

## 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.)



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### 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 <sup>2</sup> )	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 <sup>2</sup> )*	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<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 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 <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
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:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

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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