

*FCC PART 15, SUBPART B and C  
TEST REPORT**for*

WAND READER

MODEL: AVID1040

Prepared for

AVID IDENTIFICATION SYSTEMS, INC.  
3179 HAMNER AVENUE  
NORCO, CALIFORNIA 92860-9972

Prepared by: \_\_\_\_\_

KYLE FUJIMOTO

Approved by: \_\_\_\_\_

MICHAEL CHRISTENSEN

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DATE: APRIL 29, 2004

REPORT BODY	A	B	C	D	E	TOTAL
PAGES	14	2	2	11	6	37

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1	Plot Map And Layout of 3 Meter Radiated Test Site
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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 endorsement by NVLAP, NIST or any other agency of the U.S. Government.

Device Tested: Wand Reader  
 Model: AVID1040  
 S/N: N/A

Product Description: See Expository Statement.

Modifications: The EUT was not modified in order to meet the specifications.

Manufacturer: AVID Identification Systems, Inc.  
 3179 Hamner Avenue  
 Norco, California 92860-9972

Test Date: December 2, 2003

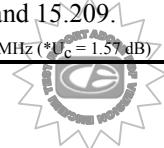
Test Specifications: EMI requirements  
 CFR Title 47, Part 15 Subpart B; and Subpart C, Sections 15.205 and 15.209

Test Procedure: ANSI C63.4: 2001

Test Deviations: The test procedure was not deviated from during the testing.

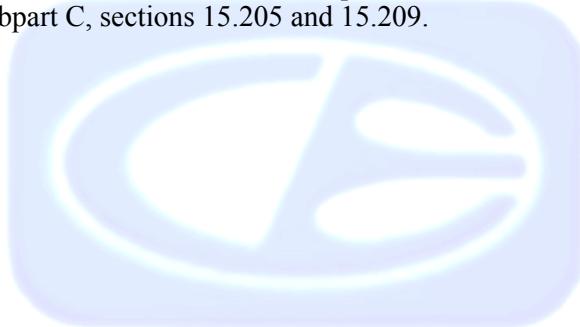
## SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions, 150 kHz - 30 MHz	The EUT is powered by a nine volt battery only and cannot be plugged into the AC public mains.
2	Radiated RF Emissions, 10 kHz - 1000 MHz	Complies with the <b>Class B</b> limits of CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205 and 15.209. <small>Highest Reading in Relation to Spec Limit: 38.92 dB<math>\mu</math>V @ 72.079 MHz (*<math>U_c = 1.57</math> dB)</small>



## 1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Wand Reader Model: AVID1040. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4: 2001. 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 and 15.209.



## 2. ADMINISTRATIVE DATA

### 2.1 Location of Testing

The EMI tests described herein were performed at the test facility of Compatible Electronics, 114 Olinda Drive, Brea, California 92823.

### 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.

Michael F Cruz      Director of Engineering

Compatible Electronics, Inc.

Kirit Ramani	Test Engineer
Kyle Fujimoto	Test Engineer
Michael Christensen	Senior Test Engineer

### 2.4 Date Test Sample was Received

The test sample was received on December 1, 2003.

### 2.5 Disposition of the Test Sample

The sample has not been returned to AVID Identification Systems, Inc. as of April 29, 2004.

### 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



### 3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
CFR Title 47, Part 15	FCC Rules – Radio frequency devices (including digital devices)
ANSI C63.4 2001	American National Standard for Methods of measurement of radio-noise emissions from low-voltage electrical and electronic equipment in the range of 9 kHz to 40 GHz



## 4. DESCRIPTION OF TEST CONFIGURATION

### 4.1 Description of Test Configuration - EMI

Setup and operation of the equipment under test.

Specifics of the EUT:

The Wand Reader Model: AVID1040 (EUT) was connected to the antenna. The EUT was continuously transmitting. The EUT was tested in three orthogonal axis.

It was determined that the emissions were at their highest level when the EUT was operating in the above configuration with the EUT placed in the Z Axis. The cable was moved to maximize the emissions. The final radiated data was taken in this mode of operation. All initial investigations were performed with the spectrum analyzer in manual mode scanning the frequency range continuously. The cable was bundled and routed as shown in the photographs in Appendix D.



#### 4.1.1 **Cable Construction and Termination**

##### **Cable 1**

This is a 1 meter unshielded cable connecting the EUT to the antenna. It is hard wired at each end.



