



Project: **06CA38706**
File: **MC1324**
Report: **060072**
Date: **August 7, 2006**
Model: **27157 Low Power Transmitter**
(FCC ID: IN2TX26
IC: 3558A-TX26)

Test Report

On

Electromagnetic Compatibility Testing

Hunter Fan Co
Memphis, TN USA

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Test Report Details:

Tests Performed By: **Underwriters Laboratories Inc.
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Research Triangle Park, NC 27709**

Tests Performed For: **Hunter Fan Co
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Memphis, TN 38114 USA**

Applicant Contact: **Mr. Robert Davis
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Test Report Number: **060072**

Test Report Date: **August 7, 2006**

Product Type: **Low Powered Transmitter**

Model Number: **27157**

Sample Serial Number: **333 1968 426**

Sample Tag Number: **0776053-001**

EUT Category: **Transmitter - Low Powered**

EUT Type: **Hand Held**

Sample Receive Date: **July 20, 2006**

Testing Start Date: **July 28, 2006**

Date Testing Complete: **July 30, 2006**

Underwriters Laboratories Inc. reports apply only to the specific samples tested under stated test conditions. All samples tested were in good operating condition throughout the entire test program. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. Underwriters Laboratories Inc. shall have no liability for any deductions, inferences or generalizations drawn by the client or others from Underwriters Laboratories Inc. issued reports. This report shall not be used to claim, constitute or imply product certification, approval, or endorsement by NVLAP or any agency of the US government.

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Summary of Testing:

Test #	Test Name Test Requirement/Specification	Comply	Does Not Comply	See Remark
1	Radiated Disturbance Emissions - 30 MHz to 3500 MHz 47 CFR Part 15, Subpart C / 47 CFR Part 15, Subpart C, Section 15.209 and 15.231 Industry Canada RSS-210 Issue 6 / Industry Canada RSS-210 Issue 6	X	-	
2	Occupied Bandwidth 47 CFR Part 15, Subpart C / 47 CFR Part 15, Subpart C, Section 15.231 Industry Canada RSS-210 Issue 6 / Industry Canada RSS-210 Issue 6	X	-	
3	Peak-to-Average Ratio 47 CFR Part 15, Subpart C / 47 CFR Part 15, Subpart C, Section 15.231 Industry Canada RSS-210 Issue 6 / Industry Canada RSS-210 Issue 6	N/A	N/A	
4	Radiated Disturbance Emissions - Restricted Bands 47 CFR Part 15, Subpart C / 47 CFR Part 15, Subpart C, Section 15.205 Industry Canada RSS-210 Issue 6 / Industry Canada RSS-210 Issue 6, Section 2.6	X	-	
4	Holdover Time – Manually Activated Transmitter 47 CFR Part 15, Subpart C / 47 CFR Part 15, Subpart C, Section 15.231 Industry Canada RSS-210 Issue 6 / Industry Canada RSS-210 Issue 6, Annex 1, A1.1.1	X		

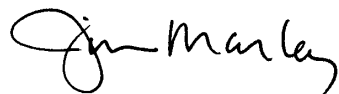
Remarks:

- 1) Antenna - This transmitter contains an integrated antenna that cannot be removed by the user.
- 2) Measurement Site & Accreditations - All measurements were performed on Industry Canada registered site IC-2953. All measurements were performed in accordance with NVLAP-accredited procedures.
- 3) RF Exposure - This device is exempt from routine evaluation to RF exposure requirements per FCC Part 2.1091. Output power is 12.8 uW EIRP (avg), therefore device is exempt from routine evaluation per Industry Canada RSS-102 Issue 2, Section 2.5.1.
- 4) Momentary Operation Requirements – It was observed that transmissions ceased immediately upon release of button (< 200 ms). This meets the holdover limit of five seconds or less found in FCC Part 15.231(a)(1) and Industry Canada RSS-210 Issue 6, Annex 1, Section A1.1.1 for manually activated transmitters. No periodic or automatically activated emissions requirements apply.
- 5) Canada Emissions Designator – Emissions Designator is L1D44K1.
- 6) Receiver – Associated receiver was tested separately. Results documented in report 060073.
- 7) Transmitter Dimensions – Transmitter measures 3.6" x 1.5" at the longest/widest points. Due to the size and curvature of the plastic, the manufacturer could not legibly fit the FCC Part 15 statement on the device. The FCC ID number is placed on the transmitter and the FCC Part 15 statement is moved to the user manual.

Conclusion:

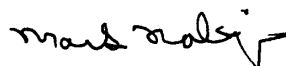
The tests listed in the Summary of Testing section of this report have been performed and the results recorded by Underwriters Laboratories Inc. in accordance with the procedures stated in each test requirement and specification. The test list was determined by the Applicant as being applicable to the Equipment Under Test. As a result, the subject product has been verified to comply or not comply as noted in the Summary of Testing with each test specification. The test results relate only to the items tested.

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Test Facilities:

Test Location A) 10-Meter Anechoic Chamber (Industry Canada - IC 2953, VCCI - R-722/C-2427)

Constructed by Lindgren RF Enclosures, this room consists of a 17.9 by 12 by 8.3 m (inside clearance) shielded room lined with TDK absorber material. The walls, floor (conducting ground plane) and ceiling are constructed of double sided galvanized sheet steel supported by 19 mm thick particle board. The interior walls and ceiling are covered with 10 by 10 cm, 4.6 mm thick ferrite tiles and partially covered with polystyrene absorber cones. Removable floor tiles and cones covering the floor between the EUT and antenna are provided when RF immunity testing is performed.

Room is provided with a 4.0 m diameter embedded turntable and a 1.2 by 2.1 m and 2.4 by 2.4 m double knife edge doors for access. Also, the room is fed electrical EUT power via permanently installed filters and is provided with a permanently mounted video surveillance camera. A remotely controllable antenna mast is located in the room for positioning the measuring antenna from 1 to 4 m above the ground plane.

Test Location F) Ground Reference Plane # 3

Horizontal floor ground reference plane constructed of galvanized sheet steel measuring 3.0 by 3.6 m x 2.5mm thick.

EUT Information:

Equipment Used During Test:

Use*	Product Type	Manufacturer	Model	Comments
EUT	Transmitter	Hunter Fan Co.	57172 (Tx)	
EUT	Receiver	Hunter Fan Co.	57172 (Rx)	Tested separately

* Use = EUT - Equipment Under Test, ACC - Accessory (Not Subjected to Test), or SIM - Simulator (Not Subjected to Test)

Input/Output Ports:

Port #	Name	Type*	Comments
0	Enclosure	N/E	No external ports

* AC = AC Power Port DC = DC Power Port I/O = Signal Input or Output Port

EUT Internal Operating Frequencies:

Frequency (MHz)*	Description
350	Transmit Frequency

Power Interface:

Mode #	Voltage (V)	Frequency (DC/AC-Hz)	Comments
Rated	12	DC	A fresh A23 battery was installed prior to test.
1	12	DC	

EUT Operation Modes:

Mode #	Description
1	Button is continuously depressed by a rubber band.

EUT Configuration Modes:

Mode #	Description
1	EUT is located on a small piece of polystyrene foam on top of an 80cm high wooden table. Positioned flat.
2	EUT is located on a small piece of polystyrene foam on top of an 80cm high wooden table. Positioned on side.
3	EUT is located on a small piece of polystyrene foam on top of an 80cm high wooden table. Positioned pointing upward.

Test 1: Radiated Disturbance Emissions - 30 MHz to 3500 MHz

Test Requirement: 47 CFR Part 15, Subpart C
 Industry Canada RSS-210 Issue 6

Test Specification: 47 CFR Part 15, Subpart C, Section 15.209 and 15.231
 Industry Canada RSS-210 Issue 6, Annex 1, Section A1.1.2

Test Procedure:

The test was performed in accordance with the Test Requirement and Specification and configured as noted in the Test Setup. The EUT was placed inside the anechoic chamber with a fresh battery installed. For frequencies below 1000 MHz, the receiver resolution bandwidth was set to 120 kHz and video bandwidth was set to 1 MHz. Above 1000 MHz, the receiver resolution and video bandwidths are set to 1 MHz. A peak measurement was first made by scanning the entire test frequency range and maximizing the EUT emissions by rotating the EUT and raising the antenna height from 1 to 4 meters above the ground reference plane. Then, a measurement was taken for all peak emissions to verify each were below the Test Limits.

Radiated Disturbance Limits for Manually Operated Transmitters - Section 15.231/RSS-210 Issue 6
 at a measurement distance of 3 meters

Fundamental Frequency (MHz)	Field Strength of Fundamental		Field Strength of Spurious	
	($\mu\text{V}/\text{m}$)	($\text{dB}\mu\text{V}/\text{m}$)	($\mu\text{V}/\text{m}$)	($\text{dB}\mu\text{V}/\text{m}$)
40.66 to 40.70	2250	67.04	225	47.04
70 to 130	1250	61.94	125	41.94
130 to 174	1250 to 3750	61.94 to 71.48	125 to 375	41.94 to 51.48
174 to 260	3750	71.48	375	51.48
260 to 470	3750 to 12,500	71.48 to 81.93	375 to 1250	51.48 to 61.93
above 470	12,500	81.93	1250	61.93

** Linear Interpolations

Test Clarifications (Specific Limits for this transmit frequency):

This product operates at: 350 MHz

- At 350 MHz peak limit is 97.5 dBuV/m. Average limit is 77.5 dBuV/m
- At harmonics not residing in restricted bands, peak limit is 77.5 dBuV/m and average limit is 57.5 dBuV/m.
- At harmonics residing within restricted bands (1050 MHz, 1400 MHz, and 2800 MHz), peak limit is 74 dBuV/m and average limit is 54 dBuV/m

Test Deviations:

None

Test Setup: Only the following ports were tested. See EUT Information for details.

Test Item	Port #	Port Name	EUT Operation Mode	EUT Configuration	Power Interface
A	0	Enclosure	1	1 (Flat)	1
B	0	Enclosure	1	2 (On side)	1
C	0	Enclosure	1	3 (On end)	1

Test 1 - Results: Radiated Disturbance Emissions - 30 MHz to 3500 MHz

Test Results Summary:

Test Item	Test Location	Humidity (%)	Temperature (°C)	Pressure (kPa)	Pass/Fail (P/F)	Date Completed	Comment #
A - C	A	51	22	101	P	7/28/06	

The EUT was considered to **Pass** the Requirements.

Comments:

Comment #	Description
1	<p><u>Highest Emissions (Transmit Frequency)</u> Highest Transmit Orientation (on end). Measured field strength at 350 MHz was 76.3 dBuV/m (avg), Or 6531 uV/m (avg in linear units) at a 3 meter measurement distance.</p> <p><u>(Equivalent Isotropic Radiated Power)</u> Using free space range equation, $TP = (FS \times D) / (30 * G)$, transmit power is 12.80 uW EIRP (avg).</p> <p><u>(Equivalent Radiated Power – dipole reference)</u> Using free space range equation, $TP = (FS \times D) / (30 * G)$ where dipole gain is 2.14 dBi, transmit power is 7.82 uW EIRP (avg).</p>
2	<p><u>Averaging</u> Average field strength = Peak field strength minus Peak-to-Average ratio (-11.7 dB) from Test 3. Applies to all average measurements within this report.</p>
3	<p><u>Highest Spurious Emissions (EUT flat)</u>. Measured field strength at 1050 MHz was 52.5 dBuV/m (avg), Or 421.7 uV/m (avg in linear units) at a 3 meter measurement distance.</p>

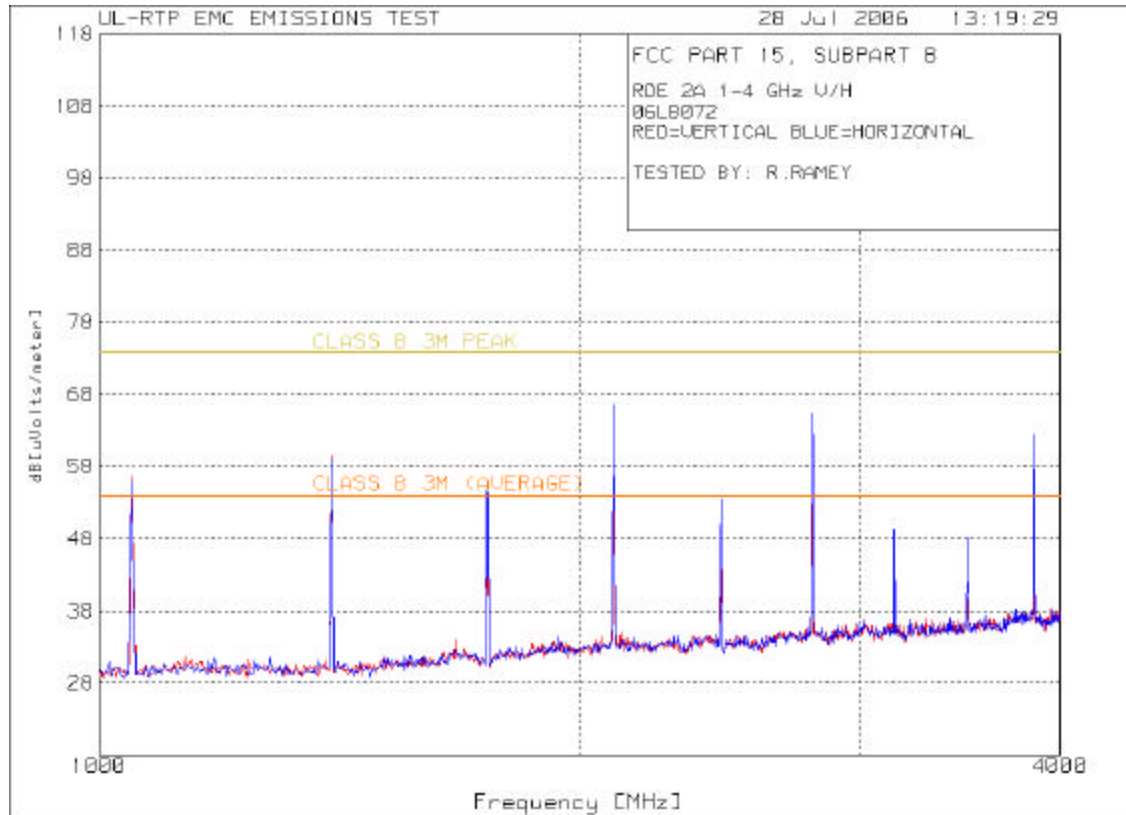
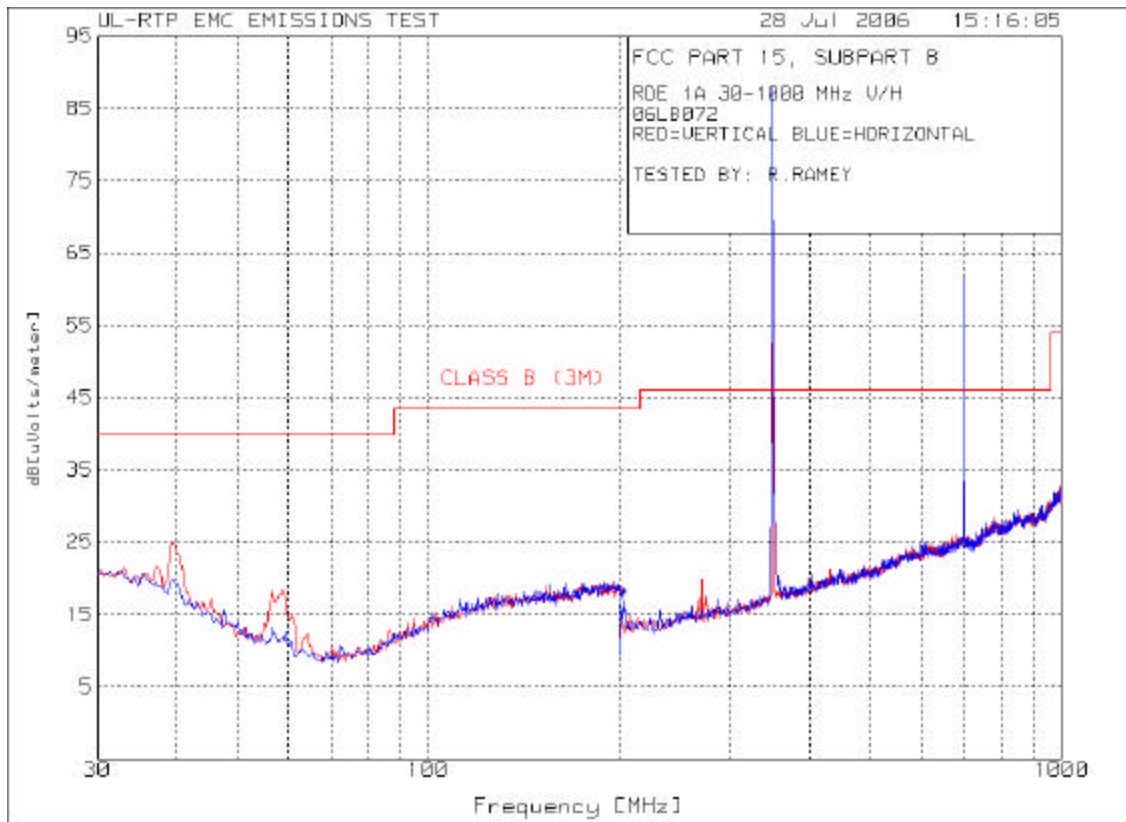
Test 1 - Test Equipment Used: Radiated Disturbance Emissions - 30 MHz to 3500 MHz

