



## Communication Certification Laboratory

August 11, 2004

Mr. Tom Wood  
Digital Alert Systems, LLC.  
2977 Morningside Dr.  
Salt Lake City, UT 84124

Dear Tom:

Communication Certification Laboratory (CCL) has completed Immunity testing of the Digital Alert Systems Model DASDEC-1EN and has found that the unit does meet the FCC §11.32(d) requirements.

Please let us know if we can be of assistance in meeting your testing needs.

Sincerely yours,

COMMUNICATION CERTIFICATION LABORATORY

Richard L. Winter  
Marketing Representative

Enclosures  
83-0966:jd

**TEST REPORT FROM:**

COMMUNICATION CERTIFICATION LABORATORY

TEST OF: DASDEC-1EN

To FCC §11.32(d)

Test Report Serial No: 83-0966

**TEST REPORT FROM:**

COMMUNICATION CERTIFICATION LABORATORY  
1940 W. Alexander Street  
Salt Lake City, Utah  
84119-2039

Type of Report: Declaration of Conformity

TEST OF: DASDEC-1EN

To FCC §11.32(d)

Test Report Serial No: 83-0966

Applicant:

Digital Alert Systems, LLC.  
2977 Morningside Dr.  
Salt Lake City, UT 84124

Equipment Receipt Date: August 11, 2004

Dates of Test: August 11, 2004

Issue Date: August 11, 2004

**CERTIFICATION OF ENGINEERING REPORT**

This report has been prepared by Communication Certification Laboratory to verify compliance of the device described below with the requirements of FCC §11.32(d). This report may be reproduced in full, partial reproduction may only be made with the written consent of the laboratory. The results in this report apply only to the sample tested.

- Applicant: Digital Alert Systems, LLC.
- Manufacturer: Digital Alert Systems, LLC.
- Brand Name: DAS
- Model Number: DASDEC-1EN

On this 11<sup>th</sup> day of August 2004 I, individually, and for Communication Certification Laboratory, certify that the statements made in this engineering report are true, complete, and correct to the best of my knowledge, and are made in good faith.

COMMUNICATION CERTIFICATION LABORATORY



Checked by: Thomas C. Jackson  
President



Tested by: Jeffrey L. Draney  
EMC Technician

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**SECTION 1.0 CLIENT INFORMATION**

**1.1 Applicant:**

Company Name: Digital Alert Systems, LLC.  
2977 Morningside Dr.  
Salt Lake City, UT 84124

Contact Name: Tom Wood  
Title: Principle Engineer

**1.2 Manufacturer:**

Company Name: Digital Alert Systems, LLC.  
P.O. Box 5107  
Oracle, AZ 85623-5107

Contact Name: Bruce Robertson  
Title: Manager

**SECTION 2.0 EQUIPMENT UNDER TEST (EUT)****2.1 Identification of EUT:**

Brand Name: DAS  
 Model Name or Number: DASDEC-1EN  
 Serial Number: None  
 Options Fitted: See Section 2.3  
 Country of Manufacture: U.S.A.

**2.2 Description of EUT:**

The DASDEC-1EN is a rack mounted decoder and encoder of Emergency Alert System signals. The signal is brought into the EUT on the Audio Line In port and, after processing, is output on the Audio Out/Speaker ports. The system tested consisted of the following components.

Component	Description
VIA ME6000	Main computer board and processor
FSP Group FSP150-50PL	Power supply
Speaker	Internal speaker
Maxtor 20 GB	Hard drive
Matrix Orbital LCD Display	Display module
Seal SSC-2	Sound Card

**2.3 EUT and Support Equipment:**

The FCC ID numbers for all the EUT and support equipment used during the test (including inserted cards) are listed below:

Brand Name Model Number Serial No.	FCC ID Number	Description	Name of Interface Ports / Interface Cables
BN: DAS MN: DASDEC-1EN (1)	N/A	EAS Encoder/ Decoder	See Section 2.3
BN: CA MN: Speakers	N/A	Speakers	Audio/Unshielded cable with stereo mini-jack connector (2)

