COMPLIANCE WORLDWIDE INC.
TEST REPORT 118-08

In Accordance with the Requirements of

Industry Canada RSS 210, Issue 7, Annex II
Federal Communications Commission CFR Title 47 Part 15.231, Subpart C
Low Power License-Exempt Radio Communication Devices
Intentional Radiators
Issued to

NAPCO Security Systems
333 Bayview Avenue
Amityville, NY 11701
for

GEM-TRANSLP
Low Profile Window/Door Transmitter

FCC ID: AD8-GEMTRANSLP
IC: 596A-GEMTRANSLP

Report Issued on February 29, 2008

Prepared by

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Reviewed By

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Compliance Worldwide, Inc. - 357 Main Street - Sandown, NH 03873
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http://www.cw-inc.com

1. Scope

This test report certifies that the NAPCO Security Systems GEM-TRANSLP Low Profile Window/Door 319.5 MHz transmitter, as tested, meets the RSS 210 Annex II Rules and FCC Part 15.231, Subpart C requirements. The scope of this test report is limited to the test sample provided by the client, only in as much as that sample represents other production units. If any significant changes are made to the unit, the changes shall be evaluated and a retest may be required

2. Product Details

2.1. Manufacturer: NAPCO Security Systems

2.2. Model Number: GEM-TRANSLP

2.3. Serial Number: N/A

2.4. Description: Low Profile Window/Door Transmitter - 319.5 MHz

2.5. Power Source: 3 Volts (One CR2032 Battery)

2.6. EMC Modifications: FB1 and FB2 changed from 1kΩ to 4.7kΩ resistor.

3. Product Configuration

3.1. Cables

Cable Type	Length	Shield	From	To
J1 Connector Wire	24 in (60cm)	No	GEM-TRANSLP	Unterminated

3.2. Support Equipment

Device	Manufacturer	Model	Serial No.
None			

3.3. Operational Characteristics

Unit was in a pre-programmed free running state once the battery was inserted.

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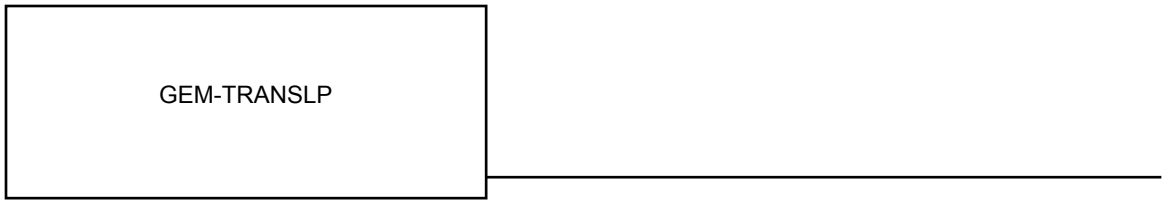
3. Product Configuration (continued)

3.4. Block Diagram



4. Measurements Parameters

4.1 Measurement Equipment Used to Perform Test

Device	Manufacturer	Model No.	Serial No.	Cal Due
EMI Receiver	Hewlett Packard	8546A	3650A00360	3/13/2008
Spectrum Analyzer	Hewlett Packard	8593E	3829A03887	3/8/2008
Biconilog Antenna	Com-Power	AC220	25509	8/21/2008
Horn Antenna	Electro-Metrics	EM-6961	6337	8/23/2008

4.2 Measurement & Equipment Setup

Test Date:	2/26/2008
Test Engineer:	Brian F Breault
Site Temperature (°C):	20.6
Relative Humidity (%RH):	30
Frequency Range:	30 MHz to 3.2 GHz
Measurement Distance:	3 Meters
EMI Receiver IF Bandwidth:	120 kHz (30 MHz – 1 GHz) 1 MHz (>1 GHz)
EMI Receiver Avg Bandwidth:	300 kHz (30 MHz – 1 GHz) 3 MHz (>1 GHz)
Detector Functions:	Peak, Quasi-Peak and Average
Antenna Height:	1 to 4 meters

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4. Measurements Parameters (continued)

4.3 Test Procedure

Test measurements were made in accordance FCC Part 15.231: Operation within the bands 40.66 – 40.70 MHz and above 70 MHz.

