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How can a base station save energy?
There are two main methods of base station energy saving,including hardware and software.
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.
Why do base stations waste so much energy?
When there is little or no communication activity,base stations typically consume more than 80% of their peak power consumption,leading to significant energy waste . This energy waste not only increases operational costs,but also burdens the environment,which is contrary to global sustainability goals .
What are the standardized energy-saving metrics for a base station?
(1) Energy-saving reward: after choosing a shallower sleep strategy for a base station, the system may save more energy if a deeper sleep mode can be chosen, and in this paper, the standardized energy-saving metrics are defined as (18) R i e = E S M = 0 E S M = i E S M = 0 E S M = 3

pose a novel model for a realistic characterisation of the power consumption of 5G multi-carrier B.

Abstract: With the maturity and large-scale deployment of 5G technology, the proportion of energy consumption of base stations in the smart grid is increasing, and there is an urgent need to ...

In the communication power supply field, base station interruptions may occur due to sudden natural disasters or unstable power supplies. This work studies the optimization of ...

In this paper, a framework is developed to study the impact of different power model assumptions on energy saving in a 5G separation architecture comprising high power ...

This technical report explores how network energy saving technologies that have emerged since the 4G era, such as carrier shutdown, channel shutdown, symbol shutdown etc., can be ...

To reduce the extra power consumption due to frequent sleep mode switching of base stations, a sleep mode switching decision algorithm is proposed. The algorithm reduces ...

In the communication power supply field, base station interruptions may occur due to sudden natural disasters or unstable ...

To further explore the energy-saving potential of 5 G base stations, this paper proposes an energy-saving operation model for 5 G base stations that incorporates ...

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 ...

In response to the current widespread issue of high energy consumption in 5G base stations, this article conducts overall design, hardware design, and software design of the base station ...

This paper investigates the energy-saving problem in a multi-base stations (BSs) scenario, incorporating BS deep sleep on a large time scale and symbol shutdown and power ...

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