Brand Name Model Number Serial No.	FCC ID Number	Description	Name of Interface Ports / Interface Cables
BN: Keytronic MN: E03601QUS201-C SN: Q990739277	DoC	Keyboard	Keyboard/Attached PS/2 keyboard cable (2 & 3)
BN: TrendNet MN: 4 Port	None	Ethernet Hub	Unshielded CAT 5 cables w/RJ45 connectors (2)
BN: DAS MN: DASDEC (support system)	N/A	EAS Encoder/ Decoder	Unshielded CAT 5 cable w/RJ45 connectors
BN: Unbranded MN: Keyboard	None	Keyboard for support system	Keyboard/Attached PS/2 keyboard cable (2 & 3)
BN: Unbranded MN: Mouse	None	IR Mouse for support system	Mouse/Attached PS/2 mouse cable (2 & 3)
BN: Unbranded MN: LCD Display	None	LCD Display for support system	Video/Attached shielded video cable (4)

Note: (1) EUT.

(2) Interface port connected to EUT (See Section 2.4)

(3) Mouse and keyboard cable permanently attached.

(4) Monitor's attached video cable includes manufacturer-supplied ferrite.

The support equipment listed above was not modified in order to achieve compliance with this standard.

#### **2.4 Interface Ports on EUT:**

Name of Ports	No. of Ports Fitted to EUT.	Cable Descriptions/Length
Ethernet	1	Cat 5 cable w/RJ45 connectors/8 meters
Keyboard	1	PS/2 Keyboard cable/2 meters

Name of Ports	No. of Ports Fitted to EUT.	Cable Descriptions/Length
Audio Line In	1 of 2	Unshielded cable with stereo mini-jack connector/1 meter cable looped to audio line out.
Audio Line Out	2 of 2	Unshielded cable with stereo mini-jack connectors. 1-4 meters long connected to speakers located outside of the chamber. 1-1 meter long looped to audio line in.

**2.5 Modification Incorporated/Special Accessories on EUT:**

There were no modifications or special accessories required to comply with the specification.

Signature: \_\_\_\_\_

Typed Name: Tom Wood

Title: Principle Engineer

**SECTION 3.0 TEST SPECIFICATION, METHODS & PROCEDURES****3.1 Test Specification:**

Title: FCC §11.32(d)

Purpose of Test: The tests were performed to demonstrate initial compliance.

**3.2 Methods & Procedures:****3.2.1 Basic Standards Used:**

Basic Standard	Date	Title
FCC §11.32(d)	-	-
EN 61000-4-3 (IEC 1000-4-3)	1995	Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques - Section 3 Radiated, radio frequency, electromagnetic field immunity test.

**SECTION 4.0 OPERATION OF EUT DURING TESTING:****4.1 Operating Environment:**

Power Supply: 120 VAC  
AC Mains Frequency: 60 HZ

**4.2 Operating Modes:**

The DASDEC-1EN was tested in the following mode. The DASDEC-1EN was connected to an Ethernet Hub located outside of the chamber. A 1-meter audio out cable was connected to the audio in port. A second audio out cable was connected to the speakers located outside of the chamber. The DASDEC-1EN was connected to the support equipment and was decoding and encoding EAS audio signals.

**4.3 Configuration & Peripherals:**

The DASDEC-1EN was placed on the table and connected to the support equipment listed in Section 2.3 via each port listed in Section 2.4. Shown in Section 4.6 is a block diagram of the test configuration.

