Test Report:	5W46140.3
Applicant:	Instantel Inc. 309 Legget Drive, Kanata, ON K2K 3A3
Apparatus:	International MyCall Tag
FCC ID:	ISEIMF
In Accordance With:	FCC Part 15 Subpart C, 15.231 Periodic operation in the band 40.66-40.70MHz and above 70 MHz.
Tested By:	Nemko Canada Inc. 303 River Road Ottawa, Ontario K1V 1H2
Authorized By:	 Sim Jagpal, Resource Manager
Date:	22 June 2005
Total Number of Pages:	19

Report Summary

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, Subpart C. Radiated tests were conducted is accordance with ANSI C63.4-2003. Radiated emissions are made on an open area test site. A description of the test facility is on file with the FCC.

The assessment summary is as follows:

Apparatus Assessed:	International MyCall Tag
Specification:	FCC Part 15 Subpart C, 15.231
Compliance Status:	Complies
Exclusions:	None
Non-compliances:	None
Report Release History:	Original Release

Author: Jason Nixon, Telecom Specialist

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025.

TABLE OF CONTENTS

Section 1 : Equipment Under Test

1.1 Product Identification

The Equipment Under Test was identified as follows:

International MyCall Tag (M/N: 806A5601)

1.2 Samples Submitted for Assessment

The following samples of the apparatus have been submitted for type assessment:

Sample No.	Description	Serial No.
1	MyCall Tag	00883
2	MyCall Tag	03508

The first samples were received on: June 6, 2005

1.3 Theory of Operation

The International MyCall tag is a battery operated transceiver. The tag receives IR energy from ceiling mounted Beacons and transmits a single frequency FSK burst of RF energy in the frequency range 433.42 – 434.42 MHz to a Local Area Receiver. The received message is sent to a central computer to track the location of people in a mapped area.

The tag also has two push buttons that when either one or both are depressed (panic mode) enables the transmitter to send a burst of RF alarm messages to the Local Area Receiver.

1.4 Technical Specifications of the EUT

Manufacturer:	Instantel Inc.
Frequency Range:	433.42 – 434.42MHz
Emission Designator:	F1D
Modulation:	FSK
Antenna:	Integral
Power:	3.6VDC Lithium Battery

Section 2 : Test Conditions

2.1 Specifications

The apparatus was assessed against the following specifications:

FCC Part 15 Subpart C, 15.231

Periodic operation in the band 40.66-40.70 MHz and above 70 MHz.

2.2 Deviations From Laboratory Test Procedures

No deviations were made from laboratory test procedures.

2.3 Test Environment

All tests were performed under the following environmental conditions:

Temperature range	:	15 – 30 ^{o}C
Humidity range	:	20 - 75 %
Pressure range	:	86 - 106 kPa
Power supply range	:	+/- 5% of rated voltages

2.4 Test Equipment

Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	Hewlett-Packard	8565E	FA000981	March 10/05	March 10/06
Dipole Antenna Set	EMCO #1	3121C	FA000814	April 29/05	April 29/06
Log Periodic Antenna #1	EMCO	LPA-25	FA000477	Aug. 26/04	Aug. 26/05
Horn Antenna #1	EMCO	3115	FA000649	Dec. 22/04	Dec. 22/05
1.0 – 2.0 GHz Amplifier	JCA	12-400	FA001498	COU	COU
2.0 – 4.0 GHz Amplifier	JCA	24-600	FA001496	COU	COU
4.0 – 8.0 GHz Amplifier	JCA	48-600	FA001497	COU	COU
5.0 – 18.0 GHz Amplifier	NARDA	DWT-186N23U40	FA001409	COU	COU

Section 3 : Observations

3.1 Modifications Performed During Assessment

No modifications were performed during assessment.

3.2 Record Of Technical Judgements

No technical judgements were made during the assessment.

3.3 EUT Parameters Affecting Compliance

The user of the apparatus could not alter parameters that would affect compliance.

3.4 Test Deleted

No Tests were deleted from this assessment.

