



Test Certificate

A sample of the following product received on November 11, 2009 and tested on February 24, 2010 complied with the requirements of,

- EN 301 489-1 V1.8.1 “Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements”
- EN 301 489-17 V2.1.1 “Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment; Part 17: Specific conditions for Broadband Data Transmitting Systems”

given the measurement uncertainties as detailed in Elliott report R78533.

Summit Data Communications Inc.

Model SDC-MSD30AG

Mark E. Hill
Staff Engineer

Summit Data Communications Inc.

Printed Name



Testing Cert #2016.01

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EMC Test Report

EN 301 489-1 v1.8.1

EN 301 489-17 V2.1.1

Model: SDC-MSD30AG

COMPANY: Summit Data Communications Inc.
526 South Main St. Suite 805
Akron, OH 44311

TEST SITE(S): Elliott Laboratories
684 West Maude Ave.
Sunnyvale, CA. 94085

REPORT DATE: March 10, 2010

FINAL TEST DATES: February 24, 2010

AUTHORIZED SIGNATORY:

A handwritten signature in blue ink, appearing to read "Mark E. Hill", written over a horizontal line.

Mark E. Hill
Staff Engineer
Elliott Laboratories



Testing Cert #2016.01

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REVISION HISTORY

| Rev# | Date | Comments | Modified By |
|------|----------------|---------------|-------------|
| - | March 10, 2010 | First release | |

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SCOPE

The European Committee for Electrotechnical Standardization (CENELEC), the European Telecommunications Standards Institute (ETSI) and the International Electrotechnical Commission (IEC) publish standards regarding the electromagnetic compatibility of electronic devices. Electromagnetic compatibility tests have been performed on the Summit Data Communications Inc. model SDC-MSD30AG in accordance with these standards. The tests were performed in accordance with the current, published versions of the basic standards referenced in the following standards, as outlined in Elliott Laboratories test procedures. The test data has been provided as an appendix to this report for reference.

| Standard | Title | Date |
|---------------|--|---------|
| EN 301 489-1 | Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements | 2008-04 |
| EN 301 489-17 | Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment; Part 17: Specific conditions for Broadband Data Transmitting Systems | 2009-05 |

OBJECTIVE

The objective of the manufacturer is to declare conformity with one of the essential requirements of the R&TTE Directive 1999/5/EC. In order to demonstrate compliance, the manufacturer or a contracted laboratory makes measurements and takes the necessary steps to ensure that the equipment complies with the appropriate technical standards.

STATEMENT OF COMPLIANCE

The tested sample of Summit Data Communications Inc. model SDC-MSD30AG complied with the requirements of:

| Standard/Regulation | Version | Standard Date |
|---------------------|---------|---------------|
| EN 301 489-1 | 1.8.1 | 2008-04 |
| EN 301 489-17 | 2.1.1 | 2009-05 |

given the performance criteria as specified by the manufacturer.

The test results recorded herein are based on a single type test of the Summit Data Communications Inc. model SDC-MSD30AG and therefore apply only to the tested sample. The sample was selected and prepared by Jerry Pohmurski of Summit Data Communications Inc.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product that could result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different enclosure, different line filter or power supply, harnessing and/or interface cable changes, etc.).

DEVIATIONS FROM THE STANDARD

No deviations were made from the published requirements listed in the scope of this report.

TEST RESULTS

The following tests were performed on the Summit Data Communications Inc. model SDC-MSD30AG. The results are based upon performance criteria defined by the manufacturer. The actual test results and associated performance criteria are contained within an appendix of this report.

