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Power load of mobile base station equipment



Overview

How do base stations affect mobile cellular network power consumption?

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 important to quantify the influence of these variations on the base station power consumption.

What is a base station power consumption model?

In recent years, many models for base station power consumption have been proposed in the literature. The work in proposed a widely used power consumption model, which explicitly shows the linear relationship between the power transmitted by the BS and its consumed power.

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 there a direct relationship between base station traffic load and power consumption?

The real data in terms of the power consumption and traffic load have been obtained from continuous measurements performed on a fully operated base station site. Measurements show the existence of a direct relationship between base station traffic load and power consumption.

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Measurements and Modelling of Base Station Power Consumption under Real

Abstract 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 ...

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

The AI-driven network energy saving solution can forecast the traffic load of base stations based on historical traffic load, service type, site coverage and user behaviours.



INVESTIGATORY ANALYSIS OF ENERGY REQUIREMENT OF A MULTI-TENANT MOBILE

Abstract Energy consumption in mobile communication base stations (BTS) significantly impacts operational costs and the environmental footprint of mobile networks.



Improved Model of Base Station Power System for the

...

An improved base station power system model is proposed in this paper, which takes into consideration the behavior of converters. And through this, a multi-faceted ...

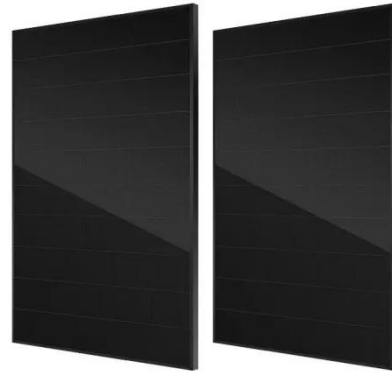


Power Consumption Modeling of Different Base Station ...

Energy efficiency of any deployment is impacted by the power consumption of each individual network element and the dependency of transmit power and load. In this paper we ...

Optimum sizing and configuration of electrical system for

With increasing market competition and declining revenues in mobile services, network operators are compelled to optimize the electrical system of telecommunication base ...



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

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), ...

Measurements and Modelling of Base Station Power ...

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 ...



Electric load characteristics analysis of 5G base stations in ...

5G base station (BS) is a fundamental part of 5th generation (5G) mobile networks. To meet the high requirements of the future mobile communication, 5G BS has ...



Comparison of Power Consumption Models for 5G Cellular Network Base

The work in [26] presents an assessment of the environmental impacts associated with mobile networks in Germany. Power consumption models for base stations are briefly ...



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