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HEADQUARTERS: 914 WEST PATAPSCO AVENUE • BALTIMORE, MARYLAND 21230 • PHONE (410) 354-3300 • FAX (410) 354-3313

05/20/2026

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

Dear Erik Ray,

Enclosed is the EMC test report for testing of the HID Global Corporation (US), Color Card Printer, DTCii Plus tested to the requirements of FCC Part 2.1091, RSS-102 Issue 6, and IEC62311 Issue 2

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: WIRA138920-MPE – Rev 1

A2LA ACCREDITED
TESTING CERT #0591.06

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

for the

HID Global Corporation (US)
Color Card Printer, DTCii Plus (Model: DTCii Plus)

Tested under

FCC Part 2.1091, RSS-102 Issue 6, and IEC62311 Issue 2

Report: WIRA138920-MPE – Rev 1

05/20/2026

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	02/05/2026	Initial Issue.
1	05/20/2026	Customer Requested Changes.

List of Terms and Abbreviations

AC	**A**lternating **C**urrent
ACF	**A**ntenna **C**orrection **F**actor
Cal	**Cal**ibration
d	**M**easurement **D**istance
dB	**D**eci**b**els
dBµA	**D**eci**b**els above one **micro**amp
dBµV	**D**eci**b**els above one **micro**volt
dBµA/m	**D**eci**b**els above one **micro**amp **per m**eter
dBµV/m	**D**eci**b**els above one **micro**volt **per m**eter
DC	**D**irect **C**urrent
E	**E**lectric Field
DSL	**D**igital **S**ubscriber **L**ine
ESD	**E**lectro**s**tatic **D**ischarge
EUT	**E**quipment **U**nder **T**est
f	**F**requency
CISPR	**C**omite **I**nternational **S**pecial des **P**erturbations **R**adioelectriques (International Special Committee on Radio Interference)
GRP	**G**round **R**eference **P**lane
H	Magnetic Field
HCP	**H**orizontal **C**oupling **P**lane
Hz	**H**ertz
IEC	**I**nternational **E**lectrotechnical **C**ommission
kHz	**k**ilo**H**ertz
kPa	**k**ilo**Pa**scal
kV	**k**ilovolt
LISN	**L**ine **I**mpedance **S**tabilization **N**etwork
MHz	**M**ega**H**ertz
µH	**micro**Henry
µF	**micro**Farad
µs	**micro**seconds
PRF	**P**ulse **R**epetition **F**requency
RF	**R**adio **F**requency
RMS	**R**oot-**M**ean-**S**quare
V/m	**V**olts **per m**eter
VCP	**V**ertical **C**oupling **P**lane

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**
10	IEC62311: 2019 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 Color Card Printer, DTCii Plus, under HID Global Corporation (US)'s purchase order number HID0308R1.

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) Color Card Printer, DTCii Plus.

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

Product Name:	Color Card Printer, DTCii Plus	
Model(s) Tested:	DTCii Plus	
Test Sample Number:	26099-11	
Equipment Specifications:	Primary Power:	24VDC via AC/DC Power Adapter
	EUT Frequency Ranges:	HF RFID: 13.56MHz
	Peak RF Output Power Including Tune-Up Tolerance:	HF RFID: -29.07dBm (EIRP)
	Antenna Gain[1]:	HF RFID: 1dB
Analysis:	The results obtained relate only to the item(s) tested.	
Environmental Test Conditions:	Temperature: 15-35º C	
	Relative Humidity: 30-60%	
	Barometric Pressure: 860-1060 mbar	
Evaluated by:	Bryan Taylor	
Report Date(s):	05/20/2026	

Table 2. EUT Summary Table

[1] The antenna gain information was provided by HID Global Corporation (US) 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 Color Card Printer, DTCii Plus is a modular, direct-to-card printer system designed to print and encode ID The Color Card Printer, DTCii Plus is a modular, direct-to-card printer system designed to print and encode cards.

Configuration 1 (SN C4461124):

Input Hopper, Printer, Flipper, Mag Encoder, Contact Encoder, OMNIKEY 5122 Encoder

Test Configuration	Radio	Transmitters Onboard
Configuration 1	OMNIKEY 5122	13.56MHz
	Ribbon	13.56MHz

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 HID Global Corporation (US) 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/ ƒ	-	6**
1.1-10	87/ $ƒ^{0.5}$	-	-	6**
10-20	27.46	0.0728	2	6
20-48	58.07/ $ƒ^{0.25}$	0.1540/ $ƒ^{0.25}$	8.944/ $ƒ^{0.5}$	6
48-300	22.06	0.05852	1.291	6
300-6000	3.142 $ƒ^{0.3417}$	0.008335 $ƒ^{0.3417}$	0.02619 $ƒ^{0.6834}$	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	616000/ $ƒ^{1.2}$
150000-300000	0.158 $ƒ^{0.5}$	4.21 x 10^{-4} $ƒ^{0.5}$	6.67 x 10^{-5} ƒ	616000/$ƒ^{1.2}$

Note: ƒ 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.

3.3 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 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 kVm^{-1}. Spark discharges causing stress or annoyance should be avoided.

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:

$$ConductedPower_{mW} = 10^{ConductedBwer(dBm)/10}$$

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

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:

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

where

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

Test Results:

The Color Card Printer, DTCii Plus was **compliant** with FCC Part 2.1091, RSS-102 Issue 6, and IEC62311 Issue 2. 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, and IEC62311 Issue 2.

13.56MHz Power EIRP Calculation:

The 13.56MHz Transmitter had a worst case measured field strength of 65.67dBuV/m. The manufacturer has a 5% tune-up tolerance from the measured value which equates to 66.09dBuV/m. The 66.09dBuV/m field strength was converted to EIRP using the equations from ANSI C63.10 Section 9.5:

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

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 = 66.09dBuV/m + 20log (3m) -104.7 = -29.07dBm

FCC Power Density Calculations:

Duty Cycle	100 (%)					
Separation Dist.	20 (cm)					
Operating Mode	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)
Ribbon	13.56	-29.07	0.0012387966	0.0000002465	0.978933	0.9789331078
5122	13.56	-32.8	0.0005248075	0.0000001044	0.978933	0.9789332498

Test Engineer(s): Bryan Taylor

Test Date(s): 12/10/2025

ISED and ICNIRP Power Density Calculations:

Duty Cycle	100 (%)					
Separation Dist.	20 (cm)					
Operating Mode	Frequency (MHz)	Max EIRP Power (Inc. Tolerance) (dBm)	Max EIRP Power (Inc. Tolerance) (W)	MPE Value (W/m^2)	MPE Limit (W/m^2)	Margin to Limit (W/m^2)
Ribbon	13.56	-29.07	0.0000012388	0.0000024645	2.0000	1.9999975355
5122	13.56	-32.8	0.0000005248	0.0000010441	2.0000	1.9999989559

Test Engineer(s): Bryan Taylor

Test Date(s): 12/10/2025