
Electricity speeds up 5G base stations

Can 3GPP reduce base station energy consumption in 5G NR BS?

Aiming at minimizing the base station (BS) energy consumption under low and medium load scenarios, the 3GPP recently completed a Release 18 study on energy saving techniques for 5G NR BSs . A broad range of techniques was evaluated in terms of the obtained network energy saving (NES) gain and their impact to the user-perceived throughput (UPT).

How does mobile data traffic affect the energy consumption of 5G base stations?

The explosive growth of mobile data traffic has resulted in a significant increase in the energy consumption of 5G base stations (BSs).

How can we improve the energy efficiency of 5G networks?

To improve the energy efficiency of 5G networks, it is imperative to develop sophisticated models that accurately reflect the influence of base station (BS) attributes and operational conditions on energy usage.

What is 5G base station?

1. Introduction 5G base station (BS), as an important electrical load, has been growing rapidly in the number and density to cope with the exponential growth of mobile data traffic . It is predicted that by 2025, there will be about 13.1 million BSs in the world, and the BS energy consumption will reach 200 billion kWh .

Importantly, this study item indicates that new 5G power consumption models are needed to accurately develop and optimize new energy saving solutions, while also ...

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In today's 5G era, the energy efficiency (EE) of cellular base stations is crucial for sustainable communication. Recognizing this, Mobile Network Operators are actively prioritizing EE for ...

Accurate energy consumption modeling is essential for developing energy-efficient strategies, enabling operators to optimize resource utilization while maintaining network ...

Energy efficiency constitutes a pivotal performance indicator for 5G New Radio (NR) networks and beyond, and achieving optimal efficiency necessitates the meticulous consideration of trade-offs against ...

In this paper, hourly electric load profiles of 5G BSs in residential, shopping, and office areas for future 5G application are simulated to compare and investigate their ...

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An energy consumption optimization strategy of 5G base stations (BSs) considering variable threshold sleep mechanism (ECOS-BS) is proposed, which includes the initial ...

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