



## RF Exposure Evaluation

**FCC ID:** TVE-240606

**APPLICANT:** Fortinet, Inc.

**Application Type:** Certification

**Product:** Network Switch

**Model No.:** FSR-216-POE

**Series Model No.** FortiSwitchRugged 216F-POExxxxxxxxxx  
FORTISWITCHRUGGED-216F-POExxxxxxxxxx  
FSR-216F-POExxxxxxxxxx  
Where "x" can be used as "A-Z", or "0-9", or "-", or blank  
for software changes or marketing purposes only.


**Trademark:** 

**FCC Rule Part(s):** Part 2.1091 (Mobile)


**Test Procedure(s):** KDB 447498 D01v06

**Received Date:** April 8, 2024

**Tested By** :   
( Kaunaz Lee )

**Reviewed By** :   
( Paddy Chen )

**Approved By** :   
( Chenz Ker )



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

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## Revision History

Report No.	Version	Description	Issue Date
2404TW8301-U3	1.0	Original Report	2024-07-19
2404TW8301-U3	2.0	1. Remove IC ID & ISED Standard: RSS-102 2. Modify Antenna gain	2024-12-05

## 1. PRODUCT INFORMATION

### 1.1. Equipment Description

Product Name	Network Switch
Model No.	FSR-216-POE
Series Model No.	FortiSwitchRugged 216F-POExxxxxxxxxx FORTISWITCHRUGGED-216F-POExxxxxxxxxx FSR-216F-POExxxxxxxxxx Where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes or marketing purposes only.
Trademark	
Supports Radios Spec.	Bluetooth: V5.0
Frequency Range	2402 ~ 2480MHz
Type of Modulation	GFSK

Note:

1. Model Difference: The difference of models only for marketing different, the other hardware was the same. (declared by the manufacturer)
2. The test was performed base on FSR-216-POE.

### 1.2. Antenna Description

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	JOYMAX ELECTRONICS CO., LTD	RFQ-24002-01	Monopole	1.33dBi

## 2. RF Exposure Evaluation

### 2.1. FCC Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

#### LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f <sup>2</sup>	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 Exposures				
0.3-1.4	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/1500	30
1500-100,000	--	--	1.0	30

Note : (1) f= Frequency in MHz , (2) \* = Plane-wave equivalent power density

## Calculation Formula:

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

Where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

r = distance between observation point and center of the radiator in cm.

## 2.2. Test Result of RF Exposure Evaluation

Mode	Frequency (MHz)	Output Power to Antenna (dBm)	Output Power to Antenna (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
BLE	2402~2480	7.81	6.04	1.33	20	0.0016	1

So, this device can complies the SAR test exclusion.

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