RF EXPOSURE REPORT

CERTIFICATE OF CONFORMITY

FCC Rule Part:	**FCC Part 2 (Section 2.1091)**
Report No.:	MFBCMA-WTW-P24120364
FCC ID:	RAXWE7224443B
Product:	Verizon Wi-Fi Extender
Brand:	Verizon
Model No.:	CE1000A
Received Date:	2024/9/10
Test Date:	2024/12/6
Issued Date:	2024/12/19
Applicant:	Arcadyan Technology Corporation
Address:	No.8, Sec.2, Guangfu Rd., Hsinchu City 30071, Taiwan, R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

Approved by: _____ , **Date:** **2024/12/19**

May Chen / Manager

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Prepared by: Vito Lung / Specialist

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Release Control Record

Issue No.	Description	Date Issued
MFBCMA-WTW-P24120364	Original release.	2024/12/19

1 Certificate

Product:	Verizon Wi-Fi Extender
Brand:	Verizon
Test Model:	CE1000A
Sample Status:	Engineering sample
Applicant:	Arcadyan Technology Corporation
Test Date:	2024/12/6
FCC Rule Part:	FCC Part 2 (Section 2.1091)
Standard:	KDB 447498 D04 Interim General RF Exposure Guidance v01

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.

2 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT.

Parameter	Specification	Uncertainty (±)
RF Exposure	60 MHz ~ 60 GHz	1.12 dB

3 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

Routine Evaluation

Routine Evaluation Procedure - Single and/or Multiple RF Sources

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
E-Field Probe Wavecontrol	WPF60	22WP230187	2024/6/14	2025/6/13
EM Field Meter Wavecontrol	SMP2 Dual	22SN1914	2024/6/14	2025/6/13

Notes:

1. The test was performed in 966 Chamber No. 5.
2. The test was performed in 966 Chamber No. 4.
3. Tested Date: 2024/12/6

4 Applicable RF Exposure Limit

§ 1.1310 Radiofrequency radiation exposure limits.

(a) Specific absorption rate (SAR) shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in § 1.1307(b) of this part within the frequency range of 100 kHz to 6 GHz (inclusive).
(b) The SAR limits for occupational/controlled exposure are 0.4 W/kg, as averaged over the whole body, and a peak spatial-average SAR of 8 W/kg, averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the parts of the human body treated as extremities, such as hands, wrists, feet, ankles, and pinnae, where the peak spatial-average SAR limit for occupational/controlled exposure is 20 W/kg, averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). Exposure may be averaged over a time period not to exceed 6 minutes to determine compliance with occupational/controlled SAR limits.
(c) The SAR limits for general population/uncontrolled exposure are 0.08 W/kg, as averaged over the whole body, and a peak spatial-average SAR of 1.6 W/kg, averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the parts of the human body treated as extremities, such as hands, wrists, feet, ankles, and pinnae, where the peak spatial-average SAR limit is 4 W/kg, averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). Exposure may be averaged over a time period not to exceed 30 minutes to determine compliance with general population/uncontrolled SAR limits.

(e) Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields

➢ Limits for General Population/Uncontrolled Exposure

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
300-1,500	…	…	f/1500	<30
1,500-100,000	…	…	1.0	<30

f = frequency in MHz. * = Plane-wave equivalent power density.

➢ Limits for Occupational/Controlled Exposure

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				
0.3-3.0	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
300-1,500			f/300	<6
1,500-100,000			5	<6

