RF Exposure Report

Report No.: SA150802C01

FCC ID: MSQ-CMBT00

Test Model: CM-32_AC2600

Received Date: Aug. 02, 2015

Test Date: Nov. 19 ~ Nov. 30, 2015

Issued Date: Nov. 30, 2015

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
SA150802C01	Original release.	Nov. 30, 2015

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. 28, 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 : _Celine Chou_ , **Date:** Nov. 30, 2015
Celine Chou / Specialist

Approved by : _Ken Liu_ , **Date:** Nov. 30, 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 32cm 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/cm²)	Limit (mW/cm²)
2412-2462	Beamforming off Mode					
	802.11b	28.65	8.72	32	0.424	1
	802.11g	28.77	8.72	32	0.436	1
	802.11n (HT20)	29.35	8.72	32	0.498	1
	802.11n (HT40)	24.64	8.72	32	0.168	1
	Beamforming on Mode					
	802.11n (HT20)	26.56	8.72	32	0.262	1
	802.11n (HT40)	22.31	8.72	32	0.099	1
5180-5240	Beamforming off Mode					
	802.11a	22.38	9.41	32	0.117	1
	802.11n (HT20)	22.28	9.41	32	0.115	1
	802.11n (HT40)	22.23	9.41	32	0.113	1
	802.11ac (VHT80)	19.85	9.41	32	0.066	1
	Beamforming on Mode					
	802.11ac (VHT20)	21.90	9.41	32	0.105	1
	802.11ac (VHT40)	20.62	9.41	32	0.078	1
	802.11ac (VHT80)	19.12	9.41	32	0.055	1
5745-5825	Beamforming off Mode					
	802.11a	27.46	10.37	32	0.472	1
	802.11n (HT20)	27.42	10.37	32	0.467	1
	802.11n (HT40)	26.34	10.37	32	0.364	1
	802.11ac (VHT80)	25.20	10.37	32	0.280	1
	Beamforming on Mode					
	802.11ac (VHT20)	25.55	10.37	32	0.304	1
	802.11ac (VHT40)	25.53	10.37	32	0.302	1
	802.11ac (VHT80)	23.94	10.37	32	0.210	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 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz = 0.498 + 0.472 = 0.970

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

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