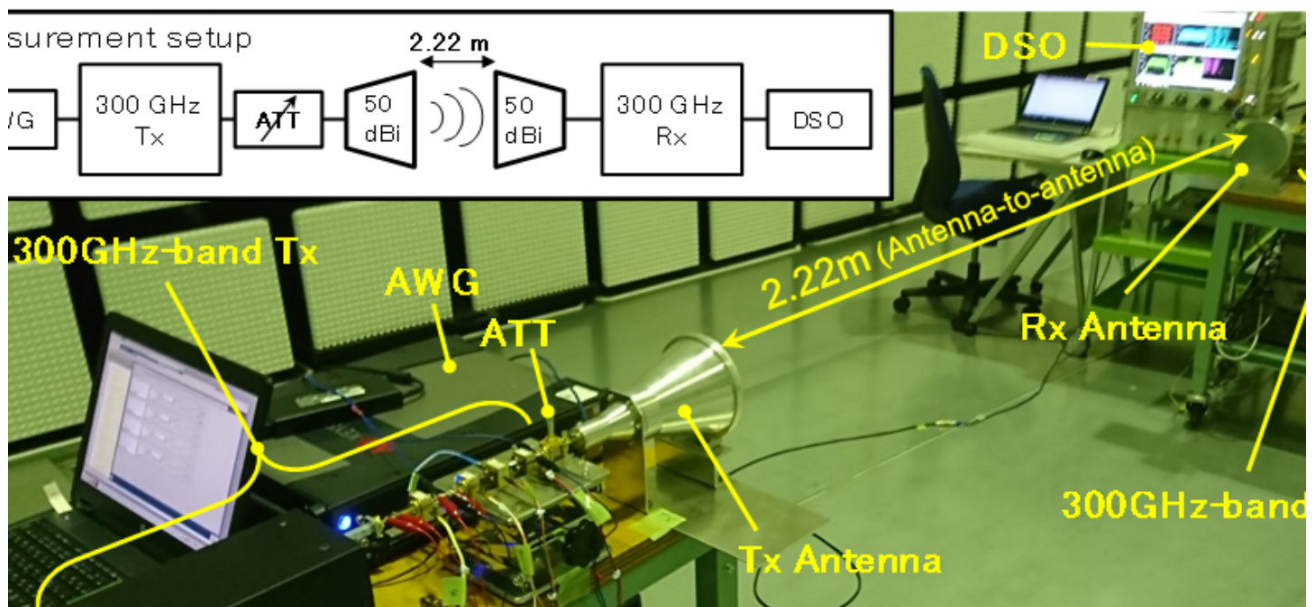


June 12, 2018

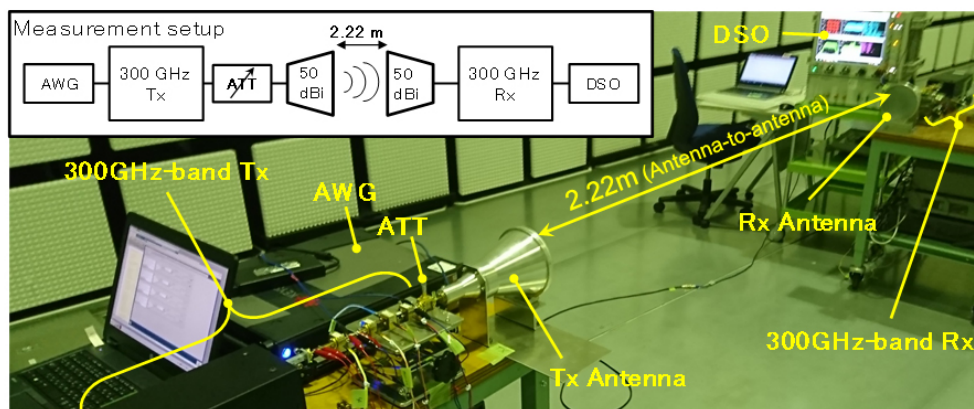
Ultra high-speed IC capable of wireless transmission of 100 gigabits per second in a 300 GHz band

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Technology expected to pioneer utilization of unexplored terahertz wave frequencies. Nippon Telegraph and Telephone (NTT; head office: Chiyoda-ku, Tokyo; president & CEO: Hiroo Unoura), and Tokyo Institute of Technology (Tokyo Tech; head office: Meguro-ku, Tokyo; president: Kazuya Masu), have jointly developed an ultra high-speed IC for wireless front-end that operates on a terahertz frequency band, and in the 300 GHz band they have succeeded in developing the world's fastest 100 gigabit per second wireless transmission data rate.

It is expected that unused terahertz waves can be applied to high-speed wireless transmission since a wide frequency band can be secured. In this research, we implemented a mixer circuit that applied a unique proprietary high isolation design technology with an Indium phosphide high electron mobility transistor (InP-HEMT). This enlarged the transmission bandwidth, which is a problem in the conventional 300 GHz band wireless front end. It also improved the signal-to-noise ratio (SNR). In addition, using this we realized a 300 GHz band wireless front-end module, and we achieved wireless transmission of 100 Gbps (gigabits per second).



In this research, we realized 100 Gbps wireless transmission with one wave (one carrier), so in the future, we can extend to multiple carriers by making use of the wide frequency band of 300 GHz band, and use spatial multiplexing

technology such as MIMO and OAM. It is expected to be an ultra high-speed IC technology that enables high-capacity wireless transmission of 400 gigabits per second. This is about 400 times the current LTE and Wi-Fi, and 40

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





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Infineon to acquire Cypress, strengthening and accelerating its path of profitable growth

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