EMISSIONS TESTING

| Test | Port | Basic Standard | Level | Compliance Status |
|-------------------------------|-----------|----------------|--------------|-------------------|
| Radiated Emissions | Enclosure | EN 55022 | N/A – note 1 | |
| Conducted Emissions | AC Power | EN 55022 | N/A – note 2 | |
| Conducted Emissions | DC Power | EN 55022 | N/A – note 3 | |
| Harmonic Current Emissions | AC Power | EN 61000-3-2 | N/A – note 2 | |
| Voltage Fluctuations | AC Power | EN 61000-3-3 | N/A – note 2 | |
| Conducted Emissions - Telecom | - | EN 55022 | N/A – Note 4 | |

Note 1 – This test is only applicable to ancillary equipment. The radiated emissions requirements for radio equipment are covered under the Radio standard.

Note 2 – The EUT does not have an AC power port.

Note 3 – The EUT does not have a DC power port that would connect to a cable longer than 3m.

Note 4 – The EUT does not have any telecommunication ports.

IMMUNITY TESTING

As the SDC-MSD30AG is a module intended for use in host devices, only limited testing was performed.

| Test | Basic Standard | Level Required | Level Tested | Criterion Met | Status |
|---|---------------------------|---|---|---------------|----------|
| ElectroStatic Discharge | EN 61000-4-2 | 4 kV CD, 8 kV AD | 4 kV CD | A / TT / TR | Complied |
| Radio frequency Electromagnetic Field | EN 61000-4-3 | 80-1400 MHz 1400-2700 MHz 3 V/m 80% 1 KHz AM | 80-1400 MHz 1400-2700 MHz 3 V/m 80% 1 KHz AM | A / CT / CR | Complied |
| Fast Transients Common Mode – AC Power Ports | EN 61000-4-4 | N/A – Note 1 | | | |
| Fast Transients Common Mode DC Power Ports | EN 61000-4-4 | N/A – Note 2 | | | |
| Fast Transients Common Mode - Signal, Control, and Telecommunications Ports | EN 61000-4-4 | N/A – Note 3 | | | |
| Surge, AC Power Port | EN 61000-4-5 | N/A – Note 1 | | | |
| Surge, Telecommunications ports | EN 61000-4-5 | N/A – Note 3 | | | |
| Vehicular Surges | ISO 7637-1, ISO 7637-2 | N/A – Note 4 | | | |
| Radio frequency Common Mode,, AC Power Port | EN 61000-4-6 | N/A – Note 1 | | | |
| Radio frequency Common Mode, DC Power Ports | EN 61000-4-6 | N/A – Note 2 | | | |
| Radio frequency Common Mode, Signal, Control, and Telecommunications Ports | EN 61000-4-6 | N/A – Note 3 | | | |
| Voltage Dips and Interrupts | EN 61000-4-11 | N/A – Note 1 | | | |
| Note 1 – The EUT does not possess an AC power port. | | | | | |
| Note 2 – The EUT does not have any DC power ports that are intended to connect to cables longer than 3m. | | | | | |
| Note 3 – The EUT does not have any signal ports that are intended to connect to cables longer than 3m in length | | | | | |
| Note 4 – The EUT is not intended to be used in a vehicular environment. | | | | | |

MEASUREMENT UNCERTAINTIES

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the test results be included in the report. The measurement uncertainties given below are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a 95% confidence level and were calculated in accordance with NAMAS document LAB 34. For emissions tests, the uncertainties were calculated using the approach described in CISPR 16-4-2:2003 and the levels were found to be below levels of Ucispr and therefore no adjustment of the data for measurement uncertainty is required.

| Measurement Type | Measurement Unit | Frequency Range | Expanded Uncertainty |
|-----------------------------|------------------|-----------------|----------------------|
| Conducted Emissions | dBuV | 0.15 to 30 MHz | ± 2.4 dB |
| Radiated Emissions | dBuV/m | 30 to 1000 MHz | ± 3.6 dB |
| AC Current Harmonics | Amps | 50 to 2,000 Hz | ± 0.12 % |
| AC Voltage Flicker | Voltage | N/A | ± 0.12 % |
| | Pst, Plt | N/A | ± 3.46 % |
| Radiated Immunity | V/m | 80 – 2500 MHz | - 26.3%, + 29.97% |
| ESD | KV | N/A | ± 8.6 % |
| Fast Transients | Voltage | N/A | ± 5.98 % |
| | Timing | N/A | ± 8.60 % |
| Surge | Voltage | N/A | ± 4.92 % |
| RF Common Mode (CDN method) | Vrms | 0.15 –80 MHz | -12.64 %, +13.33 % |
| RF Common Mode (BCI method) | Vrms | 0.15 –80 MHz | -13.45 %, +15.32 % |
| Voltage Dips | Voltage | N/A | ± 2.32 % |
| | Timing | N/A | ± 0.08 mS |

