



November 24, 2021

The Honorable Jessica Rosenworcel  
Federal Communications Commission  
445 12th Street, S.W.  
Washington, DC 20554

Dear Chairwoman Rosenworcel,

I am a physician in France and for the past fifteen years I have been working on the documented health issues related to cell phone radiation as well as the cell phone SAR test procedures.

In regards to the recent U.S. DC Circuit Court of Appeals' ruling in EHT v FCC, we are writing to request that the FCC re-open Dockets #13-84 and #03-137 to allow new, significant policy developments and research be included for consideration because of its relevance to the FCC examining its cell phone SAR testing procedures.

I am President of the Phonégate Alerte Association, formed in 2018 and our efforts to ensure transparency have led to the French government's actions to withdraw or update at least 23 models of cell phones from different manufacturers (Xiaomi, Nokia, Huawei, Wiko, Alcatel, etc.) because they were found to exceed European Union regulatory SAR limits for human exposure to radiofrequency radiation.

Similar to the FCC's regulations on cell phone test procedures, European Union regulations allow manufacturers to test cell phones at 5 mm separation distance from the body. They do not force companies to test cell phones or wireless devices at positions that are directly against the body (0 mm separation distance) *despite the reality that billions of people are using cell phones close to the body.*

### **The French Government is Requesting 0 mm Cell Phone Radiation Testing**

In late 2019, the French government health agency ANSES issued a [report](https://www.anses.fr/en/content/exposure-mobile-telephones-carried-close-body)<sup>1</sup> on the possible health effects associated with high radiation from mobile telephones carried close to the body and recommended that cell phones be tested at 0 millimeters, instead of 5 mm as the European Commission regulations require. Subsequently, France submitted a [formal objection](https://ec.europa.eu/docsroom/documents/43448)<sup>2</sup> to the European Commission in regards to the

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<sup>1</sup> <https://www.anses.fr/en/content/exposure-mobile-telephones-carried-close-body>

<sup>2</sup> <https://ec.europa.eu/docsroom/documents/43448>



current compliance test separation distance requirements of only 5 mm. The authorities have requested that compliance test distances be revised to 0 mm

*“Developments in the use of mobile telephones have led to a wide variety of situations in which telephones are no longer exclusively held close to a person’s ear in order to hold a conversation, since they are now also used to send and receive data through various applications for listening to music, playing video games or making video calls, which means that the equipment is used in ways which were not previously foreseen. There is also a growing trend for telephones to be networked with numerous connected objects, such as headsets or watches, which tend to result in lengthy connections between a telephone and the mobile network without the telephone being held in the hand, since it is often carried in clothing and is therefore closer to – or in contact with – the trunk.*

*For this reason, the French authorities believe that it is necessary to revise the harmonised standard EN 50566: 2017 concerning measurements of the SAR of devices that are hand-held or body-mounted in close proximity to the human body so that a maximum distance of 0 mm from the body is taken into consideration.”*

The FCC should ensure that cell phones are tested in body contact positions at 0 mm.

For background, in 2016, the French National Frequency Agency (ANFR) officially tested various models of cell phones and found that the majority exceeded regulatory limits when tested in body contact positions - with 0 mm between the phone and simulated body testing device (aka “phantom”).

### Cell Phones Violate Radiation Limits

Since December 4, 2019 ANFR has posted *143 new cell phone SAR test reports*. Despite the fact that the European Union strengthened their requirements to ensure cell phones were tested at 5 mm from the body, many cell phone models are still violating the limit of 2.0 W/kg for trunk SAR when tested by ANFR (10 g of tissue). All of the test results are posted online<sup>3</sup>.

