

RF Exposure Report

Report No.: SABEIH-WTW-P20110721

FCC ID: P27-XIONESCM1

Test Model: SCXI13AEI-BCO

Series Model: SCXIxxAEI-xCO
(xx For Marketing purpose (e.g.11, 12,13,14~);
x External Body Color for Product (e.g. Black=B; Gray=G; White= W))

Received Date: Nov. 24, 2020

Test Date: Dec. 1, 2020 to Jan. 5, 2021

Issued Date: Jan. 15, 2021

Applicant: Sercomm Corp.

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

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**FCC Registration /
Designation Number:** 198487 / TW2021



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Release Control Record

Issue No.	Description	Date Issued
SABEIH-WTW-P20110721	Original release.	Jan. 15, 2021

1 Certificate of Conformity

Product: Xione-SC

Brand: Comcast Xfinity

Test Model: SCXI13AEI-BCO

Series Model: SCXIxxAEI-xCO
(xx For Marketing purpose (e.g.11, 12,13,14~);
x External Body Color for Product (e.g. Black=B; Gray=G; White= W))

Sample Status: Engineering sample

Applicant: Sercomm Corp.

Test Date: Dec. 1, 2020 to Jan. 5, 2021

Standards: FCC Part 2 (Section 2.1091)
IEEE C95.3 -2002

References Test Guidance: KDB 447498 D01 General RF Exposure Guidance v06

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 : Annie Chang, **Date:** Jan. 15, 2021
Annie Chang / Senior Specialist

Approved by : Rex Lai, **Date:** Jan. 15, 2021
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

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

where

Pd = power density in mW/cm²

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**.

2.4 Antenna Gain

Function	Frequency Band (MHz)	Antenna Type	Antenna Connector	Gain (dBi)	
				Chian 0	Chian 1
WLAN	2412-2462	Printed	N/A	2.93	2.70
WLAN	5180-5240	Printed	N/A	3.84	4.03
WLAN	5260-5320	Printed	N/A	3.84	4.03
WLAN	5500-5720	Printed	N/A	3.84	4.03
WLAN	5745-5825	Printed	N/A	3.84	4.03
BT LE	2402-2480	Printed	N/A	1.17	-
BT EDR	2402-2480	Printed	N/A	1.17	-
Zigbee	2405-2480	Printed	N/A	1.17	-

Note: The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

2.5 Calculation Result Of Maximum Conducted Power

Function	Frequency Band (MHz)	Max AV Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
CDD Mode						
WLAN	2412-2462	26.10	5.83	20	0.3103	1
WLAN	5180-5240	23.57	6.95	20	0.2242	1
WLAN	5260-5320	23.40	6.95	20	0.2156	1
WLAN	5500-5720	23.48	6.95	20	0.2196	1
WLAN	5745-5825	26.28	6.95	20	0.4185	1
BT LE	2402-2480	-2.04	1.17	20	0.0002	1
BT EDR	2402-2480	9.87	1.17	20	0.0025	1
Zigbee	2425-2475	2.67	1.17	20	0.0005	1
Beamforming Mode						
WLAN	2412-2462	22.39	5.83	20	0.1320	1
WLAN	5180-5240	20.56	6.95	20	0.1121	1
WLAN	5260-5320	20.39	6.95	20	0.1078	1
WLAN	5500-5720	20.47	6.95	20	0.1098	1
WLAN	5745-5825	23.27	6.95	20	0.2093	1

Note:

2.4GHz Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 5.83$

5.0GHz Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 6.95$

Note:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- 2.4GHz & 5GHz WLAN technologies cannot transmit at same time.
WLAN & Bluetooth technologies can transmit at same time.

Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

WLAN (5745-5825MHz) + BT EDR = $0.4185/1 + 0.0025/1 = 0.421$

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

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