Communication Certification Laboratory

June 1, 2004

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

Dear Tom:

Communication Certification Laboratory (CCL) has completed testing of the Digital Alert Systems Model DASDEC-1EN and has found that the unit does meet the FCC Part 15/ICES-003 requirements for Class A Verification. Tests were performed to measure radiated and conducted electromagnetic interference generated by your equipment.

Enclosed is an engineering report for your files. Because this is Verification testing, a written report need not be filed with the FCC or Industry Canada, and no registration number is granted. Regulations do require, however, that you keep the test results on file and make them available to regulatory personnel upon request.

Any information noted as missing or not available at the time of this report should be obtained and kept on file with this report.

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

Sincerely yours,

COMMUNICATION CERTIFICATION LABORATORY

Joseph W. Jackson
V.P. Marketing

Enclosures
73-7972:nph

Corporate Office and Laboratory
1940 West Alexander Street Salt Lake City, Utah 84119-2039
Tel (801) 972-6146 Fax (801) 972-8432

www.cclab.com

EMC Open Area Test Site
500 West Wanship Road Wanship, Utah 84017-9760
Tel (435) 336-5868 Fax (435) 336-2785

TEST REPORT FROM:

COMMUNICATION CERTIFICATION LABORATORY

TEST OF: DASDEC-1EN

To FCC PART 15, Subpart B
ICES-003

Test Report Serial No: 73-7972

TEST REPORT FROM:

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

Type of Report: Verification

TEST OF: DASDEC-1EN

To FCC PART 15, Subpart B
ICES-003

Test Report Serial No: 73-7972

Applicant:

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

Date of Test: June 1, 2004

Issue Date: June 1, 2004

Equipment Receipt Date: June 1, 2004

CERTIFICATION OF ENGINEERING REPORT

This report has been prepared by Communication Certification Laboratory to document compliance of the device described below with the Class A requirements of Federal Communications Commission (FCC) Part 15, Subpart B and Industry Canada (IC) ICES-003. 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 1st day of June 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.

Although NVLAP has recognized that the Communication Certification Laboratory EMC testing facilities are in good standing, this report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

COMMUNICATION CERTIFICATION LABORATORY

Checked by: Thomas C. Jackson
President

Tested by: Norman P. Hansen
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 the Audio Out/Speaker ports. The unit has Ethernet and serial ports for control purposes. A parallel printer port is available for logging purposes. USB and Composite video ports are available for expansion purposes, although, at this time the expansion is undefined. Monitor, mouse, and keyboard ports are not typically connected, but on occasion may be and for this testing these devices were attached to the EUT.

Two versions of the DASDEC-1EN were tested. The difference is in the main processor board and the sound card. The tables below show the internal configurations of the DASDEC-1EN devices tested. The worst-case emissions were seen during testing of the configuration with the VIA ME6000 main board and the results in this report are from testing this configuration.

600 MHz System

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

1000 MHz System

Component	Description
VIA ME10000	Main computer board and processor
FSP Group FSP150-50PL	Power supply
Speaker	Internal speaker
Maxtor 30 GB	Hard drive
Matrix Orbital LCD Display	Display module
Soundblaster PCI 16	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)
BN: Gateway MN: EV500A SN: 15017A444139	BEJCB575B	Monitor	Video/Shielded attached video cable (2 & 4).
BN: HP Thinkjet MN: 2225C SN: 2442S60426	BS46XU2225C	Printer	Parallel/Shielded parallel printer cable (2)
BN: Keytronics MN: E03601QUS201-C SN: Q990739277	DoC	Keyboard	Keyboard/Attached PS/2 keyboard cable (2 & 3)
BN: Microsoft MN: Intellimouse 1.2A	DoC	Mouse	Mouse/Attached PS/2 mouse cable (2 & 3)

Brand Name Model Number Serial No.	FCC ID Number	Description	Name of Interface Ports / Interface Cables
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	Unshielded CAT 5 cable with RJ45 connectors/25 feet
USB	2 of 4	USB/USB cable/6 feet
Keyboard	1	PS/2 Keyboard cable/6 feet
Mouse	1	PS/2 Mouse cable/4 feet
VGA	1	Shielded video cable with manufacturer attached ferrite core/6 feet

Name of Ports	No. of Ports Fitted to EUT	Cable Descriptions/Length
Parallel	1	Shielded parallel printer cable/6 feet
Serial	1	Shielded cable with DB9 connectors/6 feet
Composite Video	1	Cable with RCA type connectors/6 feet
Audio Line In	2 of 2	Unshielded cable with stereo mini-jack connector/6 feet
Audio Line Out	2 of 2	Unshielded cable with stereo mini-jack connector/6 feet
Microphone	0 of 2	Ports are not used in this application
Svideo	0 of 1	Port is not used in this application
Firewire	0 of 2	Ports are not used in this application

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 PART 15, Subpart B (47 CFR 15).

Limits and methods of measurement of radio interference characteristics of radio frequency devices.

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

3.2 Methods & Procedures:

3.2.1 §15.107 Conducted Limits

(a) Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHZ to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 – 0.5*	66 to 56*	56 to 46*
0.5 – 5	56	46
5 - 30	60	50

*Decreases with the logarithm of the frequency.

(b) For a Class A digital device that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHZ to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	Quasi-peak	Average
0.15 – 0.5	79	66
0.5 – 30	73	60

3.2.2 §15.109 Radiated Limits

(a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of emission (MHz)	Field Strength (microvolts/meter)
30 - 88	100
88 - 216	150
216 - 960	200
Above 960	500

(b) The field strength of radiated emission from a Class A digital device, as determined at a distance of 10 meters, shall not exceed the following:

Frequency of emission (MHz)	Field Strength (microvolts/meter)
30 - 88	90
88 - 216	150
216 - 960	210
Above 960	300

(c) In the emission tables above, the tighter limit applies at the band edges. §15.33 and §15.35 which specify the frequency range over which radiated emissions are to be measured and the detector functions and other measurement standards apply.

