RF EXPOSURE EVALUATION REPORT

FCC ID	: TVE-111T15
Equipment	: Network Security Gateway
Brand Name	: FORTINET
Model Name	: FG-80Fxxxxxx, FortiGate 80Fxxxxxx, FORTIGATE-80Fxxxxxx FG-81Fxxxxxx, FortiGate 81Fxxxxxx, FORTIGATE-81Fxxxxxx FG-80F-Bypassxxxxxx, FortiGate 80F-Bypassxxxxxx, FORTIGATE-80F-Bypassxxxxxx FG-81F-Bypassxxxxxx, FortiGate 81F-Bypassxxxxxx, FORTIGATE-81F-Bypassxxxxxx FG-80F-USGxxxxxx, FortiGate 80F-USGxxxxxx, FORTIGATE-80F-USGxxxxxx FG-81F-USGxxxxxx, FortiGate 81F-USGxxxxxx, FORTIGATE-81F-USGxxxxxx FG-80F-Bypass-USGxxxxxx, FortiGate 80F-Bypass-USGxxxxxx, FORTIGATE-80F-Bypass-USGxxxxxx FG-81F-Bypass-USGxxxxxx, FortiGate 81F-Bypass-USGxxxxxx, FORTIGATE-81F-Bypass-USGxxxxxx (where “x” can be used “A-Z”, or “0-9”, or “-“, or blank for software purposes or marketing purposes only)
Marketing Name	FG-80F,FG-81F,FG-80F-Bypass,FG-81F-Bypass
Applicant	: Fortinet Inc. 899 KIFER RD SUNNYVALE CA 94086-5301 UNITED STATES
Manufacturer	: Fortinet Inc. 899 KIFER RD SUNNYVALE CA 94086-5301 UNITED STATES
Standard	: 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part 2.1091 and it complies with applicable limit.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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

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.

Cona Huang

Approved by: Cona Huang / Deputy Manager

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History of this test report

Report No.	Version	Description	Issued Date
FA032024	Rev. 01	Initial issue of report	Jun. 03, 2020

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Network Security Gateway
Brand Name	FORTINET
Model Name	FG-80Fxxxxxx, FortiGate 80Fxxxxxx, FORTIGATE-80Fxxxxxx FG-81Fxxxxxx, FortiGate 81Fxxxxxx, FORTIGATE-81Fxxxxxx FG-80F-Bypassxxxxxx, FortiGate 80F-Bypassxxxxxx, FORTIGATE-80F-Bypassxxxxxx FG-81F-Bypassxxxxxx, FortiGate 81F-Bypassxxxxxx, FORTIGATE-81F-Bypassxxxxxx FG-80F-USGxxxxxx, FortiGate 80F-USGxxxxxx, FORTIGATE-80F-USGxxxxxx FG-81F-USGxxxxxx, FortiGate 81F-USGxxxxxx, FORTIGATE-81F-USGxxxxxx FG-80F-Bypass-USGxxxxxx, FortiGate 80F-Bypass-USGxxxxxx, FORTIGATE-80F-Bypass-USGxxxxxx FG-81F-Bypass-USGxxxxxx, FortiGate 81F-Bypass-USGxxxxxx, FORTIGATE-81F-Bypass-USGxxxxxx (where “x” can be used “A-Z”, or “0-9”, or “-“, or blank for software purposes or marketing purposes only)
Marketing Name	FG-80F,FG-81F,FG-80F-Bypass,FG-81F-Bypass
FCC ID	TVE-111T15
Wireless Technology and Frequency Range	Bluetooth: 2400 MHz ~ 2483.5 MHz
Mode	Bluetooth LE
Ant. Type	PIFA
HW Version	DVT
SW Version	Build 5563
EUT Stage	Production Unit

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Reviewed by: Jason Wang

Report Producer: Daisy Peng

2. Maximum RF average output power among production units

Band / Mode	Average Power (dBm)	
	LE	BLE5.0
	GFSK	GFSK
Bluetooth	2	2

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)
Bluetooth	0.78	2.00	2.780	0.002	1.897	0.00038	1.00000

Conclusion:

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