

## RF Exposure Report

**Report No.:** SA160715E05

**FCC ID:** UZ7AP7622

**Test Model:** AP-7622

**Received Date:** July 15, 2016

**Test Date:** Sep. 21, 2016

**Issued Date:** Oct. 28, 2016

**Applicant:** Zebra Technologies Corporation

**Address:** One Zebra Plaza, Holtsville, NY,11742, USA

**Manufacturer:** Zebra Technologies Corporation

**Address:** One Zebra Plaza, Holtsville, NY,11742, USA

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

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### Release Control Record

Issue No.	Description	Date Issued
SA160715E05	Original release.	Oct. 28, 2016

## 1 Certificate of Conformity

**Product:** Access Point

**Brand:** ZEBRA

**Test Model:** AP-7622

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** Zebra Technologies Corporation

**Test Date:** Sep. 21, 2016

**Standards:** FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

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 :** Wendy Wu , **Date:** Oct. 28, 2016  
Wendy Wu / Specialist

**Approved by :** May Chen , **Date:** Oct. 28, 2016  
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

No.	PCB Chain No	Brand	Model	Antenna Gain(dBi) Including cable loss	Frequency range	Antenna Type	Connector type
1	Chain 0	NA	NA	3.64	2.4~2.4835GHz	Monopole	i-pex(MHF)
				4.14	5.15~5.25GHz	Monopole	i-pex(MHF)
				4.33	5.25~5.35GHz	Monopole	i-pex(MHF)
				4.66	5.47~5.725GHz	Monopole	i-pex(MHF)
				4.85	5.725~5.85GHz	Monopole	i-pex(MHF)
2	Chain 1	NA	NA	2.65	2.4~2.4835GHz	Monopole	i-pex(MHF)
				4.5	5.15~5.25GHz	Monopole	i-pex(MHF)
				5.77	5.25~5.35GHz	Monopole	i-pex(MHF)
				5.54	5.47~5.725GHz	Monopole	i-pex(MHF)
				4.78	5.725~5.85GHz	Monopole	i-pex(MHF)
3	BT	NA	NA	2.42	2.4~2.483GHz	Monopole	i-pex(MHF)

## 2.5 Calculation Result of Maximum Conducted Power

### For WLAN / BT coexistence mode:

Condition	Technology		
1	WLAN (2.4GHz-Chain0)	WLAN (5GHz-Chain1)	BT
2	WLAN (2.4GHz-Chain1)	WLAN (5GHz-Chain0)	BT
3	WLAN (2.4GHz-Chain0)	WLAN (2.4GHz-Chain1)	BT
4	WLAN (5GHz-Chain0)	WLAN (5GHz-Chain1)	BT

#### Condition 1

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462 (Chain 0)	153.462	3.64	20	0.07059	1
5180-5240 5745-5825 (Chain 1)	154.882	4.78	20	0.09263	1
2402-2480	6.339	2.42	20	0.00220	1

#### Condition 2

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462 (Chain 1)	173.78	2.65	20	0.06364	1
5180-5240 5745-5825 (Chain 0)	138.995	4.85	20	0.08448	1
2402-2480	6.339	2.42	20	0.00220	1

#### Condition 3

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462 (2TX)	327.242	6.17	20	0.26952	1
2402-2480	6.339	2.42	20	0.00220	1

#### Condition 4

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
5180-5240 5745-5825 (2TX)	293.877	7.83	20	0.35473	1
2402-2480	6.339	2.42	20	0.00220	1

#### NOTE:

2.4GHz: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 6.17\text{dBi}$

#### 5GHz:

UNII-1: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 7.33\text{dBi}$

UNII-3: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 7.83\text{dBi}$

**Conclusion:**

The formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

**Condition 1:**

Therefore, the worst-case situation is  $0.07059 / 1 + 0.09263 / 1 + 0.00220 / 1 = 0.16542$ , which is less than "1".

This confirmed that the device comply with FCC 1.1310 MPE limit.

**Condition 2:**

Therefore, the worst-case situation is  $0.06364 / 1 + 0.08448 / 1 + 0.00220 / 1 = 0.15032$ , which is less than "1".

This confirmed that the device comply with FCC 1.1310 MPE limit.

**Condition 3:**

Therefore, the worst-case situation is  $0.26952 / 1 + 0.00220 / 1 = 0.27172$ , which is less than "1". This

confirmed that the device comply with FCC 1.1310 MPE limit.

**Condition 4:**

Therefore, the worst-case situation is  $0.35473 / 1 + 0.00220 / 1 = 0.35693$ , which is less than "1". This

confirmed that the device comply with FCC 1.1310 MPE limit.

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