RF Exposure Report

Report No.:	SA170906C12A
FCC ID:	PY317400402
Test Model:	RBR20
Series Model:	RBS20
Received Date:	Aug. 25, 2017
Test Date:	Aug. 25 ~ Sep. 07, 2017
Issued Date:	Dec. 06, 2017
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 / Designation Number:	788550 / TW0003

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Release Control Record

Issue No.	Description	Date Issued
SA170906C12A	Original release.	Dec. 06, 2017

1 Certificate of Conformity

Product:	Orbi Router, Orbi Satellite
Brand:	NETGEAR
Test Model:	RBR20
Series Model:	RBS20
Sample Status:	Engineering sample
Applicant:	NETGEAR, INC.
Test Date:	Aug. 25 ~ Sep. 07, 2017
Standards:	FCC Part 2 (Section 2.1091) KDB 447498 D01 General RF Exposure Guidance v06 IEEE C95.1

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.

Prepared by : Celine Chou , **Date:** Dec. 06, 2017

Celine Chou / Specialist

Approved by : Ken Liu , **Date:** Dec. 06, 2017

Ken Liu / Senior 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				
300-1500	…	…	F/1500	30
1500-100,000	…	…	1.0	30

F = Frequency in MHz

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 20cm away from the body of the user. So, this device is classified as Mobile Device.

3 Calculation Result of Maximum Conducted Power

Function	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WLAN	CDD Mode					
	2412-2462	24.93	5.71	20	0.231	1
	5180-5240	23.24	5.01	20	0.133	1
	5260-5320	23.38	5.63	20	0.158	1
	5500-5700	23.91	5.71	20	0.182	1
	5745-5825	27.89	4.65	20	0.357	1
	Beamforming Mode					
	2412-2462	24.10	5.71	20	0.190	1
	5180-5240	23.24	5.01	20	0.133	1
	5260-5320	23.38	5.63	20	0.158	1
	5500-5700	23.91	5.71	20	0.182	1
	5745-5825	27.89	4.65	20	0.357	1

Note: The Max Power = Max tune up power
2412~2462MHz Directional gain = 5.71dBi
5180~5240MHz Directional gain = 5.01dBi
5260~5320MHz Directional gain = 5.63dBi
5500~5700MHz Directional gain = 5.71dBi
5745~5825MHz Directional gain = 4.65dBi

Conclusion:
The formula of calculated the MPE is:
CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1
CPD = Calculation power density
LPD = Limit of power density

1. WLAN 2.4GHz + WLAN 5GHz band 1 + WLAN 5GHz band 3 = 0.231 + 0.133 + 0.171 = 0.535 < 1
2. WLAN 2.4GHz + WLAN 5GHz band 1 + WLAN 5GHz band 4 = 0.231 + 0.133 + 0.357 = 0.721 < 1
3. WLAN 2.4GHz + WLAN 5GHz band 2 + WLAN 5GHz band 3 = 0.231 + 0.158 + 0.171 = 0.560 < 1
4. WLAN 2.4GHz + WLAN 5GHz band 2 + WLAN 5GHz band 4 = 0.231 + 0.158 + 0.357 = 0.746 < 1

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