



TEST REPORT

Applicant Name: McGrath Locks PTY LTD
Address: 4/36 Windorah St, Stafford Qld 4053, Australia
Report Number: 2504Z01847E-RF
FCC ID: 2BTTC-ML-HAMILTON

Test Standard (s)

47 CFR §2.1091

Sample Description

Product Name: Digital Lock
Model No.: ML-Hamilton
Trade Mark: 
Date Received: 2025-11-27
Report Date: 2026-04-08

Test Result:	The EUT complied with the standards above.
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Prepared and Checked By:

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EMC Engineer

Approved By:

Bob. Liao

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EMC Engineer

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TABLE OF CONTENTS

DOCUMENT REVISION HISTORY 3

GENERAL INFORMATION 4

 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT) 4

 OBJECTIVE 4

 TEST FACILITY 4

RF EXPOSURE 5

 APPLICABLE STANDARD..... 5

 RESULT 5

EXHIBIT A-EUT PHOTOGRAPHS 7

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
Rev.00	2504Z01847E-RF	Original Report	2026-04-08

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product Name	Digital Lock
Tested Model	ML-Hamilton
Voltage Range [#]	DC 6V from 4*AA Alkaline batteries
Note 1: The device (Digital Lock) has two parts: Exterior Assembly and Interior Assembly. Note 2: The Exterior Assembly has BLE / NFC function. Note 3: The Interior Assembly has 2.4G WIFI function.	

Frequency Range	NFC: 13.56MHz BLE: 2402-2480MHz 2.4G Wi-Fi: 2412-2462MHz
Maximum Conducted Output Peak Power (actual test result)	Exterior Assembly: BLE: -11.14 dBm
	Interior Assembly: 2.4G Wi-Fi: 25.03 dBm
Maximum E-field Strength (actual test result)	NFC: 64.34dBuV/m@3m
Antenna Specification [#]	Exterior Assembly: BLE: Internal Antenna, Gain:1.78 dBi NFC: Internal Antenna (The antenna gain is provided by the applicant.)
	Interior Assembly: 2.4G Wi-Fi: Internal Antenna, Gain: 2.62 dBi (The antenna gain is provided by the applicant.)
Sample/EUT Status	Good condition

Objective

This test report is in accordance with Part 2-Subpart J, Radiofrequency Radiation Exposure of the Federal Communication Commission rules.

The tests were performed in order to determine compliance with FCC §2.1091 rules.

Test Facility

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the Floor 1, KuMaKe Building, Dongzhou Community, Guangming Street, Guangming District, Shenzhen, Guangdong, China.

Accredited by American Association for Laboratory Accreditation (A2LA).The Certificate Number is 4297.01.

RF EXPOSURE

Applicable Standard

According to subpart 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (Minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

Result

Calculated Formulary:

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

- For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

Calculated Result:**Exterior Assembly:**

Radio	Frequency (MHz)	Tune up conducted power [#] (dBm)	Antenna Gain [#] (dBi)	EIRP		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
				(dBm)	(mW)			
BLE	2402-2480	-11.0	1.78	-9.22	0.1197	20	0.0000238	1.0
NFC	13.56	/	/	-30.86	0.0008	20	0.0000002	0.98

Note 1: The tune-up power and antenna gain are declared by the applicant.

Note 2: EIRP= Tune up conducted power + Antenna Gain

Note 3: E[dBμV/m] = EIRP[dBm] + 95.2 for d = 3 m.

For NFC EIRP= 64.34 dBuV/m@3m - 95.2 = -30.86 dBm

Note 4: The BLE and NFC can transmission simultaneously.

Interior Assembly:

Radio	Frequency (MHz)	Tune up conducted power [#] (dBm)	Antenna Gain [#] (dBi)	EIRP		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
				(dBm)	(mW)			
2.4G Wi-Fi	2412-2462	25.50	2.62	28.12	648.634	20	0.129	1.0

Note 1: The tune-up power and antenna gain are declared by the applicant.

Note 2: EIRP= Tune up conducted power + Antenna Gain

The Exterior Assembly and Interior Assembly can transmission simultaneously.

Simultaneous transmitting consideration (worst case):

The ratio = BLE/Limit + NFC/Limit + 2.4G Wi-Fi/Limit
= 0.0000238/1.0 + 0.0000002/0.98 + 0.129 /1.0
= 0.129024
<1.0

Result: Compliance. The device compliant Simultaneous transmission at 20cm distances.

EXHIBIT A-EUT PHOTOGRAPHS

Please refer to the Attachment No.1 2504Z01847E-RF EUT External Photos and Attachment No.2 2504Z01847E-RF EUT Internal Photos.

******* END OF REPORT *******