

## A-Core Container

# 5g network base station equipment power consumption



## Overview

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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.

Is 5G base station power consumption accurate?

esan@huawei.com 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.

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.

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.

What is 5G NR?

The 5G NR standard has been designed based on the knowledge of the typical traffic activity in radio networks as well as the need to support sleep states in radio network equipment. By putting the base station into a sleep state when there is no traffic to serve i.e. switching off hardware components, it will consume less energy.

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