The test methods used to generate the data in this test report are in accordance with ANSI C63.4: 2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

Prior to testing, exploratory radiated emission measurements were made by rotating the device through its three orthogonal axes to determine the worst case orientation of the device under test. All measurements in this report were made with the device under test in the worst case orientation.

5. Measurement Summary

Test Requirement	FCC Requirement	Test Report Section	Result	Comment
Antenna Requirement	15.203	N.A	Compliant	Unit has a permanently mounted internal antenna.
Operational Requirement	15.231 (a)(1)	6.1	Compliant	
Radiated Field Strength of Fundamental	15.231 (b)	6.2	Compliant	
Radiated Field Strength of Harmonics	15.231 (b)(3)	6.3	Compliant	
Occupied Bandwidth	15.231 (c)	6.4	Compliant	
Spurious Radiated Emissions	15.231 (b)(3), 15.209	6.5	Compliant	
Conducted Emissions	15.207	N.A	N/A	Unit is battery operated
Determination of Average Factor	15.35	6.6	N/A	

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6. Measurement Data

6.1. Operational Requirement

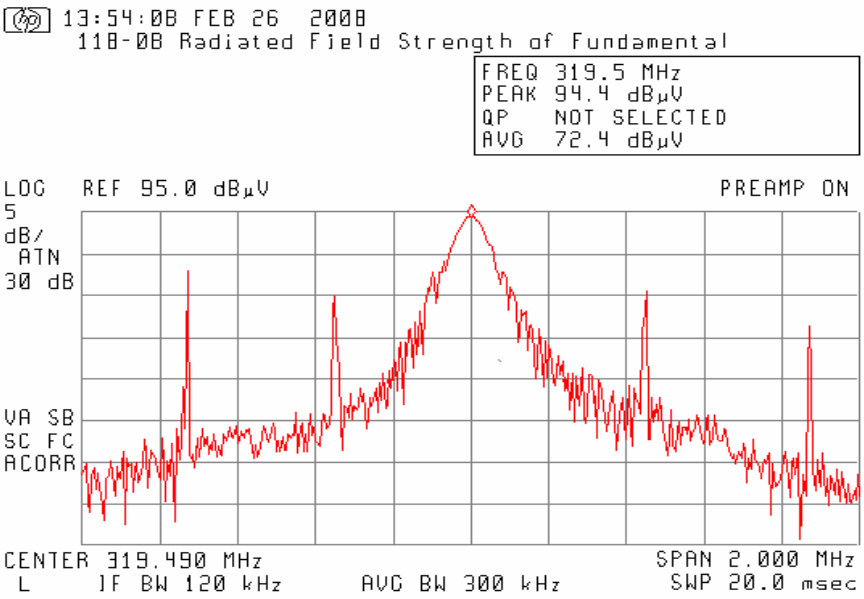
Requirement: Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed more than two seconds per hour for each transmitter. There is no limit on the number of individual transmissions, provided the total transmission time does not exceed two seconds per hour.

6.2. Radiated Field Strength of Fundamental (15.231, Section (b))

Requirement: The 3 meter field strength of the fundamental emissions from intentional radiators operated within the 260-470 MHz frequency bands shall comply with the limits specified in FCC Part 15.231, Section (b).

Note: Refer to section 6.6 for the determination of the average factor.

Frequency (MHz)	Amplitude (dBµV/m)		Average Limit (dBµV/m)	Margin (dB)	Ant Pol	Ant Ht	TT Pos	Result
	Peak	Average			H/V	cm	Deg	P/F
319.5	94.4	74.4	75.88	-1.48	H	130	320	Passed



Note: The transients shown on each side of the transmitting frequency are occasional and have no significant quasi-peak or average values.

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6. Measurement Data (continued)

6.3. Radiated Field Strength of Harmonics (15.231, Section (a))

Requirement: The 3 meter field strength of the harmonic emissions from intentional radiators operated within the 260-470 MHz frequency band shall comply with the limits specified in FCC Part 15.231, Section (b). Peak field strength may not be greater than 20 dB above the average limit.

