

MPE Calculation

for

Boomerang Tracking, Inc.
FCC ID: QPXACR30002



L. S. Compliance, Inc.

MPE Calculations for : Boomerang Tracking, Inc.

Project Name : 900MHz FHSS Transmitter

Date Assembled : April 21, 2003

Revision: 1.0

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1.0 SCOPE

This report demonstrates the Maximum Permissible Exposure (MPE) Calculation required for an Intentional Radiator equipment authorization.

2.0 REVISION CONTROL

Date	Changes	Revision
04/21/03	ORIGINAL RELEASE	1.0

3.0 APPLICABLE DOCUMENTS

[1] "Code of Federal Regulations Title 47, Volume 1, Sec. 1.1310 Radiofrequency radiation exposure limits" 47CFR1.1310, Revised as of October 1, 2001, Page 297-298.

[2] "Code of Federal Regulations Title 47, Volume 1, Sec. 2.1091 Radiofrequency radiation exposure evaluation: mobile devices." 47CFR2.1091, Revised as of October 1, 2001, Page 588-589.

[3] "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", Supplement C, OET Bulletin 65, Edition 97-01



4.0 Maximum Permissible Exposure Calculations

Calculation 1.

Mobile unit with 0.00 dBi omnidirectional (wire) antenna and 20cm separation.

Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

Maximum peak output power at antenna input terminal: 27.00 (dBm)

Maximum peak output power at antenna input terminal: 501.19 (mW)

Antenna gain(typical): 0 (dBi)

Maximum antenna gain: 1 (numeric)

Prediction distance: 20 (cm)

Prediction frequency: 915 (MHz)

MPE limit for uncontrolled exposure at prediction frequency: 0.61 (mW/cm²)

Power density at prediction frequency: **0.099709** (mW/cm²)

Maximum allowable antenna gain: **7.865972932** (dBi)

Margin of Compliance at 20cm = 3.0dB



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