EQUIPMENT UNDER TEST (EUT) DETAILS**GENERAL**

The Summit Data Communications Inc. model SDC-MSD30AG is a 802.11ag compliant wireless LAN radio Module which is designed to provide wireless local area networking connectivity. Normally, the EUT would be embedded in various types of mobile and stationary computing devices such as handheld and vehicle mounted data terminals during operation. The EUT was, therefore, placed in this position during emissions testing to simulate the end user environment. The electrical rating of the EUT is 3.3 VDC \pm 5%. It's typical power consumption is 400mA (1320mW) while in transmit mode, 180mA (594mW) while in receive mode and 10mA (33mW) while in standby mode.

The sample was received on November 11, 2009 and tested on February 24, 2010. The EUT consisted of the following component(s):

| Manufacturer | Model | Description | Serial Number |
|---------------------------------|-------------|--|---------------|
| Summit Data Communications Inc. | SDC-MSD30AG | 802.11AG Mini Compact Flash Module with antenna connectors | - |

EUT CLASSIFICATION

The EUT is a radio module that can be used in either fixed use or portable applications.

ENCLOSURE

The EUT does not have an enclosure as it is designed to be installed within the enclosure of a host computer or system.

MODIFICATIONS

The EUT did not require modifications during testing in order to comply with the immunity specification.

SUPPORT EQUIPMENT

The following equipment was used as local support equipment for immunity testing:

| Manufacturer | Model | Description | Serial Number | FCC ID |
|-----------------|-------|---------------|---------------|--------|
| Hewlett Packard | iPaq | mobile device | - | - |

The following equipment was used as remote support equipment for immunity testing:

| Manufacturer | Model | Description | Serial Number | FCC ID |
|--------------|--------------|-----------------|---------------|------------|
| Dell | Inspiron 800 | laptop computer | - | DoC |
| Airlink | AR430W | wireless router | 30008256167 | RRK-AR430W |
| Cisco | - | wireless router | - | - |

EUT INTERFACE PORTS

The I/O cabling configuration during immunity testing was as follows:

| Port | Connected To | Cable(s) | | |
|--------------------------|----------------|------------------------|------------------------|-----------|
| | | Description | Shielded or Unshielded | Length(m) |
| Ethernet on laptop | Airlink router | CAT5 UTP | unshielded | 2.0 |
| Ethernet on Cisco router | Airlink router | CAT5 STP | Shielded | 15.0 |
| DC on Power supply | iPaq | multiwire | Shielded | 2.0 |
| AC Power | AC Mains | wall-wart power supply | unshielded | 0.0 |

EUT OPERATION DURING IMMUNITY TESTING

During immunity test the EUT was exercised by a repeated ping test generated from the remote laptop computer.

Normal operation is indicated by continued pinging with no dropped packets and shall be monitored by observing the ping returns on the remote laptop and observing the iPaq screen for any errors.

In addition, the EUT was placed into a receive mode and observed for un-intentional transmissions using a spectrum analyzer.

EUT PERFORMANCE CRITERIA

Criterion A: During and after testing the EUT shall continue to return ping tests with no dropped packets. When in receive mode, the EUT shall not un-intentionally transmit.

Criterion B: During application of the transient test, degradation of performance including loss of association is allowed provided that the EUT self-recovers to normal operation after testing without any operator intervention. When in receive mode, the EUT shall not un-intentionally transmit.

