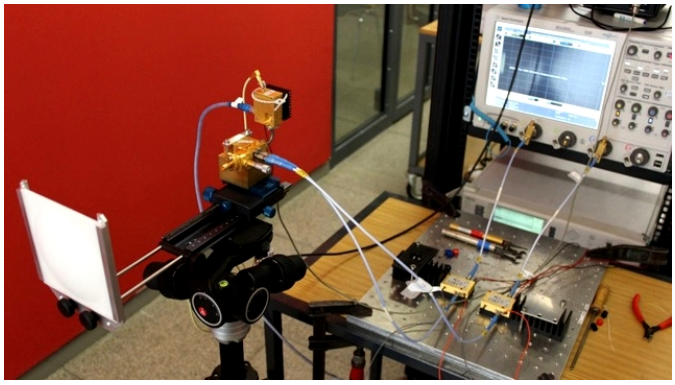
Written by Marco Attard
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Researchers at the Fraunhofer Institute for Applied Solid State Physics (IAF) and the Karlsruhe Instute of Technology (KIT) manage a world first-- wireless data transmission at 100Gbps.



The wifi tests use 237.5GHz signals over a distance of 20m in laboratory conditions. However the super-high frequencies involved demand clear line of sight between devices at all times.

“At a data rate of 100Gbps, it would be possible to transmit the contents of a Blu-ray disk or of 5 DVDs between 2 devices by radio within 2 seconds only,” researcher Prof. Ingmar Kallfass says.

The team already broke the record before-- the "Millilink" project reaches speeds of 40Gbps at distances of over 1km. The latest experiments make use of a an IAF-designed semiconductor chip paired with high-electron-mobility transistors (HEMT) from Millilink, creating active, broadband receivers for the 200-280GHz range.

The receiver chip also copes with advanced modulation formats, allowing for the bit-transparent integration of the radio link into modern optical fibre networks.

“By employing optical and electrical multiplexing techniques, i.e., by simultaneously transmitting multiple data streams, and by using multiple transmitting and receiving antennas, the data rate could be multiplied,” KIT researcher Swen König says. “Hence, radio systems having a data rate of 1 terabit per second appear to be feasible.”

The team suggests the technology can find use as a cable replacement in rural/natural areas or motorways, as well as means of high-speed data transmission between mobile devices.

Go World Record: Wireless Data Transmission at 100Gbps