



Test Report:

2W04624

Applicant:

Paradox Security Systems
780 Industrial Blvd.
Ste-Eustache, Quebec
J7R 5V3

**Equipment Under Test:
(EUT)**

OMN-RCT1

FCC ID:

KDYOMNRCT1

In Accordance With:

FCC Part 15, Subpart C, 15.231

Tested By:

Nemko Canada Inc.
3325 River Road, R.R. 5
Ottawa, Ontario K1V 1H2

Authorized By:

J. Harrington, RF Group Manager

Date:

17 April 2002

Total Number of Pages:

21

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EQUIPMENT: OMN-RCT1

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.

TESTED BY: Kevin Carr, EMC Specialist

Date: 17 April 2002

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This report applies only to the items tested.

EQUIPMENT: OMN-RCT1

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
Periodic Alternate Field Strength Requirements	15.231(e)	N/A
Power line Conducted Emissions	15.207	N/A

Test Conditions:

Indoor Temperature: 24 °C
 Humidity: 23 %

Outdoor Temperature: 10 °C
 Humidity: 40 %

EQUIPMENT: OMN-RCT1

Section 2. Equipment Under Test

General Equipment Information

Manufacturer: Paradox Security Systems

Model No.: OMN-RCT1

Serial No.: 331-2002010

Date Received In Laboratory: 11 April 2002

Nemko Identification No.: 1

Fixed Frequency: 433.92 MHz

Emission Designator: 265K0L1D

Duty Cycle Calculations:

$20\text{Log}\{(33*0.4)+(45*0.8)\}/100 = -6.16\text{dB}$

Section 3. Transmission Requirements

Para. No.: 15.231(a)

Test Performed By: Kevin Carr	Date of Test: 11 April 2002
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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: Complied.

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

EQUIPMENT: OMN-RCT1

Rationale for Compliance with Transmission Requirements

15.231(a)(1) : Complied- Manual Activated

15.231(a)(2) : Not Applicable-No Automatic Transmissions

15.231(a)(3) : Not Applicable- No Periodic Transmissions

15.231(a)(4) : Not Applicable

*EQUIPMENT: OMN-RCT1***Section 4. Radiated Emissions****Para. No.: 15.231(b)**

Test Performed By: Kevin Carr	Date of Test: 11 April 2002
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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 (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: Complied.**Test Data:** As per attached tabulated data.

Note: For Radiated Emissions Testing the Transmitter (EUT) was configured by the client to transmit continuously, with modulation enabled.

Duty Cycle Calculations:

$$20\text{Log}\{(33*0.4)+(45*0.8)\}/100 = -6.16\text{dB}$$

EQUIPMENT: OMN-RCT1

Test Data - Radiated Emissions

Test Distance (meters) : 3		Range: A		Receiver: Other			RBW(kHz): 120/1000		Detector: Peak	
No.	Freq. (MHz)	Ant.	Pol (V/H)	RCVD Signal (dBµV/m)	Ant. Factor (dB)**	Amp. Gain (dB)* **	Duty Cycle Corr. (dB)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1	433.92	E/D4	V	45	24.5		-6.2	63.3	80.8	17.5
2	433.92	E/D4	H	56.6	24.5		-6.2	74.9	80.8	5.9
3	867.841	E/D4	V	13.2	32.6		-6.2	39.6	46	6.4
4	867.841	E/D4	H	12.1	32.6		-6.2	38.5	46	7.5
5	1301.76	Hrn 2	V	59.7	28.8	48.1	-6.2	34.2	54	19.8
6	1301.79	Hrn 2	H	58.9	28.8	48.1	-6.2	33.4	54	20.6
7	1735.65	Hrn 2	V	58.8	31.4	48.4	-6.2	35.6	60.8	25.2
8	1735.55	Hrn 2	H	56.3	31.4	48.4	-6.2	33.1	60.8	27.7
9	2169.58	Hrn 2	V	64.7	34	58.5	-6.2	34	60.8	26.8
10	2169.52	Hrn 2	H	64	34	58.5	-6.2	33.3	60.8	27.5
11	2603.45	Hrn 2	V	65.7	35.2	59.7	-6.2	35	60.8	25.8
12	2603.44	Hrn 2	H	64.4	35.2	59.7	-6.2	33.7	60.8	27.1
13	3037.41	Hrn 2	V	63.9	36.8	60	-6.2	34.5	60.8	26.3
14	3037.34	Hrn 2	H	63.3	36.8	60	-6.2	33.9	60.8	26.9
15	3471.31	Hrn 2	V	62.5	38.5	60.2	-6.2	34.6	60.8	26.2
16	3471.36	Hrn 2	H	62.4	38.5	60.2	-6.2	34.5	60.8	26.3
17	3905.23	Hrn 2	V	62.3	40.4	58.6	-6.2	37.9	54	16.1
18	3905.35	Hrn 2	H	62.7	40.4	58.6	-6.2	38.3	54	15.7
19	4339.2	Hrn 2	V	57.4	40.6	55.7	-6.2	36.1	54	17.9
20	4339.2	Hrn 2	H	58.3	40.6	55.7	-6.2	37	54	17

