



Nemko USA, Inc.
11696 Sorrento Valley Rd., Suite F
San Diego, CA 92121-1024
Phone (858) 755-5525 Fax (858) 452-1810

Certification Test Report: 2009 11137686 FCC

Project number: 37077-1

Applicant: DEI Headquarters Inc.
1 Viper Way
Vista, CA 92081

Equipment Under Test (EUT): Hand Held Unit


Models: 7351V, 7351P, 7351X

In Accordance With: FCC Part 15 Subpart C, 15.231 Periodic operation in the band 40.66–40.70 MHz and above 70 MHz

RSS-210 Issue 7, June 2007 Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment

FCC ID: EZSDEI7351
IC: 1513A-7351

Tested By: Nemko USA Inc.
11696 Sorrento Valley Road, Suite F
San Diego, CA 92121


Authorized By: Alan Laudani, EMC/RF Test Engineer

Date: December 18, 2010

Total Number of Pages: 26

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 and RSS-210 Issue 7, June 2007. Radiated tests were conducted in 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 and IC.

The assessment summary is as follows:

Apparatus Assessed:	Hand Held Unit Models: 7351V, 7351P, 7351X Serial Number: 6
Specification:	FCC Part 15 Subpart C, 15.231 RSS-210 Issue 7, June 2007
Compliance Status:	Complies
Exclusions:	None
Non-compliances:	None

Report Release History:

REVISION	DATE	COMMENTS
-	December 11, 2010	Prepared By: A. Laudani
-	December 11, 2010	Initial Release: A. Laudani

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.

Nemko USA Inc. authorizes the applicant to reproduce this report provided it is reproduced in its entirety and for use by the company's employees only.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Nemko USA Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.


TESTED BY:  Date: December 11, 2010
A. Laudani, EMC Test Engineer

TABLE OF CONTENTS

Section 1. Summary of Test Results.....	2
Section 2: Equipment Under Test.....	5
2.1 Product Identification.....	5
2.2 Description and Method of Exercising the EUT.....	5
2.3 Technical Specifications of the EUT.....	6
Section 3: Test Conditions.....	7
3.1 Specifications.....	7
3.2 Deviations From Laboratory Test Procedures.....	7
3.3 Test Environment.....	7
3.4 Test Equipment.....	8
Section 4: Observations.....	9
4.1 Modifications Performed During Assessment.....	9
4.2 Record Of Technical Judgements.....	9
4.3 EUT Parameters Affecting Compliance.....	9
4.4 Test Deleted.....	9
4.5 Additional Observations.....	9
Section 5: Results Summary.....	10
5.1 Test Results.....	10
Appendix A: Test Results.....	11
Periodic operation in the band 40.66-40.77 MHz and above 70MHz.....	11
Time of Occupancy Measurements:.....	19
Periodic transmissions.....	20
Bandwidth Measurement:.....	24
Conducted Emissions.....	25

Section 2: Equipment Under Test

2.1 Product Identification

The Equipment Under Test was identified as follows:

DEVICE	MANUFACTURER MODEL # SERIAL #	POWER CABLE
EUT - Hand Held Unit	DEI Headquarters Inc. Model: 7351V, 7351P, 7351X Serial #: 6	NA

CONNECTION	I/O CABLE
No connections	

2.2 Description and Method of Exercising the EUT

The 7351V, 7351P, 7351X are Hand Held Units. Their function is to arm/disarm vehicle systems. A continuous transmit mode was configured for RF testing.

Two modes were tested.

Command / Response mode

In this mode, the user sends a command to the vehicle by activating one of the EUT switches, which in turn initiates an RF transmission to the car.

Page Mode

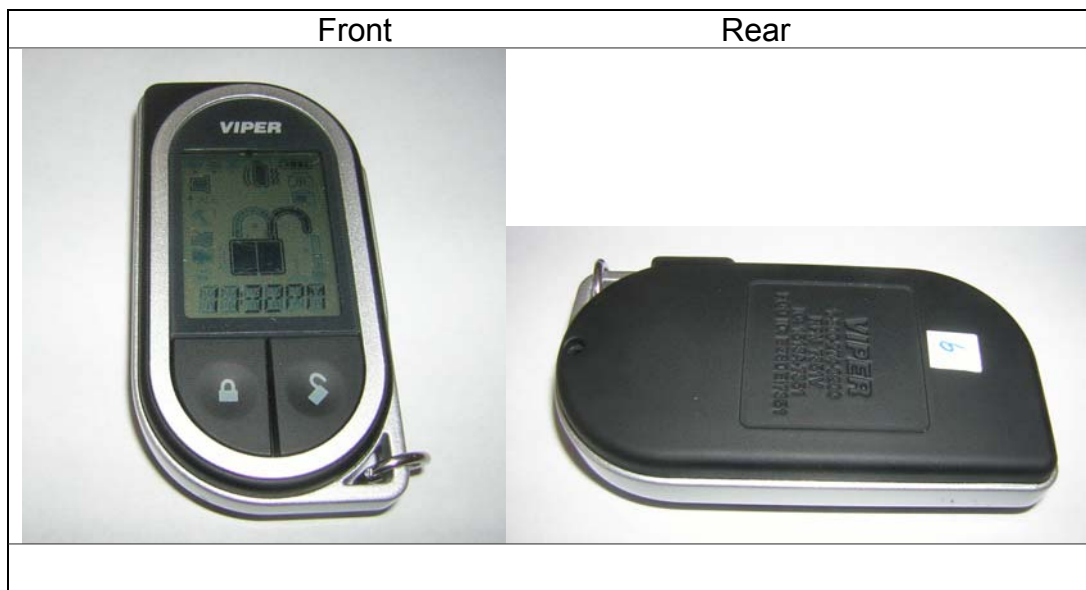
Page mode is the quiescent mode of the EUT. It's in sleep mode the majority of the time only waking up every few seconds for a short duration to turn on its receiver looking for a broadcast page transmission from the vehicle.

The EUT's performance during test was evaluated against the performance criterion specified by applicable test standards. Performance results are detailed in the test results section of this report.

2.3 Technical Specifications of the EUT

Manufacturer:	DEI Headquarters Inc.
Operating Frequency:	433.92 MHz
Measured RF field Strength:	79.0 dB μ V or 8961 uV/m (at 3m) 49.9 dB μ V
Modulation:	OOK
Antenna Connector:	Integral coil
Power Source:	Internal rechargeable batteries 4.2 V

Photograph 1. EUT Front and Rear



Section 3: Test Conditions

3.1 Specifications

The apparatus was assessed against the following specifications:

FCC Part 15 Subpart C, 15.231
Periodic operation in the band 40.66-40.77 MHz and above 70MHz.

