Electromagnetic properties of communication base stations

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

Finally,the proposed metasurfaceshelp 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.

What are the parameters of the proposed beamforming system?

Parameters of the proposed beamforming system. We propose a comprehensive,large-scale 2-bit millimeter-wave programmable metasurface system for smart base station applications with precise and wide 2D beamforming characteristics. The system comprises a feeding source,a programmable metasurface and a control board.

Why is beamforming a good base station auxiliary equipment?

The signal energy boosted in the specified direction guarantees communication speed and data integrity. This verifies that the proposed system has an excellent beamforming capability to act as good base station auxiliary equipment that can cover a wide angle range of ±70° in the upper half-space. Figure 7.

Can em property sensing reconstruct RPCD using compressive sensing techniques?

By leveraging the Lippmann-Schwinger equation, we propose an EM property sensing method that reconstructs the RPCD using compressive sensing techniques.

Electromagnetic Property Sensing in ISAC with Multiple Base Stations: Algorithm, Pilot Design, and Performance Analysis Yuhua Jiang, Feifei Gao, Shi Jin, and Tie Jun Cui ...

This paper presents the analysis of electromagnetic radiation of mobile base stations co-located with high-voltage transmission towers. Although the layout of power poles and towers is ...

The article 35 of the Regulations stipulates that "for the establishment of large-scale wireless radio stations (stations) and ground public mobile communication BS, their station layout ...

Knowledge of the electromagnetic radiation characteristics of 5G base stations under different circumstances is useful for risk prevention, assessment, and management. This paper ...

Integrated sensing and communication (ISAC) has opened up numerous game-changing opportunities for future wireless systems. In this paper, we develop a novel scheme that utilizes ...

This work provides great potential for programmable metasurfaces to aid the development of novel and intelligent millimeter-wave base stations, offering valuable insights for ...

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