

5g cellular base station power supply





Overview

What is a small cell in 5G?

Small cells are a new part of the 5G platform that increase network capacity and speed, while also having a lower deployment cost than macrocells. The compact size of a small cell requires that all components – especially power converters – provide high efficiency, better thermals and eventually the best power density possible.

How does a 5G base station reduce OPEX?

This technique reduces opex by putting a base station into a “sleep mode,” with only the essentials remaining powered on. Pulse power leverages 5G base stations’ ability to analyze traffic loads. In 4G, radios are always on, even when traffic levels don’t warrant it, such as transmitting reference signals to detect users in the middle of the night.

How do small cells fit into the 5G ecosystem?

A cell tower (also called a macrocell) is a huge umbrella used to provide radio signals to thousands of users in large areas with minimal obstructions. To extend the coverage of a macrocell, distributive antenna systems (DASs) are used in conjunction with the cell tower.

Why do small cells need a 5G antenna?

Increasing the frequency increases the speed of sending/ receiving signals and helps shrink the size of the antenna, which in turn shrinks the size of the cell. Shorter wavelengths result in a decrease in signal penetration and radius, reinforcing the need for small cells. How do small cells fit into the 5G ecosystem?



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[The power supply design considerations for 5G base stations](#)

For 5G, infrastructure OEMs are considering combining the radio, power amplifier and associated signal processing circuits with the passive antenna array in active antenna ...

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Building better power supplies for 5G base stations Authored by: Alessandro Pevere, and Francesco Di Domenico, both at Infineon Technologies

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When a mobile device is close to a small-cell base station, the power needed to transmit the signal is much lower compared to the power needed to transmit a signal from a ...

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Additionally, these 5G cells will also include more integrated antennas to apply the massive multiple input, multiple output (MIMO) techniques for reliable connections. As a result, a ...

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For 5G, infrastructure OEMs are considering combining the radio, power amplifier and associated signal processing circuits with the passive antenna array in active antenna units (AAU). While AAUs ...

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For macro base stations, Cheng Wentao of Infineon gave some suggestions on the optimization of primary and secondary power supplies. "In terms of primary power supply, we ...

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