

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

for

READER

MODEL: AVID1032

Prepared for

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

Prepared by: *Kyle Fujimoto*

KYLE FUJIMOTO

Approved by: *James Ross*

JAMES ROSS

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

DATE: MARCH 6, 2007

| | REPORT BODY | APPENDICES | | | | | TOTAL |
|-------|----------------|------------|---|---|----|----|-------|
| | | A | B | C | D | E | |
| PAGES | 18 | 2 | 2 | 2 | 17 | 15 | 56 |

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TABLE OF CONTENTS

| Section / Title | PAGE |
|--|----------|
| GENERAL REPORT SUMMARY | 4 |
| SUMMARY OF TEST RESULTS | 5 |
| 1. PURPOSE | 6 |
| 2. ADMINISTRATIVE DATA | 7 |
| 2.1 Location of Testing | 7 |
| 2.2 Traceability Statement | 7 |
| 2.3 Cognizant Personnel | 7 |
| 2.4 Date Test Sample was Received | 7 |
| 2.5 Disposition of the Test Sample | 7 |
| 2.6 Abbreviations and Acronyms | 7 |
| 3. APPLICABLE DOCUMENTS | 8 |
| 4. DESCRIPTION OF TEST CONFIGURATION | 9 |
| 4.1 Description of Test Configuration - EMI | 9 |
| 4.1.1 Cable Construction and Termination | 10 |
| 5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT | 11 |
| 5.1 EUT and Accessory List | 11 |
| 5.2 EMI Test Equipment | 12 |
| 6. TEST SITE DESCRIPTION | 13 |
| 6.1 Test Facility Description | 13 |
| 6.2 EUT Mounting, Bonding and Grounding | 13 |
| 7. TEST PROCEDURES | 14 |
| 7.1 RF Emissions | 14 |
| 7.1.1 Conducted Emissions Test | 14 |
| 7.1.2 Radiated Emissions (Spurious and Harmonics) Test | 15 |
| 7.1.3 Radiated Emissions (Spurious and Harmonics) Test (Continued) | 16 |
| 7.2 Frequency Tolerance of Carrier Signal | 17 |
| 8. CONCLUSIONS | 18 |



LIST OF APPENDICES

| APPENDIX | TITLE |
|----------|---|
| A | Laboratory Recognitions |
| B | Modifications to the EUT |
| C | Additional Models Covered Under This Report |
| D | Diagrams, Charts, and Photos <ul style="list-style-type: none">• Test Setup Diagrams• Radiated and Conducted Emissions Photos• Antenna and Effective Gain Factors |
| E | Data Sheets |

LIST OF FIGURES

| FIGURE | TITLE |
|--------|---|
| 1 | Conducted Emissions Test Setup |
| 2 | Plot Map And Layout of Radiated Test Site |



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: Reader
 Model: AVID1032
 S/N: N/A

Product Description: See Expository Statement.

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

Manufacturer: AVID ID Systems, Inc.
 3185 Hamner Avenue
 Norco, California 92860

Test Dates: February 21, 22, and 23, 2007

Test Specifications: EMI requirements
 CFR Title 47, Part 15 Subpart B; and Subpart C, Sections 15.205, 15.207, 15.209 and 15.225

Test Procedure: ANSI C63.4

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 | Complies with the Class B limits of CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.207. |
| 2 | Radiated RF Emissions, 9 kHz – 135.6 MHz | Complies with the Class B limits of CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209 and 15.225. |
| 3 | Radiated RF Emissions, 135.6 MHz – 2000 MHz | Complies with the Class A limits of CFR Title 47, Part 15, Subpart B. |



1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Reader, Model: AVID1032 (EUT). The EMI measurements were performed according to the measurement procedure described in ANSI C63.4. 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 A (above 135.6 MHz) and the Class B (135.6 MHz and below) specification limits defined by CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209 and 15.225.



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 ID Systems, Inc.

Gui-Yang Lu Director of R/D

Compatible Electronics, Inc.

Kyle Fujimoto Test Engineer
James Ross Test Engineer

2.4 Date Test Sample was Received

The test sample was received on February 21, 2007.

2.5 Disposition of the Test Sample

The sample has not been returned to AVID ID Systems, Inc. as of March 6, 2007.

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 |
| R/D | Research and Development |



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 2003 | 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 Reader (EUT), Model: AVID1032 was connected to an AC Adapter via its power port. Also, a USB memory stick was directly connected to the EUT's USB Type 'A' port. The EUT was continuously transmitting.

Note: Per section 15.209 (f), measurements made beyond the 10th harmonic (135.6 MHz) shall comply with the general radiated emission limits in 15.109 that are applicable to the incorporated digital device. The EUT was tested to the **Class A** limits of 15.109 beyond the 10th harmonic (135.6 MHz)

It was determined that the emissions were at their highest level when the EUT was operating in the above configuration. The cable was moved to maximize the emissions. The final radiated data as well as conducted data was taken in this mode of operation. All initial investigations were performed with the EMI Receiver in manual mode scanning the frequency range continuously.



4.1.1 **Cable Construction and Termination**

Cable 1

This is a 1.8-meter unshielded cable connecting EUT to the AC adapter. The cable has a 1/8 inch power connector at the EUT end and is hard wired into the AC Adapter.