RSS-210 Issue 7, June 2007 Low-power Licence-exempt Radiocommunication
Devices (All Frequency Bands): Category I Equipment

3.2 Deviations From Laboratory Test Procedures

No deviations from Laboratory Test Procedure

3.3 Test Environment

All tests were performed under the following environmental conditions:

Temperature range : 28 °C - 31 °C
Humidity range : 12 %-27%
Pressure range : 86 - 106 kPa

3.4 Test Equipment

Nemko ID	Device	Manufacturer	Model	Serial Number	Cal Date	Cal Due Date
111	Antenna, LPA	Electrometrics	3146	1382	10/20/2008	10/20/2010
114	Antenna, Bicon	EMCO	3104	2997	2/10/2009	2/10/2010
317	Preamplifier	HP	8449A	2749A00167	4/16/2009	4/16/2010
835	Spectrum Analyzer	Rohde & Schwarz	RHDFSEK	829058/005	3/31/2009	3/31/2010
877	Antenna, DRG Horn, .7-18GHz	AH Systems	SAS-571	688	7/28/2008	7/28/2010
901	pre amp	Sonoma	310 N	130607	3/27/2009	3/27/2010
422	Spectrum Analyzer Display	HP	85662A	2403A07080	7/17/2009	7/17/2010
533	Quasi-Peak Adapter	HP	85650A	2043A00211	7/20/2009	7/20/2010
564	High Pass Filter	Solar	7801-5.0	853130	8/14/2009	8/14/2010
681	Transient Limiter	HP	11947A	3107A02634	10/9/2009	10/9/2010
384	LISN	Solar	9348-50-R-24-BNC	941716	8/31/2009	8/31/2010
NA	Regulating Transformer	TDGC	0-250VAC	NA	NCR	NCR
815	Multimeter	Fluke	111	NA	8/4/2009	8/4/2010

Section 4: Observations

4.1 Modifications Performed During Assessment

No modifications performed during assessment..

4.2 Record Of Technical Judgements

No technical judgements were made during the assessment.

4.3 EUT Parameters Affecting Compliance

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

4.4 Test Deleted

No Tests were deleted from this assessment.

4.5 Additional Observations

There were no additional observations made during this assessment.

Section 5: 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 4.4 Test Deleted)

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

5.1 Test Results

Clause	RSS 210	Test/Requirement Description	Results
§ 15.207		Powerline Conducted Emissions	Complies
§ 15.209 (a)	Clause 2.6	Unintentional Radiator Radiated Emission Limits	Complies
§ 15.231 (b)	A1.1.2	Radiated Emissions	Complies
§ 15.231 (c)	Clause 4.6.1 RSS Gen.	Occupied Bandwidth	Complies
§ 15.231 (a)	A1.1.1	Transmission requirements	Complies
§ 15.231 (a)(1)	A1.1.1(b)	Manual activation requirement	Complies
§ 15.231 (a)(2)		Automatic activation requirement	Not Applicable ¹
§ 15.231 (a)(3)		Predetermined, polling or supervisory transmissions	Complies
§ 15.231 (a)(4)		Alarm device requirement	Not Applicable ³
§ 15.231 (a)(5)		Security systems requirement	Not Applicable ²

Footnotes:

1. The device utilizes manual activation.
2. The device is not used in security or safety applications.
3. The EUT is a non-alarm device.

Appendix A: Test Results

Periodic operation in the band 40.66-40.77 MHz and above 70MHz

Clause 15.231

(a) 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.

(b) In addition to the provisions of §15.205, the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

Fundamental Frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of harmonics (microvolts/meter)
40.66–40.70	2,250	225
70–130	1,250	125
130–174	11,250 to 3,750	1125 to 375
174–260	3,750	375
260–470	3,750 to 12,500	375 to 1,250
Above 470	12,500	1,250

¹Linear interpolations.

Limits at 433.92 MHz:

Limit Field Strength of fundamental: 10996.7 uV/m or 80.8 dBuV/m

Limit Field Strength of harmonics: 1099.7 uV/m or 60.8 dBuV/m

Test Conditions:

Sample Number:	6	Temperature:	18°C
Date:	10-28-2009	Humidity:	11%
Modification State:	Modulation	Tester:	A. Laudani
		Laboratory:	SOATS

Test Results:

See Attached Plots and Tables.
Field strength measured at 3 meters = 79.0 dBµV or 8961 uV/m.

Additional Observations:

- The Spectrum was searched from 30 MHz to the 10th Harmonic.
- Measurements below 1 GHz were performed at 3m with Peak detector. Peak measurements were max hold.
- Measurements of fundamental used a RBW > occupied bandwidth; VBW > RBW.
- Peak detector of 1 MHz RBW/VBW was used above 1 GHz.
- Average measurements for fundamental were computed using the formula FS avg = FS peak-20 log (duty cycle).
- The EUT is a hand held device, therefore measurements were taken at all three axes.
- The EUT used freshly charged batteries for every axis measured.
- No band defined, therefore no Band Edge Measurements:
- Low Power Mode: No harmonic spurious was detected in low power mode.
- Receive Mode: No emissions detected within 20 dB of the limits.

Typical spread sheet math:

$$\begin{aligned}
 \text{Corrected Reading (Fundamental)} &= \text{Max. Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{RF Gain} \\
 &= 79.0 + 16.7 + 3.3 - 0 \\
 &= 99.0 \text{ dBuV/m}
 \end{aligned}$$

$$\begin{aligned}
 \text{Max Reading for Fundamental Frequency} &= \text{Peak Meter Reading} - \text{Duty Cycle CF} \\
 &= 99.0 - 20 \\
 &= 79.0 \text{ dBuV/m}
 \end{aligned}$$

Duty Cycle Calculations:

Data "Word" is on for 31.86 ms in 100 ms.

Bits of data "Word" add up to 9.5 ms:

1st bit = 450 μ s

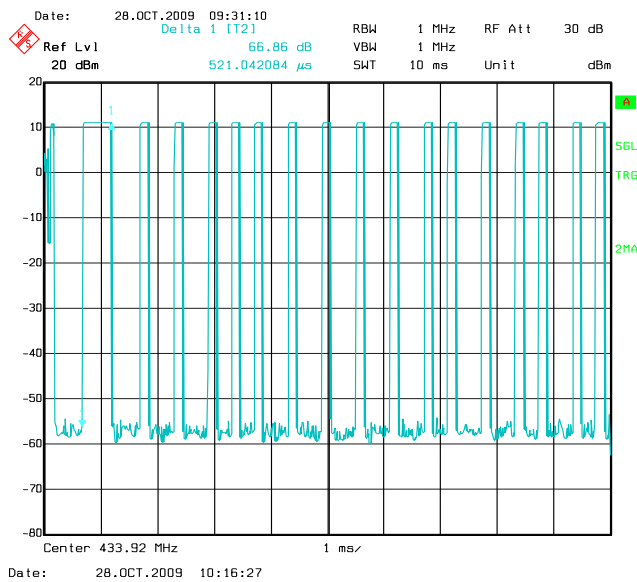
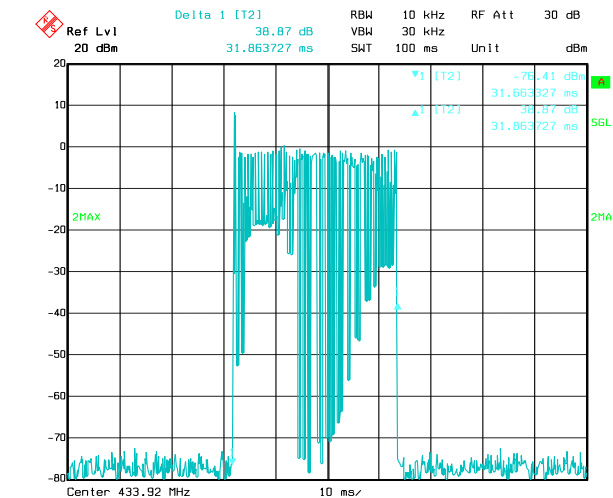
2nd bit = 521 μ s

