

RF Exposure Report

Report No.: MFBDIS-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

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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**FCC Registration /
Designation Number:** 788550 / TW0003



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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

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

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2] = 7.38\text{dBi}$

5GHz: Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2] = 8.36\text{dBi}$

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:

$\text{CPD1} / \text{LPD1} + \text{CPD2} / \text{LPD2} + \dots \text{etc.} < 1$

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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