

## RF Exposure Exemption

Applicant : Fortinet, Inc.  
Product Name : Network Security Gateway  
Trade Name : FORTINET  
Model Number : FG-601F, FG-600F, FG-600F-DC, FG-601F-DC  
FortiGate 600Fxxxxxxxxxx, FORTIGATE-600Fxxxxxxxxxx, FG-600Fxxxxxxxxxx,  
FortiGate 601Fxxxxxxxxxx, FORTIGATE-601Fxxxxxxxxxx, FG-601Fxxxxxxxxxx,  
FortiGate 600F-DCxxxxxxxxxx, FORTIGATE-600F-DCxxxxxxxxxx, FG-600F-DCxxxxxxxxxx,  
FortiGate 601F-DCxxxxxxxxxx, FORTIGATE-601F-DCxxxxxxxxxx, FG-601F-DCxxxxxxxxxx  
(where "x" can be used as "A-Z" , or "0-9" , or "- " , or blank for software changes or marketing purposes only)

Applicable Standard : 47 CFR § 2.1091  
Received Date : Nov. 23, 2022  
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### Issued by

Approved By : \_\_\_\_\_

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Taiwan Accreditation Foundation accreditation number: 1330

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### Revision History

Version	Issued Date	Revisions	Revised By
00	Jan. 30, 2023	Initial Issue	Yiyng Chiang

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## 1. General Information

### 1.1 Reference Applicable Standard

Standard	Description	Version
IEEE C95.1	American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 300 KHz to 100 GHz, New York.	1992
47 CFR § 2.1091	Radiofrequency radiation exposure evaluation: mobile devices.	-
47 CFR § 1.1310	Radiofrequency radiation exposure limits.	-
KDB 447498 D04	RF exposure procedures and equipment authorization policies for mobile and portable devices	v01

### 1.2 Testing Location

Site Name: Site Name: Eurofins E&E Wireless Taiwan Co., Ltd.

Site Address:  No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan (R.O.C.)

Site Address:  No. 2, Wuquan 5th Rd. Wugu Dist., New Taipei City, Taiwan (R.O.C.)

## 2. Description of Equipment under Test (EUT)

Applicant	Fortinet, Inc. 899 Kifer Road, Sunnyvale, CA 94086, USA
Manufacturer	Fortinet, Inc. 899 Kifer Road, Sunnyvale, CA 94086, USA
Product Name	Network Security Gateway
Trade Name	FORTINET
Model Number	FG-601F, FG-600F, FG-600F-DC, FG-601F-DC FortiGate 600Fxxxxxxxxxx, FORTIGATE-600Fxxxxxxxxxx, FG-600Fxxxxxxxxxx, FortiGate 601Fxxxxxxxxxx, FORTIGATE-601Fxxxxxxxxxx, FG-601Fxxxxxxxxxx, FortiGate 600F-DCxxxxxxxxxx, FORTIGATE-600F-DCxxxxxxxxxx, FG-600F-DCxxxxxxxxxx, FortiGate 601F-DCxxxxxxxxxx, FORTIGATE-601F-DCxxxxxxxxxx, FG-601F-DCxxxxxxxxxx (where "x" can be used as "A-Z" , or "0-9" , or "- " , or blank for software changes or marketing purposes only)
FCC ID	TVE-111T15F
Frequency Range	Bluetooth : 2402 - 2480 MHz
Supported Modulations	Bluetooth : LE

**Note:**

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

Antenna Information			
Frequency Range	Model Number	Type	Max. Gain (dBi)
2402 ~2480 MHz	ARY196-0346-005-00	PIFA Antenna	1.82
2402 ~2480 MHz	WA-F-LA-02-114	PIFA Antenna	0.73

### 3. RF Exposure Limit

For devices that operate at larger distances from persons, where there are minimal RF coupling interactions between a device and the user or nearby persons, RF exposure compliance using maximum permissible exposure (MPE) limits is applied. The limits for MPE is listed as below:

Limits for General Population / Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824 / f	2.19 / f	(180 / f <sup>2</sup> )*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	F / 1,500	30
1,500-100,000	-	-	1.0	30
Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1,842 / f	4.89 / f	(900 / f <sup>2</sup> )*	6
30-300	61.4	0.163	1.0	6
300-1,500	-	-	F / 300	6
1,500-100,000	-	-	5	6

