

## RELEASE NOTES

Quside QRNG v 2.0.0



## Outline

1. Description
2. New
3. Bugfixes
4. Known issues

## REVISION HISTORY

Date	Version	Description
02/08/2022	1.0	Initial version

## 1. Description

In this document, the new library to manage Quside's Quantum Random Number Generators (QRNG) is described. The new library has been redesigned to optimize performance and standardize the use of the QRNG in C and Python programming languages. The communication with the QRNG is handled by the Quside QRNG Library for C programming language and by the Quside QRNG LAL (Library Abstract Layer) in the case of Python. The Python package uses the Quside QRNG Library to reduce the data processing requirements by Python, improving the performance of user applications.

The new library is presented in two user modes, containing the following features:

Operating mode	Description
User (libqusideQRNGuser)	The User mode allows for the request of random data from the QRNG, including raw data and extracted data.
Admin (libqusideQRNGadmin)	The Admin mode includes all features of the User mode as well as advanced monitoring features, including Randomness Metrology and hardware status.

Both modes can be installed on the same Server but they cannot run simultaneously.

## 2. New

- PCIe and Ethernet libraries have been unified and performance has been improved.
  - o The core of the libraries are the same now for both models, PCIe and Ethernet. Improved memory management has resulted in performance improvements
- Implementation of internal improvements for the detection of the system status and calibration.
  - o In this release the status of the calibration can be requested, as well as the status of the complete system.
- Two user modes.
  - o In this new release there are two modes of use, one with more privileges than the other.
- Data processing in C programming language.
  - o The ethernet library has been optimized and allows the flexibility to develop applications in the C and Python programming languages.
- More efficient communication.
  - o This new release improves the exchange of TCP messages.
- Minimum entropy monitor.
  - o The library allows requesting the minimum entropy after calibration.
- Network configuration.
  - o Changing the network settings of the QRNG is possible in this new release.
- QRNG Restart.
  - o There is the possibility to reboot the QRNG remotely (only available for Ethernet).
- Timeout client connection.
  - o A timeout to handle the connection of an inactive client using Ethernet (default 300 seconds).

### 3. Bug fixes

- Larger random numbers capture.
  - o Fixed bugs related to internal memory management when more than 1 GB of random numbers were requested over ethernet. This bug has been fixed and there are no limitations on the maximum amount of random numbers that can be requested now. Note however that the host machine memory will impose limitations.

### 4. Known Issues

- When the system boots, the box status LED remains yellow until the first connection from a client is received, changing the status colour to green (available) or blue (capturing random numbers).