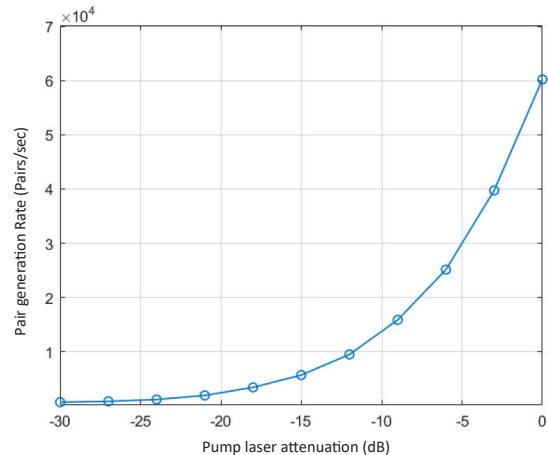
Integration of high-end technologies can be challenging but AUREA Technology is here to help you reach your objectives!

Work with AUREA Technology and benefit from the help of our dedicated technical support team. Our team of experts in single photon detection technology and QKD systems can be reached any time !

Contact our technical support team and receive an answer within a day at support@areatechnology.com



Typical visibility for H basis (blue) and D basis (red)



³Typical Pair generation rate (PGR) vs pump attenuation

ORDERING INFORMATION

TPS_1550_TYPE_II

Contact us at sales@areatechnology.com
for more information about type 0 and 810 nm TPS

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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ACCESSORIES

- +12V, 60 W, AC/DC power adapter, with AC power cord
- USB key with software
- 2 m mini USB to USB cable