RF Exposure Report

Report No.:	SA170314C06A
FCC ID:	UDX-60053010
Test Model:	Z3-HW
Received Date:	Mar. 14, 2017
Test Date:	Mar. 27 ~ May 03, 2017
Issued Date:	May 09, 2017
Applicant:	Cisco Systems, Inc.
Address:	170 West Tasman Drive, San Jose, CA 95134
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
SA170314C06A	Original release	May 09, 2017

1 Certificate of Conformity

Product:	802.11a/b/g/n/ac Wireless Security Appliance
Brand:	Cisco
Test Model:	Z3-HW
Sample Status:	Engineering sample
Applicant:	Cisco Systems, Inc.
Test Date:	Mar. 27 ~ May 03, 2017
Standards:	FCC Part 2 (Section 2.1091) KDB 447498 D03 (January 17, 2014) IEEE C95.1

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:** May 09, 2017

Pettie Chen / Senior Specialist

Approved by : _____ , **Date:** May 09, 2017

Ken Liu / Senior 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^2)	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^2

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**.

3 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WLAN					
CDD mode					
2412-2462	26.26	8.15	20	0.549	1
5180-5240	21.65	8.52	20	0.207	1
5260-5320	22.12	8.52	20	0.231	1
5500-5700	22.60	8.52	20	0.257	1
5745-5825	21.81	8.52	20	0.215	1
Beamforming mode					
2412-2462	20.46	8.15	20	0.144	1
5180-5240	18.64	8.52	20	0.103	1
5260-5320	19.11	8.52	20	0.115	1
5500-5700	19.59	8.52	20	0.129	1
5745-5825	18.79	8.52	20	0.107	1
BT LE					
2402-2480	5.13	2.66	20	0.001	1

Note:
2.4GHz Band: Directional gain = 10 $\log[(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/2]$ = 8.15dBi
5GHz Band: Directional gain = 10 $\log[(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/2]$= 8.52 dBi

Frequency Band	Max Power (dBm)		Total Power (dBm)	Power Limit (dBm)
	WLAN	BT LE		
2.4GHz	26.26	5.13	26.29	30

CONCULSION:

Both of the WLAN 2.4G & WLAN 5G & BT LE can transmit simultaneously, the formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4G + WLAN 5.0G + BT LE = 0.549 + 0.257 + 0.001 = 0.807

Therefore, the maximum calculation of this situation is 0.807, which is less than the “1” limit.

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