Criterion C: Loss of function is allowed provided that normal operation can be restored by user intervention.

IMMUNITY TEST DESCRIPTIONS

GENERAL INFORMATION

Final tests were performed at the Elliott Laboratories Test Sites located at 684 West Maude Ave. Sunnyvale, California. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent CENELEC and IEC standards.

MEASUREMENT INSTRUMENTATION

ELECTROSTATIC DISCHARGE TEST SYSTEM

An ESD generator is used for all testing. It is capable of applying electrostatic discharges in both contact discharge mode to 8 kV and air discharge mode to 16.5 kV in both positive and negative polarities in accordance with the EN 61000-4-2 basic EMC publication.

ELECTROMAGNETIC FIELD TEST SYSTEM

A signal generator and power amplifiers are used to provide a signal at the appropriate power and frequency to an antenna to obtain the required electromagnetic field at the position of the EUT in accordance with the EN61000-4-3 basic EMC publication.

INSTRUMENT CALIBRATION

All test equipment is regularly checked to ensure that performance is maintained in accordance with the company's specifications. An appendix of this report contains the list of test equipment used and calibration information.

IMMUNITY TEST PROCEDURES

EQUIPMENT PLACEMENT

EN 61000-4-2 specifies that a tabletop EUT shall be placed on a non-conducting table 80 centimeters above a ground reference plane and that floor mounted equipment shall be placed on a insulating support approximately 10 centimeters above a ground plane. During the tests, the EUT is positioned over a ground reference plane in conformance with this requirement.

For tabletop equipment, a 1.6 by 0.8 meter metal sheet is placed on the table and connected to the ground plane via a metal strap with two 470 kOhm resistors in series. The EUT and attached cables are isolated from this metal sheet by 0.5 millimeter thick insulating material.

EN 61000-4-3 specifies that a tabletop EUT be placed on a non-conducting table 80 centimeters above a ground reference plane and that floor-mounted equipment shall be placed on an insulating support approximately 10 centimeters above a ground plane. During the EN 61000-4-3 tests, the EUT is positioned in a shielded anechoic test chamber to reduce reflections from the internal surfaces of the chamber.

APPLICATION OF ELECTROSTATIC DISCHARGES

The points of application of the test discharges directly to the EUT are determined after consideration of the parts of the EUT that are accessible to the operator during normal operation. Contact and air discharges are applied to the EUT, contact discharges to conducting surfaces and air-gap discharges to insulating surfaces. Contact discharges are also applied to the coupling planes to simulate nearby ESD events.

APPLICATION OF ELECTROMAGNETIC FIELD

The electromagnetic field is established at the front edge of the EUT. The frequency range is swept through the frequency range of the test using a power level necessary to obtain the required field strength at the EUT. The field is amplitude modulated using a 1KHz or 400Hz sine wave to a depth of 80% for the swept frequency test in accordance with EN 61000-4-3.

The test is repeated with each of the four sides of the EUT facing the field generating antenna. For small, portable products the test is also performed with the top and bottom sides of the EUT facing the antenna.

Appendix A Test Equipment Calibration Data**Radiated Immunity, 80 - 1000 MHz, 24-Feb-10**

| <u>Manufacturer</u> | <u>Description</u> | <u>Model</u> | <u>Asset #</u> | <u>Cal Due</u> |
|----------------------|--|---------------------|----------------|----------------|
| EMCO | Antenna, Biconilog Transmitting | 3143 | 180 | N/A |
| Instruments Industry | For Amplifier 0.01 - 250 MHz (500W), 200 - 1000 MHz (100W) | CMX5001 | 637 | N/A |
| Instruments Industry | For Wideband Amp., 0.01-250 MHz, 15W | 5300 | 638 | N/A |
| Instruments Industry | For Power Supply Control Module | P.S. 5000 / 28 / 40 | 639 | N/A |
| Instruments Industry | For Wideband Amp., 200-1000 MHz | SMCC100 | 640 | N/A |
| Werlatone | Directional Coupler, 80-1000 MHz, 40dB, 200W | C3910 | 917 | N/A |
| Rohde & Schwarz | Power Sensor, 1uW-100mW, DC-18 GHz, 50ohms | NRV-Z51 | 1069 | 6/24/2010 |
| Fluke Mfg. Inc. | Attenuator, 6 dB, DC-1 GHz | Y9303 | 1289 | 8/20/2010 |
| Rohde & Schwarz | Power Meter, Dual Channel | NRVD | 1787 | 12/4/2010 |
| Agilent | MXG Analog Signal Generator | N5181A | 2146 | 1/22/2011 |