Section 4 : Results Summary

This section contains the following:

FCC Part 15 Subpart C : Test Results

The column headed 'Required' indicates whether the associated clauses were invoked for the apparatus under test. The following abbreviations are used:

N	No : not applicable / not relevant.
Y	Yes : Mandatory i.e. the apparatus shall conform to these tests.
N/T	Not Tested, mandatory but not assessed. (See section 3.4 Test deleted)

The results contained in this section are representative of the operation of the apparatus as originally submitted.

4.1 FCC Part 15 Subpart C : Test Results

Part 15	Test Description	Required	Result
15.205(a)	Radiated Emissions within Restricted Bands	Y	PASS
15.207(a)	Powerline Conducted Emissions	N	
15.231(a)(1)	Manually operated transmitter	N	
15.231(a)(2)	Automatically activated transmitter	N	
15.231(a)(3)	Periodic transmissions at regular predetermined intervals	N	
15.231(a)(4)	Radiators used in cases of emergency	N	
15.231(a)(5)	Set-up information for security systems	N	
15.231(b)	Radiated Emissions	N	
15.231(c)	20dB Bandwidth	Y	PASS
15.231(d)	Devices operating within the frequency band 40.66-40.70 MHz	N	
15.231(e)	Radiated emissions for Periodic radiators	Y	PASS

Notes:

Appendix A : Test Results

Criteria: Clause 15.205(a) Radiated Emissions within Restricted Bands

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvoltsmeter)	Measurement Distance (meters)
0.009-0.490	2400F (kHz)	300
0.490-1.705	24000F (kHz)	30
1.705-30.0	30	30
30-88	1001	3
88-216	1502	3
216-960	2003	3
Above 960	500	3

Test Conditions:

Sample Number:	1	**Temperature:**	13
Date:	June 20, 2005	**Humidity:**	93
Modification State:	0	**Tester:**	Jason Nixon
		Laboratory:	OATS

Test Results:

See Attached Table for Results

Additional Observations:

The Spectrum was searched from 30MHz to 5GHz. The EUT was measured on three orthogonal axis with Fresh new batteries.

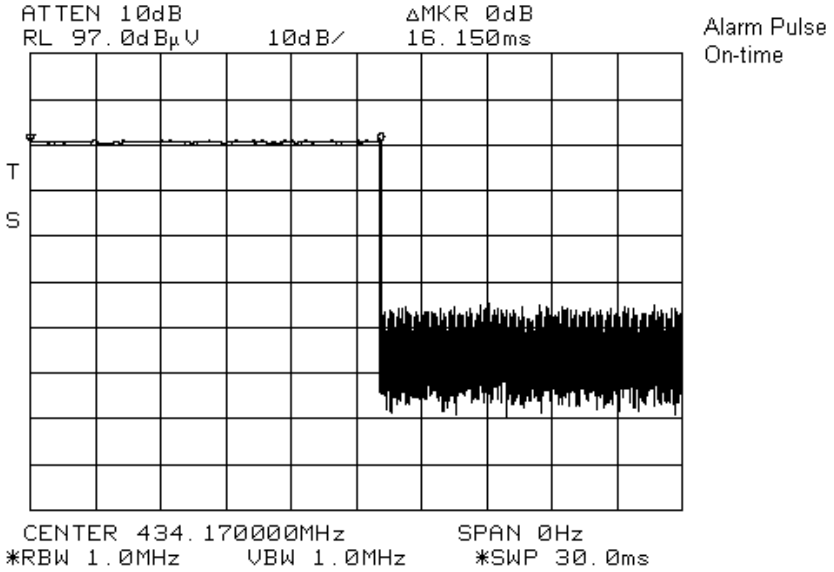
These results apply to emissions found in the Restricted bands defined in FCC Part 15 Subpart C, 15.205.