Notes:

B/C = Biconical, BL = Bilog, L/P = Log-Periodic, H = Horn, D/P = Dipole, E/D = EMCO
Dipole

* Re-measured using dipole antenna.

** Includes cable loss when amplifier is not used.

*** Includes cable loss.

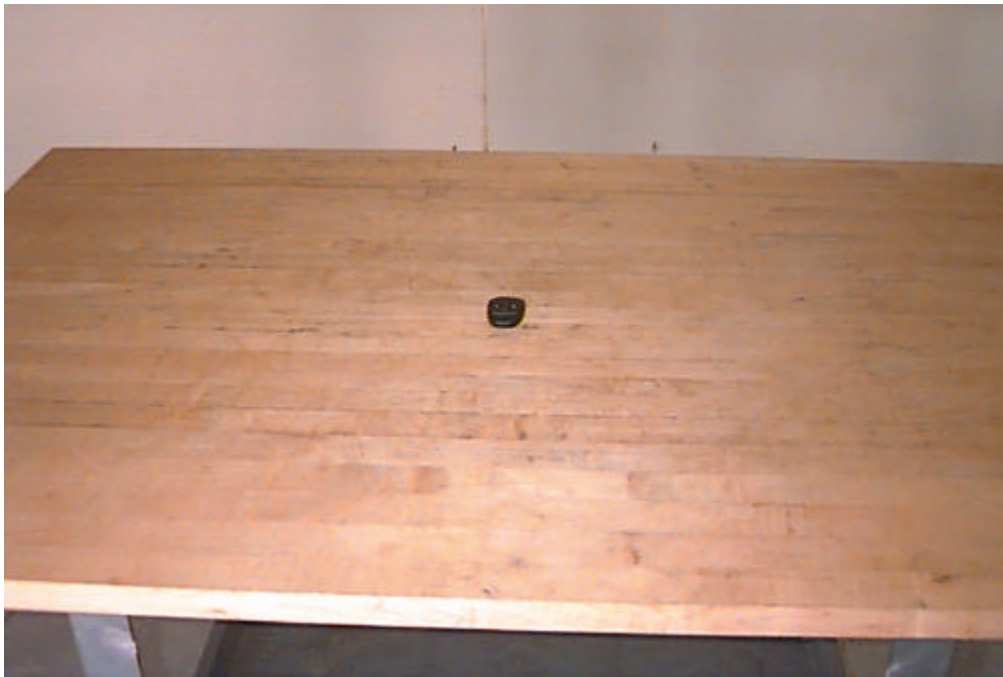
() Denotes failing emission level.

