



FCC RADIO EXPOSURE TEST REPORT

FCC ID : MSQ-RTHR00

Equipment : Wireless-AX11000 Tri-band Gigabit Router, ROG Rapture Tri-band Gaming Router

Brand Name : ASUS

Model Name : RT-AX95U, GT-AX11000

Applicant : ASUSTeK COMPUTER INC.
4F, No. 150, Li-Te Rd., Peitou, Taipei 112, Taiwan

Manufacturer (1) : ASKEY TECHNOLOGY (JIANG SU) LTD
NO1388, Jiao Tong Road, Wujiang Economic Technological Development Area Jiangsu Province 215200 China

Manufacturer (2) : Compal Networking (KunShan) Co., LTD.
No. 520, Nabbang Rd., Economic & Technical Development Zone Kunshan, Jiangsu Province China

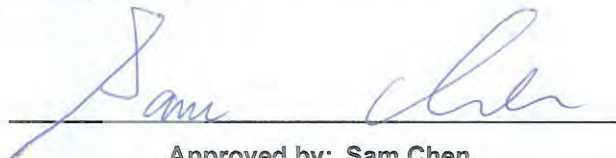
Manufacturer (3) : Arcadyan Technology (Vietnam) Co., Ltd.
Ba Thien Industrial Park, Ba Hien commune, Binh Xuyen district, Vinh Phuc Province, Viet Nam

Standard : 47 CFR Part 2.1091

The product was received on Jun. 05, 2018 , and testing was started from Jun. 05, 2018 and completed on Feb. 17, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications 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 report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.



Approved by: Sam Chen

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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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:

1. 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.
2. This model supports full RU configuration only, and the model does not have adjustable power levels for each user.

Reviewed by: Cliff Chang

Report Producer: Emily Chen

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) 802.11VHT: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM) 802.11ax: OFDM (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: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)

1.2 Table for Multiple Listing

1. The difference for each equipment name and model name is shown as below:

Equipment Name	Model Name	Description
Wireless-AX11000 Tri-band Gigabit Router, ROG Rapture Tri-band Gaming Router	RT-AX95U, GT-AX11000	All the models/equipment names are identical; the different models/equipment names served as marketing strategy.

From the above models, model: RT-AX95U was selected as representative model for the test and its data was recorded in this report.

2. EUT Function

The EUT supports below functions:

1	AP Router (Master)
2	Client without radar detection
3	Bridge (Client without radar detection)
4	Extender (Master)
5	Mesh (Client without radar detection)



3. There are four EUT, the detail information as following:

EUT	SKU	LAN Transformer		Power IC		2.5G phy chip	
		Brand Name	P/N	Brand Name	P/N	Brand Name	P/N
1	1	SWAPnet	NS777202*1	Richtek	RT6220	Broadcom	BCM84880
		SWAPnet	NS771802*1	Richtek	RT6217		
2	2	Mingtek	HN8001VG*1	Richtek	RT6220	Broadcom	BCM84880
		Mingtek	HN18101HF*1	Richtek	RT6217		
3	3	SWAPnet	NS777202*1	MPS	MP8765	Broadcom	BCM54991
		SWAPnet	NS771802*1	MPS	MP2315		
4	4	Mingtek	HN8001VG*1	MPS	MP8765	Broadcom	BCM54991
		Mingtek	HN18101HF*1	MPS	MP2315		



1.3 Table for Class II Change

This product is an extension of original one reported under Sporton project number: FA812227-03

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

Modifications	Performance Checking
1. Adding the second sources (EUT3 and EUT4). Please refer to section 1.2 for detail Information.	Do not effect the test results
2. Adding a new adapter (Brand: DELTA, Model:ADP-65GD D)	
3. Update the test rule of 5GHz Band 4 to "15.407 (b)(4)(i)" from "15.407 (b)(4)(ii)".	Maximum Permissible Exposure
4. Add a set of antennas (Brand:Walsin, P/N: RFDPA161000SBLB802) with the same type and same gain.	Do not effect the test results
5. Adding Manufacturer " Arcadyan Technology (Vietnam) Co., Ltd." and " Ba Thien Industrial Park, Ba Hien commune, Binh Xuyen district, Vinh Phuc Province, Viet Nam"	

Note: Other test results were based on the original report.

1.4 Testing Location

Testing Location		
☐	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-327-0973
☒	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086D with Industry Canada.



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 ²)	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)*	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 ²)	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)*	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 31 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

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

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 ²)	S Limit (mW/cm ²)
2.4G;G1D	7.92	28.00	35.92	0.08	36.00	3.98107	31	0.32982	1.00000
5.2G;D1D	8.32	27.54	35.86	0.14	36.00	3.98107	31	0.32982	1.00000
5.3G;D1D	8.32	21.60	29.92	0.08	30.00	1.00000	31	0.08284	1.00000
5.6G;D1D	8.32	21.66	29.98	0.02	30.00	1.00000	31	0.08284	1.00000
5.8G;D1D	7.92	28.05	35.97	0.02	35.99	3.97192	31	0.32889	1.00000

Simultaneous Transmission Analysis Mode: WLAN 2.4GHz + WLAN 5GHz band 1, 2 + WLAN 5GHz band 3, 4

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;G1D	7.92	28.00	35.92	0.07	35.99	3.97192	31	0.32889	1	0.32889
5.2G;D1D	8.32	27.54	35.86	0.13	35.99	3.97192	31	0.32889	1	0.32889
5.8G;D1D	7.92	28.05	35.97	0.02	35.99	3.97192	31	0.32889	1	0.32889
									Sum Ratio	0.98946
									Ratio Limit	1

Note: The above information was declared by manufacturer.

—THE END—