SolarTech Power Solutions

Power consumption of 5G base stations in the Democratic Republic of Congo

Overview

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 5G reduce energy consumption?

However, the energy consumption of 5G networks is today a concern. In recent years, the design of new methods for decreasing the RAN power consumption has attracted interest from both the research community and standardization bodies, and many energy savings solutions have been proposed.

Do base stations dominate the energy consumption of the radio access network?

Furthermore, the base stations dominate the energy consumption of the radio access network. Therefore, it is reasonable to focus on the power consumption of the base stations first, while other aspects such as virtualization of compute in the 5G core or the energy consumption of user equipment should be considered at a later stage.

Is energy consumption a concern for 5G networks?

Abstract—The fifth generation of the Radio Access Network (RAN) has brought new services, technologies, and paradigms with the corresponding societal benefits. However, the energy consumption of 5G networks is today a concern.

What is 3GPP base station model?

The central specification body of cellular networks, the 3GPP, presents a base

station model to facilitate energy efficiency improvements for 3GPP Release 18 in . It is based on the user equipment power model of the 3GPP in structure, presentation, and approach.

Which Nr micro deployment consumes the least energy?

At the low traffic point (around the 06:00 mark) the 1 NR micro deployment consumes the least energy, but at the high-traffic point (around the 21:00 mark) the 2 NR micro deployment consumes less. In this highly loaded case, the added capacity results in quicker transmissions, thus more time to sleep and reduced power consumption.

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