

## MEASUREMENT AND TECHNICAL REPORT

DEI  
1 Viper Way  
Vista, CA 92083

**DATE: 07 November 2005**

<b>This Report Concerns:</b>	Original Grant: <input checked="" type="checkbox"/>	Class II Change: <input type="checkbox"/>
<b>Equipment Type:</b>	Hand held keyfob transmitter, Model 7151X	
<b>Deferred grant requested per 47 CFR 0.457(d)(1)(ii)?</b>	Yes: <input type="checkbox"/> <b>Defer until:</b> <input type="text"/>	No: <input checked="" type="checkbox"/>
<b>Company Name agrees to notify the Commission by:</b>	<input type="text" value="N/A"/>	
<b>of the intended date of announcement of the product so that the grant can be issued on that date.</b>		
<b>Transition Rules Request per 15.37?</b>	Yes: <input type="checkbox"/>	No: <input checked="" type="checkbox"/>
(*) FCC Part 15, Paragraph(s) <b>15.205, 15.231(a), 15.231(b), and 15.231(c)</b>		
<b>Report Prepared by:</b>	<b>TÜV AMERICA, INC</b> 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 Fax: 858 546 0364	

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**1.0 GENERAL INFORMATION**

**1.1 Product Description**

**General Equipment Description**

EUT Description: Hand held keyfob transmitter for car alarm and convenience systems.

EUT Name: Hand held keyfob transmitter

Model No.: 7151X Serial No.: N/A

**EUT Specifications and Requirements**

Length 2.28" Width: 1.34" Height: 0.51" Weight: 0.7oz

**Power Requirements**

Voltage: 6V (2 x CR2016) (If battery powered, make sure battery life is sufficient to complete testing.)

# of Phases: N/A

**Other Special Requirements: Not applicable**

**Typical Installation and/or Operating Environment: Automotive**

**EUT Power Cable: Not applicable**

**EUT Interface Ports and Cables: None**

**EUT Software. : Not applicable**

**EUT Operating Modes to be Tested: Continuous modulated transmission**

**EUT System Components**

Description	Model #	Serial #	FCC ID #
Keyfob	7151X	N/A	EZSDEI7151

**Oscillator Frequencies**

Frequency	Derived Frequency	Component # / Location	Description of Use
433.92MHz	433.92MHz		Transmitter RF carrier

**Power Supply: Not applicable**

**Power Line Filters: Not applicable**

**Critical EMI Components (Capacitors, ferrites, etc.) : Not applicable**

**System Configuration Block Diagram: No connections or setup, just the self contained key fob**

**1.2 Related Submittal Grant**

None

**1.3 Tested System Details**

The FCC ID's for all equipment, plus descriptions of all cables used in the tested system are:

None

**1.4 Test Methodology**

Purpose of Test: To demonstrate compliance with the following tests.

Test Description	Paragraph Number	Pass/Fail
Deactivation	15.231(a)	Pass
Duty Cycle	15.231(b)	Pass
Radiated Spurious Emissions	15.231(b) / 15.205	Pass
Bandwidth	15.231(c)	Pass

Testing was performed according to the procedures in FCC/ANSI C63.4 and CSA 108.8-M1983.

**1.5 Test Facility**

The open area test site and conducted measurement data were tested by:

TÜV AMERICA, INC  
 10040 Mesa Rim Road  
 San Diego, CA 92121-2912  
 Phone: 858 678 1400  
 Fax: 858 546 0364

The Test Site Data and performance comply with ANSI C63.4 and are registered with the FCC, 7435 Oakland Mills Road, Columbia Maryland 21046. All Measurement Data is acquired according to the content of FCC Measurement Procedure and ANSI C63.4, unless supplemented with additional requirements as noted in the test report.

