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MEMBER ACIL

FCC/IC Test Report
on

FitLinxx Step Sensor/Pedometer Transceiver
Model: Actiped+

Customer Name:	FitLinxx
Customer P.O:	29170-N
Date of Report:	January 5, 2011
Test Report No:	R-5351N
Test Start Date:	November 1, 2010
Test Finish Date:	January 3, 2011
Test Technician:	M. Seamans
Laboratory Supervisor:	T. Hannemann
Branch Manager:	S. Wentworth
Report Prepared By:	J. Ramsey

Technical Information

APPLICANT		MANUFACTURER	
Name:	FitLinxx, Inc.	Name:	FitLinxx, Inc.
Address:	3 Enterprise Drive, Suite 401	Address:	134 Flanders Road
City, State, Zip:	Shelton, CT 06484	City, State, Zip:	Westborough, MA 01581

TEST SPECIFICATION:

FCC Rules and Regulations Part 15, Subpart C, Section 15.249

Radio Standards Specification, RSS-210, Issue 8, December 2010 and RSS-Gen, Issue 3, December 2010

TEST PROCEDURE: ANSI C63.4:2003

Test Sample Description

TEST SAMPLE: ActiPed (Step Sensor/Pedometer) Transceiver

BRANDNAME(s): FitLinxx

MODEL(s): ActiPed+

FCC ID: O9DAP4

IC: 4068A-AP4

TYPE: Step Sensor/Pedometer Wireless Transceiver

POWER REQUIREMENTS: 3VDC via internal battery

FREQUENCY OF OPERATION: 2429.0 MHz

Support Equipment

The EUT had no cable interfaces and support equipment was not utilized.

Tests Performed

The test methods performed on the ActiPed+ (Step Sensor/Pedometer) Transceiver are shown below:

FCC Part 15, Subpart C	Industry Canada RSS-210 Issue 8, December 2010	Industry Canada RSS-Gen Issue 3, December 2010	Test Method
15.249(a)(e)	A2.9 (a)	N/A	Field Strength of Fundamental & Harmonic Emissions
15.249(d)	A2.9(b)	N/A	Field Strength of Out of Band/Bandedge Spurious Emissions
N/A	N/A	7.2.3	Receiver Spurious Radiated Emissions
N/A	N/A	4.6.1	99% Bandwidth

General Test Requirements

1. The measurement procedures of ANSI C63.4:2003 were utilized as specified in FCC Part 15, Subpart C, Section 15.31(a)(3) and RSS-Gen, Section 4.1.
2. All radiated emissions measurements were performed on an Open Area Test Site (OATS), listed with the FCC and IC, in accordance with FCC Section 15.31(d) and RSS Gen, Section 4.2.
3. All testing was performed with a new battery installed in the EUT, in accordance with FCC Section 15.31(e) and RSS Gen Section 4.3(g).
4. All measurements were performed at the specified 3 meter test distance. The EUT was rotated throughout 360 degrees for all radiated emissions measurements as specified in FCC Section 15.31(f)(5) and IC Section 4.3(h).
5. All readily accessible EUT controls were adjusted in such a manner as to maximize the level of emissions in accordance with FCC Section 15.31(g) and RSS-Gen, Section 4.3.
6. Appropriate accessories were attached to all EUT ports during the performance of radiated emissions measurements as required by FCC Section 15.31(i) and RSS-Gen, Section 4.3(f).
7. The EUT operated at the frequency of 2429.0 MHz. Testing was performed with the device operating at this frequency.
8. The frequency spectrum was investigated from the lowest frequency generated in the device up to the 10^{th} harmonic of the highest fundamental frequency in accordance with FCC Section 15.33(a)(1) and RSS-Gen Section 4.9.
9. Measurements below 1000 MHz were taken utilizing a Quasi-Peak Detector. Measurements above 1 GHz were taken utilizing an Average Detector in accordance with FCC Section 15.35(a) and IC Section 4.9. The peak value of emissions above 1 GHz were verified to meet the 20 dB requirement of FCC Section 15.35(b).

Certification and Signatures

We certify that this report is a true representation of the results obtained from the tests of the equipment stated. We further certify that the measurements shown in this report were made in accordance with the procedures indicated and vouch for the qualifications of all Retlif Testing Laboratories personnel taking them.

Scott Wentworth
Branch Manager
NVLAP Approved Signatory

Todd Hannemann
Laboratory Supervisor
iNARTE Approved ATL-0255-T

Non-Warranty Provision
The testing services have been performed, findings obtained and reports prepared in accordance with generally accepted laboratory principles and practices. This warranty is in lieu of all others, either expressed or implied.

Non-Endorsement
This test report contains only findings and results arrived at after employing the specific test procedures and standards listed herein. It is not intended to constitute a recommendation, endorsement or certification of the product or material tested. This test report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

Requirements and Test Results

Requirement:
FCC Section 15.249(a) and (d) - Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz, 5725 - 5875 MHz and 24.0 - 24.25 GHz

IC RSS-210, A2.9(a) and (b):
This section provides standards for low-power devices that can be used for any application provided the following condition is met:

FCC Section 15.249(a): Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with Table 1.

RSS-210 A2.9(a): The field strengths measured at 3 meters shall not exceed the limits specified in Table 1.

Table 1 - Field Strength of Emissions

Fundamental Frequency	Field Strength - Fundamental (millivolts/meter)	Field Strength - Harmonics (microvolts/meter)
902 to 928 MHz	50	500
2400 to 2483.5 MHz	50	500
5725 to 5875	50	500
24.0 to 24.25 GHz	250	2500

- Results:
  The EUT was operated at 2429.0 MHz. The field strength of the fundamental did not exceed 50 mV/M. The field strength of the harmonics did not exceed 500 µV/M.

FCC Section 15.249(d): Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

RSS-210 A2.9(b): Emissions radiated outside of the frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general field strength limits of RSS-Gen, Table 5 , whichever is the less stringent.

- Results:
  Emissions radiated at the band edges and outside the specified frequency band were attenuated in accordance with the general radiated emissions limits of 15.209 and RSS-Gen, Table 5.

Requirements and Test Results (con't)

Requirement:

RSS-GEN, 7.2.3 - Receiver Spurious Emission Limits
All spurious emissions shall comply with the limits specified in Table 2.

Table 2 - Radiated Emission Limits

Frequency of Emission (MHz)	Field Strength (microvolts/meter)
30 to 88	100
88 to 216	150
216 to 960	200
Above 960	500

- Results:
  The emissions observed did not exceed the limits specified in Table 2.

Requirements and Test Results (con't)

Field Strength Measurement & Calculation:

The following spectrum analyzer settings were used:

RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f ≤ 1 GHz

VBW ≥ RBW

Detector Function = Peak or Average as applicable

Trace = Max Hold

Sweep = Auto

The maximized field strength of the emission was calculated as follows.

$F_C = M_R + C_F$

Where:
F_C = Corrected Field Strength Reading in dBµV/m
M_R = Uncorrected Meter Reading in dBµV
C_F = Correction Factor in dB (Pre-Amp + Antenna Factor + Cable Loss)

Equipment Lists

FCC Section 15.249(a) and RSS-210, A2.9(a) - Field Strength of Fundamental & Harmonic Emissions

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
3116	MITEQ	PRE-AMPLIFIER	0.1 GHz - 18 GHz	AFS42-35	1/12/2010	1/12/2011
3117	BK PRECISION	DC POWER SUPPLY	0-30 Vdc, 3.0 A	1630	Calibrate Before Use	
3258	EMCO	DOUBLE RIDGE GUIDE	1 - 18 GHz	3115	1/14/2010	1/14/2011
3430	MCS	HORN ANTENNA	18 GHz - 26.5 GHz	K-5039	1/14/2010	1/14/2011
4029	RETLIF	OPEN AREA TEST SITE	3 / 10 Meters	RNH	8/21/2009	8/21/2012
4029B	RETLIF	TEST SITE ATTENUATION	3 / 10 Meters	RNH	6/25/2009	12/25/2010
R425B	AGILENT / HP	SPECTRUM ANALYZER	100 Hz - 26.5 GHz	E7405A;A	5/28/2010	5/28/2011

