RF Exposure Report

Report No.:	SA150514C27
FCC ID:	PY315100302
Test Model:	D7800
Received Date:	May 14, 2015
Test Date:	May 15 ~ May 22, 2015
Issued Date:	May 22, 2015
Applicant:	NETGEAR INC.
Address:	350 East Plumeria Drive, San Jose, CA 95134, USA
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.)

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Release Control Record

Issue No.	Description	Date Issued
SA150514C27	Original release	May 22, 2015

1 Certificate of Conformity

Product:	AC2600 WiFi VDSL/ADSL Modem Router
Brand:	NETGEAR
Test Model:	D7800
Sample Status:	Engineering sample
Applicant:	NETGEAR INC.
Test Date:	May 15 ~ May 22, 2015
Standards:	FCC Part 2 (Section 2.1091) KDB 447498 D03 IEEE C95.1

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:** May 22, 2015
Polly Chien / Specialist

Approved by : _____ , **Date:** May 22, 2015
Ken Liu / Senior 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				
300-1500	…	…	F/1500	30
1500-100,000	…	…	1.0	30

F = Frequency in MHz

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 29cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result Of Maximum Conducted Power

Band	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
CDD Mode						
2.4GHz	2412	29.78	6.23	29	0.378	1
	2422	24.05	6.43	29	0.106	1
	2437	29.96	6.43	29	0.412	1
	2452	25.07	6.23	29	0.128	1
	2462	29.77	6.13	29	0.368	1
5GHz	5180	28.86	6.63	29	0.335	1
	5190	25.93	6.73	29	0.175	1
	5200	29.68	6.73	29	0.414	1
	5210	23.99	6.83	29	0.114	1
	5230	29.99	6.93	29	0.466	1
	5240	29.87	6.93	29	0.453	1
	5745	29.74	7.63	29	0.516	1
	5755	29.63	7.53	29	0.492	1
	5775	28.20	7.63	29	0.362	1
	5785	29.97	7.53	29	0.532	1
	5795	29.98	7.63	29	0.546	1
	5825	29.96	7.63	29	0.543	1

Note:

2412MHz: Directional gain = 0.21dBi + 10log(4) = 6.23dBi
2422MHz: Directional gain = 0.41dBi + 10log(4) = 6.43dBi
2437MHz: Directional gain = 0.41dBi + 10log(4) = 6.43dBi
2452MHz: Directional gain = 0.21dBi + 10log(4) = 6.23dBi
2462MHz: Directional gain = 0.11dBi + 10log(4) = 6.13dBi
5180MHz: Directional gain = 0.61dBi + 10log(4) = 6.63dBi
5190MHz: Directional gain = 0.71dBi + 10log(4) = 6.73dBi
5200MHz: Directional gain = 0.71dBi + 10log(4) = 6.73dBi
5210MHz: Directional gain = 0.81dBi + 10log(4) = 6.83dBi
5230MHz: Directional gain = 0.91dBi + 10log(4) = 6.93dBi
5240MHz: Directional gain = 0.91dBi + 10log(4) = 6.93dBi
5745MHz: Directional gain = 1.61dBi + 10log(4) = 7.63dBi
5755MHz: Directional gain = 1.51dBi + 10log(4) = 7.53dBi
5775MHz: Directional gain = 1.61dBi + 10log(4) = 7.63dBi
5785MHz: Directional gain = 1.51dBi + 10log(4) = 7.53dBi
5795MHz: Directional gain = 1.61dBi + 10log(4) = 7.63dBi
5825MHz: Directional gain = 1.61dBi + 10log(4) = 7.63dBi

Band	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
Beamforming_NSS1 Mode						
5GHz	5180	26.31	6.63	29	0.186	1
	5190	25.27	6.73	29	0.150	1
	5200	29.22	6.73	29	0.372	1
	5210	23.86	6.83	29	0.111	1
	5230	29.05	6.93	29	0.375	1
	5240	29.05	6.93	29	0.375	1
	5745	28.36	7.63	29	0.376	1
	5755	28.01	7.53	29	0.339	1
	5775	27.06	7.63	29	0.279	1
	5785	28.45	7.53	29	0.375	1
	5795	28.34	7.63	29	0.374	1
	5825	28.36	7.63	29	0.376	1

Note:

5180MHz: Directional gain = 0.61dBi + 10log(4) = 6.63dBi

5190MHz: Directional gain = 0.71dBi + 10log(4) = 6.73dBi

5200MHz: Directional gain = 0.71dBi + 10log(4) = 6.73dBi

5210MHz: Directional gain = 0.81dBi + 10log(4) = 6.83dBi

5230MHz: Directional gain = 0.91dBi + 10log(4) = 6.93dBi

5240MHz: Directional gain = 0.91dBi + 10log(4) = 6.93dBi

5745MHz: Directional gain = 1.61dBi + 10log(4) = 7.63dBi

5755MHz: Directional gain = 1.51dBi + 10log(4) = 7.53dBi

5775MHz: Directional gain = 1.61dBi + 10log(4) = 7.63dBi

5785MHz: Directional gain = 1.51dBi + 10log(4) = 7.53dBi

5795MHz: Directional gain = 1.61dBi + 10log(4) = 7.63dBi

5825MHz: Directional gain = 1.61dBi + 10log(4) = 7.63dBi

Band	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
Beamforming_NSS2 Mode						
5GHz	5180	27.57	3.62	29	0.124	1
	5190	25.49	3.72	29	0.079	1
	5200	29.96	3.72	29	0.221	1
	5210	25.18	3.82	29	0.075	1
	5230	29.87	3.92	29	0.226	1
	5240	29.97	3.92	29	0.232	1
	5745	29.55	4.62	29	0.247	1
	5755	29.80	4.52	29	0.256	1
	5775	28.20	4.62	29	0.181	1
	5785	29.58	4.52	29	0.243	1
	5795	29.57	4.62	29	0.248	1
	5825	29.65	4.62	29	0.253	1

Note:

5180MHz: Directional gain = 0.61dBi + 10log(4/2) = 3.62dBi

5190MHz: Directional gain = 0.71dBi + 10log(4/2) = 3.72dBi

5200MHz: Directional gain = 0.71dBi + 10log(4/2) = 3.72dBi

5210MHz: Directional gain = 0.81dBi + 10log(4/2) = 3.82dBi

5230MHz: Directional gain = 0.91dBi + 10log(4/2) = 3.92dBi

5240MHz: Directional gain = 0.91dBi + 10log(4/2) = 3.92dBi

5745MHz: Directional gain = 1.61dBi + 10log(4/2) = 4.62dBi

5755MHz: Directional gain = 1.51dBi + 10log(4/2) = 4.52dBi

5775MHz: Directional gain = 1.61dBi + 10log(4/2) = 4.62dB

5785MHz: Directional gain = 1.51dBi + 10log(4/2) = 4.52dBi

5795MHz: Directional gain = 1.61dBi + 10log(4/2) = 4.62dBi

5825MHz: Directional gain = 1.61dBi + 10log(4/2) = 4.62dB

CONCULSION:

Both of the WLAN 2.4G & WLAN 5G can transmit simultaneously, the formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4G + WLAN 5.0G = 0.412 + 0.546 = 0.958

Therefore, the maximum calculation of this situation is 0.958, which is less than the “1” limit.

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