

September 10, 2025

HID Global Corporation (US)
611 Center Ridge Drive
Austin, TX 78753
USA

Dear Richard Georgerian,

Enclosed is the EMC test report for testing of the HID Global Corporation (US), OMNIKEY SE Plug, Crescendo NFC Reader, and SRD Model: RDU552 tested to the requirements of FCC Part 2.1091, RSS-102 Issue 6, IEC62311 Issue 2, and AS/NZS 2772: 2016

Thank you for using the services of Eurofins E&E North America. If you have any questions regarding these results or if MET can be of further service to you, please do feel free to contact me.

Sincerely,



Nancy LaBrecque
Documentation Department
Eurofins Electrical and Electronic Testing NA, Inc.

Reference: WIRA135777 – MPE-HF_R3



Certificates and reports shall not be reproduced except in full, without the written permission of Eurofins E&E North America. While use of the A2LA logo in this report reflects MET accreditation under these programs, the report must not be used by the client to claim product certification, approval, or endorsement by A2LA or any agency of the Federal Government. This letter of transmittal is not a part of the attached report.

Eurofins MET Laboratories Inc. (Eurofins E&E North America) is part of the Eurofins Electrical & Electronics (E&E) global compliance network.

**RF Exposure Criteria
Test Report
Using Maximum Permissible Exposure (MPE) Calculations**

for the

**HID Global Corporation (US)
OMNIKEY SE Plug (OMNIKEY Plug, Crescendo NFC Reader, and SRD Model: RDU552)**

Tested under

FCC Part 2.1091, RSS-102 Issue 6, IEC62311 Issue 2, and AS/NZS 2772: 2016

Report: WIRA135777 – MPE-HF_R3

September 10, 2025



Bryan Taylor, Wireless Team Lead
Electromagnetic Compatibility Lab



Nancy LaBrecque
Documentation Department

Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.



Matthew Hinojosa
EMC Manager, Austin Electromagnetic Compatibility Lab

Report Status Sheet

Revision	Report Date	Reason for Revision
0	June 20, 2025	Initial Issue.
1	August 11, 2025	Customer Requested Changes.
2	August 27, 2025	TCB Reviewer Requested Changes
3	September 10, 2025	TCB Reviewer Requested Changes

Table of Contents

1.0 Requirements Summary	8
2.0 Equipment Configuration	9
2.1 Overview	9
2.2 Test Site	10
2.3 References	10
2.4 Description of Test Sample	10
2.5 Modifications	11
2.5.1 Modifications to EUT	11
2.5.2 Modifications to Test Standard	11
2.6 Disposition of EUT	11
3.0 Transmitter Requirements	12

List of Tables

Table 1. Summary of Test Results	8
Table 2. EUT Summary Table	9
Table 3. References	10
Table 4. Transmitters Onboard.....	11

List of Terms and Abbreviations

AC	Alternating Current
ACF	Antenna Correction Factor
Cal	Calibration
<i>d</i>	Measurement Distance
dB	Decibels
dBμA	Decibels above one microamp
dBμV	Decibels above one microvolt
dBμA/m	Decibels above one microamp per meter
dBμV/m	Decibels above one microvolt per meter
DC	Direct Current
E	Electric Field
DSL	Digital Subscriber Line
ESD	Electrostatic Discharge
EUT	Equipment Under Test
<i>f</i>	Frequency
CISPR	Comite International Special des Perturbations Radioelectriques (International Special Committee on Radio Interference)
GRP	Ground Reference Plane
H	Magnetic Field
HCP	Horizontal Coupling Plane
Hz	Hertz
IEC	International Electrotechnical Commission
kHz	kiloHertz
kPa	kiloPascal
kV	kilovolt
LISN	Line Impedance Stabilization Network
MHz	MegaHertz
μH	microHenry
μF	microFarad
μs	microseconds
PRF	Pulse Repetition Frequency
RF	Radio Frequency
RMS	Root-Mean-Square
V/m	Volts per meter
VCP	Vertical Coupling Plane

1.0 Requirements Summary

Page Number	Test Name	Result
12	IEC62311: 2019 MPE Limits (For General Public Exposure)	Compliant
13	RSS-102 Issue 6 MPE Limits (For General Public Exposure)	Compliant
13	FCC Part 2.1091 MPE Limits (For General Public Exposure)	Compliant

Table 1. Summary of Test Results

2.0 Equipment Configuration

2.1 Overview

Eurofins MET Labs was contracted by HID Global Corporation (US) to perform testing on the OMNIKEY SE Plug, under HID Global Corporation (US)'s purchase order number 1110995287.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the HID Global Corporation (US) OMNIKEY SE Plug.

The Model name, OMNIKEY SE Plug, used in the following test report pages will also represent the Model names, OMNIKEY Plug, Crescendo NFC Reader, and SRD Model: RDU552.

The host device was powered an external AC/DC power supply. The AC input voltage was set at 120V/60Hz.