FCC Section 15.249(d) and RSS-210, A2.9(b) - Field Strength of Out of Band Spurious Emissions

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
3116	MITEQ	PRE-AMPLIFIER	0.1 GHz - 18 GHz	AFS42-35	1/12/2010	1/12/2011
3117	BK PRECISION	DC POWER SUPPLY	0-30 Vdc, 3.0 A	1630	Calibrate Before Use	
3258	EMCO	DOUBLE RIDGE GUIDE	1 - 18 GHz	3115	1/14/2010	1/14/2011
3430	MCS	HORN ANTENNA	18 GHz - 26.5 GHz	K-5039	1/14/2010	1/14/2011
4029	RETLIF	OPEN AREA TEST SITE	3 / 10 Meters	RNH	8/21/2009	8/21/2012
4029B	RETLIF	TEST SITE ATTENUATION	3 / 10 Meters	RNH	6/25/2009	12/25/2010
5053	EMCO	BICONILOG ANTENNA	26 MHz - 3 GHz	3142C	4/21/2010	4/21/2011
R425B	AGILENT / HP	SPECTRUM ANALYZER	100 Hz - 26.5 GHz	E7405A;A	5/28/2010	5/28/2011

FCC Section 15.249(d), RSS-210, A2.9(b) - Field Strength of Band Edge Emissions

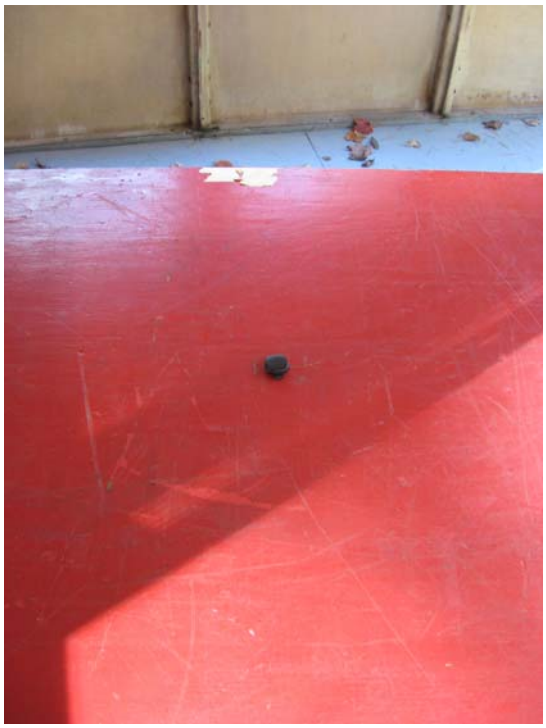
EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
3116	MITEQ	PRE-AMPLIFIER	0.1 GHz - 18 GHz	AFS42-35	1/12/2010	1/12/2011
3117	BK PRECISION	DC POWER SUPPLY	0-30 Vdc, 3.0 A	1630	Calibrate Before Use	
3258	EMCO	DOUBLE RIDGE GUIDE	1 - 18 GHz	3115	1/14/2010	1/14/2011
R425B	AGILENT / HP	SPECTRUM ANALYZER	100 Hz - 26.5 GHz	E7405A;A	5/28/2010	5/28/2011

RSS-GEN, 7.2.3 - Receiver Spurious Emission

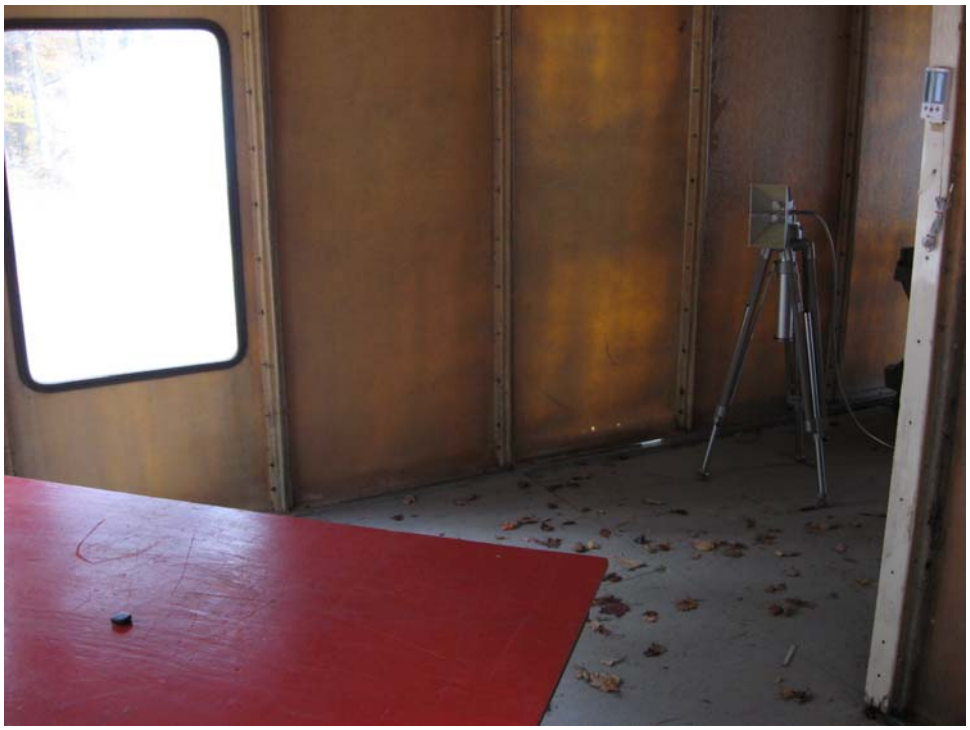
EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
3116	MITEQ	PRE-AMPLIFIER	0.1 GHz - 18 GHz	AFS42-35	1/12/2010	1/12/2011
3117	BK PRECISION	DC POWER SUPPLY	0-30 Vdc, 3.0 A	1630	Calibrate Before Use	
3258	EMCO	DOUBLE RIDGE GUIDE	1 - 18 GHz	3115	1/14/2010	1/14/2011
3430	MCS	HORN ANTENNA	18 GHz - 26.5 GHz	K-5039	1/14/2010	1/14/2011
4029	RETLIF	OPEN AREA TEST SITE	3 / 10 Meters	RNH	8/21/2009	8/21/2012
4029B	RETLIF	TEST SITE ATTENUATION	3 / 10 Meters	RNH	6/25/2009	12/25/2010
5053	EMCO	BICONILOG ANTENNA	26 MHz - 3 GHz	3142C	4/21/2010	4/21/2011
R425B	AGILENT / HP	SPECTRUM ANALYZER	100 Hz - 26.5 GHz	E7405A;A	5/28/2010	5/28/2011

FCC Section 15.249(a) and RSS-210, A2.9(a)
Field Strength of Fundamental & Harmonic Emissions

