



Electromagnetic Compatibility

EMC Report

For

Description: Sensor Network Adapter

Model: 2400E WITH 2 DIFFERENT ANTENNAS

Applicant: Daintree Networks, Inc.

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TÜV Rheinland of North America, Inc., North American Headquarters, 12 Commerce Road, Newtown, CT 06470 - Tel (203)426-0888 - Fax (203)426-4009

Test Report Number: 30561247.001 Daintree 2400E.doc			Test Report Summary	
Prübericht Nr.:				
Applicant: Daintree Networks, Inc.		Tel: (408) 351-3646		Peter Cobb
Auftraggeber: 111 N. Market Street, Suite 615 San Jose, CA 95113		Fax: (408) 351-3330 pcobb@daintree.net		
Type of Equipment: Sensor Network Adapter				
Gegenstand der Prüfung:				
Model Number: 2400E		Trademark:		
Bezeichnung:		Ursprungszeichen:		
Standards: See details below		Date of Testing: May 18 th -28 th , 2005		
Prufgrundlage:				
Standard Number	Description	Severity Level or Limit	Minimum Acceptable Performance Criteria	Summary Result
FCC Part 15.249	Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz and 24.0-24.25 GHz	See Below	See Below	See Below
Section 15.249 (a)	Field Strength emissions within Frequency Band	Fundamental 50µV/m, Harmonic 500µV/m	NA	Complied
Section 15.249 (b)	Test Conditions	As per section 15.249 (b), 1), 2), 3)	NA	Complied
Section 15.249 (c)	Test Distance	Field strength measurement done at 3m distance	NA	Complied
Section 15.249 (d)	Radiated Emissions outside the Frequency Band	Complies with FCC Part 15.209	NA	Complied
Section 15.249 (e)	Maximum permitted Average	Not exceed the maximum permitted average limit by more than 20dB above 1000MHz	NA	Complied
Section 15.207 (a)	Conducted Emissions	As per section 15.207 (a)	NA	Complied
Section 15.209 (b)	Radiated Emissions	As per section 15.209(a)	NA	Complied
The tests performed were as requested by the grantee in order to verify that changes made to product do not change the results of tests previously performed and reported for certification purposes. For this purpose, only the tests shown were carried out.				
All data covered in this report is covered by the NVLAP accreditation.				
Place of Test: TUV Rheinland of North America, 12 Commerce Road, Newtown, CT 06470 USA		 FOR THE SCOPE OF ACCREDITATION UNDER NVLAP LAB CODE 200111-0		
Prüfort: E-mail: info-new@tuv.com Web: http://www.tuv.com Phone: (203) 426-0888 Fax: (203) 429-4009				
Test Result: Unit presented for testing complied with criteria shown above. Additional information is contained in the following pages.				
Tested By: Dieter Baldamus		Checked By: Bruce Fagley		
Der Sachverständige:		Geprüft:		
 15June2005 Date, Signature Datum, Unterschrift		 15June2005 Date, Signature Datum, Unterschrift		

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2. Measuring Equipment Used

Description	Asset or Serial Number	Calibrated	Cal. Period
California Instruments 5001iX	HK53766	06/04	1 yr.
EMCO 3115	9402-4227	02/04	1 yr.
EMCO 3109	9310-2754	03/05	1 yr.
EMCO 3146	2548	02/05	1 yr.
NLSK 8126A LISN	8126277	01/05	1 yr.
HP 8546A	3325A00134	08/04	1 yr.

2.1 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

2.2 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.3 Measurement Uncertainty

☐	The estimated combined standard uncertainty for ESD immunity measurements is $\pm 4.1\%$.
☐	The estimated combined standard uncertainty for radiated immunity measurements is $\pm 2.7\text{dB}$.
☐	The estimated combined standard uncertainty for EFT fast transient immunity measurements is $\pm 5.8\%$.
☐	The estimated combined standard uncertainty for surge immunity measurements is $\pm 8.0\%$.
☐	The estimated combined standard uncertainty for conducted immunity measurements is $\pm 1.5\text{dB}$.
☐	The estimated combined standard uncertainty for power frequency magnetic field immunity measurements is $\pm 0.58\%$.
☐	The estimated combined standard uncertainty for voltage variation and interruption measurements is $\pm 4.3\%$.
☐	The estimated combined standard uncertainty for damped oscillatory wave immunity measurements is $\pm 8.7\%$.
☒	The estimated combined standard uncertainty for radiated emissions measurements is $\pm 1.6\text{ dB}$.
☒	The estimated combined standard uncertainty for conducted emissions measurements is $\pm 1.2\text{dB}$.
☐	The estimated combined standard uncertainty for harmonic current and flicker measurements is $\pm 11.6\%$.

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2.4 Location of original data

The original copies of all test data taken during actual testing were either contained within the body of this report or were attached at Appendix B. The originals were delivered to the applicant. A copy has been retained in the TUV Rheinland file for certification follow-up purposes.

2.5 Status of facility used for testing

The TUV Rheinland of North America EMC test facility located at 12 Commerce Road, Newtown, CT, USA is listed on the US Federal Communications Commission list of facilities approved to perform measurements and has been audited and found acceptable by TUV Rheinland GmbH, Cologne, Germany, a competent body in the European Union.

3. Description of Equipment Tested

3.1 General Description of Equipment

The Daintree Networks Sensor Network Adapter is a data capture accessory for the Sensor Network Analyzer. It acts as an observation point enabling the use of Daintree's Sensor Network Analyzer software in live IEEE 802.15.4™ and ZigBee™ network environments. The adapter provides both Ethernet and USB interfaces.

4. Test Conditions

All emissions tests were performed using the procedures of ANSI C63.4: 2003 including methods for signal maximizations and EUT configuration. The photos included with the report show the EUT in its maximized configuration.

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APPENDIX A: TEST DATA

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Input Voltage Variation:

The evaluation of the results was investigated using input power variations from 85% to 115% of nominal voltage.

No variation on the emission levels were observed as a result of the input power variation.



NOTES: Fundamental Emissions FCC Part 15.249 (a)
2400MHz-2483.5MHz
50mV/m Fundamental (94dBμV/m)
CH 11 (lower channel)

11:03:43 15 JUN 2005

DAINTREE MODEL:2400E CH11 LONG ANTENNA

MKR 2.40555 GHz

REF 107.0 dBμV

AT 10 dB

82.90 dBμV

PEAK

LOG
10

dB/

LIMIT PASS

MARKER
2.40555 GHz
82.90 dBμV

VA SB
SC FC

CORR

CENTER 2.40000 GHz

SPAN 20.00 MHz

#RES BW 1.0 MHz

#VBW 3 MHz

SWP 20.0 msec

ANTENNA/COUPLER:

- | | | | |
|---------------------------------------|---|---|--|
| ☐ 9124 Bicon | ☐ 3109 Bicon | ☐ CBL6140 X-Wing | ☐ NNB-4/63TL LISN |
| ☐ 3146 Log Per | ☒ 3115 Horn | ☐ MDS-21 Clamp | ☐ NNB-4/200X LISN |
| ☐ 3106 Horn | ☐ CBL6112B Bilog | ☐ NSLK 8126 LISN | ☐ Other _____ |

MEAS TYPE:

- ☐ Radiated Prescan
☒ Radiated Final
☐ Conducted
☐ Disturbance Power
☐ Other _____

POLARIZATION:

- ☒ Vertical
☒ Horizontal
☐ Line
☐ Neutral
☐ NA

DISTANCE:

