SynapSense Corporation

ADDENDUM TO TEST REPORT 91081-9A

0766, P3 Controller

Tested To The Following Standards:

FCC Part 15 Subpart C Sections 15.207, 15.247
and
RSS-210 Issue 8

Report No.: 91081-9B

Date of issue: March 9, 2011

ACCREDITED

TESTING
CERT #803.01, 803.02, 803.05, 803.06

This test report bears the accreditation symbol indicating that the testing performed herein meets the test and reporting requirements of ISO/IEC 17025 under the applicable scope of EMC testing for CKC Laboratories, Inc.

We strive to create long-term, trust based relationships by providing sound, adaptive, customer first testing services. We embrace each of our customers' unique EMC challenges, not as an interruption to set processes, but rather as the reason we are in business.

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ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

SynapSense Corporation
2365 Iron Point Rd., Suite 100
Folsom, CA 95630

Representative: Pat Weston
Customer Reference Number: 9927

REPORT PREPARED BY:

Joyce Walker
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Project Number: 91081

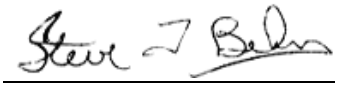
DATE OF EQUIPMENT RECEIPT: October 11, 2010
DATE(S) OF TESTING: October 12 - November 7, 2010

Revision History

Original: To perform the testing of the 0766, P3 Controller with the requirements for FCC Part 15 Subpart C Sections 15.207, 15.247 and RSS 210 Issue 7 devices.
Addendum A: To replace test results of the 0766, P3 Controller for section 15.247(b) Power Output Data, and section 15.247(e), Power Spectral Density due to an error in the power measurement.
Addendum B: Only changes the year of RSS-210 to Issue 8. No new testing was added.

Report Authorization

The test data contained in this report documents the observed testing parameters pertaining to and are relevant for only the sample equipment tested in the agreed upon operational mode(s) and configuration(s) as identified herein. Compliance assessment remains the client's responsibility. This report may not be used to claim product endorsement by A2LA or any government agencies. This test report has been authorized for release under quality control from CKC Laboratories, Inc.



Steve Behm
Director of Quality Assurance & Engineering Services
CKC Laboratories, Inc.

Test Facility Information

Our laboratories are configured to effectively test a wide variety of product types. CKC utilizes first class test equipment, anechoic chambers, data acquisition and information services to create accurate, repeatable and affordable test results.

TEST LOCATION(S):
CKC Laboratories, Inc.
110 Olinda Place
Brea, CA 92823

Site Registration & Accreditation Information

Location	CB #	Japan	Canada	FCC
Brea A	US0060	R-2945, C-3248 & T-1572	3082D-1	90473

SUMMARY OF RESULTS

Standard / Specification: FCC Part 15 Subpart C and RSS-210 Issue 8

Description	Test Procedure/Method	Results
Conducted Emissions	FCC Part 15 Subpart C Section 15.207 / ANSI C63.4 (2003)	Pass
Occupied Bandwidth	FCC Part 15 Subpart C Section 15.247(a)	Pass
Peak Output Power	FCC Part 15 Subpart C Section 15.247(b)	Pass
Bandedge	FCC Part 15 Subpart C Section 15.247(d)	Pass
Field Strength of Spurious Radiation	FCC Part 15 Subpart C Section 15.247(d)	Pass
Power Spectral Density	FCC Part 15 Subpart C Section 15.247 (e)	Pass
99% Bandwidth	RSS-210 Issue 8	Pass

Conditions During Testing

This list is a summary of the conditions noted for or modifications made to the equipment during testing.

Summary of Conditions
None

EQUIPMENT UNDER TEST (EUT)

EQUIPMENT UNDER TEST

0766
Manuf: SynapSense Corporation
Model: P3 Controller
Serial: NA

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

EUT Power Supply
Manuf: V-Infinity
Model: 3A-251DN24
Serial: ETS240100UTC-P5P-SZ

Laptop Power Supply
Manuf: Lenovo
Model: 92P1213
Serial: None

Laptop Computer
Manuf: IBM
Model: ThinkPad
Serial: LV-AB199 06/09

FCC PART 15 SUBPART C

15.207 AC Conducted Emissions

Test Data Sheets

Test Location: CKC Laboratories, Inc • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer:	**SynapSense Corporation**		
Specification:	**15.207 AC Mains - Average**		
Work Order #:	**91081**	Date:	10/18/2010
Test Type:	**Conducted Emissions**	Time:	7:16:01 PM
Equipment:	**0766**	Sequence#:	5
Manufacturer:	SynapSense Corporation	Tested By:	S. Hundal
Model:	P3 Controller		230V 50Hz
S/N:			

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05613	Attenuator	50FHC-006-10BNC	3/10/2009	3/10/2011
T2	ANP04358	Cable	RG142	5/7/2010	5/7/2012
	AN02869	Spectrum Analyzer	E4440A	2/21/2009	2/21/2011
T3	AN02610	High Pass Filter	HE9615-150K-50-720B	11/16/2009	11/16/2011
T4	AN00847.1	50uH LISN-Line 1 (dB)	3816/2NM	12/9/2008	12/9/2010
	AN00847.1	50uH LISN-Line 2 (dB)	3816/2NM	12/9/2008	12/9/2010

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
0766*	SynapSense Corporation	P3 Controller	

Support Devices:

Function	Manufacturer	Model #	S/N
EUT Power Supply	V-Infinity	3A-251DN24	ETS240100UTC-P5P-SZ
Laptop Power Supply	Lenovo	92P1213	None
Laptop Computer	IBM	ThinkPad	LV-AB199 06/09

Test Conditions / Notes:

The Controller transmitter is on-transmit mode.
All ports are filled with I/O cables.

EUT environment - 21°C and 54% Relative Humidity
Freq Range Tested - 150kHz-30MHz
150kHz-30MHz RBW=VBW=9kHz

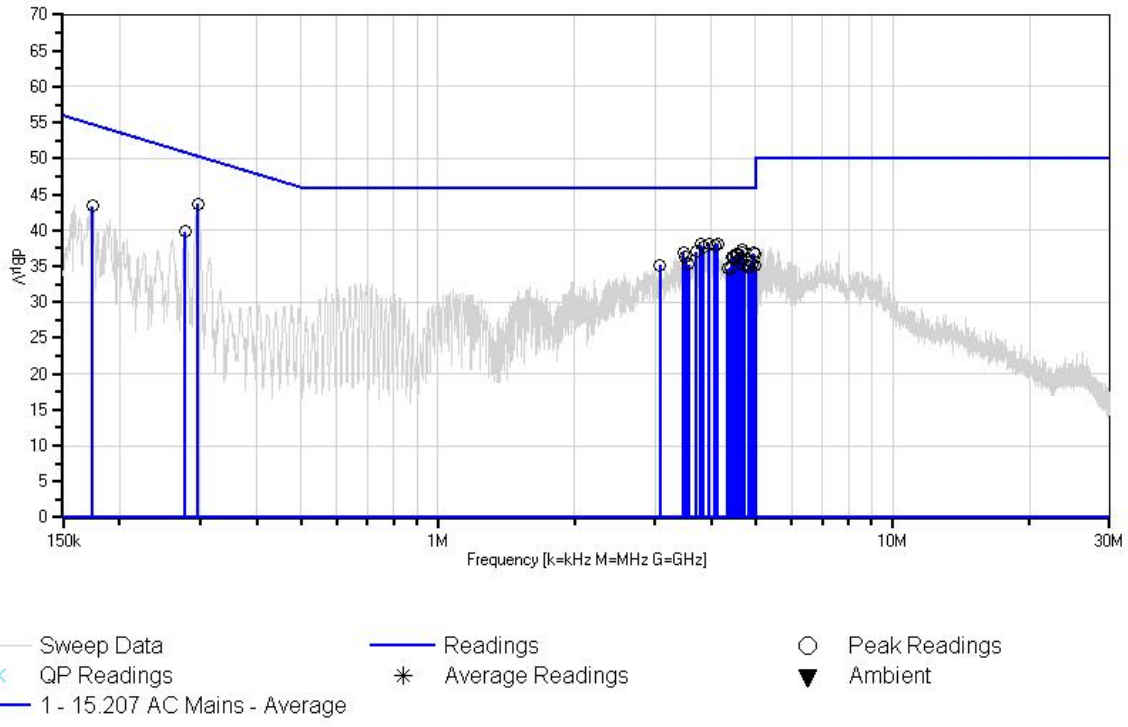
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Lead: Black

