Products
Network Security

Overview

Quantum Cryptography
Cerberis
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Quantis

GTECH ENTERPRISE SERIES APPROVED

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

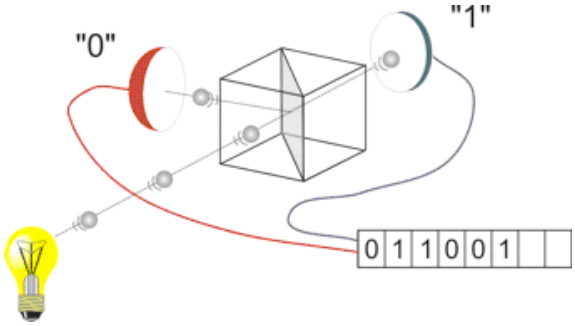
Bundesamt für Metrologie METAS

Quantis - Quantum Random Number Generators (QRNG)

NEW! Quantis product line certified by Swiss Federal Office of Metrology
See the Certificate of Conformity or read the Test Report.

Although random numbers are required in many applications, their generation is often overlooked. Being deterministic, computers are not capable of producing random numbers. A physical source of randomness is necessary. Quantum physics being intrinsically random, it is natural to exploit a quantum process for such a source. Quantum random number generators (QRNG) have the advantage over conventional randomness sources of being invulnerable to environmental perturbations and of allowing live status verification.

Quantis is a physical random number generator exploiting an elementary quantum optics process. Photons - light particles - are sent one by one onto a semi-transparent mirror and detected. The exclusive events (reflection - transmission) are associated to "0" - "1" bit values. The operation of **Quantis** is continuously monitored to ensure immediate detection of a failure and disabling of the random bit stream.



Quantis has been evaluated and certified by the Swiss Federal Office of Metrology (also known as METAS), the Swiss national organization in charge of measurement science, testing and compliance. It confirmed that the quality of its random output complies with the highest requirements. See the Certificate of Conformity and read the Test Report.

Quantis is available as an OEM component for mounting on a printed circuit board, as a PCI card, and now also as a USB module. It comes with drivers for the main operating system platforms. **Quantis** is easily integrated in existing applications.

Features

- True quantum randomness (passes all randomness tests)
- High bit rate of 4Mbits/sec (up to 16Mbits/sec for PCI card)
- Low-cost device, compact and reliable
- Continuous status check
- PCI card comes with drivers for Windows (2000/XP), Linux (2.4, 2.6), FreeBSD (4, 5, 6) and Solaris (8, 9, 10 for SPARC, x86 and x64). A console application and a library for

Random numbers from quantum origin!

Downloads
Specifications sheet
White paper
Randomness test report
Conformity Certificate (METAS)
Testing Report (METAS)
Application note (OEM)
Library API (PCI & USB)
Installation & User guide (PCI & USB)

Publications on Quantis
Algorithmic Randomness
Experimental Decoy States Randomness

Order
How to order this product?

developpers are supplied. Moreover a Windows-based graphical application is supplied that acquires random data in several formats and stores them in a file. A Labview VI is also available.

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Applications

- Cryptography (e.g. PKI)
- Numerical Simulations (e.g. Monte-Carlo)
- Statistical Research
- Lotteries and gambling
- PIN number generation
- Mobile prepaid systems

Reference RNG in the gaming and lotteries industry

Thanks to its reliability, the quality of its random output and its certification, the Quantis product line has rapidly become the reference random number generator for the demanding gaming and lottery industry.

Quantis-PCI has been approved by GTECH
GTech, the leading gaming technology company based in the United States, has subjected the **Quantis-PCI** product to an in-depth evaluation procedure. The **Quantis-PCI** product is now "ES Approved", meaning that it meets its demanding reliabilty and quality requirements and is compatible with the world's leading lottery solutions.

Quantis provides randomness to BetCruise
BetCruise, a virtual "Gambling Fleet" providing a broad range of online games relies on **Quantis** as its sole source of randomness. Visit BetCruise for more information.

What makes Quantis a unique Random Number Generator (RNG)?

Quantis uses Quantum Physics to create truly-random numbers
Existing randomness sources can be grouped in two classes: software solutions, which can only generate pseudo-random bit streams, and physical sources. In the latter, most random generators rely on classical physics to produce what looks like a random stream of bits. In reality, determinism is hidden behind complexity.
Contrary to classical physics, quantum physics is fundamentally random. It is the only theory within the fabric of modern physics that integrates randomness. **Quantis** uses this property to generate random numbers from quantum origin.

Quantis generates random numbers at a very high bit rate
Contrary to existing products, **Quantis** produces random numbers at a very high bite rate up to 16Mbps. This is the highest truly-random bit rate available to date.

Quantis continuously does a status check
The processing unit of **Quantis** performs a live verification of its functioning. Thanks to this feature, users can have a high level of trust in the random numbers they are using.

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