Radiated Immunity, 1000 - 2700 MHz, 24-Feb-10

| <u>Manufacturer</u> | <u>Description</u> | <u>Model</u> | <u>Asset #</u> | <u>Cal Due</u> |
|---------------------|---|--------------|----------------|----------------|
| EMCO | Antenna, Horn, 1-18 GHz | 3115 | 1242 | N/A |
| Fluke Mfg. Inc. | Attenuator, 6 dB, DC-1 GHz | Y9303 | 1289 | 8/20/2010 |
| Werlatone | Directional Coupler, 800-2800 MHz, 30dB, 100w | C6529 | 1402 | N/A |
| Amplifier Research | Amplifier, 0.8-4.2GHz, 50Watts | 50S1G4A | 1493 | N/A |
| Rohde & Schwarz | Power Meter, Dual Channel | NRVD | 1787 | 12/4/2010 |
| Holiday Industries | Field Probe, RF, 10 kHz-1000 MHz | HI-4422 | 1821 | 6/1/2010 |
| Agilent | MXG Analog Signal Generator | N5181A | 2146 | 1/22/2011 |

ESD, 24-Feb-10

| <u>Manufacturer</u> | <u>Description</u> | <u>Model</u> | <u>Asset #</u> | <u>Cal Due</u> |
|----------------------|--------------------------------------|--------------------------|----------------|----------------|
| Elliott Laboratories | ESD, Vertical Plane, 19-3/4 x 19-3/4 | ESD, VP, 19-3/4 x 19-3/4 | 610 | N/A |
| Schaffner | ESD Gun | NSG-435 | 1491 | 1/13/2011 |

Appendix B Test Data Log Sheets

ELECTROMAGNETIC EMISSIONS

TEST LOG SHEETS

AND

MEASUREMENT DATA

T78464 6 Pages



EMC Test Data

| | | | |
|------------------------|--|------------------|-------------------|
| Client: | Summit Data Communications | Job Number: | J77268 |
| Model: | SDC-MSD39AG | T-Log Number: | T78464 |
| | | Account Manager: | Christine Krebill |
| Contact: | Jerry Pohmurski | | - |
| Emissions Standard(s): | EN 300 328 v1.7.1/EN 301 893 v1.5.1 | Class: | - |
| Immunity Standard(s): | EN301 489-1 v1.8.1 & EN301 489-17v2.1.1: | Environment: | - |

EMC Test Data

For The

Summit Data Communications

Model

SDC-MSD39AG

Date of Last Test: 2/24/2010

| | | | |
|-----------------------|--|------------------|-------------------|
| Client: | Summit Data Communications | Job Number: | J77268 |
| Model: | SDC-MSD39AG | T-Log Number: | T78464 |
| Contact: | Jerry Pohmurski | Account Manager: | Christine Krebill |
| Immunity Standard(s): | EN301 489-1 v1.8.1 & EN301 489-17v2.1.1: | Environment: | - |

ElectroStatic Discharge (EN 61000-4-2)

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

| | |
|-------------------------------|------------------------|
| Date of Test: 2/24/2010 20:06 | Config. Used: 1 |
| Test Engineer: Peter Sales | Config Change: None |
| Test Location: ESD Lab | EUT Voltage: 230V/50Hz |

General Test Configuration

For table-top equipment, the EUT and all local support equipment were located on a 0.5-mm thick insulating layer above a horizontal coupling plane, 80 cm above a ground reference plane.

