SynapSense Corporation

ADDENDUM TO TEST REPORT 94614-9

SynapSense Intelligent Gateway
Model: 1156

Tested To The Following Standards:

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

Report No.: 94614-9A

Date of issue: January 7, 2014

ACCREDITED
Testing Certificates:
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
340 Palladio Parkway, Suite 540
Folsom, CA 95630

Representative: Abraham Fechter
Customer Reference Number: 451273

REPORT PREPARED BY:

Dianne Dudley
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Project Number: 94614

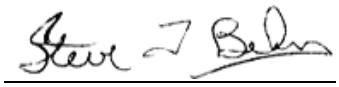
DATE OF EQUIPMENT RECEIPT: October 21, 2013
DATE(S) OF TESTING: October 21 – November 5, 2013
December, 16, 2013

Revision History

Original: Testing of the SynapSense Intelligent Gateway, Model: 1156 to FCC Part 15 Subpart C Sections 15.207, 15.247and RSS-210 Issue 8.
Addendum A: To insert corrected data for sections RSS-210 A8.2(a) Emissions Bandwidth, FCC 15.247(b)(3) Power Output and 15.247(e) Peak Power Spectral Density.

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.
5046 Sierra Pines Drive
Mariposa, CA 95338

Software Versions

CKC Laboratories Proprietary Software	Version
EMITest Emissions	5.00.14
Immunity	5.00.07

Site Registration & Accreditation Information

Location	CB #	TAIWAN	CANADA	FCC	JAPAN
Mariposa A	US0103	SL2-IN-E-1147R	3082A-2	90477	A-0136

SUMMARY OF RESULTS

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

Description	Test Procedure/Method	Results
Conducted Emissions	FCC Part 15 Subpart C Section 15.207 / ANSI C63.4	Pass
-6dB Occupied Bandwidth	FCC Part 15 Subpart C Section 15.247(a)(2)	Pass
Emissions Bandwidth Measurements	RSS-210 A8.2(a) Issue 8	Pass
RF Power Output	FCC Part 15 Subpart C Section 15.247(b)(3) / KDB 558074 / ANSI 63.10	Pass
Radiated Spurious Emissions	FCC Part 15 Subpart C Section 15.247(d)	Pass
Band Edge	FCC Part 15 Subpart C 15.247 (b) / ITU-R-552	Pass
Peak Power Spectral Density	FCC Part 15 Subpart C 15.247 (e) / KDB 558074 / ANSI C63.10	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)

The following device was tested by CKC Laboratories: **Intelligent Gateway**.

Since the time of testing the manufacturer has chosen to use the following device name in its place: **SynapSense Intelligent Gateway**. Any differences between the names do not affect their EMC characteristics and therefore meets the level of testing equivalent to the tested model name shown on the data sheets**: Intelligent Gateway.**

EQUIPMENT UNDER TEST

SynapSense Intelligent Gateway
Manuf: SynapSense Corporation
Model: 1156
Serial: 14

Power Supply
Manuf: Condor
Model: SA-054A0IV
Serial: None

PERIPHERAL DEVICES

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

Laptop Computer
Manuf: Lenovo
Model: 8744
Serial: 63-BZ456 07/06

Laptop Computer
Manuf: Lenovo
Model: 7650
Serial: 63-P621B 08/02

FCC PART 15 SUBPART C

This report contains EMC emissions test results under United States Federal Communications Commission (FCC) 47 CFR 15C requirements for Unlicensed Radio Frequency Devices, Subpart C - Intentional Radiators.

15.207 AC Conducted Emissions

Test Data

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

Customer:	**SynapSense**		
Specification:	**15.207 AC Mains - Average**		
Work Order #:	**94614**	Date:	10/23/2013
Test Type:	**Conducted Emissions**	Time:	1:19:20 PM
Equipment:	**Intelligent Gateway**	Sequence#:	22
Manufacturer:	SynapSense Corporation	Tested By:	Chuck Kendall
Model:	1156		120V 60Hz
S/N:	14		

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02660	Spectrum Analyzer	E4446A	8/23/2012	8/23/2014
T1	ANP05686	Cable	RG214/U	1/24/2012	1/24/2014
T2	ANP05624	Attenuator	PE7010-10	8/13/2012	8/13/2014
T3	AN00374	50uH LISN-Black Lead Amplitude (dB)	8028-TS-50-BNC	3/15/2013	3/15/2015

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

Function	Manufacturer	Model #	S/N
Intelligent Gateway*	SynapSense Corporation	1156	14
Power Supply	Condor	SA-054A0IV	None

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Lenovo	8744	63-BZ456 07/06
Laptop Computer	Lenovo	7650	63-P621B 08/02

Test Conditions / Notes:

EUT is set up atop some insulation some 80 cm off the ground plane. A power brick is furnishing 5 VDC to the EUT. There are two Ethernet cables attached which go to separate lap top computers. Pinging with 1400 byte packets of data. The USB interface port is just for manufacturing and service only. There is no cable attached to this port. Power cord to the power supply is greater than 80cm.

Frequencies of interest are: 150kHz to 30MHz,
From 9kHz to 30MHz; RBW =9kHz; VBW =30kHz

Transmitter is set to 2445MHz.
Environmental conditions:

Temperature = 80°F
Relative Humidity = 40%
Pressure = 97.7 kPa

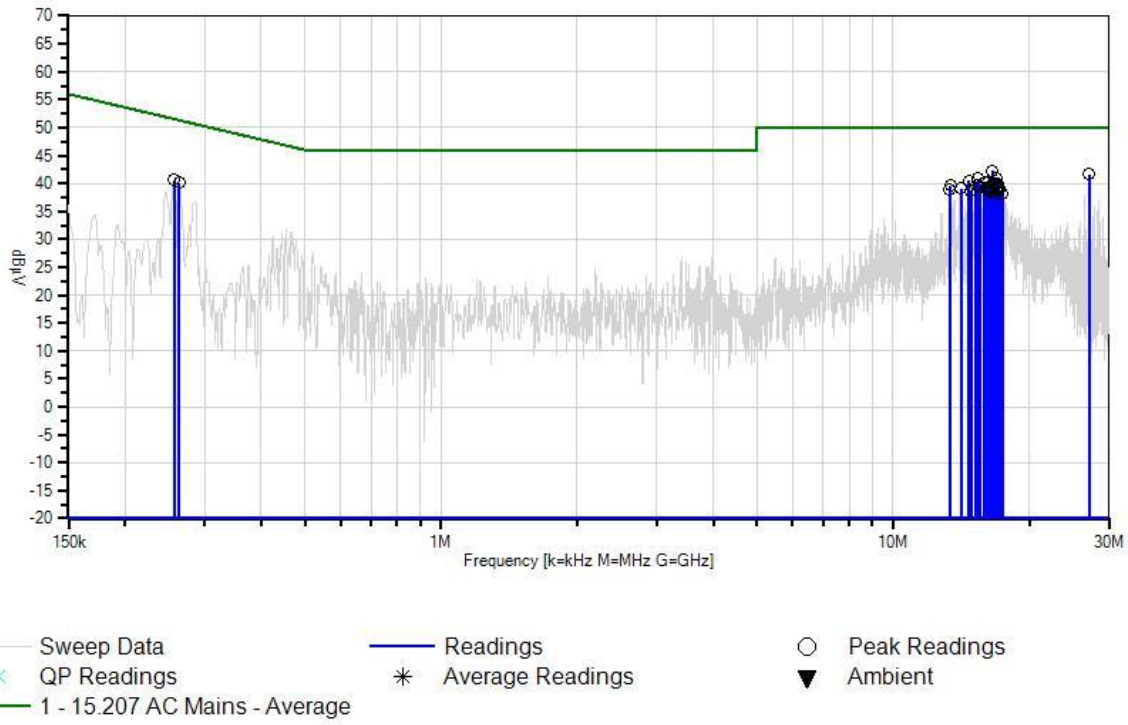
Ext Attn: 0 dB

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

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	16.596M	31.9	+0.0	+10.0	+0.4		+0.0	42.3	50.0	-7.7	Black
2	27.160M	30.9	+0.1	+10.0	+0.6		+0.0	41.6	50.0	-8.4	Black
3	15.434M	30.5	+0.0	+10.0	+0.4		+0.0	40.9	50.0	-9.1	Black
4	16.965M	30.5	+0.0	+10.0	+0.4		+0.0	40.9	50.0	-9.1	Black
5	14.704M	30.1	+0.0	+10.0	+0.4		+0.0	40.5	50.0	-9.5	Black
6	15.920M	29.8	+0.0	+10.0	+0.4		+0.0	40.2	50.0	-9.8	Black
7	16.226M	29.8	+0.0	+10.0	+0.4		+0.0	40.2	50.0	-9.8	Black
8	16.776M	29.6	+0.0	+10.0	+0.4		+0.0	40.0	50.0	-10.0	Black
9	17.064M	29.5	+0.0	+10.0	+0.4		+0.0	39.9	50.0	-10.1	Black
10	16.902M	29.4	+0.0	+10.0	+0.4		+0.0	39.8	50.0	-10.2	Black
11	15.253M	29.3	+0.0	+10.0	+0.4		+0.0	39.7	50.0	-10.3	Black
12	16.533M	29.3	+0.0	+10.0	+0.4		+0.0	39.7	50.0	-10.3	Black
13	13.416M	29.2	+0.0	+10.0	+0.4		+0.0	39.6	50.0	-10.4	Black
14	15.560M	29.1	+0.0	+10.0	+0.4		+0.0	39.5	50.0	-10.5	Black
15	17.001M	29.1	+0.0	+10.0	+0.4		+0.0	39.5	50.0	-10.5	Black
16	16.100M	28.8	+0.0	+10.0	+0.4		+0.0	39.2	50.0	-10.8	Black