**5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT****5.1 EUT and Accessory List**

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIALNUMBER	FCC ID
WAND READER (EUT)	AVID IDENTIFICATION SYSTEMS, INC.	AVID1040	N/A	<b>IOL-125-AV1040</b>
ANTENNA (EUT)	AVID IDENTIFICATION SYSTEMS, INC.	P/N: AVID110A021	N/A	<b>N/A</b>



## 5.2      EMI Test Equipment

EQUIPMENT TYPE	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
Radiate Emissions Data Capture Program	Compatible Electronics	2.0	N/A	N/A	N/A
Spectrum Analyzer – Main Section	Hewlett Packard	8566B	3638A08784	June 20, 2003	1 Year
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	3701A22279	June 20, 2003	1 Year
Quasi-Peak Adapter	Hewlett Packard	85650A	2430A00424	June 20, 2003	1 Year
Preamplifier	Com Power	PA-103	1582	March 6, 2003	1 Year
Biconical Antenna	Com Power	AB-900	15226	April 21, 2003	1 Year
Log Periodic Antenna	Com Power	AL-100	16202	February 3, 2003	1 Year
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
Turntable	Com Power	TT-100	N/A	N/A	N/A
Computer	Hewlett Packard	4530	US91912319	N/A	N/A
Monitor	Hewlett Packard	D5258A	TW74500641	N/A	N/A
Loop Antenna	Com-Power	AL-130	17070	July 8, 2003	1 Year



## 6. TEST SITE DESCRIPTION

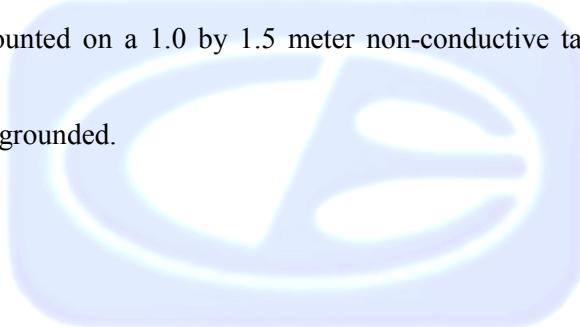
### 6.1 Test Facility Description

Please refer to section 2.1 and 7.1 of this report for EMI 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 Radiated Emissions (Spurious, Fundamental, and Harmonics) Test

The spectrum analyzer was used as a measuring meter along with the quasi-peak adapter. A preamplifier was used to increase the sensitivity of the instrument. The spectrum analyzer was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the spectrum analyzer records the highest measured reading over all the sweeps.

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	Active Loop Antenna
150 kHz to 30 MHz	9 kHz	Active Loop Antenna
30 MHz to 300 MHz	120 kHz	Biconical Antenna
300 MHz to 1 GHz	120 kHz	Log Periodic Antenna

The open field test site of Compatible Electronics, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4: 2001. 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 loop antenna was also rotated in the horizontal and vertical axis in order to ensure accurate results.

The presence of ambient signals was verified by turning the EUT off. In case an ambient signal was detected, the measurement bandwidth was reduced temporarily and verification was made that an additional adjacent peak did not exist. This ensures that the ambient signal does not hide any emissions from the EUT. The EUT was tested at a 3 meter test distance to obtain the final test data for the spurious emissions. The EUT was tested at a 10 meter test distance to obtain the final test data for the fundamental and the harmonic emissions. The final qualification data sheets are located in Appendix E.



## 8. CONCLUSIONS

The Wand Reader Model: AVID1040 meets all of the **Class B** specification limits defined in CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205 and 15.209.



## APPENDIX A

### ***LABORATORY RECOGNITIONS***



## ***LABORATORY RECOGNITIONS***

**Compatible Electronics has the following agency accreditations:**

National Voluntary Laboratory Accreditation Program - Lab Code: 200528-0

Voluntary Control Council for Interference - Registration Numbers: R-983, C-1026, R-984 and C-1027

Bureau of Standards and Metrology Inspection - Reference Number: SL2-IN-E-1031

Conformity Assessment Body for the EMC Directive Under the US/EU MRA Appointed by NIST

**Compatible Electronics is recognized or on file with the following agencies:**

Federal Communications Commission

Industry Canada

Radio-Frequency Technologies (Competent Body)



## APPENDIX B

### ***MODIFICATIONS TO THE EUT***



## MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC 15.209 or FCC Class B 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 testing.



## APPENDIX C

***ADDITIONAL MODELS COVERED  
UNDER THIS REPORT***



## **ADDITIONAL MODELS COVERED UNDER THIS REPORT**

**USED FOR THE PRIMARY TEST**

Wand Reader  
Model: AVID1040  
S/N: N/A

There were no additional models covered under this report.



