RF Exposure Report

Report No.: SA150127C37

FCC ID: 2ACTO-AP55C

Test Model: AP 55C

Received Date: Dec. 27, 2014

Test Date: Jan. 20 ~ Mar. 05, 2015

Issued Date: Mar. 13, 2015

Applicant: Sophos Ltd

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

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

Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

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Release Control Record

Issue No.	Description	Date Issued
SA150127C37	Original release.	Mar. 13, 2015

1 Certificate of Conformity

Product:	Sophos wireless Access Point AP 55C
Brand:	Sophos
Test Model:	AP 55C
Sample Status:	Engineering sample
Applicant:	Sophos Ltd
Test Date:	Jan. 20 ~ Mar. 05, 2015
Standards:	FCC Part 2 (Section 2.1091) KDB 447498 D03 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:** Mar. 13, 2015

Pettie Chen / Senior Specialist

Approved by : _____ , **Date:** Mar. 13, 2015

Ken Liu / Senior 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				
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 22cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result Of Maximum Conducted Power

Antenna Type		PIFA	
Antenna Connector		NA	
		P/N	Gain (dBi)
2.4GHz Band	Ant. A	RFMTA230900NNAB001	4.65
	Ant. B	RFMTA230900NNAB002	4.36
5.0GHz Band	Ant. D	RFMTA100800NN5B001	6.13
	Ant. E	RFMTA100800NN5B002	5.96

*The EUT doesn't support diversity function in 802.11a, g.

*For 802.11b: Antenna A was for the final test.

*For 802.11a was fixed in Antenna D.

Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2412-2462MHz					
1TX					
802.11b	23.75	4.65	22	0.114	1
802.11g	23.61	4.65	22	0.110	1
2TX					
802.11n(HT20)	25.47	7.52	22	0.327	1
802.11n(HT40)	21.04	7.52	22	0.118	1
5180-5240MHz					
1TX					
802.11a	23.32	6.13	22	0.145	1
2TX					
802.11n(HT20)	26.09	9.06	22	0.538	1
802.11n(HT40)	26.57	9.06	22	0.601	1
802.11ac(VHT20)	26.18	9.06	22	0.549	1
802.11ac(VHT40)	26.70	9.06	22	0.619	1
802.11ac(VHT80)	19.16	9.06	22	0.109	1
5745-5825MHz					
1TX					
802.11a	18.82	6.13	22	0.051	1
2TX					
802.11n(HT20)	18.30	9.06	22	0.090	1
802.11n(HT40)	19.91	9.06	22	0.130	1
802.11ac(VHT20)	18.24	9.06	22	0.088	1
802.11ac(VHT40)	19.82	9.06	22	0.127	1
802.11ac(VHT80)	18.24	9.06	22	0.088	1

NOTE:

2.4GHz:

2TX: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/2] = 7.52$ dBi

5.0GHz:

2TX: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/2] = 9.06$ dBi

CONCULSION:

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

WLAN 2.4G + WLAN 5.0G = 0.327 + 0.619 = 0.946

Therefore, the maximum calculation of this situation is 0.946, which is less than the “1” limit.

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