3.2.3 Test Procedure

The line conducted and radiated emissions testing was performed according to the procedures in ANSI C63.4 (2001). Testing was performed at CCL's Wanship open area test site #2, located at 550 West Wanship Road, Wanship, UT. This site has been fully described in a report submitted to the FCC, and was accepted in a letter dated August 11, 2003 (90504).

CCL participates in the National Voluntary Laboratory Accreditation Program (NVLAP) and has been accepted under NVLAP Lab Code:100272-0, which is effective until September 30, 2004.

For radiated emissions testing at 30 MHz or above that is performed at distances closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

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:

Each mode of operation was exercised to produce worst-case emissions. The worst-case emissions occurred with the DASDEC-1EN running in the following mode: The DASDEC-1EN was connected to the support equipment and was decoding and encoding EAS audio signals.

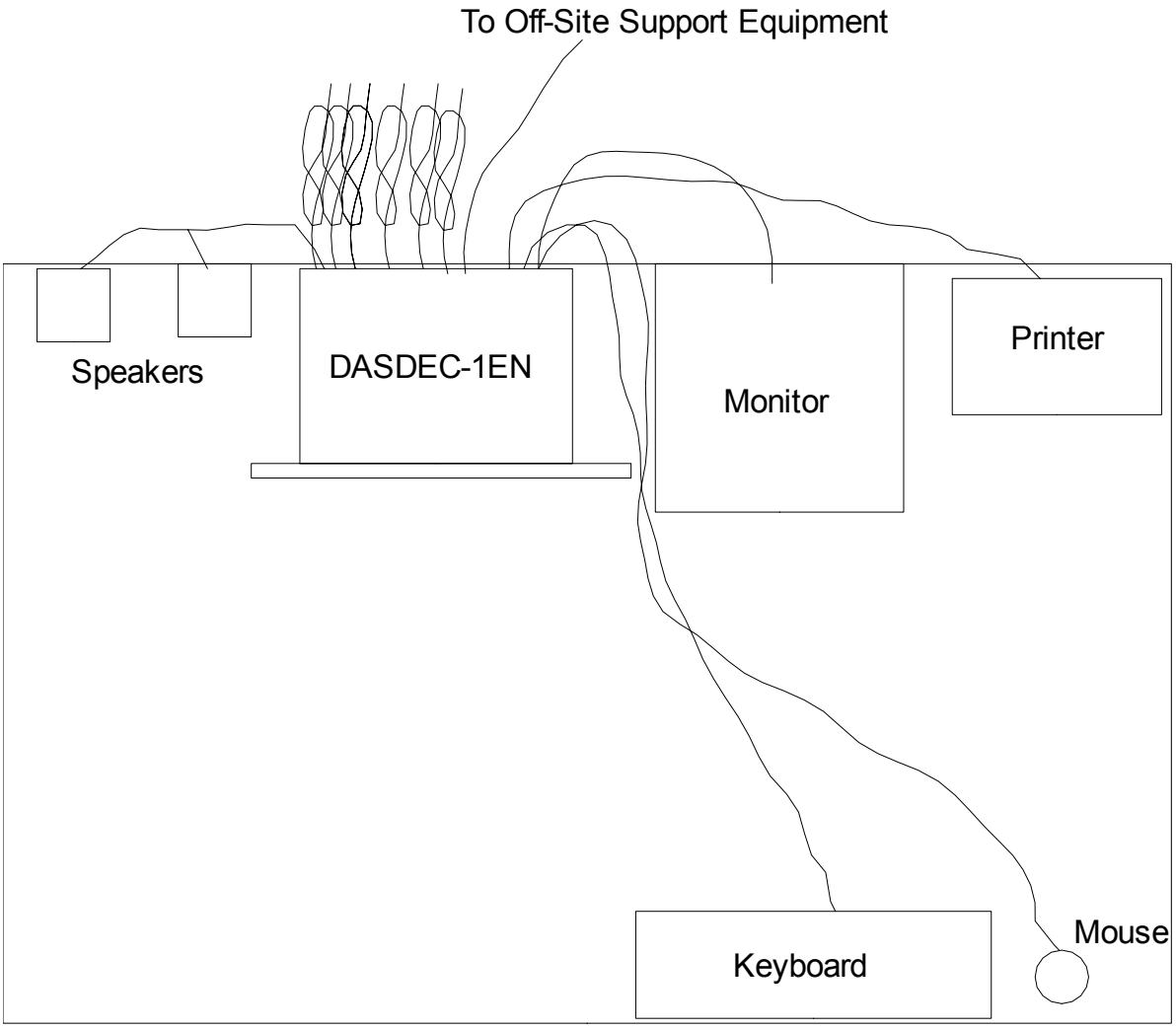
4.3 EUT Exercise Software:

Digital Alert System software running under Linux was used to exercise the EUT.

4.4 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 4.5 is a block diagram of the test configuration.

4.5 Block Diagram of Test Configuration:



SECTION 5.0 SUMMARY OF TEST RESULTS

5.1 Class A of FCC Part 15, Subpart B.

5.1.1 Summary of Tests:

Port	Environmental Phenomena	Frequency Range (MHz)	Result
AC Power	Conducted Disturbance at Mains Ports (Hot Lead to Ground)	0.15 to 30	Complied
AC Power	Conducted Disturbance at Mains Ports (Neutral Lead to Ground)	0.15 to 30	Complied
Enclosure	Radiated Disturbance (Vertical Polarity)	30 to 5000	Complied
Enclosure	Radiated Disturbance (Horizontal Polarity)	30 to 5000	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 used and a list of the test equipment used during the measurements can be found in Appendix 1 of this report.

