

FCC RF Exposure Exemption report

for

315+433.92MHz TPMS

Model No.: SP501F

FCC ID: TH9SP501F

of

Applicant: Orange Electronic Co., Ltd

Address: 5F., No.29, Keya Rd., Daya Dist., Taichung City 428, Taiwan

Tested and Prepared

by

Worldwide Testing Services (Taiwan) Co., Ltd.

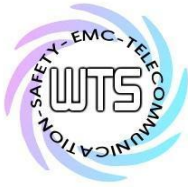
FCC Registration No.: TW1072, TW1140, TW1146, TW1477, TW0037

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



Report No.: W6D22501-24091-EE

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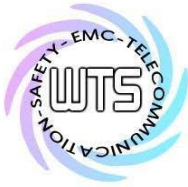


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1 General Information

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 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:

April 02, 2025

Kent Lin

Date

WTS-Lab.

Name

Signature

Technical responsibility for area of testing:

April 02, 2025

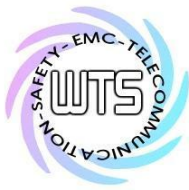
Kevin Wang

Date

WTS

Name

Signature



Worldwide Testing Services(Taiwan) Co., Ltd.

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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: ./.

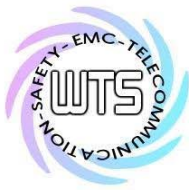
1.3 Application details

Approval holder

Name: Orange Electronic Co., Ltd
Street: 5F., No.29, Keya Rd., Daya Dist.,
Town: Taichung City 428,
Country: Taiwan

Manufacturer: (if applicable)

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



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Date of receipt of test item: January 07, 2025

Date of test: from January 08, 2025 to January 16, 2025

1.4 General information of Test item

Description of test item: 315+433.92MHz TPMS

Type identification: SP501F

Brand name: Orange Electronic

Multi-listing model number: US1-006, 974-XXX

Transmitting frequency: 315MHz / 433.93MHz

Operation mode: Simplex

Voltage supply: Battery 3Vd.c. (CR2050HR)

Antenna type: Loop antenna

Antenna gain: 315MHz: -12dBi / 433.93MHz: -8dBi

Sample no.: #01

Classification:

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

1.7 Test standards

FCC KDB Publication

447498 D04 Interim General RF Exposure Guidance v01



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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.



Worldwide Testing Services(Taiwan) Co., Ltd.

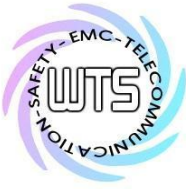
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2.3 Test Equipment List

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_EMCI	None	Farad	Version ETS-03A1 Version EMEC-3A1+	



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3 Equivalent Isotropic Radiated Power (EIRP)

1-mW Test Exemption

315MHz

The maximum power is 70.83 dBuV/m (0.0002mW)

$0.0002\text{mW} \leq 1\text{mW}$

433.93MHz

The maximum power is 82.02 dBuV/m (0.0076mW)

$0.0076\text{mW} \leq 1\text{mW}$

The device is qualify for simultaneous transmission SAR exemption.