3rd bit to 59th bit (57) = 150 μ s each or 8.550 ms

$0.450 + 0.521 + 8.550 = 9521 \mu$ s or 9.5 ms

9.5 ms in 100 ms = 0.095 or 9.5 %

Duty Cycle Correction Factor = $20 \log 0.095$
 = -20.4
 = -20 dB (allowed)



IC: 1513A-7351
FCC ID: EZSDEI751

RSS 210, Issue 7, June 2007
FCC Part 15 Subpart C, 15.231
Page 14 of 26

Report Number: **2009 11137686 FCC**

Radiated Emissions

Command / Response mode Antenna
"X" Axis Measurements

Radiated Emissions Data																							
Job # :	<u>37077-1</u>		Date :	<u>10-28-09</u>		Page	<u>1</u>		of		<u>1</u>												
NEX # :	<u>137686</u>		Time :	<u>1220</u>																			
			Staff :	<u>aal</u>																			
Client Name :	<u>DEI Headquarters, Inc.</u>					EUT Voltage :	<u>Battery</u>																
EUT Name :	<u>Hand Held Unit</u>					EUT Frequency :	<u> </u>																
EUT Model # :	<u>7351V, 7351P, 7351X</u>					Phase :	<u> </u>																
EUT Serial # :	<u>6</u>					NOATS	<u> </u>																
EUT Config. :	<u>Transmitting</u>					SOATS	<u>X</u>																
						Distance < 1000 MHz:	<u>3 m</u>																
						Distance > 1000 MHz:	<u>3 m</u>																
Specification :	<u>CFR47 Part 15, Subpart C, 15.247 15.205</u>																						
Loop Ant. # :	<u>NA</u>		Temp. (°C) :	<u>18</u>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Quasi-Peak</td> <td>RBW: 120 kHz</td> </tr> <tr> <td colspan="2" style="text-align: center;">Video Bandwidth 300 kHz</td> </tr> <tr> <td>Peak</td> <td>RBW: 1 MHz</td> </tr> <tr> <td colspan="2" style="text-align: center;">Video Bandwidth 3 MHz</td> </tr> <tr> <td>Average</td> <td>RBW: 1 MHz</td> </tr> <tr> <td colspan="2" style="text-align: center;">Video Bandwidth 10 Hz</td> </tr> </table>						Quasi-Peak	RBW: 120 kHz	Video Bandwidth 300 kHz		Peak	RBW: 1 MHz	Video Bandwidth 3 MHz		Average	RBW: 1 MHz	Video Bandwidth 10 Hz	
Quasi-Peak	RBW: 120 kHz																						
Video Bandwidth 300 kHz																							
Peak	RBW: 1 MHz																						
Video Bandwidth 3 MHz																							
Average	RBW: 1 MHz																						
Video Bandwidth 10 Hz																							
Bicon Ant.#:	<u>114</u>		Humidity (%) :	<u>11</u>																			
Log Ant.#:	<u>111 3m</u>		Spec An #:	<u>835</u>																			
DRG Ant. #	<u>877</u>		Spec An. Display #:	<u>835</u>																			
Cable LF#:	<u>SOATS</u>		QP #:	<u>897</u>																			
Cable HF#:	<u>40ft blue</u>		PreSelect#:	<u>NA</u>																			
Preamp LF#:	<u>901</u>																						
Preamp HF#	<u>317</u>																						
						Measurements below 1 GHz are Quasi-Peak values, unless otherwise stated Measurements above 1 GHz are Average values, unless otherwise stated																	
Meas. Freq. (MHz)	Meter Reading Vertical	Meter Reading Horizontal	Det.	EUT Side F/L/R/B	Ant. Height m	Max. Reading (dBµV)	Corrected Reading (dBµV/m)	Spec. limit (dBµV/m)	CR/SL Diff. (dB)	Pass Fail	Comment												
433.92	70.7	79.0	P		1.0	79.0	99.0				On side												
433.92	50.7	59.0	A		1.0	59.0	79.0	80.8	-1.8	Pass													
867.84	59.9	71.3	P		1.0	71.3	67.7																
867.84	39.9	51.3	A		1.0	51.3	47.7	60.8	-13.1	Pass													
					1.0																		
1301.76	47.0	50.2	P		1.0	50.2	48.3	74.0	-25.6	Pass													
1301.76	27.0	30.2	A		1.0	30.2	28.3	54.0	-25.6	Pass													
1735.68	48.7	55.8	P		1.0	55.8	55.2	74.0	-18.8	Pass													
1735.68	28.7	35.8	A		1.0	35.8	35.2	54.0	-18.8	Pass													
2169.60	63.5	66.5	P		1.0	66.5	69.9	74.0	-4.1	Pass													
2169.60	43.5	46.5	A		1.0	46.5	49.9	54.0	-4.1	Pass													
2603.52	53.8	51.6	P		1.0	53.8	58.6	74.0	-15.3	Pass													
2603.52	33.8	31.6	A		1.0	33.8	38.6	54.0	-15.3	Pass													
3037.44	48.3	47.2	P		1.0	48.3	55.1	74.0	-18.9	Pass													
3037.44	28.3	27.2	A		1.0	28.3	35.1	54.0	-18.9	Pass													
3471.36	51.8	49.1	P		1.0	51.8	59.5	74.0	-14.4	Pass													
3471.36	31.8	29.1	A		1.0	31.8	39.5	54.0	-14.4	Pass													
3905.28	47.8	46.2	P		1.0	47.8	56.0	74.0	-18.0	Pass													
3905.28	27.8	26.2	A		1.0	27.8	36.0	54.0	-18.0	Pass													
4339.20	45.6	46.7	P		1.0	46.7	56.7	74.0	-17.3	Pass													
4339.20	25.6	26.7	A		1.0	26.7	36.7	54.0	-17.3	Pass													

IC: 1513A-7351
FCC ID: EZSDEI751

RSS 210, Issue 7, June 2007
FCC Part 15 Subpart C, 15.231
Page 15 of 26

Report Number: **2009 11137686 FCC**

Command / Response mode Antenna
"Y" Axis Measurements

Radiated Emissions Data

Job #: 37077-1 Date: 10-28-09
NEX #: 137686 Time: 1220
Staff: aal
Client Name: DEI Headquarters, Inc.
EUT Name: Hand Held Unit
EUT Model #: 7351V, 7351P, 7351X
EUT Serial #: 6
EUT Config.: Transmitting

Page 1 of 1
EUT Voltage: Battery
EUT Frequency: _____
Phase: _____
NOATS _____
SOATS X
Distance < 1000 MHz: 3 m
Distance > 1000 MHz: 3 m

Specification: CFR47 Part 15, Subpart C, 15.247 15.205
Loop Ant. #: NA
Bicon Ant. #: 114 Temp. (°C): 18
Log Ant. #: 111 3m Humidity (%): 11
DRG Ant. #: 877 Spec An. #: 835
Cable LF#: SOATS Spec An. Display #: 835
Cable HF#: 40ft blue QP #: NA
Preamp LF#: 901 PreSelect#: NA
Preamp HF#: 317