6.2 Test Results:

6.2.1 Conducted Disturbance at Mains Ports Data (Hot Lead)

Frequency (MHz)	Detector	Measured Level ($dB\mu V$)	Class A Limit ($dB\mu V$)	Margin (dB)
0.15	Peak (Note 1)	52.8	66.0	-13.2
0.17	Peak (Note 1)	50.2	66.0	-15.8
0.20	Peak (Note 1)	47.6	66.0	-18.4
0.22	Peak (Note 1)	43.7	66.0	-22.3
9.10	Peak (Note 1)	38.6	60.0	-21.4
9.63	Peak (Note 1)	36.4	60.0	-23.6

Note 1: The reference detector used for the measurements was Quasi-Peak or Peak and the data was compared to the average limit; therefore, the EUT was deemed to meet both the average and quasi-peak limits.

Note 2: The reference detector used for the measurements was quasi-peak and average and the data was compared to the respective limits.

Measurement Uncertainty

The measurement uncertainty (with a 95% confidence level) for this test was: $\pm$ 3.3 dB.

RESULT

The EUT complied with the specification limit by a margin of 13.2 dB.

6.2.2 Conducted Disturbance at Mains Ports Data (Neutral Lead)

Frequency (MHz)	Detector	Measured Level (dBμV)	Class A Limit (dBμV)	Margin (dB)
0.18	Peak (Note 1)	44.9	66.0	-21.1
0.86	Peak (Note 1)	37.0	60.0	-23.0
1.55	Peak (Note 1)	37.1	60.0	-22.9
1.73	Peak (Note 1)	36.6	60.0	-23.4
8.63	Peak (Note 1)	39.3	60.0	-20.7
9.05	Peak (Note 1)	38.2	60.0	-21.8

Note 1: The reference detector used for the measurements was Quasi-Peak or Peak and the data was compared to the average limit; therefore, the EUT was deemed to meet both the average and quasi-peak limits.

Note 2: The reference detector used for the measurements was quasi-peak and average and the data was compared to the respective limits.

Measurement Uncertainty

The measurement uncertainty (with a 95% confidence level) for this test was: ± 3.3 dB.

RESULT

The EUT complied with the specification limit by a margin of 20.7 dB.

6.2.3 Radiated Disturbance Data (Vertical Polarity)

Frequency (MHz)	Detector	Receiver Reading (dBμV)	Correction Factor (dB/m)	Field Strength (dBμV/m)	Class A 10 m Limit (dBμV/m)	Margin (dB)
53.6	Peak (Note 1)	18.7	8.4	27.1	39.1	-12.0
55.5	Peak (Note 1)	20.2	8.0	28.2	39.1	-10.9
73.0	Peak (Note 1)	17.9	7.2	25.1	39.1	-14.0
86.8	Peak (Note 1)	17.7	7.6	25.3	39.1	-13.8
433.6	Peak (Note 1)	14.7	19.1	33.8	46.4	-12.6
534.4	Peak (Note 1)	11.6	22.2	33.8	46.4	-12.6
600.0	Peak (Note 1)	8.6	23.7	32.3	46.4	-14.1
800.0	Peak (Note 1)	5.7	26.8	32.5	46.4	-13.9
836.8	Peak (Note 1)	7.1	26.7	33.8	46.4	-12.6
1200.00	Peak (Note 1)	9.3	28.4	37.7	49.5	-11.8

Note 1: The reference detector used for the measurements was peak or quasi-peak and the data was compared to the quasi-peak limit or average limit.

Note 2: For radiated emissions above 1000 MHz, the reference detector used for the measurements was average and peak and the data was compared to the respective limits. The measurements above 1000 MHz were made at a distance of 3 meters from the EUT and the measurement was adjusted to reflect the 10 meter limit using an extrapolation factor of 20 dB per decade.

Measurement Uncertainty

The measurement uncertainty (with a 95% confidence level) for this test was: ± 4.3 dB (30 MHz to 200 MHz) and ± 6.0 dB @ 3 meters ± 2.7 dB @ 10 meters (200 MHz to 1 GHz).

RESULT

The EUT complied with the specification limit by a margin of 10.9 dB.

6.2.4 Radiated Disturbance Data (Horizontal Polarity)

Frequency (MHz)	Detector	Receiver Reading (dBμV)	Correction Factor (dB/m)	Field Strength (dBμV/m)	Class A 10 m Limit (dBμV/m)	Margin (dB)
272.8	Peak (Note 1)	9.2	14.3	23.5	46.4	-22.9
288.0	Peak (Note 1)	10.1	14.6	24.7	46.4	-21.7
356.8	Peak (Note 1)	6.7	18.0	24.7	46.4	-21.7
400.0	Peak (Note 1)	10.8	18.9	29.7	46.4	-16.7
433.6	Peak (Note 1)	15.9	19.1	35.0	46.4	-11.4
600.8	Peak (Note 1)	11.4	23.7	35.1	46.4	-11.3
767.2	Peak (Note 1)	6.8	26.0	32.8	46.4	-13.6
800.0	Peak (Note 1)	9.4	26.8	36.2	46.4	-10.2
817.6	Peak (Note 1)	6.2	26.7	32.9	46.4	-13.5
2334.0	Peak (Note 1)	3.7	34.6	38.3	49.5	-11.2

Note 1: The reference detector used for the measurements was peak or quasi-peak and the data was compared to the quasi-peak limit.

Note 2: For radiated emissions above 1000 MHz, the reference detector used for the measurements was average and peak and the data was compared to the respective limits. The measurements above 1000 MHz were made at a distance of 3 meters from the EUT and the measurement was adjusted to reflect the 10 meter limit using an extrapolation factor of 20 dB per decade.

Measurement Uncertainty

The measurement uncertainty (with a 95% confidence level) for this test was: ± 4.3 dB (30 MHz to 200 MHz) and ± 6.0 dB @ 3 meters ± 2.7 dB @ 10 meters (200 MHz to 1 GHz).

RESULT

The EUT complied with the specification limit by a margin of 10.2 dB.

