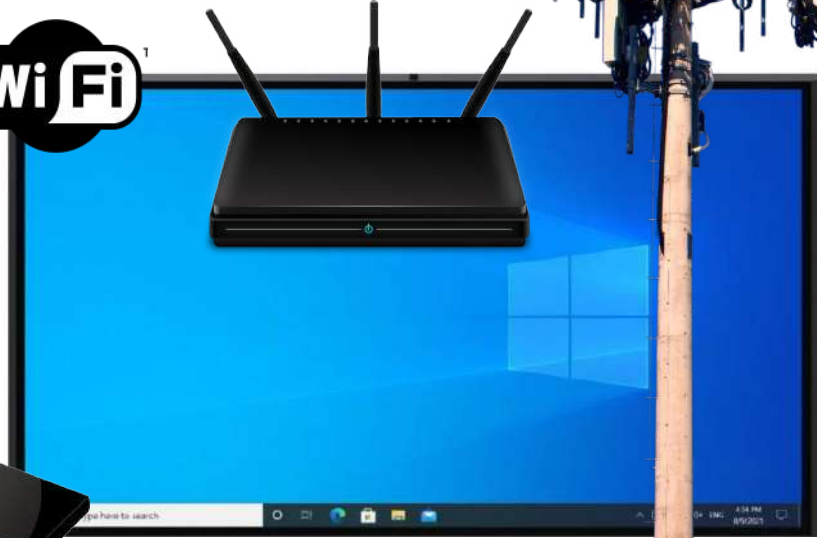


U.S. Federal Regulation of Wireless Radiation, A Case Study in Regulatory Gaps

Theodora Scarato
Environmental Health Trust

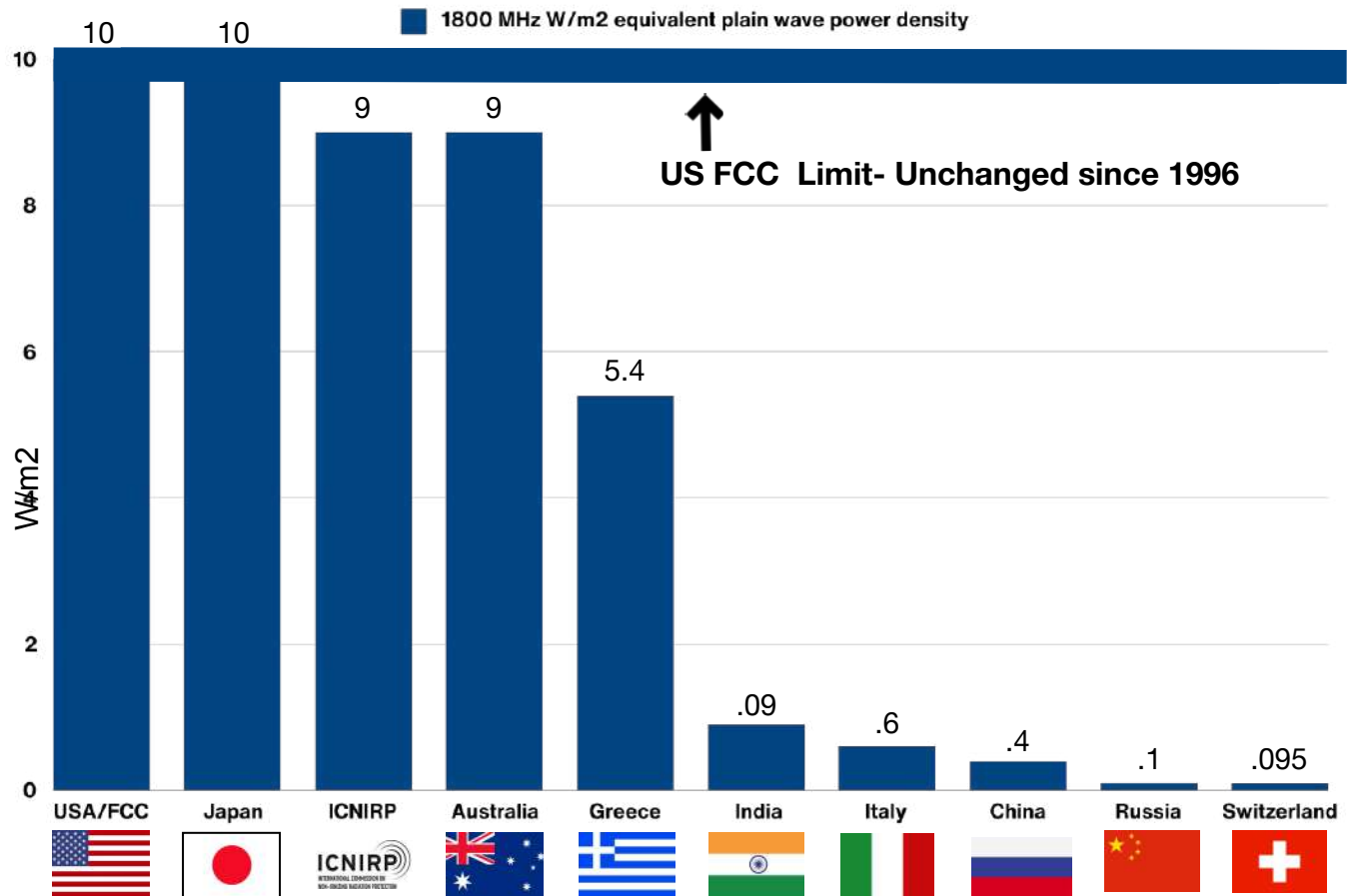


Our Wireless World



Country Comparison: RF Limits (Home and School)

1800 MHz W/m^2 equivalent plane wave density



Recent Changes to RF Limits



Italy (2024): Legislative Decree raised limit from 6 V/meter to 15 V/meter



Belgium (2022): Increases in all three regions, Flanders, Brussels and Wallonia (Brussels from 6V/M, to 9.1 V/M inside and 14.57 outside)



Poland (2020): Stringent to ICNIRP



Lithuania (2020): Stringent to ICNIRP



India (2012) to 1/10th of ICNIRP and premarket local SAR from ICNIRP (2.0 W/kg) to FCC (1.6/Wkg)



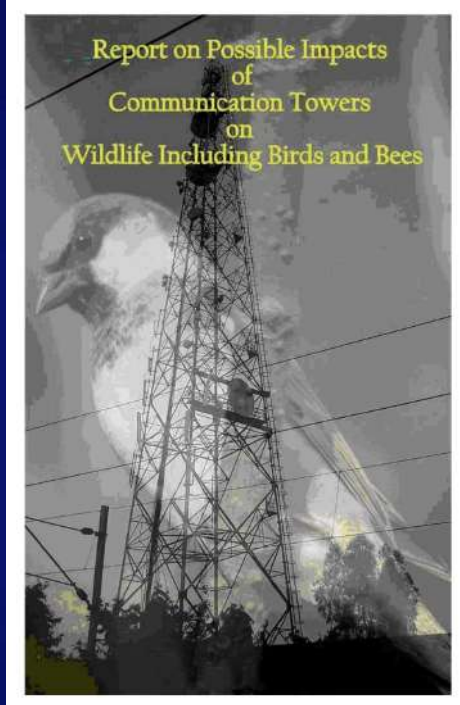
India: RF limits to 1/10 of ICNIRP

2012: Ministry of Environment and Forests reviewed the research on wildlife and concluded that while there were significant research gaps, the “vast majority of published literature indicate deleterious effects of EMFs in various species.”

Several recommendations

- Stringent RF limits
- EMFs be “recognised as a pollutant”
- Regular auditing of EMF levels near schools, hospitals, and ecologically sensitive areas.
- Removal of wireless in wildlife conservation areas
- More protections for flora and fauna in urban areas .

Sivani, S, and D. Sudarsanam. (2012): "Impacts of radio-frequency electromagnetic field (RF-EMF) from cell phone towers and wireless devices on biosystem and ecosystem-a review." *Biology and Medicine* 4, no. 4 202-216.



January 2024

India: Environment Ministry issues strict cell tower guidelines to protect tigers.

- Bans installation in core critical tiger habitat.
- No new towers within one km of existing towers “to avoid overlapping radiation”
- Recommended:
 - a. GIS mapping and public disclosure of base station locations/frequencies
 - b. monitoring the impact on wildlife, particularly birds and bees.