N.D. = Not Detected

EQUIPMENT: OMN-RCT1

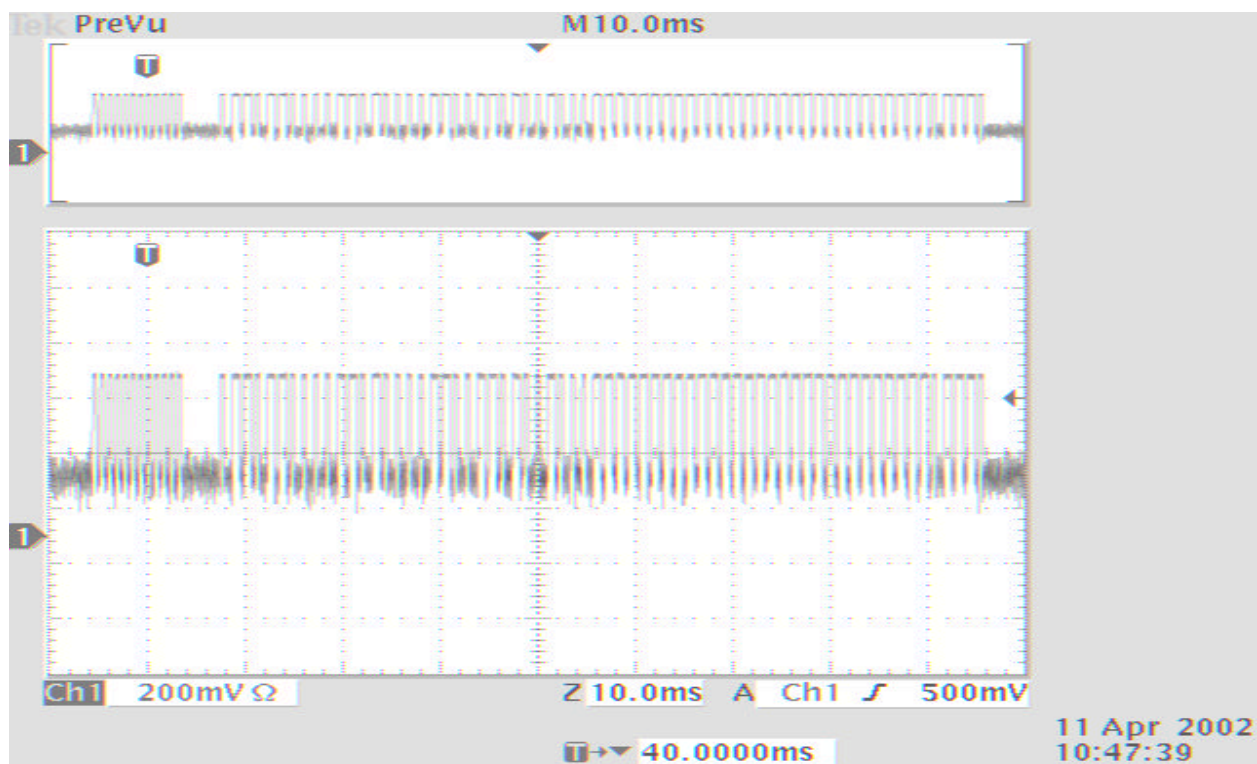
Radiated Emissions Photograph

Front View:

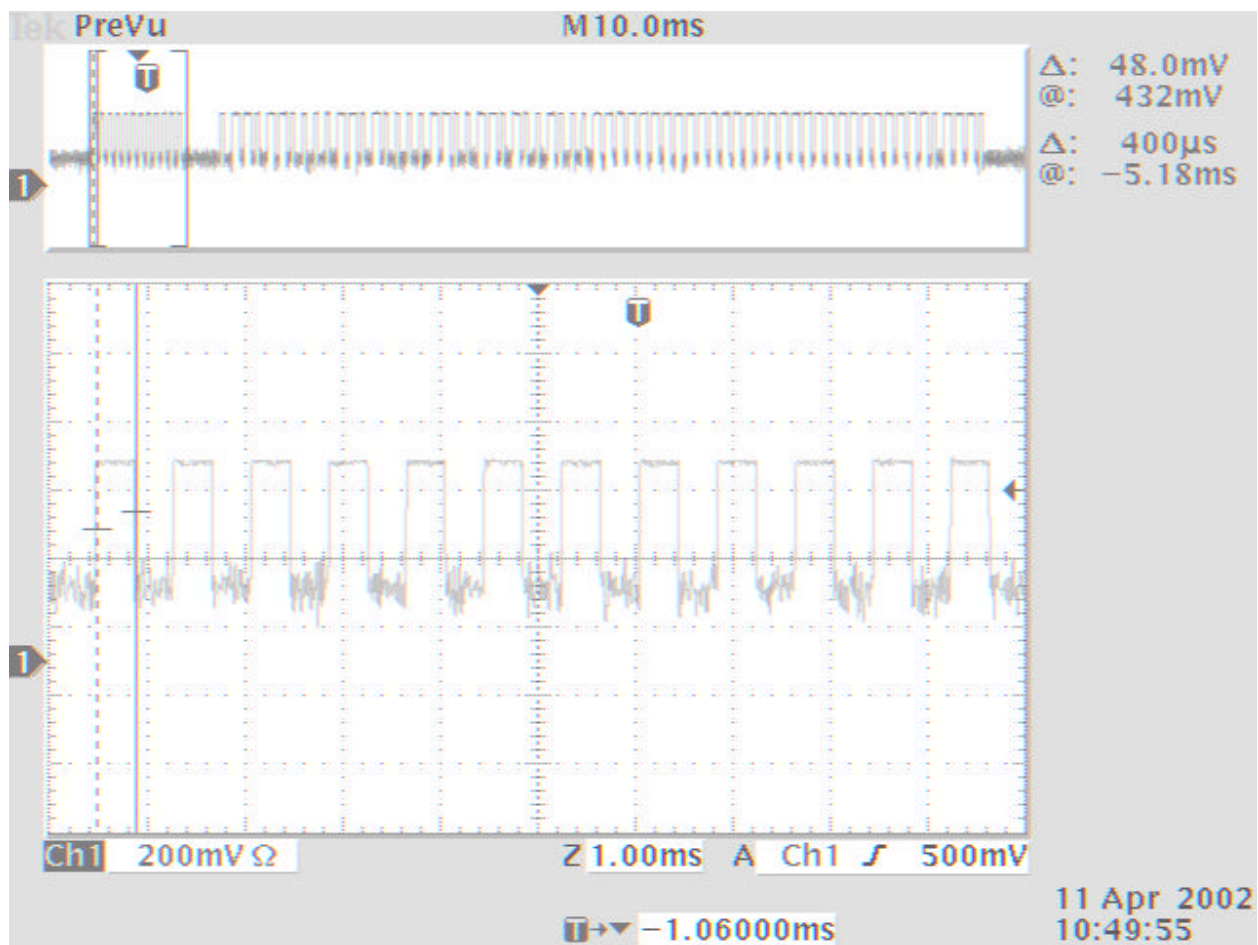


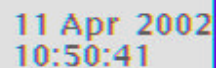
Duty Cycle Plots:

EQUIPMENT: OMN-RCT1

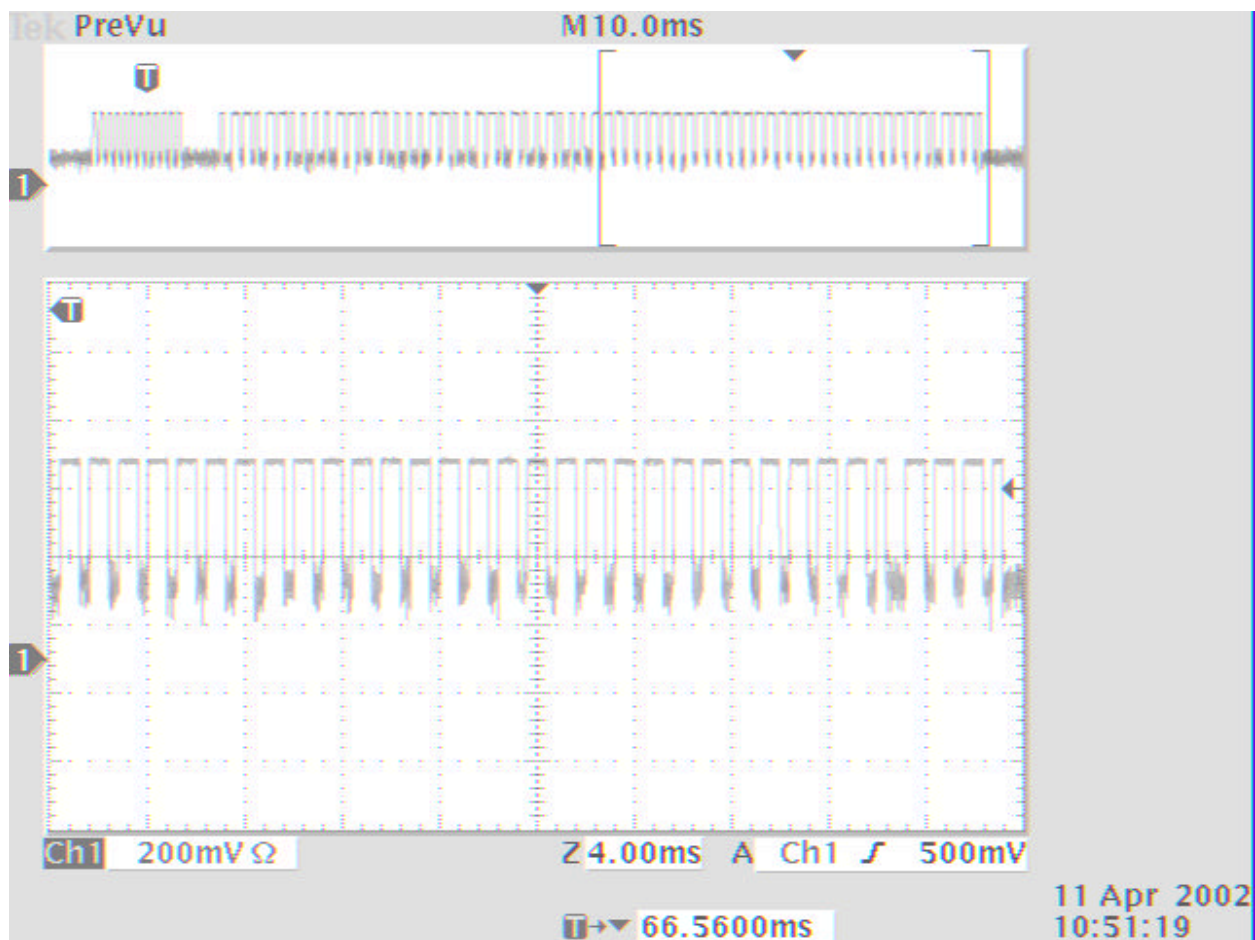


EQUIPMENT: OMN-RCT1

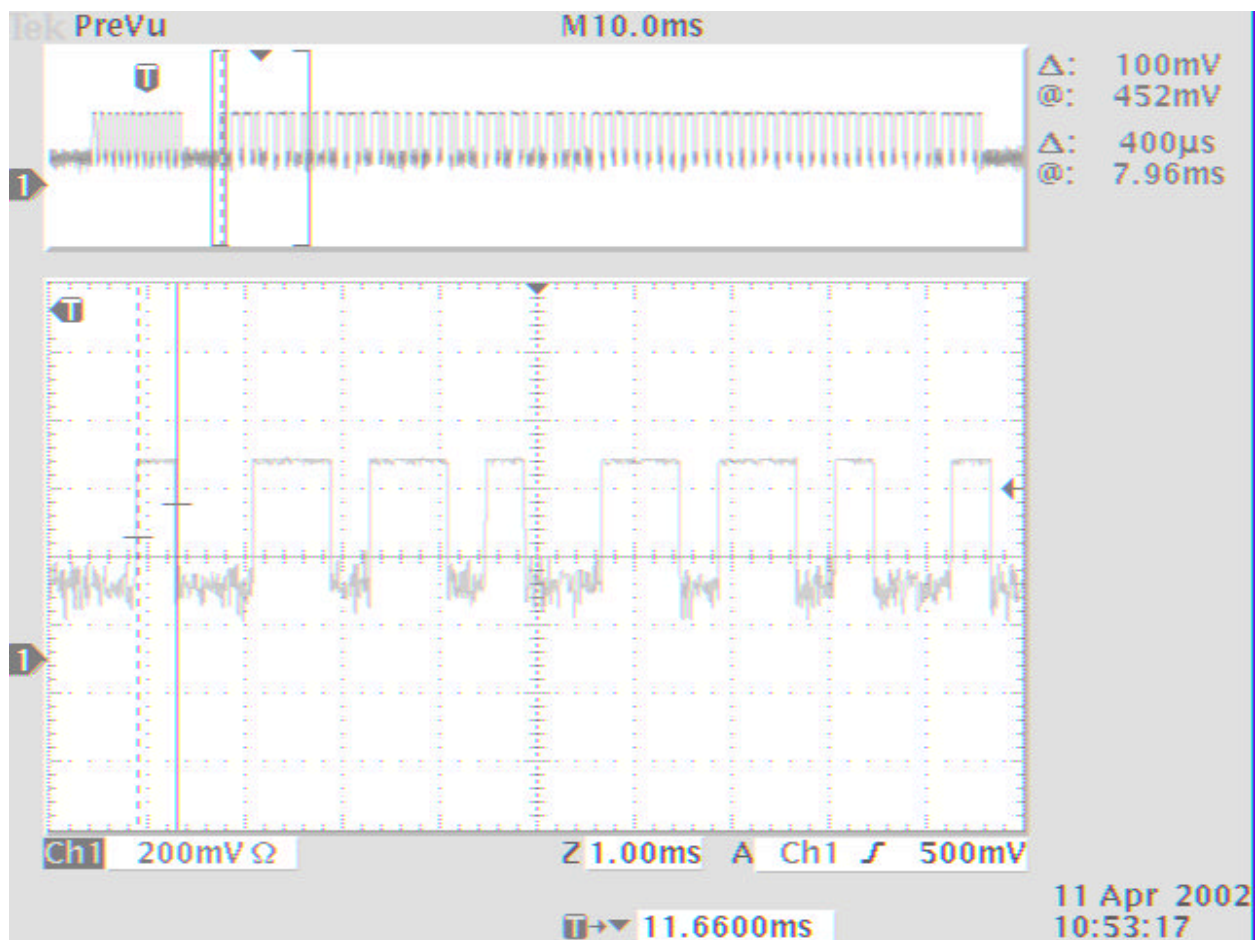




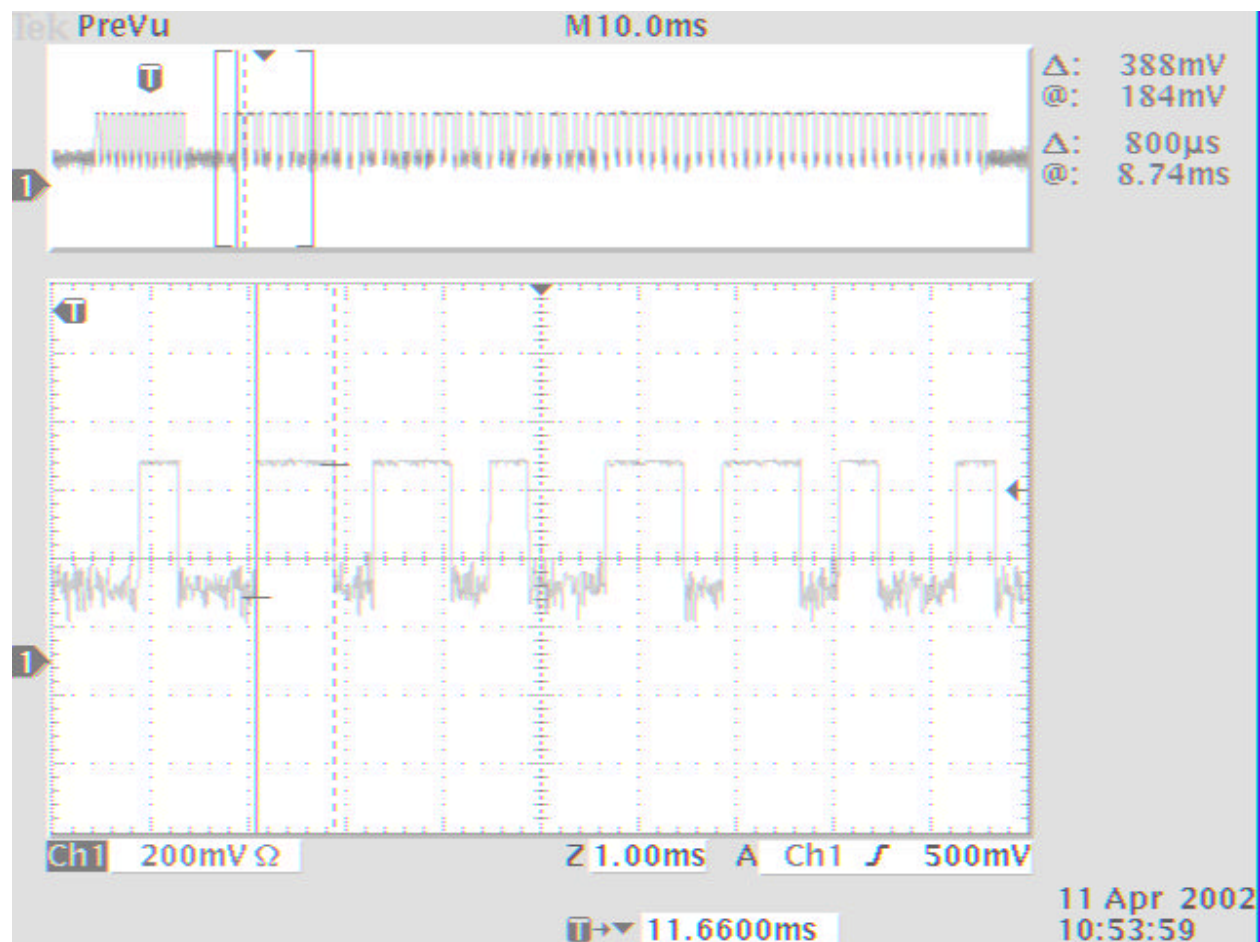
EQUIPMENT: OMN-RCT1



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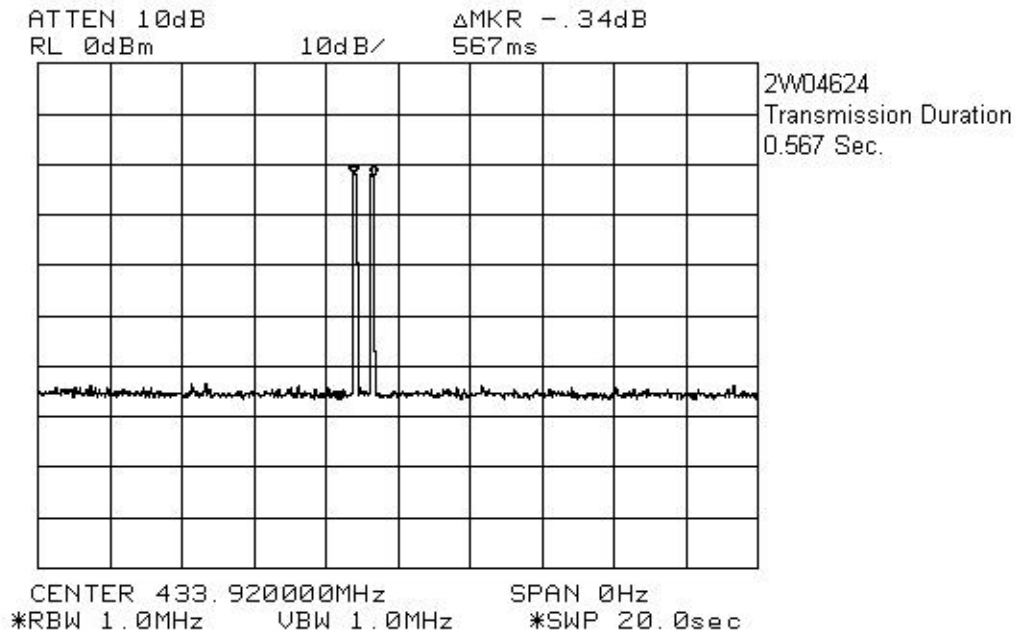


