




Test Report: 3W07223.2

Applicant: PARADOX SECURITY SYSTEMS
780 INDUSTRIAL BLVD
ST-EUSTACHE
QUEBEC, CANADA, J7R 5V3

**Equipment Under Test:
(EUT)** OMN-PMD75 (433MHZ), Wireless Motion Detector

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: 15 July 2003

Total Number of Pages: 17

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EQUIPMENT: OMN-PMD75 (433MHZ), Wireless Motion Detector

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. NONE
See " Summary of Test Data".



Test Performed By: _____
Kevin Carr, EMC Specialist

Date: 15 July 2003

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This report applies only to the items tested.

Summary Of Test Data

Name of Test	Para. Number	Results
Transmission Requirements	15.231(a)	Complied
Radiated Emissions	15.231(b)	Complied
Occupied Bandwidth	15.231(c)	Complied
Frequency Tolerance	15.231(d)	N/A(1)
Periodic Alternate Field Strength Requirements	15.231(e)	N/A(2)
Powerline Conducted Emissions	15.207	N/A(3)

Note(1) The EUT is exempt, Ref. RSP- 102, Sec.4.2

Justification for N/A's

N/A(1)	The Eut does not transmit in the band 40.66-40.070MHz
N/A(2)	The requirements of this section are not applicable to this EUT.
N/A(3)	The EUT is Battery Powered

Test Conditions:

Indoor Temperature: 20°C
 Humidity: 49%

EQUIPMENT: OMN-PMD75 (433MHZ), Wireless Motion Detector

Section 2. Equipment Under Test

General Equipment Information

Manufacturer:	Paradox Security Systems
Company Number:	2438A
Model No.:	OMN-PMD75
Serial No.:	None
Date Received In Laboratory:	3 July 2003
Nemko Identification No.:	2, 3
Frequency Range (or fixed frequency):	Fixed, 433.9MHz
Type of Modulation:	ASK, 100% (Pulse Carrier On/Off)
Emission Designator (TRC-43:)	92K0L1D

Section 3. Transmission Requirements

Para. No.: 15.231(a)

Test Performed By: Kevin Carr	Date of Test: 4 July 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

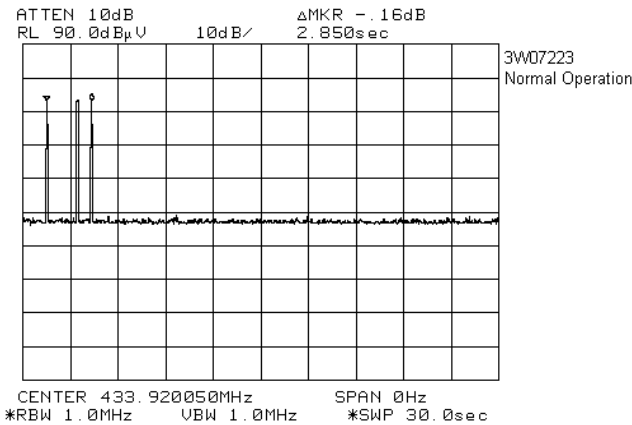
Test Data: Compliance was determined by verification of technical specifications and a functional test on the equipment.

EQUIPMENT: OMN-PMD75 (433MHZ), Wireless Motion Detector

Rationale for Compliance with Transmission Requirements

15.231(a)(1) : The EUT does not continuously transmit voice, video or data, nor is it intended for manually activated transmissions

15.231(a)(2) : Complies



15.231(a)(3) : No periodic polling or supervisory transmissions.

15.231(a)(4) : N/A

EQUIPMENT: OMN-PMD75 (433MHZ), Wireless Motion Detector

Section 4. Radiated Emissions

Para. No.: 15.231(b)

Test Performed By: Kevin Carr	Date of Test: 7 July 2003
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Minimum Standard:

Fundamental Frequency (MHz)	Field Strength of Fundamental ($\mu\text{V/m @ 3m}$)	Field Strength of Spurious Emissions ($\mu\text{V/m @ 3m}$)
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 ($\mu\text{V/m @ 3m}$)	Field Strength ($\text{dB}\mu\text{V/m @ 3m}$)
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.

