Communication Certification Laboratory

February 19, 2003

Mr. Edward C. Travis
MotoSat
2343 South 2300 West
Salt Lake City, UT 84119

Dear Ed:

Communication Certification Laboratory (CCL) has completed testing of the DataStorm LCU-1 and UCU-1 to the EN 55022/ICES-003/FCC specifications. Enclosed is a copy of the documentation for your files.

In order to market your equipment to the European market the manufacturer or importer must make a declaration of conformity stating that the equipment complies with all applicable Directives that apply to their equipment. The enclosed report covers the requirements for the emissions portion of the EMC Directive only. Once all applicable Directives have been met the manufacturer or importer must then label the equipment with the "CE" marking.

This documentation must be kept on file for a period of ten years following the placement of the last piece of equipment on the market.

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
73-7852: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: LCU-1 & UCU-1

To EN 55022: 1998
FCC Part 15, Subpart B
ICES-003

Test Report Serial No: 73-7852

TEST REPORT FROM:

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

Type of Report: Declaration of Conformity

TEST OF: LCU-1 & UCU-1

To EN 55022: 1998
FCC Part 15, Subpart B
ICES-003

Test Report Serial No: 73-7852

Applicant:

MotoSat
2343 South 2300 West
Salt Lake City, UT 84119

Date of Test: February 19, 2003

Issue Date: February 19, 2003

Equipment Receipt Date: February 19, 2003

CERTIFICATION OF ENGINEERING REPORT

This report has been prepared by Communication Certification Laboratory to document compliance of the device described below with the Class B requirements of EN 55022: 1998, 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: MotoSat
- Manufacturer: MotoSat
- Brand Name: DataStorm
- Model Number: LCU-1 & UCU-1

On this 19th day of February 2003, 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, NVLAP does not endorse the product described in this report.

COMMUNICATION CERTIFICATION LABORATORY

Checked by: Kirk Thomas
V.P. Engineering

Tested by: Norman P. Hansen
EMC Technician

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SECTION 1.0 CLIENT INFORMATION

1.1 Applicant:

Company Name: MotoSat
2343 South 2300 West
Salt Lake City, UT 84119

Contact Name: Edward C. Travis
Title: Engineering Manager

1.2 Manufacturer:

Company Name: MotoSat
2343 South 2300 West
Salt Lake City, UT 84119

Contact Name: Edward C. Travis
Title: Engineering Manager

1.3 Party Responsible for Declaration of Conformity:

Company Name: MotoSat
2343 South 2300 West
Salt Lake City, UT 84119

Contact Name: Edward C. Travis
Title: Engineering Manager

Signature: _____

SECTION 2.0 EQUIPMENT UNDER TEST (EUT)

2.1 Identification of EUT:

Brand Name: DataStorm
Model Name or Number: LCU-1 & UCU-1
Serial Number: None
Options Fitted: N/A

2.2 Description of EUT:

The LCU-1 is a controller for positioning and monitoring a mobile satellite antenna. The UCU-1 is mounted to the mobile satellite antenna and provides interfacing to the sensors and positioning motors for the satellite antenna. 12 VDC, typically a vehicle battery, is used to power both the LCU-1 and the UCU-1 and there is no provision for connection to any AC mains.

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	FCC ID Number	Description	Name of Interface Ports / Interface Cables
BN: DataStorm MN: LCU-1 (1)	N/A	Controller	See Section 2.4
BN: DataStorm MN: UCU-1 (1)	N/A	Controller	See Section 2.4
BN: HP Pavilion MN: N5420	DoC	Laptop Computer	Serial/Unshielded cable w/DB9 & DB15 connectors (2)
BN: DataStorm MN: Satellite Antenna	N/A	Mobile Satellite Antenna	Motor Control/ Unshielded cable (2)

Note: (1) EUT.
(2) Interface port connected to EUT (See Section 2.4)

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

2.4 Interface Ports on EUT:

LCU-1 Interface Ports

Name of Ports	No. of Ports Fitted to EUT.	Cable Descriptions/Length
Power	1	Unshielded 2 conductor cable/5 meters
Motor Control	1	Unshielded 9 conductor cable/10 meters
Serial	1	Unshielded cable w/DB9 and DB15 connectos/3 meters
Signal	1	RG6 coax w/F-type connectors terminated in 75Ω/1 meter

UCU-1 Interface Port

Name of Port	No. of Ports Fitted to EUT.	Cable Descriptions/Length
Data (To LCU-1)	1	Unshielded 9 conductor cable/10 meters
Motor Control	1	Unshielded cable/<1 meter

2.5 Modification Incorporated/Special Accessories on EUT:

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

Signature: _____

Typed Name: Edward C. Travis

Title: Engineering Manager

SECTION 3.0 TEST SPECIFICATION, METHODS & PROCEDURES

3.1 Test Specification:

Title: EN 55022: 1998

Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement.

