

KTL Test Report: 0R02570

Applicant: Internet Security Lifeguard Inc.
2005, 3rd Avenue
Lachine, Quebec
H8T 1X1

**Equipment Under Test:
(E.U.T.)** Man Down Transmitter

FCC ID: OQNTX234

In Accordance With: **FCC Part 15, Subpart C**
For Low Power Transmitters Operating Periodically
In The Band 40.66 - 40.77 MHz And Above 70 MHz

Tested By: KTL Ottawa Inc.
3325 River Road, R.R. 5
Ottawa, Ontario K1V 1H2

Authorized By:

R. Grant, Wireless Group Manager

Date:

Total Number of Pages: 24

EQUIPMENT: Man Down Transmitter
FCC ID: OQNTX234

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EQUIPMENT: Man Down Transmitter
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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, Paragraph 15.231. 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.



New Submission



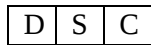
Production Unit



Class II Permissive Change



Pre-Production Unit



Equipment Code

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".



NVLAP LAB CODE: 100351-0

TESTED BY: _____ DATE: _____
Kevin Carr, Technologist

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This report applies only to the items tested.

EQUIPMENT: Man Down Transmitter
FCC ID: OQNTX234

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)	Not Applicable
Periodic Alternate Field Strength Requirements	15.231(e)	Not Applicable
Powerline Conducted Emissions	15.207	Not Applicable

Footnotes For N/A's:**Test Conditions:**

Indoor Temperature: 20 °C
 Humidity: 40 %

Outdoor Temperature: 20 °C
 Humidity: 40 %

EQUIPMENT: Man Down Transmitter
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Section 2. Equipment Under Test (E.U.T.)**General Equipment Information**

Manufacturer:	Internet Security Lifeguard
Model No.:	Man Down
Serial No.:	None
Date Received In Laboratory:	June 6, 2000
KTL Identification No.:	Item #1
Frequency Range:	303 MHz
Operating Frequency(ies) of Sample:	303.87 MHz
Type of Emission:	PWM
Emission Designator:	55K0L1D
Supply Power Requirement:	Battery, 3.6 Vdc
Duty Cycle Calculation:	$20 \text{ Log } \left(\frac{82 \times 0.6}{100} \right)_{ms} = -6.2 \text{ dB}$

EQUIPMENT: Man Down Transmitter
FCC ID: OQNTX234

Section 3. Transmission Requirements

Para. No.: 15.231(a)

Test Performed By: Kevin Carr	Date of Test: June 8, 2000
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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.

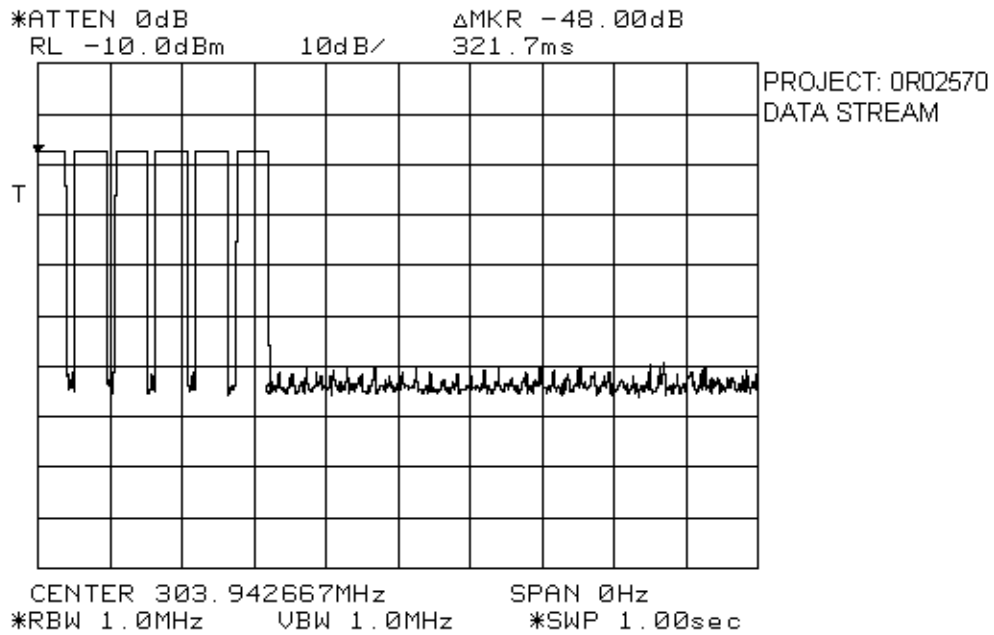
Test Data: Compliance was determined by verification of technical specifications and a functional test on the equipment.

