## * Standalone SAR test exclusion considerations

## 1. Applicable Standard

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.
a) Limits for Occupational / Controlled Exposure

| Frequency |
| :---: | :---: | :---: | :---: | :---: |
| Range (MHz) | | Electric Field |
| :---: |
| Strength (E) |
| $(\mathrm{V} / \mathrm{m})$ | | Magnetic Field |
| :---: |
| Strength (H) |
| $(\mathrm{A} / \mathrm{m})$ | | Power |
| :---: |
| Density (S) |
| $\left(\mathrm{mW} / \mathrm{cm}^{2}\right)$ | | Averaging <br> Times $\|\mathrm{E}\| 2$, <br> $\|\mathrm{H}\| 2$ or <br> $\mathrm{S}(\mathrm{minutes})$ |
| :---: |
| $0.3-3.0$ |

b) Limits for General Population / Uncontrolled Exposure

| Frequency |
| :---: | :---: | :---: | :---: | :---: |
| Range (MHz) | | Electric Field |
| :---: |
| Strength (E) |
| $(\mathrm{V} / \mathrm{m})$ | | Magnetic Field |
| :---: |
| Strength (H) |
| $(\mathrm{A} / \mathrm{m})$ | | Power |
| :---: |
| Density (S) |
| $\left(\mathrm{mW} / \mathrm{cm}^{2}\right)$ | | Averaging <br> Times $\|\mathrm{E}\| 2$, <br> $\|\mathrm{H}\| 2$ or <br> $\mathrm{S}($ minutes $)$ |
| :---: |
| $0.3-3.0$ |

Note: f=frequency in $\mathbf{M H z}$
*=Plane-wave equivalent power density
2. MPE Calculation Method
$\mathrm{S}=$ power density
$\mathrm{P}=$ power input to antenna
$G=$ power gain of the antenna in the direction of interest relative to an isotropic radiator
$\mathrm{R}=$ distance to the center of radiation of the antenna
Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

$$
S=P G / 4 \pi R^{2}
$$

## 3. Calculated Result and Limit

| Mode | Frequency <br> $\mathbf{( M H z )}$ | Maximum <br> conducted <br> power |  | Antenna <br> Gain |  | Distance | Power <br> Density | Limit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\mathbf{d B m}$ | $\mathbf{m W}$ | $\mathbf{d B i}$ | $\mathbf{m W}$ | $\mathbf{C m}$ | $\mathbf{m W} / \mathbf{c m}^{\mathbf{2}}$ | $\mathbf{m W} \mathbf{c m}^{\mathbf{2}}$ |
|  | 2402 | 6.35 | 4.315 | 2.92 | 1.959 | 20 | 0.002 | 1 |
|  | 2440 | 6.25 | 4.217 | 2.92 | 1.959 | 20 | 0.002 | 1 |

