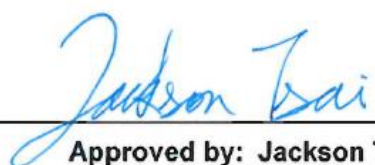


Radio Exposure Evaluation Report

Equipment : WiFi6 11ax 2T2R module 1800Mbps
Brand Name : AsiaRF Co., Ltd.
Model Name : AW7915-NPD
Applicant : 卓越電子股份有限公司
新北市永和區厚德街 7 號(1 樓)
Manufacturer : 卓越電子股份有限公司
新北市永和區厚德街 7 號(1 樓)
Standard : LP0002 Section 6.20.2 (2020-07-01)

The product was received on Mar. 28, 2022, and testing was started from Apr. 27, 2022 and completed on May 09, 2022. We, SPORTON INTERNATIONAL INC. Hsinhua Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in LP0002 Section 6.20.2 (2020-07-01) 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. Hsinhua Laboratory, the test report shall not be reproduced except in full.



Approved by: Jackson Tsai

SPORTON INTERNATIONAL INC. Hsinhua Laboratory
No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, 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:

None

Reviewed by: Ben Tseng

Report Producer: Jenny Yang

1 General Description

1.1 Information

1.1.1 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) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
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) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM)

1.1.2 Antenna Information

Group	Ant.	Brand	Model Name	Antenna Type	Connector	Support	Cable Loss (dBi)
1	1-2	Asiarf	ANT010-DAU	PCB	I-PEX / MMCX	2.4G+5G	0.3
2	3-4	Asiarf	ANT003	PCB	I-PEX / MMCX	2.4G+5G	0.3
3	5-6	Asiarf	A245005N	PCB	I-PEX / MMCX	2.4G+5G	0.3
4	7-8	Asiarf	A2405N	PCB	I-PEX / MMCX	2.4G	0.3
5	9-10	Asiarf	A5005N	PCB	I-PEX / MMCX	5G	0.3
6	11-12	Asiarf	A245004	Dipole	I-PEX / MMCX	2.4G+5G	0.3
7	13-14	Asiarf	A245002	Dipole	I-PEX / MMCX	2.4G+5G	0.3

Group	Ant.	Gain (dBi)	
		2.4G	5G
1	1-2	5.2	5.5
2	3-4	2.5	2.5
3	5-6	4	5.1
4	7-8	5.2	-
5	9-10	-	5
6	11-12	4	5.1
7	13-14	2	2

Note 1: EUT can match with above antennas for using. The higher gain (Ant. 1/6) were used to perform the worst configuration and result of that was recorded as the final test result.

Note 2: The antenna mentioned above will not be sold with the EUT in the market.

For 2.4GHz function:

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

Group 1, 2, 3, 4, 6, 7 could transmit/receive simultaneously.

For 5GHz function:

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

Group 1, 2, 3, 5, 6, 7 could transmit/receive simultaneously.

1.1.3 Table for Multiple Listing

SKU	Ant. Connector	Description
1	I-PEX	There are two SKUs for EUT. The only difference between SKU 1 and SKU 2 is Ant. Connector, but the gain is same. Therefore, SKU 1 configuration was measured during the test.
2	MMCX	

1.2 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
<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

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 20 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

<2.4GHz WLAN>

Non-Beamforming

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;G1D	4.90	19.49	24.39	0.50	24.89	20	0.06134	1.00000
2.4G;D1D	4.90	22.22	27.12	0.50	27.62	20	0.11501	1.00000

Beamforming

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;D1D	7.91	21.89	29.80	0.50	30.30	20	0.21317	1.00000

<5GHz WLAN>

Non-Beamforming

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	5.20	23.10	28.30	0.50	28.80	20	0.15091	1.00000
5.8G;D1D	5.20	24.84	30.04	0.50	30.54	20	0.22528	1.00000

Beamforming

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;D1D	8.21	21.20	29.41	0.50	29.91	20	0.19486	1.00000
5.8G;D1D	8.21	24.39	32.60	0.50	33.10	20	0.40619	1.00000

————THE END————