RF EXPOSURE INFORMATION

1. MPE Limits

The limit for Maximum Permissible Exposure (MPE), specified in FCC §1.1310, is lieted in Table 1

According to FCC §1.1310 : the criteria listed in the following table shall be used to evaluate the environmetal impact of human exposure to radio-frequency(RF) radiation as specified in §1.1307(b).

Table 1. Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strengh (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (Minutes)
(A) Limits For Occupational / Control Exposures (f= frequency)				
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 (f=frequency)				
30-300	27.5	0.073	0.2	30
300-1500	…	…	f/1500	30
1500-100,000	…	…	1.0	30

2. EUT information

Type of equipment : CAR Alarm Transceiver

Model Name : 2WNANO

FCC ID : VA5JR940-2WSS

Frequency Band : 910.92 ~ 919.08 MHz

Procedure

The procedure used to determine the RF power density was based upon a calculation for determining compliance with the MPE requirements.

The power generated by each transmitter used in this was initially measured by a power and the powers were recorded . Through use of the Friis transmission fomula and knowledge of the maximum antenna gain to be used, the power density level is calculated at a distance of 20 cm.

The antenna gain to be used to calculate the MPE in all relevant bands of operation.

Friis Transmission Formula

Friis transmission formula : Pd =(P_{out} * G) / (4π r^2)

Where,

P_d= Power Density (mW/cm^2) π =3.1416

P_{out}= out power to antenna (mW) r = distance between observation point and center of the radiator(cm)

3. Calculated MPE

The highest RF powered measured in band was used to determine the maximum theoretical antenna gain in that band. The power density limit for General Population/Uncontrolled Exposure at each frequency is determined based on the information in Table 1.

Table 2. Calculated MPE Data for RFID Reader

Frequency	915 MHz
Limit	0.61 mW/cm^2
Distance (cm), R	20 cm
Power (dBm), P	15.76 dBm (37.67 mW)
Tx Ant Gain(dBi), G	-4.28
Power Density (mW/cm2)	0.0011
Minimum Distance	0.88 cm

4. Summary of Results

Table 5. Maximum Permissible Summary Table

Frequency Band (MHz)	Maximum Antenna Gain (dBi)	MPE at 20 cm (mW/cm^2)	MPE Limit 20 cm (mW/cm^2)	Test Result
910.92 ~ 919.08	-4.28	0.0011	0.61	**PASS**

5. Conclusion

Calculations show that Radio devices with described antennas complied with Maximum Permissible (MPE) limit for the General Population/Uncontrolled Exposure