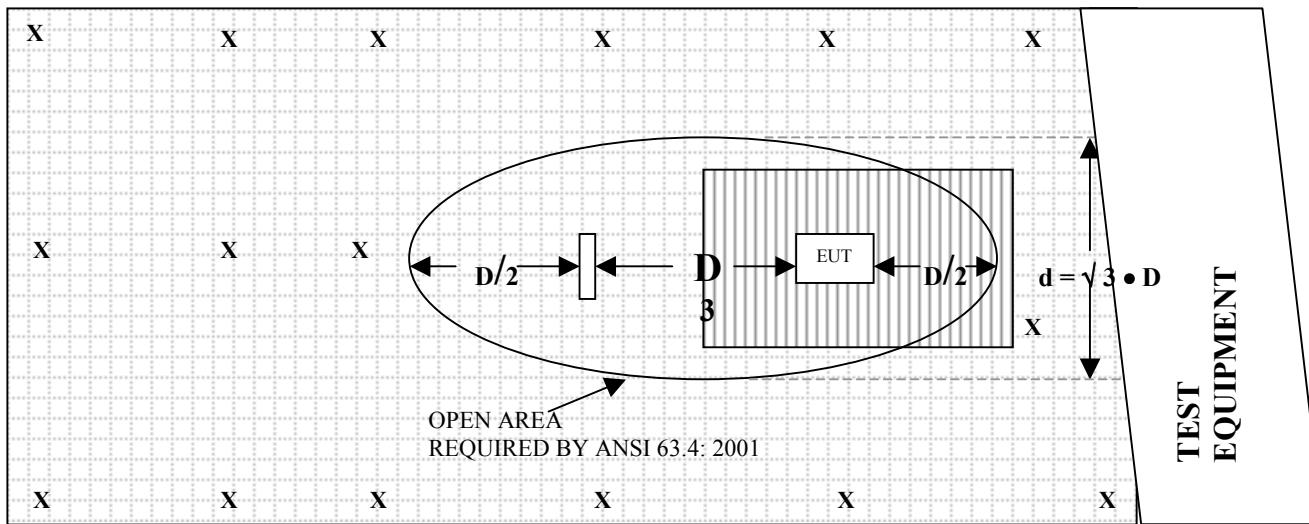
## APPENDIX D

### ***DIAGRAMS, CHARTS, AND PHOTOS***



**FIGURE 1: PLOT MAP AND LAYOUT OF 3 METER RADIATED SITE**

OPEN LAND > 15 METERS



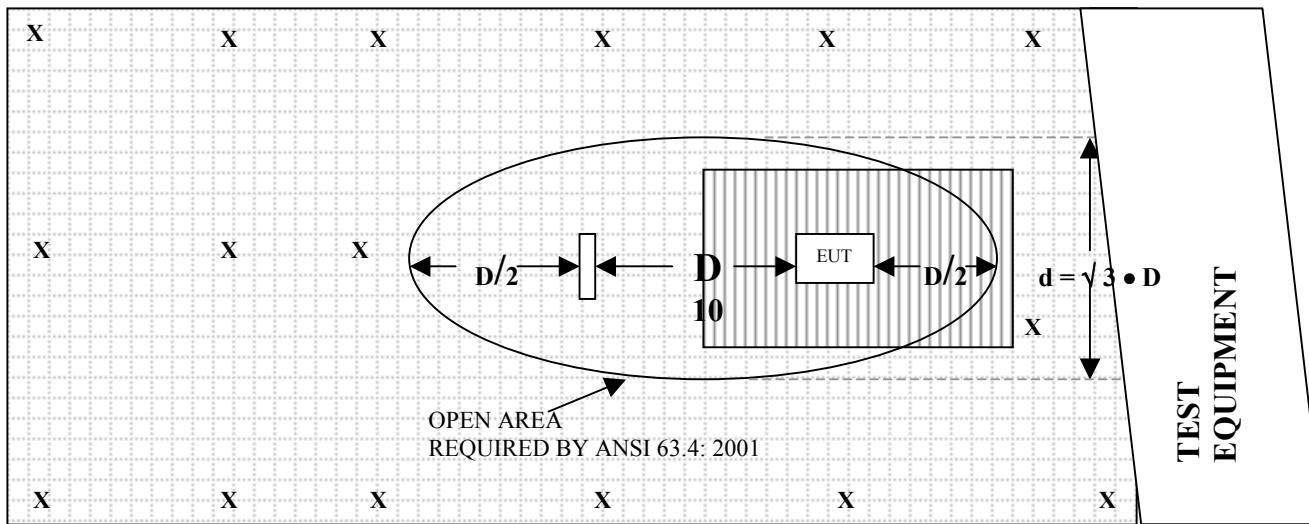
OPEN LAND > 15 METERS

	= GROUND RODS		= GROUND SCREEN
	= TEST DISTANCE (meters)		= WOOD COVER

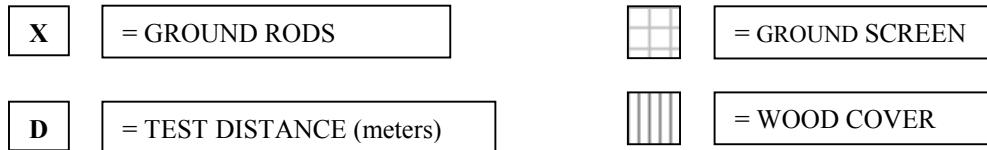


**FIGURE 2: PLOT MAP AND LAYOUT OF 10 METER RADIATED SITE**

OPEN LAND &gt; 15 METERS



OPEN LAND &gt; 15 METERS



**COM-POWER AB-900****BICONICAL ANTENNA****S/N: 15226****CALIBRATION DATE: APRIL 21, 2003**

<b>FREQUENCY (MHz)</b>	<b>FACTOR (dB)</b>	<b>FREQUENCY (MHz)</b>	<b>FACTOR (dB)</b>
30	11.20	120	13.80
35	10.40	125	12.50
40	10.20	140	12.50
45	11.00	150	10.90
50	11.30	160	11.50
60	9.60	175	14.90
70	7.40	180	15.50
80	6.10	200	16.90
90	7.70	250	15.50
100	10.50	300	23.80