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
AT0025	Biconical Antenna, 30 to 300 MHz	Schaffner, EMC	VBA6106A	3/29/06	3/31/07
AT0032	Horn Antenna, 1 to 18 GHz	EMC Test Systems	3115	8/5/05	8/31/06
AT0030	Log periodic Antenna, 200 MHz to 1000 MHz	Schaffner, EMC	3160-07	3/24/06	3/31/07
ATA084	Attenuator 6 dB, 2 GHz	Pasternack	PE7002-6	3/23/06	3/31/07
ATA085	Attenuator 6 dB, 2 GHz	Pasternack	PE7002-6	3/23/06	3/31/07
ATA096	50 ft, N male - N male	Micro-Coax	Coaxial Cable	2/14/06	2/28/07
ATA108	10 m, N male - N male	UL	RG214	3/23/06	3/31/07
ATA124	RF Amplifier, 1 to 1000 MHz	Miteq	AM-3A-000110-N	3/23/06	3/31/07
ATA125	RF Amplifier, 1 to 1000 MHz	Miteq	AM-3A-000110-N	3/23/06	3/31/07
ATA140	RG214 Ferrite Cable	EMC Eupen	N/A	3/23/06	3/31/07
ATA198	Cable, 6ft., N-male to N-male	Micro-Coax	N/A	6/20/06	6/30/07
ATA144	Amplifier, 0.1 to 18 GHz	Miteq	AFS42-00101800-2	3/30/06	3/31/07
ATA152	27 ft. N male - N male low loss cable	Micro-Coax	UFB293C-0-3149-50504	1/30/06	7/31/06
ATA199	Cable, 6ft., N-male to N-male	Micro-Coax	N/A	6/20/06	6/30/07
SAR003	EMC Receiver	Rohde & Schwarz	1088.7490K40	8/10/05	8/31/06

The above equipment has been calibrated and is within the manufacturer's published limit of error. Calibration is traceable to the National Institute of Standards & Technology(NIST) and conforms to ISO 17025:2005.

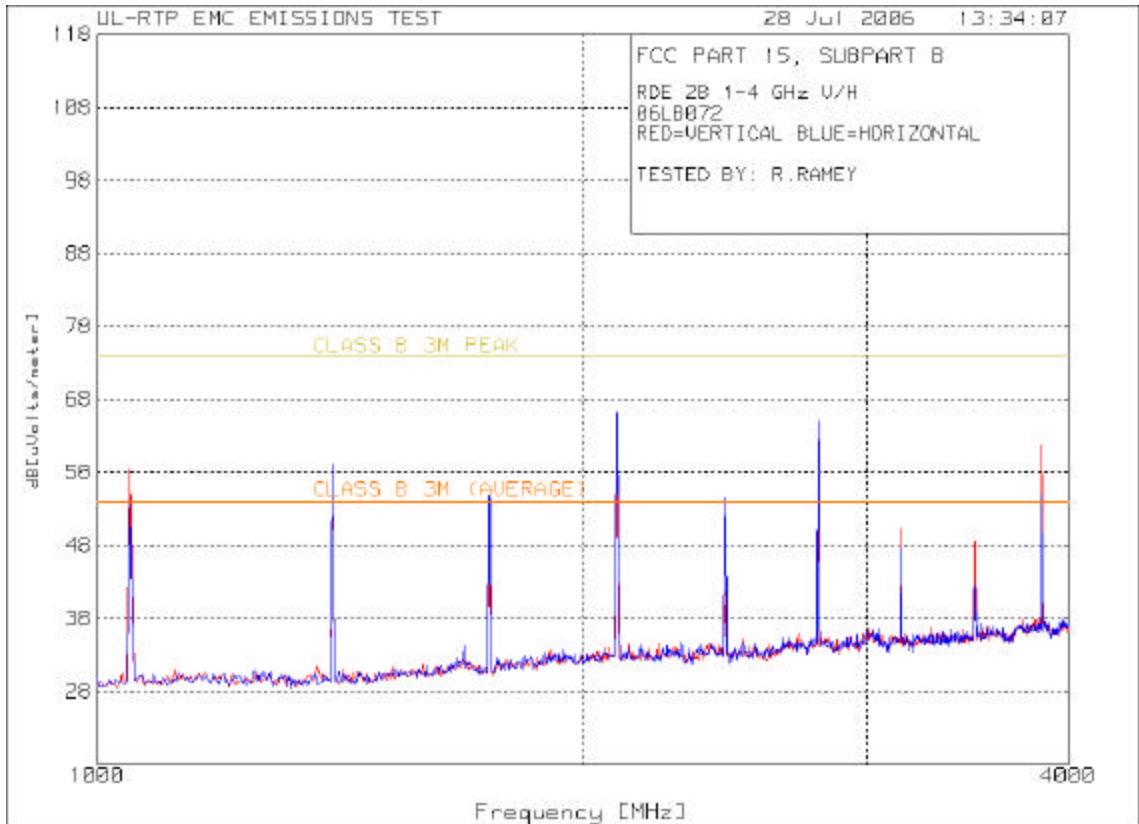
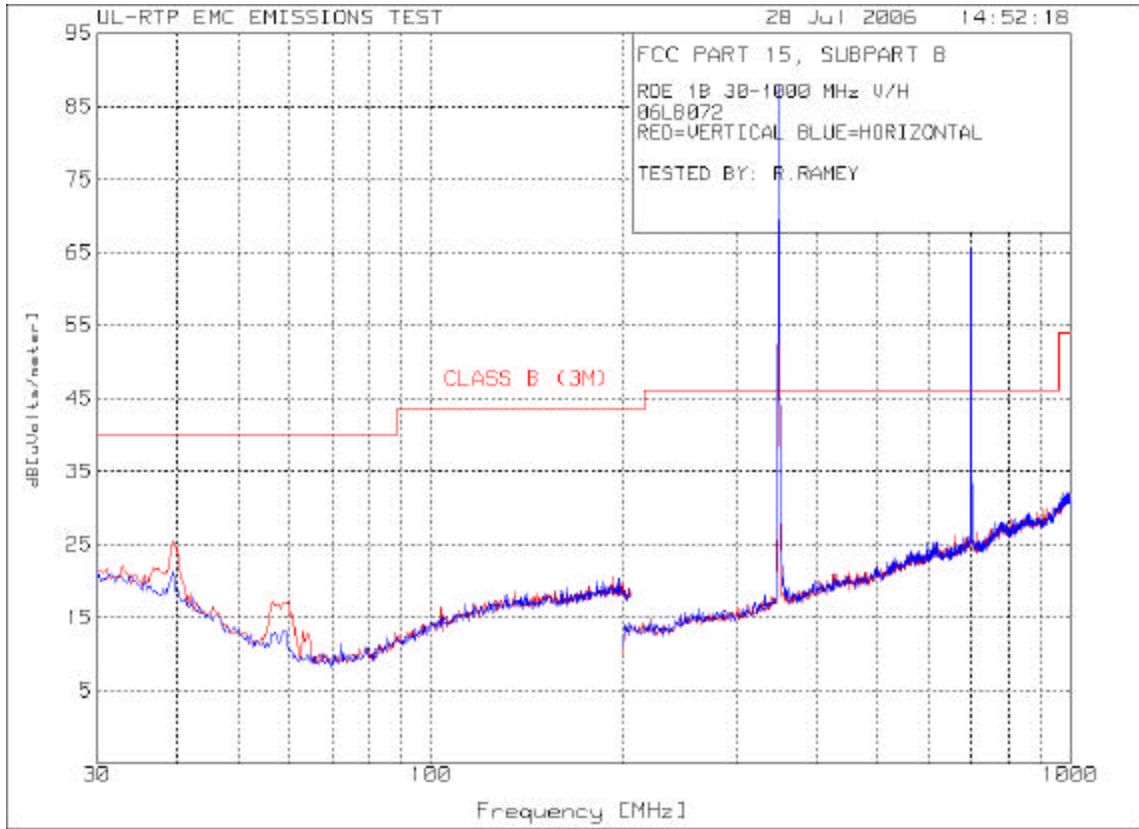
Test 1, Item A (Flat Orientation) - Peak Plot:

Radiated Disturbance Emissions - 30 MHz to 3500 MHz



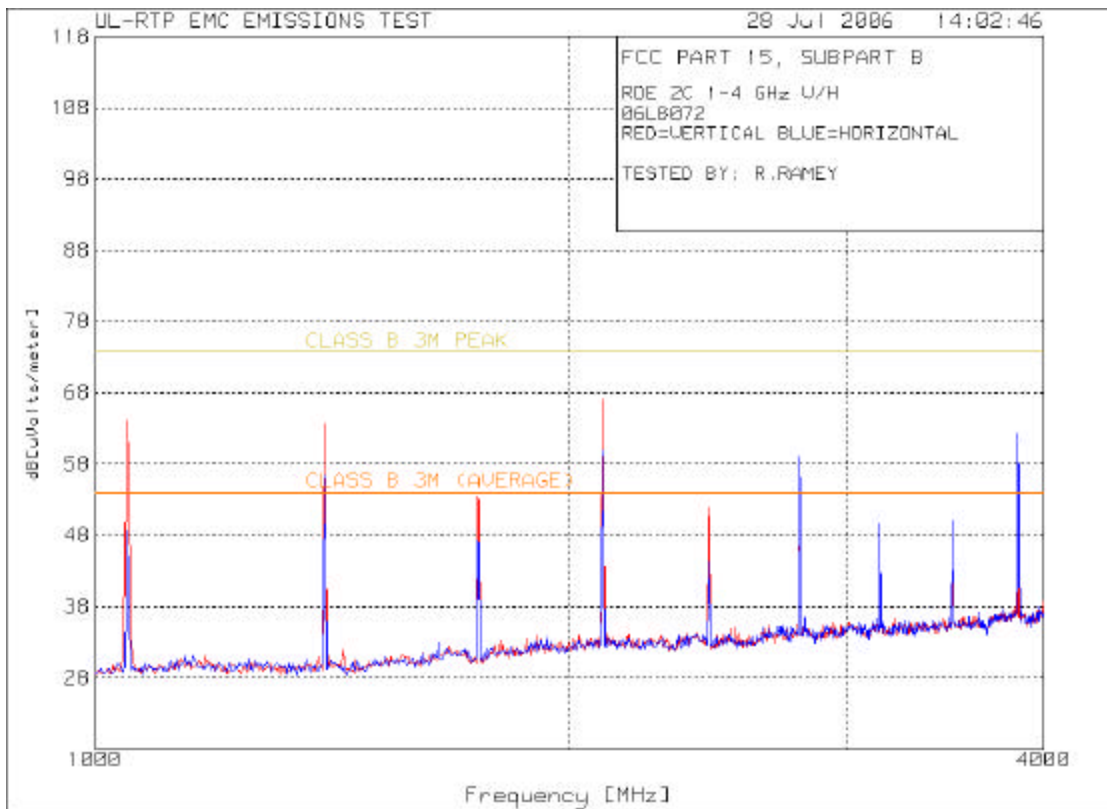
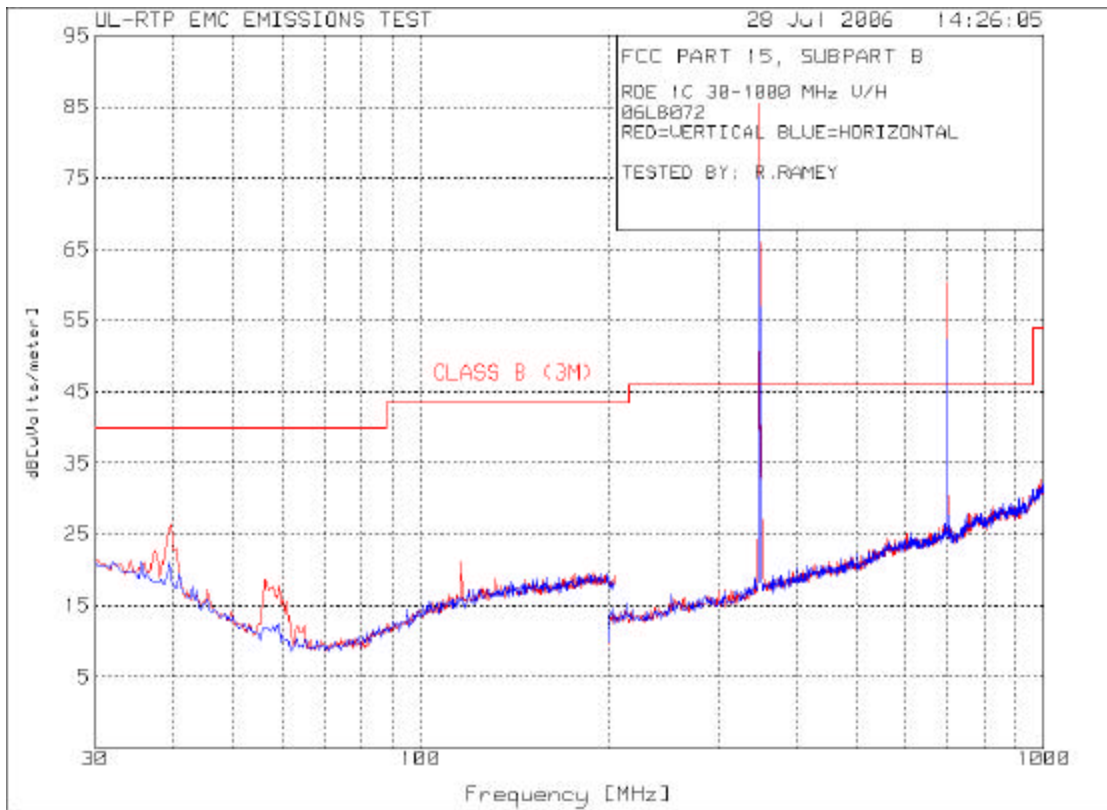
Test 1, Item B (Side Orientation) - Peak Plot:

Radiated Disturbance Emissions - 30 MHz to 3500 MHz



Test 1, Item C (End Orientation) - Peak Plot:

Radiated Disturbance Emissions - 30 MHz to 3500 MHz



Test 1, All Items - Discrete Data: Radiated Disturbance Emissions - 30 MHz to 3500 MHz

Test Item (A-Z)	Detector Type* (P/Q/A)	Antenna Polarity (H/V)	Antenna Distance (m)	Measured Frequency (MHz)	Measured Value (dBuV)	Equip Correction (dB/m)	Corrected Value (dBuV/m)	Specified Limit** (dBuV/m)	Spec Margin (dB)	See Comment (#)***
Orientation: Flat										
A	P	H	3	349.9	99.8	-12.0	87.8	97.5	-9.7	
A	A	H	3	349.9	-	-	76.1	77.5	-1.4	
A	P	H	3	699.8	66.5	-4.9	61.6	77.5	-15.9	
A	A	H	3	699.8	-	-	49.9	57.5	-7.6	
A	P	V	3	1050	65.7	-9.0	56.7	74.0	-17.3	
A	A	V	3	1050	-	-	45.0	54.0	-9.0	
A	P	V	3	1400	67.0	-7.4	59.6	74.0	-14.4	
A	A	V	3	1400	-	-	47.9	54.0	-6.1	
A	P	H	3	1750	60.0	-5.3	54.7	77.5	-22.8	
A	A	H	3	1750	-	-	43.0	57.5	-14.5	
A	P	H	3	2199	70.4	-3.8	66.6	77.5	-10.9	
A	A	H	3	2199	-	-	54.9	57.5	-2.6	
A	P	H	3	2449	56.3	-2.9	53.4	77.5	-24.1	
A	A	H	3	2449	-	-	41.7	57.5	-15.8	
A	P	H	3	2799	67.4	-2.0	65.4	77.5	-12.1	
A	A	H	3	2799	-	-	53.7	57.5	-3.8	
Orientation: On Side										
B	P	V	3	349.9	100.0	-12.0	88.0	97.5	-9.5	
B	A	V	3	349.9	-	-	76.3	77.5	-1.2	1
B	P	H	3	699.8	70.3	-4.9	65.4	77.5	-12.1	
B	A	H	3	699.8	-	-	53.7	57.5	-3.8	
B	P	H	3	1050	67.5	-9.0	58.5	74.0	-15.5	
B	A	H	3	1050	-	-	46.8	54.0	-7.2	
B	P	H	3	1400	66.5	-7.4	59.1	74.0	-14.9	
B	A	H	3	1400	-	-	47.4	54.0	-6.6	
B	P	H	3	1750	60.2	-5.3	54.9	77.5	-22.6	
B	A	H	3	1750	-	-	43.2	57.5	-14.3	
B	P	H	3	2199	69.9	-3.8	66.1	77.5	-11.4	
B	A	H	3	2199	-	-	54.4	57.5	-3.1	
B	P	H	3	2449	57.4	-2.9	54.5	77.5	-23.0	
B	A	H	3	2449	-	-	42.8	57.5	-14.7	
B	P	H	3	2799	67.1	-2.0	65.1	77.5	-12.4	
B	A	H	3	2799	-	-	53.4	57.5	-4.1	
B	P	V	3	3149	51.4	-1.1	50.3	77.5	-27.2	
B	A	V	3	3149	-	-	38.6	57.5	-18.9	
Orientation: On end										
C	P	V	3	349.9	97.5	-12.0	85.5	97.5	-12.0	
C	A	V	3	349.9	-	-	73.8	77.5	-3.7	
C	P	V	3	699.8	65.2	-4.9	60.3	77.5	-17.2	
C	A	V	3	699.8	-	-	48.6	57.5	-8.9	
C	P	V	3	1050	73.2	-9.0	64.2	74.0	-9.8	
C	A	V	3	1050	-	-	52.5	54.0	-1.5	2
C	P	V	3	1400	71.1	-7.4	63.7	74.0	-10.3	
C	A	V	3	1400	-	-	52.0	54.0	-2.0	
C	P	V	3	1750	58.7	-5.3	53.4	77.5	-24.1	
C	A	V	3	1750	-	-	41.7	57.5	-15.8	
C	P	V	3	2199	70.8	-3.8	67.0	77.5	-10.5	
C	A	V	3	2199	-	-	55.3	57.5	-2.2	
C	P	V	3	2449	54.9	-2.9	52.0	77.5	-25.5	
C	A	V	3	2449	-	-	40.3	57.5	-17.2	

Test 1, All Items - Discrete Data: Radiated Disturbance Emissions - 30 MHz to 3500 MHz

Test Item (A-Z)	Detector Type* (P/Q/A)	Antenna Polarity (H/V)	Antenna Distance (m)	Measured Frequency (MHz)	Measured Value (dBuV)	Equip Correction (dB/m)	Corrected Value (dBuV/m)	Specified Limit** (dBuV/m)	Spec Margin (dB)	See Comment (#)***
C	P	H	3	2799	61.2	-2.0	59.2	77.5	-18.3	
C	A	H	3	2799	-	-	47.5	57.5	-10.0	
C	P	H	3	3149	50.7	-1.1	49.6	77.5	-27.9	
C	A	H	3	3149	-	-	37.9	57.5	-19.6	
C	P	H	3	3499	50.0	12.4	62.4	77.5	-15.2	
C	A	H	3	3499	-	-	50.7	57.5	-6.8	

* P = Peak, Q = Quasi-Peak, A = Average.

** The Specified Limit shown is the 15.231(a) limit or, if applicable, the 15.209 limit.

*** # = See Comment Number Under This Test's Comments Section on Page 7.

Sample Calculation: Corrected Value = Measured Value + Equip Correction

Sample Calculation: Equip Correction = Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB, if used)

Test 1, Item A (Flat Orientation) - Test Set-Up Photo:

Radiated Disturbance Emissions - 30 MHz to 3500 MHz



Test 1, Item B (Side Orientation) - Test Set-Up Photo:

Radiated Disturbance Emissions - 30 MHz to 3500 MHz



Test 1, Item C (End Orientation) - Test Set-Up Photo:

Radiated Disturbance Emissions - 30 MHz to 3500 MHz



Test 2: Occupied Bandwidth

Test Requirement: 47 CFR Part 15, Subpart C
Industry Canada RSS-210 Issue 6

Test Specification: 47 CFR Part 15, Subpart C, Section 15.209 and 15.231
Industry Canada RSS-210 Issue 6, Annex 1, Section A1.1.2

Test Procedure:

The test was performed in accordance with the Test Requirement and Specification and configured as noted in the Test Setup. The EUT was positioned so that the received signal was maximized. The receive antenna height and orientation were adjusted so that the received signal was maximized.

FCC

The spectrum analyzer Resolution Bandwidth to 10 kHz and Video Bandwidth to 100 kHz for the measurement. A plot of the spectrum analyzer display screen is produced with marker points displaying the center frequency and the left and right side points that are 20 dB below the field strength at the center frequency.

Canada

99% Power Occupied Bandwidth method is used. Resolution Bandwidth is set small compared to occupied BW (approx 1% to 3%). Span is set to include 20 dB BW, or all modulation skirts (whichever is greater). Datapoints are tabulated and weighted by power. Center 99% is recorded as Occupied BW.

Occupied Bandwidth Limit - Manually Operated Transmitter FCC Part 15, Section 15.231
and Canada RSS-210 Issue 6.

Transmit Frequency MHz	Bandwidth Limit (% of fundamental)
70 to 900	.25%
Above 900	.50%

Test Deviations:

None

Test Setup: Only the following ports were tested. See EUT Information for details.

Test Item	Port #	Port Name	EUT Operation Mode	EUT Configuration	Power Interface
A	0	Enclosure (Canada)	1	1	1
B	0	Enclosure (FCC)	1	1	1

Test 2 - Results: Occupied Bandwidth

Test Results Summary:

Test Item	Test Location	Pass/Fail (P/F)	Date Completed	Comment #
A	A	P	7/30/06	
B	A	P	7/30/06	

The EUT was considered to **Pass** the Requirements.

Comments:

Comment #	Description

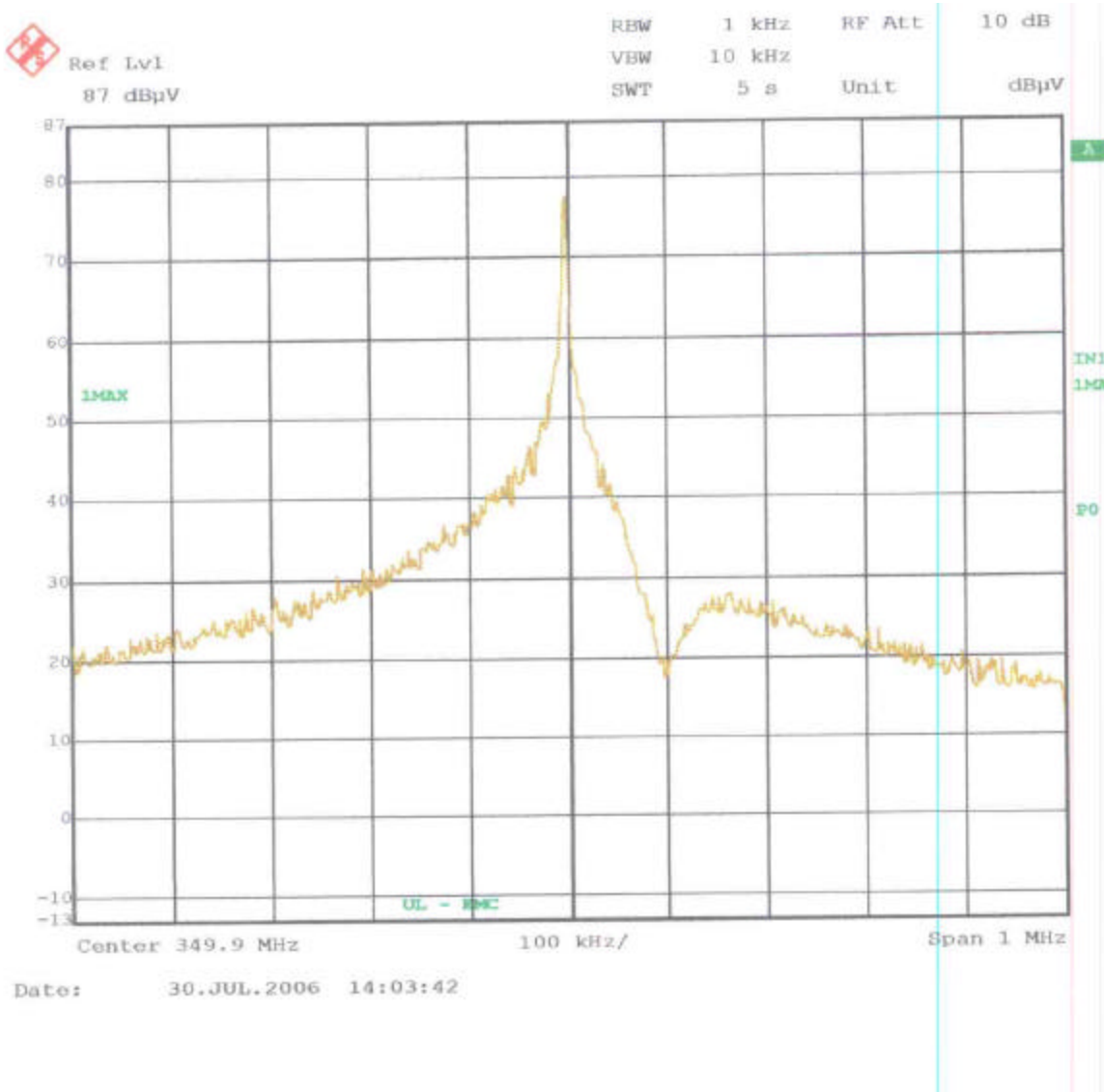
Test Equipment Used:

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
AT0030	Log periodic Antenna, 200 MHz to 1000 MHz	Schaffner, EMC	3160-07	3/24/06	3/31/07
ATA085	Attenuator 6 dB, 2 GHz	Pasternack	PE7002-6	3/23/06	3/31/07
ATA108	10 m, N male - N male	UL	RG214	3/23/06	3/31/07
ATA125	RF Amplifier, 1 to 1000 MHz	Miteq	AM-3A-000110-N	3/23/06	3/31/07
ATA198	Cable, 6ft., N-male to N-male	Micro-Coax	N/A	6/20/06	6/30/07
ATA199	Cable, 6ft., N-male to N-male	Micro-Coax	N/A	6/20/06	6/30/07
SAR003	EMC Receiver	Rohde & Schwarz	1088.7490K40	8/10/05	8/31/06

The above equipment has been calibrated and is within the manufacturer's published limit of error. Calibration is traceable to the National Institute of Standards & Technology(NIST) and conforms to ISO 17025:2005.

Test 2, Item A (Canada - RBW set to approximately 1% to 3% of signal bandwidth) - Peak Plot:

Occupied Bandwidth



Note: Span set to include all signal skirts.

Test 2, Item A (Canada – 99% Power Occupied Bandwidth) – Table:

Results:

Left Bandedge point 349.8709 MHz
 Right Bandedge point 349.9150 MHz

99% Occupied BW (Power) 0.0441 MHz

Data Points/Calculation:

- Column A Data Point, Numbers 1-500
- Column B Frequency (each freq. Equals 1/500th of span)
- Column C Amplitude, Power (dBm)
- Column D Amplitude, Linear Power (nW)
- Column E Linear Amplitude (uV) using POWER(10,Column_B/10)
- Column F Percent of total power.
- Column G Cumulative power. Sum of power from each point beginning at lowest freq.
- Column H Notes which points are between 0.5% and 99.5%

Data Point #	Frequency (MHz)	Amplitude (dBuV)	Amplitude (Power, dBm)	Amplitude (Power, nW)	Percent of Total Power	Cummulative Percentage	Within center 99% ?	Bandedge points
1)	349.4000	21.6500	-85.35	0.003	0.000%	0.000%	N	
2)	349.4020	20.4600	-86.54	0.002	0.000%	0.000%	N	
3)	349.4040	18.4300	-88.57	0.001	0.000%	0.000%	N	
4)	349.4060	20.6900	-86.31	0.002	0.000%	0.000%	N	
5)	349.4080	19.7900	-87.21	0.002	0.000%	0.000%	N	
6)	349.4100	21.4400	-85.56	0.003	0.000%	0.000%	N	
7)	349.4120	20.0700	-86.93	0.002	0.000%	0.001%	N	
8)	349.4140	19.5600	-87.44	0.002	0.000%	0.001%	N	
9)	349.4160	20.1900	-86.81	0.002	0.000%	0.001%	N	
10)	349.4180	19.3600	-87.64	0.002	0.000%	0.001%	N	
11)	349.4200	20.3200	-86.68	0.002	0.000%	0.001%	N	
12)	349.4220	20.2800	-86.72	0.002	0.000%	0.001%	N	
13)	349.4240	19.5900	-87.41	0.002	0.000%	0.001%	N	
14)	349.4261	20.7700	-86.23	0.002	0.000%	0.001%	N	
15)	349.4281	21.2100	-85.79	0.003	0.000%	0.001%	N	
16)	349.4301	19.7300	-87.27	0.002	0.000%	0.001%	N	
17)	349.4321	21.4100	-85.59	0.003	0.000%	0.001%	N	
18)	349.4341	21.8300	-85.17	0.003	0.000%	0.001%	N	
19)	349.4361	21.3300	-85.67	0.003	0.000%	0.001%	N	
20)	349.4381	19.6500	-87.35	0.002	0.000%	0.001%	N	
21)	349.4401	20.7100	-86.29	0.002	0.000%	0.002%	N	
22)	349.4421	20.2800	-86.72	0.002	0.000%	0.002%	N	
23)	349.4441	19.6400	-87.36	0.002	0.000%	0.002%	N	
24)	349.4461	21.2200	-85.78	0.003	0.000%	0.002%	N	
25)	349.4481	21.0800	-85.92	0.003	0.000%	0.002%	N	
26)	349.4501	21.3200	-85.68	0.003	0.000%	0.002%	N	
27)	349.4521	20.8500	-86.15	0.002	0.000%	0.002%	N	
28)	349.4541	20.2200	-86.78	0.002	0.000%	0.002%	N	
29)	349.4561	20.4100	-86.59	0.002	0.000%	0.002%	N	
30)	349.4581	22.7100	-84.29	0.004	0.000%	0.002%	N	
31)	349.4601	21.8200	-85.18	0.003	0.000%	0.002%	N	
32)	349.4621	21.8500	-85.15	0.003	0.000%	0.002%	N	