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

3.2 Methods & Procedures:

3.2.1 Limits for Conducted Disturbance at Mains Terminals and Telecommunication Ports

The equipment under test (EUT) shall meet the limits in Tables 1 and 3 or 2 and 4, as applicable, including the average limit and the quasi-peak limit when using, respectively, an average detector receiver and a quasi-peak detector receiver and measured in accordance with the methods described in Clause 9. Either the voltage limits or the current limits in table 3 or 4, as applicable, shall be met except for the measurement method of C.1.3 where both limits shall be met. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

If the reading on the measuring receiver shows fluctuations close to the limit the reading shall be observed for at least 15 s at each measurement frequency; the highest reading shall be recorded with the exception of any brief isolated high reading which shall be ignored.

Table 1 - Limits for conducted disturbance at mains ports of Class A ITE.

Frequency range (MHz)	Limits ($dB\mu V$)	
	Quasi-peak	Average
0.15 to 0.50	79	66
0.50 to 30	73	60
NOTE – The lower limit shall apply at the transition frequency		

Table 2 - Limits for conducted disturbance at mains ports of Class B ITE.

Frequency range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50 0.50 to 5 5 to 30	66 to 56 56 60	56 to 46 46 50
NOTE 1 – The lower limit shall apply at the transition frequencies. NOTE 2 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

Table 3 - Limits of conducted common mode (asymmetric mode) disturbance at telecommunication ports in the frequency range 0.15 MHz to 30 MHz for Class A equipment.

Frequency range (MHz)	Voltage Limits (dBμV)		Current Limits (dBμA)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 to 0.5	97 to 87	84 to 74	53 to 43	40 to 30
0.5 to 30	87	74	43	30
NOTE 1 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz. NOTE 2 – The current and voltage disturbance limits are derived for use with an impedance stabilization network (ISN) which presents a common mode (asymmetric mode) impedance of 150 Ω to the telecommunication port under test (conversion factor is 20 $\log_{10}$ 150/I = 44 dB).				

Table 4 - Limits of conducted common mode (asymmetric mode) disturbance at telecommunication ports in the frequency range 0.15 MHz to 30 MHz for Class B equipment.

Frequency range (MHz)	Voltage Limits (dBμV)		Current Limits (dBμA)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 to 0.5	84 to 74	74 to 64	40 to 30	30 to 20
0.5 to 30	74	64	30	20

NOTE 1 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.
NOTE 2 – The current and voltage disturbance limits are derived for use with an impedance stabilization network (ISN) which presents a common mode (asymmetric mode) impedance of 150 Ω to the telecommunication port under test (conversion factor is 20 $\log_{10}$ 150/I = 44 dB).
NOTE 3 – Provisionally, a relaxation of 10 dB over the frequency range of 6 MHz to 30 MHz is allowed for high-speed services having significant spectral density in this band. However, this relaxation is restricted to the common mode disturbance converted by the cable from the wanted signal. The provisional relaxation of 10 dB will be reviewed no later than three years after the date of withdrawal based on the results and interference cases seen in this period. Whenever possible it is recommended to comply with the limits without the provisional relaxation.

3.2.2 Limits for Radiated Disturbance

The EUT shall meet the limits of Tables 5 or 6 when measured at the measuring distance R in accordance with the methods described in clause 10. If the reading on the measuring receiver shows fluctuations close to the limit, the reading shall be observed for at least 15 s at each measurement frequency; the highest reading shall be recorded with the exception of any brief isolated high reading, which shall be ignored.

Table 5 - Limits for radiated disturbance of Class A ITE at a test distance of 10 m.

Frequency range (MHz)	Quasi-peak limits (dBμV/m)
30 to 230	40
230 to 1000	47

NOTE 1 - The lower limit shall apply at the transition frequency.
NOTE 2 – Additional provisions may be required for cases where interference occurs.

Table 6 - Limits for radiated disturbance of Class B ITE at a test distance of 10 m.

Frequency range (MHz)	Quasi-peak limits (dBμV/m)
30 to 230 230 to 1000	30 37
NOTE 1 - The lower limit shall apply at the transition frequency. NOTE 2 – Additional provisions may be required for cases where interference occurs.	

3.2.3 Test Procedure

The conducted disturbance at mains and telecommunications ports and radiated disturbance testing was performed according to the procedures in EN 55022: 1998, Sections 8 through 10. 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 October 23, 2000 (90504).

CCL is accredited by National Voluntary Laboratory Accreditation Program (NVLAP); NVLAP Lab Code:100272-0, which is effective until September 30, 2003.

For radiated disturbance testing 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: 12 VDC

4.2 Operating Modes:

Each mode of operation was exercised to produce worst-case emissions. The worst-case emissions were with the LCU-1 & UCU-1 running in the following mode. The UCU-1 was mounted on the DataStorm Satellite Antenna and connected to the positioning motors and sensors. The LCU-1 was connected to the UCU-1 and the laptop computer. The buses were active passing positioning data between the laptop, LCU-1, and UCU-1.

