RF Exposure

Project #:	**G100781715**	Test Area:	Intertek Louisville
Test Method:	FCC CFR47 Part 1.1310	Test Date:	11/06/2012
EUT Model #:	RC-03-MCT-K		
EUT Serial #:	FCC1		
Manufacturer:	Isonas Security Systems		
EUT Description:	The product tested is multi-frequency, network-enabled, RFID Security Access Reader with keypad. The product transmits at 122.8kHz or 13.56MHz.		
Notes:			

The following limit is from table 1 (B) Limits for General Population/Uncontrolled Exposure in FCC part 1.1310:

1 mW/cm²

The following calculation was used to determine compliance to the above limit. The calculation is from FCC OET bulletin 65.

$S=PG/4\pi R^2$

Where:
S=power density (in appropriate units, e.g. mW/cm²)
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 (appropriate unit, e.g., cm)
In this case 20cm will be used.

Tx 122.8kHz: Maximum radiated field strength = 86.13dBuV/m at 3-meters = 0.123mW
Tx 13.56MHz: Maximum radiated field strength = 66.05dBuV/m at 3-meters = 0.0012mW
(see test report 100781715DEN-001)
Maximum gain declared by the manufacture – unknown, < 6dBi

Power Density

Power (mW)	Gain (dbi)	Gain numeric	Distance (cm)	Power Density (mW/cm²)
0.123	0	1.0	20	0.0245
0.123	6	4.0	20	0.0974
0.0012	0	1.0	20	0.00024
0.0012	6	4.0	20	0.00095

Note: Worst-case antenna gain of 6dBi used in following calculations:

Tx 122.8kHz Delta Limit: 0.0974 mW/cm² - 1.0mW/cm² = -0.9026 mW/cm²
Tx 13.56MHz Delta Limit: 0.00095 mW/cm² - 1.0mW/cm² = -0.9991 mW/cm²

Results: The unit complies with the requirements for Maximum Permissible Exposure (MPE) under FCC part 1.1310.