FCC RF Exposure Exemption report

for

Zone DAS Two

Model No.: Zone DAS Two

FCC ID: 2ASQXZONEDASTWO

of

Applicant: ZQAM Communications Corp.
Address: 3F., No.6, Innovation Road II, Science Park,
Hsinchu 30076, Taiwan

Tested and Prepared

by

Worldwide Testing Services (Taiwan) Co., Ltd.

FCC Registration No.: TW1072, TW1140, TW1146, TW1477, TW0037

Industry Canada filed test laboratory Reg. No.: 20037, 31634

Report No.: W6M22504-24316-EE

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.
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1 General Information

1.1 Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.
The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.
Furthermore, there is no guarantee that a test sample which has passed all the relevant tests conforms to a specification.
Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.
The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that is performance generally conforms to representative cases of communications equipment.

Laboratory disclaimer-
1. The test results of this test report relate exclusively to the item tested as specified in 1.5.
2. The test report may only be reproduced or published in full.
3. Reproduction or publication of extracts from the report requires the prior written approval of the Worldwide Testing Services(Taiwan) Co., Ltd.
4. Antenna gain is provided by applicant and laboratory issue relevant data and results.

Tester:

July 03, 2025	Sora Kuo	Sora
Date	Name	Signature

Technical responsibility for area of testing:

July 03, 2025	Kevin Wang	Kevin Wang
Date	Name	Signature

1.2 Testing laboratory

1.2.1 Location

10m OATS
No.5-1, Lishui, Shuang Sing Village, Wanli Dist.,
New Taipei City 207, Taiwan (R.O.C.)

3 meter semi-anechoic chamber
No. 99, Sec. 1, Balian Rd., Xizhi Dist.,
New Taipei City 221032, Taiwan (R.O.C.)

Worldwide Testing Services (Taiwan) Co., Ltd.
6F., No. 58, Ln. 188, Ruiguang Rd., Neihu Dist.,
Taipei City 114 , Taiwan (R.O.C.)
Tel: 886-2-6606-8877

1.2.2 Details of accreditation status

Accredited testing laboratory
FCC filed test laboratory Reg. No.: TW1072, TW1140, TW1146, TW1477, TW0037
Industry Canada filed test laboratory Reg. No.: 20037, 31634

Test location, where different from Worldwide Testing Services (Taiwan) Co., Ltd. :

Name:	./.
Accredited no.:	./.
Street:	./.
Town:	./.
Country:	./.

1.3 Application details

Approval holder

Name:	ZQAM Communications Corp.
Street:	3F., No.6, Innovation Road II, Science Park,
Town:	Hsinchu 30076,
Country:	Taiwan

Manufacturer: (if applicable)

Name:	./.
Street:	./.
	./.
Town:	./.
Country:	./.

Date of receipt of test item: April 25, 2025

Date of test: from April 25, 2025 to May 26, 2025

1.4 General information of Test item

Type of test item: Zone DAS Two

Model no.: Zone DAS Two

Multi-listing model no.: ./.

Brand name: ZYXEL

Power supply: 120 Va.c.

Type of antenna: Widcband Dome Ceiling Antenna

Antenna gain: LTE Band 12: 1.94 dBi
LTE Band 13: 2.33 dBi
LTE Band 25: 3.17 dBi
LTE Band 30: 2.46 dBi
LTE Band 66: 3.17 dBi
NR Band n77: 4.14 dBi

Technical data

Mode	Frequency (Up Link) MHz	Output Level dBm	Frequency (Down Link) MHz	Output Level dBm
LTE Band 12	704	-10.73	734	24.08
LTE Band 13	782	-14.45	751	24.88
LTE Band 25	1882.5	-16.07	1962.5	22.85
LTE Band 30	2310	-11.26	2355	23.05
LTE Band 66	1755	-13.11	2170	24.16
NR Band n77	3750	-10.62	3930	26.79

Operation modes: Duplex

Sample no.: #01

Special statement: ./.