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

| EQUIPMENT | MANUFACTURER | MODEL NUMBER | PART NUMBER | FCC ID |
|------------------------|-----------------------|----------------------|---------------------|-----------------|
| READER (EUT) | AVID ID SYSTEMS, INC. | AVID1032 | N/A | IOL-1356-AV1032 |
| AC ADAPTER FOR THE EUT | GLOBTEK, INC. | GTM21089-1509-1.5-W3 | WR92C20000LCP-Y-MED | N/A |
| USB MEMORY STICK | AVID ID SYSTEMS, INC. | N/A | N/A | N/A |



5.2 EMI Test Equipment

| EQUIPMENT TYPE | MANUFACTURER | MODEL NUMBER | SERIAL NUMBER | CAL. DATE | CAL. CYCLE |
|---|------------------------|--------------|---------------|--------------------|------------|
| GENERAL TEST EQUIPMENT USED FOR ALL RF EMISSIONS TESTS | | | | | |
| EMI Receiver | Rohde & Schwarz | ESIB40 | 100194 | Nov. 18, 2005 | 2 Year |
| Computer | Hewlett Packard | 4530 | US91912319 | N/A | N/A |
| RF RADIATED EMISSIONS TEST EQUIPMENT | | | | | |
| Radiated Emissions Data Capture Program | Compatible Electronics | 2.0 | N/A | N/A | N/A |
| Preamplifier | Com Power | PA-102 | 1017 | January. 16, 2007 | 1 Year |
| Biconical Antenna | Com Power | AB-900 | 15227 | March 9, 2006 | 1 Year |
| Log Periodic Antenna | Com Power | AL-100 | 16060 | July 17, 2006 | 1 Year |
| Loop Antenna | Com Power | AL-130 | 17089 | September 21, 2005 | 2 Year |
| Microwave Preamplifier | Com-Power | PA-122 | 181921 | March 7, 2006 | 1 Year |
| Horn Antenna | Antenna Research | DRG-118/A | 1053 | March 6, 2006 | 2 Year |
| Mast Antenna | Com Power | AM-100 | N/A | N/A | N/A |
| RF CONDUCTED EMISSIONS TEST EQUIPMENT | | | | | |
| Emissions Program | Compatible Electronics | 2.3 (SR19) | N/A | N/A | N/A |
| LISN | Com Power | LI-215 | 12076 | September 13, 2006 | 1 Year |
| LISN | Com Power | LI-215 | 12090 | September 13, 2006 | 1 Year |
| Transient Limiter | Com Power | 252A910 | 1 | September 15, 2006 | 1 Year |



6. TEST SITE DESCRIPTION

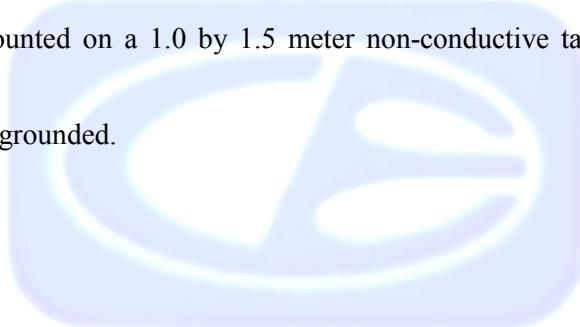
6.1 Test Facility Description

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 Conducted Emissions Test

The EMI Receiver was used as a measuring meter. The data was collected with the spectrum analyzer in the peak detect mode with the "Max Hold" feature activated. The quasi-peak was used only where indicated in the data sheets. A transient limiter was used for the protection of the spectrum analyzer 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 the 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 the Compatible Electronics software in several overlapping sweeps by running the spectrum analyzer at a minimum scan rate of 10 seconds per octave. 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 for conducted emissions.



7.1.2 Radiated Emissions (Spurious and Harmonics) Test

The EMI Receiver was used as a measuring meter along with the quasi-peak adapter. A preamplifier was used to increase the sensitivity of the instrument. The EMI Receiver was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the EMI Receiver 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 |
| 1 GHz to 2 GHz | 1 MHz | Horn 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. 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.



7.1.3**Radiated Emissions (Spurious and Harmonics) Test (Continued)**

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 test distance of 3 meters and 10 meters to obtain final test data. The final qualification data sheets are located in Appendix E.

Test Results:

The EUT complies with the **Class A** (above 135.6 MHz) and **Class B** (30 MHz to 135.6 MHz) limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, Section 15.225 for radiated emissions.



7.2 Frequency Tolerance of Carrier Signal

The EUT was placed in temperature chamber and set to -20 degrees C. The EUT was exposed to this temperature for a period of 10 minutes. The temperature was subsequently increased at 10 degree increments up to +50 degrees with a 30 minute acclimation period between each temperature. At each temperature, the EUT was checked with an EMI Receiver to determine whether the carrier signal was within 0.01% of the fundamental frequency at startup, 2 minutes, 5 minutes and 10 minutes after removal from the temperature chamber. The frequency tolerance of the carrier signal was also checked at 85% and 115% of the rated supply voltage at 20 degrees C. A data sheet of the Frequency Tolerance testing is located in Appendix E.

Test Results:

The EUT complies with the frequency tolerance requirements of CFR Title 47, Part 15, Subpart C, Section 15.225.



8. CONCLUSIONS

The Reader, Model: AVID1032 (EUT) meets all of the Class A (above 135.6 MHz) and the Class B (135.6 MHz and below) specification limits defined in CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.225.



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 15.225, FCC Class A, and 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

Reader
Model: AVID1032
S/N: N/A

There were no additional models covered under this report.



APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS



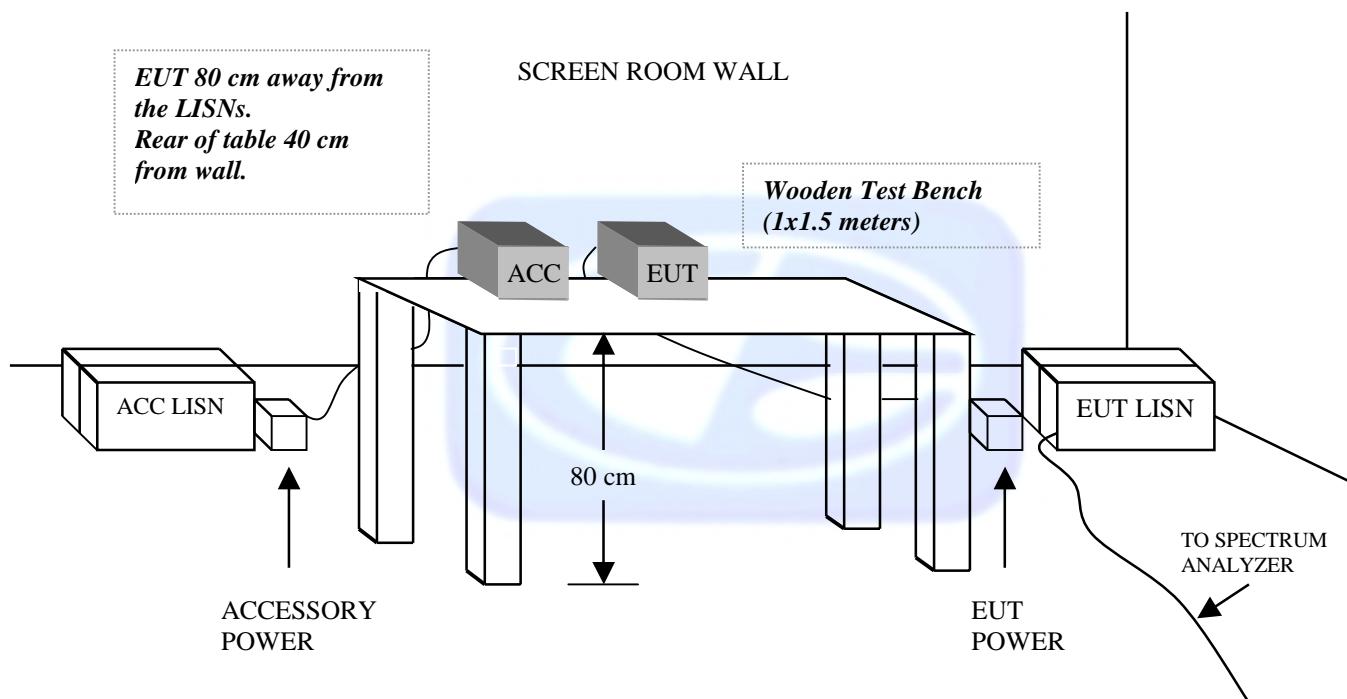
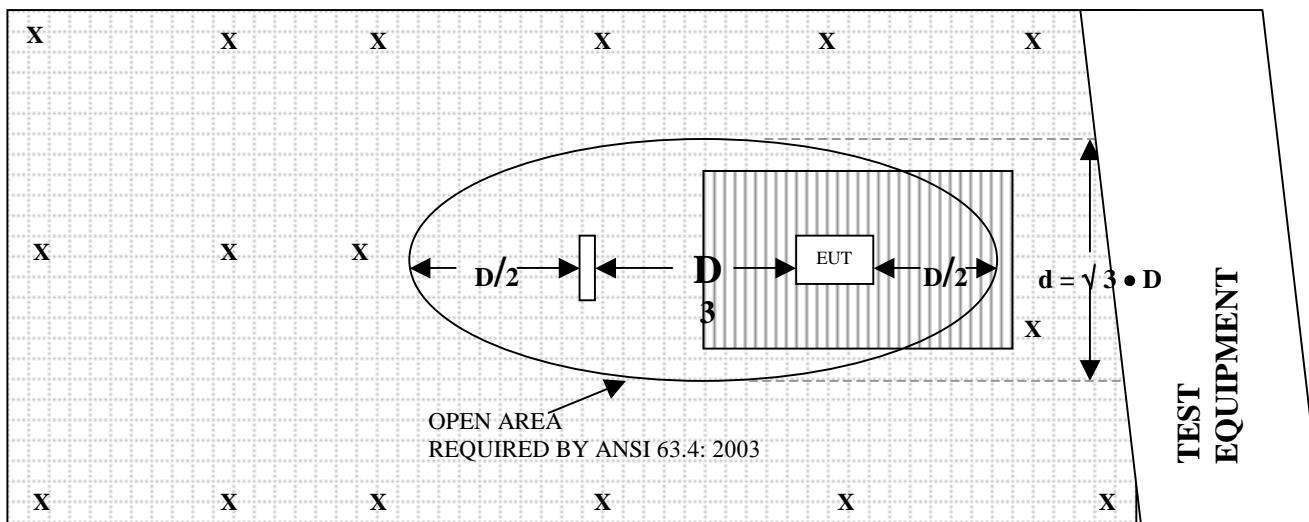
FIGURE 1: CONDUCTED EMISSIONS TEST SETUP


FIGURE 2: PLOT MAP AND LAYOUT OF RADIATED SITE
OPEN LAND > 15 METERS

OPEN LAND > 15 METERS

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



COM-POWER AB-900**BICONICAL ANTENNA****S/N: 15227****CALIBRATION DATE: MARCH 9, 2006**

| FREQUENCY (MHz) | FACTOR (dB) | FREQUENCY (MHz) | FACTOR (dB) |
|----------------------------|------------------------|----------------------------|------------------------|
| 30 | 11.12 | 120 | 13.50 |
| 35 | 10.17 | 125 | 12.63 |
| 40 | 9.75 | 140 | 12.20 |
| 45 | 12.22 | 150 | 11.85 |
| 50 | 13.28 | 160 | 13.25 |
| 60 | 11.36 | 175 | 15.74 |
| 70 | 7.95 | 180 | 16.23 |
| 80 | 5.95 | 200 | 16.79 |
| 90 | 7.62 | 250 | 16.47 |
| 100 | 10.89 | 300 | 17.49 |



COM-POWER AL-100**LOG PERIODIC ANTENNA****S/N: 16060****CALIBRATION DATE: JULY 17, 2006**

| FREQUENCY (MHz) | FACTOR (dB) | FREQUENCY (MHz) | FACTOR (dB) |
|----------------------------|------------------------|----------------------------|------------------------|
| 300 | 13.58 | 700 | 20.49 |
| 400 | 14.53 | 800 | 20.13 |
| 500 | 15.36 | 900 | 22.15 |
| 600 | 18.29 | 1000 | 22.76 |