FCCs Refuses to Update 1996 RF Limits

Post WWII through 1970s and 1980s- active research by U.S. agencies

1995: EPA tasked to develop RF limits for short term heating effects as well as modulation **but then defunded**

1996: Telecom Act passed, FCC adopted RF limits and legal action filed by numerous groups.

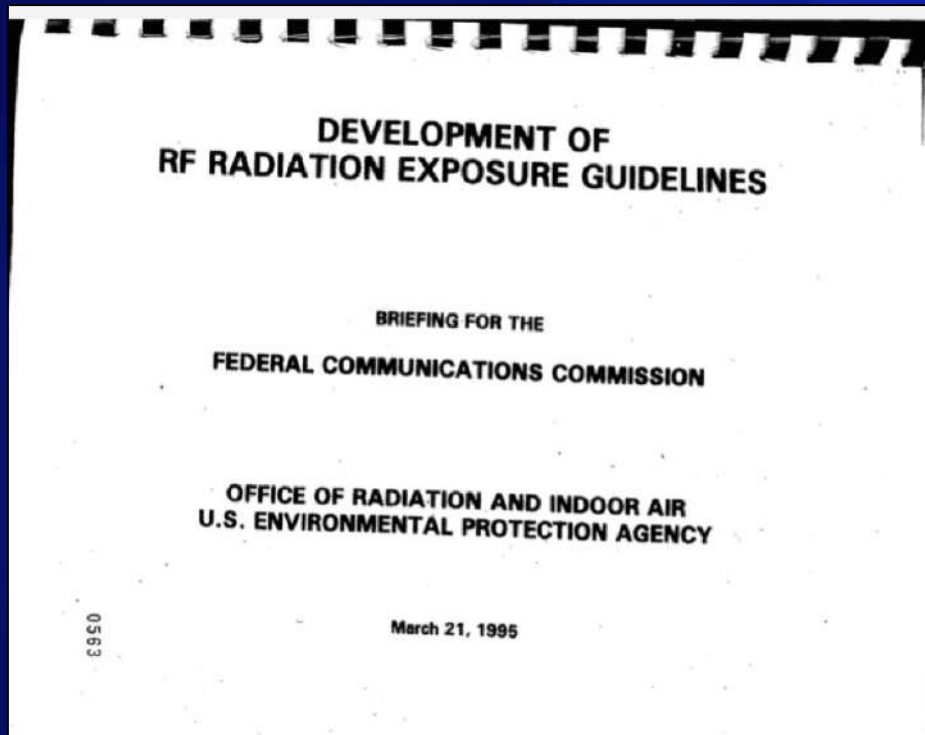
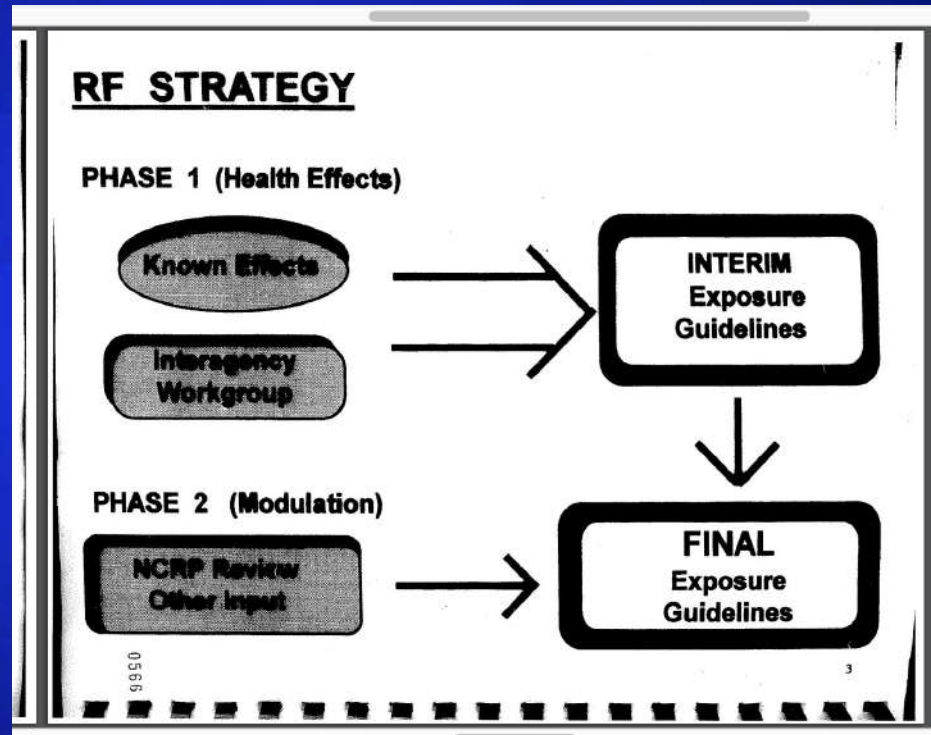
2000: Cellular Phone Task Force et al., v. the FCC

The Court decision stated the FCC “**could reasonably expect**” agencies such as the EPA “**to keep abreast of scientific developments**” as the EPA “had been on the verge of releasing its own draft guidelines pertaining to the health effects of RF radiation in 1996.”

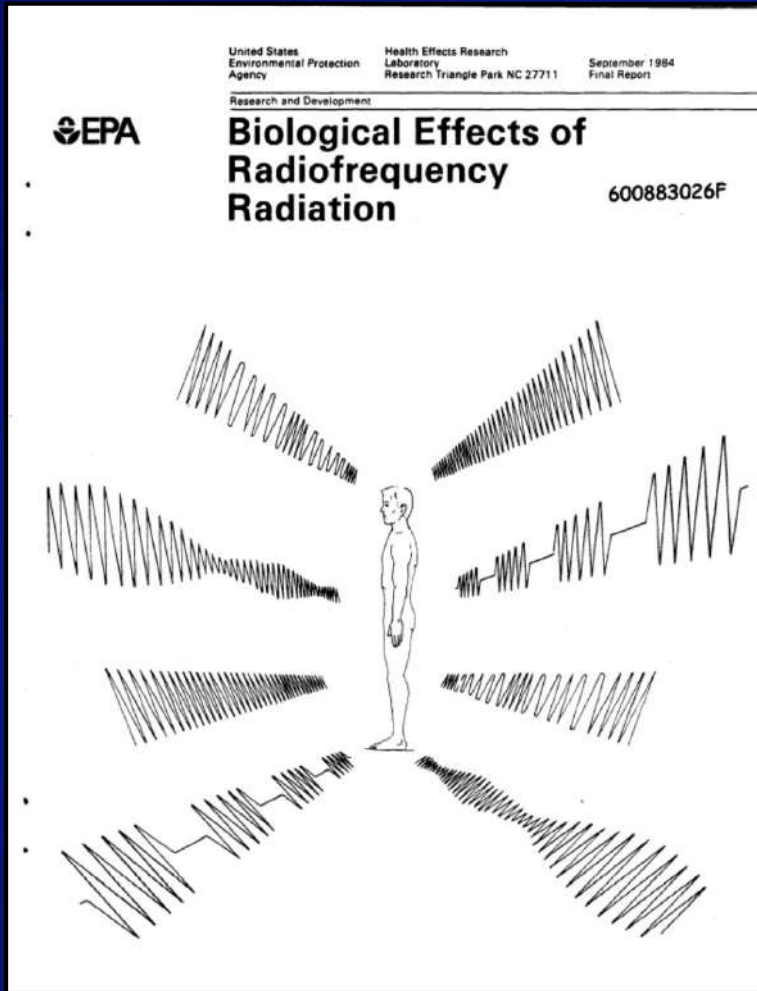


1995 EPA Briefing to the FCC and NTIA

The EPA Was Developing RF Limits



Images From EPA Briefing to the FCC (1995)
"Development of RF Radiation Exposure Guidelines"



“EPA’s **last review was in the 1984** document Biological Effects of Radiofrequency Radiation. The EPA **does not currently have a funded mandate** for radiofrequency matters.”

Regarding birds, bees and trees “we are **not aware of any EPA reviews** that have been conducted ...”

-Lee Ann B. Veal
Director, Radiation Protection Division
Office of Radiation and Indoor Air
Email to Scarato July 8, 2020 and 2023



2012: GAO Report that **FCC's human exposure limits** “may not reflect current science” and “should be reassessed.”

