

Espay Solar Energy S.L.

Factors that affect power consumption of communication base stations



Overview

This paper conducts a literature survey of relevant power consumption models for 5G cellular network base stations and provides a comparison of the models. Using both site-level measurements and aggregated multi-eNB data collected over a typical workweek, the study analyses traffic trends, PRB utilization. The increasing total energy consumption of information and communication technology (ICT) poses the challenge of developing sustainable solutions in the area of distributed computing. 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.

Factors that affect power consumption of communication base station



Optimal energy-saving operation strategy of 5G base station with

However, these studies generally simplify dynamic power consumption as a linear function of communication traffic, without considering specific factors such as communication rate, ...

Empirical Analysis of Power Consumption in LTE Base Stations:

...

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.



Power Consumption Assessment of Telecommunication Base Stations

The simulations indicate that construction materials and methods influence the energy efficiency of base stations, while ventilation and photo-voltaics can reduce consumption.



Power consumption analysis of access network in 5G mobile ...

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

...



Power Consumption Modeling of Base Stations Based on Dynamic Factors

As power model will affect the energy-saving gains of different green resolutions, in this paper we provide such power models for mobile communication BSs relying on practical data ...

Electricity consumption of communication network base stations

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



Measurements and Modelling of Base Station Power Consumption ...

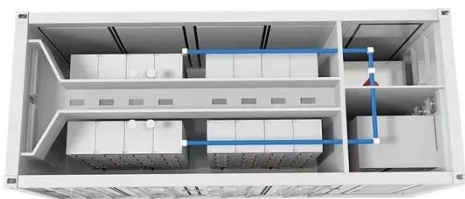
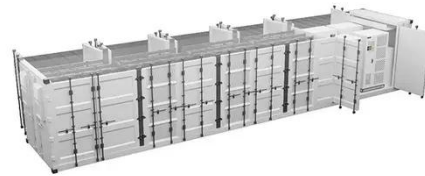
Base stations represent the main



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 ...

Comparison of Power Consumption Models for 5G Cellular Network ...

In order to quantify and optimize the energy consumption of mobile networks, theoretical models are required to estimate the effect of relevant parameters on the total energy consumption.



Key Factors Affecting Power Consumption in Telecom Base Stations

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