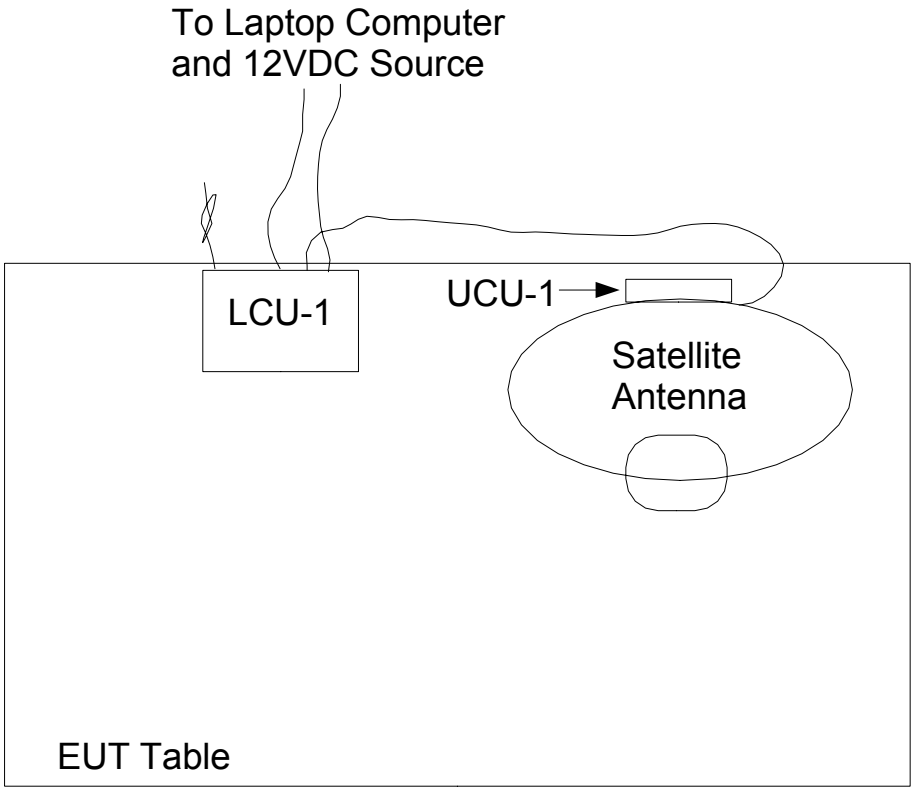
4.3 EUT Exercise Software:

MotoSat software was used to exercise the EUT.

4.4 Configuration & Peripherals:

The LCU-1 & UCU-1 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 Tables 2, 4 and 6 (Class B) of EN 55022: 1998

5.1.1 Summary of Tests:

Port	Environmental Phenomena	Frequency Range (MHz)	Result
AC Power	Conducted Disturbance (Hot Lead to Ground)	0.15 to 30	Not Applicable (Note 1)
AC Power	Conducted Disturbance (Neutral Lead to Ground)	0.15 to 30	Not Applicable (Note 1)
Telecommunication Port	Conducted Common Mode (asymmetric mode) Disturbance	0.15 to 30	Not Applicable (Note 2)
Enclosure	Radiated Disturbance (Vertical Polarity)	30 to 1000	Complied
Enclosure	Radiated Disturbance (Horizontal Polarity)	30 to 1000	Complied

Note 1: There is no provision for operating the EUT from AC mains power; therefore, this test is not applicable.

Note 2: There are no telecommunication ports on the EUT; therefore, this test is not applicable.

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 Radiated Disturbance Data (Vertical Polarity)

Frequency (MHz)	Detector	Receiver Reading ($dB\mu V$)	Correction Factor (dB/m)	Field Strength ($dB\mu V/m$)	Class B 10 m Limit ($dB\mu V/m$)	Margin (dB)
60.4	Peak (Note 1)	12.9	7.8	20.7	30.0	-9.3
72.3	Peak (Note 1)	14.6	7.3	21.9	30.0	-8.1
138.0	Peak (Note 1)	15.3	8.3	23.6	30.0	-6.4
208.8	Peak (Note 1)	9.4	11.6	21.0	30.0	-9.0
228.8	Peak (Note 1)	11.2	12.9	24.1	30.0	-5.9
256.0	Peak (Note 1)	18.0	13.8	31.8	37.0	-5.2
259.2	Peak (Note 1)	14.4	13.9	28.3	37.0	-8.7
422.4	Peak (Note 1)	12.0	19.0	31.0	37.0	-6.0
435.2	Peak (Note 1)	10.6	19.2	29.8	37.0	-7.2
Note 1: The reference detector used for the measurements was peak or quasi-peak and the data was compared to the quasi-peak limit.						

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 5.2 dB.