17	14.154M	28.7	+0.0	+10.0	+0.4	+0.0	39.1	50.0	-10.9	Black
18	256.899k	29.8	+0.0	+10.0	+0.8	+0.0	40.6	51.5	-10.9	Black
19	16.271M	28.7	+0.0	+10.0	+0.4	+0.0	39.1	50.0	-10.9	Black
20	17.136M	28.7	+0.0	+10.0	+0.4	+0.0	39.1	50.0	-10.9	Black
21	17.100M	28.7	+0.0	+10.0	+0.4	+0.0	39.1	50.0	-10.9	Black
22	13.353M	28.6	+0.0	+10.0	+0.4	+0.0	39.0	50.0	-11.0	Black
23	16.344M	28.6	+0.0	+10.0	+0.4	+0.0	39.0	50.0	-11.0	Black
24	16.163M	28.5	+0.0	+10.0	+0.4	+0.0	38.9	50.0	-11.1	Black
25	17.181M	28.4	+0.0	+10.0	+0.4	+0.0	38.8	50.0	-11.2	Black
26	263.444k	29.4	+0.0	+10.0	+0.7	+0.0	40.1	51.3	-11.2	Black
27	16.407M	28.3	+0.0	+10.0	+0.4	+0.0	38.7	50.0	-11.3	Black
28	14.884M	28.3	+0.0	+10.0	+0.4	+0.0	38.7	50.0	-11.3	Black
29	16.551M	27.9	+0.0	+10.0	+0.4	+0.0	38.3	50.0	-11.7	Black
30	17.470M	27.6	+0.1	+10.0	+0.4	+0.0	38.1	50.0	-11.9	Black

CKC Laboratories, Inc. Date: 10/23/2013 Time: 1:19:20 PM SynapSense WO#: 94614
15.207 AC Mains - Average Test Lead: Black 120V 60Hz Sequence#: 22 Ext ATTN: 0 dB



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

Customer: **SynapSense**
Specification: **15.207 AC Mains - Average**
Work Order #: **94614** Date: 10/23/2013
Test Type: **Conducted Emissions** Time: 1:24:38 PM
Equipment: **Intelligent Gateway** Sequence#: 23
Manufacturer: SynapSense Corporation Tested By: Chuck Kendall
Model: 1156 120V 60Hz
S/N: 14

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02660	Spectrum Analyzer	E4446A	8/23/2012	8/23/2014
T1	ANP05686	Cable	RG214/U	1/24/2012	1/24/2014
T2	ANP05624	Attenuator	PE7010-10	8/13/2012	8/13/2014
T3	AN00374	50uH LISN-White Lead Amplitude (dB)	8028-TS-50-BNC	3/15/2013	3/15/2015

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

Function	Manufacturer	Model #	S/N
Intelligent Gateway*	SynapSense Corporation	1156	14
Power Supply	Condor	SA-054A0IV	None

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Lenovo	8744	63-BZ456 07/06
Laptop Computer	Lenovo	7650	63-P621B 08/02

Test Conditions / Notes:

EUT is set up atop some insulation some 80 cm off the ground plane. A power brick is furnishing 5 VDC to the EUT. There are two Ethernet cables attached which go to separate lap top computers. Pinging with 1400 byte packets of data. The USB interface port is just for manufacturing and service only. There is no cable attached to this port. Power cord to the power supply is greater than 80cm.

Frequencies of interest are: 150kHz to 30MHz,
From 9kHz to 30MHz; RBW =9kHz; VBW =30kHz
Transmitter is set to 2445MHz.

Environmental conditions:

Temperature = 80°F
Relative Humidity = 40%
Pressure = 97.7 kPa

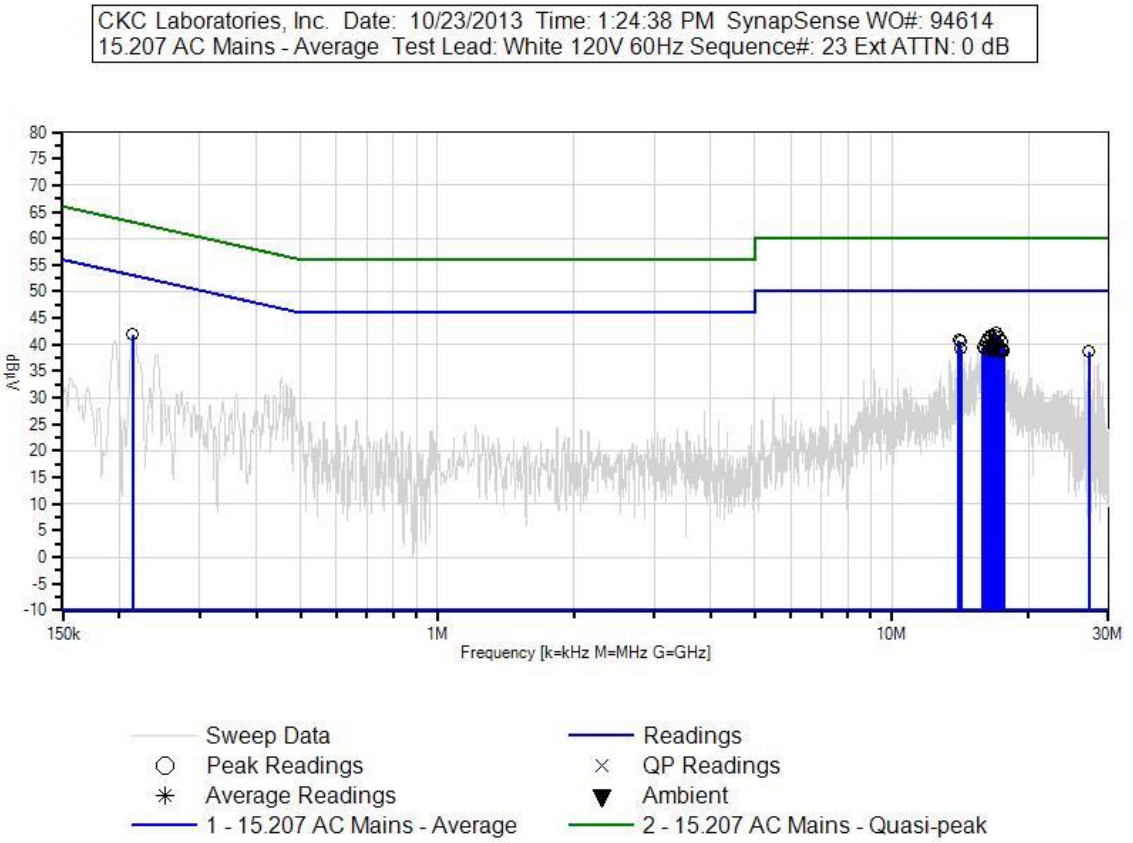
Ext Attn: 0 dB

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

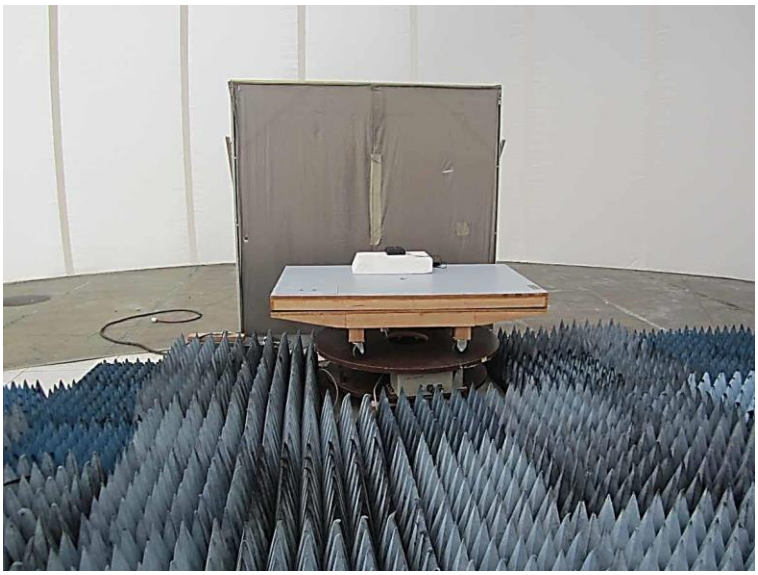
#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	16.947M	31.6	+0.0	+10.0	+0.5		+0.0	42.1	50.0	-7.9	White
2	16.434M	31.2	+0.0	+10.0	+0.5		+0.0	41.7	50.0	-8.3	White
3	16.857M	31.2	+0.0	+10.0	+0.5		+0.0	41.7	50.0	-8.3	White