Quasi-Peak	RBW: 120 kHz
Video Bandwidth 300 kHz	
Peak	RBW: 1 MHz
Video Bandwidth 3 MHz	
Average	RBW: 1 MHz
Video Bandwidth 10 Hz	

Measurements below 1 GHz are Quasi-Peak values, unless otherwise stated
Measurements above 1 GHz are Average values, unless otherwise stated

Meas. Freq. (MHz)	Meter Reading Vertical	Meter Reading Horizontal	Det.	EUT Side F/L/R/B	Ant. Height m	Max. Reading (dBµV)	Corrected Reading (dBµV/m)	Spec. limit (dBµV/m)	CR/SL Diff. (dB)	Pass Fail	Comment
433.92	78.7	69.2	P		1.0	78.7	98.7				Standing
433.92	58.7	49.2	A		1.0	58.7	78.7	80.8	-2.1	Pass	
867.84	74.4	57.3	P		1.0	74.4	70.8				
867.84	54.4	37.3	A		1.0	54.4	50.8	60.8	-10.0	Pass	
					1.0						
1301.76	48.4	36.0	P		1.0	48.4	46.5	74.0	-27.4	Pass	
1301.76	28.4	16.0	A		1.0	28.4	26.5	54.0	-27.4	Pass	
1735.68	54.1	55.7	P		1.0	55.7	55.1	74.0	-18.9	Pass	
1735.68	34.1	35.7	A		1.0	35.7	35.1	54.0	-18.9	Pass	
2169.60	65.3	59.3	P		1.0	65.3	68.7	74.0	-5.3	Pass	
2169.60	45.3	39.3	A		1.0	45.3	48.7	54.0	-5.3	Pass	
2603.52	52.0	51.6	P		1.0	52	56.8	74.0	-17.1	Pass	
2603.52	32.0	31.6	A		1.0	32	36.8	54.0	-17.1	Pass	
3037.44	49.2	49.7	P		1.0	49.7	56.5	74.0	-17.5	Pass	
3037.44	29.2	29.7	A		1.0	29.7	36.5	54.0	-17.5	Pass	
3471.36	52.5	49.6	P		1.0	52.5	60.2	74.0	-13.7	Pass	
3471.36	32.5	29.6	A		1.0	32.5	40.2	54.0	-13.7	Pass	
3905.28	49.1	46.0	P		1.0	49.1	57.3	74.0	-16.7	Pass	
3905.28	29.1	26.0	A		1.0	29.1	37.3	54.0	-16.7	Pass	
4339.20	54.0	46.6	P		1.0	54	64.0	74.0	-10.0	Pass	
4339.20	34.0	26.6	A		1.0	34	44.0	54.0	-10.0	Pass	

IC: 1513A-7351
FCC ID: EZSDEI751

RSS 210, Issue 7, June 2007
FCC Part 15 Subpart C, 15.231
Page 16 of 26

Report Number: 2009 11137686 FCC

Command / Response mode Antenna
"Z" Axis Measurements

Radiated Emissions Data												
Job # :	37077-1		Date :	10-28-09		Page	1		of	1		
NEX # :	137686		Time :	1220		Staff :	aal					
Client Name :	DEI Headquarters, Inc.						EUT Voltage :	Battery				
EUT Name :	Hand Held Unit						EUT Frequency :					
EUT Model # :	7351V, 7351P, 7351X						Phase :					
EUT Serial # :	6						NOATS					
EUT Config. :	Transmitting						SOATS	X				
							Distance < 1000 MHz:	3 m				
							Distance > 1000 MHz:	3 m				
Specification :	CFR47 Part 15, Subpart C, 15.231											
Loop Ant. # :	NA											
Bicon Ant.#:	114		Temp. (°C) :	18								
Log Ant.#:	111 3m		Humidity (%) :	11								
DRG Ant. #	877		Spec An.#:	835								
Cable LF#:	SOATS		Spec An. Display #:	835								
Cable HF#:	40ft blue		QP #:	NA								
Preamp LF#:	901		PreSelect#:	NA								
Preamp HF#	317											

Quasi-Peak	RBW: 120 kHz
Video Bandwidth 300 kHz	
Peak	RBW: 1 MHz
Video Bandwidth 3 MHz	

Measurements below 1 GHz are Quasi-Peak values, unless otherwise stated.
Measurements above 1 GHz are Average values, unless otherwise stated.

Meas. Freq. (MHz)	Meter Reading Vertical	Meter Reading Horizontal	Det.	EUT Side F/L/R/B	Ant. Height m	Max. Reading (dBµV)	Corrected Reading (dBµV/m)	Spec. limit (dBµV/m)	CR/SL Diff. (dB)	Pass Fail	Comment
433.92	65.0	78.9	P		1.0	78.9	98.9				flat (on back)
433.92	45.0	58.9	A		1.0	58.9	78.9	80.8	-1.9	Pass	
867.84	53.2	58.0	P		1.0	58	54.4				
867.84	33.2	38.0	A		1.0	38	34.4	60.8	-26.4	Pass	
					1.0						
1301.76	49.0	51.8	P		1.0	51.8	49.9	74.0	-24.0	Pass	
1301.76	29.0	31.8	A		1.0	31.8	29.9	54.0	-24.0	Pass	
1735.68	56.7	61.7	P		1.0	61.7	61.1	74.0	-12.9	Pass	
1735.68	36.7	41.7	A		1.0	41.7	41.1	54.0	-12.9	Pass	
2169.60	56.6	62.3	P		1.0	62.3	65.7	74.0	-8.3	Pass	
2169.60	36.6	42.3	A		1.0	42.3	45.7	54.0	-8.3	Pass	
2603.52	50.9	52.5	P		1.0	52.5	57.3	74.0	-16.6	Pass	
2603.52	30.9	32.5	A		1.0	32.5	37.3	54.0	-16.6	Pass	
3037.44	51.0	49.7	P		1.0	51	57.8	74.0	-16.2	Pass	
3037.44	31.0	29.7	A		1.0	31	37.8	54.0	-16.2	Pass	
3471.36	52.5	49.6	P		1.0	52.5	60.2	74.0	-13.7	Pass	
3471.36	32.5	29.6	A		1.0	32.5	40.2	54.0	-13.7	Pass	
3905.28	52.0	50.2	P		1.0	52	60.2	74.0	-13.8	Pass	
3905.28	32.0	30.2	A		1.0	32	40.2	54.0	-13.8	Pass	
4339.20	53.3	50.3	P		1.0	53.3	63.3	74.0	-10.7	Pass	
4339.20	33.3	30.3	A		1.0	33.3	43.3	54.0	-10.7	Pass	