COM-POWER PA-102**PREAMPLIFIER****S/N: 1017****CALIBRATION DATE: JANUARY 16, 2007**

| FREQUENCY (MHz) | FACTOR (dB) | FREQUENCY (MHz) | FACTOR (dB) |
|----------------------------|------------------------|----------------------------|------------------------|
| 30 | 38.4 | 300 | 38.2 |
| 40 | 38.3 | 350 | 38.2 |
| 50 | 38.2 | 400 | 38.1 |
| 60 | 38.3 | 450 | 37.8 |
| 70 | 38.4 | 500 | 37.8 |
| 80 | 38.6 | 550 | 38.1 |
| 90 | 38.3 | 600 | 37.8 |
| 100 | 38.4 | 650 | 37.8 |
| 125 | 38.3 | 700 | 37.6 |
| 150 | 38.2 | 750 | 37.9 |
| 175 | 38.4 | 800 | 37.6 |
| 200 | 38.4 | 850 | 37.2 |
| 225 | 38.4 | 900 | 37.4 |
| 250 | 38.3 | 950 | 37.0 |
| 275 | 38.3 | 1000 | 37.2 |



COM-POWER PA-122**PREAMPLIFIER****S/N: 181921****CALIBRATION DATE: MARCH 7, 2006**

| FREQUENCY (GHz) | FACTOR (dB) | FREQUENCY (GHz) | FACTOR (dB) |
|----------------------------|------------------------|----------------------------|------------------------|
| 1.0 | 36.2 | 10.0 | 36.3 |
| 1.5 | 35.6 | 10.5 | 35.1 |
| 2.0 | 35.1 | 11.0 | 34.5 |
| 2.5 | 35.2 | 11.5 | 34.5 |
| 3.0 | 35.1 | 12.0 | 34.7 |
| 3.5 | 34.8 | 12.5 | 35.5 |
| 4.0 | 34.6 | 13.0 | 35.3 |
| 4.5 | 34.4 | 13.5 | 35.7 |
| 5.0 | 34.5 | 14.0 | 36.2 |
| 5.5 | 35.1 | 14.5 | 36.4 |
| 6.0 | 36.4 | 15.0 | 36.4 |
| 6.5 | 37.1 | 15.5 | 36.3 |
| 7.0 | 37.1 | 16.0 | 35.9 |
| 7.5 | 35.9 | 16.5 | 35.7 |
| 8.0 | 34.1 | 17.0 | 35.4 |
| 8.5 | 33.4 | 17.5 | 34.6 |
| 9.0 | 34.7 | 18.0 | 34.0 |
| 9.5 | 36.6 | | |



ANTENNA RESEARCH DRG-118/A**HORN ANTENNA****S/N: 1053****CALIBRATION DATE: MARCH 6, 2006**

| FREQUENCY (GHz) | FACTOR (dB) | FREQUENCY (GHz) | FACTOR (dB) |
|----------------------------|------------------------|----------------------------|------------------------|
| 1.0 | 24.46 | 10.0 | 39.55 |
| 1.5 | 25.05 | 10.5 | 39.86 |
| 2.0 | 28.42 | 11.0 | 38.49 |
| 2.5 | 29.91 | 11.5 | 40.71 |
| 3.0 | 31.46 | 12.0 | 40.59 |
| 3.5 | 31.91 | 12.5 | 40.17 |
| 4.0 | 31.55 | 13.0 | 39.70 |
| 4.5 | 31.94 | 13.5 | 40.84 |
| 5.0 | 32.90 | 14.0 | 41.58 |
| 5.5 | 34.07 | 14.5 | 45.14 |
| 6.0 | 35.69 | 15.0 | 42.20 |
| 6.5 | 33.11 | 15.5 | 39.42 |
| 7.0 | 36.51 | 16.0 | 38.80 |
| 7.5 | 37.27 | 16.5 | 41.08 |
| 8.0 | 37.21 | 17.0 | 44.11 |
| 8.5 | 37.16 | 17.5 | 46.29 |
| 9.0 | 38.27 | 18.0 | 41.61 |
| 9.5 | 39.73 | | |



COM-POWER AL-130**LOOP ANTENNA****S/N: 17089****CALIBRATION DATE: SEPTEMBER 21, 2005**

| FREQUENCY (MHz) | MAGNETIC (dB/m) | ELECTRIC (dB/m) |
|----------------------------|----------------------------|----------------------------|
| 0.009 | -42.84 | 8.66 |
| 0.01 | -41.93 | 9.57 |
| 0.02 | -41.29 | 10.21 |
| 0.05 | -42.37 | 9.13 |
| 0.07 | -41.8 | 9.7 |
| 0.1 | -41.83 | 9.67 |
| 0.2 | -44.13 | 7.37 |
| 0.3 | -41.73 | 9.77 |
| 0.5 | -41.8 | 9.7 |
| 0.7 | -41.53 | 9.97 |
| 1 | -41.46 | 10.04 |
| 2 | -41.14 | 10.36 |
| 3 | -41.26 | 10.24 |
| 4 | -41.46 | 10.04 |
| 5 | -41.10 | 10.40 |
| 10 | -40.83 | 10.67 |
| 15 | -41.47 | 10.03 |
| 20 | -35.44 | 16.06 |
| 25 | -42.37 | 9.13 |
| 30 | -42.94 | 8.56 |



