



# Retlif Testing Laboratories

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## FCC/IC Test Report on

ActiLink 3.0 Wireless Access Point (USB Transceiver)  
Model: SyncPoint

**Customer Name:** FitLinxx, Inc.

**Customer P.O.:** 30426-N

**Date of Report:** November 10, 2012

**Test Report No.:** R-5624N-2

**Test Start Date:** September 20, 2012

**Test Finish Date:** November 1, 2012

**Test Technician:** M. Seamans

**Branch Manager:** S. Wentworth

**Laboratory Supervisor:** T. Hannemann

**Results Prepared By:** J. Ramsey

**Government Source Inspection:** N/A

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We certify that these Test Results are true results obtained from the tests of the equipment stated, and relates only to the equipment tested. We further certify that the measurements shown in this Test Results package were made in accordance with the procedures indicated and vouch for the qualifications of all Retlif Testing Laboratories personnel taking them.



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Scott Wentworth  
Branch Manager  
NVLAP Approved Signatory



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Todd Hannamann  
Laboratory Supervisor  
iNARTE Certified Technician 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.

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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 may not be used by the client to claim product endorsement by NVLAP, NIST or any agency of the U.S. Government.



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## Revision History

Revisions to this document are listed below; the latest revised document supersedes all previous issues of this document.

Revision	Date	Pages Affected
-	November 10, 2012	Original Release



**Retlif Testing Laboratories**

Test Report No. R-5624N-2

### Test Program Summary

<b>Job Number:</b>	R-5624N-2
<b>Applicant:</b>	FitLinxx, Inc.
<b>Address:</b>	134 Flanders Road, Suite 200 Westborough, MA 01581
<b>Test Sample:</b>	ActiLink 3.0 Wireless Access Point
<b>Brand Name:</b>	FitLinxx, Inc.
<b>Model:</b>	SyncPoint
<b>Antenna Port/Type:</b>	No Antenna Port
<b>Power Requirements:</b>	Internal Antenna - PCB Trace
<b>Frequency Band of Operation:</b>	5 VDC via USB
<b>Frequency of Operation:</b>	2.40 GHz to 2.4835 GHz
<b>FCC ID:</b>	2.429 GHz
<b>IC:</b>	O9DAL3
	4068A-AL3

#### Test Specification:

FCC Rules and Regulations Part 15, Subpart C, Paragraph 15.207 and 15.249

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

#### Test Procedure:

ANSI C63.4: 2003, American National Standard for Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

#### Purpose:

The purpose of this test program was to demonstrate compliance of the ActiLink 3.0 Wireless Access Point to the technical requirements of FCC Part 15.207 and 15.249 and RSS-210, Annex A2.9.



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**Test Methods & Results:**

The following table depicts the test methods that were performed on the EUT and the corresponding test results:

Table 1 – Test Methods Performed

Testing Date(s)	FCC Part 15, Subpart C	Industry Canada RSS-210 Issue 8, December 2010	Industry Canada RSS-GEN Issue 3, December 2010	Test Method	Test Results
November 1, 2012	15.207(a)	N/A	7.2.4	Conducted Emissions	Complied
September 25, 2012	15.249 (a) (e)	A2.9 (a)	N/A	Field Strength of Fundamental & Harmonic Emissions	Complied
September 25, 2012	15.249 (d)	A2.9 (b)	N/A	Field Strength of Out of Band/ Bandedge Emissions	Complied
September 25, 2012	N/A	N/A	6.1	Field Strength of Receiver Spurious Emissions	Complied
September 25, 2012	N/A	N/A	4.6.1	99% Bandwidth	3.86 MHz

**Test Sample Description:**

The ActiLink 3.0 is a personal wireless access point for individual users and families that automatically transfers activity and health data from ActiHealth-compatible devices over the Internet to the ActiHealth website. The ActiLink must be plugged into a USB port of a computer and uses a software application to transfer data to the ActiHealth website. This software application can be downloaded during the ActiHealth registration process or at any time from the “Devices” tab on the ActiHealth website. The ActiLink will collect data from ActiHealth-compatible devices at a range of up to 60 feet.

**Support Equipment:**

Table 2 – Support Equipment

Description	Manufacturer	Part Number	Model Number	Serial Number
Laptop	Dell	N/A	PP18L	N/A
AC Adapter	Dell	YT886	FA65NS0-00	CN-OYT886-73245-93B-3389-A01
Keyboard	Dell	N/A	RX7D50	CN-OJ4624-37172-4AM-03PC
Network Switch	Linksys	N/A	EZXS55W	R915OH443962


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### **Test Sample/Test Results Summary:**

- The maximized fundamental field strength at 2429 MHz did not exceed 50 m V/M (94dB $\mu$ V) at a test distance of 3 meters. The measured maximized average field strength was 77.65 dB $\mu$ V/m.
- The field strength of observed harmonic emissions did not exceed 500  $\mu$  V/M. The worst case harmonic emission measured was 40.59 dBuV/m at a frequency of 4858 MHz. No other harmonic emissions were observed within 10dB of the specified limit at 3 meter or 1 meter test distances.
- 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 20 dB. The measured maximized peak field strength was 85.18 dB $\mu$ V.

