

11/26/2025

Controlid Industria e Comercio de Hardware e Servicos De Tecnologia Ltda
Rua Hungria, 888
8th floor
São Paulo, Brazil
01455-000

Dear Albert Nissimoff,

Enclosed is the EMC test report for testing of the Controlid Industria e Comercio de Hardware e Servicos De Tecnologia Ltda, iDFace Max tested to the requirements of FCC Part 2.1091 and RSS-102 Issue 6

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,

A handwritten signature in blue ink that reads "Nancy LaBrecque".

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

Reference: WIRA136636_MPE_R2



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

for the

**Controlid Industria e Comercio de Hardware e Servicos De Tecnologia Ltda
iDface Max (Model: IDFMAXFPH)**

Tested under

FCC Part 2.1091 and RSS-102 Issue 6

Report: WIRA136636_MPE_R2

11/26/2025



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	July 29, 2025	Initial Issue.
1	10/13/2025	TCB Review Comments
2	11/26/2025	TCB Review Comments

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
10	RSS-102 Issue 6 MPE Limits (For General Public Exposure)	Compliant
10	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 Controlid Industria e Comercio de Hardware e Servicos De Tecnologia Ltda to perform testing on the, under Controlid Industria e Comercio de Hardware e Servicos De Tecnologia Ltda's purchase order number HID026483.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the Controlid Industria e Comercio de Hardware e Servicos De Tecnologia Ltda iDFace Max.

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

Product Name:	iDFace Max	
Model(s) Tested:	VL35LF	
FCCID:	2AKJ4-VL35LF	
ICID:	22235-VL35LF	
Equipment Specifications:	Primary Power:	12VDC
	EUT Frequency Ranges:	BLE: 2402MHz – 2480MHz HF RFID: 13.56MHz LF RFID: 125kHz
	Peak RF Output Power Including Tune-Up Tolerance:	BLE: 3.81dBm HF RFID: -44.36dBm (EIRP) LF RFID: -41.30dBm (EIRP)
	Antenna Gain ¹ :	BLE: 3.47dBi HF RFID: 1dB LF RFID: 1dB
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	
Report Date(s):	11/26/2025	

Table 2. EUT Summary Table

¹ The antenna gain information was provided by Controlid Industria e Comercio de Hardware e Servicos De Tecnologia Ltda and may affect compliance.

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

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 iDFace Max, is an access control reader employing facial recognition technology, as well as RFID and Bluetooth technologies.

The VL35LF has a LF, HF and a BLE radio on board enable the use of traditional RFID access control as well as mobile access through cell phone BLE and the HID Mobile Access App.

The VL35LF allows a user that is enrolled to access a door through the means of facial recognition (by looking into the cameras on the screen) or presenting an RFID credential, in the form of a fob, card or mobile device.

2.5 Modifications

2.5.1 Modifications to EUT

No modifications were made to the EUT.

2.5.2 Modifications to Test Standard

No modifications were made to the test standard.

2.6 Disposition of EUT

The test sample including all support equipment submitted to the Electro-Magnetic Compatibility Lab for testing was returned to Controlid Industria e Comercio de Hardware e Servicos De Tecnologia Ltda upon completion of testing.

3.0 Maximum Permissible Exposure Results

3.1 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).				

3.2 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:

$$\text{ConductedPower}_{mW} = 10^{\text{ConductedPower(dBm)}/10}$$

$$\text{PowerDensity} = \frac{\text{ConductedPower}_{mW} \times \text{Ant.Gain}}{4\pi \times (20_{cm})^2}$$

For transmitters where field strength was measured at a specific distance, the radiated power was calculated via the formula from ANSI C63.10 shown below:

$$\text{EIRP} = E_{M_{431}} + 20 \log(d_{M_{431}}) - 104.7$$

where

EIRP	is the equivalent isotropically radiated power, in dBm
$E_{M_{431}}$	is the field strength of the emission at the measurement distance, in dBuV/m
$d_{M_{431}}$	is the measurement distance, in m

The EIRP was then used in the numerator in the power density equation above in place of the conducted power and antenna gain.

For transmitters that could operate simultaneously, the MPE to limit ratio for each was calculated and then summed. If the sum of the MPE to limit ratios was less than 1, that specific combination of transmitters was deemed to comply.

Test Results:

The iDFace Max was **compliant** with FCC Part 2.1091 and RSS-102 Issue 6. 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 and RSS-102 Issue 6.

For ISED, the 125kHz transmitter is subject to the Nerve Stimulation requirements from RSS-102 and that is addressed in a separate report.

BLE Power Calculation:

The BLE radio had a measured conducted power of 3.81dBm. The manufacturer has a 2dB tune up tolerance which equates to a worst-case power of 5.81dBm which was used in the MPE calculation.

