

# The maximum load of the communication base station energy storage system



## Overview

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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.

What is 5G base station load forecasting technology?

The research on 5G base station load forecasting technology can provide base station operators with a reasonable arrangement of energy supply guidance, and realize the energy saving and emission reduction of 5G base stations.

What is a typical base station power consumption model?

In a typical base station power consumption model, the power consumption of the base station is not stable at a particular value but changes with the real-time traffic load. Owing to the behavior of the communication users, the traffic load has the dual characteristics of time and space.

What is a 5G base station energy storage device?

During main power failures, the energy storage device provides emergency power for the communication equipment. A set of 5G base station main communication equipment is generally composed of a baseband BBU unit and multiple RF AAU units. Equation 1 serves as the base station load model:

How 5G technology has changed the power load characteristics of base stations?

At the same time, the new equipment has altered the power load characteristics of base stations. In the 5G technology framework, the 5G base station comprises macro and micro variants. The micro base station serves indoor blind spots with minimal power consumption. The macro base station

exhibits greater potential for demand response.

What is the power consumption of a micro base station?

The power consumption of micro base station is mainly basic power consumption. It does not change significantly with the traffic load, and because the micro base station is in the active or dormant state, the power consumption of the  $k$ -th micro base station as in Equation (7).

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