

# Base station optimization for mobile communications





## Overview

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How to optimize base station deployment in 5G wireless networks?

In previous research on 5 G wireless networks, the optimization of base station deployment primarily relied on human expertise, simulation software, and algorithmic optimization.

What is base station deployment optimization method based on?

Base station deployment optimization method based on dynamic adjustment quantum genetic algorithm.

How does base station coverage optimization work?

Therefore, the base station coverage optimization method proposed in this paper effectively mirrors real-world scenarios, visually exposes signal blind spots, and accurately identifies instances where users cannot connect to base stations due to complex environmental factors such as high-rise obstructions or areas beyond the coverage range. Fig. 9.

Why are base stations important?

As critical nodes in wireless network connectivity, base stations, if not deployed with foresight and scientific planning, may not only lead to resource wastage, but also cause signal interference, directly affecting network coverage, signal quality, and user experience, thereby increasing the complexity of network management and operational costs.



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### Optimization Control Strategy for Base Stations Based on Communication

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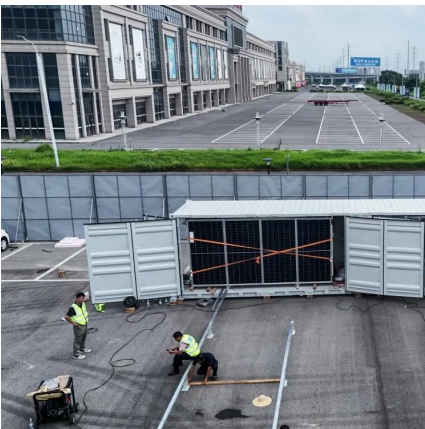
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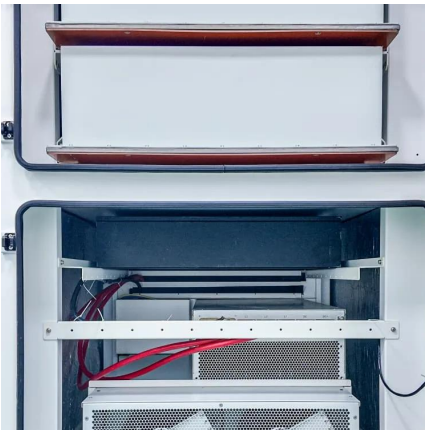
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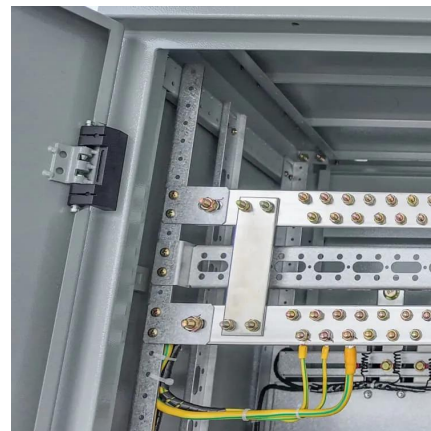
[Communication Base Station Site Selection Method Based...](#)

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[Mobile Communication Network Base Station Deployment...](#)

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### Research on mobile communication network site optimization ...

Oct 27, 2023 · The coverage area of base stations has shrunk due to the rapid growth of 5G technology in China, but the quantity of base stations needed to cover the same region has ...



### Optimal location of base stations for cellular mobile network

Jun 1, 2025 · The location of these events might not cover the large demand. In this paper, we address the classical problem of locating base stations for a mobile cellular network to serve ...

### Optimal positioning of 5G base stations in different cellular ...

Jul 8, 2025 · Yangyang Z, Chunlin J, Ping Y, et al. Particle swarm optimization for base station placement in mobile communication. In: Proceedings of the international conference on ...



### [Optimizing redeployment of communication base station](#)

Feb 6, 2025 · Most of the current research is based on the performance of the base station (BS) itself or the operation mode of the communication operator without considering the users' ...



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