6.2.2 Radiated Disturbance Data (Horizontal Polarity)

Frequency (MHz)	Detector	Receiver Reading ($dB\mu V$)	Correction Factor (dB/m)	Field Strength ($dB\mu V/m$)	Class B 10 m Limit ($dB\mu V/m$)	Margin (dB)
137.8	Peak (Note 1)	13.9	8.3	22.2	30.0	-7.8
256.0	Peak (Note 1)	16.3	13.8	30.1	37.0	-6.9
360.0	Peak (Note 1)	12.5	18.1	30.6	37.0	-6.4
372.8	Peak (Note 1)	12.6	18.5	31.1	37.0	-5.9
385.6	Peak (Note 1)	14.6	18.7	33.3	37.0	-3.7
396.8	Peak (Note 1)	13.2	18.8	32.0	37.0	-5.0
411.2	Peak (Note 1)	13.7	18.9	32.6	37.0	-4.4
422.4	Peak (Note 1)	11.9	19.0	30.9	37.0	-6.1
435.2	Peak (Note 1)	13.8	19.2	33.0	37.0	-4.0
444.8	Peak (Note 1)	10.9	19.6	30.5	37.0	-6.5

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

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 3.7 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 and Telecommunications Ports:

The conducted disturbance at mains and telecommunications 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 and telecommunications 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:

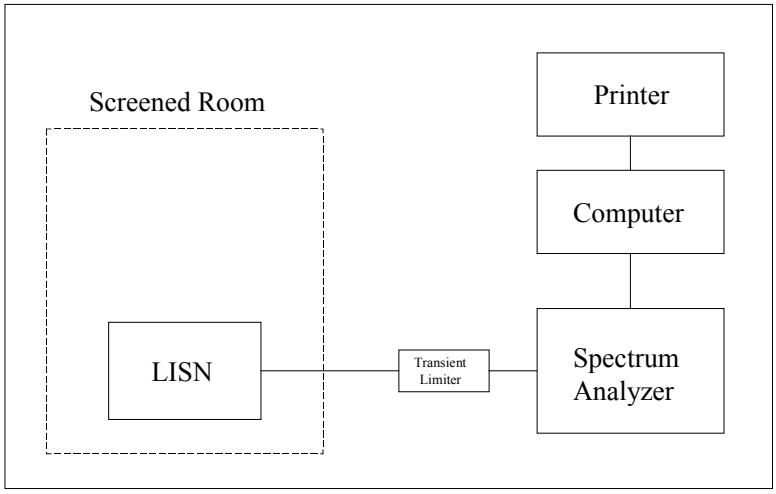
a) Each power cord, which is terminated in a mains supply plug, shall be tested separately.
b) Power cords, which are not specified by the manufacturer to be connected via a host unit, shall be tested separately.
c) Power cords which are specified by the manufacturer to be connected via a host unit or 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.

For AC mains port testing the desktop ITE are placed on a non-conducting table at least 0.8 meters from the metallic floor, and for telecommunications port testing the desktop ITE are placed on a non-conducting table at least 0.4 meters from the metallic floor. The equipment is placed a minimum of 40 cm from all walls. 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	12/31/2002
Test Software	CCL	Conducted Emissions	Revision 1.2	N/A
Spectrum Analyzer	Hewlett Packard	8566B	2230A01711	10/01/2002
Quasi-Peak Detector	Hewlett Packard	8565A	3107A01582	10/02/2002
LISN	EMCO	3825/2	9305-2099	01/27/2003
Conductance Cable Wanship Site #2	CCL	Cable J	N/A	12/31/2002
Transient Limiter	Hewlett Packard	11947A	3107A02266	12/31/2002

An independent calibration laboratory or CCL personnel calibrates all the equipment listed above every 12 months 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.

The configuration of the ITE was varied to find the maximum radiated emission. The EUT was connected to the peripherals listed in Section 2.4 via the interconnecting cables listed in Section 2.5. 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.

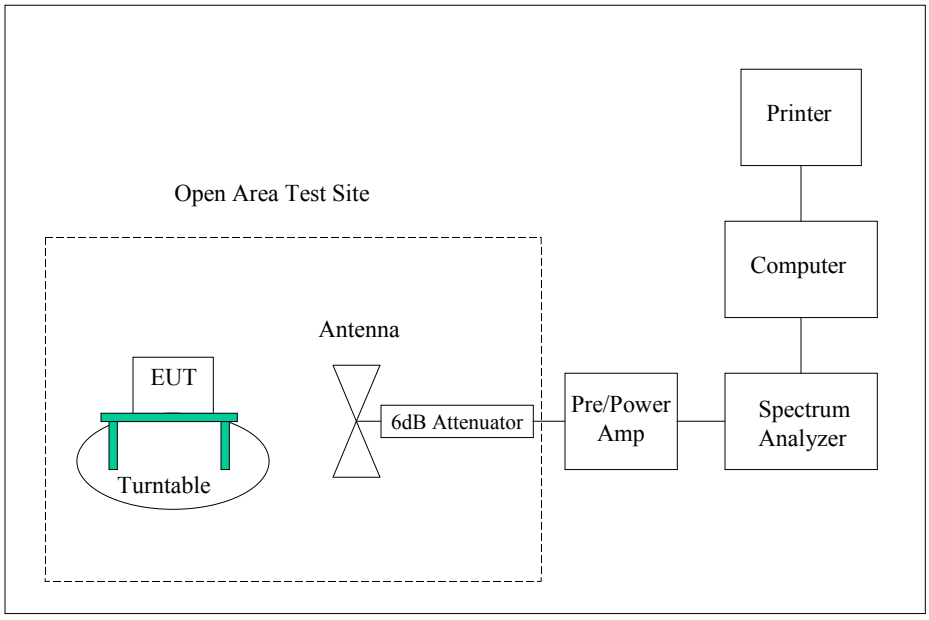
Desktop ITE is measured on a non-conducting table 0.8 meters above the ground plane. The table is placed on a turntable, which is level with the ground plane. For equipment normally placed on floors, the equipment shall be placed directly on the turntable.