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	296.896k	37.6	+5.7	+0.1	+0.3	+0.0	+0.0	43.7	50.3	-6.6	Black
2	3.943M	32.1	+5.6	+0.2	+0.1	+0.1	+0.0	38.1	46.0	-7.9	Black
3	4.131M	32.1	+5.6	+0.2	+0.1	+0.1	+0.0	38.1	46.0	-7.9	Black
4	3.778M	32.0	+5.6	+0.2	+0.1	+0.1	+0.0	38.0	46.0	-8.0	Black
5	4.062M	31.9	+5.6	+0.2	+0.1	+0.1	+0.0	37.9	46.0	-8.1	Black
6	3.833M	31.7	+5.6	+0.2	+0.1	+0.1	+0.0	37.7	46.0	-8.3	Black
7	4.688M	31.2	+5.6	+0.2	+0.1	+0.1	+0.0	37.2	46.0	-8.8	Black
8	3.705M	31.0	+5.6	+0.2	+0.1	+0.1	+0.0	37.0	46.0	-9.0	Black
9	3.467M	30.9	+5.6	+0.2	+0.1	+0.1	+0.0	36.9	46.0	-9.1	Black
10	4.658M	30.9	+5.6	+0.2	+0.1	+0.1	+0.0	36.9	46.0	-9.1	Black
11	4.934M	30.8	+5.6	+0.2	+0.1	+0.1	+0.0	36.8	46.0	-9.2	Black
12	4.530M	30.6	+5.6	+0.2	+0.1	+0.1	+0.0	36.6	46.0	-9.4	Black
13	4.564M	30.6	+5.6	+0.2	+0.1	+0.1	+0.0	36.6	46.0	-9.4	Black
14	4.968M	30.6	+5.6	+0.2	+0.1	+0.1	+0.0	36.6	46.0	-9.4	Black
15	4.471M	30.3	+5.6	+0.2	+0.1	+0.1	+0.0	36.3	46.0	-9.7	Black
16	4.441M	30.3	+5.6	+0.2	+0.1	+0.1	+0.0	36.3	46.0	-9.7	Black
17	3.501M	30.2	+5.6	+0.2	+0.1	+0.1	+0.0	36.2	46.0	-9.8	Black
18	4.628M	30.1	+5.6	+0.2	+0.1	+0.1	+0.0	36.1	46.0	-9.9	Black
19	4.879M	29.7	+5.6	+0.2	+0.1	+0.1	+0.0	35.7	46.0	-10.3	Black
20	4.909M	29.3	+5.6	+0.2	+0.1	+0.1	+0.0	35.3	46.0	-10.7	Black

21	3.556M	29.2	+5.6	+0.2	+0.1	+0.1	+0.0	35.2	46.0	-10.8	Black
22	3.084M	29.1	+5.6	+0.2	+0.1	+0.1	+0.0	35.1	46.0	-10.9	Black
23	4.713M	29.1	+5.6	+0.2	+0.1	+0.1	+0.0	35.1	46.0	-10.9	Black
24	4.998M	29.0	+5.6	+0.2	+0.1	+0.1	+0.0	35.0	46.0	-11.0	Black
25	278.715k	33.8	+5.6	+0.1	+0.3	+0.0	+0.0	39.8	50.9	-11.1	Black
26	4.811M	28.9	+5.6	+0.2	+0.1	+0.1	+0.0	34.9	46.0	-11.1	Black
27	4.845M	28.9	+5.6	+0.2	+0.1	+0.1	+0.0	34.9	46.0	-11.1	Black
28	4.407M	28.8	+5.6	+0.2	+0.1	+0.1	+0.0	34.8	46.0	-11.2	Black
29	4.343M	28.7	+5.6	+0.2	+0.1	+0.1	+0.0	34.7	46.0	-11.3	Black
30	173.998k	37.4	+5.6	+0.1	+0.3	+0.0	+0.0	43.4	54.8	-11.4	Black

CKC Laboratories, Inc Date: 10/18/2010 Time: 7:16:01 PM SynapSense Corporation WO#: 91081
15.207 AC Mains - Average Test Lead: Black 230V 50Hz Sequence#: 5 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **SynapSense Corporation**
Specification: **15.207 AC Mains - Average**
Work Order #: **91081** Date: 10/18/2010
Test Type: **Conducted Emissions** Time: 7:19:16 PM
Equipment: **0766** Sequence#: 6
Manufacturer: SynapSense Corporation Tested By: S. Hundal
Model: P3 Controller 230V 50Hz
S/N:

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	ANP05613	Attenuator	50FHC-006-10BNC	3/10/2009	3/10/2011
T2	ANP04358	Cable	RG142	5/7/2010	5/7/2012
	AN02869	Spectrum Analyzer	E4440A	2/21/2009	2/21/2011
T3	AN02610	High Pass Filter	HE9615-150K-50-720B	11/16/2009	11/16/2011
	AN00847.1	50uH LISN-Line 1 (dB)	3816/2NM	12/9/2008	12/9/2010
T4	AN00847.1	50uH LISN-Line 2 (dB)	3816/2NM	12/9/2008	12/9/2010

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
0766*	SynapSense Corporation	P3 Controller	

Support Devices:

Function	Manufacturer	Model #	S/N
EUT Power Supply	V-Infinity	3A-251DN24	ETS240100UTC-P5P-SZ
Laptop Power Supply	Lenovo	92P1213	None
Laptop Computer	IBM	ThinkPad	LV-AB199 06/09

Test Conditions / Notes:

The Controller transmitter is on-transmit mode.
All ports are filled with I/O cables.

