

4/10/2024

Perigon Health 360, LLC
340 N. Main, Ste. 300
Plymouth, MI 48170
USA

Dear Jake Wright,

Enclosed is the EMC test report for testing of the Perigon Health 360, LLC, Medesto-Go 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,



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

Reference: WIRA128411 – MPE_R1



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

for the

Perigon Health 360, LLC
Medesto-Go

Tested under

FCC Part 2.1091 and RSS-102 Issue 6

Report: WIRA128411 – MPE_R1

4/10/2024



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. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules Part 15.247 under normal use and maintenance.



Matthew Hinojosa
EMC Manager, Austin Electromagnetic Compatibility Lab

Report Status Sheet

Revision	Report Date	Reason for Revision
0	3/11/2024	Initial Issue.
1	4/10/2024	Changes requested by TCB reviewer

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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	RSS-102 Issue 6 MPE Limits (For General Public Exposure)	Compliant
12	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 Perigon Health 360, LLC to perform testing on the Medesto-Go, under Perigon Health 360, LLC's purchase order number EUR081423.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the Perigon Health 360, LLC Medesto-Go.

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

Model(s) Tested:	Medesto-Go	
Model(s) Covered:	Medesto-Go	
EUT Specifications:	Primary Power: 9VDC	
	Type of Modulation(s):	ASK
	Equipment Code:	DXX
	Maximum field Strength:	30.65dBuV/m
	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	
Test Date(s):	8/29/2023 to 9/11/2023	

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

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 Medesto-Go (Model: Medesto-Go) is a RFID enabled medication dispenser.

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 Perigon Health 360, LLC 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 field strength (converted to EIRP) measured as part of the FCC radio testing. The EIRP was calculated with the following equation:

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

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

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

The EIRP was then converted from dBm to mW and used to calculate the power density with the following formula:

$$\text{Power Density} = \frac{\text{EIRP}_{\text{mw}}}{4\pi(20\text{cm})^2}$$

Test Results:

The Medesto-Go 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. Additionally, the MPE to limit ratio for the worst case simultaneous transmission condition was less than 1.

Test Data (FCC):

Duty Cycle	100 (%)						
Separation Dist.	20 (cm)						
Operating Mode	Frequency (MHz)	Measured Field Strength at 3m (dBuV/m)	ERP (Converted from Field Strength) (dBm)	MPE Value (mW/cm ²)	MPE Limit (mW/cm ²)	Margin to Limit (mW/cm ²)	MPE / Limit Ratio (for Co-Location)
RFID	13.56	30.65	-64.51	7.0465E-11	0.9789	0.9789	7.1981E-11

Duty Cycle	100 (%)								
Separation Dist.	20 (cm)								
Operating Mode	Frequency	Declared Max Cond. Power (Inc. Tolerance)	Duty Cycle Adjusted Cond. Output Power	Antenna Gain	MPE Value	MPE Limit	Margin to Limit	MPE / Limit Ratio	
	(MHz)	(dBm)	(dBm)	(dB)	(mW/cm ²)	(mW/cm ²)	(mW/cm ²)	(for Co-Location)	
	LTE Band 2	1900	24	24.00	1.9	0.0774	1.0000	0.9226	0.0774
	LTE Band 4	1700	24	24.00	1.9	0.0774	1.0000	0.9226	0.0774
	LTE Band 5	850	24	24.00	1.8	0.0756	0.5667	0.4910	0.1335
	LTE Band 12	700	24	24.00	1.8	0.0756	0.4667	0.3910	0.1621
	LTE Band 13	700	24	24.00	1.8	0.0756	0.4667	0.3910	0.1621
	LTE Band 14	700	24	24.00	1.8	0.0756	0.4667	0.3910	0.1621
	LTE Band 17	700	24	24.00	1.8	0.0756	0.4667	0.3910	0.1621
	LTE Band 25	1900	24	24.00	1.9	0.0774	1.0000	0.9226	0.0774
	LTE Band 26	850	24	24.00	1.8	0.0756	0.5667	0.4910	0.1335
LTE Band 66	1700	24	24.00	1.9	0.0774	1.0000	0.9226	0.0774	

Worst Case LTE transmit mode (Band 13) + RFID MPE to Limit Ratio
 $0.1621 + 7.1981 \times 10^{-11} = 1.6210 \times 10^{-1}$

Test Engineer(s): Bryan Taylor

Test Date(s): 8/29/2023

Test Data (ISED):

Duty Cycle	100 (%)						
Separation Dist.	20 (cm)						
Operating Mode	Frequency (MHz)	Measured Field Strength at 3m (dBuV/m)	ERP (Converted from Field Strength) (dBm)	MPE Value (W/m ²)	MPE Limit (W/m ²)	Margin to Limit (W/m ²)	MPE / Limit Ratio (for Co-Location)
RFID	13.56	30.65	-64.51	7.0465E-10	2.0000	2.0000	3.5232E-10

Duty Cycle	100 (%)								
Separation Dist.	20 (cm)								
Operating Mode	Frequency (MHz)	Declared 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)	
	LTE Band 2	1900	24	24.00	1.9	0.7740	4.5586	3.7847	0.1698
	LTE Band 4	1700	24	24.00	1.9	0.7740	4.2250	3.4510	0.1832
	LTE Band 5	850	24	24.00	1.8	0.7564	2.6309	1.8745	0.2875
	LTE Band 12	700	24	24.00	1.8	0.7564	2.3040	1.5476	0.3283
	LTE Band 13	700	24	24.00	1.8	0.7564	2.3040	1.5476	0.3283
	LTE Band 14	700	24	24.00	1.8	0.7564	2.3040	1.5476	0.3283
	LTE Band 17	700	24	24.00	1.8	0.7564	2.3040	1.5476	0.3283
	LTE Band 25	1900	24	24.00	1.9	0.7740	4.5586	3.7847	0.1698
	LTE Band 26	850	24	24.00	1.8	0.7564	2.6309	1.8745	0.2875
	LTE Band 66	1700	24	24.00	1.9	0.7740	4.2250	3.4510	0.1832

Worst Case LTE transmit mode (Band 13) + RFID MPE to Limit Ratio
 $0.3283 + 3.5232 \times 10^{-10} = 3.283 \times 10^{-1}$

Test Engineer(s): Bryan Taylor

Test Date(s): 8/29/2023