

Power consumption of Huawei s 5G base stations





Overview

In Hangzhou, the 5G Power solution deployed by China Tower and Huawei supports one cabinet for one site and boasts smart features like intelligent peak shaving, intelligent voltage boosting, and intelligence.

How much power does a 5G station use?

The power consumption of a single 5G station is 2.5 to 3.5 times higher than that of a single 4G station. The main factor behind this increase in 5G power consumption is the high power usage of the active antenna unit (AAU). Under a full workload, a single station uses nearly 3700W.

Is 5G more energy efficient than 4G?

Although the absolute value of the power consumption of 5G base stations is increasing, their energy efficiency ratio is much lower than that of 4G stations. In other words, with the same power consumption, the network capacity of 5G will be as dozens of times larger than 4G, so the power consumption per bit is sharply reduced.

Why does 5G use so much power?

The main factor behind this increase in 5G power consumption is the high power usage of the active antenna unit (AAU). Under a full workload, a single station uses nearly 3700W. This necessitates a number of updates to existing networks, such as more powerful supplies and increased performance output from supporting facilities.

Is 5G base station power consumption accurate?

Abstract—The energy consumption of the fifth generation (5G) of mobile networks is one of the major concerns of the telecom industry. However, there is not currently an accurate and tractable approach to evaluate 5G base stations (BSs) power consumption. In this article, we pr

How much power will 5G use in 2023?

Multiple bands in one site will be the typical configuration in the 5G era. The



proportion of sites with more than five bands will increase from 3% in 2016 to 45% in 2023. As a result, the maximum power consumption of a site will be higher than 10 kW, in a site where there is more than 10 bands, the power consumption will exceed 20 kW.

What is a 5G base station?

A 5G base station is mainly composed of the baseband unit (BBU) and the AAU — in 4G terms, the AAU is the remote radio unit (RRU) plus antenna. The role of the BBU is to handle baseband digital signal processing, while the AAU converts the baseband digital signal into an analog signal, and then modulates it into a high-frequency radio signal.



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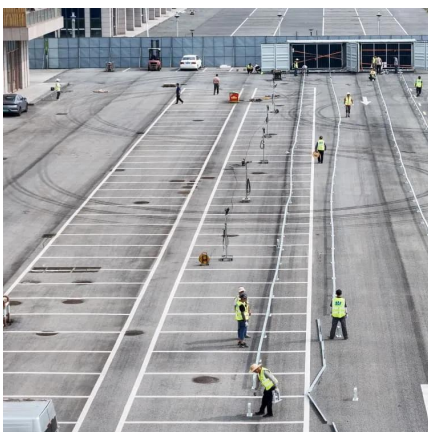


[\(PDF\) Power Consumption Modeling of 5G Multi-Carrier Base Stations...](#)

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), as well as the ...

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In the 5G era, the maximum energy consumption of a 64T64R active antenna unit (AAU) will be an estimated 1 to 1.4 kW to 2 kW for a baseband unit (BBU). Base stations with multiple ...



[Energy-efficiency schemes for base stations in 5G heterogeneous](#)

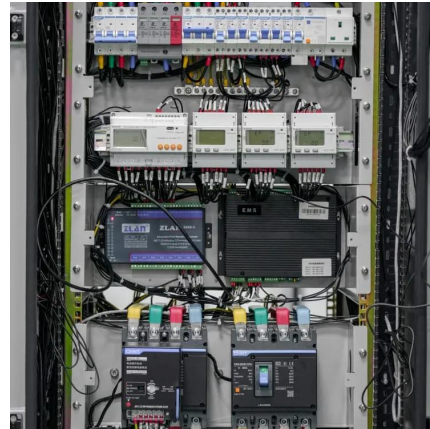
In today's 5G era, the energy efficiency (EE) of cellular base stations is crucial for sustainable communication. Recognizing this, Mobile Network Operators are actively prioritizing EE for ...

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After 5G is deployed, the power consumption and number of base stations increase significantly, and so does the carrier operational expenditure



(OPEX). China Tower Zhejiang Branch and ...



[Huawei's "ONE 5G" Concept Centre Stage at Global MBB Forum](#)

Huawei's "ONE 5G" Concept Amalgamating multi-band, multi-RAT base stations into single hardware units that can efficiently maximise the use of available spectrum was a major theme ...

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