RF Exposure Statement

25-0007RP10-006

Product / EUT:	*Tire pressure monitoring sensor*
Type designation:	*030405 - TireCheck External Sensor*
Tested type:	*PN: 030405*
Intended use:	☐ *Fixed* ☒ *Mobile* ☐ *Portable*
FCC ID:	*YMY-030405*
S/N:	*n/a*
Production level:	*n/a*
Hardware version:	*030405*
Firmware version:	*1.0.3*
Manufacturer:	*TireCheck GmbH* *In den Stegwiesen 18* *89542 Herbrechtingen / Germany*
Test remit:	47 CFR Part 1 – Subpart I – §1.1307 (b)(3)(i)(A) 47 CFR Part 2 – Subpart J – §2.1091 KDB 447498 D04 Interim General RF Exposure Guidance v01 1-mW Test Exemption

Applicant:	TireCheck GmbH In den Stegwiesen 18 89542 Herbrechtingen / Germany
EUT-	
Date of arrival:	04/08/2025
Test ID:	25-0007PR15-007
Date(s) of test:	04/16/2025

Burgrieden, 06/26/2025

Released by:

Principal Engineer - Christian Vogelmann

Test laboratory:	EMCE GmbH Ingenieurbüro für EMV-Prüfungen und Schaltungsentwicklung Untere Wiesen 1 / 88483 Burgrieden / Germany

Scope:

1 General information

Project manager:	Mr. S. Vogelmann
Inspector:	Mr. S. Vogelmann
	EMCE GmbH Ingenieurbüro für EMV-Prüfungen und Schaltungsentwicklung
Contact person:	Mr. Markert / TireCheck GmbH
Remarks:	n/a

State of revision:

Source document	New Document	Date / Reviser	Modifications

2 EUT information

Sampling:	The device was selected and provided by the customer. Main product: 030405 - TireCheck External Sensor
Description:	*The EUT is an external tire pressure monitoring sensor that can be directly attached to a brass truck tire valve (8V1). The sensor measures tire pressure and temperature directly on the wheel and transmits data to an appropriate wireless communication device at 433.92 MHz. In normal operation, the data is transmitted every 40 seconds; in warning mode, e.g. in the event of a sudden drop in pressure, the sensor transmits the data every 5 seconds. For service purposes, an LF receiver at 125 kHz is used in a receive-only mode to activate remote control via 433.92 MHz.*
Voltage supply:	*Internal battery, 2.1 – 3.3 VDC*
Frequency list:	*125 kHz, 433.92 MHz*
Max. clock frequency:	*433.92 MHz*
Temperature range:	*-40 °C to +125 °C*
Dimension (mm):	*44 x 29 x 27 (LxWxH)*

RF Applications:

Application	Frequency range	Technology	Architecture for application
Unidirectional data transmission to the base station	433.92 MHz	Proprietary RF technology	☐ Receiver ☒ Transmitter ☐ Transceiver
Enabling service mode and configuration of the RF parameters.	125 kHz	Proprietary RF technology	☒ Receiver ☐ Transmitter ☐ Transceiver ☐ Tagging system (RFID)

Used antennas:

Antenna designation	Manufacturer	Connector / cable length	Gain (dBi) @ f / GHz
Integral antenna @125 kHz	*n/a*	*n/a*	*n/a*
Integral antenna @434 MHz	*TireCheck*	*assembled*	*n/a*

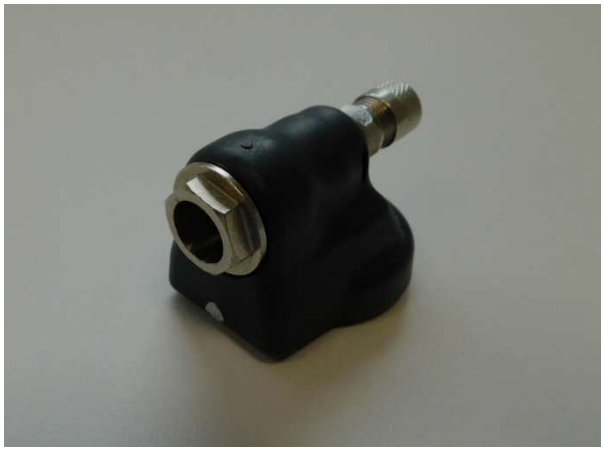
Used band filter:

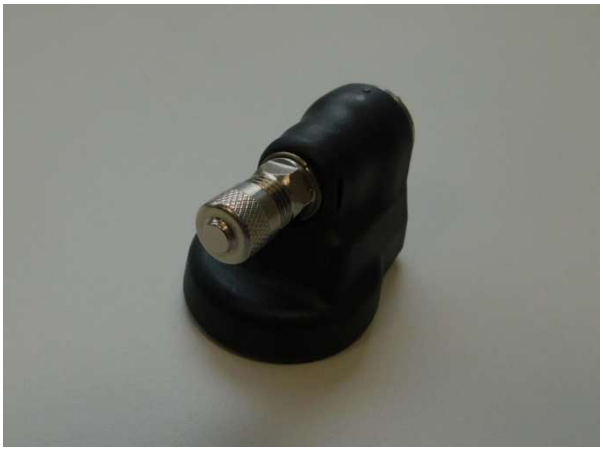
Filter designation	Filter type	Manufacturer	Connector
n/a			

Configuration:

☒ As-delivered condition
☐ Modified
* _____

Pictures of the EUT





3 RF exposure assessment

Measurement procedure:

Rules and specification	47 CFR Part 1 Section 1307 47 CFR Part 2 Section 1091 KDB 447498 D04 Interim General RF Exposure Guidance v01

According to FCC §2.1091 and §1.1307(b), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

1-mW Test Exemption		
☒	Single RF source	Per §1.1307(b)(3)(i)(A), a single RF source is exempt RF device (from the requirement to show data demonstrating compliance to RF exposure limits, as previously mentioned) if the available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption applies to all operating configurations and exposure conditions, for the frequency range 100 kHz to 100 GHz, regardless of fixed, mobile, or portable device exposure conditions. This is a standalone exemption, and it cannot be applied in conjunction with any other test exemption.
☐	Multiple RF sources with separation distance greater than or equal to 2 cm	As discussed in §1.1307(b)(3)(ii)(A), the 1-mW exemption intended for single transmitters may be also applied to simultaneous transmission conditions, within the same host device, when the nearest parts of the antenna structures of the simultaneously operating transmitters are separated by at least 2 cm and the maximum available power each individual transmitting antenna within the same time averaging period is ≤ 1 mW. This exemption may not be combined with any other exemption.
☐	Multiple RF sources with separation distance less than 2 cm	As discussed in §1.1307(b)(3)(ii)(A), the 1-mW exemption intended for single transmitters may be also applied to simultaneous transmission conditions, within the same host device, when the nearest parts of the antenna structures of the simultaneously operating transmitters are separated by less than 2 cm and the aggregate maximum available power of all transmitting antennas is ≤ 1 mW in the same time-averaging period. This exemption may not be combined with any other exemption.

Test Result

The result is based on maximum EIRP measured at 100 % duty cycle (theoretical worst case) documented in the test report 25-0007RP10-015-A.

Field strength E @433.96 MHz @100% DC @3m = 75.32 dBµV/m
EIRP @433.96 MHz @100% DC = -19.88 dBm

The EIRP is calculated according ANSI C63.10:2013:

$EIRP = E_{Meas} + 20\log d_{Meas} - 104.7$

EIRP is the equivalent isotropically radiated power, in dBm
E_{Meas} is the field strength of the emission at the measurement distance, in dBµV/m
d_{Meas} is the measurement distance, in m

Maximum EIRP = 75.32 + 9.54 – 104.7 = -19.84 dBm

Center Frequency	Maximum EIRP		Limit	1-mW Test Exemption
(MHz)	(dBm)	(mW)	(mW)	
433.964	-19.84	0.0102	1	Fulfilled
RF Average Field strength at 433.964 MHz @3 m = 54.82 dBµV/m				

Test result

Limits for SAR exemption:

☒ kept
☐ not kept
☐ not relevant

4 Summary

47 CFR Part 1 Subpart I
47 CFR Part 2 Subpart J
KDB 447498 D04 Interim General RF Exposure Guidance v01

Requirement	Regulation section	Limits	Result	Remarks
1-mW Test Exemption	§ 1.1307 (b)(3)(i)(A)	1 mW	Pass	n/a

Burgrieden, 06/26/2025

Responsible inspector:

Project manager – Steffen Vogelmann

- End of Test Report -