

A New approach for miniaturization of Quantum Random Number Generator

Jeong Woon Choi^{1*} and Seung Hwan Kwak^{1**}

¹ Quantum Tech. Lab, Corporate R&D Center, SK telecom, Korea

* E-mail: jw_choi@sk.com

** E-mail: kwaksh@sk.com

Up to now, there have been developed many quantum random number generators (QRNG) which are able to support a true randomness theoretically proven from various non-deterministic quantum natures. QRNGs normally output random bits with a highly qualified entropy and entropy rate. In this presentation, we would like to show how much small a QRNG can be made as a chip, the size of which is at most 5mm x 5mm, by using only conventional semiconductor technologies such as LED, CMOS, and ASIC.