FCC PART 15, SUBPART B and C
TEST REPORT

for

RFID READER

MODEL: MINITRACKER 4 WAND READER

Prepared for

AVID IDENTIFICATION SYSTEMS, INC.
3185 HAMNER AVENUE
NORCO, CALIFORNIA 92860

Prepared by:_____

KYLE FUJIMOTO

Approved by:_____

JAMES ROSS

COMPATIBLE ELECTRONICS INC.
114 OLINDA DRIVE
BREA, CALIFORNIA 92823
(714) 579-0500

DATE: DECEMBER 23, 2024

	REPORT BODY	APPENDICES					TOTAL
		A	***B***	***C***	***D***	***E***	
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GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Compatible Electronics Inc., which is an independent testing and consulting firm. The test report is based on testing performed by Compatible Electronics personnel according to the measurement procedures described in the test specifications given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced without the written permission of Compatible Electronics, unless done so in full.

This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the federal government.

Device Tested:	RFID Reader Model: MiniTracker 4 Wand Reader S/N: UNIT 1
Product Description:	The EUT is an RFID Reader that reads various tags and has a pre certified BLE Module.
Modifications:	The EUT was not modified during the testing.
Customer:	AVID Identification Systems, Inc. 3185 Hamner Avenue Norco, California 92860
Test Dates:	August 12, 13, 14, 15, and 16, 2024; and December 23, 2024

Test Specifications covered by accreditation:

Emissions requirements
FCC Standard: CFR Title 47, Part 15, Subpart B and Subpart C
ISED Standard: RSS-210, Issue 10 and RSS-GEN, Issue 5

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Test Procedure:	ANSI C63.4:2014, ANSI C63.10: 2013
Test Deviations:	The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Spurious Radiated RF Emissions, 9 kHz – 25000 MHz (Transmitter and Digital portion)	Complies with the **Class B** limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.205, and 15.209 Highest reading in relation to spec limit: 41.65 (QP) dBuV/m @ 240.50 MHz (*U = 3.19 dB)
2	Conducted RF Emissions, 150 kHz – 30 MHz	The EUT complies with the **Class B** limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.207 Highest reading in relation to spec limit: 40.70 (Avg) dBuV/m @ 0.158 MHz (*U = 2.72 dB)

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the RFID Reader, Model: MiniTracker 4 Wand Reader. The emissions measurements were performed according to the measurement procedure described in ANSI C63.4 and ANSI C63.10. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the **Class B** specification limits defined by CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, and 15.209.

2. ADMINISTRATIVE DATA

2.1 Location of Testing

The emissions tests described herein were performed at the test facility of Compatible Electronics, 114 Olinda Drive, Brea, California 92823 and 20621 Pascal Way Lake Forest, California 92630.

2.2 Traceability Statement

The calibration certificates of all test equipment used during the test are on file at the location of the test. The calibration is traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

AVID Identification Systems, Inc.

Martin Ma	RF Engineer

Compatible Electronics Inc.

Kyle Fujimoto	Sr. Test Engineer
James Ross	Sr. Test Engineer

2.4 Date Test Sample was Received

The test sample was received prior to the initial test date.

2.5 Disposition of the Test Sample

The test sample has not been returned to AVID Identification Systems, Inc. as of the date of this test report.

2.6 Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network
N/A	Not Applicable
BLE	Bluetooth Low Energy
USB	Universal Serial Bus

3. APPLICABLE DOCUMENTS

The following documents are referenced or used in the preparation of this emissions Test Report.

SPEC	TITLE
FCC Title 47, Part 15 Subpart C	FCC Rules - Radio frequency devices (including digital devices) – Intentional Radiators
FCC Title 47, Part 15 Subpart B	FCC Rules - Radio frequency devices (including digital devices) – Unintentional Radiators
ANSI C63.4 2014	Methods of measurement of radio-noise emissions from low-voltage electrical and electronic equipment in the range of 9 kHz to 40 GHz
ANSI C63.10 2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
EN 50147-2 1997	Anechoic chambers, Alternative test site suitability with respect to site attenuation

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration

Battery Mode: The RFID Reader, Model: MiniTracker 4 Wand Reader (EUT) was connected to a wand.

USB Mode: The RFID Reader, Model: MiniTracker 4 Wand Reader (EUT) was connected to a laptop via its USB port and also a wand. The laptop was also connected to a mouse and AC Adapter via its USB and power ports, respectively.

The EUT was operating at 134.2 kHz and also transmitting BLE at the same time. The microSD card was also being exercised on a continuous basis.

The EUT contained a fully certified BLE Module.

The firmware inside the EUT allowed the EUT to continuously transmit or receive BLE and to transmit 134.2 kHz on a continuous basis in either modulated or continuous wave mode.

The firmware is stored on the company's servers.

The final radiated and conducted emissions data for the EUT was taken in the configurations described above. Please see Appendix E for the data sheets.

4.1.1 Cable Construction and Termination

Cable 1 **(USB Mode)**
This is a 1.5-meter shielded cable connecting the EUT to the laptop. The cable has a USB type 'A' connector at the laptop end and a USB type 'C' connector at the EUT end. The cable has a molded ferrite at the EUT end. The shield of the cable was grounded to the chassis via the connector.

Cable 2 **(USB Mode)**
This is a 2-meter shielded cable connecting the laptop to the mouse. The cable has a USB type 'A' connector at the laptop end and is hard wired into the mouse. The shield of the cable was grounded to the chassis via the connector.

Cable 3 **(USB Mode)**
This is a 2-meter cable connecting the AC adapter to the laptop. The cable has a one pin connector at the laptop end and is hard wired into the AC Adapter. The cable was bundled to a length of 1-meter.

Cable 4 This is a 1-meter unshielded cable connecting the wand to the EUT. The cable is hard wired at each end.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
RFID READER (EUT)	AVID IDENTIFICATION SYSTEMS, INC.	MINITRACKER 4 WAND READER	UNIT 1	IOL-134-AV1053
WAND	AVID IDENTIFICATION SYSTEMS, INC.	N/A	N/A	N/
FIRMWARE	AVID IDENTIFICATION SYSTEMS, INC.	999097799999901	N/A	N/A
LAPTOP	DELL	P89G	DQNH703	N/A
MOUSE	HEWLETT PACKARD	N910U	K9P02625630	N/A
AC ADAPTER	DELL	LA45NM140	CN-0KXTTW-LOC00	N/A
BLE MODULE	AVID IDENTIFICATION SYSTEMS, INC.	BT840F	N/A	IOL-BT840F

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
RF RADIATED AND AC CONDUCTED EMISSIONS TEST EQUIPMENT					
TDK TestLab	TDK RF Solutions, Inc.	9.22	700145	N/A	N/A
EMI Receiver, 3 Hz – 44 GHz	Keysight Technologies, Inc.	N9038A	MY59050117	July 14, 2023	July 14, 2025
System Controller	Sunol Sciences Corporation	SC110V	112213-1	N/A	N/A
Turntable	Sunol Sciences Corporation	2011VS	N/A	N/A	N/A
Antenna-Mast	Sunol Sciences Corporation	TWR95-4	112213-3	N/A	N/A
Loop Antenna	Com-Power	AL-130R	121090	February 10, 2022	February 10, 2025
CombiLog Antenna	Com-Power	AC-220	10030004	November 22, 2023	November 22, 2025
Horn Antenna	Com-Power	AH-118	10050192	November 30, 2023	November 30, 2025
Preamplifier	Com-Power	PA-118	181653	March 7, 2022	March 7, 2025
Preamplifier	Com-Power	PA-840	711013	April 8, 2022	April 8, 2025
Horn Antenna	Com-Power	AH-826	0071957	NCR	NCR
Below 1 GHz Conducted Cable	N/A	N/A	Asset #: 0009	October 3, 2022	October 3, 2024
Below 1 GHz Radiated Cable	N/A	N/A	Asset #: 0006	October 3, 2022	October 3, 2025
Above 1 GHz Cable	Suhner	Sucoflex 102EA	2291	August 22, 2023	August 22, 2025
Above 1 GHz Cable	Suhner	Sucoflex 102EA	501393	August 22, 2023	August 22, 2025
Above 1 GHz Cable	Suhner	Sucoflex 102EA	501394	August 22, 2023	August 22, 2025
High Pass Filter	Microwave Circuits	H3G020G4	495523	December 6, 2023	December 6, 2025
LCD Monitor	Hewlett Packard	52031a	3CQ046N3MG	N/A	N/A
Variable Autotransformer	Staco Energy Products	3PN2210	003	N/A	N/A
True RMS	Fluke	115	36601149WS	March 18, 2024	March 18, 2026

Multimeter					

6. TEST SITE DESCRIPTION

6.1 Test Facility Description

Please refer to section 2.1 of this report for emissions test location.