EUT environment - 21°C and 54% Relative Humidity
Freq Range Tested - 150kHz-30MHz
150kHz-30MHz RBW=VBW=9kHz

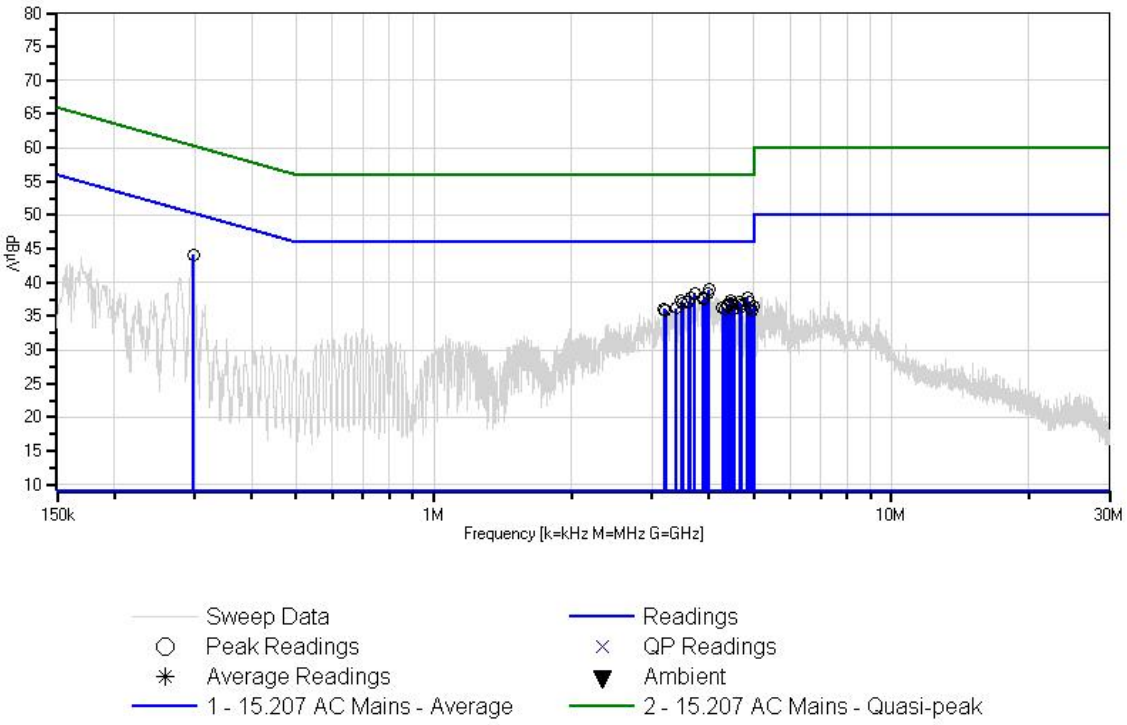
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Lead: White

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	297.623k	38.0	+5.7	+0.1	+0.3	+0.0	+0.0	44.1	50.3	-6.2	White
2	3.999M	32.9	+5.6	+0.2	+0.1	+0.2	+0.0	39.0	46.0	-7.0	White
3	3.718M	32.3	+5.6	+0.2	+0.1	+0.2	+0.0	38.4	46.0	-7.6	White
4	3.965M	32.2	+5.6	+0.2	+0.1	+0.2	+0.0	38.3	46.0	-7.7	White

5	3.637M	31.7	+5.6	+0.2	+0.1	+0.2	+0.0	37.8	46.0	-8.2	White
6	3.901M	31.7	+5.6	+0.2	+0.1	+0.2	+0.0	37.8	46.0	-8.2	White
7	4.841M	31.7	+5.6	+0.2	+0.1	+0.2	+0.0	37.8	46.0	-8.2	White
8	3.875M	31.4	+5.6	+0.2	+0.1	+0.2	+0.0	37.5	46.0	-8.5	White
9	3.467M	31.2	+5.6	+0.2	+0.1	+0.2	+0.0	37.3	46.0	-8.7	White
10	4.441M	31.2	+5.6	+0.2	+0.1	+0.2	+0.0	37.3	46.0	-8.7	White
11	4.905M	31.1	+5.6	+0.2	+0.1	+0.2	+0.0	37.2	46.0	-8.8	White
12	3.599M	31.0	+5.6	+0.2	+0.1	+0.2	+0.0	37.1	46.0	-8.9	White
13	4.875M	31.0	+5.6	+0.2	+0.1	+0.2	+0.0	37.1	46.0	-8.9	White
14	4.654M	30.9	+5.6	+0.2	+0.1	+0.2	+0.0	37.0	46.0	-9.0	White
15	3.497M	30.8	+5.6	+0.2	+0.1	+0.2	+0.0	36.9	46.0	-9.1	White
16	4.471M	30.7	+5.6	+0.2	+0.1	+0.2	+0.0	36.8	46.0	-9.2	White
17	4.407M	30.6	+5.6	+0.2	+0.1	+0.2	+0.0	36.7	46.0	-9.3	White
18	4.501M	30.6	+5.6	+0.2	+0.1	+0.2	+0.0	36.7	46.0	-9.3	White
19	4.688M	30.6	+5.6	+0.2	+0.1	+0.2	+0.0	36.7	46.0	-9.3	White
20	4.717M	30.4	+5.6	+0.2	+0.1	+0.2	+0.0	36.5	46.0	-9.5	White
21	4.377M	30.3	+5.6	+0.2	+0.1	+0.2	+0.0	36.4	46.0	-9.6	White
22	4.998M	30.3	+5.6	+0.2	+0.1	+0.2	+0.0	36.4	46.0	-9.6	White
23	3.386M	30.1	+5.6	+0.2	+0.1	+0.2	+0.0	36.2	46.0	-9.8	White
24	4.279M	30.1	+5.6	+0.2	+0.1	+0.2	+0.0	36.2	46.0	-9.8	White
25	4.939M	30.1	+5.6	+0.2	+0.1	+0.2	+0.0	36.2	46.0	-9.8	White
26	3.191M	30.0	+5.6	+0.2	+0.1	+0.2	+0.0	36.1	46.0	-9.9	White
27	4.322M	29.9	+5.6	+0.2	+0.1	+0.2	+0.0	36.0	46.0	-10.0	White
28	4.530M	29.9	+5.6	+0.2	+0.1	+0.2	+0.0	36.0	46.0	-10.0	White
29	3.212M	29.8	+5.6	+0.2	+0.1	+0.2	+0.0	35.9	46.0	-10.1	White
30	4.968M	29.7	+5.6	+0.2	+0.1	+0.2	+0.0	35.8	46.0	-10.2	White

CKC Laboratories, Inc Date: 10/18/2010 Time: 7:19:16 PM SynapSense Corporation WO#: 91081
15.207 AC Mains - Average Test Lead: White 230V 50Hz Sequence#: 6 Ext ATTN: 0 dB



Test Setup Photos

15.207 FRONT

15.207 BACK

15.247(a) Occupied Bandwidth

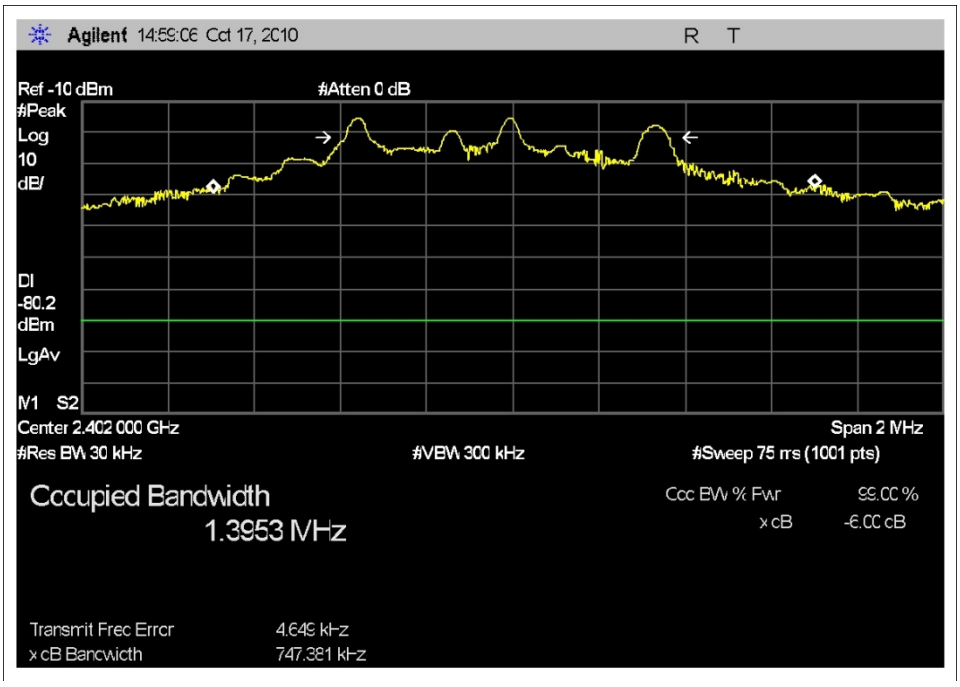
Test Set up

The EUT is placed on the test bench. The device is set in continuous transmit and receive mode.