4	16.470M	31.0	+0.0	+10.0	+0.5	+0.0	41.5	50.0	-8.5	White
5	17.262M	30.8	+0.1	+10.0	+0.5	+0.0	41.4	50.0	-8.6	White
6	16.226M	30.6	+0.0	+10.0	+0.5	+0.0	41.1	50.0	-8.9	White
7	16.839M	30.5	+0.0	+10.0	+0.5	+0.0	41.0	50.0	-9.0	White
8	14.028M	30.4	+0.0	+10.0	+0.4	+0.0	40.8	50.0	-9.2	White
9	14.154M	30.1	+0.0	+10.0	+0.4	+0.0	40.5	50.0	-9.5	White
10	16.163M	30.0	+0.0	+10.0	+0.5	+0.0	40.5	50.0	-9.5	White
11	17.524M	29.9	+0.1	+10.0	+0.5	+0.0	40.5	50.0	-9.5	White
12	17.145M	29.7	+0.0	+10.0	+0.5	+0.0	40.2	50.0	-9.8	White
13	16.668M	29.5	+0.0	+10.0	+0.5	+0.0	40.0	50.0	-10.0	White
14	16.785M	29.4	+0.0	+10.0	+0.5	+0.0	39.9	50.0	-10.1	White
15	16.344M	29.3	+0.0	+10.0	+0.5	+0.0	39.8	50.0	-10.2	White
16	16.578M	29.1	+0.0	+10.0	+0.5	+0.0	39.6	50.0	-10.4	White
17	15.857M	29.0	+0.0	+10.0	+0.5	+0.0	39.5	50.0	-10.5	White
18	16.028M	28.9	+0.0	+10.0	+0.5	+0.0	39.4	50.0	-10.6	White
19	16.046M	28.8	+0.0	+10.0	+0.5	+0.0	39.3	50.0	-10.7	White
20	14.208M	28.8	+0.0	+10.0	+0.4	+0.0	39.2	50.0	-10.8	White
21	17.181M	28.6	+0.0	+10.0	+0.5	+0.0	39.1	50.0	-10.9	White
22	16.605M	28.5	+0.0	+10.0	+0.5	+0.0	39.0	50.0	-11.0	White
23	16.316M	28.5	+0.0	+10.0	+0.5	+0.0	39.0	50.0	-11.0	White
24	17.560M	28.4	+0.1	+10.0	+0.5	+0.0	39.0	50.0	-11.0	White
25	17.425M	28.4	+0.1	+10.0	+0.5	+0.0	39.0	50.0	-11.0	White
26	213.993k	30.9	+0.0	+10.0	+1.0	+0.0	41.9	53.0	-11.1	White

27	16.740M	28.3	+0.0	+10.0	+0.5	+0.0	38.8	50.0	-11.2	White
28	17.353M	28.1	+0.1	+10.0	+0.5	+0.0	38.7	50.0	-11.3	White
29	17.623M	28.1	+0.1	+10.0	+0.5	+0.0	38.7	50.0	-11.3	White
30	27.160M	28.1	+0.1	+10.0	+0.5	+0.0	38.7	50.0	-11.3	White



Test Setup Photos



15.247(a)(2) -6dB Occupied Bandwidth

Test Data Sheets

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

Customer: **SynapSense**
Specification: **15.247(a)(2) -6dB/99% Bandwidth (2400-2483.5 MHz DTS)**
Work Order #: **94614** Date: 10/22/2013
Test Type: **Maximized Emissions** Time: 14:11:26
Equipment: **Intelligent Gateway** Sequence#: 4
Manufacturer: SynapSense Corporation Tested By: Chuck Kendall
Model: 1156
S/N: 14

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02660	Spectrum Analyzer	E4446A	8/23/2012	8/23/2014
T1	AN03358	Cable	32022-2-29094K-36TC	2/7/2013	2/7/2015
T2	AN03360	Cable	32022-2-29094-36TC	2/4/2013	2/4/2015
T3	AN03355	Cable	32026-2-29094K-48TC	2/7/2013	2/7/2015
T4	ANP05904	Cable	32022-2-29094K-144TC	2/15/2013	2/15/2015
T5	AN03155	Preamp	83017A	6/26/2013	6/26/2015
T6	AN00327	Horn Antenna	3115	4/13/2012	4/13/2014
T7	AN3011	Cable		2/4/2013	2/4/2015

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

Function	Manufacturer	Model #	S/N
Intelligent Gateway*	SynapSense Corporation	1156	14
Power Supply	Condor	SA-54A0IV	None

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Lenovo	8744	63-BZ456 07/06
Laptop Computer	Lenovo	7650	63-P621B 08/02

Test Conditions / Notes:

EUT is set up atop some insulation some 80 cm off the ground plane. A power brick is furnishing 5 VDC to the EUT. There are two Ethernet cables attached which go to separate lap top computers. Pinging with 1400 byte packets of data. The USB interface port is just for manufacturing and service only. There is no cable attached to this port. Power cord to the power supply is greater than 80cm.

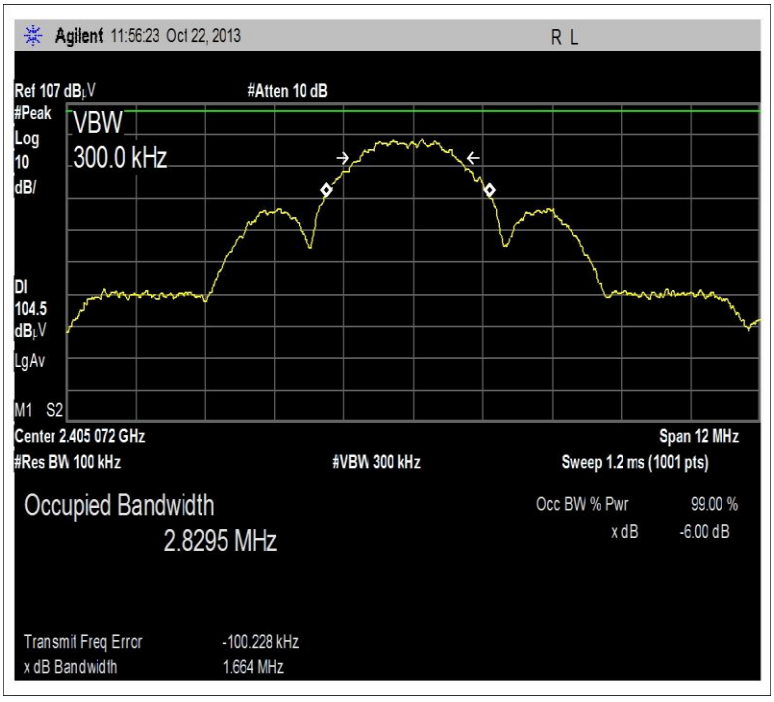
Frequencies of interest are: 2400 - 2483.5 MHz
From 2400tMHz to 2483.5MHz - RBW =30/100kHz; VBW = 300kHz
Freq Span: 12MHz.

Frequency in MHz	-6dB Bandwidth in MHz	Minimum BW in kHz	Result
2405	1.664	500 kHz	Pass
2445	1.675	500 kHz	Pass
2480	1.679	500 kHz	Pass

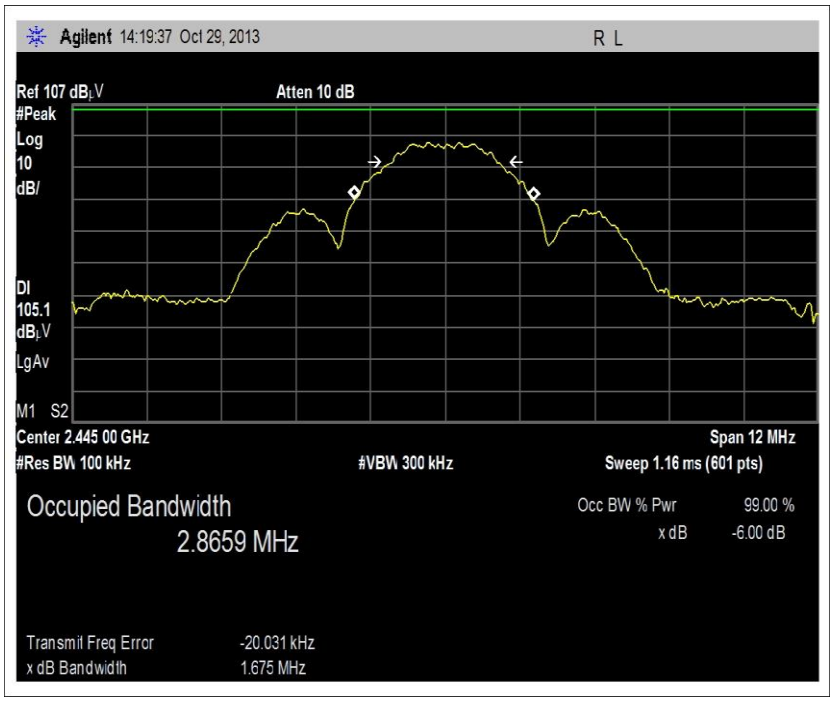
Transmitter is set to 2405, 2445, & 2480MHz.