6.2 EUT Mounting, Bonding and Grounding

The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

The EUT was not grounded.

7. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section.

7.1 RF Emissions

7.1.1 Conducted Emissions Test

The EMI Receiver was used as a measuring meter. A 10 dB attenuator was used for the protection of the EMI Receiver input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the EMI Receiver. The output of a second LISN was terminated by a 50-ohm termination. The effective measurement bandwidth used for this test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding, and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI C63.4. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 0.4 meters in length.

The conducted emissions from the EUT were maximized for operating mode as well as cable placement. The final data was collected under program control by computer software. The final qualification data is located in Appendix E.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.207.

Note: The **Class B** limits were used because they are similar to the conducted limits of FCC 15.107 which is for conducted emissions for intentional radiators.

7.1.2 Radiated Emissions (Spurious and Harmonics) Test – Lab D

The EMI Receiver was used as the measuring meter. A built-in, internal preamplifier was used to increase the sensitivity of the instrument. The EMI Receiver was initially used with the Analyzer mode feature activated. In this mode, the EMI receiver can then record the actual frequency to be measured. This final reading is then taken accurately in the EMI Receiver mode, which takes into account the cable loss, amplifier gain and antenna factors, so that a true reading is compared to the true limit. The effective measurement bandwidth used for the radiated emissions test was according to the frequency measured (200 Hz for 9 kHz to 150 kHz, 9 kHz for 150 kHz to 30 MHz, 120 kHz for 30 MHz to 1 GHz and 1 MHz for 1 GHz to 25 GHz).

The frequencies 1 GHz and below were Quasi-Peaked using the Quasi-Peak detector function on the EMI Receiver.

The frequencies above 1 GHz were averaged using the RMS detector function on the EMI Receiver.

The EMI test chamber of Compatible Electronics, Inc. was used for radiated emissions testing. This test site is in full compliance with ANSI C63.4. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength). The gunsight method was used when measuring with the horn antenna in order to ensure accurate results.

The EUT was tested at a 3-meter test distance. The six highest emissions are listed in Table 1.0.

Radiated Emissions (Spurious and Harmonics) Test – Lab D (Continued)

The measurement bandwidths and transducers used for the radiated emissions test were:

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
9 kHz to 150 kHz	200 Hz	Loop Antenna
150 kHz to 30 MHz	9 kHz	Loop Antenna
30 MHz to 1 GHz	120 kHz	CombiLog Antenna
1 GHz to 25 GHz	1 MHz	Horn Antenna

Test Results:

The EUT complies with the **Class A** limits of **CFR** Title 47, Part 15, Subpart B; Subpart C sections 15.205 and 15.209 for radiated emissions. Emissions in the non-restricted bands that were verified from being from the intentional radiator of the pre-certified RF module do not need to meet FCC 15.209 limits, but instead the criteria per FCC 15.247 (d). See the certification for FCC ID: IOL-BT840F for further information.

Note: Per CFR Title 47, Part 15, Subpart C, section 15.209 (f), any harmonics tested above the tenth harmonic shall comply with the general radiated emission limits applicable to the incorporated digital device as shown in 15.109. The tenth harmonic of 134.2 kHz is 1.342 MHz.

7.1.4 RF Emissions Test Results

Table 1.0 CONDUCTED EMISSION RESULTS
RFID Reader, Model: MINITRACKER 4 WAND READER

Frequency (MHz)	Average Emission Level* (dBuV)	Average Specification Limit (dBuV)	Delta (Emission – Spec. Limit) (dB)
0.158 (Line) (Modulated)	40.70	55.87	-15.17
0.154 (Line) (Modulated)	40.56	55.81	-15.24
0.162 (Line) (Modulated)	40.50	55.78	-15.27
0.158 (Neutral) (CW)	40.33	55.74	-15.41
0.166 (Neutral) (CW)	40.01	55.53	-15.52
14.622 (Line) (CW)	34.16	50.00	-15.84

Notes:
* The complete emissions data is given in Appendix E of this report.
(CW) Continuous Wave

RF Emissions Test Results (Continued)

Table 2.0 RADIATED EMISSION RESULTS
RFID Reader, Model: MINITRACKER 4 WAND READER

Frequency MHz	Corrected Reading* dBuV/m	Specification Limit dBuV/m	Delta (Cor. Reading – Spec. Limit) dB
0.1342 (Antenna Z-Axis) (Z-Axis) (USB Mode) (CW)	24.41	25.05	-0.64
0.1342 (Antenna X-Axis) (Y-Axis) (Battery Mode) (CW)	23.74	25.05	-1.31
4804.00 (Antenna V))(Y-Axis) (USB Mode)	52.63 (AVG)	53.97	-1.34
0.1342 (Antenna X-Axis)(Y-Axis) (CW Mode) (USB)	23.55	25.05	-1.50
0.1342 (Antenna X-Axis) (Y-Axis) (CW Mode) (Battery)	22.91	25.05	-2.14
4880.00 (Antenna V)(Y-Axis) (USB Mode)	51.82	53.97	-2.15

Notes:

* The complete emissions data is given in Appendix E of this report.
(BL) Black Lead
(WL) White Lead
(V) Vertical
(H) Horizontal
(USB) Universal Serial Bus
(CW) Continuous Wave
(AVG) Average

7.1.5 Sample Calculations

A correction factor for the antenna, cable, and a distance factor (if any) must be applied to the meter reading before a true field strength reading can be obtained. This Corrected Meter Reading is then compared to the specification limit in order to determine compliance with the limits.

Conversion to logarithmic terms: Specification limit (µV/m) log x 20 = Specification Limit in dBuV/m

To correct for distance when measuring at a distance other than the specification

For measurements below 30 MHz: (Specification distance / test distance) log x 40 = distance factor

For measurements above 30 MHz: (Specification distance / test distance) log x 20 = distance factor

Note: When using an Active Antenna, the Antenna factor shall be subtracted due to the combination of the internal amplification and antenna loss.

Corrected Meter Reading = meter reading + F – A + C

where: F = antenna factor
A= amplifier gain
C = cable loss

The correction factors for the antenna and the amplifier gain are attached in Appendix D of this report. The data sheets are attached in Appendix E.

The distance factor D is 0 when the test is performed at the required specification distance.

When the limit is in terms of magnetic field, the following equation applies:

$$H[dB(\mu A/m)] = V[dB(\mu V)] + L_C\,[dB] - G_{PA}\,[dB] + AF^H\,[dB(S/m)]$$

where: *H* is the magnetic field strength (to be compared with the limit),
V is the voltage level measured by the receiver or spectrum analyzer,
L_C is the cable loss,
G_{PA} is the gain of the preamplifier (if used), and
AF^H is the magnetic antenna factor.

The G_{PA} term is only included in the equation when an external preamplifier is used in the measurement chain, in front of the receiver or spectrum analyzer. An external preamplifier is not usually necessary (or even advisable, due to risk of saturating the input mixer of the receiver) when an active loop antenna is used. In that case, the antenna factor of the loop already includes the gain of its built-in preamplifier.