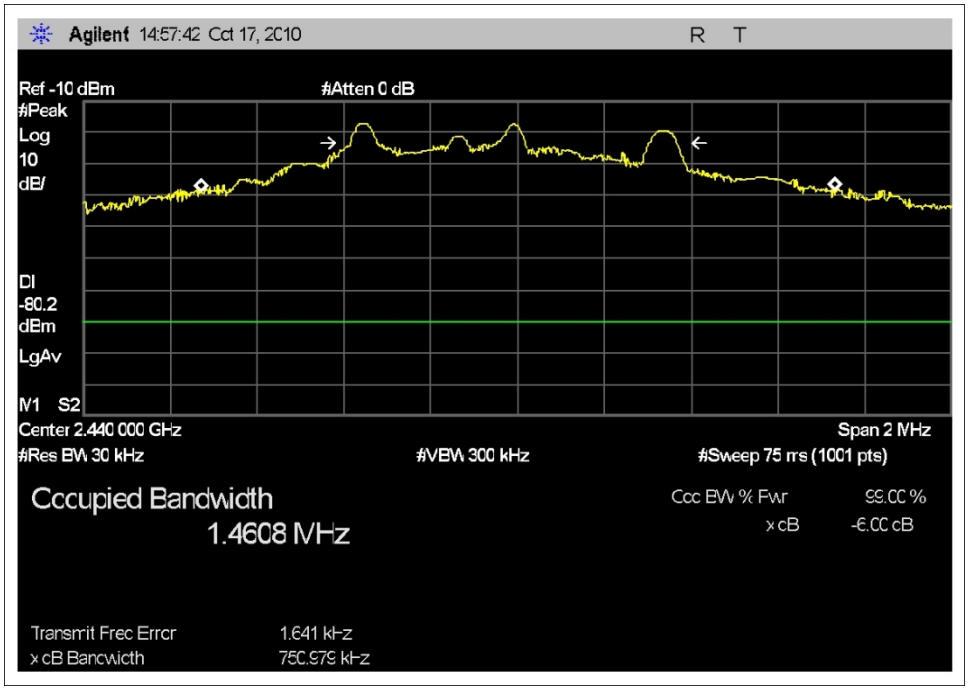
Engineer Name: S. Hundal

Test Equipment					
Asset/Serial #	**Description**	**Model**	**Manufacturer**	**Cal Date**	**Cal Due**
00849	Horn Antenna	3115	ETS	4/23/2010	4/23/2012
00786	Preamp	83017A	HP	8/5/2010	8/5/2012
P05565	Cable	ANDL-1-PNMN-54	Andrews	9/3/2010	9/3/2012
02948	Cable	32022-2-2909K-24TC	Astrolab Inc.	9/21/2009	9/21/2011
02869	Spectrum Analyzer	E4440A	Agilent	2/21/2009	2/21/2011

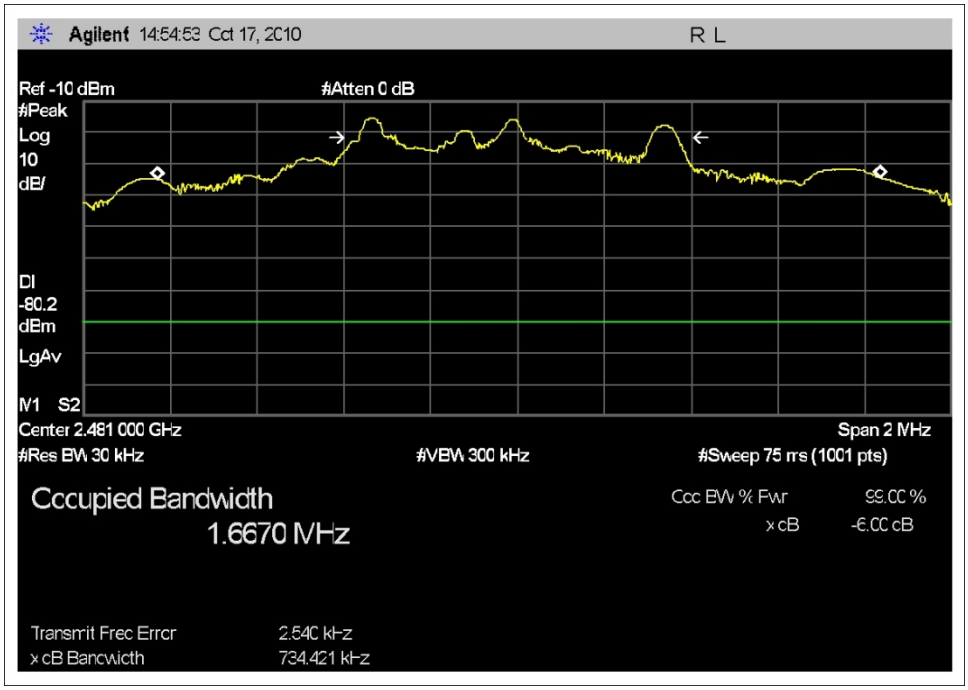
Test Data



Occupied Bandwidth -6dB Low



Occupied Bandwidth - 6dB Mid



Occupied Bandwidth - 6dB High

Test Setup Photos

15.247 (a) Occupied Bandwidth

15.247 (a) Occupied Bandwidth

15.247(b) Peak Output Power

Test Data Sheets

Test Location: CKC Laboratories • 110 Olinda Place • Brea, CA 92823 • 714-993-6112

Customer: **SynapSense Corporation**
Specification: **15.247(b) Power Output (2400-2483.5 MHz FHSS >75 Channels)**
Work Order #: **91081** Date: 11/7/2010
Test Type: **Maximized Emissions** Time: 18:56:24
Equipment: **0766** Sequence#: 1
Manufacturer: SynapSense Corporation Tested By: S. Hundal
Model: P3 Controller
S/N:

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00786	Preamp	83017A	8/5/2010	8/5/2012
T2	AN00849	Horn Antenna	3115	4/23/2010	4/23/2012
T3	AN02948	Cable	32022-2-2909K-24TC	9/21/2009	9/21/2011
T4	ANP05565	Cable	ANDL-1-PNMN-54	9/3/2010	9/3/2012
	AN02869	Spectrum Analyzer	E4440A	2/21/2009	2/21/2011
T5	ANdBm	Unit Conversion		4/12/2010	4/12/2012

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
0766*	SynapSense Corporation	P3 Controller	

Support Devices:

Function	Manufacturer	Model #	S/N
EUT Power Supply	V-Infinity	3A-251DN24	ETS240100UTC-P5P-SZ
Laptop Power Supply	Lenovo	92P1213	None
Laptop Computer	IBM	ThinkPad	LV-AB199 06/09

Test Conditions / Notes:

The EUT is sitting atop a turn table at the 3 meter distance. The Controller transmitter is on-transmit mode.
All ports are filled with I/O cables.