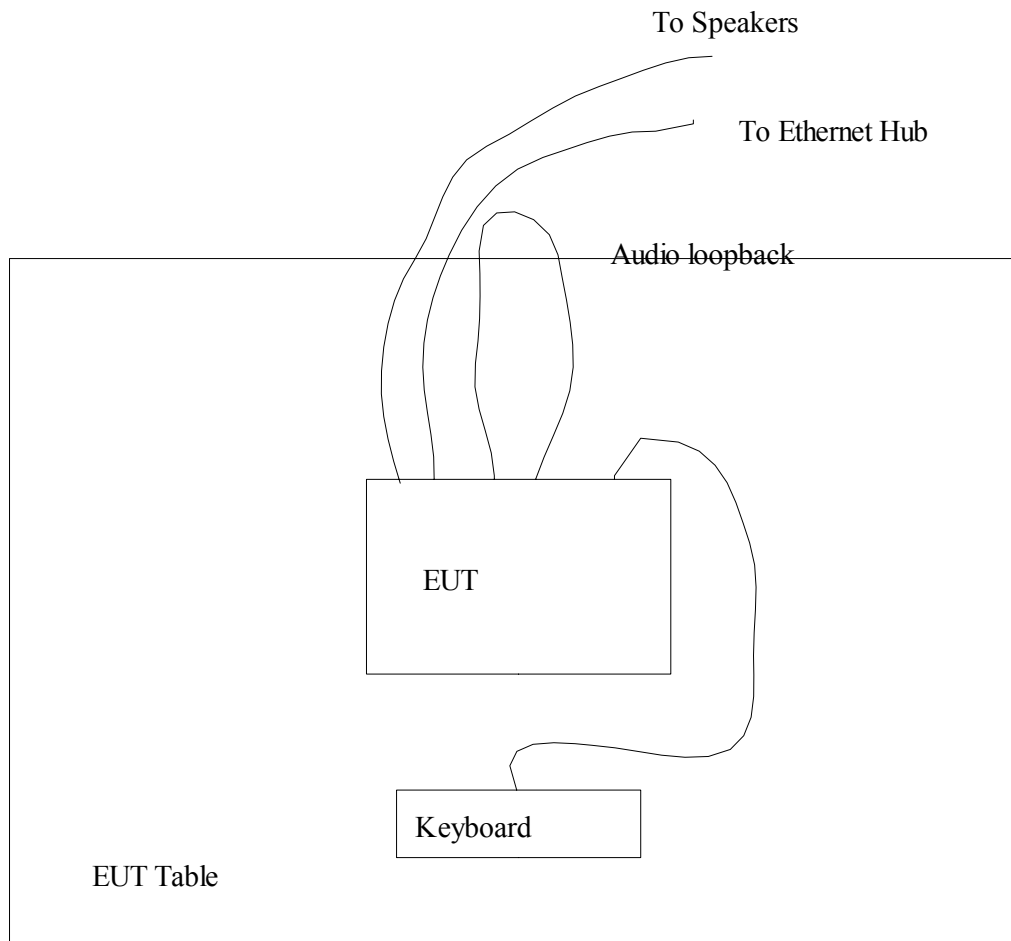
#### **4.4 Performance Criteria**

The EUT shall continue to operate as intended, with no degradation of performance.

#### **4.5 Monitoring of the EUT**

The DASDEC-1EN was monitored outside the chamber using a second DASDEC-1EN connected to the Ethernet Hub. The decoded audio was also monitored through the speakers located outside of the chamber.

**4.6 Block Diagram of Test Configuration:**



**SECTION 5.0 SUMMARY OF TEST RESULTS****5.1 Summary of Tests**

Basic Standard	Environmental Phenomena	Result
FCC §11.32(d)	Radio Frequency Electromagnetic Field (Amplitude modulated)	Complied

**5.2 Result**

In the configuration tested, the EUT complied with the requirements of the specification.

**SECTION 6.0 MEASUREMENTS, EXAMINATIONS AND DERIVED RESULTS****6.1. General Comments**

This section contains the test results only. Details of the test methods, etc., can be found in Appendix 1 of this report.

**6.2. Test Results****6.2.1 Radio Frequency Electromagnetic Field**

Port: Enclosure

Basic Standard: FCC §11.32(d)

Limit: 10 V/m, 0.5 V/M

Modulation: 1 kHz 80% Amplitude Modulated

Frequency (MHz)	Level (V/m)	Exposed Area	Comment	Result
0.5 - 1.65	10.8	Front	Note 1	Complied
0.5 - 1.65	10.8	Right Side	Note 1	Complied
0.5 - 1.65	10.8	Left Side	Note 1	Complied
0.5 - 1.65	10.8	Rear	Note 1	Complied
80 - 1000	1.3	Front	Note 1	Complied
80 - 1000	1.3	Right Side	Note 1	Complied
80 - 1000	1.3	Left Side	Note 1	Complied
80 - 1000	1.3	Rear	Note 1	Complied
Note 1: There was no observable degradation in the performance of the EUT				

**Measurement Uncertainty**

The measurement uncertainty (with a 95% confidence level) for this test was: " 0.8 V/m

**RESULT**

In the configuration tested, the EUT complied with the specification.