- ☒ 3 Meter
☐ 10 Meter
☐ _____ Meter
☐ NA

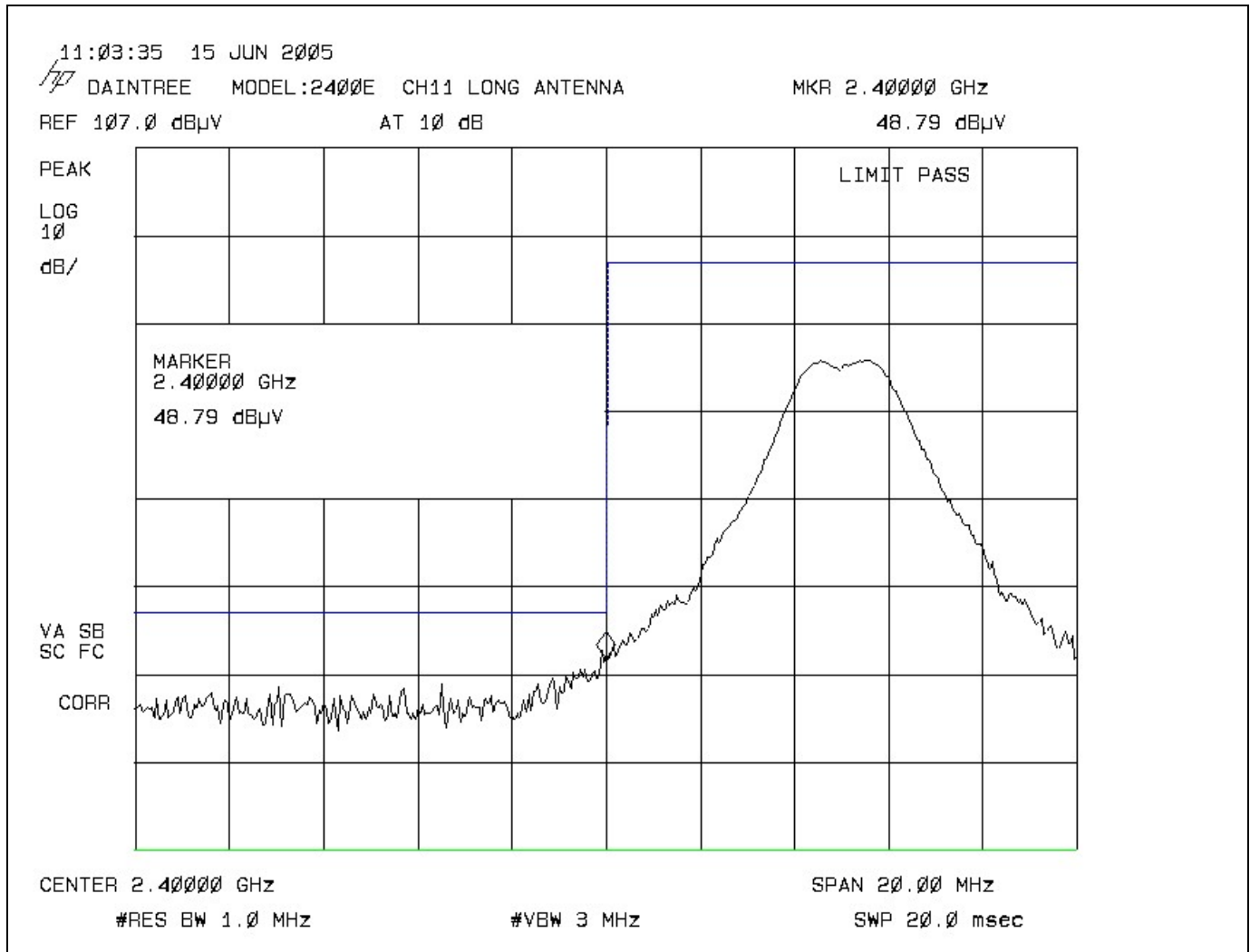
LOCATION:

- ☐ OATS
☒ Semi-Anechoic
☐ Shielded Room
☐ Factory Floor
☐ Other _____

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NOTES: Fundamental Emissions FCC Part 15.249 (a)
Band-Edge Measurement
2400MHz-2483.5MHz
50mV/m Fundamental (94dBμV/m)
CH 11 (lower channel)

**ANTENNA/COUPLER:**

- | | | | |
|---------------------------------------|---|---|--|
| ☐ 9124 Bicon | ☐ 3109 Bicon | ☐ CBL6140 X-Wing | ☐ NNB-4/63TL LISN |
| ☐ 3146 Log Per | ☒ 3115 Horn | ☐ MDS-21 Clamp | ☐ NNB-4/200X LISN |
| ☐ 3106 Horn | ☐ CBL6112B Bilog | ☐ NSLK 8126 LISN | ☐ Other_____ |

MEAS TYPE:

- ☐ Radiated Prescan
☒ Radiated Final
☐ Conducted
☐ Disturbance Power
☐ Other_____

POLARIZATION:

- ☒ Vertical
☒ Horizontal
☐ Line
☐ Neutral
☐ NA

DISTANCE:

- ☒ 3 Meter
☐ 10 Meter
☐ _____ Meter
☐ NA

LOCATION:

- ☐ OATS
☒ Semi-Anechoic
☐ Shielded Room
☐ Factory Floor
☐ Other_____

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NOTES: Fundamental Emissions FCC Part 15.249 (a)
2400MHz-2483.5MHz
500µV/m harmonic (54dBµV/m)
CH 11 (lower channel)

15:30:59 18 MAY 2005

DAINTREE MODEL:2400E CH11 LONG ANTENNA

MKR 4.816 GHz

REF 107.0 dBµV

AT 10 dB

PG -5.2 dB

53.94 dBµV

PEAK

LOG
10

dB/

EMC ANALYZER 857120 REV A.00.01
(c)HP 1987 - 1992

MARKER
4.816 GHz
53.94 dBµV

VA SB
SC FC

CORR

START 2.900 GHz

STOP 5.000 GHz

#RES BW 1.0 MHz

#VBW 3 MHz

SWP 42.0 msec

ANTENNA/COUPLER:

- | | | | |
|---------------------------------------|---|---|--|
| ☐ 9124 Bicon | ☐ 3109 Bicon | ☐ CBL6140 X-Wing | ☐ NNB-4/63TL LISN |
| ☐ 3146 Log Per | ☒ 3115 Horn | ☐ MDS-21 Clamp | ☐ NNB-4/200X LISN |
| ☐ 3106 Horn | ☐ CBL6112B Bilog | ☐ NSLK 8126 LISN | ☐ Other_____ |

MEAS TYPE:

- ☐ Radiated Prescan
☒ Radiated Final
☐ Conducted
☐ Disturbance Power
☐ Other_____

POLARIZATION:

- ☒ Vertical
☒ Horizontal
☐ Line
☐ Neutral
☐ NA

DISTANCE:

- ☒ 3 Meter
☐ 10 Meter
☐ _____Meter
☐ NA

LOCATION:

- ☐ OATS
☒ Semi-Anechoic
☐ Shielded Room
☐ Factory Floor
☐ Other_____

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NOTES: Fundamental Emissions FCC Part 15.249 (a)
2400MHz-2483.5MHz
50mV/m Fundamental (94dBμV/m)
CH 19 (middle channel)

11:06:21 15 JUN 2005

DAINTREE MODEL:2400E CH19 LONG ANTENNA

MKR 2.44555 GHz

REF 107.0 dBμV

AT 10 dB

84.08 dBμV

PEAK

LIMIT PASS

LOG

10

dB/

MARKER
2.44555 GHz
84.08 dBμV

VA SB
SC FC

CORR

CENTER 2.44520 GHz

SPAN 20.00 MHz

#RES BW 1.0 MHz

#VBW 3 MHz

SWP 20.0 msec

ANTENNA/COUPLER:

- | | | | |
|---------------------------------------|---|---|--|
| ☐ 9124 Bicon | ☐ 3109 Bicon | ☐ CBL6140 X-Wing | ☐ NNB-4/63TL LISN |
| ☐ 3146 Log Per | ☒ 3115 Horn | ☐ MDS-21 Clamp | ☐ NNB-4/200X LISN |
| ☐ 3106 Horn | ☐ CBL6112B Bilog | ☐ NSLK 8126 LISN | ☐ Other _____ |

MEAS TYPE:

- ☐ Radiated Prescan
☒ Radiated Final
☐ Conducted
☐ Disturbance Power
☐ Other _____

POLARIZATION:

- ☒ Vertical
☒ Horizontal
☐ Line
☐ Neutral
☐ NA

DISTANCE:

- ☒ 3 Meter
☐ 10 Meter
☐ _____ Meter
☐ NA

LOCATION:

- ☐ OATS
☒ Semi-Anechoic
☐ Shielded Room
☐ Factory Floor
☐ Other _____

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NOTES: Fundamental Emissions FCC Part 15.249 (a)
2400MHz-2483.5MHz
500µV/m harmonic (54dBµV/m)
CH 19 (middle channel)

15:29:26 18 MAY 2005

DAINTREE MODEL:2400E CH19 LONG ANTENNA

MKR 4.895 GHz

REF 107.0 dBµV

AT 10 dB

PG -5.2 dB

51.86 dBµV

PEAK

LOG
10

dB/

EMC ANALYZER 857180 REV A.00.01

(c)HP 1987 - 1992

MARKER
4.895 GHz
51.86 dBµV

VA SB
SC FC

CORR

START 2.900 GHz

STOP 5.000 GHz

#RES BW 1.0 MHz

#VBW 3 MHz

SWP 42.0 msec

ANTENNA/COUPLER:☐ 9124 Bicon☐ 3109 Bicon☐ CBL6140 X-Wing☐ NNB-4/63TL LISN☐ 3146 Log Per☒ 3115 Horn☐ MDS-21 Clamp☐ NNB-4/200X LISN☐ 3106 Horn☐ CBL6112B Bilog☐ NSLK 8126 LISN☐ Other _____**MEAS TYPE:**☐ Radiated Prescan☒ Radiated Final☐ Conducted☐ Disturbance Power☐ Other _____**POLARIZATION:**☒ Vertical☒ Horizontal☐ Line☐ Neutral☐ NA**DISTANCE:**☒ 3 Meter☐ 10 Meter☐ _____ Meter☐ NA**LOCATION:**☐ OATS☒ Semi-Anechoic☐ Shielded Room☐ Factory Floor☐ Other _____

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NOTES: Fundamental Emissions FCC Part 15.249 (a)
2400MHz-2483.5MHz
50mV/m Fundamental (94dBμV/m)
CH 26 (higher channel)

10:55:24 15 JUN 2005

DAINTREE MODEL:2400E CH26 LON ANTENNA

MKR 2.48045 GHz

REF 107.0 dBμV

AT 10 dB

80.96 dBμV

PEAK

LOG
10

dB/

LIMIT PASS

*

MARKER
2.48045 GHz
80.96 dBμV

VA SB
SC FC

CORR

CENTER 2.48500 GHz

SPAN 20.00 MHz

#RES BW 1.0 MHz

#VBW 3 MHz

SWP 20.0 msec

ANTENNA/COUPLER:

- | | | | |
|---------------------------------------|---|---|--|
| ☐ 9124 Bicon | ☐ 3109 Bicon | ☐ CBL6140 X-Wing | ☐ NNB-4/63TL LISN |
| ☐ 3146 Log Per | ☒ 3115 Horn | ☐ MDS-21 Clamp | ☐ NNB-4/200X LISN |
| ☐ 3106 Horn | ☐ CBL6112B Bilog | ☐ NSLK 8126 LISN | ☐ Other _____ |

MEAS TYPE:

- ☐ Radiated Prescan
☒ Radiated Final
☐ Conducted
☐ Disturbance Power
☐ Other _____

POLARIZATION:

- ☒ Vertical
☒ Horizontal
☐ Line
☐ Neutral
☐ NA

DISTANCE:

- ☒ 3 Meter
☐ 10 Meter
☐ _____ Meter
☐ NA

LOCATION:

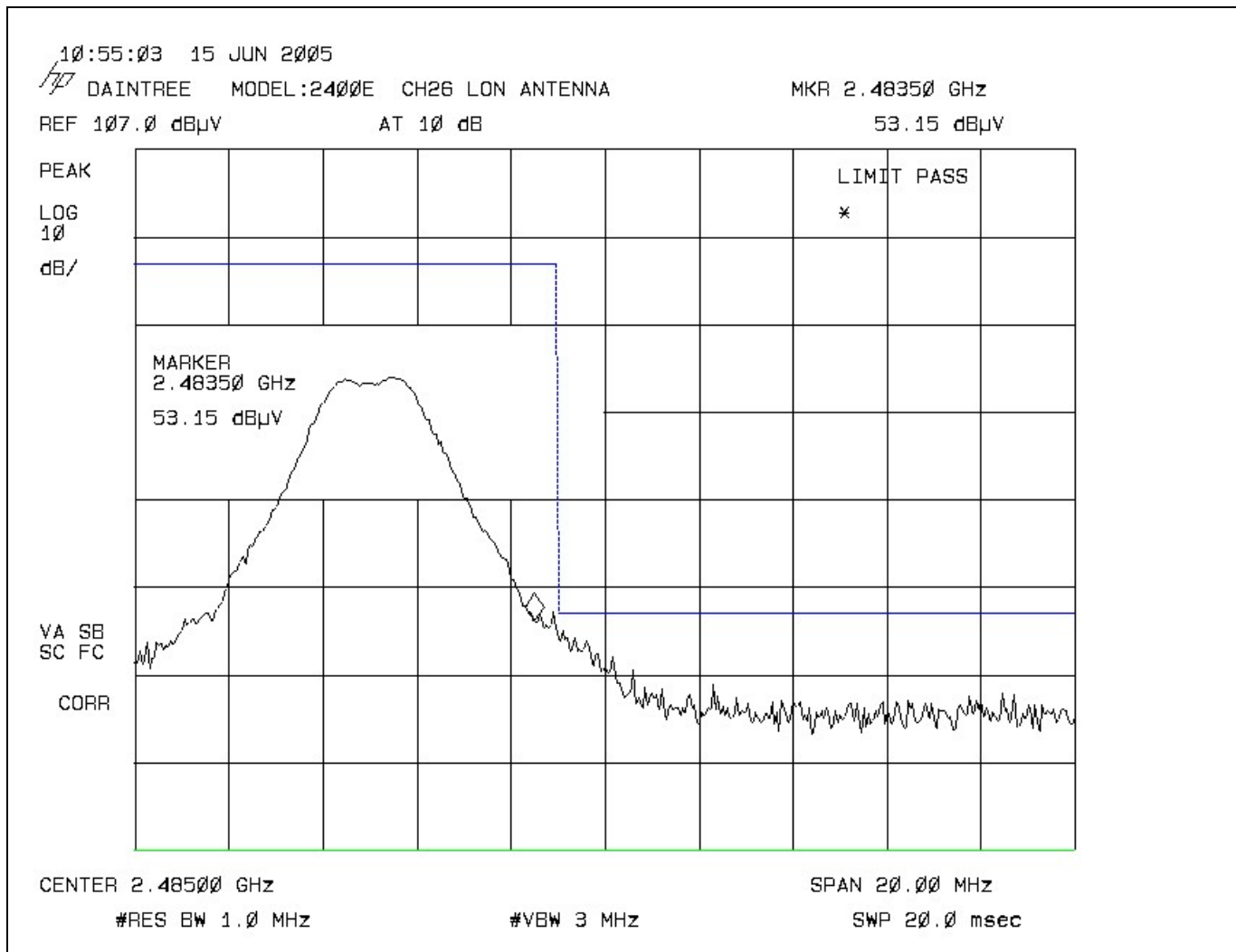
- ☐ OATS
☒ Semi-Anechoic
☐ Shielded Room
☐ Factory Floor
☐ Other _____

