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^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 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^2)	Limit (mW/cm^2)
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 + ……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.

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