2013: FCC opened Notice of Inquiry (NOI) on RF-EMF Limits

2019: FCC terminated NOI (03-137 and 13-84) **affirming its 1996 RF exposure limits and proposing new limits**

- *3 KHz to 300 KHz*
- *100 GHz up to 3 THz*

based on FCC's just issued determination that FCC's 1996 RF limits were adequate (ET Docket No. 19-226)

2020: EHT filed a challenge to the FCC's termination on the NOI.

2021: U.S. Court of Appeals issued a favorable decision in EHT et al v. the FCC

United States Court of Appeals
FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued January 25, 2021

Decided August 13, 2021

No. 20-1025

ENVIRONMENTAL HEALTH TRUST, ET AL.,
PETITIONERS

v.

FEDERAL COMMUNICATIONS COMMISSION AND UNITED
STATES OF AMERICA,
RESPONDENTS

Environmental Health Trust et al. v. the FCC

August 13, 2021: United States Court of Appeals, D.C. Circuit ruled that the FCC's 2019 decision not to update 1996 wireless radiation limits was "arbitrary and capricious."

Court remanded the case to the FCC ordering the agency to "provide a reasoned explanation for its determination that its guidelines adequately protect against harmful effects of exposure to RF unrelated to cancer."

The FCC must specifically address:

- Impacts to children
- Effects of long-term exposure
- The ubiquity of wireless devices and technological developments since 1996.
- Premarket SAR compliance test procedures for phones and devices
- Impacts on the environment

2024: The FCC has not responded to the Court

National Law Review, "[Telecom Alert: DC Circuit Remands RF Rules](#)" August 23, 2021



National Toxicology Program
U.S. Department of Health and Human Services



The FCC has no agencies to defer to for RF safety evaluation.

Federal Communications Commission (FCC)

“Since the Commission is **not a health and safety agency**, we defer to other organizations and agencies with respect to interpreting the biological research necessary **to determine what levels are safe.**”

National Cancer Institute (NCI), Department of Labor (DOL), Department of Labor, National Institute for Occupational Safety and Health (NIOSH), the Centers for Disease Control and Prevention (CDC) and Environmental Protection Agency (EPA)

- **No scientific evaluations** of adequacy of FCC limits or risk/hazard of FCC.

National Toxicology Program (NTP)

- \$30M cell phone radiation animal study **found “clear evidence”** of an association with cancer and DNA damage. Follow up **research now halted.**

Food and Drug Administration (FDA)

- FDA only released **a limited literature review** (rejecting the NTP study the FDA had requested) focused **only on cell phones** (not frequencies above 6 GHz, not ambient RF of cell towers Wi-Fi, Bluetooth) and **only on cancer**, not impacts to the nervous, reproductive or endocrine system.

U.S. Government Accountability 2020 Report (GAO-21-26SP, 2020)

- The **FDA and other organizations “only reviewed a subset of the relevant research”** and stated in regards to the FDA’s 2018 Literature Review “The assessment focused on cancer-related animal and human studies of frequencies **below 6 GHz.**”

A REGULATORY VACUUM

No scientific reports by any U.S. federal agency in the FCC 6 year Inquiry.

“The **silence of other expert agencies**, however, **does not constitute a reasoned explanation** for the Commission’s decision to terminate its notice of inquiry for the same reason that the **FDA’s conclusory statements do not constitute a reasoned explanation...**”

-U.S. Court of Appeals, DC Circuit
EHT et al., v. the FCC

2021

Regulatory Gap: No Federal Agency is Addressing the Safety of Ambient Environment Exposure



“The FDA does not regulate cell towers or cell tower radiation. Therefore, the FDA has no studies or information on cell towers to provide in response to your questions.”

-Ellen Flannery, Director of the FDA Office of Policy Center for Devices and Radiological Health
January 11, 2022

“We don’t have jurisdiction over cellphone towers since those are environmental emitters.”

-Daniel Kassiday
Radiation Safety Engineer at U.S. Food and Drug Administration
June 20, 2016

“Small Cell” in front of New York apartment.



April 2024
New York City Department of Health

“The FCC has concluded the weight of scientific evidence has not linked 5G to health problems”

From: Kenneth E. Johnson III <kjohnson9@health.nyc.gov>

Sent: Tuesday, April 30, 2024 9:23 AM

To:XXXXX

Subject: RE: [EXTERNAL] DOH data on 5G towers?

Good morning Carla,

Hope you're doing well! This question comes up from time to time.

Please see below response from our Environmental Health unit:

Thank you for your email regarding potential adverse health impacts of 5G Cell Towers, which use radio frequency (RF) technology. The Federal Communications Commission, which has statutory authority to regulate RF transmission, concluded that the weight of scientific evidence has not linked 5G Cell Towers with health problems. The NYC Health Department continues to monitor the science.

Thank you,
Kenneth

Kenneth Johnson [[he/him/his](#)]

Community Liaison – The Bronx

Office of External Affairs

NYC Department of Health and Mental Hygiene — City of New York

42-09 28th St., Long Island City, NY 11101

Telephone: 347-396-7612

Email: kjohnson9@health.nyc.gov | nyc.gov/health



New York 5G Tower

New York City: Link NYC Myth V. Fact Factsheets



Fiction

5G is a new technology that hasn't been researched and is harmful to our health and the environment.



Source: Website of CTIA Wireless Industry



Is 5G safe?

Decades of research by the international scientific community shows radio frequency energy from wireless devices and networks, including 5G, has no negative effects on our health. The evidence includes thousands of peer-reviewed studies conducted by the [FDA](#), the [World Health Organization](#), and the [FCC](#).

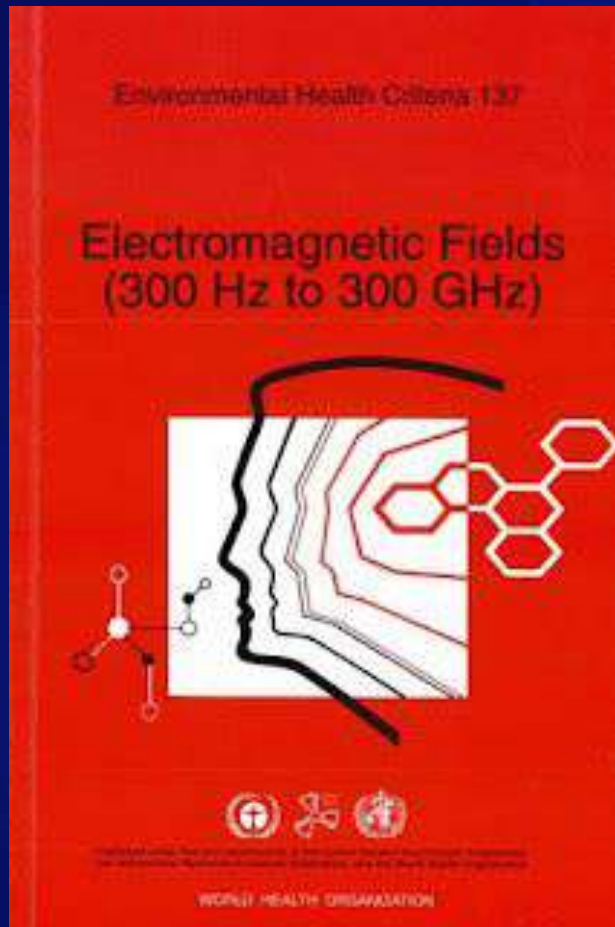
^{*}Source: [Wireless Health Facts](#)

Fact

5G is safe.

Thousands of peer-reviewed studies supported by organizations like the U.S. Food and Drug Administration and the World Health Organization have found no negative impact on our health or the environment from wireless devices and cellular networks — like 5G — that utilize radio frequencies.





WHO 1993 Environmental Health Criteria

Despite the **WHO EMF Project webpages** proclaiming “no adverse health effects”

The last WHO risk assessment criteria document is from 1993.

Transparency Issues

Unanswered letters sent by scientists to WHO EMF Project Dr. Deventer in 2019 and 2020

- Who is selecting the research teams for the reviews?
- Will industry funding for university research be stated on COI forms?
- Which scientists wrote the WHO factsheets online?

