

RF Exposure Report

Report No.: SA160621C27

FCC ID: PY316200341

Test Model: RBR50

Series Model: RBS50

Received Date: Jun. 20, 2016

Test Date: Jun. 20 ~ Aug. 19, 2016

Issued Date: Aug. 19, 2016

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.)



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Release Control Record

Issue No.	Description	Date Issued
SA160621C27	Original release.	Aug. 19, 2016

1 Certificate of Conformity

Product: Orbi Router, Orbi Satellite
Brand: NETGEAR
Test Model: RBR50
Series Model: RBS50
Sample Status: Engineering sample
Applicant: NETGEAR, INC.
Test Date: Jun. 20 ~ Aug. 19, 2016
Standards: FCC Part 2 (Section 2.1091)
KDB 447498 D01 (October 23, 2015)
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 : Polly Chien, **Date:** Aug. 19, 2016
Polly Chien / Specialist

Approved by : Ken Liu, **Date:** Aug. 19, 2016
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 28cm 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	29.58	3.448	28	0.204	1
5180-5240	29.54	5.812	28	0.348	1
5745-5825	29.70	8.068	28	0.607	1
(Beamforming_NSS 1 Mode)					
2412-2462	29.50	3.448	28	0.200	1
5180-5240	29.14	5.812	28	0.317	1
5745-5825	27.92	8.068	28	0.403	1
(Beamforming_NSS 2 Mode)					
5745-5825	29.51	5.058	28	0.291	1

Note:

2.4GHz: Directional gain = 3.448dBi

CDD & Beamforming_NSS 1 Mode

5GHz U-NII-1 Band: Directional gain = 5.812dBi

5GHz U-NII-3 Band: Directional gain = 8.068dBi

Beamforming_NSS 2 Mode

5GHz U-NII-3 Band: Directional gain = 5.058dBi

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) = 0.204 + 0.607 = 0.811

WLAN 5GHz (Band 1) + WLAN 5GHz (Band 4) = 0.348 + 0.607 = 0.955

Therefore, the maximum calculations of above situations are less than the "1" limit.

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