EUT environment - 21°C and 54% Relative Humidity
Freq Tested - 2402MHz-2481MHz
1GHz-40GHz RBW=VBW=1MHz
15.31(e) Voltage variation on power. Supply voltage varied between 85% and 115% of the nominal rated supply voltage. No change in fundamental emission was observed as a result of these tests.

Radiated field strength in dBm was measured on OATS and converted to watt using equation provided in FCC_KDB 558074. P = (E x d) Squared / (30 xG), where d = 3, G=6dBi = 4 (linear)

Limit = 1 Watt.

Measurement Data: Reading listed by margin. Test Distance: None

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Peak Power	Polar
	MHz	dBm	dB	dB	dB	dB	Table	dBuV	**Watt**	Ant
1	2440.365M	-12.1	-37.9 +107.0	+28.4	+0.5	+2.7	+0.0	88.6	**0.000054**	Horiz
2	2402.300M	-12.7	-38.0 +107.0	+28.4	+0.5	+2.7	+0.0	87.9	**0.000046**	Vert
3	2440.365M	-13.1	-37.9 +107.0	+28.4	+0.5	+2.7	+0.0	87.6	**0.000043**	Vert
4	2480.630M	-13.5	-37.9 +107.0	+28.5	+0.5	+2.8	+0.0	87.4	**0.000041**	Horiz
5	2481.345M	-13.6	-37.9 +107.0	+28.5	+0.5	+2.8	+0.0	87.3	**0.000040**	Vert
6	2402.005M	-14.7	-38.0 +107.0	+28.4	+0.5	+2.7	+0.0	85.9	**0.000029**	Horiz

Test Setup Photos

15.247(b) Peak Power

15.247(b) Peak Power

15.247(d) Bandedge

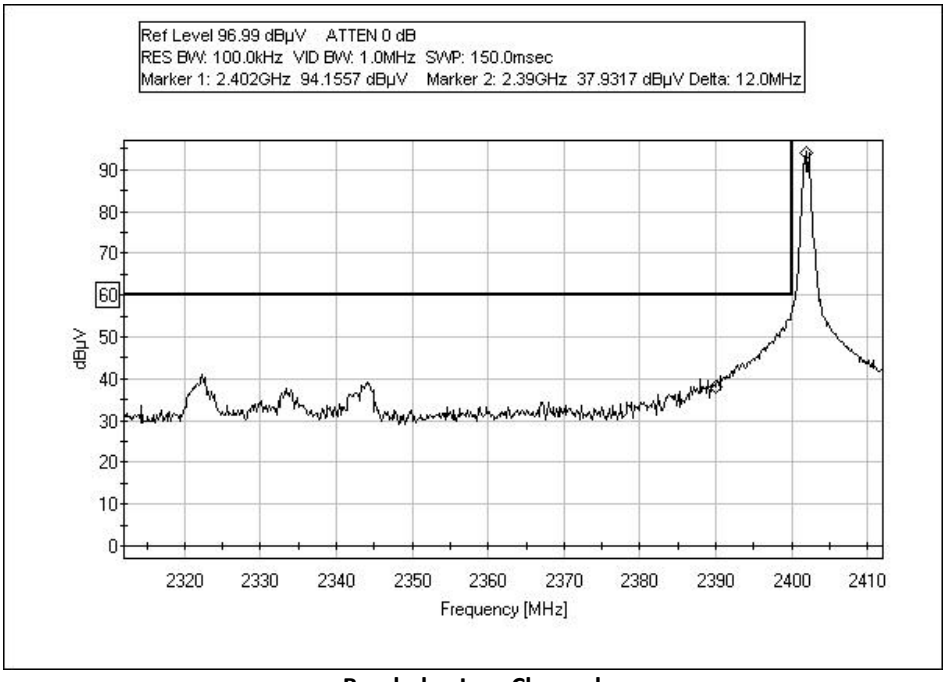
Test Setup

The EUT is placed on the test bench. The device is set in continuous transmit and receive mode.

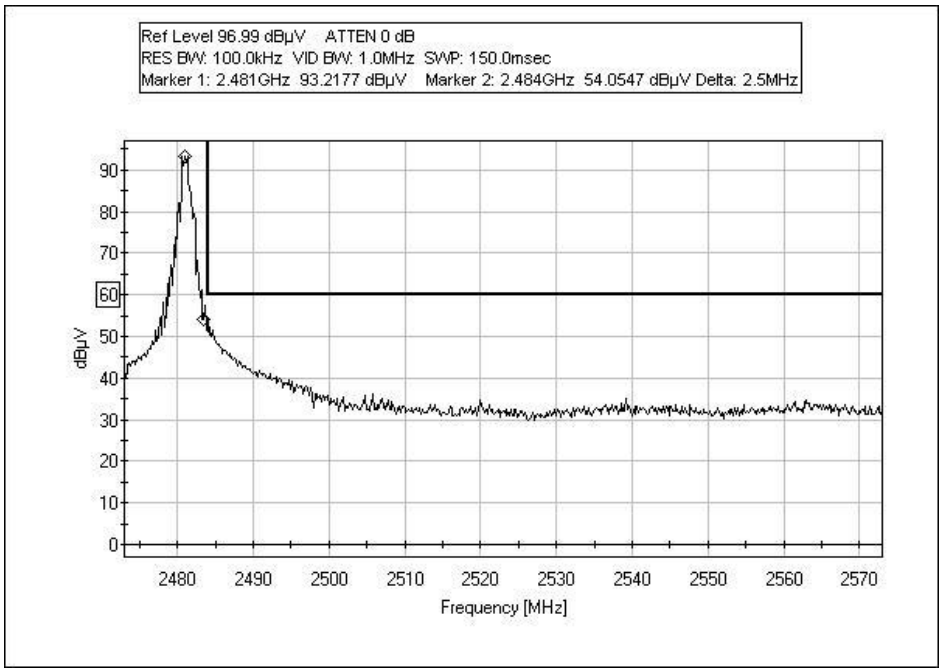
Engineer Name: S. Hundal

Test Equipment					
Asset/Serial #	**Description**	**Model**	**Manufacturer**	**Cal Date**	**Cal Due**
00849	Horn Antenna	3115	ETS	4/23/2010	4/23/2012
00786	Preamp	83017A	HP	8/5/2010	8/5/2012
P05565	Cable	ANDL-1-PNMN-54	Andrews	9/3/2010	9/3/2012
02948	Cable	32022-2-2909K-24TC	Astrolab Inc.	9/21/2009	9/21/2011
02869	Spectrum Analyzer	E4440A	Agilent	2/21/2009	2/21/2011

Test Data



Bandedge Low Channel



Bandedge High Channel

Test Setup Photos

15.247(d) Bandedge

15.247(d) Bandedge

15.247(d) Spurious Radiated Emissions

Test Data Sheets

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Drive • Mariposa, CA 95338 • (209) 966-5240

Customer: **SynapSense Corporation**
Specification: **15.209 Radiated Emissions**
Work Order #: **91081** Date: 11/7/2010
Test Type: **Maximized Emissions** Time: 17:48:10
Equipment: **0766** Sequence#: 4
Manufacturer: SynapSense Corporation Tested By: S. Hundal
Model: P3 Controller
S/N:

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN00309	Preamp	8447D	5/7/2010	5/7/2012
	AN01995	Biconilog Antenna	CBL6111C	3/8/2010	3/8/2012
	ANP05050	Cable	RG223/U	4/16/2009	4/16/2011
	ANP05198	Cable	8268	1/5/2009	1/5/2011
	AN02869	Spectrum Analyzer	E4440A	2/21/2009	2/21/2011
	AN00314	Loop Antenna	6502	6/30/2010	6/30/2012
T1	AN00786	Preamp	83017A	8/5/2010	8/5/2012
T2	AN00849	Horn Antenna	3115	4/23/2010	4/23/2012
T3	AN02948	Cable	32022-2-2909K-24TC	9/21/2009	9/21/2011
T4	ANP05565	Cable	ANDL-1-PNMN-54	9/3/2010	9/3/2012
	AN01413	Horn Antenna	84125-80008	11/13/2008	11/13/2010

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
0766*	SynapSense Corporation	P3 Controller	

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	IBM	ThinkPad	LV-AB199 06/09
Laptop Power Supply	Lenovo	92P1213	None
EUT Power Supply	V-Infinity	3A-251DN24	ETS240100UTC-P5P-SZ

Test Conditions / Notes:

The EUT is sitting atop a turn table at the 3 meter distance. The Controller transmitter is on-transmit mode.
All ports are filled with I/O cables.

