

RF Exposure Evaluation Report

Product : Control Panel LTE-M 915
Trade mark : Rentokil Initial
Model/Type reference : 5000010R
Serial Number : N/A
Report Number : EED32Q80900003
FCC ID : 2AK3P-5000010R
Date of Issue : Jun. 26, 2024
Test Standards : 47 CFR Part 1.1307
47 CFR Part 1.1310
47 CFR Part 2.1091
47 CFR Part 2.1093
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:

Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District,
Shenzhen, Guangdong, China
TEL: +86-755-3368 3668
FAX: +86-755-3368 3385

Compiled by:

Frazer Li

Frazer Li

Approved by:

Aaron Ma

Aaron Ma

Reviewed by:

Tom Chen

Tom Chen

Date of Issue:

Jun. 26, 2024

Check No.:1845310822



1 Version

Version No.	Date	Description
00	Jun. 26, 2024	Original

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3 General Information

3.1 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 & Electronics Solutions Ltd
Address of Factory:	Greengate Industrial Estate, Greenside Way, Middleton, Manchester M24 1SW, United Kingdom

3.2 General Description of EUT

Product Name:	Control Panel LTE-M 915
Model No.(EUT):	5000010R
Trade Mark:	Rentokil Initial

3.3 Product Specification subjective to this standard

Frequency Range:	Lora :915.25MHz to 927.5MHz GSM 850: TX:824.2~848.8MHz RX: 869.2~893.8MHz DCS 1900: TX:1850.2~1909.8MHz RX: 1930.2~1989.8MHz LTE Band 2 TX:1850~1910MHz RX:1930~1990MHz LTE Band 4 TX:1710~1755MHz RX:2110~2155MHz LTE Band 5 TX:824~849MHz RX:869~894MHz LTE Band 12 TX:699~716MHz RX:729~746MHz LTE Band 13 TX: 777~787MHz RX:746~756MHz LTE Band 26 TX:814~849MHz RX: 859~894MHz	
Modulation Type:	Lora :FSK Chirp GPRS: GMSK; EGPRS: GMSK, 8PSK LTE: QPSK,16QAM	
Test Power Grade:	Default	
Test Software of EUT:	putty.exe	
Antenna Type:	Lora :Internal antenna 2G&4G:External antenna	
Antenna Gain:	Lora:1.10dBi, 2G&4G:2.15dBi	
Power Supply:	Adapter:	Model: DYS812-050210W-K Input: 100-240V~50/60Hz,0.35A MAX Output: 5.0V,2.1A,10.5W
Sample Received Date:	Sep. 01, 2022	
Sample tested Date:	Jan. 11, 2023 to Jan.16, 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.

3.4 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

3.5 Deviation from Standards

None.

3.6 Abnormalities from Standard Conditions

None.

3.7 Other Information Requested by the Customer

None.

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 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.

4.1.2 Test Procedure

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

4.1.3 EUT RF Exposure Evaluation

For Stand alone:

1) For Lora:

Frequency (MHz)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP (mW)	Limit (mW)	Result
915.25	16.04	1.10	17.14	14.99	31.550	1867.11	PASS

2) For 2G&4G:

Frequency (MHz)	EIRP (dBm)	ERP (dBm)	ERP (mW)	Limit (mW)	Result
824.0	30.50	28.35	683.912	1680.960	PASS

Remark:

1.ERP= Maximum tune up peak conducted output power + Antnna gain;

2.EIRP=ERP+2.15;

3.The test data please refer to report of EED32Q80900001,EED32Q80900002 and IC:5131A-ME910C1WW report.And only the worst case mode of GPRS 4 Slots 850 MHz Band was recorded in the report.

4.Minimum use distance (m) is 0,2.

3) For Lora+2G&4G:

SUM=31.550/1867.11+683.912/1680.960=0.4238 < 1

Result: Pass

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 ***