Type of Equipment	Manufacturer	Model Number	Serial Number	Date of Last Calibration
Wanship Open Area Test Site #2	CCL	N/A	N/A	12/31/2002
Test Software	CCL	Radiated Emissions	Revision 1.3	N/A
Spectrum Analyzer	Hewlett Packard	8566B	2230A01711	10/01/2002
Quasi-Peak Detector	Hewlett Packard	8565A	3107A01582	10/02/2002
Biconilog Antenna	EMCO	3142	9601-1009	12/30/2002

Type of Equipment	Manufacturer	Model Number	Serial Number	Date of Last Calibration
10 Meter Radiated Emissions Cable Wanship Site #2	CCL	Cable L	N/A	12/31/2002
Pre/Power-Amplifier	Hewlett Packard	8447F	3113A05161	09/19/2002
6 dB Attenuator	Hewlett Packard	8491A	32835	12/31/2002

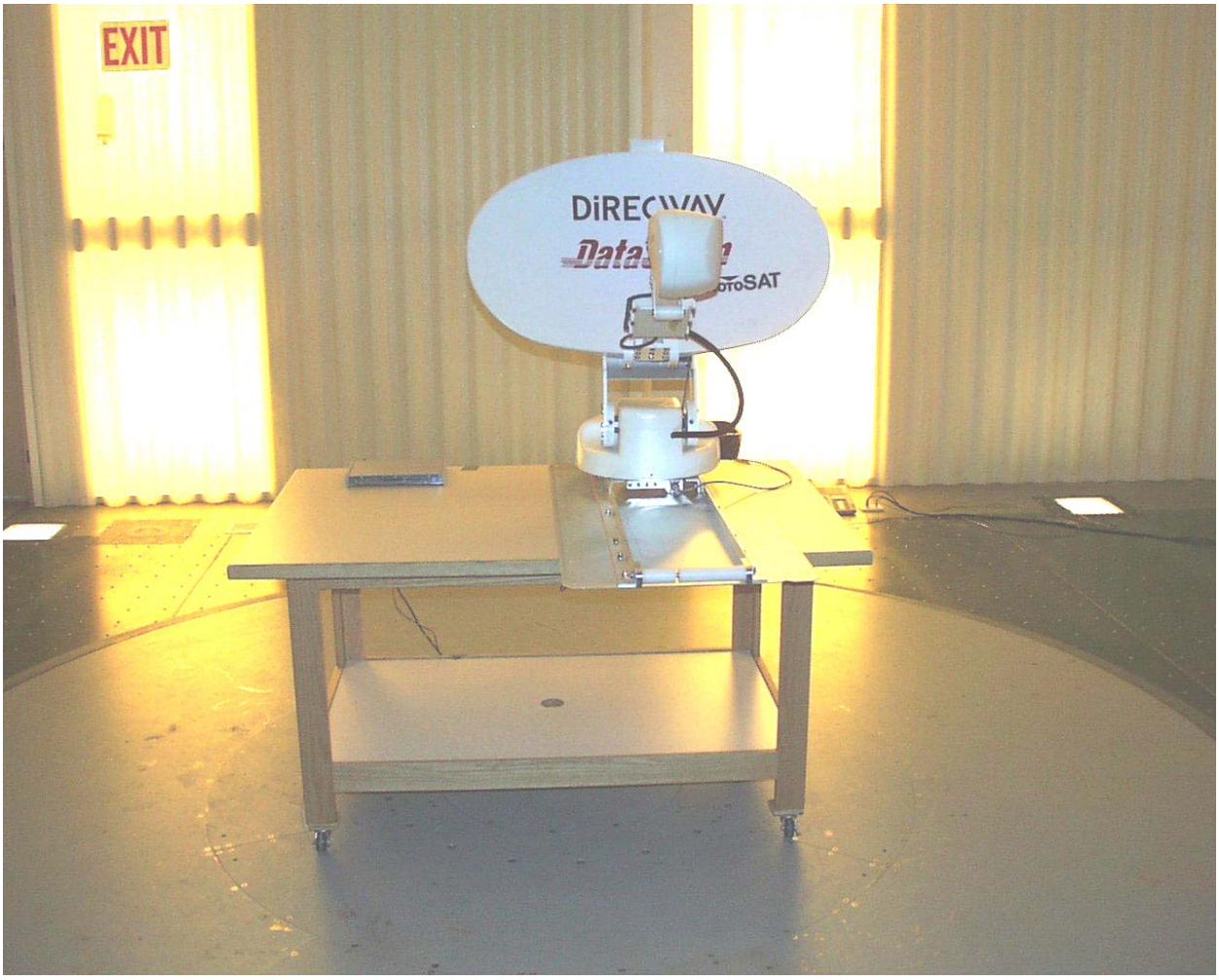
An independent calibration laboratory or CCL personnel calibrates all the equipment listed above every 12 months following outlined calibration procedures. All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to tractability is on file and is available for examination upon request.

