

RF Exposure Report

Report No.: SABDYS-WTW-P20110432

FCC ID: TVE-4617T111266

Test Model: FAP-432F

Series Model: FortiAP 432Fxxxxxx, FAP-432Fxxxxxx, FORTIAP-432Fxxxxxx (Where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes or marketing purposes only)

Received Date: Nov. 13, 2020

Test Date: Nov. 18, 2020 ~ Jan. 21, 2021

Issued Date: Feb. 05, 2021

Applicant: Fortinet, Inc.

Address: 899 Kifer Road Sunnyvale, CA 94086 USA

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



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.

Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 RF Exposure	5
2.1 Limits for Maximum Permissible Exposure (MPE)	5
2.2 MPE Calculation Formula	5
2.3 Classification	5
3 Calculation Result of Maximum Conducted Power	6

Release Control Record

Issue No.	Description	Date Issued
SABDYS-WTW-P20110432	Original Release	Feb. 05, 2021

1 Certificate of Conformity

Product: Secured Wireless Access Point

Brand: Fortinet

Test Model: FAP-432F

Series Model: FortiAP 432Fxxxxxx, FAP-432Fxxxxxx, FORTIAP-432Fxxxxxx (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: Nov. 18, 2020 ~ Jan. 21, 2021

Standards: FCC Part 2 (Section 2.1091)

IEEE C95.3 -2002

References Test Guidance: 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:** Feb. 05, 2021
Gina Liu / Specialist

Approved by : Dylan Chiou, **Date:** Feb. 05, 2021
Dylan Chiou / Senior 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

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

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 48cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result of Maximum Conducted Power

Radio	Frequency Band (MHz)	Max AV Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2G traffic radio (Radio 1)	CDD Mode					
	2412-2462	29.12	11.52	48	0.400	1
	Beamforming Mode					
	2412-2462	24.41	11.52	48	0.135	1
5GHz traffic radio (Radio 2)	CDD Mode					
	5180-5240	26.74	13.22	48	0.342	1
	5745-5825	28.78	13.22	48	0.547	1
	Beamforming Mode					
	5180-5240	22.71	13.22	48	0.135	1
	5745-5825	22.72	13.22	48	0.136	1
2G+5G Scanning radio (Radio 3)	2412-2462	18.74	5.5	48	0.009	1
	5180-5240	16.26	7.2	48	0.008	1
	5745-5825	18.39	7.2	48	0.013	1
BT LE	2402-2480	9.39	4.5	48	0.001	1
Zigbee	2405-2480	9.31	4.5	48	0.001	1

Note:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

Radio 1:

2.4GHz: Directional gain = 5.5 dBi + 10log(4) = 11.52

Radio 2:

5GHz: Directional gain = 7.2 dBi + 10log(4) = 13.22 dBi

Conclusion:

Both of the WLAN 2.4G & WLAN 5G can transmit simultaneously, the formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

1. 2G traffic radio (Radio 1) + 5GHz traffic radio (Radio 2) + 5G Scanning radio (Radio 3) + BLE = $0.400 / 1 + 0.547 / 1 + 0.013 / 1 + 0.001 / 1 = 0.961$
2. 2G traffic radio (Radio 1) + 5GHz traffic radio (Radio 2) + 5G Scanning radio (Radio 3) + Zigbee = $0.400 / 1 + 0.547 / 1 + 0.013 / 1 + 0.001 / 1 = 0.970$
3. 5GHz traffic radio (Radio 2) + 2G Scanning radio (Radio 3) + BLE = $0.547 / 1 + 0.009 / 1 + 0.001 / 1 = 0.557$
4. 5GHz traffic radio (Radio 2) + 2G Scanning radio (Radio 3) + Zigbee = $0.547 / 1 + 0.009 / 1 + 0.001 / 1 = 0.557$
5. Therefore the maximum calculations of above situations are less than the "1" limit.

---END---