

# Itron Products and Radio Frequency Regulations

Following the guidelines and regulations set forth by the FCC on RF exposure

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## INTRODUCTION

Radio frequency (RF) energy is all around us. RF plays a critical role in the communications systems that we depend on every day, such as police and fire radio systems and pagers, radio and television broadcasts and cellular telephones. Many of the conveniences we've grown accustomed to in our homes, such as cordless phones and wireless internet (WiFi), utilize radio frequency.

Since 1996, the Federal Communications Commission (FCC) has required all wireless communications devices sold in the United States meet minimum guidelines for safe human exposure to radio frequency energy. In addition, federal health and safety agencies including the EPA, FDA, National Institute for Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA) consistently monitor and regulate RF safety. The research and recommendations from these public health focused organizations are factored into FCC regulations regarding RF exposure.

According to the FCC “currently no scientific evidence establishes a causal link between wireless device use and cancer or other illnesses.”

Itron's products are stringently evaluated for RF safety and meet all Federal Communication Commission (FCC), Health Canada (HC), and Institute of Electrical and Electronic Engineers (IEEE) standards. We consistently evaluate key factors for exposure risk including the frequency of the transmission, the power output and the distance from the public. Three key factors ensure that Itron meters expose people to only extremely low levels of RF exposure relative to the devices people use every day.

- » Limited time on the air: Our meters and communication modules transmit for very short intervals (typically totaling about three minutes per day) and thus have a very low duty cycle. This results in RF exposure levels that are a tiny fraction of the limits specified by regulatory agencies, including the FCC and Health Canada.
- » Low power: Our devices are low power; transmitting at approximately one watt or less. These low levels of RF exposure are well below the regulatory limits and less RF energy than a typical cell phone network.
- » Limited proximity to humans: Our devices are typically installed outside the home. Since RF energy falls off very quickly with distance, this typically represents much lower exposure than other RF devices located within the home.

In addition, several reputable research organizations that have conducted peer-reviewed health research on RF exposure have said there is no demonstrated cause and effect relationship between low levels of RF exposure and adverse human health effects. Itron recognizes that concerns about RF emissions exist.

As such, we continue to monitor the regulations and perform extensive RF testing to actively minimize RF emission levels by all means possible. Because the vast majority of this research has focused on cell phone usage, and because smart meters expose humans to far less RF emissions than cell phone based on the factors described above, there is a significant, added safety margin for smart meters compared to cell phone usage.

## THE FCC AND CURRENT EXPOSURE LIMITS

Many federal agencies have addressed the issue of exposure to RF energy. In addition to the FCC, federal health and safety agencies such as the EPA, FDA, NIOSH and OSHA have been actively involved in monitoring and investigating issues related to RF exposure. For example, the FDA has issued guidelines for safe RF emission levels from microwave ovens, and it continues to monitor exposure issues related to the use of certain RF devices such as cellular telephones. NIOSH conducts investigations and health hazard assessments related to occupational RF exposure.

Federal, state and local government agencies and other organizations have generally relied on RF exposure standards developed by expert non-government organizations such as the IEEE and the National Council on Radiation Protection and Measurements (NCRP). Since 1996, the FCC has required that all wireless communications devices sold in the United States meet its minimum guidelines for safe human exposure to radio frequency (RF) energy. The FCC's guidelines and rules regarding RF exposure are based upon standards developed by IEEE and NCRP and input from other federal agencies, such as those listed above.

All handheld and mobile wireless devices sold in the US, including Itron products, go through a formal FCC approval process to ensure that they do not exceed the maximum allowable SAR level when operating at the device's highest possible power level. If the FCC learns that a device does not conform with the test report upon which FCC approval is based – in essence, if the device being used is not the device the FCC approved – the FCC can withdraw its approval and pursue enforcement action against the appropriate party.

Itron meters meet the following FCC regulations under CFR 47, Part 15, Subpart C, Intentional Radiators.

15.207 – Conducted Emissions (AC mains)

15.209 – Radiated Emission Limits, General Requirements

15.247 – Operation within the bands 902–928 MHz, 2400–2483.5 MHz and 5725–5850 MHz.

Itron meters also meet the following FCC regulation on RF Exposure.

2. 1091– Radiofrequency radiation exposure evaluation: mobile devices.



“Itron’s products are stringently evaluated for RF safety and meet all FCC, IC, and IEEE standards.”

## RECENT DEVELOPMENTS

Several US government agencies and international organizations work cooperatively to monitor research on the health effects of RF exposure. According to the FDA, World Health Organization and other organizations, to date, the weight of scientific evidence has not effectively linked exposure to radio frequency energy from mobile devices with any known health problems.

The FDA maintains a website on RF issues. WHO established the International Electromagnetic Fields Project (IEFP) to provide information on health risks, establish research needs and support efforts to harmonize RF exposure standards. For more information on the IEFP, go to [www.who.int/peh-emf/en](http://www.who.int/peh-emf/en).

Recently, some health and safety interest groups have interpreted certain reports to suggest that wireless device use may be linked to cancer and other illnesses, posing potentially greater risks for children than adults. While these assertions have gained increased public attention, currently no scientific evidence establishes a causal link between wireless device use and cancer or other illnesses. Those evaluating the potential risks of using wireless devices agree that more and longer-term studies should explore whether there is a better basis for RF safety standards than is

currently used. The FCC closely monitors all of these study results. However, at this time, there is no basis on which to establish a different safety threshold than current requirements.

The FCC website provides a great deal of information on the history and current status of the requirements established for limiting RF exposure at the following link: <http://transition.fcc.gov/oet/rfsafety/background.html>. A short summary is captured below:

The regulatory requirements that govern the RF exposure levels from radio devices such as cell phones, WiFi devices and smart meters were established based on the National Environmental Policy Act of 1969. This Act required that the FCC evaluate the effect of emissions on the human environment. The FCC adopted the NCRP’s recommendations for Maximum Permissible Exposure limits in 1996 with the requirements being effective starting in 1997.

The FCC website provides for the public to file comments: <http://www.fcc.gov/comments>. From FCC website: <http://transition.fcc.gov/oet/rfsafety/background.html>

You can find additional useful information and links to some of the other responsible organization’s webpages on the FCC’s main website, [www.fcc.gov](http://www.fcc.gov).



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