

**COMPLIANCE WORLDWIDE INC.
TEST REPORT 100-26RF**

**In Accordance with the Requirements of
Federal Communications Commission CFR Title 47 Part 2.1093:2020
Radio Frequency Exposure Evaluation: Portable Devices**

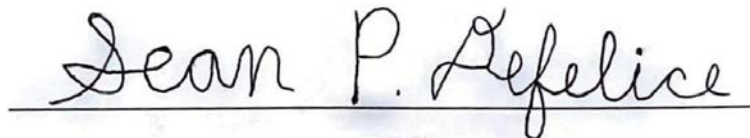
**Issued to
Napco Security Technologies, Inc.
333 Bayview Avenue
Amityville, NY 11701**

**for the
13.56 MHz MIFARE Smart Card Reader
Model: R-MI**

FCC ID: AD8R-MI

Report Issued on January 20, 2026

Tested by



Sean P. Defelice

Reviewed by



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1. Scope

This test report certifies that the Napco Security Technologies Model R-MI, as tested, meets the FCC Part 2.1093 requirements exempting the device from a SAR Evaluation.

The scope of this test report is limited to the test sample provided by the client, only in as much as that sample represents other production units. If any significant changes are made to the unit, the changes shall be evaluated and a retest may be required. Measurement Uncertainty will not be applied to any of the measurement / testing results in this test report to determine pass/fail criteria per the Decision Rule as defined in ISO/IEC Guide 17025-2017 Clause 3.7.

2. Product Details

2.1. Manufacturer:	Napco Security Technologies
2.2. Model Numbers:	R-MI
2.3. Serial Numbers:	Pre-production
2.4. Description:	NAPCO's 13.56MHz R-MI MIFARE Smart Card Reader is for use with NAPCO's MIFARE EV1 / EV2 / EV3 smart cards. The R-MI MIFARE Smart Card Reader provides secure, contact-less smart card technology with fast data transmission and advanced encryption.
2.5. Power Source:	7.5 to 16 VDC
2.6. Hardware Revision:	N/A
2.7. Software Revision:	N/A
2.8. Modulation Type:	ASK
2.9. Operating Frequency:	13.56 MHz
2.10. EMC Modifications:	None

3. Product Configuration

3.1. Operational Characteristics & Software

The device under test is powered up normally.

3.2. EUT Hardware

Device	Manufacturer	Model	Serial No.
13.56 MHz Reader	Napco Security	R-MI	Pre-production

3.3. EUT Cables/Transducers

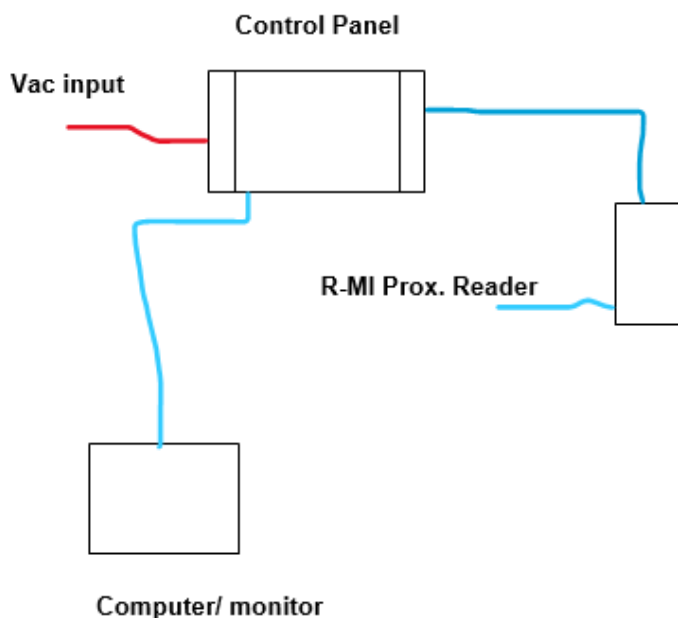
Cable Type	Shield	Length	From	To
Wiegand	No	2M	EUT	Data / Power

