

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.

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

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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 : Pettie Chen , **Date:** Oct. 05, 2018
Pettie Chen / Senior Specialist

Approved by : Bruce Chen , **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 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**.

3 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
(CDD Mode)					
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
(Beamforming_NSS 1 Mode)					
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
(Beamforming_NSS 2 Mode)					
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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