RF Exposure Report

Report No.: SA150325C05C

FCC ID: PY315100301

Test Model: R7500v2

Received Date: May 07, 2015

Test Date: May 07 ~ Sep. 03, 2015

Issued Date: Sep. 04, 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.)

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
SA150325C05C	Original release.	Sep. 04, 2015

1 Certificate of Conformity

Product:	AC2350 Smart WiFi Router
Brand:	NETGEAR
Test Model:	R7500v2
Sample Status:	Engineering sample
Applicant:	NETGEAR INC.
Test Date:	May 07 ~ Sep. 03, 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 : Suntee Liu , **Date:** Sep. 04, 2015

Suntee Liu / Specialist

Approved by : Ken Liu , **Date:** Sep. 04, 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 27cm 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	29.82	4.98	27	0.330	1
	2422	23.21	5.18	27	0.075	1
	2437	29.90	5.18	27	0.352	1
	2452	24.65	4.98	27	0.100	1
	2462	29.76	4.88	27	0.318	1
5GHz	5180	28.59	6.63	27	0.363	1
	5190	25.73	6.73	27	0.192	1
	5200	28.99	6.73	27	0.407	1
	5210	23.98	6.83	27	0.132	1
	5230	29.98	6.93	27	0.536	1
	5240	29.08	6.93	27	0.436	1
	5745	28.27	7.63	27	0.425	1
	5755	23.39	7.53	27	0.135	1
	5775	21.88	7.53	27	0.095	1
	5785	29.92	7.53	27	0.607	1
	5795	28.27	7.63	27	0.425	1
	5825	28.91	7.63	27	0.492	1

Note:

2412MHz: Directional gain = 0.21dBi + 10log(3) = 4.98dBi

2422MHz: Directional gain = 0.41dBi + 10log(3) = 5.18dBi

2437MHz: Directional gain = 0.41dBi + 10log(3) = 5.18dBi

2452MHz: Directional gain = 0.21dBi + 10log(3) = 4.98dBi

2462MHz: Directional gain = 0.11dBi + 10log(3) = 4.88dBi

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 = 1.51dBi + 10log(4) = 7.53dBi

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	28.08	6.63	27	0.323	1
	5190	25.22	6.73	27	0.171	1
	5200	28.98	6.73	27	0.407	1
	5210	23.92	6.83	27	0.130	1
	5230	29.05	6.93	27	0.433	1
	5240	29.01	6.93	27	0.429	1
	5745	27.42	7.63	27	0.349	1
	5755	21.48	7.53	27	0.087	1
	5775	21.49	7.53	27	0.087	1
	5785	28.43	7.53	27	0.431	1
	5795	28.09	7.63	27	0.407	1
	5825	28.36	7.63	27	0.434	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 = 1.51dBi + 10log(4) = 7.53dBi

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	28.37	3.62	27	0.173	1
	5190	25.52	3.72	27	0.092	1
	5200	29.51	3.72	27	0.230	1
	5210	25.39	3.82	27	0.091	1
	5230	29.68	3.92	27	0.250	1
	5240	29.62	3.92	27	0.247	1
	5745	27.02	4.62	27	0.159	1
	5755	22.22	4.52	27	0.052	1
	5775	21.51	4.52	27	0.044	1
	5785	29.62	4.52	27	0.283	1
	5795	28.17	4.62	27	0.208	1
	5825	28.55	4.62	27	0.226	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 = 1.51dBi + 10log(4/2) = 4.52dBi

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 = 0.352 + 0.607 = 0.959

Therefore, the maximum calculation of this situation is 0.964, which is less than the “1” limit.

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