## **2.0 SYSTEM TEST CONFIGURATION**

### **2.1 Justification**

The EUT was initially tested for FCC emissions in the following configuration:

See Test Setup Photos Exhibit

### **2.2 EUT Exercise Software**

None

### **2.3 Special Accessories**

None

### **2.4 Equipment Modifications**

None

### **2.5 Configuration of Test System**

See Test Setup Photos Exhibit

**3.0 EQUIPMENT/DATA**

**Test Conditions: DEACTIVATION - FCC Part 15.231(a)**  
**RADIATED SPURIOUS EMISSIONS - FCC Part 15.231(a)**  
**DUTY CYCLE - FCC Part 15.231(a)**  
**BANDWIDTH - FCC Part 15.231(a)**

The following measurements were performed at the San Diego Testing Facility:

- Test not applicable

- - SR-3, Shielded Room, 12' x 20' x 8', Metal Chamber
- - Roof (Small Open Area Test Site)

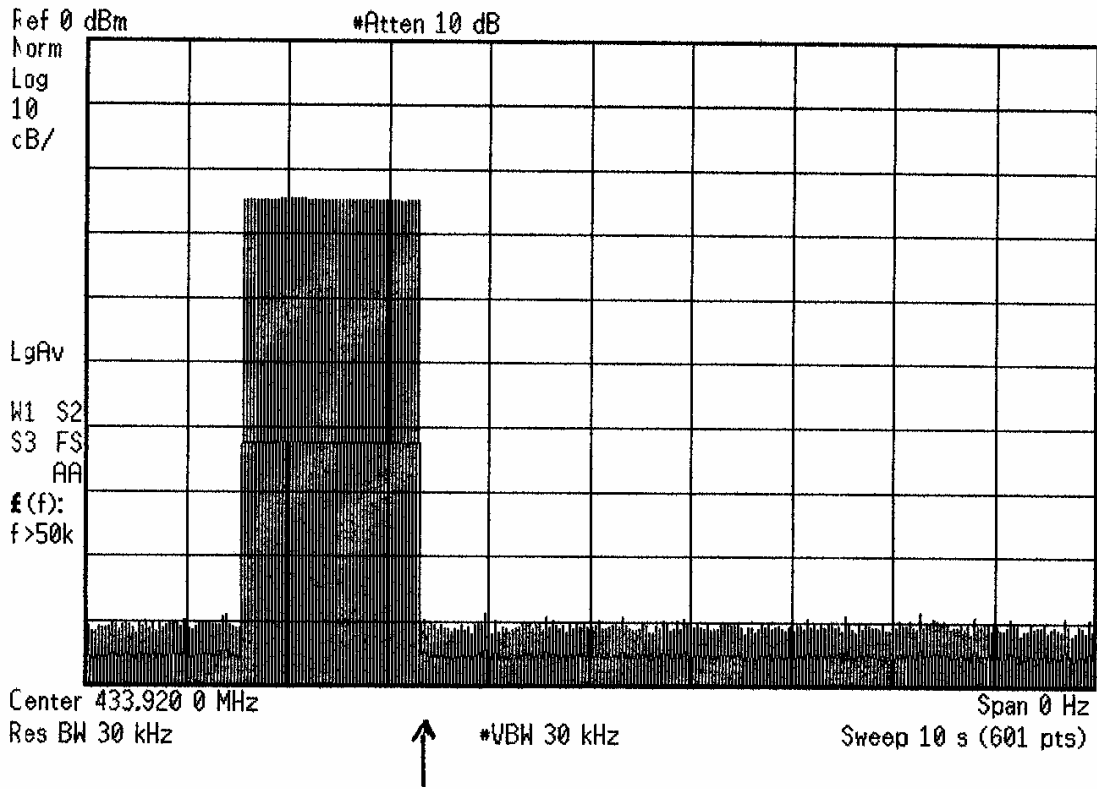
**Test Equipment Used:**

Model No.	Prop. No.	Description	Manufacturer	Serial No.	Date Calibrated
E4440A	6814	Spectrum Analyzer	Agilent	MY42510441	02/06
E4440A	7500	Spectrum Analyzer	Agilent	MY3362168	01/06
FF6549-1	783	900 MHz High Pass Filter	Sage	008	Verified*
3115	6669	Horn Antenna	Electro Mechanics Co.	9412-434	08/06
3146	6641	Log Periodic Antenna	EMCO	1063	07/06

