Before the
Department of Health and Human Services
Washington, DC 20201

In the Matter of	)	
	)	
Request for Information on Electromagnetic Fields (EMFs), Radiofrequency (RF) Radiation, and Wireless Radiation Exposure	)	HHS-OASH-2026-0397

COMMENTS OF NCTA –
THE INTERNET & TELEVISION ASSOCIATION

I. Introduction

NCTA – The Internet & Television Association ("NCTA")[1] submits these comments in response to the Request for Information (RFI) in the above-captioned proceeding. NCTA supports the Federal Communications Commission's ("FCC" or "Commission") repeated determination that its radio frequency (RF) exposure rules are appropriate and there is no evidence that challenges the premise of the Order adopting the current rules. The Commission has repeatedly found these limits to be consistent with health and safety, and its Public Notice seeking comment on RF exposure issues correctly notes that courts "have consistently upheld the reasonableness of the Commission's RF human safety requirements when challenged."[2] There has been no clear and direct evidence proving that RF exposure limits pose adverse health

[1] NCTA is the principal trade association of the cable television industry in the United States, which is a leading provider of residential broadband service to U.S. households. Its members include owners and operators of cable systems serving more than 80 percent of the Nation's cable television customers as well as more than 200 video program networks and services. Cable service providers have invested more than $335 billion over the last two decades to deploy and continually upgrade networks and other infrastructure – including building some of the Nation's largest Wi-Fi networks.

[2] *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, at 2 (Sept. 17, 2026) (Public Notice).

effects. Nothing in the studies discussed by the D.C. Circuit in *Environmental Health Trust v. FCC* majority, which refused to vacate the rules, undercuts that fact.[3]

Because the overwhelming majority of voice, video, and data traffic delivered by cable operators rides over Wi-Fi and CBRS-licensed networks rather than high-power, exclusive-use networks, these comments focus on Wi-Fi and Citizens Broadband Radio Service (CBRS). Given that the Commission's RF exposure rules set the upper limits of power to cover licensed cellular services, which typically operate at high power (1640-3280 Watts), it follows that FCC-authorized services that use much less power, including those that use a *fraction* of cellular power levels, like Wi-Fi (operating at up to 1-4 Watts for clients and infrastructure), and CBRS licensed cellular (operating at 50 Watts), pose even less of a potential risk to consumer health and safety. There is, simply put, no clear and direct evidence proving that Wi-Fi or CBRS signals are associated with any negative health or environmental effects, and there is actually much evidence to the contrary.

The fact that Wi-Fi and CBRS safety is beyond dispute is great news for American consumers and the American economy, given these services' enormous positive impacts. Wi-Fi and CBRS provide dramatic socioeconomic benefits to millions of Americans. Wi-Fi has become one of the most important technologies of the modern era, serving as the wireless foundation for an increasingly connected world. Similarly, CBRS is increasingly important to U.S. manufacturing, agriculture, ports, utilities, national defense, logistics, and energy infrastructure, not to mention to large universities, Native populations, and others.[4] In the U.S.,

[3] Public Notice at 2 (citing *Env't Health Tr. v. FCC*, 9 F.4th 893, 911–12 (D.C. Cir. 2021) (upholding, inter alia, the FCC's determination that exposure to RF radiation at levels below the current limits will not cause cancer)).

[4] *See* Analysys Mason, *The Role of Private 5G and CBRS in the U.S. Manufacturing Sector* (Mar. 2026), https://www.americanmade5g.com/_files/ugd/3e8afa_d81de8f298404bfa9df25c299b818dfb.pdf (Analysys Mason Report).

75 percent of private 5G networks rely on CBRS for onsite communications, improving safety, increasing productivity, and supporting new technologies where other services cannot deliver the same reliability.[5] Accordingly, given that the weight of evidence draws no connection between high-power cellular services and harmful health effects, it follows that Wi-Fi and CBRS – services that operate at a fraction of the power – present even less of a concern or risk. For these reasons, NCTA supports the Commission's existing RF safety rules. There is no evidence that those rules need to be changed. NCTA thus urges the Department of Health and Human Services (HHS) not to take any further action here.

II. Wi-Fi and CBRS Operate with Low Power and Do Not Cause Adverse Health Effects

The FCC's RF exposure rules are continuously evaluated and based on research from entities with specialized expertise in health and safety issues.[6] Wi-Fi routers, access points, and devices operate mostly at 0.06 percent of the power that high-power mobile systems use, while CBRS licensed cellular operates at about 3 percent of the lower end of cellular power levels and about 1.5 percent of the higher end. Research has not found any credible evidence that even the high-power cellular service is unsafe. It follows that Wi-Fi and CBRS-licensed services, operating at fractions of those power levels, are exponentially safer than the high-power cellular offerings for which there has been no direct causal finding of adverse health effects.