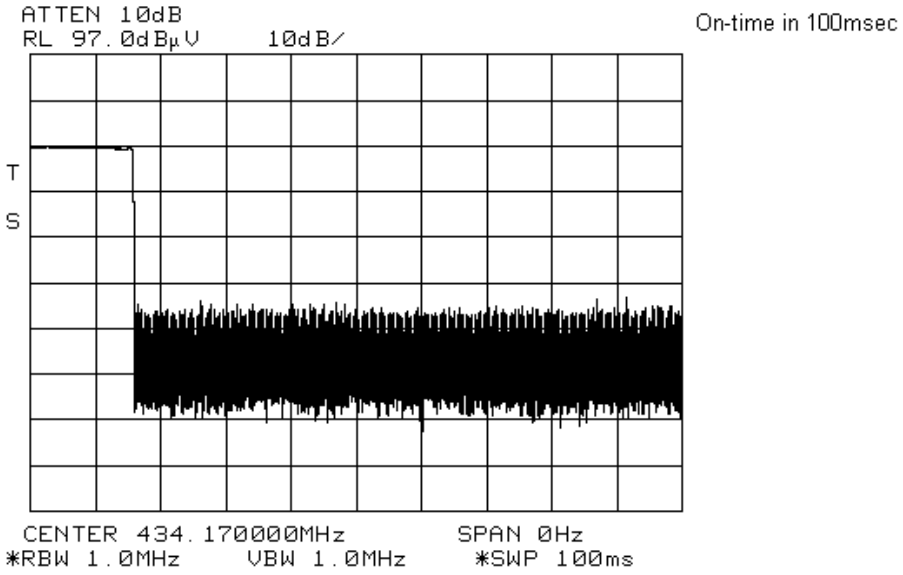
All measurements were performed using a Peak Detector with 100kHz RBW below 1GHz and a 1MHz RBW above 1GHz at a distance of 3 meters.

	Frequency (MHz)	Antenna	Polarity	RCVD Signal (dBuV)	Ant. Factor (dB)	Amp. Gain / Cable Loss (dB)	Duty Cycle Corr.	Distance Correction	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1302.51	Horn1	V	54.2	25.1	43.3	15.8	0.0	36.0	74	38.0	Peak
									20.2	54	33.8	Average
2	1302.51	Horn1	H	53.3	25.1	43.3	15.8	0.0	35.1	74	38.9	Peak
									19.3	54	34.7	Average

Emission Level(Peak) = RCVD Signal + Ant. Factor – Amp. Gain/Cable Loss
Emission Level(Average) = RCVD Signal + Ant. Factor – Amp. Gain/Cable Loss – Duty Cycle Corr.

Duty Cycle:





Duty cycle = 20Log(16.15/100) = -15.8dB

Criteria: Clause 15.231(a) Conditions for intentional radiators to comply with periodic operation

The provisions of this section are restricted to periodic operation within the band 40.66-40.70 MHz and above 70 MHz. Except as shown in paragraph (e) of this section, the intentional radiator is restricted to the transmission of a control signal such as those used with alarm systems, door openers, remote switches, etc. Continuous transmissions, voice, video and the radio control of toys are not permitted. Data is permitted to be sent with a control signal. The following conditions shall be met to comply with the provisions for this periodic operation:

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

(2) A transmitter activated automatically shall cease transmission within 5 seconds after activation.

(3) 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.

(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 condition.

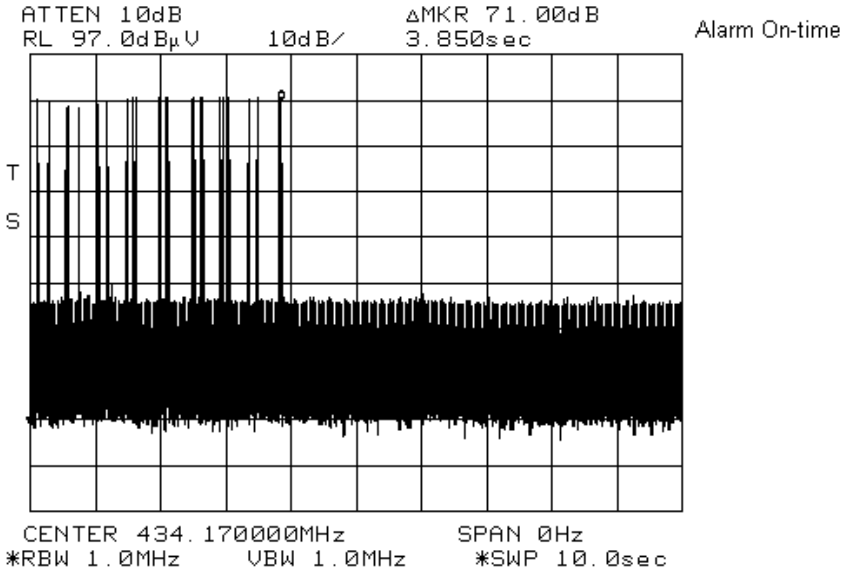
(5) Transmission of set-up information for security systems may exceed the transmission duration limits in paragraphs (a)(1) and (a)(2) of this section, provided such transmissions are under the control of a professional installer and do not exceed ten seconds after a manually operated switch is released or a transmitter is activated automatically. Such set-up information may include data.