**Remarks:** One year calibration cycle for all test equipment and sites. (\*) Verified Before Use.

15.231(a)(1), Deactivation

\* Agilent 11:39:09 Nov 1, 2006



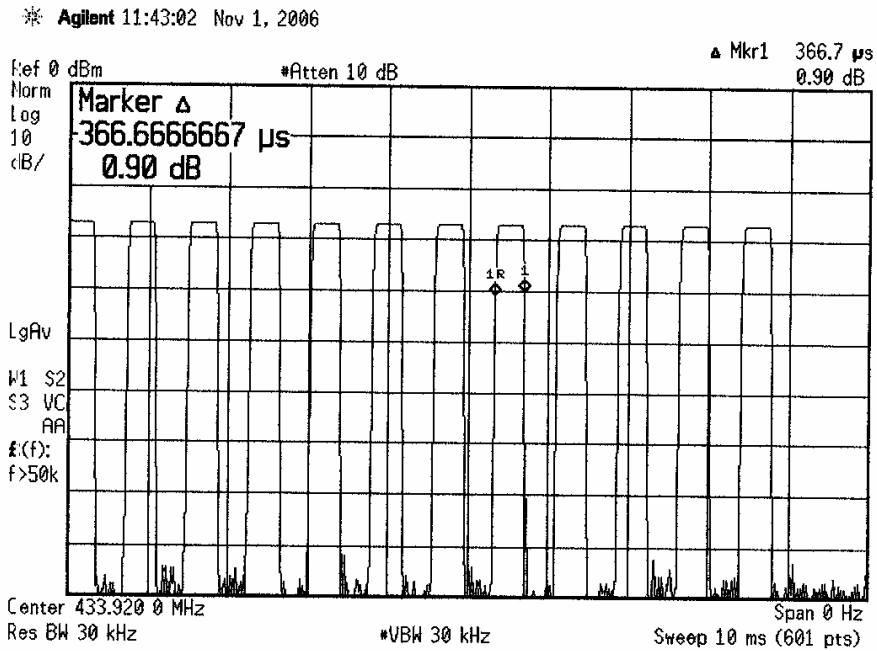
Released activation button  
Transmitter turned off less than 5 seconds

REPORT No: SC605249     TESTER: David Grey     SPEC: FCC Part 15 para 15.231(b)  
 CUSTOMER: DI Headquarters Inc.     TEST DIST: 3 Meters  
 E U T: 7151X     TEST SITE: Roof  
 EUT MODE: transmit     BICONICAL: 491  
 DATE: November 2, 2006     LOG: 243  
 NOTES: Duty Cycle= 50%     OTHER: 453  
 above 1GHz: RBW & VBW 1 MHz for Pk; AVG = PK - 20LOG(Duty Cycle)  
 below 1GHz: RBW & VBW 100 kHz for Pk; AVG = PK - 20LOG(Duty Cycle)  
 CF = Antenna Factor + Cable Loss - Preamp/plier Gain + Preselector Loss