EQUIPMENT: Man Down Transmitter
FCC ID: OQNTX234

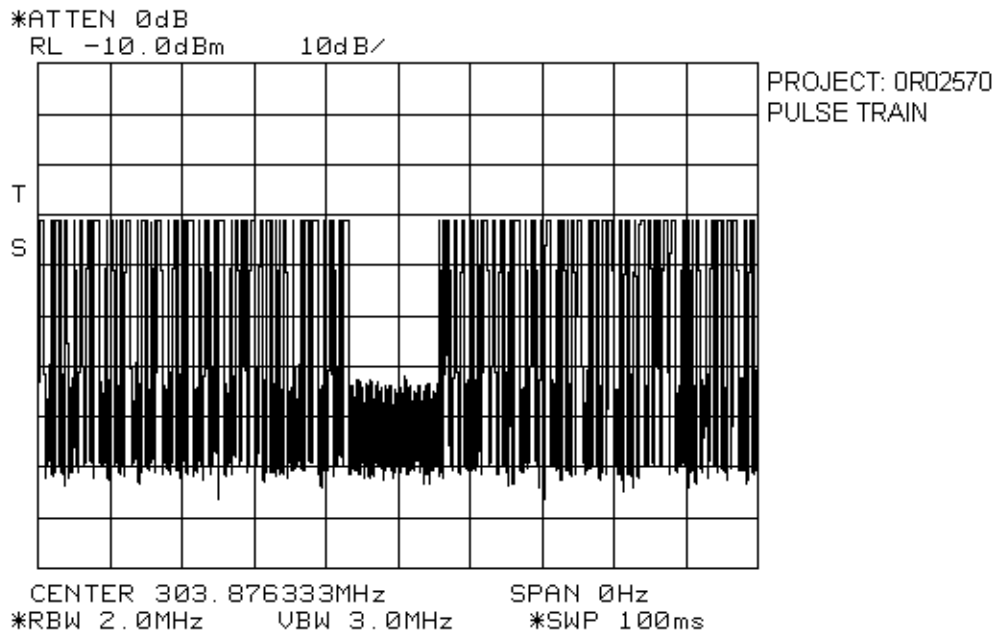
Rationale for Compliance with Transmission Requirements

- 15.231(a)(1) :** There is no provision for manual operation.
- 15.231(a)(2) :** The transmission duration is 321.7 ms.
- 15.231(a)(3) :** No polling function with this EUT.
- 15.231(a)(4) :** Not applicable.

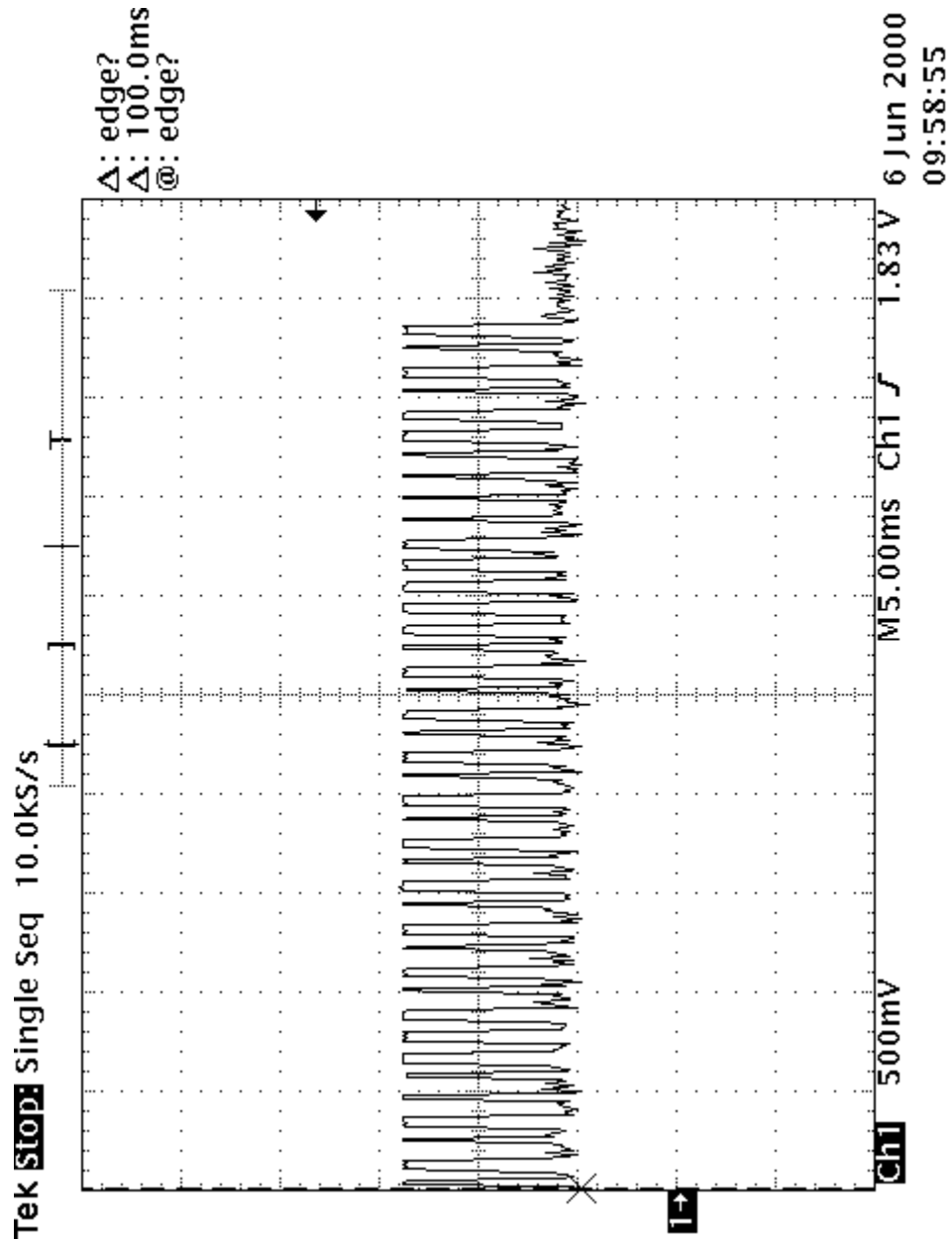
EQUIPMENT: Man Down Transmitter
FCC ID: OQNTX234



