

FCC RF Exposure Report

FCC ID : I88WX5610-B0
Equipment : AX7800 WiFi 6E Tri-Band Gigabit Wireless Extender
Model No. : WX5610-B0
Brand Name : ZYXEL
Applicant : Zyxel Communications Corporation
Address : No.2 Industry East RD. IX, Hsinchu Science Park, Hsinchu 30075, Taiwan
Standard : 47 CFR FCC Part 2.1091
Received Date : Dec. 26, 2022
Tested Date : Dec. 26, 2022 ~ Feb. 24, 2023

We, International Certification Corporation, 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 shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by:

Approved by:



Along Chen / Assistant Manager



Gary Chang / Manager

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Release Record

Report No.	Version	Description	Issued Date
FA2D2801	Rev. 01	Initial issue	Mar. 22, 2023

1 MPE EVALUATION OF MOBILE DEVICES

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

Pi= 3.1416

R= Measurement distance

1.3 REFERENCE GUIDANCE

447498 D01 General RF Exposure Guidance v06

1.4 DEVIATION FROM TEST STANDARD AND MEASUREMENT PROCEDURE

None

1.5 MEASUREMENT UNCERTAINTY

The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)).

Parameters	Uncertainty
Conducted power	±0.808 dB

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1.6 MPE EVALUATION RESULTS

Non-beamforming mode

Frequency Range (MHz)	Maximum Conducted Power (dBm)	Maximum Tune Up Limit (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	*Ratio	Pass / Fail
2412-2462	28.18	28.5	5.0	20	0.445	1	0.445	Pass
5180-5240	25.49	25.5	5.5	20	0.250	1	0.250	Pass
5260-5320	23.72	24.0	5.0	20	0.158	1	0.158	Pass
5500-5720	23.89	24.0	5.1	20	0.162	1	0.162	Pass
5745-5825	28.29	28.5	5.0	20	0.445	1	0.445	Pass

Frequency Range (MHz)	EIRP(dBm)	Maximum Tune Up Limit (dBm)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	*Ratio	Pass / Fail
5925-6425	22.02	23	20	0.040	1	0.040	Pass
6425-6525	22.28	23	20	0.040	1	0.040	Pass
6525-6875	22.10	23	20	0.040	1	0.040	Pass
6875-7125	21.40	23	20	0.040	1	0.040	Pass

*Ratio = Power density / Limit.

Beamforming mode

Frequency Range (MHz)	Maximum Conducted Power (dBm)	Maximum Tune Up Limit (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	*Ratio	Pass / Fail
2412-2462	25.04	25.5	7.48	20	0.395	1	0.395	Pass
5180-5240	22.00	22.0	8.22	20	0.209	1	0.209	Pass
5260-5320	20.71	21.0	7.29	20	0.134	1	0.134	Pass
5500-5720	20.88	21.0	7.77	20	0.150	1	0.150	Pass
5745-5825	25.28	25.5	7.34	20	0.383	1	0.383	Pass

*Ratio = Power density / Limit.

Note:

For 2412~2462MHz:

Directional gain = $10 \times \log((10^{3.9/20} + 10^{5/20})^2 / 2) = 7.48$ dBi.

For 5180~5240MHz:

Directional gain = $10 \times \log((10^{5.5/20} + 10^{4.9/20})^2 / 2) = 8.22$ dBi.

For 5260~5320MHz:

Directional gain = $10 \times \log((10^{5/20} + 10^{3.5/20})^2 / 2) = 7.29$ dBi.

For 5500~5720MHz:

Directional gain = $10 \times \log((10^{5.1/20} + 10^{4.4/20})^2 / 2) = 7.77$ dBi.

For 5745~5825MHz:

Directional gain = $10 \times \log((10^{5/20} + 10^{3.6/20})^2 / 2) = 7.34$ dBi.

Frequency Range (MHz)	EIRP(dBm)	Maximum Tune Up Limit (dBm)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	*Ratio	Pass / Fail
5925-6425	23.63	24	20	0.050	1	0.050	Pass
6425-6525	23.63	24	20	0.050	1	0.050	Pass
6525-6875	23.32	24	20	0.050	1	0.050	Pass
6875-7125	22.95	23	20	0.040	1	0.040	Pass

*Ratio = Power density / Limit.

1.7 MPE EVALUATION OF SIMULTANEOUS TRANSMISSION

Non-beamforming mode

Mode	Max Ratio of Each Mode
WLAN 2.4GHz	0.445
WLAN 5GHz	0.445
WLAN 6GHz	0.040
Sum	0.930
Limit	1
Pass / Fail	Pass

Beamforming mode

Mode	Max Ratio of Each Mode
WLAN 2.4GHz	0.395
WLAN 5GHz	0.383
WLAN 6GHz	0.050
Sum	0.828
Limit	1
Pass / Fail	Pass

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 Corporation (EMC and Wireless Communication Laboratory), 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 District. Location map can be found on our website <http://www.icertifi.com.tw>.

Linkou

Tel: 886-2-2601-1640

No.30-2, Ding Fwu Tsuen, Lin Kou
District, New Taipei City, Taiwan
(R.O.C.)

Kwei Shan

Tel: 886-3-271-8666

No.3-1, Lane 6, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)
No.2-1, Lane 6, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)

Kwei Shan Site II

Tel: 886-3-271-8640

No.14-1, Lane 19, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)

If you have any suggestion, please feel free to contact us as below information.

Tel: 886-3-271-8666

Fax: 886-3-318-0345

Email: ICC_Service@icertifi.com.tw

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