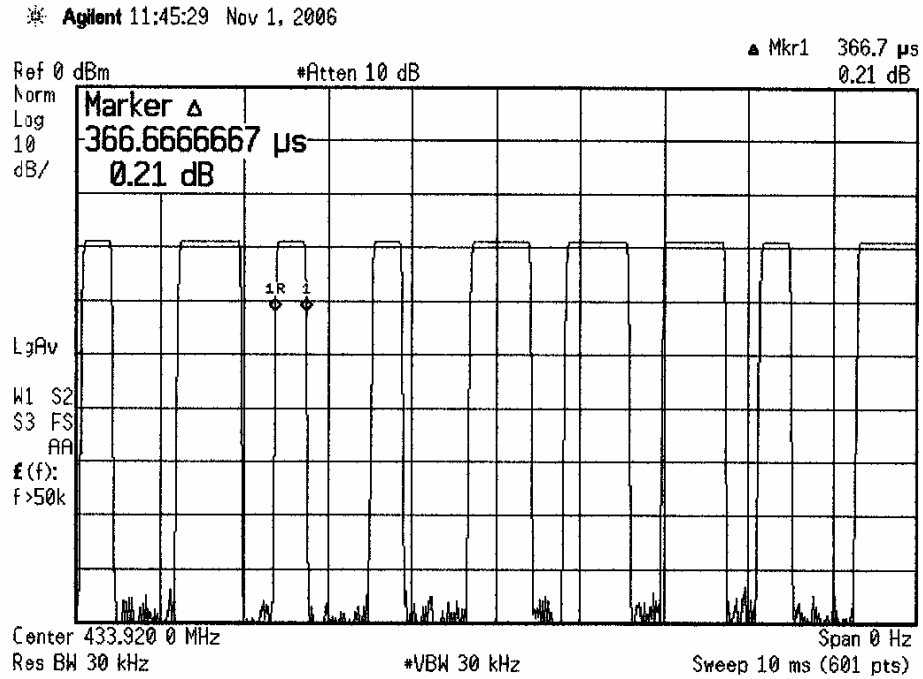
FREQ (MHz)	VERT. (dBuv)		HORIZ (dBuv)		CF (dB/m)	MAX LEVEL (dBuV/m)		SPEC LIMIT (dBuV/m)		MARGIN (dB)		EUT Rotation	Antenna Height	Notes
	pk	DCav	pk	DCav		pk	av	pk	av	pk	av			
433.920	48.6	42.6	61.3	55.3	16.9	78.2	72.2	100.8	80.8	-22.6	-8.7	0	1	
867.840	30.4	24.4	32.7	26.7	23.5	56.2	50.2	80.8	60.8	-24.6	-10.6	90	1	
1301.760	55.1	49.1	56.3	50.3	-12.4	43.9	37.9	80.8	60.8	-36.9	-23.0	60	1.2	
1735.680	44.2	38.2	47.3	41.3	-9.1	38.2	32.2	80.8	60.8	-42.6	-28.6	180	1	
2169.600	52.9	46.9	50.8	44.8	-6.9	46.0	40.0	80.8	60.8	-34.8	-20.8	0	1	noise
2603.520	43.1	37.1	42.1	36.1	-5.2	37.9	31.9	80.8	60.8	-42.9	-29.0	0	1	noise
3037.440	41.5	35.5	41.3	35.3	-2.9	38.6	32.6	80.8	60.8	-42.2	-28.2	0	1	noise
3471.360	27.4	21.4	26.8	20.8	-1.7	25.7	19.7	80.8	60.8	-55.1	-41.1	0	1	noise
3905.280	24.4	18.4	24.2	18.2	-1.1	23.3	17.3	80.8	60.8	-57.5	-43.5	0	1	noise
4339.200	24.3	18.3	24.2	18.2	-2.0	22.3	16.3	80.8	60.8	-59.5	-44.6	0	1	noise