6.3 Sample Field Strength Calculation:

The field strength is calculated by adding the Correction Factor (Antenna Factor + Cable Factor), to the measured level from the receiver. The receiver amplitude reading is compensated for any amplifier gain. The basic equation with a sample calculation is shown below:

FS = RA + CF Where

FS = Field Strength
RA = Receiver Amplitude Reading (Receiver Reading - Amplifier Gain)
CF = Correction Factor (Antenna Factor + Cable Factor)

Assume a receiver reading of 42.5 dBμV is obtained from the receiver, an amplifier gain of 26.5 dB and a correction factor of 8.5 dB/m. The field strength is calculated by subtracting the amplifier gain and adding the correction factor, giving a field strength of 24.5 dBμV/m, FS = (42.5 - 26.5) + 8.5 = 24.5 dBμV/m.

APPENDIX 1 TEST PROCEDURES AND TEST EQUIPMENT

Conducted Disturbance at Mains Ports:

The conducted disturbance at mains ports from the ITE was measured using a spectrum analyzer with a quasi-peak adapter for peak, quasi-peak and average readings. The quasi-peak adapter uses a bandwidth of 9 kHz, with the spectrum analyzer's resolution bandwidth set at 100 kHz, for readings in the 150 kHz to 30 MHz frequency ranges.

The conducted disturbance at mains ports measurements are performed in a screen room using a (50 Ω/50 μH) Line Impedance Stabilization Network (LISN).

Where mains flexible power cords are longer than 1 m, the excess cable is folded back and forth as far as possible so as to form a bundle not exceeding 0.4 m in length.

Where the EUT is a collection of ITE with each ITE having its own power cord, the point of connection for the LISN is determined from the following rules:

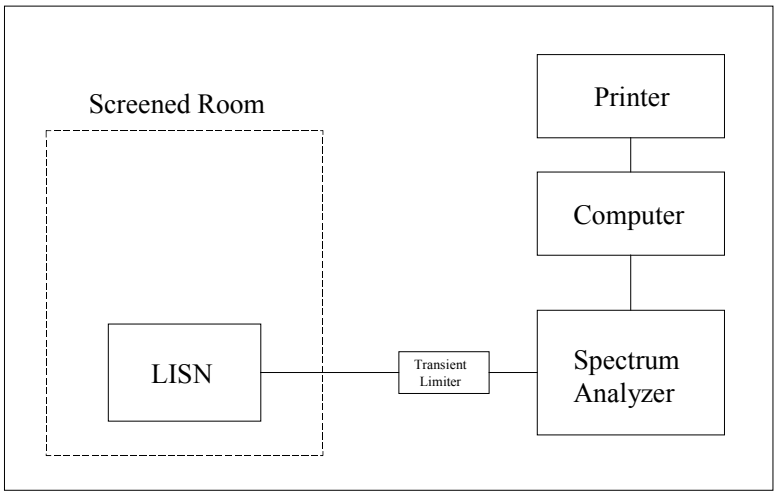
a) Each power cord, which is terminated in a mains supply plug, shall be tested separately.
b) Power cords, which are not specified by the manufacturer to be connected via a host unit, shall be tested separately.
c) Power cords which are specified by the manufacturer to be connected via a host unit or other power supplying equipment shall be connected to that host unit and the power cords of that host unit connected to the LISN and tested.
d) Where a special connection is specified, the necessary hardware to effect the connection is supplied by the manufacturer for the testing purpose.
e) When testing equipment with multiple mains cords, those cords not under test are connected to an artificial mains network (AMN) different than the AMN used for the mains cord under test.

Desktop ITE are placed on a non-conducting table at 0.8 meters from the metallic floor. The vertical coupling plane (wall of the screened room) is located 40 cm to the rear of the EUT. Floor standing equipment is placed directly on the earth grounded floor.

Type of Equipment	Manufacturer	Model Number	Serial Number	Date of Last Calibration
Wanship Open Area Test Site #2	CCL	N/A	N/A	12/27/2003
Test Software	CCL	Conducted Emissions	Revision 1.2	N/A
Spectrum Analyzer	Hewlett Packard	8566B	2230A01711	10/03/2003
Quasi-Peak Detector	Hewlett Packard	85650A	3107A01582	10/16/2003
LISN	EMCO	3825/2	9305-2099	02/03/2004
Conductance Cable Wanship Site #2	CCL	Cable J	N/A	12/09/2003
Transient Limiter	Hewlett Packard	11947A	3107A02266	12/08/2003

An independent calibration laboratory or CCL personnel calibrates all the equipment listed above at intervals defined in ANSI C63.4:2001 Section 4.4 following outlined calibration procedures. All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to tractability is on file and is available for examination upon request.

Conducted Emissions Test Setup



Radiated Disturbance:

The radiated disturbance from the ITE was measured using a spectrum analyzer with a quasi-peak adapter for peak and quasi-peak readings. A preamplifier with a fixed gain of 26 dB and a power amplifier with a fixed gain of 22 dB were used to increase the sensitivity of the measuring instrumentation. The quasi-peak adapter uses a bandwidth of 120 kHz, with the spectrum analyzer's resolution bandwidth set at 1 MHz, for readings in the 30 to 1000 MHz frequency ranges.

A biconilog antenna was used to measure the frequency range of 30 to 1000 MHz, at a distance of 10 meters from the EUT. The readings obtained by these antennas are correlated to the levels obtained with a tuned dipole antenna by adding antenna factors. A double-ridged guide antenna was used to measure the emissions at frequencies above 1000 MHz at a distance of 3 meters from the EUT.

The configuration of the ITE was varied to find the maximum radiated emission. The EUT was connected to the peripherals listed in Section 2.3 via the interconnecting cables listed in Section 2.4. A technician manually manipulated these interconnecting cables to obtain worst-case radiated disturbance. The ITE was rotated 360 degrees, and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission. Where there was multiple interface ports all of the same type, cables are either placed on all of the ports or cables added to these ports until the emissions do not increase by more than 2 dB.

