

FCC SAR Exclusion Report

Product name : Dräger Bluetooth module 9x11
Applicant : Dräger Safety AG & Co. KGaA
FCC ID : X6O-BT01
IC ID : 5895F-BT01

Test report No. : 201100701 005 Ver 1.0

Laboratory information

Accreditation

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Documentation

The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The documentation of the testing performed on the tested devices is archived for 10 years at Telefication Netherlands.

Testing Location

Test Site	Kiwa Telefication BV
Test Site location	Wilmersdorf 50 7327 AC Apeldoorn The Netherlands Tel. +31 88998 3393
Test Site FCC	NL0001

Revision History

Version	Date	Remarks	By
v1.00	23-02-2021	Release version	R.T

Table of Contents

Revision History	2
1 General Description	4
1.1 Applicant	4
1.2 Manufacturer	4
1.3 Tested Equipment Under Test (EUT)	4
1.4 SAR Measurement Evaluation	5
1.4.1 Maximum Output Power	5
1.4.2 SAR Testing Exclusions, Portable use	5
1.5 Summary	5

1 General Description

1.1 Applicant

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1.2 Manufacturer

Manufacturer name:	Dräger Safety AG & Co. KGaA
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Contact name:	Lutz Rüffert

1.3 Tested Equipment Under Test (EUT)

Product name:	Dräger Safety
Brand name:	Dräger Safety
FCC ID:	X6O-BT01
IC ID:	5895F-BT01
Model(s):	BT01
Software version:	Zephyr OS 2.2,1
Hardware version:	3711863-02
Date of receipt	02-02-2021
Tests started:	12-02-2021
Testing ended:	19-02-2021

1.4 SAR Measurement Evaluation

1.4.1 Maximum Output Power

The maximum radiated power including tune-up tolerance is shown as below.

Mode	Output power (dBm)
Bluetooth LE	4.67

* from Telefication report

1.4.2 SAR Testing Exclusions, Portable use

According to KDB 447498 D01, the SAR test exclusion condition is based on source-based time-averaged maximum conducted output power, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions. The SAR exclusion threshold is determined by the following formula.

- For the test separation distance ≤ 50 mm

$$\frac{\text{Max. Tune up Power}_{(mW)}}{\text{Min. Test Separation Distance}_{(mm)}} \times \sqrt{f_{(GHz)}} \leq 3.0$$

When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

- For the test separation distance > 50 mm, and the frequency at 100 MHz to 1500 MHz

$$\left[(\text{Threshold at 50 mm in Step 1}) + (\text{Test Separation Distance} - 50 \text{ mm}) \times \left(\frac{f_{(MHz)}}{150} \right) \right]_{(mW)}$$

- For the test separation distance > 50 mm, and the frequency at > 1500 MHz to 6 GHz

$$[(\text{Threshold at 50 mm in Step 1}) + (\text{Test Separation Distance} - 50 \text{ mm}) \times 10]_{(mW)}$$

Mode	Max. Tune-up Power (dBm)	Max. Tune-up Power (mW)	Ant. to Surface (mm)	Calculated Result	Require SAR Testing?
	4.67	2.9	5	0.898	No

Note:

- When separation distance ≤ 50 mm and the calculated result shown in above table is ≤ 3.0 , the SAR testing exclusion is applied.
- When separation distance > 50 mm and the device output power is less than the calculated result (power threshold, mW) shown in above table, the SAR testing exclusion is applied.

1.5 Summary

Since the SAR testing for all device orientations apply SAR test exclusion per KDB 447498, SAR testing for this device is not required.