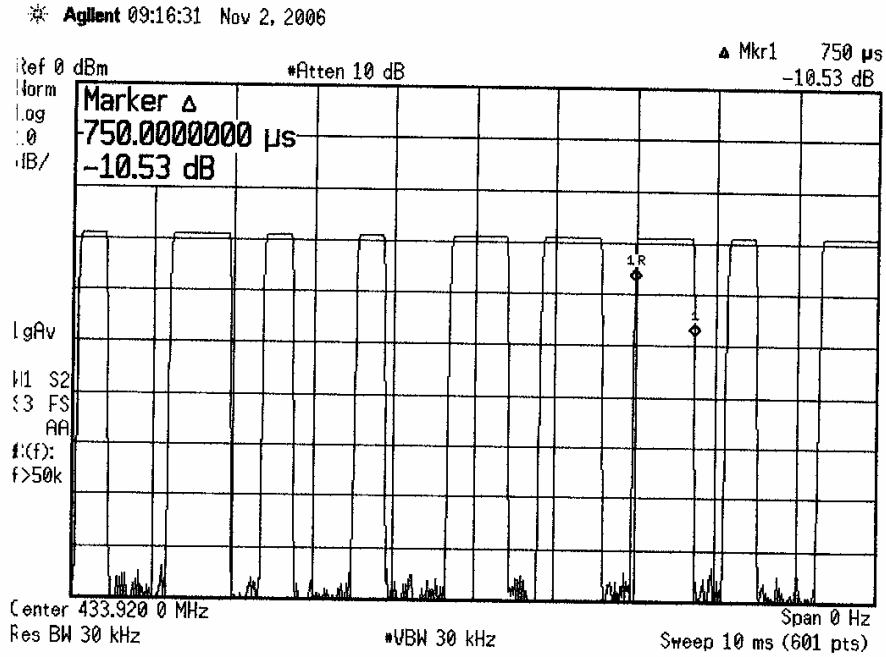
15.231(b)(2), Duty Cycle (pre-amble)



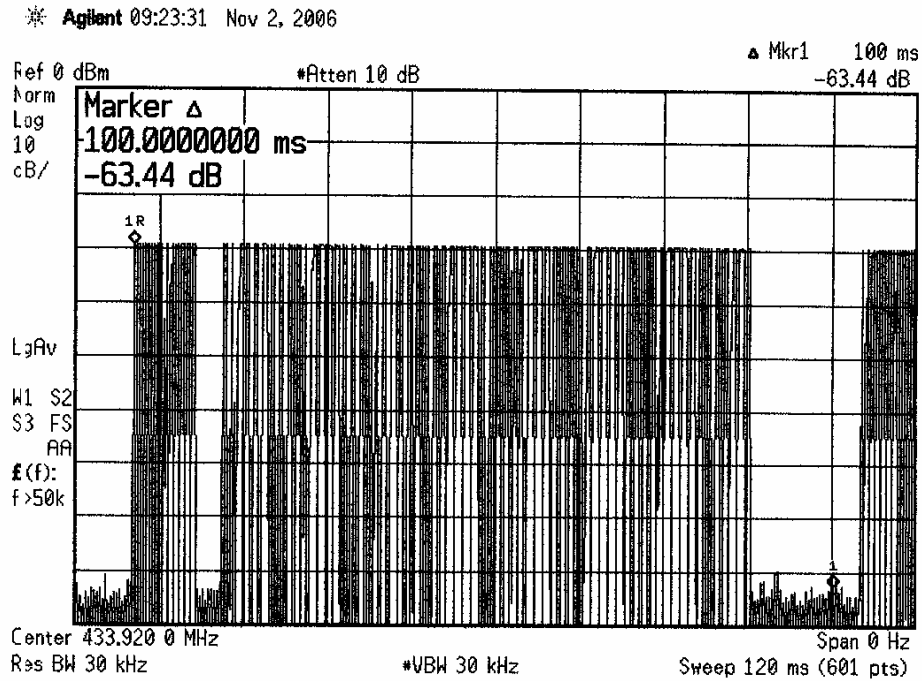
15.231(b)(2), Duty Cycle (part of data wad)