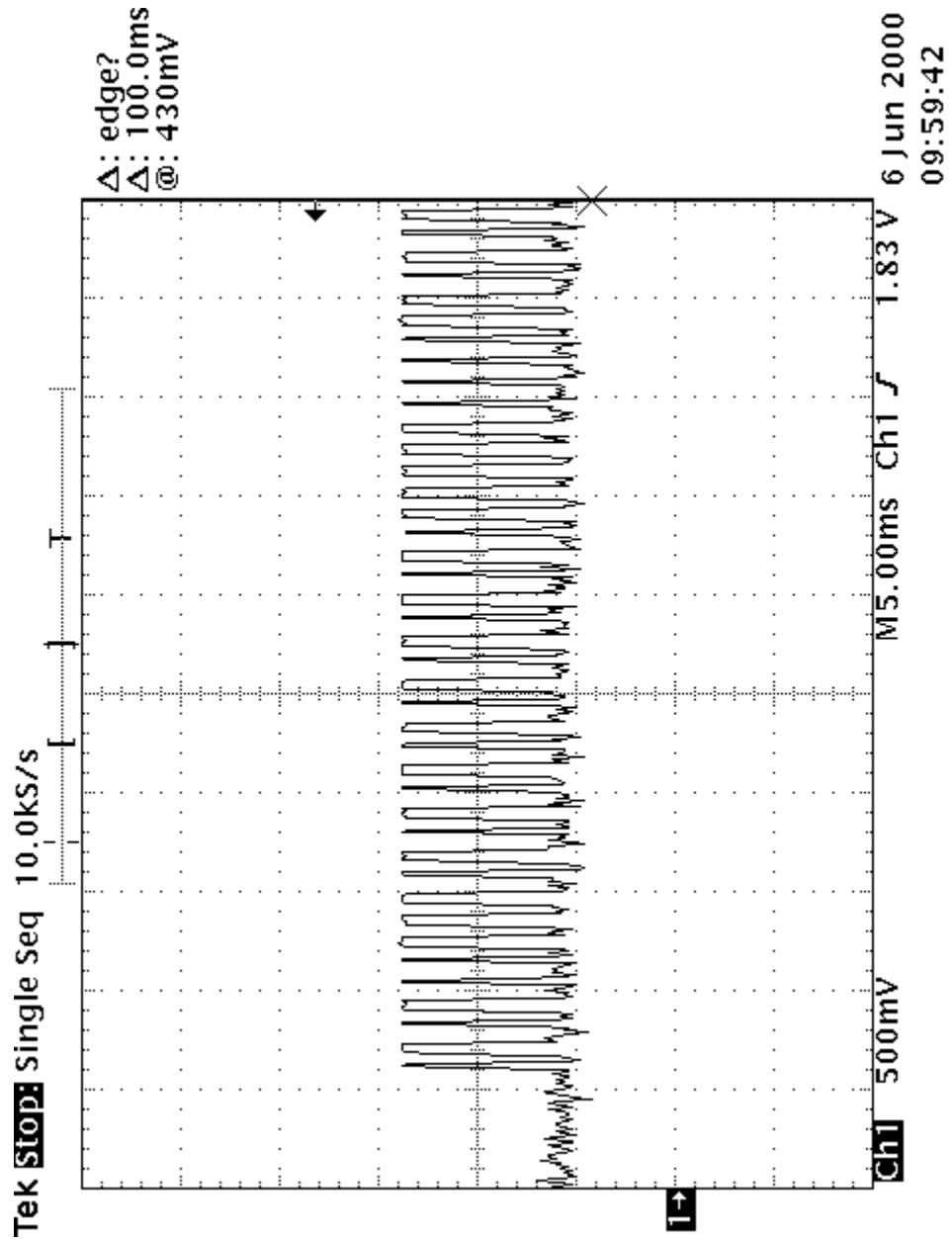
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FCC ID: OQNTX234



