RF Exposure Report

Report No.: SA170421E06

FCC ID: 2ACTO-APX740

Test Model: APX 740

Received Date: Apr. 21, 2017

Test Date: May 12 to June 09, 2017

Issued Date: Sep. 29, 2017

Applicant: Sophos Ltd

Address: The Pentagon, Abingdon Science Park, Abingdon, OX14 3YP, United Kingdom

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
SA170421E06	Original release.	Sep. 29, 2017

1   Certificate of Conformity

Product:	Sophos Access Point
Brand:	SOPHOS
Test Model:	APX 740
Sample Status:	ENGINEERING SAMPLE
Applicant:	Sophos Ltd
Test Date:	May 12 to June 09, 2017
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 EMC characteristics under the conditions specified in this report.

Prepared by : _Wendy Wu_ , **Date:** Sep. 29, 2017

Wendy Wu / Specialist

Approved by : _____ , **Date:** Sep. 29, 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^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/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 43cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Radio 1								
2.4GHz								
Antenna No.	Transmitter Circuit	Brand	Model No.	Antenna Net Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connecter Type	*Cable Length
1	Chain (0)	NA	NA	4.99	2.4~2.4835	PIFA	i-pex(MHF)	176
2	Chain (1)	NA	NA	4.47	2.4~2.4835	PIFA	i-pex(MHF)	140
3	Chain (2)	NA	NA	3.71	2.4~2.4835	PIFA	i-pex(MHF)	98
4	Chain (3)	NA	NA	4.83	2.4~2.4835	PIFA	i-pex(MHF)	70
Radio 2								
5GHz								
Antenna No.	Transmitter Circuit	Brand	Model No.	Antenna Net Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connecter Type	*Cable Length
1	Chain (0)	NA	NA	5.94	5.15~5.85	Dipole	i-pex(MHF)	79
2	Chain (1)	NA	NA	5.71	5.15~5.85	Dipole	i-pex(MHF)	117
3	Chain (2)	NA	NA	5.61	5.15~5.85	Dipole	i-pex(MHF)	157
4	Chain (3)	NA	NA	5.32	5.15~5.85	Dipole	i-pex(MHF)	189
Radio 3								
Bluetooth								
Antenna No.	Transmitter Circuit	Brand	Model No.	Antenna Net Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connecter Type	*Cable Length
1	Chain (0)	NA	NA	2.75	2.4~2.4835	PIFA	i-pex(MHF)	121

2.5   Calculation Result of Maximum Conducted Power

For WLAN:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2412-2462	859.613	10.53	43	0.41798	1
5180-5240	410.091	11.67	43	0.25926	1
5745-5825	759.756	11.67	43	0.48032	1

NOTE:

2.4GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G2/20} + 10^{G2/20})^2 / 4]$ = 10.53dBi

5GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G2/20} + 10^{G2/20})^2 / 4]$ = 11.67dBi

For BT-LE:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2402-2480	5.07	2.75	43	0.00041	1

Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz = 0.41798 / 1 + 0.48032 / 1 = 0.89830

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

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