

Huawei HJ 5G base station power consumption comparison





Overview

Energy consumption per unit of data (watt/bit) is much less for 5G than 4G, but power consumption is much higher. In the 5G era, the maximum energy consumption of a 64T64R active antenna unit (AAU).

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.

Should power consumption models be used in 5G networks?

This restricts the potential use of the power models, as their validity and accuracy remain unclear. Future work includes the further development of the power consumption models to form a unified evaluation framework that enables the quantification and optimization of energy consumption and energy efficiency of 5G networks.

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



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Jan 23, 2023 · 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), ...



[Base Station Energy Consumption Analysis . Huijue Group E ...](#)

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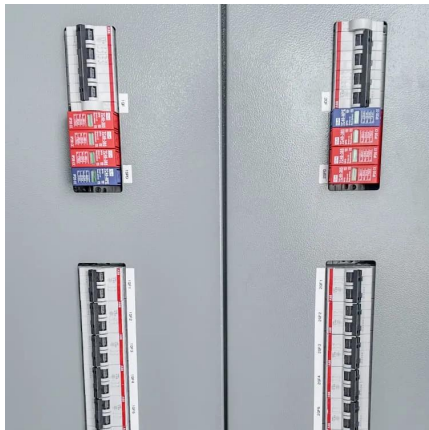
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[Front Line Data Study about 5G Power Consumption](#)

The two figures above show the actual power consumption test results of 5G base stations from different manufacturers, ZTE and HUAWEI, in Guangzhou and Shenzhen, by an anonymous ...



[DBS5900 Distributed Base Stations -- Huawei Enterprise](#)

Dec 2, 2025 · The DBS5900 adopts a modular structure, with the baseband unit BBU and remote radio unit RRU deployed separately. The DBS5900 has the characteristics of small size, low ...

[Comparison of Power Consumption Models for 5G Cellular Network Base](#)

Jul 1, 2024 · This paper conducts a literature survey of relevant power consumption models for 5G cellular network base stations and provides a comparison of the models. It highlights ...



[How energy-efficient are Huawei's 5G base stations ...](#)

Huawei's 5G base stations are more energy-efficient than previous generation equipment due to advanced power management, efficient hardware designs, and the use of smaller cells. They ...



5G Power Whitepaper

Mar 25, 2019 · Different from the traditional single-component energy-saving design, 5G powering system requires end-to-end full-link energy-saving design from the aspects of power supply, ...



[Comparing 4G and 5G downlink energy consumption](#)

Comparing 4G and 5G downlink energy consumption Li Peng, member, IEEE
Abstract--During the deployment of 5G it has become apparent that 5G base stations consume excessive ...



Green 5G White Paper

May 19, 2022 · In response to the above concerns, Huawei releases this Green 5G White Paper. It aims to facilitate joint industry efforts to develop effective systems for measuring network ...



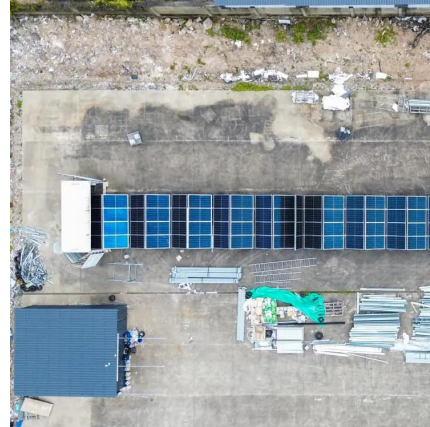
[Final draft of deliverable D.WG3-02-Smart Energy Saving ...](#)

May 7, 2021 · Change Log This document contains Version 1.0 of the ITU-T Technical Report on "Smart Energy Saving of 5G Base Station: Based on AI and other emerging technologies to ...



Base Station Energy Storage Engineering , Huijue Group E-Site

As global 5G deployments accelerate, base station energy storage engineering has emerged as the linchpin for sustainable telecom growth. Did you know a single 5G macro station ...

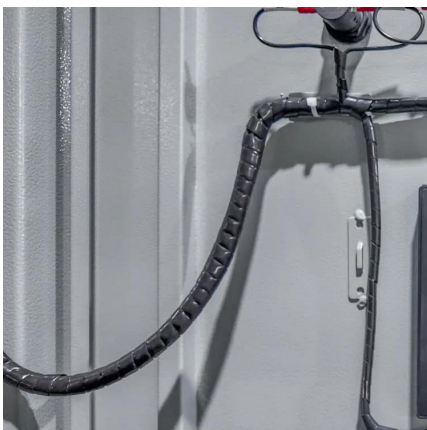


5G network deployment and the associated energy consumption...

Jul 1, 2022 · In particular, this research took the UK as an example to investigate the spatiotemporal dynamic characteristics of 5G evolution, and further analysed the energy ...

What is the Power Consumption of a 5G Base Station?

Nov 15, 2024 · Why is 5G Power Consumption Higher? 1. Increased Data Processing and Complexity These 5G base stations consume about three times the power of the 4G stations. ...



GREEN 5G: BUILDING A SUSTAINABLE WORLD

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May 28, 2023 · The fifth generation of the Radio Access Network (RAN) has brought new services, technologies, and paradigms with the corresponding societal benefits. However, the ...



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