6.3.1. Harmonics < 1 GHz

Frequency (MHz)	Amplitude (dBµV/m)		Q-P Limit	Margin (dB)	Ant Pol	Ant Ht	TT Pos	Result
	Peak	QP			H/V	cm	Deg	
639.0	61.4	41.4	55.88	-14.5	H	129	284	Passed
958.5	44.2	24.2	55.88	-31.6	V	100	280	Passed

6.3.2. Harmonics > 1 GHz

Frequency (MHz)	Amplitude (dBµV/m)		Average Limit	Margin (dB)	Ant Pol	Ant Ht	TT Pos	Result
	Peak	Avg			H/V	cm	Deg	
1278.0	57.6	37.6	55.88	-18.3	H	110	280	Passed
1597.5[1]	57.9	37.9	55.88	-18.0	H	100	190	Passed
1917.0	54.1	34.1	55.88	-21.8	H	110	348	Passed
2236.5[1]	59.7	39.7	55.88	-16.2	V	101	340	Passed
2556.0	57.1	37.1	55.88	-18.8	V	109	254	Passed
2875.5[1]	57.4	37.4	55.88	-18.5	V	115	348	Passed
3195.0	57.0	37.0	55.88	-18.9	V	111	98	Passed

[1] Frequency falls within the Restricted Bands of Operation. See FCC Part 15, Section 15.205 for additional information.

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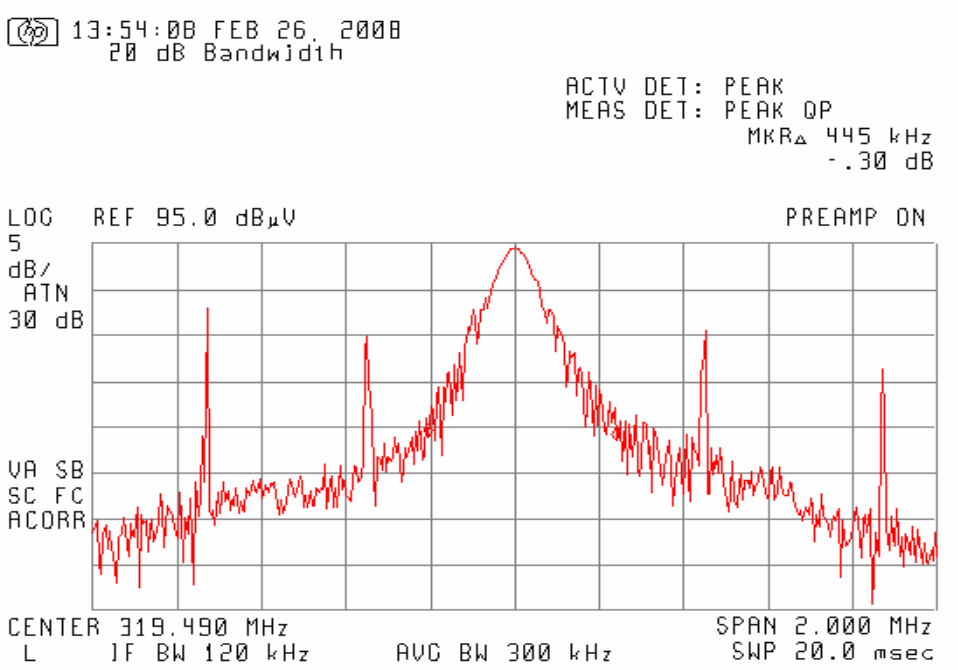
6. Measurement Data (continued)

6.4. Occupied Bandwidth

Requirement: The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. Bandwidth is determined at the points 20 dB down from the modulated carrier.

Fundamental Frequency	-20 dB Bandwidth	Limit	Result
(MHz)	(kHz)	(kHz)	P/F
319.5	445	798	Passed



Note: The transients shown on each side of the transmitting frequency are occasional and have no significant quasi-peak or average values.

