FCC RF Exposure Exemption report

for

Wireless Mouse

Model No.: M-XGLL30DBS

FCC ID: YWO- M-XGLL30DBS

of

Applicant: ELECOM CO., LTD.
Address: Fushimimachi 4-1-1, Chuo-ku, Osaka City, Osaka Japan 541-8765

Tested and Prepared

by

Worldwide Testing Services (Taiwan) Co., Ltd.

FCC Registration No.: TW1477, TW1072

Industry Canada filed test laboratory Reg. No.: 20037, 5107A

Report No.: W6M22211-22308-EE

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.
TEL: 886-2-66068877 FAX: 886-2-66068879 E-mail: wts@wts-lab.com

Registration number: W6M22211-22308-EE
FCC ID: YWO-M-XGLL30DBS

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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:

Date	WTS-Lab.	Name	Signature
February 07, 2023		Sora Kuo	Sora

Technical responsibility for area of testing:

Date	WTS	Name	Signature
February 07, 2023		Kevin Wang	Kevin Wang

Registration number: W6M22211-22308-EE
FCC ID: YWO-M-XGLL30DBS

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.35, Aly. 21, Ln. 228, Ankang Rd., Neihu Dist.,
Taipei City 114, Taiwan (R.O.C.)
Tel: 886-2-6613-0228

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.: TW1477, TW1072
Industry Canada filed test laboratory Reg. No.: 20037, 5107A

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

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

1.3 Application details

Approval holder

Name:	ELECOM CO., LTD.
Street:	Fushimimachi 4-1-1, Chuo-ku,
Town:	Osaka City, Osaka
Country:	Japan 541-8765

Manufacturer: (if applicable)

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

Date of receipt of test item: November 16, 2022

Date of test: from November 17, 2022 to December 16, 2022

1.4 General information of Test item

Type of test item: Wireless Mouse

Model no.: M-XGLL30DBS

Multi-listing model no.: M-XGL30DBS、M-XGM30DBS、M-XGS30DBS

Brand name: ELECOM

Power supply: Battery 1.5Vd.c.

Type of antenna: PCB antenna

Antenna gain: 1.78 dBi

Technical data: 102.36 dBuV/m

Operation modes: Duplex

Modulation type: GFSK

Sample no.: #02 (for M-XGLL30DBS)、#07 (for M-XGM30DBS)

Special statement: ./.

Classification:

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

1.7 Test standards

47 CFR PART 15 SUBPART C § 15.249 (2021-10)

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：3.07 dB

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

2.3 Test Equipment List

RF Conducted

No.	Test equipment	Type	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2022/8/3	2023/8/2
ETSTW-RE 050	Attenuator 10dB	50HF-010-1	None	JFW	2022/2/18	2023/2/17
ETSTW-RE 051	Attenuator 6dB	50HF-006-1	None	JFW	2022/2/18	2023/2/17
ETSTW-RE 053	Attenuator 3dB	50HF-003-1	None	JFW	2022/2/18	2023/2/17
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2022/3/28	2023/3/27
ETSTW-RE 060	Attenuator 30dB	5015-30	F651012z-01	ATM	2022/2/18	2023/2/17
ETSTW-RE 099	DC Block	50DB-007-1	None	JFW	2022/2/18	2023/2/17
ETSTW-RE 112	AC POWER SOURCE	TFC-1005	T-0A023536	T-Power	Function test	
ETSTW-RE 127	RF Switch Box	RFS-01	None	WTS	2022/2/18	2023/2/17
ETSTW-RE 153	Signal Analyzer	FSV40	101929	R&S	2022/10/3	2023/10/2
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2022/9/2	2023/9/1
ETSTW-Cable 027	Microwave Cable	SUCOFLEX 104	279083	HUBER+SUHNER	2022/5/6	2023/5/5
ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104 （S_Cable 9） （S_Cable 9）	279067	HUBER+SUHNER	2022/2/18	2023/2/17
ETSTW-Cable 045	Microwave Cable	SUCOFLEX 104	325536	HUBER+SUHNER	2022/10/21	2023/10/20
ETSTW-Cable 058	Microwave Cable	SUCOFLEX 104	none	HUBER+SUHNER	2022/5/27	2023/5/26
WTSTW-SW 008	Signal studio	Agilent	None	AUDIX	Version 2.0.0.1	

3 Equivalent Isotropic Radiated Power (EIRP)

FCC Rule: 15.249

3.1 Exemption Limits for Routine Evaluation according to FCC KDB Publication

RESULT:

Test standard : FCC KDB Publication
447498 D01 General RF Exposure Guidance v06

3.3.1 Exemption Limits for Routine Evaluation – SAR Evaluation

SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table .

Table: SAR evaluation — Exemption limits for routine evaluation based on frequency and separation distance

MHz	5	10	15	20	25	mm
2405	10.08	19.25	29.33	38.49	48.49	SAR Test Exclusion Threshold (mW)

MHz	30	35	40	45	50	mm
2405	57.65	67.74	77.82	86.98	97.06	SAR Test Exclusion Threshold (mW)

Output power level shall be the higher of the maximum conducted or equivalent isotropically radiated power (e.i.r.p.) source-based, time-averaged output power.

EIRP= 102.36 dBuV/m= 7.13 dBm (5.1656 mW)

Established separation distance is 5 mm.

Operating frequency band : 2405-2474 MHz

Max. output power level at 5 mm separation distance at 2405 MHz
according to table is: 10.08 mW

The product is exempt from SAR Evaluation/Testing because the output power of 5.1656 mW is below the exemption limit of 10.08 mW.