



MPE Analysis:
REPORT #: MPE00007

FOR

Video King Gaming Systems, Inc.
100-1475 Chevrier Blvd.
Winnipeg, MB R3T 1Y7

Power Bingo King
RF REMOTE TRANSMITTER

FCC ID:
SKCTRANS-1

DATED:
FEBRUARY 6,2006

IN ACCORDANCE WITH
CFR 47 PART 15.247(B)(5)
RF EXPOSURE COMPLIANCE

FCC ID: SKCTRANS-1	 ARRISTA <small>Technologies Inc.</small>
REPORT NO.: MPE000007	
FCC CFR 47 Part 15.247(b)(5)	

Test Lab Personnel:

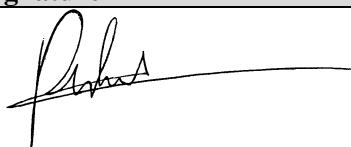
Test Performed by:	Date	Signature
Paul Eberling, CNA Electronic Technologist	February 6, 2006	

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Document Template Revision History:

Date	Name	Revision	Description
01/31/2002	Elwood Friesen	1.0	Initial Release
04/15/2002	Paul Eberling	1.2	Reviewed

Approvals:

Date	Name	Title	Signature
February 6, 2006	Roman Wroczynski	Director; Development & Test	

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1.1. 15.247(b)(5) RF Exposure Compliance

Spread spectrum transmitters operating under Section 15.247 are categorically excluded from routine environmental evaluation for demonstrating RF exposure compliance with respect to MPE and/or SAR limits. Though, these devices are not exempted from compliance. As indicated in Section 15.247(b)(5), these transmitters are required to operate in a manner that ensures that exposure to the public (users and nearby persons) does not exceed the Commission's RF exposure guidelines (see Sections 1.1307, 2.1091 and 2.1093).

Table 1 (b) as per OET Bulletin 65 is shown below and depicts the LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE) for both controlled and uncontrolled exposure.

Article 01-Table 1(b): MPE Limits

(A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H)(A/m)	Power Density (S) (mW/cm ²)	Averaging Time S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0- 30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	F/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H)(A/m)	Power Density (S) (mW/cm ²)	Averaging Time S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34- 30	1842/f	4.89/f	(180/f ²)*	30
30-300	61.4	0.163	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

- f = frequency in MHz

* Plane-wave equivalent power density

NOTE 1: *Occupational/controlled* limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2: *General population/uncontrolled* exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

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Article 02-Table: MPE Calculations

Output Power of the transmitter: (at the RF test port)	0.0089W maximum	
Antenna Gain: Maximum antenna gain allowed as described in user/install manual.	2.7dBi	
Operational Frequency:	902-928MHz	
Minimum distance (Controlled): For personnel aware of radiofrequency equipment and who are able to limit their exposure time. (Installation Technicians)	20cm	
Minimum distance (Uncontrolled): For personnel unaware of radiofrequency equipment and who are not able to limit their exposure time. (General Public)	20cm	
Maximum Permissible Exposure (MPE): (Using f = 902MHz in calculation)	Controlled 6 min avg 3.007 mW/cm ²	Uncontrolled 30 min avg 0.6013 mW/cm ²
Calculated Power Density	0.0033 mW/cm ²	0.0033 mW/cm ²
Complies with MPE Limits	Yes	Yes

1.1.1. Calculations

The power density calculations follow the formula below. It is noted that the antenna used incorporates a forward gain of 2.7dBi expressed as a numerical gain of 1.86.

$$S = P_T G / 4\pi R^2 \quad (1)$$

where:

S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW)

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

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

(A) Controlled Exposure Calculation

$$\begin{aligned} S &= 8.9 * 1.86 / (4\pi * 20^2) \\ S &= 16.554 / 5026.55 \\ S &= 0.0033 \text{ mW/cm}^2 \end{aligned}$$

(B) Uncontrolled Exposure Calculation

$$\begin{aligned} S &= 8.9 * 1.86 / (4\pi * 20^2) \\ S &= 16.554 / 5026.55 \\ S &= 0.0033 \text{ mW/cm}^2 \end{aligned}$$

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