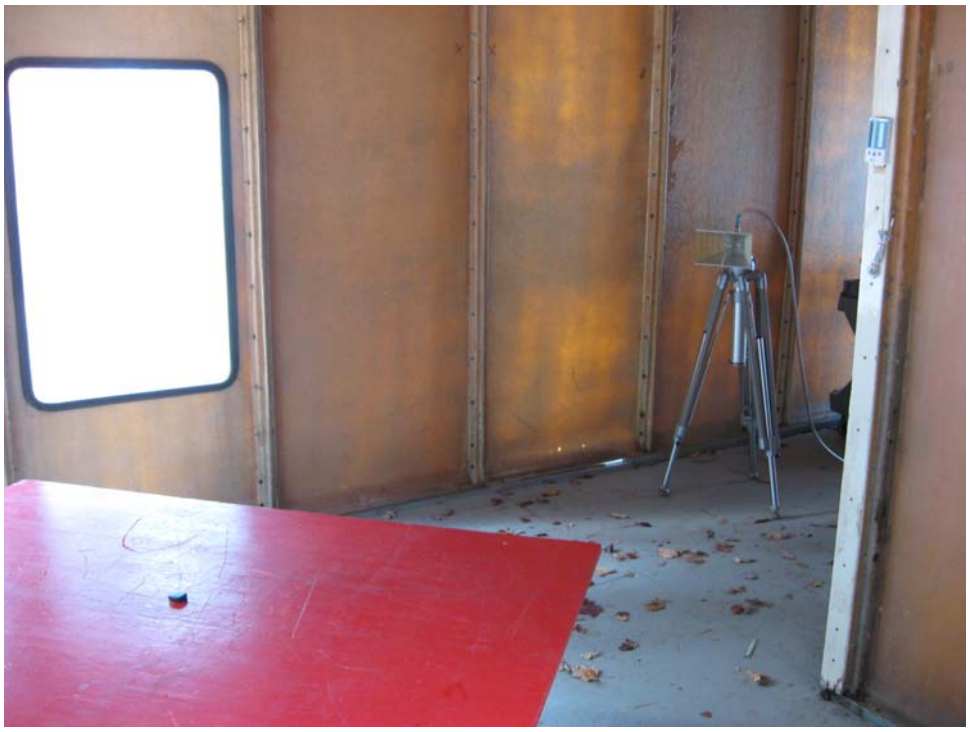
Photographs



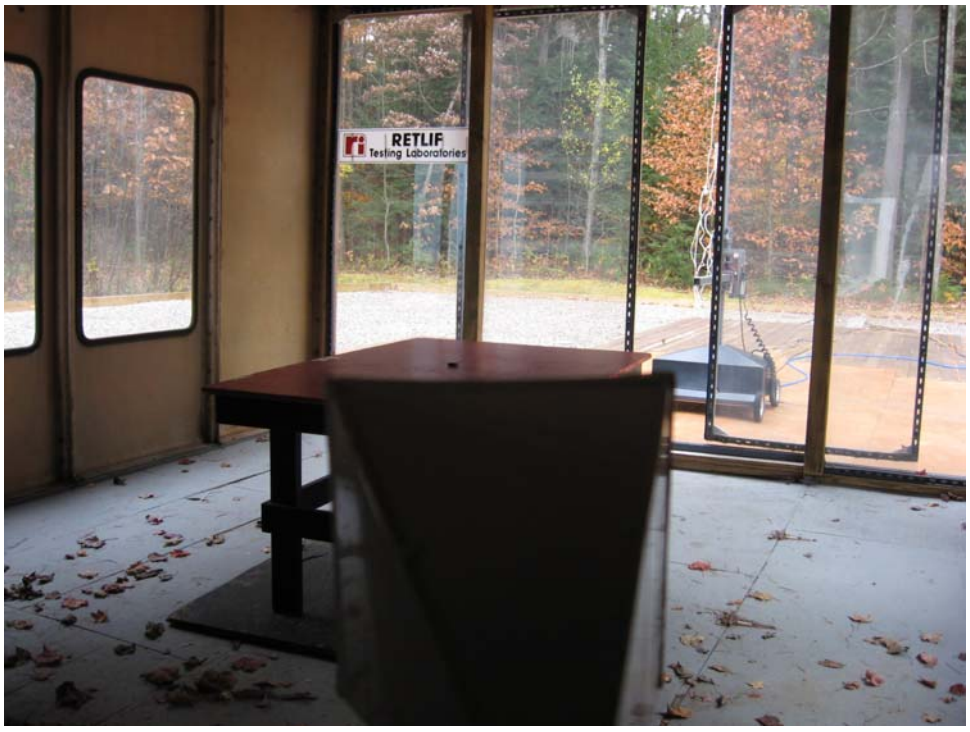
Test Setup



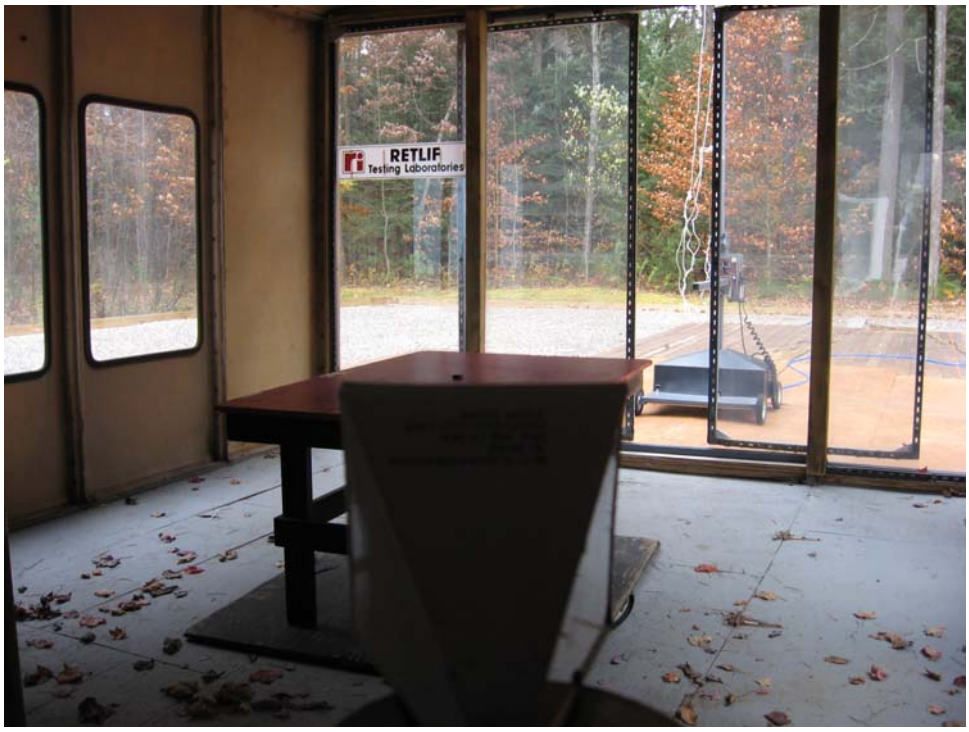
Horizontal Antenna Polarization, 1 to 18 GHz



Vertical Antenna Polarization, 1 to 18 GHz



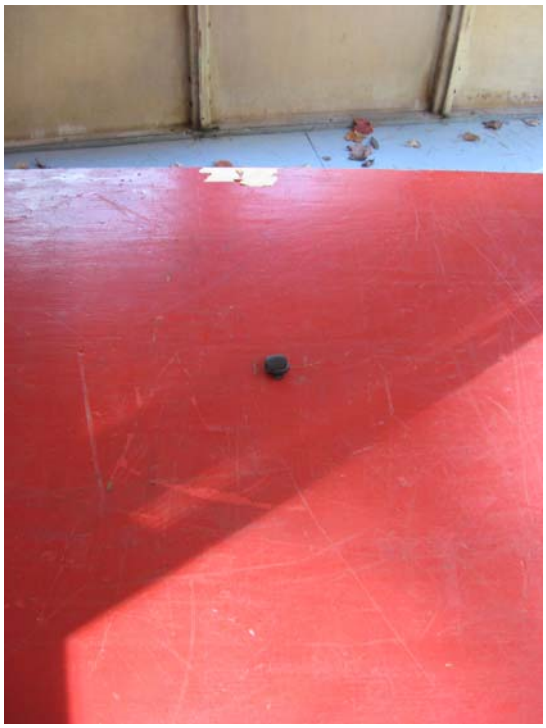
Horizontal Antenna Polarization, 18 to 26 GHz



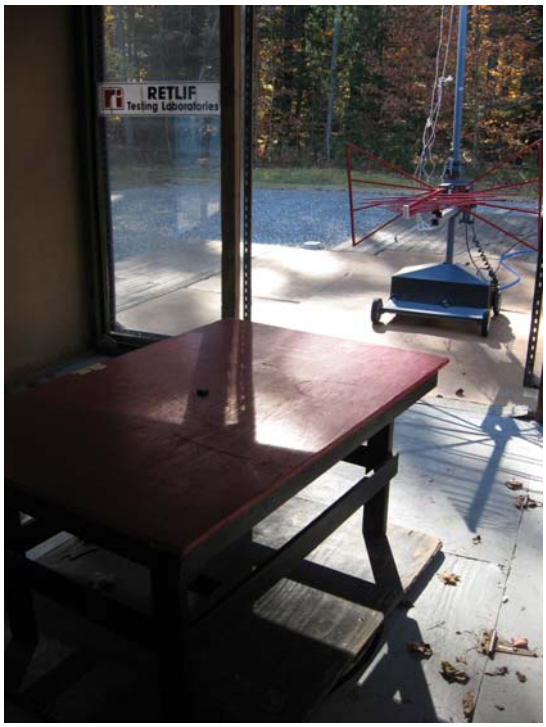
Vertical Antenna Polarization, 18 to 26 GHz