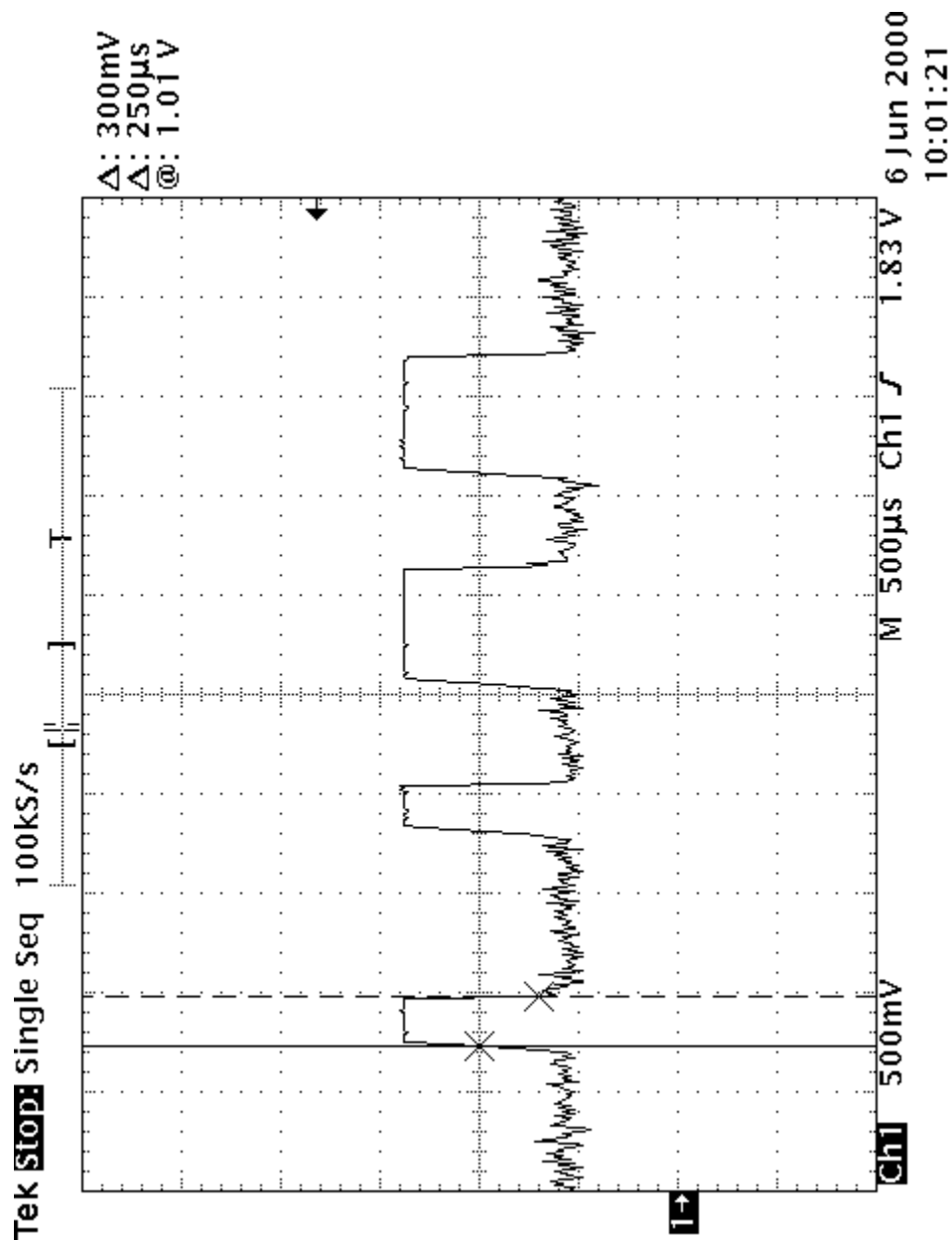
EQUIPMENT: Man Down Transmitter
FCC ID: OQNTX234