EQUIPMENT: OMN-PMD75 (433MHZ), Wireless Motion Detector

Radiated Disturbance Test Data:

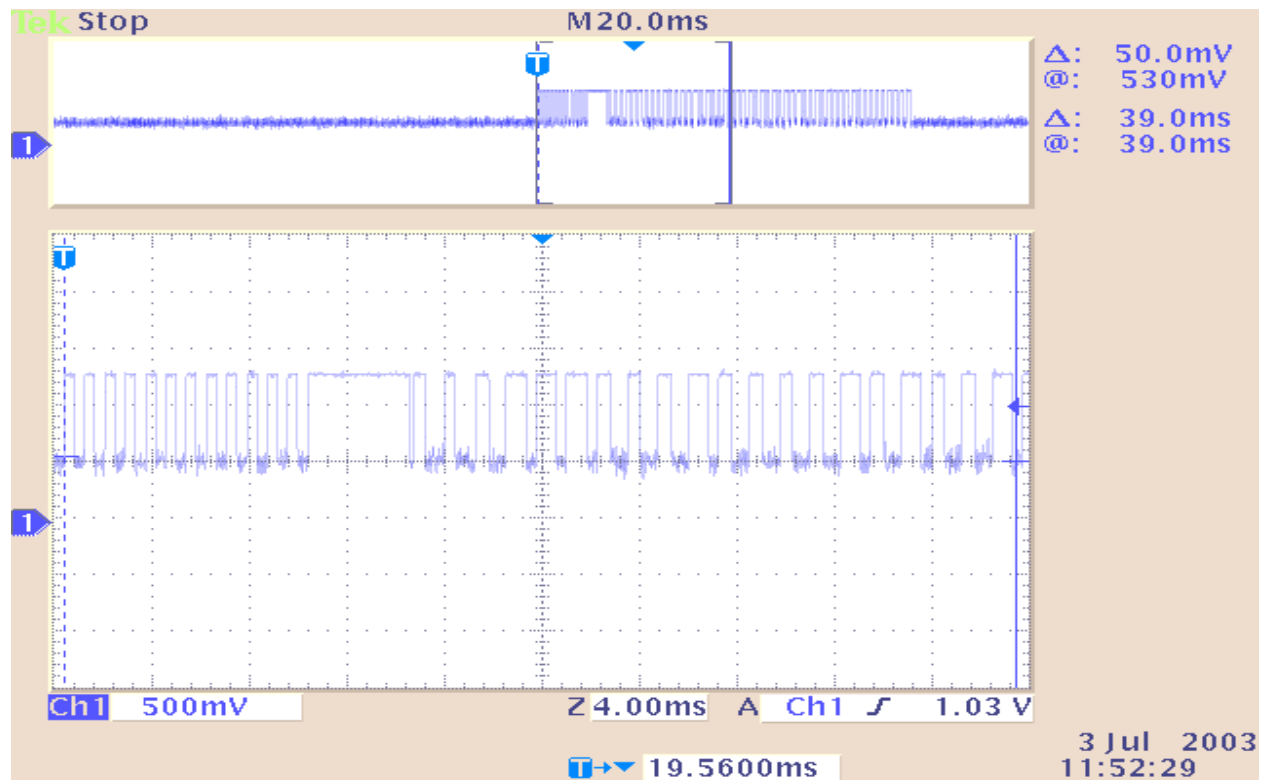
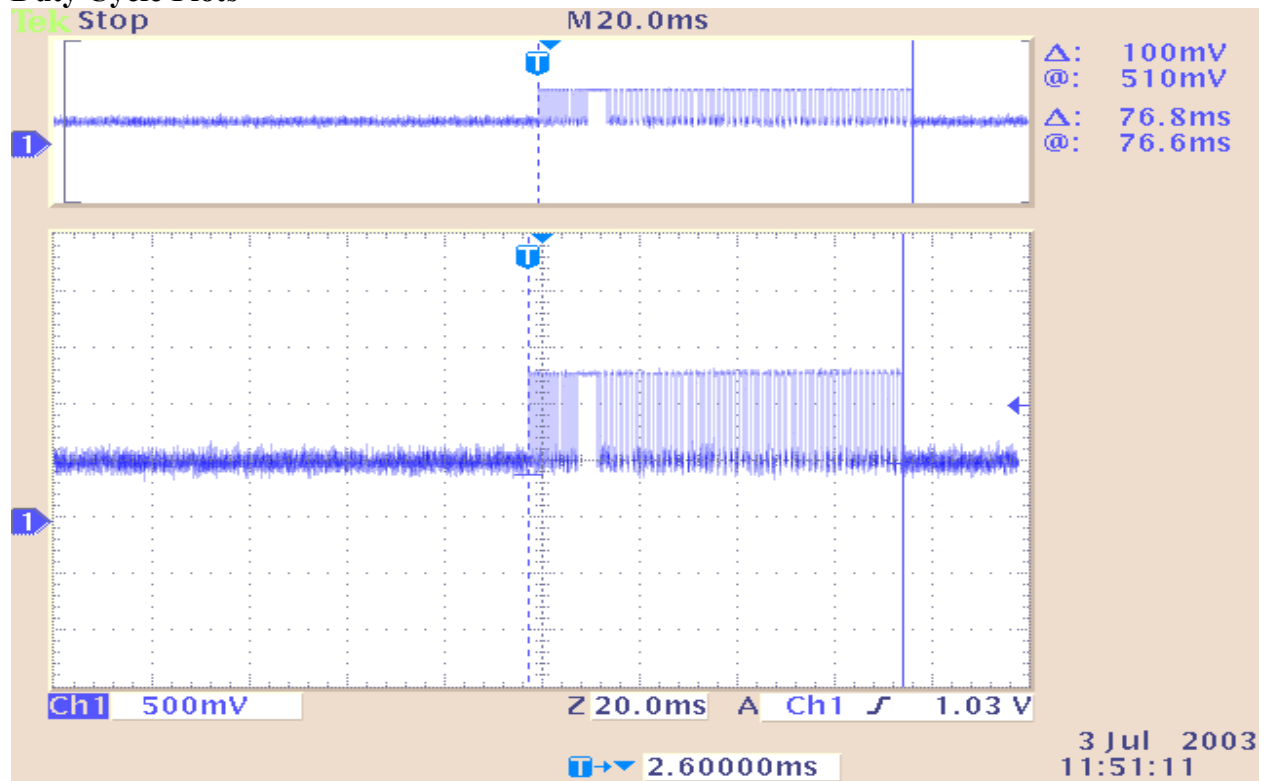
Test Date: 7-7-03											
Engineer's Name: Kevin Carr											
Temperature (C°): 23						Humidity %: 78					
Tested as per (Table Top/Floor Standing): Table Top											
Test Distance (meters): 3						Range: 1					
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBµV)	Ant. Factor (dB)	Amp. Gain (dB)	Duty Cycle Corr. (-dB)	Cable Loss (dB)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Amp.
433.9150	LP1	V	61.4	16.4	N/A	-6.6	2.7	73.9	80.8	6.9	None
433.9180	LP1	H	52.8	17.0	N/A	-6.6	2.7	65.9	80.8	14.9	None
867.8330	LP1	V	21.5	22.6	N/A	-6.6	3.9	41.4	46.0	4.6	None
867.8360	LP1	H	21.7	23.7	N/A	-6.6	3.9	42.7	46.0	3.3	None
1301.9200	Horn2	V	50.2	26.6	46.5	-6.6	3.3	27.0	54.0	27.0	1-2GHz
1301.9200	Horn2	H	48.9	26.6	46.5	-6.6	3.3	25.7	54.0	28.3	1-2GHz
1735.6700	Horn2	V	61.1	28.4	46.6	-6.6	3.9	40.1	54.0	13.9	1-2GHz
1735.6700	Horn2	H	61.8	28.8	46.6	-6.6	3.9	41.3	54.0	12.7	1-2GHz
2169.6400	Horn2	V	67.8	28.9	55.3	-6.6	4.7	39.4	54.0	14.6	2-4GHz