Examples of smartphones that **violated the EU limits of 2.0 W/kg as well as the FCC limit of 1.6 W/kg when SAR radiation tested by the ANFR at 5mm include:**

- February 26, 2020: Sony Xperia 5 violated the limit at 2.64 W/kg.
- November 12, 2020: Essential Heyou 40 violated the limit at 2.54 W/kg<sup>4</sup>
- September 9, 2020: Essential Heyou 60 violated the limit at 2.86 W/kg<sup>5</sup>
- February 26, 2020: Xiaomi Mi Note 10 violated the limit at 2.45 W/kg<sup>6</sup>

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[https://data.anfr.fr/explore/dataset/das-telephonie-mobile/table/?disjunctive.marque&disjunctive.modele&dataC hart=eyJxdWVyaWVzljpbeyJib25maWciOnsiZGF0YXNldCI6ImRhcy10ZWxlGhvbmlLLW1vYmIsZSIsIm9wdGlbnMiOnsiZGZanVuY3RpdmUubWVycXVlIjpb0cnVILCJkaXNqdW5jdGl2ZS5tb2RlbGUiOnRydWV9fSwiY2hhcnRzljpbeyJ0eXBlljoib GluZSIsImZ1bmMiOiJBVkcilCJ5QXhpcyl6ImRhcy190ZXRIX25vcm1IX25mX2VuXzUwMzYwliwic2NpZW50aWZpY0Rpc3 BsYXkiOnRydWUsImNvbG9yYljoilzY2YzJhNSJ9XSwieEF4aXMiOiJkYXRlX2R1X2NvbRyb2xIX3Bhcl9sX2FuZnliLCJtYXhwb 2ludHMiOiJlLCJ0aW1lc2NhbgUiOiJ5ZWYliwic29ydCI6IiJ9XX0%3D&sort=das\\_tronc\\_au\\_contact](https://data.anfr.fr/explore/dataset/das-telephonie-mobile/table/?disjunctive.marque&disjunctive.modele&dataC hart=eyJxdWVyaWVzljpbeyJib25maWciOnsiZGF0YXNldCI6ImRhcy10ZWxlGhvbmlLLW1vYmIsZSIsIm9wdGlbnMiOnsiZGZanVuY3RpdmUubWVycXVlIjpb0cnVILCJkaXNqdW5jdGl2ZS5tb2RlbGUiOnRydWV9fSwiY2hhcnRzljpbeyJ0eXBlljoib GluZSIsImZ1bmMiOiJBVkcilCJ5QXhpcyl6ImRhcy190ZXRIX25vcm1IX25mX2VuXzUwMzYwliwic2NpZW50aWZpY0Rpc3 BsYXkiOnRydWUsImNvbG9yYljoilzY2YzJhNSJ9XSwieEF4aXMiOiJkYXRlX2R1X2NvbRyb2xIX3Bhcl9sX2FuZnliLCJtYXhwb 2ludHMiOiJlLCJ0aW1lc2NhbgUiOiJ5ZWYliwic29ydCI6IiJ9XX0%3D&sort=das_tronc_au_contact)

<sup>4</sup> <https://www.anfr.fr/das/COM054200035>

<sup>5</sup> <https://www.anfr.fr/das/COM054200035>

<sup>6</sup> <https://www.anfr.fr/das/COM006200006/>



Examples of smartphones **that would be compliant with the EU limit but would violate the FCC limits of 1.6 W/kg when SAR radiation tested by the ANFR at 5mm include:**

- September 16, 2020 Logicom Le Fleep 178 violated FCC's limit at 1.94 W/kg<sup>7</sup>
- September 16, 2020: Sky 55 Konrow violated FCC's limit at 1.91 W/kg<sup>8</sup>
- September 30, 2020: Wiki Lubi 5 Plus violated FCC's limit at 1.9 W/kg<sup>9</sup>
- September 29, 2020: Nokia 5.1 violated FCC's limit at 1.82 W/kg<sup>10</sup>
- April 8, 2021: Wiko F 300 violated FCC's limit at 1.8 W/kg<sup>11</sup>

As European Union and FCC test procedures utilize different averaging volumes, one cannot directly compare the measurements. However, FCC test procedures could result in even higher SAR violations ([Gandhi 2019](#))<sup>12</sup>.