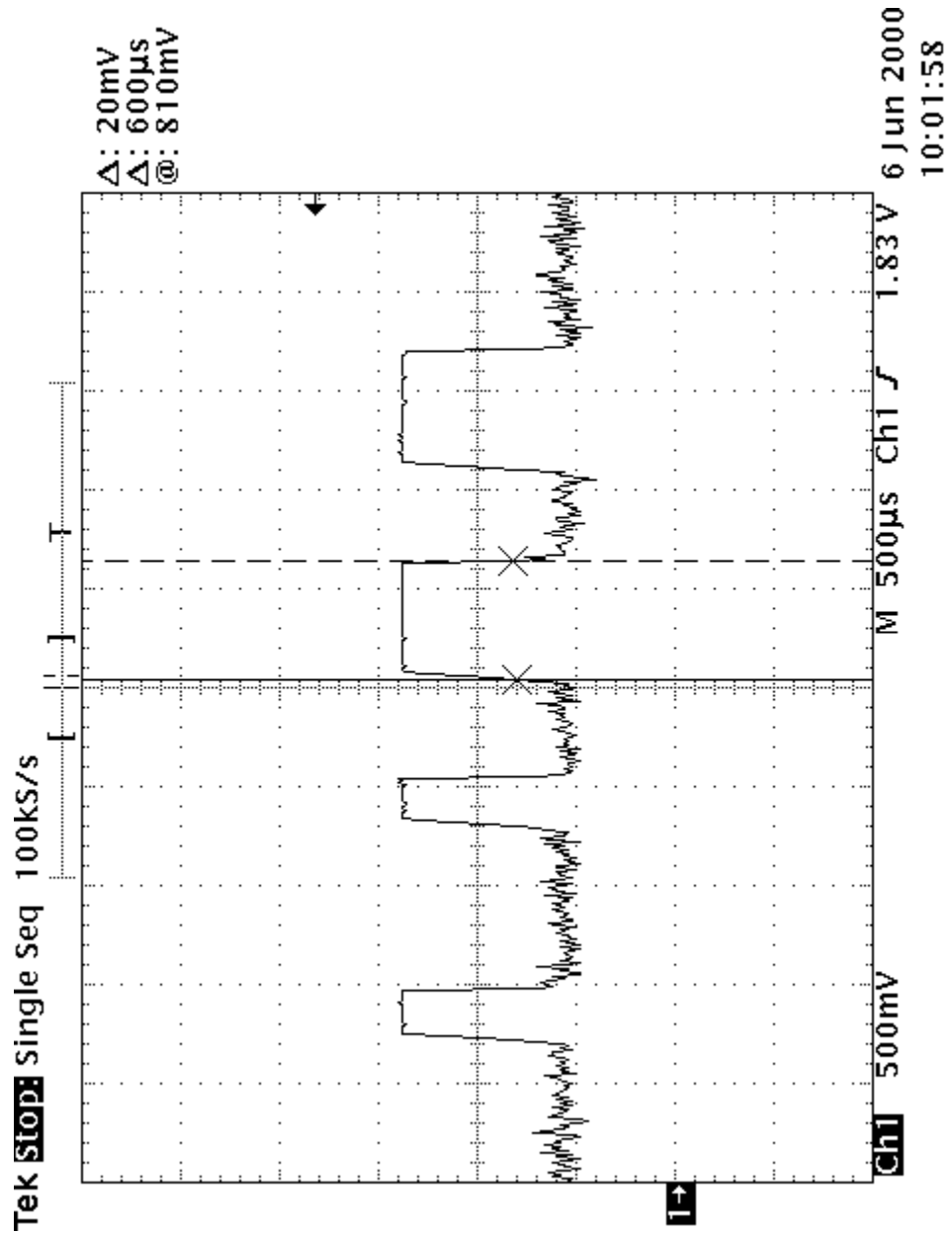
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EQUIPMENT: Man Down Transmitter
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Para. No.: 15.231(b)

Test Performed By: Kevin Carr**Date of Test:** June 8, 2000**Minimum Standard:****Permissible Field Strength Limits (Momentarily Operated Devices)**

Fundamental Frequency (MHz)	Field Strength of Fundamental Microvolts/Meter at 3 meters; (watts)	Field Strength of Unwanted Emissions Microvolts/Meter at 3 meters; (watts)
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

Notes:

Use quasi-peak or averaging meter.

For 130 - 174 MHz: $FS \text{ (microvolts/m)} = (56.82 \times F) - 6136$ * Linear interpolation with frequency F in MHzFor 260 - 470 MHz: $FS \text{ (microvolts/m)} = (41.67 \times F) - 7083$

Any emissions that fall within the restricted bands of 15.205 shall not exceed the following limits:

Frequency (MHz)	Field Strength ($\mu\text{V/m}$ @ 3m)	Field Strength (dB @ 3m)
30 - 88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

Test Results:Complies. The worst-case emission level is 51.5dB $\mu\text{V/m}$ @ 3m at 607.75 MHz. This is 2.5 dB below the specification limit.**Test Data:**

See attached table.

Above 1 GHz a spectrum analyzer and low noise amplifier are used to measure emission levels. The spectrum analyzer resolution bandwidth was set to 1 MHz and video bandwidth was 3 MHz.

In the case of handheld equipment, the E.U.T. is rotated in three planes to obtain worst-case results.

EQUIPMENT: Man Down Transmitter
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Test Data - Radiated Emissions

