

RF Exposure Report

Report No.: SA180717C32

FCC ID: 2ACTO-APX120

Test Model: APX 120

Received Date: Jul. 17, 2018

Test Date: Aug. 05 ~ Aug. 15, 2018

Issued Date: Oct. 15, 2018

Applicant: Sophos Ltd

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

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



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Release Control Record

Issue No.	Description	Date Issued
SA180717C32	Original release	Oct. 15, 2018

1 Certificate of Conformity

Product: Sophos Access Point

Brand: Sophos

Test Model: APX 120

Sample Status: Engineering sample

Applicant: Sophos Ltd

Test Date: Aug. 05 ~ Aug. 15, 2018

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 RF characteristics under the conditions specified in this report.

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Approved by : Bruce Chen , **Date:** Oct. 15, 2018
Bruce Chen / 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				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

2.2 MPE Calculation Formula

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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)
CDD Mode					
2412-2462	25.18	6.71	20	0.307	1
5180-5240	25.01	6.92	20	0.310	1
5745-5825	23.57	6.92	20	0.223	1
Beamforming Mode					
2412-2462	25.15	6.71	20	0.305	1
5180-5240	25.01	6.92	20	0.310	1
5745-5825	23.57	6.92	20	0.223	1

Note: The Max Power = Max tune up power

2.4GHz: Directional gain = 3.70dBi + 10log(2) = 6.71dBi

5GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2]$ = 6.92dBi

Conclusion:

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

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

CPD = Calculation power density

LPD = Limit of power density

$$2.4G + 5G = 0.307 + 0.310 = 0.617$$

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

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