Radiated Emissions Test Setup

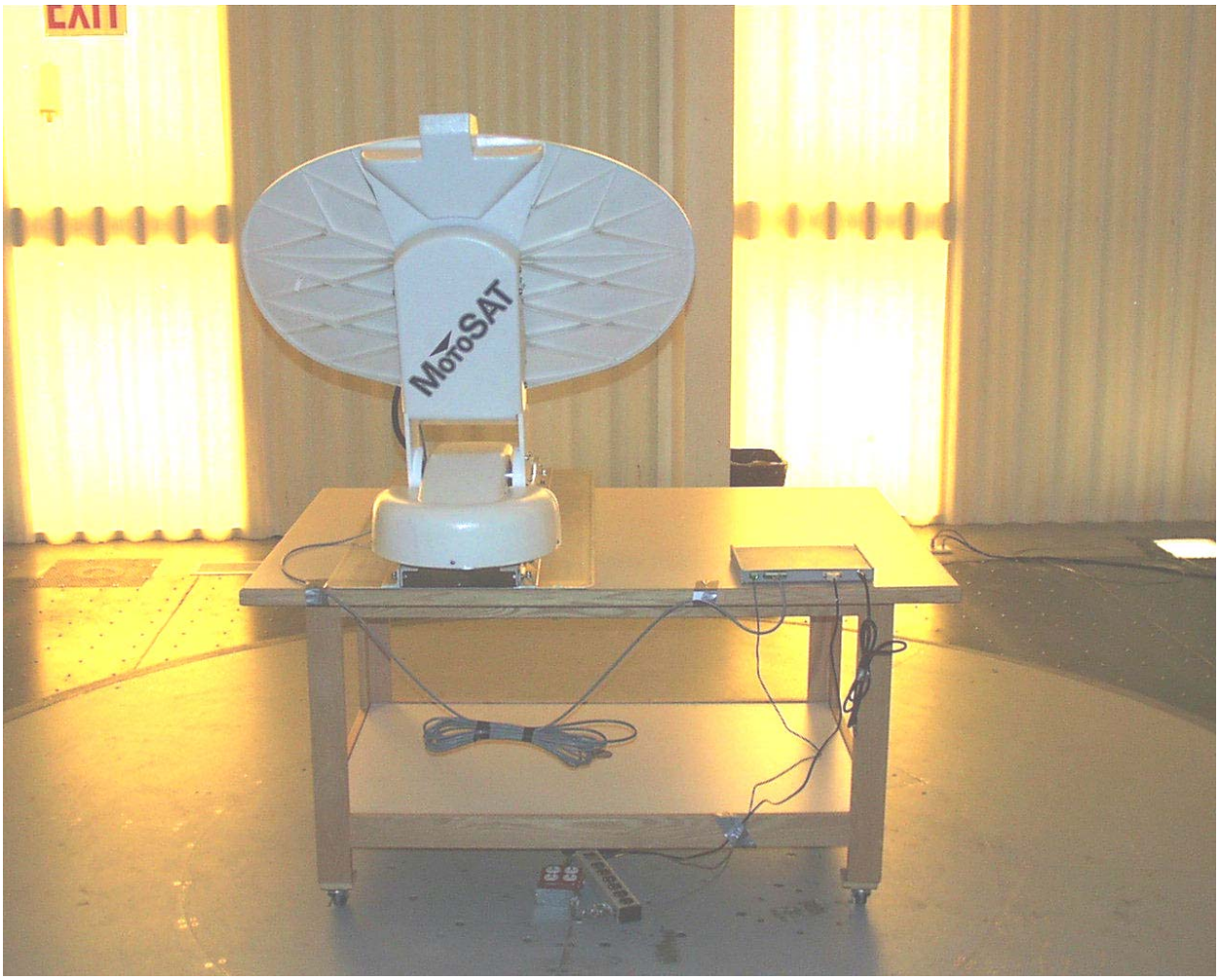


APPENDIX 2 PHOTOGRAPHS

Photograph 1 – Front View Radiated Disturbance