



FCC 13-39

Before the Federal Communications Commission

Washington, D.C. 20554

In the Matter of

Reassessment of Federal Communications)	ET Docket No. 13-84
Commission Radiofrequency Exposure Limits and)	
Policies)	
)	
Proposed Changes in the Commission's Rules)	ET Docket No. 03-137
Regarding Human Exposure to Radiofrequency)	
Electromagnetic Fields)	

To: Office of the Secretary
Federal Communications Commission , Washington, DC 20554

As officially presented in the Federal Register/ Vol. 78, No. 107 / Tuesday, June 4, 2013 / Proposed Rules. Federal Communications Commission, 47 CFR Parts 1, 2, 15, 24, 25, 27, 73, 90, 95, 97, and 101 [ET Docket Nos. 03-137 and 13-84; FCC 13-39], Reassessment of Exposure to Radiofrequency Electromagnetic Fields Limits and Policies, Federal Communications Commission

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We have read comments submitted by the parties on 03-137 and 13-84, and submit the following Reply:

There is a broad consensus that new, biologically-based public safety limits for chronic exposure are warranted, given the scientific and public health evidence for health risks from low-intensity radiofrequency radiation exposures from wireless technology applications.

The existing FCC public safety limits are inadequate to protect public health given the proliferation of RF-emitting devices now in common usage.

We do not see a “broad consensus to adopt the Basic Restriction in IEEE C95.1-2005” for SAR and substituting a 10-gm tissue volume for the current 1-gm tissue volume for calculating SAR - except across the associated industry and corporate interests where it would be expected that these parties would promote the status quo regardless of impacts to public health.

Willful disregard by industries and regulators since at least 2007 of this scientific and public health evidence for health harm is no justification to keep existing and inadequate FCC public safety limits.

There is no reasonable basis for time-averaging and spatially averaging measured values as the sole basis for protection against health impacts of chronic exposure. Pulsed radiofrequency health impacts require the development of protective safety limits that control chronic exposure to peak exposures, not time-averaged exposures.

The biologically-relevant time period during which pulsed RF causes disruption of key biological processes should be the basis for determining acceptable safety limits. If biological systems register pulsed RF as a continuous insult (e.g., by expression of stress proteins or HSP, or by disruption of normal electrophysiology or neural synchrony, or by oxidative damage or mitochondrial function disruption as examples) then the biologically relevant time period that cell membranes, cells and tissues respond to pulsed RF as a continuous insult must define the safety limit.



Some parties have commented ‘RF levels in some places already exceed new recommendations by the BioInitiative Working Group and others. There is no justification that today’s levels of RF must be tolerated because the wireless industry created them already; RF levels common today are creating intolerable health problems and should be rolled back. The evidence for health risks comes directly from thousands of published scientific and public health studies that increasing RF levels are producing ‘epidemiologically-visible’ health harm across very large populations of exposed people.

Regulators need to rethink safety limits now, even if it means rolling back ‘RF exposure levels now commonly measured’ to levels below those reported to cause biological effects and adverse health effects. It is precisely why this FCC process has been convened: to re-evaluate the RF health impacts and sufficiency of existing safety limits, and to change them in accord with the damage to health that is now established from the rollout of wireless technologies and the RF exposures they create. And, remember, corporate decisions to roll out wireless technologies over early scientific and public health objections and early evidence of health risk was simply a calculated risk. It was demonstrated at least as early as 2007 that the evolving evidence was sufficient to look for alternatives to wireless in communications and data transmission. Market decisions that ignored such possible health risks do not today deserve to be rewarded at the expense of public health. Further, it is not in the public interest to continue to market technologies that will worsen out-of-control US healthcare costs.

CTIA comments that *“CTIA strongly supports the Commission's decision in the First R&O to classify the pinna as an extremity based on the expert determinations of the FDA and of the IEEE, and the Commission's conclusion that this specification has no practical effect on human exposure to RF energy permitted by the FCC's rules.”* There is no justification for this conclusion since placing a wireless transmitting device (e.g., a cell or cordless phone) against the pinna of the ear also exposes the highly sensitive brain and eyes to excessive pulsed RF. which has already resulted in increased risk for malignant brain tumors, acoustic neuromas, parotid gland tumors and some reports of uveal melanoma. Reclassifying the pinna of the ear as an extremity will greatly increase RF exposures not just within the pinna, but also critical tissues and organs in proximity - the brain, the skin, the eyes, the underlying nerves, blood vessels, salivary glands and tissues. It is already demonstrated that EXISTING RF exposures are linked to increased risk of some cancers. Reclassifying the pinna of the ear as an extremity is an extreme way to



make legal what the industry needs to deploy new and more powerful cell phones and other wireless devices; and to cover themselves from liability where cell phones today don't always comply with existing SAR limits in the manner they are commonly used by consumers.