Henry Lai, PhD, Professor Emeritus, University of Washington, Seattle, WA

Devra Davis PhD, MPH, Environmental Health Trust

Simona Carrubba, PhD, Mercyhurst University, Erie, PA

Kjell Hansson Mild, Department of Radiation Sciences Umeå University SE-901 87 Umeå, Sweden

Semra Tepe Çam, Assoc.Prof., Turkish Atomic Energy Authority Ankara Turkey

Alvaro Augusto de Salles, Ph.D., Professor, Federal University of Rio Grande do Sul- UFRGS, Porto Alegre, Brazil

Alfonso Balmore, BSc., Biologist, Spain

Samuel Milham MD, MPH., Retired Washington State Health Department

Kavindra Kesari, Ph.D., Senior Scientist, Department of Applied Physics, Aalto University, Espoo, Finland

Livio Giuliani, , “dirigente di ricerca” of Italian National Health Service, ICEMS Spokesman

Jerry L. Phillips, Ph.D., Executive Director, Excel Centers, Professor Attendant, Department of Chemistry & Biochemistry

David O. Carpenter, M.D., Director, Institute for Health and the Environment, University at Albany

Wenjun Sun, PhD, Professor, Zhejiang University School of Medicine, Hangzhou, China

Lukas H. Margaritis, Professor Emeritus of Cell Biology and Radiobiology, Dept of Cell Biology and Biophysics Faculty of Biology, University of Athens

Carl F. Blackman, U.S. Environmental Protection Agency (1970-2014), Retired

Dr. Besarion Partsvania, Georgian Technical University

Hidetake Miyata, PhD., Associate Professor, Department of Physics, Tohoku University, Japan

Marie-Claire Cammaerts., University of Brussels, Belgium, Retired

Martin L. Pall PHD, Professor Emeritus of Biochemistry and Basic Medical Sciences, Washington State University

Paul Héroux, PhD, Professor of Toxicology and Health Effects of Electromagnetism, McGill University Medicine, Department of Surgery, McGill University Health Center

Theodora Scarato MSW, Environmental Health Trust

(The EMF Project is a separate entity from the WHO International Agency for Research on Cancer (IARC) that issued a 2011 determination that RF is a Class 2B “possible” carcinogen.)

FDA Cannot Offer Safety Determinations for Wildlife



“protecting non-human biological systems from electronic product radiation are not within the scope of FDA’s authorities.”

-Ellen Flannery, Director of the
FDA Office of Policy Center for
Devices and Radiological Health
[FDA to Soft Lights rejecting
petition](#)

May 24, 2024





1996 Telecom Act

No state or local governments may regulate wireless facilities “on the basis of the environmental effects” so long as the facilities comply with the FCC regulations.

47 U.S.C. § 332(c)(7)(B)(iv)

U.S. Oversight, Compliance and Enforcement Program for EMF?

- No registry of all wireless sites (small cell, 4G, 5G)
- No nationwide monitoring or mapping
- No auditing or oversight for industry RF compliance reports for cell towers and wireless facilities



Governments That Have RF Compliance Program and/or Measure Environmental Cell Tower Radiation



France, Greece, Turkey, Switzerland, India,
Israel, United Kingdom, Australia, French
Polynesia, Senegal, Guinea, Monaco,
Bhutan, Austria, Gibraltar, Brussels
Belgium, Bulgaria, Tunisia, Bahrain,
Norway, Brazil, Malta, Thailand, Croatia,
Lithuania, Serbia, Spain



Switzerland

► Share

► Print

► Draw & Measure on map

► Advanced tools

▼ Radio transmitter

Change topic

Antenna positions

☒ 5G antenna locations (NF)



☒ 4G antenna locations (LTE)



☒ 3G antenna locations (UMTS)



☒ 2G (GSM) antenna locations



☒ Radio and TV broadcasters



☐ Microwave links



Coverage areas

☐ Radio coverage areas



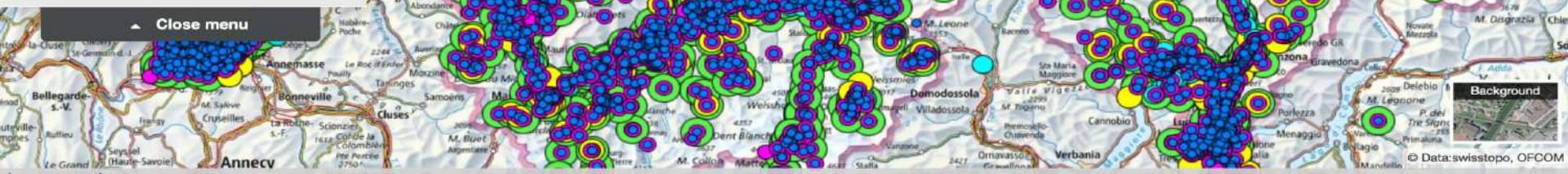
☐ TV coverage areas



► Background data

► Maps displayed

Close menu





UNDERSTANDING CARTORADIO

GLOSSARY

F.A.Q

Cartoradio

The map of radio sites and wave measurements

Find the location of radio antennas.

Consult the measurements of exposure to the waves on all the French territory.

Register your own maps with the My Cartoradio account.



