RF Exposure Report

Report No.:	SABBQZ-WTW-P20110514
FCC ID:	PY321200536
Test Model:	Perseverance
Series Model:	Ingenuity, Phobos, Deimos
Received Date:	Nov. 17, 2020
Test Date:	Jan. 15, 2021
Issued Date:	July 19, 2021
Applicant:	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
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
SABBQZ-WTW-P20110514	Original release.	July 19, 2021

1 Certificate of Conformity

Product:	WiFi Device
Brand:	NETGEAR
Test Model:	Perseverance
Series Model:	Ingenuity, Phobos, Deimos
Sample Status:	Engineering sample
Applicant:	NETGEAR, Inc.
Test Date:	Jan. 15, 2021
Standards:	FCC Part 2 (Section 2.1091)
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 : Vivian Huang , **Date:** July 19, 2021

Vivian Hunag / Specialist

Approved by : , **Date:** July 19, 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

$Pd = (Pout*G) / (4*pi*r^2)$

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 34cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

1. The directional antenna gain, please refer to the following table:

Band	Directional Antenna Gain (dBi)
2.4G	6.66
UNII-1	6.43
UNII-2A	6.45
UNII-2C	6.3
UNII-3	6.21
Note: More detailed information, please refer to antenna specification.	

2. The antennas provided to the EUT, please refer to the following table:

Antenna No.	RF Chain No.	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connector Type
6G-1	6GHz Chain 0	4.09	5.925~6.425GHz	Dipole	i-pex(MHF)
		1.78	6.425~6.525GHz		
		3.37	6.525~6.875GHz		
		4.31	6.875~7.125GHz		
6G-2	6GHz Chain 1	4.39	5.925~6.425GHz	Dipole	i-pex(MHF)
		2.16	6.425~6.525GHz		
		3.51	6.525~6.875GHz		
		4.45	6.875~7.125GHz		
6G-3	6GHz Chain 2	3.77	5.925~6.425GHz	Dipole	i-pex(MHF)
		2.62	6.425~6.525GHz		
		3.75	6.525~6.875GHz		
		4.48	6.875~7.125GHz		
6G-4	6GHz Chain 3	4.38	5.925~6.425GHz	Dipole	i-pex(MHF)
		4.38	6.425~6.525GHz		
		4.48	6.525~6.875GHz		
		3.9	6.875~7.125GHz		

2.5 Calculation Result

Operation Mode	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Pass / Fail
WLAN 2.4GHz	992.242	6.66	34	0.31656	1	Pass
WLAN 5GHz U-NII-1	961.831	6.43	34	0.29103	1	Pass
WLAN 5GHz U-NII-3	974.358	6.21	34	0.28025	1	Pass

Operation Mode	Max EIRP (mW)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Pass / Fail
WLAN 6GHz NSS4	506.991	34	0.03490	1	Pass

NOTE:

1. 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 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz (Low Band) + WLAN 5GHz (High Band) + WLAN 6GHz =

0.31656 / 1 + 0.29103 / 1 + 0.28025 / 1 + 0.03490 / 1= 0.92292

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

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