

## RF Exposure Report

**Report No.:** SA200522E10

**FCC ID:** PY320100482

**Contains FCC ID:** XMR201807EG06A

**Test Model:** LAX20

**Received Date:** May 22, 2020

**Test Date:** July 02, 2020

**Issued Date:** Aug. 03, 2020

**Applicant:** 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
SA200522E10	Original release.	Aug. 03, 2020

## 1 Certificate of Conformity

**Product:** NIGHTHAWK AX6 AX1800 LTE WiFi Router

**Brand:** NETGEAR

**Test Model:** LAX20

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** NETGEAR, Inc.

**Test Date:** July 02, 2020

**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 :** Joyce Kuo , **Date:** Aug. 03, 2020  
Joyce Kuo / Specialist

**Approved by :** Clark Lin , **Date:** Aug. 03, 2020  
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 <sup>2</sup> )	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 <sup>2</sup> )*	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/cm<sup>2</sup>

$P_{out}$  = 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 26 cm away from the body of the user. So, this device is classified as **Mobile Device**.

## 2.4 Antenna Gain

1 The WLAN antennas provided to the EUT, please refer to the following table:

Antenna Set 1	Antenna Set 2
Dual_Ant 5	Dual_Ant 4
Dual_Ant 6	Dual_Ant 3

From the above antenna conditions, the worst case was found in Antenna Set 1. Therefore only the test data of the mode was recorded in this report.

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

Frequency Range (GHz)	Directional Antenna Gain (dBi)	Antenna Type	Antenna Connector
2.4~2.4835	4.55	Dipole	R-SMA
5.15 ~ 5.25	5.24		
5.725 ~ 5.85	6.01		

Note: More detailed information, please refer to antenna specification.

3 The WWAN antennas provided to the EUT, please refer to the following table:

Antenna No.	Band	Freq. Range (MHz)	Gain (dBi)	Antenna Type
1	WCDMA Band 2	1850~1910	5.03	PCB
	WCDMA Band 4	1710~1755	4.74	
	WCDMA Band 5	824~849	2.66	
	LTE Band 2	11850~1910	5.03	
	LTE Band 4	1710~1755	4.74	
	LTE Band 5	824~849	2.66	
	LTE Band 7	2500~2570	5.02	
	LTE Band 12	688~716	0.89	
	LTE Band 13	777~787	1.55	
	LTE Band 25	1850~1915	5.03	
	LTE Band 26	814~849	2.66	
	LTE Band 30	2305~2310	5.36	
	LTE Band 66	1710~1780	5.12	
2	WCDMA Band 2	1850~1910	4.89	PCB
	WCDMA Band 4	1710~1755	4.61	
	WCDMA Band 5	824~849	2.93	
	LTE Band 2	11850~1910	4.89	
	LTE Band 4	1710~1755	4.61	
	LTE Band 5	824~849	2.93	
	LTE Band 7	2500~2570	4.83	
	LTE Band 12	688~716	1.06	
	LTE Band 13	777~787	1.8	
	LTE Band 25	1850~1915	4.92	
	LTE Band 26	814~849	2.93	
	LTE Band 30	2305~2310	5.53	
	LTE Band 66	1710~1780	4.84	

\* 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.

## 2.1 Calculation Result

### For WLAN:

Operation Mode	Evaluation Frequency (MHz)	Max Avg. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
WLAN 2.4GHz	2412-2462	867.292	4.55	26	0.29108	1
WLAN 5GHz U-NII-1	5180-5240	843.395	5.24	26	0.33180	1
WLAN 5GHz U-NII-3	5745-5825	887.09	6.01	26	0.41669	1

#### NOTE:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- 2.4GHz: Directional gain =  $10 \log[(10^{G_0/20} + 10^{G_1/20})^2 / 2] = 4.55\text{dBi}$
- 5GHz (U-NII-1): Directional gain =  $10 \log[(10^{G_0/20} + 10^{G_1/20})^2 / 2] = 5.24\text{dBi}$
- 5GHz (U-NII-3): Directional gain =  $10 \log[(10^{G_0/20} + 10^{G_1/20})^2 / 2] = 6.01\text{dBi}$

### For WWAN (LTE) module (FCC ID: XMR201807EG06A):

Operation Mode	Evaluation Frequency (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
LTE B7	2502.5-2567.5	415.91	5.02	26	0.15554	1

\*Limit of Power Density = F/1500

#### 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

$WLAN\ 2.4GHz + WLAN\ 5GHz + LTE = 0.29108 / 1 + 0.41669 / 1 + 0.15554 / 1 = 0.86331$

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

## Appendix

WWAN (LTE) module (FCC ID: XMR201807EG06A)

MPE Evaluation

Mode	Equipment Category	Transmitter Range (MHz)		Maximum		Antenna Gain (dBi)	Power Density (mW/cm <sup>2</sup> )		Ratio
		Start	Stop	(dBm)	(W)		Vaule	Limit	
UMTS	Band II	1852.4	1907.6	25.09	0.323	5.03	0.12107	1	0.12107
	Band IV	1712.4	1752.6	25	0.316	4.74	0.1108	1	0.11080
	Band V	826.4	846.6	23.87	0.244	2.66	0.05299	0.5509	0.09619
LTE	Band 2	1850.7	1909.3	25.71	0.372	5.03	0.13944	1	0.13944
	Band 4	1710.7	1754.3	25.31	0.34	4.74	0.11921	1	0.11921
	Band 5	824.7	848.3	23.93	0.247	2.66	0.05365	0.5498	0.09758
	Band 7	2502.5	2567.5	26.19	0.416	5.02	0.15557	1	0.15557
	Band 12	699.7	715.3	24.35	0.272	0.89	0.0393	0.4664	0.08426
	Band 13	779.5	784.5	24.22	0.264	1.55	0.04441	0.5196	0.08547
	Band 25	1850.7	1914.3	25.71	0.372	5.03	0.13944	1	0.13944
	Band 26	814.7	823.3	23.89	0.245	2.66	0.05321	0.5431	0.09797
	Band 30	2307.5	2312.5	22.94	0.197	5.36	0.07967	1	0.07967
	Band 66	1710.7	1719.3	25.31	0.34	5.12	0.13011	1	0.13011

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