**APPENDIX 1 TEST PROCEDURES AND TEST EQUIPMENT****A.1.1 Radiated Electromagnetic Field - EN 61000-4-3:1995 (IEC 1000-4-3:1995)**

The DASDEC-1EN was tested to the test procedures outlined in EN 61000-4-3:1995 Part 3 Section 8.

The DASDEC-1EN was configured for normal operation as described in Sections 4.2 and 4.3.

The measurements are performed in a semi anechoic chamber, 6.2 m x 8.5 m. The EUT is placed 2 m from the back of the chamber and at least 2 m from each side. The radiating antenna is placed 3 m from the EUT and 1 m from the back of the chamber.

The field strength is calibrated via an IBM compatible computer running custom software. The computer, signal generator, amplifier, and field monitor are located on the outside of the chamber during the tests. Two field sensor probes are placed inside the chamber, in the area in which the EUT will occupy, to monitor the calibration. The software is designed to monitor the field strength as the frequency is swept incrementally from 80 MHz to 2000 MHz. The step size shall not exceed 1% of the fundamental. The signal level to the radiating system is then adjusted until the required field intensity is indicated. This signal level is stored by the computer, without the EUT present, to be used during the testing routine.

The radiating antenna was placed 3 m from the front of the EUT, in the exact position used during calibration.

The EUT is placed on a wooden table that is 0.8 m from the floor of the chamber, at the distance specified above. The frequency range is swept incrementally from 0.5 to 1.65 MHz and 80 MHz to 1000 MHz using the previously recorded power levels to re-establish the field. The EUT is rotated in 90° increments to ensure that all four sides are exposed to the radiating field.

The dwell time at each frequency shall be not less than the time necessary to the EUT to be exercised, and be able to respond. The sensitive frequencies, the clock frequency (ies) and harmonics or frequencies of dominant interest are analyzed separately.