IC: 1513A-7351
FCC ID: EZSDEI751

RSS 210, Issue 7, June 2007
FCC Part 15 Subpart C, 15.231
Page 17 of 26

Report Number: **2009 11137686 FCC**

Low Power Mode or Polling Mode Antenna

No other emissions detected from 30 MHz to 4339.2 MHz

Radiated Emissions Data												
Job # :	<u>37077-1</u>			Date :	<u>10-28-09</u>			Page	<u>1</u>		of	<u>1</u>
NEX # :	<u>137686</u>			Time :	<u>1400</u>							
				Staff :	<u>aal</u>							
Client Name :	<u>DEI Headquarters, Inc.</u>						EUT Voltage :	<u>Battery</u>				
EUT Name :	<u>Hand Held Unit</u>						EUT Frequency :	<u> </u>				
EUT Model # :	<u>7351V, 7351P, 7351X</u>						Phase:	<u> </u>				
EUT Serial # :	<u>6</u>						NOATS	<u> </u>				
EUT Config. :	<u>Low Power Transmit</u>						SOATS	<u>X</u>				
							Distance < 1000 MHz:	<u>3 m</u>				
							Distance > 1000 MHz:	<u>3 m</u>				
Specification :	<u>CFR47 Part 15, Subpart C, 15.247 15.205</u>											
Loop Ant. # :	<u>NA</u>											
Bicon Ant.#:	<u>114</u>			Temp. (°C) :	<u>20</u>							
Log Ant.#:	<u>111 3m</u>			Humidity (%) :	<u>11</u>							
DRG Ant. #	<u>877</u>			Spec An.#:	<u>835</u>							
Cable LF#:	<u>SOATS</u>			Spec An. Display #:	<u>835</u>							
Cable HF#:	<u>40ft blue</u>			QP #:	<u>NA</u>							
Preamp LF#:	<u>901</u>			PreSelect#:	<u>NA</u>							
Preamp HF#	<u>317</u>											
							Quasi-Peak RBW: 120 kHz Video Bandwidth 300 kHz					
							Peak RBW: 1 MHz Video Bandwidth 3 MHz					
Measurements below 1 GHz are Quasi-Peak values, unless otherwise stated Measurements above 1 GHz are Average values, unless otherwise stated												
Meas. Freq. (MHz)	Meter Reading Vertical	Meter Reading Horizontal	Det.	EUT Side F/L/R/B	Ant. Height m	Max. Reading (dBµV)	Corrected Reading (dBµV/m)	Spec. limit (dBµV/m)	CR/SL Diff. (dB)	Pass Fail	Comment	
433.92	49.5	40.5	P		1.4	49.5	69.5				on side	
433.92	42.8	49.8	P		1.7	49.8	69.8				on end	
433.92	41.0	49.9	P		1.7	49.9	69.9				on back	
433.92	29.5	20.5	A		1.4	29.5	49.5	80.8	-31.3	Pass	on side	
433.92	22.8	29.8	A		1.7	29.8	49.8	80.8	-31.0	Pass	on end	
433.92	21.0	29.9	A		1.7	29.9	49.9	80.8	-30.9	Pass	on back	

IC: 1513A-7351
FCC ID: EZSDEI751

RSS 210, Issue 7, June 2007
FCC Part 15 Subpart C, 15.231
Page 18 of 26

Report Number: **2009 11137686 FCC**

Low Power Mode or Polling Mode Antenna while powered by AC
No other emissions detected from 30 MHz to 4339.2 MHz

Radiated Emissions Data

Job #: 37077-1 Date: 1-11-2010
NEX #: 137686 Time: 0900
Staff: aal

Page 1 of 1

Client Name: DEI Headquarters, Inc.
EUT Name: Hand Held Unit
EUT Model #: 7351V, 7351P, 7351X
EUT Serial #: 6
EUT Config.: Low Power Transmit

EUT Voltage: 120
EUT Frequency: 60
Phase: 1
NOATS
SOATS X
Distance < 1000 MHz: 3 m
Distance > 1000 MHz: 3 m

Specification: CFR47 Part 15, Subpart C, 15.247 15.205
Loop Ant. #: NA
Bicon Ant. #: 114 Temp. (°C): 20
Log Ant. #: 111_3m Humidity (%): 11
DRG Ant. #: 877 Spec An. #: 835
Cable LF#: SOATS Spec An. Display #: 835
Cable HF#: 40ft_blue QP #: NA
Preamp LF#: 901 PreSelect#: NA
Preamp HF#: 317

Quasi-Peak	RBW: 120 kHz
	Video Bandwidth 300 kHz
Peak	RBW: 1 MHz
	Video Bandwidth 3 MHz

Measurements below 1 GHz are Quasi-Peak values, unless otherwise stated.
Measurements above 1 GHz are Average values, unless otherwise stated.

AC power (120 VAC 60 Hz) was varied by 15%, no output power variance was noted.

Meas. Freq. (MHz)	Meter Reading Vertical	Meter Reading Horizontal	Det.	EUT Side F/L/R/B	Ant. Height m	Max. Reading (dBµV)	Corrected Reading (dBµV/m)	Spec. limit (dBµV/m)	CR/SL Diff. (dB)	Pass Fail	Comment
433.92	49.6	40.6	P		1.4	49.6	69.6				on side
433.92	42.7	49.7	P		1.7	49.7	69.7				on end
433.92	41.1	49.8	P		1.7	49.8	69.8				on back
433.92	29.6	20.6	A		1.4	29.6	49.6	80.8	-31.2	Pass	on side
433.92	22.7	29.7	A		1.7	29.7	49.7	80.8	-31.1	Pass	on end
433.92	21.1	29.8	A		1.7	29.8	49.8	80.8	-31.0	Pass	on back

Time of Occupancy Measurements:

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

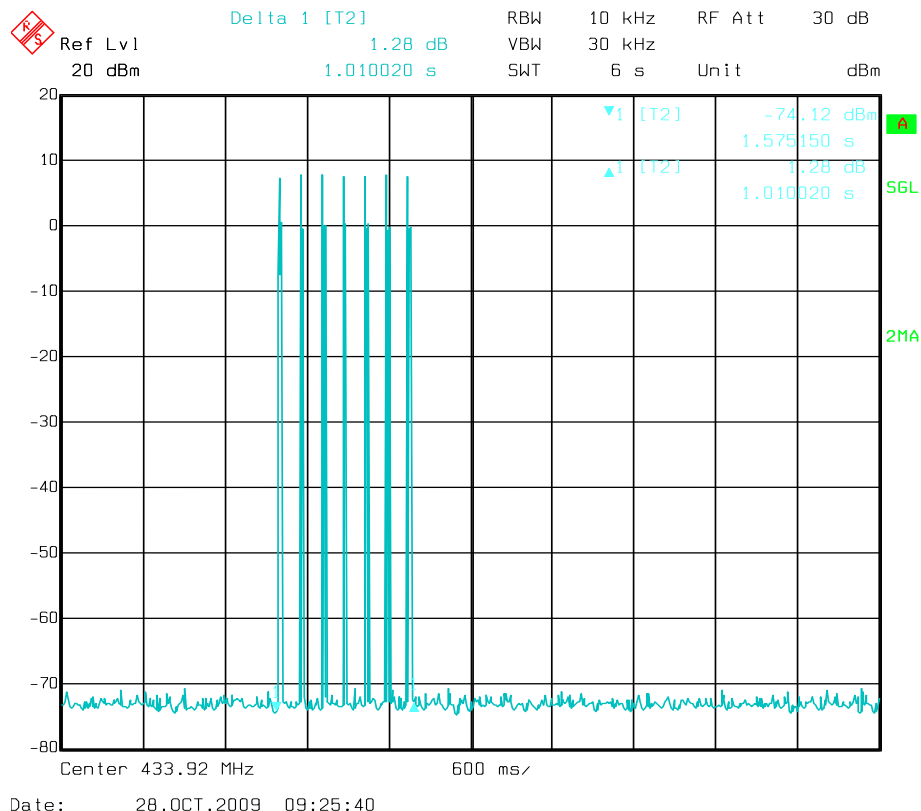
Test Conditions:

Sample Number:	6	Temperature:	27°C
Date:	10-28-09	Humidity:	28%
Modification State:	Modulation	Tester:	A. Laudani
		Laboratory:	Nemko SR1

Test Results:

The spectrum analyzer was set to 6 seconds sweep capturing the deactivation time of the EUT.

