



Engineering and Testing for EMC and Safety Compliance



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**Certification Application Report  
FCC Part 15.231 & Industry Canada RSS-210**

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<b>FCC ID</b>	U9D04EDWC01PRO108	<b>TEST REPORT DATE</b>	June 13, 2007
<b>IC</b>	7092A-EDWC01PRO	<b>RTL WORK ORDER NUMBER</b>	2007159
<b>PLATFORM</b>	N/A	<b>RTL QUOTE NUMBER</b>	QRTL07-035
<b>MODEL NAME/#</b>	Phantomcalls Pro Series/ WR & PS		
<b>FCC Classification</b>	DSC- Part 15 Security/Remote Control Transmitter		
<b>FCC Rule Part(s)</b>	Part 15.231: Periodic operation in the band 40.66 – 40.70 MHz and above 70 MHz (10-01-06)		
<b>Industry Canada Standard</b>	RSS-210 Issue 7 June 2007: Low Power License-Exempt Radio Communication Devices (All Frequency Bands)		
<b>Digital Interface Information</b>	Digital Interface was found to be compliant		
<b>Receiver Information</b>	Receiver was found to be compliant		
<b>Frequency Range (MHz)</b>	<b>Output Power (W)</b>	<b>Frequency Tolerance</b>	<b>Emission Designator</b>
418.084	N/A	N/A	820KF1D

I, the undersigned, hereby declare that the equipment tested and referenced in this report conforms to the identified standard(s) as described in this test report. Modifications made to the equipment during testing, in order to achieve compliance with these standards, are listed in the report.

Furthermore, there was no deviation from, additions to, or exclusions from the applicable parts of FCC Part 2, FCC Part 15, Industry Canada RSS-210, and ANSI C63.4.

Signature: 

Date: June 13, 2007

Typed/Printed Name: Desmond A. Fraser

Position: President

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## **1 General Information**

### **1.1 Scope**

FCC Rules Part 15.231: Periodic operation in the band 40.66–40.70 MHz and above 70 MHz.

IC RSS-210 Section A1.1: Momentarily Operated Devices

### **1.2 Modifications**

No modifications were required for certification testing.

### **1.3 Test Facility**

The open area test site and conducted measurement facility used to collect the radiated data is located at Rhein Tech Laboratories, Inc. (RTL), 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170. This site has been fully described in a report and approved by the Federal Communications Commission to perform AC line conducted and radiated emissions testing (ANSI C63.4 2003).

### **1.4 Related Submittal(s)/Grant(s)**

This is an original certification application for Extreme Dimension Wildlife Calls, Model: Phantomcalls Pro Series, FCC ID: U9D04EDWC01PRO108, IC: 7092A-EDWC01PRO.

## 2 Test Information

### 2.1 Test Justification

The EUT was tested in all three orthogonal planes in order to determine worst-case emissions. 418.084 MHz was tested and investigated from 9 kHz to the 10<sup>th</sup> harmonic. The test results relate only to the item(s) that was tested.

The antenna transmits, receives, and is externally attached. The IF, LO, and up to the 2<sup>nd</sup> LO, were investigated and tested, and found to be compliant for unintentional emissions compliance.

### 2.2 Exercising the EUT

The EUT was adapted to continuously transmit with a 30 ms long train of pulses within 100 ms for testing purposes. The carrier was also checked to verify that the information was being transmitted. There were no deviations from the test standard(s) and/or methods.

### 2.3 Test Result Summary

**Table 2-1: Test Result Summary with FCC Rules and Regulations**

Standard	Test	Pass/Fail Or N/A
FCC 15.231(a)	Radiated Emissions	Pass
FCC 15.231(c)	20 dB Bandwidth	Pass

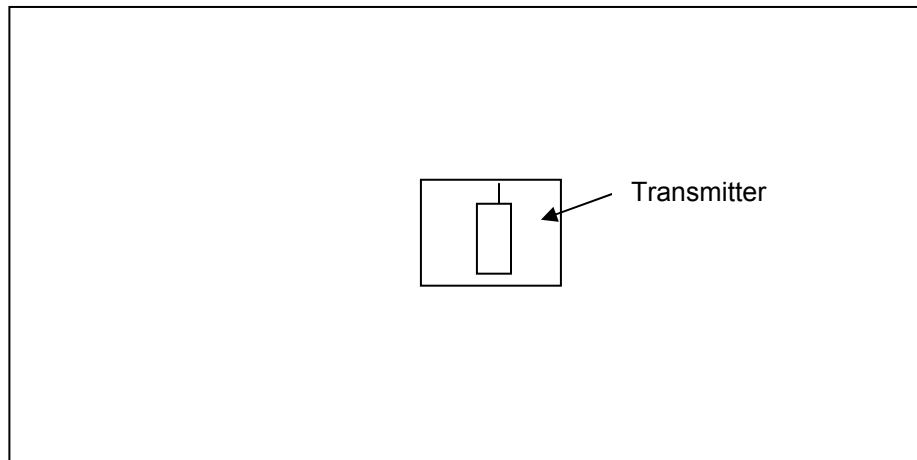
### 2.4 Test System Details

The test sample was received by RTL on April 9 and 12, 2007. The FCC Identifiers for all equipment, plus descriptions of all cables used in the tested system, are:

**Table 2-2: Equipment Under Test (EUT)**

Part	Manufacturer	Model	Serial Number	FCC ID	Cable Description	RTL Bar Code
Receiver	Extreme Dimension Wildlife Calls	Phantomcalls Pro Series	N/A	U9D04EDWC01PRO108	59' unshielded I/O	17858
Transmitter	Extreme Dimension Wildlife Calls	Phantomcalls Pro Series	TX4 2.7K	U9D04EDWC01PRO108	Unshielded	17871
8 ohm, 15 Watt Horn Speaker	Extreme Dimension Wildlife Calls	N/A	N/A	N/A	0.6 m unshielded	17861

## 2.5 Configuration of Tested System



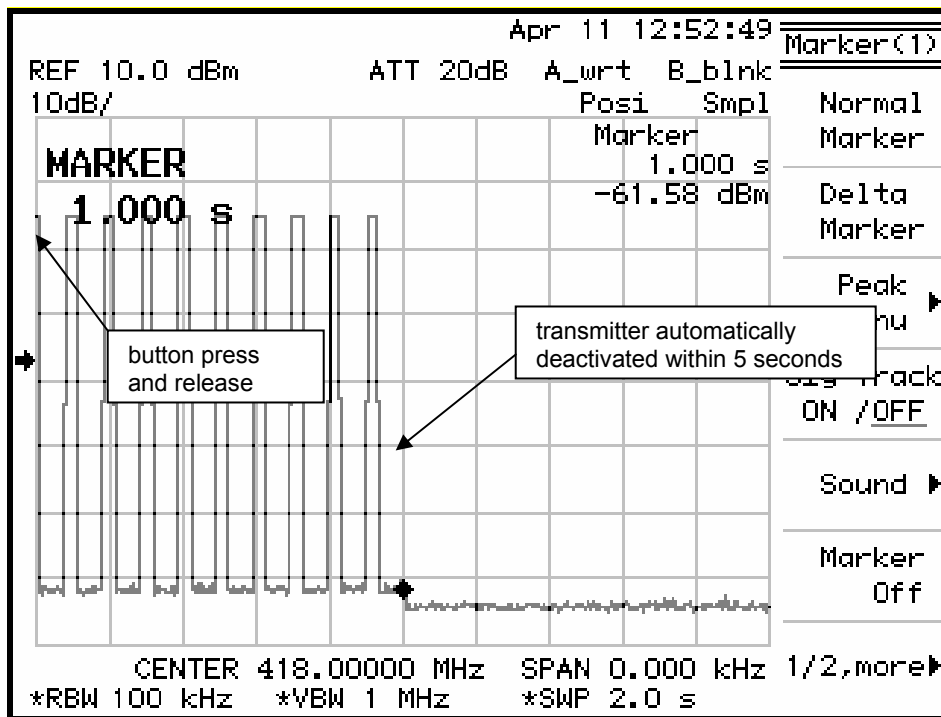
**Figure 2-1: Worst Case Configuration of System under Test**

## 3 Conducted Limits – FCC §15.207 & IC RSS-Gen

No conducted emissions were performed since the device is battery operated.

#### 4 Transmitter Deactivation - FCC §15.231(a)(1), RSS-210 A1.1.1(a)

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



#### 5 Duty Cycle Calculation - FCC §15.35(c), RSS-Gen 4.5

A standard transmission consists of a 30 ms data packet, followed by a 70 ms blanking interval for a total transmission period of 100 ms. The modulation scheme within the 30 ms is on-off keying, which has a duty cycle of 50%. Therefore, the aggregate on time within a transmission period is 15 ms, which equals 15% (15 ms / 100 ms).

The duty cycle correction is  $20 \log(0.15) = -16.5 \text{ dB}$ .

## **6 Modulated Bandwidth – FCC §15.231(c) & IC RSS-210 §A1.1.3**

### **6.1 Modulated Bandwidth Test Procedure**

The minimum 20 dB bandwidth was measured using a 50 ohm spectrum analyzer with the resolution bandwidth set at 100 Hz, and the video bandwidth set at 1 MHz. The spectrum analyzer's automated bandwidth feature was set to -20 dB and max hold until the spectrum was filled and a plot taken.