### **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 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).
4. 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.
5. 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).
6. The EUT operated at the frequency of 2429.0 MHz. Testing was performed with the device operating at this frequency.
7. The frequency spectrum was investigated from the lowest frequency generated in the device up to the 10<sup>th</sup> harmonic of the highest fundamental frequency in accordance with FCC Section 15.33(a)(1) and RSS-Gen Section 4.9.
8. 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 RSS-Gen Section 4.9. The peak values of emissions above 1 GHz were verified to meet the 20 dB requirement of FCC Section 15.35(b).



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## Requirements and Test Results:

### Requirement: 15.207 (a) AC Line Conducted Emissions

#### Conducted Emissions Measurement Procedure:

The test sample was plugged into the USB port of the host computer system which was placed on a 0.8m high wooden test stand above the floor of the test area (ground plane). The rear of the EUT was aligned flush with the rear of the test stand. The test stand was situated such that the EUT was located 0.4m from all other grounded surfaces. The AC Power Line of the host computer was connected to an artificial mains network (LISN). The spectrum analyzer was connected to the RF port of the LISN and peak/quasi-peak and average measurements were taken in the frequency range of 150 kHz to 30 MHz on the 120VAC, 60Hz hot and neutral leads.

Test Results: The measured AC line conducted emissions met the limit specified in 15.207 (a) and RSS Gen, Para. 7.2.4.

#### 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 3.

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

Table 3 - 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



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## Requirements and Test Results (con't)

- Results:  
The EUT was operated at 2429.0 MHz. The field strength of the fundamental did not exceed 50 mV/M. Harmonic emissions did not exceed 500uV/M or 2500uV/M as applicable.

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.

### Requirement:

#### RSS-GEN, 6.1 - Receiver Spurious Emission Limits

All spurious emissions shall comply with the limits specified in Table 4.

Table 4 - 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:  
No receiver spurious emissions were observed within 10dB of the limits specified in Table 2.

#### IC RSS-GEN, 4.6.1 – Occupied Bandwidth

When an occupied bandwidth value is not specified in the applicable RSS, the 99% bandwidth of the transmitted signal shall be reported.

- Results:  
The 99% emission bandwidth was measured and recorded.



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## Requirements and Test Results (con't)

### Field Strength Measurement & Calculation:

The following spectrum analyzer settings were used:

RBW = 1 MHz for  $f \geq 1$  GHz, 100 kHz for  $f \leq 1$  GHz

VBW  $\geq$  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 dB $\mu$ V/m

$M_R$  = Uncorrected Meter Reading in dB $\mu$ V

$C_F$  = Correction Factor in dB (Pre-Amp + Antenna Factor + Cable Loss)

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

#### Radiated Emissions Measurement Procedure:

The field strength of the fundamental, harmonic and out of band/bandedge emissions were measured. The EUT was plugged into the USB port of the host PC which was placed on a 80cm high wooden test stand located 3 meters from the test antenna on a FCC listed open area test site. Emissions from the EUT were maximized field strength of each observed emissions 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.



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## Test Setup Photographs



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## Test Setup Photograph(s) Radiated Emissions



Horizontal Antenna Polarization



Vertical Antenna Polarization



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**Test Setup Photograph(s)  
Radiated Emissions**



Horizontal Antenna Polarization



Vertical Antenna Polarization



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**Test Setup Photograph(s)  
Radiated Emissions**



Horizontal Antenna Polarization



Vertical Antenna Polarization



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**Test Setup Photograph(s)**  
**99% Bandwidth**



Test Setup



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## Test Setup Photograph(s) Conducted Emissions



Test Setup



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## Equipment Lists

### Radiated Emissions

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
1232	AGILENT / HP	PRE-AMPLIFIER	1 - 26.5GHz	8449B	5/30/2012	5/31/2013
3258	EMCO	DOUBLE RIDGED GUIDE ANTENNA	1 GHZ - 18GHZ	3115	2/24/2012	2/28/2013
3430	MCS	HORN ANTENNA	18 GHz - 26.5 GHz	K-5039	1/19/2012	1/31/2013
4029	RETLIF	OPEN AREA TEST SITE	3 / 10 Meters	RNH	7/24//2012	7/24/2015
R444	AGILENT / HP	SPECTRUM ANALYZER	100 Hz - 26.5 GHz	E7405A;A	7/6/2012	7/6/2013