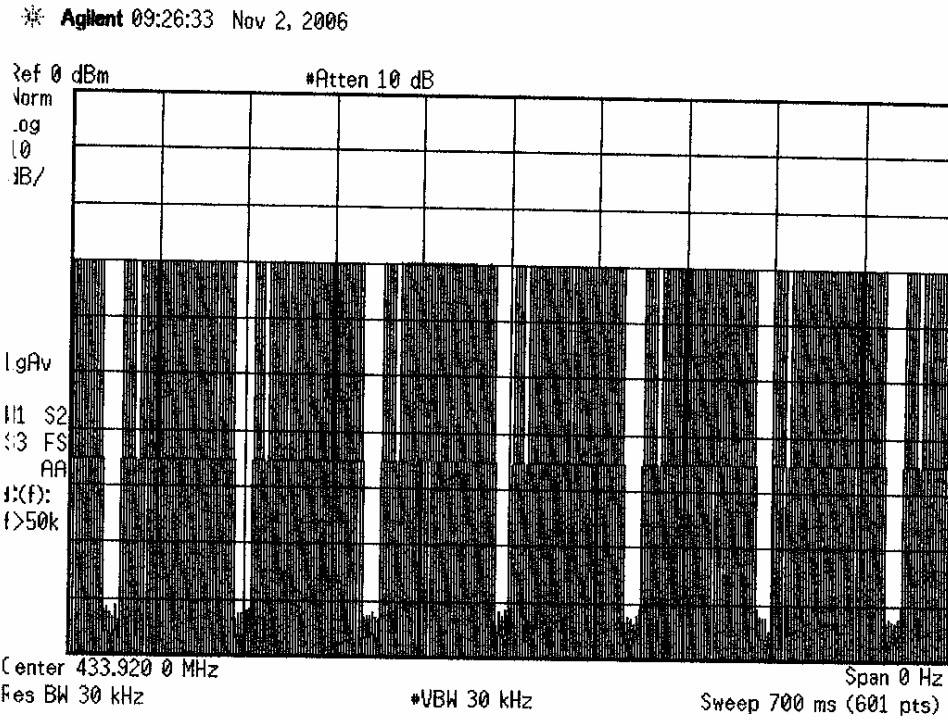
15.231(b)(2), Duty Cycle (part of data wad)