Test Conditions:

Sample Number:	2	**Temperature:**	23
Date:	June 16, 2005	**Humidity:**	28
Modification State:	0	**Tester:**	Jason Nixon
		Laboratory:	Wireless

Test Results:

15.231(a)(1) Manual Operation



15.231(a)(2) Automatic Operation

The EUT is not automatically activated.

15.231(a)(3) Periodic Transmissions

The EUT does transmit Periodically and complies with the requirements of 15.231(e).

15.231(a)(4) Emergency Transmissions

The EUT is not intended for Emergency transmissions.

15.231(a)(5) Transmission of Setup Information

The EUT does not exceed the transmission characteristics of 15.231(a)(1).

Criteria: Clause 15.231(c) 20dB Bandwidth

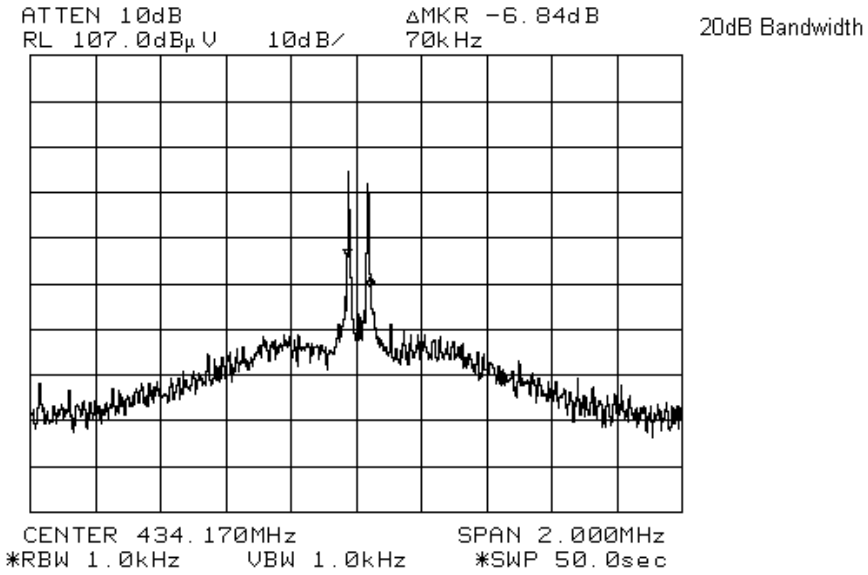
The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

Test Conditions:

Sample Number:	2	**Temperature:**	20
Date:	June 16, 2005	**Humidity:**	28
Modification State:	0	**Tester:**	Jason Nixon
		Laboratory:	Wireless

Test Results:

20dB Bandwidth:



Criteria: Clause 15.231(e) Radiated emissions for Periodic radiators

Intentional radiators may operate at a periodic rate exceeding that specified in paragraph (a) of this section and may be employed for any type of operation, including operation prohibited in paragraph (a) of this section, provided the intentional radiator complies with the provisions of paragraphs (b) through (d) of this section, except the field strength table in paragraph (b) of this section is replaced by the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (microvolts/meter)	Field Strength of Spurious Emissions (microvolts/meter)
40.66-40.70	1,000	100
70-130	500	50
130-174	500 to 1,500	50 to 150
174-260	1,500	150
260-470	1,500 to 5,000	150 to 500
Above 470	5,000	500

In addition, devices operated under the provisions of this paragraph shall be provided with a means for automatically limiting operation so that the duration of each transmission shall not be greater than one second and the silent period between transmissions shall be at least 30 times the duration of the transmission but in no case less than 10 seconds.