Unfortunately ANFR no longer tests cell phones in body contact positions with 0 mm distance from the phone to the body phantom. If they did, far more of the 143 cell phones tested in the last two years would violate FCC and EU limits because every millimeter can significantly increase exposure. Further, due to the averaging volume differences between the FCC and EU limits, several of the phones that ANFR finds are compliant with the 1.6 W/kg limit would violate the FCC's test procedures.

The FCC presently allows manufacturers to SAR test cell phones with a separation distance between the phone and body (which can be up to approximately one inch from the body in some models of phones still in use in the USA) inaccurately measuring SAR levels into the body. Actual SAR exposure in direct body contact positions would be much higher than FCC test measurements.

### **New Research on Metal and Radiation Levels**

Studies on SAR in human tissue published since 2019 related to cell phone test procedures need to be included in the FCC re-examination. Metal can reflect and refocus cellular radiation, resulting in much higher absorption rates. The FCC, states, "Electrically conductive objects in or on the body may interact with sources of RF energy in ways that are not easily predicted. Examples of conductive objects in the body include implanted metallic objects. Examples of conductive objects on the body include eyeglasses, jewelry, or metallic accessories."

- In January 2021 the study "[Experimental Validation for Temperature Rise in Human Tissue Due to Implanted Metal Plates with Screw Holes Using Translucent Solid Phantom](#)" was published in 2020 International Symposium on Antennas and Propagation (ISAP), Osaka, Japan IEEE, 2021 and found increases in SAR enhancement due to the implanted metallic plates observed at specific frequencies.<sup>13</sup>
- On December 2020, the study [The effect of metal objects on the SAR and temperature increase in the human head exposed to dipole antenna \(numerical analysis\)](#) published in Case Studies in Thermal Engineering found "the presence of metal objects in proximity to the head alters SAR and temperature increase within the tissues. In most cases, metal objects redistribute the EM

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<sup>7</sup> <https://www.anfr.fr/das/COM044200035>

<sup>8</sup> <https://www.anfr.fr/das/COM044200036>

<sup>9</sup> <https://www.anfr.fr/das/COM046200002>

<sup>10</sup> <https://www.anfr.fr/das/COM085200003>

<sup>11</sup> <https://www.anfr.fr/das/COM057210009>

<sup>12</sup> <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=8688629>

<sup>13</sup> <https://ieeexplore.ieee.org/document/9391129>



field incident upon them to a smaller region increasing power absorption, thereby increasing SAR and temperature in that region. The power absorption in head layers is found to be sensitive to metal object's size and shape, and distance of the antenna from the objects".<sup>14</sup>

These are just a few of the published studies on radiation levels will not be included in the FCC's examination of cell phone test procedures *unless the FCC refreshes the record*.

### **Investigative Reports on Telecom Influence**

In September 2020, the editor-in-chief of the Program 66 minutes interviewed Chicago Tribune journalist and Pulitzer Prize winner Sam Roe and myself discussing how FCC's cell phone test procedures allow violations of FCC limits because they do not require cell phones to be tested at 0 mm.<sup>15</sup>

On November 12, 2020, France Télévisions Complément d'Investigation "5G A Wave of Doubt" directed by investigative journalist Nicolas Vescovacci was broadcast on France 2<sup>16</sup>. The investigation described how cell phones exceed radiation thresholds when tested against the body and how cell phones are being taken off the market in response. Importantly, the industry ties of members of International Commission on Non-Ionizing Radiation Protection (ICNIRP) were revealed. In June 2020, a report released by European Members of Parliament Michèle Rivasi (Europe Écologie) and Dr. Klaus Buchner (Ökologisch-Demokratische Partei) found that ICNIRP has long ignored the science on non thermal effects<sup>17</sup>.

This 2020 investigative research must be included in the FCC's record review so that the FCC does not inadvertently allow the wireless industry to influence its review of the record and decision.

