RF Exposure Evaluation Report

APPLICANT: Zebra Technologies Corporation

EQUIPMENT: RFID READER

BRAND NAME: Zebra

MODEL NAME: FX9600

FCC ID : UZ7FX9600

STANDARD : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC., would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091, and pass the limit. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by: Eric Huang / Manager

Approved by: Jones Tsai / Manager

lac-MRA



Report No.: FA751510

SPORTON INTERNATIONAL INC.

No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan City, Taiwan (R.O.C.)

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7FX9600 Page Number : 1 of 7
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SPORTON LAB. RF Exposure Evaluation Report

Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE	
FA751510	Rev. 01	Initial issue of report	Oct. 30, 2017	

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1. Administration Data

1.1. <u>Testing Laboratory</u>

Testing Laboratory				
Test Site	SPORTON INTERNATIONAL INC.			
Test Site Location	No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978			

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	Applicant
Company Name	Zebra Technologies Corporation
Address	1 Zebra Plaza, Holtsville, NY 11742-1300, USA

Manufacturer				
Company Name	Zebra Technologies Corporation			
Address	1 Zebra Plaza, Holtsville, NY 11742-1300, USA			

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2. <u>Description of Equipment Under Test (EUT)</u>

Product Feature & Specification					
EUT Type	RFID READER				
Brand Name	Zebra				
Model Name	FX9600				
FCC ID	UZ7FX9600				
Wireless Technology and Frequency Range	RFID : 902.75MHz ~ 927.25MHz				
Mode	RFID: ASK				
Hardware	0.0.5.0				
OS version	2.2.10.0				
Radio Firmware	2.1.2.0				
Radio RFBoard	13.0.0.0				
MFD	30SEP17				
EUT Stage	Identical Prototype				

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

3. Maximum RF average output power among production units

Mode	Average Power (dBm)				
RFID	30				

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4. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

requency range Electric field strength (V/m)		Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)	
800 B.	(A) Limits for O	ccupational/Controlled Expos	sures	W: 122	
0.3-3.0	614	1.63	*(100)	6	
3.0-30	1842/	f 4.89/1	*(900/f2)	6	
30-300	61.4	0.163	1.0	6	
300-1500			f/300	6	
1500-100,000			5	6	
	(B) Limits for Gene	ral Population/Uncontrolled I	Exposure		
0.3-1.34	614	1.63	*(100)	30	
1.34-30	824/	f 2.19/1	*(180/f2)	30	
30-300	27.5	0.073	0.2	30	
300-1500			f/1500	30	
1500-100,000			1.0	30	

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:

$$S=\frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna

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5. Radio Frequency Radiation Exposure Evaluation

5.1. Standalone Power Density Calculation

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	(mW)	Power Density at 23cm (mW/cm^2)	(mW/cm^2)
RFID	902.75	6.00	30.00	36.000	3.981	3981.072	0.599	0.602

Note: For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.

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