Appendix A: RF Exposure Compliance

RF Exposure Calculation - MPE

Using FCC 1.1310 Table 1B as guidance, the maximum permissible RF exposure for an uncontrolled environment is 0.61 mW/cm^2 for the 902 – 928 MHz band, and 1 mW/cm^2 for the 2402 - 2480 MHz band. The worst case power at the center frequency of the band of operation is used for the calculation below.

The actual power density for a single transmitter is calculated as shown below.

$$S = (P \times G)/(4 \times \pi \times d^2)$$

where:
S = power density
P = transmitter conducted power in (W)
G = antenna numeric gain
d = distance to radiation center (m)

Frequency (MHz)	Antenna Gain (dBi)	Conducted Power (W)	Power Density (mW/cm^2)	Power Density Limit (mW/cm^2)
915.2	5	0.859	0.54	0.61
2441	0	0.003	0.0006	1

For a single Bluetooth transmitter, the power density / limit = 0.0006 / 1 = 0.06%

For a single MaxStream transmitter, the power density / limit = 0.54 / 0.61 = 89%

For an indication of both transmitters transmitting simultaneously,

0.06% + 89% = 89.06% which shows that the power density contribution from the Bluetooth transmitter is negligible.

Therefore, MPE requirements are met with both transmitters co-located.