



Nemko

Test Report: 3W06850


Applicant: Digital Security Controls
3301 Langstaff Road
Vaughan Ontario
L4K 4L2

**Equipment Under Test:
(EUT)** Door Window Low Power Transmitter
WS4955NA

FCC ID: F5303W4955

In Accordance With: **FCC Part 15, Subpart C, 15.231**

Tested By: Nemko Canada Inc.
303 River Road, R.R. 5
Ottawa, Ontario K1V 1H2



Authorized By: Glen Westwell, Wireless Technologist

Date: 23 January 2003

Total Number of Pages: 16

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EQUIPMENT: Door Window Transmitter FCC ID F5303W4955

Section 1. Summary of Test Results

General

All measurements are traceable to national standards.

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, Subpart C. All tests were conducted using measurement procedure ANSI C63.4-1992. Radiated emissions are made on an open area test site. A description of the test facility is on file with the FCC.

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE.

See " Summary of Test Data".



TESTED BY: _____
Russell Grant, Senior Approvals Eng.

DATE: 22 January 2003

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This report applies only to the items tested.

EQUIPMENT: Door Window Transmitter FCC ID F5303W4955

Summary Of Test Data

Name of Test	Para. Number	Results
Transmission Requirements	15.231(a)	Complies
Radiated Emissions	15.231(b)	Complies
Occupied Bandwidth	15.231(c)	Complies
Frequency Tolerance	15.231(d)	NA
Periodic Alternate Field Strength Requirements	15.231(e)	NA
Powerline Conducted Emissions	15.207	NA

Note: This device is powered by a 3Vdc lithium cell.

Test Conditions:

Indoor Temperature: 20°C
 Humidity: 20%

Outdoor Temperature: 15°C
 Humidity: 5%

EQUIPMENT: Door Window Transmitter FCC ID F5303W4955

Section 2. Equipment Under Test

General Equipment Information

Manufacturer: Digital Security Controls

Model No.: WS4955NA

Serial No.: 2

Date Received In Laboratory: Jan 22, 2003

Nemko Identification No.: 4

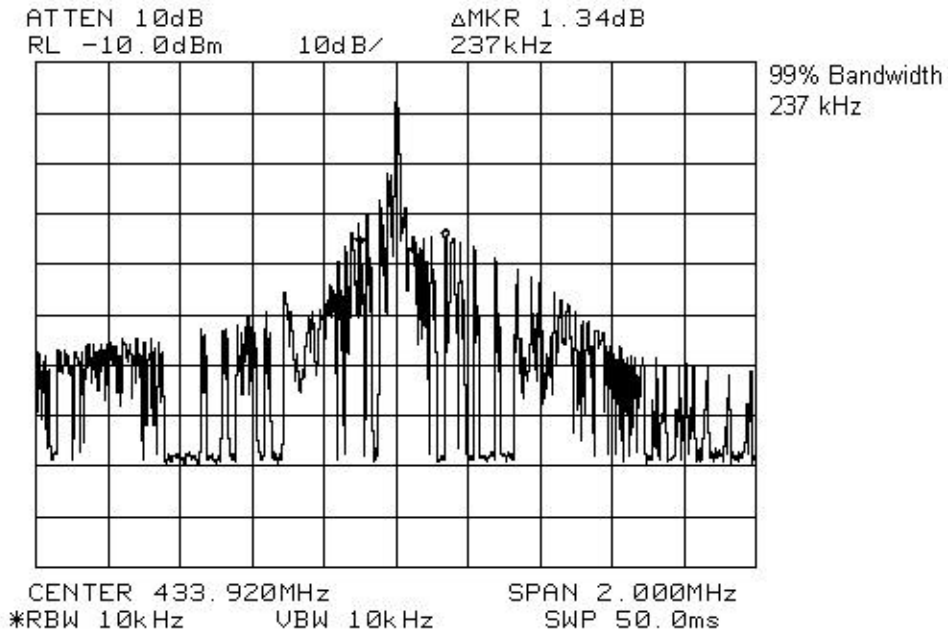
Door Window Transmitter

Modulation: Pulsed Carrier On/Off Modulation

Emission Designator: 237KL1D

Transmit Frequency: 433.92 MHz Fixed

EQUIPMENT: Door Window Transmitter FCC ID F5303W4955



Section 3. Transmission Requirements

Para. No.: 15.231(a)

Test Performed By: Russell Grant	Date of Test: Jan 22, 2003
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Minimum Standard: 15.231(a) Continuous transmissions such as voice, video or data transmissions are not permitted.

