HOUSE DOCKET, NO. 3553 FILED ON: 1/17/2025

HOUSE . . . . . No.

The Commonwealth of Massachusetts

PRESENTED BY:

***Patricia A. Duffy*, (BY REQUEST)**

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled:

The undersigned legislators and/or citizens respectfully petition for the adoption of the accompanying bill:

An Act reducing electromagnetic radiation emitted by technology through settings, design, and specific limits.

PETITION OF:

NAME:	DISTRICT/ADDRESS:	DATE ADDED:
Kirstin Beatty	*149 Central Park Drive, Holyoke, MA 01040*	*1/17/2025*

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[Pin Slip]

The Commonwealth of Massachusetts

In the One Hundred and Ninety-Fourth General Court
(2025-2026)

An Act reducing electromagnetic radiation emitted by technology through settings, design, and specific limits.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

SECTION 1. The legislature finds and confirms all of the following:-

Whereas, the International Commission on the Biological Effects of Electromagnetic Fields (ICBE-EMF.org) has provided simple software and hardware solutions that could dramatically reduce our wireless exposures, while noting that even if such exposures continue they are harmful.

Whereas, cellphones are typically the largest individual exposure to radiofrequency radiation, exceeding that of far field cell towers, with requirements to utilize cellphones in all facets of life have increased since 2004.

Whereas, studies show proximity to cell towers increases cancer, such as a study finding 10.5 times greater cancer incidence for women after only the second year of a cell tower installation, despite electromagnetic radiofrequency exposures 1000 times less that U.S. FCC

limits; or another study finding cancer death rates significantly elevated within 500 meters of a cell tower (Wolf & Wolf, 2004; Dode et al, 2011)

Whereas, scientists Henry Lai and Narendra Singh decades ago found that radiation comparable to cellphones could cause DNA breaks, but then faced propaganda from industry to discredit their work; Lai has since then compiled peer-reviewed studies to show that most studies find DNA damage, neurological effects, genetic effects, etc., as listed at the Bioinitiative (.org), a scientific project which industry has also sought to discredit.

Whereas, the scientific literature reveals serious threats to life from current wireless exposures such as numerous studies finding damage to sperm and ovaries; DNA damage that can cause germ line mutations in following generations; and infertility in mice after a few generations of wireless radiation exposure (Magdas & Xenos, 1997).

Whereas, reducing power density may reduce some mechanisms of harm as may increasing off-line functionality of wireless devices, but scientific studies also show that extremely low power density exposure allows serious biological effects that still must otherwise be addressed, beginning with limits on particularly vulnerable populations such as children and pregnant women.

Resolved, that the policy goals of this act shall be to limit electromagnetic radiation from 0 hertz through 300 gigahertz that is emitted by technology by requiring:

(a) technology companies to add design modifications in products that reduce wireless exposures such as improving off-line functionality and limiting transmissions;

(b) technology companies to include design modifications that reduce electric and magnetic fields such as shielding and quality filtering;

(c) best practices for settings, selection, and installation of technology software, equipment, and infrastructure;

(d) future-proofing products and equipment to enable wired functionality with reduced electromagnetic emissions.

SECTION 2. The General Laws are hereby amended by inserting after chapter 166A the following new chapter:

CHAPTER 166B.

CORPORATE RADIATION LIMITS

Section 1.

(a) As used in this section, the following terms shall have the following meanings:

"As Safe As Reasonable and Achievable" or "ASARAA" means that when humans or the environment are exposed to radiation from technology, the exposure should be as safe as is reasonable and achievable with respect to all software design, installation, and technological aspects, such as with regard to but not limited to non-use (an elimination of exposure), pulsing, modulation, frequencies, resonance, power density, polarization, power quality, distance of reach, shielding, filters, grounding, and synergism between frequencies or other bio-active substances.

"Reasonable" means within the term ASARAA a prioritization of safety and does not refer to a risk and benefits analysis - reasonable refers to the fact that prioritizing safety is reasonable. Reasonable design means that non-use or elimination of radiation applies when a potential for great danger to the public or environment exists as judged by a reasonable interpretation of available science, expert warnings, or when effects are unknown.

"Electromagnetic radiation" or "radiation" means all radiation emitted by technology, whether intentionally or unintentionally, and includes the radiative fields emitted by electricity, including from poor power quality, and the radiating frequencies that are emitted by wireless technologies.

(b) Corporations which design, manufacture, install, or maintain digital, internet, or wireless infrastructure, technological products, or their respective services must within their purview make design and technological choices that limit harm from electromagnetic radiation - exposures from technology must be ‘As Safe as Reasonable and Achievable’, which will hereafter be called ‘ASARAA’. Where products or services are actually intended to operate wirelessly or otherwise intentionally emit radiation, such corporations are to minimize harm with ASARAA design, selection, and best practices.

