

FCC RF Exposure Exemption report

for

Digital UHF tour guide system

Model No.: TG-501TPlus

FCC ID: 2ADLG-TG501TU

of

Applicant: **LINKX ELECTRONICS CO., LTD.**

Address: **NO.16, Sec. 1, Wenxue Road, Renwu Dist., Kaohsiung 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, 5107A



Report No.: W6M22409-23762-EE

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.
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Registration number: W6M22409-23762-C-1
FCC ID: 2ADLG-TG501TU

TABLE OF CONTENTS

1 GENERAL INFORMATION.....2

1.1 NOTES2

1.2 TESTING LABORATORY3

1.3 APPLICATION DETAILS3

1.4 GENERAL INFORMATION OF TEST ITEM.....4

1.5 TEST STANDARDS5

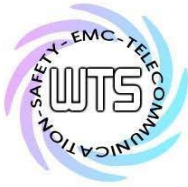
2 TEST CONFIGURATION6

2.1 TEST ENVIRONMENT6

2.2 MEASUREMENT UNCERTAINTY6

2.3 TEST EQUIPMENT LIST.....6

3 EXEMPTION CALCULATION.....7



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22409-23762-C-1

FCC ID: 2ADLG-TG501TU

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 its 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:

February 03, 2025

Sora Kuo

Date

WTS-Lab.

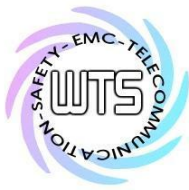
Name

Signature

Technical responsibility for area of testing:

February 03, 2025

Kevin Wang



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22409-23762-C-1

FCC ID: 2ADLG-TG501TU

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

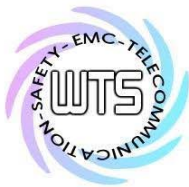
Test location, where different from Worldwide Testing Services (Taiwan) Co., Ltd. :

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

1.3 Application details

Approval holder

Name: LINKX ELECTRONICS CO., LTD.
Street: NO.16, Sec. 1, Wenxue Road, Renwu Dist.,
Town: Kaohsiung
Country: Taiwan



Worldwide Testing Services(Taiwan) Co., Ltd.

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FCC ID: 2ADLG-TG501TU

Manufacturer: (if applicable)

Name: ./.

Street: ./.

Town: ./.

Country: ./.

Application details

Date of receipt of test sample: November 21, 2024

Date of test: from November 22, 2024 to January 20, 2025

1.4 General information of Test item

Type of test item: Digital UHF tour guide system

Model no.: TG-501TPlus

Multi-listing model no.: TG-501T, TG-501R, TG-500T

Brand name: LINKX

Power supply: USB 5Vd.c.

Battery 3.7Vd.c., 1300mAh, 4.81Wh

Type of antenna: TG-501TPlus, TG-501T, TG-500T: Whip antenna

TG-501R: Helical antenna

Antenna gain: 0 dBi

Technical data:

Model number: TG-501TPlus

Mode	Channel	Conducted Power (dBm)
470-608MHz	478 MHz	8.33
	540 MHz	9.81
	607 MHz	12.77

Multi-listing model number: TG-501R

Mode	Channel	Conducted Power (dBm)
470-608MHz	478 MHz	6.38
	540 MHz	7.91
	607 MHz	11.25

Operation modes: Duplex

Modulation type: GFSK

Sample no.: #02

Special statement: ./.



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Registration number: W6M22409-23762-C-1

FCC ID: 2ADLG-TG501TU

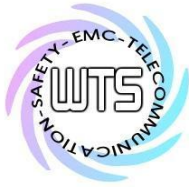
Classification:

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

1.5 Test standards

47 CFR FCC Part 2.1093

447498 D04 Interim General RF Exposure Guidance v06



Registration number: W6M22409-23762-C-1

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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 : 1.64 dB

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

2.3 Test Equipment List

TX Power

Code No.	Test equipment	Mode No.	Serial No.	Brand	Cal. Date	Next Cal. Date
ETSTW-RE 153	Signal Analyzer	FSV40	101929	R&S	2024/9/11	2025/9/10
ETSTW-RE 154	EMI Test Receiver	ESR3	102829	R&S	2024/4/10	2025/4/9
ETSTW-RE 160	Amplifier Module	CHC 3	None	WTS	2024/7/12	2025/7/11
ETSTW-RE 177	TRILOG Broadband Antenna	VULB 9168&EMCI-N-6-06	01380&AT-06007	SCHWARZBECK & EMC	2024/3/4	2025/3/3
ETSTW-RE 178	Double Ridged Guide Horn Antenna	DRH18-E	210505A18ES	RFSPIN	2024/2/29	2025/2/28
ETSTW-Cable 077	SMA type cable (10m)	EMC104-SM-SM-10000	230511	EMCI	2024/7/12	2025/7/11
ETSTW-Cable 084	SMA type cable (1m)	SF104-11SMA-1000	816477/4	HONOVA	2024/7/12	2025/7/11
ETSTW-Cable 089	SMA type cable (2m)	SF104-11SMA-2000	SN 811889/4	HUBER+SUHNER	2024/7/12	2025/7/11
WTSTW-SW 002	EMI TEST SOFTWARE	EZ EMC	None	Farad	Version ETS-03A1 Version EMEC-3A1+	



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3 Exemption calculation

FCC Rule: 15.247(b)(3)

EIRP = max. conducted output power + antenna gain

EIRP = 12.77 dBm + 0 dBi [antenna gain claimed by manufacturer] = 12.77 dBm = 18.9234 mW

3.2 Exemption Limits for Routine Evaluation according to FCC KDB Publication

RESULT:

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

According to 447498 D01 General RF Exposure Guidance v06:

SAR evaluation, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

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
607	19.55	40.11	59.66	79.62	99.77	SAR Test Exclusion Threshold (mW)

MHz	30	35	40	45	50	mm
607	119.32	139.87	159.43	179.39	199.53	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.

Established separation distance is 5 mm.

Operating frequency band : 470-608 MHz

Max. output power level at 5 mm separation distance at 607 MHz
according to table is: 19.55 mW

The product is exempt from SAR Evaluation/Testing because the output power of 18.92 mW is below the exemption limit of 19.55 mW.