

## RF Exposure Report

**Report No.:** SA141003E10E

**FCC ID:** PY314300283

**Test Model:** EX6150

**Received Date:** Dec. 03, 2014

**Test Date:** Dec. 09, 2014 and Sep. 23, 2015

**Issued Date:** Oct. 01, 2015

**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:** No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin  
Chu Hsien 307, Taiwan R.O.C.

**Test Location (1):** No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin  
Chu Hsien 307, Taiwan R.O.C.

**Test Location (2):** No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin  
Chu Hsien 307, Taiwan R.O.C.



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### Release Control Record

Issue No.	Description	Date Issued
SA141003E10E	Original release.	Oct. 01, 2015



## 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				
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<sup>2</sup>

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 20cm away from the body of the user.

So, this device is classified as **Mobile Device**.

### 2.4 Antenna Gain

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

PCB Chain No.	Brand	Model	Antenna Gain(dBi) < including cable loss >	Frequency range (MHz ~ MHz)	Antenna Type	Connecter Type	Cable Length (mm)
Chain 0	NETGEAR	NA	3.1	2400~2500	Dipole	i-pex	50
			2.7	5150~5250			
			2.9	5250~5350			
			2.2	5470~5725			
			2.6	5725~5850			
Chain 1	NETGEAR	NA	3.1	2400~2500	Dipole	i-pex	50
			2.7	5150~5250			
			2.9	5250~5350			
			2.2	5470~5725			
			2.6	5725~5850			

### 3 Calculation Result of Maximum Conducted Power

The data (Except U-NII-3 band data) was copied from the original test report (Report No.: SA141003E10)  
**For 15.247:**

**802.11b:**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2412 ~ 2462	212.595	6.11	20	0.17270	1

Directional gain = 3.1dBi + 10log(2) = 6.11dBi

**802.11g:**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2412 ~ 2462	616.801	6.11	20	0.50104	1

Directional gain = 3.1dBi + 10log(2) = 6.11dBi

**802.11n (HT20):**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2412 ~ 2462	471.291	6.11	20	0.38284	1

Directional gain = 3.1dBi + 10log(2) = 6.11dBi

**802.11n (HT40):**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2422 ~ 2452	122.807	6.11	20	0.09976	1

Directional gain = 3.1dBi + 10log(2) = 6.11dBi

**For 15.407(5GHz):**

**802.11a:**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5180 ~ 5240	303.086	5.71	20	0.22454	1
5745 ~ 5825	350.003	5.61	20	0.25340	1

For 5180 ~ 5240 MHz: Directional gain = 2.7dBi + 10log(2) = 5.71dBi

For 5745 ~ 5825 MHz: Directional gain = 2.6dBi + 10log(2) = 5.61dBi

**802.11ac (VHT20)**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5180 ~ 5240	299.592	5.71	20	0.22195	1
5745 ~ 5825	307.697	5.61	20	0.22277	1

For 5180 ~ 5240 MHz: Directional gain = 2.7dBi + 10log(2) = 5.71dBi

For 5745 ~ 5825 MHz: Directional gain = 2.6dBi + 10log(2) = 5.61dBi

**802.11ac (VHT40)**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5190 ~ 5230	266.722	5.71	20	0.19760	1
5755 ~ 5795	243.588	5.61	20	0.17635	1

For 5180 ~ 5240 MHz: Directional gain = 2.7dBi + 10log(2) = 5.71dBi

For 5745 ~ 5825 MHz: Directional gain = 2.6dBi + 10log(2) = 5.61dBi

**802.11ac (VHT80)**

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5210	58.423	5.71	20	0.04328	1
5755	76.481	5.61	20	0.05537	1

For 5180 ~ 5240 MHz: Directional gain = 2.7dBi + 10log(2) = 5.71dBi

For 5745 ~ 5825 MHz: Directional gain = 2.6dBi + 10log(2) = 5.61dBi

**CONCLUSION:**

Both of the 2.4GHz and 5GHz WLAN can transmit simultaneously, the formula of calculated the MPE is:

$$CPD_1 / LPD_1 + CPD_2 / LPD_2 + \dots \text{etc.} < 1$$

**CPD = Calculation power density**

**LPD = Limit of power density**

Therefore, the worst-case situation is  $0.50104 / 1 + 0.25340 / 1 = 0.75444$ , which is less than "1". This confirmed that the device comply with FCC 1.1310 MPE limit.

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