

RF Exposure Report

Report No.: SA180719D12

FCC ID: P27XW4

Test Model: XW4

Series Model: XW4xxx, SCHX4AEWxxx (the 1st x should be blank or "-"; the rest x could 0 to 9, A to Z, a to z, blank or "-", for marking purpose)

Received Date: Jul. 19, 2018

Test Date: Jul. 27 ~ Sep. 4, 2018

Issued Date: Sep. 4, 2018

Applicant: Sercomm Corp.

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

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**FCC Registration /
Designation Number:** 418586 / TW1078



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Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 RF Exposure	5
2.1 Limits For Maximum Permissible Exposure (MPE)	5
2.2 MPE Calculation Formula	5
2.3 Classification	5
2.4 Calculation Result Of Maximum Conducted Power	6

Release Control Record

Issue No.	Description	Date Issued
SA180719D12	Original release.	Sep. 4, 2018

1 Certificate of Conformity

Product: WiFi Adapter

Brand: Sercomm ; Xfinity

Test Model: XW4

Series Model: XW4xxx, SCHX4AEWxxx (the 1st x should be blank or "-"; the rest x could be 0 to 9, A to Z, a to z, blank or "-", for marking purpose)

Sample Status: Engineering sample

Applicant: Sercomm Corp.

Test Date: Jul. 27 ~ Sep. 4, 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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Date: Sep. 4, 2018

Annie Chang / Senior Specialist

Approved by :

Rex Lai

Date: Sep. 4, 2018

Rex Lai / Associate Technical 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

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

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**.

2.4 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)
2412-2462	25.67	6.52	20	0.3294	1
5180-5240	23.86	6.72	20	0.2274	1
5260-5320	23.90	6.72	20	0.2295	1
5500-5700	23.93	6.72	20	0.2311	1
5745-5825	24.55	6.72	20	0.2665	1
2402-2480	5.96	1.34	20	0.0011	1

NOTE:

2.4GHz: Directional gain = $3.51\text{dBi} + 10\log(2) = 6.52\text{dBi}$

5.0GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / 2] = 6.72\text{dBi}$

Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

$\text{WLAN} + \text{BT LE} = 0.3294 + 0.0011 = 0.3305$

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

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