Classification:

Fixed Device	☒
Mobile Device (Human Body distance ＞ 20cm)	☐
Portable Device (Human Body distance ＜ 20cm)	☐

1.5 Test standards

447498 D01 General RF Exposure Guidance v06

2 Test configuration

2.1 Test environment

Relative humidity content: 20 ... 75 %

Air pressure: 86 ... 103 kPa

Extreme conditions parameters: ./.

2.2 Measurement uncertainty

Test item Name	Uncertainty
Estimation Result of Uncertainty of Conducted Output Power Measurement (Peak Output Power (transmitter))	Expanded Uncertainty：1.63 dB

The decision rule is: Measurement uncertainty is not included in the calculation of test results.

2.3 Test Equipment List

Code No.	Test equipment	Mode No.	Serial No.	Brand	Cal. Date	Next Cal. Date
ETSTW-RE 195	SMA 30dB Fixed Attenuator	MVE2407-30	F30012	MVE	2025/3/14	2026/3/13
ETSTW-RE 196	SMA 30dB Fixed Attenuator	MVE2407-30	F30012	MVE	2025/3/14	2026/3/13
ETSTW-RE 050	Attenuator 10dB	50HF-010-1	None	JFW	2025/2/14	2026/2/13
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2025/3/5	2026/3/4
ETSTW-RE 099	DC Block	50DB-007-1	None	JFW	2025/2/14	2026/2/13
ETSTW-RE 134	MXG Vector Signal Generator	N5182B	MY53050664	Agilent	2025/5/17	2026/5/16
ETSTW-RE 155	Signal and Spectrum Analyzer	FSV3044	101136	R&S	2025/4/10	2026/4/9
ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104 （S_Cable 9）	279067	HUBER+SUHNER	2025/2/14	2026/2/13

3 Equivalent Isotropic Radiated Power (EIRP)

FCC Rule: 447498 D01 General RF Exposure Guidance v06

3.1 Exemption Limits for Routine Evaluation according to 47 CFR FCC Part 2 Subpart J, section 2.1091

FCC OET Bulletin 65 Edition 97.01 determines the equations for predicting RF fields and applicable limits.
The prediction for power density in the far-field but will over-predict power density in the near field, where it could be used for walking a “worst case” or conservative prediction.
Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 20 cm normally can be maintained between the user and the device.

MPE Calculation Method

(A) Limits 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) Limits 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

f = frequency in MHz *Plane-wave equivalent power density

$$Pd = \frac{30 \times P \times G}{3770 \times d^2}$$

mW/cm^2.

Mode	Frequency (Up Link) MHz	Output Level dBm	Tune-Up Power dB	Gain dBi	Power density W/cm^2	Power density limit W/cm^2
LTE Band 12	704	-10.73	0.5	1.94	0.000038	0.4693
LTE Band 13	782	-14.45	0.5	2.33	0.000023	0.5213
LTE Band 25	1882.5	-16.07	0.5	3.17	0.000019	1
LTE Band 30	2310	-11.26	0.5	2.46	0.000038	1
LTE Band 66	1755	-13.11	0.5	3.17	0.000036	1
NR Band n77	3750	-10.62	0.5	4.14	0.000058	1

Mode	Frequency (Down Link) MHz	Output Level dBm	Tune-Up Power dB	Gain dBi	Power density W/cm^2	Power density limit W/cm^2
LTE Band 12	734	24.08	0.5	1.94	0.0893	0.4893
LTE Band 13	751	24.88	0.5	2.33	0.1174	0.5007
LTE Band 25	1962.5	22.85	0.5	3.17	0.0893	1
LTE Band 30	2355	23.05	0.5	2.46	0.0935	1
LTE Band 66	2170	24.16	0.5	3.17	0.1207	1
NR Band n77	3930	26.79	0.5	4.14	0.2765	1