Written by Marco Attard
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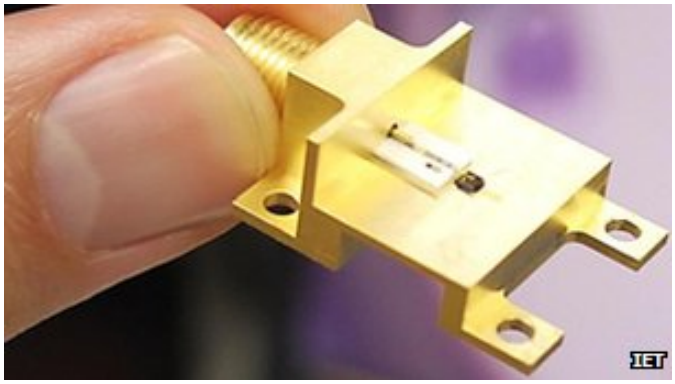
Japanese researchers at the Tokyo Institute of Technology smash the record for wireless data transmission over the "T-ray" band, achieving 3Gbps transfer over a 542GHz wireless connection.



The data rate achieved is double the previous record from chip maker Rohm of 1.5Gbps transfers using a 300GHz connection. Such connections falls into the 300GHz-3THz band, known as the terahertz spectrum or simply "T-rays."

300GHz is 60x higher than the highest current wifi standard.

Tetraherz wifi has range limitations (around 10m) but supports data rates of up to 100Gb/s, nearly x15 higher than the next generation of 802.11ac wifi.

The Japanese researchers achieve such wifi speeds using a resonant tunneling diode (RTD), a 1mm-square device that "resonates" and transmits electro-magnetic signals at very high frequencies. Previous T-ray experiments required bulky, costly and power-hungry equipment with science fiction-esque names like "quantum cascade lasers."

Project leader Dr. Safumi Suzuki is confident tetraherz communications are ripe for consumerisation-- he believes "everybody will use products related to THz technology within the next decade."

Go Intense Resonance Paper (IET Electronics Letters)

Go Milestone for Wifi with T-Rays (BBC)