CARTORADIO, COMMENT ÇA MARCHE ? LE TUTORIEL VIDÉO



Enter an address, a zip code or a city name



Radio sites

Find radio antennas location and the



Measures

View the results of field wave exposure



My Cartoradio



NATIONAL OBSERVATORY
OF ELECTROMAGNETIC FIELDS

500 Fixed
STATIONS

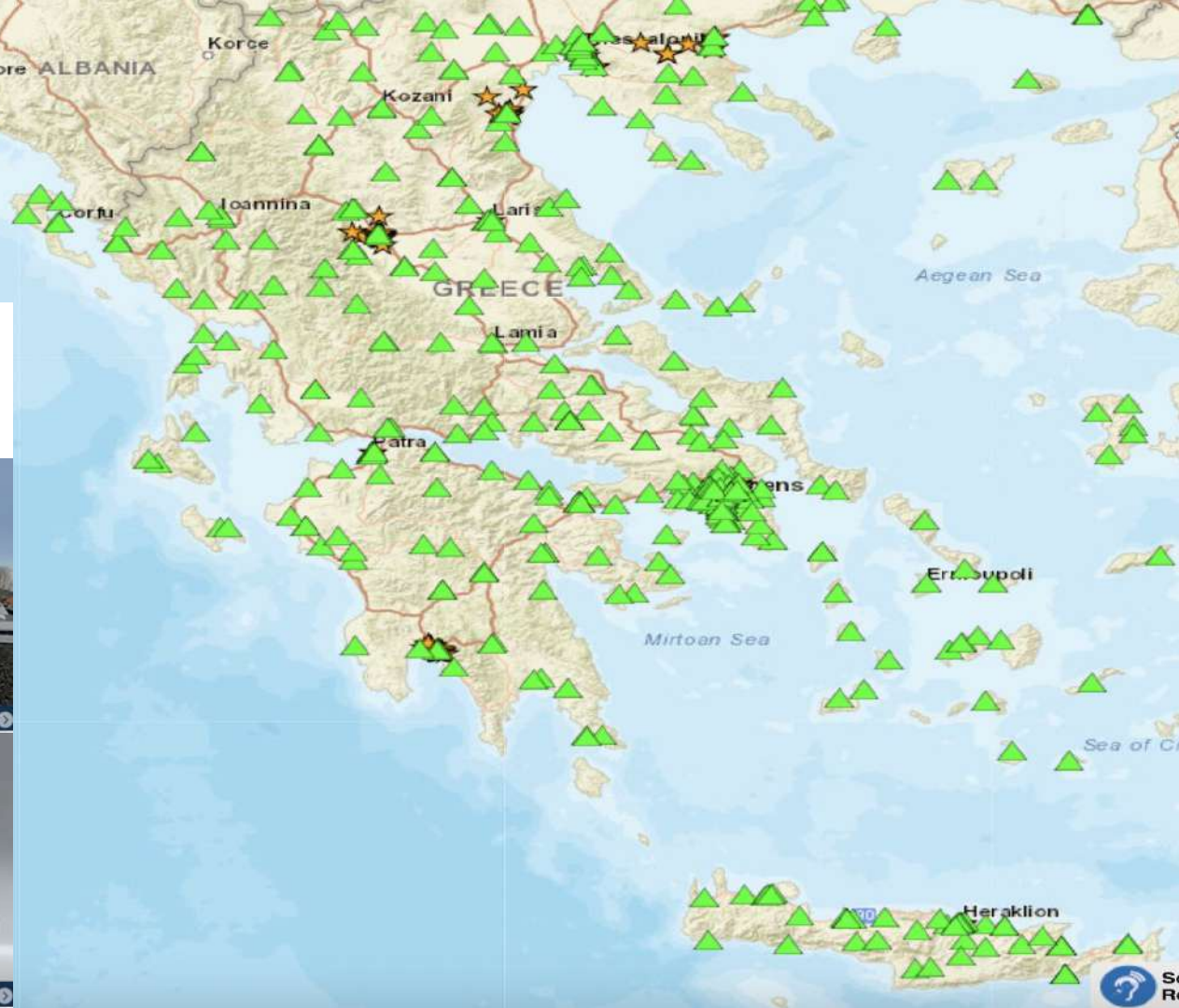


Electromagnetic field monitoring data - always **AVAILABLE** to the public

13 Mobile
STATIONS



Electromagnetic field monitoring data - always **AVAILABLE** to the public

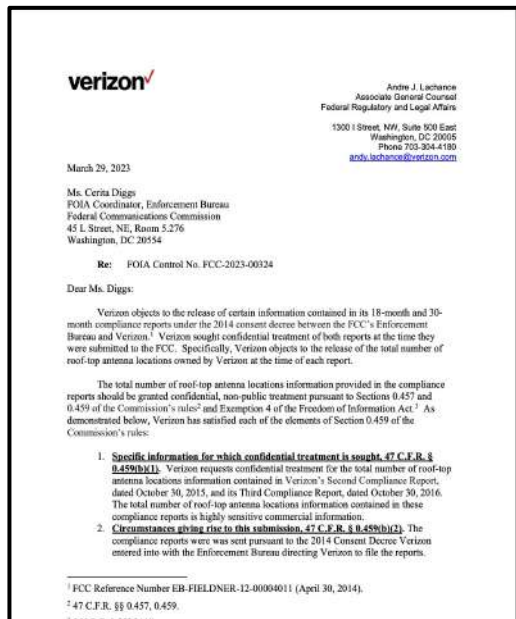




Over **100 Congressional complaints** by EMR Policy Institute on **rooftop RF exceedances** *ignored by the FCC.*

No transparency even with Freedom of Information Requests.

- New York City: RF compliance reports on the 5G Towers, 2023
- FCC: RF Reports on rooftop antennas, 2023



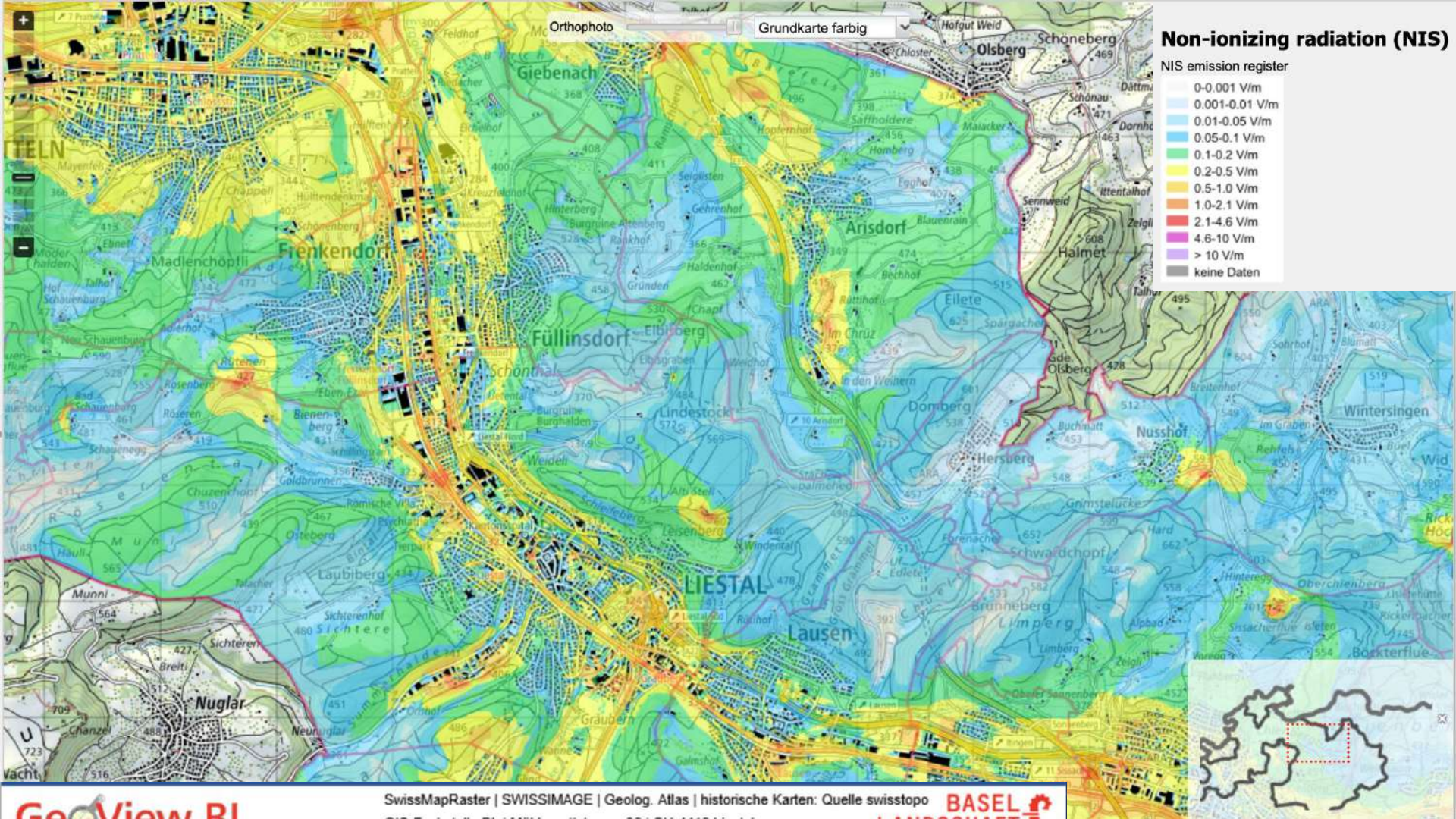
“Specifically, Verizon **objects to the release** of the total number of roof-top antenna locations owned by Verizon...”

“The **total number of roof-top antenna locations** information provided in the compliance reports **should be granted confidential, non-public treatment...**”

-Verizon letter to FCC FOIA Coordinator regarding EHT FCC FOIA -2023-00324

¹ FCC Reference Number EB-FIELDNER-12-00004011 (April 30, 2014).

² 47 C.F.R. §§ 0.457, 0.459.





United States
Environmental Protection
Agency

Office of Radiation Programs
Office of Air and Radiation
Washington, D.C. 20460

EPA 620/1-85-014
July 1989

Radiation

The Radiofrequency Radiation Environment: Environmental Exposure Levels and RF Radiation Emitting Sources