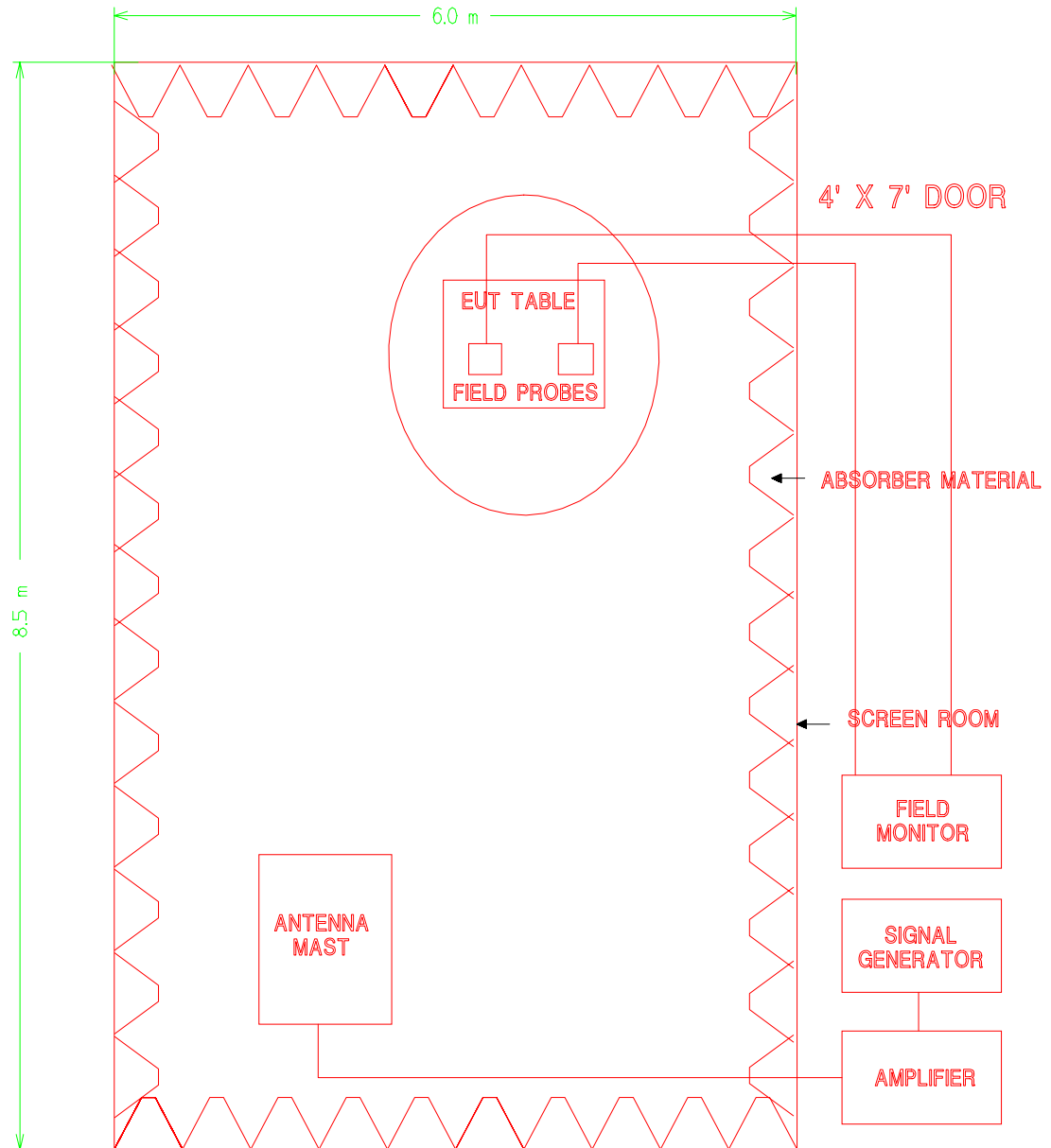
The chamber is calibrated for field uniformity every twelve months. A vertical plane that is 1.5 m by 1.5 m defines the uniformity of the chamber. The bottom of this vertical plane is 0.8 m above the floor of the chamber. Sixteen points are defined in this vertical plane located 0.5-m apart arranged in a grid pattern in the plane (as per EN 61000-4-3:1995). The uniformity of the chamber is met if 12 of the 16 points are within -0 to +6

dB of the nominal field level. The point with the lowest level measured is used for the reference level when determining the field level at that frequency.

The uniformity of the chamber is determined by placing an isotropic field strength probe 3-m from the transmitting antenna at a height of 0.8 m from the floor of the chamber (calibration position). The frequency range is swept incrementally (1% of fundamental) from 80 MHz to 2000 MHz. The output level of the signal generator required to produce the desired field strength is measured and recorded. The probe is moved to position #1. The frequency range is again swept with the signal generator outputting the level that was recorded with the probe in the calibration position, at the appropriate frequency. The level from the probe is measured and recorded. After the entire frequency range has been swept the probe is moved to the next position and the process is repeated until all 16 positions have been measured and recorded.

Type of Equipment	Manufacturer	Model Number	Serial Number
Field Monitor	Amplifier Research	FM2000	12785
Isotropic Field Probes	Amplifier Research	FP2000	12794 12921
Isotropic Field Probe	Amplifier Research	FP2036	300138
BiconiLog Antenna	EMCO	3141	1045
Double Ridge Guide Antenna	EMCO	3115	9604-4779
Cable B	N/A	Radiated	N/A
RF Power Amp	Amplifier Research	25W1000M7	12572
RF Power Amp	Amplifier Research	15S1G3	303669
Signal Generator	Hewlett Packard	8647A	3247A00548
.01 to 220 MHz Antenna	Instruments for Industry	EFG-3	203

An independent calibration laboratory calibrates all the equipment listed above every 12 months or the equipment is calibrated by CCL personal following outlined calibration procedures.