A. Wi-Fi and CBRS Operate at Low Power

Wi-Fi operates with low power and well within the FCC's RF exposure limits. Lower power generally means less potential exposure. For instance, in the 6 GHz band, the FCC limit for low-power indoor (LPI) access – the primary power mode used for Wi-Fi – is 30 dBm (1W)

[5] *Id.*

[6] Public Notice at 1.

EIRP. The FCC relied on this power level to keep most 6 GHz Wi-Fi signals indoors – meaning the RF at this power is too weak to go through walls, further limiting any alleged impact on consumers' health. Based on free space calculation, a continuous 1 W EIRP transmitter would generate ~2 W/m^2 at a distance of just 20 cm. This level is a mere 20 percent of the FCC public exposure limit and is an upper bound. Actual Wi-Fi operation would yield a much lower power density because Wi-Fi transmissions are intermittent. The power density also drops exponentially as the distance from the transmitter increases. This remains true for all Wi-Fi generations, including new generations such as Wi-Fi 6E and Wi-Fi 7, which operate well within the established RF exposure limits.

While the record underpinning the *2019 Order* supported the FCC's current rules,[7] other sources and entities further confirm the lack of evidence supporting the assertion that Wi-Fi and CBRS operating with low power are unsafe. As the United Kingdom (UK) Health Security Agency states, "time-averaged output power of Wi-Fi devices are generally lower than that of mobile phones."[8] A 2022 review of scientific literature describes Wi-Fi devices as low-powered RF transceivers and reports that exposure from typical Wi-Fi equipment is well below the international exposure limits examined.[9] It concludes that human exposure to Wi-Fi RF fields, including in schools, is very low.[10] Another review of the available scientific evidence

[7] *See Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields,* ET Docket No. 03-137, Resolution of Notice of Inquiry, Second Report and Order, Notice of Proposed Rulemaking, and Memorandum Opinion and Order, 34 FCC Rcd. 11687 (2019) (*2019 Order*).

[8] See U.K. Health Security Agency, *Wi-Fi Radio Waves and Health* (updated Feb. 19, 2025), https://www.gov.uk/government/publications/wireless-networks-wi-fi-radio-waves-and-health/wi-fi-radio-waves-and-health.

[9] See Ivica Prlić et al., Wi-Fi Technology and Human Health Impact: A Brief Review of Current Knowledge, 73 Arhiv za Higijenu Rada i Toksikologiju 94, 94–106 (2022), https://doi.org/10.2478/aiht-2022-73-3402 (2022 Review).

[10] *Id*. at 94–106.

concluded that, "[u]nequivocally, the RF exposures from Wi-Fi and wireless networks are far below U.S. and international exposure limits for RF energy."[11]

CBRS likewise supports low-power wireless operations, including indoor networks and outdoor small cells. For example, the FCC limits Category A CBRS devices to a maximum power of 30 dBm (1 W) EIRP per 10 MHz of bandwidth.[12] These relatively low power levels enable CBRS devices to provide localized wireless connectivity while limiting the geographic reach of their transmissions. Moreover, walls and other building materials further attenuate signals from indoor CBRS devices, reducing RF exposure beyond the immediate operating environment. Both Wi-Fi and CBRS operate at relatively low power compared to other operations that have not been found to cause adverse health effects.

B. Wi-Fi and CBRS Do Not Cause Adverse Health Effects

The FCC record on these issues includes no credible evidence that either Wi-Fi or CBRS are unsafe. The United States has maintained that operations at power levels even exponentially higher than Wi-Fi and CBRS are safe. As the Food and Drug Administration's (FDA's) website currently makes clear, "the weight of scientific evidence has not linked cell phone radio frequency radiation with any health problems."[13] The National Cancer Institute similarly has stated that there is "no clearly established dangerous health effects on the human body from radiofrequency radiation."[14] High-power licensed cell phones typically operate at 1640 times the power of Wi-Fi, and 32.8 times the power of CBRS cellular. Another paper notes that "the vast

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[11] Kenneth R. Foster & John E. Moulder, Wi-Fi and Health: Review of Current Status of Research, 105 Health Physics 561, 561–75 (2013).

[12] 47 C.F.R. § 96.41(b).

[13] U.S. Food & Drug Administration, *Cell Phones*, https://www.fda.gov/radiation-emitting-products/home-business-and-entertainment-products/cell-phones (last visited Oct 21, 2026).

[14] National Cancer Institute, *Cell Phones and Cancer Risk*, https://www.cancer.gov/about-cancer/causes-prevention/risk/radiation/cell-phones-fact-sheet#is-the-radiation-from-cell-phones-harmful (last visited Oct. 12, 2026).

majority of the research about potential adverse health effects of the microwave part of the RF spectrum (300 MHz to 300 GHz) has been focused on mobile phone devices, rather than Wi-Fi, since they emit more RF radiation than other common RF communication devices."[15] Given the absence of evidence connecting those high-power levels to harmful health effects, HHS can reliably conclude that there is no connection between Wi-Fi and CBRS and harmful health effects.

