# RF Exposure Report

**Report No.:** SA181026C02

**FCC ID:** PY318300419

**Test Model:** RBS50v2

**Received Date:** Aug. 08, 2018

**Test Date:** Sep. 05 ~ Oct. 27, 2018

**Issued Date:** Oct. 30, 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.)

## Table of Contents

## Release Control Record

| Issue No. | Description | Date Issued |
|---|---|---|
| SA181026C02 | Original release. | Oct. 30, 2018 |

## 1 Certificate of Conformity

**Product:** Orbi Satellite

**Brand:** NETGEAR

**Test Model:** RBS50v2

**Sample Status:** Engineering sample

**Applicant:** NETGEAR, INC.

**Test Date:** Sep. 05 ~ Oct. 27, 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. 30, 2018
Pettie Chen / Senior Specialist

**Approved by :** Bruce Chen , **Date:** Oct. 30, 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 | 29.35 | 2.61 | 25 | 0.200 | 1 |
| 5180-5240 | 29.39 | 4.18 | 25 | 0.290 | 1 |
| 5745-5825 | 29.57 | 7.43 | 25 | 0.638 | 1 |
| **(Beamforming_NSS 1 Mode)** | | | | | |
| 2412-2462 | 29.26 | 2.61 | 25 | 0.196 | 1 |
| 5180-5240 | 29.30 | 4.18 | 25 | 0.284 | 1 |
| 5745-5825 | 27.78 | 7.43 | 25 | 0.423 | 1 |
| **(Beamforming_NSS 2 Mode)** | | | | | |
| 5745-5825 | 29.43 | 4.86 | 25 | 0.342 | 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) = 0.200 + 0.638 = 0.838
WLAN 5GHz (Band 1) + WLAN 5GHz (Band 4) = 0.290 + 0.638 = 0.928

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

**--- END ---**