### **There is Not a 50-Fold Safety Factor for Cell Phone Local SAR**

Furthermore, we would like to importantly note that after we questioned ICNIRP President Rodney Croft and Vice President Eric Van Rongen, we received confirmation that there is not a 50 fold safety factor when it comes to ICNIRP's cell phone local SAR limit.

Here is what Mr. Van Rongen wrote about this:

"Anyone who states that a reduction factor of 50 applies to local exposures obviously misinterprets the guidelines, although the 1998 guidelines might not have been very clear in that respect the 2020 ones provide more clear information."

On December 17, 2019 Environmental Health Trust and Phonegate Association write members of Congress a letter<sup>18</sup> and Background and Facts document<sup>19</sup> on the urgent need for a hearing regarding cell phone radiation test procedures, due to the excessive radiation the phone can expose the user to in body contact positions.

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<sup>14</sup> <https://www.sciencedirect.com/science/article/pii/S2214157X20305311?via%3Dihub>

<sup>15</sup> [Phonegate : entretien avec le journaliste américain et prix Pulitzer Sam Roe](#)

<sup>16</sup> [https://www.francetvinfo.fr/replay-magazine/france-2/complement-d-enquete/complement-d-enquete-5g-londe-dun-doute\\_4152949.html](https://www.francetvinfo.fr/replay-magazine/france-2/complement-d-enquete/complement-d-enquete-5g-londe-dun-doute_4152949.html)

<sup>17</sup> <https://ehtrust.org/wp-content/uploads/ICNIRP-report-FINAL-JUNE-2020.pdf>

<sup>18</sup> <https://ehtrust.org/wp-content/uploads/Signed-Letter-to-US-Congress-phonegate-.pdf>

<sup>19</sup> [Background and Facts Documenting PhoneGate and Our Call for Congressional Action](#)  
<https://ehtrust.org/wp-content/uploads/Background-and-Facts-on-PhoneGate-1-1.pdf>



We have a significant amount of new data on SAR test methods from 2020 and 2021 to share with the FCC in order to ensure the protection of cell phone users, especially children. SAR tests are thermally based and they are an inadequate measurement to ensure safety. Stronger regulations which protect users from thermal and non-thermal effects are needed.

### **New Law To Require Radiation Testing of Wi-Fi Laptops, Router and Electronics**

In addition, there has been new legislation regarding transparency on wireless radiation in France. Starting in July 2020, the wireless industry must label tablets, laptops, Wi-Fi routers, DECT phones and other wireless connected electronics with the radiofrequency radiation SAR exposure levels for consumers **at point of sale and for all advertising**. This includes the SAR for the head, trunk and extremities. All equipment used close to the head, hand-held or carried close to the body is potentially covered. From the [SAR Regulation Guide](#) provided by [ANFR](#), you can find a non-exhaustive list of equipment qualified as radio equipment that required SAR testing.

Note: For years [France law](#)<sup>20</sup> has ensured cell phones were SAR radiation labeled, banned the sale of cell phones designed for young children, prohibited advertising to children under 14 years of age<sup>21</sup> and [warned](#)<sup>22</sup> users to keep devices away from the body.

It is imperative that the two above-mentioned dockets are re-opened to allow recent developments to be submitted for a proper assessment of FCC's testing protocol.

Sincerely,

Marc Arazi, M.D.

A handwritten signature in blue ink, appearing to be 'M. Arazi', with a horizontal line extending to the left.

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A book on Phonegate was published by Massot Editions on this international health scandal. An English version is planned and we will be sure to send it to you when it is released in the United States.

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<sup>20</sup> [Article 183 - LOI n° 2010-788 du 12 juillet 2010 portant engagement national pour l'environnement \(1\)](#)

<sup>21</sup> [Law on sobriety, transparency, information and consultation for exposure to electromagnetic waves](#)

<sup>22</sup> [Order of November 15, 2019 relating to the display of the specific absorption rate of radioelectric equipment and to consumer information NOR: SSAP1834792A](#)