15.231(a)(1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds after being released.

15.231(a)(2) A transmitter activated automatically shall cease transmission within 5 seconds of activation.

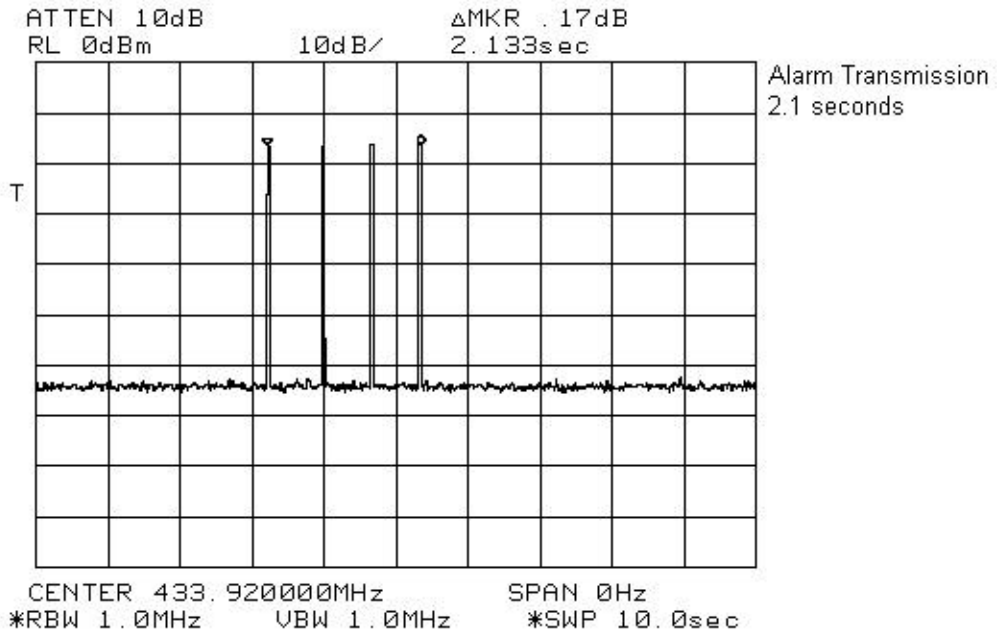
15.231(a)(3) Periodic transmissions at regular pre-determined intervals are not permitted. However polling or supervisory transmissions to determine system integrity of transmitters used in security or safety applications are allowed if the periodic rate of transmission does not exceed one transmission of not more than one second duration per hour for each transmitter.

15.231(a)(4) Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm.

Test Results: Complies

Test Data: Compliance was determined by verification of technical specifications and a functional test on the equipment.

EQUIPMENT: Door Window Transmitter FCC ID F5303W4955



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Rationale for Compliance with Transmission Requirements

15.231(a)(1) : The transmitter is deactivated within 2.1 seconds of turning on.

15.231(a)(2) : No automatic activation.

15.231(a)(3) : This device sends one supervisory transmission of 24.5mS every 64 minutes.

15.231(a)(4) : The transmitter is deactivated within 2.1 seconds.

EQUIPMENT: Door Window Transmitter FCC ID F5303W4955

Section 4. Radiated Emissions

Para. No.: 15.231(b)

Test Performed By: Russell Grant	Date of Test: Jan 22, 2003
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Minimum Standard:

Fundamental Frequency (MHz)	Field Strength of Fundamental (µV/m @ 3m)	Field Strength of Spurious Emissions (µV/m @ 3m)
40.66 - 40.70	2,250	225
70-130	1, 250	125
130-174	1,250 to 3,750*	125 to 375
174-260 (note 1)	3,750	375
260-470 (note 1)	3,750 to 12,500*	375 to 1,250
Above 470	12,500	1,250

Restricted Band Limits		
Frequency (MHz)	Field Strength (µV/m @ 3m)	Field Strength (dBµV/m @ 3m)
30 - 88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

Test Results: Complies

Test Data: As per attached tabulated data.
Emissions were search on 3 orthogonal axis with a fresh battery.
All emissions up to the 10th harmonic were searched.

