FCC RADIO EXPOSURE TEST REPORT

FCC ID	:	MSQ-RTAX2D00
Equipment	:	Wireless AX6100 Tri Band Gigabit Router
Brand Name	:	ASUS
Model Name	:	RT-AX92U,RT-AX6100, RT-AX92P, RT-AX92R, RT-AX92A
Applicant	:	ASUSTeK COMPUTER INC. 4F, No. 150, Li-Te Rd., Peitou, Taipei 112, Taiwan
Manufacturer (1)	:	Compal Networking (KunShan) Co., LTD. No. 520, Nanbang Rd., Economic & Technical Development Zone Kunshan, Jiangsu Province China
Manufacturer (2)	:	ASKEY TECHNOLOGY (JIANG SU) LTD NO1388, Jiao Tong Road, Wujiang Economic Technological Development Area Jiangsu Province 215200 China
Standard	:	47 CFR Part 2.1091

The product was received on Sep. 20, 2017, and testing was started from Jun. 11, 2018 and completed on Aug. 27, 2018. 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 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

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Photographs of EUT v01

History of this test report

Report No.	Version	Description	Issued Date
FA791525	01	Initial issue of report	Sep. 03, 2018

Summary of Test Result

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

Reviewed by: Sam Chen

Report Producer: Cindy Peng

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) 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
5GHz WLAN	5150-5250	5180-5240	802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
	5470-5725 5725-5850	5500-5700 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 EUT has five model names which are identical to each other in all aspects except for the following table:

Model Name	Description
RT-AX92U	All the models are identical, the different model names served as marketing strategy.
RT-AX6100	
RT-AX92P	
RT-AX92R	
RT-AX92A	

From the above models, model: RT-AX92U was selected as representative model for the test and its data was recorded in this report.

2. The EUT has two SKU which are identical to each other in all aspects except for the following table:

SKU / Description	SKU 1	SKU 2
LAN port transformer (Brand Name/Model Name)	SWAPnet/NS773602	Mingtek/HN36201CG
WAN port transformer (Brand Name/Model Name)	SWAPnet/NS892402	BOTHHAND/GST5009W

Note: The SKU does not affect the test result of RF tests, so only SKU 1 was tested and recorded in this report.

1.3 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/ 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)*	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)*	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 30 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	4.71	29.98	34.69	0.50	35.19	3.30370	30	0.29210	1.00000
5.2G;D1D	4.93	29.83	34.76	0.50	35.26	3.35738	30	0.29685	1.00000
5.6G;D1D	7.13	22.83	29.96	0.04	30.00	1.00000	30	0.08842	1.00000
5.8G;D1D	7.13	28.85	35.98	0.02	36.00	3.98107	30	0.35200	1.00000

Simultaneous Transmission Analysis Mode: WLAN 2.4GHz + WLAN 5GHz Band 1 + WLAN 5GHz Band 3~Band 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;D1D	4.71	29.98	34.69	0.50	35.19	3.30370	30	0.29210	1	0.29210
5.2G;D1D	4.93	29.83	34.76	0.50	35.26	3.35738	30	0.29685	1	0.29685
5.8G;D1D	7.13	28.85	35.98	0.02	36.00	3.98107	30	0.35200	1	0.35200
									Sum Ratio	0.94095
									Ratio Limit	1

————THE END————