Utility Telecom Commission (UTC) argues for a categorical exemption for routine RF testing for wireless utility meters.

“Specifically with regard to categorical exclusion, the Commission should clarify that low power fixed transmitters -- such as those that utilities and other CII use for advanced metering infrastructure (AMI), multiple address systems (MAS) and supervisory control and data acquisition (SCADA) – are categorically excluded from routine evaluation. These devices operate at low power and typically only transmit when they are polled by the associated master station or network node. As such, they pose little or no risk of exceeding the RF exposure limits, especially when a time average measurements are conducted. Similarly, bidirectional amplifiers that are used to extend coverage within a building should also be categorically excluded, due to their low power and minimal risk of causing excessive RF exposure.¹⁵ Alternatively, the power limits proposed for categorical exclusion in Section 1.1307(b)(1)(ii) should be revised upward to clearly encompass bi-directional amplifiers. Finally, and consistent with the Commission’s Report and Order, any new rules should not require licensees to conduct routine evaluations for devices that were licensed before the rules go into effect.¹⁶”

We oppose UTCs request for a categorical exclusion of these facilities from routine RF evaluation. UTC ignores the evidence that such meters emit RF pulses far more frequently because they are ‘hand-shaked’ every few seconds by the mesh networks to which they are tied (about 90% more transmissions than estimated for ‘polling’ alone), and not just when ‘polled’ for information (about 10% of transmissions based on testimony by PG&E to the California Public Utilities Commission for the OWS NIC514).

UTC also ignores the evidence that wireless utility meters can violate existing FCC safety limits when the 100% duty cycle requirement for ‘uncontrolled public access’ is properly applied within FCC OET 65 Equations 6 and 10 (Sage, 2011). UTC errs in assuming that “*they pose little or no risk of exceeding the RF exposure limits*”. Further, diluting the RF exposure of millisecond bursts by time-averaging makes a mockery of testing procedures. Pulsed RF has biological effects from millisecond RF bursts that last longer than the interval between these RF emissions; thus the biological insult is continuous (chronic exposure). Time-averaging simply gives the appearance of diluting these biologically-important exposures to extinction.



These devices are frequently placed within mere centimeters of occupied space in family homes, and in businesses that have inside electric meters on walls close to where patrons (including their children) spend time. Considering that perhaps 2-3% of wireless utility meters (electric meters) are completely accessible and closer than 20-40 cm (uncontrolled public access by definition) and there are likely to be 300 to 400 million ‘smart meters’ installed; this would mean about 6 million to 12 million meters would place people in situations where there are significant RF exposures, there is no warning signage, there is complete access to touch or place the face close to the meter (to read the digital output information) and depending on whether it is one meter, or a bank of meters mounted together – this situation demands both routine environmental testing for every meter type, and it demands that the distancing exclusions be eliminated from the FCC’s proposed actions.

We also oppose the proposed new standardized measures for separation distance that could exempt many of these devices,

Distance Exemptions: More realistic provisions must be developed regarding distancing from RFR transmitters (wireless devices, wireless access points and routers, baby monitors, wireless utility meters, etc) for infants and children who cannot reasonably be expected to observe FCC rules for 20 cm or 40 cm separation. The basis for exemptions from routine evaluations (Appendix C – fixed, mobile or portable RF sources) assumes conservative derivations or worst- case predictions leading to “*minimal likelihood for the exposure limits for the general public to be exceeded*” based on faulty logic about what can be expected with regard to the general public knowing or being able to avoid breaching an arbitrary 20 cm or 40 cm distances.

Compliance Testing: Realistic assumptions about operation of wireless utility meter devices (‘smart meters’) should be mandatory in FCC testing and issuance of Grants of Authorization. FCC testing labs ignore the obvious two-antenna or three-antenna design of wireless utility meters, yet issue ‘Conditions’ for compliance that specify “*this compliance test is issued with the condition that the antenna may not operate in conjunction with other antennas*”. The FCC cannot reasonably issue Grants of Authorization based on lab testing that ignores typical construction of the device, and how in common practice it is installed and operated.

Cumulative Effects: Cumulative effects of RFR exposures from multiple wireless devices and environmental exposures are not sufficiently addressed, measured or tested under current or proposed FCC rules. The 2008 NAS Report on Research Needs for Wireless Device summarizes deficiencies for wireless effects on children, adolescents and pregnant women; wireless personal computers and base station antennas; multiple element base station antennas under highest radiated power conditions; hand-held cell



phone compliance testing; and better dosimetric absorbed power calculations using realistic anatomic models for both men, women and children of different height and ages. Realistic assessments of cumulative RFR exposures need to be addressed, taking into account the high variability in environmental situations; and safety buffers below ‘effects levels’ need to be built into new FCC public safety limits.

