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Title: Manufacturing of a power supply device for a 5G communication base station

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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 will mmWave based 5G affect PA & PSU designs?

Site-selection considerations also are driving changes to the PA and PSU designs. The higher the frequency, the shorter the signals travel, which means mmWave-based 5G will require a much higher density of small cells compared to 4G. Many 5G sites will also need to be close to street level, where people are.

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 does a small cell base station affect a smartphone's battery life?

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 cell tower far away, thus extending smartphone battery life.

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The 5G base station is composed of a power supply system and communication equipment [4], in addition to some auxiliary equipment such as air conditioning and lighting.

These tools simplify the task of selecting the right power management solutions for these devices and, thereby, provide an optimal power solution for 5G base stations components.

Manufacturing of a power supply device for a 5G communication base station

The power supply design considerations for 5G base stations For their PSU suppliers, a key design challenge is minimizing the power consumption during this quiescent period. The PSU ...

Under the impact of these problems, 5g base station power supply with maintenance free, high reliability, diverse installation methods and high IP protection level is one of the best solutions to solve the ...

The all-area laying of 5G base stations is an important foundation for realizing the 5G communication strategy [1, 2]. How to lay 5G base stations in all areas according to the load ...

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 to support up to two ...

Global demand for high-speed, reliable connectivity continues to surge as 5G networks expand rapidly, with connections projected to reach billions. Managing power in 5G networks is ...

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

An integrated architecture reduces power consumption, which MTN Consulting estimates currently is about 5% to 6 % of opex. This percentage will increase significantly with 5G because a ...

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