### **6.2 FCC §15.231(c) Limits**

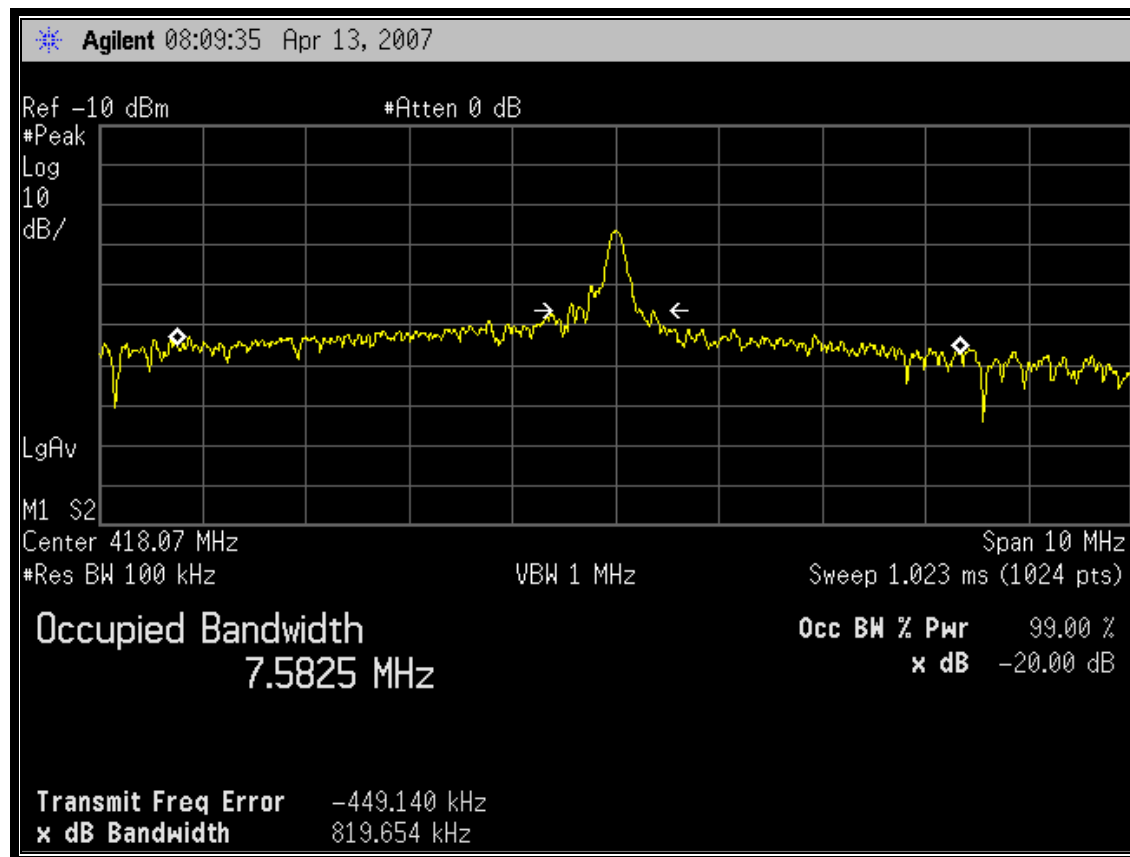
The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated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

### **6.3 Modulated Bandwidth Test Data**


**Table 6-1: 20 dB Modulated Bandwidths**

<b>20 dB Bandwidth (kHz)</b>	<b>Limit (kHz)</b>	<b>Margin (kHz)</b>
819.7	0.25% of 418070 = 1045	225.5





RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Date
901413	Agilent Technologies	E4448A	Spectrum Analyzer	US44020346	12/14/07

Daniel Baltzell		April 13, 2007
Test Engineer	Signature	Date Of Test

## 7 Radiated Emissions – FCC §15.231 & IC RSS-210 §A1.1.2

### 7.1 Radiated Fundamental Emissions Test Procedure

Radiated Emissions of the Fundamentals were tested at three meters, and meet the requirements of 10,336.8  $\mu\text{V/m}$  in average mode, and 20 dB higher in peak mode. The limit is calculated from a linear interpolation between 3,750 and 12,500  $\mu\text{V/m}$ , and from 260-470 MHz, as 41.6667(F)-7,083.3333. The EUT was tested in all three orthogonal planes. Measurement was based on a CISPR quasi-peak detector and compared to the average limit as per 15.231(b)(2).