The transmit button was pressed and released. The EUT deactivates instantaneously in 1 second.



Periodic transmissions

a) 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.

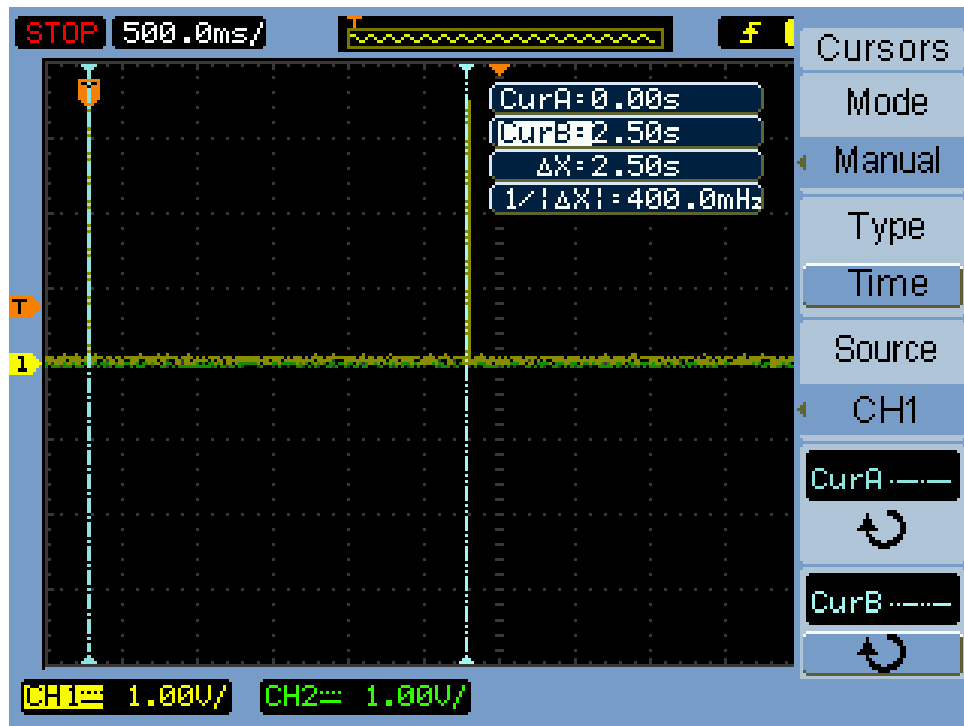
(3) Periodic transmissions at regular predetermined intervals are not permitted. **However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed more 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

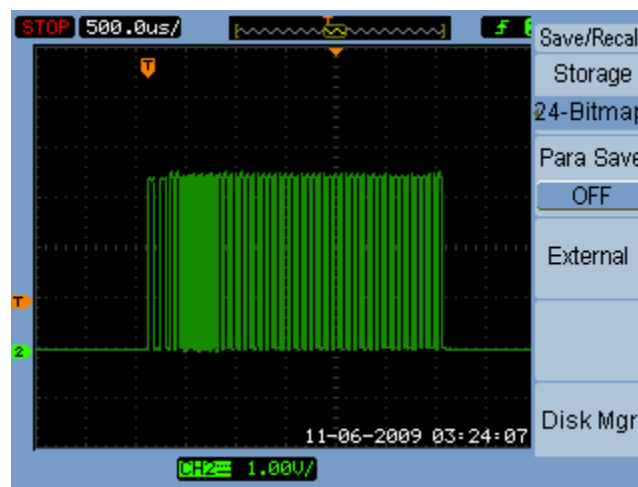
(5) Transmission of set-up information for security systems may exceed the transmission duration limits in paragraphs (a)(1) and (a)(2) of this section, provided such transmissions are under the control of a professional installer and do not exceed ten seconds after a manually operated switch is released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

1. Frame repeats every 2.5s

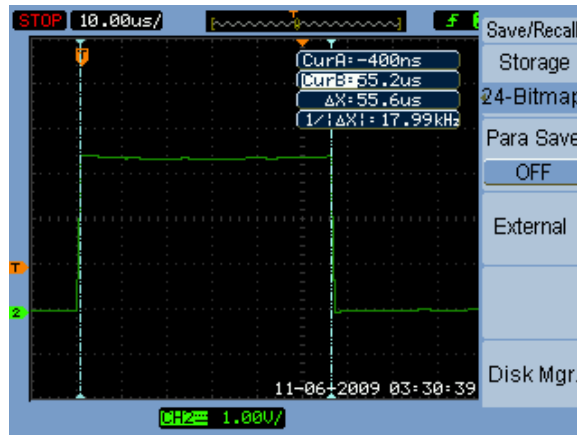
EUT demonstrates ON time of less than 2 seconds per hour



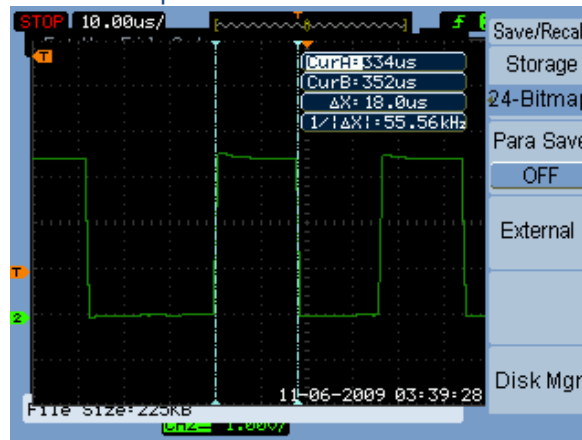
(It seems there's nothing on this plot but that's because the frame is so thin that you have to zoom in to see it.)