33)	349.4641	20.7900	-86.21	0.002	0.000%	0.003%	N
34)	349.4661	21.7700	-85.23	0.003	0.000%	0.003%	N
35)	349.4681	22.5500	-84.45	0.004	0.000%	0.003%	N
36)	349.4701	22.2600	-84.74	0.003	0.000%	0.003%	N
37)	349.4721	20.9000	-86.1	0.002	0.000%	0.003%	N
38)	349.4741	22.8300	-84.17	0.004	0.000%	0.003%	N
39)	349.4762	21.3100	-85.69	0.003	0.000%	0.003%	N
40)	349.4782	22.7000	-84.3	0.004	0.000%	0.003%	N
41)	349.4802	21.2900	-85.71	0.003	0.000%	0.003%	N
42)	349.4822	21.0900	-85.91	0.003	0.000%	0.003%	N
43)	349.4842	23.4200	-83.58	0.004	0.000%	0.004%	N
44)	349.4862	22.5400	-84.46	0.004	0.000%	0.004%	N
45)	349.4882	21.0300	-85.97	0.003	0.000%	0.004%	N
46)	349.4902	22.5500	-84.45	0.004	0.000%	0.004%	N
47)	349.4922	21.9000	-85.1	0.003	0.000%	0.004%	N
48)	349.4942	22.9200	-84.08	0.004	0.000%	0.004%	N
49)	349.4962	23.0200	-83.98	0.004	0.000%	0.004%	N
50)	349.4982	23.1700	-83.83	0.004	0.000%	0.004%	N
51)	349.5002	21.2100	-85.79	0.003	0.000%	0.004%	N
52)	349.5022	23.4900	-83.51	0.004	0.000%	0.005%	N
53)	349.5042	23.5000	-83.5	0.004	0.000%	0.005%	N
54)	349.5062	23.8000	-83.2	0.005	0.000%	0.005%	N
55)	349.5082	22.8500	-84.15	0.004	0.000%	0.005%	N
56)	349.5102	23.2700	-83.73	0.004	0.000%	0.005%	N
57)	349.5122	21.5700	-85.43	0.003	0.000%	0.005%	N
58)	349.5142	22.3700	-84.63	0.003	0.000%	0.005%	N
59)	349.5162	22.6400	-84.36	0.004	0.000%	0.005%	N
60)	349.5182	21.5000	-85.5	0.003	0.000%	0.006%	N
61)	349.5202	21.5200	-85.48	0.003	0.000%	0.006%	N
62)	349.5222	23.0300	-83.97	0.004	0.000%	0.006%	N
63)	349.5242	22.9700	-84.03	0.004	0.000%	0.006%	N
64)	349.5263	22.9600	-84.04	0.004	0.000%	0.006%	N
65)	349.5283	23.1000	-83.9	0.004	0.000%	0.006%	N
66)	349.5303	23.4900	-83.51	0.004	0.000%	0.006%	N
67)	349.5323	24.1700	-82.83	0.005	0.000%	0.007%	N
68)	349.5343	23.2400	-83.76	0.004	0.000%	0.007%	N
69)	349.5363	23.4600	-83.54	0.004	0.000%	0.007%	N
70)	349.5383	23.4000	-83.6	0.004	0.000%	0.007%	N
71)	349.5403	24.1200	-82.88	0.005	0.000%	0.007%	N
72)	349.5423	24.8200	-82.18	0.006	0.000%	0.007%	N
73)	349.5443	24.1800	-82.82	0.005	0.000%	0.007%	N
74)	349.5463	23.1300	-83.87	0.004	0.000%	0.008%	N
75)	349.5483	23.9900	-83.01	0.005	0.000%	0.008%	N
76)	349.5503	23.0600	-83.94	0.004	0.000%	0.008%	N
77)	349.5523	22.7600	-84.24	0.004	0.000%	0.008%	N
78)	349.5543	24.9200	-82.08	0.006	0.000%	0.008%	N
79)	349.5563	24.6400	-82.36	0.006	0.000%	0.008%	N
80)	349.5583	24.1300	-82.87	0.005	0.000%	0.009%	N
81)	349.5603	25.1800	-81.82	0.007	0.000%	0.009%	N
82)	349.5623	24.8600	-82.14	0.006	0.000%	0.009%	N
83)	349.5643	24.6200	-82.38	0.006	0.000%	0.009%	N
84)	349.5663	23.7000	-83.3	0.005	0.000%	0.009%	N
85)	349.5683	25.1800	-81.82	0.007	0.000%	0.010%	N
86)	349.5703	22.8600	-84.14	0.004	0.000%	0.010%	N

87)	349.5723	23.6700	-83.33	0.005	0.000%	0.010%	N
88)	349.5743	25.8200	-81.18	0.008	0.000%	0.010%	N
89)	349.5764	25.2200	-81.78	0.007	0.000%	0.010%	N
90)	349.5784	23.5500	-83.45	0.005	0.000%	0.010%	N
91)	349.5804	26.4500	-80.55	0.009	0.000%	0.011%	N
92)	349.5824	26.3500	-80.65	0.009	0.000%	0.011%	N
93)	349.5844	25.2400	-81.76	0.007	0.000%	0.011%	N
94)	349.5864	25.2400	-81.76	0.007	0.000%	0.011%	N
95)	349.5884	24.4600	-82.54	0.006	0.000%	0.012%	N
96)	349.5904	25.8300	-81.17	0.008	0.000%	0.012%	N
97)	349.5924	25.4800	-81.52	0.007	0.000%	0.012%	N
98)	349.5944	24.4600	-82.54	0.006	0.000%	0.012%	N
99)	349.5964	24.3500	-82.65	0.005	0.000%	0.012%	N
100)	349.5984	23.4700	-83.53	0.004	0.000%	0.013%	N
101)	349.6004	25.6100	-81.39	0.007	0.000%	0.013%	N
102)	349.6024	26.7000	-80.3	0.009	0.000%	0.013%	N
103)	349.6044	27.7200	-79.28	0.012	0.000%	0.014%	N
104)	349.6064	26.9200	-80.08	0.010	0.000%	0.014%	N
105)	349.6084	26.7300	-80.27	0.009	0.000%	0.014%	N
106)	349.6104	24.9800	-82.02	0.006	0.000%	0.014%	N
107)	349.6124	26.1600	-80.84	0.008	0.000%	0.015%	N
108)	349.6144	24.9500	-82.05	0.006	0.000%	0.015%	N
109)	349.6164	25.7100	-81.29	0.007	0.000%	0.015%	N
110)	349.6184	24.1200	-82.88	0.005	0.000%	0.015%	N
111)	349.6204	25.4500	-81.55	0.007	0.000%	0.015%	N
112)	349.6224	26.0300	-80.97	0.008	0.000%	0.016%	N
113)	349.6244	27.4900	-79.51	0.011	0.000%	0.016%	N
114)	349.6265	27.2100	-79.79	0.010	0.000%	0.016%	N
115)	349.6285	27.0200	-79.98	0.010	0.000%	0.017%	N
116)	349.6305	25.4900	-81.51	0.007	0.000%	0.017%	N
117)	349.6325	26.8200	-80.18	0.010	0.000%	0.017%	N
118)	349.6345	27.2000	-79.8	0.010	0.000%	0.018%	N
119)	349.6365	26.7200	-80.28	0.009	0.000%	0.018%	N
120)	349.6385	25.1600	-81.84	0.007	0.000%	0.018%	N
121)	349.6405	27.2400	-79.76	0.011	0.000%	0.018%	N
122)	349.6425	28.5100	-78.49	0.014	0.000%	0.019%	N
123)	349.6445	26.9300	-80.07	0.010	0.000%	0.019%	N
124)	349.6465	26.3500	-80.65	0.009	0.000%	0.020%	N
125)	349.6485	27.3700	-79.63	0.011	0.000%	0.020%	N
126)	349.6505	27.7400	-79.26	0.012	0.000%	0.020%	N
127)	349.6525	27.4500	-79.55	0.011	0.000%	0.021%	N
128)	349.6545	27.4300	-79.57	0.011	0.000%	0.021%	N
129)	349.6565	27.3000	-79.7	0.011	0.000%	0.021%	N
130)	349.6585	28.6500	-78.35	0.015	0.000%	0.022%	N
131)	349.6605	27.7900	-79.21	0.012	0.000%	0.022%	N
132)	349.6625	27.6100	-79.39	0.012	0.000%	0.023%	N
133)	349.6645	27.2300	-79.77	0.011	0.000%	0.023%	N
134)	349.6665	30.4500	-76.55	0.022	0.001%	0.024%	N
135)	349.6685	29.5600	-77.44	0.018	0.001%	0.024%	N
136)	349.6705	28.5900	-78.41	0.014	0.000%	0.025%	N
137)	349.6725	27.4600	-79.54	0.011	0.000%	0.025%	N
138)	349.6745	28.7500	-78.25	0.015	0.000%	0.026%	N
139)	349.6766	29.2200	-77.78	0.017	0.001%	0.026%	N
140)	349.6786	28.3000	-78.7	0.013	0.000%	0.027%	N

141)	349.6806	28.6900	-78.31	0.015	0.000%	0.027%	N
142)	349.6826	29.6000	-77.4	0.018	0.001%	0.028%	N
143)	349.6846	28.8900	-78.11	0.015	0.001%	0.028%	N
144)	349.6866	29.4500	-77.55	0.018	0.001%	0.029%	N
145)	349.6886	29.6900	-77.31	0.019	0.001%	0.029%	N
146)	349.6906	27.7500	-79.25	0.012	0.000%	0.030%	N
147)	349.6926	31.2000	-75.8	0.026	0.001%	0.031%	N
148)	349.6946	29.8400	-77.16	0.019	0.001%	0.031%	N
149)	349.6966	30.2500	-76.75	0.021	0.001%	0.032%	N
150)	349.6986	28.3800	-78.62	0.014	0.000%	0.032%	N
151)	349.7006	30.6500	-76.35	0.023	0.001%	0.033%	N
152)	349.7026	31.0900	-75.91	0.026	0.001%	0.034%	N
153)	349.7046	30.6100	-76.39	0.023	0.001%	0.035%	N
154)	349.7066	28.9500	-78.05	0.016	0.001%	0.035%	N
155)	349.7086	30.3900	-76.61	0.022	0.001%	0.036%	N
156)	349.7106	30.5200	-76.48	0.022	0.001%	0.037%	N
157)	349.7126	29.0400	-77.96	0.016	0.001%	0.037%	N
158)	349.7146	29.9500	-77.05	0.020	0.001%	0.038%	N
159)	349.7166	31.0900	-75.91	0.026	0.001%	0.039%	N
160)	349.7186	29.7300	-77.27	0.019	0.001%	0.039%	N
161)	349.7206	30.7300	-76.27	0.024	0.001%	0.040%	N
162)	349.7226	31.6500	-75.35	0.029	0.001%	0.041%	N
163)	349.7246	31.2100	-75.79	0.026	0.001%	0.042%	N
164)	349.7267	31.4700	-75.53	0.028	0.001%	0.043%	N
165)	349.7287	30.5600	-76.44	0.023	0.001%	0.043%	N
166)	349.7307	31.3600	-75.64	0.027	0.001%	0.044%	N
167)	349.7327	32.4600	-74.54	0.035	0.001%	0.045%	N
168)	349.7347	31.4600	-75.54	0.028	0.001%	0.046%	N
169)	349.7367	32.0000	-75	0.032	0.001%	0.047%	N
170)	349.7387	33.2700	-73.73	0.042	0.001%	0.049%	N
171)	349.7407	31.2800	-75.72	0.027	0.001%	0.050%	N
172)	349.7427	32.4600	-74.54	0.035	0.001%	0.051%	N
173)	349.7447	32.4500	-74.55	0.035	0.001%	0.052%	N
174)	349.7467	32.0500	-74.95	0.032	0.001%	0.053%	N
175)	349.7487	31.1900	-75.81	0.026	0.001%	0.054%	N
176)	349.7507	33.4700	-73.53	0.044	0.001%	0.055%	N
177)	349.7527	33.5600	-73.44	0.045	0.001%	0.057%	N
178)	349.7547	33.5400	-73.46	0.045	0.001%	0.058%	N
179)	349.7567	33.2400	-73.76	0.042	0.001%	0.060%	N
180)	349.7587	34.2700	-72.73	0.053	0.002%	0.061%	N
181)	349.7607	34.3000	-72.7	0.054	0.002%	0.063%	N
182)	349.7627	33.5900	-73.41	0.046	0.001%	0.064%	N
183)	349.7647	34.3000	-72.7	0.054	0.002%	0.066%	N
184)	349.7667	33.4200	-73.58	0.044	0.001%	0.068%	N
185)	349.7687	33.6900	-73.31	0.047	0.002%	0.069%	N
186)	349.7707	34.2700	-72.73	0.053	0.002%	0.071%	N
187)	349.7727	34.4700	-72.53	0.056	0.002%	0.073%	N
188)	349.7747	36.3100	-70.69	0.085	0.003%	0.075%	N
189)	349.7768	35.3100	-71.69	0.068	0.002%	0.078%	N
190)	349.7788	35.4500	-71.55	0.070	0.002%	0.080%	N
191)	349.7808	35.1300	-71.87	0.065	0.002%	0.082%	N
192)	349.7828	33.8600	-73.14	0.049	0.002%	0.084%	N
193)	349.7848	35.4100	-71.59	0.069	0.002%	0.086%	N
194)	349.7868	35.2100	-71.79	0.066	0.002%	0.088%	N

