



RADIO EXPOSURE TEST REPORT

FCC ID : TLZ-XMA06

Equipment : IEEE 802.11 2X2 a/b/g/n/ac/ax WiFi 6/6E Wireless LAN + Bluetooth 5.3 LGA Module

Brand Name : AzureWave

Model Name : AW-XMA06-T

Applicant : AzureWave Technologies, Inc.
8F., No.94, Baozhong Rd. , Xindian Dist., New Taipei City , Taiwan 231

Manufacturer : AzureWave Technologies, Inc.
8F., No.94, Baozhong Rd. , Xindian Dist., New Taipei City , Taiwan 231

Standard : 47 CFR Part 2.1091

The product was received on Apr. 01, 2025, and testing was started from Apr. 28, 2025 and completed on Aug. 18, 2025. 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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Photographs of EUT v01



History of this test report

TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB-A1_1 Ver1.1

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Summary of Test Result

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

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacture who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the chapter "Measurement Uncertainty".

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Sam Chen

Report Producer: Vicky 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) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
5GHz WLAN	5150-5250 5250-5350 5470-5725 5725-5850 5725-5895	5180-5240 5260-5320 5500-5720 5745-5825 5835-5885	802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
6GHz WLAN	5925-7125	5955-7115	802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
Bluetooth	2400-2483.5	2402-2480	BR / EDR: FHSS (GFSK / $\pi/4$ -DQPSK / 8DPSK) LE: GFSK



1.2 Antenna Information

Set	Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1~3	ARISTOTLE	RFA-27-JP326MHF4C198	PIFA	I-PEX	Note 1
2	1~3	ARISTOTLE	RFA-27-JP326-C198	PIFA	I-PEX	

Note 1:

Set	Ant.	Port	Gain (dBi)		
			WLAN 2.4GHz	Bluetooth	WLAN 5GHz / WLAN 6GHz
1	1	1	3.5	-	5
	2	2	3.5	-	5
	3	1	-	3.5	-
2	1	1	3.5	-	5
	2	2	3.5	-	5
	3	1	-	3.5	-

Note 2: The above information was declared by manufacturer.

Note 3: The EUT has two sets of antennas, each with three antennas. Because antenna sets 1 and 2 are the same type and gain, only antenna set 1 was tested.

Note 4:

For 2.4GHz function:**For IEEE 802.11 b/g/n/VHT/ax (2TX/2RX):**

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

For 5GHz function:**For IEEE 802.11a/n/ac/ax (2TX/2RX):**

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

For 6GHz function:**For IEEE 802.11ax (2TX/2RX):**

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

For Bluetooth function (1TX/1RX):

Only Port 1 can be used as transmitting/receiving antenna.

Note 5: Directional gain information

Type	Maximum Output Power	Power Spectral Density
Non-BF	Directional gain = Max.gain + array gain. For power measurements on IEEE 802.11 devices Array Gain = 0 dB (i.e., no array gain) for N ANT ≤ 4	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left(\sum_{k=1}^{N_{ANT}} \varepsilon_{j,k} \right)^2}{N_{ANT}} \right]$
BF	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left(\sum_{k=1}^{N_{ANT}} \varepsilon_{j,k} \right)^2}{N_{ANT}} \right]$	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left(\sum_{k=1}^{N_{ANT}} \varepsilon_{j,k} \right)^2}{N_{ANT}} \right]$

Ex.

Directional Gain (NSS1) formula :

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left(\sum_{k=1}^{N_{ANT}} \varepsilon_{j,k} \right)^2}{N_{ANT}} \right]$$

$$NSS1(g1,1) = 10^{G1/20} ; NSS1(g1,2) = 10^{G2/20} ; NSS1(g1,3) = 10^{G3/20} ; NSS1(g1,4) = 10^{G4/20}$$

$$g_{j,k} = (NSS1(g1,1) + NSS1(g1,2) + NSS1(g1,3) + NSS1(g1,4))^2$$

$$DG = 10 \log[(NSS1(g1,1) + NSS1(g1,2) + NSS1(g1,3) + NSS1(g1,4))^2 / N_{ANT}] \Rightarrow 10$$

$$\log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2 / N_{ANT}]$$

Where ;

$$2.4G \ G1 = 3.5 \text{ dBi} ; G2 = 3.5 \text{ dBi} ; DG = 6.51 \text{ dBi}$$

$$5G \text{ UNII-1} \ G1 = 5 \text{ dBi} ; G2 = 5 \text{ dBi} ; DG = 8.01 \text{ dBi}$$

