

Radio Exposure Evaluation Report

FCC ID : H8NGRYPHONAX
Equipment : WIFI Tri-band Mesh
Brand Name : Gryphon
Model Name : GRYPHON AX
Applicant : ASKEY COMPUTER CORPORATION
10F, No. 119, Jiankang Road, Zhonghe Dist.,
New Taipei City, Taiwan
Manufacturer : ASKEY COMPUTER CORPORATION
10F, No. 119, Jiankang Road, Zhonghe Dist.,
New Taipei City, Taiwan
Standard : 47 CFR Part 2.1091

The product was received on Jan. 06, 2021, and testing was started from Jan. 18, 2021 and completed on Feb. 05, 2021. We, SPORTON INTERNATIONAL INC. Hsinhua 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. Hsinhua Laboratory, the test report shall not be reproduced except in full.



Approved by: Allen Lin

SPORTON INTERNATIONAL INC. Hsinhua Laboratory

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History of this test report

Report No.	Version	Description	Issued Date
FA091021-01	01	Initial issue of report	Mar. 26, 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:
None

Reviewed by: Sam Tsai

Report Producer: Jenny Yang

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/ac/ax: OFDM (BPSK, QPSK, 16QAM, 64QAM)
5GHz WLAN	5150-5250 5725-5850	5180-5240 5745-5825	802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ac/ax: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Bluetooth	2400-2483.5	2402-2480	BR / EDR: FHSS (GFSK / $\pi/4$ -DQPSK / 8DPSK) LE: DSSS (GFSK)

1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector
1-7	Askey	AP5660W	PCB antenna	I-PEX

Ant.	Peak Gain (dBi)									
	2.4G			5G				BT		
	2400 MHz	2450 MHz	2500 MHz	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3	2400 MHz	2450 MHz	2500 MHz
1	4.13	4.05	3.94	-	-	4.37	4.10	-	-	-
2	4.13	4.05	3.94	-	-	4.37	4.10	-	-	-
3	-	-	-	3.46	3.19	-	-			
4	-	-	-	3.46	3.19	-	-			
5	-	-	-	3.46	3.19	-	-			
6	-	-	-	3.46	3.19	-	-			
7	-	-	-	-	-	-	-	3.25	3.40	2.52



Ant.	Gain (dBi)						
	2.4G			5G			
	2400MHz	2450MHz	2500MHz	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
1	4.52	4.74	3.37	-	-	5.87	5.56
2	4.52	4.74	3.37	-	-	5.87	5.56
3	-	-	-	6.05	6.42	-	-
4	-	-	-	6.05	6.42	-	-
5	-	-	-	6.05	6.42	-	-
6	-	-	-	6.05	6.42	-	-

Note 1: The EUT has seven antennas.

For 2.4GHz function:

For IEEE 802.11 b/g/n/VHT/ax mode (2TX/2RX)

Ant. 1 and Ant. 2 could transmit/receive simultaneously.

For BT function:

For IEEE 802.15.1 Bluetooth mode (1TX/1RX)

Ant. 7 could transmit/receive.

For 5GHz function:

For IEEE 802.11 a/n/ac/ax mode (2TX/2RX)

Only Ant. 1~2 can be used as transmitting/receiving antenna.

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

Only Ant. 3~6 can be used as transmitting/receiving antenna.

1.3 Accessories

Accessories				
AC Adapter 1 (US Plug)	Brand Name	FLYPOWER	Model Name	PS24L120K2000UD
	Power Rating	I/P: 100-240 Vac, 0.8 A, O/P: 12.0 Vdc, 2.0A		
	Power Cord	1.5 meter, non-shielded cable, w/o ferrite core		
AC Adapter 2 (US Plug)	Brand Name	APD	Model Name	WB-24J12FU
	Power Rating	I/P: 100-240 Vac, 0.7A, O/P: 12 Vdc, 2.0A		
	Power Cord	1.5 meter, non-shielded cable, w/o ferrite core		
RJ45 Cable	Signal Line	1.8 meter, non-shielded cable, w/o ferrite core		

Reminder: Regarding to more detail and other information, please refer to user manual.

1.4 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FA091021

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

Modifications	Performance Checking
U-NII-2A and U-NII-2C was added	Exposure evaluation

1.5 Testing Location

Test Lab. : Sporton International Inc. Hsinhua Laboratory		
<input checked="" type="checkbox"/> Hsinhua (TAF: 3785)	ADD: No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)	
	TEL: 886-3-327-3456	FAX: 886-3-327-0973
Test site Designation No. TW1190 with FCC.		
<input type="checkbox"/> Wen 33rd.St. (TAF: 3785)	ADD: No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)	
	TEL: 886-3-318-0787	FAX: 886-3-318-0287
Test site Designation No. TW0008 with FCC.		

Laboratory number TAF 3785 is a spin-off from the original Laboratory number TAF 1190.

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 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/ 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 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 23 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

WLAN 2.4GHz + WLAN 5GHz+Bluetooth

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	4.05	29.53	33.58	0.50	34.08	2.55859	23	0.38489	1.00000	0.38489
5.8G;D1D	5.56	29.79	35.35	0.50	35.85	3.84592	23	0.57854	1.00000	0.57854
2.4G;BT-BR	3.40	9.66	13.06	0.50	13.56	0.02270	23	0.00341	1.00000	0.00341
									Sum Ratio	0.96684
									Ratio Limit	1

—————THE END—————