

RF Exposure Evaluation Report

Product : Radar R
Trade mark : Rentokil
Model/Type reference : 5000006S
Serial Number : N/A
Report Number : EED32O81145302
FCC ID : 2AK3P-5000006S
Date of Issue : Feb. 09, 2023
Test Standards : 47 CFR Part 1.1307
47 CFR Part 1.1310
447498 D04 Interim General RF
Exposure Guidance v01
Test result : PASS

Prepared for:

Rentokil Initial 1927 plc
Compass House, Manor Royal, Crawley, West
Sussex, RH10 9PY, United Kingdom

Prepared by:

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2 Version

Version No.	Date	Description
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3 Contents

	Page
1 COVER PAGE	1
2 VERSION	1
3 CONTENTS	3
4 GENERAL INFORMATION	4
4.1 CLIENT INFORMATION.....	4
4.2 GENERAL DESCRIPTION OF EUT.....	4
4.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD.....	4
4.4 TEST LOCATION.....	5
4.5 DEVIATION FROM STANDARDS.....	5
4.6 ABNORMALITIES FROM STANDARD CONDITIONS.....	5
4.7 OTHER INFORMATION REQUESTED BY THE CUSTOMER.....	5
5 SAR EVALUATION	6
5.1 RF EXPOSURE COMPLIANCE REQUIREMENT.....	6
5.1.1 Limits.....	6
5.1.2 Test Procedure.....	6
5.1.3 EUT RF Exposure Evaluation.....	7

4 General Information

4.1 Client Information

Applicant:	Rentokil Initial 1927 plc
Address of Applicant:	Compass House, Manor Royal, Crawley, West Sussex, RH10 9PY, United Kingdom
Manufacturer:	Rentokil Initial 1927 plc
Address of Manufacturer:	Compass House, Manor Royal, Crawley, West Sussex, RH10 9PY, United Kingdom
Factory:	UK Circuits and Electronics Solutions Ltd
Address of Factory:	Greengate Industrial Estate, Greenside Way, Middleton, Manchester, M24 1SW, United Kingdom

4.2 General Description of EUT

Product Name:	Radar R
Model No. (EUT):	5000006S
Add Model No.:	N/A
Trade Mark:	Rentokil

4.3 Product Specification subjective to this standard

Operation Frequency:	915.25MHz~927.50MHz
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	LoRa Chirp Spread Spectrum
Product Type:	Fix Location
Test Power Grade:	Default
Test Software of EUT:	Putty.exe
Antenna Type:	Internal antenna
Antenna Gain:	5.48dBi
Power Supply:	Battery: DC 6.0V
Test Voltage:	DC 6.0V
Sample Received Date:	Sep. 01, 2022
Sample tested Date:	Jan. 11, 2023 to Feb.03, 2023
Remark:	Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.

4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

5 SAR Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Limits

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula (B.1).

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

The 1 mW Blanket Exemption of § 1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance.

5.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

5.1.3 EUT RF Exposure Evaluation

For Lora:

Frequency (MHz)	Separation distance (cm)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	Result
915.25	20	16.04	5.48	21.52	141.906	1867.1100	PASS

Note:

① $ERP (dBm) = \text{Max. Conducted Output power (dBm)} + \text{Antenna Gain (dBi)}$;

② The test data please refer to the report of EED32081365001, and only the worst case data was recorded in this report.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

*** End of Report ***