

Prediction of MPE limit at a given distance

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

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

Equipment
Manufacturer
Antenna 1

AirStation WZR-HP-G54
Buffalo Inc.
AI25P01-CA

where: S = power density

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 antenna input terminal: 25.00 (dBm)

Maximum peak output power at antenna input terminal: 316.227766 (mW)

Antenna gain(typical): 2.6 (dBi)

Maximum antenna gain: 1.819700859 (numeric)

Prediction distance: 20 (cm)

Prediction frequency: 2440 (MHz)

MPE limit for uncontrolled exposure at prediction frequency: 1.00245043 (mW/cm²)

Power density at prediction frequency: 0.114480 (mW/cm²)

Maximum allowable antenna gain: 12.02332762 (dBi)

Margin of Compliance: 9.423327618

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Equipment
Manufacturer
Antenna 2

AirStation WZR-HP-G54
Buffalo Inc.
WLE-HG-NDR

where: S = power density

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 antenna input terminal: 25.00 (dBm)

Maximum peak output power at antenna input terminal: 316.227766 (mW)

Antenna gain(typical): 4.7 (dBi)

Maximum antenna gain: 2.951209227 (numeric)

Prediction distance: 20 (cm)

Prediction frequency: 2440 (MHz)

MPE limit for uncontrolled exposure at prediction frequency: 1.00245043 (mW/cm²)

Power density at prediction frequency: 0.185665 (mW/cm²)

Maximum allowable antenna gain: 12.02332762 (dBi)

Margin of Compliance: 7.323327618

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Equipment
Manufacturer
Antenna 3

AirStation WZR-HP-G54
Buffalo Inc.
WLE-NDR-WR

where: S = power density

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 antenna input terminal: 25.00 (dBm)

Maximum peak output power at antenna input terminal: 316.227766 (mW)

Antenna gain(typical): 2 (dBi)

Maximum antenna gain: 1.584893192 (numeric)

Prediction distance: 20 (cm)

Prediction frequency: 2440 (MHz)

MPE limit for uncontrolled exposure at prediction frequency: 1.00245043 (mW/cm²)

Power density at prediction frequency: 0.099708 (mW/cm²)

Maximum allowable antenna gain: 12.02332762 (dBi)

Margin of Compliance: 10.02332762

Prediction of MPE limit at a given distance

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

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

Equipment
Manufacturer
Antenna 4

AirStation WZR-HP-G54
Buffalo Inc.
WLI-MYG

where: S = power density

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 antenna input terminal: 25.00 (dBm)

Maximum peak output power at antenna input terminal: 316.227766 (mW)

Antenna gain(typical): 3.9 (dBi)

Maximum antenna gain: 2.454708916 (numeric)

Prediction distance: 20 (cm)

Prediction frequency: 2440 (MHz)

MPE limit for uncontrolled exposure at prediction frequency: 1.00245043 (mW/cm²)

Power density at prediction frequency: 0.154429 (mW/cm²)

Maximum allowable antenna gain: 12.02332762 (dBi)

Margin of Compliance: 8.123327618

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Equipment
Manufacturer
Antenna 5

AirStation WZR-HP-G54
Buffalo Inc.
WLE-DA

where: S = power density

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 antenna input terminal: 25.00 (dBm)

Maximum peak output power at antenna input terminal: 316.227766 (mW)

Antenna gain(typical): 4 (dBi)

Maximum antenna gain: 2.511886432 (numeric)

Prediction distance: 20 (cm)

Prediction frequency: 2440 (MHz)

MPE limit for uncontrolled exposure at prediction frequency: 1.00245043 (mW/cm²)

Power density at prediction frequency: 0.158027 (mW/cm²)

Maximum allowable antenna gain: 12.02332762 (dBi)

Margin of Compliance: 8.023327618