

# Measurement and detection of power consumption of 5G base stations in Argentina





## Overview

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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.

Are 5G base stations energy consuming?

Abstract: 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.

Should power consumption models be used in 5G networks?

This restricts the potential use of the power models, as their validity and accuracy remain unclear. Future work includes the further development of the power consumption models to form a unified evaluation framework that enables the quantification and optimization of energy consumption and energy efficiency of 5G networks.

Can machine learning predict energy consumption for 5g/4g radio base stations?

To further develop energy modelling methodology and attempt to answer the questions presented in the previous section, different machine learning algorithm's ability to predict energy consumption is investigated for 5G/4G radio base stations.



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### 5G Base Station Power Consumption Using Machine Learning

Apr 25, 2025 · Accurate power consumption forecasting plays a pivotal role in energy management, influencing both utility operations and customer experience. With increasing ...

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### Power Consumption Analysis of a 5G NR Base Transceiver ...

Jul 17, 2025 · This work has explored the power consumption of an outdoor commercial 5G NR base station using an inexpensive and custom-built power measurement setup.

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### Modelling the 5G Energy Consumption Using Real-world ...

Sep 15, 2025 · Accurate energy consumption modeling is essential for developing energy-efficient strategies, enabling operators to optimize resource utilization while maintaining network ...

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### Power consumption based on 5G communication

Oct 17, 2021 · At present, 5G mobile traffic base stations in energy consumption accounted for 60% ~ 80%, compared with 4G energy consumption increased three times. In the future, high ...

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### A measurement-based approach to analyze the power consumption ...

May 1, 2024 · In this paper, we propose and validate a measurement-based approach to analyze the power consumption of a virtualized 5G core network (5GC) deployment.

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### Energy Consumption Modelling for 5G Radio Base ...

Mathematical optimization of energy consumption requires a model of the problem at hand. In this thesis linear regression is compared with the gradient boosted trees method and a neural ...

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### Energy consumption optimization of 5G base stations ...

Aug 1, 2023 · An energy consumption optimization strategy of 5G base stations (BSs) considering variable threshold sleep mechanism (ECOS-BS) is proposed, which includes the initial ...

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

Jun 25, 2024 · 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 Consumption Modeling of 5G Multi-Carrier Base ...

Jan 23, 2023 · However, there is still a need to understand the power consumption behavior of state-of-the-art base station architectures, such as multi-carrier active antenna units (AAUs), ...

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### Comparison of Power Consumption Models for 5G Cellular Network Base

Jul 1, 2024 · This paper conducts a literature survey of relevant power consumption models for 5G cellular network base stations and provides a comparison of the models. It highlights ...

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