



## RF Exposure Report

**Report No.:** SA151104E03

**FCC ID:** UZ7VC80

**Test Model:** VC80

**Received Date:** Nov. 04, 2015

**Test Date:** Nov. 17 to 28, 2015

**Issued Date:** Dec. 16, 2015

**Applicant:** Zebra Technologies Corporation

**Address:** 1 Zebra Plaza, Holtsville, NY 11742

**Manufacturer:** Zebra Technologies Corporation

**Address:** 1 Zebra Plaza, Holtsville, NY 11742

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Hsin Chu Laboratory

**Lab Address:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan R.O.C.

**Test Location (1):** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan R.O.C.

**Test Location (2):** No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin  
Chu Hsien 307, Taiwan R.O.C.

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### Release Control Record

Issue No.	Description	Date Issued
SA151104E03	Original release.	Dec. 16, 2015



# 1 Certificate of Conformity

**Product:** Vehicle Computer

**Brand:** Zebra

**Test Model:** VC80

**Sample Status:** ENGINEERING SAMPLE


**Applicant:** Zebra Technologies Corporation

**Test Date:** Nov. 17 to 18, 2015

**Standards:** FCC Part 2 (Section 2.1091)  
447498 D01 General RF Exposure Guidance v06  
IEEE Std C95.1-2005

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**Prepared by :**  \_\_\_\_\_, **Date:** \_\_\_\_\_ Dec. 16, 2015  
Elsie Hsu / Specialist

**Approved by :**  \_\_\_\_\_, **Date:** \_\_\_\_\_ Dec. 16, 2015  
May Chen / Manager

## 2 RF Exposure

### 2.1 Limits For Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 2.2 MPE Calculation Formula

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

### 2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user.

So, this device is classified as **Mobile Device**.

### 2.4 Antenna Gain

Antenna No	PCB Chain No.	Model	Antenna Type	Antenna Connector	Antenna Gain (dBi) Exclude cable loss	Internal cable loss (dB)	External cable loss (dB)	Antenna Gain (dBi) Include cable loss	Internal cable length (mm)	External cable length (mm)	Frequency (GHz to GHz)
1	Int.Chain0	AN000097A01	Patch	i-pex (MHFL4)	5	NA	NA	5	NA	NA	2.4~2.4835
					5	NA	NA	5	NA	NA	5.15~5.85
	Int.Chain1				5	NA	NA	5	NA	NA	2.4~2.4835
					5	NA	NA	5	NA	NA	5.15~5.85
2	ext.Chain0	AN2010	Monopole	RPSMA	2	0.6	1.8	-0.4	147	2850	2.4~2.4835
					2	0.9	2.6	-1.5	147	2850	5.15~5.85
	ext.Chain1				2	0.6	1.8	-0.4	147	2850	2.4~2.4835
					2	0.9	2.6	-1.5	147	2850	5.15~5.85
3	ext.Chain0	AN2020	Monopole	RPSMA	5	0.6	1.8	2.6	147	2850	2.4~2.4835
	ext.Chain1				5	0.6	1.8	2.6	147	2850	2.4~2.4835
4	ext.Chain0	AN2030	Dipole	RPSMA	2	0.6	NA	1.4	147	NA	2.4~2.4835
					3.7	0.9	NA	2.8	147	NA	5.15~5.85
	ext.Chain1				2	0.6	NA	1.4	147	NA	2.4~2.4835
					3.7	0.9	NA	2.8	147	NA	5.15~5.85
5	ext.Chain0	AN2040	Dipole	RPSMA	2	0.6	NA	1.4	147	NA	2.4~2.4835
	ext.Chain1				2	0.6	NA	1.4	147	NA	2.4~2.4835

Note:

1. For 1TX configuration mode: max gain was selected as representative antenna.

### 3 Calculation Result Of Maximum Conducted Power

**For WLAN:**

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2472	764.224	5	20	0.48078	1
5180-5240	199.739	5	20	0.12566	1
5260-5320	193.688	5	20	0.12185	1
5500-5720	208.673	5	20	0.13128	1
5745-5825	201.444	5	20	0.12673	1

**For BT-EDR:**

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2402-2480	2.410	5	20	0.00152	1

**For BT-LE:**

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2402-2480	1.811	5	20	0.00114	1

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