

## RF Exposure Report

**Report No.:** SA170601E12B

**FCC ID:** 2AKCZ-0C2

**Test Model:** APL43-0C2

**Received Date:** June 01, 2017

**Test Date:** Aug. 01, 2017

**Issued Date:** Nov. 30, 2017

**Applicant:** SonicWall Inc.

**Address:** 5455 Great America Parkway, Santa Clara, CA 95054 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
SA170601E12B	Original release.	Nov. 30, 2017

## 1 Certificate of Conformity

**Product:** Wireless Access Point

**Brand:** SONICWALL

**Test Model:** APL43-0C2

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** SonicWall Inc.


**Test Date:** Aug. 01, 2017

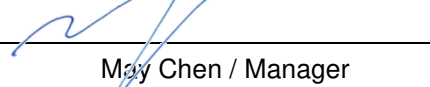
**Standards:** FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

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:** Nov. 30, 2017  
Claire Kuan / Specialist

**Approved by :**  , **Date:** Nov. 30, 2017  
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 50cm away from the body of the user. So, this device is classified as Mobile Device.

### 2.4 Antenna Gain

External antenna									Internal antenna	
Type	Dipole								PIFA	
Connector	RSMA								IPEX	
Radio	1				2				3	4
Frequency	2.4GHz				5GHz				2.4GHz	BT-LE
Antenna	1	2	3	4	5	6	7	8	9	10
Gain (dBi)	5.08	5.08	5.08	5.08	8.41	8.41	8.41	8.41	2.91	3.13

### 3 Calculation Result of Maximum Conducted Power

All test data (Except Frequency Band: 5260-5320 MHz, 5500-5700 MHz) was copied from the original test report (Report No.: SA170601E12)

Radio	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
1	WLAN 2412~2462 (CDD mode)	27.55	11.1	50	0.23307	1
	WLAN 2412~2462 (Beamforming mode)	24.21	11.1	50	0.10809	1
2	WLAN 5180-5240 (CDD mode)	24.20	14.43	50	0.23238	1
	WLAN 5260-5320 (CDD mode)	18.54	14.43	50	0.06310	1
	WLAN 5500-5700 (CDD mode)	21.49	14.43	50	0.12446	1
	WLAN 5745-5825 (CDD mode)	27.54	14.43	50	0.50051	1
	WLAN 5180-5240 (Beamforming mode)	21.37	14.43	50	0.12103	1
	WLAN 5260-5320 (Beamforming mode)	15.53	14.43	50	0.03155	1
	WLAN 5500-5700 (Beamforming mode)	15.50	14.43	50	0.03133	1
	WLAN 5745-5825 (Beamforming mode)	21.48	14.43	50	0.12403	1
3	WLAN 2412~2462	20.66	2.91	50	0.00724	1
4	BT-LE 2402~2480	6.04	3.13	50	0.00026	1

Note:

For radio 1

2.4GHz: Directional gain = 5.08dBi + 10log(4) = 11.1dBi

For radio 2

5GHz: Directional gain = 8.41dBi + 10log(4) = 14.43dBi

For radio 3

2.4GHz: Directional gain = 2.91dBi

For radio 4

BT-LE: Directional gain = 3.13dBi

#### 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

Radio 1 + Radio 2 + Radio 3 + Radio 4

$= 0.23307 / 1 + 0.50051 / 1 + 0.00724 / 1 + 0.00026 / 1 = 0.74108 < 1$

Therefore the maximum calculations of above situations are less than the "1" limit.

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