Test Distance (meters) :3		Range: A Tower		Receiver: HP8564E		RBW: 100kHz/1MHz		Detector: PEAK	
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)
303.876	E/D4	V	31.5	22.0		-6.2	47.3	74.9	27.6
303.876	E/D4	H	51.3	22.0		-6.2	67.1	74.9	7.8
607.752	E/D4	V	19.4	29.5		-6.2	42.7	54.0	11.3
607.752	E/D4	H	28.2	29.5		-6.2	51.5	54.0	2.5
911.628	E/D4	V	4.2	34.4		-6.2	32.4	54.0	21.6
911.628	E/D4	H	13.4	34.4		-6.2	41.6	54.0	12.4
1215.526	H2	V	65.3	30.2	-48.0	-6.2	41.3	54.0	12.7
1215.527	H2	H	69.0	30.2	-48.0	-6.2	45.0	54.0	9.0
1519.41	H2	V	55.8	31.4	-48.0	-6.2	33.0	54.0	21.0
1519.41	H2	H	55.0	31.4	-48.0	-6.2	32.2	54.0	21.8
1823.3	H2	V	62.8	33.0	-48.0	-6.2	41.6	54.0	12.4
1823.4	H2	H	59.8	33.0	-48.0	-6.2	38.6	54.0	15.4
2127.4	H2	V	66.3	35.7	-57.9	-6.2	37.9	54.0	16.1
2127.2	H2	H	66.5	35.7	-57.9	-6.2	38.1	54.0	15.9
2431.09	H2	V	72.7	37.3	-60.0	-6.2	43.8	54.0	10.2
2431.27	H2	H	72.7	37.3	-60.0	-6.2	43.8	54.0	10.2
2735.02	H2	V	69.2	37.7	-59.9	-6.2	40.8	54.0	13.2
2734.97	H2	H	72.4	37.7	-59.9	-6.2	44.0	54.0	10.0
3038.74	H2	V	66.3	38.8	-59.4	-6.2	39.5	54.0	14.5
3038.76	H2	H	66.1	38.8	-59.4	-6.2	39.3	54.0	14.7

Notes:

B/C = Biconical, B/L = Biconilog, L/P = Log-Periodic, H = Horn, D/P = 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: Man Down Transmitter
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Radiated Photographs (Worst Case Configuration)

Front View



EQUIPMENT: Man Down Transmitter
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Section 5. Occupied Bandwidth

Para. No.: 15.231(c)

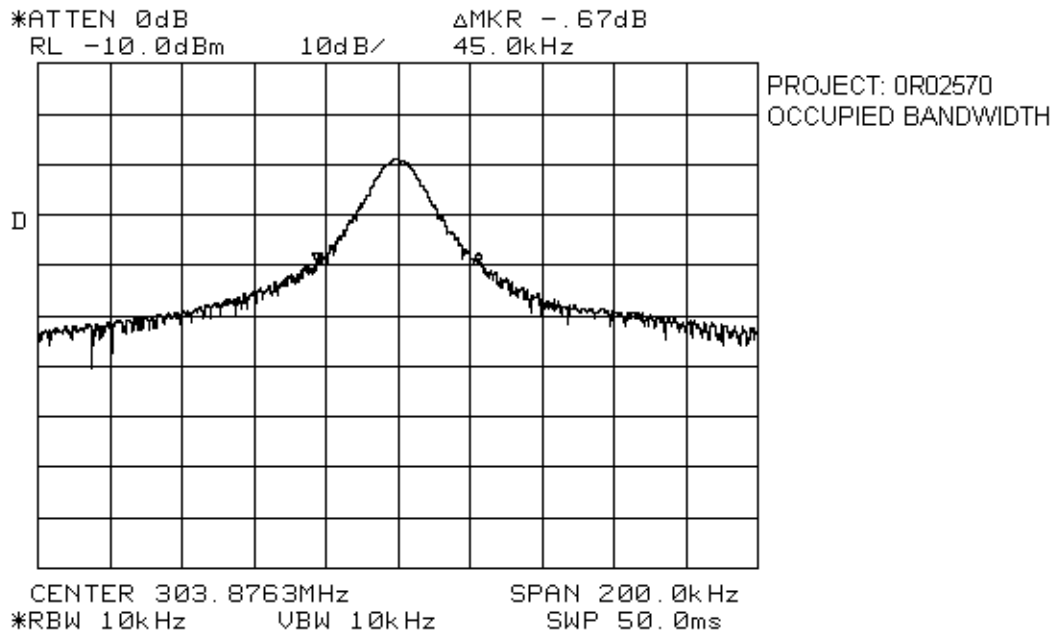
Test Performed By: Kevin Carr	Date of Test: June 6, 2000
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Minimum Standard: 15.231(c) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 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.

