

## Sample 3D Magnetometer for a Dilution Refrigerator

**S. Uchaikin**<sup>a</sup>, A. Likhachev<sup>a</sup>, F. Cioata<sup>a</sup>, J.C. Petroff<sup>a</sup>, C. Rich<sup>a</sup>, P. Spear<sup>a</sup>, H. Sanghera<sup>b, a</sup>, I. Singh<sup>b, a</sup>, and X. Han<sup>c, a</sup>

<sup>a</sup>D-Wave Systems Inc., Burnaby, BC, Canada

<sup>b</sup>Department of Engineering Physics, University of British Columbia, Vancouver, BC, Canada

<sup>c</sup>School of Engineering Science, Simon Fraser University, Burnaby, BC, Canada

In this report, we describe a development of a three dimensional system for measurements of magnetic field at a wide temperature range of 300K-4K. The system is based on 8th AMR sensors and allows to control magnetic environment in a dilution refrigerator during cool down of a superconducting chip. With a low noise signal processing electronics and special sensor saturation circuit, a magnetic induction resolution below of 1 nT was achieved.