

# **Three-dimensional communication extension base station unit**





## Overview

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What are the research thrusts of 3D continuous space radio channels?

Then, an in-depth investigation on the four major research thrusts of 3D continuous-space radio channels is provided: 1) channel measurements and modeling, 2) channel capacity analysis, 3) general antenna design, and 4) wireless system design.

What is a 3D continuous-space radio channel?

The underlying channels show an evolutionary trend to 3D continuous-space radio channels that combine antennas and wireless propagation channels, in comparison to discrete local-space wireless propagation channels in previous generations.

Why is a UAV considered an Aerial Base Station?

In this work, the UAV is considered as an aerial base station. The UAVBS coverage advantage is higher than that for the GBS because it has a higher operating altitude. On the one hand, if the altitude of a UAVBS increases, the path loss will increase and the probability of getting LoS links between UAVBS and users will increase.

Does EIT support 3D continuous-space radio channels in 6g/b6g?

To address these challenges, this paper performs a comprehensive study on 3D continuous-space radio channels in 6G/B6G with the aid of electromagnetic information theory (EIT) that integrates electromagnetic theory, information theory, wireless propagation channel modeling theory, and antenna theory.



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A Novel 3D Beam Domain Channel Model for Massive ...

Jan 22, 2024 · The integration of massive MIMO and mmWave/THz communication technologies has become a consensus for future wireless communication systems [4]. In massive MIMO ...

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Three-dimensional wireless positioning method based ...

Sep 22, 2019 · Abstract: Aiming at the problem that the indoor three-dimensional positioning algorithm is complex and the accuracy is not high, this paper proposes a three-dimensional ...

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Three-dimensional positioning of wireless communication base station

According to the actual measurement of the coordinates of the 30 base stations and the value of time of arrival (TOA) between the 1100 mobile phone positions and each base station, a total ...

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Three-Dimensional Model of the Radio Links Formation between the Base

Nov 29, 2021 · A three-dimensional model of the radio links formation between a base station (BS) of a mobile communication system and a ground user terminal with signal relaying ...

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Modeling, Capacity Studies, Antenna and System Designs

Apr 21, 2025 · Channel theory is a fundamental theory of wireless communications. The sixth generation (6G) and beyond 6G (B6G) wireless communication networks are expected to ...

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Modified Least Squares Algorithm for Three ...

Jan 23, 2024 · It is shown in Figure 1, that for a two-dimensional (2D) location system, the coordinates of an undetermined target can be determined by using three or more ...

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3D Deployment of Unmanned Aerial Vehicle-Base Station ...

Aug 17, 2021 · Unmanned aerial vehicles (UAVs), also named as drones, have become a modern model to provide a quick wireless communication infrastructure. They have been used when ...

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3D Deployment of Unmanned Aerial ...

Aug 17, 2021 · Unmanned aerial vehicles (UAVs), also named as drones, have become a modern model to provide a quick wireless communication ...

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Modern Base Station Architecture: Enabling Passive ...

Jan 28, 2025 · [4] evaluates three-dimensional (3D) antenna array structures for hybrid precoder design in multi-user mmWave massive MIMO. The authors in [5] proposes a two-stage ...

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A three-dimensional positioning method for three base stations ...

A technology of three-dimensional positioning and three base stations, which is applied in the



field of positioning and navigation, can solve the problems of large hardware resource ...

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Wireless Communication Base Station Location Selection ...

Jun 9, 2024 · Abstract: Base station location selection and network optimization are critical to improving the performance of wireless communication networks in terms of latency reduction. ...

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