**FRONT VIEW**

AVID ID SYSTEMS, INC.
READER
MODEL: AVID1032
FCC SUBPART B AND C – RADIATED EMISSIONS – 3 METERS

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



**REAR VIEW**

AVID ID SYSTEMS, INC.
READER
MODEL: AVID1032
FCC SUBPART B AND C – RADIATED EMISSIONS – 3 METERS

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





FRONT VIEW

AVID ID SYSTEMS, INC.
READER
MODEL: AVID1032
FCC SUBPART B AND C – RADIATED EMISSIONS – 10 METERS

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



**REAR VIEW**

AVID ID SYSTEMS, INC.
READER
MODEL: AVID1032
FCC SUBPART B AND C – RADIATED EMISSIONS – 10 METERS

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



**FRONT VIEW**

AVID ID SYSTEMS, INC.
READER
MODEL: AVID1032
FCC SUBPART B AND C – RADIATED EMISSIONS – 10 METERS

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



**REAR VIEW**

AVID ID SYSTEMS, INC.
READER
MODEL: AVID1032
FCC SUBPART B AND C – RADIATED EMISSIONS – 10 METERS

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



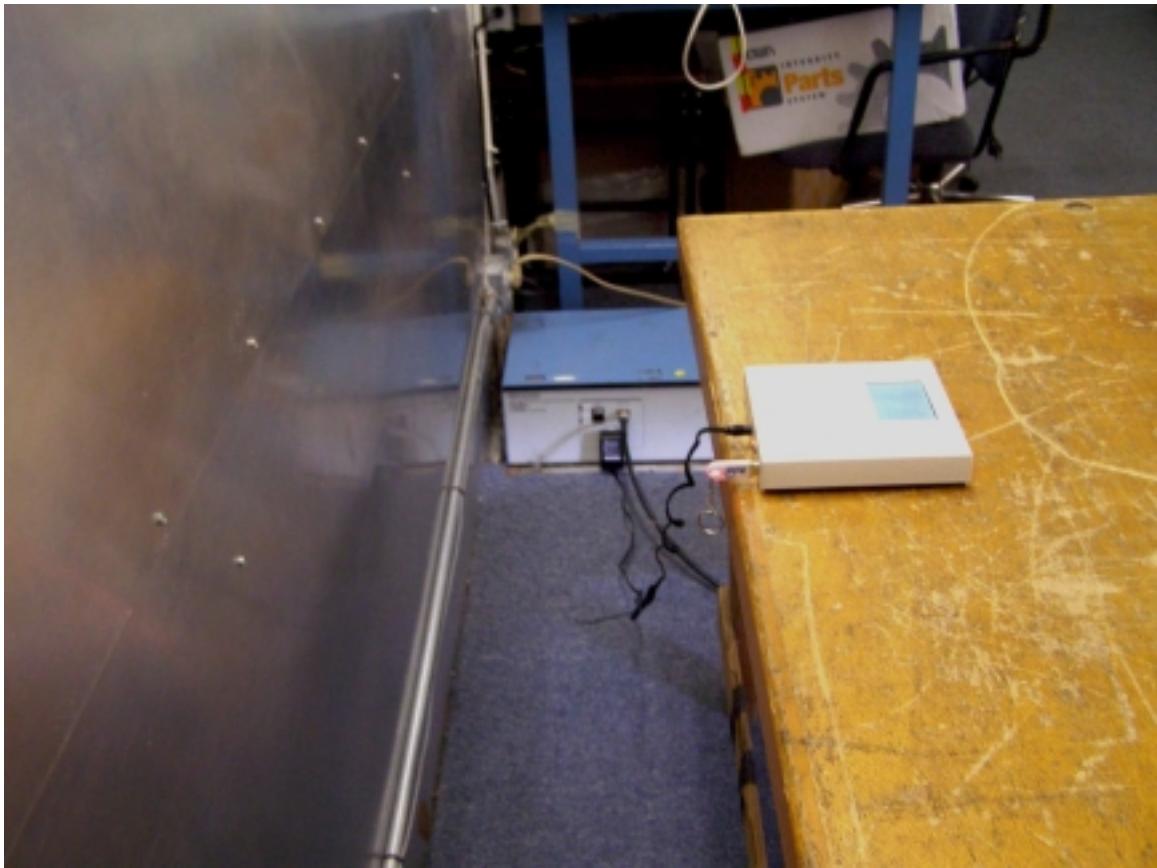


FRONT VIEW

AVID ID SYSTEMS, INC.
READER
MODEL: AVID1032
FCC SUBPART B AND C – CONDUCTED EMISSIONS

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





REAR VIEW

AVID ID SYSTEMS, INC.
READER
MODEL: AVID1032
FCC SUBPART B AND C – CONDUCTED EMISSIONS

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



APPENDIX E

DATA SHEETS



RADIATED EMISSIONS
DATA SHEETS



FCC 15.225 and FCC Class B

AVID ID Systems. Inc.

Date: 2/21/2007

Reader

Lab: D

Model: AVID1032

Tested By: Kyle Fujimoto

Radiated Emissions -- 30 MHz to 135.60 MHz

Transmit Frequency: 13.56 MHz

Vertical and Horizontal Polarizations

Test Distance: 3 Meters

FCC Class A

AVID ID Systems, Inc.

