



Test Report – FCC_1.1310 RF Exposure

Applicant: Vanguard Protex Global Inc.

Approved for Release By:

Signature: Bruno Clavier

Name & Title: Bruno Clavier, General Manager

Date of Signature 6/22/2023

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1. Applicant Information

Applicant: Vanguard Protex Global Inc.
Address: 720 Brooker Creek Blvd. Suite 223,
Oldsmar, Florida, 34677, United States

1.1 Test Result Summary

The following test procedure was used FCC 1.1310. Full test results are available in this report.

No additions to the test methods were needed. There were no deviations, or exclusions from the test methods. No test results are from external providers or from the customer. The test results relate only to the items tested. Timco does not offer opinions and interpretations, only a pass/fail statement.

Clauses	Description of the Requirements	Result (Pass, Fail or N/A)
FCC 1.1310	Limits for Maximum Permissible Exposure (MPE)	Pass



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2. Location of Testing

2.1 Test Laboratory

Timco Engineering Inc. is a subsidiary of Industrial Inspection & Analysis, Inc. ("IIA"). Testing was performed at Timco's permanent laboratory located at 849 NW State Road 45, Newberry, Florida 32669

FCC test firm # 578780

FCC Designation # US1070

FCC site registration is under A2LA certificate # 0955.01

ISED Canada test site registration # 2056A

EU Notified Body # 1177

For all designations see A2LA scope # 0955.01

2.2 Testing was performed, reviewed by

Dates of Testing: 05/26/2023

Signature:

James D. Page

Sr. EMC Engineer
EMC-003838-NE

The logo for iMARIE certification. It features the word "CERTIFIED" in a bold, sans-serif font at the top, with a thin horizontal line underneath. Below this line is the "iMARIE" logo, which consists of the word "iMARIE" in a stylized, italicized font with a registered trademark symbol (®) at the end. The entire logo is set against a background of concentric, semi-transparent circles.

Name & Title:

Tim Royer, EMC Engineer

Date of Signature

6/22/2023

Signature:

Terri Allen

Name & Title:

Terri Allen, Project Specialist

Date of Signature

6/22/2023



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3. Test Sample(s) (EUT/DUT)

The test sample was received: 5/22/2023

3.1 Description of the EUT

A description as well as unambiguous identification of the EUT(s) tested. Where more than one sample is required for technical reasons (such as the use of connected units for the purpose of conducted output power testing where the product units will have integral antennas), each specific test shall identify which unit was tested.

Identification	
FCC ID:	2AKCG-VP1821
Brief Description	Inductive Charging Sensor
Model(s) #	VP-1821
Firmware version	N/A
Software version	N/A
Serial Number	N/A

Technical Characteristics	
Technology	Inductive Charging Sensor
Antenna Type	N/A
Voltage Rating (AC or Batt.)	AC
Frequency Range	110-205 kHz



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3.2 Configuration of EUT

Configuration	Mode
1	Operational, with a cell phone load

Operating conditions during Testing:

No modifications of the device under test (including firmware, specific software settings, and input/output signal levels to the EUT).

Retail Security electronic wireless charging. The device is a wireless inductive charger that transmits between 110-205 kHz. The charger (a.k.a. the Base Station, or Transmitter) transmits and receives data to the inductive charging receiver inside a mobile phone. Data is exchanged solely for the purpose of managing the charging system itself, and its reach is limited to the near field. The radio is not preapproved.

Peripherals used during Testing:

No peripherals used.



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4. Test methods & Applicable Regulatory Limits

4.1 Test methods/Standards/Guidance

The measurement was performed as per Section 1.1310 (e)(1). Full test results are available in this report.

4.1.1 Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6
(B) 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
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

F=frequency in MHz
*=Plane-wave equivalent power density
RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).



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4.2 Test Equipment List

Test Equipment						
Type	Device	Manufacturer	Model	SN#	Current Cal	Cal Due
Field Probe Meter	E-Field, H-Field, B-Field Probe Handheld Meter	Wave Control	SMP2	20SN1400	8/19/20	8/19/2023
Field Probe	E-Field Probe - 100 kHz to 8 GHz	Wave Control	WPF8	20WP041171	8/19/20	8/19/2023
Field Probe	E-Field & B-Field Probe - 10 Hz to 400 kHz	Wave Control	WP400	20WP100701	8/21/20	8/21/2023
Field Probe	H-Field Probe - 300 kHz to 60 MHz	Wave Control	WPH60	20WP110071	8/20/20	8/20/2023



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4.3 Equations

POWER DENSITY

$$E(V/m) = \text{SQRT} (30 * P * G) / d$$

$$Pd(W/m^2) = E^2 / 377$$

$$S = \text{EIRP} / (4 * \text{Pi} * D^2)$$

Where:

S = Power density, in mW/cm^2

EIRP = Equivalent Isotropic Radiated Power, in mW

D = Separation distance in cm

Power density is converted from units of mW/cm^2 to units of W/m^2 by multiplying by 10.

