

RETLIF TESTING LABORATORIES  
TEST REPORT R-4534N  
February 8, 2006

FCC COMPLIANCE TEST REPORT  
ON

FERRARIS RESPIRATORY, INC.  
PEAK FLOW METER WITH WIRELESS TRANSCEIVER  
MODEL: PIKO-1  
FCC ID: TQTPIKOBL1

<b>APPLICANT</b> Ferraris Respiratory, Inc. 901 Front Street Louisville, CO 80027	<b>MANUFACTURER</b> SAME
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TEST SPECIFICATION: FCC Rules and Regulations Part 15, Subpart C, Para. 15.249

TEST PROCEDURE: ANSI C63.4:2003

TEST SAMPLE DESCRIPTION

BRANDNAME: eSense

MODEL: Piko-1

TYPE: Peak Flow Meter with Wireless Transceiver

POWER REQUIREMENTS: 3VDCD via Internal Battery

FREQUENCY BAND OF OPERATION: 2400 to 2483.5MHz

FREQUENCY OF OPERATION : 2425.15MHz

FCC ID: TQTPIKOBL1

APPLICABLE RULE SECTION: Part 15, Subpart C, Section 15.249

TESTS PERFORMED

15.249 (a) Fundamental & Harmonic Emissions

15.249 (d)/15.209 Out of Band/Bandedge Emissions

15.249 (e) Peak Field Strength

TEST SAMPLE DESCRIPTION

The EUT is a Peak Flow Meter with Wireless Transceiver Transmitting at 2425.15MHz. The intended application is to interface the Peak Flow Meter via 2.4GHz Radio Link with a PDA in order to transfer data packets. This device is powered by 3VDC via internal battery with no connection to AC mains.

## ANTENNA DESCRIPTION

The device uses an internal PCB antenna and thus has no connection for external antenna.

## TEST SAMPLE / TEST RESULTS SUMMARY

- The fundamental field strength at 2415.25MHz did not exceed 50mV/M at a test distance of 3 meters. The maximum measured peak field strength was 67.39dBuV.
- The field strength of harmonic emissions did not exceed 500μV/M.
- The field strength of non-harmonic out of band/bandedge emissions were attenuated more than 50dB below the level of the fundamental or to the limits of 15.209 as applicable. No out of band spurious emissions were observed within 10dB of the specified limit at 3 meter or 1 meter test distances.
- The peak field strength of the fundamental emission did not exceed the maximum permitted average field strength by more than 20dB.
- Radiated Emissions from the EUT were measured in all three axis. Worst case emissions were found with the EUT in the “Y” Axis. The attached Radiated Emissions test data is representative of this worst case orientation.

## MEASUREMENT PROCEDURES

### 15.249 (a/d) Field Strength of Fundamental, Harmonic and Out of Band/Band Edge Emissions

The field strength of the fundamental, harmonic and out of band/bandedge emissions were measured. The EUT was placed on a 80cm high wooden test stand which was located 3 meters from the test antenna on an FCC listed open area test site. Emissions from the EUT were maximized by rotating the test sample and adjusting the test sample orientation and antenna polarization. The maximized field strength of each observed emission was measured, recorded and compared to the specified limits of 15.249/15.209 as appropriate. Peak field strength of emissions were measured, recorded and verified to meet the specified limit (limit corresponds to 20dB above the maximum permitted average limit). When necessary the marker/delta method was used to verify bandedge compliance.

