RF Exposure Report

Report No.:	SA190503C13B
FCC ID:	MSQ-RTACRH01
Test Model:	RT-ACRH15
Series Model:	RT-AC1200GE, RT-AC59U, RT-AC1500G PLUS, RT-AC1500UHP, RT-AC57U, RT-AC58U, RT-AC1300G PLUS
Received Date:	May 03, 2019
Test Date:	May 17 ~ Jul. 19, 2019
Issued Date:	Jul. 22, 2019
Applicant:	ASUSTeK COMPUTER INC.
Address:	4F, NO. 150, Li-Te Rd. Peitou, Taipei 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, R.O.C.
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
SA190503C13B	Original release.	Jul. 22, 2019

1 Certificate of Conformity

Product:	Dual Band Gigabit WiFi Router
Brand:	ASUS
Test Model:	RT-ACRH15
Series Model:	RT-AC1200GE, RT-AC59U, RT-AC1500G PLUS, RT-AC1500UHP, RT-AC57U, RT-AC58U, RT-AC1300G PLUS
Sample Status:	Engineering sample
Applicant:	ASUSTeK COMPUTER INC.
Test Date:	May 17 ~ Jul. 19, 2019
Standards:	FCC Part 2 (Section 2.1091) KDB 447498 D01 General RF Exposure Guidance v06 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 RF characteristics under the conditions specified in this report.

Prepared by : Pettie Chen , **Date:** Jul. 22, 2019

Pettie Chen / Senior Specialist

Approved by : Bruce Chen , **Date:** Jul. 22, 2019

Bruce Chen / Project Engineer

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				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	…	…	f/1500	30
1500-100,000	…	…	1.0	30

f = Frequency in MHz; *Plane-wave equivalent power density

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

Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
CDD Mode					
2412-2462	26.70	11.02	27	0.646	1
5180-5240	26.23	8.01	27	0.290	1
5745-5825	26.88	8.01	27	0.337	1
Beamforming Mode					
5180-5240	25.80	8.01	27	0.262	1
5745-5825	26.88	8.01	27	0.337	1

Note:
1. Directional gain:
For 2.4GHz Band: Directional gain = 5dBi + 10log(4) = 11.02dBi
For 5.0GHz Band: Directional gain = 5dBi + 10log(2) = 8.01dBi

2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

Conclusion:

2.4GHz & 5GHz Band can transmit at same time.

The formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

1. WLAN 2.4GHz + WLAN 5GHz = 0.646/1 + 0.337/1 = 0.983

Therefore the maximum calculations of above situations are less than the “1” limit.

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