

RF Exposure Report

Report No.: SA180629C26

FCC ID: ACQ-VAP4641

Test Model: VAP4641

Received Date: Jun. 29, 2018

Test Date: Jul. 21 ~ Aug. 23, 2018

Issued Date: Sep. 03, 2018

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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Test Location (1): No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

**FCC Registration /
Designation Number:** 788550 / TW0003

Test Location (2): E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.

**FCC Registration /
Designation Number:** 723255 / TW2022



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Release Control Record

Issue No.	Description	Date Issued
SA180629C26	Original release.	Sep. 03, 2018

1 Certificate of Conformity

Product: Wireless AP router

Brand: Arris

Test Model: VAP4641

Sample Status: Engineering sample

Applicant: ARRIS

Test Date: Jul. 21 ~ Aug. 23, 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.

Prepared by :



Date:

Sep. 03, 2018

Suntee Liu / Specialist

Approved by :



Date:

Sep. 03, 2018

Bruce Chen / Project Engineer

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

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

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 25cm 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)	Mode	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN 2412~2462	CDD	25.95	6.1	25	0.204	1
WLAN 5180~5240	CDD	27.71	7.8	25	0.453	1
	Beamforming	27.65	7.8	25	0.447	1
WLAN 5260~5320	CDD	23.80	7.4	25	0.168	1
	Beamforming	22.20	7.4	25	0.116	1
WLAN 5500~5720	CDD	23.82	7.7	25	0.181	1
	Beamforming	21.84	7.7	25	0.115	1
WLAN 5720~5825	CDD	29.87	7.7	25	0.728	1
	Beamforming	28.29	7.7	25	0.506	1

Note:

2412~2462MHz Directional Gain = 6.1dBi

5180~5240MHz Directional Gain = 7.8dBi

5260~5320MHz Directional Gain = 7.4dBi

5500~5720MHz Directional Gain = 7.7dBi

5745~5825MHz Directional Gain = 7.7dBi

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 = $0.204 / 1 + 0.728 / 1 = 0.932 < 1$

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