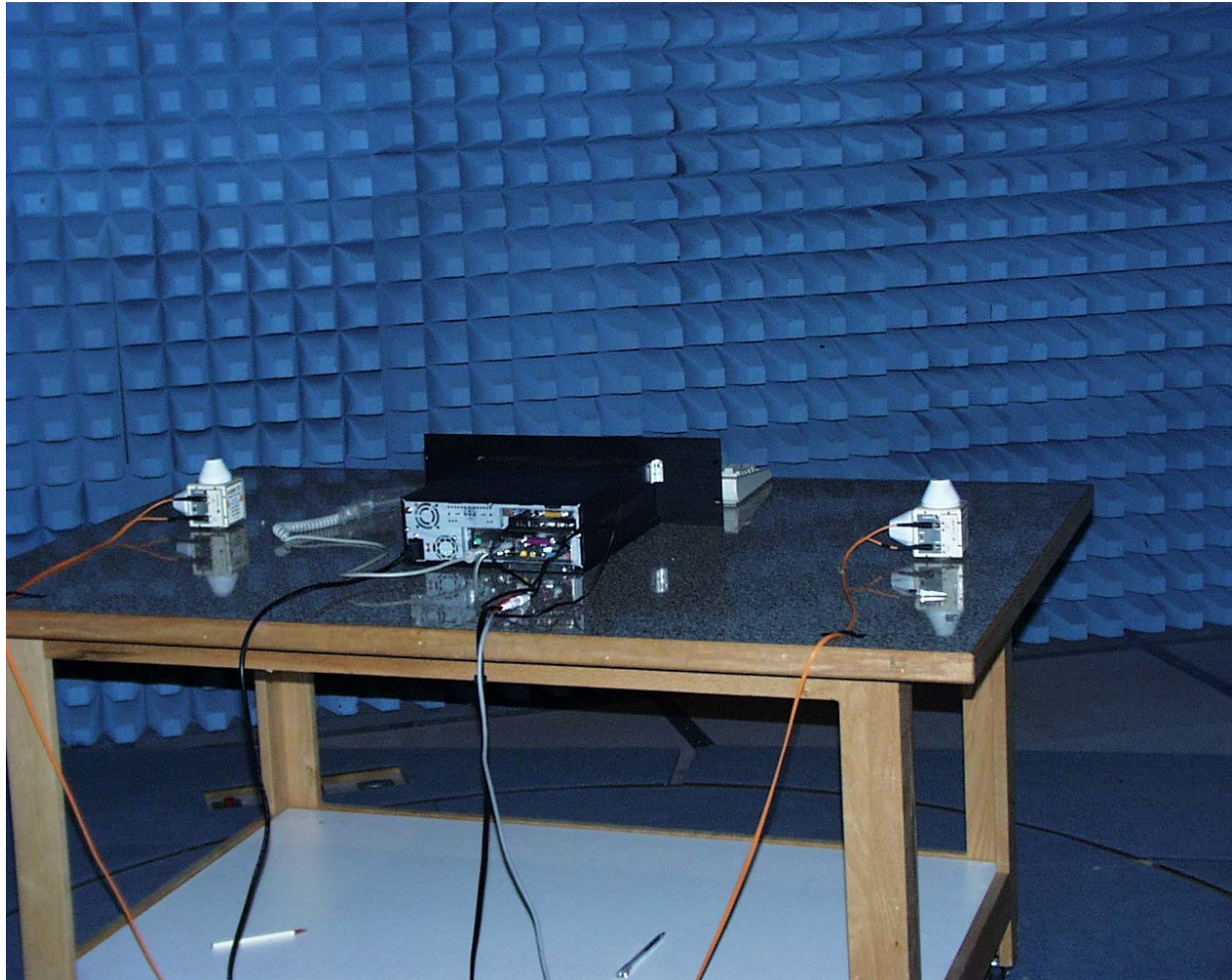


**APPENDIX 2 PHOTOGRAPHS**

Photograph 1 - Shows the front view of the radiated test setup.