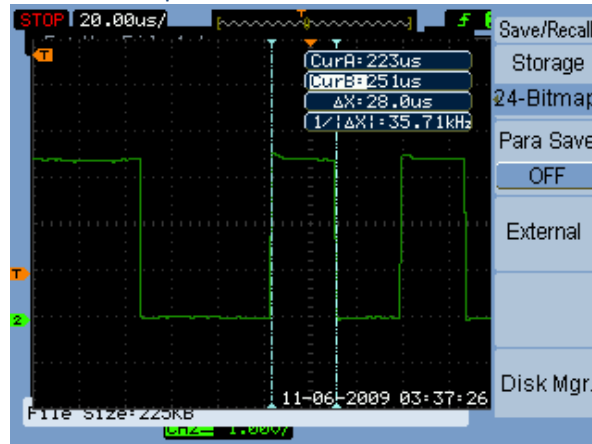
- 2. The frame is comprised of the following elements
 - a. Preamble = 56 μ s



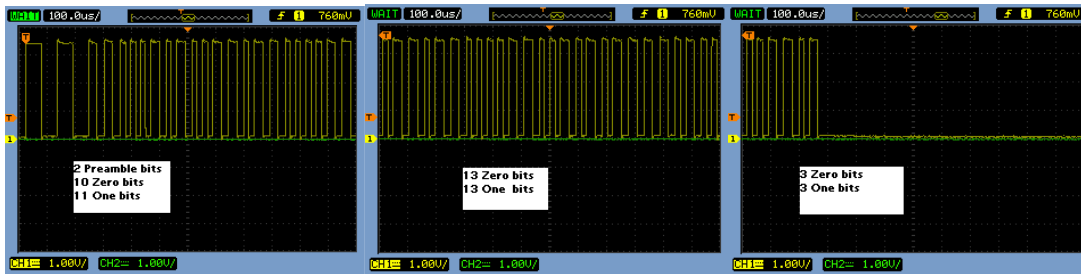
- b. "1" bit = 18 μ s



- b. "0" bit = 28 μ s



3. The captured frame ON time is as follows
 - a. 2 x preamble bit = 2 x 56 μ s = 112 μ s
 - b. 27 x "1" bits = 486 μ s
 - c. 26 x "0" bits = 728 μ s



- d. Total ON time per frame = 1326 μ s

4. ON time per hour
 - a. 1 hour = 3600s
 - b. 3600s \div 2.5s = 1440 frame repetition per hour
 - c. 1440 x 1326 μ s = 1.90944s per hour

Bandwidth Measurement:

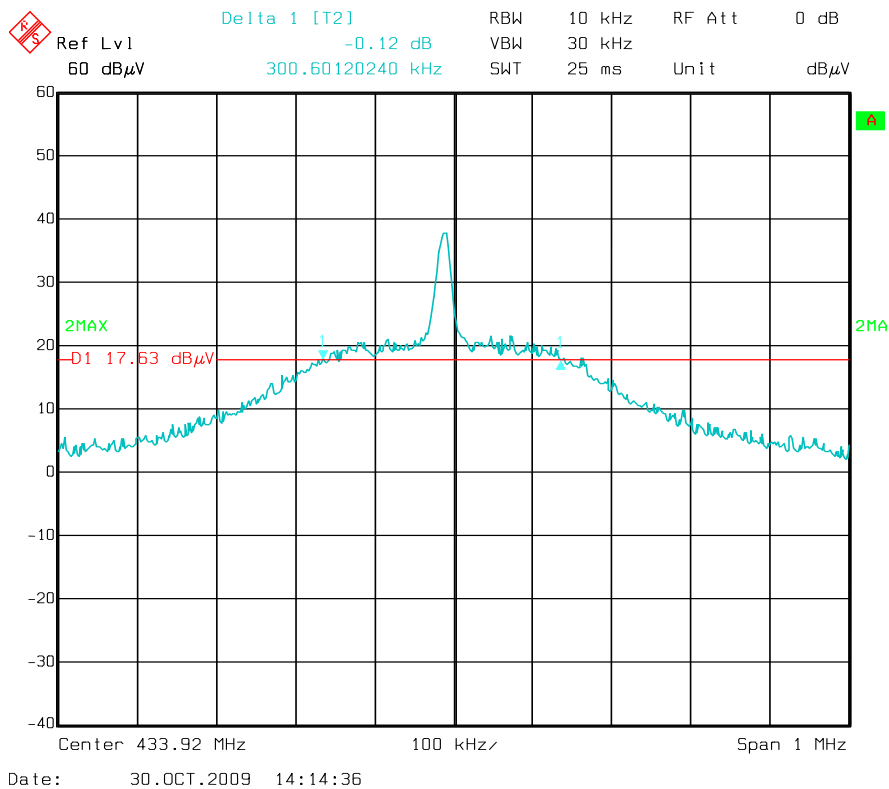
15.231(c) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from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

Test Conditions:

Sample Number:	6	Temperature:	27°C
Date:	10-28-09	Humidity:	28%
Modification State:	Modulation	Tester:	A. Laudani
		Laboratory:	Nemko SR1

Test Results: EUT Complies

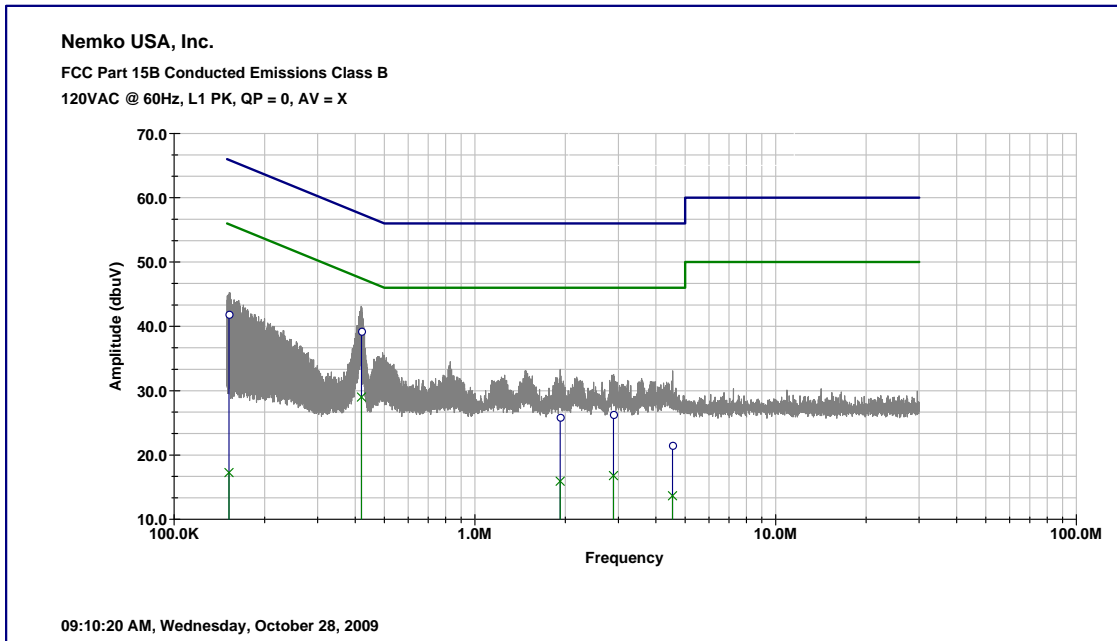
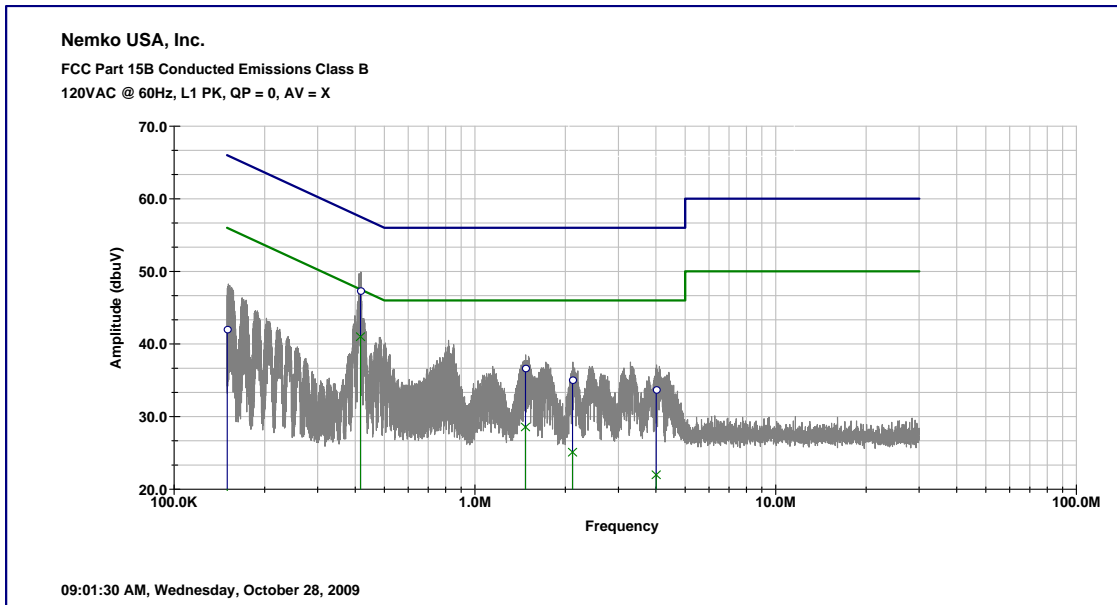
Limit = 0.25% of 433.92 MHz = 1.085 MHz
 Measured bandwidth at 20dB down from carrier is 301 kHz