1986: EPA's Last Measurement Report on EMF Levels in USA

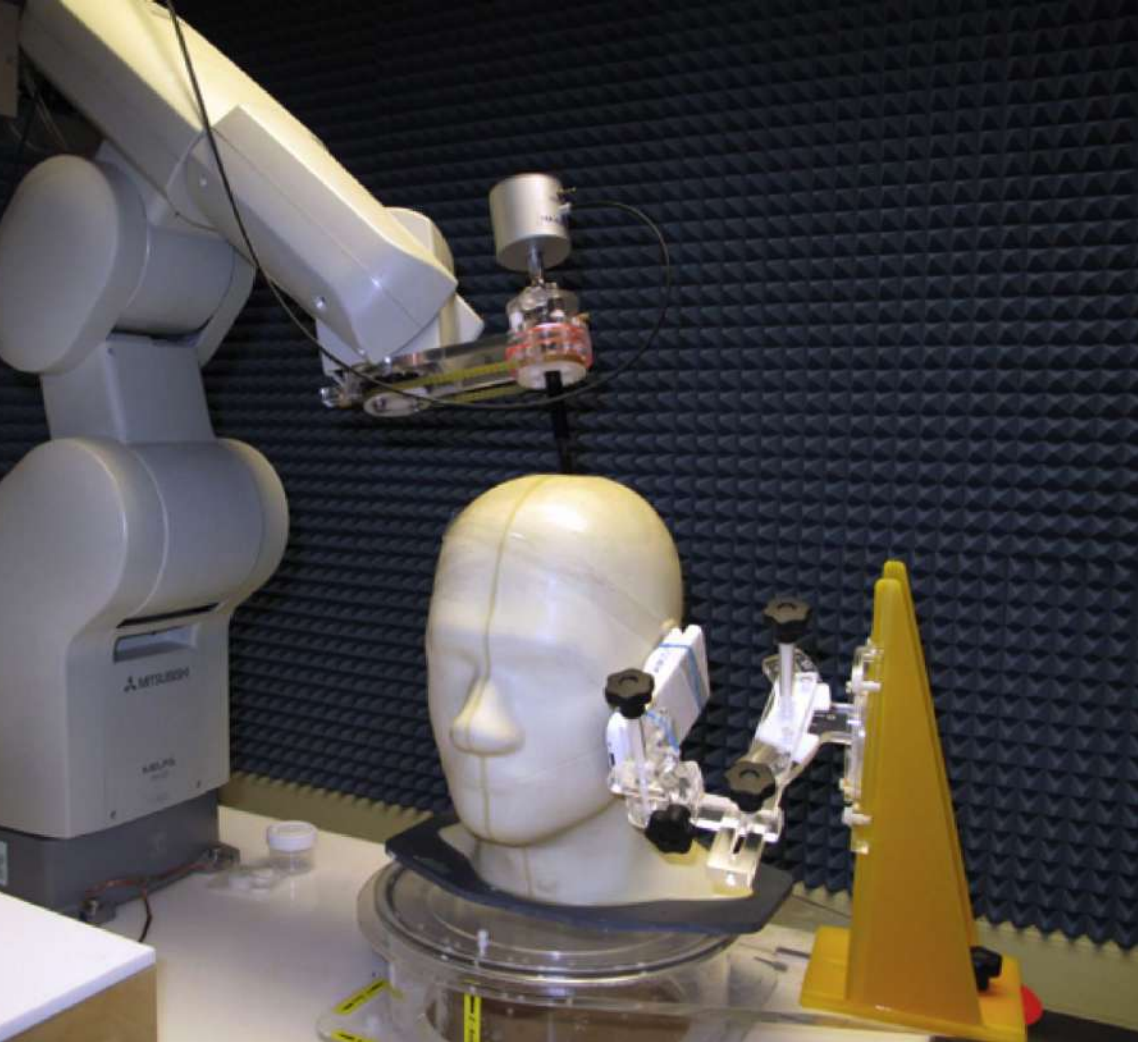


Transparent Oversight and Enforcement is Essential

- Auditing
- Scheduled post deployment compliance reporting.

Wildlife and the natural environment must be considered, especially in the era of 5G where exclusion zones are widening (Virto et al., 2024).





Photos From Pixel 4 Test Submitted to FCC

Body SAR is measured with a 10 mm distance



FCC SAR TEST REPORT

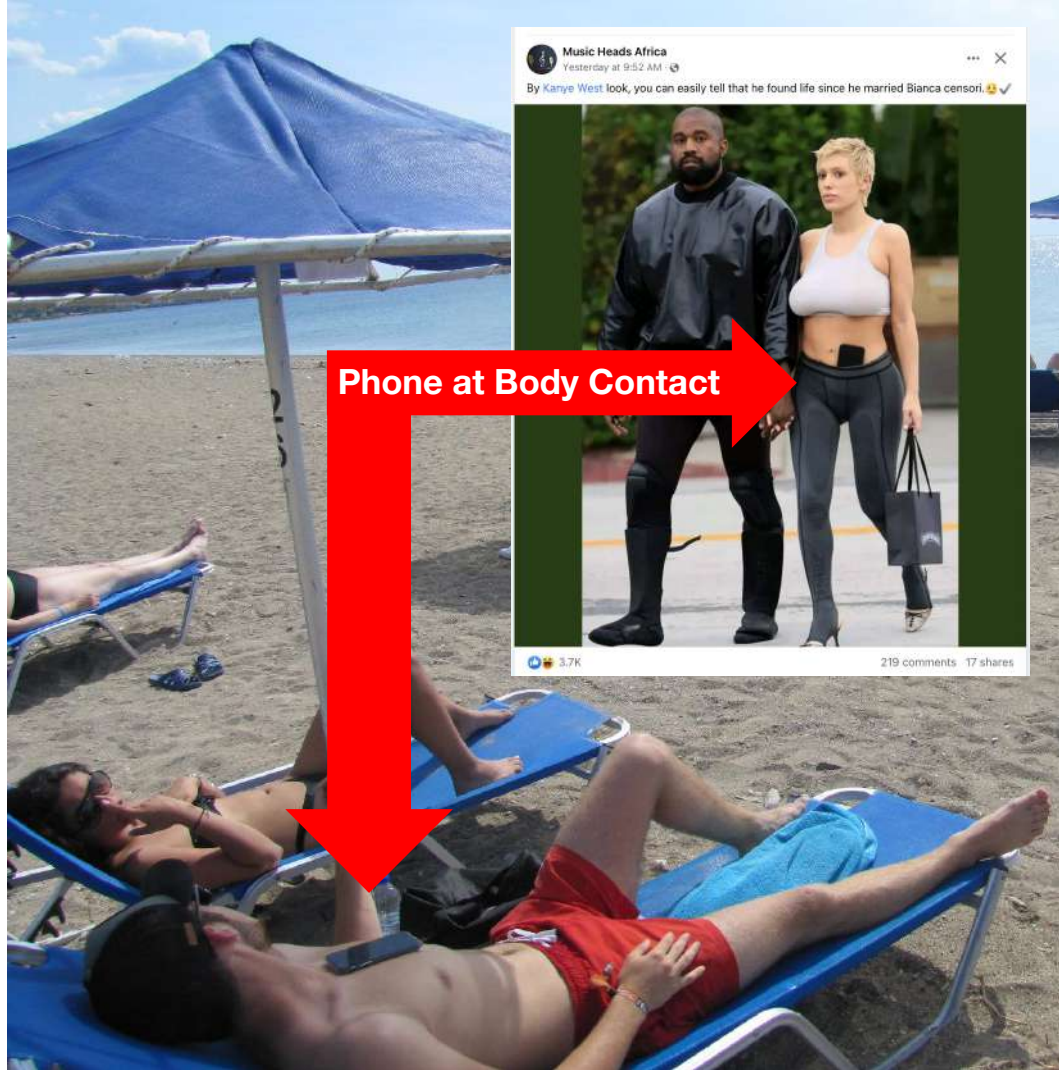


Left Side, Test Separation 10 mm

“The highest SAR values for the Pixel 4 are 1.20 W/kg when used near your ear or 1.34 W/kg **at a distance of 1.0 cm (0.4 in) from your body.**”

-Pixel 4 Safety & regulatory manual

<https://fccid.io/A4RG025J/Test-Setup-Photos/Test-Setup-SAR-4675321>





Accountability and enforcement for cell phones

French Agency ANFR post market surveillance program: SAR tests for hundreds of phones

- 2016: **89% phones tested at 0 mm exceeded EU limit** (2W/kg)
- Gandhi (2019) analyzed ANFR data and concluded exceedances would be 3 to 11 times FCC limit.
- **EU changed test distance** from 25 mm to 5mm (RED Directive)
- PhoneGate Association lists over **48 phones software updated or pulled from the market due to excessive SAR levels measured by ANFR.**
- 2019: French Ministers called for 0 mm phone testing, France filed to EU (2020,2023)
- **European Committee for Electrotechnical Standardization** proposal to perform SAR at 0 mm distance to the body for body-worn test conditions (Douglas et al, 2023).

Chicago Tribune

“We tested popular cell phones for radiofrequency radiation. Now the FCC is investigating.” August 21, 2019

- Tribune tested several phone models for body SAR
 - 2 mm distance
 - manufacturers distance (5,10,15 mm)
- Several models exceeded FCC limits at 2 mm *and at* 5,10 or 15 mm.

December 10, 2019 FCC Report released FCC lab tests of phones with separation distances of 5 to 15 mm.

“All sample cell phones tested by
the FCC laboratory...produced
maximum 1-g average SAR values
less than the 1.6 W/kg limit
specified in the FCC rules.”



