

## RF Exposure Report

**Report No.:** SA190715C10

**FCC ID:** PY319200449

**Test Model:** RBR10

**Received Date:** Jul. 15, 2019

**Test Date:** Jul. 23 ~ Jul. 25, 2019

**Issued Date:** Jul. 26, 2019

**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.)

**FCC Registration /** 788550 / TW0003

**Designation Number:**



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### Release Control Record

Issue No.	Description	Date Issued
SA190715C10	Original release.	Jul. 26, 2019

## 1 Certificate of Conformity

**Product:** Orbi Router

**Brand:** NETGEAR

**Test Model:** RBR10

**Sample Status:** Engineering sample

**Applicant:** NETGEAR, INC.

**Test Date:** Jul. 23 ~ Jul. 25, 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 RF characteristics under the conditions specified in this report.

**Prepared by :** Pettie Chen , **Date:** Jul. 26, 2019  
Pettie Chen / Senior Specialist

**Approved by :** Bruce Chen , **Date:** Jul. 26, 2019  
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				
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/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 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)	Mode	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
WLAN 2412~2462	CDD	27.63	4.49	20	0.324	1
	Beamforming	27.18	4.49	20	0.292	1
WLAN 5180~5240	CDD	25.82	5.51	20	0.270	1
	Beamforming	25.69	5.51	20	0.262	1
WLAN 5745~5825	CDD	26.16	6.50	20	0.367	1
	Beamforming	26.16	6.50	20	0.367	1

Note:

1. Directional Gain:

$$2412\sim 2462\text{MHz Max. Directional Gain} = 10 \log[(10^{G_1/10} + 10^{G_2/10} + \dots + 10^{G_N/10})/N_{ANT}] = 4.49\text{dBi}$$

$$5180\sim 5240\text{MHz Max. Directional Gain} = 10 \log[(10^{G_1/10} + 10^{G_2/10} + \dots + 10^{G_N/10})/N_{ANT}] = 5.51\text{dBi}$$

$$5745\sim 5825\text{MHz Max. Directional Gain} = 10 \log[(10^{G_1/10} + 10^{G_2/10} + \dots + 10^{G_N/10})/N_{ANT}] = 6.50\text{dBi}$$

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

Conclusion:

The formula of calculated the MPE is:

$$CPD_1 / LPD_1 + CPD_2 / LPD_2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

$$\text{WLAN } 2.4\text{G}+5\text{G} = 0.324 / 1 + 0.367 / 1 = 0.691 < 1$$

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