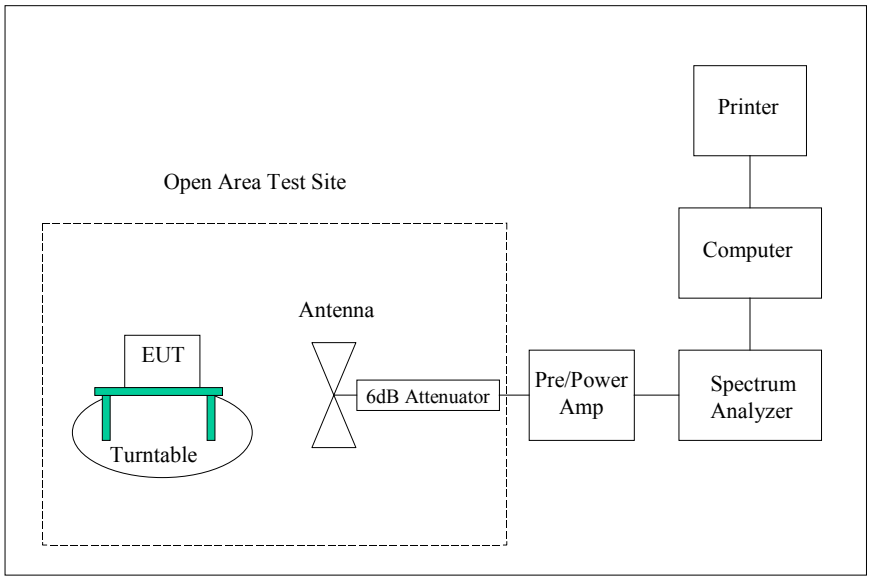
Desktop ITE is measured on a non-conducting table 0.8 meters above the ground plane. The table is placed on a turntable, which is level with the ground plane. For equipment normally placed on floors, the equipment shall be placed directly on the turntable.

Type of Equipment	Manufacturer	Model Number	Serial Number	Date of Last Calibration
Wanship Open Area Test Site #2	CCL	N/A	N/A	12/27/2003
Test Software	CCL	Radiated Emissions	Revision 1.3	N/A
Spectrum Analyzer	Hewlett Packard	8566B	2230A01711	10/03/2003
Quasi-Peak Detector	Hewlett Packard	85650A	3107A01582	10/16/2003
Biconilog Antenna	EMCO	3142	9601-1009	12/26/2003

Type of Equipment	Manufacturer	Model Number	Serial Number	Date of Last Calibration
Double Ridged Guide Antenna	EMCO	3115	2129	06/10/2003
High Frequency Amplifier	Hewlett Packard	8449B	3008A00990	04/25/2003
3 Meter Radiated Emissions Cable Wanship Site #2	CCL	Cable K	N/A	12/09/2003
10 Meter Radiated Emissions Cable Wanship Site #2	CCL	Cable L	N/A	12/09/2003
Pre/Power-Amplifier	Hewlett Packard	8447F	3113A05161	09/15/2003
6 dB Attenuator	Hewlett Packard	8491A	32835	12/09/2003

An independent calibration laboratory or CCL personnel calibrates all the equipment listed above at intervals defined in ANSI C63.4:2001 Section 4.4 following outlined calibration procedures. All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to tractability is on file and is available for examination upon request.