This directive for ASARAA design refers to all new products, services, installations, settings, infrastructure and, where compatibility exists, to service upgrades, product upgrades, repairs, and ongoing software updates.

(c) General ASARAA design principles and more specific requirements are as follows:

(1) Limit consumer and work exposure to wireless radiation from personal devices, personal computers, and other radiating technologies including but not limited to the following requirements:

i. Provide hard-wired integration options for wireless technologies and services so that any wireless antenna can be turned off when hard-wired transmission is preferred, including but not limited to smart entertainment systems that must have hard-wired functionality without wireless transmissions;

ii. Automatically block wireless radiation emissions, but not reception, when positioned close to the head or body;

iii. Include a soft key that easily allows all wireless transmissions to be turned on or halted at once;

iv. Include a soft key for a mode that only receives and does not transmit;

v. Set factory and default mode to wired connectivity, allowing updates, downloads, and installations to occur with wired instead of wireless connectivity and insuring that updates do not restart wireless transmissions that were preset as wired;

vi. As related to messaging, data collection, and other applications, provide an application that allows consumers to turn off antenna transmissions individually as well as allows consumers to set transmissions to begin and end at certain times including as set on a regular basis and as set by the tap of a soft key or button that sets the signal to begin after a certain time and upon completion of transmission or as set by the user.

vii. Provide a visible marker that indicates when wireless transmissions are occurring.

viii. Eliminate continuing transmissions of location so that transmissions only occur when expressly and actively sought by the user for an immediate, active use, for a time set by the user and easily halted.

ix. Provide an application to turn on location services upon remote inquiry in order to find lost mobile devices.

x. Set routers, wireless home phones, and other transmitting devices to only transmit on demand and even during a certain time frame, and to turn off when no longer in use by the consumer.

xi. Where products and services, including utilities, use wireless transmissions, insure that all such transmissions are specific to the user's needs, such as payment for services, updates, or cybersecurity checks, and are not in any way extraneous to the product or service, such as but not limited to data collection for profiling and marketing.

xii. Where utilities have placed more than 1 utility meter, such as but not limited to apartment buildings, utlities are to remove the wired functionality of these utility meters and replace the meters with analog meters or wired utility meters that best reduce electromagnetic radiation exposures.

xiii. With respect to data collection, integration, and related work on the part of the user of a device, include simple, preferential functionality for inputing and collecting data offline and for use of wired connectivity for downloading and syncing onto any pertinent device, including a passive storage device.

xiv. With respect to wireless transmissions, use automated protocol-based reductions of all of the following: the number of emissions, emission duration, and the integrated dose.

xv. Provide an easy to access, free application with personal wireless devices to limit call durations according to an estimation of the effective radiated power emitted by the device that allows: (A) users to track and further refine call duration limits beyond any default settings; (B) allow guardians to easily set limits for their children's devices, including disallowing wireless for times specified, with allowances to bypass only under specific conditions specified by the guardian except for allowing continuing access on mobile phones to dial relevant emergency and crisis numbers.

xvi. Except where only wireless connectivity can provide functionality of a product or service, insure wired or offline functionality is available and comparable in quality or better than wireless functionality;

xvii. Insure use of quality connectors that prevent leakage of radiation;

xviii. Modify the antenna of personal mobile devices so the emission pattern is more hemispherical and radiates away from the head and the body.

xix. With new personal computer, cellphone, and other wireless technology product sales, provide the connecting necessities and ports, with or without an Ethernet cord, for hard-wired functionality as part of the sales package so that users are not required to use wireless mice, headphones, etc., for functionality.

xx. Provide simple, accessible information on how to hard-wire products such as routers, including generatlly where to get or buy the necessary equipment to do so;

xxi. If providing broadband or telecommunications services to a residence or business, provide at a minimum one hard-wired connection with cord and if the resident or client expects to use more than one hard-wired connection, provide an ethernet or comparable switch -- additionally provide education on how to hard wire devices for connectivity;

xxii. When installing, programming, or setting up relevant technology as part of an installation service, limit radiation wherever possible, using best practices such as but not limited to providing an installation option for hard-wired connectivity, providing distance from and labeling of any wireless antennas, selecting products which minimize all electromagnetic exposures; and providing guidance and labeling to maintain best practices to limit electromagnetic radiation.

xxiii. Where installing broadband or telecommunications services for consumers, insure that the cost of wired, in contrast to wireless installation, is an add-on with a cost that does not exceed the costs of supplies and the hourly wage of installers by more than 1%.

xxiv. Limit the number, reach or distance of, and the power density of antennas to only that necessary for functionality.

xxv. If providing streaming services, provide downloadable options to reduce wireless exposures from streaming.

xxvi. Provide large buttons or manual switches that clearly mark and easily turn off wireless transmissions on equipment such as but not limited to routers.

