FTMRS SOLAR

Communication 5g base station intelligent shutdown

Overview

What is the ITU-T Technical Report on 5G base station?

This document contains Version 1.0 of the ITU-T Technical Report on "Smart Energy Saving of 5G Base Station: Based on AI and other emerging technologies to forecast and optimize the management of 5G wireless network energy consumption" approved at the ITU-T Study Group 5 meeting held online, 20th May, 2021. 3.1.

Can network energy saving technologies mitigate 5G energy consumption?

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 leveraged to mitigate 5G energy consumption.

Can smartmme optimize base station energy usage?

The proliferation of User Equipment (UE) drives this energy demand, urging 5G deployments to seek more energy-efficient methodologies. In this work, we propose SmartMME , as a pivotal solution aimed at optimizing Base Station (BS) energy usage.

Is a 5G energy saving solution enough?

It also analyses how enhanced technologies like deep sleep, symbol aggregation shutdown etc., have been developing in the 5G era. This report aims to detail these fundamentals. However, it is far away from being enough, a revolutionized energy saving solution should be taken into consideration.

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SmartMME : Implementation of Base Station Switching Off ...
    Jan 13, 2024 · The proliferation of User Equipment (UE) drives this energy demand, urging 5G deployments to seek more energy-efficient methodologies. In this work, we propose ...

Intelligent Energy Saving Solution of 5G Base Station Based ...
    PDF , On Jul 26, 2021, Tan Rumeng and others published Intelligent Energy Saving Solution of 5G Base Station Based on Artificial Intelligence Technologies , Find, read and cite all the ...

Two-Time Scale Energy-Saving Scheme with Base Station ...
    Jul 25, 2025 · Green communications (GC) is an urgent need for 5G and 6G. How to realize GC with guaranteed quality of service is still a challenging problem. This paper investigates the ...

Application of AI technology 5G base station
    Dec 9, 2020 · The intelligent energy-saving of base station using AI technology should divided into different types of problems, study the characteristics of telecommunication analysis and ...

Smart Energy-Saving Solutions Based on Artificial ...
    Dec 5, 2025 · Execution Strategy: The network management system receives the integrated energy-saving strategy and executes energy-saving functions on 5G base stations, such as ...

Optimal energy-saving operation strategy of 5G base station ...
    Dec 1, 2025 · 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 ...

Evaluation Method Based on Temporal Clustering for 5G Base Station
    May 16, 2025 · In modern wireless communication networks, the effective application of power-saving technologies is crucial for improving energy efficiency and extending the lifespan of ...

Final draft of deliverable D.WG3-02-Smart Energy Saving ...
    May 7, 2021 · Change Log This document contains Version 1.0 of the ITU-T Technical Report on "Smart Energy Saving of 5G Base Station: Based on AI and other emerging technologies to ...

Energy-saving control strategy for ultra-dense network base stations
    Aug 1, 2025 · A base station control algorithm based on Multi-Agent Proximity Policy Optimization (MAPPO) is designed. In the constructed 5G UDN model, each base station is considered as ...

Energy Saving of 5G Base Stations Based on Symbol Shutdown ...
    Jun 12, 2025 · The rapid development of 5G technology leads to increasing energy consumption in base stations (BSs). For the vision of green and sustainable communications, we

propose a ...

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