Sample Calculations (Continued)

If the "electrical" antenna factor is used instead, the above equation becomes:

$$H[dB(\mu A/m)] = V[dB(\mu V)] + L_C\,[dB] - G_{PA}[dB] + AF^E\,[dB(m^{-1})\,] - 51.5\,[dB\Omega]$$

where: AF^E is the "electric" antenna factor, as provided by the antenna calibration laboratory.

When the limit is in terms of electric field, the following equation applies:

$$E[dB(\mu V/m)] = V[dB(\mu V)] + L_C[dB] - G_{PA}[dB] + AF^E\,[dB(m^{-1})\,]$$

or, if the magnetic antenna factor is used:

$$E[dB(\mu V/m)] = V[dB(\mu V)] + L_C[dB] - G_{PA}[dB] + AF^H\,[dB(S/m)] + 51.5[dB\Omega]$$

The display of the receiver (or spectrum analyzer) **shall not** be configured in units of current, e.g. µA or dB(µA). That conversion is calculated inside the receiver (or spectrum analyzer) using its input impedance, which is 50 Ω, while the magnetic field calculation is based on the free-space impedance of 377 Ω.

7.1.6 Variation of the Input Power

The variation of the input power test was performed using the EMI Receiver. The EUT input power was varied between 85 % and 115 % of the nominal rated supply voltage. The carrier frequency was monitored for any change in amplitude.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart A section 15.31 (e). The variation of the input voltage was varied from 85% to 115% on the laptop providing the power to the EUT in USB mode. It was determined that this did not change the amplitude nor the frequency of the fundamental emissions.

This test was not performed when the EUT was in battery mode.

8. CONCLUSIONS

The RFID Reader, Model: MiniTracker 4 Wand Reader, as tested, meets all of the specification limits defined in FCC Title 47, Part 15, Subpart B and Subpart C, sections 15.205, 15.207, and 15.209.

APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

LABORATORY ACCREDITATIONS AND RECOGNITIONS

NVLAP® TESTING
NVLAP LAB CODE 200528-0

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For US, Canada, Australia/New Zealand, Japan, Taiwan, Korea, and the European Union, Compatible Electronics is currently accredited by NVLAP to ISO/IEC 17025.
For the most up-to-date version of our scopes and certificates please visit http://celectronics.com/quality/scope/

Quote from ISO-ILAC-IAF Communiqué on 17025:
"A laboratory's fulfilment of the requirements of ISO/IEC 17025:2005 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025:2005 (Section 4) are written in language relevant to laboratory operations and meet the principles of ISO 9001:2008 Quality Management Systems — Requirements."

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC Subpart B and FCC Subpart C specifications.

All the rework described below was implemented during the test in a method that could be reproduced in all the units by the manufacturer.

No modifications were made to the EUT during the testing.

APPENDIX C

ADDITIONAL MODELS

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

RFID Reader
Model: MiniTracker 4 Wand Reader
S/N: N/A

ADDITIONAL MODELS COVERED UNDER THIS REPORT:

There were no additional models covered under this report.

APPENDIX D

DIAGRAMS AND CHARTS

FIGURE 1: LAYOUT OF THE SEMI-ANECHOIC TEST CHAMBER

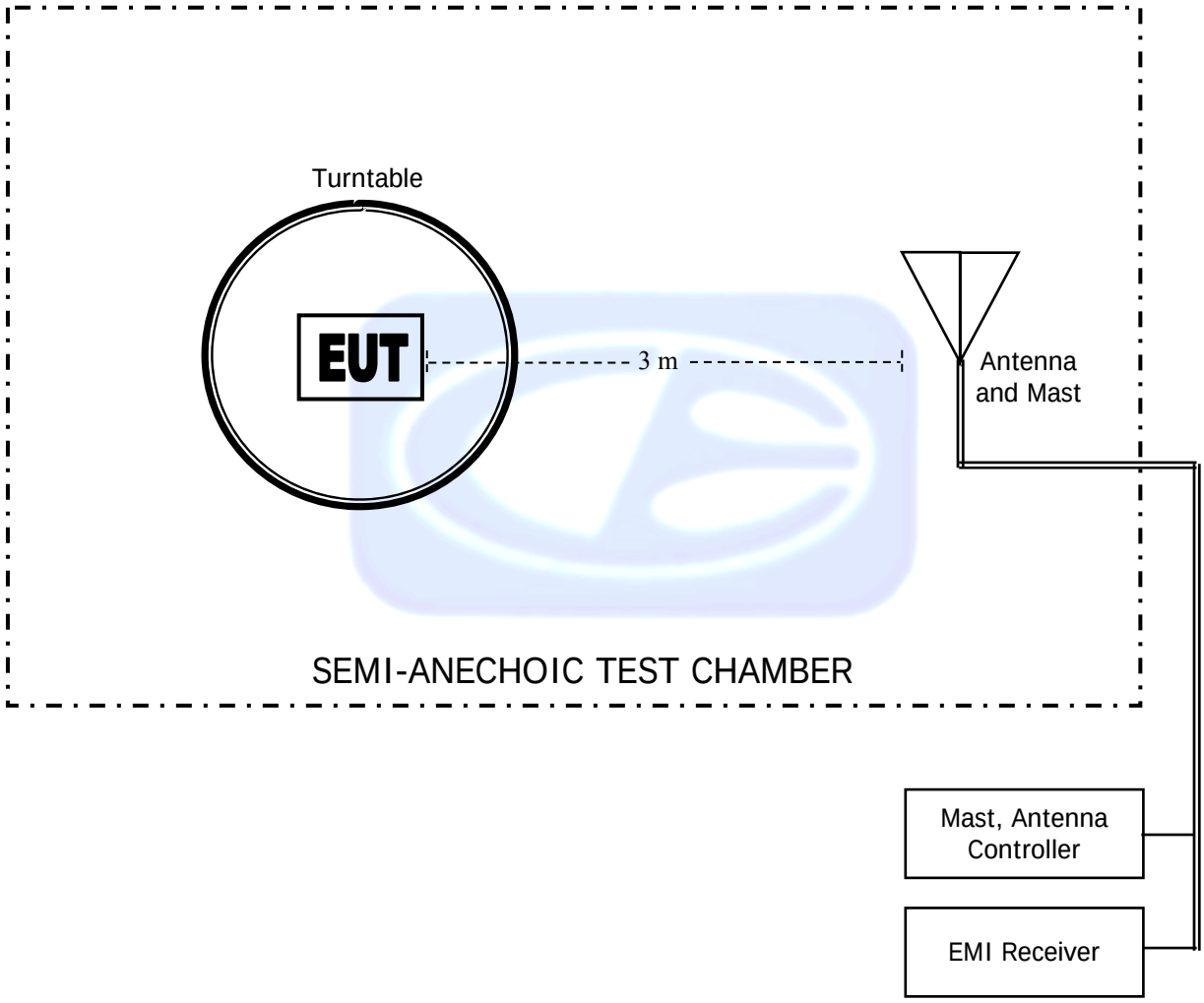
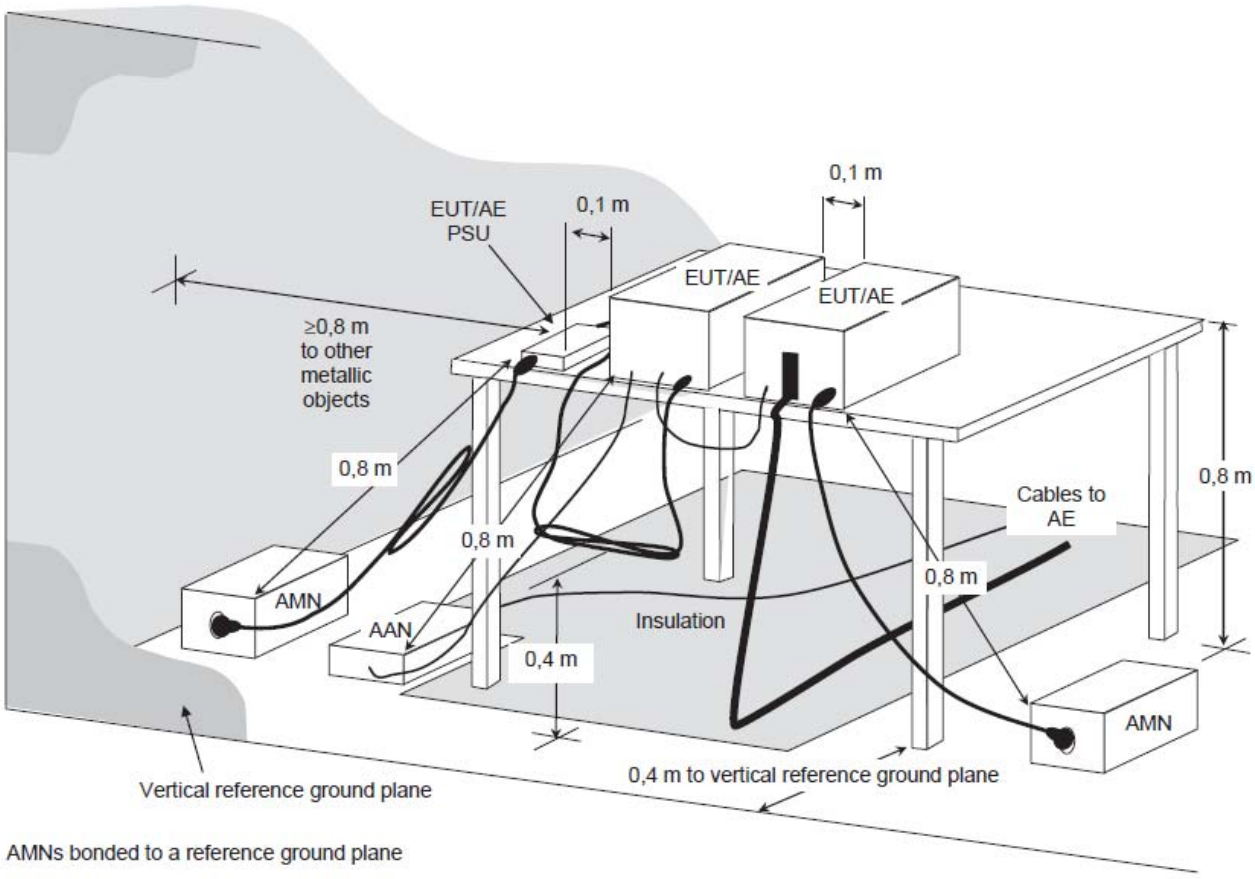