FCC Section 15.249(d) and RSS-210, A2.9(b)
Field Strength of Out of Band Spurious Emissions

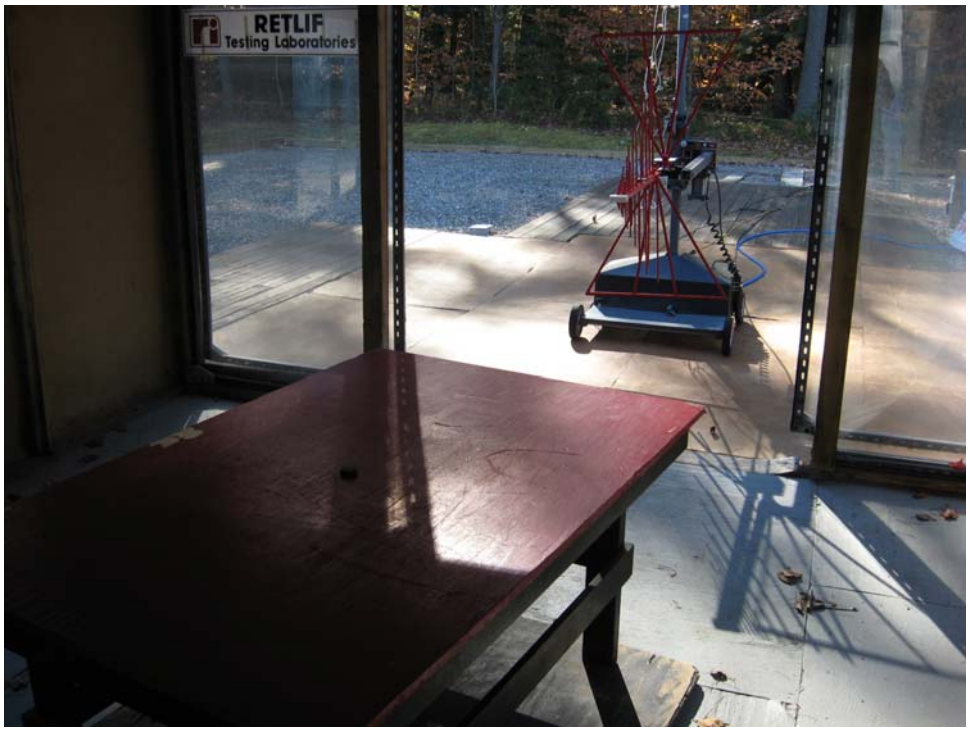
Photographs



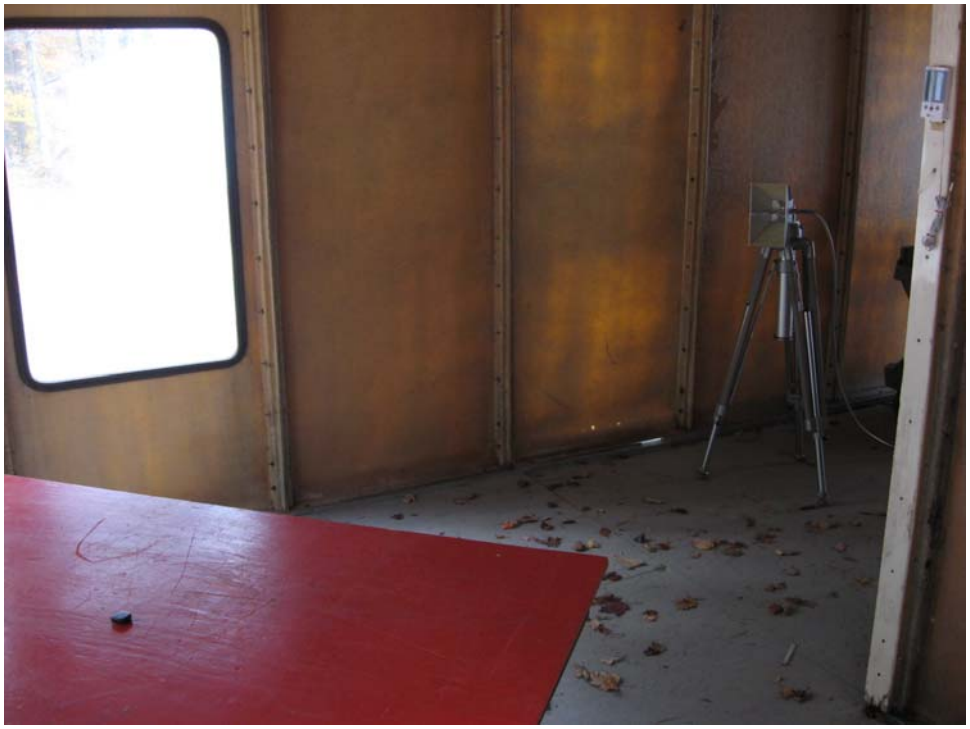
Test Setup

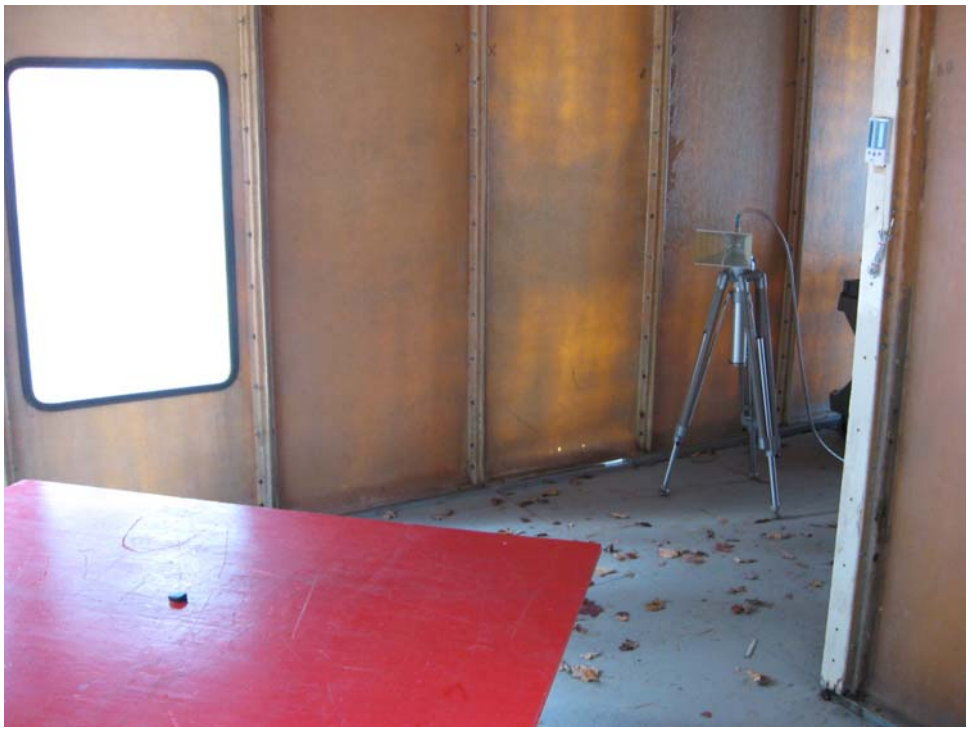


Horizontal Antenna Polarization, 30 to 1000 MHz

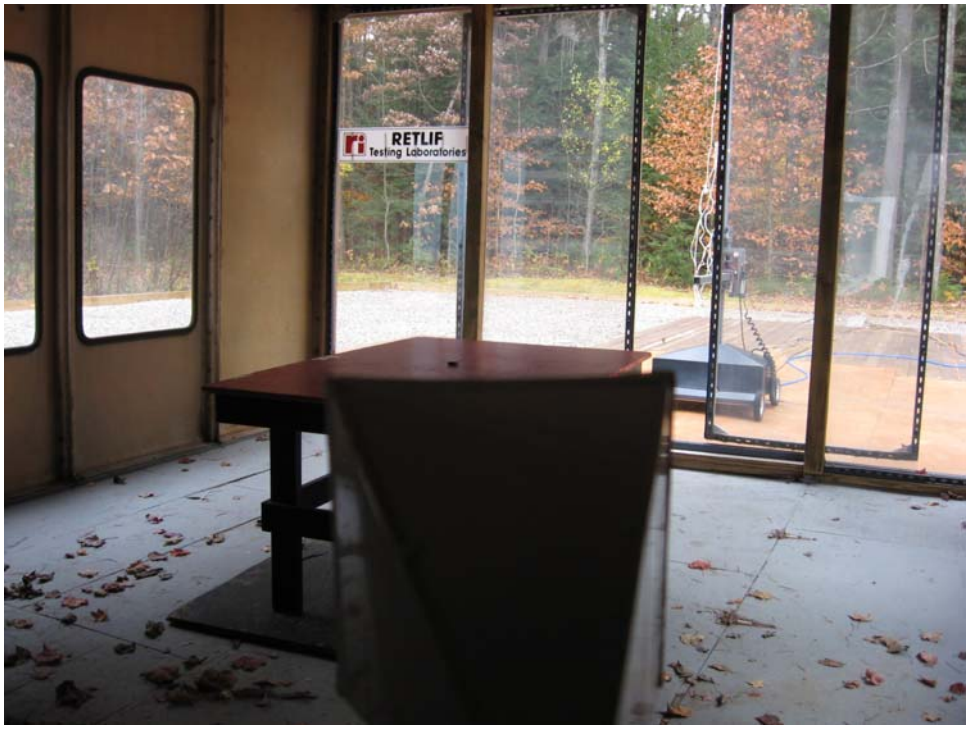


