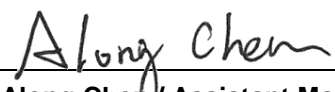


FCC RF Exposure Report

FCC ID : I88WX3310-1
Equipment : AX5400 Gigabit Wireless Extender
Model No. : WX3310-B1
Brand Name : ZYXEL
Applicant : Zyxel Communications Corporation
Address : No.2 Industry East RD. IX, Hsinchu Science
Park, Hsinchu 30075, Taiwan, R.O.C
Standard : 47 CFR FCC Part 2.1091
Received Date : Aug. 26, 2022
Tested Date : Sep. 06 ~ Oct. 07, 2022

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:


Along Chen / Assistant Manager

Approved by:


Gary Chang / Manager

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Release Record

| Report No. | Version | Description | Issued Date |
|------------|---------|---------------|---------------|
| FA282601 | Rev. 01 | Initial issue | Oct. 26, 2022 |

1 RF Exposure Test Exemptions

1.1 1-mW TEST EXEMPTION

Available maximum time-averaged power is no more than 1 mW.

1.2 SAR-BASED EXEMPTION

This exemption is applicable to the frequency range between 300 MHz and 6 GHz, with test separation distances between 0.5 cm and 40 cm, and for all RF sources in fixed, mobile, and portable device exposure conditions.

The maximum time-averaged power or effective radiated power (ERP), whichever is greater, $\leq P_{th}$

$$P_{th} \text{ (mW)} = ERP_{20cm}(d/20)^x \quad d \leq 20cm$$

$$P_{th} \text{ (mW)} = ERP_{20cm} \quad 20 \text{ cm} < d \leq 40cm$$

Where $x = -\log_{10}\left(\frac{60}{ERP_{20cm}\sqrt{f}}\right)$

$$P_{th} \text{ (mW)} = ERP_{20cm} \text{ (mW)} = 2040f \quad 0.3GHz \leq f < 1.5 \text{ GHz}$$

$$P_{th} \text{ (mW)} = ERP_{20cm} \text{ (mW)} = 3060 \quad 1.5GHz \leq f < 6 \text{ GHz}$$

| Frequency (MHz) | Power Thresholds | |
|-----------------|------------------|-------|
| | mW | dBm |
| 663 | 1353 | 31.31 |
| 699 | 1426 | 31.54 |
| 704 | 1436 | 31.57 |
| 777 | 1585 | 32.00 |
| 824 | 1681 | 32.26 |
| 902 | 1840 | 32.65 |
| 1500 ~ 6000 | 3060 | 34.86 |

1.3 MPE-BASED EXEMPTION

For a much wider frequency range, from 300 kHz to 100 GHz, applicable for separation distances greater or equal to $\lambda/2\pi$, where λ is the free-space operating wavelength in meters.

| Radio Source Frequency | | | Minimum Distance | | | Threshold ERP |
|------------------------|---|-----------|--------------------|---|--------------------|----------------|
| F_L MHz | | F_H MHz | $\lambda_L / 2\pi$ | | $\lambda_H / 2\pi$ | W |
| 0.3 | - | 1.34 | 159 m | - | 35.6 m | 1920 R^2 |
| 1.34 | - | 30 | 35.6 m | - | 1.6 m | 3450 R^2/f^2 |
| 30 | - | 300 | 1.6 m | - | 159 mm | 3.83 R^2 |
| 300 | - | 1500 | 159 mm | - | 31.8 mm | 0.0128 R^2f |
| 1500 | - | 100000 | 31.8 mm | - | 0.5 mm | 19.2 R^2 |

Note: R is the antenna-person separation distance.

1.4 REFERENCE GUIDANCE

447498 D04 Interim General RF Exposure Guidance v01

1.5 DEVIATION FROM TEST STANDARD AND MEASUREMENT PROCEDURE

None

1.6 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.

1.7 EXEMPTION CALCULATION

Single RF Source

| Frequency Range (MHz) | Maximum Conducted Power (dBm) | Maximum tune up limit (dBm) | Antenna Gain (dBi) | EIRP (dBm) | ERP (dBm) | SAR-Based Exemption Thresholds (dBm) | *Ratio | Pass/Fail |
|-----------------------------|-------------------------------|-----------------------------|--------------------|------------|-----------|--------------------------------------|--------|-----------|
| Non-beamforming mode | | | | | | | | |
| 2412~2462 | 29.67 | 30.0 | 3.28 | 33.28 | 31.13 | 34.86 | 0.424 | Pass |
| 5180~5240 | 29.45 | 29.5 | 5.01 | 35.01 | 32.86 | 34.86 | 0.562 | Pass |
| 5260~5320 | 23.90 | 24.0 | 4.10 | 28.10 | 25.95 | 34.86 | 0.129 | Pass |
| 5500~5720 | 23.88 | 24.0 | 4.08 | 28.08 | 25.93 | 34.86 | 0.128 | Pass |
| 5745~5825 | 29.57 | 30.0 | 4.21 | 34.21 | 32.06 | 34.86 | 0.525 | Pass |
| Beamforming mode | | | | | | | | |
| 2412~2462 | 28.70 | 29.0 | 3.61 | 32.61 | 30.46 | 34.86 | 0.363 | Pass |
| 5180~5240 | 29.38 | 29.5 | 5.11 | 34.61 | 32.46 | 34.86 | 0.575 | Pass |
| 5260~5320 | 23.62 | 24.0 | 5.21 | 29.21 | 27.06 | 34.86 | 0.166 | Pass |
| 5500~5720 | 23.83 | 24.0 | 4.93 | 28.93 | 26.78 | 34.86 | 0.156 | Pass |
| 5745~5825 | 29.53 | 30.0 | 4.77 | 34.77 | 32.62 | 34.86 | 0.597 | Pass |

Note:

Minimum separation distance = 20 cm.

Simultaneous Transmission Test Exemption***Non-beamforming mode***

| Mode | Max Ratio of Each Mode |
|-------------|------------------------|
| WLAN 2.4GHz | 0.424 |
| WLAN 5GHz | 0.562 |
| Sum | 0.986 |
| Limit | 1 |
| Pass / Fail | Pass |

Beamforming mode

| Mode | Max Ratio of Each Mode |
|-------------|------------------------|
| WLAN 2.4GHz | 0.363 |
| WLAN 5GHz | 0.597 |
| Sum | 0.960 |
| Limit | 1 |
| Pass / Fail | Pass |

Conclusion

Wi-Fi transmitters are qualify for Simultaneous Transmission SAR exemption

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 333, 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

==END==