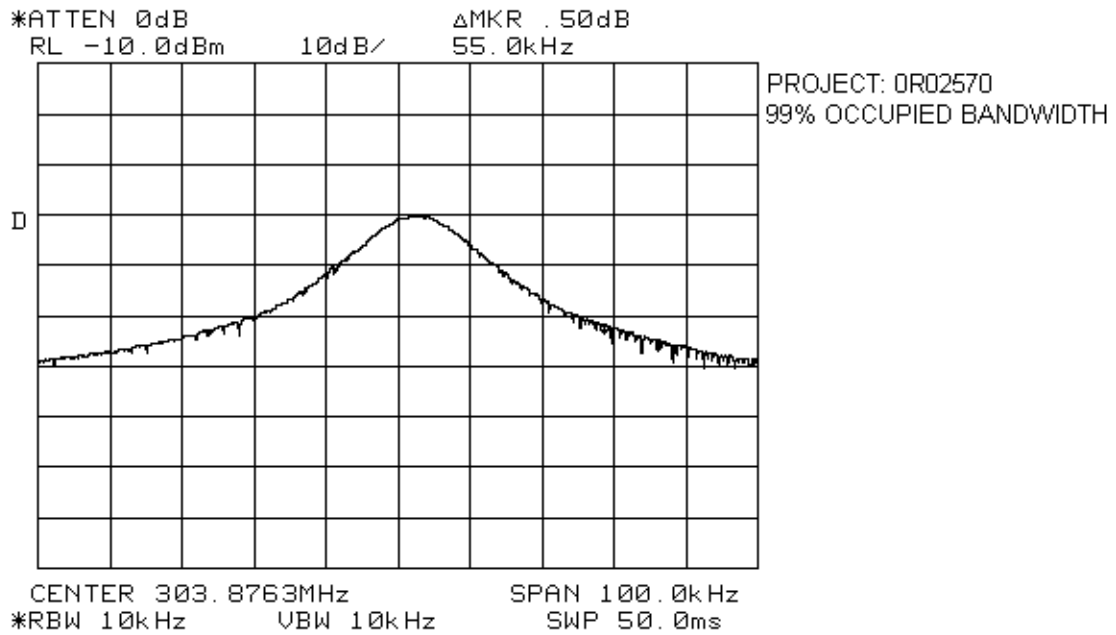
Test Results: Complies. See attached graph.

Test Data: See attached graph.

EQUIPMENT: Man Down Transmitter
FCC ID: OQNTX234



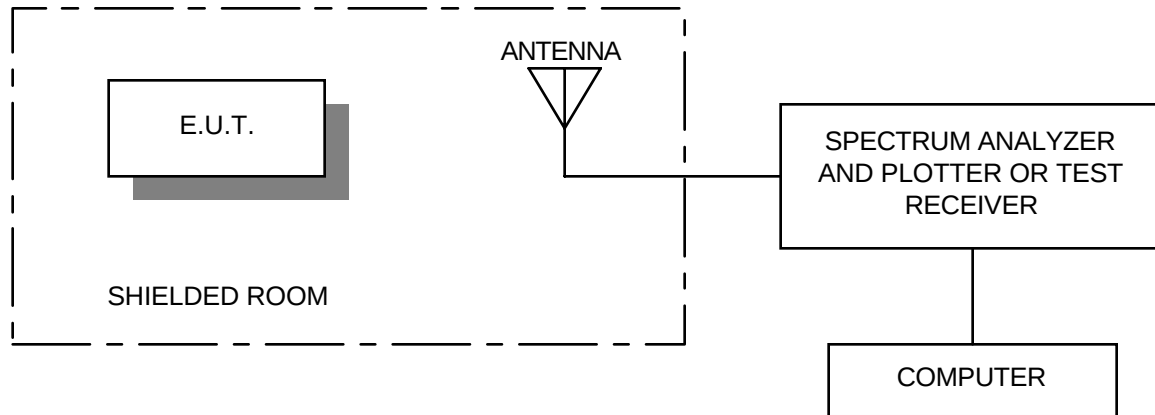
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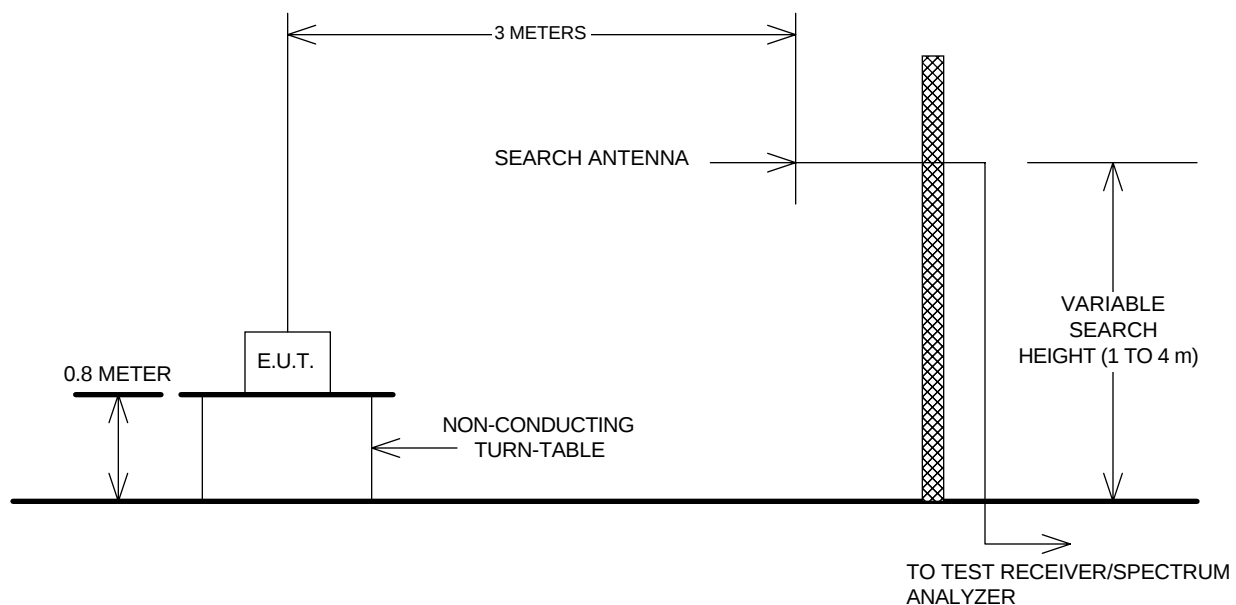
EQUIPMENT: Man Down Transmitter
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Section 6. Block Diagrams

