U.S. Army Public Health Command (Provisional)
formerly U.S. Army Center for Health Promotion and Preventive Medicine

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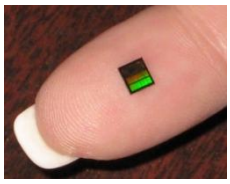
Just the Facts...

Radio-frequency Identification (RFID)

What is RFID?

Radio-frequency identification (RFID) is the use of an object for the purpose of identification and tracking using radio waves. Some tags can be read from several meters away and beyond the line of sight of the reader. There are three components to an RFID system:



- Tag: A microchip and antenna attached to an item to be identified. Passive tags receive power from the reader and may be battery assisted. Active tags include a transceiver and a battery allowing for greater range.
- Reader: A transceiver unit with one or more antennas that interrogates the tag and receives radio signals with data back from tags.
- Database: Stores data received from the reader about the various tags read.

What are the Potential Uses for RFID technology?

- Supply Chain Management
- ID, Travel, and Ticketing at Airports
- Baggage Tracking
- Patient Care and Management at Hospitals
- Highway toll collection

What are the requirements for RFID devices?

DOD policy is that RFID transmitters meet 47 CFR 15 requirements. Meeting these requirements ensures that the device is excluded from RF exposure evaluation by the Federal Communications Commission (FCC). Since the FCC standards are more conservative than DOD requirements, any device that the FCC deems compliant is also compliant with DOD exposure limits.

What levels are safe for exposure to RF energy?

The FCC guidelines for human exposure to RF electromagnetic fields were derived from the recommendations of two expert organizations, the National Council on Radiation Protection and Measurements (NCRP) and the Institute of Electrical and Electronics Engineers (IEEE). Both the NCRP exposure criteria and the IEEE standard were developed by expert scientists and engineers after extensive reviews of the scientific literature related to RF biological effects. The exposure guidelines are based on thresholds for known adverse effects, and they incorporate margins of safety.

What are the possible health concerns?

The World Health Organization, International Commission on Non-Ionizing Radiation Protection, FCC, and IEEE's research has shown that exposure below the limits recommended in internationally adopted guidelines has not revealed any known negative health effects. DOD RFID devices operate within these guidelines.

Can RFID interfere with Medical Devices?

Studies show RFID devices can interfere with medical devices. The studies indicate that very close proximity is required (less than one foot) to see the effect. MEDCOM Reg 40-42 recommends that hospital staff maintain 1 meter separation from RF emitters (cell phones, wireless devices, RFID, etc.) and electronic medical devices in critical care areas. Persons with medical implants should comply with any warnings that came with the device.

References:

47 Code of Federal Regulations, Part 15, Radio frequency devices, 2008

USD (AT&L) Policy Memorandum, 30 June 2004, Subject: Radio Frequency Identification (RFID) Policy

MEDCOM Regulation 40-42, ***U.S. Army Medical Command Radiation Safety Program, August 2004***

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