The results obtained relate only to the item(s) tested.

Product Name:	OMNIKEY SE Plug	
Sample Number:	25512-1	
FCCID:	JQ6-RDU552	
ICID:	2236B-RDU552	
	Primary Power:	4.75 – 5.5VDC (USB)
	Type of Modulation(s):	ASK
	Equipment Code:	DXX
	Maximum field Strength:	65.43dBuV/m (3 meter measurement distance)
	Antenna Type:	loop
	EUT Frequency Ranges:	13.56MHz
Analysis:	The results obtained relate only to the item(s) tested.	
Environmental Test Conditions:	Temperature: 15-35° C	
	Relative Humidity: 30-60%	
	Barometric Pressure: 860-1060 mbar	
Evaluated by:	Bryan Taylor and Sergio Gutierrez	
Report Date:	September 10, 2025	

Table 2. EUT Summary Table

2.2 Test Site

All testing was performed at Eurofins E&E North America, Austin, TX. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology.

2.3 References

IEC62311 Edition 2.0 (2019-04)	Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz to 300 GHz)
RSS-102: Issue 6	Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)
FCC Part 2.1091	Radiofrequency radiation exposure evaluation: mobile devices.

Table 3. References

2.4 Description of Test Sample

The OMNIKEY SE Plug is the next generation of a USB RFID reader from HID Global supporting a full range of HF RFID contactless card technologies and NFC applications. OMNIKEY SE Plug is the ultimate compact RFID reader for mobile use cases. Its small and lightweight design makes it ideal for mobile professionals.

2.5 Mode of Operation

An RFID credential was placed near the test sample in order to trigger the normal RFID reading operation throughout the testing. Pretesting was performed with the test sample connected directly to the laptop as well as at the end of a 0.15m long USB-A to USB-C cable. It was determined that the operating mode with the test sample connected at the end of the 0.15m USB cable represented worst case.

A 2 cm spacer between the EUT and the credential was used to simulate real-life conditions.

Transmitter	Channel Frequencies Tested	Exercising Method
RFID	13.56MHz	Placing an RFID credential near the reader

Table 4. Transmitters Onboard

2.6 Modifications

2.6.1 Modifications to EUT

No modifications were made to the EUT.

2.6.2 Modifications to Test Standard

No modifications were made to the test standard.

2.7 Disposition of EUT

The test sample including all support equipment submitted to the Electro-Magnetic Compatibility Lab for testing was returned to HID Global Corporation (US) upon completion of testing.

3.0 Maximum Permissible Exposure Results

3.1 IEC62311 (ICNIRP) RF Exposure Limits

Table 7. Reference levels for general public exposure to time-varying electric and magnetic fields (unperturbed rms values).^a

Frequency range	E-field strength (V m ⁻¹)	H-field strength (A m ⁻¹)	B-field (μT)	Equivalent plane wave power density S_{eq} (W m ⁻²)
up to 1 Hz	—	3.2×10^4	4×10^4	—
1–8 Hz	10,000	$3.2 \times 10^4/f^2$	$4 \times 10^4/f^2$	—
8–25 Hz	10,000	$4,000/f$	$5,000/f$	—
0.025–0.8 kHz	$250/f$	$4/f$	$5/f$	—
0.8–3 kHz	$250/f$	5	6.25	—
3–150 kHz	87	5	6.25	—
0.15–1 MHz	87	$0.73/f$	$0.92/f$	—
1–10 MHz	$87/f^{1/2}$	$0.73/f$	$0.92/f$	—
10–400 MHz	28	0.073	0.092	2
400–2,000 MHz	$1.375f^{1/2}$	$0.0037f^{1/2}$	$0.0046f^{1/2}$	$f/200$
2–300 GHz	61	0.16	0.20	10

^a Note:

1. f as indicated in the frequency range column.
2. Provided that basic restrictions are met and adverse indirect effects can be excluded, field strength values can be exceeded.
3. For frequencies between 100 kHz and 10 GHz, S_{eq} , E^2 , H^2 , and B^2 are to be averaged over any 6-min period.
4. For peak values at frequencies up to 100 kHz see Table 4, note 3.
5. For peak values at frequencies exceeding 100 kHz see Figs. 1 and 2. Between 100 kHz and 10 MHz, peak values for the field strengths are obtained by interpolation from the 1.5-fold peak at 100 kHz to the 32-fold peak at 10 MHz. For frequencies exceeding 10 MHz it is suggested that the peak equivalent plane wave power density, as averaged over the pulse width does not exceed 1,000 times the S_{eq} restrictions, or that the field strength does not exceed 32 times the field strength exposure levels given in the table.
6. For frequencies exceeding 10 GHz, S_{eq} , E^2 , H^2 , and B^2 are to be averaged over any $68/f^{1.05}$ -min period (f in GHz).
7. No E-field value is provided for frequencies <1 Hz, which are effectively static electric fields. perception of surface electric charges will not occur at field strengths less than 25 kV m^{-1} . Spark discharges causing stress or annoyance should be avoided.