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NOTES:

Fundamental Emissions FCC Part 15.249 (a)
Band-Edge Measurement
2400MHz-2483.5MHz
50mV/m Fundamental (94dBμV/m)
CH 26 (higher channel)

ANTENNA/COUPLER:

- | | | | |
|---------------------------------------|---|---|--|
| ☐ 9124 Bicon | ☐ 3109 Bicon | ☐ CBL6140 X-Wing | ☐ NNB-4/63TL LISN |
| ☐ 3146 Log Per | ☒ 3115 Horn | ☐ MDS-21 Clamp | ☐ NNB-4/200X LISN |
| ☐ 3106 Horn | ☐ CBL6112B Bilog | ☐ NSLK 8126 LISN | ☐ Other_____ |

MEAS TYPE:

- ☐ Radiated Prescan
☒ Radiated Final
☐ Conducted
☐ Disturbance Power
☐ Other_____

POLARIZATION:

- ☒ Vertical
☒ Horizontal
☐ Line
☐ Neutral
☐ NA

DISTANCE:

- ☒ 3 Meter
☐ 10 Meter
☐ _____ Meter
☐ NA

LOCATION:

- ☐ OATS
☒ Semi-Anechoic
☐ Shielded Room
☐ Factory Floor
☐ Other_____

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NOTES: Fundamental Emissions FCC Part 15.249 (a)
2400MHz-2483.5MHz
500µV/m harmonic (54dBµV/m)
CH 26(higher channel)

15:28:32 18 MAY 2005

DAINTREE MODEL:2400E CH26 LONG ANTENNA

MKR 4.963 GHz

REF 107.0 dBµV

AT 10 dB

PG -5.2 dB

53.11 dBµV

PEAK

LOG
10

dB/

EMC ANALYZER 857120 REV A.00.01
(c)HP 1987 - 1992

MARKER
4.963 GHz
53.11 dBµV

MA SB
SC FC

CORR

START 2.900 GHz

STOP 5.000 GHz

#RES BW 1.0 MHz

#VBW 3 MHz

SWP 42.0 msec

ANTENNA/COUPLER:

- | | | | |
|---------------------------------------|---|---|--|
| ☐ 9124 Bicon | ☐ 3109 Bicon | ☐ CBL6140 X-Wing | ☐ NNB-4/63TL LISN |
| ☐ 3146 Log Per | ☒ 3115 Horn | ☐ MDS-21 Clamp | ☐ NNB-4/200X LISN |
| ☐ 3106 Horn | ☐ CBL6112B Bilog | ☐ NSLK 8126 LISN | ☐ Other _____ |

MEAS TYPE:

- ☐ Radiated Prescan
☒ Radiated Final
☐ Conducted
☐ Disturbance Power
☐ Other _____

POLARIZATION:

- ☒ Vertical
☒ Horizontal
☐ Line
☐ Neutral
☐ NA

DISTANCE:

- ☒ 3 Meter
☐ 10 Meter
☐ _____Meter
☐ NA

LOCATION:

- ☐ OATS
☒ Semi-Anechoic
☐ Shielded Room
☐ Factory Floor
☐ Other _____

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Emissions Measurements														
Standard: ANSI C63.4-2003/ CFR 47 FCC Part 15.249									PRE-SCAN or FINAL: Final				Date: 5/25/2005	
Device Tested: Daintree - 2400E										Distance: 3.0m			File: 05052503.xls	
		Measured Level												
					Antenna + Cable- Amplifier Correction Factor (included in measured levels)									
Meas #	Signal Type	Freq (GHz)	Peak (dBµV/m)	Average (dBµV/m)	Peak Limit	Average Limit	Peak Δ	Average Δ	Peak Result	Average Result	Polarization	Angle (degrees)	Antenna Height (meters)	Comment
1	Fundamental CH 11	2.4056	82.90	81.61	114	94	-31.10	-12.39	Complied	Complied	Vertical	180	1.00	Worst case condition
2	Band-Edge CH11	2.4000	48.79	41.08	74	54	-25.21	-12.92	Complied	Complied	Vertical	154	1.00	Worst case condition
3	2 Harmonic CH11	4.8160	53.44	44.60	74	54	-20.56	-9.40	Complied	Complied	Vertical	132	1.00	Worst case condition
4	Fundamental CH 19	2.4456	84.08	82.70	114	94	-29.92	-11.30	Complied	Complied	Vertical	150	1.00	Worst case condition
5	2 Harmonic CH 19	4.8950	51.86	42.00	74	54	-22.14	-12.00	Complied	Complied	Vertical	185	1.00	Worst case condition
6	Fundamental CH 26	2.4805	80.96	83.07	114	94	-33.04	-10.93	Complied	Complied	Vertical	175	1.00	Worst case condition
7	Band-Edge CH 26	2.4835	53.15	46.30	74	54	-20.85	-7.70	Complied	Complied	Vertical	178	1.00	Worst case condition
8	2 Harmonic CH 26	4.9630	53.11	40.94	74	54	-20.89	-13.06	Complied	Complied	Vertical	134	1.00	Worst case condition
Tested by: Dieter Baldamus														
TUV Rheinland of North America, Inc.		12 Commerce Road	Newtown, CT 06470	Tel: (203) 426-0888	Fax: (203) 426-4009									REFCCEB-JN Revised 10/04/03
Conducted Emissions Calculation:														
Measured Quasi Peak Value or Average Value + Correction Factor (USN + cable) - Quasi Peak limit or Average Limit = Result (Quasi Peak Delta)														
Quasi Peak Value and Average Value in the above table already includes measured Quasi Peak and Average value plus correction factors.														

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NOTES:

Radiated Spurious Emissions
FCC Part 15.209 (a)
Measurement at 3m distance



12:42:22 MAY 18, 2005

MFR: DAINTREE MODEL: 24000E PRESCAN

MARKER

35.4 MHz

48.90 dB μ V/m

ACTV DET: PEAK

MEAS DET: PEAK QP AVG

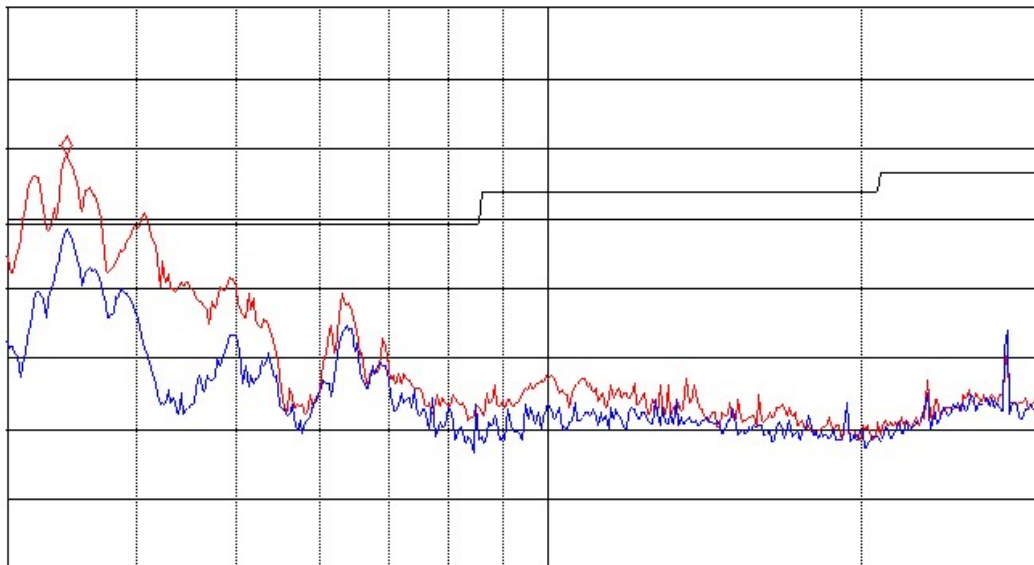
MKR 35.4 MHz

48.90 dB μ V/mLOG REF 70.0 dB μ V/m

PREAMP ON

10
dB/
#ATTN
0 dB

VA VB
SC FC
ACDRR



START 30.0 MHz

STOP 300.0 MHz

L IF BW 120 kHz

AVG BW 300 kHz

SWP 253 msec

ANTENNA/COUPLER:

- ☐ 9124 Bicon
☐ 3146 Log Per
☐ 3106 Horn

- ☐ 3109 Bicon
☒ 3115 Horn
☐ CBL6112B Bilog

- ☐ CBL6140 X-Wing
☐ MDS-21 Clamp
☐ NSLK 8126 LISN

- ☐ NNB-4/63TL LISN
☐ NNB-4/200X LISN
☐ Other _____

MEAS TYPE:

- ☐ Radiated Prescan
☒ Radiated Final
☐ Conducted
☐ Disturbance Power
☐ Other _____

POLARIZATION:

- ☒ Vertical
☒ Horizontal
☐ Line
☐ Neutral
☐ NA

DISTANCE:

- ☒ 3 Meter
☐ 10 Meter
☐ _____ Meter
☐ NA

LOCATION:

- ☐ OATS
☒ Semi-Anechoic
☐ Shielded Room
☐ Factory Floor
☐ Other _____

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NOTES:

Radiated Spurious Emissions
FCC Part 15.209 (a)
Measurement at 3m distance



12:46:46 MAY 18, 2005

MFR: DAINTREE MODEL: 24000E PRESCAN

MARKER

510.6 MHz

31.31 dB μ V/m

ACTV DET: PEAK

MEAS DET: PEAK QP AVG

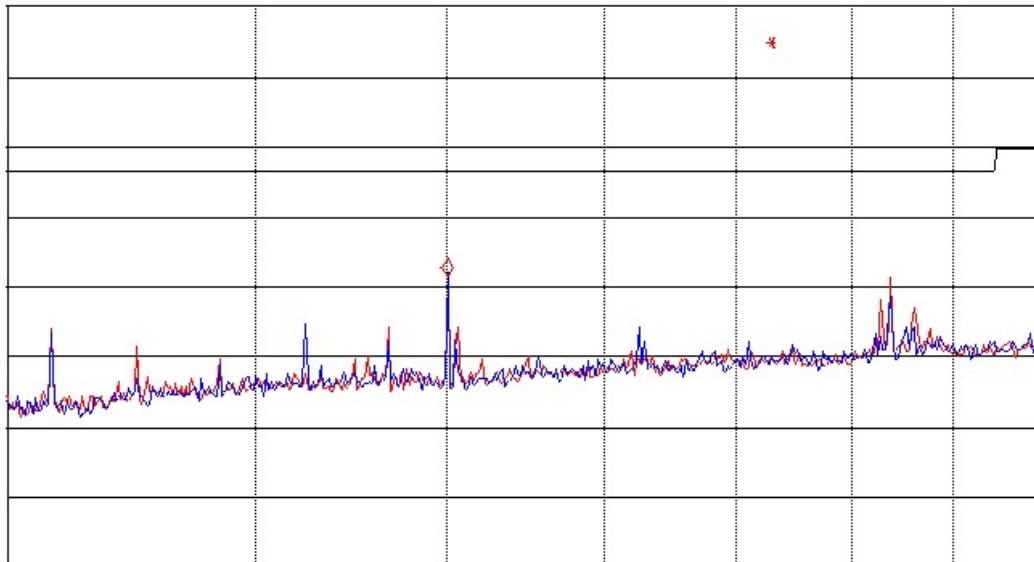
MKR 510.6 MHz

31.31 dB μ V/mLOG REF 70.0 dB μ V/m

PREAMP ON

10
dB/
#ATTN
0 dB

VA VB
SC FC
ACDRR



START 300.0 MHz

STOP 1.0000 GHz

IF BW 120 kHz

AVG BW 300 kHz

SWP 656 msec

ANTENNA/COUPLER:

- | | | | |
|---------------------------------------|---|---|--|
| ☐ 9124 Bicon | ☐ 3109 Bicon | ☐ CBL6140 X-Wing | ☐ NNB-4/63TL LISN |
| ☐ 3146 Log Per | ☒ 3115 Horn | ☐ MDS-21 Clamp | ☐ NNB-4/200X LISN |
| ☐ 3106 Horn | ☐ CBL6112B Bilog | ☐ NSLK 8126 LISN | ☐ Other _____ |

MEAS TYPE:

- ☐ Radiated Prescan
☒ Radiated Final
☐ Conducted
☐ Disturbance Power
☐ Other _____

POLARIZATION:

- ☒ Vertical
☒ Horizontal
☐ Line
☐ Neutral
☐ NA

DISTANCE:

- ☒ 3 Meter
☐ 10 Meter
☐ _____ Meter
☐ NA

LOCATION:

- ☐ OATS
☒ Semi-Anechoic
☐ Shielded Room
☐ Factory Floor
☐ Other _____

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NOTES:

Radiated Spurious Emissions
FCC Part 15.209 (a)
Measurement at 3m distance

12:55:59 22 JUL 2005

hp

MKR 1.970 GHz

REF 107.0 dBμV

AT 10 dB

50.01 dBμV

PEAK

LOG
10

dB/

MARKER
1.970 GHz
50.01 dBμV

MA SB
SC FC

CORR

START 1.000 GHz

RES BW 3.0 MHz

VBW 1 MHz

STOP 2.400 GHz

SWP 28.0 msec

ANTENNA/COUPLER:

- | | | | |
|---------------------------------------|---|---|--|
| ☐ 9124 Bicon | ☐ 3109 Bicon | ☐ CBL6140 X-Wing | ☐ NNB-4/63TL LISN |
| ☐ 3146 Log Per | ☒ 3115 Horn | ☐ MDS-21 Clamp | ☐ NNB-4/200X LISN |
| ☐ 3106 Horn | ☐ CBL6112B Bilog | ☐ NSLK 8126 LISN | ☐ Other _____ |

MEAS TYPE:

- ☐ Radiated Prescan
☒ Radiated Final
☐ Conducted
☐ Disturbance Power
☐ Other _____

POLARIZATION:

- ☒ Vertical
☒ Horizontal
☐ Line
☐ Neutral
☐ NA

DISTANCE:

- ☒ 3 Meter
☐ 10 Meter
☐ _____ Meter
☐ NA

LOCATION:

- ☐ OATS
☒ Semi-Anechoic
☐ Shielded Room
☐ Factory Floor
☐ Other _____

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Radiated Emissions Measurements												
Standard:		ANSI C63.4:2003/ CFR 47 FCC Part 15.209 (a) Class B					PRESCAN or FINAL:		Final		Date: 5/25/2005	
Device Tested:		Daintree 2400E					Distance:		3.0m		File: 05052501.xls	
		Measured Level										
							Antenna + Cable Correction Factor (included in measured levels)				Antenna Height (meters)	Comment
Meas #	Freq (MHz)	Peak	Quasi-Peak	Average	Quasi-Peak Limit	Quasi-Peak Δ		Result	Polarization	Angle (degrees)		
1	34.9229	41.02	31.45	20.75	40.00	-8.55	16.89	Complied	Horizontal	185	1.00	
2	44.0221	38.88	28.94	18.59	40.00	-11.06	12.29	Complied	Horizontal	144	1.00	
3	47.0302	45.10	32.18	13.66	40.00	-7.82	10.75	Complied	Horizontal	54	1.20	
4	78.8577	35.40	29.18	21.04	40.00	-10.82	8.15	Complied	Horizontal	68	1.50	
5	108.0567	39.22	35.38	27.15	43.50	-8.12	12.41	Complied	Horizontal	154	1.80	
6	221.2351	30.12	25.34	11.43	46.00	-20.66	10.98	Complied	Horizontal	354	1.54	
7	479.9949	28.27	24.98	21.65	46.00	-21.02	19.76	Complied	Horizontal	245	1.54	
8	35.4244	45.74	39.50	38.45	40.00	-0.50	15.95	Complied	Vertical	124	1.00	
9	37.6885	41.20	36.70	31.74	40.00	-3.30	14.85	Complied	Vertical	98	1.00	
10	41.8955	42.33	38.60	30.75	40.00	-1.40	12.70	Complied	Vertical	88	1.00	
11	51.0009	34.43	28.43	21.34	40.00	-11.57	8.24	Complied	Vertical	255	2.02	
12	66.1858	31.29	24.40	18.58	40.00	-15.60	6.32	Complied	Vertical	312	2.15	
Tested by:		Dieter Baldamus										
TUV Rheinland of North America, Inc.		12 Commerce Road		Newtown, CT 06470		Tel:(203) 426-0888		Fax: (203) 426-4009		REFCCEB-01b Revised 10MAR03		
Field Strength Calculation:		Measured Quasi Peak Value + Correction Factor (Antenna + cable) - Quasi Peak limit = Result (Quasi Peak Delta.)										
		Quasi Peak Value in the above table already includes measured value and correction factors.										
		Negative Result is a Pass										

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NOTES:

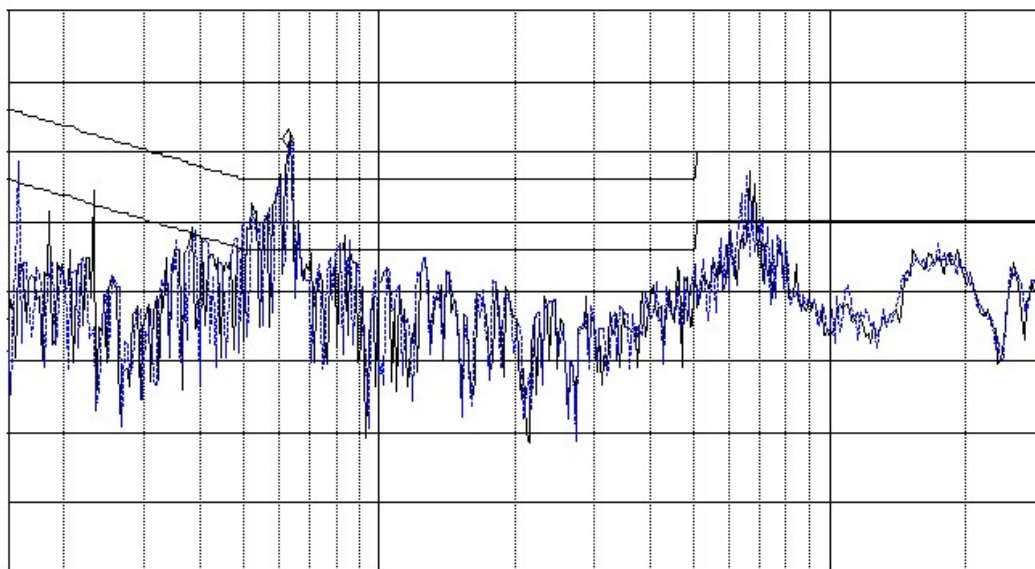
Conducted Emissions
FCC Part 15.207 (a)
120V/60Hz

12:22:03 JUN 15, 2005
MFR: DAINTREE MODEL: 2400E 120V/60Hz [X] L [X] N
MARKER ACTV DET: PEAK
630 kHz MEAS DET: PEAK QP AVG
60.22 dB μ V/m MKR 630 kHz
60.22 dB μ V/m

LOG REF 00.0 dB μ V/m

10
dB/
ATN
10 dB

VA VB
SC FC
ACORR



START 150 kHz

#IF BW 9.0 kHz

AVG BW 30 kHz

STOP 30.00 MHz

SWP 2.49 sec

ANTENNA/COUPLER:

- | | | | |
|---------------------------------------|---|---|--|
| ☐ 9124 Bicon | ☐ 3109 Bicon | ☐ CBL6140 X-Wing | ☐ NNB-4/63TL LISN |
| ☐ 3146 Log Per | ☒ 3115 Horn | ☐ MDS-21 Clamp | ☐ NNB-4/200X LISN |
| ☐ 3106 Horn | ☐ CBL6112B Bilog | ☐ NSLK 8126 LISN | ☐ Other _____ |

MEAS TYPE:

- ☐ Radiated Prescan
☒ Radiated Final
☐ Conducted
☐ Disturbance Power
☐ Other _____

POLARIZATION:

- ☒ Vertical
☒ Horizontal
☐ Line
☐ Neutral
☐ NA

DISTANCE:

- ☒ 3 Meter
☐ 10 Meter
☐ _____ Meter
☐ NA

LOCATION:

- ☐ OATS
☒ Semi-Anechoic
☐ Shielded Room
☐ Factory Floor
☐ Other _____

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Conducted Emissions Measurements														
Standard:		ANSI C63.4:2003/ CFR 47 FCC Part 15.207 (a)												
Device Tested:		Daintree - 2400E												
Signal Num	Freq MHz	Peak Amp dBuV	QP Amp dBuV	Avg Amp dBuV	QP Limit dBuV	Avg Limit dBuV	LISN and Cable Correction factor (included in measured levels)	Conductor	QP Δ dB	QP Result	Avg Δ dB	Average Result	Mode	
1	0.5535	53.13	49.92	39.74	56.00	46.00	10.30	Line	-6.08	Complied	-6.26	Complied		
2	0.6346	60.22	55.71	44.66	56.00	46.00	10.30	Line	-0.29	Complied	-1.34	Complied		
3	0.8683	48.42	45.33	33.45	56.00	46.00	10.30	Line	-10.67	Complied	-12.55	Complied		
4	6.6504	58.86	57.03	49.44	60.00	50.00	10.30	Line	-2.97	Complied	-0.56	Complied		
5	16.2796	47.40	44.57	37.33	60.00	50.00	10.30	Line	-15.43	Complied	-12.67	Complied		
6	0.6367	60.77	55.91	42.75	56.00	46.00	10.30	Neutral	-0.09	Complied	-3.25	Complied		
7	0.8478	48.77	44.43	31.30	56.00	46.00	10.30	Neutral	-11.57	Complied	-14.70	Complied		
8	3.8808	40.13	35.98	24.94	56.00	46.00	10.30	Neutral	-20.02	Complied	-21.06	Complied		
9	6.7188	50.88	45.28	36.70	60.00	50.00	10.30	Neutral	-14.72	Complied	-13.30	Complied		
10	18.9805	47.72	45.67	38.57	60.00	50.00	10.30	Neutral	-14.33	Complied	-11.43	Complied		
Tested by:		Dieter Baldamus												
TUV Rheinland of North America, Inc.		12 Commerce Road		Newtown, CT 06470		Tel: (203) 426-0888		Fax: (203) 426-4009		CE22_B-147 Revised 13-APR-05				
Conducted Emissions Calculation:		Measured Quasi Peak Value or Average Value + Correction Factor (LISN + cable) - Quasi Peak limiter Average Limit = Result (Quasi Peak Delta.)												
		Quasi Peak Value and Average Value in the above table already includes measured Quai Peak and Average value plus correction factors.												
		Negative Result is a Pass												

