

RF Exposure Report

Report No.: SA200511E13

FCC ID: 2AHBN-AP12

Test Model: AP12

Received Date: May 11, 2020

Date of Evaluation: Jul. 27, 2020

Issued Date: Jul. 30, 2020

Applicant: Juniper Networks, Inc.

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



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Release Control Record

Issue No.	Description	Date Issued
SA200511E13	Original Release	Jul. 30, 2020

1 Certificate of Conformity

Product: 802.11ax Wallplate AP

Brand: Mist

Test Model: AP12

Sample Status: Engineering Sample

Applicant: Juniper Networks, Inc.

Date of Evaluation: Jul. 27, 2020

Standards: FCC Part 2 (Section 2.1091)

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

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Date: Jul. 30, 2020

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Approved by :

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Date: Jul. 30, 2020

Dylan Chiou / Senior 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				
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 25cm 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)	TX Function	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
CDD Mode						
2412-2462	1TX	26.02	2.1	25	0.083	1
	2TX	26.68	5.81	25	0.226	1
5180-5240	1TX	18.07	5	25	0.026	1
	2TX	27.11	8.61	25	0.475	1
5745-5825	1TX	19.65	5	25	0.037	1
	2TX	28.54	8.61	25	0.661	1

Frequency Band (MHz)	TX Function	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
Beamforming Mode						
2412-2462	2TX	22.80	5.81	25	0.092	1
5180-5240	2TX	27.11	8.61	25	0.475	1
5745-5825	2TX	27.13	8.61	25	0.477	1

Frequency Band (MHz)	TX Function	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
Radio 4						
BT LE	-	3.41	-0.6	25	0.0002	1

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. 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
3. 2.4GHz: Directional gain = $10\log[(10G1/20 + 10G2/20 + \dots + 10GN/20)^2 / NANT] = 5.81\text{dBi}$
5.0GHz: Directional gain = $10\log[(10G1/20 + 10G2/20 + \dots + 10GN/20)^2 / NANT] = 8.61\text{ dBi}$

Conclusion:

2.4G & 5G & BT can transmit simultaneously.

The simultaneous operation mode was determined by client as below:

Radio 1: 2.4G + Radio 2: 2.4G & 5G + Radio 3: 5G + Radio 4: BT

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

Radio 1: 2.4G + Radio 2: 2.4G & 5G + Radio 3: 5G + Radio 4: BT = $0.226 + 0.083 + 0.661 + 0.0002 = 0.9702$

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

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