

Multiple Frequency Exposure Requirements

The AC775 WAN and Bluetooth can transmit at the same time.

In normal operation both can transmit at the same time.

The MPE calculations are submitted for multiple frequency exposure criteria. The ratio of the field strength or power density to the applicable exposure limit at the exposure location was determined for each transmitter below and the sum of these ratios does not exceed the 1 mW/cm² limit for uncontrolled exposure / general population exposure limits detailed in CFR 47, Part 1.1310.

Multiple Frequency Exposure Requirements with GSM850

Ratio 1		Ratio 2	Limit
AIRCARD775		Bluetooth	
0.1453 / 0.56		0.0002 / 1	<1.0
= .2595		= .0002	<1.0
Sum = 0.2597		(mW/cm ²)	<1.0

Multiple Frequency Exposure Requirements with PCS1900

Ratio 1		Ratio 2	Limit
AIRCARD775		Bluetooth	
0.2184 / 1		0.0002 / 1	<1.0
= .2184		= .0002	<1.0
Sum = 0.2186		(mW/cm ²)	<1.0

Prediction of MPE Limit OET Bulletin 65, Edition 97-01

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

$$R = \sqrt{PG/4\pi S}$$

- 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

General Population/Uncontrolled

1.) AirCard775, (WAN) GSM850

Tx Frequency: 836.60 MHz
 Max. Peak Power Antenna Input Terminal: 31.44 dBm
 Antenna gain: -2.80 dBi

S= 0.56 (mW/cm²)
 P= 1393.1568 (mW)
 G= 0.52 (numeric)
 R = 10.21 (cm)

S (mw/cm²) at 20cm = 0.14529791

2.) AirCard775, (WAN) PCS1900

Tx Frequency: 188000 MHz
 Max. Peak Power Antenna Input Terminal: 28.41 dBm
 Antenna gain: 2.00 dBi

S= 1.00 (mW/cm²)
 P= 693.4258 (mW)
 G= 1.58 (numeric)
 R = 9.35 (cm)

S (mw/cm²) at 20cm = 0.218403386

3.) MUBTC2-TH, (Bluetooth)

Tx Frequency: 2441.00 MHz
 Max. Peak Power Antenna Input Terminal: 0.56 dBm
 Antenna gain: 0.11 dBi

S= 1.00 (mW/cm²)
 P= 1.1368 (mW)
 G= 1.03 (numeric)
 R = 0.30 (cm)

S (mw/cm²) at 20cm = 0.000231718