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 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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History of this test report

Report No.	Version	Description	Issued Date
FA162902	01	Initial issue of report	Oct. 28, 2021
FA162902	02	Changing the Adapter 2 information	Nov. 02, 2021

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: Viola Huang

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 5725-5850	5180-5240 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
Max Gain (dBi)	2.77	3.14	3.47	1.86	2.98
DG (4T1S) (dBi)	5.54	4.78	4.65	4.52	3.92
DG (4T2S) (dBi)	2.77	3.14	3.47	1.86	2.98
DG (4T4S) (dBi)	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. The EUT enables 2.4GHz and 5GHz UNII 1, UNII 3.

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 shieled, 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 shieled, 1.5m
Others				
US power cord*2, non shieled, 0.9m				
RJ-45 cable*1, shielded, 1.5m				

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/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
0.3-3.0	614	1.63	*(100)	<6
3.0-30	1842/f	4.89/f	*(900/f^2)	<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/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
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

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 (V/m) = $\frac{\sqrt{30 \times P \times G}}{d}$ Power Density: *Pd* (W/m²) = $\frac{E^2}{377}$

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^2)	S Limit (mW/cm^2)
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
5.8G;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^2)	S Limit (mW/cm^2)	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———