3. Product Configuration (continued)

3.4. Support Equipment

Device	Manufacturer	Model	Serial No.
Control Panel	Napco Security	NA-1	MAC: D4F0B4F00209

3.5. Block Diagram



4. Measurements Parameters

4.1. Measurement Equipment and Software Used to Perform Test

Device	Manufacturer	Model No.	Serial No.	Cal Due	Interval
EMI Test Receiver, 9kHz - 7GHz ¹	Rohde & Schwarz	ESR7	101156	10/26/2026	5 Years
EMI Test Receiver, 10 Hz - 7GHz ¹	Rohde & Schwarz	ESR7	101770	7/23/2026	2 Years
Loop Antenna 9 kHz - 30 MHz	EMCO	6512	9309-1139	4/14/2026	4 Years
Digital Barometer	Control Company	4195	ID236	3/15/2026	2 Years
Barometric Pressure/Humidity & Temp Datalogger	Extech Instruments	SD700	Q590483	4/4/2026	2 Years

¹ ESR7 Firmware revision: V3.48 SP3, Date installed: 09/30/2020 Previous V3.48 SP2, installed 07/23/2020.

4. Measurements Parameters (continued)

4.2. Software Used to Perform Test

Manufacturer	Software Description	Title or Model #	Rev.	Report Sections
Compliance Worldwide	Test Report Generation Software	Test Report Generator	1.0	Used to process conducted emissions data

4.3 Measurement & Equipment Setup

Test Dates:	1/2/2026
Test Engineer:	Sean Defelice
Site Temperature (°C):	21
Relative Humidity (%RH):	42
Frequency Range:	9 kHz to 1 GHz
Measurement Distance:	3 Meters and 1 Meter
EMI Receiver IF Bandwidth:	200 Hz (30 kHz – 150 kHz) 9 kHz (150 kHz – 30 MHz) 120 kHz (30 MHz – 1 GHz)
EMI Receiver Avg Bandwidth:	≥ 3 * RBW or IF(BW)
Detector Functions:	Peak, Quasi-Peak and Average

4.4 Test Procedure

The test measurements contained in this report are based on the requirements detailed in FCC Part 15, Subpart C - Intentional Radiators, notably Section 15.225, Operation within the band 13.110 – 14.010 MHz using ANSI C63.10: 2020, American National Standard for Methods for Unlicensed Wireless Devices.

In addition, FCC KDB 447498 D01 General RF Exposure Guidance v06, October 23, 2015 are referenced for the testing and requirements detailed in this report.

5. Choice of Equipment for Test Suites

5.1. Choice of Model

This test report is based on the test samples supplied by the manufacturer and are reported by the manufacturer to be equivalent to the production units.

5.2. Presentation

The test sample was tested complete with all required ancillary equipment. Refer to Section 3 of this report for the product equipment configuration.

5.3. Choice of Operating Frequencies

The transmitter in the unit under test utilizes a single operating frequency at approximately 13.56 MHz

6. Measurement Data (continued)

6.1. Operation within the Band 13.110 MHz – 14.010 MHz (15.225 (a), (b) and (c))

Radiated Field Strength of Fundamental (15.225 (a), (b) and (c))

- Requirement: (a) The field strength of any emissions within the band 13.553 - 13.567 MHz shall not exceed 15,848 microvolts/meter (84 dBμV/m) at 30 meters.
- (b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter (50.5 dBμV/m) at 30 meters.
- (c) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter (40.5 dBμV/m) at 30 meters.

