

EMF TEST REPORT

Test Report No. : OT-264-RWD-031
Reception No. : 2405001576
Applicant : MOTREXEV CO.,LTD
Address : 801-805, 619 Baekbeom-ro, Seo-gu, Incheon, 22830, South Korea
Manufacturer : MOTREXEV CO.,LTD
Address : 801-805, 619 Baekbeom-ro, Seo-gu, Incheon, 22830, South Korea
Type of Equipment : RFID card Reader BOARD
FCC ID : 2BVH9MEV-RF23A
Model Name : MEV-RF23A
Multiple Model Name : N/A
Serial number : N/A
Total page of Report : 7 pages (including this page)
Date of Incoming : January 08, 2026
Date of Issuing : April 08, 2026

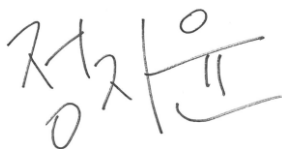
SUMMARY

The equipment complies with the requirements of **FCC CFR 47 § 1.1307**

This test report contains only the result of a single test of the sample supplied for the examination.

It is not a general valid assessment of the features of the respective products of the mass-production.

This test report is not associated with the accreditation granted by the Korean Laboratory Accreditation Scheme (KOLAS).





Tested by
 Ji-Yun, Jeong / Engineer
 ONETECH Corp.

Reviewed by
 Tae-Ho, Kim / Chief Engineer
 ONETECH Corp.

Approved by
 Jae-Ho, Lee / Director
 ONETECH Corp.

CONTENTS

Page

1. VERIFICATION OF COMPLIANCE	4
2. GENERAL INFORMATION	5
2.1 PRODUCT DESCRIPTION.....	5
2.2 MODEL DIFFERENCES.....	5
3. EUT MODIFICATIONS.....	5
4. MAXIMUM PERMISSIBLE EXPOSURE	6
4.1 RF EXPOSURE CALCULATION	6
4.2 EUT DESCRIPTION.....	6
4.3 CALCULATED MPE SAFE DISTANCE.....	7

Revision History

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-264-RWD-031	April 08, 2026	Initial Release	All

1. VERIFICATION OF COMPLIANCE

Applicant : MOTREXEV CO.,LTD
Address : 801-805, 619 Baekbeom-ro, Seo-gu, Incheon, 22830, South Korea
Contact Person : WOO YOUNG, KIM / Senior HW Engineer
Telephone No. : +82-10-9040-7050
FCC ID : 2BVH9MEV-RF23A
Model Name : MEV-RF23A
Brand Name : -
Serial Number : N/A
Date : April 08, 2026

DEVICE TYPE	DXX – Low Power Communication Device Transmitter
E.U.T. DESCRIPTION	RFID card Reader BOARD
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	KDB 447498 D01 Interim General RF Exposure Guidance v06
TYPE OF EQUIPMENT TESTED	Pre-Production
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	Certification
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	None

-. The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

2. GENERAL INFORMATION

2.1 Product Description

The MOTREXEV CO.,LTD, Model MEV-RF23A (referred to as the EUT in this report) is a RFID card Reader BOARD.
The product specification described herein was obtained from product data sheet or user's manual.

DEVICE TYPE	RFID card Reader BOARD
OPERATING FREQUENCY	13.56 MHz
MODULATION TYPE	ASK
ANTENNA TYPE	PCB Antenna
POWER REQUIREMENT	DC 5.0 V
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1 MHz)	27.12 MHz

2.2 Model Differences

-. None

3. EUT MODIFICATIONS

-. None

4. MAXIMUM PERMISSIBLE EXPOSURE

4.1 RF Exposure Calculation

According to the FCC rule 1.1310 table 1B, the limit for the maximum permissible RF exposure for an uncontrolled environment are $180/\text{f}^2$ mW/cm² for the frequency range between 1.34 MHz and 30 MHz and 1.0 mW/cm² for the frequency range between 1 500 MHz and 100 000 MHz.

The electric field generated for a 1 mW/cm² exposure is calculated as follows:

$$E = \sqrt{(30 * P * G) / d}, \text{ and } S = E^2 / Z = E^2 / 377, \text{ because } 1 \text{ mW/cm}^2 = 10 \text{ W/m}^2$$

Where

S = Power density in mW/cm², Z = Impedance of free space, 377 Ω

E = Electric field strength in V/m, G = Numeric antenna gain, and d = distance in meter

Combining equations and rearranging the terms to express the distance as a function of the remaining variable

$$d = \sqrt{(30 * P * G) / (377 * 10 \text{ S})}$$

Changing to units of mW and cm, using P (mW) = P (W) / 1 000, d (cm) = 0.01 * d (m)

$$d = 0.282 * \sqrt{(P * G) / S}$$

Where

d = distance in cm, P = Power in mW, G = Numeric antenna gain, and S = Power density in mW/cm²

4.2 EUT Description

Kind of EUT	RFID card Reader BOARD
MAX. RF OUTPUT POWER	58.51 dBμV/m
Device Category	☐ Portable (< 20 cm separation) ☒ Mobile (> 20 cm separation) ☐ Others
Exposure Evaluation Applied	☒ MPE ☐ SAR ☐ N/A

4.3 Calculated MPE Safe Distance

Frequency (MHz)	Operating Mode	Target Power W/tolerance (dBm)	Max tune up power		Antenna Gain		Safe Distance (cm)	Power Density (mW/cm ²) @ 20 cm Separation	Limit (mW/ cm ²)
			(dBm)	(mW)	Log	Linear			
13.56	RFID	-36.69 ± 0.5	-36.19	0.000 2	-	-	0.004 0	0.000 000 039	0.98

E.I.R.P[dBm] = Field strength (dBμV/m)-95.2= 58.51 dBμV/m – 95.2 = -36.69 dBm

Limit = (180/f²)=(180/13.56²) = 0.98(mW/cm²)

According to above table, for 13.56 MHz, safe distance,

$$D = 0.282 * \sqrt{(0.000\ 2 * 1)/1.00} = 0.004\ 0\ \text{cm}.$$

For getting power density at 20 cm separation in above table, following formula was used.

$$S = P * G / (4\pi * R^2) = 0.000\ 2 * 1 / (4 * \pi * 20^2) = 0.000\ 000\ 039$$

Where:

S = Power Density,

P = Radiated Power (Field strength (dBμV/m)-95.2)

G = Gain of Transmit Antenna (linear gain), R = Distance from Transmitting Antenna