Unless you were away earlier this year on an intergalactic mission, you probably picked up the heavy media buzz around the claim [1] made by an “important government source”:

There was an article this week that talked about how you can surveil someone through their phones, through their . . . certainly through their television sets, any number of different ways. And microwaves that turn into cameras, et cetera. So we know that that is just a fact of modern life.

So: is it really a fact of modern life that microwaves can spy on you? It depends on the meaning of microwaves. According to the Merriam-Webster Online Dictionary [2], the word means either “a comparatively short electromagnetic wave; especially: one between about one millimeter and one meter in wavelength” or a “microwave oven.”

When most people use the word microwave, they are thinking of the eponymous household appliance, rather than a certain part of the electromagnetic spectrum. So can your microwave oven be used to listen to your conversations or take photos of your kitchen on the sly? There are virtually no microwave ovens on the market today that include a microphone, a camera, or an Internet connection [1]. As Jack Browne of Microwaves & RF quipped [3], “Remember, it takes a receiver to ‘listen,’ but it takes a transmitter to keep the dinner warm.”

Next, we turn our attention to microwaves as short electromagnetic waves. Here, it is worthwhile to take a brief historical detour [4]:

On August 4, 1945, Soviet school children gave a carving of the Great Seal of the United States to U.S. Ambassador Averell Harriman. It hung in the ambassador’s Moscow residential office until 1952 when the State Department discovered that it was “bugged.”

The microphone hidden inside was passive and only activated when the Soviets wanted it to be. They shot radio waves from a van parked outside into the ambassador’s office and could then detect the changes of the microphone’s diaphragm inside the resonant cavity. When Soviets turned off the radio waves, it was virtually impossible to detect the hidden “bug.” The Soviets were able to eavesdrop on the U.S. ambassador’s conversations for six years.

How does this James Bond-worthy Cold War stuff translate to the typical modern urban household? As a recent article [5] in The Atlantic cautions, the Wi-Fi router that connects your laptop and the television wirelessly to the Internet “can also be used to monitor humans—and in surprisingly detailed ways.” As the router goes about its main business of transmitting information in both directions between devices
The family of a deceased member requested that notification of the member’s death be sent to the IEEE and that sending out of publications and other mailings be stopped; this was taken care of.

Finally, a member receiving duplicate copies of IEEE magazines asked that this be corrected; a request to do so was sent the IEEE.

Conference and Symposium Issues
The following inquiries regarding various symposia were received and replies provided.

- A member requested help with registration payment.
- A company offered to provide assistance with symposia.
- A member expressed interest in assisting at a conference.

Jobs for Microwave Engineers
An employer had a job opportunity for a microwave engineer. I directed the person to the IEEE JobSite (http://careers.ieee.org). The employer was familiar about this site and wanted to know if any MTT-S publications include job listings. I informed the person that none of our publications do so, having received confirmation of this from our Magazine Outreach Committee.

Microwave Surfing (continued from page 12)

around the house and the worldwide web, it also collects information about how the radio signals are traveling around the house as a way to optimize the flow of information around obstacles. Researchers have shown [5] that the system can be trained to detect the movement of people and objects through the radio-wave environment created by the Wi-Fi signals from the router. Once the system is appropriately trained, it may be possible [5] to “even read a person’s lips with startling accuracy.”

And what does the future hold? In an article on the office of tomorrow, The Economist paints an Orwellian image [6]:

Office-furniture makers, for example, are experimenting with putting sensors in desks and chairs, so that firms will be better able to monitor when workers are there.

Such data could be anonymized to allay privacy concerns. They could also save electricity or help people find an empty room to hold a meeting. But it is not hard to imagine how such data could create a culture of surveillance, where employees feel constantly monitored.

Time to take a deep breath and reheat my tea in the microwave!

References