**COM-POWER AL-100****LOG PERIODIC ANTENNA****S/N: 16202****CALIBRATION DATE: FEBRUARY 3, 2003**

<b>FREQUENCY (MHz)</b>	<b>FACTOR (dB)</b>	<b>FREQUENCY (MHz)</b>	<b>FACTOR (dB)</b>
300	12.70	700	20.60
400	15.40	800	21.80
500	16.50	900	21.00
600	17.20	1000	21.50



**COM-POWER PA-103****PREAMPLIFIER****S/N: 1582****CALIBRATION DATE: MARCH 6, 2003**

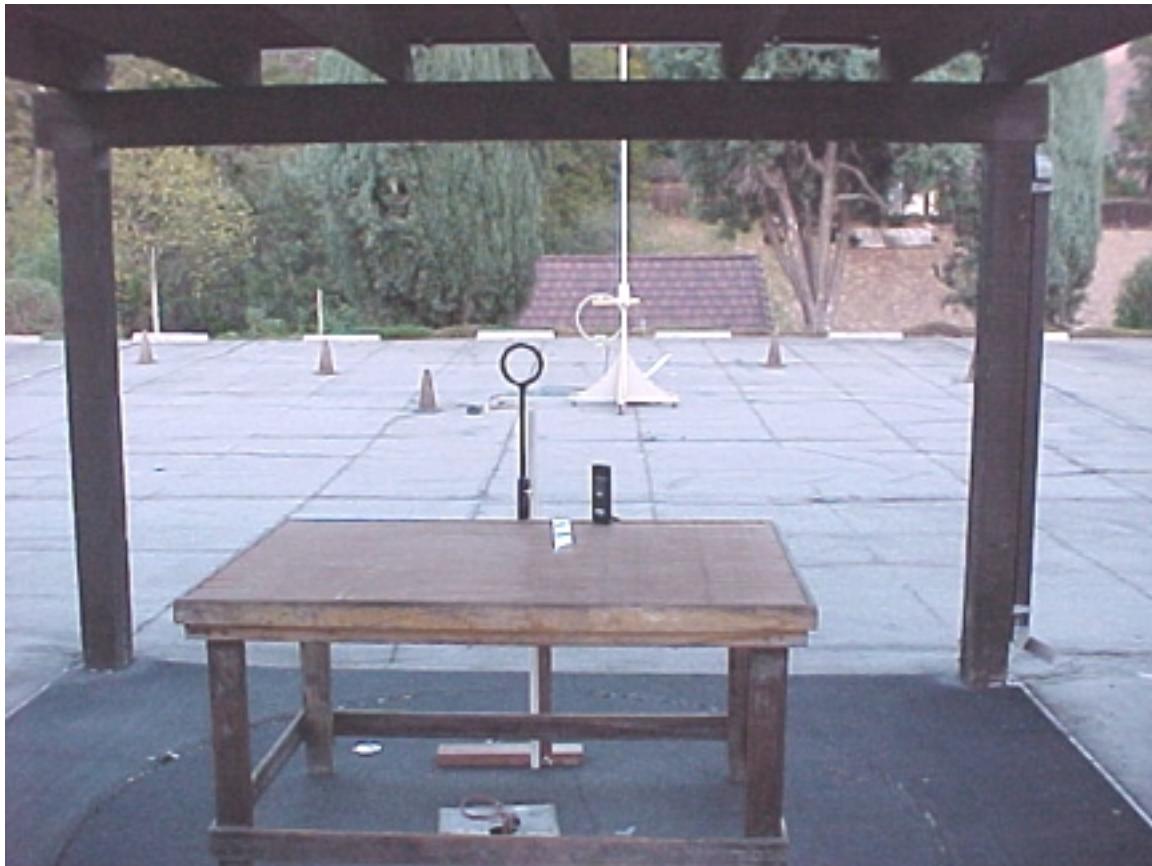
<b>FREQUENCY (MHz)</b>	<b>FACTOR (dB)</b>	<b>FREQUENCY (MHz)</b>	<b>FACTOR (dB)</b>
30	33.6	300	33.3
40	33.6	350	33.3
50	33.6	400	33.1
60	33.6	450	33.0
70	33.5	500	32.9
80	33.5	550	33.0
90	33.5	600	32.8
100	33.6	650	32.6
125	33.6	700	32.7
150	33.4	750	32.4
175	33.5	800	32.4
200	33.4	850	32.7
225	33.3	900	31.9
250	33.2	950	31.8
275	33.3	1000	32.5