EQUIPMENT: Door Window Transmitter FCC ID F5303W4955

Standard: FCC Part C Date: 22-Jan-03 Tester: Dome# 1
 Tower: A Distance: 3m Location: Ottawa Test Lab
 Receiver: 8565E Comment: Temp: Humidity:

Frequency (MHz)	Antenna	Polarity	RCVD Signal (dBuV)	Ant. Factor (dB)	Sig. Sub. Factor	Amp. Gain (dB)	Duty Cycle Corr.	Cable Loss (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Amp.
1	433.9200	ED4	V	43.0	21.9		11.4	2.7	56.2	80.8	24.6	Peak	
2	433.9200	ED4	H	58.0	21.4		11.4	2.7	70.7	80.8	10.1	Peak	
3	867.8400	ED4	V	36.0	28.5		11.4	3.9	57.0	60.8	3.8	Peak	
4	867.8400	ED4	H	34.0	27.6		11.4	3.9	54.1	60.8	6.7	Peak	
5	1301.7600	Hom2	V	82.0	26.6	48.2	11.4	2.8	51.9	54.0	2.1	Peak	1-2GHz
6	1301.7600	Hom2	H	69.0	26.6	48.2	11.4	2.8	38.9	54.0	15.1	Peak	1-2GHz
7	1735.6800	Hom2	V	78.0	28.4	47.8	11.4	3.8	51.0	60.8	9.8	Peak	1-2GHz
8	1735.6800	Hom2	H	77.0	28.8	47.8	11.4	3.8	50.4	60.8	10.4	Peak	1-2GHz
9	2169.6000	Hom2	V	88.0	28.9	58.6	11.4	4.3	51.2	60.8	9.6	Peak	2-4GHz
10	2169.6000	Hom2	H	97.0	28.9	58.6	11.4	4.3	60.3	60.8	0.5	Peak	2-4GHz
11	2603.5200	Hom2	V	89.0	30.0	60.2	11.4	8.0	55.4	60.8	5.4	Peak	2-4GHz
12	2603.5200	Hom2	H	89.0	29.9	60.2	11.4	8.0	55.2	60.8	5.6	Peak	2-4GHz
13	3037.4400	Hom2	V	87.0	31.0	59.8	11.4	6.6	53.3	60.8	7.5	Peak	2-4GHz
14	3037.4400	Hom2	H	84.0	31.0	59.8	11.4	6.6	50.3	60.8	10.5	Peak	2-4GHz
15	3471.3600	Hom2	V	64.0	31.1	59.1	11.4	5.5	30.1	60.8	30.7	Peak	2-4GHz
16	3471.3600	Hom2	H	56.0	31.1	59.1	11.4	5.5	22.1	60.8	38.7	Peak	2-4GHz
17	3905.2800	Hom2	V	67.0	32.8	58.2	11.4	6.5	36.7	54.0	17.3	Peak	2-4GHz
18	3905.2800	Hom2	H	63.0	32.9	58.2	11.4	6.5	32.8	54.0	21.2	Peak	2-4GHz
19	4339.2000	Hom2	V	53.0	32.6	54.6	11.4	6.7	26.3	54.0	27.7	Peak	4-8GHz
20	4339.2000	Hom2	H	44.0	33.0	54.6	11.4	6.7	17.7	54.0	36.3	Peak	4-8GHz

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Section 5. Occupied Bandwidth

Para. No.: 15.231(c)

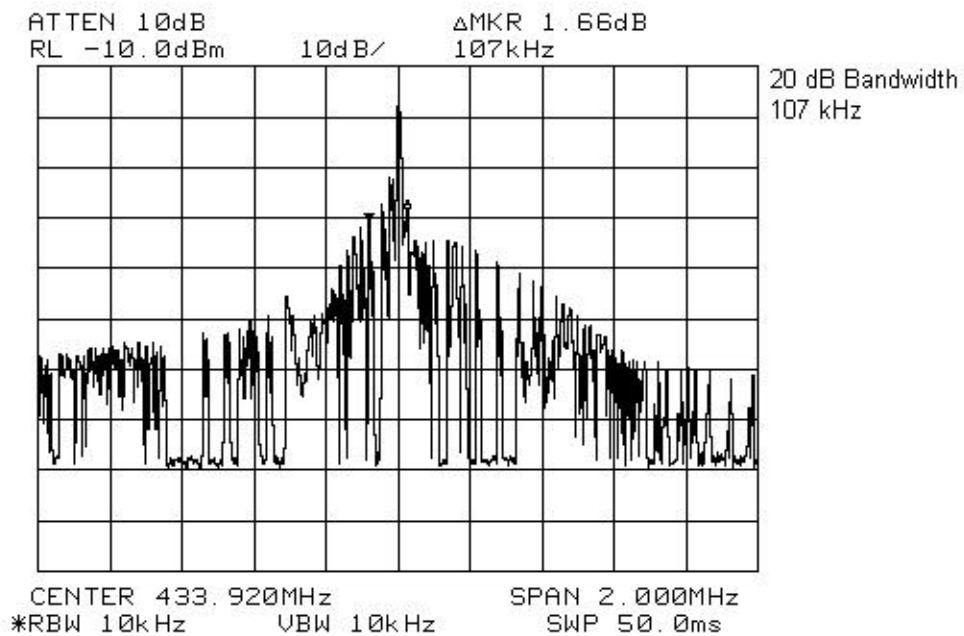
Test Performed By: Russell Grant	Date of Test: Jan 22, 2003
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Minimum Standard: 15.231(c) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

