

Evaluation Report

Product Name:	LotTrack LPR Checkpoint
Model Name:	LPR Checkpoint Type: RF
Report No.:	
Applicant:	Intellion AG
Prepared by:	

General

Applied Standard(s):	EN 62479:2010 CFR47 FCC Part 2: Section 2.1093 FCC KDB Publication 447498 v06
Test Result:	complies
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Description of EUT

Product Name:	LotTrack LPR Checkpoint
Model No.:	LPR Checkpoint Type: RF
Trade Name:	LotTrack LPR Checkpoint
Frequency Range:	919.2 – 920.8 MHz (Type NA), transmitter 1 13.56 MHz, transmitter 2
Working Frequency:	
Power Supply:	5 V DC

Rated Power according to the manufacturer

Frequency (MHz)	Target Power and Tolerance
919.2 (transmitter 1)	max 1 mW
919.8 (transmitter 1)	max 1 mW
13.56 MHz (transmitter 2)	max 1 mW

Evaluation of product specific Health Aspects

USA Part

Limits - USA

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
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

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 30	824/f	2.19/f	(180/f ²)*	30
30 – 300	27.5	0.073	0.2	30
300 – 1500	/	/	f/1500	30
1500 – 100,000	/	/	1.0	30

F=frequency in MHz

*=Plane-wave equivalent power density

MPE Calculation Method – USA

Predication of MPE limit at a given distance as described in Equation on page 18 of OET Bulletin 65, Edition 97-01

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

Where:

S=power density

Evaluation of product specific Health Aspects

P=power input to 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

Evaluation Result

Modulation Type	Target Output power	Antenna gain (dBi)	Antenna gain (linear)	MPE (calculated)	MPE (Limit)
GFSK	1 mW	3 dBi	2	0.00318 mW/cm ² (Peak)	0.614 mW/cm ²
ASK	1 mW			0.00000001232 mW/cm ²	0.979 mW/cm ²
Combined	2 mW			0.00318001232 mW/cm ²	0.614 mW/cm ²

Remark: The 2 transmitter (one for 919.2 – 920.8 MHz and one for 13.56 MHz) can operate simultaneously (see combined modulation type).

Conclusion

The device is compliant to the RF Exposure requirements.