EUT environment - 21°C and 54% Relative Humidity

Highest Clock Freq - 2483.5GHz
Freq Range Tested - 9kHz-25GHz
30MHz-1GHz RBW=VBW=120kHz; 1GHz-40GHz RBW=VBW=1MHz

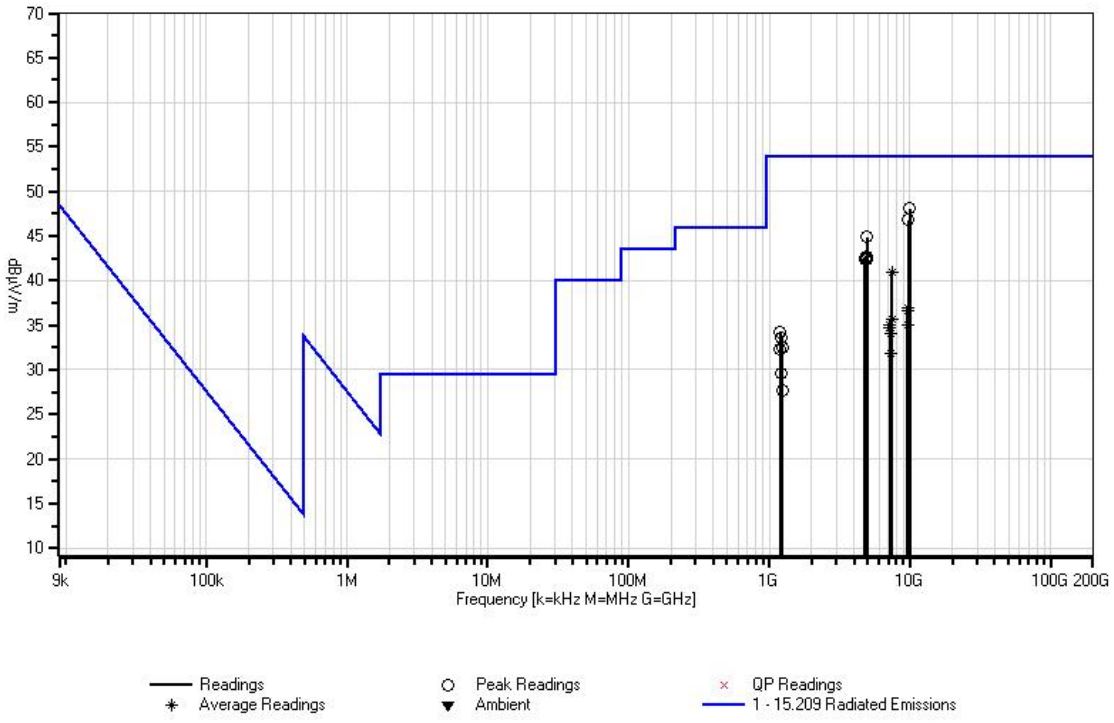
Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	9924.730M	38.9	-35.8	+37.3	+1.0	+6.7	+0.0	48.1	54.0 2481MHz	-5.9	Vert
2	9760.480M	37.3	-35.5	+37.5	+1.0	+6.5	+0.0	46.8	54.0 2440MHZ	-7.2	Horiz
3	4961.480M	43.9	-37.0	+33.2	+0.7	+4.1	+0.0	44.9	54.0 2481MHz	-9.1	Horiz
4	4879.900M	41.9	-37.1	+33.1	+0.7	+4.1	+0.0	42.7	54.0 2440MHZ	-11.3	Vert
5	4803.300M	41.8	-37.1	+33.0	+0.7	+4.2	+0.0	42.6	54.0 2402MHz	-11.4	Horiz
6	4962.002M	41.4	-37.0	+33.2	+0.7	+4.1	+0.0	42.4	54.0 2481MHz	-11.6	Vert
7	4804.010M	41.5	-37.1	+33.0	+0.7	+4.2	+0.0	42.3	54.0 2402MHz	-11.7	Vert
8	7443.000M Ave	36.0	-36.6	+35.6	+0.8	+5.1	+0.0	40.9	54.0 2481MHz	-13.1	Vert
^	7443.000M	55.8	-36.6	+35.6	+0.8	+5.1	+0.0	60.7	54.0 2481MHz	+6.7	Vert
10	9608.020M Ave	26.9	-35.2	+37.7	+1.0	+6.6	+0.0	37.0	54.0 2402MHz	-17.0	Horiz
^	9608.010M	40.0	-35.2	+37.7	+1.0	+6.6	+0.0	50.1	54.0 2402MHz	-3.9	Horiz
12	9608.000M Ave	26.6	-35.2	+37.7	+1.0	+6.6	+0.0	36.7	54.0 2402MHz	-17.3	Vert
^	9608.010M	39.3	-35.2	+37.7	+1.0	+6.6	+0.0	49.4	54.0 2402MHz	-4.6	Vert
14	7443.000M Ave	30.8	-36.6	+35.6	+0.8	+5.1	+0.0	35.7	54.0 2481MHz	-18.3	Horiz
^	7443.030M	49.1	-36.6	+35.6	+0.8	+5.1	+0.0	54.0	54.0 2481MHz	+0.0	Horiz
16	9760.450M Ave	25.5	-35.5	+37.5	+1.0	+6.5	+0.0	35.0	54.0 2440MHZ	-19.0	Vert
^	9760.480M	40.1	-35.5	+37.5	+1.0	+6.5	+0.0	49.6	54.0 2440MHZ	-4.4	Vert
18	7206.010M Ave	29.6	-36.8	+36.2	+0.8	+5.2	+0.0	35.0	54.0 2402MHz	-19.0	Vert
^	7206.010M	45.2	-36.8	+36.2	+0.8	+5.2	+0.0	50.6	54.0 2402MHz	-3.4	Vert

