BC0

## Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

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

where: $\mathrm{S}=$ power density
$\mathrm{P}=$ power input to the antenna
$G=$ power gain of the antenna in the direction of interest relative to an isotropic radiator
$R=$ distance to the center of radiation of the antenna

Maximum peak output power at the antenna terminal:
8.20 (dBm)

Maximum peak output power at the antenna terminal:
$6.60693448(\mathrm{~mW})$
Antenna gain(typical): $\quad 0$ (dBi)
Maximum antenna gain: $\frac{1}{}$ (numeric)
Prediction distance:
20 (cm)
Prediction frequency:
$889.2(\mathrm{MHz})$
MPE limit for uncontrolled exposure at prediction frequency: $0.5928\left(\mathrm{~mW} / \mathrm{cm}^{\wedge} 2\right)$
Power density at prediction frequency: $\quad 0.001314\left(\mathrm{~mW} / \mathrm{cm}^{\wedge} 2\right)$

BC1

## Prediction of MPE limit at a given distance

${ }^{P} P_{4} 8$ of OET Bulletin 65, Edition 97-01<br>$4 \pi R^{2}$

$$
\text { where: } \begin{aligned}
& \mathrm{S}=\text { power density } \\
& \mathrm{P}=\text { power input to the antenna } \\
& \mathrm{G}=\text { power gain of the antenna in the direction of interest relative to an isotropic radiator } \\
& \mathrm{R}=\text { distance to the center of radiation of the antenna }
\end{aligned}
$$

| Maximum peak output power at the antenna terminal: | 13.50 (dBm) |
| :---: | :---: |
| Maximum peak output power at the antenna terminal: | 22.38721139 (mW) |
| Antenna gain(typical): | 0 (dBi) |
| Maximum antenna gain: | 1 (numeric) |
| Prediction distance: | 20 (cm) |
| Prediction frequency: | 1956.25 (MHz) |
| limit for uncontrolled exposure at prediction frequency | $1\left(\mathrm{~mW} / \mathrm{cm}^{\wedge}\right.$ |

$$
\text { Power density at prediction frequency: } \quad 0.004454\left(\mathrm{~mW} / \mathrm{cm}^{\wedge} 2\right)
$$

## EVDO

## Prediction of MPE limit at a given distance

Equation frompage $G_{8}$ of OET Bulletin 65, Edition 97-01<br>$4 \pi R^{2}$

where: $\quad S=$ power density
$\mathrm{P}=$ power input to the antenna
$\mathrm{G}=$ power gain of the antenna in the direction of interest relative to an isotropic radiator
$R=$ distance to the center of radiation of the antenna

Maximum peak output power at the antenna terminal: $\quad 15.40(\mathrm{dBm})$
Maximum peak output power at the antenna terminal:
$34.67368505(\mathrm{~mW})$
Antenna gain(typical): $\quad 0$ (dBi)
Maximum antenna gain: $\quad 1$ (numeric)
Prediction distance: $\quad 20(\mathrm{~cm})$
Prediction frequency: $\quad 1956.25(\mathrm{MHz})$
MPE limit for uncontrolled exposure at prediction frequency: $\qquad$ $1\left(\mathrm{~mW} / \mathrm{cm}^{\wedge} 2\right)$

$$
\text { Power density at prediction frequency: } \quad 0.006898\left(\mathrm{~mW} / \mathrm{cm}^{\wedge} 2\right)
$$

## One-X

## Prediction of MPE limit at a given distance

Equation frompage $G_{8}$ of OET Bulletin 65, Edition 97-01<br>$4 \pi R^{2}$

where: $\quad S=$ power density
$\mathrm{P}=$ power input to the antenna
$G=$ power gain of the antenna in the direction of interest relative to an isotropic radiator
$R=$ distance to the center of radiation of the antenna

Maximum peak output power at the antenna terminal: Maximum peak output power at the antenna terminal:
$9.120108394(\mathrm{~mW})$

Antenna gain(typical):
Maximum antenna gain:
9.120108394 (mW)

Prediction distance: $\qquad$
Prediction frequency: $\quad 1956.25(\mathrm{MHz})$
MPE limit for uncontrolled exposure at prediction frequency: $\qquad$ $1\left(\mathrm{~mW} / \mathrm{cm}^{\wedge} 2\right)$

$$
\text { Power density at prediction frequency: } \quad 0.001814\left(\mathrm{~mW} / \mathrm{cm}^{\wedge} 2\right)
$$

BC10

## Prediction of MPE limit at a given distance

Equation frompage $P_{8}$ of OET Bulletin 65, Edition 97-01<br>$4 \pi R^{2}$

where: $\quad S=$ power density
$\mathrm{P}=$ power input to the antenna
$\mathrm{G}=$ power gain of the antenna in the direction of interest relative to an isotropic radiator
$R=$ distance to the center of radiation of the antenna

Maximum peak output power at the antenna terminal
Maximum peak output power at the antenna terminal
$5.74(\mathrm{dBm})$

Antenna gain(typical):
Maximum antenna gain: $3.749730022(\mathrm{~mW})$
$\overline{0}(\mathrm{dBi})$
Prediction distance: $\qquad$
Prediction frequency: $\quad 862.9(\mathrm{MHz})$
MPE limit for uncontrolled exposure at prediction frequency: $\quad 0.575267\left(\mathrm{~mW} / \mathrm{cm}^{\wedge} 2\right)$

$$
\text { Power density at prediction frequency: } \quad 0.000746\left(\mathrm{~mW} / \mathrm{cm}^{\wedge} 2\right)
$$

## Combined All Radios

$[\operatorname{Pd}(1) / \operatorname{LPd}(1)]+[\operatorname{Pd}(2) / \operatorname{LPd}(2)]+\ldots \ldots+[\operatorname{Pd}(n) / \operatorname{LPd}(n)]<1$,
then device complies with FCC's RF radiation exposure limit for general population for a mobile device.
Where;
$\operatorname{Pd}(\mathrm{n})=$ Power density of $\mathrm{n}^{\text {th }}$ transmitter at 20 cm
$\operatorname{LPd}(\mathrm{n})=$ Power density limit for the $\mathrm{n}^{\text {th }}$ transmitter
The highest gain values were used for antenna gain.

|  | BCO | BC1 | EVDO | One-X | BC10 |  |  |
| ---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| power: | 0.00131441 | 0.00445379 | 0.00689811 | 0.00181439 | 0.00074600 |  |  |
| limit: | 0.59280000 | 1.00000000 | 1.00000000 | 1.00000000 | 0.57526667 |  |  |
| power/limit: | 0.00221729 | 0.00445379 | 0.00689811 | 0.00181439 | 0.00129679 | sum: | 0.0167 |
|  |  |  |  |  | limit: | 1.0000 |  |