Radiated Emissions Test Setup



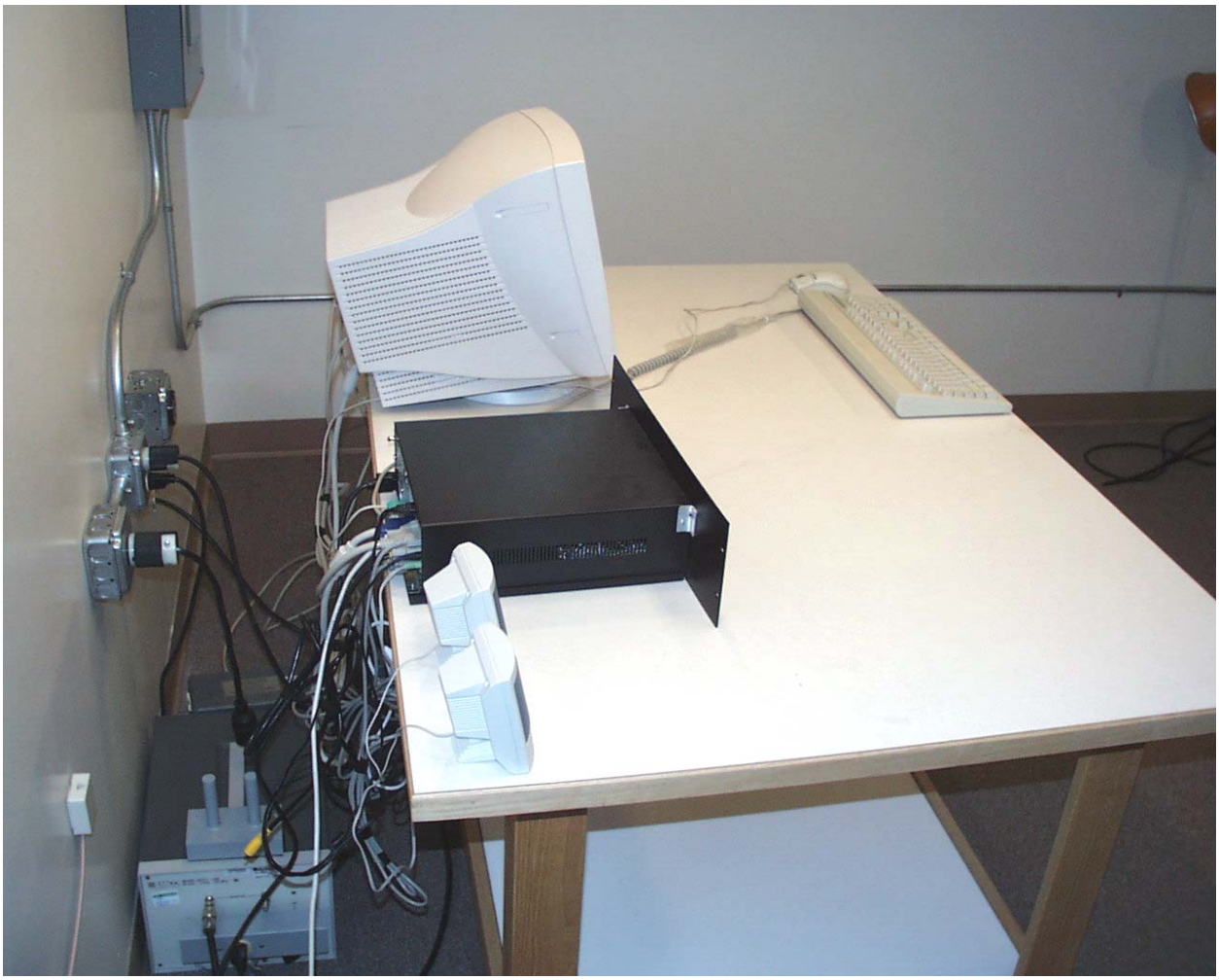
APPENDIX 2 PHOTOGRAPHS

Photograph 1 – Front View Radiated Disturbance Worst Case Configuration

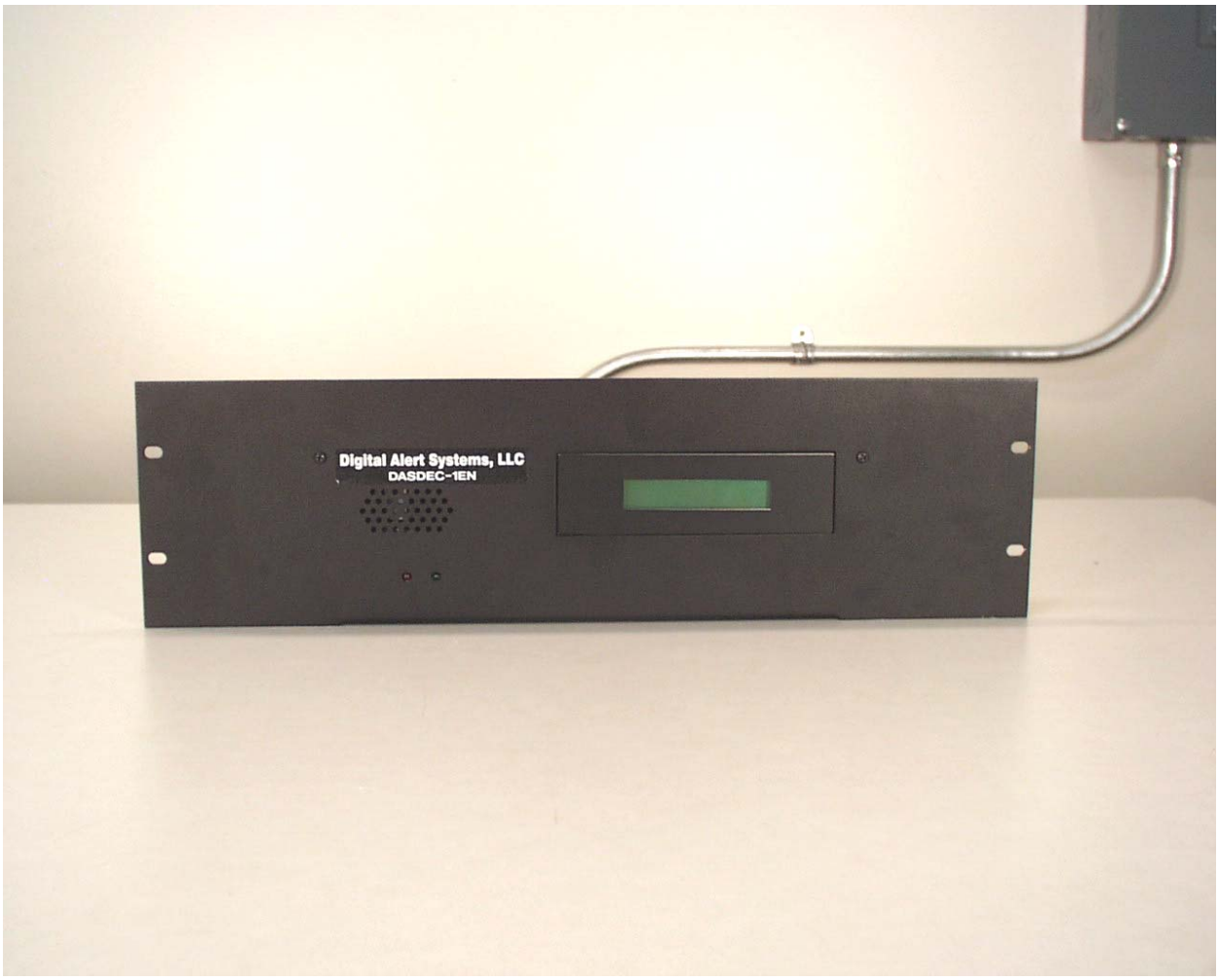
Photograph 2 – Back View Radiated Disturbance Worst Case Configuration