100% Duty Cycle: FCC OET 65 should make clear that a 100% duty cycle will continue to be required in calculations of power density ‘where the public cannot be excluded’.

CTIA’s comments dispute and distort the basis, intent and result of the World Health Organization IARC classification of RF as a Group 2B Possible Human Carcinogen. CTIA recklessly disregards human health with its twisted representation of the IARC classification. If anything CTIA’s arrogant attempt to downplay the IARC classification is the real distortion of fact here, not that IARC’s work has left the issue “*vulnerable to distortion by alarmists*”. IARC could have reviewed the science on RF health impacts and voted it a Group 4 (Not a Carcinogen) if what CTIA maintains is that wireless RF is safe. They did not. IARC could have voted RF as a Group 3 (Insufficient Evidence) but they did not. IARC found there to be sufficient scientific evidence to classify RF as a Group 2B Possible Human Carcinogen, and all the dancing around CTIA does to undermine this in the eyes of the Commission is a cynical dodge favoring the industry members for whom CTIA is chief lobby.

IEEE’s justification for reclassifying the pinna of the ear is based on thermal injury alone, and this is an outdated and irrelevant measure of health harm (IEEE C95.1-2005).

The Mobile Manufacturers Forum comment on proposed reclassification of the pinna of the ear as an extremity “*just as for hands, wrists and limbs where there are no major organs subject to RF exposure*” defies belief. Clearly, has MMF no knowledge of basic physiology to say that the human eyes, brain, skin, glands of the throat and neck, and interconnecting nerves are not ‘major organs’?

In a spectacular gaff, a staff representative for Hammett and Edison, Inc recently testified in a municipal proceeding on behalf of AT&T (September 2013) that “boiled vegetables” are a Group 2B Possible Human Carcinogen. It would be a laughable mistake except when one considers that the ‘expert’ in question who misspoke represents one of the most active engineering firms that represents dozens of site applications for major telecom siting companies. But it is another demonstration that engineering firms often



do not have the biological or health credentials and knowledge to make rules on health risks and safety limits, nor do they accurately depict the recent IARC classification. Rather, they issue the oft-heard dismissal that the 300+ listed Group 2B carcinogens also include pickled vegetables, coffee and talcum - rendering any other listings like RF a trivial issue by association. But, usually they trivialize it more accurately.

Hatfield and Dawson Engineers commented that “*(B)oth the IEEE and NCRP guidelines were developed by scientists and engineers with a great deal of experience and knowledge in the area of RF biological effects*”. Nothing could be further from the truth in this matter. Engineers are not experts in biology, and certainly have failed to recommend RF public safety limits and maximum permissible exposures in line with established biological effects and related health harm from low-intensity, chronic RF exposures in all prior IEEE C95.1 proceedings that use ‘thermal injury’ as a basis for defining permissible exposures for the public.

Motorola Solutions Inc. comments support the existing FCC standards. It is another example where industry is telling the FCC they like the existing (and inadequate) safety standards just as they are – although they probably did not intend the irony here.

“(A)s the Commission reviews its RF exposure policies, it should begin from the understanding that the current system is working. The Commission’s policies have enabled the rapid development and widespread adoption of wireless technologies in the United States in a manner that is safe and sustainable.”

The current system is working well for industry. The current system has enabled the rapid development and widespread adoption of wireless technologies for industry benefit - to keep on track with wireless marketing strategies. The current FCC limits suit the industry, and now the industry wants bigger exclusions and higher exposure limits to keep rolling out new wireless technologies.

The current system is NOT WORKING for consumers who suffer health harm from wireless technologies, nor is it working for Americans whose health care costs are already exorbitant and who are suffering from the inavailability of medical insurance. The current system is not sustainable and certainly not safe. This is a positive assertion of safety of wireless devices from Motorola Solutions. It is contradicted by Motorola’s own RF health warnings on cell phones that they issued for years in the fine print of cell phone owners’ manuals.



CTIA has commented that “(B)y continuing a pro-competitive, deregulatory environment for wireless service and directing the FCC to promulgate uniform RF emission standards, the 1996 Telecommunications Act codified the policy goals underlying the Commission’s current RF regime. When adopting the current standards, the Commission noted that it sought to balance public safety with the goal of fostering wireless deployment, thus reflecting the directives of the 1996 Act. The growth of the wireless industry since 1996 attests to the Commission’s success in striking the right balance.”

In fact, the scientific evidence is more than sufficient in 2007, and certainly in 2012 (www.bioinitiative.org) that the Commission has not struck the right balance between uncontrolled wireless rollout and health impacts resulting for Americans, particularly for children. The increased risk for cancers, neurological diseases, memory and learning impairment in children, and other serious medical problems associated with wireless technologies and chronic exposure to low-intensity RF are now clearly available to the Commission.

Respectfully submitted:

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