

MPE Calculations for FCC ID: WCV-D350V2, WCV-D350U1 & WCV-D350U2

Using the equations for **Predicting RF Fields** from the FCC OET bulletin 65:

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

Where S = power density (mW/cm^2)

P = power input to the antenna (mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiation

R = distance to the centre of radiation of the antenna (cm)

Using Table 1b for OET bulletin 65 **Limits for General population/Uncontrolled Exposure** is:

V2 frequencies: 0.2 (mW/cm^2)

U1 frequencies (worst case): 0.26(mW/cm^2)

U2 frequencies (worst case) 0.293 (mW/cm^2)

To calculate minimum distance to ensure the limit is met:

Transpose formular: $R = \sqrt{(PG/4\pi S)}$ N.B. gain of antenna is 1 and output power is 5Watts

Gives V2: 44.6cm

U1: 39.1cm

U2: 36.85cm

To calculate gain of antenna to ensure MPE is not exceeded when $R = 20\text{cm}$

Transpose formular: $G = (4S\pi R^2)/P$

Gives:

Band	P/gain	5 Watts	1 Watt
V2	$G = 0.2$	-7dB	0 dB
U1	$G = 0.26$	-5.8dB	1.16dB
U2	$G = 0.295$	-5.3dB	1.73dB

Worst case is -7dB antenna gain.

N.B.

5 Watt (High Power) output power using a -7dB gain antenna is equivalent to 1Watt.

5 Watt = 37dBm. 37-7= 30dBm.

1 watt = 30dBm (therefore 0dB antenna gain applies for D350 Low Power default setting)

User Guide Statement shall read:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) This device may not cause harmful interference, and

2) This device must accept any interference received including interference that may cause undesired operation.

Any change or modification to the product not expressly approved by Mobile Expertise Ltd. could void the user's authority to operate the device.

This equipment complies with FCC radiation exposure limits set forth for an occupational/controlled environment. This equipment should be operated with a minimum distance of 20cm between the radiator and your body. A maximum antenna gain of 0dB at 1W (low power) and -7dB at 5W (high power) should be used with the equipment in order to maintain the 20cm distance.