Test Conditions:

Sample Number:	1	**Temperature:**	13
Date:	June 20, 2005	**Humidity:**	93
Modification State:	0	**Tester:**	Jason Nixon
		Laboratory:	OATS

Test Results:

See Attached Table for Results

Additional Observations:

The Spectrum was searched from 30MHz to 5GHz.

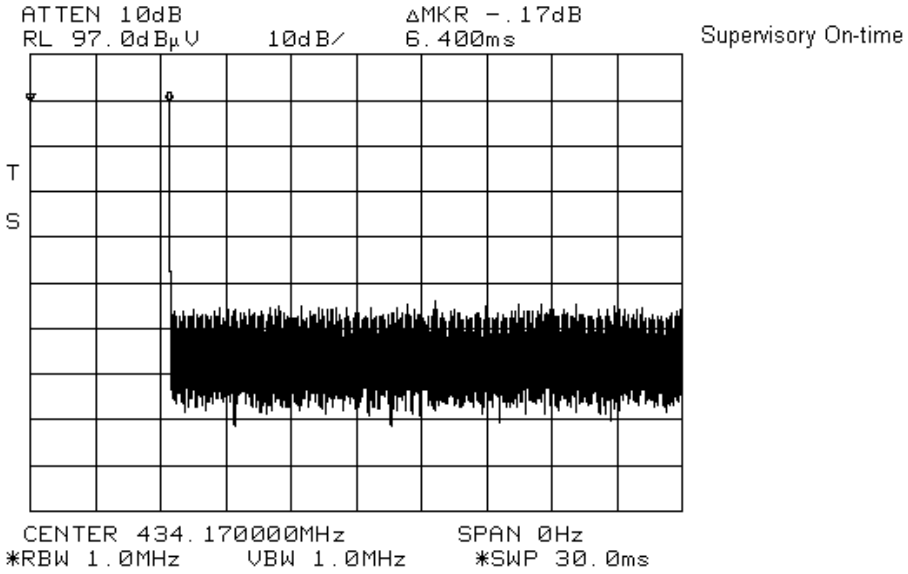
The EUT was measured on three orthogonal axis with Fresh new batteries.

All measurements were performed using a Peak Detector with 100kHz RBW below 1GHz and a 1MHz RBW above 1GHz at a distance of 3 meters. Only emissions less than 20dB below the limit have been included.

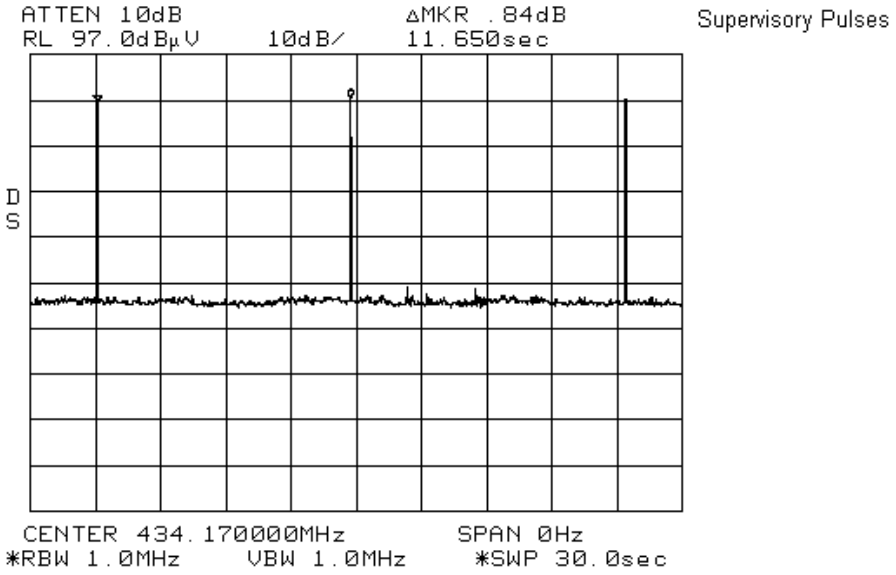
Freq. (MHz)	Ant	Pol. V/H	RCVD Signal (dBμV)	Ant. Factor (dB)	Amp. Gain (dB)	Duty Cycle Corr. (dB)	Cable Loss (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)
434.17	ED4	V	44.8	21.6	-	-15.8	2.7	53.3	72.9	19.6
434.17	ED4	H	44.7	21.6	-	-15.8	2.7	53.1	72.9	19.8

Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole
Level = RCVD Signal + Ant. Factor –Amp Gain – Duty Cycle Corr. + Cable Loss

Data burst On-Time:



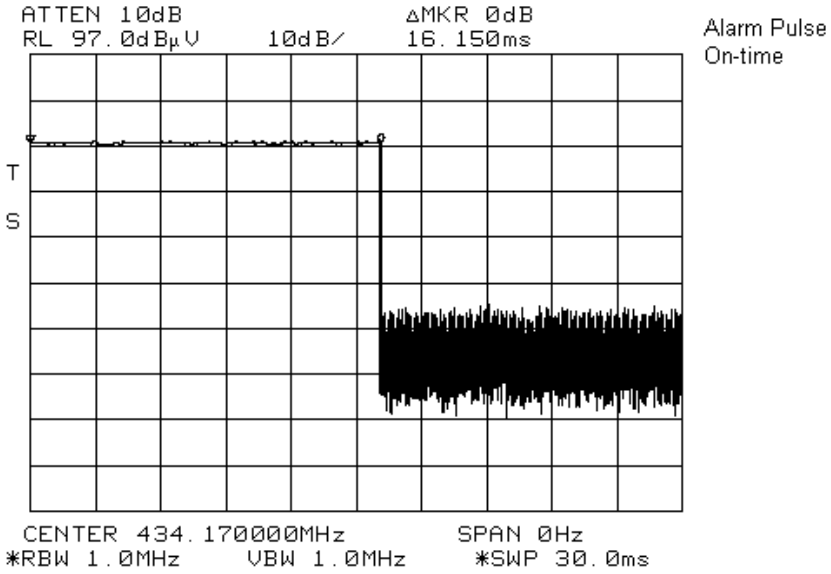
Time between Data bursts:

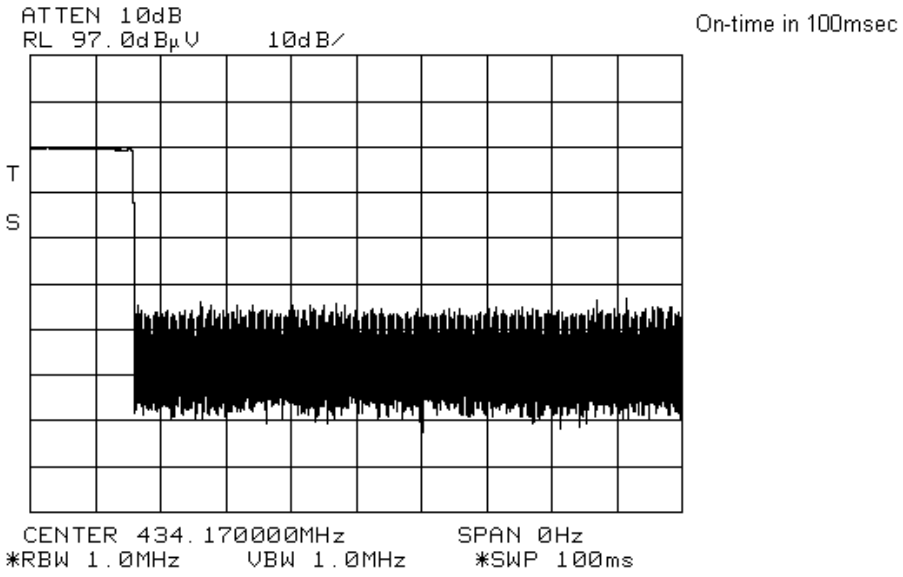


Time between transmissions > 30 x transmission on-time

11.650s > 30 x 6.4msec

Duty Cycle:





Duty cycle = 20Log(16.15/100) = -15.8dB

Appendix B : Setup Photographs

Spurious Emissions Setup:

Appendix C : Block Diagram of Test Setups

Test Site For Radiated Emissions