Worst Case Configuration



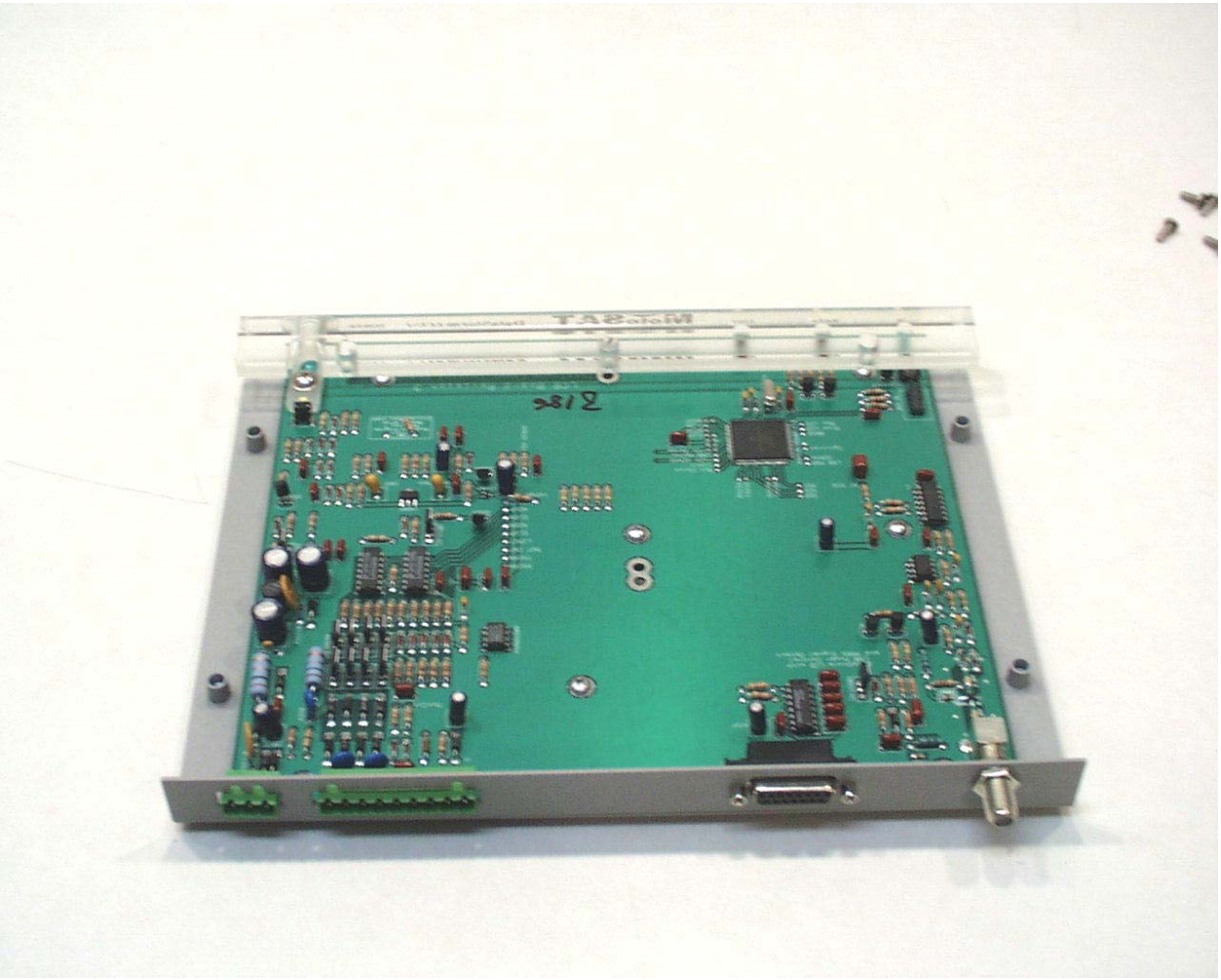
Photograph 2 – Back View Radiated Disturbance Worst Case Configuration