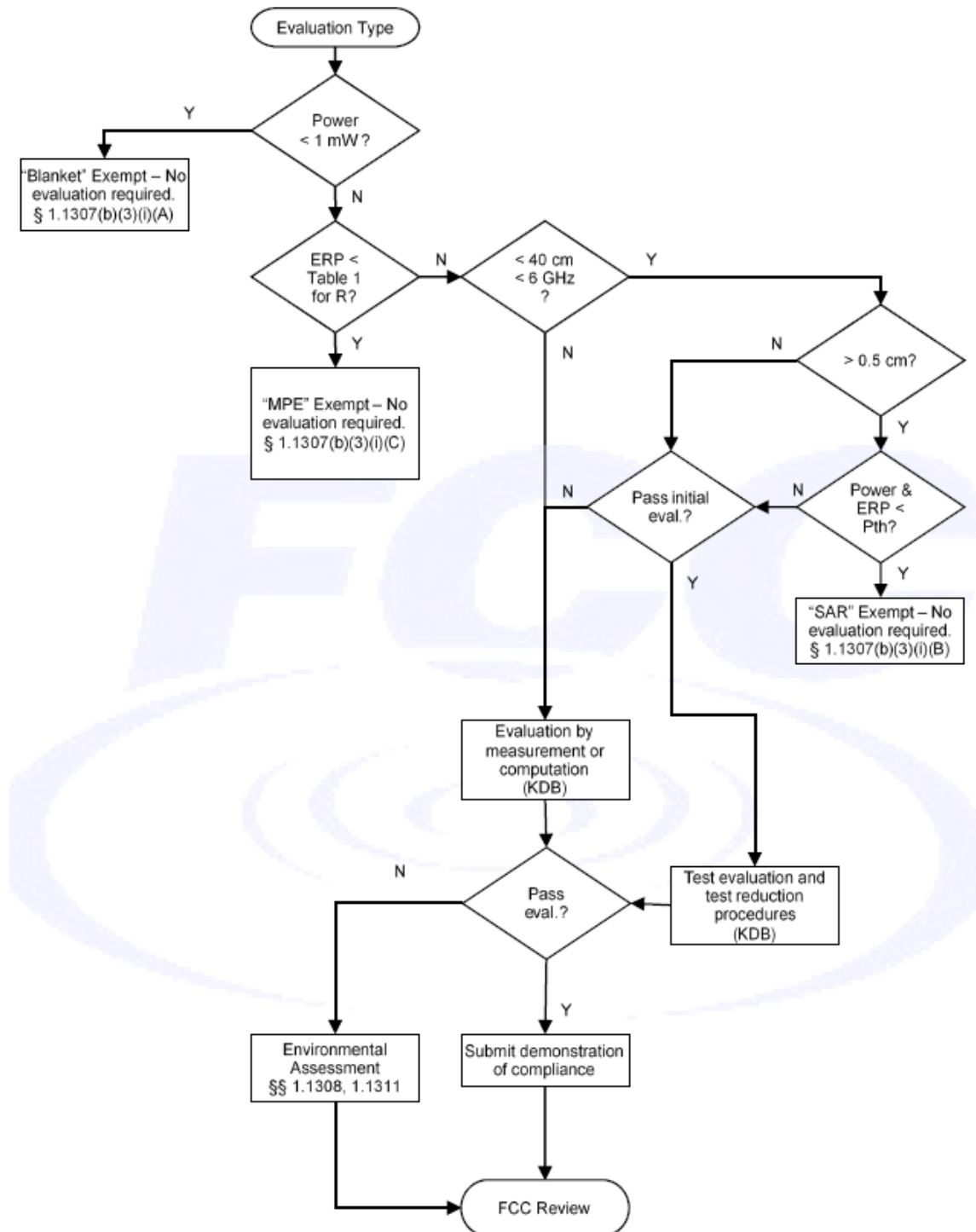
f = frequency in MHz. \* = Plane-wave equivalent power density.

## 4. RF Exposure Assessment

### 4.1 Exemption Evaluation

Exemption evaluation was performed according to the appendix A and B in KDB447498 D04.

The General Sequence for Determination of Procedure demonstrated in Figure A.1 of KDB447498 D04 was applied.



## 4.2 Human Exposure Assessment

Due to the design and installation of this product, it is not possible to conduct SAR evaluation. This is because client either manufactures or supplies the antenna(s) that will be used in the installation of this product. Therefore, this product will be evaluated as a mobile device per 47 CFR § 1.1310 titled “Radiofrequency radiation exposure limits”, generally referred to as MPE limits.

In 47 CFR § 2.1091, paragraph (b) defines a mobile device as “a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 cm is normally maintained between the transmitter’s radiating structure(s) and the body of the user or nearby persons.”

Exposure evaluation

$$S_{eirp} = \frac{EIRP}{4\pi d^2} = \frac{PG}{4\pi d^2} (W / m^2)$$

Where

S: is the input power (W);

G: is the antenna gain;

d : is the distance between antennas and evaluation point (m).



## 5. Maximum Tune-up Power

Operate Band	Frequency (MHz)	ANT 0
Bluetooth LE	2402 - 2480	3.50

## 6. Test Result

Band	Frequency (MHz)	Distance (cm) [R]	Antenna	Tune-up Power (dBm)	Tune-up Power (mW)	ANT Gain (dBi)	ERP (W)	<§1.1307(b)(3)(i)(C)> Exemption Minimum Distance (m)	<§1.1307(b)(3)(i)(C)> Exemption Threshold ERP (W)	<§1.1307(b)(3)(i)(C)> Exemption considerations
Bluetooth LE	2402 - 2480	20.00	ANT 0	3.50	2.24	1.82	0.002	0.020	0.008	Qualified

Note:

This device is qualified for exemption under §1.1307(b)(3)(i)(C).

## 7. Conclusion

The result shows that this device is qualified for MPE-Based Exemption in KDB 447498. Therefore, MPE testing is not required.

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