

Does 5G base stations fall under general industrial and commercial electricity consumption





Overview

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.

How does mobile data traffic affect the energy consumption of 5G base stations?

The explosive growth of mobile data traffic has resulted in a significant increase in the energy consumption of 5G base stations (BSs).

Which network consumes the most power in 5G?

Also, NextGalliance published a report with the below figure clearly illustrates that the RAN consumes the most power. Although RAN power consumption is reduced in 5G, it is still over 50% of the total 5G network infrastructure consumption. Another trend worth noting is the rise in data center power consumption in 5G.

What is 5G BS power consumption?

The 5G BS power consumption mainly comes from the active antenna unit (AAU) and the base band unit (BBU), which respectively constitute BS dynamic and static power consumption. The AAU power consumption changes positively with the fluctuation of communication traffic, while the BBU power



consumption remains basically unchanged , , .

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.



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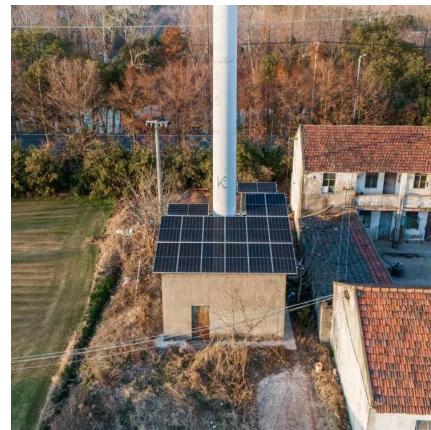


[A technical look at 5G energy consumption and performance](#)

Based on data bits per kilowatt, 5G networks are 90% more efficient than their 4G predecessors. However, huge increases in density and traffic are expected to negate these savings, leading ...

[Energy Consumption of 5G, Wireless Systems and the Digital...](#)

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additional elements like heat exchangers, ...



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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 ...

[Energy Management of Base Station in 5G and B5G: Revisited](#)

Since mmWave base stations (gNodeB) are typically capable of radiating up to 200-400 meters in urban locality. Therefore, high density of these stations is required for actual 5G deployment, ...



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