

5G base station power supply requirements





Overview

What are the key requirements for 5G infrastructure?

From the trends and challenges mentioned above, we can derive three key general requirements for the 5G infrastructure: • High efficiency. Achieving high efficiency is the best way to reduce heat dissipation (due to high power consumption compared to 4G) and operational expenses (OPEX). • Re-use of existing infrastructure.

Should a 5G power amplifier be combined with a power amplifier?

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 improve performance and simplify installation, they also require the power supply to share a heatsink with the power amplifier for cooling.

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.



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The power supply design considerations for ...

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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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Figure 3. A power supply for a 5G macro base station block diagram. Highlighted ICs The MAX15258 is a high voltage multiphase boost controller with an I²C digital interface designed ...

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Small Cells, Big Impact: Designing Power Solutions for 5G ...

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5G infrastructure power supply design considerations (Part II)

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