2169.7100	Horn2	H	64.9	28.9	55.3	-6.6	4.7	36.6	54.0	17.4	2-4GHz
2603.4900	Horn2	V	66.6	30.0	56.5	-6.6	8.0	41.5	54.0	12.5	2-4GHz
2603.6000	Horn2	H	65.0	29.9	56.5	-6.6	8.0	39.8	54.0	14.2	2-4GHz
3037.4600	Horn2	V	63.3	31.0	56.1	-6.6	6.1	37.7	54.0	16.3	2-4GHz
3037.4600	Horn2	H	62.3	31.0	56.1	-6.6	6.1	36.6	54.0	17.4	2-4GHz
3471.3700	Horn2	V	60.4	31.1	55.1	-6.6	7.2	37.0	54.0	17.0	2-4GHz
3471.4200	Horn2	H	60.2	31.1	55.1	-6.6	7.2	36.8	54.0	17.2	2-4GHz
3905.2400	Horn2	V	60.3	32.8	54.6	-6.6	7.6	39.5	54.0	14.5	2-4GHz
3905.3400	Horn2	H	59.8	32.9	54.6	-6.6	7.6	39.1	54.0	14.9	2-4GHz
4339.1200	Horn2	V	55.8	32.6	52.5	-6.6	8.3	37.6	54.0	16.4	4-8GHz
4339.1500	Horn2	H	55.8	33.0	52.5	-6.6	8.3	38.0	54.0	16.0	4-8GHz
<p>Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole</p> <p>Note 2: Detector Legend: Q-Peak = 120 kHz RBW, Average = 1.0 MHz RBW, N.D. = Not Detected</p>											
Notes:		All emissions to the 10 th harmonic were searched. Only those within 25dB of the limit were reported. Receiver bandwidth of 100KHz was used below 1GHz, & 1MHz bandwidth was used on emissions above 1GHz. Emissions were measured at the Ottawa Facility, Range A, at 3 meters									

