

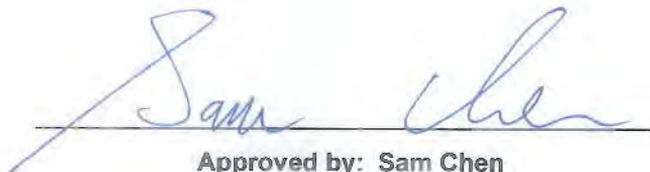


# RADIO EXPOSURE TEST REPORT

FCC ID : MSQ-RTAX5600  
Equipment : ROG Rapture GT-AX6000 Dual Band Gaming Router  
Brand Name : ASUS  
Model Name : GT-AX6000  
Applicant : ASUSTeK COMPUTER INC.  
1F., No. 15, Lide Rd., Beitou, Taipei 112, Taiwan  
Manufacturer (1) : Datamax Electronics (DongGuan) Co., Ltd.  
Niu Shan Foreign Economic Industrial Park, Dong  
Cheng District, Dong Guan City, Guang Dong, China  
Manufacturer (2) : Compal Networking (KunShan) Co., LTD.  
No. 520, Nabbang Rd., Economic & Technical  
Development Zone Kunshan, Jiangsu Province China  
Manufacturer (3) : Lih Rong Electronic Enterprise Co.,Ltd.  
No. 486, Sec. 1, Wanshou Road, Guishan District, ,  
Taoyuan City, Taiwan  
Standard : 47 CFR Part 2.1091

The product was received on Aug. 04, 2021, and testing was started from Sep. 02, 2021 and completed on Oct. 16, 2021. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR Part 2.1091 and shown compliance with the applicable technical standards.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.



Approved by: Sam Chen

**Sporton International Inc. Hsinchu Laboratory**  
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<b>Photographs of EUT v01</b>	





### Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2	-	Exposure evaluation	PASS	-

**Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

**Comments and Explanations:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: **Sam Chen**

Report Producer: **Jessie Wei**



# 1 General Description

## 1.1 EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
2.4GHz WLAN	2400-2483.5	2412-2462	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) VHT: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
5GHz WLAN	5150-5250 5250-5350 5470-5725 5725-5850	5180-5250 5250-5320 5500-5720 5745-5825	802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)



### 1.2 Antenna Information

Ant.	2.4GHz Port	5GHz Port	Brand Name	Model Name	Antenna Type	Connector	Gain (dBi)
1	4	4	WHA YU	C660-510557-A	Dipole	Reversed-SMA	Note 1
2	3	3	WHA YU	C660-510557-A	Dipole	Reversed-SMA	
3	2	2	WHA YU	C660-510557-A	Dipole	Reversed-SMA	
4	1	1	WHA YU	C660-510557-A	Dipole	Reversed-SMA	
5	-	-	WHA YU	C660-510558-A	Dipole	Reversed-SMA	

Note 1:

Ant.	Gain (dBi)				
	2.4GHz	UNII 1	UNII 2A	UNII 2C	UNII 3
1	2.59	2.99	3.1	1.39	2.02
2	2.43	2.57	3.34	1.86	1.5
3	2.77	2.16	2.47	1.46	2.17
4	2.23	3.14	3.47	1.71	2.98
5	-	5.45	5.45	5.45	5.45
<b>Max Gain (dBi)</b>	2.77	3.14	3.47	1.86	2.98
<b>DG (4T1S) (dBi)</b>	5.54	4.78	4.65	4.52	3.92
<b>DG (4T2S) (dBi)</b>	2.77	3.14	3.47	1.86	2.98
<b>DG (4T4S) (dBi)</b>	1.36	1.63	2.02	0.09	0.43

Note 2: The above information was declared by manufacturer.

Note 3: The directional gain is measured which follows the procedure of KDB 662911 D03. The antenna report is provided in the operational description for this application.

Note 4: The EUT has five antennas, ant 5 has only receiving function.

**For 2.4GHz function:**

**For IEEE 802.11 b/g/n/VHT/ax mode (4TX/4RX)**

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

**For 5GHz function:**

**For IEEE 802.11a/n/ac/ax mode (4TX/4RX)**

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.



### 1.3 Table for EUT supports function

Function	Supports type
AP Router	Master
Bridge	Slave without radar detection
Repeater	Master
Mesh	Master

Note: The AP Router (Master) mode has been tested and recorded in this test report.

### 1.4 Accessories

Accessories				
Equipment Name	Brand Name	Model Name	Rating	Remark
Adapter 1	DELTA	ADP-45FE F	INPUT: 100-240V~1.2A, 50-60Hz OUTPUT: 19.0V, 2.37A, 45.0W	DC power cable, non shielded, 1.5m
Adapter 2	AcBel	ADH011	INPUT: 100-240V~1.4A, 50-60Hz OUTPUT: 19.5V, 2.31A, 45.0W MAX.	DC power cable, non shielded, 1.5m
Others				
US power cord*2, non shielded, 0.9m				
RJ-45 cable*1, Shielded, 1.5m				

### 1.5 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FA162902

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. Adding UNII-2A and UNII-2C bands (5250~5350 MHz, 5470~5725 MHz) for this device.	Exposure evaluation
2. Adding 802.11ac 160MHz and 802.11ax 160MHz Mode.	

Note: WLAN 2.4GHz and WLAN 5GHz UNII-1, UNII-3 MPE results were based on original report.



## 2 Maximum Permissible Exposure

### 2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	*(100)	<6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	<6
30-300	61.4	0.163	1.0	<6
300-1500	-	-	f/300	<6
1500-100,000	-	-	5	<6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
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

Note: f = frequency in MHz ; \*Plane-wave equivalent power density

### 2.2 MPE Calculation Method

The MPE was calculated at 25 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

**E** = Electric field (V/m)

**P** = RF output power (W)

**G** = EUT Antenna numeric gain (numeric)

**d** = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$



### 2.3 Calculated Result and Limit

**Exposure Environment: General Population / Uncontrolled Exposure**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )
2.4G;D1D	5.54	29.95	35.49	0.50	35.99	3.97192	25	0.50572	1.00000
5.2G;D1D	4.78	29.94	34.72	0.50	35.22	3.32660	25	0.42356	1.00000
5.3G;D1D	4.65	23.94	28.59	0.50	29.09	0.81096	25	0.10325	1.00000
5.6G;D1D	4.52	23.97	28.49	0.50	28.99	0.79250	25	0.10090	1.00000
5.8G;D1D	3.92	29.97	33.89	0.50	34.39	2.74789	25	0.34987	1.00000

**Simultaneous Transmission Analysis Mode: WLAN 2.4GHz + WLAN 5GHz**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )	Ratio (S/Limit)
2.4G;D1D	5.54	29.95	35.49	0.50	35.99	3.97192	25	0.50572	1.00000	0.50572
5.2G;D1D	4.78	29.94	34.72	0.50	35.22	3.32660	25	0.42355	1.00000	0.42355
									Sum Ratio	0.92927
									Ratio Limit	1

Note: The above antenna gain was declared by manufacturer.

—————THE END—————