$$5G \text{ UNII-2A} \ G1 = 5 \text{ dBi} ; G2 = 5 \text{ dBi} ; DG = 8.01 \text{ dBi}$$

$$5G \text{ UNII-2C} \ G1 = 5 \text{ dBi} ; G2 = 5 \text{ dBi} ; DG = 8.01 \text{ dBi}$$

$$5G \text{ UNII-3} \ G1 = 5 \text{ dBi} ; G2 = 5 \text{ dBi} ; DG = 8.01 \text{ dBi}$$

$$5G \text{ UNII-4} \ G1 = 5 \text{ dBi} ; G2 = 5 \text{ dBi} ; DG = 8.01 \text{ dBi}$$

$$6G \text{ UNII-5} \ G1 = 5 \text{ dBi} ; G2 = 5 \text{ dBi} ; DG = 8.01 \text{ dBi}$$

$$6G \text{ UNII-6} \ G1 = 5 \text{ dBi} ; G2 = 5 \text{ dBi} ; DG = 8.01 \text{ dBi}$$

$$6G \text{ UNII-7} \ G1 = 5 \text{ dBi} ; G2 = 5 \text{ dBi} ; DG = 8.01 \text{ dBi}$$

$$6G \text{ UNII-8} \ G1 = 5 \text{ dBi} ; G2 = 5 \text{ dBi} ; DG = 8.01 \text{ dBi}$$



1.3 Accessories

N/A

1.4 Testing Location

Testing Location Information	
Test Lab. : Sporton International Inc. Hsinchu Laboratory	
Hsinchu	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)
(TAF: 3787)	TEL: 886-3-656-9065 FAX: 886-3-656-9085
	Test site Designation No. TW3787 with FCC.
	Conformity Assessment Body Identifier (CABID) TW3787 with ISED.



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

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)	TL Ratio
2.4G;D1D	6.51	21.36	27.87	0.50	28.37	0.68707	20	0.13668	1.00000	0.13668
5.2G;D1D	8.01	19.39	27.40	0.50	27.90	0.61660	20	0.12266	1.00000	0.12266
5.3G;D1D	8.01	19.96	27.97	0.50	28.47	0.70307	20	0.13987	1.00000	0.13987
5.6G;D1D	8.01	19.37	27.38	0.50	27.88	0.61376	20	0.12210	1.00000	0.12210
5.8G;D1D	8.01	20.19	28.20	0.50	28.70	0.74131	20	0.14748	1.00000	0.14748
6.2G;D1D	8.01	10.34	18.35	0.50	18.85	0.07674	20	0.01527	1.00000	0.01527
6.4G;D1D	8.01	10.68	18.69	0.50	19.19	0.08299	20	0.01651	1.00000	0.01651
6.7G;D1D	8.01	10.37	18.38	0.50	18.88	0.07727	20	0.01537	1.00000	0.01537
7.0G;D1D	8.01	10.41	18.42	0.50	18.92	0.07798	20	0.01551	1.00000	0.01551
2.4G;BT-BR	3.50	11.90	15.40	0.50	15.90	0.03890	20	0.00774	1.00000	0.00774
2.4G;BT-LE	3.50	10.91	14.41	0.50	14.91	0.03097	20	0.00616	1.00000	0.00616

Simultaneous Transmission Analysis Mode:

Mode 1: Bluetooth+WLAN 2.4GHz

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	6.51	21.36	27.87	0.50	28.37	0.68707	20	0.13668	1.00000	0.13668
2.4G;BT-EDR	3.50	11.90	15.40	0.50	15.90	0.03890	20	0.00774	1.00000	0.00774
									Sum Ratio	0.14442
									Ratio Limit	1

Mode 2: Bluetooth+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)
5.8G;D1D	8.01	20.19	28.20	0.50	28.70	0.74131	20	0.14748	1.00000	0.14748
2.4G;BT-EDR	3.50	11.90	15.40	0.50	15.90	0.03890	20	0.00774	1.00000	0.00774
									Sum Ratio	0.15522
									Ratio Limit	1



Mode 3: Bluetooth+WLAN 6GHz

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)
6.4G;D1D	8.01	10.68	18.69	0.50	19.19	0.08299	20	0.01651	1.00000	0.01651
2.4G;BT-EDR	3.50	11.90	15.40	0.50	15.90	0.03890	20	0.00774	1.00000	0.00774
									Sum Ratio	0.02425
									Ratio Limit	1

Note: The above antenna gain was declared by manufacturer.

————THE END————