

The impact of ultra-high voltage on 5G base stations

Why is a 5G network a challenge?

5G networks deployment poses new challenges when evaluating human exposure to electromagnetic fields. Fast variation of the user load and beamforming techniques may cause large fluctuations of 5G base stations field level. They may be underestimated, resulting in compliance of base stations not fitting the requirements.

How will 5G impact data centers?

While these are just a few areas where 5G will have an impact, it all is highly dependent on the data centers and supporting communications base stations. Reliability of the infrastructure equipment is critical for the successful adoption of 5G networks.

Does a 5G base station increase field levels?

Adding the 5G systems does not significantly increase the overall field levels in the surroundings of the base station, in normal working conditions, compared to those of the previous generation. This has been checked during a measurement campaign in the surroundings of a 5G base station under operation.

Does 5G signal exposure affect base station compliance?

This agrees with measurements done in other countries whose authors conclude that the exposure to 5G signals is limited „,but this does not assure the base station compliance as full load situation should be considered for such assessment. It also shows that the increase in the EMF field is due to the induced data traffic.

What is a 5G network & how does it work?

The roll-out of 5G networks necessarily implies the deployment of new base station equipment, including new radiating systems. These systems may be provided with massive multiple-input multiple-output (M-MIMO) capabilities, where up to a hundred antenna elements are used for beamforming.

What is a 5G base station?

The 5G base stations contain advanced, active antenna systems containing multiple antennas in multiple input-multiple outputs (MIMO) technology configurations. The advanced, active antennas provide higher transmission/reception capacity, faster data transmission rates, and more efficient delivery of RF power.

High voltage levels in the substation produce a strong magnetic field interference, and metal shielding shells of 5G equipment have almost no effect on it therefore, it will be the main cause ...

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