RADIOFREQUENCY EMISSIONS

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SAFETY & AWARENESS REFERENCE GUIDE

This handout is not intended to replace the FCC/OSHA mandated occupational requirement for RF Safety & Awareness Training

FEDERAL COMPLIANCE REQUIREMENTS

The Federal Communications Commission (FCC) has established safety guidelines relating to RF exposure from cell sites. The FCC developed those standards, known as Maximum Permissible Exposure (MPE) limits, in consultation with numerous other federal agencies, including the Environmental Protection Agency, the Food and Drug Administration, and the Occupational Safety and Health Administration.

The standards were developed by expert scientists and engineers after extensive reviews of the scientific literature related to RF biological effects. The FCC explains that its standards incorporate prudent margins of safety.

CLASSIFICATIONS FOR EXPOSURE LIMITS

OCCUPATIONAL

Persons are "exposed as a consequence of their employment" and are "fully aware of the potential for exposure and can exercise control over their exposure."

GENERAL POPULATION

Any persons that "may not be made fully aware of the potential for exposure or cannot exercise control over their exposure."

Those in this category do not require RF Safety & Awareness Training.

ENSURING COMPLIANCE WITH FCC GUIDELINES

Areas or portions of any transmitter site may be susceptible to high power densities that could cause personnel exposures in excess of the FCC guidelines. Wireless Licensees are required by law to implement the following:

- Restrict access
- Post notification signage on every access point to increase awareness of the potential for exposure BEFORE one enters an area with antennas.
- Place additional notification signage and visual indicators in an area with antennas (beyond an access point) where RF exposure levels may start to exceed the FCC's limits.



GENERAL EXPOSURE MANAGEMENT

- Assume that all antennas are active
- Obey all posted signs
- Do not stop in front of any antenna
- Recognize the type of antenna and approach at the safest angle
- Contact wireless operator to coordinate access if required
- Signage will indicate where potential RF conditions
 exist
- · Understand pathways of safe egress

- If needed and possible wear personal protection equipment
- When using a personal monitor, remember the time averaging limits and monitor alarm thresholds if working in front of antennas
- If experiencing symptoms of heat exhaustion or nausea, remove yourself from the worksite and seek medical attention
- Power density decreases with distance so maintain distance between you and the antennas. The greater the distance you are from an antenna the bigger the reduction of RF exposure you will receive



PROPERTY OWNER RESPONSIBILITIES (M.E.N.U.)

RF exposure safety and the protection of every licensee's infrastructure are very important. Property owners and licensees have a shared responsibility in maintaining a safe and secure RF environment. Property owners can help in this significant endeavor by:

- Maintaining all necessary wireless licensee contact information.
- Enforcing restricted access (help maintain a Controlled Environment). Ensuring all building/maintenance personnel are trained in RF Safety, aware that the potential for exposure exists, and follow all appropriate entry and safety procedures.
- Notifying all licensees when any non-carrier requests access to any area with antennas at least 24 hours in advance.
- Understanding that compliance with the FCC and OSHA can be achieved with RF Exposure levels above the applicable limit if the proper signage, physical/indicative barrier, and access restrictions are implemented. Commitment to compliance and willingness to cooperate are essential.

NOTIFICATION SIGNS



A blue Notice sign is posted when levels (beyond posted signage) may exceed General Population MPE limits.

ACAUTION



A yellow Caution sign is posted when levels (beyond posted signage) may exceed Occupational MPE limits.

A WARNING



A orange Warning sign is posted when levels (beyond posted signage) exceed 10 times the Occupational MPE limits.

TYPES OF ANTENNAS

MICROWAVE ANTENNA

- Highly directional antenna model used for point to point communications
- Approach from the rear and sides. Do not stand or walk in front of microwaves as they transmit at a high frequency.



OMNI ANTENNA

- Omni antennas have the appearance of a rod-shaped pole and radiate in a 360° pattern around the pole.
- At the antenna level, there is no approach angle that is safer than another. Typically, emissions directly below the antenna are less than in front of the antenna.

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YAGI ANTENNA

- Directional antenna model
- Approach from sides and rear.

PANEL ANTENNA

- Range from 1 to 8 feet in length
- Sled mounted or to a support structure on site (Rooftop)
- Approach these antennas from the rear.



QUASI-OMNI ANTENNA

- Quasi-Omni antennas have the appearance of a cylinder and contain emitters that radiate in a 360° pattern around the pole.
- At the antenna level, there is no approach angle that is safer than another. Typically, emissions directly below the antenna are less than in front of the antenna.



RF SAFETY TRAINING CONTACTS

WATERFORD CONSULTANTS	www.waterfordconsultants.com
ЕВІ	www.ebiconsulting.com
SITESAFE	www.sitesafe.com
DTECH COMMUNICATIONS	www.dtech.com





CONTACT US

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