Test Note: Reference ANSI C63.10-2013 sections 5.3.2 and 6.4.4.2. The following formula was used to extrapolate the measurement distance to the limit distance:

$$FS_{\text{limit}} = FS_{\text{max}} - 40 \log \left(\frac{d_{\text{near field}}}{d_{\text{measure}}} \right) - 20 \log \left(\frac{d_{\text{limit}}}{d_{\text{near field}}} \right) \quad \text{Equation 1}$$

FS_{limit} is the calculation of field strength at the limit distance (dBμV/m)

FS_{max} is the measured field strength, expressed in (dBμV/m QP @ 3M)

d_{near field} is the λ / 2π distance (Meters)

d_{measure} is the distance of the measurement point from the EUT (Meters)

d_{limit} is the reference limit distance (Meters)

44.86

66.25
3.52
3.00
30.00

The screen captures on the following pages display the value measured at a distance of 3 meters. This distance value was adjusted to the limit distance using the formula detailed in Equation 1.

Result: Compliant - The fundamental frequency radiated field strength of the device under test complies with the requirements detailed in FCC Part 15.225, Section (a).

The peak field strength of the device under test met the average requirement. For this reason, the quasi-peak field strength was not factored using a duty cycle correction factor.

Freq. (MHz)	Corr Ampl. ¹ (dBμV/m) Peak	Corr. Ampl. ¹ (dBμV/m) (3M) QP	Corr. Ampl. ¹ (dBμV/m) (30M) QP	FCC 15.225 Limit (dBμV/m) QP 30M	Margin (dB)	Ant Pos. Par/Per Gnd Par	Ant Height (cm)	Turntable Azimuth (Deg)	Result
13.56	70.79	66.25	44.86	84.00	-39.14	Parallel	100	350	Compliant

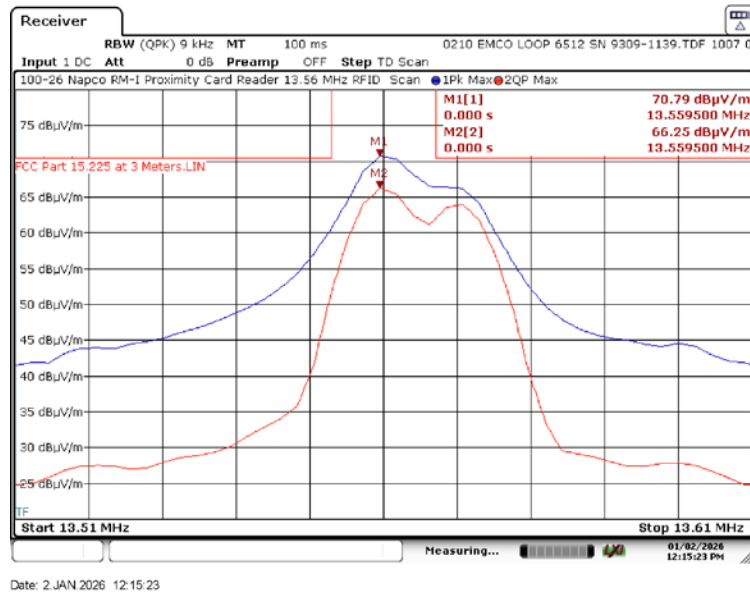
¹ Measurement has been extrapolated from 3 meters to 30 meters using Equation 1 on this page.

