RADIO EXPOSURE TEST REPORT

FCC ID	:	TLZ-NM430SM
Equipment	:	IEEE 802.11 1X1 b/g/n Wireless LAN and Bluetooth 4.2 12mm x 12mm Stamp LGA module
Brand Name	:	AzureWave
Model Name	:	AW-NM430SM, AW-NM430
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 Mar. 25, 2021, and testing was started from Mar. 25, 2021 and completed on Aug. 03, 2021. 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
No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issued Date
FA131818	01	Initial issue of report	Sep. 09, 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:
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.

Reviewed by: Sam Chen

Report Producer: Sandy Chuang

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)
Bluetooth	2400-2483.5	2402-2480	BR / EDR: FHSS (GFSK / π/4-DQPSK / 8DPSK) LE: GFSK

1.2 Antenna Information

Ant.	**Port**	**Brand**	**Model Name**	**Antenna Type**	**Connector**	**Antenna Gain(dBi)**		
1	1	MAG. LAYERS	MSA-4008-25GC1-A2	PIFA	I-PEX	2.98		
Ant.	**Port**	**Brand**	**Model Name**	**Antenna Type**	**Connector**	**Antenna Gain(dBi)**	**Cable Loss(dB)**	**Net Gain (dBi)**
2	1	YAGEO	ANT3216A063R2400A	Chip	N/A	1.69	2	-0.31

Note 1: The above information was declared by manufacturer.

Note 2: For conducted test: Only the higher gain antenna “Ant. 1” was tested and recorded in the report.

<WLAN 2.4GHz Function>

For IEEE 802.11b/g/n (1TX/1RX):

Only Port 1 can be used as transmitting/receiving.

<Bluetooth Function> (1TX/1RX)

Only Port 1 can be used as transmitting/receiving.

1.3 Table for Multiple Listing

The model names in the following table are all refer to the identical product.

Model Name	Description
AW-NM430SM	All the model names are identical, the difference model names served as marketing strategy.
AW-NM430	

Note 1: From the above models, model: AW-NM430SM was selected as representative model for the test and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.

1.4 Accessories

N/A

1.5 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/ 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^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/ 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^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 (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	2.98	21.78	24.76	0.50	25.26	0.33574	20	0.06679	1.00000
2.4G;BT-BR	2.98	3.28	6.26	0.50	6.76	0.00474	20	0.00094	1.00000
2.4G;BT-LE	2.98	7.24	10.22	0.50	10.72	0.01180	20	0.00235	1.00000

Simultaneous Transmission Analysis Mode: 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;D1D	2.98	21.78	24.76	0.50	25.26	0.33574	20	0.06679	1.00000	0.06679
2.4G;BT-BR	2.98	7.24	10.22	0.50	10.72	0.01180	20	0.00235	1.00000	0.00235
									Sum Ratio	0.06914
									Ratio Limit	1

Note: The above antenna gain was declared by manufacturer.

———THE END———