20	7206.000M Ave	29.3	-36.8	+36.2	+0.8	+5.2	+0.0	34.7	54.0 2402MHz	-19.3	Horiz
^	7206.010M	45.8	-36.8	+36.2	+0.8	+5.2	+0.0	51.2	54.0 2402MHz	-2.8	Horiz
22	1201.010M	46.6	-39.3	+24.7	+0.3	+2.0	+0.0	34.3	54.0 2402MHz	-19.7	Horiz
23	7320.260M Ave	28.9	-36.7	+35.9	+0.8	+5.2	+0.0	34.1	54.0 2440MHZ	-19.9	Vert
^	7320.260M	48.1	-36.7	+35.9	+0.8	+5.2	+0.0	53.3	54.0 2440MHZ	-0.7	Vert
25	1220.060M	45.8	-39.2	+24.7	+0.3	+2.0	+0.0	33.6	54.0 2440MHZ	-20.4	Horiz
26	1240.450M	44.6	-39.2	+24.8	+0.3	+2.0	+0.0	32.5	54.0 2481MHz	-21.5	Horiz
27	1201.010M	44.6	-39.3	+24.7	+0.3	+2.0	+0.0	32.3	54.0 2402MHz	-21.7	Vert
28	7320.330M Ave	26.7	-36.7	+35.9	+0.8	+5.2	+0.0	31.9	54.0 2440MHZ	-22.1	Horiz
^	7320.360M	47.1	-36.7	+35.9	+0.8	+5.2	+0.0	52.3	54.0 2440MHZ	-1.7	Horiz
30	1219.720M	41.8	-39.2	+24.7	+0.3	+2.0	+0.0	29.6	54.0 2440MHZ	-24.4	Vert
31	1240.492M	39.8	-39.2	+24.8	+0.3	+2.0	+0.0	27.7	54.0 2481MHz	-26.3	Vert

CKC Laboratories, Inc. Date: 11/7/2010 Time: 17:48:10 SynapSense Corporation WO#: 91081
15.209 Radiated Emissions Test Distance: 3 Meters Sequence#: 4 Ext ATTN: 0 dB



Test Setup Photos

15.247(d) Spurious Emissions

15.247(d) Spurious Emissions

15.247(e) Power Spectral Density

15.247(e)
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test Setup

The EUT is placed on the test bench. The device is set in continuous transmit and receive mode.

PSD, Option 2
RBW: 3kHz
VBW: 100kHz
Detector: Peak
Average: 100 Trace average
Trigger: RF Burst.
Sweep time: Auto

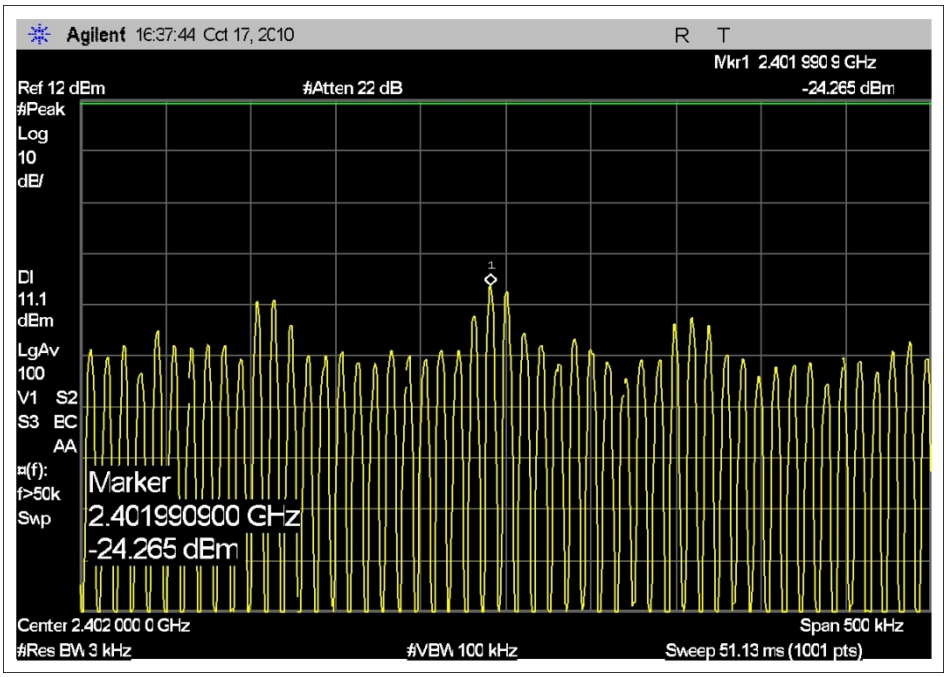
Engineer Name: S. Hundal

Test Equipment					
Asset/Serial #	**Description**	**Model**	**Manufacturer**	**Cal Date**	**Cal Due**
00849	Horn Antenna	3115	ETS	4/23/2010	4/23/2012
00786	Preamp	83017A	HP	8/5/2010	8/5/2012
P05565	Cable	ANDL-1-PNMN-54	Andrews	9/3/2010	9/3/2012
02948	Cable	32022-2-2909K-24TC	Astrolab Inc.	9/21/2009	9/21/2011
02869	Spectrum Analyzer	E4440A	Agilent	2/21/2009	2/21/2011

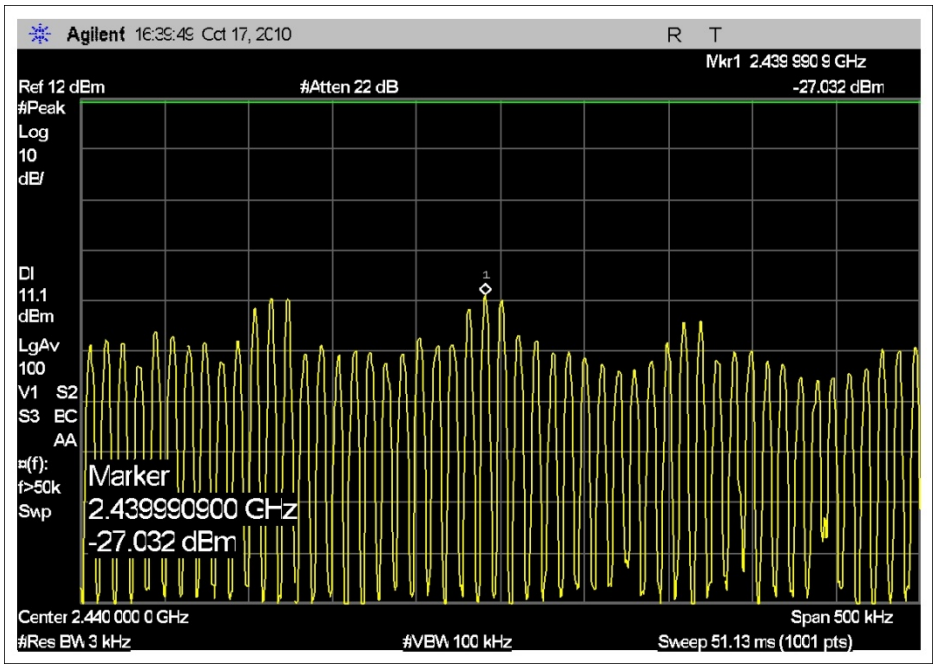
Radiated field strength in dBm was measured on OATS and converted to W using equation provided in FCC_KDB 558074. P = (E x d) Squared / (30 xG), where d = 3, G=6dBi = 4 (linear). Power in watt is then converted to dBm

Frequency	Measured Radiated Field Strength	Calculated EIRP
2402	-24dBm (83dVuV)	-24.6 dBm
2440	-27dBm (80dBuV)	-27.5 dBm
2481	-29dBm (78dBuV)	-29.3 dBm

