# RF Exposure Report

| | |
|---|---|
| **Report No.:** | MFBDYS-WTW-P23110748A |
| **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:** | 2024/10/4 |
| **Applicant:** | Fortinet, Inc. |
| **Address:** | 909 Kifer Road Sunnyvale, Ca. 94086 |
| **Issued By:** | Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch<br>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 |
|---|---|---|
| MFBDYS-WTW-P23110748A | Original Release | 2024/10/4 |

## 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:** 2024/10/4

Lena Wang / Specialist

**Approved by :** Jeremy Lin , **Date:** 2024/10/4

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 |
| 5260-5320 | 23.93 | 8.36 | 21 | 0.306 | 1 |
| 5500-5720 | 23.93 | 8.36 | 21 | 0.306 | 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 |
| 5260-5320 | 21.56 | 8.36 | 21 | 0.177 | 1 |
| 5500-5720 | 21.43 | 8.36 | 21 | 0.172 | 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.
4. This report is issued as a supplementary report to the original BV CPS report no.: MFBDYS-WTW-P23110748 R1. The differences compared with the original report is adding 5.26GHz to 5.32GHz and 5.50GHz to 5.720GHz by software.

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<br>=0.394/1+0.444/1=0.838 |
| 2 | WLAN 5GHz + BLE<br>=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.

**---END---**