Marseille Telecom 5G Base Station AI Energy Saving Project

Overview

What is the energy consumption of a 5G network?

The energy consumption of 5G networks is one of the pressing concerns in green communications. Recent research is focused towards energy saving techniques of base stations (BSs). BSs are one of the most power consuming elements of a 5G network. It is important to model their energy consumption for analyzing overall energy efficiency of a network.

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.

How AI based energy saving can help BS Energy Saving?

In response to the requirement of an intelligent and self-adaptive energy saving solution, AI and big data technology are also introduced to BS energy saving for improving the efficiency and reducing the manpower required. 7.2. AI based energy saving for 5G base stations Nowadays the 5G network deployment is on the fast track around the world.

Are base stations energy saving?

Recent research is focused towards energy saving techniques of base stations (BSs). BSs are one of the most power consuming elements of a 5G network. It is important to model their energy consumption for analyzing overall energy efficiency of a network. Additionally, the energy efficiency of a modeling approach itself must also be considered.

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Final draft of deliverable D.WG3-02-Smart Energy Saving …

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 …

Evaluation of the power-saving effect of 5G base station based on AI

Abstract The research and application of energy-saving technology for 5G wireless networks are significant for the emission-reduction work of Communication Operators. …

ITU-T L Supplement 43

This Supplement examines energy-saving technology for fifth generation (5G) base stations (BSs). Some energy-saving technologies developed since the fourth generation (4G) …

Intelligent Energy Saving Solution of 5G Base Station Based ...

This paper introduces the basic energy-saving technology of 5G base station, and puts forward the intelligent energy-saving solutions based on artificial intelligence (AI) and big ...

ITU-AI-ML-in-5G-Challenge/5G-Energy-Consumption ...

AI/ML for 5G-Energy Consumption Modelling by ITU AI/ML in 5G Challenge 5G Energy Consumption Modelling Private RANK 1 Solution Team Farzi Data Scientists Problem ...

Optimal energy-saving operation strategy of 5G base station ...

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 ...
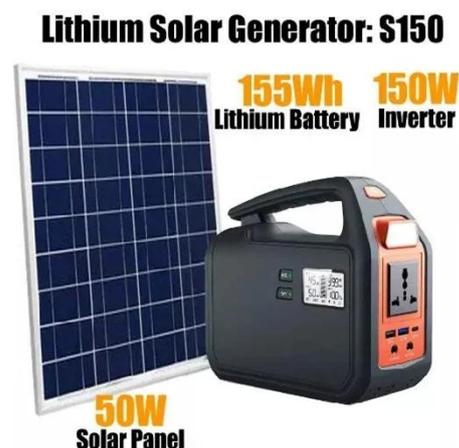
Base Station Energy Saving based on Imitation Learning in

5G ...

In this paper, our goal is to minimize the total power consumption of the base station by dynamically controlling the switching status of the base station. This article first ...

GitHub

This project addresses the critical challenge of energy consumption in 5G networks, specifically in Base Stations (BSs), which account for over 70% of the total energy usage. ...

AI-based energy consumption modeling of 5G base stations: an energy

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