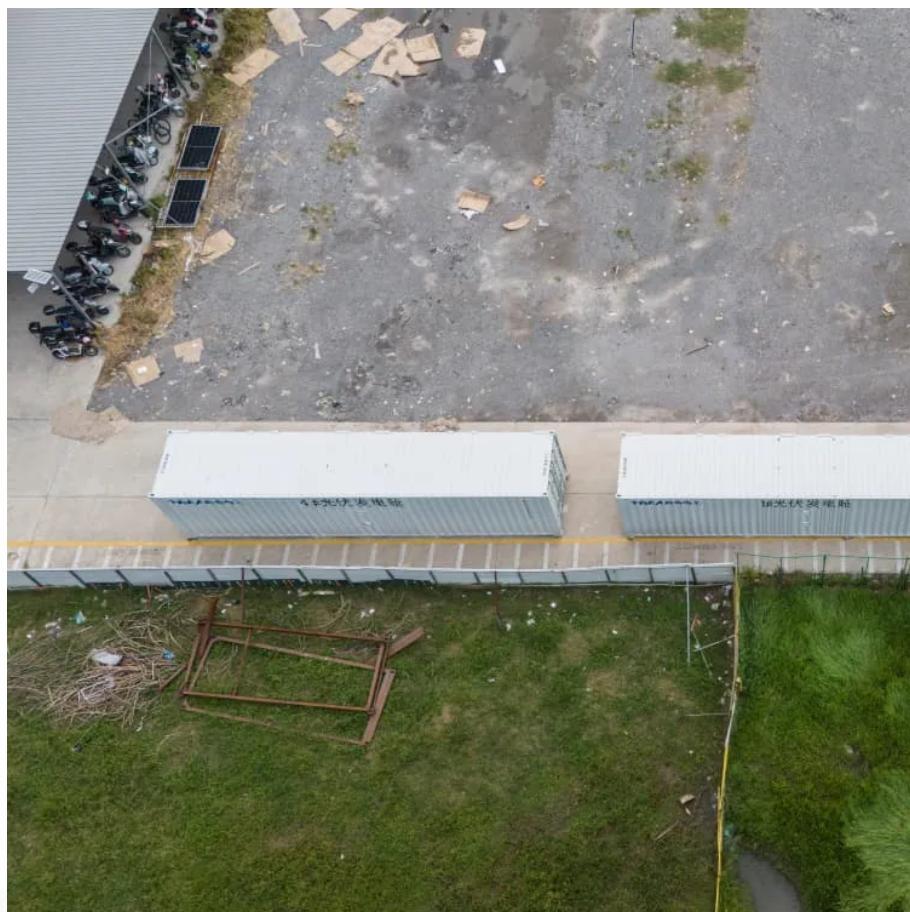




BUHLE POWER

## Actual current of 5G base station





## 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.

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 is a 5G network a challenge?

5G networks deployment poses new challenges when evaluating human exposure to electromagnetic fields. Fast variation of the user load and beamforming techniques may cause large fluctuations of 5G base stations field level. They may be underestimated, resulting in compliance of base stations not fitting the requirements.

Does 5G signal exposure affect base station compliance?

This agrees with measurements done in other countries whose authors conclude that the exposure to 5G signals is limited , , but this does not assure the base station compliance as full load situation should be considered for such assessment. It also shows that the increase in the EMF field is due to the induced data traffic.



## Actual current of 5G base station



### [Network-Based Assessment of Actual EIRP of 5G Base Stations ...](#)

Nov 7, 2024 · In this study, the actual time-averaged equivalent isotropic radiated power (EIRP) levels of nine 5G massive multiple-input-multiple-output base stations (BSs) located inside the ...

### [5G power consumption is 2.5 to 3 times of 4G](#)

Apr 15, 2025 · The power consumption of a 5G single station is 2.5 to 3.5 times that of a 4G single station due to AAU power consumption, the current full load power of a single station is nearly ...



### [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 ...



### [5G Network-based assessment of actual EIRP](#)

2 days ago · A study of actual time-averaged equivalent isotropic radiated power (EIRP) levels of 5G massive MIMO base stations and Implications on EMF Compliance.



### [Directional Power Control of 5G Radio Base Stations for EMF ...](#)

Jul 23, 2024 · When the electromagnetic field (EMF) compliance boundary of a radio base station (RBS) is determined based on the actual maximum EMF exposure condition according to the ...

### [Human exposure to EMF from 5G base stations: analysis, ...](#)

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### Analysis of the Actual Power and EMF Exposure from Base ...

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### Long-term Network-based Assessment of the Actual Output Power of Base

Mar 22, 2024 · In this study, data were collected for 22 massive multi-input multi-output (MIMO) base stations in busy 5G sites over 15 months using a network monitoring tool. Logged ...

### Analysis of the Actual Power and EMF Exposure from Base Stations ...

Jul 30, 2020 · The base stations made use of state-of-the-art massive MIMO antennas utilizing beamforming in order to optimize the signal strength at the user's device. In order to ...



### A study on the ambient electromagnetic radiation level of 5G base

Feb 21, 2024 · Knowledge of the electromagnetic radiation characteristics of 5G base stations under different circumstances is useful for risk prevention, assessment, and management. ...



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