195)	349.7888	36.3700	-70.63	0.086	0.003%	0.091%	N	
196)	349.7908	36.3600	-70.64	0.086	0.003%	0.094%	N	
197)	349.7928	36.5600	-70.44	0.090	0.003%	0.097%	N	
198)	349.7948	36.7400	-70.26	0.094	0.003%	0.100%	N	
199)	349.7968	35.1000	-71.9	0.065	0.002%	0.102%	N	
200)	349.7988	36.7200	-70.28	0.094	0.003%	0.105%	N	
201)	349.8008	36.5600	-70.44	0.090	0.003%	0.108%	N	
202)	349.8028	36.1200	-70.88	0.082	0.003%	0.110%	N	
203)	349.8048	38.2100	-68.79	0.132	0.004%	0.115%	N	
204)	349.8068	37.9900	-69.01	0.126	0.004%	0.119%	N	
205)	349.8088	36.3100	-70.69	0.085	0.003%	0.122%	N	
206)	349.8108	37.7300	-69.27	0.118	0.004%	0.125%	N	
207)	349.8128	38.9100	-68.09	0.155	0.005%	0.130%	N	
208)	349.8148	37.9200	-69.08	0.124	0.004%	0.134%	N	
209)	349.8168	39.0800	-67.92	0.161	0.005%	0.140%	N	
210)	349.8188	40.1200	-66.88	0.205	0.007%	0.146%	N	
211)	349.8208	39.3200	-67.68	0.171	0.006%	0.152%	N	
212)	349.8228	40.3200	-66.68	0.215	0.007%	0.159%	N	
213)	349.8248	39.7200	-67.28	0.187	0.006%	0.165%	N	
214)	349.8269	40.7700	-66.23	0.238	0.008%	0.173%	N	
215)	349.8289	39.0700	-67.93	0.161	0.005%	0.178%	N	
216)	349.8309	40.2100	-66.79	0.209	0.007%	0.185%	N	
217)	349.8329	41.1300	-65.87	0.259	0.008%	0.193%	N	
218)	349.8349	41.3000	-65.7	0.269	0.009%	0.202%	N	
219)	349.8369	39.8300	-67.17	0.192	0.006%	0.208%	N	
220)	349.8389	42.6300	-64.37	0.366	0.012%	0.220%	N	
221)	349.8409	42.6200	-64.38	0.365	0.012%	0.232%	N	
222)	349.8429	38.8000	-68.2	0.151	0.005%	0.237%	N	
223)	349.8449	42.7200	-64.28	0.373	0.012%	0.249%	N	
224)	349.8469	43.5200	-63.48	0.449	0.015%	0.264%	N	
225)	349.8489	43.1300	-63.87	0.410	0.013%	0.277%	N	
226)	349.8509	41.6300	-65.37	0.290	0.009%	0.286%	N	
227)	349.8529	41.6000	-65.4	0.288	0.009%	0.296%	N	
228)	349.8549	43.2700	-63.73	0.424	0.014%	0.309%	N	
229)	349.8569	43.1400	-63.86	0.411	0.013%	0.323%	N	
230)	349.8589	44.9200	-62.08	0.619	0.020%	0.343%	N	
231)	349.8609	46.2000	-60.8	0.832	0.027%	0.370%	N	
232)	349.8629	46.1900	-60.81	0.830	0.027%	0.397%	N	
233)	349.8649	42.5200	-64.48	0.356	0.012%	0.408%	N	
234)	349.8669	46.7100	-60.29	0.935	0.030%	0.439%	N	
235)	349.8689	46.7500	-60.25	0.944	0.031%	0.470%	N	
236)	349.8709	46.4500	-60.55	0.881	0.029%	0.498%	N	Left Edge
237)	349.8729	49.2200	-57.78	1.667	0.054%	0.552%	Y	
238)	349.8749	49.4400	-57.56	1.754	0.057%	0.609%	Y	
239)	349.8770	48.4200	-58.58	1.387	0.045%	0.654%	Y	
240)	349.8790	48.9800	-58.02	1.578	0.051%	0.706%	Y	
241)	349.8810	52.7900	-54.21	3.793	0.123%	0.829%	Y	
242)	349.8830	52.5200	-54.48	3.565	0.116%	0.945%	Y	
243)	349.8850	53.8500	-53.15	4.842	0.157%	1.102%	Y	
244)	349.8870	56.0300	-50.97	7.998	0.260%	1.362%	Y	
245)	349.8890	56.8500	-50.15	9.661	0.314%	1.676%	Y	
246)	349.8910	57.4300	-49.57	11.041	0.359%	2.035%	Y	
247)	349.8930	62.7400	-44.26	37.497	1.219%	3.253%	Y	
248)	349.8950	65.7800	-41.22	75.509	2.454%	5.707%	Y	

249)	349.8970	76.9100	-30.09	979.490	31.830%	37.538%	Y	
250)	349.8990	77.4800	-29.52	1116.863	36.295%	73.832%	Y	
251)	349.9010	74.9200	-32.08	619.441	20.130%	93.962%	Y	
252)	349.9030	67.6100	-39.39	115.080	3.740%	97.702%	Y	
253)	349.9050	61.5900	-45.41	28.774	0.935%	98.637%	Y	
254)	349.9070	56.1400	-50.86	8.204	0.267%	98.904%	Y	
255)	349.9090	55.7400	-51.26	7.482	0.243%	99.147%	Y	
256)	349.9110	54.8000	-52.2	6.026	0.196%	99.343%	Y	
257)	349.9130	52.4400	-54.56	3.499	0.114%	99.456%	Y	
258)	349.9150	51.9400	-55.06	3.119	0.101%	99.558%	N	Right Edge
259)	349.9170	51.5000	-55.5	2.818	0.092%	99.649%	N	
260)	349.9190	48.1400	-58.86	1.300	0.042%	99.692%	N	
261)	349.9210	47.5000	-59.5	1.122	0.036%	99.728%	N	
262)	349.9230	47.5000	-59.5	1.122	0.036%	99.765%	N	
263)	349.9250	47.0100	-59.99	1.002	0.033%	99.797%	N	
264)	349.9271	45.7800	-61.22	0.755	0.025%	99.822%	N	
265)	349.9291	46.4300	-60.57	0.877	0.028%	99.850%	N	
266)	349.9311	45.1400	-61.86	0.652	0.021%	99.871%	N	
267)	349.9331	40.8900	-66.11	0.245	0.008%	99.879%	N	
268)	349.9351	44.1300	-62.87	0.516	0.017%	99.896%	N	
269)	349.9371	43.1700	-63.83	0.414	0.013%	99.909%	N	
270)	349.9391	39.8000	-67.2	0.191	0.006%	99.916%	N	
271)	349.9411	41.2600	-65.74	0.267	0.009%	99.924%	N	
272)	349.9431	41.3400	-65.66	0.272	0.009%	99.933%	N	
273)	349.9451	39.6800	-67.32	0.185	0.006%	99.939%	N	
274)	349.9471	38.2400	-68.76	0.133	0.004%	99.944%	N	
275)	349.9491	39.2700	-67.73	0.169	0.005%	99.949%	N	
276)	349.9511	38.3500	-68.65	0.136	0.004%	99.953%	N	
277)	349.9531	37.7800	-69.22	0.120	0.004%	99.957%	N	
278)	349.9551	37.2100	-69.79	0.105	0.003%	99.961%	N	
279)	349.9571	37.1300	-69.87	0.103	0.003%	99.964%	N	
280)	349.9591	35.5800	-71.42	0.072	0.002%	99.966%	N	
281)	349.9611	33.7800	-73.22	0.048	0.002%	99.968%	N	
282)	349.9631	33.1200	-73.88	0.041	0.001%	99.969%	N	
283)	349.9651	32.5400	-74.46	0.036	0.001%	99.970%	N	
284)	349.9671	31.7000	-75.3	0.030	0.001%	99.971%	N	
285)	349.9691	31.5000	-75.5	0.028	0.001%	99.972%	N	
286)	349.9711	28.9700	-78.03	0.016	0.001%	99.973%	N	
287)	349.9731	27.8700	-79.13	0.012	0.000%	99.973%	N	
288)	349.9751	28.1700	-78.83	0.013	0.000%	99.974%	N	
289)	349.9772	27.5100	-79.49	0.011	0.000%	99.974%	N	
290)	349.9792	27.2900	-79.71	0.011	0.000%	99.974%	N	
291)	349.9812	25.8100	-81.19	0.008	0.000%	99.975%	N	
292)	349.9832	24.3400	-82.66	0.005	0.000%	99.975%	N	
293)	349.9852	25.4100	-81.59	0.007	0.000%	99.975%	N	
294)	349.9872	22.3200	-84.68	0.003	0.000%	99.975%	N	
295)	349.9892	22.2900	-84.71	0.003	0.000%	99.975%	N	
296)	349.9912	20.2300	-86.77	0.002	0.000%	99.975%	N	
297)	349.9932	19.2100	-87.79	0.002	0.000%	99.975%	N	
298)	349.9952	20.1600	-86.84	0.002	0.000%	99.975%	N	
299)	349.9972	17.3600	-89.64	0.001	0.000%	99.975%	N	
300)	349.9992	19.4800	-87.52	0.002	0.000%	99.976%	N	
301)	350.0012	19.0300	-87.97	0.002	0.000%	99.976%	N	
302)	350.0032	20.0000	-87	0.002	0.000%	99.976%	N	

303)	350.0052	20.1000	-86.9	0.002	0.000%	99.976%	N
304)	350.0072	19.9000	-87.1	0.002	0.000%	99.976%	N
305)	350.0092	21.2200	-85.78	0.003	0.000%	99.976%	N
306)	350.0112	22.1200	-84.88	0.003	0.000%	99.976%	N
307)	350.0132	22.1100	-84.89	0.003	0.000%	99.976%	N
308)	350.0152	22.7300	-84.27	0.004	0.000%	99.976%	N
309)	350.0172	24.0300	-82.97	0.005	0.000%	99.976%	N
310)	350.0192	23.7800	-83.22	0.005	0.000%	99.977%	N
311)	350.0212	23.2400	-83.76	0.004	0.000%	99.977%	N
312)	350.0232	23.9200	-83.08	0.005	0.000%	99.977%	N
313)	350.0252	23.8800	-83.12	0.005	0.000%	99.977%	N
314)	350.0273	24.6200	-82.38	0.006	0.000%	99.977%	N
315)	350.0293	24.6900	-82.31	0.006	0.000%	99.977%	N
316)	350.0313	25.7100	-81.29	0.007	0.000%	99.978%	N
317)	350.0333	26.0600	-80.94	0.008	0.000%	99.978%	N
318)	350.0353	25.6000	-81.4	0.007	0.000%	99.978%	N
319)	350.0373	26.7000	-80.3	0.009	0.000%	99.978%	N
320)	350.0393	25.5500	-81.45	0.007	0.000%	99.979%	N
321)	350.0413	25.6800	-81.32	0.007	0.000%	99.979%	N
322)	350.0433	26.5300	-80.47	0.009	0.000%	99.979%	N
323)	350.0453	27.3900	-79.61	0.011	0.000%	99.980%	N
324)	350.0473	25.8600	-81.14	0.008	0.000%	99.980%	N
325)	350.0493	25.5900	-81.41	0.007	0.000%	99.980%	N
326)	350.0513	27.3900	-79.61	0.011	0.000%	99.980%	N
327)	350.0533	25.3200	-81.68	0.007	0.000%	99.981%	N
328)	350.0553	26.4900	-80.51	0.009	0.000%	99.981%	N
329)	350.0573	26.4200	-80.58	0.009	0.000%	99.981%	N
330)	350.0593	27.6200	-79.38	0.012	0.000%	99.982%	N
331)	350.0613	27.7100	-79.29	0.012	0.000%	99.982%	N
332)	350.0633	27.7900	-79.21	0.012	0.000%	99.982%	N
333)	350.0653	26.9700	-80.03	0.010	0.000%	99.983%	N
334)	350.0673	27.2600	-79.74	0.011	0.000%	99.983%	N
335)	350.0693	25.3000	-81.7	0.007	0.000%	99.983%	N
336)	350.0713	26.1700	-80.83	0.008	0.000%	99.983%	N
337)	350.0733	27.0100	-79.99	0.010	0.000%	99.984%	N
338)	350.0753	26.3700	-80.63	0.009	0.000%	99.984%	N
339)	350.0774	26.3200	-80.68	0.009	0.000%	99.984%	N
340)	350.0794	25.4600	-81.54	0.007	0.000%	99.985%	N
341)	350.0814	27.2300	-79.77	0.011	0.000%	99.985%	N
342)	350.0834	25.3200	-81.68	0.007	0.000%	99.985%	N
343)	350.0854	25.7200	-81.28	0.007	0.000%	99.985%	N
344)	350.0874	25.7300	-81.27	0.007	0.000%	99.986%	N
345)	350.0894	26.0300	-80.97	0.008	0.000%	99.986%	N
346)	350.0914	24.9000	-82.1	0.006	0.000%	99.986%	N
347)	350.0934	26.7000	-80.3	0.009	0.000%	99.986%	N
348)	350.0954	26.2600	-80.74	0.008	0.000%	99.987%	N
349)	350.0974	25.4100	-81.59	0.007	0.000%	99.987%	N
350)	350.0994	26.1000	-80.9	0.008	0.000%	99.987%	N
351)	350.1014	25.5800	-81.42	0.007	0.000%	99.987%	N
352)	350.1034	25.1000	-81.9	0.006	0.000%	99.988%	N
353)	350.1054	26.8100	-80.19	0.010	0.000%	99.988%	N
354)	350.1074	23.5500	-83.45	0.005	0.000%	99.988%	N
355)	350.1094	24.5500	-82.45	0.006	0.000%	99.988%	N
356)	350.1114	25.3900	-81.61	0.007	0.000%	99.988%	N

