Radio Frequency levels measured in uW/cm²

Automatic Metering Infrastructure and Radio Frequencies

Advanced metering works via wireless technology to send readings to a regional collector that transmits near-water-use data to Village Hall. The system works via wireless radio frequency (RF) signals and from a transmitter that is most often located on the exterior of the building. Sensys Networks’ AMI fixed-base network communicates via primary-use FCC-licensed spectrum. It serves as a dedicated and secure two-way communications network that transmits at less than 2 watts of power. Regional collectors are typically located on commercial towers at a height of 120 feet.

Wireless AMI Network Topology

AMI devices operate on a point-to-multipoint network. The base collector can talk to all endpoints individually, and endpoints can receive information back to the base collector. There are no radio frequencies that are bounced back and forth between transmitters like in an unlicensed spectrum with a mesh network.

Regional collectors are typically located on antenna towers at a height of 120 feet. The wireless portions of the system will be operated according to Federal Communications Commission rules on a licensed spectrum and will not interfere with other radio frequencies in the area. The wireless network is a dedicated and secure two-way communications network that transmits at less than 2 watts of power.

Will the meter interfere with my internet router or other Wi-Fi devices?

What about the health risks?

According to the FCC and the World Health Organization (WHO), among other organizations, there is no scientific evidence that has definitively linked exposure to wireless technology to any human health problems. Calculations corresponding to a “worst-case” situation (all transmitters operating simultaneously and continuously at the maximum licensed power) show that, in order to be exposed to RF levels near the FCC’s guidelines, an individual would essentially need to remain in the main transmitting beam and within a few feet of the regional collector during transmission time. Thus, the possibility that a member of the general public could be exposed to RF levels in excess of the FCC guidelines is extremely remote. Additionally, if an individual was on the other side of the wall from a transmitter during transmission time, they would be exposed to 0.03 percent of the level established as safe by the FCC guidelines.

Wireless AMI Network Topology

FCC-licensed spectrum utilized on a point-to-multipoint network

In a licensed spectrum point-to-multipoint network, the data collector can talk to all endpoints individually, and endpoints can receive information back to the base collector. There are no radio frequencies that are bounced back and forth between transmitters, like in an unlicensed spectrum with a mesh network.

Radio Frequency levels measured in uW/cm²

Point to Multipoint

FCC-licensed spectrum utilized on a point-to-multipoint network

In a licensed spectrum point-to-multipoint network, the data collector can talk to all endpoints individually, and endpoints can receive information back to the base collector. There are no radio frequencies that are bounced back and forth between transmitters, like in an unlicensed spectrum with a mesh network.

Previous occasions where smart meters have been reported to burst into flames occurred only in electric smart meters, not water smart meters. The source of these fires was an electric hot socket in the meter. Water meters do not have an electric hot socket. The IPERL meter is rated to withstand 140 degree F air temperatures. Temperatures above that can cause damage to the meter, like melting plastic. Calculation only occurs if the water meter is exposed to extremely high temperatures for a very short period of time, but not sustained. All Sensus meters have exceeded the United Laboratories (UL) Safety Standards.

According to the FDA and the World Health Organization (WHO), among 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.