**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 $Wm^{-2}$ or 0.0000027 $mWcm^{-2}$
- 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 $mW/cm^2$ **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 $mW/cm^2$ **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