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Title: Power consumption ratio of communication base stations

Generated on: 2026-04-30 10:49:14

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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.

These 5G base stations consume about three times the power of the 4G stations. The main reason for this spike in power consumption is the addition of massive MIMO and beamforming, ...

Measurements show the existence of a direct relationship between base station traffic load and power consumption. According to this relationship, we develop a linear power consumption model for base ...

Deployed 5G networks have been estimated to be approximately four times more energy efficient than 4G ones.

Among the components of a mobile network, the Radio Access Network (RAN) is by far the most energy-intensive, with base stations (BSs) alone responsible for up to 80% of the network's total ...

The network power efficiency with the consideration of propagation environment and network constraints is investigated to identify the energy-efficient architecture for the 5G mobile ...

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 ...

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 ...

We introduce five base station energy models for the state-of-the-art EnergyPlus simulator, and we present the development of an OpenStudio Measure for the parameterization of ...



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