DISTANCE

$$D = \text{SQRT} (\text{EIRP} / (4 * \text{Pi} * S))$$

Where:

D = Separation distance in cm

EIRP = Equivalent Isotropic Radiated Power, in mW

S = Power density in mW/cm^2

SOURCE-BASED DUTY CYCLE (When applicable (for example, multi-slot mobile phone applications) A duty cycle factor may be applied.)

$$\text{Source-based time-average EIRP} = (DC / 100) * \text{EIRP}$$

Where:

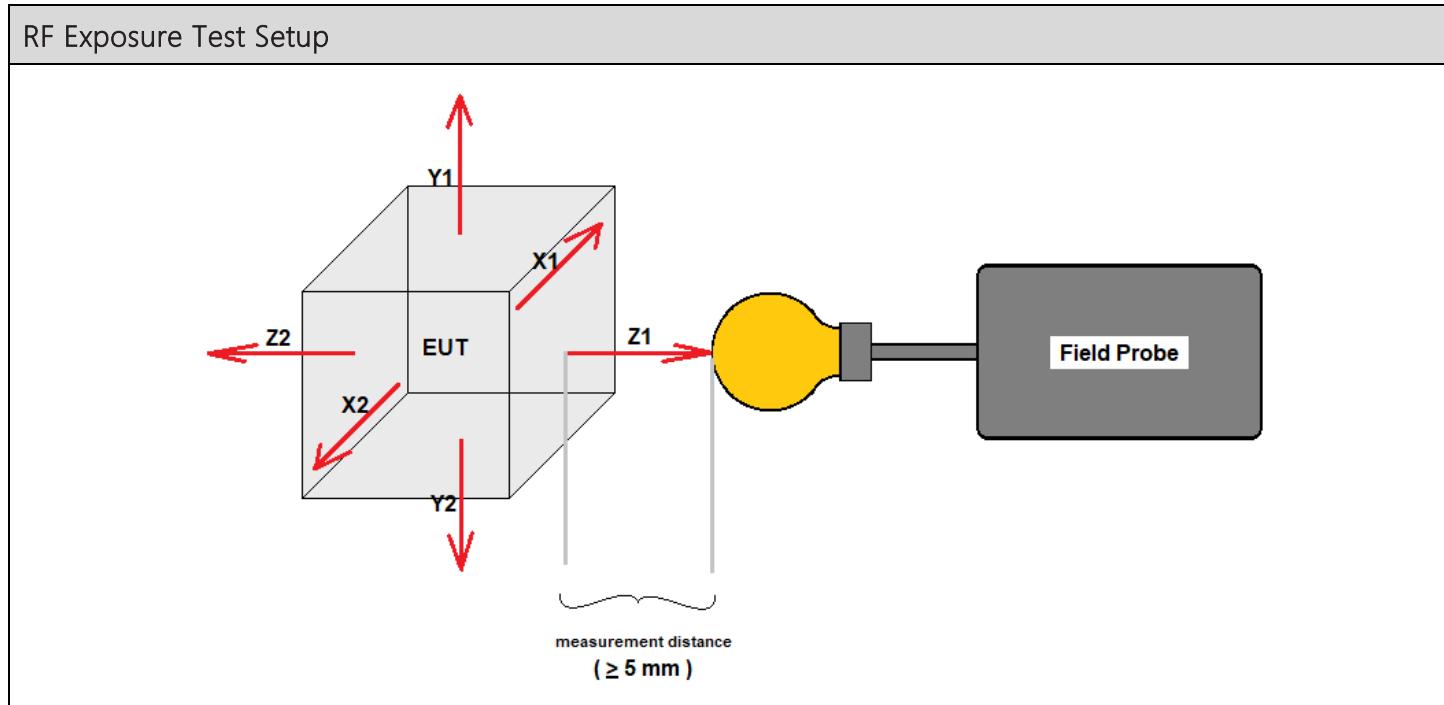
DC = Duty Cycle in % as applicable.

