

RF Module Exposure Statement

Neil McDonald

- Part Number 101482a
- The maximum power output is 0dBm (1mW). Under all conditions maximum observed EIRP:
 - -0.72 dBm @ 2400.5MHz
 - -1.19 dBm @ 2440.5MHz
 - -2.20 dBm @ 2480.5MHz
- Frequency Range 2400MHz to 2480MHz
- External Antenna gain = 3.0 dBi
- Separation distance from antenna typically 0.5m to 10m. Will therefore calculate at 20cm (0.2m)
- Duty cycle is typically 0.6% to 1% so will assume 1%.
- Power flux $S = \frac{PG}{4\pi r^2}$
 - where P is average power 1mW * 0.01 (duty cycle)
 - G is Antenna Gain 3dBi
 - R is distance 0.2m
 - $S = 0.000027 \text{ Wm}^{-2}$ or $0.0000027 \text{ mWcm}^{-2}$
- Electric Field strength $E = \sqrt{SZ_0}$
 - Where Z_0 is impedance of free space 377 Ohms.
 - E = average electric field strength = 0.10V/m
- Magnetic Field strength $H = E/Z_0$
 - H = average magnetic field strength = 0.00027A/m

Regional Requirement	Calculated RF exposure level at compliance boundary of 0.2m					
	S Field (W/m ²)		E Field (V/m)		H Field (A/m)	
	Result	Limit	Result	Limit	Result	Limit
EU	0.000027	50.0000	0.10	137.0000	0.00027	0.3630
FCC*	0.000003	5.0000	N/A	N/A	N/A	N/A

*Requirement and result in mW/cm²

Occupational results

The calculations show that the RF module complies with the occupational exposure levels described in the Council Recommendation 1999/519/EC, CFR 47 Pt1.1310, at the point of investigation, 0.2m

Regional Requirement	Calculated RF exposure level at compliance boundary of 0.2m					
	S Field (W/m ²)		E Field (V/m)		H Field (A/m)	
	Result	Limit	Result	Limit	Result	Limit
EU	0.000027	10.0000	0.10	61.0000	0.00027	0.1620
FCC*	0.000003	1.0000	N/A	N/A	N/A	N/A

*Requirement and result in mW/cm²

General population results

The calculations show that the EUT complies with the occupational exposure levels described in the Council Recommendation 1999/519/EC, CFR 47 Pt1.1310, at the point of investigation, 0.2m