

Base station communication load calculation method



Overview

What is the load of a 5G base station?

The load of a 5G base station primarily consists of communication equipment and auxiliary components. The communication equipment mainly includes Active Antenna Unit (AAU) and Base Band Unit (BBU). AAU is a combination of radio frequency unit and antenna array of 5G base station.

What is a base station load forecasting model?

Reference (Qu et al., 2019) introduces a base station load forecasting model that leverages spatio-temporal characteristics. To achieve this, a clustering algorithm based on artificial neural networks is employed to establish specific models for various types of base stations.

What is a base station antenna wind load working group?

established a base station antenna wind load working group. This working group has organized several workshops with multiple antenna manufacturers and carriers to normalize wind load standards and wind load calculation methods in the antenna industry. The standardized method of calculating the base station antenna.

How much energy does a communication base station use?

In this region, the communication base stations are equipped with energy storage systems with a rated capacity of 48 kWh and a maximum charge/discharge power of 15.84 kW. The self-discharge efficiency is set at 0.99, and the state of charge (SOC) is allowed to range between a maximum of 0.9 and a minimum of 0.1. Figure 3.

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This method excavates the peak shaving potential of 5G communication base stations based on the spatiotemporal characteristics of communication base stations and participates in auxiliary ...

For mobile communication companies to optimize the number of base stations implemented, it is necessary to accurately measure the wireless traffic load of the currently ...

The calculation example analysis results show that communication load transfer can effectively reduce the power consumption of 5G base stations during low load periods and increase the ...

Therefore, in response to the impact of communication load rate on the load of 5G base stations, this paper proposes a base station energy storage auxiliary power grid peak ...

This paper proposes a double-layer clustering method for 5G base stations and an integrated centralized-decentralized control strategy for their participation in frequency ...

In this paper, a distributed collaborative optimization approach is proposed for power distribution and communication networks with 5G base stations. Firstly, the model of 5G ...

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Since 2017, the standardization organization NGMN-P-BASTA has established a base station antenna wind load working group. This working group has organized several ...

This article proposes a fast evaluation method for the carrying capacity of 5G base station load scale connected to the distribution network based on a data-driven fast power flow ...

However, there is still a need to understand the power consumption behavior of state-of-the-art base station architectures, such as multi-carrier active antenna units (AAUs), ...

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