Duty Cycle Calculation:

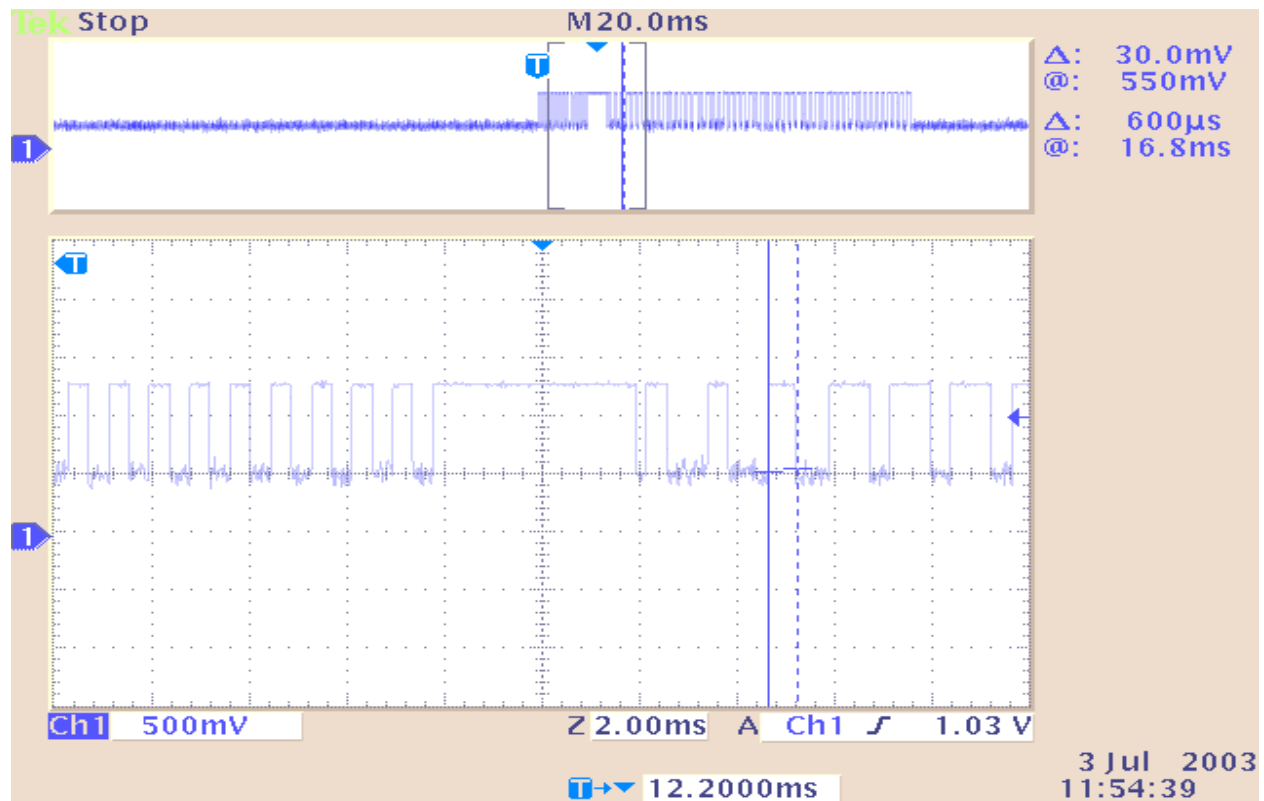
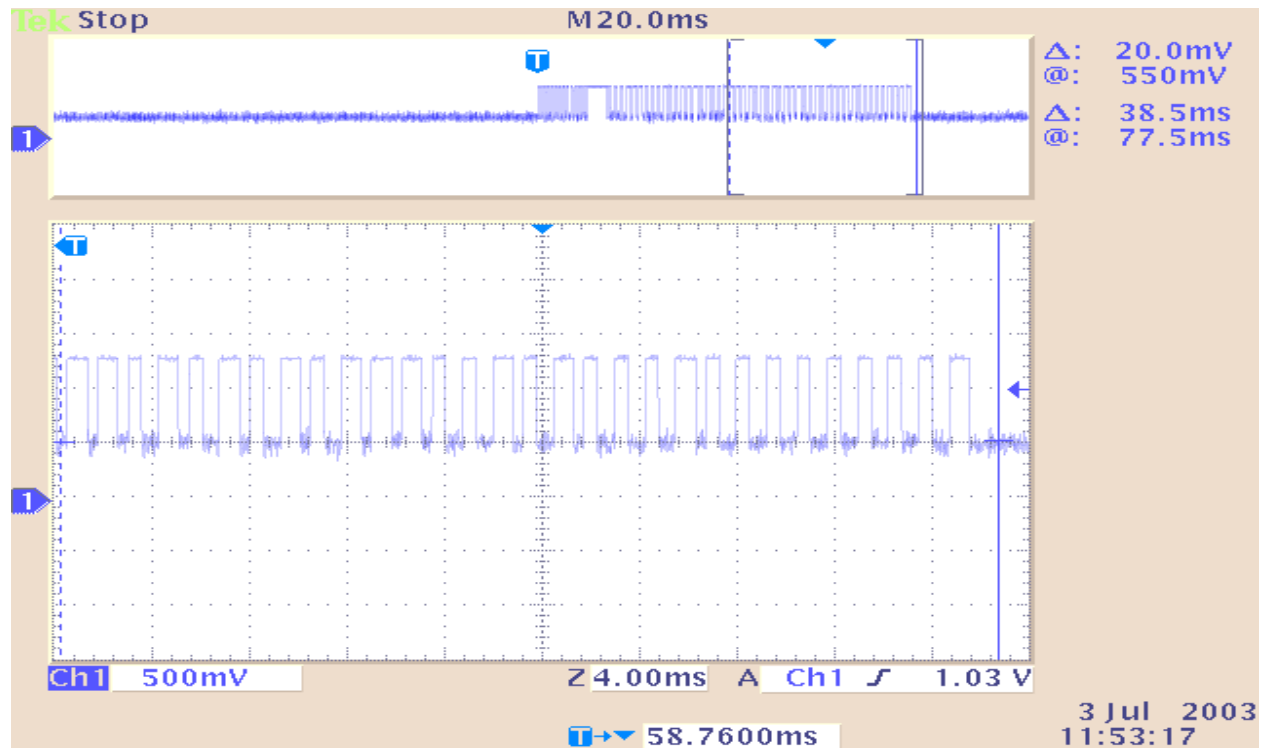
$$20 \text{ Log} \{ ((43 \times 0.6\text{mS}) + (19 \times 0.88\text{mS}) + 4.2\text{mS}) / 100\text{mS} \} = -6.6 \text{ dB}$$