Unless otherwise stated, ten discharges at each voltage, and polarity, were applied to each test point listed. Contact discharges were applied to coupling planes and conductive surfaces of the EUT. Air discharges were applied to any non-conductive surfaces of the EUT. The VCP was located on the table top for table top devices and 80cm above the ground plane for floor standing equipment.

The determination as to the test point being a part of a conductive or non-conductive surface was based on testing the surface for conductivity using an ohmmeter.

Ambient Conditions:

| | |
|--------------------|---------|
| Temperature: | 21 °C |
| Relative Humidity: | 42 % |
| Pressure: | 1028 mb |

Summary of Results

| Run # | Test Performed | Level | Criteria/Result | Comments |
|-------|-----------------|------------|-----------------|----------|
| 1 | ESD - Enclosure | +,- 4kV CD | A / Pass | TX Mode |
| 2 | ESD - Enclosure | +,- 4kV CD | A / Pass | RX Mode |

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

| | |
|--|------------------------------------|
| Client: Summit Data Communications | Job Number: J77268 |
| Model: SDC-MSD39AG | T-Log Number: T78464 |
| Contact: Jerry Pohmurski | Account Manager: Christine Krebill |
| Immunity Standard(s): EN301 489-1 v1.8.1 & EN301 489-17v2.1.1: | Environment: - |

**Run #1: Electrostatic Discharge
TX Mode**

| Indirect Discharges (To Coupling Planes) | Positive Polarity | | | | Negative Polarity | | | |
|--|-------------------|---------|---------|---------|-------------------|---------|---------|---------|
| | (kV) | | | | (kV) | | | |
| Contact Mode | Level 1 | Level 2 | Level 3 | Level 4 | Level 1 | Level 2 | Level 3 | Level 4 |
| | 2 | 4 | 6 | 8 | 2 | 4 | 6 | 8 |
| VCP located 10cm from the front, rear, left and right sides of the EUT | X | X | | | X | X | | |
| HCP located 10cm from the front, rear, left and right sides of the EUT | X | X | | | X | X | | |

Note: An "X" indicates that the unit continued to operate as intended. Ping continued to return with no interruptions.

Note: ND: No discharge was possible due to the lack of a discharge path to ground from the test point.
HCP: Horizontal Coupling Plane. VCP: Vertical Coupling Plane

Note: As the EUT is a module that would be enclosed by a host device, only indirect discharges were performed.

**Run #2: Electrostatic Discharge
RX Mode**

| Indirect Discharges (To Coupling Planes) | Positive Polarity | | | | Negative Polarity | | | |
|--|-------------------|---------|---------|---------|-------------------|---------|---------|---------|
| | (kV) | | | | (kV) | | | |
| Contact Mode | Level 1 | Level 2 | Level 3 | Level 4 | Level 1 | Level 2 | Level 3 | Level 4 |
| | 2 | 4 | 6 | 8 | 2 | 4 | 6 | 8 |
| VCP located 10cm from the front, rear, left and right sides of the EUT | X | X | | | X | X | | |
| HCP located 10cm from the front, rear, left and right sides of the EUT | X | X | | | X | X | | |

Note: An "X" indicates that the unit continued to operate as intended. A spectrum analyser was used to monitor the band between 2400-2483 MHz for any inadvertent transmissions. No transmissions were observed

Note: ND: No discharge was possible due to the lack of a discharge path to ground from the test point.
HCP: Horizontal Coupling Plane. VCP: Vertical Coupling Plane

Note: As the EUT is a module that would be enclosed by a host device, only indirect discharges were performed.

| | | | |
|-----------------------|--|------------------|-------------------|
| Client: | Summit Data Communications | Job Number: | J77268 |
| Model: | SDC-MSD39AG | T-Log Number: | T78464 |
| Contact: | Jerry Pohmurski | Account Manager: | Christine Krebill |
| Immunity Standard(s): | EN301 489-1 v1.8.1 & EN301 489-17v2.1.1: | Environment: | - |