FIGURE 2: CONDUCTED EMISSIONS TEST SETUP



COM-POWER AL-130R

LOOP ANTENNA

S/N: 121090

CALIBRATION DATE: FEBRUARY 10, 2022

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	15.6	-35.8
0.01	15.8	-35.6
0.02	14.8	-36.6
0.03	15.6	-35.9
0.04	15.0	-36.5
0.05	14.4	-37.1
0.06	14.6	-36.9
0.07	14.3	-37.2
0.08	14.3	-37.2
0.09	14.4	-37.0
0.10	14.1	-37.4
0.20	14.1	-37.4
0.30	14.0	-37.5
0.40	13.9	-37.6
0.50	14.1	-37.3
0.60	14.1	-37.3
0.70	14.2	-37.3
0.80	14.2	-37.3
0.90	14.2	-37.2
1.00	14.4	-37.0
2.00	14.6	-36.9
3.00	14.6	-36.8
4.00	14.9	-36.6
5.00	14.9	-36.7
6.00	14.8	-36.7
7.00	14.6	-36.8
8.00	14.5	-37.0
9.00	14.3	-37.2
10.00	14.5	-37.0
11.00	14.6	-36.9
12.00	14.7	-36.7
13.00	14.9	-36.6
14.00	15.0	-36.5
15.00	14.9	-36.6
16.00	14.9	-36.6
17.00	14.6	-36.8
18.00	14.4	-37.1
19.00	14.5	-37.0
20.00	14.5	-37.0
21.00	14.2	-37.3
22.00	13.9	-37.5
23.00	13.9	-37.5
24.00	13.8	-37.7
25.00	13.4	-38.0
26.00	13.2	-38.2
27.00	13.2	-38.3
28.00	12.7	-38.7
29.00	12.7	-38.8
30.00	12.4	-39.0

COM-POWER AC-220

COMBILOG ANTENNA

S/N: 10030004

CALIBRATION DATE: NOVEMBER 22, 2023

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	23.10	200	16.10
35	22.00	250	17.90
40	41.30	300	19.10
45	20.50	350	20.30
50	19.30	400	21.60
60	15.40	450	22.20
70	12.40	500	23.20
80	12.40	550	23.70
90	14.10	600	25.10
100	15.50	650	25.30
120	15.90	700	25.10
125	15.90	750	26.70
140	14.80	800	26.60
150	14.60	850	27.20
160	14.80	900	28.00
175	15.90	950	29.10
180	15.50	1000	28.90

COM POWER AH-118

HORN ANTENNA

S/N: 10050192

CALIBRATION DATE: NOVEMBER 30, 2023

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	24.01	10.0	38.78
1.5	25.25	10.5	39.29
2.0	27.21	11.0	39.30
2.5	27.42	11.5	39.87
3.0	28.89	12.0	39.77
3.5	30.58	12.5	40.21
4.0	31.78	13.0	40.01
4.5	32.48	13.5	40.06
5.0	33.13	14.0	40.63
5.5	34.27	14.5	41.41
6.0	34.92	15.0	41.53
6.5	35.58	15.5	40.59
7.0	36.83	16.0	41.63
7.5	37.02	16.5	40.93
8.0	36.93	17.0	41.27
8.5	37.67	17.5	41.69
9.0	37.53	18.0	44.00
9.5	38.76		

COM-POWER PAM-118

PREAMPLIFIER

S/N: 181653

CALIBRATION DATE: MARCH 7, 2022

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	40.02	6.0	38.84
1.1	39.72	6.5	39.20
1.2	39.93	7.0	39.46
1.3	39.98	7.5	39.67
1.4	39.99	8.0	39.28
1.5	40.20	8.5	38.63
1.6	40.05	9.0	38.96
1.7	40.15	9.5	39.33
1.8	40.20	10.0	39.58
1.9	40.33	11.0	38.25
2.0	40.33	12.0	40.03
2.5	40.60	13.0	40.55
3.0	40.76	14.0	40.36
3.5	40.87	15.0	39.34
4.0	40.39	16.0	37.34
4.5	39.55	17.0	42.14
5.0	40.34	18.0	42.54
5.5	39.45		

COM-POWER AH-826

HORN ANTENNA

S/N: 71957

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	33.5	22.5	35.5
18.5	33.5	23.0	35.9
19.0	34.0	23.5	35.7
19.5	34.0	24.0	35.6
20.0	34.3	24.5	36.0
20.5	34.9	25.0	36.2
21.0	34.7	25.5	36.1
21.5	35.0	26.0	36.2
22.0	35.0	26.5	35.7

COM-POWER PA-840

MICROWAVE PREAMPLIFIER

S/N: 711013

CALIBRATION DATE: APRIL 8, 2022

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	24.85	31.0	25.37
19.0	24.25	31.5	25.44
20.0	22.69	32.0	24.96
21.0	22.17	32.5	26.17
22.0	22.78	33.0	25.83
23.0	23.23	33.5	25.19
24.0	23.72	34.0	26.31
25.0	24.13	34.5	24.70
26.0	24.28	35.0	25.31
26.5	25.06	35.5	24.39
27.0	26.22	36.0	25.09
27.5	24.85	36.5	25.24
28.0	25.30	37.0	27.10
28.5	25.01	37.5	27.45
29.0	25.54	38.0	23.72
29.5	26.23	38.5	23.01
30.0	26.00	39.0	21.29
30.5	25.39	39.5	21.11
		40.0	19.17

