

FCC RF Exposure Report

FCC ID : TVE-130513
Equipment : 3T3R PCIeModule- 5GHz
Model No. : WMDQ-174AC
Brand Name : Fortinet, Inc.
Applicant : Fortinet Inc.
Address : 899 Kifer Road Sunnyvale, CA 94086, USA
Standard : 47 CFR FCC Part 2.1091
Received Date : Mar. 10, 2015
Tested Date : Mar. 16 ~ Apr. 09, 2015

We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Approved & Reviewed by:



Gary Chang / Manager



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Release Record

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FA531001	Rev. 01	Initial issue	May 20, 2015

1 MPE EVALUATION OF MOBILE DEVICES

Human exposure to RF emissions from mobile devices (47 CFR §2.1091) may be evaluated based on the MPE limits adopted by the FCC for electric and magnetic field strength and/or power density, as appropriate, since exposures are assumed to occur at distances of 20 cm or more from persons.

1.1 LIMITS FOR GENERAL POPULATION/UNCONTROLLED EXPOSURE

Frequency Range (MHz)	Power Density (mW /cm ²)	Averaging Time (minutes)
300~1500	F/1500	30
1500~100000	1.0	30

1.2 MPE EVALUATION FORMULA

$$Pd = \frac{Pt}{4 * \pi * R^2}$$

Where

Pd= Power density in mW/cm²

Pt= EIRP in mW

π= 3.1416

R= Measurement distance

1.3 MPE EVALUATION RESULTS

Frequency Range (MHz)	Antenna type	Antenna Gain (dBi)	Maximum Conducted Power (dBm)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
5180~5240	Dipole	4.78	16.72	20	0.028	1
5745~5825	Dipole	5.67	25.66	20	0.270	1
5180~5240	PIFA	3.46	16.72	20	0.021	1
5745~5825	PIFA	4.34	25.66	20	0.199	1

1.4 Result of Maximum Permissible Exposure for Co-located

The EUT (FCC ID: TVE-130513) will be installed in below hosts.

Brand Name	Model Name	Product name	Antenna type	Description
Fortinet	FAP-S321C	FortiAP-S321C	PIFA	The platform contains 2 certified wireless modules. Module 1. FCC ID: TVE-130513 Module 2. FCC ID: TVE-130503
Fortinet	FAP-S323C	FortiAP-S323C	Dipole	The platform contains 2 certified wireless modules. Module 1. FCC ID: TVE-130513 Module 2. FCC ID: TVE-130503

Evaluation result of FCC ID: TVE-130503.

Frequency Range (MHz)	Antenna type	Antenna Gain (dBi)	Maximum Conducted Power (dBm)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412~2462	Dipole	4.59	26.70	20	0.268	1
2412~2462	PIFA	6.38	26.70	20	0.404	1

CONCLUSION:

Both of the WLAN 2.4G & 5.0G can transmit simultaneously, the formula of calculated the MPE is:

$$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

MPE evaluation for Model name: FAP-S321C

$$= 0.404 / 1 + 0.199 / 1 = 0.603$$

MPE evaluation for Model name: FAP-S323C

$$= 0.270 / 1 + 0.268 / 1 = 0.538$$

Therefore, the maximum calculation of this situation is 0.603, which is less than the "1" limit.

2 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp, it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan Hsiang. Location map can be found on our website <http://www.icertifi.com.tw>.

Linkou

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