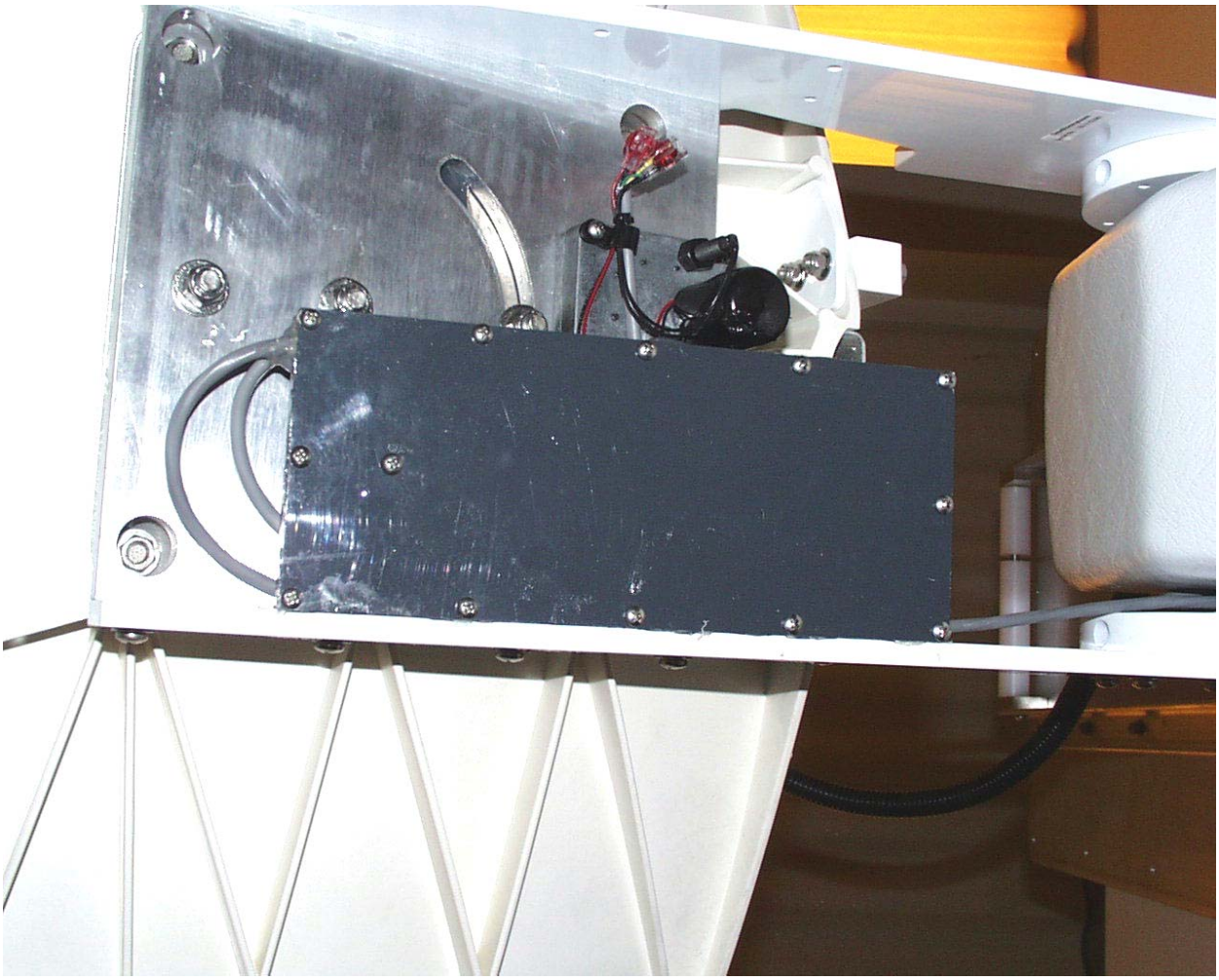
Photograph 3 – Front View of the LCU-1

Photograph 4 – Back View of the LCU-1

Photograph 5 – Internal View of the LCU-1



Photograph 6 – View of the UCU-1 mounted to the DataStorm Antenna



APPENDIX 3 FCC Part 15/ICES-003 CONDUCTED DISTURBANCE AT MAINS PORTS DATA

There is no provision for operating the EUT from AC mains power; therefore, these tests are not applicable.

APPENDIX 4 FCC Part 15/ICES-003 COMPLIANCE INFORMATION

A.4.1 LABEL AND COMPLIANCE STATEMENT

The label of the MotoSat DataStorm LCU-1 & UCU-1 were not available at the time of this report. Below are the FCC labeling requirements:

Section 15.17(a)

(3) All other devices shall bear the following statement in a conspicuous location on the device:

> This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

(4) Where a device is constructed in two or more sections connected by wires and marketed together, the statement specified under paragraph (a) of this section is required to be affixed only to the main control unit.

Section 15.17(b)

(4) The label shall not be a stick-on, paper label. The label on these products shall be permanently affixed to the product and shall be readily visible to the purchaser at the time of purchase, as described in Section 2.925(d) of this chapter. "Permanently affixed" means that the label is etched, engraved, stamped, silkscreened, indelibly printed, or otherwise permanently marked on a permanently attached part of the equipment or on a nameplate of metal, plastic, or other material fastened to the equipment by welding, riveting, or a permanent adhesive. The label must be designed to last the expected lifetime of the equipment in the environment in which the equipment may be operated and must not be readily detachable.

A.4.2 BLOCK DIAGRAM

A block diagram showing the clock frequencies and signal paths of the MotoSat DataStorm LCU-1 & UCU-1 were not available at the time of this report.

A.4.3 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 B Warning Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiated radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.