**COM-POWER AL-130****LOOP ANTENNA****S/N: 17070****CALIBRATION DATE: JULY 08, 2003**

<b>FREQUENCY (MHz)</b>	<b>MAGNETIC (dB/m)</b>	<b>ELECTRIC (dB/m)</b>
0.009	-40.0	11.5
0.01	-40.1	11.4
0.02	-41.3	10.2
0.05	-39.9	11.6
0.07	-41.3	10.2
0.1	-41.5	10
0.2	-43.8	7.7
0.3	-41.4	10.1
0.5	-41.3	10.2
0.7	-41.2	10.3
1	-40.8	10.7
2	-40.3	11.2
3	-40.6	10.9
4	-40.7	10.8
5	-40.1	11.4
10	-40.5	11.0
15	-41.3	10.2
20	-41.1	10.4
25	-41.7	9.8
30	-43.1	8.4



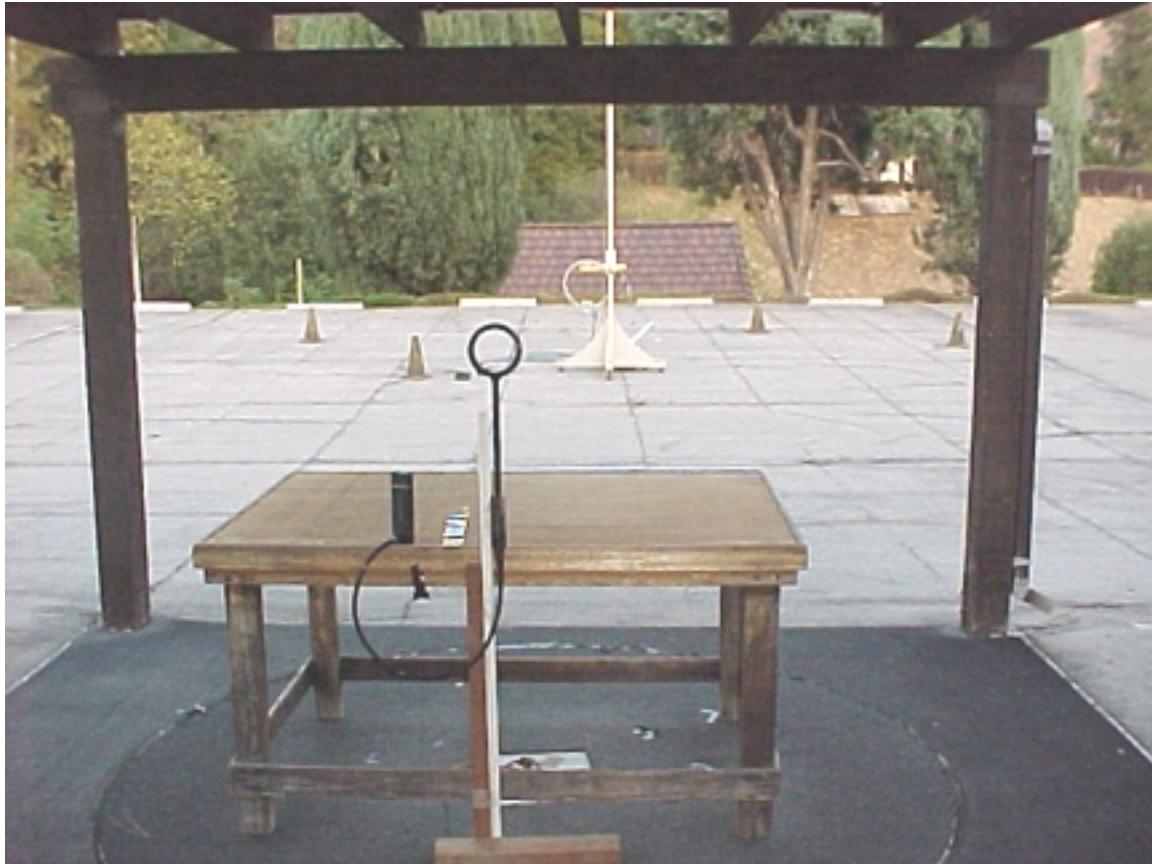


**FRONT VIEW**

AVID IDENTIFICATION SYSTEMS, INC.  
WAND READER  
MODEL: AVID1040  
FCC SUBPART C – RADIATED EMISSIONS – 12-02-03

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION  
FOR MAXIMUM EMISSIONS**