Other countries have affirmed Wi-Fi's safety because of its operations at low power levels. For example, the UK Health Security Agency reports that Wi-Fi devices generally transmit at very low power, and, therefore, there is no consistent evidence that exposure to radio signals from Wi-Fi devices adversely affects the health of the general population.[16] Ireland's Environmental Protection Agency states that Wi-Fi and low-powered telecommunication devices use RF to transmit information over short distances, resulting in RF emissions that are well below recommended exposure limits issued by the ICNIRP.[17] It goes on to state that "[t]here is no established scientific evidence that exposure to RF at these low levels adversely affects the health of the general population, including children."[18] The low-power operation of CBRS and Wi-Fi results in low levels of human RF exposure. The available scientific evidence has not established adverse health effects from CBRS and Wi-Fi operations.

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[15] *See 2022 Review,* supra note 8, at 94–106 (discussing Wi-Fi as a lower source of RF exposure than other sources in the environment).

[16] See U.K. Health Security Agency, *Wi-Fi Radio Waves and Health* (updated Feb. 19, 2025), https://www.gov.uk/government/publications/wireless-networks-wi-fi-radio-waves-and-health/wi-fi-radio-waves-and-health (sections titled "Wi-Fi and health" and "Radio waves and Wi-Fi").

[17] Environmental Protection Agency (Ireland), *Wi-Fi, Smart Meters & Your Health,* https://www.epa.ie/environment-and-you/radiation/emf/emf-and-your-health/wifi-and-your-health/ (last visited Sept. 29, 2026) (stating that Wi-Fi RF exposure is well below recommended limits and that no established health effects are associated with such exposure).

[18] *Id.*

III. Wi-Fi and CBRS Provide Enormous Benefits to Americans

The safety of Wi-Fi and CBRS is important given these offerings' vitality to our nation's success. From students accessing coursework to a parent working from home, and from patients connecting to telehealth appointments to families streaming their favorite shows, Wi-Fi has become an essential part of everyday life. As more devices come online and more activities move into connected environments, reliable Wi-Fi is an essential resource rather than a luxury. CBRS has also become vital to many American industries and manufacturing. It supports private networks, expanded broadband access, logistics, government and defense applications, and campus connectivity for hospitals, universities, airports, and other large facilities.[19] These deployments are only a small portion of the ways that CBRS supports enterprise innovation, strengthens logistics and operations for critical missions, and expands broadband access in areas where traditional options can be challenging.[20]

A. Wi-Fi and CBRS Power America's Connectivity

Approximately 90% of mobile data traffic is delivered via Wi-Fi.[21] Wi-Fi connects the devices Americans rely on every day, from smartphones and laptops to smart TVs, security systems and appliances. As the number of connected devices used by the average household is expected to nearly double, with 44 connected devices per average household in 2030, compared with approximately 25 today, robust Wi-Fi and next-gen fiber networks will be essential to

[19] See NCTA—The Internet & Television Association, *CBRS: Powering America's Wireless Future* (Feb. 19, 2025), https://www.ncta.com/news/cbrs-powering-americas-wireless-future.

[20] *Id.*

[21] *See* NCTA—The Internet & Television Association, *Industry Stats: Wi-Fi Powers America's Connectivity* (Feb. 17, 2026), https://www.ncta.com/news/industry-stats-wi-fi-powers-americas-connectivity (NCTA Wi-Fi Stats).

power the always-connected home.[22] Wi-Fi supports work, education, streaming, video calls, telehealth, and smart-home devices among many other activities.

Meanwhile, CBRS powers 5G manufacturing and provides vital connectivity for many other industries in the United States. CBRS applications include automated logistics management, computer vision, and mobile robotics.[23] CBRS delivers measurable results in communities and facilities across the country, and real-world deployments demonstrate the versatility and impact of America's Innovation Band. For instance, a rural broadband provider is using CBRS to deliver fixed wireless service across a wide rural area where traditional wired builds are costly and slow to deploy.[24] At Miami International Airport, CBRS supports a private wireless network that enhances real-time coordination of baggage systems, ground operations, and logistics, providing secure and reliable connectivity across the airport campus.[25] For the U.S. Marine Corps, CBRS enables a private wireless network that improves warehouse and supply chain operations at its logistics facility in Georgia, while operating alongside other protected defense users.[26] The CBRS framework has expanded unencumbered access to the band to roughly 240 million Americans.[27]

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[22] See NCTA Wi-Fi Stats, supra note 20 (projecting 44 connected devices per average household in 2030, compared with approximately 25 today).

[23] See Analysys Mason Report, supra note 3.