FRONT VIEW

AVID IDENTIFICATION SYSTEMS, INC.
RFID READER
MODEL: MINITRACKER 4 WAND READER
BATTERY MODE
FCC SUBPART C – RADIATED EMISSIONS – BELOW 30 MHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

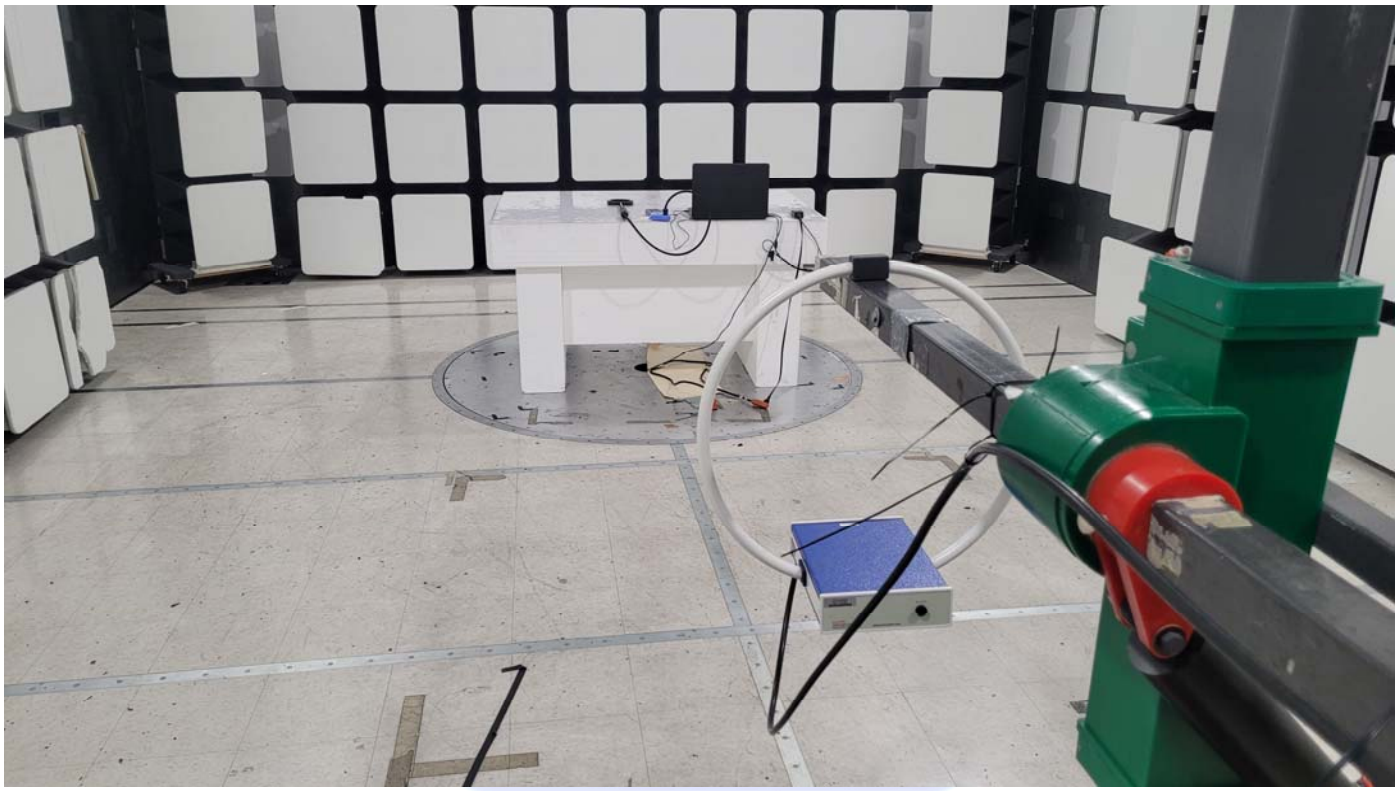
AVID IDENTIFICATION SYSTEMS, INC.
RFID READER
MODEL: MINITRACKER 4 WAND READER
BATTERY MODE
FCC SUBPART C – RADIATED EMISSIONS – BELOW 30 MHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

FRONT VIEW

AVID IDENTIFICATION SYSTEMS, INC.
RFID READER
MODEL: MINITRACKER 4 WAND READER
USB MODE
FCC SUBPART C – RADIATED EMISSIONS – BELOW 30 MHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

AVID IDENTIFICATION SYSTEMS, INC.
RFID READER
MODEL: MINITRACKER 4 WAND READER
USB MODE
FCC SUBPART C – RADIATED EMISSIONS – BELOW 30 MHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

FRONT VIEW

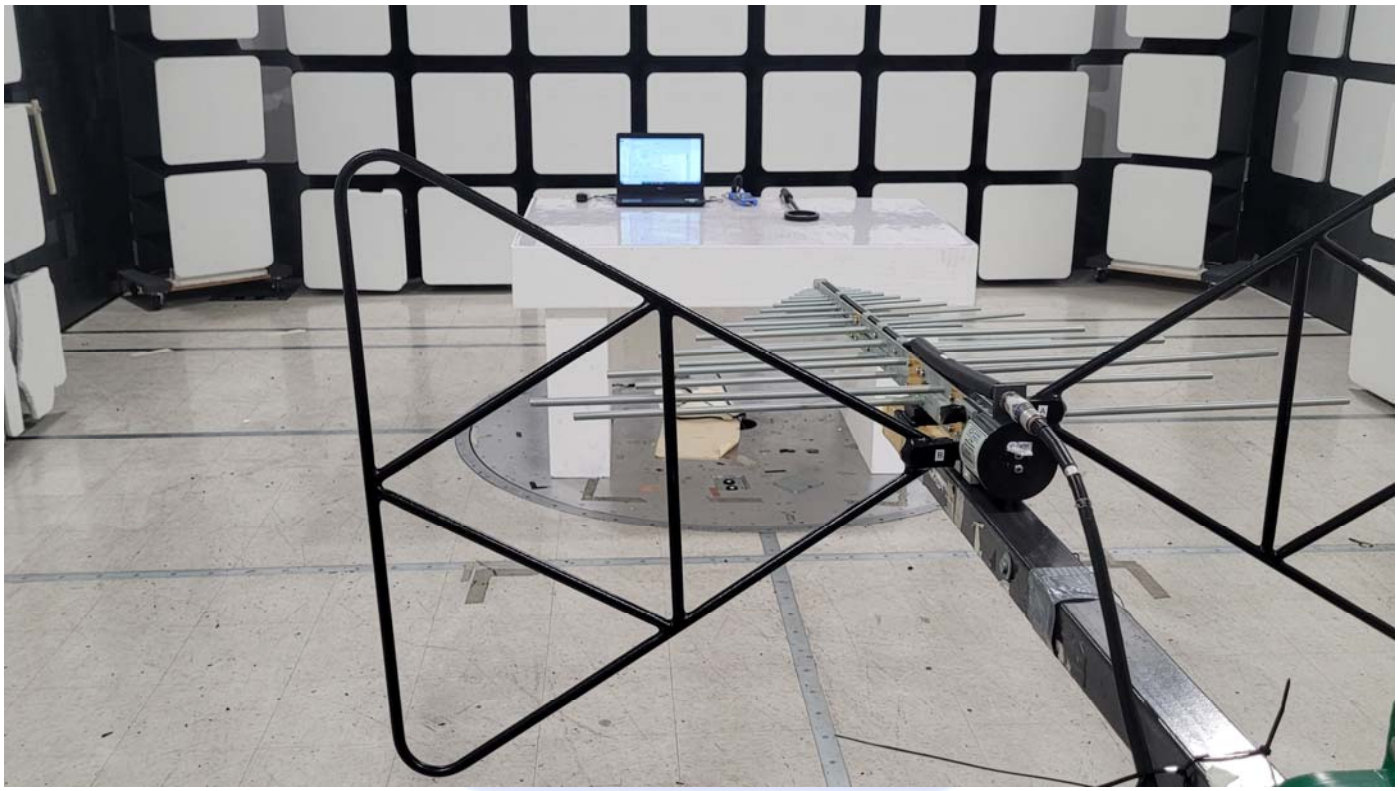
AVID IDENTIFICATION SYSTEMS, INC.
RFID READER
MODEL: MINITRACKER 4 WAND READER
BATTERY MODE
FCC SUBPART B and C – RADIATED EMISSIONS – 30 MHz to 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

