Super Large Communication Base Station

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.
What is a high altitude platform station?
Abstract--The high altitude platform station (HAPS) concept has recently received notable attention from both industry and academia to support future wireless networks. A HAPS can be equipped with 5th generation (5G) and beyond technologies such as massive multiple-input multiple-output (MIMO) and reconfigurable intelligent surface (RIS).
What is a good performance for a base station auxiliary equipment?
The good performance indicates its significant applications as a base station auxiliary equipment working in the millimeter-wave band and suggests its potential to inspire the development of new wireless communication technologies.
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.

To accommodate the dramatically increased demand on extremely high service data rate in wireless communications, one promising and effective solution is to densely deploy a large number ...

With the large-scale deployment of 5G technology, the rationality of communication base station siting is crucial for network performance, construction costs, and operational efficiency. ...

IEEE Transactions on Wireless Communications, 2014 Load diversity based optimal processing resource allocation for super base stations in centralized radio access networks

Through backup paths and redundant designs, it ensures communication remains unaffected, maintaining network stability and reliability. If a base station hardware fails or is damaged by natural ...

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This research aims to create trustworthy, fast communication technologies for 5G and beyond. The design investigates the possibilities of Free-Space Optical (FSO) communication ...

In future 5G mobile communication systems, a number of promising techniques have been proposed to

support a three orders of magnitude higher network load compared to what operators ...

A Super Base Station based Centralized Network Architecture for 5G Mobile Communication Systems Manli Qian,Yuanyuan Wang,Yiqing Zhou, Lin Tian and Jinglin Shi Abstract

These modes comprise a HAPS super macro base station (HAPS-SMBS) mode for enhanced computing, caching, and communication services, a HAPS relay station (HAPS-RS) mode ...

To meet the explosive growth of mobile data traffic, ultra-dense networks have emerged to enhance spatial and spectral efficiency. Densely deployed small cell architecture faces several ...

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