15.231(b)(2), Duty Cycle

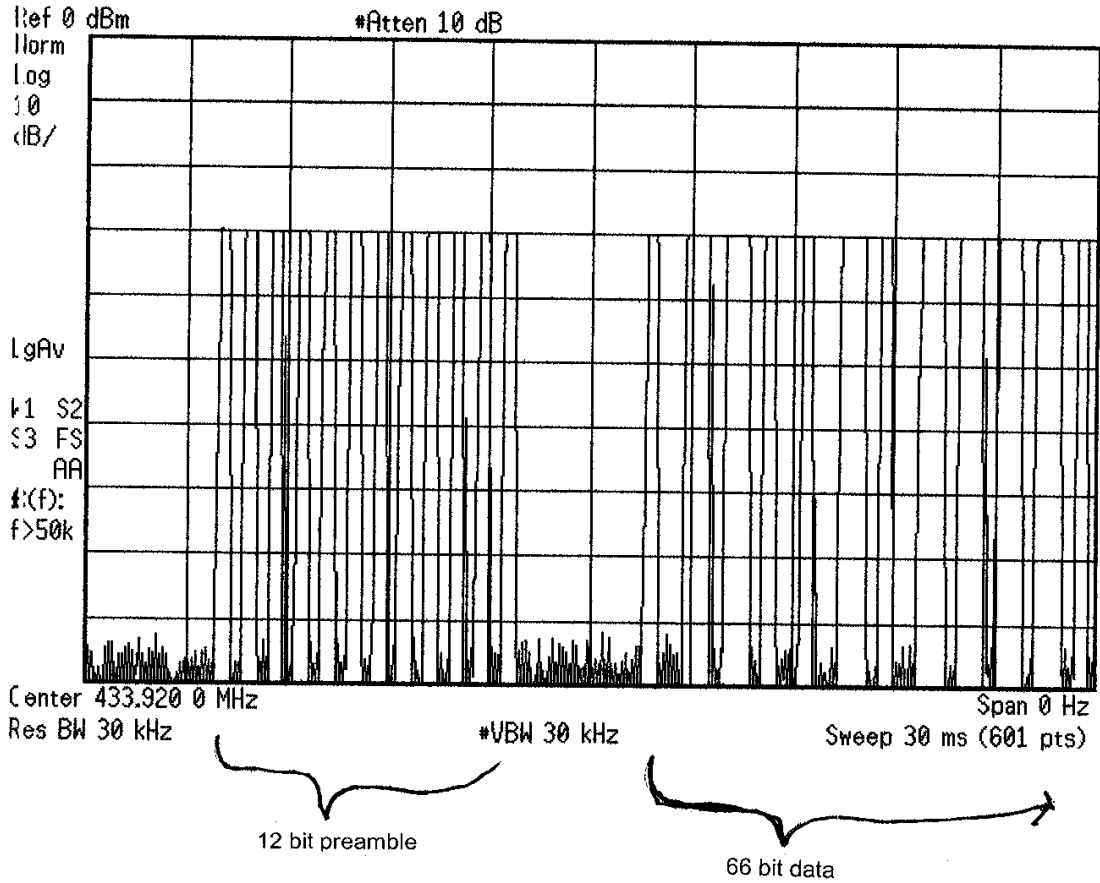


15.231(b)(2), Duty Cycle

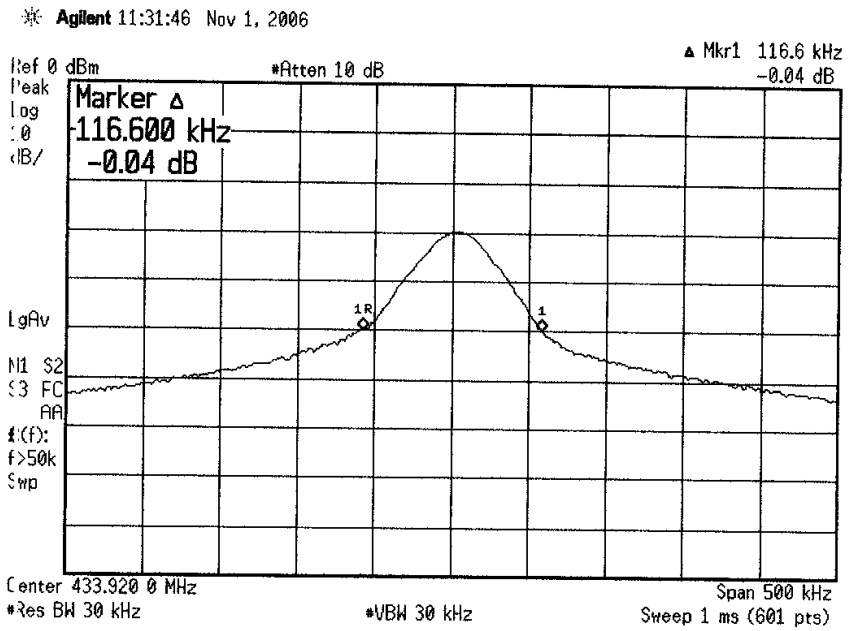


15.231(b)(2), Duty Cycle

\* Agilent 09:32:54 Nov 2, 2006



15.231(c), Occupied Bandwidth



**6.0 ATTESTATION STATEMENT**

**GENERAL REMARKS:**

**SUMMARY:**

All tests were performed per CFR 47, Part(s) 15.205, 15.231(a), 15.231(b), and 15.231(c)

■ - Performed

The Equipment Under Test

■ - **Fulfills** the requirements of CFR 47, Part(s) 15.205, 15.231(a), 15.231(b), and 15.231(c)

Testing Start Date: 01 November 2006

Testing End Date: 02 November 2006

**- TÜV AMERICA, INC. -**

Reviewing Engineer:



Ron Brewer  
(EMC Manger)

Test Engineer:



David Gray  
(Engineer)