Vertical Antenna Polarization, 30 to 1000 MHz

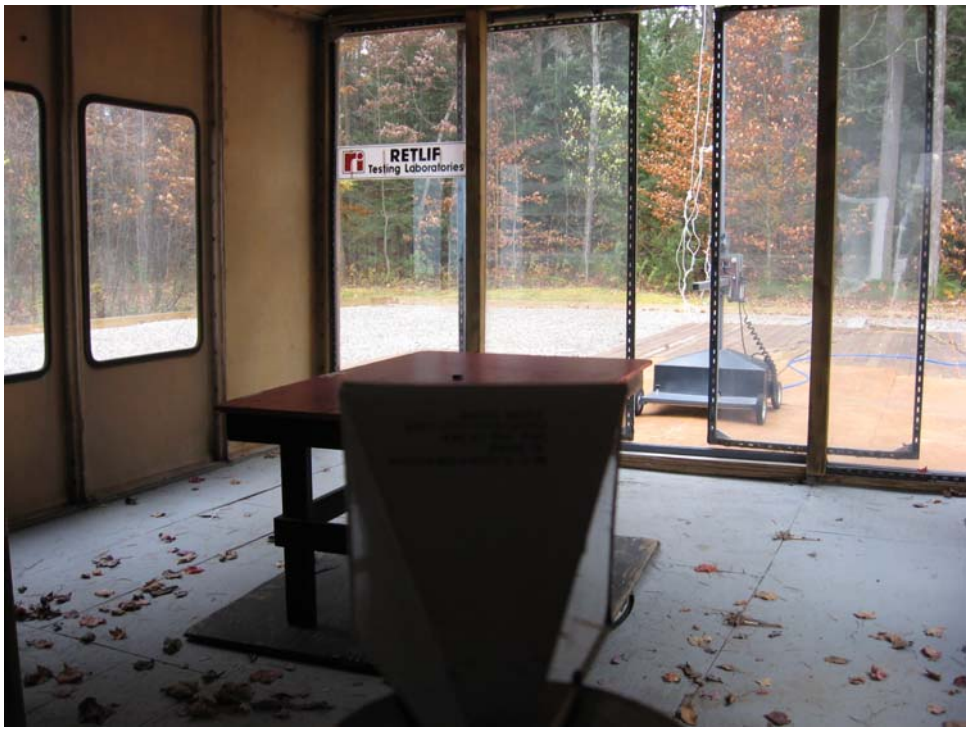

Horizontal Antenna Polarization, 1 to 18 GHz



Vertical Antenna Polarization, 1 to 18 GHz



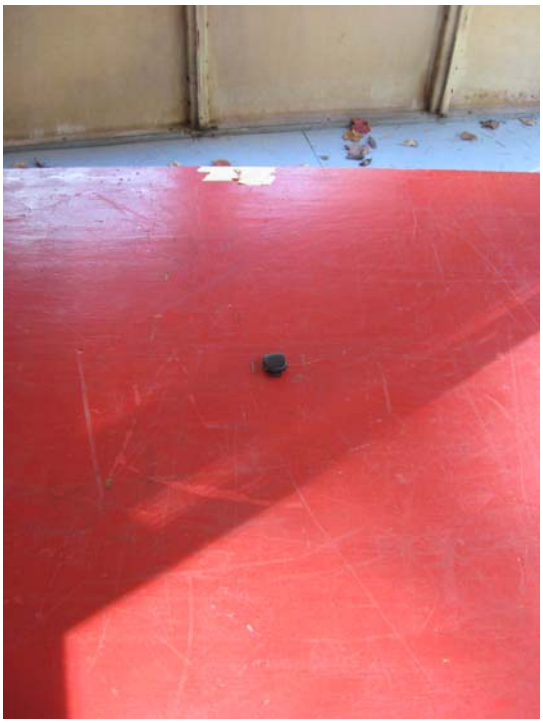
Horizontal Antenna Polarization, 18 to 26 GHz



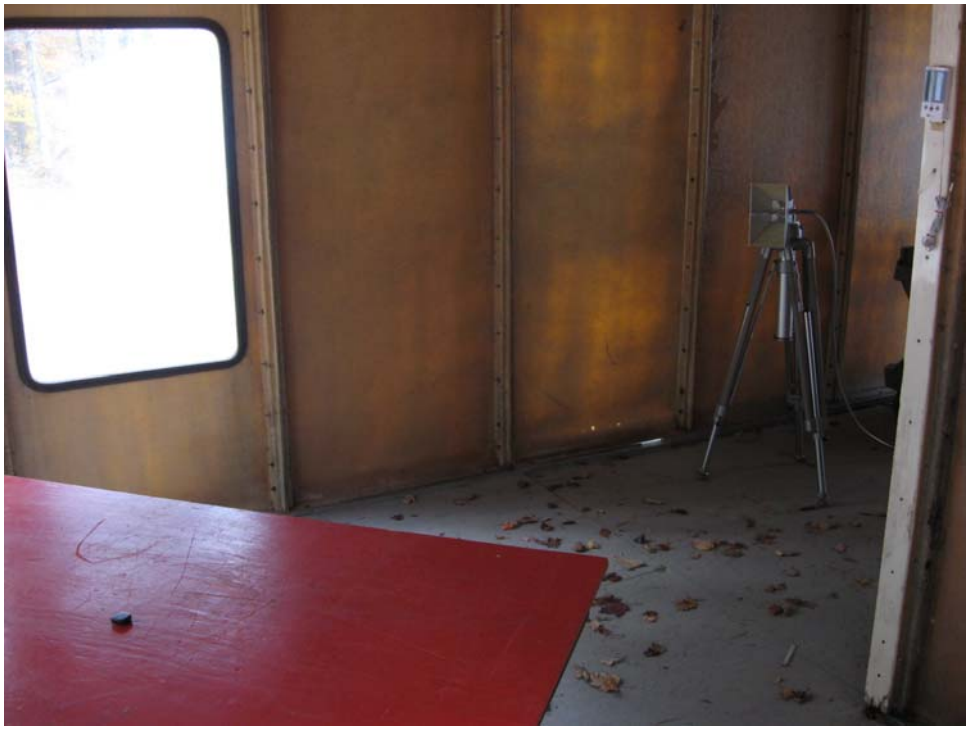
Vertical Antenna Polarization, 18 to 26 GHz

