

## Secure Token Authentication and Encrypted Communication from Quantum Random Numbers

### **Disclosure Number**

201102728

### **Technology Summary**

We present a novel combination of true random number generator devices with cryptographic and authentication systems. Using true random numbers, two factor authentication systems are not subject to attacks based on reverse engineering of hash functions or any other attack that might arise from using pseudo-random numbers as the basis for secrecy. Rather than rely on a deterministic computational process to approximate a random number, Quantum Random Number Generators rely on probabilistic, natural processes, which can only be partially controlled by the observer. These natural processes are monitored, and when appropriate random events occur, they are recorded and incorporated into random numbers.

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