Test Results: Complies

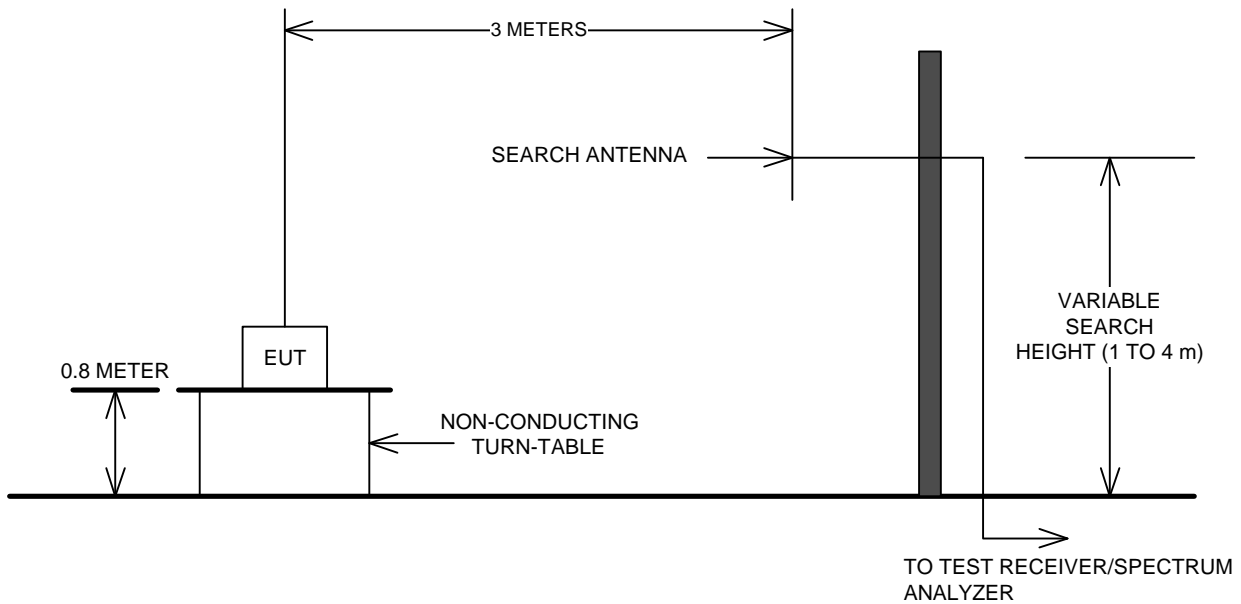
Test Data: See attached graph.

EQUIPMENT: Door Window Transmitter FCC ID F5303W4955



Section 6. Block Diagrams

Outdoor Test Site For Radiated Emissions



The spectrum was searched up to the 10th harmonic of the fundamental frequency of operation.

EQUIPMENT: Door Window Transmitter FCC ID F5303W4955

Section 7. Test Equipment List

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL
1 Year	Spectrum Analyzer	Hewlett Packard	8565E	FA000981
1 Year	Horn Antenna	EMCO #2	3115	4336
1 Year	Dipole Antenna Set	EMCO #2	3121C	FA001349
1 Year	RF AMP	JCA	2-4 GHz	FA001496
1 Year	RF AMP	JCA	1-2 GHz	FA001498
1 Year	RF AMP	JCA	4-8 GHz	FA001497