[24] See NCTA—The Internet & Television Association, *CBRS at Work: Connecting Rural North Carolina* (Oct. 3, 2025), https://www.ncta.com/news/cbrs-at-work-connecting-rural-north-carolina.

[25] See NCTA—The Internet & Television Association, *CBRS at Work: Miami International Airport* (Apr. 9, 2025), https://www.ncta.com/news/cbrs-at-work-miami-international-airport.

[26] See NCTA—The Internet & Television Association, CBRS at Work: Revolutionizing Military Logistics (Feb. 12, 2025), https://www.ncta.com/news/cbrs-at-work-revolutionizing-military-logistics.

[27] See NCTA—The Internet & Television Association, Industry Stats: CBRS by the Numbers (May 29, 2024), https://www.ncta.com/news/industry-stats-cbrs-by-the-numbers.

B. CBRS and Wi-Fi Produce Meaningful Economic Benefits

Across the country, businesses, schools, healthcare providers, manufacturers, farms, retailers, sports and recreation venues, and local governments depend on CBRS and Wi-Fi connectivity to operate efficiently and serve their communities. The economic impact is substantial. Wi-Fi technologies created 7.1 million U.S. jobs in 2023.[28] That number is projected to grow to 13.6 million jobs by 2027 and nearly 21 million jobs by 2032.[29] A Telecom Advisory Services study estimated that the annual economic value of Wi-Fi to the American economy will rapidly grow to $2.4 trillion in 2027,[30] a 33 percent increase over its 2024 value of $1.6 trillion. These figures reflect Wi-Fi's dominant role as a platform for innovation and productivity. Wireless connectivity enables businesses to adopt new technologies, improve operations, serve customers more effectively, and compete in an increasingly digital economy.

CBRS provides substantial economic benefits by expanding access to valuable mid-band spectrum, lowering barriers to entry, and enabling innovative wireless services. CBRS's spectrum-sharing framework allows businesses, wireless providers, and other entities to deploy networks without the significant costs associated with acquiring exclusive-use spectrum licenses, fostering competition, investment, and innovation.[31] CBRS also supports American

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[28] See Raul Katz & Fernando Callorda, Telecom Advisory Servs., *How the Success of Wi-Fi Drives U.S. Job Creation* 4, 8–12 (Apr. 2025), https://wififorward.org/wp-content/uploads/2025/04/Wi-Fi-and-employment_3.25.25-v259.pdf (Wi-Fi Jobs Report); *see also* NCTA – The Internet & Television Ass'n, *New Study Shows Wi-Fi's Growing Role in U.S. Job Creation* (Apr. 2025), https://www.ncta.com/news/new-study-shows-wi-fis-growing-role-in-us-job-creation.

[29] See Wi-Fi Jobs Report, at 4, 8–12.

[30] See Raul Katz et al., Telecom Advisory Servs., *Assessing the Economic Value of Wi-Fi in the United States* 7–8 & tbl. C (Sept. 2024), https://wififorward.org/wp-content/uploads/2024/09/Assessing-the-Economic-Value-of-Wi-Fi.pdf (Economic Value Report) (projecting $2.424 trillion in annual value for 2027, compared with $1.602 trillion in 2024).

[31] See NCTA—The Internet & Television Association, *New Study Shows Shared Spectrum Benefits Government, Taxpayers, and Businesses* (Sept. 28, 2023), https://www.ncta.com/news/new-study-shows-shared-spectrum-benefits-government-taxpayers-and-business.

manufacturing by enabling private wireless networks that improve productivity, increase operational efficiency, and facilitate advanced technologies such as automation, robotics, and real-time analytics. A March 2026 Analysys Mason study estimates that approximately 75 percent of private 5G networks in the United States rely on CBRS and found that one automotive manufacturer reduced unplanned downtime by 30 percent after deploying a CBRS private 5G network.[32] Beyond manufacturing, CBRS supports fixed wireless broadband, enterprise connectivity, and other innovative applications, helping providers extend connectivity and develop cost-effective solutions tailored to consumer and business needs.[33]

IV. Conclusion

As the FCC has found, the existing RF exposure limits fully protect American consumers from harmful health effects. Because those limits are set to cover high-power, exclusively licensed cellular networks, it clearly follows that the services operating at fractions of those power levels – particularly Wi-Fi and CBRS – do not pose any risk to consumers or public health. To the contrary, because of the flexible, low-power ecosystem the FCC's unlicensed and CBRS rules have created, Wi-Fi and CBRS networks generate a multitude of benefits for American consumers and are major drivers of the US economy, boosting nearly every industry.

[32] *See* Analysys Mason Report at 3.

[33] *See* OnGo Alliance, CBRS Momentum (Oct. 2024), https://ongoalliance.org/wp-content/uploads/2024/10/OnGo-eBook-20241021.pdf.

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