



# Retlif Testing Laboratories

101 New Boston Road, Goffstown, NH 03045  
603-497-4600 - Fax: 603-497-5281

CORPORATE OFFICE  
795 Marconi Avenue  
Ronkonkoma, NY 11779  
631-737-1500 Fax 631-737-1497  
(A NY Corporation)

BRANCH LABORATORIES  
3131 Detwiler Road  
Harleysville, PA 19438  
215-256-4133 Fax 215-256-4130

WASHINGTON  
REGULATORY OFFICE  
703-533-1614 Fax 703-533-1612

MEMBER  
ACIL

## REPORT OF MEASUREMENTS

### FOR FITSENSE TECHNOLOGY

#### WIRELESS DIGITAL WEIGHT SCALE

MODEL: ActiScale TH 340

FCC ID: 09DCS

<b>Company Name:</b>	<u>Fitsense Technology</u>
<b>Date of Report:</b>	<u>November 6, 2007</u>
<b>Test Report No:</b>	<u>R-4916N-2</u>
<b>Test Start Date:</b>	<u>October 25, 2007</u>
<b>Test Finish Date:</b>	<u>October 26, 2007</u>
<b>Test Technician:</b>	<u>Matt Seamans</u>
<b>Lab Supervisor:</b>	<u>Todd Hannemann</u>
<b>Report Prepared By:</b>	<u>Jamie Ramsey</u>

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Scott Wentworth  
Branch Manager  
NVLAP Approved Signatory



Matthew Seamans  
EMC Test Technician

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Test Report No. R-4916N-2  
FCC ID:09DCS

APPLICANT	MANUFACTURER
FITSENSE TECHNOLOGY 21 Boston Road Southborough, MA 01772	SAME

TEST SPECIFICATION: FCC Rules and Regulations Part 15, Subpart C, Para. 15.249

TEST PROCEDURE: ANSI C63.4:2003

TEST SAMPLE DESCRIPTION

BRANDNAME: Fitsense

MODEL: ActiScale TH 340

TYPE: DIGITAL WEIGHT SCALE WITH 2.4GHz WIRELESS TRANSCEIVER

POWER REQUIREMENTS: Internal Battery

FREQUENCY BAND OF OPERATION: 2400 to 2483.5MHz

FREQUENCY OF OPERATION : 2429.0MHz

FCC ID: 09DCS

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

TESTS PERFORMED

15.249 (a) Fundamental & Harmonic Emissions

15.249 (d) Out of Band/Bandedge Emissions

15.249 (e) Peak Field Strength

## TEST SAMPLE DESCRIPTION

The EUT is a Digital Weight Scale containing a FITSENSE TECHNOLOGY, UWM Wireless Transceiver Transmitting at 2429MHz. The intended application is to interface the Scale with the Fitsense BodyLan RF Network via 2.4GHz Radio Link and transmit weight data to the network. This device is powered by internal battery with no connections to the AC mains.

## ANTENNA DESCRIPTION

The device uses an integral PCB etch antenna with a gain of approximately 2dB and thus has no connection for external antenna.

## TEST SAMPLE / TEST RESULTS SUMMARY

- The maximized fundamental field strength at 2429MHz did not exceed 50mV/M (94dBuV) at a test distance of 3 meters. The measured maximized field strength was 79.6dBuV.
- The field strength of observed harmonic emissions did not exceed 500 $\mu$ V/M. No harmonic emissions were observed within 10dB of the specified limit at 3 meter or 1 meter test distances above the fifth harmonic (12,145MHz).
- 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 maximized peak field strength of the emissions did not exceed the maximum permitted average field strength by more than 20dB.
- Radiated Emissions from the EUT were measured with the scale laying flat, top side up which is its only useable 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 antenna polarization. The maximized field strength of each observed emission was measured, recorded and compared to the specified limits of 15.249 (a), (d)/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.

# RETLIF TESTING LABORATORIES

## **TABULAR DATA SHEET**

Test Method:	Fundamental Field Strength & Harmonics		
Customer:	FitSense Technology	Job No:	R-4916N-2
Test Sample:	Wireless Digital Scale		
Model No:	ActiScale TH 340	Serial No:	FGEW-00:02:56:00:12:82
Test Specification:	FCC Part 15 Paragraph: 15.249 (a)		
Operating Mode:	Continuously Transmitting		
Technician:	M.Seamans	Date:	10/25/2007
Notes:	Average Readings to Average Limits		

At the harmonic frequencies where no meter reading is recorded, there was no harmonic observer above the baseline of the spectrum analyzer which was a minimum of 10 dB below the limit.