6. Measurement Data (continued)

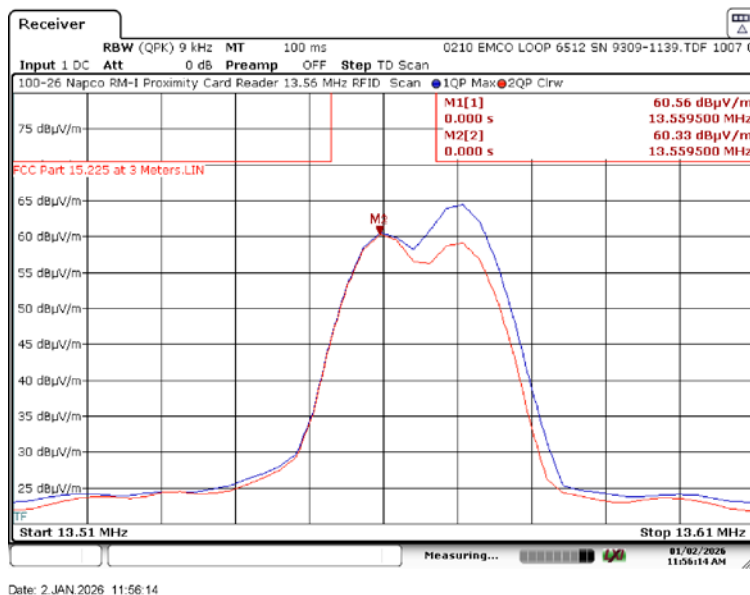
6.1. Operation within the Band 13.110 MHz – 14.010 MHz (15.225 (a), (b) and (c))

Radiated Field Strength of Fundamental (15.225 (a), (b) and (c)) (continued)

6.1.1. Worst Case Field Strength of the Fundamental – Parallel Antenna



6.1.2. Worst Case Field Strength of the Fundamental – Perpendicular Antenna

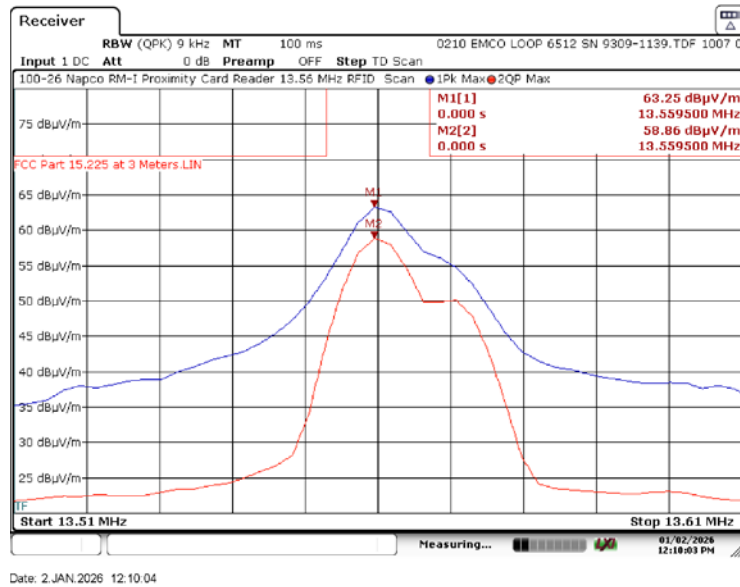


6. Measurement Data (continued)

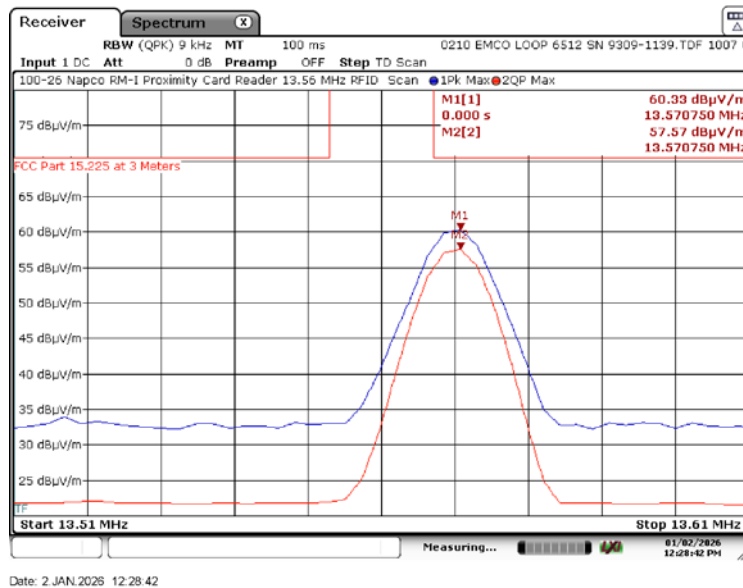
6.1. Operation within the Band 13.110 MHz – 14.010 MHz (15.225 (a), (b) and (c))