125kHz EIRP Calculation:

The Field strength at 3m was measured (53.44 dBuV/m) and according to the manufacturer has a 5% tune up tolerance from the measured value which equates to 53.86dBuV/m. 53.86dBuV/m was converted to EIRP using the equations from ANSI C63.10 Section 9.5:

$$EIRP = E_{Meas} + 20 \log(d_{Meas}) - 104.7 \quad (22)$$

where

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

NOTE—Because this equation yields the identical result whether the field strength is extrapolated using the default 20 dB/decade of distance extrapolation factor, or the field strength is not extrapolated for distance, this equation can generally be applied directly (with no further correction) to determine EIRP. In some cases, a different distance correction factor may be required; see 9.1.

$$EIRP = 53.86\text{dBuV/m} + 20\log(3\text{m}) - 104.7 = -41.3\text{dBm}$$

13.56MHz Power EIRP Calculation:

The 13.56MHz Transmitter had a measured field strength of 50.38dBuV/m. The manufacturer has a 5% tune-up tolerance from the measured value which equates to 50.80dBuV/m. The 50.80dBuV/m field strength was converted to ERP using the equations from ANSI C63.10 Section 9.5:

$$EIRP = E_{Meas} + 20 \log(d_{Meas}) - 104.7 \quad (22)$$

where

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

NOTE—Because this equation yields the identical result whether the field strength is extrapolated using the default 20 dB/decade of distance extrapolation factor, or the field strength is not extrapolated for distance, this equation can generally be applied directly (with no further correction) to determine EIRP. In some cases, a different distance correction factor may be required; see 9.1.

$$EIRP = 50.80\text{dBuV/m} + 20\log(3\text{m}) - 104.7 = -44.36\text{dBm}$$

FCC Power Density Calculations:

100 (%)							
20 (cm)							
Frequency (MHz)	Max Cond. Power (Inc. Tolerance) (dBm)	Duty Cycle Adjusted Cond. Output Power (dBm)	Antenna Gain (dB)	MPE Value (mW/cm ²)	MPE Limit (mW/cm ²)	Margin to Limit (mW/cm ²)	MPE / Limit Ratio (for Co-Location)
2402	5.81	5.81	3.47	0.0016855054	1.0000000000	0.9983144946	0.0016855054
						Sum:	0.0016855054

100 (%)						
20 (cm)						
Frequency (MHz)	Max EIRP Power (Inc. Tolerance) (dBm)	Max EIRP Power (Inc. Tolerance) (mW)	MPE Value (mW/cm ²)	MPE Limit (mW/cm ²)	Margin to Limit (mW/cm ²)	MPE / Limit Ratio (for Co-Location)
0.125	-41.3	0.0000741310	0.0000000147	100.000000	99.9999999853	0.0000000001
13.56	-44.36	0.0000366438	0.0000000073	100.000000	99.9999999927	0.0000000001
						Sum: 0.0000000001

TX Mode	MPE / Limit Ratio
125kHz RFID	0.0000000001
13.56MHz RFID	0.0000000001
BLE	0.0016855054
Sum:	0.0016855056

Since the sum of all of the limit to MPE ratios is less than 1 the device has demonstrated compliance with the simultaneous transmission exposure criteria.

Test Engineer(s): Bryan Taylor

Test Date(s): 05/29/2025 - 06/05/2025

ISED Power Density Calculations:

For ISED, the 125kHz transmitter is subject to the Nerve Stimulation requirements from RSS-102 and that is addressed in a separate report.

Duty Cycle	100 (%)							
Separation Dist.	20 (cm)							
Operating Mode	Frequency (MHz)	Max Cond. Power (Inc. Tolerance) (dBm)	Duty Cycle Adjusted Cond. Output Power (dBm)	Antenna Gain (dB)	MPE Value (W/m ²)	MPE Limit (W/m ²)	Margin to Limit (W/m ²)	MPE / Limit Ratio (for Co-Location)
BLE	2402	5.81	5.81	3.47	0.0168550539	5.350805	5.3339495088	0.0031500036
							Sum:	0.0031500036

Duty Cycle	100 (%)						
Separation Dist.	20 (cm)						
		Max EIRP Power (Inc. Tolerance)	Max EIRP Power (Inc. Tolerance)	MPE Value		Margin to Limit	MPE / Limit Ratio
Operating Mode	Frequency (MHz)	(dBm)	(W)	(W/m ²)	MPE Limit (W/m ²)	(W/m ²)	(for Co- Location)
13.56MHz RFID	13.56	-44.36	0.0000000366	0.0000000729	2.0000	1.9999999271	0.0000000365
						Sum:	0.0000000365

TX Mode	MPE / Limit Ratio
13.56MHz RFID	0.0000000365
BLE	0.0031500036
Sum:	0.0031500401

Since the sum of all of the limit to MPE ratios is less than 1 the device has demonstrated compliance with the simultaneous transmission exposure criteria.

Test Engineer(s): Bryan Taylor

Test Date(s): 05/29/2025 - 06/05/2025