

FCC SAR Test Report

APPLICANT : Zebra Technologies Corporation
EQUIPMENT : Enterprise Digital Assistant (EDA)
BRAND NAME : Zebra
MODEL NAME : MC67ND
FCC ID : UZ7MC67ND
STANDARD : FCC 47 CFR Part 2 (2.1093)
ANSI/IEEE C95.1-1992
IEEE 1528-2013

We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and had been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.



Reviewed by: Eric Huang / Deputy Manager



Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA320416-12	Rev. 01	Enable BLE Function	Jun. 02, 2016

1. Administration Data

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

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

2. Guidance Standard

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02

3. Equipment Under Test (EUT)

3.1 General Information

Product Feature & Specification	
Equipment Name	Enterprise Digital Assistant (EDA)
Brand Name	Zebra
Model Name	MC67ND
FCC ID	UZ7MC67ND
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz CDMA 2000 BC0: 824.7 MHz ~ 848.31 MHz CDMA 2000 BC1: 1851.25 MHz ~ 1908.75 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5700 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	<ul style="list-style-type: none"> • GSM/GPRS/EGPRS • AMR/RMC 12.2Kbps • HSDPA • HSUPA • 1xRTT/1xEv-Do(Rev.0)/1xEv-Do(Rev.A) • 802.11a/b/g/n HT20 • Bluetooth v2.1+EDR
HW Version	MV
SW Version	5.2.29366
FW Version	X_2.03.0.0.007R
MFD	24NOV15
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype
Remark:	
1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.	

4. Conducted RF Output Power (Unit: dBm)

<Bluetooth v4.0 with LE Conducted Power>

Mode	Channel	Frequency (MHz)	Burst average power (dBm)
			GFSK
v4.0 with LE	CH 0	2402	3.38
	CH 19	2440	3.51
	CH 39	2480	3.35

Mode	Channel	Frequency (MHz)	Source-based time-average power (dBm)
			GFSK
v4.0 with LE	CH 0	2402	1.24
	CH 19	2440	1.37
	CH 39	2480	1.21

Note:

1. The data above is the average power level during the "ON" burst of Bluetooth transmitter
2. The duty factor of LE is applied to determine source-based time-average power, and time-average power = burst average power / duty factor
3. Duty factor of LE is 61.15% individually
4. Per KDB 447498 D01v06 test exclusion, the minimum test separation distance is < 5 mm; a distance of 5 mm is applied to determine SAR test exclusion. The test exclusion threshold is 0.31 which is <= 3, SAR testing is not required.
5. For BLE simultaneous transmission analysis, due to the max source base time average power is less than original filing(1.41 dBm) and does not affect original SAR test results, all the Sim-Tx analysis is referred to original report, FCC ID: UZ7-MC67ND, Sporton Report No.: FA320416, Rev.01.

5. References

- [1] FCC 47 CFR Part 2 "Frequency Allocations and Radio Treaty Matters; General Rules and Regulations"
- [2] ANSI/IEEE Std. C95.1-1992, "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz", September 1992
- [3] IEEE Std. 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", Sep 2013
- [4] FCC KDB 447498 D01 v06, "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies", Oct 2015
- [5] FCC KDB 865664 D01 v01r03, "SAR Measurement Requirements for 100 MHz to 6 GHz", Feb 2014.
- [6] FCC KDB 865664 D02 v01r01, "RF Exposure Compliance Reporting and Documentation Considerations" May 2013.