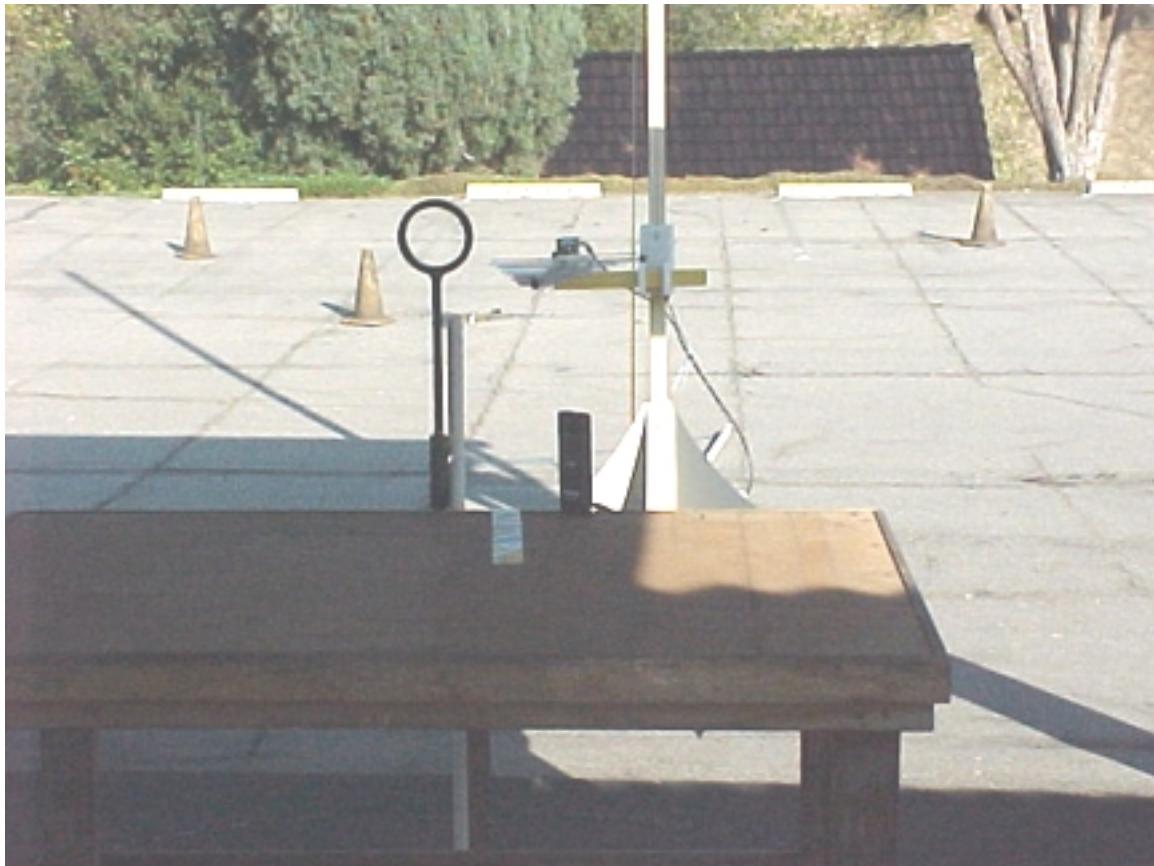


#### REAR VIEW

AVID IDENTIFICATION SYSTEMS, INC.  
WAND READER  
MODEL: AVID1040  
FCC SUBPART C – RADIATED EMISSIONS – 12-02-03

#### PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



**FRONT VIEW**

AVID IDENTIFICATION SYSTEMS, INC.  
WAND READER  
MODEL: AVID1040  
FCC SUBPART B – RADIATED EMISSIONS – 12-02-03

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION  
FOR MAXIMUM EMISSIONS**

**REAR VIEW**

AVID IDENTIFICATION SYSTEMS, INC.  
WAND READER  
MODEL: AVID1040  
FCC SUBPART B – RADIATED EMISSIONS – 12-02-03

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION  
FOR MAXIMUM EMISSIONS**

**APPENDIX E**

***DATA SHEETS***



***RADIATED EMISSIONS***  
  
***DATA SHEETS***



Company Name:	Avid ID Systems	DATE:	12/2/03
EUT:	Wand Reader	EUT S/N:	N/A
EUT MODEL:	AVID1040	LOCATION:	Lab A
SPECIFICATION:	FCC PART 15.209	CLASS:	B



Test Location : Compatible Electronics Page : 1/2  
Customer : AVID Date : 12/02/2003  
Manufacturer : AVID Time : 8:53:48  
Eut name : Mini-Tracker I Lab : A  
Model : Test Distance : 3 Meters  
Serial # :  
Specification : FCC Class B  
Distance correction factor ( $20 * \log(\text{test}/\text{spec})$ ) : 0.00  
Test Mode : Z axis - Generic Name: Wand Reader Model: AVID1040

