

RF Exposure Report

Report No.: SA170905C13

FCC ID: PY317200377

Test Model: RBS50Y

Received Date: Sep. 05, 2017

Test Date: Sep. 11 ~ Oct. 06, 2017

Issued Date: Oct. 11, 2017

Applicant: NETGEAR, INC.

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

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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
SA170905C13	Original release.	Oct. 11, 2017

1 Certificate of Conformity

Product: Orbi Router, Orbi Satellite, Orbi AC3000 Tri-band WiFi System

Brand: NETGEAR

Test Model: RBS50Y

Sample Status: Engineering sample

Applicant: NETGEAR, INC.

Test Date: Sep. 11 ~ Oct. 06, 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:** Oct. 11, 2017
Celine Chou / Specialist

Approved by : Ken Liu , **Date:** Oct. 11, 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

$$Pd = (P_{out} * G) / (4 * \pi * r^2)$$

where

Pd = power density in mW/cm²

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 26cm 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)	TX Function	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN	CDD Mode						
	2412-2462	2TX	29.14	5.31	26	0.328	1
	5180-5240	1TX	17.16	3.71	26	0.014	1
		2TX	17.17	5.97	26	0.024	
	5745-5825	4TX	29.69	7.57	26	0.626	1
	Beamforming Mode						
	2412-2462	2TX	27.56	5.31	26	0.228	1
	5180-5240	2TX	14.18	5.97	26	0.012	1
	5745-5825	4TX	28.20	7.57	26	0.444	1
BT LE	2402-2480	1TX	7.83	1.50	26	0.001	1

Note: The Max Power = Max tune up power
 2412~2462MHz Directional gain = 5.31dBi
 5180~5240MHz Directional gain = 5.97dBi
 5745~5825MHz Directional gain = 7.57dBi

Frequency Band	Max Power (dBm)		Total Power (dBm)	Power Limit (dBm)
	WLAN	BT LE		
2.4GHz	29.14	7.83	29.17	30

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 1 (1TX) + WLAN 5GHz band 4 + BT LE = $0.328 + 0.014 + 0.626 + 0.001 = 0.969 < 1$

WLAN 2.4GHz + WLAN 5GHz band 1 (2TX) + WLAN 5GHz band 4 + BT LE = $0.328 + 0.024 + 0.626 + 0.001 = 0.979 < 1$

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