Environmental conditions:
Temperature = 80°F
Relative Humidity = 40%
Pressure = 97.7 kPa

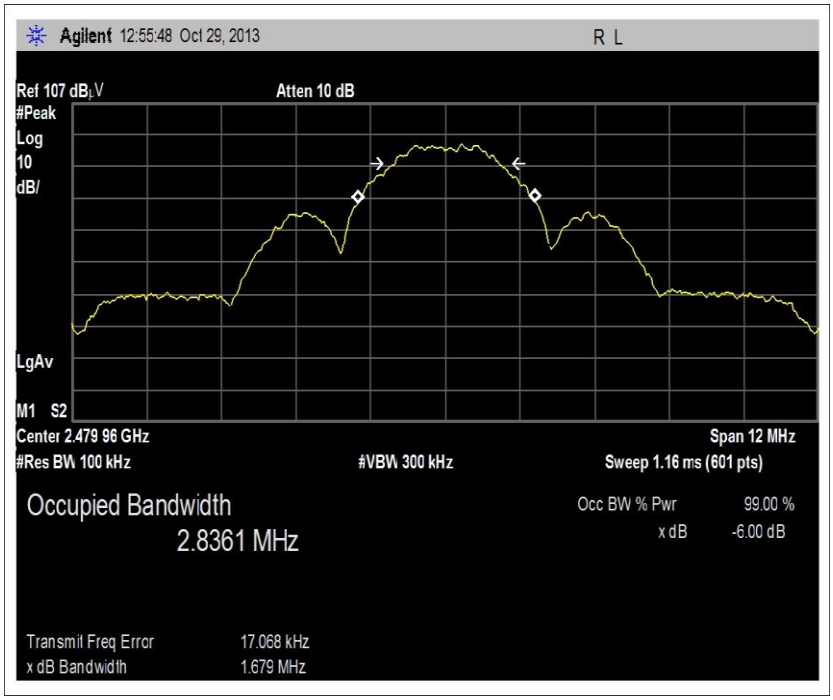
Test Plots



2405MHz

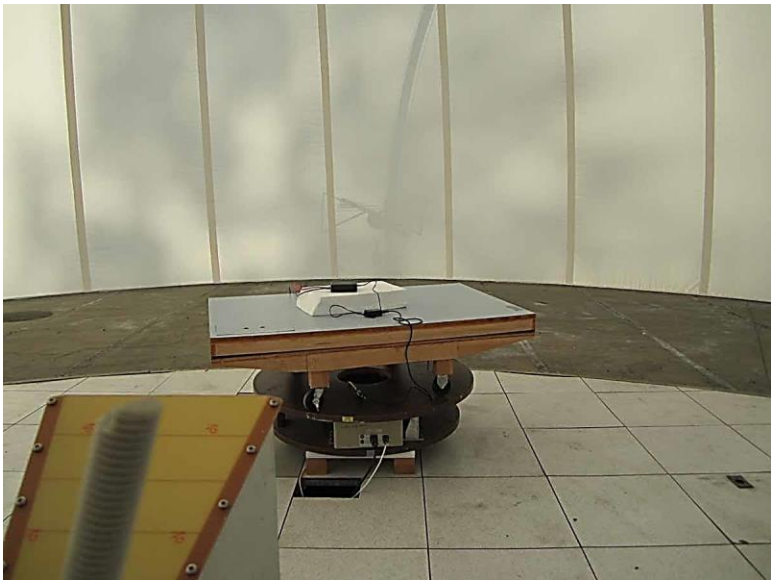


2445MHz



2480MHz

Test Setup Photo



RSS-210 A8.2 (a) Emissions Bandwidth Measurements

Test Data Sheets

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

Customer: **SynapSense**
Specification: **RSS-210 A8.2(a) Emissions Bandwidth Measurements**
Work Order #: **94614** Date: 10/22/2013
Test Type: **Maximized Emissions** Time: 14:11:26
Equipment: **Intelligent Gateway** Sequence#: 4
Manufacturer: SynapSense Corporation Tested By: Chuck Kendall
Model: 1156
S/N: 14

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02660	Spectrum Analyzer	E4446A	8/23/2012	8/23/2014
T1	AN03358	Cable	32022-2-29094K-36TC	2/7/2013	2/7/2015
T2	AN03360	Cable	32022-2-29094-36TC	2/4/2013	2/4/2015
T3	AN03355	Cable	32026-2-29094K-48TC	2/7/2013	2/7/2015
T4	ANP05904	Cable	32022-2-29094K-144TC	2/15/2013	2/15/2015
T5	AN03155	Preamp	83017A	6/26/2013	6/26/2015
T6	AN00327	Horn Antenna	3115	4/13/2012	4/13/2014
T7	AN3011	Cable		2/4/2013	2/4/2015

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

Function	Manufacturer	Model #	S/N
Intelligent Gateway*	SynapSense Corporation	1156	14
Power Supply	Condor	SA-54A0IV	None

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Lenovo	8744	63-BZ456 07/06
Laptop Computer	Lenovo	7650	63-P621B 08/02

Test Conditions / Notes:

EUT is set up atop some insulation some 80 cm off the ground plane. A power brick is furnishing 5 VDC to the EUT. There are two Ethernet cables attached which go to separate lap top computers. Pinging with 1400 byte packets of data. The USB interface port is just for manufacturing and service only. There is no cable attached to this port. Power cord to the power supply is greater than 80cm.

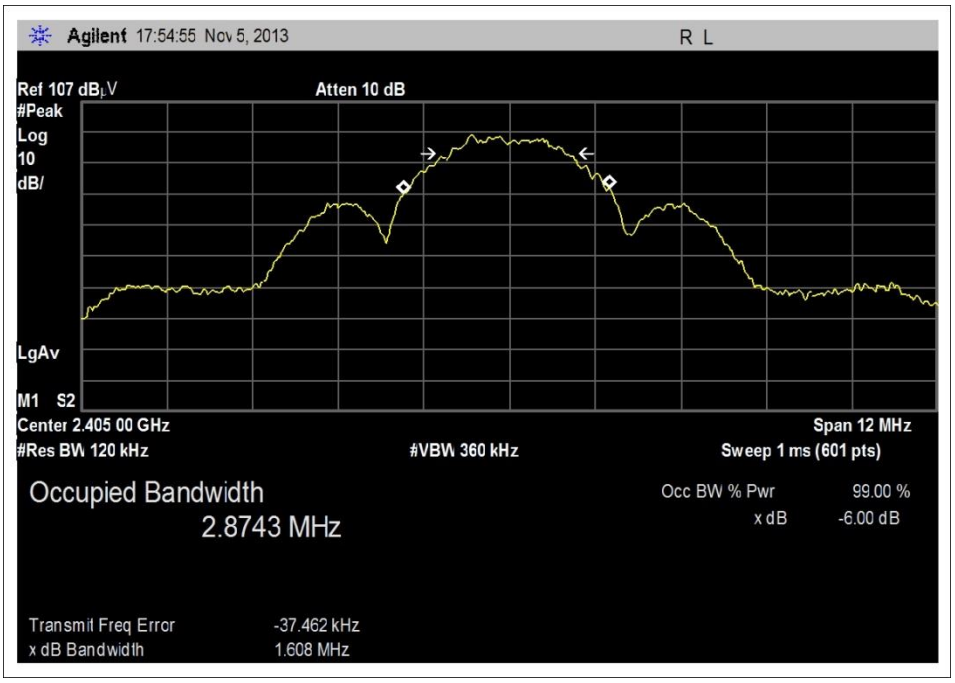
Frequencies of interest are: 2400 - 2483.5 MHz
From 2400tMHz to 2483.5MHz - RBW =18/120kHz; VBW = 300kHz
Freq Span: 12MHz for the 99%BW and 1% of EBW for the -6dB BW

Frequency in MHz	-6dB Bandwidth in MHz	99% Bandwidth in MHz
2405	1.620	2.8743
2445	1.575	2.8854
2480	1.667	2.8530

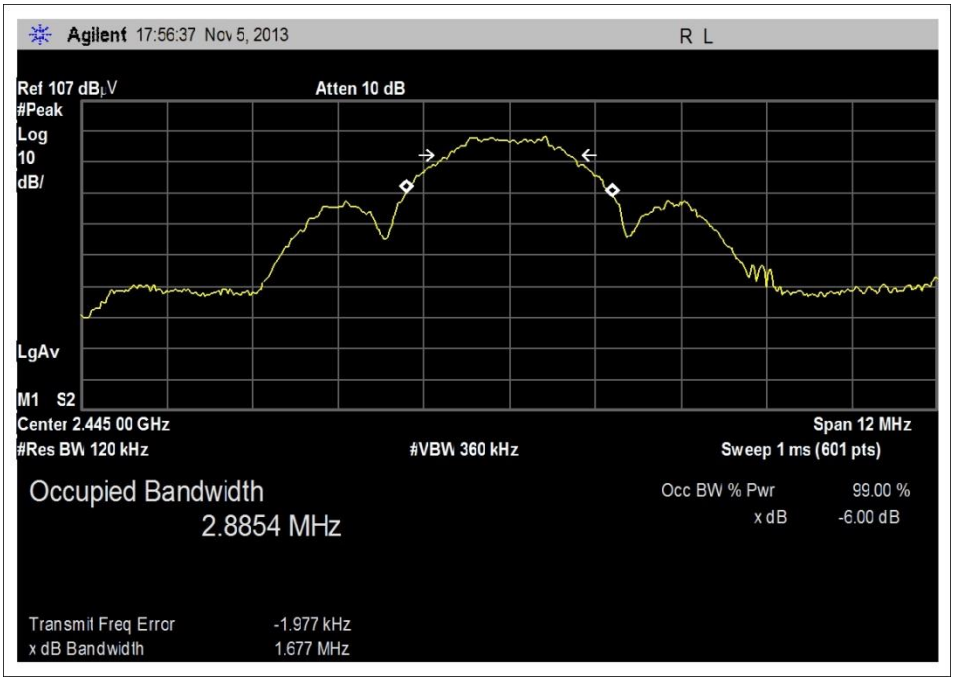
Transmitter is set to 2405, 2445, & 2480MHz.