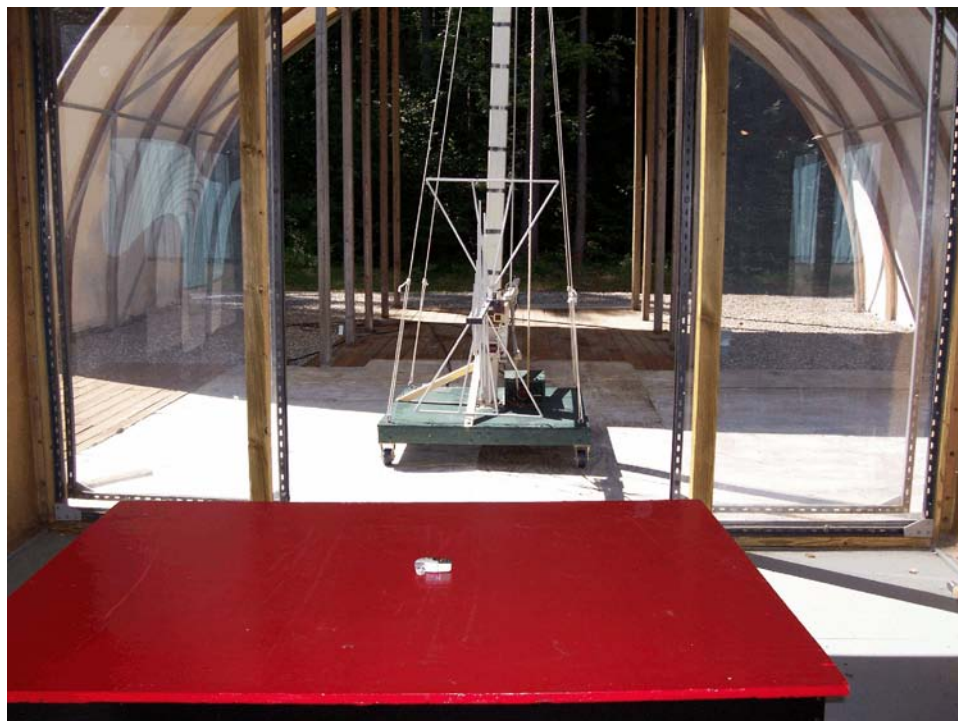
## EQUIPMENT LIST

### Fundamental Field Strength, Harmonics and Out of Band Emissions

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due
3430	Horn Antenna	MCS Corporation	18 GHz - 26.5 GHz	K-5039	1/25/2005	1/25/2006
4029B	Test Site Attenuation	Retlif	3 / 10 Meters	RNH	12/3/2004	12/3/2005
4984B	High Gain Horn	Microlab/FXR	1.7 - 2.6 GHz	R638A	1/25/2005	1/25/2006
4984C	High Gain Horn	Microlab/FXR	2.6 - 3.95 GHz	S638A	1/25/2005	1/25/2006
4984D	High Gain Horn	Microlab/FXR	3.95 - 5.85 GHz	H638A	1/25/2005	1/25/2006
4984E	High Gain Horn	Microlab/FXR	5.8 - 8.2 GHz	C638A	1/25/2005	1/25/2006
4984F	High Gain Horn	Microlab/FXR	8.2 - 12.4 GHz	X638A	1/25/2005	1/25/2006
4984G	High Gain Horn	Microlab/FXR	12.4 GHz - 18 GHz	Y638A	1/25/2005	1/25/2006
713	EMI Test Receiver	Rohde & Schwarz	20 Hz - 26.5 GHz	ES126	3/22/2005	3/22/2006
R120	Preamplifier	Hewlett Packard	1.0 -26.5 GHz	8449B	7/08/2005	7/08/2006
4202	Biconilog	EMCO	26 MHz - 2 GHz	3142	12/13/2004	12/13/2005

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## RADIATED EMISSIONS SETUP PHOTOGRAPHS



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# RETLIF TESTING LABORATORIES

## TABULAR DATA SHEET

Test Method:	Fundamental Field Strength & Harmonics		
Customer:	Ferraris Respiratory	Job No:	R-4534N
Test Sample:	Peak Flow Meter		
Model No:	Piko-1	Serial No:	E0095665
Test Specification:	FCC Part 15 Subpart C Paragraph: 15.249 (a)		
Operating Mode:	Continuously Transmitting		
Technician:	T. Firkowski	Date:	9/1/2005
Notes:	Peak Readings		

[illegible]

\*No harmonic emissions were observed above the noise floor of the test equipment which was a minimum of 10dB below the specified limit.



# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

**Test Method:**

### Out of Band Emissions 30 MHz to 26.5 GHz

Customer

## Ferraris Respiratory

Job No.

R-4534N

## Test Sample

Peak Flow Meter

Model No.

Piko-1

Serial No.

E0095665

### Test Specification:

FCC Part 15 Subpart C

Paragraph: 15.249 (d)

**Operating Mode:**

### Continuously Transmitting

Technician:

T. Firkowski

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Date:

September 1, 2005

**Notes:**

Test Distance: 3 Meters

Detector: Quasi-Peak

[illegible]

No EUT emissions were observed above the noise floor of the test equipment which was a minimum of 10dB below the limit.

# RETLIF TESTING LABORATORIES

## TABULAR DATA SHEET

Test Method:	Band Edge Data 2400MHz to 2483.5MHz		
Customer:	Ferraris Respiratory	Job No:	R-4534N
Test Sample:	Peak Flow Meter		
Model No:	Piko-1	Serial No:	E0095665
Test Specification:	FCC Part 15 Subpart C Paragraph: 15.209		
Operating Mode:	Continuously Transmitting at 2425.15MHz		
Technician:	T. Firkowski	Date:	9/1/2005
Notes:	Test Distance = 3 Meters		

[illegible]

The EUT is compliant at the band edges with 15.209 radiated emissions limits.