

RF Exposure Report

Report No.: SABBQZ-WTW-P20100751

FCC ID: PY319200453

Test Model: RBR850

Series Model: RBS850

Received Date: July 17, 2019

Test Date: Aug. 22, 2019

Issued Date: Feb. 09, 2021

Applicant/Manufacturer: NETGEAR, Inc.

Address: 350 East Plumeria Drive San Jose, CA 95134

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

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Test Location: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
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**FCC Registration /
Designation Number:** 723255 / TW2022

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Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 RF Exposure	5
2.1 Limits for Maximum Permissible Exposure (MPE)	5
2.2 MPE Calculation Formula	5
2.3 Classification	5
2.4 Antenna Gain	5
2.5 Calculation Result of Maximum Conducted Power	6

Release Control Record

Issue No.	Description	Date Issued
SABBQZ-WTW-P20100751	Original release.	Feb. 09, 2021

1 Certificate of Conformity

Product: Orbi Router, Orbi Satellite

Brand: NETGEAR

Test Model: RBR850

Series Model: RBS850

Sample Status: ENGINEERING SAMPLE

Applicant/ Manufacturer: NETGEAR, Inc.

Test Date: Aug. 22, 2019

Standards: FCC Part 2 (Section 2.1091)

IEEE C95.3 -2002

References Test Guidance: KDB 447498 D01 General RF Exposure Guidance v06

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 :  , **Date:** Feb. 09, 2021
Claire Kuan / Specialist

Approved by :  , **Date:** Feb. 09, 2021
Clark Lin / Technical 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				
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

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

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 33 cm away from the body of the user.

So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Frequency Range (GHz)	Directional Antenna Gain (dBi)	Antenna Type	Antenna Connector
2.4~2.4835	6.01	Dipole	i-pex(MHF)
5.15~5.25	6.22		
5.25~5.35	6.37		
5.47~5.725	6.29		
5.725~5.85	6.52		

Note: More detailed information, please refer to operating description.

2.5 Calculation Result of Maximum Conducted Power

The Maximum power was copied from the original test report (Report No.: SA190716E02 R3)

Operation Mode	Evaluation Frequency (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN 2.4GHz	2437	992.435	6.01	33	0.28938	1
WLAN 5GHz (U-NII-1)	5240	924.661	6.22	33	0.28297	1
WLAN 5GHz (U-NII-3)	5795	993.367	6.52	33	0.32574	1

NOTE:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- 2.4GHz: The directional gain = 6.01dBi
5GHz:
U-NII-1: The directional gain = 6.22dBi
U-NII-3: The directional gain = 6.52dBi

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

$$\text{WLAN 2.4GHz} + \text{WLAN 5GHz (low band)} + \text{WLAN 5GHz (high band)} = 0.28938 / 1 + 0.28297 / 1 + 0.32574 / 1 = 0.89809$$

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

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