

RF Exposure Report

Report No.: SA190725E05C

FCC ID: PY319300460

Test Model: EAX20

Received Date: Oct. 25, 2019

Test Date: Nov. 28, 2019

Issued Date: Dec. 10, 2019

Applicant: NETGEAR, Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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Test Location: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
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**FCC Registration /
Designation Number:** 723255 / TW2022

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Release Control Record

| Issue No. | Description | Date Issued |
|--------------|-------------------|---------------|
| SA190725E05C | Original release. | Dec. 10, 2019 |

1 Certificate of Conformity

Product: AX1800 Mesh Extender

Brand: NETGEAR

Test Model: EAX20

Sample Status: ENGINEERING SAMPLE

Applicant: NETGEAR, Inc.

Test Date: Nov. 28, 2019

Standards: FCC Part 2 (Section 2.1091)

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 EMC characteristics under the conditions specified in this report.

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Phoenix Huang / Specialist

Approved by : Clark Lin , **Date:** Dec. 10, 2019
Clark Lin / 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

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

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 28 cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

| Antenna No. | Transmitter Circuit | Antenna Net Gain (dBi) | Frequency Range (GHz) | Antenna Type | Connector Type |
|-------------|---------------------|------------------------|-----------------------|--------------|----------------|
| 1 | Chain 0 | 3.48 | 2.4~2.4835 | PIFA | i-pex(MHF) |
| | | 2.56 | 5.15~5.25 | | |
| | | 2.56 | 5.25~5.35 | | |
| | | 2.58 | 5.47~5.725 | | |
| | | 3.03 | 5.725~5.85 | | |
| 2 | Chain 1 | 3.48 | 2.4~2.4835 | PIFA | i-pex(MHF) |
| | | 2.56 | 5.15~5.25 | | |
| | | 2.56 | 5.25~5.35 | | |
| | | 2.58 | 5.47~5.725 | | |
| | | 3.03 | 5.725~5.85 | | |

2.5 Calculation Result of Maximum Conducted Power

| Operation Mode | Evaluation Frequency (MHz) | Max Power (mW) | Antenna Gain (dBi) | Distance (cm) | Power Density (mW/cm ²) | Limit (mW/cm ²) |
|----------------|----------------------------|----------------|--------------------|---------------|-------------------------------------|-----------------------------|
| WLAN (2.4GHz) | 2437 | 995.663 | 6.49 | 28 | 0.45039 | 1 |
| WLAN (U-NII-1) | 5240 | 880.125 | 5.57 | 28 | 0.32212 | 1 |
| WLAN (U-NII-3) | 5785 | 986.32 | 6.04 | 28 | 0.40225 | 1 |

Note:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- 2.4GHz: The directional gain = 3.48 dBi + 10log(2) = 6.49 dBi
- 5GHz:
 - U-NII-1: The directional gain = 2.56 dBi + 10log(2) = 5.57 dBi
 - U-NII-3: The directional gain = 3.03 dBi + 10log(2) = 6.04 dBi

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

$$WLAN\ 2.4GHz + WLAN\ 5GHz = 0.45039 / 1 + 0.40225 / 1 = 0.85264$$

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

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