

Exhibit A- Radiation Hazard Analysis



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Maximum Safe RF Exposure Power Levels

Antenna Diameter Meters	Antenna Area cm ²	Typical BUC Power Watts	Peak Power Density mW/cm ²	Nominal Power Density mW/cm ²	Max Safe BUC Power Watts	Peak Power Density mW/cm ²	Nominal Power Density mW/cm ²
0.6	2,827	5	1.8	0.1	25	8.8	0.6
1	7,854	8	1.0	0.1	75	9.5	0.6
1.2	11,310	25	2.2	0.1	100	8.8	0.6
1.5	17,671	25	1.4	0.1	150	8.5	0.5
1.8	25,447	25	1.0	0.1	250	9.8	0.6
2	31,416	50	1.6	0.1	300	9.5	0.6
2.4	45,239	75	1.7	0.1	450	9.9	0.6
3.6	101,788	100	1.0	0.1	1000	9.8	0.6
8797 (2.0)	30,500	50	1.6	0.1	300	9.8	0.6
9797 (2.4)	42,450	100	2.4	0.1	400	9.4	0.6

Notes:

The '**Peak Power Density**' values shown above assume a 100 percent duty cycle modulation of the RF power amplifier (BUC) at its maximum possible output power. No satellite network is ever operated at this extreme level. The '**Nominal Power Density**' values shown above, represent operation with a 10 percent duty cycle modulation and a 2 dB power backoff (0.1 x 0.63). These are realistic values for operation within a network that accommodates multiple users.

The FCC has defined, in document 'OET Bulletin 65', the maximum safe exposure level for controlled environments to be 5 mW/cm² and the maximum safe exposure level for uncontrolled environments to be 1 mW/cm². Clearly, the '**Typical BUC Power**' installations meet this requirement with a safety margin of 10. Furthermore, any system equipped with a BUC or RF power amplifier equal to or less than the '**Max Safe BUC Power**' stated above, is guaranteed to be safe outside the confines of the radome walls.

By contrast, an analog cellular telephone, with a peak power output of 2 Watts produces a power density, averaged over the area of your head of 20 mW/cm². Localized power densities, i.e. next to your ear, can approach 200 mW/cm². Digital cellular telephones typically operate with a duty cycle between 1 and 5 percent making the averaged power density equal to or slightly below the FCC defined safe level. Compared to the table values above, a cellular telephone produces between 10 and 100 times the RF exposure level of a typical Sea Tel satellite terminal.

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