

RF Exposure Evaluation Declaration

Product Name : Dual-Band Wireless AC/N VDSL2 Combo WAN Gigabit Gateway

Brand Name : ZYXEL

Model No. : VMG3625-T50B

FCC ID : I88VMG3625-T50B

Applicant : ZyXEL Communications Corporation

Address : No.2 Industry East RD. IX, Science Park, Hsinchu, Taiwan

Date of Receipt : Sep. 09, 2019

Issued Date : Jul. 18, 2022

Report No. : 2230646R-RFUSMPEV02-A

Report Version : V1.0



The test results relate only to the samples tested.

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

This report must not be used to claim product endorsement by TAF or any agency of the government.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

The test report shall not be reproduced except in full without the written approval of DEKRA Testing and Certification Co., Ltd.



Product Name : Dual-Band Wireless AC/N VDSL2 Combo WAN Gigabit Gateway

Applicant : ZyXEL Communications Corporation

Address : No.2 Industry East RD. IX, Science Park, Hsinchu, Taiwan

Manufacturer : ZyXEL Communications Corporation

Address : No.2 Industry East RD. IX, Science Park, Hsinchu, Taiwan

Brand Name : ZYXEL

Model No. : VMG3625-T50B

FCC ID : I88VMG3625-T50B

EUT Voltage : DC 12V (adapter)

Testing Voltage : AC 120V/60Hz

Applicable Standard : FCC 47 CFR Part 2.1091 Radiofrequency radiation exposure evaluation: mobile devices.

Laboratory Name : DEKRA Testing and Certification Co., Ltd.
Hsin Chu Laboratory

Address : No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 310, Taiwan, R.O.C.

Test Result : Complied

Documented By :

Hailey Peng

(Hailey Peng / Senior Engineer)

Approved By :

Rueyyan Lin

(Rueyyan Lin / Supervisor)

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Revision History

Version	Description	Issued Date
V1.0	Initial issue of report	Jul. 18, 2022

1. General Information

1.1. EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
WiFi 2.4 GHz	2400 ~ 2483.5	2412 ~ 2462	802.11b: DSSS 802.11g/n: OFDM
WiFi 5 GHz	5150 ~ 5250 5725 ~ 5850	5180 ~ 5240 5745 ~ 5825	802.11a/n/ac: OFDM

Note: The above EUT information is declared by the manufacturer.

1.2. Test Facility

Laboratory Information

USA : **FCC Registration Number: TW3024**
Canada : **CAB identifier : TW3024**

The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site: <http://www.dekra.com.tw>

If you have any comments, please don't hesitate to contact us. Our test sites as below:

Test Laboratory	DEKRA Testing and Certification Co., Ltd.
Address	1. No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C. 2. No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.
Phone number	1. +886-3-582-8001 2. +886-3-582-8001
Fax number	1. +886-3-582-8958 2. +886-3-582-8958
E mail address	info.tw@dekra.com
Website	http://www.dekra.com.tw
Note: Test site number for address 1 includes HC-SR02. Test site number for address 2 includes HC-CB02, HC-CB03, HC-CB04, HC-SR10 and HC-SR12.	

2. RF Exposure Evaluation

2.1. Test Limit

(A) Test Limit for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
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) Test Limit 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 ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	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: f = frequency in MHz; *Plane-wave equivalent power density

Power Density (S) is calculated by the following formula:

$$S=(P*G) /4\pi R^2$$

where:

S = power density (in appropriate units, e.g. mW/ cm²)

P = power input to the antenna (in appropriate units, e.g., mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

π = 3.1416

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

2.2. Test Result of RF Exposure Evaluation

Exposure Environment: General Population / Uncontrolled Exposure

Evaluation Mode	Maximum Conducted Output Power (dBm)	Maximum Antenna Gain (dBi)	E.I.R.P (dBm)	E.I.R.P (mW)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WiFi 2.4 GHz	23.328	3.23	26.558	452.689	0.090	1.000
Evaluation Mode	Maximum Conducted Output Power (dBm)	Directional Gain (dBi)	E.I.R.P (dBm)	E.I.R.P (mW)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WiFi 5 GHz Band 1	20.544	7.22	27.764	597.585	0.119	1.000
WiFi 5 GHz Band 4	22.058	7.22	29.278	846.837	0.168	1.000

Distance (cm): 20 for Maximum Permissible Exposure.

Co-location
<p>Conclusion:</p> <p>The formula of calculated the MPE is:</p> <p>CPD1 / LPD1 + CPD2 / LPD2 +etc. < 1</p> <p>CPD = Calculation power density</p> <p>LPD = Limit of power density</p> <p>WiFi 2.4 GHz + WiFi 5 GHz = 0.090 + 0.168 = 0.258, therefore the maximum calculations of above situations are less than the "1" limit.</p>

Note:

1. The above EUT information is declared by the manufacturer.
2. The results are evaluated using the maximum power.