

RF Exposure Report

Report No.: SABBQZ-WTW-P21120286

FCC ID: PY322100553

Test Model: MM32X

Received Date: 2022/1/20

Test Date: 2022/3/17

Issued Date: 2022/4/1

Applicant and

Manufacturer: NETGEAR, Inc.

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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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Release Control Record

Issue No.	Description	Date Issued
SABBQZ-WTW-P21120286	Original release.	2022/4/1

1 Certificate of Conformity

Product: Wireless Module

Brand: NETGEAR

Test Model: MM32X

Sample Status: Engineering sample

**Applicant and
Manufacturer:** NETGEAR, Inc.

Test Date: 2022/3/17

Standards: FCC Part 2 (Section 2.1091)

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 :

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Date:

2022/4/1

Cherry Chuo / Specialist

Approved by :

Clark Lin

Date:

2022/4/1

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

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

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 20 cm away from the body of the user.
So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Antenna NO.	Model	Antenna Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connector Type
MC321-Ant0	907X00747X22(580)	1.03	2.4~2.4835	Dipole	ipex(MHF)
		1.36	5.15~5.25		
		1.78	5.725~5.85		
MC321-Ant1	907X00747X11(580)	1.33	2.4~2.4835	Dipole	ipex(MHF)
		2.22	5.15~5.25		
		2.24	5.725~5.85		
MC327-Ant0	907X00747X88	0.64	2.4~2.4835	Dipole	ipex(MHF)
		1.24	5.15~5.25		
		1.51	5.725~5.85		
MC327-Ant1	907X00747X35	1.61	2.4~2.4835	Dipole	ipex(MHF)
		2.03	5.15~5.25		
		2.33	5.725~5.85		

Note: The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

2.5 Calculation Result

Operation Mode	Evaluation Frequency (MHz)	Max. Average Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Result
WLAN (2.4GHz)	2412~2462	400.911	1.33	20	0.10834	1	Pass
WLAN (U-NII-1)	5180~5250	247.236	2.22	20	0.08201	1	Pass
WLAN (U-NII-3)	5745~5825	593.851	2.24	20	0.19788	1	Pass

NOTE:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

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

$WLAN (2.4GHz) + WLAN (5GHz) = 0.10834 / 1 + 0.19788 / 1 = 0.30622$

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

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