EQUIPMENT: OMN-RCT1



EQUIPMENT: OMN-RCT1

Transmission Requirement Sec. 6.1.1.(a)(2)



Section 5. Occupied Bandwidth

Para. No.: 15.231(c)

Test Performed By: Kevin Carr	Date of Test: 11 April 2002
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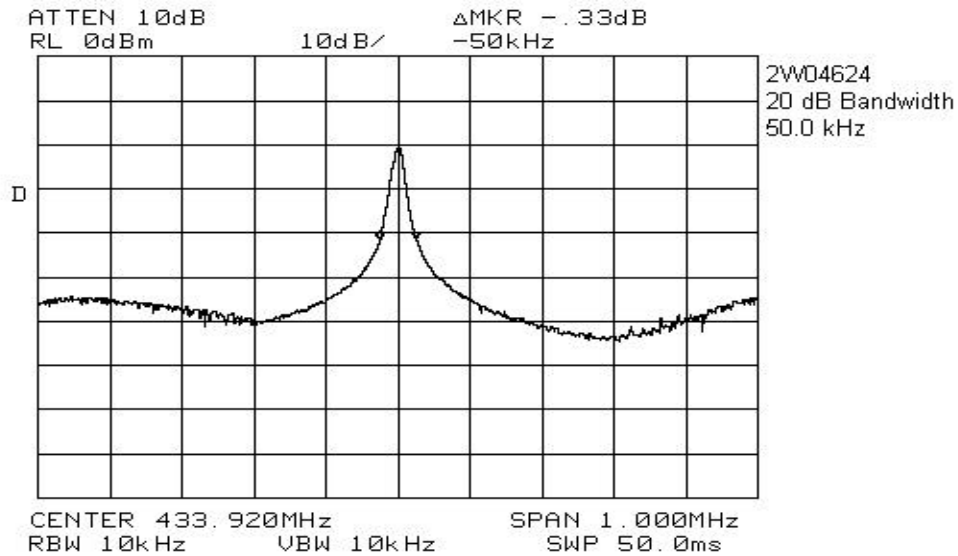
Minimum Standard: 15.231(c) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

Test Results: Complied.

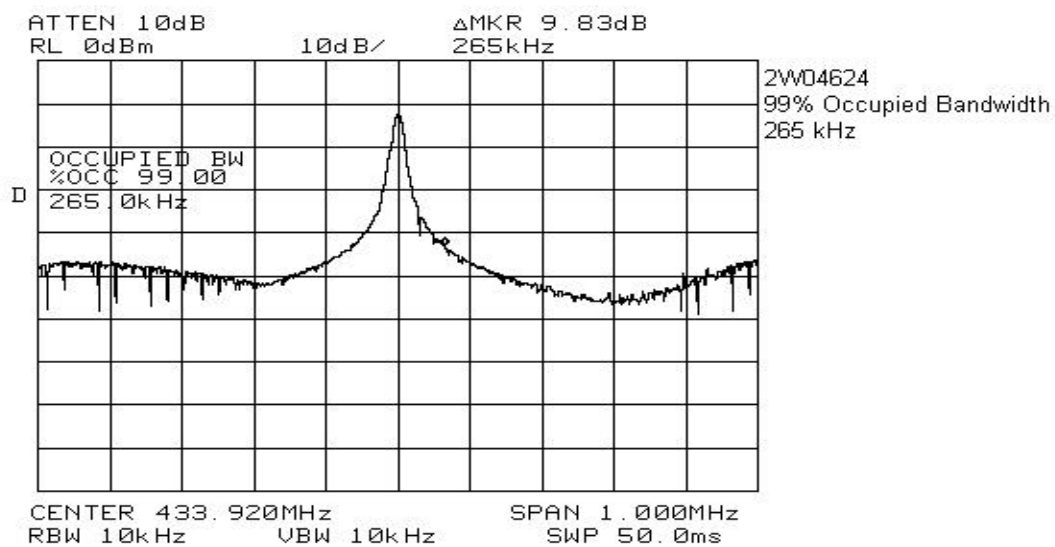
Test Data: See attached graph.

