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Federal Communications Commission, Office of Engineering and Technology
ET Docket No. 13-84
Federal Register document 2026-19364
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Re: ET Docket No. 13-84; Public Notice DA 26-997, FCC Seeks Comment on RF Exposure Issues Subject to D.C. Circuit Remand in Environmental Health Trust v. FCC, 91 FR 60128 (September 22, 2026), FR Doc. 2026-19364

I am an epidemiologist (Ph.D., Environmental Health Sciences, University of Minnesota, 2014) and a security engineer who has designed and built RF telemetry and software-defined radio sensing systems. I file in my individual capacity, in what the Public Notice identifies as a permit-but-disclose proceeding, and my affiliation is for identification only. I take no position on whether RF exposure below the limits in 47 CFR 1.1310 causes non-cancer harm. This comment concerns the evidentiary standard the Commission proposes to apply to the refreshed record, and the exposure-measurement problem that leaves that record weaker, in both directions, than either side of this proceeding tends to admit.

Summary of recommendations

1. Apply the eighteen methodological questions to every study relied on in either direction, including those supporting the 2019 findings, and publish a table of those studies with their dispositions.

2. State what a null finding does and does not establish given the exposure measurement in the underlying studies, and distinguish a record that does not demonstrate harm from a record that demonstrates no harm.

3. State that near-universal exposure removes the unexposed comparison group, so that dose-response designs with measured dose are the informative class, and describe the study that could change the finding.

4. Coordinate with the Department of Health and Human Services, whose concurrent request for information covers overlapping questions.

5. Address children in terms of dose, which varies with body size, use patterns, and duration, rather than in terms of whether any study of children shows harm.

6. Pair device compliance testing with a published measurement uncertainty budget and with test conditions that reflect actual use positions, including devices used against the body.

7. Treat the 2014 Department of the Interior letter as evidence of a gap in the record, state what evidence would fill it, and whether any has appeared since 2014.

The case for the Commission's approach

The Public Notice is, in design, the right response to a remand. The Commission has confined the refresh to the remanded issues, stated that it does not seek comment on the upheld parts of the 2019 decision, and told commenters in advance what will count. Quality over quantity, no weight for unverifiable testimonials, no scientific weight for meta-analyses that pool studies of widely varying rigor without quality weighting or heterogeneity assessment, and eighteen explicit methodological questions: that is how an expert agency builds a record a reviewing court can follow. Announcing the standard before the comments arrive is salutary, because it can then be held to. My recommendations accept this framework and ask that it be applied more completely.

Apply the eighteen questions to both sides of the record

The eighteen questions are sound criteria. As the Federal Register summary frames them, however, several are addressed to studies that purport to show harm, while the Commission separately asks whether record evidence affirmatively supports the current rules. Those two inquiries must run under one standard. I recommend that the order state that the eighteen criteria apply to every study and review on which the Commission relies, including those supporting the 2019 findings, and publish a table of each study relied on in either direction with its disposition under each criterion. A standard applied only to evidence of harm would be asymmetric: the court asked for "a reasoned explanation for its determination that its guidelines adequately protect," not for a reasoned rejection of the contrary submissions. A standard applied to both is perspicuous and durable. The dissent's criticisms of the six cited items are themselves applications of these criteria; the order should make the same scrutiny visible on the other side of the record.

What a null finding establishes

Most human studies in this field rely on surrogate measures of exposure: self-reported use, subscriber records, or distance to infrastructure. When error in a surrogate is unrelated to outcome status, the usual effect is to attenuate the estimated association toward the null, so a study that finds nothing is weaker evidence of safety than its sample size suggests. Where exposure is reconstructed from recall, as in case-control designs, the error can differ between cases and controls and push the estimate in either direction. I ask the Commission to state the epistemic status of a null finding in this record: what it does and does not establish given the measurement quality of the studies relied on. The 2019 finding that the "totality of the available scientific evidence continues to not support adverse health effects in humans" is a statement that the record does not demonstrate harm. It is not a statement that the record demonstrates no harm; nor is the absence of demonstrated harm on a large record without weight. The order should say which of the two it is making.

Ubiquity and the missing comparison group (remanded issue 2)

The Commission asks whether the record contains epidemiologic evidence accounting for the "ubiquitous saturation of cell phones" in the population. The consequence of saturation is that there is no unexposed comparison population, so the ever-versus-never contrast carries little information. What remains informative is contrast in dose within an exposed population, which requires measured individual dose across several exposure levels, with endpoints specified in advance and adequate follow-up. I recommend the Commission say so in its order and describe the study that would be capable of changing its finding, so that the record it invites next time is

the record it needs. The Department of Health and Human Services has a concurrent request for information on overlapping questions (Docket HHS-OASH-2026-0397, comments due October 21, 2026), and I am filing a separate comment there recommending a national measured-exposure program. The Commission should coordinate with HHS so that health agencies supply the exposure science and the Commission the engineering limits.

