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Fujitsu Achieves Record 56Gbps Wireless Transmission

Steve McCaskill, February 2, 2016, 1:32 pm

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Fujitsu and Tokyo Institute of Technology create tech that could boost capacity of mobile networks in years to come

Fujitsu and the Tokyo Institute of Technology claim to have achieved world record transmission speeds of 56Gbps and hope to commercialise the technology for use in mobile base stations by 2020, boosting the capacity of cellular networks in **areas suffering from poor connectivity** due to high data demands.

The speed, achieved in indoor tests across a distance of 10cm, were made possible using millimeter-wave (mmWave) frequencies located between 30-300GHz, which are capable of carrying large amounts of data and have **few other competing wireless applications.**

Record wireless transmission

The partners say this spectrum has been difficult to harness because of the requirement to design Complementary metal-oxide semiconductor (CMOS) circuits that can modulate and demodulate mobile broadband signals in and out of the frequencies without data loss.

Researchers were able to solve this difficulty by creating CMOS circuits that split data signals into two and transmitting them over different frequency ranges before combining them once again. Essentially this method, increases capacity without impacting the quality of the signal. This signal is transported across the circuit board using a specially designed interface to the antenna, reducing data loss.

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It is claimed that by pairing the technology developed with a high-output amplifier, the same effect can be achieved outdoors.

Mobile capacity can be boosted using small cells and additional base stations connected to the wider network using fibre. However Fujitsu says in some areas, such as urban locations and places surrounding by mountains and rivers, the laying of additional cable might not be possible. By boosting the wireless capacity of the base station itself, this need might be removed.

MmWave is seen by many within the mobile industry as a way of boosting speeds and capacity, and one standard being proposed by the **third generation partnership project (3GPP) as a core 5G technology.**

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Steve McCaskill is deputy editor of TechWeekEurope and joined as a reporter in 2011 having previously written for Steel Media. He covers telecommunications, networking, public sector IT, along with sports technology.

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