Run #1: Radiated Immunity, 80 - 2,700 MHz (EN61000-4-3)

TX Mode

| | | |
|-------------------|---------------|---------------|
| Frequency: | 80 - 1000 MHz | 1 - 2,700 GHz |
| Step Size: | 1 % | 1 % |
| Dwell time: | 2874 ms | 2874 ms |
| Field Uniformity: | 1.5m x 1.5m | 1.5m x 1.0m |
| Test Distance: | 3 | 2.0 |

| Modulation Details | |
|-----------------------|-------|
| Modulating Frequency: | 1 kHz |
| Modulation: | AM |
| Depth / Deviation: | 80% |

| Frequency Range (MHz) | Level V/m | Front | | Left Side | | Rear | | Right | | Top | | Bottom | |
|-----------------------|-----------|-------|--------|-----------|--------|-------|--------|-------|--------|-------|--------|--------|--------|
| | | Vert. | Horiz. | Vert. | Horiz. | Vert. | Horiz. | Vert. | Horiz. | Vert. | Horiz. | Vert. | Horiz. |
| 80 - 1000 | 3 | X | X | X | X | | | | | X | X | | |
| 1000 - 2,700 | 3 | X | X | X | X | | | | | X | X | | |

Test files used for this run:

The following calibration files from O:\EMC Stuff\RI Playback Files\2010\2010-02 80-1000 MHz\3Vm (CMX 5000 for 80-1000)\ were used:

Position A, 1.69m high, 80 MHz - 1000 MHz Horiz 3Vm.crf

Position A, 1.69m high, 80 MHz - 1000 MHz Vert 3Vm.crf

The following calibration files from O:\EMC Stuff\RI Playback Files\2008\Radiated Immunity (9 points) 1-2.7GHz\ were used:

9 point antenna at c' at 1.4m height 1000 MHz - 2700 MHz H 3Vm.crf

9 point antenna at c' at 1.4m height 1000 MHz - 2700 MHz V 3Vm.crf

Note: An "X" indicates that the unit continued to operate as intended. Ping continued to return with no interruptions.

Note: Due to the EUTs small size, the EUT was rotated thru three orientations to represent full exposure.

| | |
|--|------------------------------------|
| Client: Summit Data Communications | Job Number: J77268 |
| Model: SDC-MSD39AG | T-Log Number: T78464 |
| Contact: Jerry Pohmurski | Account Manager: Christine Krebill |
| Immunity Standard(s): EN301 489-1 v1.8.1 & EN301 489-17v2.1.1: | Environment: - |

Run #2: Radiated Immunity, 80 - 2,700 MHz (EN61000-4-3)

RX mode

| | | |
|-------------------|---------------|---------------|
| Frequency: | 80 - 1000 MHz | 1 - 2,700 GHz |
| Step Size: | 1 % | 1 % |
| Dwell time: | 2874 ms | 2874 ms |
| Field Uniformity: | 1.5m x 1.5m | 1.5m x 1.0m |
| Test Distance: | 3 | 2.0 |

| | |
|-----------------------|-------|
| Modulation Details | |
| Modulating Frequency: | 1 kHz |
| Modulation: | AM |
| Depth / Deviation: | 80% |

| Frequency Range (MHz) | Level V/m | Front | | Left Side | | Rear | | Right | | Top | | Bottom | |
|-----------------------|-----------|-------|--------|-----------|--------|-------|--------|-------|--------|-------|--------|--------|--------|
| | | Vert. | Horiz. | Vert. | Horiz. | Vert. | Horiz. | Vert. | Horiz. | Vert. | Horiz. | Vert. | Horiz. |
| 80 - 1000 | 3 | X | X | X | X | | | | | X | X | | |
| 1000 - 2,700 | 3 | X | X | X | X | | | | | X | X | | |