FCC Section 15.249(d) and RSS-210, A2.9(b)
Field Strength of Band Edge Emissions

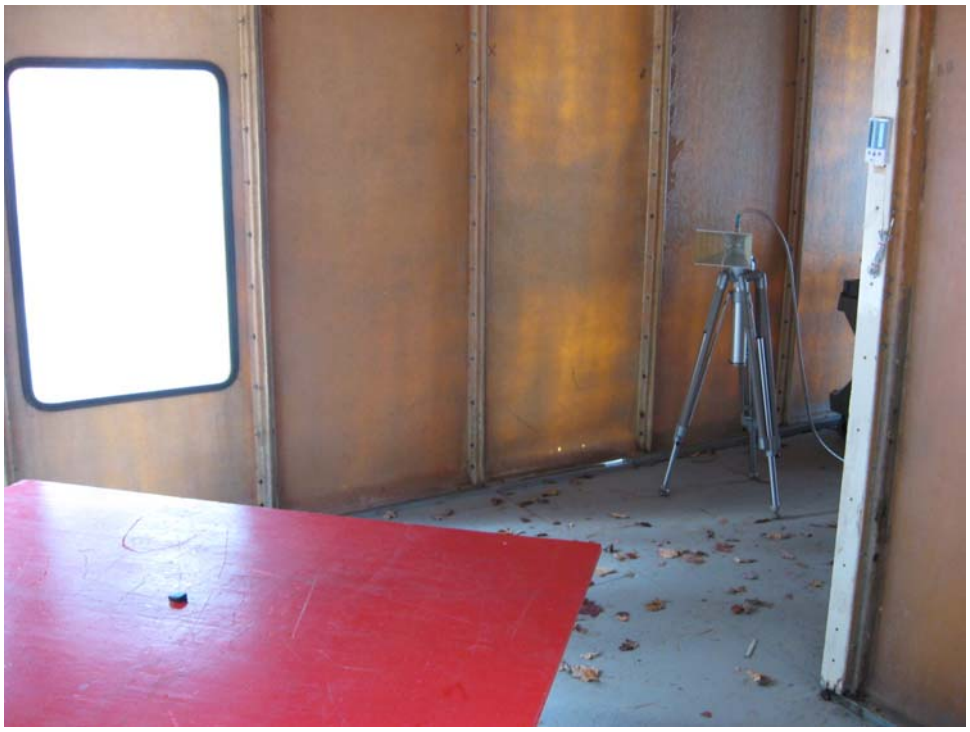
Photographs



Test Setup



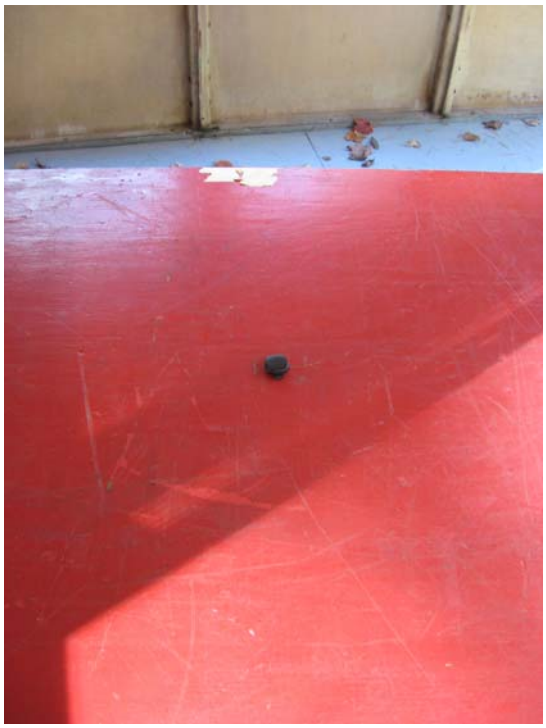
Horizontal Antenna Polarization, 1 to 18 GHz



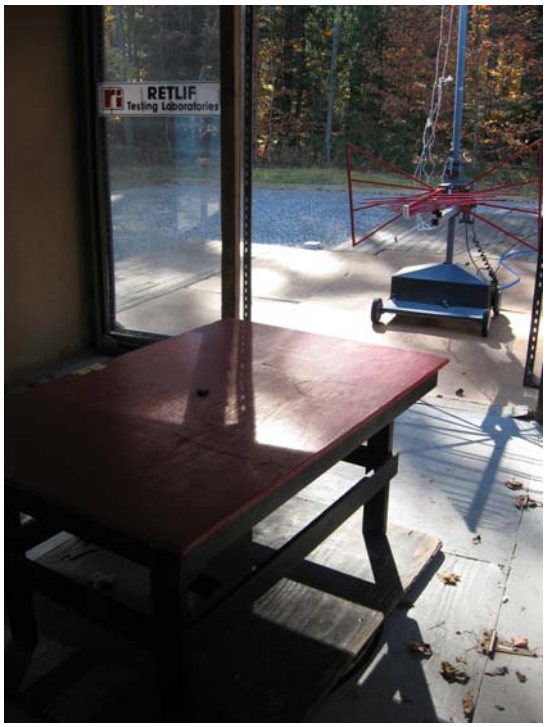
Vertical Antenna Polarization, 1 to 18 GHz