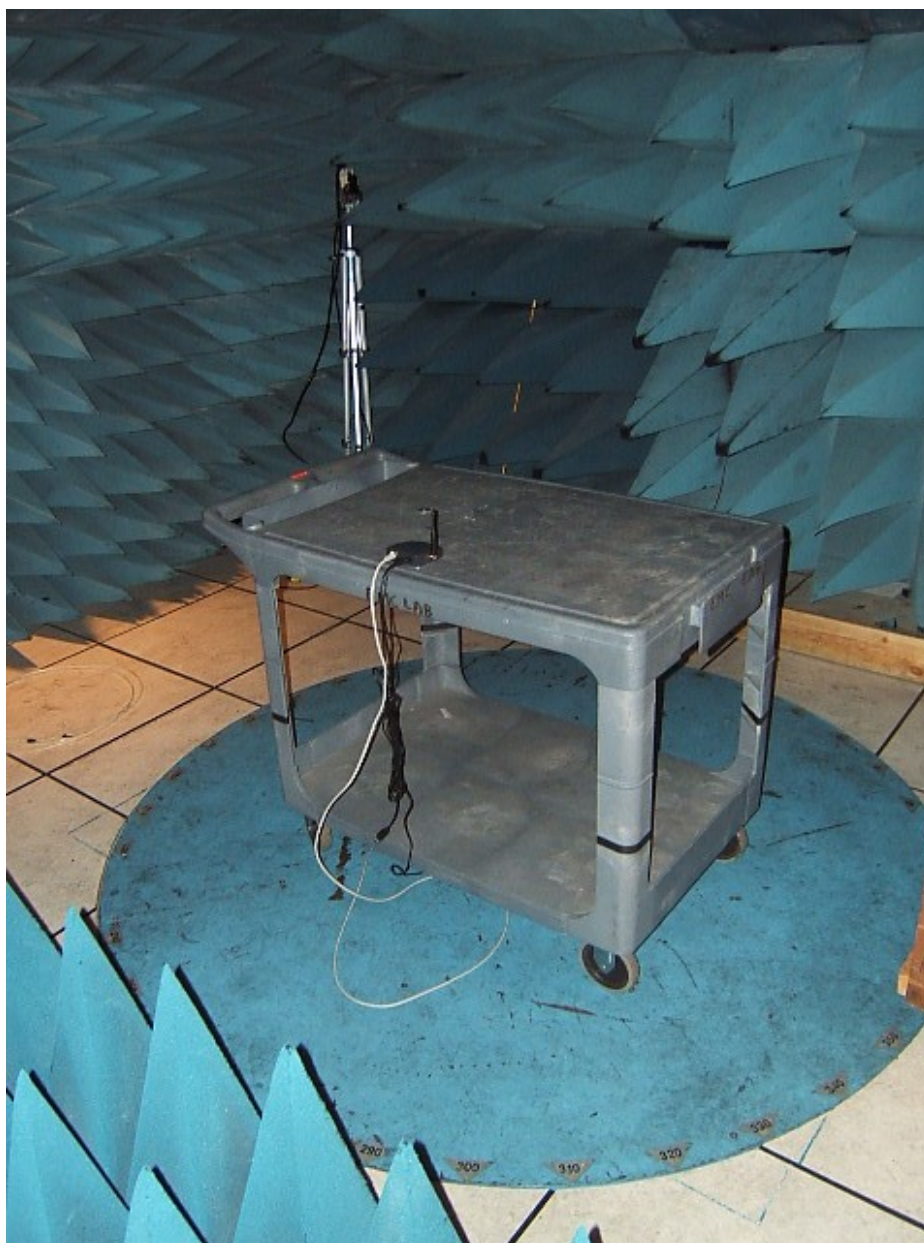
The test results contained in this report refer exclusively to the product(s) presented for testing. No liability may be assumed for models or products not referred to herein. This test report may not be published or duplicated in part without permission of the testing body. This test report by itself does not constitute authorization for the use of any TUV Rheinland test mark. This report must not be used by the applicant to claim product endorsement by TUV Rheinland, NVLAP or any agency of the United States Government.



APPENDIX B: PHOTOGRAPHS

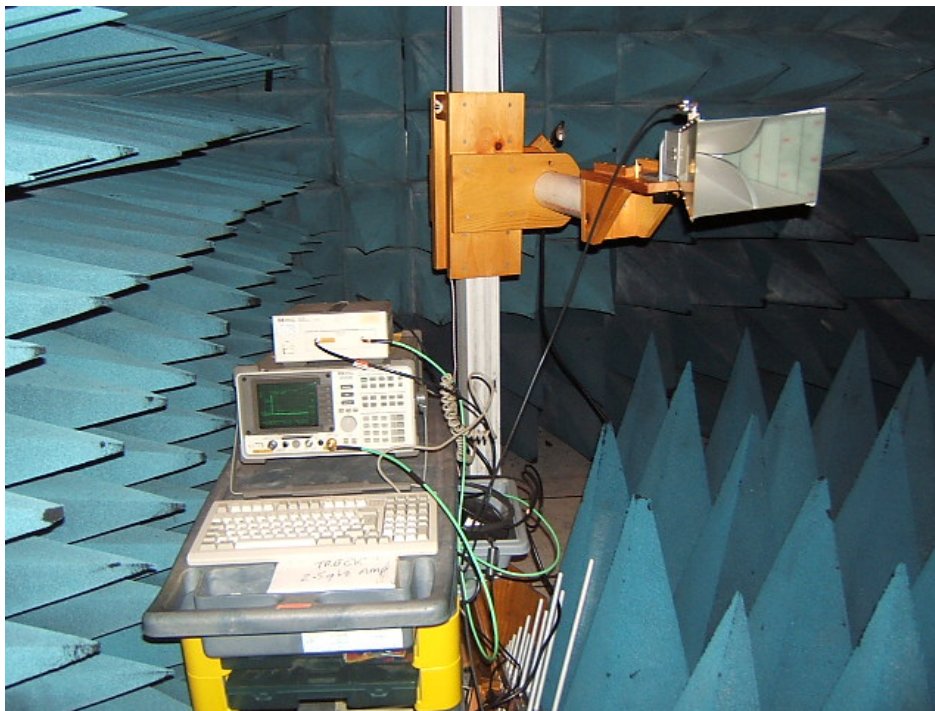
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TÜV Rheinland of North America, Inc., North American Headquarters, 12 Commerce Road, Newtown, CT 06470 - Tel (203)426-0888 - Fax (203)426-4009

Emissions Pre-scan

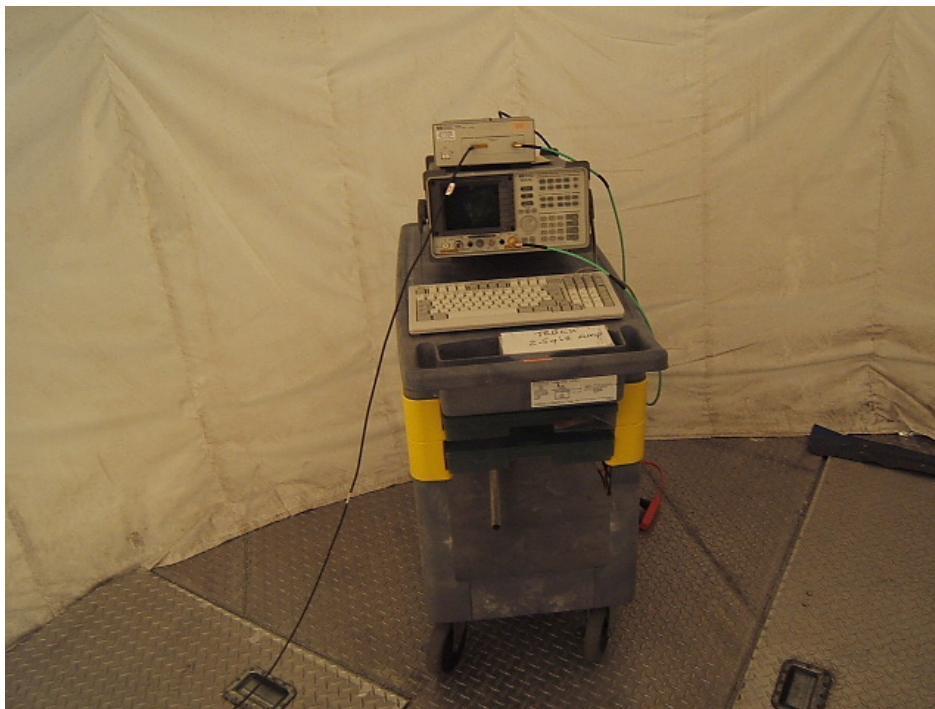
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Emissions Pre-scan**Test Equipment****Emissions Final Scan
(OATS)****EUT**