Environmental conditions:
Temperature = 80°F
Relative Humidity = 40%
Pressure = 97.7 kPa

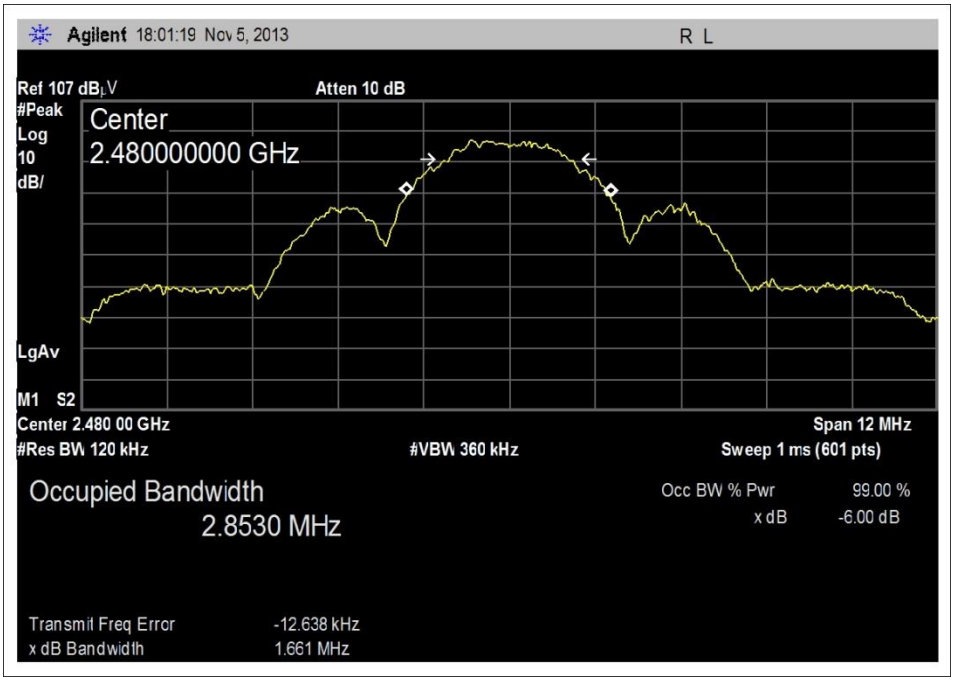
Test Plots



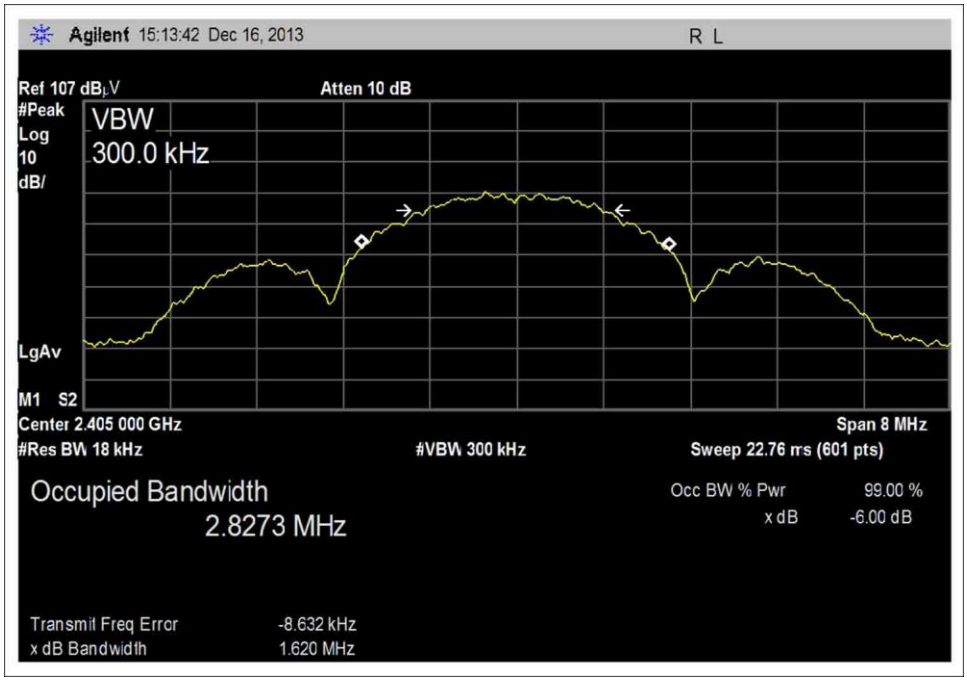
99% BW 2405MHz



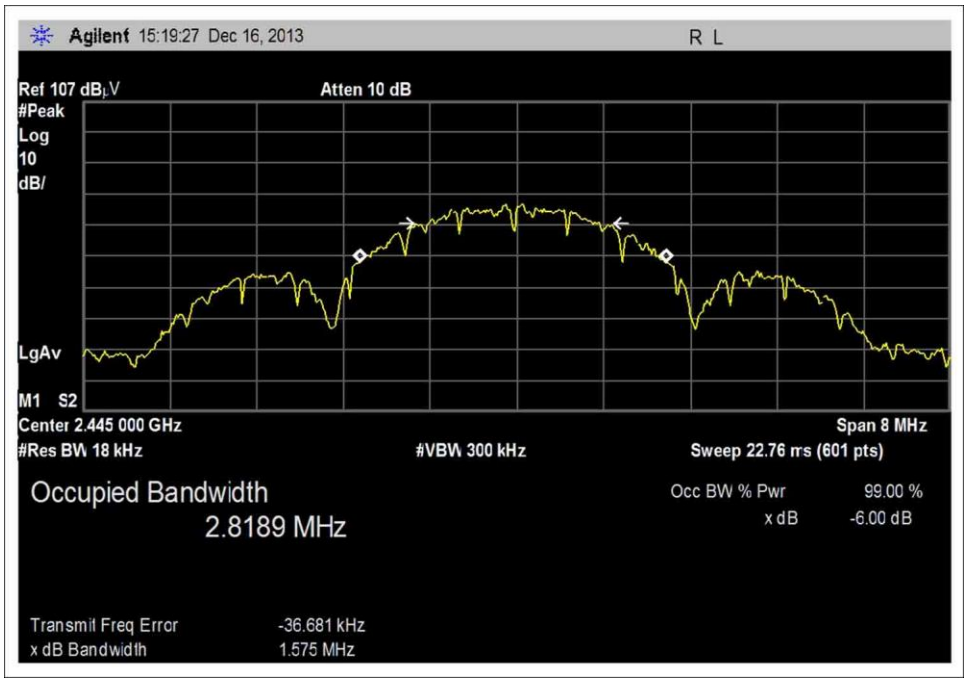
99% BW 2445MHz



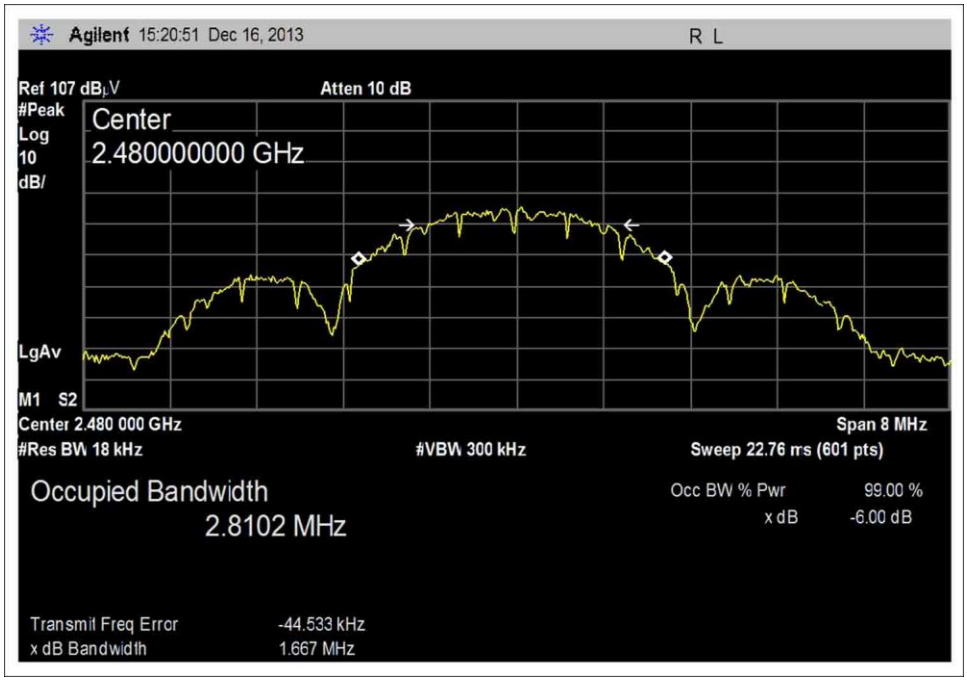
99% BW 2480MHz



6 dB BW 2405MHz

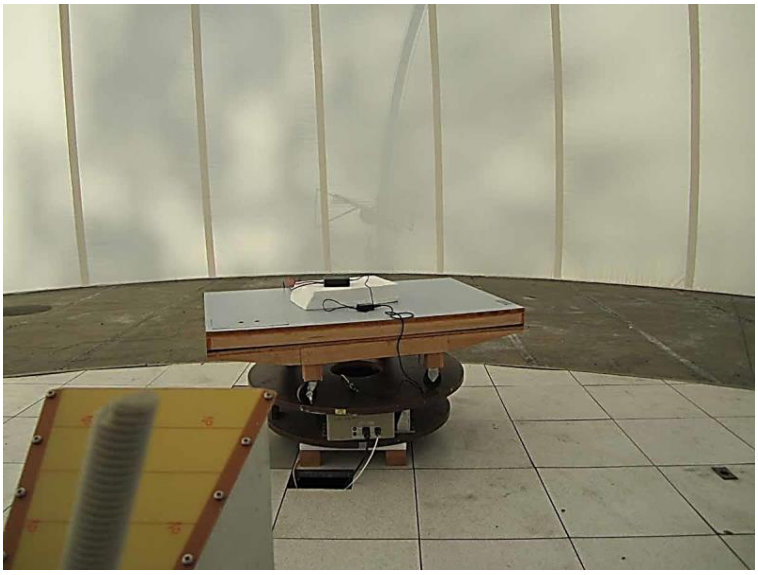


6 dB BW 2445MHz



6 dB BW 2480MHz

Test Setup Photo



15.247(b) (3) RF Power Output

Test Data

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

Customer: **SynapSense**
Specification: **15.247(b) Power Output (2400-2483.5 MHz DTS)**
Work Order #: **94614** Date: 10/29/2013
Test Type: **Maximized Emissions** Time: 15:18:31
Equipment: **Intelligent Gateway** Sequence#: 4
Manufacturer: SynapSense Corporation Tested By: Chuck Kendall
Model: 1156
S/N: 14

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02660	Spectrum Analyzer	E4446A	8/23/2012	8/23/2014
T2	AN03358	Cable	32022-2-29094K-36TC	2/7/2013	2/7/2015
T3	AN03360	Cable	32022-2-29094-36TC	2/4/2013	2/4/2015
T4	AN03355	Cable	32026-2-29094K-48TC	2/7/2013	2/7/2015
T5	ANP05904	Cable	32022-2-29094K-144TC	2/15/2013	2/15/2015
T6	AN03155	Preamp	83017A	6/26/2013	6/26/2015
T7	AN00327	Horn Antenna	3115	4/13/2012	4/13/2014
T8	AN3011	Cable		2/4/2013	2/4/2015

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

Function	Manufacturer	Model #	S/N
Intelligent Gateway*	SynapSense Corporation	1156	14
Power Supply	Condor	SA-54A0IV	None

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Lenovo	8744	63-BZ456 07/06
Laptop Computer	Lenovo	7650	63-P621B 08/02

Test Conditions / Notes:

EUT is set up atop some insulation over a wooden table some 80 cm off the ground plane. A power brick is furnishing 5 VDC to the EUT. There are two Ethernet cables attached which go to separate lap top computers. Pinging with 1400 byte packets of data. The USB interface port is just for manufacturing and service only. There is no cable attached to this port. Power cord to the power supply is greater than 80cm.