Photograph 3 – Front View Conducted Disturbance Worst Case Configuration

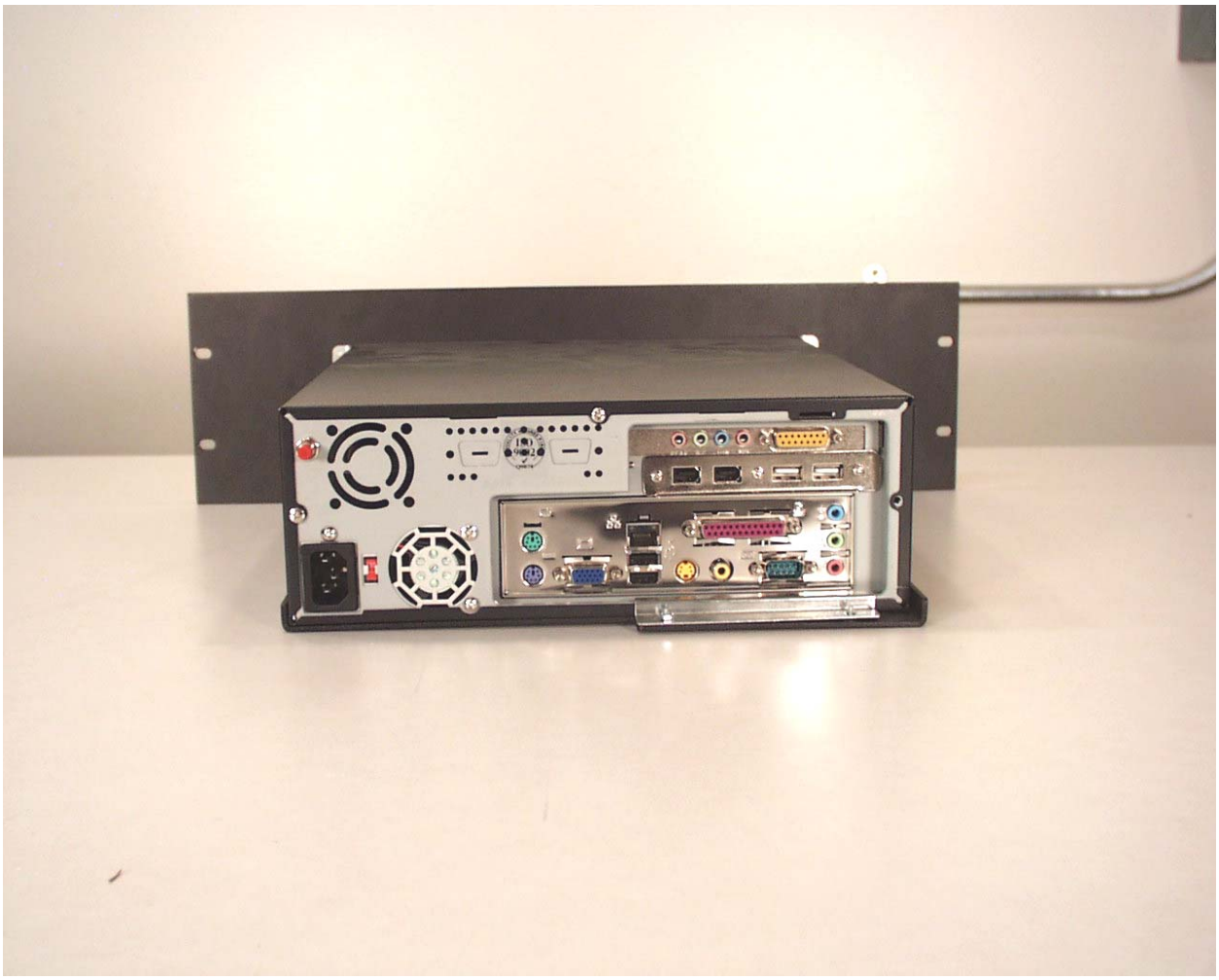
Photograph 4 – Back View Conducted Disturbance Worst Case Configuration



