

Power consumption characteristics of communication base stations

This thesis examines analytic power consumption models for the base station, radio access network, user equipment, and system level relevant for 5th generation (5G) cellular networks.

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

Base stations represent the main contributor to the energy consumption of a mobile cellular network. Since traffic load in mobile networks significantly varies during a working or weekend day, it is ...

Abstract: Energy consumed in telecommunication base stations is a significant part of the cellular network energy footprint. Efficient energy use, renewable energy sources, and infrastructure ...

The aim was to analyse real-world energy consumption behaviours across urban macro base stations (eNBs), including both temporal usage patterns and internal component-level power distribution.

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), as well as the impact of ...

This paper investigates changes in the power consumption of base stations according to their respective traffic and develops a model for the power consumption as per traffic generated aiming to highlight ...

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

By analyzing this impact on the total power consumption and capacity of each BS, one can determine the most suitable deployment on UAVs specific to use cases and optimize their performance for ...

Discover the key factors influencing power consumption in telecom base stations. Optimize energy efficiency and reduce operational costs with our expert insights.



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