Frequencies of interest are: 2400 - 2483.5 MHz
From 2400tMHz to 2483.5MHz - RBW =3MHz; VBW = 50MHz
Freq Span: 2.455/12MHz.
In accordance with 15.31(e) Supply voltage was varied from 102VAC to 138VAC with no change in the readings.

Plots are uncorrected as shown-corrected readings were used in the calculations.
Calculations in accordance with KDB 558074 and ANSI 63.10
Antenna Gain = 3.3 dBi
EIRP □□p_t□□g_t□□□E□□$d)^2$/ 30
where

p_t is the transmitter output power in watts
g_t is the numeric gain of the transmitting antenna (dimensionless)
E is the electric field strength in V/m
d is the measurement distance in meters (m)

Transmitter is set to 2405, 2445, & 2480MHz.

Frequency	Conducted Power in dBm	Limit in dBm	Pass or Fail
2405 MHz	2.2	30	PASS
2445 MHz	0.07	30	PASS
2480 MHz	1.2	30	PASS

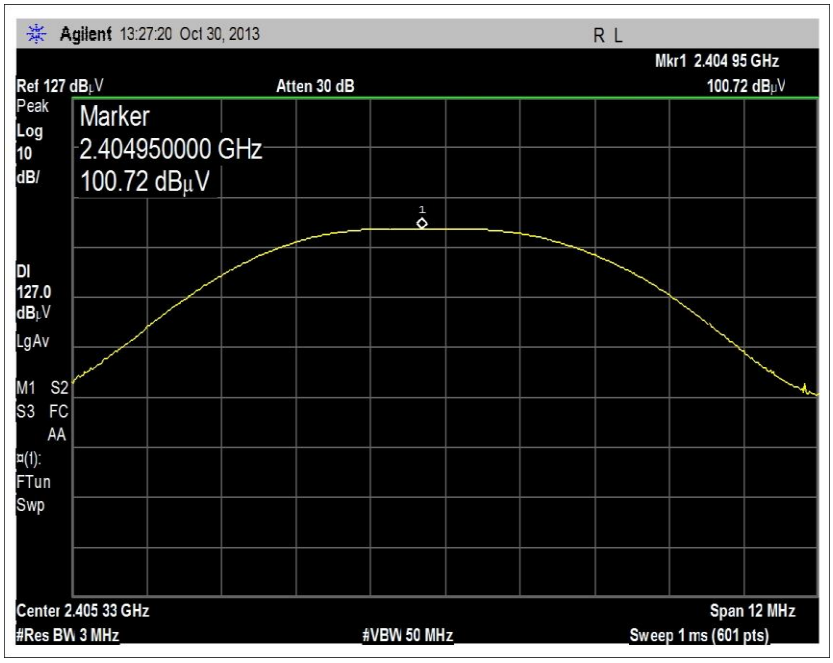
Environmental conditions:
Temperature = 80°F, Relative Humidity = 40%, Pressure = 97.7 kPa

Ext Attn: 0 dB

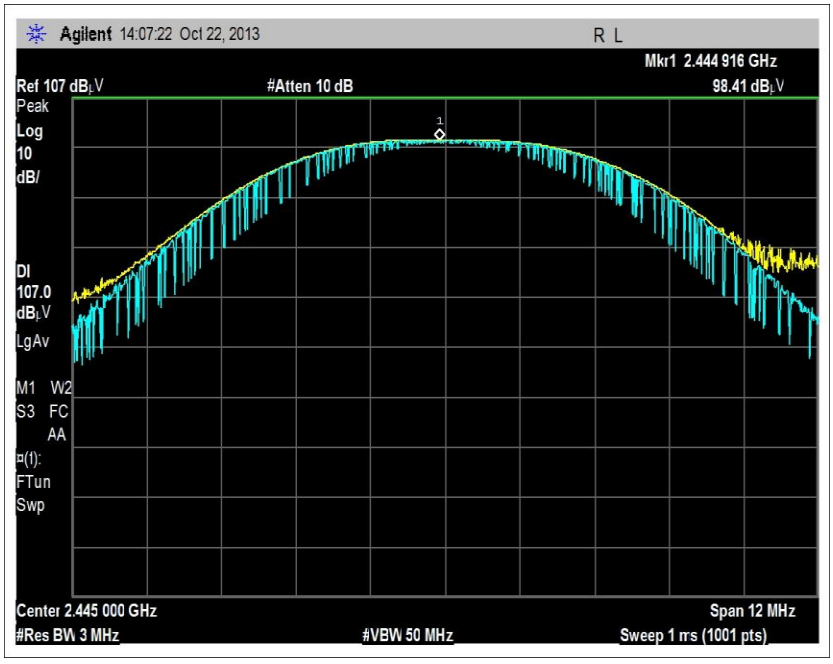
Measurement Data: Reading listed by order taken. Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	2405.002M	90.0	+0.0	+0.5	+0.7	+0.5		89.9			Vert
			+2.2	-32.9	+28.4	+0.5			Fundamental-2405 MHz		
2	2444.510M	89.7	+0.0	+0.6	+0.7	+0.5		89.9			Vert
			+2.2	-32.9	+28.6	+0.5			Fundamental-2445MHz		
3	2479.388M	89.8	+0.0	+0.6	+0.7	+0.5		90.2			Vert
			+2.3	-32.9	+28.7	+0.5			Fundamental-2480 MHz		
4	2445.000M	98.4	+0.0	+0.6	+0.7	+0.5		98.6			Horiz
			+2.2	-32.9	+28.6	+0.5			Fundamental		
5	2405.330M	100.8	+0.0	+0.5	+0.7	+0.5		100.7			Horiz
			+2.2	-32.9	+28.4	+0.5			Fundamental		
6	2479.420M	99.3	+0.0	+0.6	+0.7	+0.5		99.7			Horiz
			+2.3	-32.9	+28.7	+0.5			Fundamental		