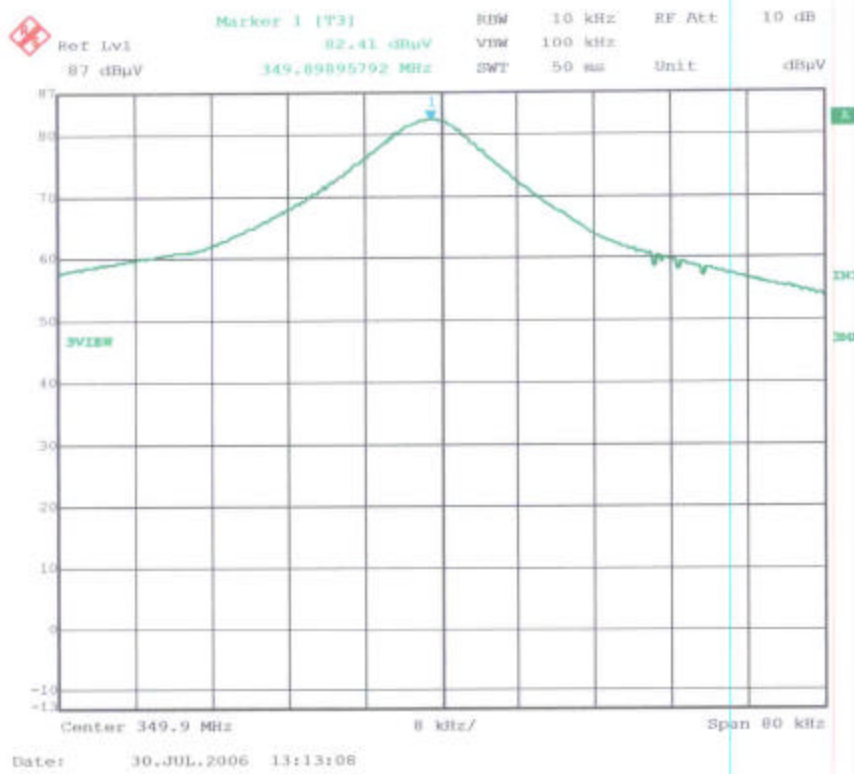
357)	350.1134	25.7300	-81.27	0.007	0.000%	99.989%	N
358)	350.1154	25.7800	-81.22	0.008	0.000%	99.989%	N
359)	350.1174	25.7900	-81.21	0.008	0.000%	99.989%	N
360)	350.1194	24.5500	-82.45	0.006	0.000%	99.989%	N
361)	350.1214	24.2300	-82.77	0.005	0.000%	99.990%	N
362)	350.1234	23.5400	-83.46	0.005	0.000%	99.990%	N
363)	350.1254	25.1800	-81.82	0.007	0.000%	99.990%	N
364)	350.1275	25.1800	-81.82	0.007	0.000%	99.990%	N
365)	350.1295	24.0700	-82.93	0.005	0.000%	99.990%	N
366)	350.1315	23.9400	-83.06	0.005	0.000%	99.990%	N
367)	350.1335	24.3800	-82.62	0.005	0.000%	99.991%	N
368)	350.1355	25.1300	-81.87	0.007	0.000%	99.991%	N
369)	350.1375	23.5100	-83.49	0.004	0.000%	99.991%	N
370)	350.1395	23.8400	-83.16	0.005	0.000%	99.991%	N
371)	350.1415	24.0300	-82.97	0.005	0.000%	99.991%	N
372)	350.1435	23.2400	-83.76	0.004	0.000%	99.991%	N
373)	350.1455	23.4300	-83.57	0.004	0.000%	99.992%	N
374)	350.1475	22.4800	-84.52	0.004	0.000%	99.992%	N
375)	350.1495	23.4600	-83.54	0.004	0.000%	99.992%	N
376)	350.1515	22.6000	-84.4	0.004	0.000%	99.992%	N
377)	350.1535	22.4400	-84.56	0.003	0.000%	99.992%	N
378)	350.1555	22.3700	-84.63	0.003	0.000%	99.992%	N
379)	350.1575	22.7900	-84.21	0.004	0.000%	99.992%	N
380)	350.1595	23.8800	-83.12	0.005	0.000%	99.992%	N
381)	350.1615	23.0300	-83.97	0.004	0.000%	99.993%	N
382)	350.1635	22.3800	-84.62	0.003	0.000%	99.993%	N
383)	350.1655	23.5300	-83.47	0.004	0.000%	99.993%	N
384)	350.1675	22.9600	-84.04	0.004	0.000%	99.993%	N
385)	350.1695	23.2300	-83.77	0.004	0.000%	99.993%	N
386)	350.1715	23.4600	-83.54	0.004	0.000%	99.993%	N
387)	350.1735	22.8900	-84.11	0.004	0.000%	99.993%	N
388)	350.1755	22.4300	-84.57	0.003	0.000%	99.994%	N
389)	350.1776	23.6100	-83.39	0.005	0.000%	99.994%	N
390)	350.1796	23.5400	-83.46	0.005	0.000%	99.994%	N
391)	350.1816	22.0600	-84.94	0.003	0.000%	99.994%	N
392)	350.1836	23.0900	-83.91	0.004	0.000%	99.994%	N
393)	350.1856	22.6300	-84.37	0.004	0.000%	99.994%	N
394)	350.1876	22.2600	-84.74	0.003	0.000%	99.994%	N
395)	350.1896	21.8300	-85.17	0.003	0.000%	99.994%	N
396)	350.1916	22.0700	-84.93	0.003	0.000%	99.994%	N
397)	350.1936	21.8800	-85.12	0.003	0.000%	99.995%	N
398)	350.1956	20.9800	-86.02	0.003	0.000%	99.995%	N
399)	350.1976	21.5000	-85.5	0.003	0.000%	99.995%	N
400)	350.1996	22.8900	-84.11	0.004	0.000%	99.995%	N
401)	350.2016	23.2500	-83.75	0.004	0.000%	99.995%	N
402)	350.2036	21.7200	-85.28	0.003	0.000%	99.995%	N
403)	350.2056	20.6800	-86.32	0.002	0.000%	99.995%	N
404)	350.2076	21.2100	-85.79	0.003	0.000%	99.995%	N
405)	350.2096	20.3700	-86.63	0.002	0.000%	99.995%	N
406)	350.2116	23.2800	-83.72	0.004	0.000%	99.995%	N
407)	350.2136	21.3200	-85.68	0.003	0.000%	99.996%	N
408)	350.2156	21.3300	-85.67	0.003	0.000%	99.996%	N
409)	350.2176	20.3800	-86.62	0.002	0.000%	99.996%	N
410)	350.2196	19.8700	-87.13	0.002	0.000%	99.996%	N

411)	350.2216	21.6000	-85.4	0.003	0.000%	99.996%	N
412)	350.2236	21.1500	-85.85	0.003	0.000%	99.996%	N
413)	350.2256	20.8000	-86.2	0.002	0.000%	99.996%	N
414)	350.2277	21.7000	-85.3	0.003	0.000%	99.996%	N
415)	350.2297	20.2000	-86.8	0.002	0.000%	99.996%	N
416)	350.2317	19.8100	-87.19	0.002	0.000%	99.996%	N
417)	350.2337	21.1600	-85.84	0.003	0.000%	99.996%	N
418)	350.2357	19.7900	-87.21	0.002	0.000%	99.996%	N
419)	350.2377	21.3300	-85.67	0.003	0.000%	99.997%	N
420)	350.2397	18.8700	-88.13	0.002	0.000%	99.997%	N
421)	350.2417	20.3000	-86.7	0.002	0.000%	99.997%	N
422)	350.2437	21.3800	-85.62	0.003	0.000%	99.997%	N
423)	350.2457	19.8300	-87.17	0.002	0.000%	99.997%	N
424)	350.2477	18.5000	-88.5	0.001	0.000%	99.997%	N
425)	350.2497	20.9200	-86.08	0.002	0.000%	99.997%	N
426)	350.2517	19.6200	-87.38	0.002	0.000%	99.997%	N
427)	350.2537	19.7200	-87.28	0.002	0.000%	99.997%	N
428)	350.2557	21.2800	-85.72	0.003	0.000%	99.997%	N
429)	350.2577	19.1000	-87.9	0.002	0.000%	99.997%	N
430)	350.2597	19.7700	-87.23	0.002	0.000%	99.997%	N
431)	350.2617	19.8300	-87.17	0.002	0.000%	99.997%	N
432)	350.2637	18.0600	-88.94	0.001	0.000%	99.997%	N
433)	350.2657	19.7500	-87.25	0.002	0.000%	99.997%	N
434)	350.2677	19.4600	-87.54	0.002	0.000%	99.997%	N
435)	350.2697	18.6600	-88.34	0.001	0.000%	99.997%	N
436)	350.2717	18.6400	-88.36	0.001	0.000%	99.998%	N
437)	350.2737	19.2000	-87.8	0.002	0.000%	99.998%	N
438)	350.2757	18.4200	-88.58	0.001	0.000%	99.998%	N
439)	350.2778	19.1500	-87.85	0.002	0.000%	99.998%	N
440)	350.2798	17.3400	-89.66	0.001	0.000%	99.998%	N
441)	350.2818	18.1500	-88.85	0.001	0.000%	99.998%	N
442)	350.2838	18.7500	-88.25	0.001	0.000%	99.998%	N
443)	350.2858	19.6000	-87.4	0.002	0.000%	99.998%	N
444)	350.2878	19.0800	-87.92	0.002	0.000%	99.998%	N
445)	350.2898	18.5000	-88.5	0.001	0.000%	99.998%	N
446)	350.2918	18.4800	-88.52	0.001	0.000%	99.998%	N
447)	350.2938	17.8900	-89.11	0.001	0.000%	99.998%	N
448)	350.2958	20.3600	-86.64	0.002	0.000%	99.998%	N
449)	350.2978	19.2800	-87.72	0.002	0.000%	99.998%	N
450)	350.2998	18.4200	-88.58	0.001	0.000%	99.998%	N
451)	350.3018	19.4900	-87.51	0.002	0.000%	99.998%	N
452)	350.3038	18.5000	-88.5	0.001	0.000%	99.998%	N
453)	350.3058	18.3800	-88.62	0.001	0.000%	99.998%	N
454)	350.3078	16.9000	-90.1	0.001	0.000%	99.998%	N
455)	350.3098	15.8000	-91.2	0.001	0.000%	99.998%	N
456)	350.3118	19.4000	-87.6	0.002	0.000%	99.998%	N
457)	350.3138	18.3100	-88.69	0.001	0.000%	99.999%	N
458)	350.3158	16.7200	-90.28	0.001	0.000%	99.999%	N
459)	350.3178	17.9900	-89.01	0.001	0.000%	99.999%	N
460)	350.3198	18.0600	-88.94	0.001	0.000%	99.999%	N
461)	350.3218	18.6000	-88.4	0.001	0.000%	99.999%	N
462)	350.3238	17.9700	-89.03	0.001	0.000%	99.999%	N
463)	350.3258	19.3100	-87.69	0.002	0.000%	99.999%	N
464)	350.3279	18.1900	-88.81	0.001	0.000%	99.999%	N

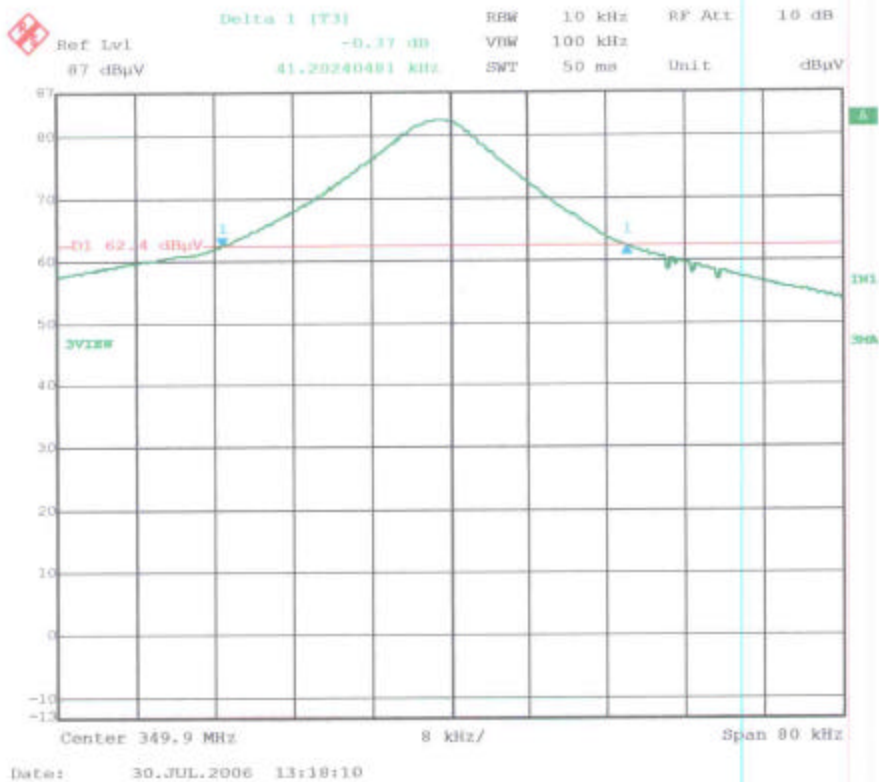
465)	350.3299	19.2200	-87.78	0.002	0.000%	99.999%	N
466)	350.3319	18.0100	-88.99	0.001	0.000%	99.999%	N
467)	350.3339	16.0700	-90.93	0.001	0.000%	99.999%	N
468)	350.3359	19.3200	-87.68	0.002	0.000%	99.999%	N
469)	350.3379	17.9700	-89.03	0.001	0.000%	99.999%	N
470)	350.3399	16.6500	-90.35	0.001	0.000%	99.999%	N
471)	350.3419	15.9300	-91.07	0.001	0.000%	99.999%	N
472)	350.3439	16.3800	-90.62	0.001	0.000%	99.999%	N
473)	350.3459	18.0700	-88.93	0.001	0.000%	99.999%	N
474)	350.3479	18.3100	-88.69	0.001	0.000%	99.999%	N
475)	350.3499	18.7800	-88.22	0.002	0.000%	99.999%	N
476)	350.3519	17.4500	-89.55	0.001	0.000%	99.999%	N
477)	350.3539	16.1600	-90.84	0.001	0.000%	99.999%	N
478)	350.3559	17.2300	-89.77	0.001	0.000%	99.999%	N
479)	350.3579	16.8000	-90.2	0.001	0.000%	99.999%	N
480)	350.3599	17.2900	-89.71	0.001	0.000%	99.999%	N
481)	350.3619	16.4400	-90.56	0.001	0.000%	99.999%	N
482)	350.3639	15.9300	-91.07	0.001	0.000%	99.999%	N
483)	350.3659	16.6600	-90.34	0.001	0.000%	100.000%	N
484)	350.3679	15.5200	-91.48	0.001	0.000%	100.000%	N
485)	350.3699	17.0500	-89.95	0.001	0.000%	100.000%	N
486)	350.3719	16.2900	-90.71	0.001	0.000%	100.000%	N
487)	350.3739	17.5300	-89.47	0.001	0.000%	100.000%	N
488)	350.3759	16.9300	-90.07	0.001	0.000%	100.000%	N
489)	350.3780	16.0400	-90.96	0.001	0.000%	100.000%	N
490)	350.3800	16.5900	-90.41	0.001	0.000%	100.000%	N
491)	350.3820	16.2400	-90.76	0.001	0.000%	100.000%	N
492)	350.3840	17.3800	-89.62	0.001	0.000%	100.000%	N
493)	350.3860	16.8400	-90.16	0.001	0.000%	100.000%	N
494)	350.3880	16.3300	-90.67	0.001	0.000%	100.000%	N
495)	350.3900	16.2400	-90.76	0.001	0.000%	100.000%	N
496)	350.3920	16.6600	-90.34	0.001	0.000%	100.000%	N
497)	350.3940	16.2900	-90.71	0.001	0.000%	100.000%	N
498)	350.3960	16.1200	-90.88	0.001	0.000%	100.000%	N
499)	350.3980	16.0200	-90.98	0.001	0.000%	100.000%	N
500)	350.4000	14.4900	-92.51	0.001	0.000%	100.000%	N

Test 2, Item B (FCC/ANSI Occupied BW, RBW = 10 kHz) - Peak Plot:

Center Frequency (349.8989 MHz)



Left and Right -20 dB Points (41.202 kHz)



Test 2, Item A - Discrete Data:

Occupied Bandwidth

Test Item (A-Z)	Center Frequency (MHz)	Measured Bandwidth (MHz)	Bandwidth (% of Center Frequency)	Maximum Permitted Bandwidth (% of Center Frequency)	Pass/Fail (P/F)	See Comment (#)*
Canada						
A	349.898	0.0441	0.0126%	0.25%	P	
FCC / ANSI						
B	349.899	0.0412	0.0118%	0.25%	P	

* # = See Comment Number Under This Test's Comments Section.

Test 3: Peak-to-Average Ratio

Test Requirement: 47 CFR Part 15, Subpart C
Industry Canada RSS-210 Issue 6

Test Specification: 47 CFR Part 15, Subpart C, Section 15.209 and 15.231
Industry Canada RSS-210 Issue 6, Annex 1, Section A1.1.2

Test Procedure:

The test was performed in accordance with the Test Requirement and Specification and configured as noted in the Test Setup. The EUT was positioned so that the received signal was maximized. The receive antenna height and orientation were adjusted so that the received signal was maximized.

The spectrum analyzer reference level set to bring the signal close to the top of the screen. Next the signal is centered on the transmit frequency and span is reduced to 0 Hz to obtain a time domain measurement. The period of one complete transmit cycle is recorded. Next each button on the transmitter is depressed in sequence to determine which button produces the largest duty cycle. The duration of each pulse in the cycle is recorded and the percentage of time the EUT is transmitting is calculated.

No limit is expressed for this test, however the result of this test is used to calculate average values for the radiated transmit power and spurious emissions.

Test Deviations:

None

Test Setup: Only the following ports were tested. See EUT Information for details.

Test Item	Port #	Port Name	EUT Operation Mode	EUT Configuration	Power Interface
A	0	Enclosure	1	1	1

Test 3 - Results: Peak-to-Average Ratio

Test Results Summary:

Test Item	Test Location	Pass/Fail (P/F)*	Date Completed	Comment #
A	A	N/A	7/30/06	

*There is no Pass/Fail requirement for this test, however the results are used to calculate average emissions for Test 1.

