

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.

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 . 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%) .

Which base station elements consume the most energy?

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%) . New research aimed at reducing energy consumption in the cellular access networks can be viewed in terms of three levels: component, link and network.

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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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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[Table 1 Power consumption of the base ...](#)

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



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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 ...

[ICNIRP , Base Stations](#)

The power of a base station varies (typically between 10 and 50 watts) depending on the area that needs to be covered and the number of calls processed. This is low compared to other ...



[Base Station Energy Use in Dense Urban and Suburban ...](#)

In addition, measurements, and calculations for the actual and theoretical energy consumption of each equivalent base station were done, and an extrapolated energy intensity per square ...



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