RF Exposure Report

Report No.:	MFBECO-WTW-P20100054F
FCC ID:	TLZ-CM276NF
Test Model:	AW-CM276NF
Received Date:	Mar. 18, 2022
Date of Evaluation:	Jul. 06, 2022
Issued Date:	Jul. 08, 2022
Applicant:	AzureWave Technologies, Inc.
Address:	8F., No.94, Baozhong Rd. , Xindian Dist., New Taipei City , Taiwan 231
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN
FCC Registration / Designation Number:	788550 / TW0003

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Release Control Record

Issue No.	Description	Date Issued
MFBECO-WTW-P20100054F	Original Release	Jul. 08, 2022

1 Certificate of Conformity

Product:	IEEE 802.11 2X2 MU-MIMO ac/a/b/g/n Wireless LAN + Bluetooth NGFF Module
Brand:	AzureWave
Test Model:	AW-CM276NF
Sample Status:	Engineering Sample
Applicant:	AzureWave Technologies, Inc.
Date of Evaluation:	Jul. 06, 2022
FCC Rule Part:	FCC Part 2
Standards:	KDB 447498 D01 General RF Exposure Guidance v06

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : Gina Liu , **Date:** Jul. 08, 2022

Gina Liu / Specialist

Approved by : Jeremy Lin , **Date:** Jul. 08, 2022

Jeremy Lin / Project Engineer

2 General Information

1. This report is prepared for FCC class II permissive change. This report is issued as a supplementary report to BV CPS report no. SABECO-WTW-P20100054E. The difference compared with original report is adding new antennas and specific End-product.
2. The EUT is authorized for use in specific End-product. All models are listed as below. Model TD540-W are the representative for final test.

Product	10” Touch Display	
Brand	Trimble	
Function	**Model**	
	TD540-W	TD540
Wireless	With	Without
Bluetooth	With	Without
NFC	With	With
Note: The difference between TD540 and TD540-W is software disable WIFI/BT.		

3. The antennas provided to the EUT, please refer to the following table:

Newly

Antenna Set	**Brand**	**Model**	**Chain No.**	**Antenna Net. Gain (dBi)**	**Frequency Range (MHz)**	**Antenna Type**	**Connector Type**	**Cable Length**
21	INPAQ	WA-M-LB-01-128	Chain 0(Aux)	2.68	2400-2500	PIFA	ipex(MHF)	145 mm
				4.19	5150-5850			
		WA-M-LB-02-262	Chain 1(Main)	2.44	2400-2500	PIFA	ipex(MHF)	215 mm
				4.08	5150-5850			

3 RF Exposure

3.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
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

f = Frequency in MHz ; *Plane-wave equivalent power density

3.2 MPE Calculation Formula

$Pd = (Pout*G) / (4*pi*r^2)$

where

Pd = power density in mW/cm^2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

pi = 3.1416

r = distance between observation point and center of the radiator in cm

3.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

3.4 Calculation Result of Maximum Conducted Power

Band	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WLAN	2412-2462	20.97	5.57	20	0.090	1.00
	5180-5240	20.76	7.15	20	0.123	1.00
	5260-5320	21.06	7.15	20	0.132	1.00
	5500-5700	21.03	7.15	20	0.131	1.00
	5745-5825	22.41	7.15	20	0.180	1.00
BT EDR	2402-2480	3.57	2.68	20	0.001	1.00
BT LE	2402-2480	3.62	2.68	20	0.001	1.00

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. The above Antenna information refers to the manufacturer's antenna specifications, the laboratory shall not be held responsible.
3. 2.4GHz: Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots. + 10^{GN/20})^2 / N_{ANT}] = 5.57$ dBi
   5.0GHz: Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots. + 10^{GN/20})^2 / N_{ANT}] = 7.15$ dBi

Conclusion:

Both of the WLAN and BT can transmit simultaneously, the formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + BT = 0.090 + 0.001 = 0.091

WLAN 5GHz + BT = 0.180 + 0.001 = 0.181

Therefore the maximum calculations of above situations are less than the "1" limit.

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