



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 : 
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Reviewed By : 
(Paddy Chen)

Approved By : 
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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 ²)	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 ²	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 ²	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:

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

Where

Pd = power density in mW/cm²

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 ²)	Limit (mW/cm ²)
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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