

FCC RF Exposure Exemption report
for

TPMS TOOL

Model No.: TPMS5

FCC ID: 2ANR7-TPMS5V1

of

Applicant: ATEQ INSTRUMENTS (ASIA)PTE LTD.
TAIWAN BRANCH (SINGAPORE)

Address: NO.3, LANE 223, SAN JIA DONG STREET,
40642, TAICHUNG, 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.: W6M22408-23659-EE



Registration number: W6M22408-23659-EE
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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:

October 23, 2024

Ken Kang

Date

WTS-Lab.

Name

Signature

Technical responsibility for area of testing:

October 23, 2024

Kevin Wang

Date

WTS

Name

Signature



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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

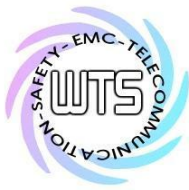
Name: ATEQ INSTRUMENTS (ASIA)PTE LTD.

TAIWAN BRANCH (SINGAPORE)

Street: NO.3, LANE 223, SAN JIA DONG STREET, 40642,

Town: TAICHUNG,

Country: TAIWAN



Worldwide Testing Services(Taiwan) Co., Ltd.

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Manufacturer: (if applicable)

Name: ./.

Street: ./.

Town: ./.

Country: ./.

Application details

Date of receipt of test item: August 29, 2024

Date of test: from August 30, 2024 to October 01, 2024

1.4 General information of Test item

Type of test item: TPMS TOOL

Model number: TPMS5

Brand name: **Snap-on**

Multi-listing model number: MDMAX3.0 (for **MATCO TOOLS**)
TIRE 200 (for **Continental**)

TPMX (for SUN)

Technical data:

Mode	Channel	Conducted Power (dBm)
BR	Ch 0 : 2402 MHz	2.45
	Ch 39 : 2441 MHz	2.19
	Ch 78 : 2480 MHz	1.58
EDR	Ch 0 : 2402 MHz	1.59
	Ch 39 : 2441 MHz	1.32
	Ch 78 : 2480 MHz	0.83

Mode	Conducted Power (dBm)
125kHz	5.89

Operation modes: Duplex

Modulation type: GFSK

Sample no.: #01

Special statement: ./.



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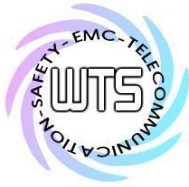
Classification:

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

1.6 Test standards

47 CFR FCC Part 2.1093

447498 D04 Interim General RF Exposure Guidance v06



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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

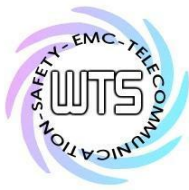
Max Output Power

BT2.0

Code No.	Test equipment	Mode No.	Serial No.	Brand	Cal. Date	Next Cal. Date
ETSTW-RE 050	Attenuator 10dB	50HF-010-1	None	JFW	2024/2/16	2025/2/15
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2024/3/7	2025/3/6
ETSTW-RE 099	DC Block	50DB-007-1	None	JFW	2024/2/16	2025/2/15
ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104 (S_Cable 9)	279067	HUBER+SUHNER	2024/2/16	2025/2/15

125kHz

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 176	Loop Antenna	FMZB 1513-60	39	SCHWARZBECK	2024/8/21	2025/8/20
ETSTW-Cable 090	N type Cable (15m)	EMCCFD400-NM-NM-15000	230732	EMCI	2024/8/3	2025/8/2



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3 Exemption calculation

FCC Rule: 15.247(b)(3)

BT2.0

EIRP = max. conducted output power + antenna gain

EIRP = 2.45 dBm + 0.73 dBi [antenna gain claimed by manufacturer] = 3.18dBm = 2.08mW

125kHz

EIRP = max. conducted output power + antenna gain

EIRP = 5.89 dBm + 0 dBi [antenna gain claimed by manufacturer] = 5.89dBm = 3.88mW

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

BT2.0

MHz	5	10	15	20	25	mm
2402	10.09	19.26	29.35	38.52	48.52	SAR Test Exclusion Threshold (mW)

kHz	30	35	40	45	50	mm
2402	57.70	67.79	77.87	87.05	97.13	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.



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125kHz

kHz	5	10	15	20	25	mm
125	39.00	77.00	116.00	110.04	137.05	SAR Test Exclusion Threshold (mW)

kHz	30	35	40	45	50	mm
125	164.06	192.07	219.08	246.09	274.09	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.

BT2.0

Operating frequency band : 2402-2480 MHz

Max. output power level at 5 mm separation distance at 2402 MHz
according to table is: 10.09 mW

The product is exempt from SAR Evaluation/Testing because the output power of 2.08 mW is below the exemption limit of 10.09 mW.

125kHz

Operating frequency band : 125 kHz

Max. output power level at 5 mm separation distance at 125 kHz
according to table is: 39.00 mW

The product is exempt from SAR Evaluation/Testing because the output power of 3.88 mW is below the exemption limit of 39.00 mW.