AVID IDENTIFICATION SYSTEMS, INC.
RFID READER
MODEL: MINITRACKER 4 WAND READER
BATTERY MODE
FCC SUBPART B and C – RADIATED EMISSIONS – 30 MHz to 1 GHz

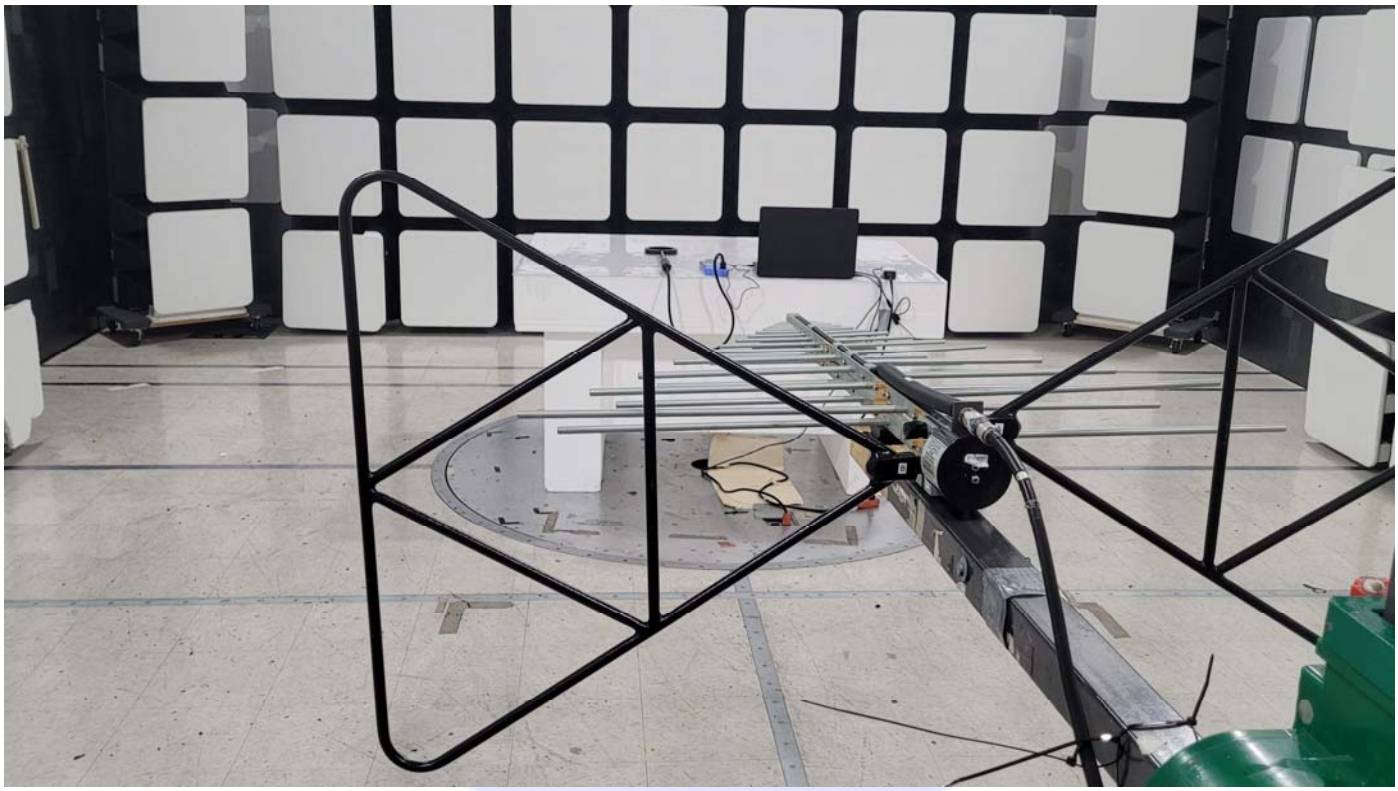
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

AVID IDENTIFICATION SYSTEMS, INC.
RFID READER
MODEL: MINITRACKER 4 WAND READER
USB MODE
FCC SUBPART B and C – RADIATED EMISSIONS – 30 MHz TO 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



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AVID IDENTIFICATION SYSTEMS, INC.
RFID READER
MODEL: MINITRACKER 4 WAND READER
USB MODE
FCC SUBPART B and C – RADIATED EMISSIONS – 30 MHz TO 1 GHz

