
Mobile Base Station Equipment Power Consumption Agreement

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.

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.

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 [7] proposed a widely used power consumption model, which explicitly shows the linear relationship between the power transmitted by the BS and its consumed power.

What is the largest energy consumer in a base station?

The largest energy consumer in the BS is the power amplifier, which has a share of around 65% of the total energy consumption [7]. Of the other base station elements, significant energy consumers are: air conditioning (17.5%), digital signal processing (10%) and AC/DC conversion elements (7.5%) [8].

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

appropriate energy efficiency metric must be defined. One important figure of merit is the energy consumption of a network. In this work the electrical input power of macro and ...

A mobile operator base station based VPP-only consumption-based approach is feasible since base stations cannot generate power. Reducing consumption is much simpler ...

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), ...

Generally, cellular networks consist of a core network, the radio access network (RAN) - which includes base stations and transport networks such as the backhaul network, ...

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