RSS-GEN, 7.2.3 - Receiver Spurious Emission

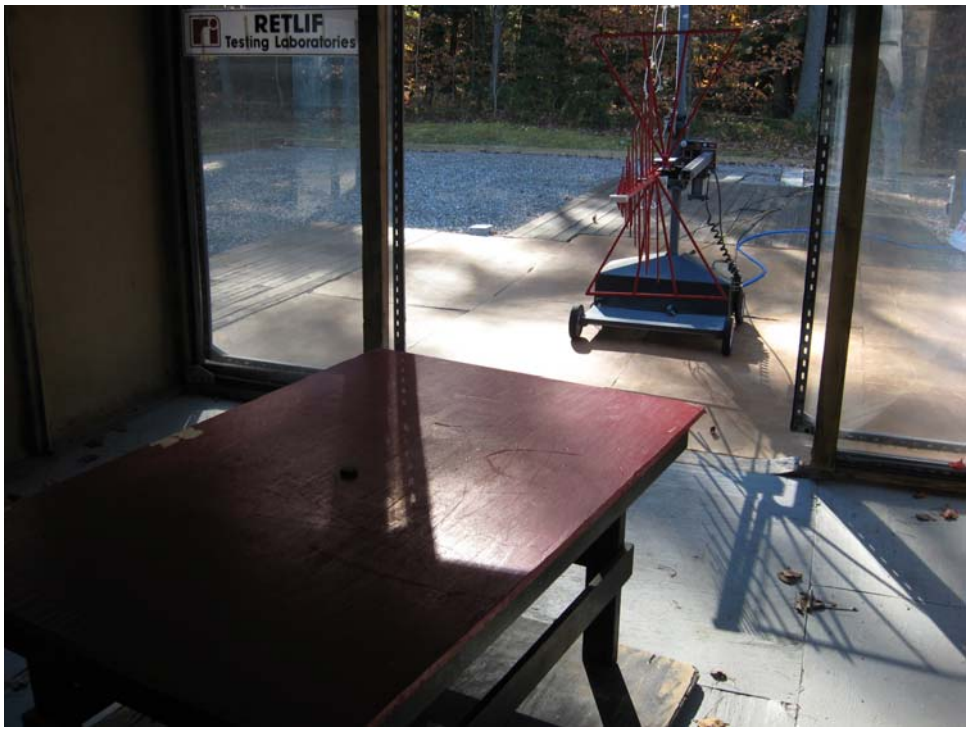
Photographs



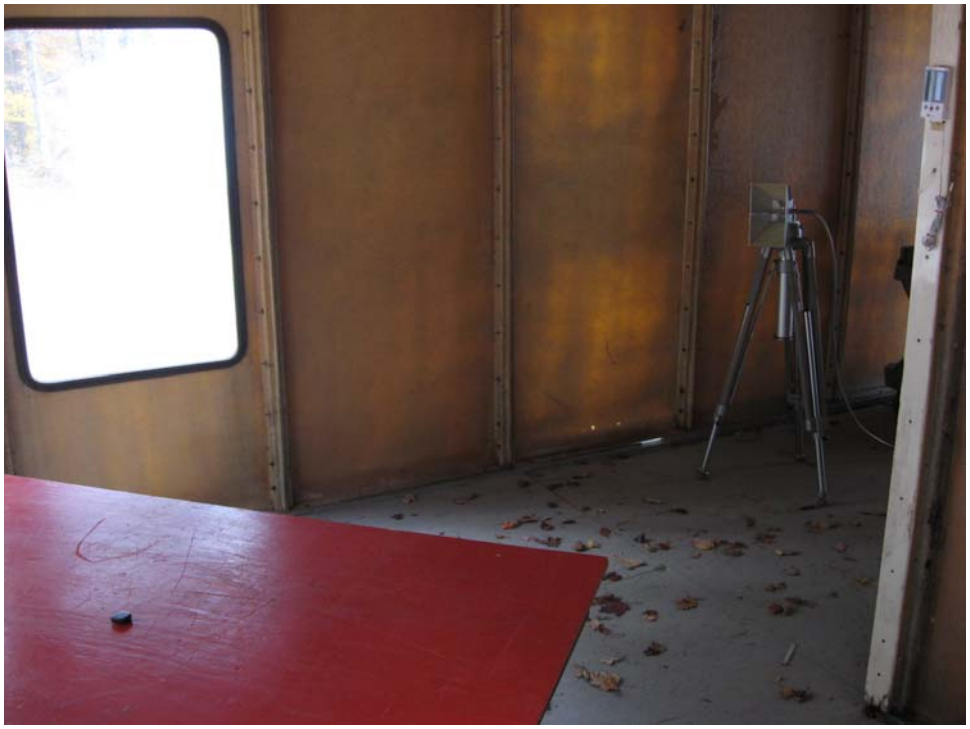
Test Setup

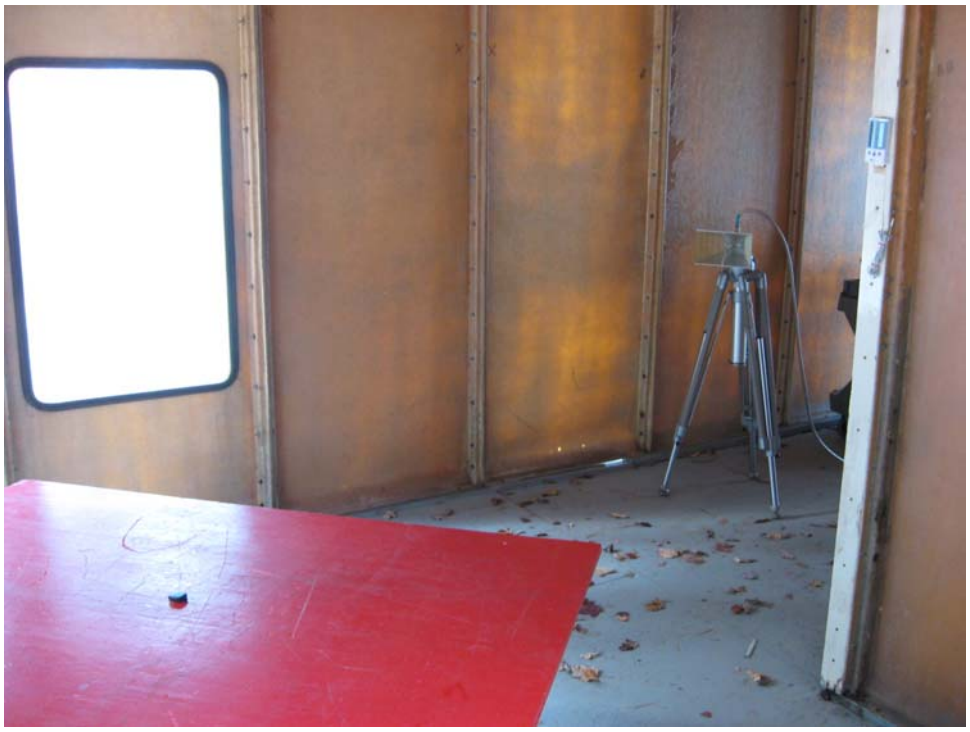


Horizontal Antenna Polarization, 30 to 1000 MHz

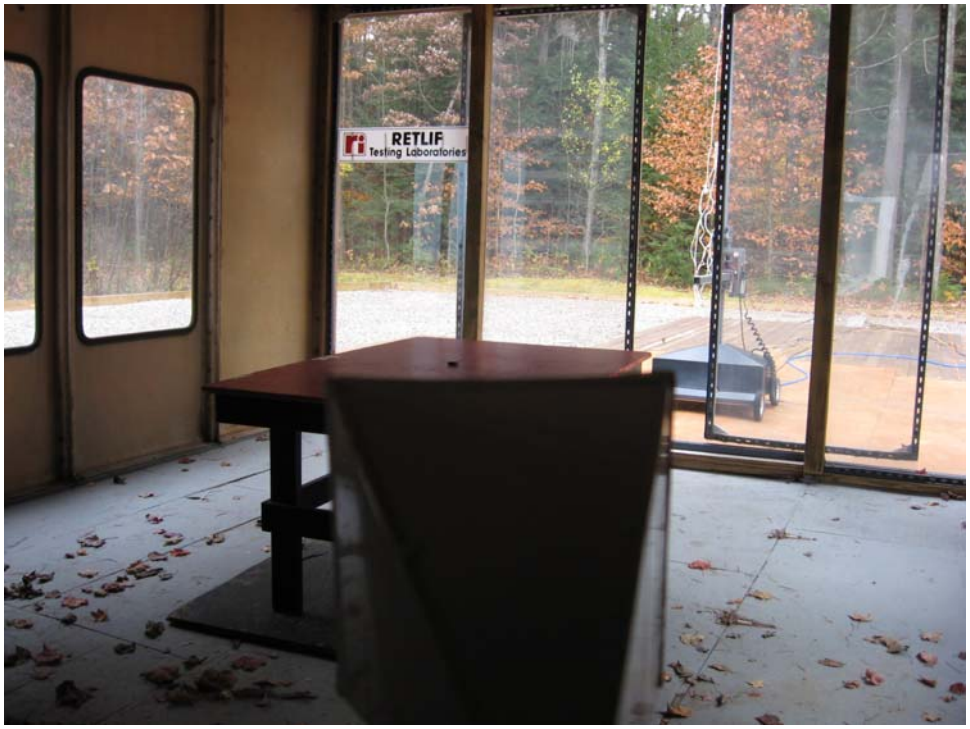


Vertical Antenna Polarization, 30 to 1000 MHz

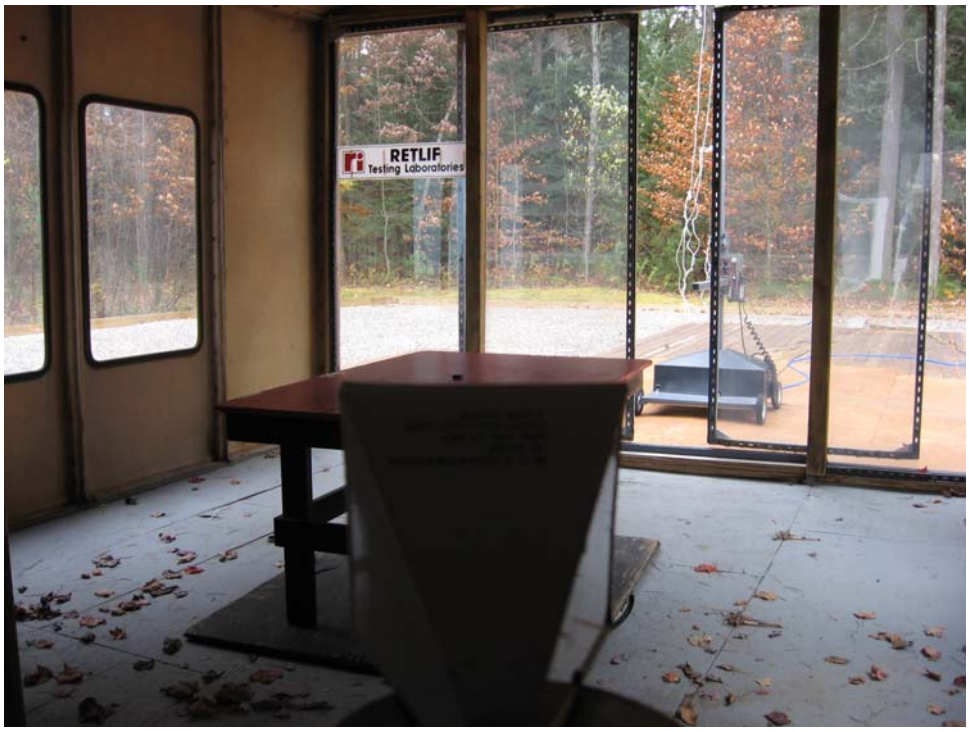

Horizontal Antenna Polarization, 1 to 18 GHz



Vertical Antenna Polarization, 1 to 18 GHz



Horizontal Antenna Polarization, 18 to 26 GHz



Vertical Antenna Polarization, 18 to 26 GHz

FCC Section 15.249(a) and RSS-210, A2.9(a)
Field Strength of Fundamental & Harmonic Emissions

Test Data

RETLIF TESTING LABORATORIES

TABULAR DATA SHEET

Test Method:	Fundamental Field Strength & Harmonics		
Customer:	Fitlinxx	**Job No:**	R-5351N
Test Sample:	ActiPed (Step Sensor/Pedometer) Transceiver		
Model No:	ActiPed+	**Serial No:**	HEKV-00256-00303
Test Specification:	FCC Part 15 Paragraph: 15.249 (a)		
Operating Mode:	Continuously Transmitting		
Technician:	M.Seamans	**Date:**	November 1, 2010
Notes:	Average Readings to Average Limits		

Transmit Frequency	Test Frequency	Antenna/EUT Position	Meter Reading	Correction Factor		Corrected Reading			Converted Reading	Limit at 3 Meters
MHz	MHz	Polarization/Axis	dBuV	dB		dBuV/m			uV/m	uV/m
2429.00	2429.00	V/z	83.30	-1.40		81.90			12445.15	50000.00
	4858.00	-	-	-		-			-	500.00
	7287.00	-	-	-		-			-	500.00
	9716.00	-	-	-		-			-	500.00
	12145.00	-	-	-		-			-	500.00
	14574.00	-	-	-		-			-	500.00
	17003.00	-	-	-		-			-	500.00
	19432.00	-	-	-		-			-	500.00
	21861.00	-	-	-		-			-	500.00
	24290.00	-	-	-		-			-	500.00

At the harmonic frequencies where no meter reading is recorded, there was no harmonic observed above the baseline noise 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:	Fitlinxx	**Job No:**	R-5351N
Test Sample:	ActiPed (Step Sensor/Pedometer) Transceiver		
Model No:	ActiPed+	**Serial No:**	HEKV-00256-00303
Test Specification:	FCC Part 15 Paragraph: 15.249 (e)		
Operating Mode:	Continuously Transmitting		
Technician:	M.Seamans	**Date:**	
Notes:	Peak Readings to Peak Limits(20dB above average limits)		

Transmit Frequency	Test Frequency	Antenna/EUT Position	Meter Reading	Correction Factor		Corrected Reading			Converted Reading	Limit at 3 Meters
MHz	MHz	Polarization/Axis	dBuV	dB		dBuV/m			uV/m	uVm
2429.00	2429.00	V/Y	87.94	-1.40		86.54			21232.44	500000.00
	4858.00	-	-	-		-			-	5000.00
	7287.00	-	-	-		-			-	5000.00
	9716.00	-	-	-		-			-	5000.00
	12145.00	-	-	-		-			-	5000.00
	14574.00	-	-	-		-			-	5000.00
	17003.00	-	-	-		-			-	5000.00
	19432.00	-	-	-		-			-	5000.00
	21861.00	-	-	-		-			-	5000.00
	24290.00	-	-	-		-			-	5000.00

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