Children and long-term exposure

I support differentiated exposure assessment for children on the ground of dose, not of effect. Absorbed dose for a given incident field varies with body size and tissue geometry; use patterns differ; and exposure that begins in childhood accumulates over a longer lifetime. I do not assert that any effect exists. Asking whether any study of children shows harm, however, conflates the absence of studies with measured dose and adequate follow-up with the absence of an effect. The order should address "the impacts of RF radiation on children" in terms of dose: how absorbed dose in children differs from adults at the compliance limit.

Device testing procedures (remanded issue 1)

I offer one engineering observation on "its decision to retain its testing procedures," with the caveat that the published notice gives little detail here. A specific absorption rate measurement carries an uncertainty budget, which the measurement standards (IEC/IEEE 62209-1528) specify: probe calibration, tissue-simulant properties, device positioning, and output power drift during the scan. To the extent the current procedures already require that budget in each test report, the order should say so and state whether the expanded uncertainty is carried into the compliance margin; to the extent they do not, it should be. The order should state the separation distances used in testing, their basis, and whether exposure at zero separation is measured, so that the test conditions can be compared with the positions in which devices are used.

Environment (remanded issue 3)

The 2014 Department of the Interior letter, as quoted in the notice, states that "no independent, third-party field studies have been conducted in North America" on tower emissions and migratory birds. That statement is probative of a gap in the record, not of an effect. The right response to a gap is to say what evidence would fill it, here field studies with measured field strength at tower sites and defined avian endpoints, and whether any such evidence has appeared since 2014. The ARPANSA conclusion the notice cites, that good quality studies "show no effect from radio waves on plants and animals," should pass through the same eighteen questions before the order relies on it.

Brief answers to four of the methodological questions

On mechanism: a demonstrated mechanism strengthens causal inference, but its absence does not refute an observed dose-response relationship. On proxies such as oxidative effects: biomarkers are intermediate endpoints, evidence that a biological interaction occurred rather than evidence of an adverse health effect, unless the marker has been validated as predictive of a clinical outcome at the levels observed. On self-reported data: weight self-report by its validation against measured exposure in a comparable population, whether the study reports an effect or none. On animal studies: weight them by dosimetry quality and by whether exposure levels and durations

are comparable to human use. An animal study at exposures far above the human limit may speak to hazard, not to risk at the limit; one with poor dosimetry speaks to neither.

Scope and confidence

I did not address the cancer finding, which the court upheld, and did not review the individual submissions in the record; my remarks on the six cited items rely on the partial dissent's characterizations as summarized in the notice. I responded to the Public Notice as published in the Federal Register; the text of DA 26-997 on the Commission's document server was not retrievable to me at the time of writing, and my remarks on the six cited items rely on the characterizations summarized there. My confidence that symmetric application of the eighteen criteria, with a published disposition table, would strengthen the order on review is about 85 out of 100; my confidence in the measurement analysis, as a matter of method, is about 90. I state no confidence on whether harm exists below the limits, because I take no position on it.

Disclosure: I have no financial interest in any vendor or contract involving this proceeding, and I was not compensated for this comment. My commercial work has included RF telemetry and software-defined radio sensing hardware; I have no financial interest in any wireless carrier, device manufacturer, or exposure-measurement vendor.

Thank you for the opportunity to comment.

Respectfully,

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References

1. Federal Communications Commission, Office of Engineering and Technology. FCC Seeks Comment on RF Exposure Issues Subject to D.C. Circuit Remand in Environmental Health Trust v. FCC. Public Notice DA 26-997, ET Docket No. 13-84. 91 FR 60128, September 22, 2026, FR Doc. 2026-19364. https://www.govinfo.gov/content/pkg/FR-2026-09-22/html/2026-19364.htm

2. Environmental Health Trust v. FCC, 9 F.4th 893 (D.C. Cir. 2021).

3. 47 CFR 1.1310, Radiofrequency radiation exposure limits. https://www.ecfr.gov/current/title-47/chapter-I/subchapter-A/part-1/subpart-I/section-1.1310

4. U.S. Department of Health and Human Services, Office of the Assistant Secretary for Health. Request for Information on Electromagnetic Fields (EMFs), Radiofrequency (RF) Radiation, and Wireless Radiation Exposure. 91 FR 59792, September 21, 2026. https://www.govinfo.gov/content/pkg/FR-2026-09-21/html/2026-19252.htm

5. IEC/IEEE 62209-1528:2020, Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-worn wireless communication devices. 2020.