160 Gbit/s photonics wireless transmission in the 300-500 GHz band

To accommodate the ever increasing wireless traffic in the access networks, considerable efforts have been recently invested in developing photonics-assisted wireless communication systems with very high data rates. Superior to photonic millimeter-wave systems, terahertz (THz) band (300 GHz-10 THz) provides a much larger bandwidth and thus promises an extremely high capacity. However, the capacity potential of THz wireless systems has by no means been achieved yet. Here, we successfully demonstrate 160 Gbit/s wireless transmission by using a single THz emitter and modulating 25 GHz spaced 8 channels (20 Gbps per channel) in the 300-500 GHz band, which is the highest bitrate in the frequency band above 300 GHz, to the best of our knowledge.

General information
State: Published
Organisations: Department of Photonics Engineering, High-Speed Optical Communication, Centre of Excellence for Silicon Photonics for Optical Communications, Ultrafast Infrared and Terahertz Science, Department of Micro- and Nanotechnology, Tianjin University
Number of pages: 6
Publication date: 2016
Peer-reviewed: Yes

Publication information
Journal: APL Photonics
Volume: 1
Issue number: 8
Article number: 081301
ISSN (Print): 2378-0967
Ratings:
Web of Science (2019): Indexed yes
Web of Science (2018): Indexed yes
Web of Science (2017): Indexed yes
Web of Science (2016): Indexed yes
Original language: English
Keywords: Applied optics, Photonics, TA1501-1820, Radio links and equipment, radio networks, telecommunication traffic, wireless systems, millimeter-wave systems, data rates, wireless communication systems, access networks, wireless traffic, photonics wireless transmission, bit rate 160 Gbit/s, frequency 300 GHz to 500 GHz
Electronic versions:
160_Gbits_photonics_wireless_transmission_in_the_300_500_GHz_band.pdf
DOI:
10.1063/1.4960136

Bibliographical note
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Source: FindIt
Source-ID: 2341967479
Research output: Research - peer-review › Journal article – Annual report year: 2016