6.5. Spurious Radiated Emissions, 30 MHz to 4.4 GHz (15.231, Section (b))

Requirement: Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

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6. Measurement Data (continued)

6.5. Spurious Radiated Emissions, 30 MHz to 4.4 GHz (15.231, Section (b)) (continued)

6.51. Spurious Radiated Emissions Test Setup

6.5.1.1. Regulatory Limit: FCC Part 209, Quasi-Peak

Frequency Range (MHz)	Distance (Meters)	Limit (dBµV/m)
30 to 88	3	40.0
88 to 216	3	43.5
216 to 960	3	46.0
Above 960	3	54.0

6.5.1.2. Measurement Equipment Used to Perform Test

Device	Manufacturer	Model No.	Serial No.	Cal Due
EMI Receiver	Hewlett Packard	8546A	3650A00360	3/13/2008
Biconilog Antenna	Com-Power	AC220	25509	8/21/2008
Horn Antenna	Electro-Metrics	EM-6961	6337	8/23/2008

6.5.1.3. Measurement & Equipment Setup

Test Date:	2/26/2008
Test Engineer:	Brian F Breault
Site Temperature (°C):	20.6
Relative Humidity (%RH):	30
Frequency Range:	30 MHz to 4.4 GHz
Measurement Distance:	3 Meters
EMI Receiver IF Bandwidth:	120 kHz (30 MHz – 1 GHz) 1 MHz (>1 GHz)
EMI Receiver Avg Bandwidth:	300 kHz (30 MHz – 1 GHz) 3 MHz (>1 GHz)
Detector Functions:	Peak, Quasi-Peak and Average
Antenna Height:	1 to 4 meters

6.5.1.4. Test Procedure

Test measurements were made in accordance with ANSI C63.4-2003, Standard Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronics Equipment in the Range of 9 kHz to 40 GHz.

6.5.2. Spurious Radiated Emissions, 30 MHz to 1 GHz Test Results

There were no measurable spurious emissions other than the harmonic emission detailed in section 6.3.1.

6.5.3. Spurious Radiated Emissions, >1 GHz Test Results

There were no measurable spurious emissions other than the harmonic emissions detailed in section 6.3.2.

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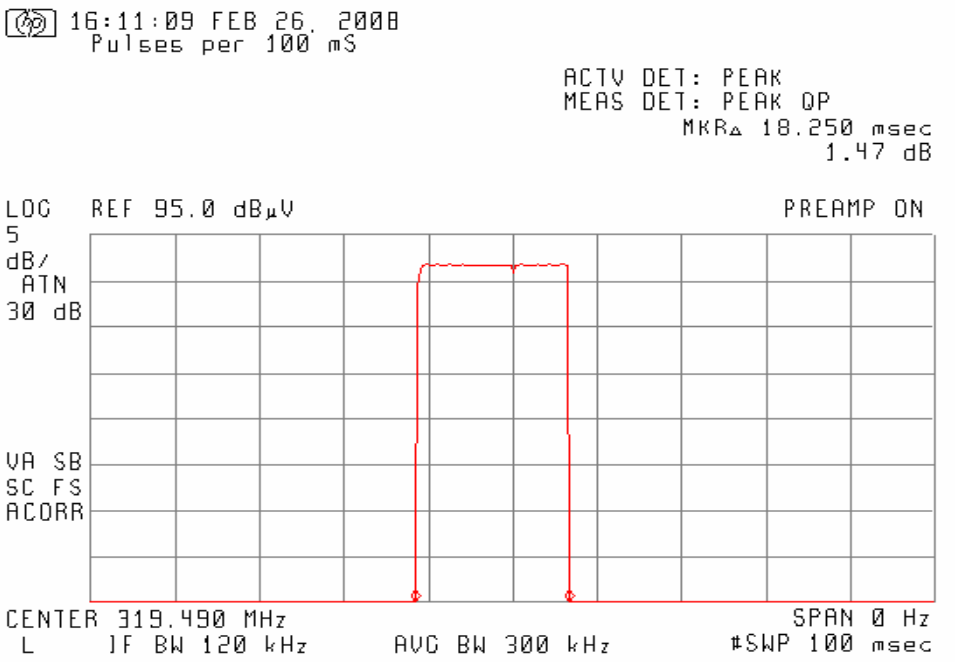
6. Measurement Data (continued)