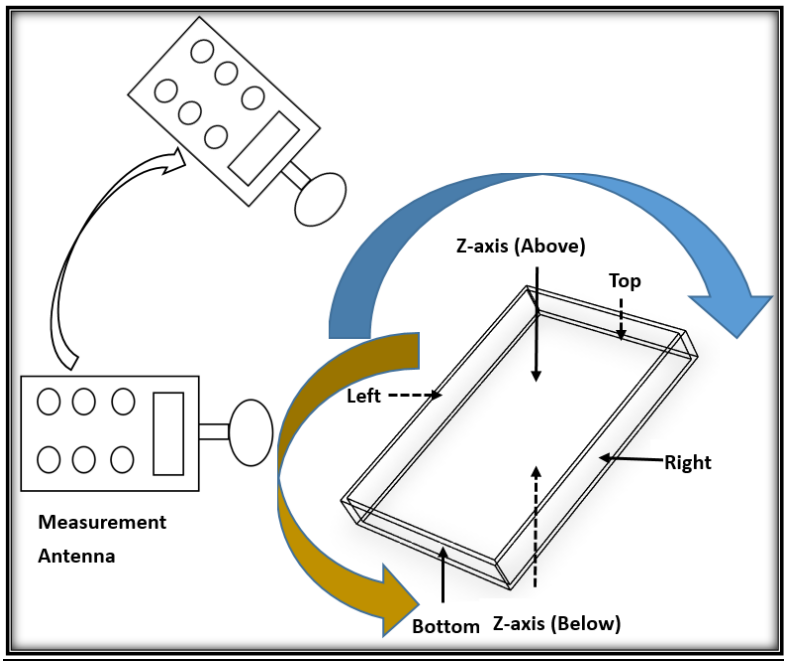
f = frequency in MHz. * = Plane-wave equivalent power density.

Routine Evaluation

Routine Evaluation Procedure - Single and/or Multiple RF Sources

➢ MPE compliance are measurement in all directions surrounding the antenna and radiating structures of the device.

Test Setup



Note:

1. The measurement antenna are moving and surrounding the EUT when performed the test, the test results recorded the highest values for each sides of the EUT (left/right/top/bottom/z-axis (Above)/z-axis (Below))
2. The Worst Condition: Right side.

Fixed RF sources operating in the same time-averaging period – §1.1307(b)(3)(ii)(B)

- Either SAR-based or MPE-based exemption may be considered for test exemption for fixed, mobile, or portable device exposure conditions; therefore, the contributions from each exemption in conjunction with the measured SAR (Evaluatedk term) should be used to determine exemption for simultaneous transmission according to Formula below,

$$\sum_{i=1}^{a} \frac{P_i}{P_{th,i}} + \sum_{j=1}^{b} \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^{c} \frac{Evaluated_k}{Exposure\ Limit_k} \leq 1$$

The sum of the ratios of the applicable terms for SAR-based, MPE-based and measured SAR or MPE should be less than 1, to determine simultaneous transmission exposure compliance.

Where:

a = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(B) of this section for P_{th}, including existing exempt transmitters and those being added.

c = number of existing fixed, mobile, or portable RF sources with known evaluation for the specified minimum distance including existing evaluated transmitters.

$P_{th,i}$ = the exemption threshold power (P_{th}) according to paragraph (b)(3)(i)(B) of this section for fixed, mobile, or portable RF source *i.*

$ERP_{th,j}$ = exemption threshold ERP for fixed, mobile, or portable RF source *j,* at a distance of at least λ/2π according to the applicable formula of paragraph (b)(3)(i)(C) of this section.

Exposure Limit$_k$ = either the general population/uncontrolled maximum permissible exposure (MPE) or specific absorption rate (SAR) limit for each fixed, mobile, or portable RF source *k,* as applicable from § 1.1310 of this chapter.

b = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(C) of this section for Threshold ERP, including existing exempt transmitters and those being added.

P_i = the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source *i* at a distance between 0.5 cm and 40 cm (inclusive).

ERP_j = the ERP of fixed, mobile, or portable RF source *j.*

Evaluated$_k$ = the maximum reported SAR or MPE of fixed, mobile, or portable RF source *k* either in the device or at the transmitter site from an existing evaluation at the location of exposure.

