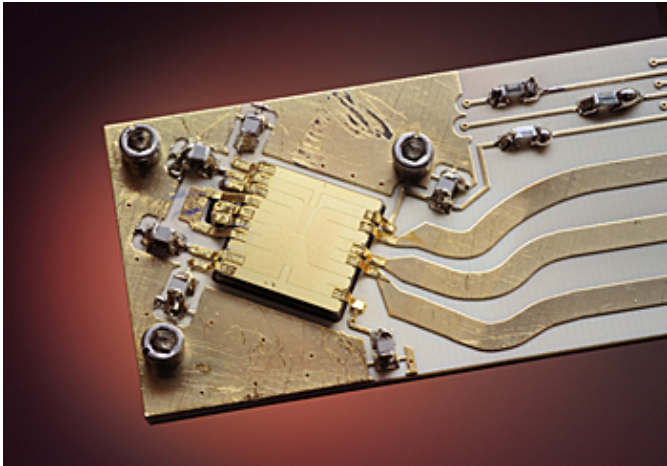


Microwaves for the Future's Quantum PCs?

Written by Marco Attard
17 August 2011

Scientists at the National Institute of Standards and Technology (NIST) might have the means for the future's personal quantum computers-- via commercial microwave technology.



Their experiment involves manipulating the quantum properties of two separate ions (electrically charged atoms) via microwaves instead of the traditional laser beams, on desktop-scale equipment only around one-tenth of the size previously required.

One still needs low-power UV lasers to observe results, but these come in sizes as small as those in portable DVD players.

What are this experiment's implications? It could replace current quantum computing's "laser parks" (coming in room-filling sizes) with miniature microwave technology similar to that in smartphones.

The use of commercial technologies may also make quantum computers feasible sometime within our lifetimes-- making it more likely that we might see personal quantum computers in the near future.

NIST physicist Dietrich Liefried predicts "...a modest-sized quantum computer could eventually look like a smart phone combined with a laser pointer-like device, while sophisticated machines might have an overall footprint comparable to a regular desktop PC."

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