6.6. Determination of Average Factor (FCC Part 15.35)

Number of Pulses per 100 mS:	1
Total On-Time in 1 cycle:	(43 x 142.5 µs) + (12 x 270 µs)
	6.128 mS + 3.240 mS = 9.368 mS
On-Time divided by cycle:	9.368 mS/100 mS = 0.09368
Average Factor:	20 log(0. 09368) = -20.56 dB

Note: The FCC and IC maximum allowed average factor is –20 dB.

6.6.1. Number of Pulses per 100 mS



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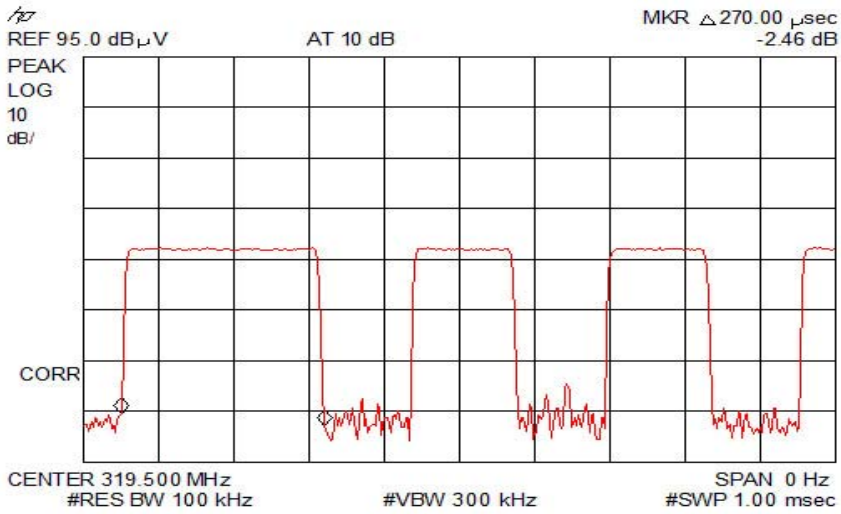
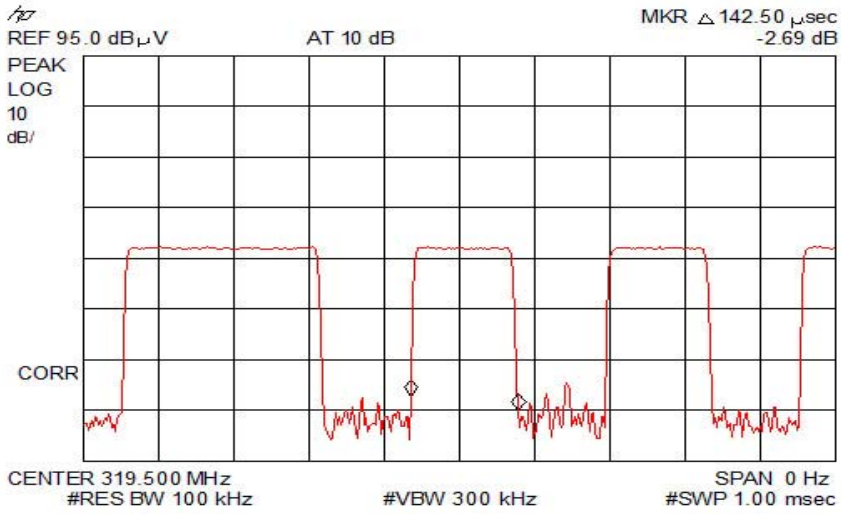
6. Measurement Data (continued)

