# RF Exposure Report

| | |
|---|---|
| **Report No.:** | SA180717C32B |
| **FCC ID:** | 2ACTO-APX120 |
| **Test Model:** | APX 120 |
| **Received Date:** | Jul. 17, 2018 |
| **Test Date:** | Aug. 05 ~ Aug. 15, 2018 |
| **Issued Date:** | Oct. 16, 2018 |
| | |
| **Applicant:** | Sophos Ltd |
| **Address:** | The Pentagon, Abingdon Science Park, Abingdon, OX14 3YP, UK |
| | |
| **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.) |
| **FCC Registration / Designation Number:** | 788550 / TW0003 |

**Table of Contents**

## Release Control Record

| Issue No. | Description | Date Issued |
|---|---|---|
| SA180717C32B | Original release | Oct. 16, 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.

**Prepared by :** _Celine Chou_ , **Date:** Oct. 16, 2018

Celine Chou / Senior Specialist

**Approved by :** _Bruce Chen_ , **Date:** Oct. 16, 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

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$^2$) |
|---|---|---|---|---|---|
| CDD Mode | | | | | |
| 2412-2462 | 25.18 | 6.71 | 20 | 0.307 | 1 |
| 5180-5240 | 25.01 | 6.92 | 20 | 0.310 | 1 |
| 5260-5320 | 23.91 | 6.92 | 20 | 0.241 | 1 |
| 5500-5700 | 23.74 | 6.92 | 20 | 0.232 | 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 |
| 5260-5320 | 22.69 | 6.92 | 20 | 0.182 | 1 |
| 5500-5700 | 22.74 | 6.92 | 20 | 0.184 | 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 = $10 \log[(10^{G1/20} + 10^{G2/20} + \cdots + 10^{GN/20})^2/2]$ = 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 + ……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.

**---END---**