Reader

Model: AVID1032

Dates: 2/21/2007 and 2/22/2007

Labs: B and D

Tested By: Kyle Fujimoto

Radiated Emissions -- 135.60 MHz to 2000 MHz**Transmit Frquency: 13.56 MHz****Vertical and Horizontal Polarizations****Test Distance: 10 Meters (below 1 GHz), 3 Meters (Above 1 GHz)**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit (dBuV/m) | Margin (dB) | Peak / QP / Avg | Comments |
|----------------|-------------------|-----------|-------------------|----------------|--------------------|----------|
| 149.15 | 19.32 | H | 43.50 | -24.18 | Pk | |
| 149.12 | 20.73 | V | 43.50 | -22.77 | Pk | |
| 162.69 | 24.19 | H | 43.50 | -19.31 | Pk | |
| 162.71 | 25.66 | V | 43.50 | -17.84 | Pk | |
| 176.27 | 27.49 | H | 43.50 | -16.01 | Pk | |
| 176.27 | 31.11 | V | 43.50 | -12.39 | Pk | |
| 189.81 | 34.72 | H | 43.50 | -8.78 | Pk | |
| 189.81 | 34.44 | V | 43.50 | -9.06 | Pk | |
| 203.28 | 29.69 | H | 43.50 | -13.81 | Pk | |
| 203.37 | 29.52 | V | 43.50 | -13.98 | Pk | |
| 216.94 | 28.11 | H | 46.40 | -18.29 | Pk | |
| 216.93 | 28.87 | V | 46.40 | -17.53 | Pk | |
| 230.52 | 28.31 | H | 46.40 | -18.09 | Pk | |
| 230.52 | 29.65 | V | 46.40 | -16.75 | Pk | |
| 244.06 | 27.12 | H | 46.40 | -19.28 | Pk | |
| 244.05 | 32.08 | V | 46.40 | -14.32 | Pk | |
| 311.87 | 24.46 | H | 46.40 | -21.94 | Pk | |
| 325.42 | 31.11 | H | 46.40 | -15.29 | Pk | |
| 338.98 | 31.82 | H | 46.40 | -14.58 | Pk | |
| 352.54 | 26.62 | H | 54.00 | -27.38 | Pk | |
| 366.09 | 25.95 | H | 46.40 | -20.45 | Pk | |
| 379.67 | 25.86 | H | 46.40 | -20.54 | Pk | |
| 406.78 | 32.22 | H | 46.40 | -14.18 | Pk | |
| 433.90 | 34.63 | H | 46.40 | -11.77 | Pk | |
| 461.02 | 32.48 | H | 46.40 | -13.92 | Pk | |
| 501.72 | 30.35 | H | 46.40 | -16.05 | Pk | |
| 474.61 | 29.08 | H | 46.40 | -17.32 | Pk | |
| 311.87 | 25.92 | V | 46.40 | -20.48 | Pk | |
| 325.41 | 29.06 | V | 46.40 | -17.34 | Pk | |
| 406.79 | 25.83 | V | 46.40 | -20.57 | Pk | |
| 433.98 | 27.87 | V | 46.40 | -18.53 | Pk | |
| 474.59 | 36.29 | V | 46.00 | -9.71 | Pk | |
| 501.71 | 27.02 | V | 46.00 | -18.98 | Pk | |
| 420.03 | 31.49 | V | 46.00 | -14.51 | Pk | |
| 420.01 | 38.05 | H | 46.00 | -7.95 | Pk | |
| 1260.35 | 47.90 | H | 60.00 | -12.10 | Pk | |
| 1261.32 | 44.99 | V | 60.00 | -15.01 | Pk | |

FCC 15.225

AVID ID Systems. Inc.
Reader
Model: AVID1032

Date: 2/21/2007
Lab: D
Tested By: Kyle Fujimoto

Test Range: 9 kHz to 30 MHz, Including the Fundamental and 2nd Harmonic of the Tx

Loop Antenna Perpendicular (V) and Loop Antenna Parallel (H) to the EUT

Note: The Limit has been adjusted for 10 Meters based on 40 Log (Spec Dist. / Test Dist.)

CONDUCTED EMISSIONS
DATA SHEETS



FCC Conducted Emissions

AVID ID Systems, Inc.

Reader

Model: AVID1032

FCC Class B – Black Lead

Tested By: Kyle Fujimoto



FCC Conducted Emissions

AVID ID Systems, Inc.

Reader

Model: AVID1032

FCC Class B – Black Lead

Tested By: Kyle Fujimoto

| EDIT PEAK LIST (Prescan Results) | | | |
|----------------------------------|-----------|-------------------------|----------------|
| Trace1: | C22CONAV | Trace2: | --- |
| Trace3: | --- | Trace4: | --- |
| TRACE | FREQUENCY | LEVEL dB _V V | DELTA LIMIT dB |
| 1 | Max Peak | 638.0000 kHz | 38.89 |
| 1 | Max Peak | 3.3260 MHz | 37.70 |
| 1 | Max Peak | 3.5500 MHz | 36.70 |
| 1 | Max Peak | 3.5180 MHz | 35.54 |
| 1 | Max Peak | 3.3460 MHz | 35.41 |
| 1 | Max Peak | 3.5660 MHz | 35.15 |
| 1 | Max Peak | 3.5380 MHz | 35.03 |
| 1 | Max Peak | 3.4940 MHz | 34.77 |
| 1 | Max Peak | 3.3100 MHz | 34.76 |
| 1 | Max Peak | 3.4580 MHz | 34.64 |
| 1 | Max Peak | 3.2980 MHz | 34.10 |
| 1 | Max Peak | 3.6980 MHz | 33.97 |
| 1 | Max Peak | 830.0000 kHz | 33.86 |
| 1 | Max Peak | 3.2740 MHz | 33.67 |
| 1 | Max Peak | 3.6060 MHz | 33.54 |
| 1 | Max Peak | 3.3660 MHz | 33.53 |
| 1 | Max Peak | 3.4380 MHz | 33.39 |
| 1 | Max Peak | 3.5900 MHz | 33.12 |
| 1 | Max Peak | 3.6780 MHz | 32.85 |
| 1 | Max Peak | 3.4780 MHz | 32.85 |

Date: 21.FEB.2007 08:33:15

FCC Conducted Emissions

AVID ID Systems, Inc.

Reader

Model: AVID1032

FCC Class B – White Lead

Tested By: Kyle Fujimoto



FCC Conducted Emissions

AVID ID Systems, Inc.

