



SPORTON International Inc.

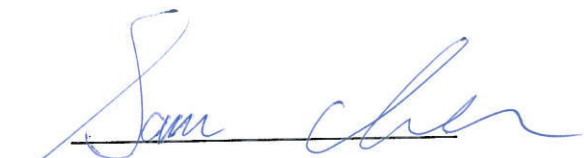
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Project No: CB10504035

Maximum Permissible Exposure Report

Applicant's company	Zebra Technologies Corporation
Applicant Address	1 Zebra Plaza Holtsville, NY 11742 USA
FCC ID	UZ7SP5500
Manufacturer's company	Zebra Technologies Corporation
Manufacturer Address	1 Zebra Plaza Holtsville, NY 11742 USA

Product Name	Pole Mounted Reader
Brand Name	ZEBRA
Model Name	SP5500
Ref. Standard(s)	47 CFR FCC Part 2 Subpart J, section 2.1091
Received Date	Mar. 11, 2016
Final Test Date	Mar. 31, 2016
Submission Type	Original Equipment


Sam Chen

SPORTON INTERNATIONAL INC.



Table of Contents

1. GENERAL DESCRIPTION.....	1
1.1. EUT General Information	1
1.2. Testing Location.....	1
2. MAXIMUM PERMISSIBLE EXPOSURE.....	2
2.1. Limit of Maximum Permissible Exposure	2
2.2. MPE Calculation Method	3
2.3. Calculated Result and Limit.....	3

History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA631021	Rev. 01	Initial issue of report	Apr. 11, 2016

1. GENERAL DESCRIPTION

1.1. EUT General Information

RF General Information		
Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
902-928	902.75-927.25	DB-ASK, PR-ASK

1.2. Testing Location

Testing Location		
☐	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-327-0973
☒	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

2. MAXIMUM PERMISSIBLE EXPOSURE

2.1. Limit of Maximum Permissible Exposure

(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 E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	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 E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

2.2. MPE Calculation Method

The MPE was calculated at 23 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = Peak RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

2.3. Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

Antenna Type : Circular Polarized Patch Antenna

Conducted Power: 26.95 dBm

Distance (cm)	Antenna Gain (dBi)	Antenna Gain (numeric)	Conducted Power		Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
			(dBm)	(mW)			
23	3.00	1.9953	26.9500	495.4502	0.1488	0.6018	Complies