

4 FCC §15.407(f) & §2.1091 - RF Exposure

4.1 Applicable Standards

According to FCC §15.407(f) and §1.1307(b)(1), 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 of the Commission's guidelines.

Limits for General Population/Uncontrolled Exposure

| Frequency Range (MHz) | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density (mW/cm ²) | Averaging Time (minutes) |
|---|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| Limits for General Population/Uncontrolled Exposure | | | | |
| 0.3-1.34 | 614 | 1.63 | * (100) | 30 |
| 1.34-30 | 824/f | 2.19/f | * (180/f ²) | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1500 | / | / | f/1500 | 30 |
| 1500-100,000 | / | / | 1.0 | 30 |

f = frequency in MHz

* = Plane-wave equivalent power density

4.2 MPE Prediction

Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S = power density

P = power input to 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

4.3 MPE Results

Antenna with Model Number: ACC-ANT-12ABGN-0607-PT has the highest gain in all three types of antennas

| | |
|---|---------------|
| <u>Maximum peak output power at antenna input terminal (dBm):</u> | <u>15.48</u> |
| <u>Maximum peak output power at antenna input terminal (mW):</u> | <u>35.31</u> |
| <u>Prediction distance (cm):</u> | <u>20</u> |
| <u>Prediction frequency (MHz):</u> | <u>5180</u> |
| <u>Maximum Antenna Gain, typical (dBi):</u> | <u>7.0</u> |
| <u>Maximum Antenna Gain (numeric):</u> | <u>5.01</u> |
| <u>MPE for uncontrolled exposure at prediction frequency (mW/cm²):</u> | <u>0.0176</u> |
| <u>MPE limit for uncontrolled exposure at prediction frequency (mW/cm²):</u> | <u>1.0</u> |

The device is compliant with the requirement MPE limit for uncontrolled exposure at 20 cm distance.