Test files used for this run:

The following calibration files from O:\EMC Stuff\RI Playback Files\2010\2010-02 80-1000 MHz\3Vm (CMX 5000 for 80-1000)\ were used:

Position A, 1.69m high, 80 MHz - 1000 MHz Horiz 3Vm.crf

Position A, 1.69m high, 80 MHz - 1000 MHz Vert 3Vm.crf

The following calibration files from O:\EMC Stuff\RI Playback Files\2008\Radiated Immunity (9 points) 1-2.7GHz\ were used:

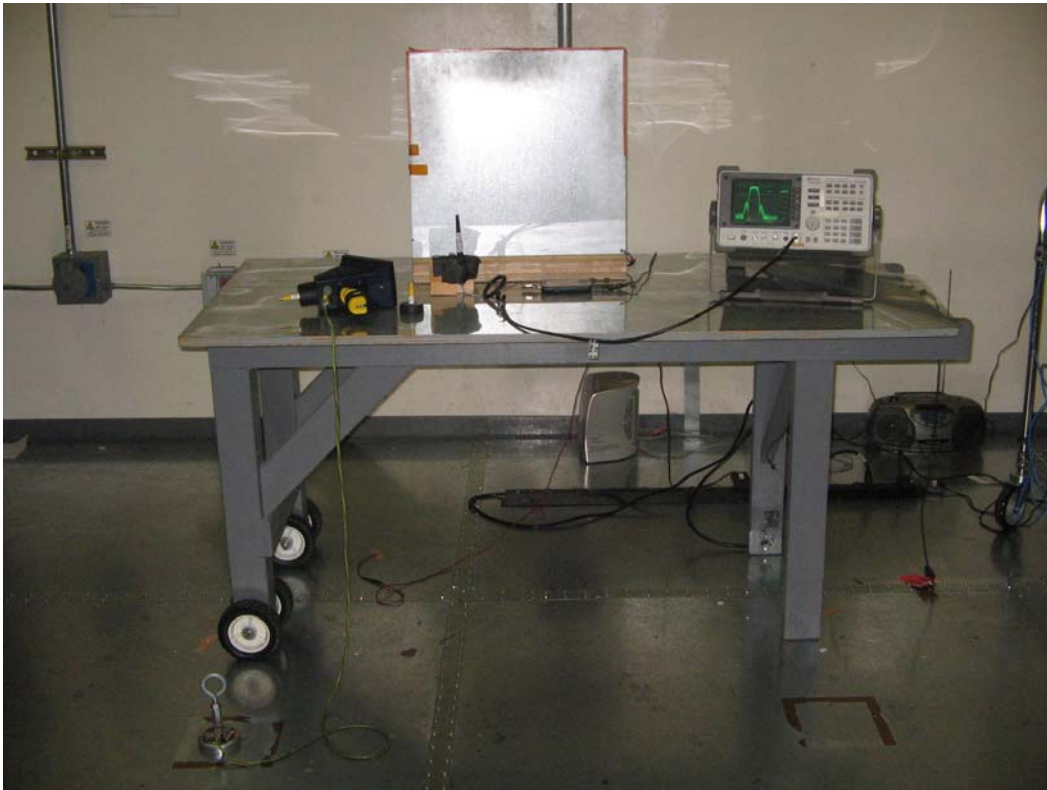
9 point antenna at c' at 1.4m height 1000 MHz - 2700 MHz H 3Vm.crf

9 point antenna at c' at 1.4m height 1000 MHz - 2700 MHz V 3Vm.crf

Note: An "X" indicates that the unit continued to operate as intended. A spectrum analyser was used to monitor the band between 2400-2483 MHz for any inadvertent transmissions. No transmissions were observed

Note: Due to the EUTs small size, the EUT was rotated thru three orientations to represent full exposure.

Appendix C ESD Test Configuration Photographs





Appendix D Radiated Susceptibility Test Configuration Photographs