#### 7.1.1 Radiated Fundamental Emissions Limits Test Data

Table 7-1: Radiated Fundamental Emissions

Frequency (MHz)	Analyzer Reading (dBuV)	Polarity	Site Correction Factor (dBm)	Peak Level Corrected (dBuV/m)	Duty Cycle Correction 20Log(.15)	Average Level (Pk-D.C.) (dBuV/m)	Limit (dBuV/m)	Margin (dB)
418.084	104.6	V	-12.8	91.8	-16.5	75.3	80.3	-5.0

#### 7.1.2 Power Calculation from Field Strength

$$\frac{E^2 d^2}{30}$$

$$E(\text{V/m}) = 10^{(75.3/20)} / 1\text{E}6 = 0.00582 \text{ V/m}$$

$$d = 3 \text{ m}$$

$$\frac{(0.00582)^2 \times 3^2}{30} = 0.00001 \text{ W}$$

## 7.2 Radiated Harmonics/Spurious Emissions – FCC §15.231 & IC RSS-210 §A1.1.2

### 7.2.1 Radiated Emissions Harmonics/Spurious Test Procedure

Radiated Emissions of the harmonics were tested at three meters, and meet the requirements of 1033.68  $\mu\text{V/m}$  in average mode, and 20 dB higher in peak mode. The EUT was tested in the 3 orthogonal planes with the receive antenna in both polarities.

## 7.2.2 Radiated Harmonics/Spurious Emissions Test Data

**Table 7-2: Radiated Harmonics/Spurious Emissions**

Emission Frequency (MHz)	Analyzer Reading (dBuV)	Antenna Polarity	Site Correction Factor (dB/m)	Corrected Analyzer Reading (dBuV)	Duty Cycle Correction (dBuV/m)	Corrected Average Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
836.158	51.6	V	-7.1	44.5	-16.5	28.0	60.3	-32.3
1254.242	51.1	H	-2.7	48.4	-16.5	31.9	60.3	-28.4
1672.295	53.3	H	0.0	53.3	-16.5	36.8	54.0	-17.2
2090.379	49.8	V	-3.3	46.5	-16.5	30.0	60.3	-30.3
2508.463	49.0	V	-3.4	45.6	-16.5	29.1	60.3	-31.2
2926.547	49.1	V	-2.2	46.9	-16.5	30.4	60.3	-29.9
3344.631	54.9	V	-2.4	52.5	-16.5	36.0	54.0	-18.0
3762.715	42.5	V	4.0	46.5	-16.5	30.0	54.0	-24.0

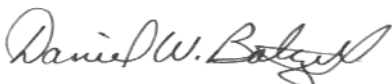
**Table 7-3: Radiated Emissions Test Equipment**

RTL Asset	Manufacturer	Model	Part Type	Serial Number	Calibration Date
901053	Schaffner & Chase	CBL6112B	Bilog Antenna (20 MHz - 2 GHz)	2648	11/01/07
900932	Miteq	JS4-01002600-36-5P	Preamplifier (30 MHz - 26 GHz)	849863	02/15/08
900772	EMCO	3161-02	Horn Antenna (2 - 4 GHz)	9804-1044	05/20/07
900323	EMCO	3160-07	Horn Antenna (8.2 - 12.4 GHz)	9605-1054	05/20/07
900321	EMCO	3161-03	Horn Antenna (4.0 - 8.2 GHz)	9508-1020	05/20/07
901215	Hewlett Packard	8596EM	Portable Spectrum Analyzer (9 kHz - 12.8 GHz)	3826A00144	10/16/07
901425	Insulated Wire, Inc.	KPS-1503-2400-KPS	RF cable, 20'	NA	12/05/07
901424	Insulated Wire Inc.	KPS-1503-360-KPS	RF cable 36"	NA	12/05/07
900878	Rhein Tech Labs	AM3-1197-0005	3 meter antenna mast, polarizing	Outdoor Range 1	Not Required
901242	Rhein Tech Labs	WRT-000-0003	Wood rotating table	N/A	Not Required

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Suite 1400  
Herndon, VA 20170  
<http://www.rheintech.com>

Client: Extreme Dimension Wildlife Calls  
Model: Phantomcalls Pro Series  
Standards: FCC 15.231/IC RSS-210  
ID's: U9D04RDWC01PRO108/7092A-EDWC01PRO  
Report #: 2007159

## TEST PERSONNEL:

Daniel Baltzell		April 12, 2007
Test Engineer	Signature	Date Of Test

## 8 Conclusion

The data in this measurement report shows that Extreme Dimension Wildlife Calls Model: Phantomcalls Pro Series; FCC ID: U9D04EDWC01PRO108, IC: 7092A-EDWC01PRO, complies with all the applicable requirements of Parts 2 and 15 of the FCC Rules, and Industry Canada RSS-210.