FCC Section 15.249(d) and RSS-210, A2.9(b)
Field Strength of Out of Band Spurious Emissions

Test Data

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	**Out of Band Radiated Emissions 30 MHz to 26.5 GHz**		
Customer	Fitlinxx	**Job No.**	R-5351N
Test Sample	ActiPed (Step Sensor/Pedometer) Transceiver		
Model No.	ActiPed+	**Serial No.**	HEKV-00256-00303
Test Specification:	FCC Part 15 Subpart C Paragraph: 15.249 (d)		
Operating Mode:	Continuously Transmitting		
Technician:	M.Seamans	**Date:**	November 1, 2010
Notes:	Test Distance: 3 Meters		

Test Frequency	Antenna Position	Turntable Position	Uncorrected Reading	Correction Factor	Corrected Reading					Limit at 3 Meters
MHz	(H/V) - Height	Degrees	dBuV	dB	dBuV/m					dBuV/m
30.00	-	-	-	-	-					40.0
|	-	-	-	-	-					|
88.00	-	-	-	-	-					40.0
88.00	-	-	-	-	-					43.5
|	-	-	-	-	-					|
216.00	-	-	-	-	-					43.5
216.00	-	-	-	-	-					46.0
|	-	-	-	-	-					|
960.00	-	-	-	-	-					46.0
960.00	-	-	-	-	-					54.0
|	-	-	-	-	-					|
26500.00	-	-	-	-	-					54.0

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

Data Sheet 1 of 1 R-5351N

FCC Section 15.249(d), RSS-210, A2.9(b)
Field Strength of Band Edge Emissions

Test Data

RETLIF TESTING LABORATORIES

TABULAR DATA SHEET

Test Method:	Band Edge		
Customer:	Fitlinxx	**Job No:**	R-5351N
Test Sample:	ActiPed (Step Sensor/Pedometer) Transceiver		
Model No:	ActiPed+	**Serial No:**	HEKV-00256-00303
Test Specification:	FCC Part 15 Paragraph: 15.249 (d)		
Operating Mode:	Continuously Transmitting		
Technician:	M.Seamans	**Date:**	11/1/2010
Notes:	Peak Readings Test Distance 3 Meters		

Test Frequency		Meter Reading	Correction Factor			Corrected Reading		Limit		
MHz		dBuV	dB			dBuV/m		dBuV/m		
2400.00		44.12	-1.40			42.72		54.0		
2483.50		42.99	-1.40			41.59		54.0		

RSS-GEN, 7.2.3 - Receiver Spurious Emission

Test Data

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	**Receiver Spurious Emissions 30MHz to 26.5GHz**		
Customer	FitLinxx	**Job No.**	R-5351N
Test Sample	ActiPed (Step Sensor/Pedometer(Transceiver)		
Model No.	ActiPed+	**Serial No.**	HEKV-00256-00303
Test Specification:	RSS-Gen Paragraph 7.2.3		
Operating Mode:	Receiving		
Technician:	M.Seamans	**Date:**	November 1, 2010
Notes:	Test Distance: 3 Meters		

Test Frequency	Antenna Position	Turntable Position	Meter Reading	Correction Factor	Corrected Reading					Limit at 3 Meters
MHz	(H/V) - Height	Degrees	dBuV	dB	dBuV/m					dBuV/m
30.00	-	-	-	-	-					40.0
I	-	-	-	-	-					
88.00	-	-	-	-	-					40.0
88.00	-	-	-	-	-					43.5
I	-	-	-	-	-					
216.00	-	-	-	-	-					43.5
216.00	-	-	-	-	-					46.0
I	-	-	-	-	-					I
960.00	-	-	-	-	-					46.0
960.00	-	-	-	-	-					54.0
I	-	-	-	-	-					I
26500.00	-	-	-	-	-					54.0

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