Radiated Field Strength of Fundamental (15.225 (a), (b) and (c)) (continued)

6.1.3. Worst Case Field Strength of the Fundamental – Ground Parallel Antenna



6.1.4. Worst Case Field Strength of the Fundamental – Ambient Signal



Note: Radio Marti broadcasting on 13.57 MHz Shortwave out of Greenville, NC

6. Measurement Data (continued)

6.2. Public Exposure to Radio Frequency Energy Levels (FCC Part 2.1093:2020)

6.2.1. 2.1093 Requirements

Requirement: Portable devices are subject to radio frequency radiation exposure requirements. For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.

For frequencies below 100 MHz, the following may be considered for SAR test exclusion.

For test separation distances > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by $[1 + \log(100/f(\text{MHz}))]$

For test separation distances ≤ 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by $\frac{1}{2}$.

SAR measurement procedures are not established below 100 MHz.

Test Notes: The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by the following formula:

$$\text{SAR Test Exclusion} = \frac{P_{\text{MAX}}}{d_{\text{MIN}}} \times \sqrt{f_{(\text{GHz})}} \quad (1)$$

P_{MAX}	mW	Maximum power of channel, including tune-up tolerance
d_{MIN}	mm	Minimum test separation distance, mm (≤ 50 mm)
$f_{(\text{GHz})}$	GHz	$f_{(\text{GHz})}$ is the RF channel transmit frequency in GHz (>100 MHz and <6 GHz)

6. Measurement Data (continued)

6.2. Public Exposure to Radio Frequency Energy Levels (FCC Part 2.1093:2020)

6.2.1. 2.1093 Requirements (Continued)

Enter

1. Value for 1-g SAR (3.0) or 10g extremity SAR (7.5):	3.0	Numeric
2. Test separation distance (mm):	50	mm
3. Test frequency of interest:	13.56	MHz

Power allowed at a SAR numeric threshold of 3.0 at 50mm.	474.3416	mW
Power threshold separation distances > 50mm and < 200mm	885.9469	mW (100 MHz)
Power threshold separation distances < 50mm	442.974	mW (Tst Freq)

Enter

1. Value for 1-g SAR (3.0) or 10g extremity SAR (7.5):	7.5	Numeric
2. Test separation distance (mm):	50	mm
3. Test frequency of interest:	13.56	MHz

Power allowed at a SAR numeric threshold of 7.5 at 50mm.	1,185.8541	mW
Power threshold separation distances > 50mm and < 200mm	2,214.8675	mW (100 MHz)
Power threshold separation distances < 50mm	1,107.434	mW (Tst Freq)

6.2.1 SAR Test Exclusion (FCC KDB 447498 D01 v06, Clause 4.3.1.(c)(2))

Frequency (MHz)	MPE Distance (mm)	DUT Output Power (mW)	SAR Test Exclusion (mW)	Result
	(1)	(2)	(3)	
13.56	≤50	0.00362243	442.974	Compliant
13.56	≤50	0.00362243	1,107.434	Compliant

- (1) FCC KDB 447498 D01 v06, Clause 4.3.1.(c)(2)
- (2) Converted from 3M field strength measurement ($FS_{dB\mu V/m} - 95.2$)
Reference Section 6.1, Measured Field Strength
- (3) $\frac{1}{2}(1 + \log(100/f_{MHz}))$
Formula detailed in KDB 447498 D01 v06, Clause 4.3.1.(c) (2)

Conclusion: Compliant - The device under test meets the exclusion requirement detailed in FCC OET 447498, dated October 23, 2015 Clause 4.3.1 (a).