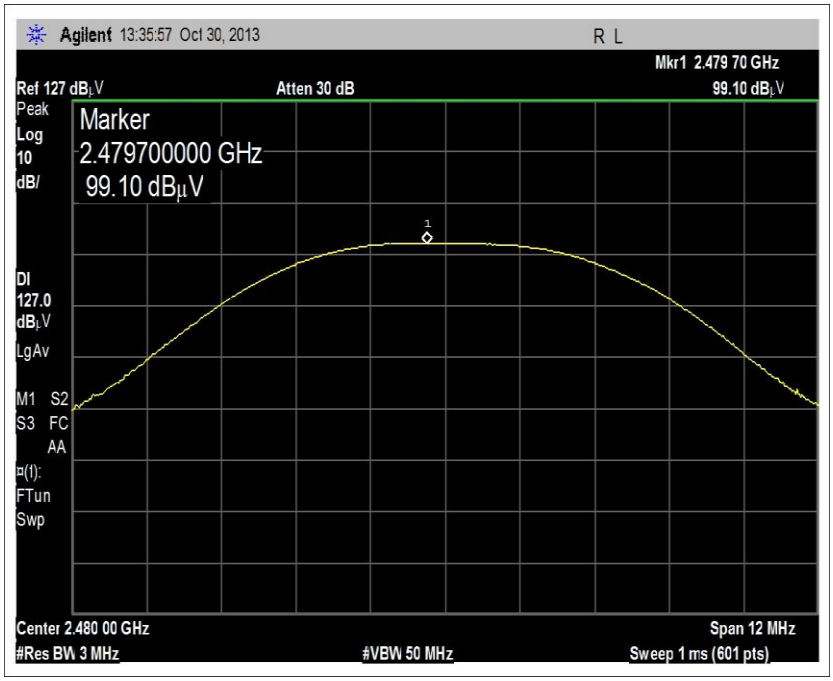
Test Plots



Peak Power Out, 2405MHz

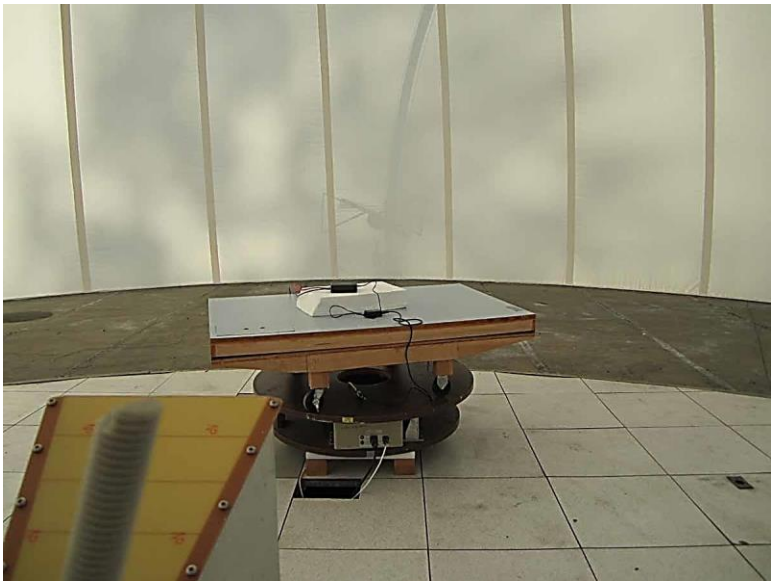


Peak Power Out, 2445MHz



Peak Power Out, 2480MHz

Test Setup Photo



15.247(d) Radiated Spurious Emissions

Test Data

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

Customer: **SynapSense**
Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**
Work Order #: **94614** Date: 10/31/2013
Test Type: **Maximized Emissions** Time: 15:52:00
Equipment: **Intelligent Gateway** Sequence#: 1
Manufacturer: SynapSense Corporation Tested By: Chuck Kendall
Model: 1156
S/N: 14

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02660	Spectrum Analyzer	E4446A	8/23/2012	8/23/2014
T2	AN01991	Biconilog Antenna	CBL6111C	3/14/2012	3/14/2014
T3	AN00062	Preamp	8447D	6/6/2012	6/6/2014
T4	ANP05686	Cable	RG214/U	1/24/2012	1/24/2014
	ANP05922	Cable	RG/214	8/15/2012	8/15/2014
T5	AN03358	Cable	32022-2-29094K-36TC	2/7/2013	2/7/2015
T6	AN03360	Cable	32022-2-29094-36TC	2/4/2013	2/4/2015
T7	AN03355	Cable	32026-2-29094K-48TC	2/7/2013	2/7/2015
T8	ANP05904	Cable	32022-2-29094K-144TC	2/15/2013	2/15/2015
T9	AN03155	Preamp	83017A	6/26/2013	6/26/2015
T10	AN00327	Horn Antenna	3115	4/13/2012	4/13/2014
	AN02751	Band Pass Filter	6IH40-500/T3000-O/O	2/20/2013	2/20/2015
T11	AN3011	Cable		2/4/2013	2/4/2015
	AN02046	Horn Antenna-ANSI C63,5 (2006) 3m (dB)	MWH-1826/B	2/4/2013	2/4/2015
T12	AN00432	Loop Antenna	6502	4/2/2013	4/2/2015

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

Function	Manufacturer	Model #	S/N
Intelligent Gateway*	SynapSense Corporation	1156	14
Power Supply	Condor	SA-54A0IV	None

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Lenovo	8744	63-BZ456 07/06
Laptop Computer	Lenovo	7650	63-P621B 08/02

Test Conditions / Notes:

EUT is set up atop some insulation some 80 cm off the ground plane. A power brick is furnishing 5 VDC to the EUT. There are two Ethernet cables attached which go to separate lap top computers. Pinging with 1400 byte packets of data. The USB interface port is just for manufacturing and service only. There is no cable attached to this port. Power cord to the power supply is greater than 80cm.

Frequencies of interest are: 9kHz to 30MHz, 30 MHz to 1000 MHz, & 1-26GHz
From 1 to 26GHz - BBW =1MHz; VBW = 3MHz
From 30-1000 MHz -RBW =120kHz; VBW = 300kHz
From 9kHz to 30MHz; RBW =9kHz; VBW =30kHz

Transmitting on 2405 MHz

Environmental conditions:

Temperature = 80°F
Relative Humidity = 40%
Pressure = 97.7 kPa

Ext Attn: 0 dB

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

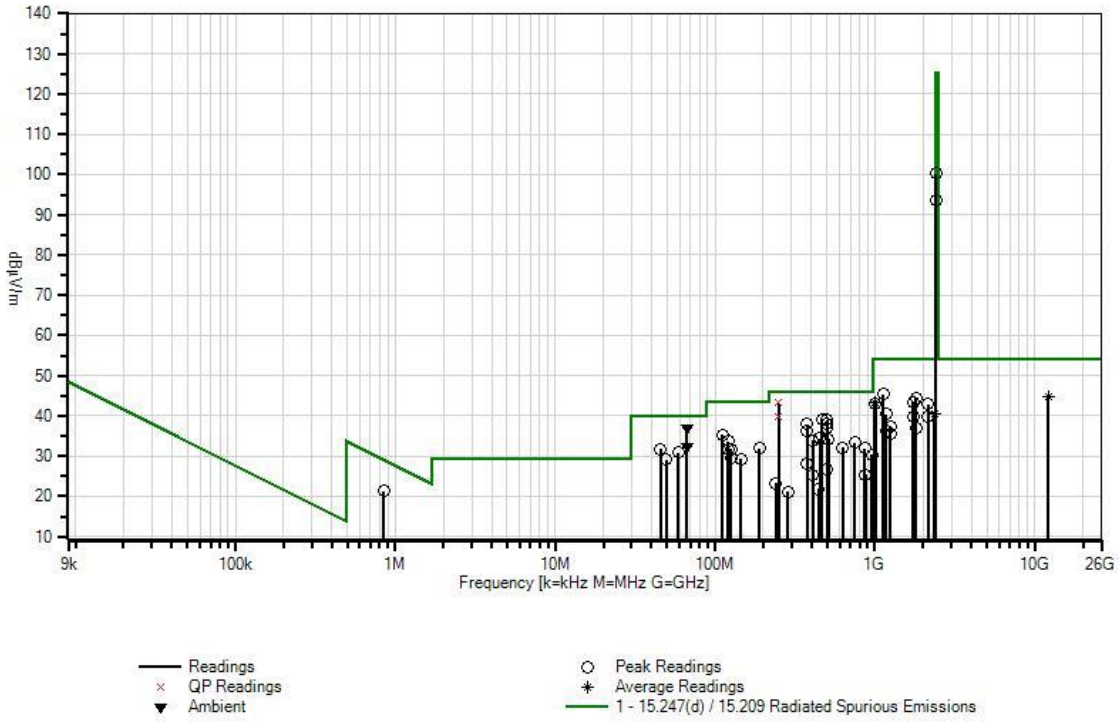
#	Freq	Rdng	T1 T5 T9	T2 T6 T10	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	250.001M	59.8	+0.0	+12.3	-29.0	+0.2	+0.0	43.3	46.0	-2.7	Horiz
	QP		+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
^	249.996M	60.6	+0.0	+12.3	-29.0	+0.2	+0.0	44.1	46.0	-1.9	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
^	249.995M	56.8	+0.0	+12.3	-29.0	+0.2	+0.0	40.3	46.0	-5.7	Horiz
			+0.0	+0.0	+0.0	+0.0			EUT is now in the		
			+0.0	+0.0	+0.0	+0.0			vertical orientation.		
4	66.720M	60.6	+0.0	+6.7	-30.3	+0.1	+0.0	37.1	40.0	-2.9	Horiz
	Ambient		+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
5	249.995M	56.2	+0.0	+12.3	-29.0	+0.2	+0.0	39.7	46.0	-6.3	Vert
	QP		+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
^	249.998M	56.9	+0.0	+12.3	-29.0	+0.2	+0.0	40.4	46.0	-5.6	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
^	249.995M	51.9	+0.0	+12.3	-29.0	+0.2	+0.0	35.4	46.0	-10.6	Vert
			+0.0	+0.0	+0.0	+0.0			EUT is now in the		
			+0.0	+0.0	+0.0	+0.0			vertical orientation.		
8	464.799M	51.6	+0.0	+17.0	-29.9	+0.3	+0.0	39.0	46.0	-7.0	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
9	499.985M	50.9	+0.0	+17.7	-30.0	+0.3	+0.0	38.9	46.0	-7.1	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					