3.2 RSS-102 RF Exposure Limits

Table 4: RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)				
Frequency Range (MHz)	Electric Field (V/m rms)	Magnetic Field (A/m rms)	Power Density (W/m ²)	Reference Period (minutes)
0.003-10 ²¹	83	90	-	Instantaneous [*]
0.1-10	-	0.73/ f	-	6 ^{**}
1.1-10	87/ f ^{0.5}	-	-	6 ^{**}
10-20	27.46	0.0728	2	6
20-48	58.07/ f ^{0.25}	0.1540/ f ^{0.25}	8.944/ f ^{0.5}	6
48-300	22.06	0.05852	1.291	6
300-6000	3.142 f ^{0.3417}	0.008335 f ^{0.3417}	0.02619 f ^{0.6834}	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	616000/ f ^{1.2}
150000-300000	0.158 f ^{0.5}	4.21 x 10 ⁻⁴ f ^{0.5}	6.67 x 10 ⁻⁵ f	616000/f ^{1.2}
Note: f is frequency in MHz. [*] Based on nerve stimulation (NS). ^{**} Based on specific absorption rate (SAR).				

3.3 FCC Exposure Limits

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*(900/f ²)	<6
30-300	61.4	0.163	1.0	<6
300-1,500			f/300	<6
1,500-100,000			5	<6
(ii) Limits for General Population/Uncontrolled Exposure				
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
300-1,500			f/1500	<30
1,500-100,000			1.0	<30
f = frequency in MHz. * = Plane-wave equivalent power density.				

Test Procedure:

An MPE evaluation for was performed in order to show that the device was compliant with the general population exposure limits. The maximum power density was calculated for each transmitter band at a separation distance of 20cm using the maximum declared output power including tune up tolerance.

For each transmitter the maximum RF exposure at a 20 cm distance using the formula:

$$\text{Power Density} = \text{EIRP} / [4\pi(20\text{cm})^2]$$

The EIRP was calculated from the maximum field strength measured at a 3m distance plus a 5% tolerance using the formula from ANSI C63.10

$$\text{EIRP} = E_{\text{Meas}} + 20\log d_{\text{Meas}} + 104.7$$

Where,

EIRP	is the equivalent isotropically radiated power, in dBm
E_{Meas}	is the field strength of the emission at the measurement distance, in dBμV/m
d_{Meas}	is the measurement distance, in m

For this particular device the following values were used in the calculation:

$$E_{\text{Meas}} + 5\% E_{\text{Meas}} = 65.43\text{dBuV/m} + .05 \times 65.43\text{dBuV/m} = 68.7\text{dBuV/m}$$

$$D_{\text{Meas}} = 3\text{m}$$

$$\text{EIRP} = 68.7\text{dBuV/m} + 20\log(3\text{m}) - 104.7$$

$$\text{EIRP} = -26.46\text{dBm or } 0.00226\text{mW}$$

$$\text{Power Density} = 0.00226\text{mW} / [4\pi(20\text{cm})^2]$$

$$\text{Power Density} = 0.00000045 \text{ mW/cm}^2 \text{ or } 0.0000045 \text{ W/m}^2$$

Test Results:

The OMNIKEY SE Plug was **compliant** with FCC Part 2.1091, RSS-102 Issue 6, IEC62311 Issue 2, and AS/NZS 2772: 2016. The calculated maximum power density at 20cm distance was equal to or less than the required limits for general population exposure for FCC Part 2.1091, RSS-102 Issue 6, IEC62311 Issue 2, and AS/NZS 2772: 2016.

Test Data:

Duty Cycle	100 (%)				
Separation Dist.	20 (cm)				
Operating Mode	Frequency (MHz)	Maximum Radiated Power (mW)	MPE Value (mW/cm ²)	MPE Limit (mW/cm ²)	Margin to Limit (mW/cm ²)
RFID	13.56	0.00226	0.00000045	0.9789	0.97893290

FCC Data

Duty Cycle	100 (%)				
Separation Dist.	20 (cm)				
Operating Mode	Frequency (MHz)	Maximum Radiated Power (mW)	MPE Value (W/m ²)	MPE Limit (W/m ²)	Margin to Limit (W/m ²)
RFID	13.56	0.00226	0.00000450	2.0000	1.99999550

ISED Data

Duty Cycle	100 (%)				
Separation Dist.	20 (cm)				
Operating Mode	Frequency (MHz)	Maximum Radiated Power (mW)	MPE Value (W/m ²)	MPE Limit (W/m ²)	Margin to Limit (W/m ²)
RFID	13.56	0.00226	0.00000450	2.0000	1.99999550

ICNIRP Data

Test Engineer: Bryan Taylor

Test Date: 5/12/2025