FEDERAL COMMUNICATIONS COMMISSION
7435 Oakland Mills Road
Columbia, MD 21046
Telephone: 301-362-3000
Facsimile: 301-362-3290

December 10, 2019

Results of Tests on Cell Phone RF Exposure Compliance

Grantees: a) Apple Inc.
b) BLU Products, Inc.
c) Motorola Mobility LLC
d) Samsung Electronics Co Ltd

Model Numbers: 1) iPhone 7
2) iPhone X
3) iPhone XS
4) Vivo 5 Mini
5) Moto g5 Play
6) Moto g6 Play
7) Galaxy S9
8) Galaxy J3

Table 2: SAR Test Results

FCC ID	Manufacturer	Description	Wireless Tech Tested	Test Distance (mm)	Original SAR Report Measured SAR Value (W/kg)	Chicago Tribune Measured SAR Value (W/kg)	FCC Lab Maximum Measured SAR Value (W/kg)
BCG-E3091A	Apple	iPhone 7 Portable Handset	WCDMA	5	1.140	3.560	0.946
BCG-E3161A	Apple	iPhone X Portable Handset	WCDMA	5	1.090	2.19 ¹	0.799
BCG-E3218A	Apple	iPhone XS Portable Handset	GPRS	5	0.047	N/A ²	1.350
A3LSMG960U	Samsung	Galaxy S9 Portable Handset	CDMA	15	0.795	0.625	0.538
A3LSMJ337A	Samsung	Galaxy J3 Portable Handset	WCDMA	10	1.040	1.380	1.230
IHDT56XC4	Motorola	Moto c5 Play Portable Handset	WCDMA	5	1.120	4.700	1.020
IHDTF6XB1	Motorola	Moto g6 Play Portable Handset	WCDMA	5	0.944	0.247	1.250
YHLBLUVIVO5MN	BLU	Vivo 5 Mini Portable Handset	GPRS	10	1.246	0.295	0.668

The FCC had also tested phones at 2 mm.

FCC: SARs exceeded 1.6 W/kg in 10 of 17 SAR tests at 2mm.

“We observed that at a 2 mm separation distance, the FCC RF exposure limits were exceeded...”

-FCC 9/29/2023 letter to Scarato RE FOIA Control 2023-000281 and 2023-000325



A	B	C	D	E		G
CONFIDENTIAL *FCC INTERNAL ONLY*						
*NOTE: THE FOLLOWING RESULTS ARE FROM SAR TESTS AT A SEPARATION DISTANCE NOT IN ACCORDANCE WITH FCC GUIDANCE						
FCC ID	Manufacturer	Description	Sample Type	SAR Configuration	FCC Lab Measured SAR Value (W/kg)	Serial Number
BCG-E3091A	Apple	iPhone 7 Portable Handset	Provided by Manufacturer	WCDMA Band 4, RMC, 12.2 kbps, Ch 1513, Body, Bottom, 2 mm	1.440	C6K6HD69HG7N
BCG-E3161A	Apple	iPhone X Portable Handset	Provided by Manufacturer	WCDMA Band 2, RMC, 12.2 kbps, Ch 9262, Body, Bottom, 2 mm	1.350	C39VF007JH2Q
				GPRS 1900, GMSK, 2 Tx Slots, Ch 512, Body, Bottom, 2 mm	0.727	
BCG-E3218A	Apple	iPhone XS Portable Handset	Purchased by FCC	GPRS 1900, GMSK, 2 Tx Slots, Ch 661, Body, Back, 2 mm	2.340	GONZ50M7KPFR
				GPRS 1900, GMSK, 2 Tx Slots, Ch 661, Body, Bottom, 2 mm	1.990	
A3LSMG960U	Samsung	Galaxy S9 Portable Handset	Provided by Manufacturer	CDMA BC1, RC3, TDSO 32, Ch 600, Body, Back, 2 mm, Connect ther	4.520	R38K609SMYL
				CDMA BC1, RC3, TDSO 32, Ch 600, Body, Back, 2 mm, Position ther	4.380	
A3LSMG960U	Samsung	Galaxy S9 Portable Handset	Purchased by FCC	CDMA BC1, RC3, TDSO 32, Ch 600, Body, Back, 2 mm, Connect ther	No Data Yet	R3M706TT9A
				CDMA BC1, RC3, TDSO 32, Ch 600, Body, Back, 2 mm, Position ther	No Data Yet	
A3LSMJ337A	Samsung	Galaxy J3 Portable Handset	Provided by Manufacturer	WCDMA Band 4, RMC, 12.2 kbps, Ch 1312, Body, Back, 2 mm, Con	5.200	RF8KA1J3X6E
				WCDMA Band 4, RMC, 12.2 kbps, Ch 1312, Body, Back, 2 mm, Posi	5.140	
IHDT56XC4	Motorola	Moto e5 play Portable Handset	Provided by Manufacturer	WCDMA Band 2, RMC, 12.2 kbps, Ch 9262, Body, Back, 2 mm, Con	1.390	359524090350295
				WCDMA Band 2, RMC, 12.2 kbps, Ch 9262, Body, Back, 2 mm, Posi	1.360	
IHDT56XB1	Motorola	Moto g6 Play Portable Handset	Provided by Manufacturer	WCDMA Band 5, RMC, 12.2 kbps, Ch 4132, Body, Front, 2 mm, Cor	1.980	351864090034178
				WCDMA Band 5, RMC, 12.2 kbps, Ch 4132, Body, Front, 2 mm, Pos	1.980	
IHDT56XB1	Motorola	Moto g6 Play Portable Handset	Purchased by FCC	WCDMA Band 5, RMC, 12.2 kbps, Ch 4132, Body, Front, 2 mm, Cor	1.080	3518643090300620
				WCDMA Band 5, RMC, 12.2 kbps, Ch 4132, Body, Front, 2 mm, Pos	1.090	

Chicago Tribune

FCC says tests find cell phones comply with federal limits on radiofrequency radiation.

By Joe Mahr

December 20, 2019

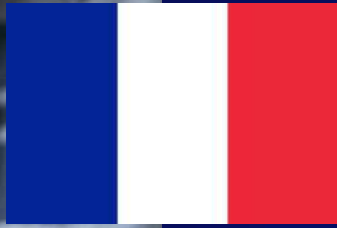
“The FCC said this week that its own testing testing found all eight models it evaluated were in compliance.”

“the FCC's recent study did not test phones at 2 mm distance”

The FCC did not mention its 2 mm tests in 3 court cases.

1. **EHT et al., v. the FCC:** Petitioners alleged the FCC ignored record evidence.
2. **Cohen et al., v. Apple, Inc:** Consumers (class action) alleging Apple had not warned them about excessive RF.
3. **CTIA v. City of Berkeley:** Wireless industry sued Berkeley to halt implementation of its *cell phone right to know* ordinance that informed consumers (point of sale) that phones in a pants or shirt pocket or bra could result in RF exposure exceeding federal guidelines.





France

Consumer Information for RF Emitting Devices

Order by Ministers of Health and Economy
(2019)

- Reduce exposure: speakerphone
- Children and adolescents should limit call time

"Keep radio equipment **away from the stomachs of pregnant women & adolescents.**"

American Academy
of Pediatrics



DEDICATED TO THE HEALTH OF ALL CHILDREN®

“If you plan to watch a movie on your device, download it first, then switch to airplane mode while you watch in order to avoid unnecessary radiation exposure.”

- American Academy of Pediatrics



“It is wise to reduce exposure...”

-Connecticut
Department of Public Health



Cyprus Medical Association



Cyprus National Committee
on Environment and Children's Health



Vienna Medical Association



Swiss Physicians Association of
Doctors for Environmental
Protection

Policy Measures Aimed at Mitigating Health Risk To Children



Russia: Cell tower, base stations no longer allowed near schools. National schedule for the relocation of base stations off school



Lithuania: Cell antennas prohibited on kindergartens and hospitals



Greece: Cell antennas prohibited on school grounds. Restrictive limit 300 meter radius around kindergartens, schools, hospitals and elder homes.



Bangladesh: No cell towers on homes, schools, colleges, playing fields.



Israel: Cell tower setback 100m from schools.