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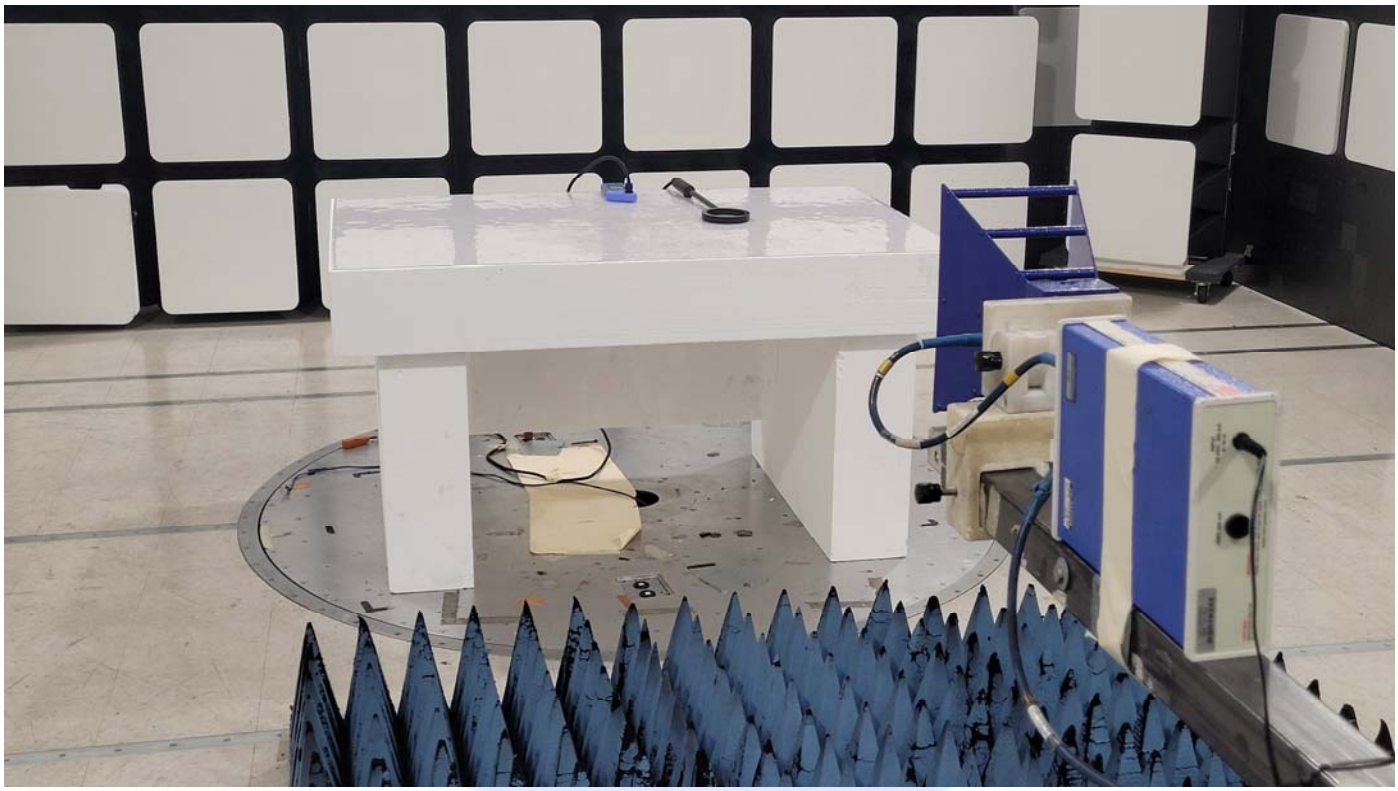
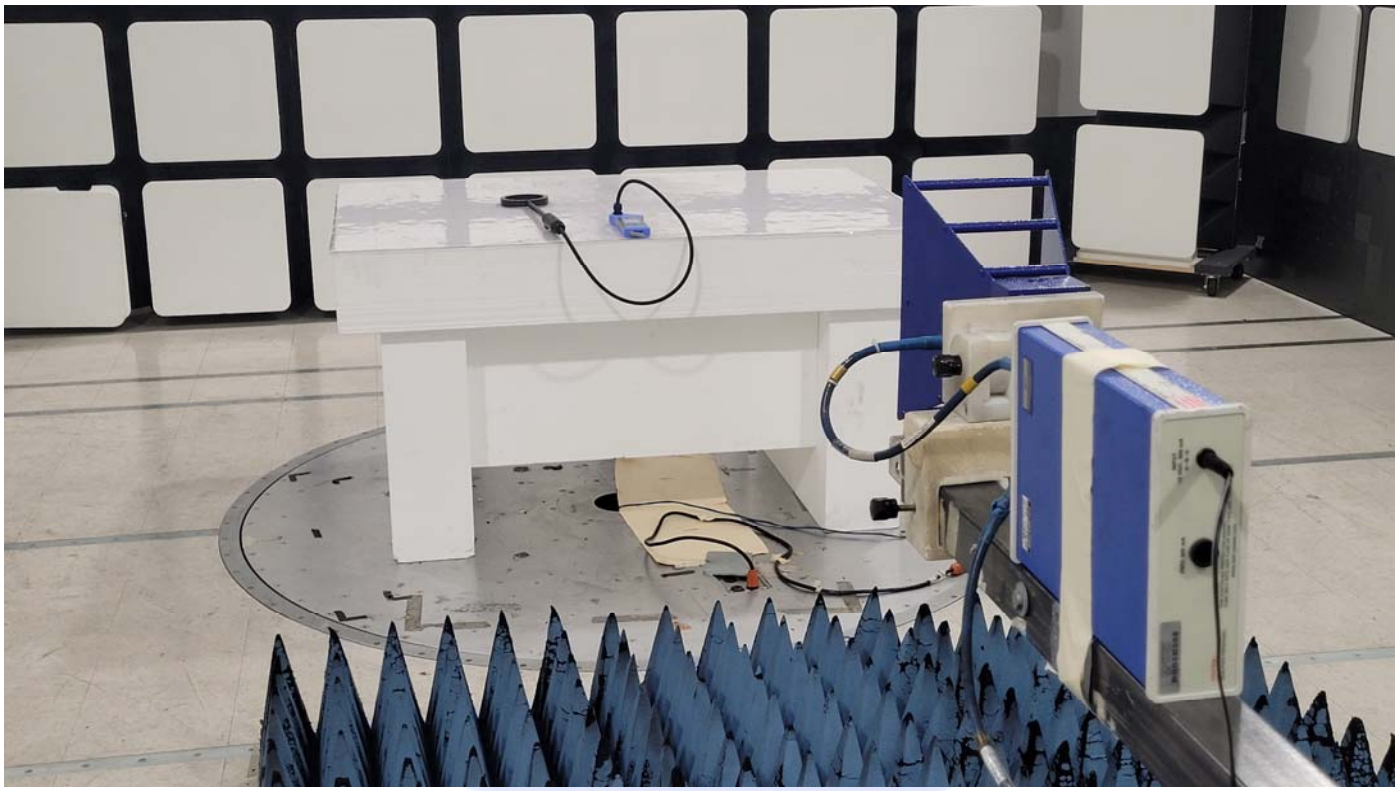


FRONT VIEW

AVID IDENTIFICATION SYSTEMS, INC.
RFID READER
MODEL: MINITRACKER 4 WAND READER
BATTERY MODE
FCC SUBPART B – RADIATED EMISSIONS – ABOVE 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

AVID IDENTIFICATION SYSTEMS, INC.
RFID READER
MODEL: MINITRACKER 4 WAND READER
BATTERY MODE
FCC SUBPART B – RADIATED EMISSIONS – ABOVE 1 GHz

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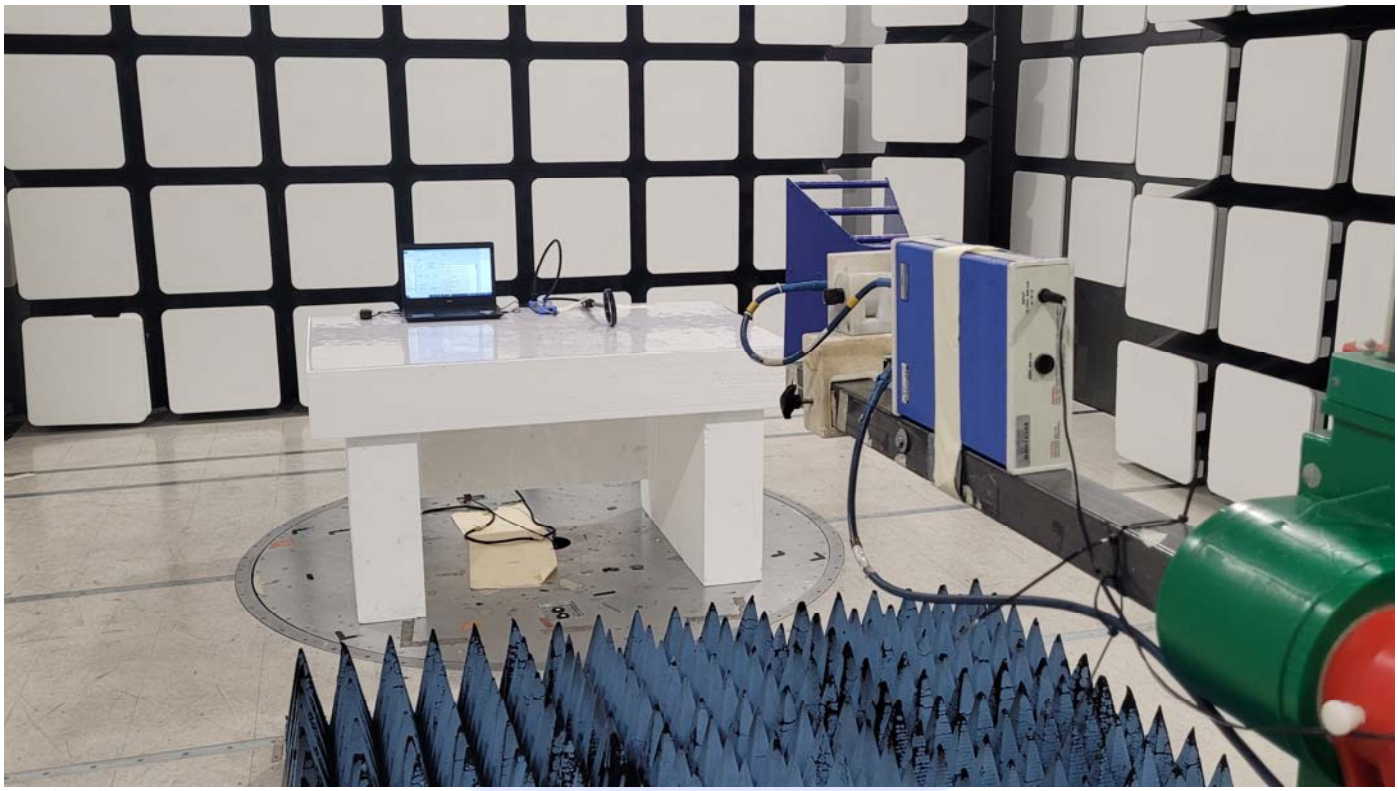