6.6. Determination of Average Factor (continued)

6.6.2. Long Pulse Width



6.6.3. Short Pulse Width



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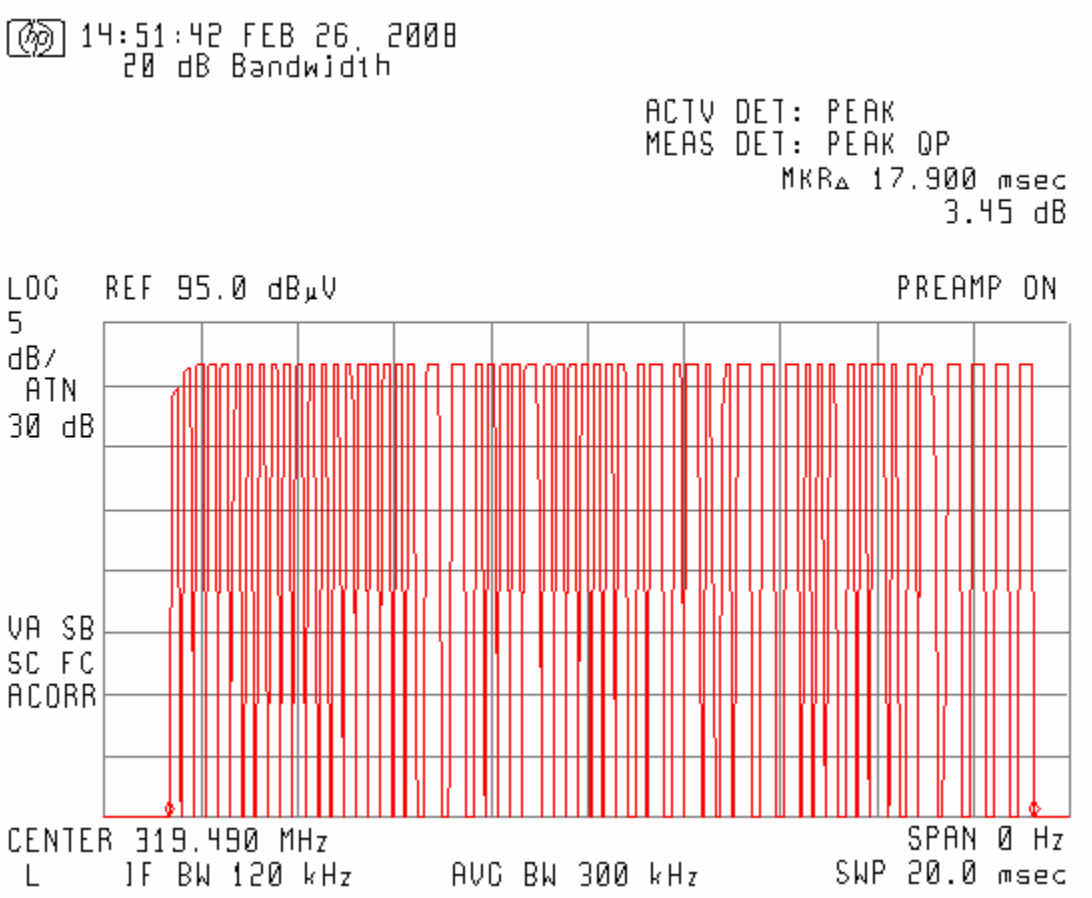
6. Measurement Data (continued)

6.6. Determination of Average Factor (continued)

6.6.3. Pulse Train



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7. Test Site Description

Compliance Worldwide is located at 357 Main Street in Sandown, New Hampshire. The test sites at Compliance Worldwide are used for conducted and radiated emissions testing in accordance with Federal Communications Commission (FCC) and Industry Canada standards. A description of the test sites is on file with the FCC (registration number **96392**) and Industry Canada (file number **IC 3023A-1)**.

The radiated emissions test site is a 3 and 10 meter enclosed open area test site (OATS). Personnel, support equipment and test equipment are located in the basement beneath the OATS ground plane.

The conducted emissions site is part of a 16' x 20' x 12' ferrite tile chamber and uses one of the walls for the vertical ground plane required by EN 55022.

Both sites are designed to test products or systems 1.5 meters W x 1.5 meters L x 2.0 meters H, floor standing or table top.

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