TESTED BY: Kirit Ramani

Pol	Freq	Rdng	Cable loss	Ant factor	Amp gain	Cor' d	Limit	Delta
								R-L
						rdg = R	L	dB
						dBuV	dBuV/m	
1V	54. 089	58. 90	1. 24	10. 57	33. 60	37. 11	40. 00	- 2. 89
2V	54. 089Qp	57. 16	1. 24	10. 57	33. 60	35. 37	40. 00	- 4. 63
3V	64. 087	59. 80	1. 34	8. 66	33. 56	36. 25	40. 00	- 3. 75
4V	66. 068	61. 10	1. 36	8. 23	33. 54	37. 15	40. 00	- 2. 85
5V	66. 068Qp	59. 71	1. 36	8. 22	33. 54	35. 76	40. 00	- 4. 24
6V	70. 077	62. 10	1. 40	7. 39	33. 50	37. 39	40. 00	- 2. 61
7V	70. 077Qp	60. 64	1. 40	7. 39	33. 50	35. 93	40. 00	- 4. 07
8V	71. 076	63. 40	1. 41	7. 25	33. 50	38. 56	40. 00	- 1. 44
9V	71. 076Qp	61. 56	1. 41	7. 25	33. 50	36. 72	40. 00	- 3. 28
10V	71. 580	62. 10	1. 42	7. 18	33. 50	37. 20	40. 00	- 2. 80
11V	71. 580Qp	60. 57	1. 42	7. 18	33. 50	35. 67	40. 00	- 4. 33
12V	72. 072	65. 90	1. 42	7. 12	33. 50	40. 94	40. 00	0. 94
13V	72. 079Qp	63. 88	1. 42	7. 12	33. 50	38. 92	40. 00	- 1. 08
14V	72. 081Qp	64. 48	1. 42	7. 11	33. 50	39. 52	40. 00	- 0. 48
15V	72. 854	60. 90	1. 43	7. 01	33. 50	35. 84	40. 00	- 4. 16
16V	73. 306	60. 20	1. 43	6. 95	33. 50	35. 09	40. 00	- 4. 91
17V	73. 810	61. 60	1. 44	6. 88	33. 50	36. 42	40. 00	- 3. 58
18V	75. 046	58. 20	1. 45	6. 72	33. 50	32. 87	40. 00	- 7. 13
19V	76. 053	57. 20	1. 46	6. 59	33. 50	31. 75	40. 00	- 8. 25
20V	121. 831	47. 20	1. 78	13. 32	33. 60	28. 69	43. 50	- 14. 81
21V	126. 086	50. 50	1. 81	12. 50	33. 59	31. 22	43. 50	- 12. 28
22V	129. 090	55. 80	1. 85	12. 50	33. 56	36. 59	43. 50	- 6. 91
23V	139. 325	57. 00	1. 98	12. 50	33. 48	38. 00	43. 50	- 5. 50
24V	141. 071	57. 80	2. 00	12. 32	33. 47	38. 65	43. 50	- 4. 85
25V	144. 072Qp	59. 66	2. 03	11. 84	33. 44	40. 08	43. 50	- 3. 42
26V	144. 072	60. 80	2. 03	11. 84	33. 44	41. 22	43. 50	- 2. 28
27V	144. 080	59. 80	2. 03	11. 83	33. 44	40. 22	43. 50	- 3. 28
28V	145. 086	57. 80	2. 05	11. 67	33. 44	38. 08	43. 50	- 5. 42
29V	147. 078	57. 90	2. 07	11. 36	33. 42	37. 90	43. 50	- 5. 60
30V	147. 554	57. 40	2. 07	11. 28	33. 42	37. 34	43. 50	- 6. 16
31V	148. 089	58. 00	2. 08	11. 20	33. 41	37. 86	43. 50	- 5. 64
32V	150. 075Qp	61. 29	2. 10	10. 90	33. 40	40. 89	43. 50	- 2. 61
33V	150. 075	61. 70	2. 10	10. 90	33. 40	41. 30	43. 50	- 2. 20
34V	151. 082	61. 60	2. 10	10. 97	33. 40	41. 27	43. 50	- 2. 23
35V	153. 066	62. 50	2. 11	11. 09	33. 41	42. 29	43. 50	- 1. 21



Test Location : Compatible Electronics Page : 2/2  
Customer : AVID Date : 12/02/2003  
Manufacturer : AVID Time : 8:53:48  
Eut name : Mini-Tracker I Lab : A  
Model : Test Distance : 3 Meters  
Serial # :  
Specification : FCC Class B  
Distance correction factor ( $20 * \log(\text{test}/\text{spec})$ ) : 0.00  
Test Mode : Z axis - Generic Name: Wand Reader Model: AVID1040