EIRP = Equivalent Isotropic radiated Power, in mW

5. RF Exposure

5.1 Near Field Measurement

Requirement and Limits from 47 CFR PART 1, Subpart I, Section 1.1310. A pre-scan of all usable axes was conducted, and the worst case axis was used for each configuration.



Note: Axes X1, X2, Z1, and Z2 were evaluated, but are not practically useable for this EUT.

Note: Measurements were carried out at a distance of 35 mm.

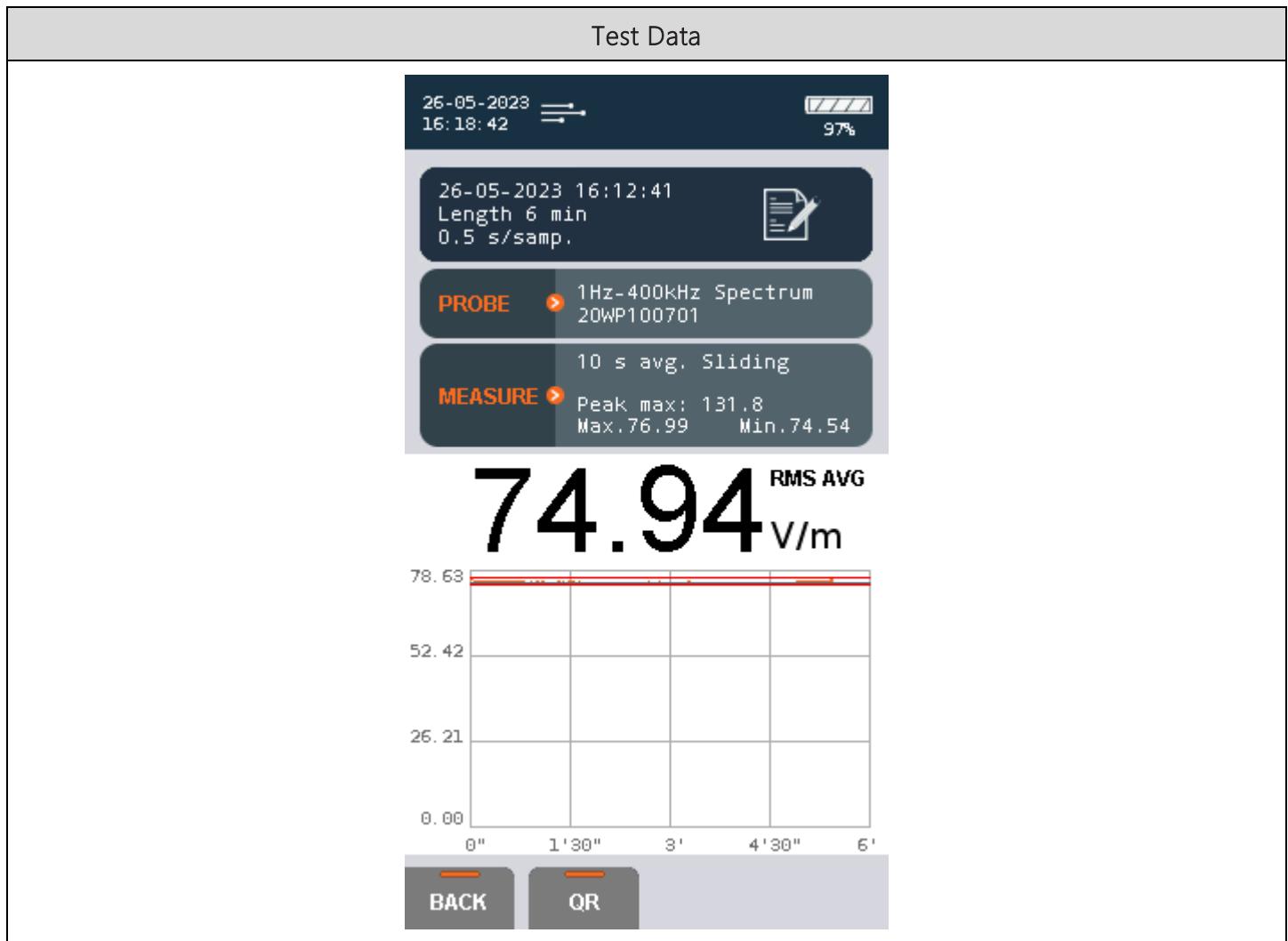
Note: Averaging time for all measurements was 6 minutes.

