
Is millimeter wave communication a micro base station

How can a millimeter-wave base station improve real-time information transmission?

Finally, the proposed metasurfaces help the millimeter-wave base station to realize real-time information transmission of multi-users with different directions in a realistic indoor scenario. The experimental results demonstrate that the new beamforming base station system can intelligently enhance or attenuate signals in specific target areas.

Can a programmable metasurface build a smart base station framework for 6G?

Here, we propose a large-scale 2-bit millimeter-wave programmable metasurface to build an integrated smart base station framework for 6G communications. The meta-array is composed of 30×30 meta-elements, each with two embedded positive-intrinsic-negative (PIN) diodes.

Does a large-scale metasurface have phase-modulation capability in the millimeter-wave band?

The simulation and experimental results indicate that the designed large-scale metasurface possesses 2-bit phase-modulation capability in the millimeter-wave band and achieves a wide beam-scanning range in free space ($-70^\circ \leq \theta \leq 70^\circ$; $0^\circ \leq \phi \leq 360^\circ$) with a gain of 23 dBi.

Does a 2-bit transmissive RIS design work in millimeter-wave bands?

In a 2-bit transmissive RIS design with a 90° digital phase shifter and a 1-bit vertical current reversible dipole was presented to work in millimeter-wave bands, which aids wireless communications. However, low integration, high profile and bulky feed structures make most of the above metasurfaces inflexible for applications.

This study proposes a cylindrical conformal array antenna (CCAA) for fifth-generation (5G) micro base station applications. The CCAA is composed of five Chebyshev ...

Implementing millimeter wave (mmWave) frequency bands is an indispensable catalyst for revolutionizing the performance of 5G and beyond. By harnessing the power of ...

In the fifth-generation (5G) technology for broadband cellular networks, one of the striking problems is the millimeter wave (mmWave) transmission that enables high speed and ...

The Compact Macro 5G RAN is based on FSM 5G RAN design technology, featuring up to 256 built-in micro antenna modules, 60dBm peak equivalent isotropically ...

Abstract--In this paper, we present a systematic approach for the development of application-specific antennas for 5G millimeter-wave (mmWave) base stations. First, an in ...

Omnidirectional Solid Angle Beam-Switching Flexible Array Antenna in Millimeter Wave for 5G Micro Base Station Applications Article Full-text available Oct 2019

A small cell is basically a miniature base station that breaks up a cell site into much smaller pieces, and is a term that encompasses ...

A novel compact 5G multiple-input-multiple-output (MIMO) base station (5G-BS) is introduced for enhancing communications in underground mine environments. The structure ...

High Connection Density and Large Capacity: The short wavelength of millimeter waves necessitates the deployment of more densely packed base stations. Consequently, 5G ...

Recently, micro base station antennas have begun to play a more important role in 5G wireless communication, with the rapid ...

Omnidirectional Solid Angle Beam-Switching Flexible Array Antenna in Millimeter Wave for 5G Micro Base Station Applications, IEEE Access, vol. 7, pp. 157027-157034.

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