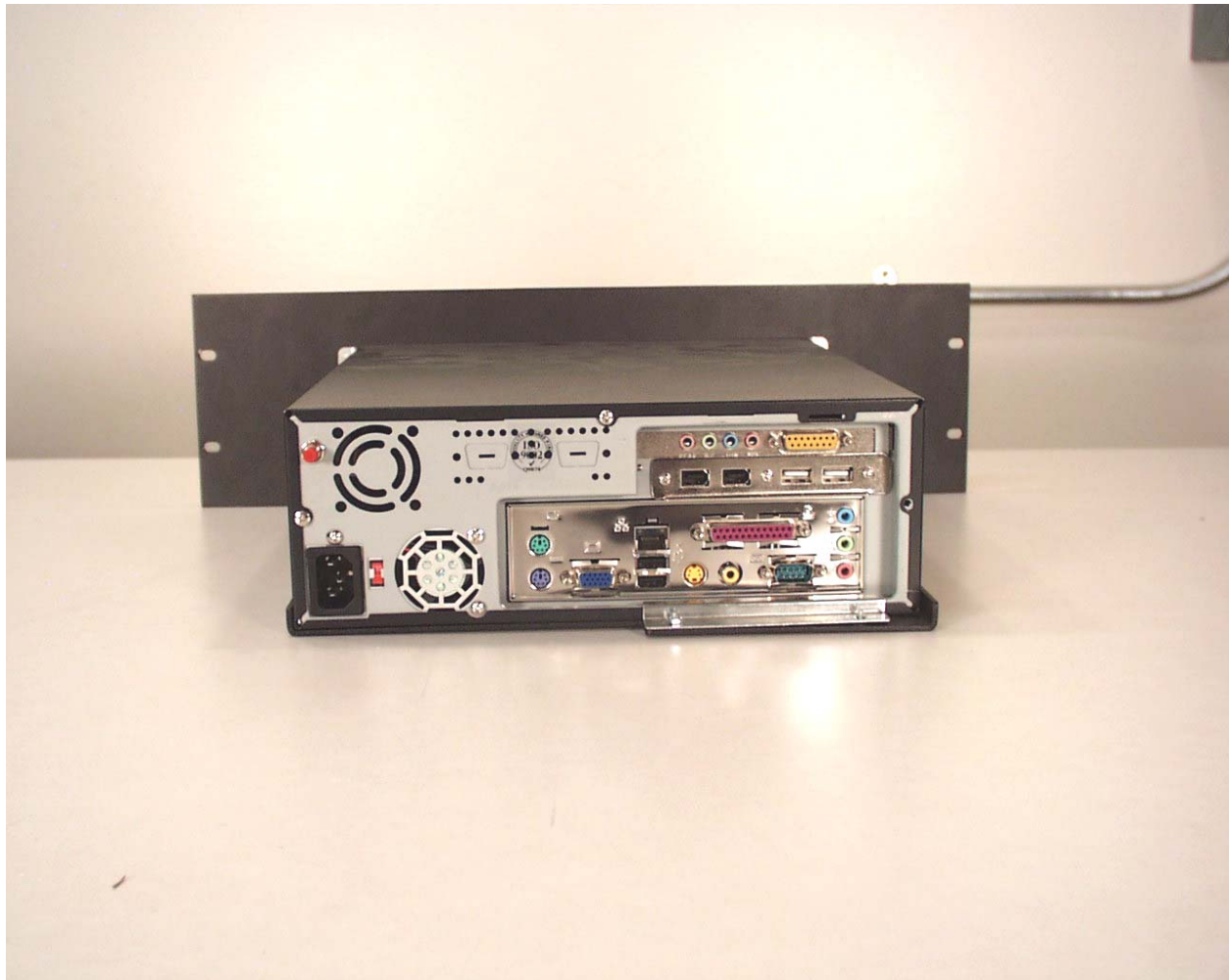
Photograph 2 - Shows the rear view of the radiated test setup.



Photograph 3 - Front View of the EUT



Photograph 4 - Back View of the EUT



Photograph 5 - Internal View of the EUT

