

**BLINK SOLAR**

# **Telecom Italia 5G Base Station AI Energy Saving Project**



## Overview

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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.

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.

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.

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.

## Telecom Italia 5G Base Station AI Energy Saving Project

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### 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. ...

### Remake Green 5G

China Telecom has been enhancing the urgency and practicality of promoting the Net Zero, building green new cloud networks, and building green 5G base stations. The new ...



### Power Consumption Modeling of 5G Multi-Carrier Base ...

In this paper, we present a power consumption model for 5G AAUs based on artificial neural networks. We demonstrate that this model achieves good estimation ...

## Smart energy saving of 5G base stations: Traffic

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



## Green Future Networks

These energy consumption percentages may vary depending on the Telecom equipment power efficiency, the technology and capacity of air conditioning units, the climate ...

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

technology of 5G base station, and puts forward the intelligent energy-saving solutions based on artificial intelligence (AI) and big data technologies to forecast and optimize ...



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



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 ...

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## Power Saving Techniques for 5G and Beyond

It provides the 5G evolution path of the power saving techniques from the first release of 5G standard to the future beyond-5G releases. In addition to the existing ...



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

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## 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 ...



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

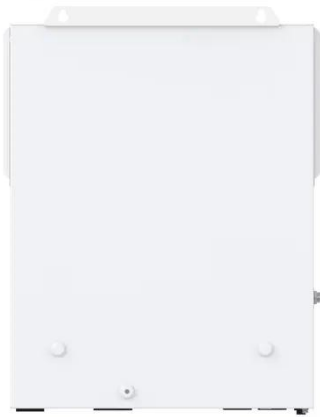
The research and application of energy-saving technology for 5G wireless networks are significant for the emission-reduction work of Communication Operators. The ...

## Focus Group on Environmental Efficiency for Artificial

D.WG3-02 - Smart energy saving of 5G base station: Based on AI and other emerging technologies to forecast and optimize the management of 5G wireless network ...



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



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## **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 ...



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## **ITU-T L Supplement 43**

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## **Application of AI technology 5G base station**

The intelligent energy-saving of base

station using AI technology should be divided into different types of problems, study the characteristics of telecommunication analysis and ...



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## Intelligent Energy Saving Solution of 5G Base ...

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