

# RF Exposure Statement

## 1. LIMITS

### 1-1 Limits for FCC

According to §1.1310 and §2.1091 RF exposure is calculated.

(B) Limits for General Population/Uncontrolled Exposures

Frequency range (MHz)	Electric field Strength (V/m)	Magnetic field Strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
0.3 - 1.34.....	614	1.63	*(100)	30
1.34 - 30.....	824/f	2.19/f	*(180/ f <sup>2</sup> )	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

### 1-2 Limits for IC

The limit for Maximum Permissible Exposure (MPE), specified in IC RSS-102, is listed in Table 4 According to IC RSS-102: the criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency(RF) radiation as specified in RSS-102

Table 4: RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)

Frequency range (MHz)	Electric field Strength (V/m)	Magnetic field Strength (A/m)	Power density (W/m <sup>2</sup> )	Averaging time (minutes)
0.003-10	83	90	-	Instantaneous*
0.1-10	-	0.73/ f	-	6**
1.1-10	87/ f <sup>0.5</sup>	-	-	6**
10-20	27.46	0.0728	-2	6
20-48	58.07/ f <sup>0.25</sup>	0.1540/ f <sup>0.25</sup>	8.944/ f <sup>0.5</sup>	6
48-300	22.06	0.05852	1.291	6
300-6000	3.142 f <sup>0.3417</sup>	0.008335 f <sup>0.3417</sup>	0.02619 f <sup>0.6834</sup>	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	616000/ f <sup>1.2</sup>
150000-300000	0.158 f <sup>0.5</sup>	4.21 x 10 <sup>-4</sup> f <sup>0.5</sup>	6.67 x 10 <sup>-5</sup> f	616000/f <sup>1.2</sup>

**Note:** f is frequency in MHz.

\* Based on nerve stimulation (NS).

\*\* Based on specific absorption rate (SAR).

## 2. MAXIMUM PERMISSIBLE EXPOSURE Prediction

Prediction of MPE limit at a given distance

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

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

### 3. RESULTS (BT BAND)

#### 3-1. BT BAND

Max Peak output Power at antenna input terminal (dBm)	8.99
Max Peak output Power at antenna input terminal (mW)	7.925
Prediction distance (cm)	20.0000
Prediction frequency (MHz)	2402.0000
Antenna Gain(typical) (dBi)	1.4000
Antenna Gain(numeric)	1.38038
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.002176
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	0.53508

### 4.RESULTS (DTS BAND)

#### 4-1. DTS (802.11b BAND)

Max Peak output Power at antenna input terminal (dBm)	23.43
Max Peak output Power at antenna input terminal (mW)	220.293
Prediction distance (cm)	20.0000
Prediction frequency (MHz)	2437.000
Antenna Gain(typical) (dBi)	-0.10
Antenna Gain(numeric)	0.97724
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.042828
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	0.540397

**4-2. DTS (802.11g BAND)**

Max Peak output Power at antenna input terminal (dBm)	22.22
Max Peak output Power at antenna input terminal (mW)	166.725
Prediction distance (cm)	20.0000
Prediction frequency (MHz)	2412.0000
Antenna Gain(typical) (dBi)	-0.10000
Antenna Gain(numeric)	0.97724
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.032414
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	0.536602

**4-3. DTS (802.11n 20MHz BAND)**

Max Peak output Power at antenna input terminal (dBm)	22.01
Max Peak output Power at antenna input terminal (mW)	158.855
Prediction distance (cm)	20.0000
Prediction frequency (MHz)	2412.000
Antenna Gain(typical) (dBi)	-0.10000
Antenna Gain(numeric)	0.97724
Power density at prediction frequency (mW/cm <sup>2</sup> )	0.030884
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> )	0.536602

**Note : we applied IC limit instead of FCC limit because IC limit is worst case.**