### Conducted Emissions

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
4027	SOLAR ELECTRONICS	LINE IMPEDANCE STABILIZATION NETWORK	10KHZ-50MHZ	9252-50-R-24BNC	1/19/201	1/31/2013
4028	ACME	ISOLATION TRANSFORMER		120X240	No Calibration Required	
5030B	NARDA	10DB ATTENUATOR	DC - 12.4 GHz	757C-10	1/18/2012	1/31/2013
R444	AGILENT / HP	SPECTRUM ANALYZER	100 Hz - 26.5 GHz	E7405A;A	7/6/2012	7/6/2013

### 99% Bandwidth

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
5070	ROHDE & SCHWARZ	EMI TEST RECEIVER	20 Hz - 40 GHz	ESIB40	10/26/2011	10/26/2012



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**Test Data**



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# RETLIF TESTING LABORATORIES

## TABULAR DATA SHEET

<b>Test Method:</b>	Fundamental Field Strength & Harmonics		
<b>Customer:</b>	FitLinxx	<b>Job No:</b>	R-5624N-2
<b>Test Sample:</b>	ActiLink 3.0 Wireless Access Point (USB Transceiver)		
<b>Model No:</b>	SyncPoint	<b>Serial No:</b>	N/A
<b>Test Specification:</b>	FCC Part 15 Paragraph: 15.249 (a)		
<b>Operating Mode:</b>	Transmitting continuous signal at 2.429GHz		
<b>Technician:</b>	M.Seamans	<b>Date:</b>	September 25, 2012
<b>Notes:</b>	Average Readings to Average Limits		

[illegible]

# RETLIF TESTING LABORATORIES

## TABULAR DATA SHEET

<b>Test Method:</b>	Peak Field Strength		
<b>Customer:</b>	FitLinxx	<b>Job No:</b>	R-5624N-2
<b>Test Sample:</b>	ActiLink 3.0 Wireless Access Point (USB Transceiver)		
<b>Model No:</b>	SyncPoint	<b>Serial No:</b>	N/A
<b>Test Specification:</b>	FCC Part 15 Paragraph: 15.249 (e)		
<b>Operating Mode:</b>	Transmitting continuous signal at 2.429GHz		
<b>Technician:</b>	M.Seamans	<b>Date:</b>	September 25, 2012
<b>Notes:</b>	Peak Readings to Peak Limits( 20dB above average limits )		

[illegible]

# RETLIF TESTING LABORATORIES

# EMISSIONS DATA SHEET

**Test Method:**

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

Customer

FitLinxx

Job No.

R-5624N-2

## Test Sample

ActiLink 3.0 Wireless Access Point (USB Transceiver)

Model No.

## SyncPoint

Serial No.

N/A

### Test Specification:

FCC Part 15 Subpart C

Paragraph: 15.249 (d)

**Operating Mode:**

Transmitting continuous signal at 2.429GHz

**Technician:**

M.Seamans

Date:

September 25, 2012

### Notes:

Test Distance: 3 Meters

[illegible]

# RETLIF TESTING LABORATORIES

## TABULAR DATA SHEET

<b>Test Method:</b>	Band Edge		
<b>Customer:</b>	FitLinxx	<b>Job No:</b>	R-5624N-2
<b>Test Sample:</b>	ActiLink 3.0 Wireless Access Point (USB Transceiver)		
<b>Model No:</b>	SyncPoint	<b>Serial No:</b>	N/A
<b>Test Specification:</b>	FCC Part 15 Paragraph: 15.249 (d)		
<b>Operating Mode:</b>	Transmitting continuous signal at 2.429GHz		
<b>Technician:</b>	M.Seamans	<b>Date:</b>	September 25, 2012
<b>Notes:</b>	Peak Readings Test Distance 3 Meters		

[illegible]

# RETLIF TESTING LABORATORIES

# EMISSIONS DATA SHEET

**Test Method:**

### Receiver Spurious Emissions 30 MHz to 26.5 GHz

Customer

FitLinxx

Job No.

R-5624N-2

## Test Sample

ActiLink 3.0 Wireless Access Point (USB Transceiver)

Model No.

## SyncPoint

Serial No.