xxvii. Include a two to three meter cord with switch or another mechanism to to allow users to turn on and turn off transmissions at a distance from strong near field exposures from static consumer devices such as but not limited to routers.

xxviii. Provide the location of antennas and sensors on wireless and digital technology within print and online manuals, and provide instructions for the removal of antennas or elimination of their transmissions such as but not limited to smart devices and appliances.

xxix. Where services and products, including utilities, use wireless for payment or updating functionality that cannot easily or immediately be replaced by hard-wired connectivity, insure that the wireless transmission is set to minimize transmissions, including but not limited to using low power density, minimizing signal duration, and setting transmission time to occur with the minimum exposure possible, such as at a designated time set by the user or quarterly, including with notification to the user of expected transmission times

xxx. For wireless transmissions such as updates and messaging, include information on how long the wireless signal is expected to take in advance of the transmission begins and provide a voluntary ring tone and visible sign that the wireless transmission is completed.

xxxi. When using a wireless signal for transmission, automatically prefer use of antennas which require less power density for connectivity, such as Wi-Fi antennas.

xxxii. Where wireless signals occur that are not related to the user's messaging, internet usage, necessary provider payments, or for necessary functionality and cybersecurity updates, provide an app that clearly identifies all the different signaling alongside accompanying options to eliminate each signal or choose to circumscribe the time of transmission.

xxxiii. Corporations selling products that unintentionally emit frequencies from 0 hertz through 300 gigahertz that cannot all be successfully remediated, such as but not limited to fiberoptic connectors, are to provide information on the packaging and in manual regarding any leakage of this electromagnetic radiation, including the amount, frequencies, and description of how time and use may impact leakage.

xxxiv. When installing broadband or telecommunications access in early through higher education settings as well as in daycare, nursing homes, and hospitals, provide hard-wired ports and hard-wired connectivity that best reduces electromagnetic radiation, prioritizing such connectivity first in areas specific to babies, pregnancies, and children.

(2) Limit consumer exposure to radiation from electric and magnetic fields with good design including the following requirements:

i. Limit frequencies on electrical cords and infrastructure through the use of appropriate filters, connectors, and quality electrical design to prevent the addition of electromagnetic frequencies besides 60 hertz on the electrical lines and to comply with electrical code standard IEEE 519;

ii. Limit electric and magnetic fields through the use of shielding, grounding, distance setbacks, and quality electrical design.

iii. Corporations selling products which emit frequencies from 0 hertz through 300 gigahertz or which continue to leak such frequencies despite quality filtering and remediation, including but not limited to lighting, are to provide information on the packaging and in the product manual regarding any intentional or unintentional emissions including leakage, including providing the amount, frequencies, and, for leakage, the effects of time and use on leakage.

(d) While subsection (c) above provides some specific requirements, the general principal of ASARAA means that corporations have a duty to be proactive in the prevention of harm through continuing investigation and application of findings to further additional modifications for the best, safest, future-proof design. Corporations have a duty to pay attention to critics, cautions and guidance from existing scientific knowledge around the world from past to present in order to craft safer technology - and a duty to avoid ignorance or compromised, inadequate research as an excuse to avoid responsibility. Recommended resources to guide design include the Building Biology Institute and the International Commission on the Biological Effects of Electromagnetic Fields.

(e) The attorney general shall enforce good faith compliance of this section through adjudication of complaints alleging such violations in accordance with chapter 93A and with chapter 106, section 2-314. This remedy shall not be exclusive and shall be in addition to all other causes of action, remedies and penalties provided by law, and shall allow for a qui tam action as well as a private right of action for product liability and negligence. The office of the attorney general shall provide a mechanism for anonymous reporting of violations. Corporate whistle-blowers shall be provided comparable rewards and protections to that of the Massachusetts False Claims Act and the Massachusetts Whistleblower Protection Act.

SECTION 3. This act shall take effect upon its passage. Upon the effective date of this section, compliance shall be in good faith with steps initiated to implement changes within a month and changes rolled out as soon as functional. Changes that can take place immediately, such as in the best practices for installation shall be implemented within one month of passage. Specific software requirements which require design modification shall be implemented at minimum within 2 years of passage unless sooner implementation is possible, in which case

sooner implementation shall take place. Those changes requiring manufacturing or hardware changes should at minimum take no more than 4 years to be enacted, unless sooner implementation is possible, in which case sooner implementation shall take place. Hardware and software changes should be reflected in the interim in the ongoing design of new models.

SECTION 4. The provisions of this act are severable, and if any clause, sentence, paragraph or section of this law or an application thereof shall be adjudged by any court of competent jurisdiction to be invalid, such judgment shall not affect, impair, or invalidate the remainder thereof but shall be confined in its operation to the clause, sentence, paragraph, section or application adjudged invalid and such clause, sentence, paragraph, section or application shall be reformed and construed so that it would be valid to the maximum extent permitted.