

D-Wave sells first commercial quantum computer

1 June 2011, by Lisa Zyga



Dr. Geordie Rose, CTO and co-founder of D-Wave Systems, with the D-Wave One system. Image credit: D-Wave.

(PhysOrg.com) -- Last week, Burnaby, British Columbia-based company D-Wave Systems, Inc., announced that it sold its first commercial quantum computer. Global security company Lockheed Martin, based in Bethesda, Maryland, bought the quantum computer for a rumored \$10 million, which includes maintenance and other services for several years.

Lockheed Martin communications manager Thad Madden said that the company spent a year reviewing the computer, called the D-Wave One, before purchasing it. The company plans to use the computer to build "cyber-physical systems," which integrate software with environmental sensors.

The announcement comes just a few weeks after D-Wave researchers published a paper in *Nature* describing [how D-Wave's devices work](#), using a process called quantum annealing. The paper demonstrated quantum behavior in a system with

eight qubits made from superconducting loops, by showing that (classical) thermal fluctuations could not be responsible for flipping the qubits' spins.

D-Wave One uses 16 of these eight-qubit cells in its 128-qubit chip. However, due to the complexity of the 128-qubit chip, some experts in the [quantum computing](#) field are still not fully convinced that D-Wave's commercial system works with quantum effects.

"There is an enormous gap between demonstrating some kind of quantum effect in eight qubits, as they have done here, and saying that they have a 128-qubit chip that can perform a computationally interesting task faster than a conventional computer," Scott Aaronson, a computer scientist at MIT, told *Nature News*.

The sale to [Lockheed Martin](#) is not the first time that D-Wave has worked with the technology industry. In 2009, D-Wave partnered with Google to develop software that can recognize automobiles within images. Some cell phones now use the machine-learning algorithms created by D-Wave's computers.

More information:

Read also: [D-Wave researchers demonstrate progress in quantum computing](#)

via: [Nature News](#), [PC World](#), [Wired](#)

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APA citation: D-Wave sells first commercial quantum computer (2011, June 1) retrieved 21 September 2019 from <https://phys.org/news/2011-06-d-wave-commercial-quantum.html>

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