RF EXPOSURE EVALUATION REPORT

FCC ID	:	TVE-240201
Equipment	:	Network Security Gateway
Brand Name	:	FORTINET
Model Name	:	FortiWiFi 30Gxxxxxxxxxx, FORTIWIFI 30Gxxxxxxxxxx, FWF-30Gxxxxxxxxxx FortiWiFi 31Gxxxxxxxxxx, FORTIWIFI 31Gxxxxxxxxxx, FWF-31Gxxxxxxxxxx (where "x" can be used as "A-Z", or "0-9", or "-", or blank for software purposes or marketing purposes only)
Applicant	:	Fortinet Inc. 909 KIFER RD SUNNYVALE CA 94086 UNITED STATES
Manufacturer	:	Fortinet Inc. 909 KIFER RD SUNNYVALE CA 94086 UNITED STATES
Standard	:	47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part2.1091 and it complies with applicable limit.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Laboratory, the test report shall not be reproduced except in full.

Approved by: Cona Huang / Deputy Manager

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History of this test report

Report No.	Version	Description	Issued Date
FA450904	Rev. 01	Initial issue of report	Jul. 30, 2024

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Network Security Gateway
Brand Name	FORTINET
Model Name	FortiWiFi 30Gxxxxxxxxxx, FORTIWIFI 30Gxxxxxxxxxx, FWF-30Gxxxxxxxxxx FortiWiFi 31Gxxxxxxxxxx, FORTIWIFI 31Gxxxxxxxxxx, FWF-31Gxxxxxxxxxx (where "x" can be used as "A-Z", or "0-9", or "-", or blank for software purposes or marketing purposes only)
FCC ID	TVE-240201
Wireless Technology and Frequency Range	WLAN 2.4 GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2 GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3 GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.6 GHz Band: 5470 MHz ~ 5725 MHz WLAN 5.8 GHz Band: 5725 MHz ~ 5850 MHz
Mode	WLAN: 802.11a/b/g/n/ac/ax HT20/HT40/VHT20/VHT40/VHT80/HE20/HE40/HE80
EUT Stage	Production Unit

Reviewed by: Jason Wang

Report Producer: Carlie Tsai

2. Maximum RF average output power among production units

Band	Maximum Average Power (dBm)		
	Ant 1	Ant 2	Ant 1+2
2.4GHz WLAN	22.5	22.0	25.0
5GHz WLAN	26.0	25.5	28.5

3. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:
S = Power Density
P = Output Power at Antenna Terminals
G = Gain of Transmit Antenna (linear gain)
R = Distance from Transmitting Antenna

4. Radio Frequency Radiation Exposure Evaluation

4.1. Standalone Power Density Calculation

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)	Power Density / Limit
WLAN2.4GHz Band Ant 1+2	3.24	25.00	28.24	0.67	666.81	0.133	1.000	0.133
WLAN5GHz Band Ant 1+2	3.27	28.50	31.77	1.50	1503.14	0.299	1.000	0.299

4.2. Collocated Power Density Calculation

WLAN 2.4GHz Band Ant 1+2 Power Density / Limit	WLAN 5GHz Band Ant 1+2 Power Density / Limit	Σ(Power Density / Limit) of WLAN 2.4GHz + WLAN 5GHz
0.133	0.299	0.432

Note:

1. ∑(Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], WLAN 2.4GHz + WLAN 5GHz.
2. Considering the WLAN transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 2 collocated transmitters is compliant.

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.