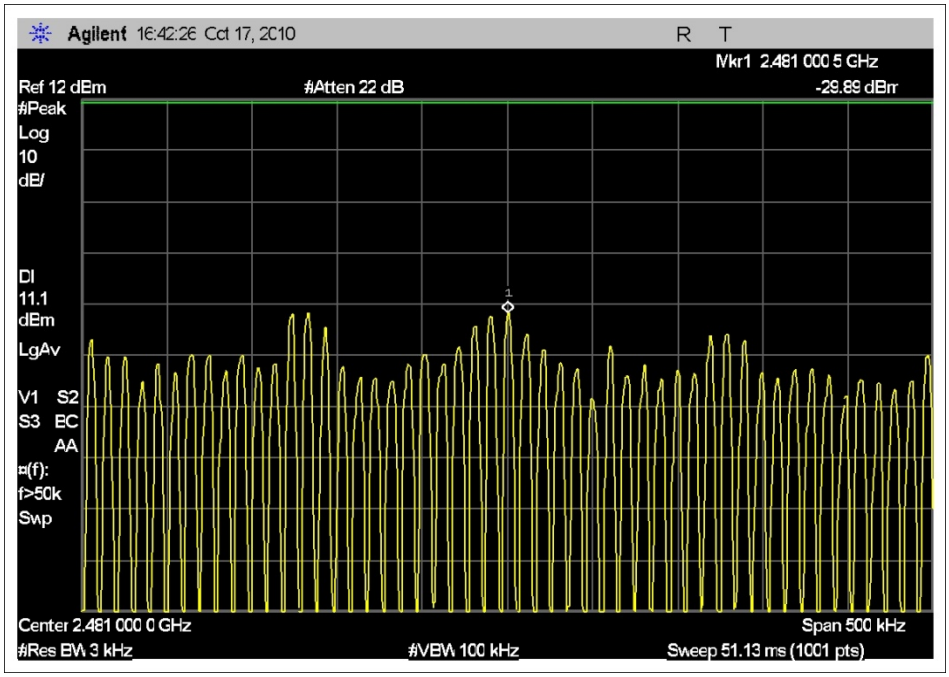
Test Plots



Power Spectral Density=-24dBm 2402MHz



Power Spectral Density=-27dBm 2440MHz



Power Spectral Density =-29dBm 2481MHz

Test Setup Photos

Power Spectral Density

Power Spectral Density

RSS 210

99% Bandwidth

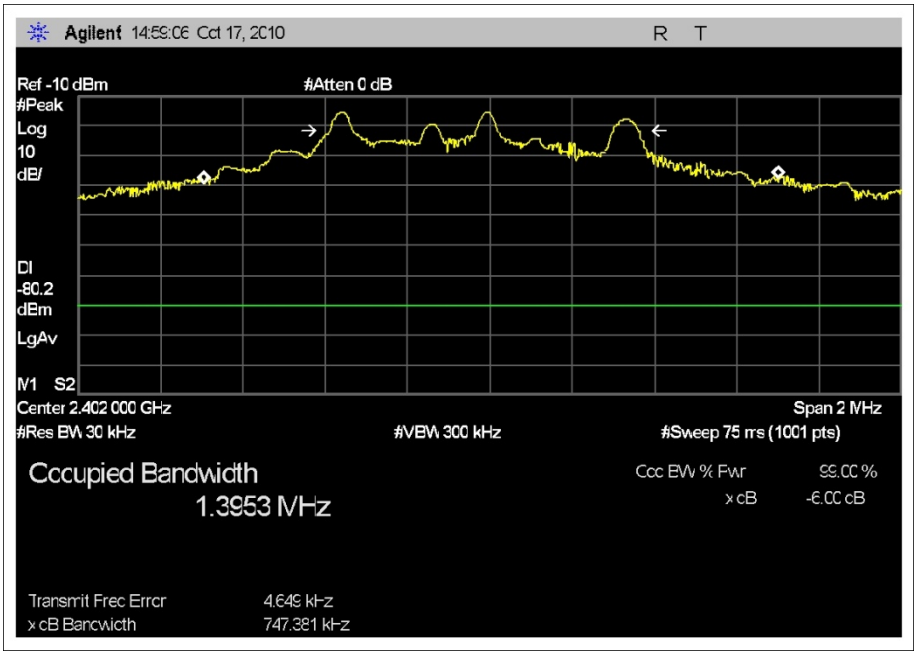
Test Setup

The EUT is placed on the test bench. The device is set in continuous transmit and receive mode.

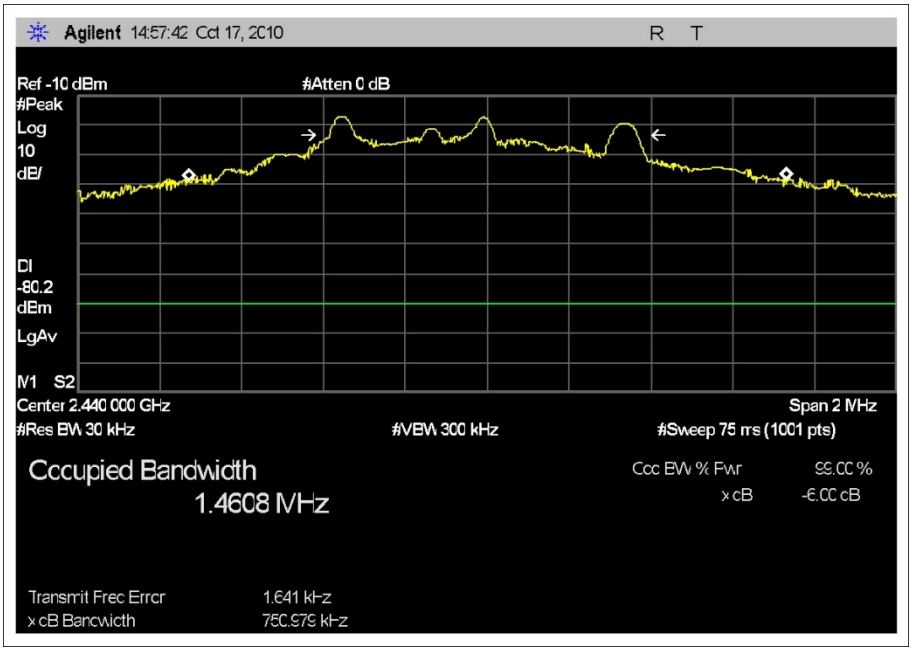
Engineer Name: S. Hundal

Test Equipment					
Asset/Serial #	**Description**	**Model**	**Manufacturer**	**Cal Date**	**Cal Due**
00849	Horn Antenna	3115	ETS	4/23/2010	4/23/2012
00786	Preamp	83017A	HP	8/5/2010	8/5/2012
P05565	Cable	ANDL-1-PNMN-54	Andrews	9/3/2010	9/3/2012
02948	Cable	32022-2-2909K-24TC	Astrolab Inc.	9/21/2009	9/21/2011
02869	Spectrum Analyzer	E4440A	Agilent	2/21/2009	2/21/2011

Test Data



99% Occupied Bandwidth Low



Occupied Bandwidth 99% Mid

Test Setup Photos

RSS 210 99% Bandwidth

RSS 210 99% Bandwidth

SUPPLEMENTAL INFORMATION

Measurement Uncertainty

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

The reported measurement uncertainties are calculated based on the worst case of all laboratory environments from CKC Laboratories, Inc. test sites. Only those parameters which require estimation of measurement uncertainty are reported. The reported worst case measurement uncertainty is less than the maximum values derived in CISPR 16-4-2. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2. Compliance is deemed to occur provided measurements are below the specified limits.

Emissions Test Details

TESTING PARAMETERS

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula. This reading was then compared to the applicable specification limit.

SAMPLE CALCULATIONS		
	Meter reading	(dBµV)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dBµV/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. The following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used.

MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	>1 GHz	1 MHz

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the highest readings, this is indicated as a "QP" or an "Ave" on the appropriate rows of the data sheets. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the spectrum analyzer/receiver readings recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the measuring device called "peak hold," the measuring device had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the quasi-peak detector.

Average

For certain frequencies, average measurements may be made using the spectrum analyzer/receiver. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.