

RF Exposure Report

Report No.: SA200717C08

FCC ID: 2AKCZ-101

Test Model: APL57-0F2, APL57-101 (refer to section 1 for more details)

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FCC Registration / 788550 / **TW0003**
Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
SA200717C08	Original release.	Oct. 08, 2020

1 Certificate of Conformity

Product: Wireless Network Security Appliance

Brand: SONICWALL

Test Model: APL57-0F2, APL57-101

Sample Status: Engineering sample

Applicant: SonicWall Inc.

Standards: FCC Part 2 (Section 2.1091)

References Test Guidance: KDB 447498 D01 General RF Exposure Guidance v06
 IEEE C95.3 -2002

Note:

1. The following models are provided to this EUT.
 - (a) The EUT using the same PCB Layout.
 - (b) Due to series models, the parts are different as below:

Model	APL57-0F2	APL57-101
PSE Out	N/A	N/A
Copper Ports	x8 GbE	x8 GbE
SFP Ports	x2 SFP (Max: 2.5Gbps)	NO
mPCIe WiFi Module	2x2 11ac Wave 2 (Module)	2x2 11ac Wave 2 (Module)
WiFi SPEC	2.4G+5G 11ac+abgn support Beamforming	2.4G+5G 11ac+abgn support Beamforming
ANT for WiFi	x2 ANTs (EXT)	x2 ANTs (EXT)
Console (RJ45)	YES	YES
USB Port	3.0 x2	3.0 x2
FAN(s)	YES	YES
Outer covering	Metal	Metal
CPU	1.4GHz	1.2GHz

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 RF characteristics under the conditions specified in this report.

Prepared by : Vera Huang, Date: Oct. 08, 2020

Vera Huang / Specialist

Approved by : Dylan Chiou, Date: Oct. 08, 2020

Dylan Chiou / Senior Project Engineer

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				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	f/1500	30
1500-100,000	1.0	30

f = Frequency in MHz; *Plane-wave equivalent power density

2.2 MPE Calculation Formula

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

where

Pd = power density in mW/cm²

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 20m 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 Average Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
CDD mode					
WLAN 2412~2462	23.53	6.20	20	0.187	1
WLAN 5180~5240	21.43	8.86	20	0.213	1
WLAN 5745~5825	24.02	8.86	20	0.386	1
Beamforming mode					
WLAN 2412~2462	16.97	6.20	20	0.041	1
WLAN 5180~5240	18.42	8.86	20	0.106	1
WLAN 5745~5825	20.88	8.86	20	0.187	1

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

* WLAN 2.4GHz & WLAN 5GHz technology cannot transmit at same time.

2.4GHz: Directional gain = $3.19\text{dBi} + 10\log(2) = 6.20\text{dBi}$

5.0GHz: Directional gain = $5.85\text{dBi} + 10\log(2) = 8.86\text{dBi}$

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