

5g base station AC power distribution system





Overview

What is a 5G base station?

At the same time, a large number of 5G base stations (BSs) are connected to distribution networks , which usually involve high power consumption and are equipped with backup energy storage, , giving it significant demand response potential.

How does 5G BS get power?

There are mainly two ways for BS to obtain its power supply: when the power distribution system is normal, 5G BS obtains power by connecting to the distribution network; when the power distribution system fails, the storage battery supplies power to the equipment and guarantees communication services of 5G BS.

What is a distributed collaborative optimization approach for 5G base stations?

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 base stations considering communication load demand migration and energy storage dynamic backup is established.

What is a collaborative optimal operation model of 5G base stations?

Afterward, a collaborative optimal operation model of power distribution and communication networks is designed to fully explore the operation flexibility of 5G base stations, and then an improved distributed algorithm based on the ADMM is developed to achieve the collaborative optimization equilibrium.



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May 25, 2025 · Building better power supplies for 5G base stations Authored by: Alessandro Pevere, and Francesco Di Domenico, both at Infineon Technologies

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Basic components of a 5G base station

The 5G base station is composed of a power supply system and communication equipment [4], in addition to some auxiliary equipment such as air conditioning and lighting.

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