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USB MODE
FCC SUBPART B – RADIATED EMISSIONS – ABOVE 1 GHz

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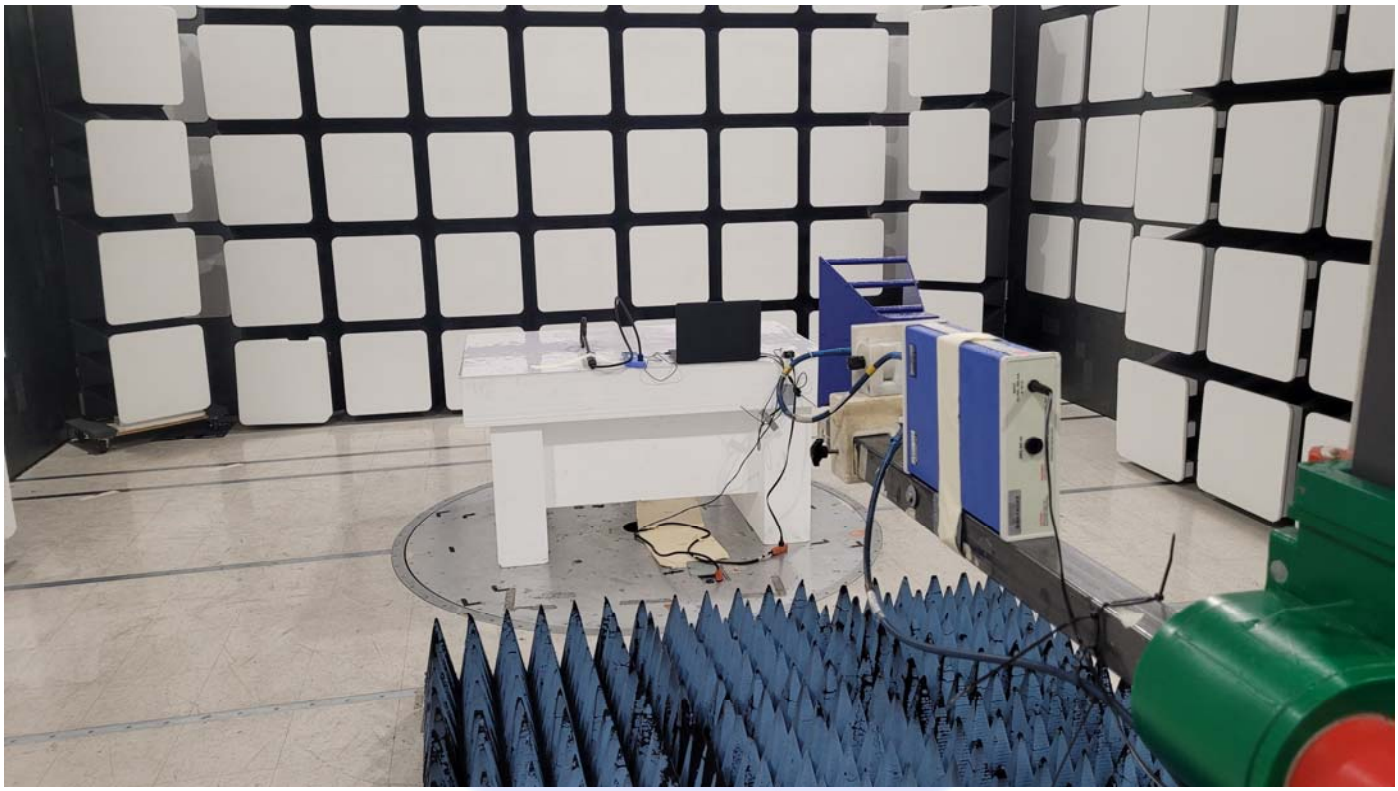

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FCC SUBPART B – RADIATED EMISSIONS – ABOVE 1 GHz

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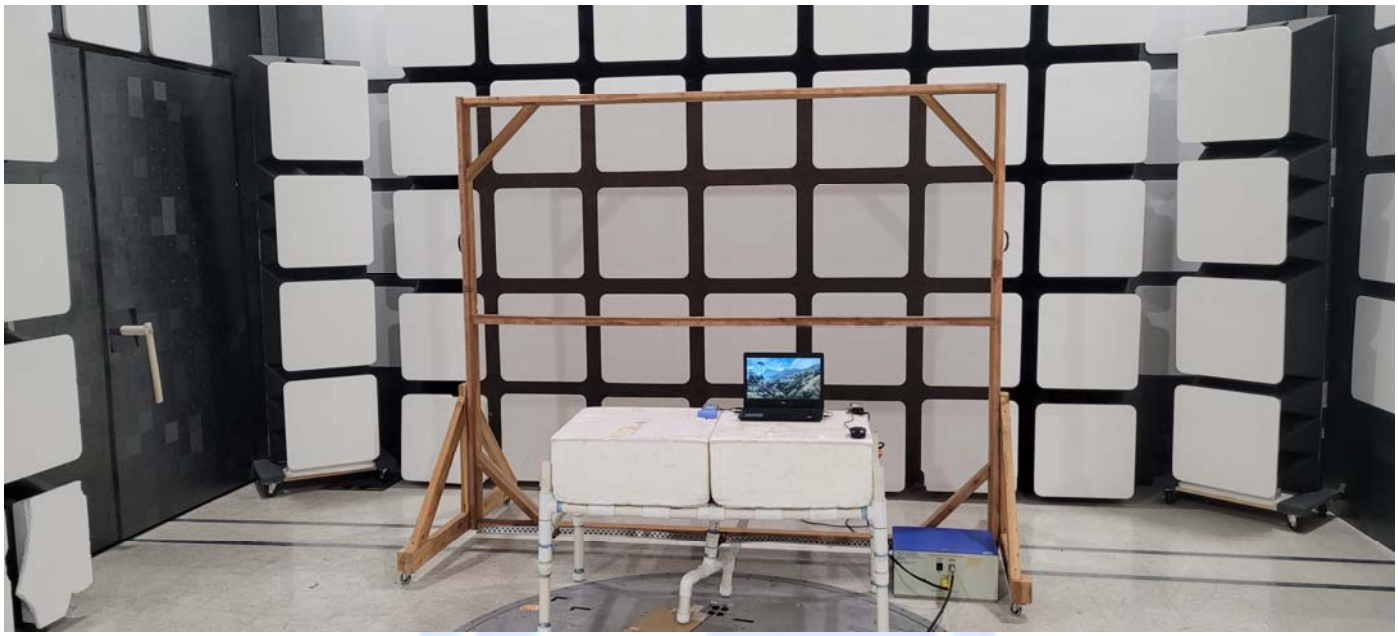

FRONT VIEW

AVID IDENTIFICATION SYSTEMS, INC.
RFID READER
MODEL: MINITRACKER 4 WAND READER
USB MODE
FCC SUBPART B AND C – CONDUCTED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

AVID IDENTIFICATION SYSTEMS, INC.
RFID READER
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USB MODE
FCC SUBPART B AND C – CONDUCTED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS