



# How to charge 5G base stations

How much power does a 5G base station use?

Each nation has a different 5G strategy. For 5G, China uses 3.5GHz as the frequency. Then, a 5G base station resembles a 4G system, but it's on a much larger scale. For sub-6GHz in 5G, let's say you have a macro base station. The power levels at the antenna range from 40 watts, 80 watts or 100 watts.

How many 5G base stations would a cell phone tower support?

Hundreds of 5G base stations will need to be installed to cover the area of a single cell phone tower. Even if just 100 base stations were required, 5G's would support at least 25,000 devices to 4G's 100. 5G smartphones are being released all the time.

What is the range of a 5G base station?

5G base stations use millimeter waves that are extremely limited in range. Each 5G base station has a range of between 800-1000 feet, or 0.15-0.19 miles. It makes up for its limited range by surpassing 4G in other key areas: data transfer speeds (bandwidth), latency, and capacity.

Could 5G make us say goodbye to batteries for good?

Researchers at Georgia Tech have come up with a concept for a wireless power grid that might make it possible to say goodbye to batteries for good, using 5G's mm-wave frequencies. Because 5G base stations beam data through densely packed electromagnetic waves, the scientists have designed a device to capture that energy.

What is a 5G 'wireless power grid'?

A 5G 'wireless power grid' refers to the electromagnetic energy that 5G base stations emit, which can be harvested by a small device for wireless powering of IoT devices. Researchers at Georgia Tech have envisioned this concept, similar to how 3G and 4G cell phone towers radiate electromagnetic energy.

Is 5G more efficient than 3G?

5G base stations are more efficient than 3G and 4G base stations, according to Jimmy Hester, Ph.D., a Georgia Tech alum who serves as senior lab advisor to the ATHENA group. Old standards, like 3G and 4G, are known for indiscriminately emitting power from massive service towers in all directions, beaming significant amounts of untapped energy.

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