EQUIPMENT: OMN-RCT1

Test Data: 20 dB Bandwidth

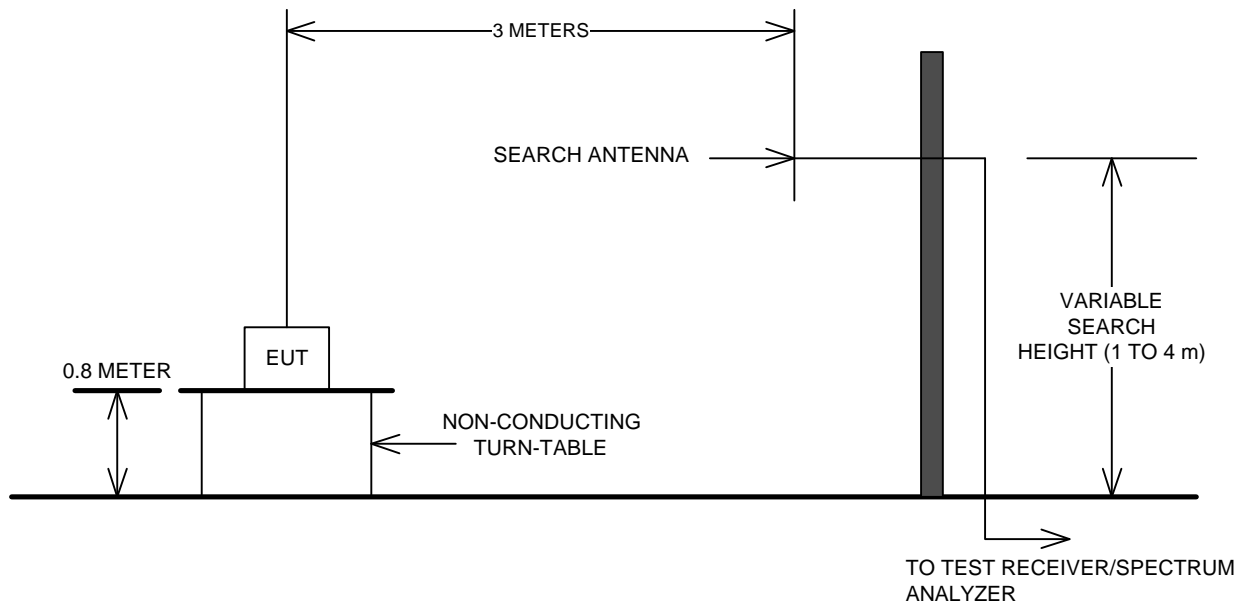


99% Occupied Bandwidth



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-RCT1

Section 7. Test Equipment List

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL	LAST CAL.	NEXT CAL.
1 Year	Oscilloscope	Tektronix	TDS 3012	FA001560	June 29/01	June 29/02
1 Year	Spectrum Analyzer	Hewlett-Packard	8565E	FA000981	June. 08/01	June. 08/02
1 Year	Receiver	Rohde & Schwarz	ESVP	FA000871	Sept. 19/01	Sept. 19/02
1 Year	Dipole Antenna Set	EMCO #1	3121C	FA000814	Apr. 16/01	Apr. 16/02
1 Year	Horn Antenna #2	EMCO	3115	FA000825	Dec. 01/01	Dec. 01/02
1 Year	1.0 – 2.0 GHz Amplifier	JCA	12-400	FA001498	May. 30/01	May. 30/02
1 Year	2.0 – 4.0 GHz Amplifier	JCA	24-600	FA001496	May. 30/01	May. 30/02
1 Year	4.0 – 8.0 GHz Amplifier	JCA	48-600	FA001498	May. 30/01	May. 30/02

NA: Not Applicable

NCR: No Cal Required

COU: CAL On Use