

RF Exposure Report

Report No.: SA191203C03

FCC ID: ACQ-X5042

Test Model: X5042

Received Date: Dec. 03, 2019

Test Date: Dec. 19, 2019 ~ Mar. 17, 2020

Issued Date: Mar. 31, 2020

Applicant: ARRIS

Address: 101 Tournament Drive, Horsham, Pennsylvania 19044, United States

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration / 788550 / TW0003
Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
SA191203C03	Original release	Mar. 31, 2020

1 Certificate of Conformity

Product: WiFi extender

Brand: Arris

Test Model: X5042

Sample Status: Engineering sample

Applicant: ARRIS

Test Date: Dec. 19, 2019 ~ Mar. 17, 2020

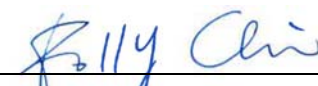
Standards: FCC Part 2 (Section 2.1091)

References Test KDB 447498 D01 General RF Exposure Guidance v06

Guidance: IEEE C95.3 -2002

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 :


Polly Chien / Specialist

Date:

Mar. 31, 2020

Approved by :



Bruce Chen / Senior Project Engineer

Date:

Mar. 31, 2020

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

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

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**.

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	25.78	5.95	20	0.296	1
5180-5240	27.73	7.16	20	0.613	1
5260-5320	23.80	7.39	20	0.262	1
5500-5720	23.68	7.11	20	0.239	1
5745-5825	27.84	6.71	20	0.567	1
Beamforming Mode					
5180-5240	27.54	7.16	20	0.587	1
5260-5320	22.60	7.39	20	0.198	1
5500-5720	22.88	7.11	20	0.198	1
5745-5825	27.37	6.71	20	0.509	1

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2412~2462MHz Directional Gain = 5.95dBi.
 5180~5240MHz Directional Gain = 7.16dBi.
 5260~5320MHz Directional Gain = 7.39dBi.
 5500~5720MHz Directional Gain = 7.11dBi.
 5745~5825MHz Directional Gain = 6.71dBi.

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

Worst case: WLAN 2.4GHz + WLAN 5GHz = $0.296 / 1 + 0.613 / 1 = 0.909 < 1$

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