FORTIS ALBERTA

UNDERSTANDING
Radio Frequency and Cellular Meters

RADIO FREQUENCY

FortisAlberta, your local electricity distribution service provider, is implementing a meter reading system that uses radio frequency and cellular technology. Unlike the current system where meter data and communication signals are transmitted via the existing power lines, radio frequency and cellular technology uses wireless communication to transmit this information to FortisAlberta. These technologies are also used for other common household devices including Wi-Fi, cordless telephones, cell phones, baby monitors and garage door openers.

The frequency that our radio frequency meters operate at are in the range of 900 MHz. The frequency that our cellular meters operate at are in the range of 700 to 2100 MHz.

We understand that there are questions about possible health effects of radio frequency and cellular emissions created by wireless communication technologies. These technologies have been researched for decades and thorough reviews of this research have been completed by health agencies including Health Canada, the US Federal Communications Commission (FCC), and the American Cancer Society. Each of these organizations has concluded that emissions below certain exposure limits are not harmful.

Health Canada has defined these safe exposure limits in its Safety Code. FortisAlberta's meters operate at levels far below the limits outlined by Health Canada's Safety Code and in total, transmits signals for less than a minute and a half each day.

The graph below shows how the emissions from a FortisAlberta meter compare to the emissions from other common household devices.

Mean power density measured near common household devices - Testing by the Centre de recherche industrielle du Québec (CRIQ)

Unless you're standing right next to it, RF wave exposure is almost non-existent as FortisAlberta meters are often located outside of your property.

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FREQUENCIES

Different forms of electromagnetic energy are distinguished by their frequency (i.e. the number of times it changes direction back and forth per second), that is measured in hertz (Hz). Frequency is strongly associated with the energy level of the electromagnetic fields, which determines how they may interact with objects and living tissue.

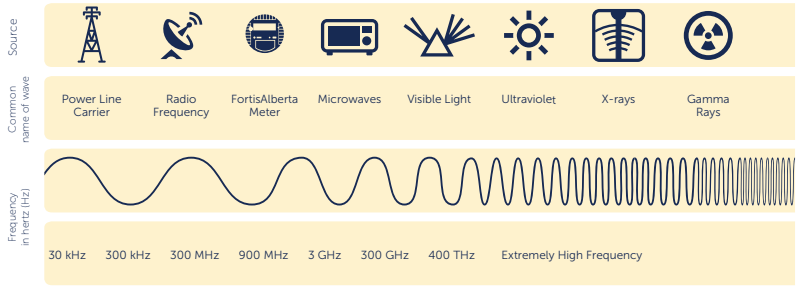
Static fields and extremely low frequency fields (e.g. Radio Frequency) are at the lower end of the electromagnetic spectrum and have very low energy levels.

Higher in the electromagnetic spectrum are fields including microwaves, visible light, and ionizing radiation, such as X-rays, that have increasingly higher energy levels. Microwaves, for example, can heat tissue at high intensity levels, while X-rays can damage cells and break up molecules.

Radio frequency is classified as a "low frequency" electromagnetic field (EMF), which means it has a frequency between 3 kHz and 300 GHz (3000 hertz and 300 billion hertz).

See the chart below.

FREQUENCIES OF THE ELECTROMAGNETIC SPECTRUM AND COMMON SOURCES



Source: Institute of Electrical and Electronics Engineers.

HEALTH CANADA'S SAFETY CODE

The purpose of Health Canada's Safety Code is to establish safety limits for exposure in the frequencies between 3 kHz and 300 GHz. These limits are based on decades of research from peer reviewed scientific studies. Safety limits established by Health Canada are set many times below the level at which research suggests there may be an adverse health effect from short- or long-term exposure to RF. For devices communicating at 900 MHz, Health Canada's Safety Code limit is 2.7 W/m2 or 2,700,000 µW/m2. The radio frequency and cellular infrastructure that FortisAlberta is implementing is far below the limits outlined in Safety Code 6.

FortisAlberta Meter	Total time active per day*	Power level (watts)	RF emission exposure levels in µW/m²	Per cent of Safety Code 6 Limit
One metre directly in front of the device	< 1.5 min.	0.425	54.67	0.002
Five metres directly in front of the device	< 1.5 min.	0.425	2.18	0.00008
One metre directly behind the device	< 1.5 min.	0.425	1.93	0.00007

* The devices listed in the table above communicate in brief intervals throughout the day. The total time active per day is the total amount of time in a 24-hour period the device is communicating.

For more information on the Safety Code, visit: Health Canada

For more information on radio frequency emissions and public health, please visit: Health Canada | Innovation, Science and Economic Development Canada | American Cancer Society