Radiated Prescan



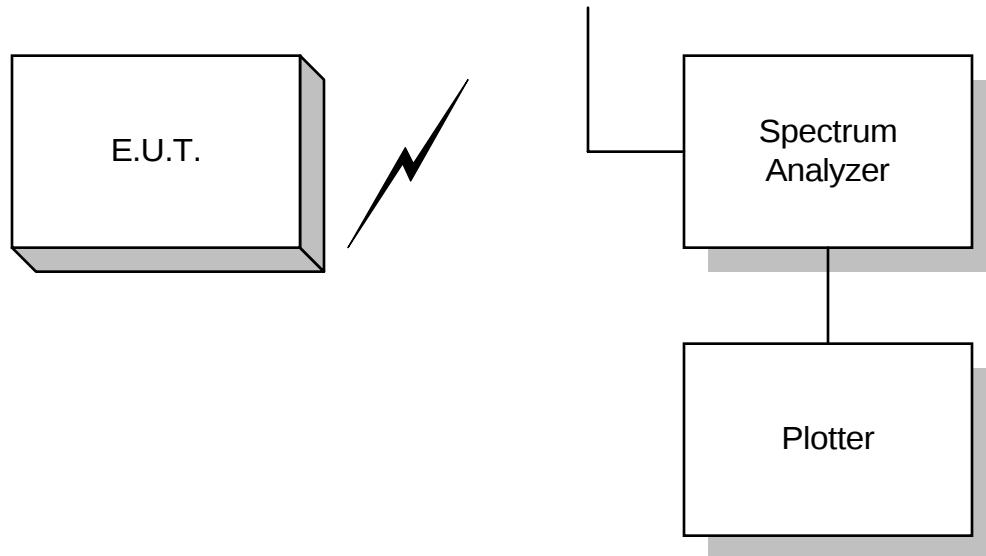
Outdoor Test Site For Radiated Emissions



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

EQUIPMENT: Man Down Transmitter
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Occupied Bandwidth



EQUIPMENT: Man Down Transmitter
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Section 7. Test Equipment List

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL	LAST CAL.	NEXT CAL.
1 Year	Spectrum Analyzer	Hewlett Packard	8564E	3846A01407	May 31/99	May 31/00
1 Year	Horn Antenna	EMCO #2	3115	4336	Nov. 11/99	Nov. 11/00
1 Year	Dipole Antenna Set	EMCO #2	3121C	FA001349	June 5/00	June 5/01
1 Year	RF AMP	JCA	2-4 GHz	FA001496	May 31/00	May 31/01
1 Year	RF AMP	JCA	1-2 GHz	FA001498	May 31/00	May 31/01
1 Year	RF AMP	JCA	4-8 GHz	FA001497	May 31/00	May 31/01

NA: Not Applicable
NCR: No Cal Required
COU: CAL On Use

KTL Ottawa

FCC PART 15, SUBPART C
FOR LOW POWER TRANSMITTERS
PROJECT NO.: 0R02570
ANNEX A

EQUIPMENT: Man Down Transmitter
FCC ID: OQNTX234

Annex A

Restricted Bands

EQUIPMENT: Man Down Transmitter
FCC ID: OQNTX234

Section A Restricted Bands of Operation

(a) Except as shown in paragraph (d) of this section , only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42-16.423	399.9-410	4.5-5.15
0.49 - 0.51	16.69475-16.69525	608-614	5.35-5.46
2.1735 - 2.1905	16.80425-16.80475	960-1240	7.25-7.75
3.020 - 3.026	25.5-25.67	1300-1427	8.025-8.5
4.125 - 4.128	37.5-38.25	1435-1626.6	9.0-9.2
4.17725 - 4.17775	73-74.6	1645.5-1646.5	9.3-9.5
4.20725 - 4.20775	74.8-75.2	1660-1710	10.6-12.7
6.215 - 6.218	108-121.94	1718.8-1722.2	13.25-13.4
6.31175 - 6.31225	123-138	2220-2300	14.47-14.5
8.291 - 8.294	149.9-150.05	2310-2390	15.35-16.2
8.362 - 8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625 - 8.38675	156.7-156.9	2655-2900	22.01-23.12
8.41425 - 8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29 - 12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975 - 12.52025	240-285	3345.8-3358	36.43-36.5
12.57675 - 12.57725	322-335.4	3600-4400	Above 38.6
13.36 - 13.41			