



Satellite Tracking of People LLC

by SECURUS TECHNOLOGIES™

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Telecommunication Certification Body
UL VS Ltd,
Pavilion A
Ashwood Park
Basingstoke
Hampshire
RG23 8BG
United Kingdom

FCC: S5E0114BLU07
IC: 9086A-BLU07

RF Exposure Exemption Analysis of 915 MHz transmitter

Calculation of maximum Power in Channel

Measured field strength at 3 metres: 70.2 dB μ V/m \equiv 3.24 mV/m

$$\text{Equivalent ERP} = (E \times d)^2 / 30G$$

where ERP is the power, in Watts

E is the measured peak field strength, in Volts/metre (0.00324)

d is the distance at which the measurement was made, in metres (3)

G is the numeric gain of the radiating element (1.64)

$$\begin{aligned}\text{Equivalent ERP} &= (0.00324 \times 3)^2 / (30 \times 1.64) \\ &= 0.0000019 \text{ W} \\ &= 0.0019 \text{ mW}\end{aligned}$$

Maximum stated duty cycle for the 915 MHz transmitter = 0.0002 (0.020%)

Source based time averaged power = 0.0019 x 0.0002 = 0.00000038 mW

SAR Test Exclusion Threshold

From KDB447498 4.3.1 (1), the calculation for the SAR exclusion threshold is:

$[(\text{max. power of channel, mW}) / (\text{min. test separation distance, mm})] \times [\sqrt{f(\text{GHz})}] \leq 7.5$ for 10-g extremity SAR

The measured power for the transmitter is 0.00000038 mW. Most conservative minimum distance of 5 mm applied. Under these conditions, the threshold calculation is:

$$(0.00000038 / 5) \times \sqrt{0.915} = 0.0000007$$

which is far below the 7.5 threshold for requiring SAR testing.

Stephen Freathy
VP Engineering