5.1.1 Test Data

Configuration	Measurement	Limit
1	74.94 V/m	614
1	0.072 A/m	1.63
1	0.092 uT	1.63

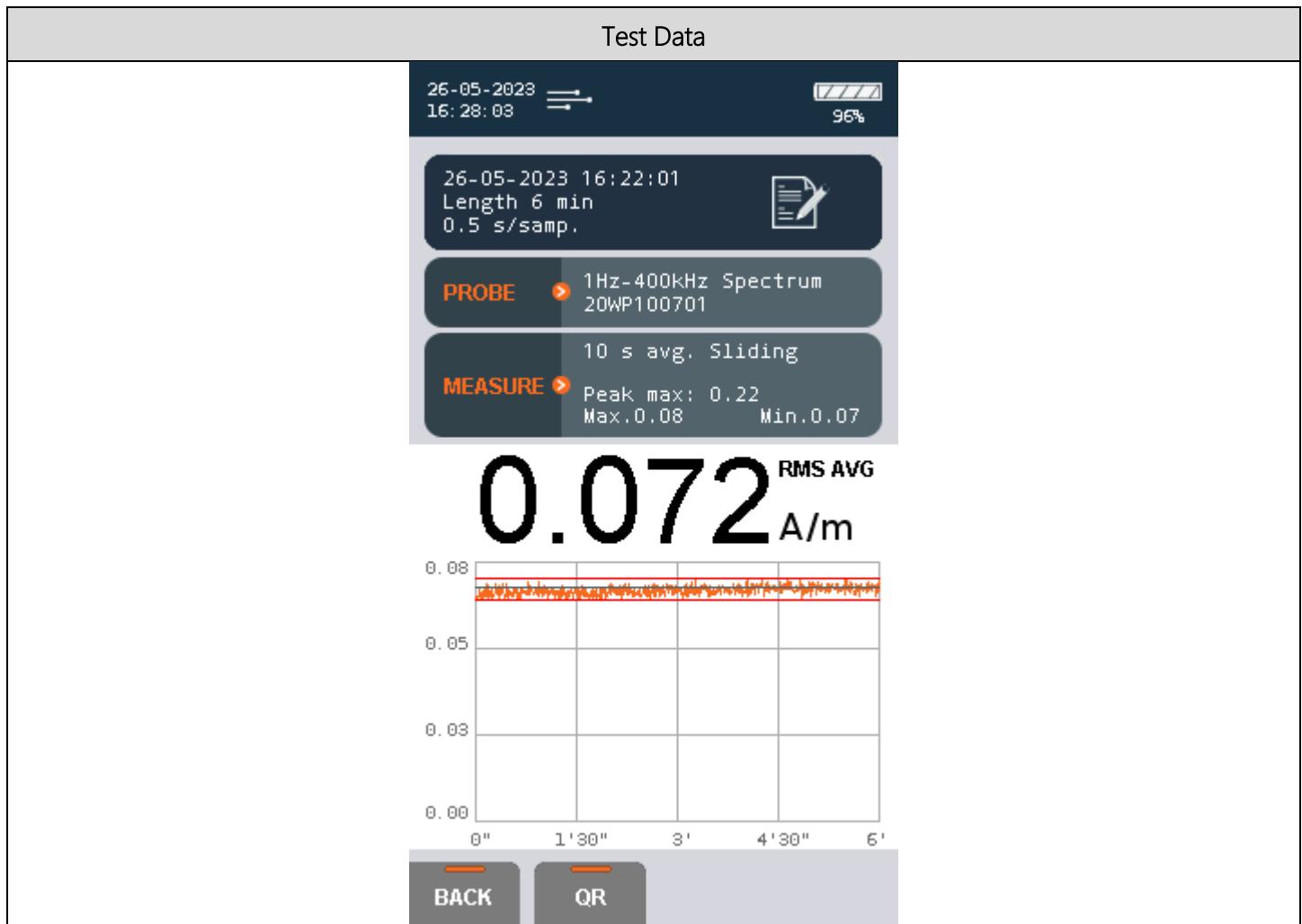
5.1.2 0.001 – 400 kHz, Configuration 1, E-Field

