



uQRNG is a portable device providing genuine random numbers directly from quantum process. uQRNG can be used as a standalone device or integrated into other hardware modules as quantum entropy source, enabling solutions for true random key generation in cryptography, trustworthy choices in gaming and lottery, fair selection and distribution in blockchain, or unbiased randomness in simulation.

QCI uQRNG is photonic based, where we harvest the time-bin degree of freedom of photons. Single photons before detection is in superposition of states - the arrival time-bins, which means it is not possible to predict which state the single photons will collapse into. We obtain the true randomness by measuring the stochastic arrival time of single photons. This quantum process gives the high dimensional nature of the quantum information. Each photon detection returns random bits of more than just 0 or 1, but in this case, 0 to 8,191, equivalent to returning a 13-bit string instead of 1 bit string per photon.

Key Features

QRNG type	Uniform probability distribution
Range of raw qrn	0 to 8,191
Generation rate	~6,200 high dimensional qrn per second ~80 kbps
Operation	Ethernet communication interface, gRPC package and GUI
Power	12 V DC supply
Dimension	5.9" × 5.9" × 5.9"
Randomness Test Suites	NIST SP 800-90B, Dieharder