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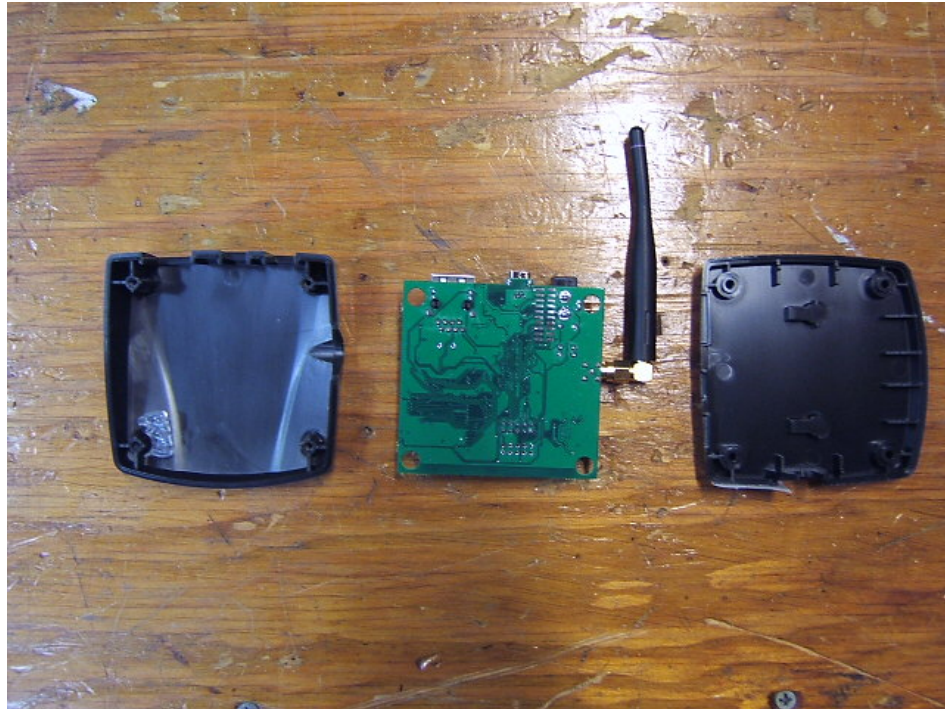
TUV Rheinland of North America, Inc., North American Headquarters, 12 Commerce Road, Newtown, CT 06470 - Tel (203)426-0888 - Fax (203)426-4009

**Emissions Final Scan
(OATS)****Test Equipment****Conducted Emissions**

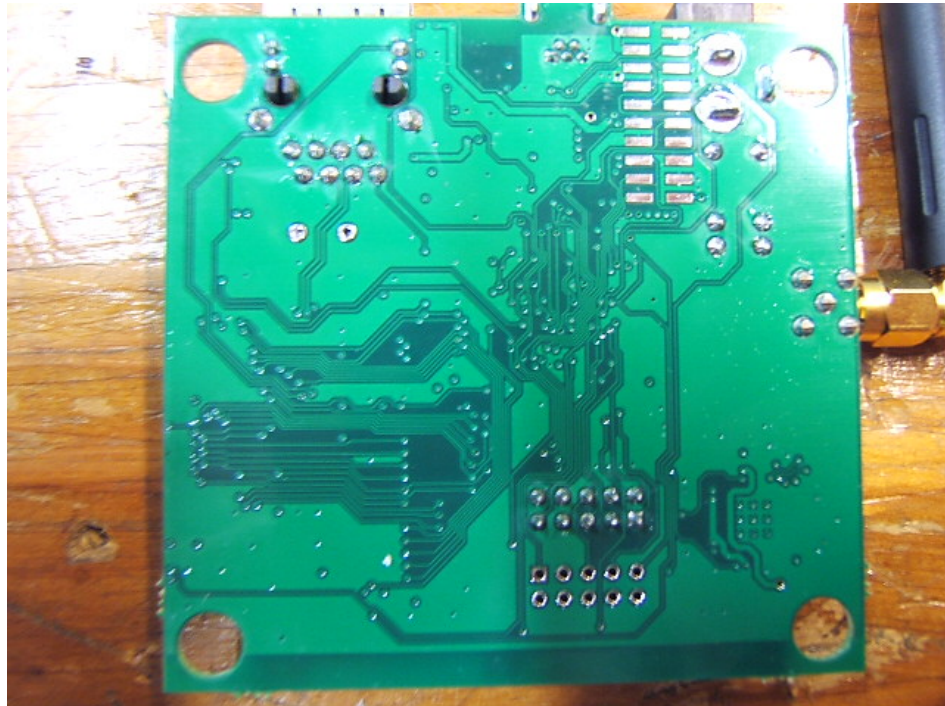
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Inside view



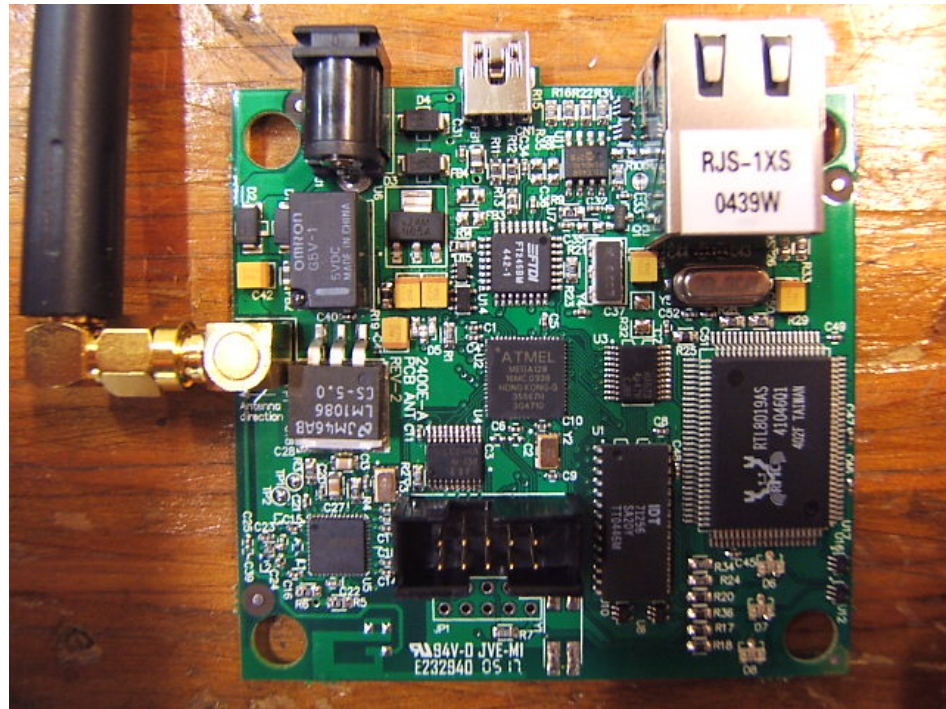
Inside view



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Inside view



Power Adapter



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