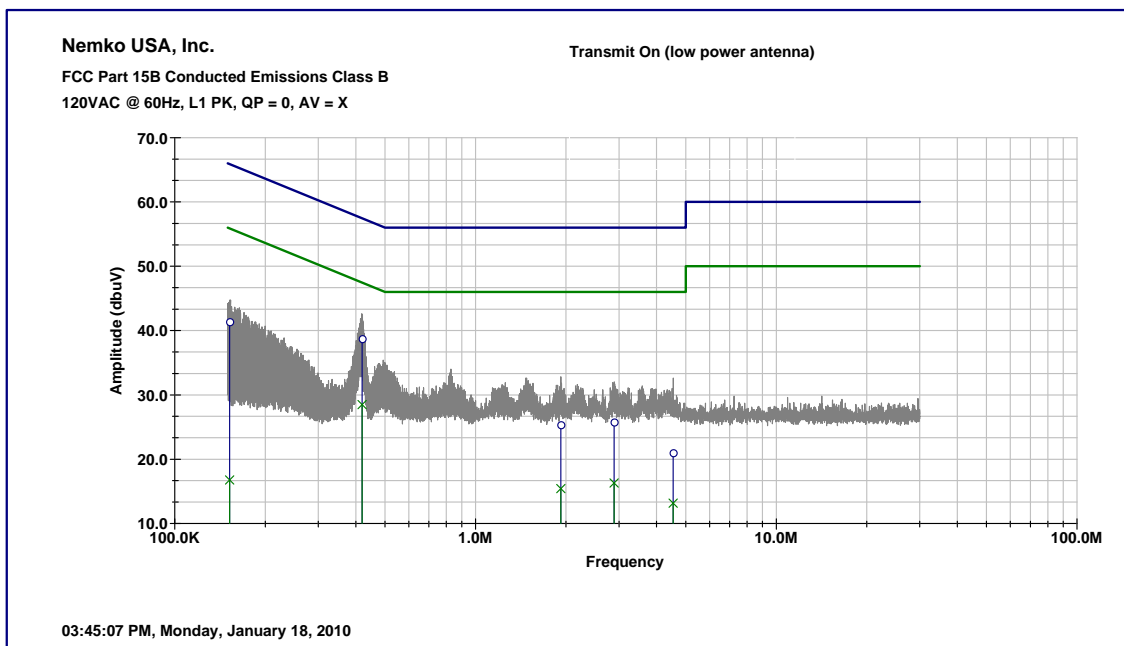
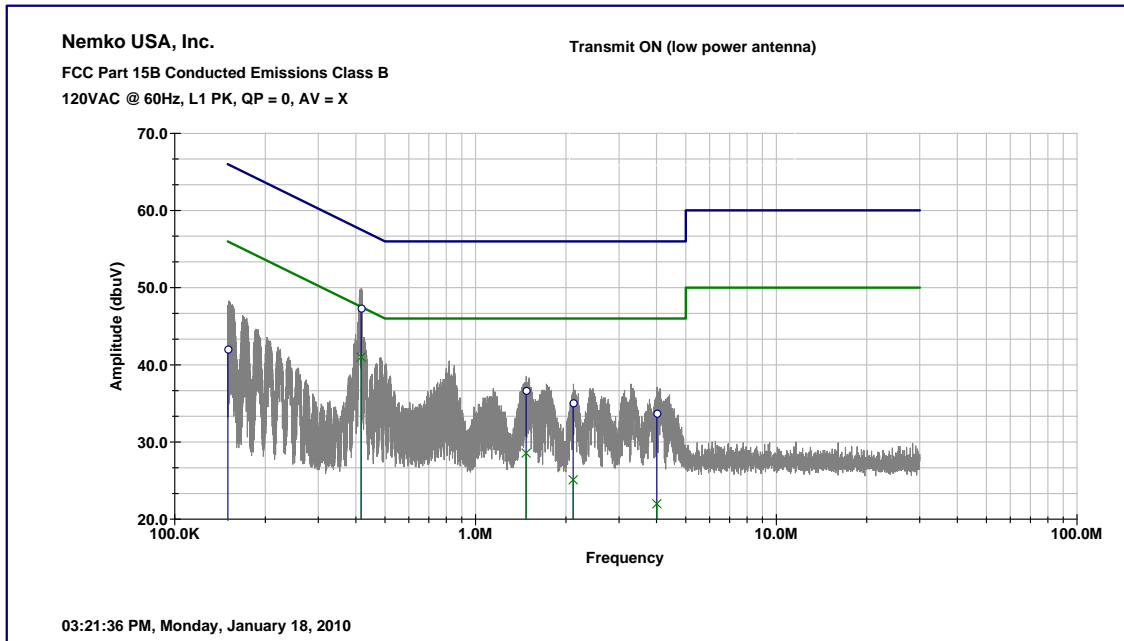
Conducted Emissions

Test Conditions:

Sample Number:	6	Temperature:	27°C
Date:	10-28-09	Humidity:	28%
EUT State:	Charge Mode	Tester:	A. Laudani
		Laboratory:	Nemko SR1



QP & Peak RBW: 100kHz VBW: 100kHz
 Blue (Top) Line is Quasi Peak. Green (Bottom) Line is Average.
 Charging mode: Idle mode.



QP & Peak RBW: 100kHz VBW: 100kHz
Blue (Top) Line is Quasi Peak. Green (Bottom) Line is Average.
Charging mode: Transmit