# RETLIF TESTING LABORATORIES

## TABULAR DATA SHEET

Test Method:	Peak Field Strength		
Customer:	FitSense Technology	Job No:	R-4916N-2
Test Sample:	Wireless Digital Scale		
Model No:	ActiScale TH 340	Serial No:	FGEW-00:02:56:00:12:82
Test Specification:	FCC Part 15 Paragraph: 15.249 (e)		
Operating Mode:	Continuously Transmitting		
Technician:	M.Seamans	Date:	10/25/2007
Notes:	Peak Readings to Peak Limits( 20dB above average limits )		

At the harmonic frequencies where no meter reading is recorded, there was no harmonic observer above the baseline of the spectrum analyzer which was a minimum of 10 dB below the limit.

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

### Test Method:

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

### Customer

FitSense Technology

1. Job No.

R-4797N-2

### Test Sample

Wireless Digital Scale

**Model No.**

ActiScale TH 340

Serial No.

FGEW-00:02:56:00:12:82

## Test Specification:

FCC Part 15 Subpart C

Paragraph: 15.249 (d)

### Operating Mode:

### Continuously Transmitting

**Technician:**

M.Seamans

1 Date:

October 25, 2007

## Notes

Test Distance: 3 Meters

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum.

# RETLIF TESTING LABORATORIES

## **TABULAR DATA SHEET**

Test Method:	Band Edge		
Customer:	Fitsense Technology	Job No:	R-4916N-2
Test Sample:	Wireless Digital Scale		
Model No:	ActiScale TH 340	Serial No:	FGEW-00:02:56:00:12:82
Test Specification:	FCC Part 15 Paragraph: 15.249 (d)		
Operating Mode:	Continuously Transmitting		
Technician:	M.Seamans	Date:	10/25/2007
Notes:	Peak Readings Test Distance 3 Meters		

## RADIATED EMISSIONS EQUIPMENT LIST

<b>EN</b>	<b>Type</b>	<b>Manufacturer</b>	<b>Description</b>	<b>Model No.</b>	<b>Cal Date</b>	<b>Due</b>
3116	Pre-Amplifier	Miteq	0.1 GHz - 18 GHz	AFS42-35	8/27/2007	8/27/2008
3117	Power Supply	B&K Precision	0-30 Vdc, 3.0 A	1630	1/23/2007	1/23/2008
3430	Horn Antenna	MCS Corporation	18 GHz - 26.5 GHz	K-5039	1/23/2007	1/23/2008
4029B	Test Site Attenuation	Retlif	3 / 10 Meters	RNH	6/20/2007	6/20/2008
4984A	High Gain Horn	Microlab/FXR	1.0 - 1.7 GHz	L638A	1/24/2007	1/24/2008
4984B	High Gain Horn	Microlab/FXR	1.7 - 2.6 GHz	R638A	1/24/2007	1/24/2008
4984C	High Gain Horn	Microlab/FXR	2.6 - 3.95 GHz	S638A	1/24/2007	1/24/2008
4984D	High Gain Horn	Microlab/FXR	3.95 - 5.85 GHz	H638A	1/24/2007	1/24/2008
4984E	High Gain Horn	Microlab/FXR	5.8 - 8.2 GHz	C638A	1/24/2007	1/24/2008
4984F	High Gain Horn	Microlab/FXR	8.2 - 12.4 GHz	X638A	1/24/2007	1/24/2008
4984G	High Gain Horn	Microlab/FXR	12.4 GHz - 18 GHz	Y638A	1/24/2007	1/24/2008
5053	Biconilog	EMCO	26 MHz - 3 GHz	3142C	10/4/2007	10/4/2008
5070	EMI Test Receiver	Rohde & Schwarz	20Hz - 40GHz	ESIB40	11/22/2006	11/22/2007
5072	Preamplifier	Miteq	18 GHz-40 GHz	JS4-18004000-30	1/10/2007	1/10/2008
R425	Spectrum Analyzer	Agilent	100 Hz - 26.5GHz	E7405A;A	11/3/2006	12/11/2007

## RADIATED EMISSIONS SETUP PHOTOGRAPHS



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