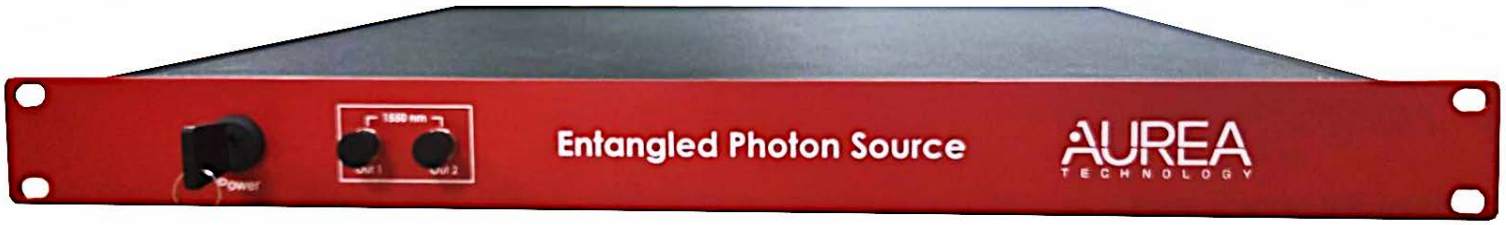
TPS_1550_TYPE_S

Entangled Photon Source

High Brightness Polarized Entangled Photon Source
1550 nm · DWDM · Polarization & Energy-Time



The **TPS_1550_TYPE_S** is a room-temperature **entangled-photon source** designed for entanglement-based **QKD** and wavelength-multiplexed quantum networks.

It combines **99% typical polarization visibility**, 98% typical quantum-state fidelity and **100 Mpairs/s/nm typical spectral pair generation** across a 40 nm bandwidth, supporting up to 32 ITU channels.

Its compact 19" 1U architecture, USB remote control and Python/C/C++ APIs simplify integration into **laboratory**, **field-test** and **quantum-network systems**.

Features

- Polarization & Energy-Time Entanglement
- 100 Mpairs/s/nm Brightness
- 99% Polarization Visibility
- 98% Quantum-State Fidelity
- CAR ≥ 1000
- 40 nm Bandwidth · 32 ITU Channels
- 19" 1U · Room-Temperature
- Remote control · Python/C/C++ APIs

Applications

- Entanglement-Based QKD — BBM92
- DWDM & Multi-User Quantum Networks
- Entanglement Distribution & Quantum Networking
- Quantum Optics & Bell-Test Experiments
- Quantum Sensing

Related Products

- SPD_OEM_NIR Photon Counter
- SPD_SLIM_NIR Photon Counter
- CHRONOXEA Time Tagger

RoHS compliant

Telcordia GR-468, GR-1209, GR-1221 Compliant

TECHNICAL SPECIFICATIONS

OPTICAL & SPECTRAL PERFORMANCE [1]	Min.	Typical	Max.
Operating Mode	—	Continuous Wave	—
Center Wavelength	—	1550.1 ± 0.1 nm	—
Spectral Bandwidth (FWHM) [2]	26 nm	40 nm	—
ITU Channels [3]	16	32	—
Brightness (Pair-Generation Rate)	50 Mpairs/s/nm	100 Mpairs/s/nm	—
Coincidence-to-Accidental Ratio (CAR) [4]	1000	2500	—
Heralding Efficiency [4]	> 20 %	—	—
Polarization Visibility	97 %	99 %	—
Quantum State Fidelity (to |Φ+) [5]	96 %	98 %	—
MECHANICAL & ENVIRONMENTAL			
Form Factor	—	19 " 1U Rack	—
Weight	—	—	4 kg
Power Consumption	—	—	40 W
Thermal Dissipation	—	—	10 W
Operating Temperature	+ 10 °C	—	+ 30 °C
Storage Temperature	- 45 °C	—	+ 80 °C
INPUT/OUTPUT & SOFTWARE			
Optical Outputs		2x FC/APC	
Embedded Interface		Emulated Serial Port	
Host Interface		USB 2.0 Port	
Programming APIs		Python, C / C ++	
Supported OS		Windows, Linux	

[1] All specifications are given after photon-pairs splitting under CW operation.

[2] Spectral bandwidth for each channel output.

[3] Minimum number of ITU channels supported on a 100 GHz grid.

[4] CAR and Heralding Efficiency measured at 1 Mpairs/s brightness (generation rate). Effective CAR after processing correction of the photon counter's performance.

[5] Measured with DWDM filter at receiver.

QUANTUM PLATFORM

Build your quantum communication systems now!

AUREA Technology provides the building blocks for a complete quantum platform:
- TPS_1550_TYPE_S: The Entangled Photon Source
- CHRONOXEA: The picosecond Time Tagger
- SPD_OEM_NIR: The best-in-class NIR Photon Counter
- SPD_SLIM_NIR: Ultra-Compact NIR Photon Counter

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

CUSTOMER SUPPORT

Integrating advanced technologies can be challenging, but AUREA Technology is here to help you achieve your objectives.

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.

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

ORDERING INFORMATION

TPS_1550_TYPE_S

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

ACCESSORIES SUPPLIED

- +5V, 60W, AC/DC power adapter, with AC power cord

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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