N/A

### Test Specification:

RSS-GEN

Paragraph: 6.1

**Operating Mode:**

Receiving at 2429.0 MHz

**Technician:**

M.Seamans

Date:

September 25, 2012

### Notes:

Test Distance: 3 Meters

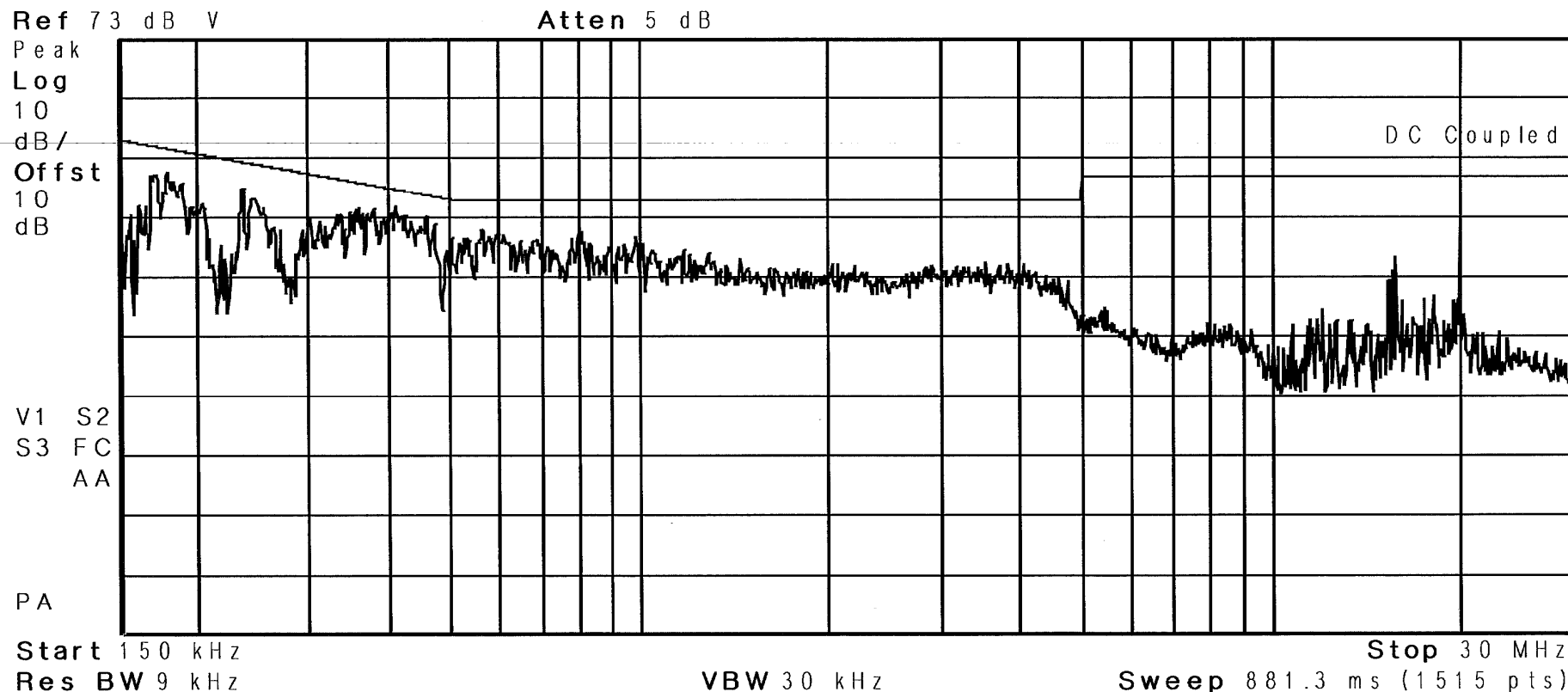
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# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

Test Method:	Conducted Emissions 150 kHz to 30 MHz		
Customer:	Fitlinxx, Inc.	Test Sample:	ActiLink 3.0 Wireless Access Point (USB Transceiver)
Model No:	SyncPoint	Serial No:	N/A
Test Specification:	FCC Part 15	Paragraph:	15.207(a)
Operating Mode:	Continuously transmitting signal at 2.429GHz		
Notes:	Lead Tested: 120 VAC 60 Hz Hot    Peak Readings to Average Limits.		
Job No:	R-5624N-2		
Technician:	M. Seamans		
Date:	November 1, 2012		

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# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

Test Method:	Conducted Emissions 150 kHz to 30 MHz		
Customer:	Fitlinxx, Inc.	Test Sample:	ActiLink 3.0 Wireless Access Point (USB Transceiver)
Model No:	SyncPoint	Serial No:	N/A
Test Specification:	FCC Part 15	Paragraph:	15.207(a)
Operating Mode:	Continuously transmitting signal at 2.429GHz		
Notes:	Lead Tested: 120 VAC 60 Hz Neutral Peak Readings to Average Limits.		
Job No:	R-5624N-2		Technician:
		M. Seamans	Date:
		November 1, 2012	

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