TESTED BY: Kirit Ramani

Pol	Freq	Rdng	Cable loss dB	Ant factor dB	Amp gain dB	Cor' d rdg = R dBuV	Limit = L dBuV/m	Delta R-L dB
36V	153. 066Qp	61. 04	2. 11	11. 09	33. 41	40. 83	43. 50	- 2. 67
37V	154. 065	61. 20	2. 12	11. 15	33. 42	41. 05	43. 50	- 2. 45
38V	154. 065Qp	61. 01	2. 12	11. 15	33. 42	40. 86	43. 50	- 2. 64
39V	157. 075	58. 20	2. 13	11. 33	33. 43	38. 23	43. 50	- 5. 27
40V	163. 080	53. 60	2. 15	12. 22	33. 45	34. 52	43. 50	- 8. 98
41V	178. 082	51. 40	2. 24	15. 27	33. 49	35. 42	43. 50	- 8. 08
42V	184. 088	49. 80	2. 31	15. 80	33. 46	34. 45	43. 50	- 9. 05
43V	216. 073	48. 60	2. 57	16. 42	33. 33	34. 25	46. 00	- 11. 75
44V	288. 077	41. 30	2. 85	20. 54	33. 30	31. 39	46. 00	- 14. 61
45V	300. 072	50. 30	2. 90	12. 70	33. 30	32. 60	46. 00	- 13. 40
46V	306. 076	49. 50	2. 94	12. 89	33. 30	32. 03	46. 00	- 13. 97
47V	404. 075	44. 50	3. 52	15. 45	33. 09	30. 38	46. 00	- 15. 62
48V	410. 078	47. 90	3. 54	15. 52	33. 08	33. 89	46. 00	- 12. 11
49V	480. 088	45. 80	3. 82	16. 30	32. 94	32. 98	46. 00	- 13. 02
50V	486. 114	45. 30	3. 85	16. 36	32. 93	32. 58	46. 00	- 13. 42
51V	492. 112	46. 40	3. 87	16. 42	32. 92	33. 78	46. 00	- 12. 22
52V	498. 084	47. 80	3. 89	16. 48	32. 90	35. 27	46. 00	- 10. 73
53V	504. 080	48. 40	3. 92	16. 53	32. 91	35. 94	46. 00	- 10. 06
54V	510. 107	46. 80	3. 94	16. 58	32. 92	34. 40	46. 00	- 11. 60
55V	516. 112	46. 00	3. 97	16. 62	32. 93	33. 66	46. 00	- 12. 34
56V	792. 143	40. 90	4. 80	21. 71	32. 40	35. 01	46. 00	- 10. 99



Test Location : Compatible Electronics Page : 1/1  
Customer : AVID Date : 12/02/2003  
Manufacturer : AVID Time : 11:17:32  
Eut name : Mini-Tracker I Lab : A  
Model : Test Distance : 3 Meters  
Serial # :  
Specification : FCC Class B  
Distance correction factor (20 \* log(test/spec)) : 0.00  
Test Mode : Z axis - Generic Name: Wand Reader Model: AVID1040

**TESTED BY: Kirit Ramani**

Pol	Freq MHz	Rdng dBuV	Cable loss dB	Ant factor dB	Amp gain dB	Cor' d rdg = R dBuV	Limit = L dBuV/m	Delta R-L dB
1H	36.077	44.70	1.03	10.35	33.60	22.48	40.00	-17.52
2H	60.095	50.20	1.30	9.58	33.60	27.48	40.00	-12.52
3H	66.088	50.80	1.36	8.22	33.54	26.85	40.00	-13.15
4H	72.086	58.10	1.42	7.11	33.50	33.14	40.00	-6.86
5H	198.095	41.50	2.48	16.77	33.41	27.34	43.50	-16.16
6H	210.096	45.70	2.54	16.59	33.36	31.47	43.50	-12.03
7H	229.097	46.30	2.62	16.05	33.28	31.68	46.00	-14.32
8H	232.070	46.70	2.63	15.97	33.27	32.03	46.00	-13.97
9H	250.068	43.50	2.70	15.51	33.20	28.51	46.00	-17.49
10H	288.093	40.90	2.85	20.54	33.30	30.99	46.00	-15.01
11H	300.080	53.30	2.90	12.70	33.30	35.60	46.00	-10.40
12H	306.106	51.10	2.94	12.89	33.30	33.63	46.00	-12.37
13H	312.094	48.50	2.98	13.07	33.30	31.25	46.00	-14.75
14H	336.070	49.00	3.12	13.77	33.30	32.59	46.00	-13.41
15H	385.116	43.50	3.41	15.04	33.16	28.80	46.00	-17.20
16H	480.087	47.80	3.82	16.30	32.94	34.98	46.00	-11.02
17H	486.088	46.60	3.85	16.36	32.93	33.88	46.00	-12.12
18H	492.115	47.20	3.87	16.42	32.92	34.58	46.00	-11.42
19H	498.102	46.30	3.89	16.48	32.90	33.77	46.00	-12.23
20H	810.153	37.70	4.84	21.71	32.46	31.79	46.00	-14.21