EQUIPMENT: OMN-PMD75 (433MHZ), Wireless Motion Detector

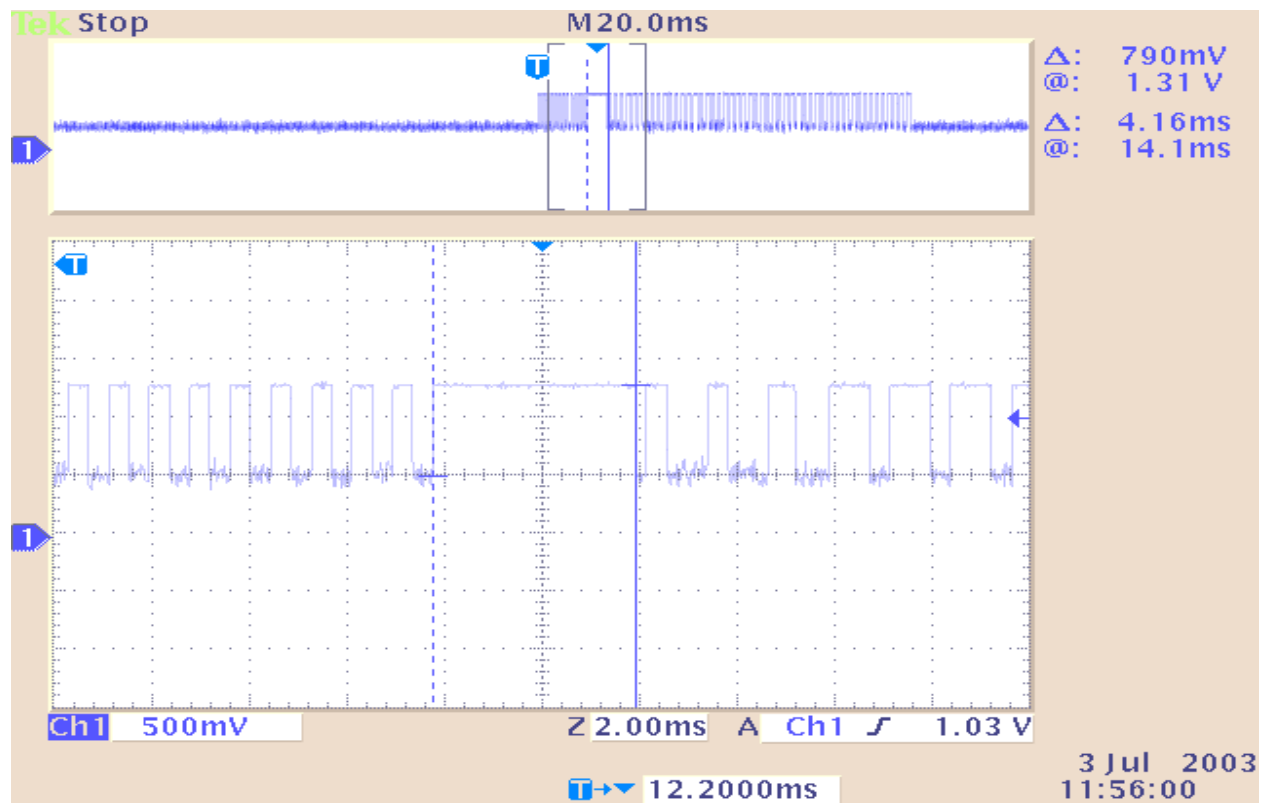
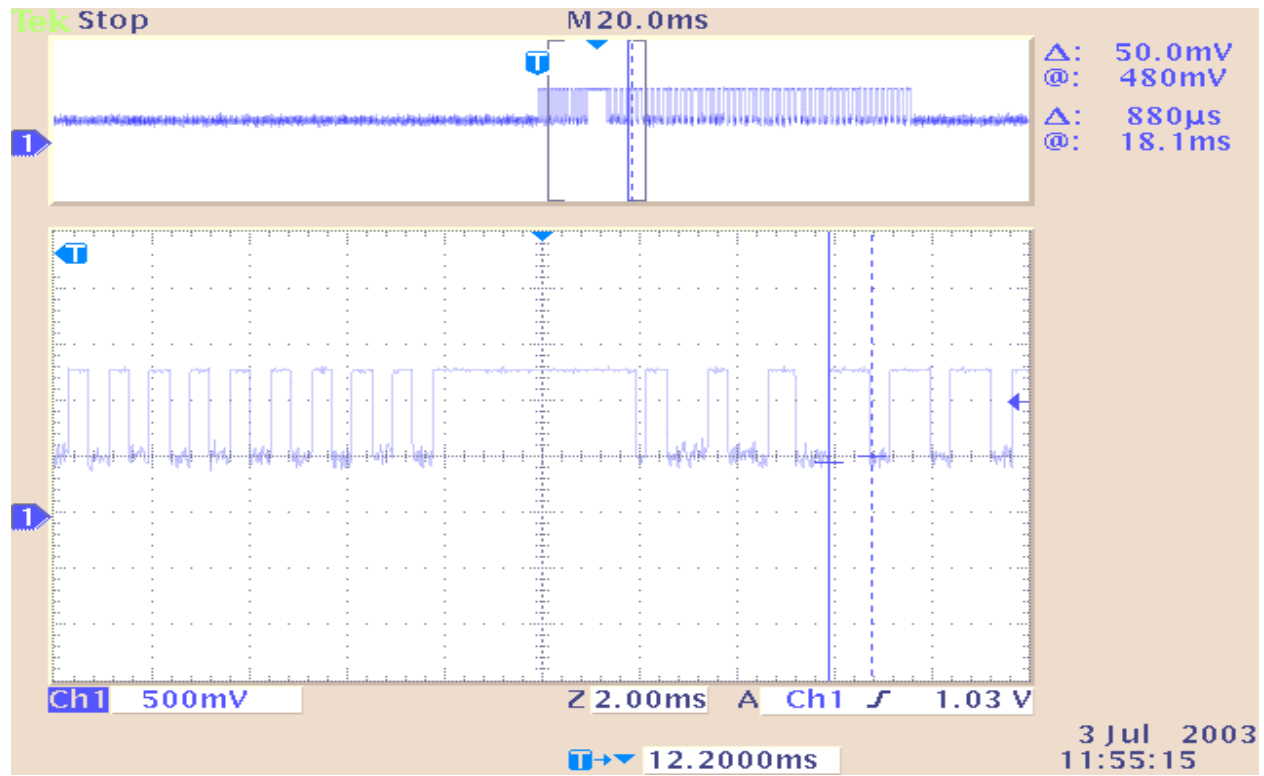
Duty Cycle Plots



