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 : 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

$Pd = (Pout*G) / (4*pi*r^2)$

where

Pd = power density in mW/cm^2

Pout = 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^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 + ……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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