Configuration	Worst-case Orientation Axis
1	Y1



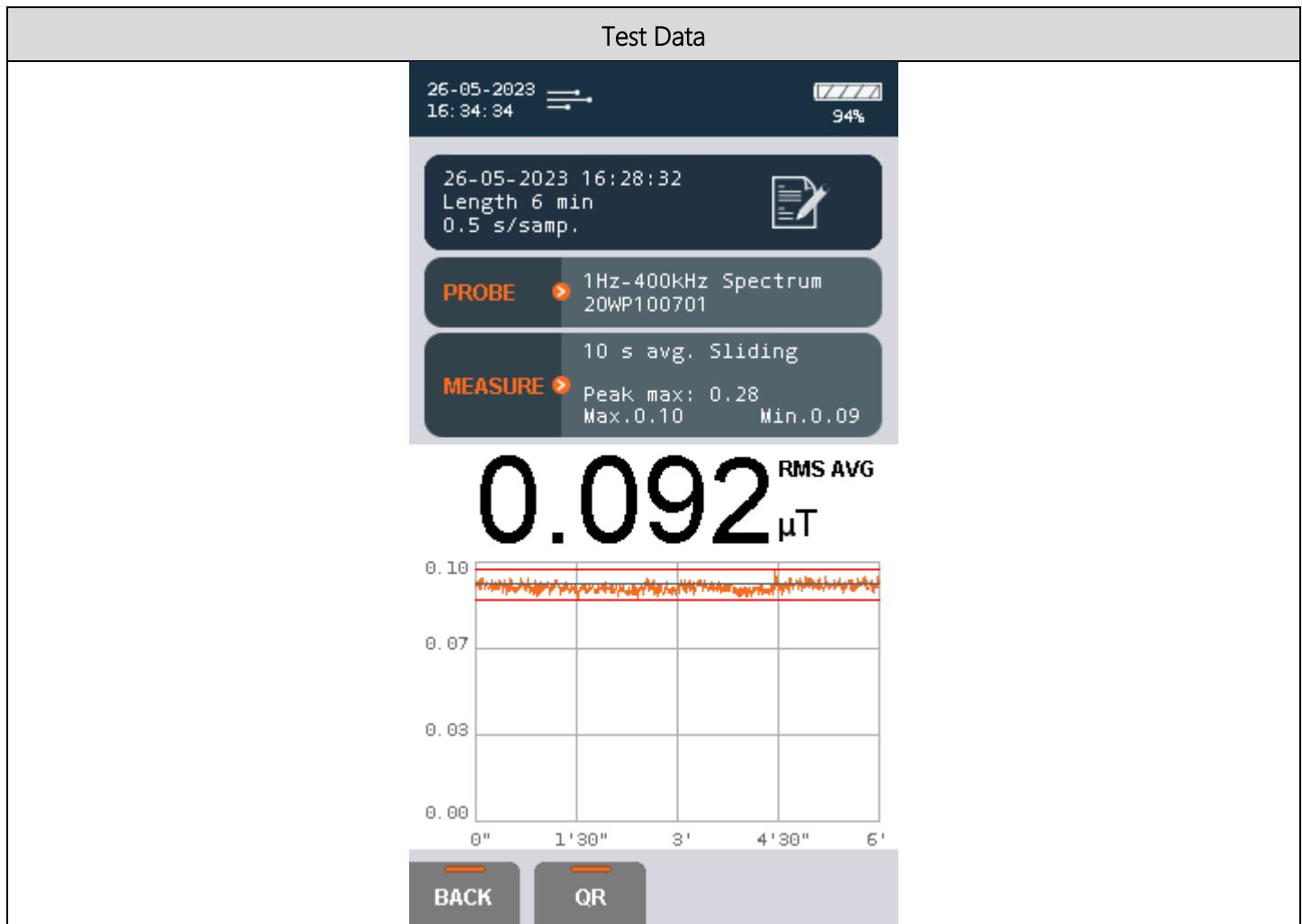
5.1.3 0.001 – 400 kHz, Configuration 1, H-Field

Configuration	Worst-case Orientation Axis
1	Y1



5.1.4 0.001 – 400 kHz, Configuration 1, B-Field

Configuration	Worst-case Orientation Axis
1	Y1





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6. ANNEX-A - Photographs of the EUT

Photographs of the EUT and any manufacturer supplied accessories to be used with the EUT are in a separate document.

7. ANNEX-B – Test Setup Photographs

Test setup photographs are located in a separate document.

8. History of Test Report Changes

Test Report #	Revision #	Description	Date of Issue
TR_8054-23_FCC 1.1310 (NS)_	1	Initial release	6/9/2023



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END OF TEST REPORT