EQUIPMENT: OMN-PMD75 (433MHZ), Wireless Motion Detector



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OATS Set up Photo



EQUIPMENT: OMN-PMD75 (433MHZ), Wireless Motion Detector

Section 5. Occupied Bandwidth

Para. No.: 15.231(c)

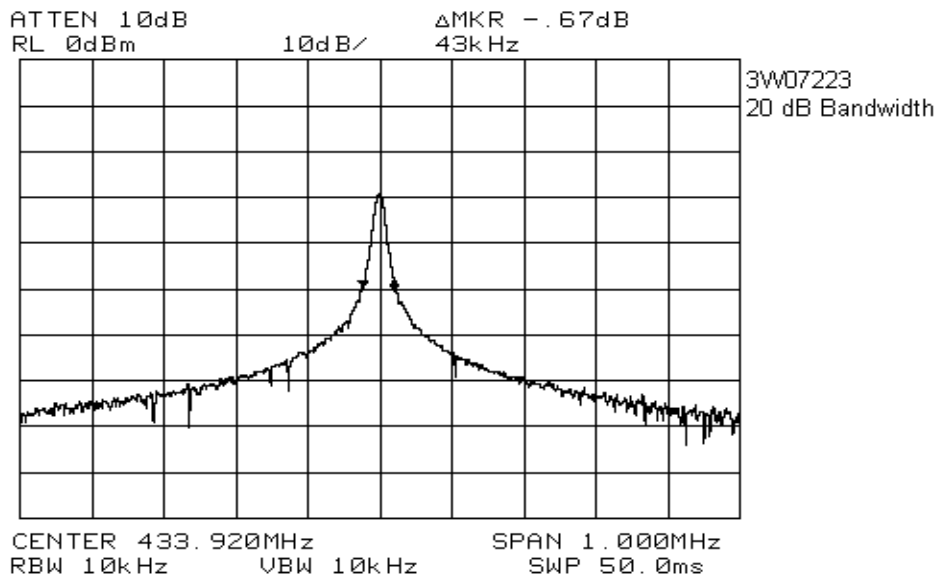
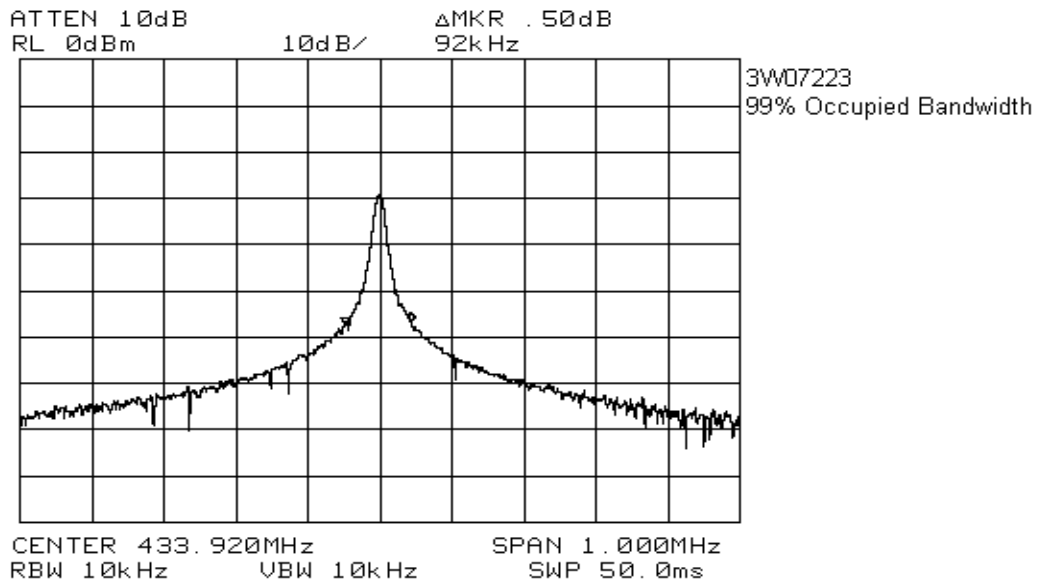
Test Performed By: Kevin Carr	Date of Test: 4 July 2003
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Minimum Standard: 15.231(c) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 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.

