

## RF Exposure Report

**Report No.:** SABDQY-WTW-P21070082

**FCC ID:** YOR-RT6600AX

**Test Model:** RT6600ax

**Received Date:** Jul. 01, 2021

**Test Date:** Oct. 19 ~ Nov. 22, 2021

**Issued Date:** Dec. 17, 2021

**Applicant:** Synology Incorporated

**Address:** 9F., No. 1, Yuandong Rd., Banqiao Dist., New Taipei City 220632

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Lin Kou Laboratories

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

**Test Location (1):** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City  
33383, TAIWAN

**FCC Registration /  
Designation Number:** 788550 / TW0003

**Test Location (2):** No. 70, Wenming Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)

**FCC Registration /  
Designation Number:** 281270 / TW0032



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### Release Control Record

Issue No.	Description	Date Issued
SABDQY-WTW-P21070082	Original release	Dec. 17, 2021

## 1 Certificate of Conformity

**Product:** 802.11ax Wireless Router

**Brand:** Synology

**Test Model:** RT6600ax

**Sample Status:** Engineering sample

**Applicant:** Synology Incorporated

**Test Date:** Oct. 19 ~ Nov. 22, 2021

**Standards:** FCC Part 2 (Section 2.1091)

**References Test Guidance:** KDB 447498 D01 General RF Exposure Guidance v06

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 :** Celine Chou , **Date:** Dec. 17, 2021  
Celine Chou / Senior Specialist

**Approved by :** Jeremy Lin , **Date:** Dec. 17, 2021  
Jeremy Lin / 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				
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 21cm 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 AV Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
CDD Mode					
2412-2462	29.36	2.00	21	0.247	1.00
5180-5240	29.97	3.00	21	0.358	1.00
5745-5825	29.75	3.00	21	0.340	1.00
Beamforming Mode					
2412-2462	25.30	5.01	21	0.194	1.00
5180-5240	25.65	6.01	21	0.264	1.00
5745-5825	23.73	9.02	21	0.340	1.00

**Note:**

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

2412-2462MHz: Directional gain = 2dBi + 10log(2) = 5.01dBi  
 5180-5240MHz: Directional gain = 3dBi + 10log(2) = 6.01dBi  
 5260-5320MHz: Directional gain = 3dBi + 10log(2) = 6.01dBi  
 5500-5720MHz: Directional gain = 3dBi + 10log(4) = 9.02dBi  
 5745-5825MHz: Directional gain = 3dBi + 10log(4) = 9.02dBi  
 5845-5885MHz: Directional gain = 3.3dBi + 10log(4) = 9.32dBi.

**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

$$2412-2462\text{MHz Band} + 5180-5240\text{MHz or } 5260-5320\text{MHz Band} + 5500-5720\text{MHz or } 5745-5825\text{MHz or } 5845-5885\text{MHz Band} = 0.247 / 1 + 0.358 / 1 + 0.340 / 1 = 0.945 < 1$$

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