

How much power does the mobile base station have





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.

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 are base station models?

The base station models vary in their approaches and potential use cases. Hereafter, the models are grouped according to these aspects. Main component models only model the power consumption of the main base station components (power amplifier, analog frontend, baseband unit, active cooling, power supply) separately.

Can a base station Power model be combined?

As the main components are common to most of the models, they can be easily combined to form a new model. Most of the base station power models are based on measurements of LTE (4G) hardware or theoretical assumptions. For the more recent models, based on measurements of 5G hardware, the parameter values are not publicly available.



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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 ...

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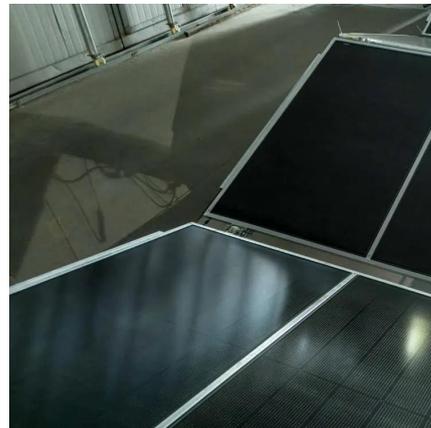
Table 1 Power consumption of the base station components ...

In this paper, the energy efficiency of a femtocell base station is investigated and compared for various bit rates and for three different wireless technologies namely, mobile WiMAX, HSPA, ...

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The power consumption of the 5G base station mainly comes from the AU module processing and conversion and high power-consuming high radio frequency signals, the ...

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Measurements and Modelling of Base Station Power Consumption under Real

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Base Stations

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ICNIRP , Base Stations

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5G basestations are pushing up power requirements by three times, as MIMO and more digital circuitry require more power.

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