

RF Exposure Evaluation Report

Applicant's company	Zebra Technologies Corporation
Applicant Address	3 Overlook Point Lincolnshire IL 60069 USA
FCC ID	XWX-TFF5100
Manufacturer's company	Zebra Technologies Corporation
Manufacturer Address	3 Overlook Point Lincolnshire IL 60069 USA

Product Name	WhereNet RTLS Badge Tag
Brand Name	Zebra
Model Name	TFF-5100
Ref. Standard(s)	47 CFR FCC Part 2 Subpart J, section 2.1093
Received Date	Jul. 06, 2017
Final Test Date	Nov. 06, 2017
Submission Type	Original Equipment


Kevin Liang / Assistant Manager





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PHOTOGRAPHS OF EUT V01



History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA770616	Rev. 01	Initial issue of report	Nov. 07, 2017

1. GENERAL DESCRIPTION

1.1. EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
2.4GHz WLAN	2400-2483.5	2442, 2446	OOK, BPSK

1.2. Testing Location Information

Testing Location		
☒	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL : 886-3-327-3456 FAX : 886-3-327-0973 Test site Designation No. TW1190 with FCC.
☐	JHUBEI	ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.) TEL : 886-3-656-9065 FAX : 886-3-656-9085 Test site Designation No. TW0006 with FCC.

2. RF EXPOSURE EVALUATION

2.1. Applicable Standard

In accordance with FCC 47 CFR part 2 (2.1093) this device has been defined as a portable device which is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.

Portable devices must be evaluated using the specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2003.

2.2. SAR evaluation

- Per FCC KDB 447498 D01 v06, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f_{\text{(GHz)}}}] \leq 3.0$$
 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR
 - $f_{\text{(GHz)}}$ is the RF channel transmit frequency in GHz
 - Power and distance are rounded to the nearest mW and mm before calculation
 - The result is rounded to one decimal place for comparison

Mode	Tune-up Average Power		Test Distance (mm)	Frequency (GHz)	Exclusion Thresholds
	(dBm)	(mW)			
OOK	3.42	2.20	5	2.446	0.7
BPSK	4.27	2.67	5	2.442	0.8

- The worst of per FCC KDB 447498 D01 v06 exclusion thresholds is $0.8 < 3$, RF exposure evaluation is not required.