Comments:

Comment #	Description

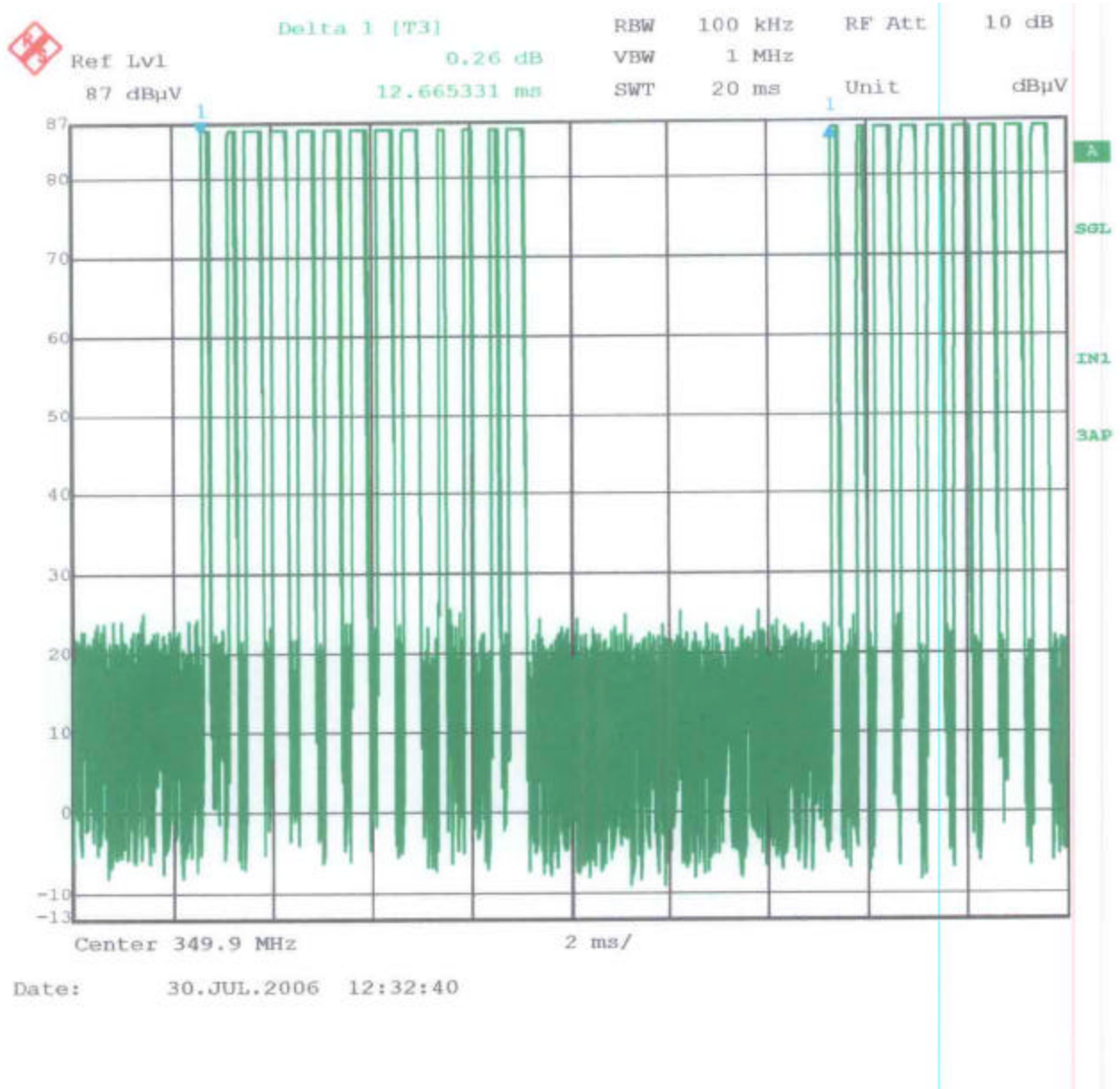
Test Equipment Used:

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
AT0030	Log periodic Antenna, 200 MHz to 1000 MHz	Schaffner, EMC	3160-07	3/24/06	3/31/07
ATA085	Attenuator 6 dB, 2 GHz	Pasternack	PE7002-6	3/23/06	3/31/07
ATA108	10 m, N male - N male	UL	RG214	3/23/06	3/31/07
ATA125	RF Amplifier, 1 to 1000 MHz	Miteq	AM-3A-000110-N	3/23/06	3/31/07
ATA143	Cable, 6ft., N-male to N-male	Micro-Coax	N/A	2/14/06	8/31/06
ATA168	Cable, 6ft., N-male to N-male	Micro-Coax	N/A	12/21/05	12/31/06
SAR003	EMC Receiver	Rohde & Schwarz	1088.7490K40	8/10/05	8/31/06

The above equipment has been calibrated and is within the manufacturer's published limit of error. Calibration is traceable to the National Institute of Standards & Technology(NIST) and conforms to ISO 17025:2005.

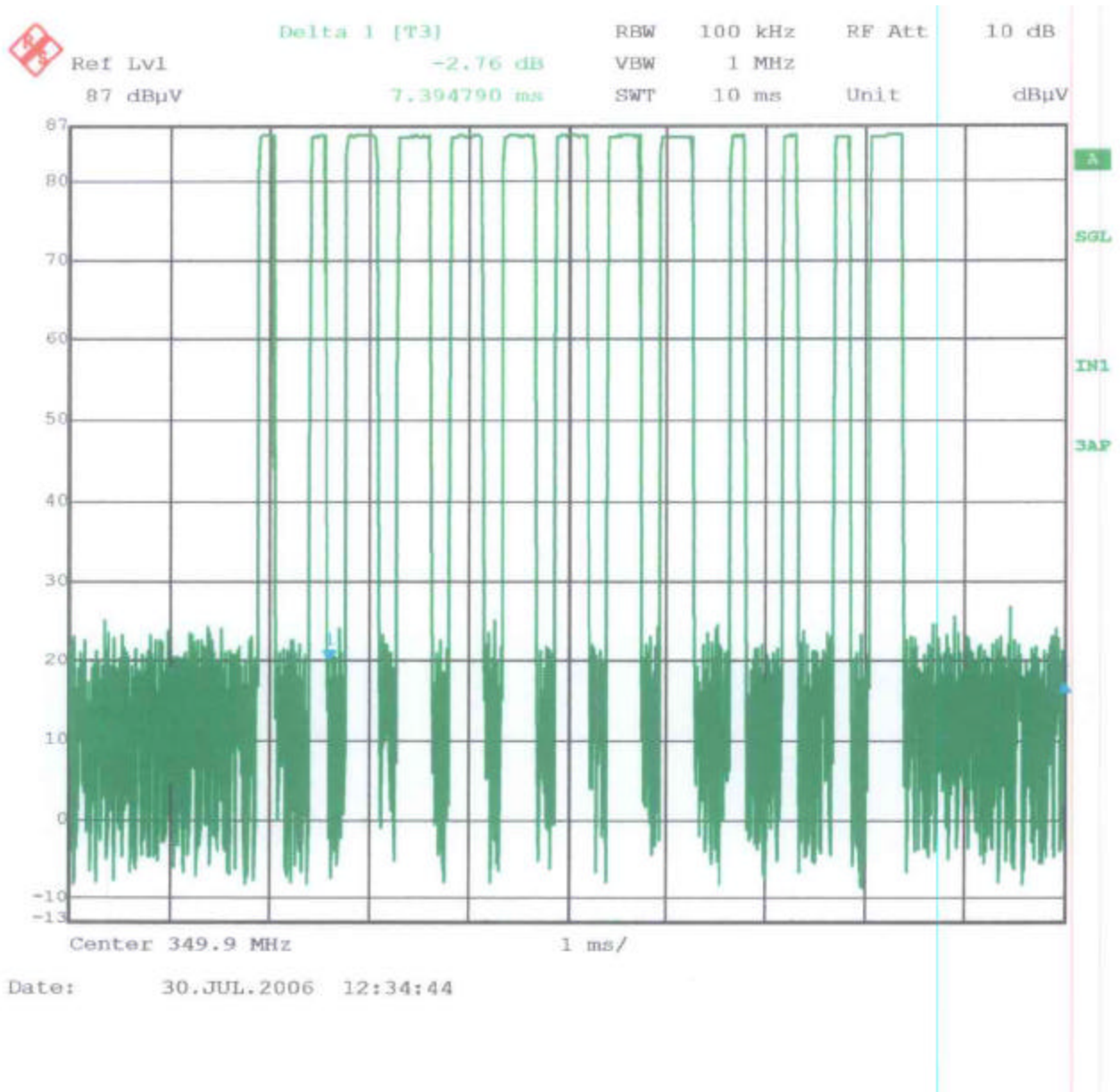
Test 3, Item A (Full Cycle) - Peak Plot:

Peak-to-Average Ratio



Test 3, Item A (Number of Pulses) - Peak Plot:

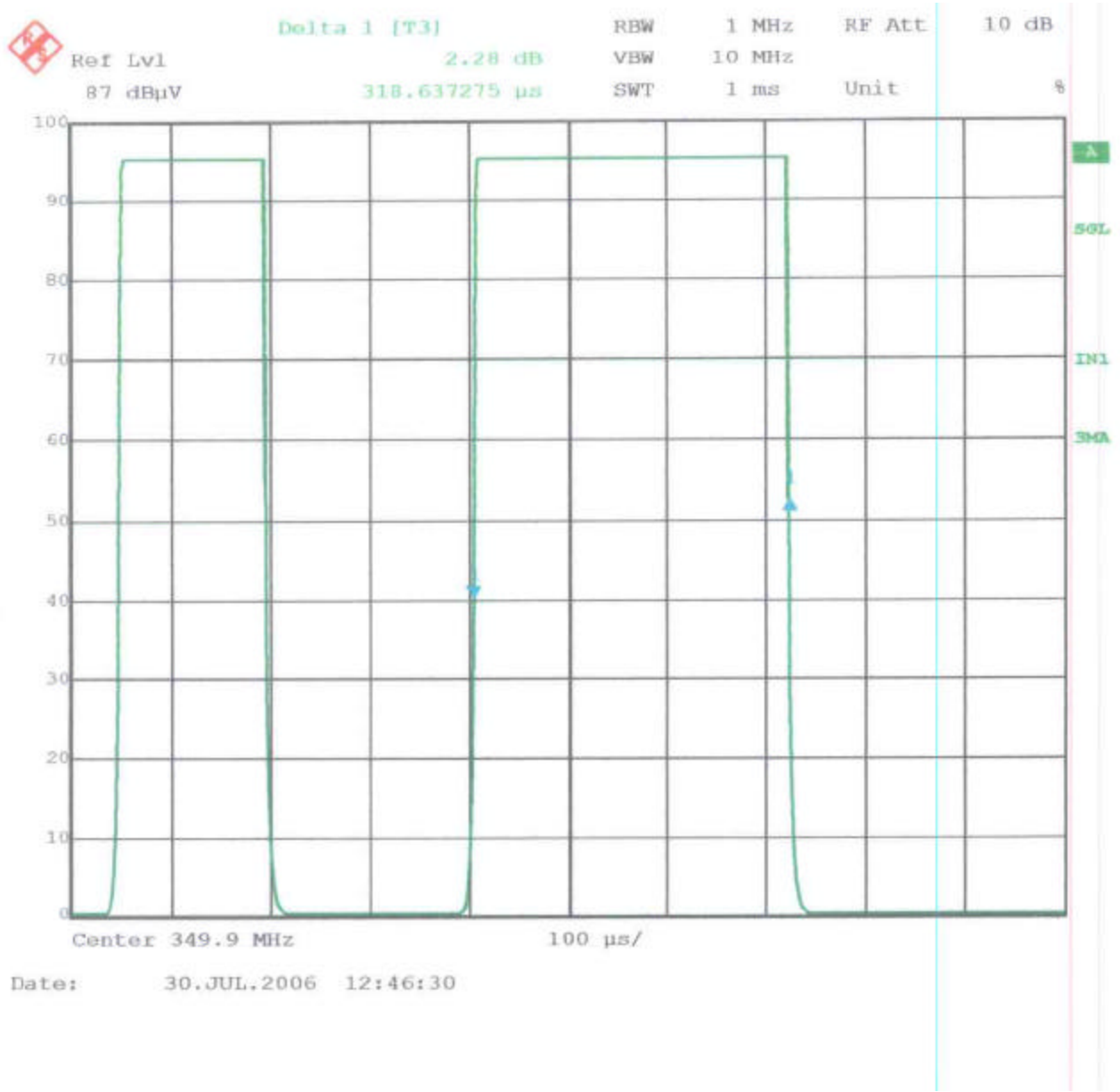
Peak-to-Average Ratio



Note: Worst-case address mode. 13 pulses are observed – 5 short and 8 long duration.

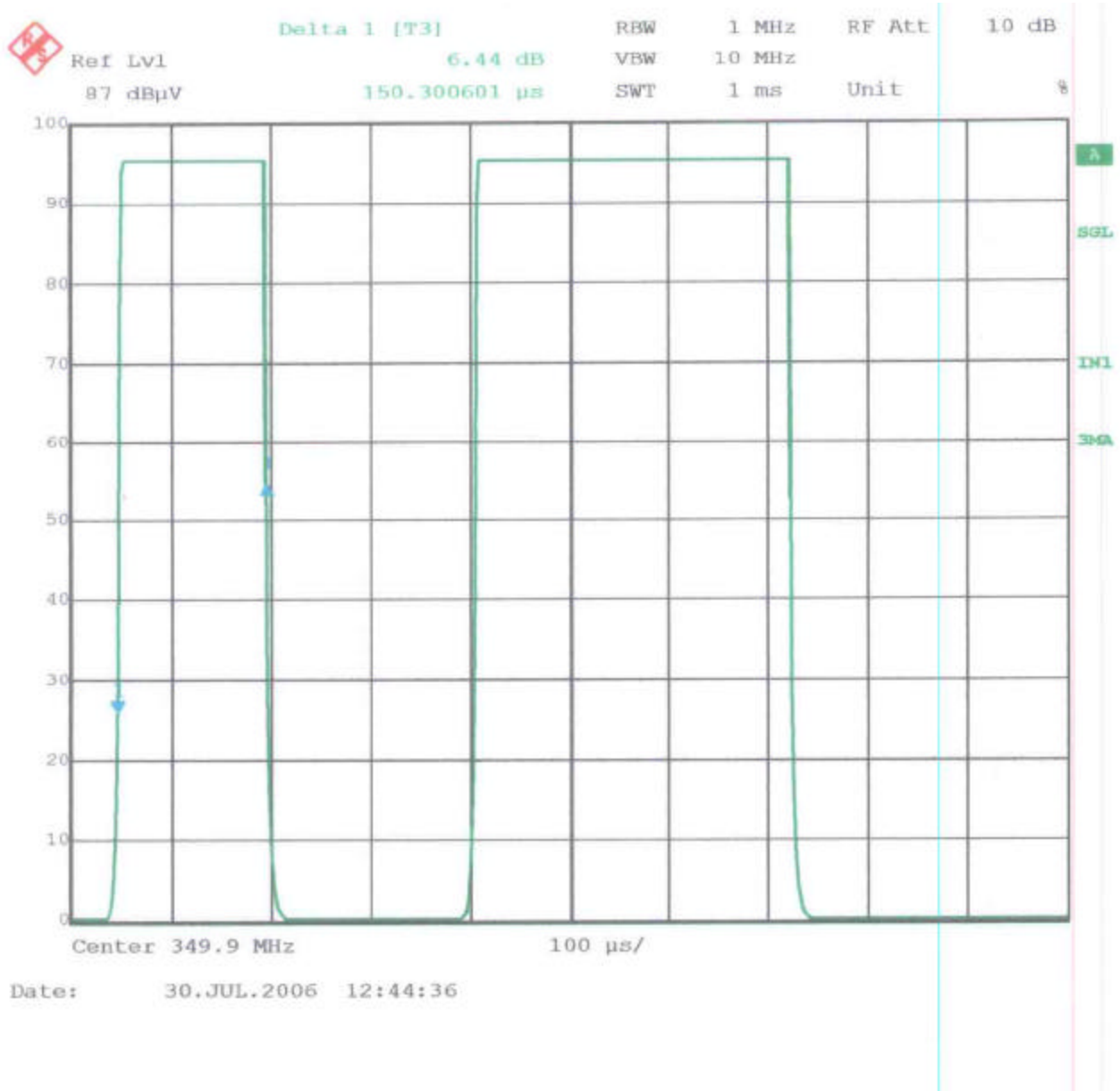
Test 3, Item A (Long Pulse Duration) - Peak Plot:

Peak-to-Average Ratio



Test 3, Item A (Short Pulse Duration) - Peak Plot:

Peak-to-Average Ratio



Test 3, Item A - Results:

Peak-to-Average Ratio

Test Item (A-Z)	Name of Pulse (short, long, header, etc)	Number of Pulses (#)	Duration of Each Pulse (ms)	Total ON Time for Pulse Type (Number x Duration)	See Comment (#)***
A	Short	5	0.1503	0.751	
A	Long	8	0.3186	2.549	
			Total ON Time per period (ms)	3.300	
			Total Cycle Time (ms)*	12.66	
			Duty Cycle (fraction)	0.2607	
			Duty Cycle (dB)**	-11.7	

* Or 100 milliseconds, whichever is less

** Peak-to-Average Ratio = $20 * \log(\text{Duty Cycle})$

*** # = See Comment Number Under The Preceding Test Comments Section.

Test 4: Radiated Disturbance Emissions - Restricted Bands

Test Requirement: 47 CFR Part 15, Subpart C
 Industry Canada, RSS-210, Issue 6

Test Specification: 47 CFR Part 15, Subpart C, Section 15.205
 Industry Canada, RSS-210, Issue 6, Section 2.6

Test Procedure:

The EUT is verified to produce only spurious emissions in the bands listed below. Where spurious emissions exist they must comply with the general limits from 47 CFR Part 15, Section 15.209 and RSS-210 Issue 6 Section 2.6.

