

## SolarTech Power Solutions

# The highest voltage of 5G base station



## Overview

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How much power does a 5G system need?

To keep the power density per MHz similar to LTE systems, the 100MHz 3.5GHz spectrum will require 5x 80 W, which is not easy to be achieved. 5G trials need to define a realistic output power trade-off between coverage, power consumption, EMF limits, and performance.

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 the limiting factor of a 5G UE?

However, the uplink with the fixed user equipment output power of 23dBm (20mW) will be anyway the limiting factor. User equipment output power will be limited to 23dBm. This is also related to how many transmitting paths are to be assumed. In a typical 5G configuration, the UE has to support 4Rx diversity as a minimum.

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.

What is 5G NR?

The new 5G system will provide a vast range of new services, while extended connectivity is necessary for IoT, smart home applications, and areas where

smart devices are widely used. 5G NR will also include higher frequency electromagnetic waves of at least up to 30 GHz in the millimeter-wave region.

What is a 5G network?

5G networks are the next generation of mobile systems that will provide faster speeds, lower latencies, and extended connectivity than existing 4G networks. The new 5G system will provide a vast range of new services, while extended connectivity is necessary for IoT, smart home applications, and areas where smart devices are widely used.

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