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Small mobile base station equipment energy method



Overview

What is the energy-saving technology of base stations?

This technical report focuses on energy-saving technology of base stations. Some energy saving technologies since 4G era will be explained in details, while artificial intelligence and big data technology will be introduced in response to the requirement of an intelligent and self-adaptive energy saving solution.

What is a base station power consumption model?

In recent years, many models for base station power consumption have been proposed in the literature. The work in proposed a widely used power consumption model, which explicitly shows the linear relationship between the power transmitted by the BS and its consumed power.

How can a base station save energy?

There are two main methods of base station energy saving, including hardware and software.

Do small cell base stations consume more power?

Base line small cell base station In cellular networks, to meet the increasing demand of high-data-rate for wireless applications, small cell BSs provide a promising and feasible approach but that consumes more power. The base line of small cell BSs is shown in Fig. 1.

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To achieve low latency, higher throughput, larger capacity, higher reliability, and wider connectivity, 5G base stations (gNodeB) need to be deployed in mmWave. Since ...

Within this model, we leverage the flexibility of mobile small-cell base stations (MSBS) to seamlessly traverse service regions. We compute the transmission power and ...

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 ...

The energy consumption of the mobile network is becoming a growing concern for mobile network operators and it is expected to rise further with operational costs and carbon ...

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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Although cellular networks account for a rather small share of energy use, lowering their energy consumption appears beneficial from an economical perspective. In this regard, ...

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Base Stations (BSs) sleeping strategy is an efficient way to obtain the energy efficiency of cellular networks. To meet the increasing demand of high-data-rate for wireless ...

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