Results from measurements are examined to ensure that no spurious emission in a restricted band (below) exceeds the general limits. The restricted bands are:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	608 - 614	4.5 - 5.15
0.495 - 0.505	16.69475 - 16.69525	960 - 1240	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	1300 - 1427	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1435 - 1626.5	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1645.5 - 1646.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1660 - 1710	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1718.8 - 1722.2	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	2200 - 2300	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2310 - 2390	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2483.5 - 2500	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2655 - 2900	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	3260 - 3267	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3332 - 3339	23.6 - 24.0
12.29 - 12.293	127.72 - 167.17	3345.8 - 3358	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3600 - 4400	36.43 - 36.5
12.57675 - 12.57725	332-335.4		Above 38.6
13.36 - 13.41	399.9 - 410		

All spurious emissions, including harmonics falling within restricted bands were observed to meet the general limits of 15.209 and RSS-210 Issue 6.

Test Results:

From data recorded in Test 1:

- The transmit frequency, 350 MHz, does not fall within a restricted band.
- All spurious emissions falling within a restricted band (1050 MHz, 1400 MHz, and 2800 MHz) comply with the general limit in 15.209.

Test 5: Holdover Duration – Manually Activated Transmitter

Test Requirement: 47 CFR Part 15, Subpart C
Industry Canada, RSS-210, Issue 6

Test Specification: 47 CFR Part 15, Subpart C, Section 15.231
Industry Canada, RSS-210, Issue 6, Annex 1, A1.1.1

Test Procedure:

The EUT is verified to cease emissions within 5 seconds after releasing transmit buttons. This measurement is performed as a benchtop measurement. A calibrated spectrum analyzer and a coupling antenna is used. The spectrum analyzer is set to a duration of 10 seconds, center frequency is set to the transmitter's center frequency, and span to zero Hz. A wide resolution bandwidth and video bandwidth is chosen (RBW=10 kHz or greater, VBW>RBW). The transmitter's button is depressed. The spectrum analyzer sweep is begun. The transmit button is released when the sweep reaches the first grid line.

If the transmitter ceases to transmit immediately, the spectrum analyzer screen is printed, and a comment added to show that the transmission ceased immediately.

If the transmitter continues to transmit, then two markers are positioned on the display to document the holdover time.

Test Deviations:

None

Test Setup: Only the following ports were tested. See EUT Information for details.

Test Item	Port #	Port Name	EUT Operation Mode	EUT Configuration	Power Interface
A	0	Enclosure	1	1	1

Test 5 - Results: Holdover Time – Manually Activated Transmitter

Test Results Summary:

Test Item	Test Location	Pass/Fail (P/F)*	Date Completed	Comment #
A	F	P	7/30/06	

*There is no Pass/Fail requirement for this test, however the results are used to calculate average emissions for Test 1.

Comments:

Comment #	Description

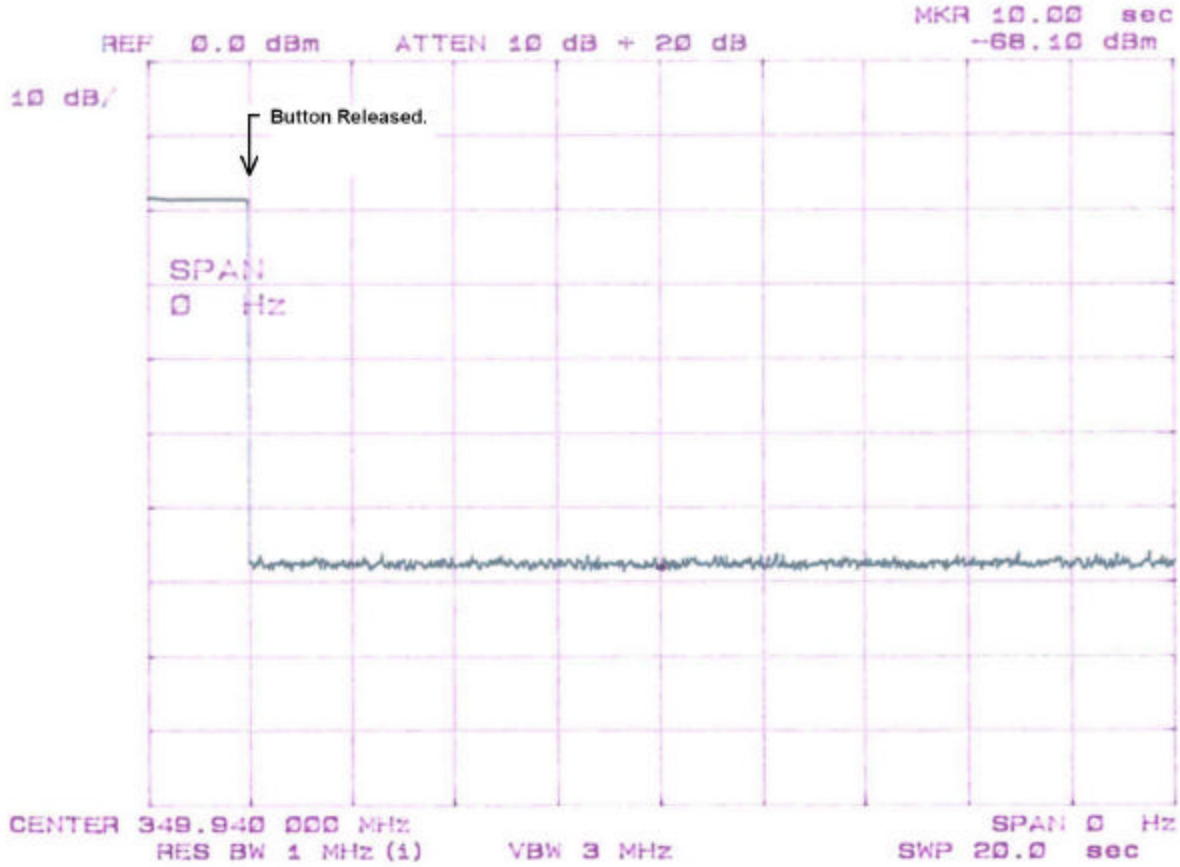
Test Equipment Used:

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
AT0030	Log periodic Antenna, 200 MHz to 1000 MHz	Schaffner, EMC	3160-07	3/24/06	3/31/07
ATA168	Cable, 6ft., N-male to N-male	Micro-Coax	N/A	12/21/05	12/31/06
SAR001	Spectrum Analyzer / Receiver	Hewlett-Packard	8572A	2/15/06	2/28/07

The above equipment has been calibrated and is within the manufacturer's published limit of error. Calibration is traceable to the National Institute of Standards & Technology(NIST) and conforms to ISO 17025:2005.

Test 5, Item A - Peak Plot:

Holdover Duration – Manually Activated Transmitter



Transmission was observed to cease immediately upon release of button (< 100 ms).

Test 5, Item A - Results:

Holdover Duration – Manually Activated Transmitter

Test Item (A-Z)	Holdover Time Measured (seconds)	Holdover Time Maximum (seconds)	Pass/Fail (P/F)	See Comment (#)***
A	<0.1	5	P	

Accreditation Certificates:



SCOPE OF ACCREDITATION TO ISO/IEC 17025:1999

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ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS **NVLAP LAB CODE 200246-0**

NVLAP Code Designation / Description

Emissions Test Methods:

12/CIS14	CISPR 14-1 (March 30, 2000): Limits and Methods of Measurement of Radio Interference Characteristics of Household Electrical Appliances, Portable Tools and Similar Electrical Apparatus - Part 1: Emissions
12/CIS14a	EN 55014-1 (1995), A1 (1997), A2 (1999):
12/CIS14b	AS/NZS 1644 (1995):
12/CIS14c	CNS 13783-1: Electromagnetic Compatibility Requirements for household appliances, electric tools and similar apparatus - Part 1: Emissions
12/CIS22	IEC/CISPR 22 (1997) & EN 55022 (1998) + A1(2000): Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/CIS22a	IEC/CISPR 22 (1993) and EN 55022 (1994): Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1 (1995) and Amendment 2 (1996)
12/CIS22b	CNS 13438 (1997): Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
12/EM02a	IEC 61000-3-2, Edition 2.1 (2001-10), EN 61000-3-2 (2000), and AS/NZS 2279.1 (2000): Electromagnetic compatibility (EMC) Part 3-2: Limits - Limits for harmonic current emissions (equipment input current <= 16 A)

2005-07-01 through 2006-06-30

Effective dates

For the National Institute of Standards and Technology
NVLAP-015 (REV. 2005-05-19)

Page 1 of 3



ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS **NVLAP LAB CODE 200246-0**

NVLAP Code Designation / Description

12/EM03b	IEC 61000-3-3, Edition 1.1(2002-03) & EN 61000-3-3, A1(2001): EMC - Part 3-3: Limits - Limitations of voltage changes, voltage fluctuations and flicker, in public low-voltage supply-systems, for equipment with rated current <=16 A per phase and not subject to conditional connections
12/FCC15b	ANSI C63.4 (2003) with FCC Method 47 CFR Part 15, Subpart B: Unintentional Radiators
12/T51	AS/NZS CISPR 22 (2002) and AS/NZS 3548 (1997): Electromagnetic Interference - Limits and Methods of Measurement of Information Technology Equipment

Immunity Test Methods:

12/I01	IEC 61000-4-2, Ed. 1.2 (2001), A1, A2, EN 61000-4-2: Electrostatic Discharge Immunity Test
12/I02	IEC 61000-4-3, Ed. 2.0 (2002-05); EN 61000-4-3 (2002): Radiated Radio-Frequency Electromagnetic Field Immunity Test
12/I03	IEC 61000-4-4(1995), A1(2005), A2(2001), EN 61000-4-4: Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical Fast Transient/Burst Immunity Test
12/I04	IEC 61000-4-5, Ed. 1.1 (2001-04); EN 61000-4-5: Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test
12/I05	IEC 61000-4-6, Ed. 2.0 (2003-05); EN 61000-4-6: Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields
12/I06	IEC 61000-4-8, Ed. 1.1 (2001); EN 61000-4-8: Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test
12/I07	IEC 61000-4-11, Ed. 1.1 (2001-03); EN 61000-4-11: Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests

2005-07-01 through 2006-06-30

Effective dates

For the National Institute of Standards and Technology
NVLAP-015 (REV. 2005-05-19)

Page 2 of 3



ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS **NVLAP LAB CODE 200246-0**

NVLAP Code Designation / Description

Safety Test Methods:

12/T41a	AS/NZS 60950 (2000): Safety of Information Technology Equipment (including Amd1)
12/T50	AS/NZS 3260 (1993) + Supplement 1 (1996): Safety of Information Technology Equipment Including Electrical Business Equipment

Telecommunications Test Methods:

12/1089d	GR-1089-CORE, Issue 3 (April 2002): EMC and Electrical Safety - Generic Criteria for Network Telecommunications Equipment (sections: 2.1.2.1, 2.1.2.2, 2.1.4, 2.2, 3.2, 3.3, 4.6.2, 4.6.5, 4.6.7 - 4.6.17, 4.7, 5.2, 5.3.1, 5.4, 6, 7.2 - 7.7, 8, and 9.2 - 9.12)
12/76200a	SBC-TP-76200, Issue 4 (May 2003): Network Equipment Power, Grounding, Environmental, and Physical Design Requirements (sections: 6.1B, 7.1, 7.2, 7.3, 7.4, and 10.1 - 10.4B)
12/VGR63a	GR-63-CORE, Issue 2 (April 2002): NEBS (TM) Requirements: Physical Protection (sections: 2, 3, 4.1, 4.2.3, 4.3, 4.4.1, 4.4.3, 4.4.4, 4.5, 4.6, and 4.7)

2005-07-01 through 2006-06-30

Effective dates

For the National Institute of Standards and Technology
NVLAP-015 (REV. 2005-05-19)

Page 3 of 3

Measurement Uncertainty Statement

Test	Expanded Estimate of Uncertainty (k = 2, for 95% of a normal distribution)	Units
Radiated Disturbance Emissions: <ul style="list-style-type: none">• 3 and 10 meter measurement distances• 1 meter measurement distance	+/- 3.8 dB +/- 2.3 dB	Volts/meter Volts/meter
Conducted Disturbance Emissions (9 kHz – 30 MHz):	+/- 3.4 dB	Volts
Electrostatic Discharge	+/- 2.2 %	Volts
Radiated RF Immunity (Chamber):	+/- 2.7 dB	Volts/meter
Electrical Fast Transients/Bursts Immunity	+/- 4.6 %	Volts
Surge Immunity	+/- 4.6 %	Volts
Conducted RF Immunity	+/- 2.8 dB	Volts
Power Frequency Magnetic Field Immunity	+/-13.6 %	Amps/meter
Voltage Dips and Short Interrupts	+/-4.2 %	Volts
Radiated RF Immunity (Tri-plate)	+/-3.2 %	Volts/meter
Disturbance Power (30 – 300 MHz)	+/-3.5%	Volts

CISPR 16-4:2000 Statement

The UL-RTP estimate of expanded measurement uncertainty listed above for Conducted Disturbance (+/- 3.4 dB), Disturbance Power (+/- 3.5 dB), and Radiated Disturbance (+/-3.8 dB) are less than the Values of U_{CISPR} as listed in Table 1 of CISPR 16-4. Therefore:

- Compliance is deemed to occur if no measured disturbance reported exceeds the disturbance limits.
- Non-compliance is deemed to occur if any measured disturbance reported exceeds the disturbance limits.