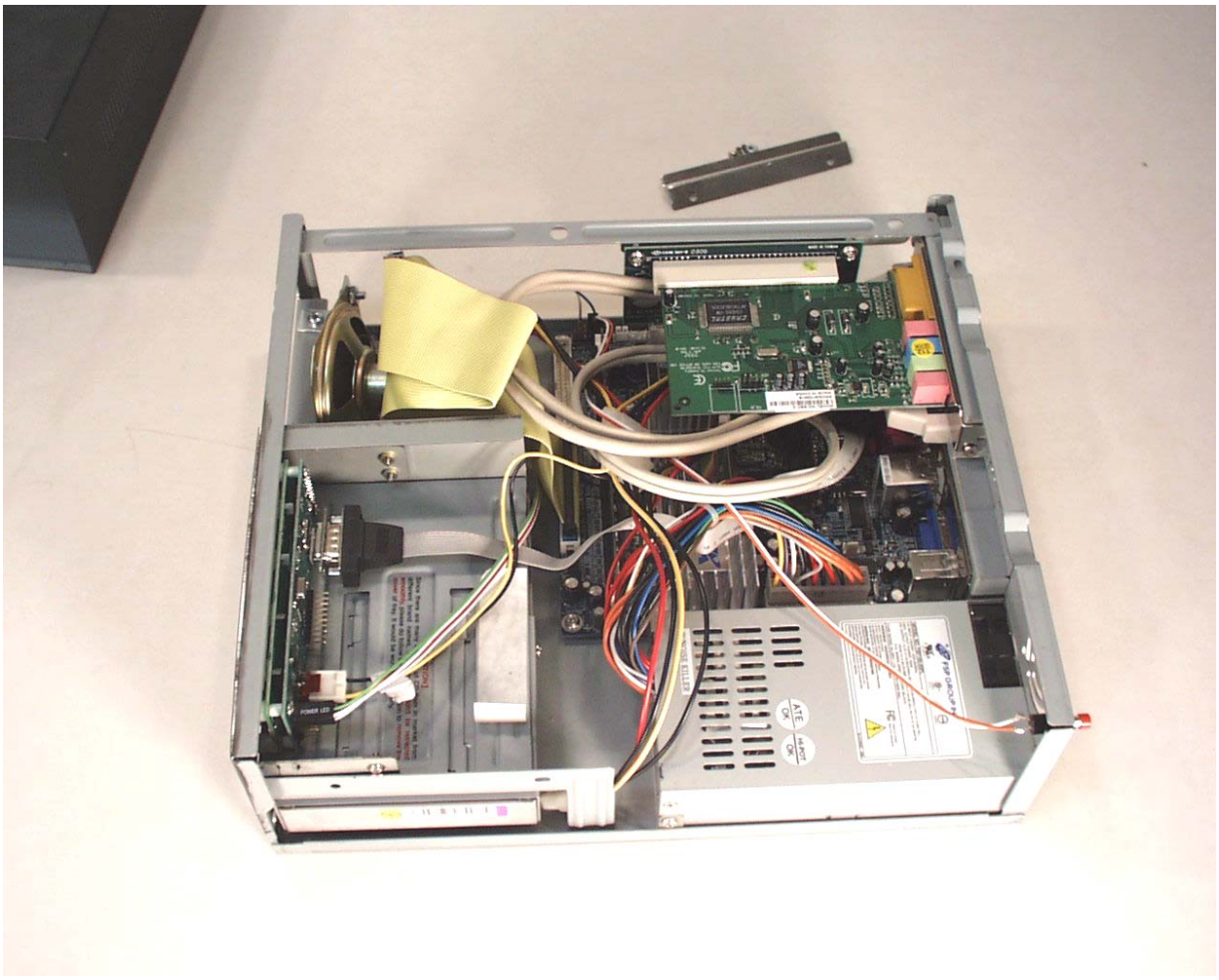
Photograph 5 – Front View of the EUT



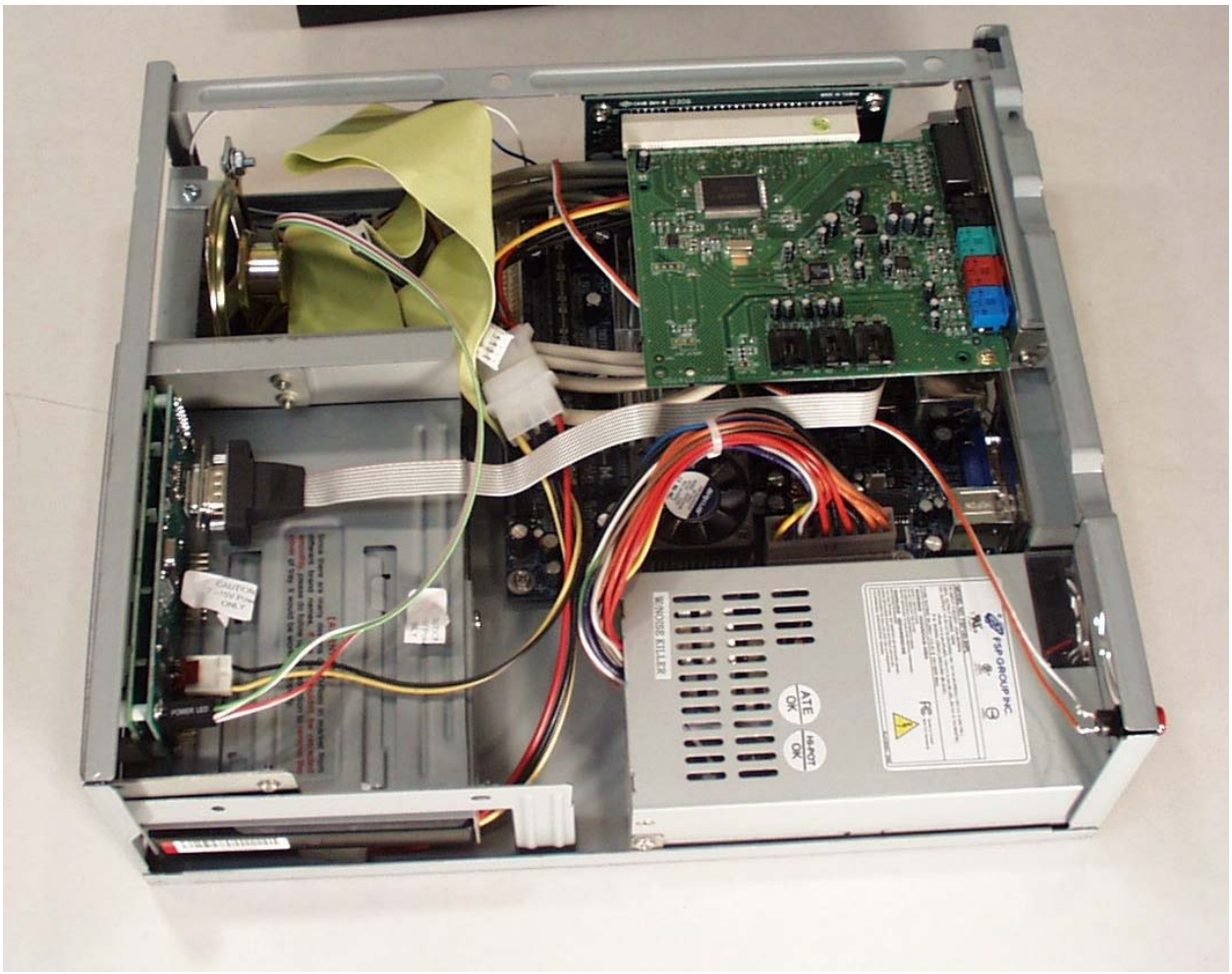
Photograph 6 – Back View of the EUT



Photograph 7 – Internal View of the 600 MHz System



Photograph 8 – Internal View of the 1000 MHz System



APPENDIX 3 FCC Part 15/ICES-003 COMPLIANCE INFORMATION

A.3.1 LABEL AND COMPLIANCE STATEMENT

The label of the Digital Alert Systems, LLC. DASDEC-1EN was not available at the time of this report.

A.3.2 BLOCK DIAGRAM

A block diagram showing the clock frequencies and signal paths of the Digital Alert Systems, LLC. DASDEC-1EN was not available at the time of this report.

A.3.3 USER'S MANUAL

A copy of the User's manual containing the FCC warning statement was not available at the time of this report.

Sample of Class A Warning Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiated radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.