

Beat: Technology

# HOW TO MONITOR EXPOSURE TO RADIO FREQUENCY BY 5G SMARTPHONES HEALTH

## AMID ELECTROMAGNETIC FIELDS BY ART-FI

Paris, Washington DC, 22.01.2021, 02:26 Time

**USPA NEWS** - Consumers are wondering about how dangerous are the 5G smartphones and harmful. how to monitor our exposure to radio frequency electromagnetic fields When ? " We see a test bench with halves of the heads, they are "mannequins" [?], a robotic arm will approach the smartphone to reproduce all the positions we take with our devices. "Hundreds of sensors are inside the mannequins that measure all the characteristics of a wave. They are immersed in a liquid that stimulates the way waves propagate inside the human body ", explains Stephane Pannetrat, Founder and CEO of ART-Fi. There is no need to prolong the measurement, three to four seconds are enough to obtain high accuracy. In short, it is like taking a picture of the full characteristics of electro-magnetic waves. However, because there are hundreds of measurements to take, it takes a day or two to get through a smartphone.

## 5G SMARTPHONES AND HEALTH : HOW TO MONITOR OUR EXPOSURE TO FREQUENCY ELECTROMAGNETIC FIELDS ? (01net.com)

The waves emitted by 5G smartphones will continue to be treated as for 4G smartphones. This involves performing SAR measurements, the specific absorption rate. Explanations and report in a specialized laboratory. The effects of 5G on our health are an extremely controversial subject. To the point that several elected officials wished to observe a moratorium on this technology, pending the conclusions of the Health Agency in early 2021. The exposure of our bodies to electro-magnetic waves comes from two different sources. There are the antennas of the operators and the smartphones. The National Frequency Agency (ANFR) is just beginning to check the compliance of 5G devices. It is expected to double the number of smartphones checked in 2021 and to focus on the most popular models sold in 5G.

## DRIVE THE SMARTPHONE TO ITS SMARTPHONE TO ITS LIMITS-----

For the time being, the methods will not differ from those used for 4G devices. Smartphone manufacturers are required, when they market a model, to provide measurements of SAR: the specific absorption rate. It represents the amount of power absorbed by the body and is expressed in watts per kilogram (W / kg). The ANFR agents collect copies from the market and submit them for laboratory measurements to verify compliance with their SAR. The aim is to push the smartphone to its limits and assess the maximum power levels. "As we use the cell phone in different ways, there are different types of SAR: head SAR near the head, body SAR near the bust, and finally, limb SAR near the legs or arms. At the regulatory level, there are limit values that must not be exceeded. They are of 2 W / kg for head and body SAR and 4 W / kg for limb SAR ", explains Emmanuelle Conil, research engineer at ANFR. While waiting to have its own test bench, the agency invited us to the specialized laboratory of the company ART-Fi for a demonstration.

## 5G COMPLICATES MEASUREMENTS-----

It was already necessary to multiply the physical positions of the head, trunk and limbs by the number of frequencies, technologies (2G, 3G, 4G, Bluetooth, Wi-Fi) and combinations of emissions. 5G will make everything even more complex. "Multiple emissions are emerging on several frequency bands at the same time: 4G and 5G or 5G and 5G. But there is also the new presence of several antennas in smartphones which emit according to a certain number of parameters, one after the other, or one without the other, in order to optimize the operating performance of the mobile, "[?]explains Stéphane Pannetrat. And yet this will only apply to the beginnings of 5G in France. Further changes will take place when smartphones will be able to transmit on millimeter waves of operators' networks in France. High bands will allow to boost the flow rates thanks to a lot of width of the spectrum. But they also have the characteristic of having a weak propagation and penetrating much less our organisms. As the exposure will remain on the surface of the skin, the ANFR will have to set up a new measurement protocol based no longer on the SAR but on the DSP (Power Surface Density). However, this should not happen before 2023. Source: Art-Fi

**Article online:**

<https://www.uspa24.com/bericht-18105/how-to-monitor-exposure-to-radio-frequency-by-5g-smartphones-health.html>

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V.i.S.d.P. & Sect. 6 MDSStV (German Interstate Media Services Agreement): Jedi Foster P/O Rahma Sophia Rachdi

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