5 Test Results

Environmental Conditions:	25°C, 60% RH	Tested By:	Katina Lu

CDD

For Single RF Source

Routine Evaluation (General Population)					
Operation Mode	Frequency Band (MHz)	Power Density (mW/cm^2)	Test Distance (cm)	Limit (mW/cm^2)	Test Result
WLAN 2.4 GHz	2412-2462	0.123	20	1	Pass
WLAN 5 GHz_F	5180-5320 5500-5825	0.104	20	1	Pass
WLAN 5 GHz_L	5180-5320	0.103	20	1	Pass
WLAN 5 GHz_H	5500-5825	0.112	20	1	Pass
WLAN 6 GHz	5955-7115	0.079	20	1	Pass

For Multiple RF Sources (Simultaneous Operations Condition 1)

Multiple RF Sources (Simultaneous Operations)							
Routine Evaluation (General Population)					Sum of Ratios	Limit of Ratios	Test Result
Operation Mode	Frequency Band (MHz)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Ratio			
WLAN 2.4 GHz	2412-2462	0.123	1	0.123	0.227	1	Pass
WLAN 5 GHz_F	5180-5320 5500-5825	0.104	1	0.104			

For Multiple RF Sources (Simultaneous Operations Condition 2)

Multiple RF Sources (Simultaneous Operations)							
Routine Evaluation (General Population)					Sum of Ratios	Limit of Ratios	Test Result
Operation Mode	Frequency Band (MHz)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Ratio			
WLAN 2.4 GHz	2412-2462	0.123	1	0.123	0.338	1	Pass
WLAN 5 GHz_L	5180-5320	0.103	1	0.103			
WLAN 5 GHz_H	5500-5825	0.112	1	0.112			

For Multiple RF Sources (Simultaneous Operations Condition 3)

Multiple RF Sources (Simultaneous Operations)							
Routine Evaluation (General Population)					Sum of Ratios	Limit of Ratios	Test Result
Operation Mode	Frequency Band (MHz)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Ratio			
WLAN 2.4 GHz	2412-2462	0.123	1	0.123	0.306	1	Pass
WLAN 5 GHz_F	5180-5320 5500-5825	0.104	1	0.104			
WLAN 6 GHz	5955-7115	0.079	1	0.079			

Environmental Conditions:	25°C, 60% RH	Tested By:	Katina Lu

Beamforming

For Single RF Source

Routine Evaluation (General Population)					
Operation Mode	Frequency Band (MHz)	Power Density (mW/cm^2)	Test Distance (cm)	Limit (mW/cm^2)	Test Result
WLAN 2.4 GHz	2412-2462	0.138	20	1	Pass
WLAN 5 GHz_F	5180-5320 5500-5825	0.121	20	1	Pass
WLAN 5 GHz_L	5180-5320	0.117	20	1	Pass
WLAN 5 GHz_H	5500-5825	0.127	20	1	Pass
WLAN 6 GHz	5955-7115	0.093	20	1	Pass

For Multiple RF Sources (Simultaneous Operations Condition 1)

Multiple RF Sources (Simultaneous Operations)							
Routine Evaluation (General Population)					Sum of Ratios	Limit of Ratios	Test Result
Operation Mode	Frequency Band (MHz)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Ratio			
WLAN 2.4 GHz	2412-2462	0.138	1	0.138	0.259	1	Pass
WLAN 5 GHz_F	5180-5320 5500-5825	0.121	1	0.121			

For Multiple RF Sources (Simultaneous Operations Condition 2)

Multiple RF Sources (Simultaneous Operations)							
Routine Evaluation (General Population)					Sum of Ratios	Limit of Ratios	Test Result
Operation Mode	Frequency Band (MHz)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Ratio			
WLAN 2.4 GHz	2412-2462	0.138	1	0.138	0.382	1	Pass
WLAN 5 GHz_L	5180-5320	0.117	1	0.117			
WLAN 5 GHz_H	5500-5825	0.127	1	0.127			

For Multiple RF Sources (Simultaneous Operations Condition 3)

Multiple RF Sources (Simultaneous Operations)							
Routine Evaluation (General Population)					Sum of Ratios	Limit of Ratios	Test Result
Operation Mode	Frequency Band (MHz)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Ratio			
WLAN 2.4 GHz	2412-2462	0.138	1	0.138	0.352	1	Pass
WLAN 5 GHz_F	5180-5320 5500-5825	0.121	1	0.121			
WLAN 6 GHz	5955-7115	0.093	1	0.093			

6 Conclusion

Source-base time average power is below Exemption Criteria and/or Routine Evaluation MPE thresholds, therefore the device is compliant FCC RF exposure requirement.

7 Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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The address and road map of all our labs can be found in our web site also.

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