SolarInnovate Energy Solutions

5g base station power introduction

Overview

What is 5G MIMO & how does it work?

The 5G standard introduces massive MIMO technology. In low base station service load scenarios, such as idle hours at night and non-capacity cell scenarios, it can be considered to turn off the transmission power of some RF channels to achieve energy-saving effect.

Does BS load rate affect the power consumption of 5G networks?

the power consumption of AAU nearly linearly increases with the growth of BS load rate, while that of the BBU is quite stable at varying load rates. As the power consumption of 5G BSs is significantly higher than that of 4G BSs, we focus on the backup power allocation of 5G networks in this work.

How will 5G be used in the future?

Reprinted, with permission, from ref. In the foreseeable future, 5G networks will be deployed rapidly around the world, in cope with the ever-increasing bandwidth demand in mobile network, emerging low-latency mobile services and potential billions of connections to IoT devices at the network edge .

What is the difference between 5g and 4G BS?

the 5G BS consumes much more (about 2 ~ 3 times) energy than that of the 4G BS, and the gap between them increases when the load rate (i.e., the ratio of specified mobile traffic amount to the maximum traffic load of BS is higher.

How dense is 5G compared to 4G?

With shorter signal range compared to that of 4G, the deployment of 5G network is expected to be highly dense. It is estimated that, by 2026 and in China only, over 14 million new and upgraded 5G BSs will be built, with 4.8 million macro BSs and another 9.5 million small ones . □2020 IEEE. Reprinted, with permission, from ref.

What is base station energy saving?

There are mainly two method of base station energy saving, which are hardware power saving and software energy saving. It is based on lowering the basic energy consumption of the base station.

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Energy-saving control strategy for ultra-dense network base stations

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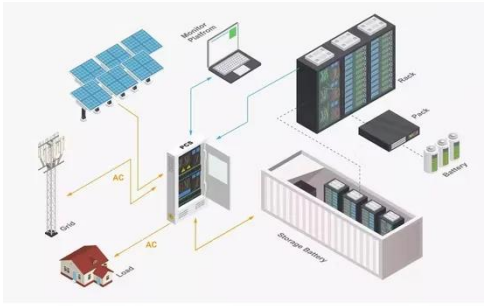

Comparison of Power Consumption Models for 5G Cellular Network Base

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