

## RF Exposure Report

**Report No.:** SA150802C01C

**FCC ID:** MSQ-CMBT00

**Test Model:** CM-32\_AC2600

**Received Date:** Aug. 02, 2015

**Test Date:** Nov. 19 ~ Nov. 30, 2015 (For 2.4G and 5G U-NII-1 Band)  
May 26 ~ May 31, 2016 (For U-NII-3 Band)

**Issued Date:** Jun. 01, 2016

**Applicant:** ASUSTek COMPUTER INC.

**Address:** 4F, NO. 150, LI-TE RD. PEITOU, TAIPEI 112, TAIWAN

**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

**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
SA150802C01C	Original release	Jun. 01, 2016

## 1 Certificate of Conformity

**Product:** Wireless-AC3100 Dual Band Gigabit Router

**Brand:** ASUS

**Test Model:** CM-32\_AC2600

**Sample Status:** Engineering sample

**Applicant:** ASUSTek COMPUTER INC.

**Test Date:** Nov. 19 ~ Nov. 30, 2015 (For 2.4G and 5G U-NII-1 Band)  
May 26 ~ May 31, 2016 (For U-NII-3 Band)

**Standards:** FCC Part 2 (Section 2.1091)  
KDB 447498 D01 (October 23, 2015)  
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 :** Celine Chou , **Date:** Jun. 01, 2016  
Celine Chou / Specialist

**Approved by :** Ken Liu , **Date:** Jun. 01, 2016  
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 <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

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

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 37cm away from the body of the user. So, this device is classified as **Mobile Device**.

### 3 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Mode	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462	Beamforming off Mode					
	802.11b	28.65	8.72	37	0.317	1
	802.11g	28.77	8.72	37	0.326	1
	802.11n (HT20)	29.35	8.72	37	0.373	1
	802.11n (HT40)	24.64	8.72	37	0.126	1
	Beamforming on Mode					
	802.11n (HT20)	26.56	8.72	37	0.196	1
802.11n (HT40)	22.31	8.72	37	0.074	1	
5180-5240	Beamforming off Mode					
	802.11a	22.38	9.41	37	0.088	1
	802.11n (HT20)	22.28	9.41	37	0.086	1
	802.11n (HT40)	22.23	9.41	37	0.085	1
	802.11ac (VHT80)	19.85	9.41	37	0.049	1
	Beamforming on Mode					
	802.11ac (VHT20)	21.90	9.41	37	0.079	1
	802.11ac (VHT40)	20.62	9.41	37	0.059	1
802.11ac (VHT80)	19.12	9.41	37	0.041	1	
5745-5825	Beamforming off Mode					
	802.11a	26.27	10.37	37	0.268	1
	802.11n (HT20)	26.32	10.37	37	0.271	1
	802.11n (HT40)	29.78	10.37	37	0.602	1
	802.11ac (VHT80)	29.07	10.37	37	0.511	1
	Beamforming on Mode					
	802.11ac (VHT20)	25.30	10.37	37	0.214	1
	802.11ac (VHT40)	25.32	10.37	37	0.215	1
802.11ac (VHT80)	25.34	10.37	37	0.216	1	

Note:

2.4GHz: Directional gain = 2.70dBi + 10log(4) = 8.72dBi

5180-5240MHz: Directional gain = 3.39dBi + 10log(4) = 9.41dBi

5745-5825MHz: Directional gain = 4.35dBi + 10log(4) = 10.37dBi

**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

$$WLAN\ 2.4GHz + WLAN\ 5GHz = 0.373 + 0.602 = 0.975$$

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

**---END---**