Chile: Prohibits cell towers in “sensitive areas”



Queensland, Australia: No new towers on school property, required distance of at least 200 meters and emissions no greater than 1% of ARPANSA



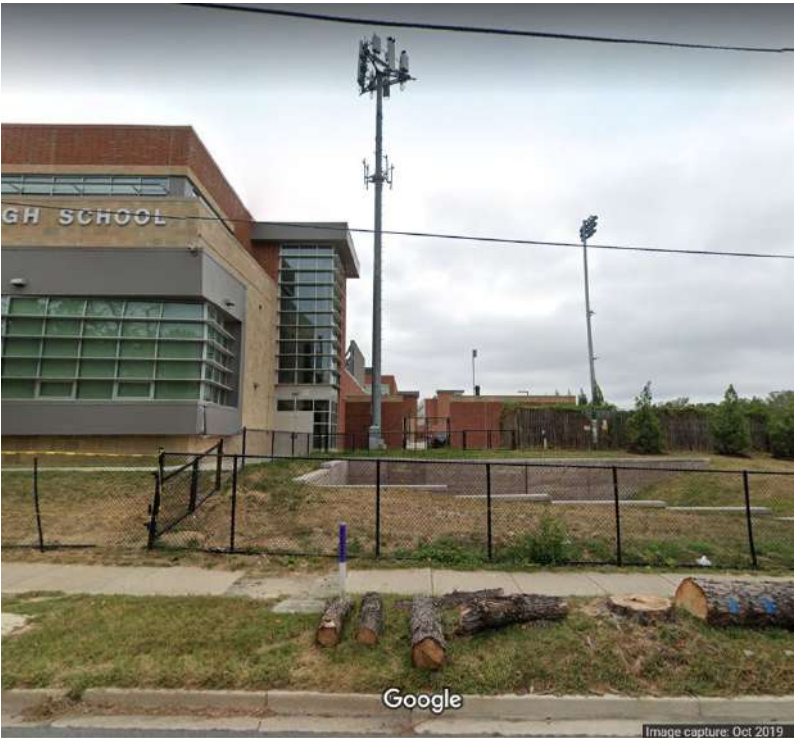
India: Mumbai, Zilla Parishad & Karnataka: Cell towers prohibited near schools, colleges, orphanages and old age homes.



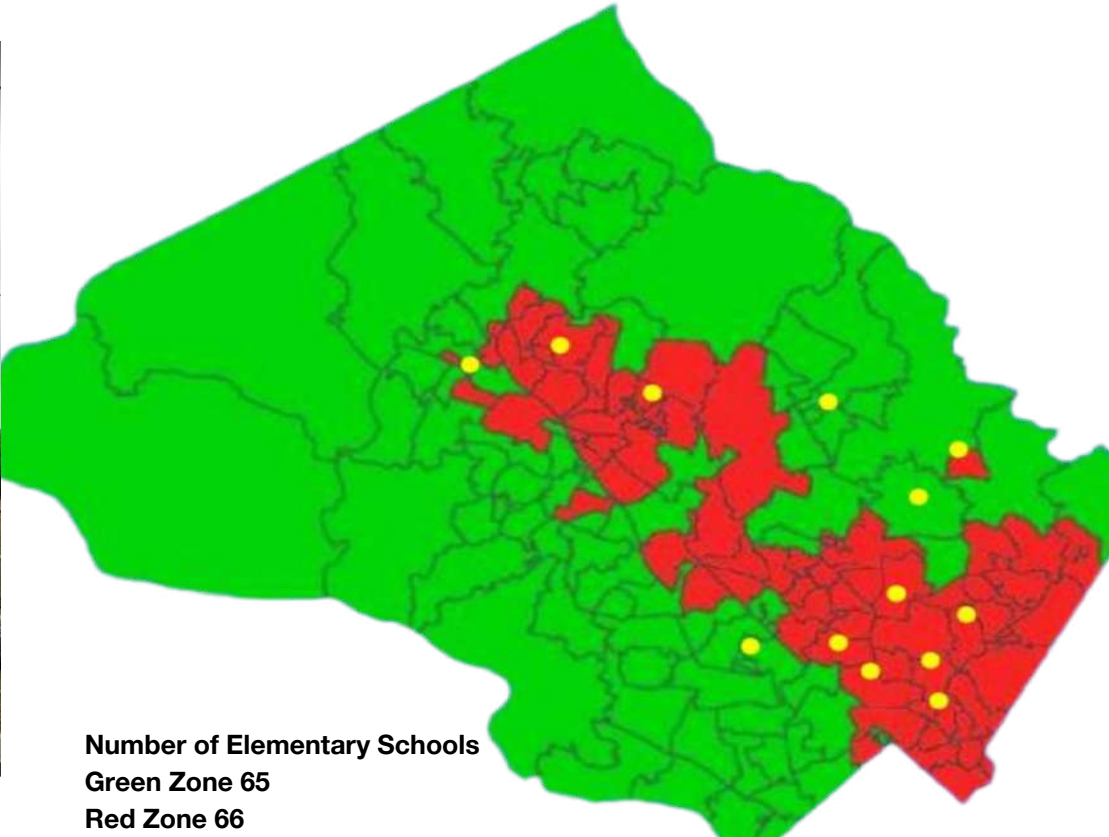
Towers and antennas deployed on schools nationwide despite some local governments restrictions and setbacks.

- Shelburne, Massachusetts: 3,000 feet for schools and 1,500 feet for homes.
- Williamson County Tennessee: 1,500 foot setback for schools.
- Copake, New York: 1,500 feet from homes, schools, churches and public buildings.
- Sallisaw, Oklahoma: 1,500 feet from homes or structures.
- Stockbridge, Massachusetts: 1,000 feet for schools, playgrounds and athletic fields. 600 feet for residential.
- Walnut City, California: 1,500 feet setbacks for schools, parks and residential zones.
- Calabasas, California: 1,000 feet for homes and schools.
- Davis, California: 500 feet of residential zones and schools.
- Bar Harbor, Maine: 1500 feet setback for schools.
- Bedford, New Hampshire: 750 feet from nearest residentially-zoned property.
- San Diego County: 300 feet for small cell wireless for schools, childcare centers, hospitals, religious facilities, fire and police stations.
- Fairfax, California: 300 ft. from schools and parks.

Cell Towers Disproportionately Placed on Schools With Higher Free Lunch and Higher Minority Population (Red Zone)



Wheaton High School, Montgomery County Maryland



Number of Elementary Schools
Green Zone 65
Red Zone 66
Image from Parents Coalition of Montgomery County



Limiting liability with positioning to minimize negative health effects of cellular phone towers

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Highlights

- Cellular phone networks demand widespread human exposure to radio-frequency radiation (RFR).
- Cellular phone base stations density & power output increasing global human RFR exposure.
- Already enough medical-scientific evidence to warrant long-term liability concerns.
- To protect cell phone tower firms, companies should seek to minimize human RFR exposure.

Companies can mitigate their risk by competing on safety.

Alphabet, Inc. (Google) Shareholder Motion

June 7th: Alphabet Shareholder Meeting Vote on **Proposal #5 “Regarding a Report on Electromagnetic Radiation and Wireless Technologies Risks.”**

Requiring an annual report on the risks associated with wireless electromagnetic radiation emitted by Google’s smartphones and wireless devices.

EHT filed a comprehensive exempt solicitation to Google's response that regulatory limits are adequate protective.

Santa Clara California Medical Association

Recommendations for Best Practices for Technology in Schools (2023)

- Create a “Safe Tech in Schools Program” to educate on reducing wireless radiation for students and staff.
- Create cell phone-free policies for the classroom.
- Prefer hard-wired ethernet devices instead of Wi-Fi
- Professional RF measurements.
- Avoid installation of smart meters.
- Consider a policy to restrict installation of cell towers on or near school property.

The US Needs A Transparent Regulatory Framework for Wireless With Policy Measures to Mitigate Risks

1. Development of **science based limits** for humans and non-humans
2. **Full environmental reviews** prior to the licensing and national buildout of major new technologies like 5G, 6G and beyond
3. **A research program with premarket and post market safety testing**
4. **Health and environmental surveillance** for long term impacts
5. Robust **publicly accessible oversight and compliance program** with regular audits.
6. Nationwide **EMF monitoring and mapping**- including forests, parks and ecologically sensitive areas.
7. **A federal registry** for all wireless facilities (4G, 5G and “small” cells)
8. **Worker protections and interagency collaboration**
9. Implementation of **measures to reduce exposure and manage risk.**

Until adequate limits and regulations for wildlife are developed, measures to mitigate/reduce RF in ecologically sensitive areas, conservation areas, wildlife protected areas, bird habitat, turtle breeding areas, bee colonies should be urgently implemented.

Jérémy S. P. Froidevaux, Laura Recuero Virto, Marek Czerwiński, Arno Thielens, and Kirsty J. Park [Addressing Wildlife Exposure to Radiofrequency Electromagnetic Fields: Time for Action](#) Environmental Science & Technology Letters, 2024, 11, 1, 3–4

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Ensuring a healthy future for children, wildlife and the environment should be at the center of the decision making process.

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