Reader

Model: AVID1032

FCC Class B – White Lead

Tested By: Kyle Fujimoto

| EDIT PEAK LIST (Prescan Results) | | | |
|----------------------------------|--------------|-------------------------|----------------|
| Trace1: | C22CONAV | Trace2: | --- |
| Trace3: | --- | Trace4: | --- |
| TRACE | FREQUENCY | LEVEL dB _V V | DELTA LIMIT dB |
| 1 Max Peak | 3.2420 MHz | 37.20 | -8.79 |
| 1 Max Peak | 3.3740 MHz | 36.46 | -9.53 |
| 1 Max Peak | 510.0000 kHz | 35.32 | -10.67 |
| 1 Max Peak | 3.2860 MHz | 35.17 | -10.82 |
| 1 Max Peak | 3.2220 MHz | 35.17 | -10.82 |
| 1 Max Peak | 3.3540 MHz | 34.66 | -11.33 |
| 1 Max Peak | 3.3820 MHz | 34.01 | -11.98 |
| 1 Max Peak | 3.5940 MHz | 33.74 | -12.25 |
| 1 Max Peak | 3.0180 MHz | 33.56 | -12.43 |
| 1 Max Peak | 3.1980 MHz | 33.29 | -12.70 |
| 1 Max Peak | 378.0000 kHz | 35.20 | -13.11 |
| 1 Max Peak | 3.4380 MHz | 32.75 | -13.24 |
| 1 Max Peak | 2.3660 MHz | 32.56 | -13.43 |
| 1 Max Peak | 3.2700 MHz | 32.47 | -13.52 |
| 1 Max Peak | 2.6260 MHz | 32.44 | -13.56 |
| 1 Max Peak | 3.4060 MHz | 32.34 | -13.65 |
| 1 Max Peak | 254.0000 kHz | 37.90 | -13.71 |
| 1 Max Peak | 478.0000 kHz | 32.49 | -13.87 |
| 1 Max Peak | 3.4260 MHz | 31.94 | -14.05 |
| 1 Max Peak | 3.3340 MHz | 31.94 | -14.06 |

