RF Exposure Report

Report No.:	MFBDYS-WTW-P23110748 R1
FCC ID:	TVE-240607
Test Model:	FBS-10F-WiFi
Series Model:	FortiBranchSASE-10F-WiFixxxxxxxxxx, FBS-10F-WiFixxxxxxxxxx, FORTIBRANCHSASE-10F-WiFixxxxxxxxxx (where “x” can be used as “A-Z”, or “0-9”, or “-“, or blank for software changes or marketing purposes only)
Received Date:	2024/2/29
Test Date:	2024/2/29 ~ 2024/4/6
Issued Date:	2024/8/20
Applicant:	Fortinet, Inc.
Address:	909 Kifer Road Sunnyvale, Ca. 94086
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

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
MFBDYS-WTW-P23110748	Original Release	2024/7/11
MFBDYS-WTW-P23110748 R1	1. Revise applicant' address, brand and series model name 2. Remove WLAN 5G Band 2, 3	2024/8/20

1 Certificate of Conformity

Product:	Secured Wireless Access Point
Brand:	FORTINET
Test Model:	FBS-10F-WiFi
Series Model:	FortiBranchSASE-10F-WiFixxxxxxxxxx, FBS-10F-WiFixxxxxxxxxx, FORTIBRANCHSASE-10F-WiFixxxxxxxxxx (where “x” can be used as “A-Z”, or “0-9”, or “-“, or blank for software changes or marketing purposes only)
Sample Status:	Engineering Sample
Applicant:	Fortinet, Inc.
Test Date:	2024/2/29 ~ 2024/4/6
FCC Rule Part:	FCC Part 2 (Section 2.1091)
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 : Lena Wang , **Date:** 2024/8/20

Lena Wang / Specialist

Approved by : Jeremy Lin , **Date:** 2024/8/20

Jeremy Lin / Project Engineer

2 RF Exposure

2.1 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				
300-1500	…	…	F/1500	30
1500-100,000	…	…	1.0	30

F = Frequency in MHz

2.2 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

2.3 Classification

The antenna of this product, under normal use condition, is at least 21cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Average Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WLAN					
CDD Mode					
2412-2462	26.01	7.38	21	0.394	1
5180-5240	25.55	8.36	21	0.444	1
5745-5825	24.41	8.36	21	0.341	1
Beamforming Mode					
2412-2462	25.04	7.38	21	0.315	1
5180-5240	25.55	8.36	21	0.444	1
5745-5825	24.41	8.36	21	0.341	1
BT LE					
2402-2480	5.43	3.6	21	0.001	1

Note:
1. Directional gain:
   2.4GHz Band: Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2] = 7.38dBi
   5GHz: Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2] = 8.36dBi
2. Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.
3. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

The simultaneous operation mode was determined by client.

No	Mode
1	WLAN 2.4G+ WLAN 5GHz =0.394/1+0.444/1=0.838
2	WLAN 5GHz + BLE =0.444/1+0.001/1=0.445

*WLAN 2.4G and BT technologies cannot transmit at same time.

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

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