

## RF Exposure Report

**Report No.:** SA180808C26

**FCC ID:** PY318300418

**Test Model:** RBR50v2

**Received Date:** Aug. 08, 2018

**Test Date:** Sep. 05 ~ Oct. 04, 2018

**Issued Date:** Oct. 05, 2018

**Applicant:** NETGEAR, INC.

**Address:** 350 East Plumeria Drive San Jose, CA 95134

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

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)

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



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### Release Control Record

Issue No.	Description	Date Issued
SA180808C26	Original release.	Oct. 05, 2018

## 1 Certificate of Conformity

**Product:** Orbi Router

**Brand:** NETGEAR

**Test Model:** RBR50v2

**Sample Status:** Engineering sample

**Applicant:** NETGEAR, INC.

**Test Date:** Sep. 05 ~ Oct. 04, 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:**

Oct. 05, 2018

Pettie Chen / Senior Specialist

**Approved by :**



**Date:**

Oct. 05, 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 <sup>2</sup> )	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 <sup>2</sup> )*	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/cm<sup>2</sup>

$P_{out}$  = 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 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)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
<b>(CDD Mode)</b>					
2412-2462	29.41	2.61	25	0.203	1
5180-5240	29.44	4.18	25	0.293	1
5745-5825	29.64	7.43	25	0.649	1
<b>(Beamforming_NSS 1 Mode)</b>					
2412-2462	29.32	2.61	25	0.199	1
5180-5240	29.37	4.18	25	0.288	1
5745-5825	27.82	7.43	25	0.426	1
<b>(Beamforming_NSS 2 Mode)</b>					
5745-5825	29.48	4.86	25	0.346	1

Note:

**2.4GHz:** Directional gain = 2.61dBi

**CDD & Beamforming\_NSS 1 Mode**

**5GHz U-NII-1 Band:** Directional gain = 4.18dBi

**5GHz U-NII-3 Band:** Directional gain = 7.43dBi

**Beamforming\_NSS 2 Mode**

**5GHz U-NII-3 Band:** Directional gain = 4.86dBi

#### 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 (Band 4) = 0.203 + 0.649 = 0.852

WLAN 5GHz (Band 1) + WLAN 5GHz (Band 4) = 0.293 + 0.649 = 0.942

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

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