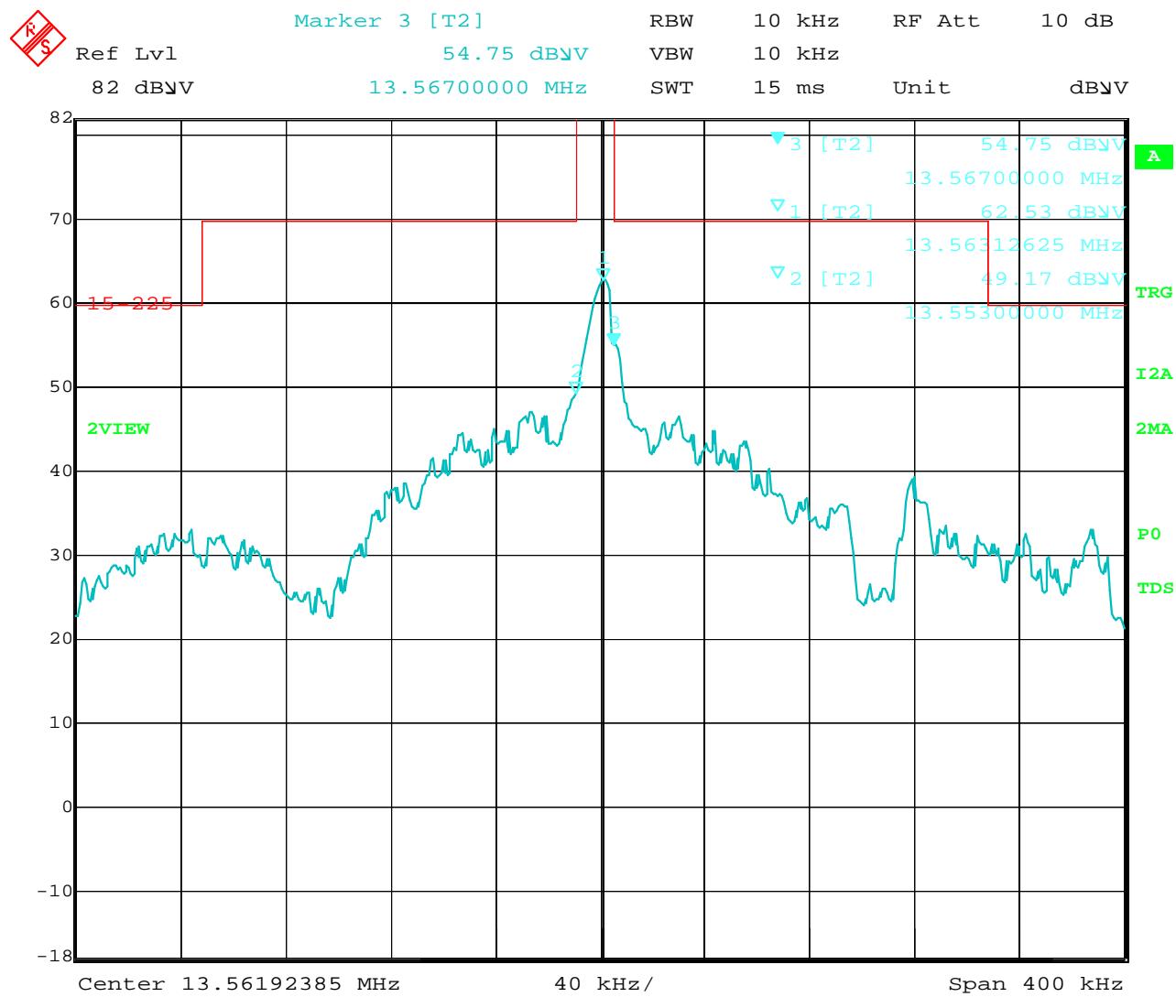
Date: 21.FEB.2007 08:35:34

BAND EDGES

DATA SHEETS



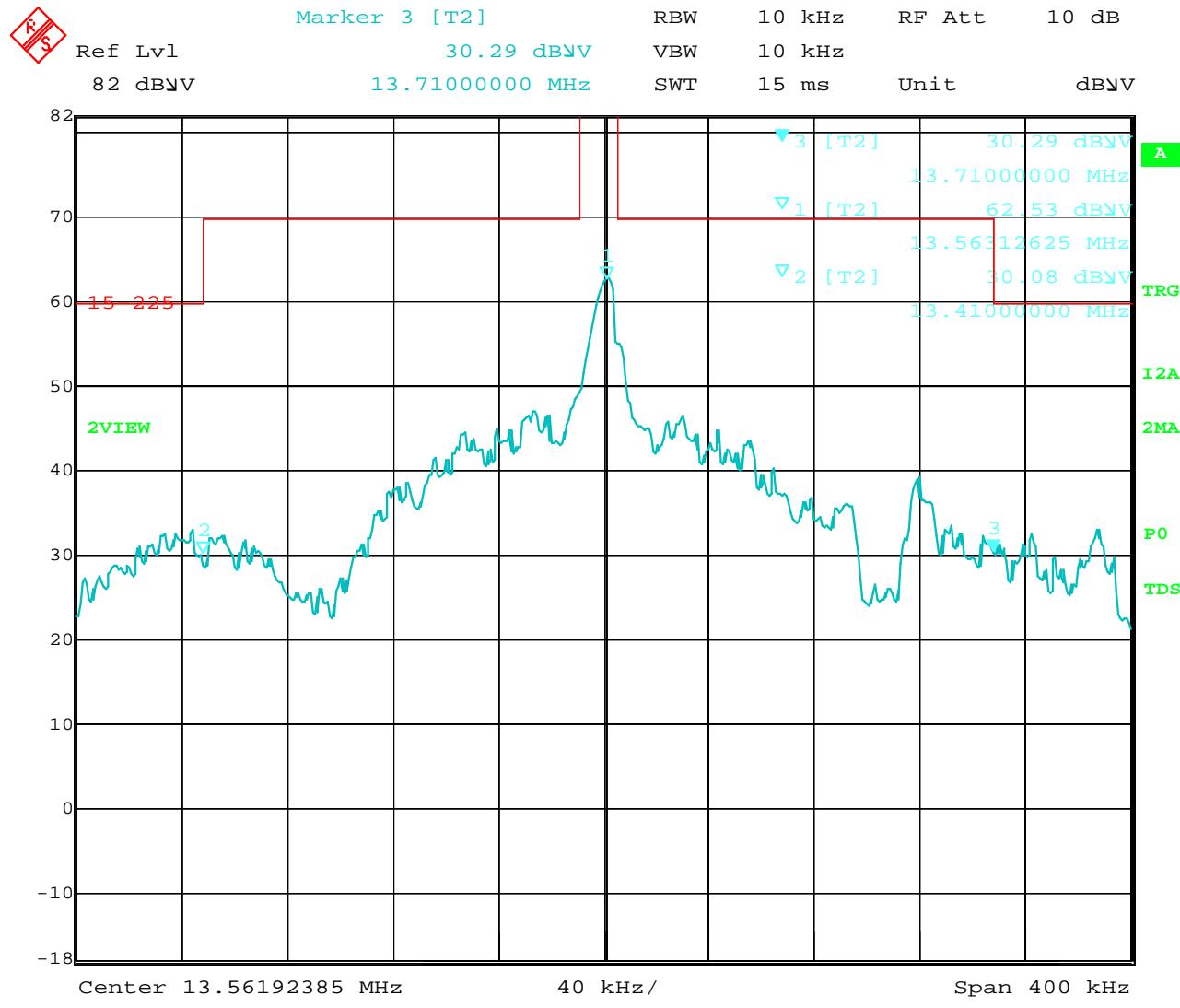
FCC 15.225
AVID ID Systems, Inc.
Reader
Model: AVID1032
Tested By: Kyle Fujimoto



Date: 21.FEB.2007 15:16:42

Band Edge of the Fundamental – Part 1

FCC 15.225
AVID ID Systems, Inc.
Reader
Model: AVID1032
Tested By: Kyle Fujimoto



Date: 21.FEB.2007 15:18:39

Band Edge of the Fundamental – Part 2

FREQUENCY TOLERANCE
DATA SHEET



FCC 15.225 TESTING

| | | | |
|-----------------|-----------------------|------------------|---------------|
| COMPANY: | AVID ID SYSTEMS, INC. | DATE: | 02/23/2007 |
| EUT: | READER | ENGINEER: | KYLE FUJIMOTO |
| MODEL: | AVID1032 | S/N: | N/A |

| TEMPERATURE | FREQUENCY (GHz) AT 0 MINUTES | FREQUENCY (GHz) AT 2 MINUTES | FREQUENCY (GHz) AT 5 MINUTES | FREQUENCY (GHz) AT 10 MINUTES | % OF SUPPLY VOLTAGE |
|-------------|------------------------------|------------------------------|------------------------------|-------------------------------|---------------------|
| -30°C | 13.56049098 | 13.56049098 | 13.56049098 | 13.56049098 | 100 |
| -20°C | 13.56049098 | 13.56049098 | 13.56049098 | 13.56049098 | 100 |
| -10°C | 13.56049098 | 13.56049098 | 13.56049098 | 13.56049098 | 100 |
| 0°C | 13.56049098 | 13.56049098 | 13.56049098 | 13.56049098 | 100 |
| +10°C | 13.56045090 | 13.56045090 | 13.56045090 | 13.56045090 | 100 |
| +20°C | 13.56045090 | 13.56045090 | 13.56045090 | 13.56045090 | 100 |
| +20°C | 13.56045090 | 13.56045090 | 13.56045090 | 13.56045090 | 85 |
| +20°C | 13.56045090 | 13.56045090 | 13.56045090 | 13.56045090 | 115 |
| +30°C | 13.56037074 | 13.56037074 | 13.56037074 | 13.56037074 | 100 |
| +40°C | 13.56039078 | 13.56039078 | 13.56039078 | 13.56039078 | 100 |
| +50°C | 13.56037074 | 13.56037074 | 13.56037074 | 13.56037074 | 100 |