RF Exposure Report

Report No.:	SA170905C13A
FCC ID:	PY317200377
Test Model:	RBS50Y
Received Date:	Sep. 05, 2017
Test Date:	Sep. 11 ~ Oct. 16, 2017
Issued Date:	May 29, 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.)
FCC Registration / Designation Number:	788550 / TW0003

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Release Control Record

Issue No.	Description	Date Issued
SA170905C13A	Original release.	May 29, 2018

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. 16, 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 RF characteristics under the conditions specified in this report.

Prepared by : Celine Chou , **Date:** May 29, 2018

Celine Chou / Specialist

Approved by : Bruce Chen , **Date:** May 29, 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				
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 27cm 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	27	0.304	1
	5180-5240	1TX	17.16	3.71	27	0.013	1
		2TX	17.17	5.97	27	0.022	1
	5260-5320	2TX	23.74	5.41	27	0.090	1
	5500-5700	4TX	23.64	8.74	27	0.189	1
	5745-5825	4TX	29.69	7.57	27	0.581	1
	Beamforming Mode						
	2412-2462	2TX	27.56	5.31	27	0.211	1
	5180-5240	2TX	14.18	5.97	27	0.011	1
	5260-5320	2TX	23.72	5.41	27	0.089	1
	5500-5700	4TX	21.25	8.74	27	0.109	1
	5745-5825	4TX	28.20	7.57	27	0.412	1
BT LE	2402-2480	1TX	7.83	1.50	27	0.001	1

Note: The Max Power = Max tune up power
2412~2462MHz Directional gain = 5.31dBi
5180~5240MHz Directional gain = 5.97dBi
5260~5320MHz Directional gain = 5.41dBi
5500~5700MHz Directional gain = 8.74dBi
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 + ……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 = 0.304 + 0.013 + 0.581 + 0.001 = 0.899 < 1

WLAN 2.4GHz + WLAN 5GHz band 1 (2TX) + WLAN 5GHz band 4 + BT LE = 0.304 + 0.022 + 0.581 + 0.001 = 0.908 < 1

WLAN 2.4GHz + WLAN 5GHz band 1 (2TX) + WLAN 5GHz band 3 + BT LE = 0.304 + 0.022 + 0.189 + 0.001 = 0.516 < 1

WLAN 2.4GHz + WLAN 5GHz band 2 + WLAN 5GHz band 3 + BT LE = 0.304 + 0.090 + 0.189 + 0.001 = 0.584 < 1

WLAN 2.4GHz + WLAN 5GHz band 2 + WLAN 5GHz band 4 + BT LE = 0.304 + 0.090 + 0.581 + 0.001 = 0.976 < 1

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