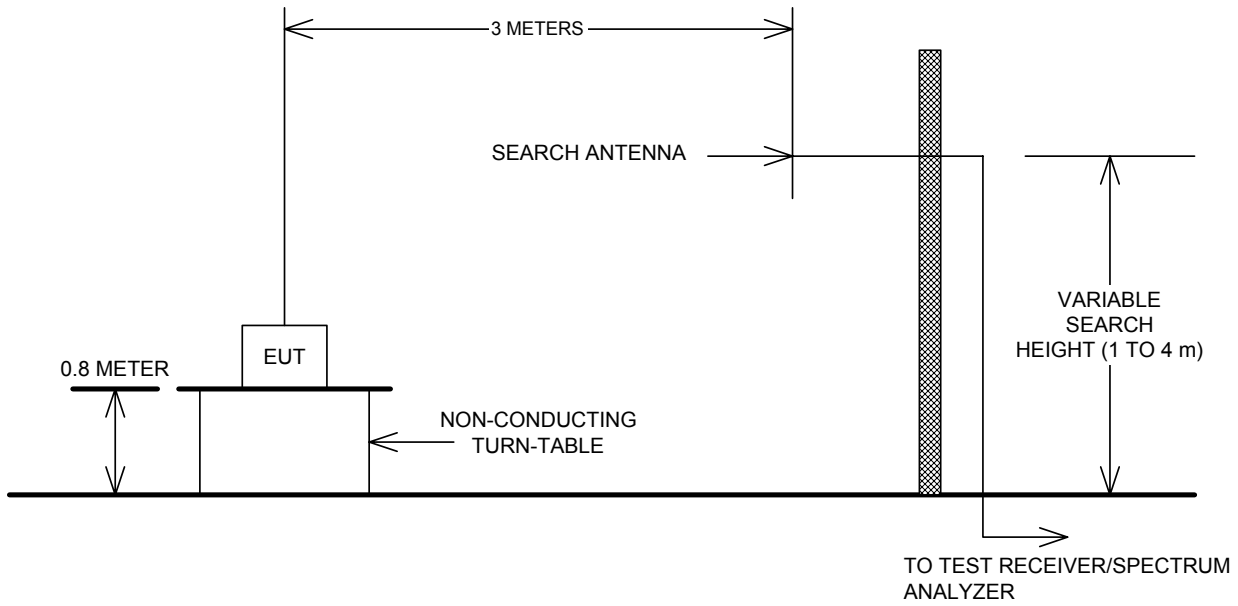
EQUIPMENT: OMN-PMD75 (433MHZ), Wireless Motion Detector



EQUIPMENT: OMN-PMD75 (433MHZ), Wireless Motion Detector

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: OMN-PMD75 (433MHZ), Wireless Motion Detector

Section 7. Test Equipment List

Equipment List - Radiated Emissions

CAL Cycle	Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
1 Year	Spectrum Analyzer	Hewlett-Packard	8564E	FA001367	May. 13/03	May. 13/04
1 Year	Horn Antenna #2	EMCO	3115	FA000825	Dec. 09/02	Dec. 09/03
1 Year	Log Periodic Antenna #1	EMCO	LPA-25	FA000477	Aug. 23/02	Aug. 23/03
1 Year	1.0 – 2.0 GHz Amplifier	JCA	12-400	FA001498	June. 18/03	June. 18/04
1 Year	2.0 – 4.0 GHz Amplifier	JCA	24-600	FA001496	June. 18/03	June. 18/04
1 Year	4.0 – 8.0 GHz Amplifier	JCA	48-600	FA001497	June. 18/03	June. 18/04
Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use, OUT = Out For CAL/Repair						