10	66.608M	55.8	+0.0	+6.7	-30.3	+0.1	+0.0	32.3	40.0	-7.7	Vert
	Ambient		+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
11	499.984M	50.2	+0.0	+17.7	-30.0	+0.3	+0.0	38.2	46.0	-7.8	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
12	843.200k	31.9	+0.0	+0.0	+0.0	+0.0	-20.0	21.3	29.1	-7.8	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+9.4					
13	374.988M	52.3	+0.0	+15.0	-29.6	+0.3	+0.0	38.0	46.0	-8.0	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
14	111.595M	54.8	+0.0	+10.5	-30.1	+0.1	+0.0	35.3	43.5	-8.2	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
15	45.746M	51.9	+0.0	+10.3	-30.6	+0.1	+0.0	31.7	40.0	-8.3	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
16	1124.897M	51.9	+0.0	+0.0	+0.0	+0.0	+0.0	45.3	54.0	-8.7	Vert
			+0.5	+0.5	+0.4	+1.7					
			-34.8	+24.7	+0.4	+0.0					
17	499.991M	49.1	+0.0	+17.7	-30.0	+0.3	+0.0	37.1	46.0	-8.9	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
18	12070.000	26.4	+0.0	+0.0	+0.0	+0.0	+0.0	44.8	54.0	-9.2	Vert
	M		+1.7	+1.6	+2.0	+5.4					
	Ave		-32.4	+38.9	+1.2	+0.0					
^	12070.000	37.3	+0.0	+0.0	+0.0	+0.0	+0.0	55.7	54.0	+1.7	Vert
	M		+1.7	+1.6	+2.0	+5.4					
			-32.4	+38.9	+1.2	+0.0					
20	58.746M	53.8	+0.0	+7.3	-30.4	+0.1	+0.0	30.8	40.0	-9.2	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
21	1796.470M	48.2	+0.0	+0.0	+0.0	+0.0	+0.0	44.5	54.0	-9.5	Horiz
			+0.5	+0.6	+0.5	+2.1					
			-33.3	+25.4	+0.5	+0.0					
22	119.997M	53.0	+0.0	+10.7	-30.1	+0.1	+0.0	33.7	43.5	-9.8	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
23	375.000M	50.5	+0.0	+15.0	-29.6	+0.3	+0.0	36.2	46.0	-9.8	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
24	1732.560M	47.7	+0.0	+0.0	+0.0	+0.0	+0.0	43.5	54.0	-10.5	Horiz
			+0.5	+0.6	+0.5	+2.1					
			-33.4	+25.0	+0.5	+0.0					
25	1000.003M	50.3	+0.0	+0.0	+0.0	+0.0	+0.0	43.4	54.0	-10.6	Vert
	Ave		+0.4	+0.5	+0.4	+1.6					
			-35.5	+25.3	+0.4	+0.0					
^	1000.025M	57.4	+0.0	+0.0	+0.0	+0.0	+0.0	50.5	54.0	-3.5	Vert
			+0.4	+0.5	+0.4	+1.6					
			-35.5	+25.3	+0.4	+0.0					

27	49.381M	50.9	+0.0	+8.7	-30.6	+0.1	+0.0	29.1	40.0	-10.9	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
28	1000.065M	49.9	+0.0	+0.0	+0.0	+0.0	+0.0	43.0	54.0	-11.0	Horiz
			+0.4	+0.5	+0.4	+1.6					
			-35.5	+25.3	+0.4	+0.0					
29	2146.600M	44.2	+0.0	+0.0	+0.0	+0.0	+0.0	43.0	54.0	-11.0	Vert
			+0.5	+0.7	+0.5	+2.1					
			-32.9	+27.4	+0.5	+0.0					
30	189.415M	52.2	+0.0	+9.0	-29.5	+0.2	+0.0	31.9	43.5	-11.6	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
31	454.065M	47.1	+0.0	+16.8	-29.9	+0.3	+0.0	34.3	46.0	-11.7	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
32	124.998M	51.1	+0.0	+10.7	-30.1	+0.1	+0.0	31.8	43.5	-11.7	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
33	510.125M	45.9	+0.0	+17.9	-30.0	+0.3	+0.0	34.1	46.0	-11.9	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
34	119.991M	50.8	+0.0	+10.7	-30.1	+0.1	+0.0	31.5	43.5	-12.0	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
35	406.217M	47.5	+0.0	+15.7	-29.7	+0.3	+0.0	33.8	46.0	-12.2	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
36	750.002M	42.7	+0.0	+20.0	-29.7	+0.4	+0.0	33.4	46.0	-12.6	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
37	2340.610M	41.0	+0.0	+0.0	+0.0	+0.0	+0.0	40.6	54.0	-13.4	Vert
	Ave		+0.5	+0.7	+0.5	+2.2					
			-33.0	+28.2	+0.5	+0.0					
^	2340.600M	50.2	+0.0	+0.0	+0.0	+0.0	+0.0	49.8	54.0	-4.2	Vert
			+0.5	+0.7	+0.5	+2.2					
			-33.0	+28.2	+0.5	+0.0					
39	1176.000M	47.2	+0.0	+0.0	+0.0	+0.0	+0.0	40.5	54.0	-13.5	Vert
			+0.5	+0.5	+0.4	+1.7					
			-34.7	+24.5	+0.4	+0.0					
40	125.007M	49.0	+0.0	+10.7	-30.1	+0.1	+0.0	29.7	43.5	-13.8	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
41	624.999M	42.7	+0.0	+19.2	-30.0	+0.3	+0.0	32.2	46.0	-13.8	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
42	860.861M	40.7	+0.0	+20.1	-29.3	+0.4	+0.0	31.9	46.0	-14.1	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
43	1732.525M	44.1	+0.0	+0.0	+0.0	+0.0	+0.0	39.9	54.0	-14.1	Vert
			+0.5	+0.6	+0.5	+2.1					
			-33.4	+25.0	+0.5	+0.0					

44	145.427M	47.3	+0.0 +0.0 +0.0	+11.6 +0.0 +0.0	-29.9 +0.0 +0.0	+0.2 +0.0 +0.0	+0.0	29.2	43.5	-14.3	Vert
45	2146.555M	40.9	+0.0 +0.5 -32.9	+0.0 +0.7 +27.4	+0.0 +0.5 +0.5	+0.0 +2.1 +0.0	+0.0	39.7	54.0	-14.3	Horiz
46	952.313M	38.2	+0.0 +0.0 +0.0	+20.8 +0.0 +0.0	-29.1 +0.0 +0.0	+0.4 +0.0 +0.0	+0.0	30.3	46.0	-15.7	Vert
47	1249.925M	44.0	+0.0 +0.5 -34.4	+0.0 +0.5 +24.1	+0.0 +0.4 +0.4	+0.0 +1.8 +0.0	+0.0	37.3	54.0	-16.7	Vert
48	1797.500M	40.7	+0.0 +0.5 -33.3	+0.0 +0.6 +25.4	+0.0 +0.5 +0.5	+0.0 +2.1 +0.0	+0.0	37.0	54.0	-17.0	Vert
49	1176.010M	42.9	+0.0 +0.5 -34.7	+0.0 +0.5 +24.5	+0.0 +0.4 +0.4	+0.0 +1.7 +0.0	+0.0	36.2	54.0	-17.8	Horiz
50	375.015M	42.3	+0.0 +0.0 +0.0	+15.0 +0.0 +0.0	-29.6 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	28.0	46.0	-18.0	Vert
51	1249.985M	42.3	+0.0 +0.5 -34.4	+0.0 +0.5 +24.1	+0.0 +0.4 +0.4	+0.0 +1.8 +0.0	+0.0	35.6	54.0	-18.4	Horiz
52	499.992M	38.6	+0.0 +0.0 +0.0	+17.7 +0.0 +0.0	-30.0 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	26.6	46.0	-19.4	Vert
53	875.002M	34.2	+0.0 +0.0 +0.0	+20.0 +0.0 +0.0	-29.2 +0.0 +0.0	+0.4 +0.0 +0.0	+0.0	25.4	46.0	-20.6	Vert
54	406.217M	38.9	+0.0 +0.0 +0.0	+15.7 +0.0 +0.0	-29.7 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	25.2	46.0	-20.8	Horiz
55	240.012M	40.5	+0.0 +0.0 +0.0	+11.6 +0.0 +0.0	-29.1 +0.0 +0.0	+0.2 +0.0 +0.0	+0.0	23.2	46.0	-22.8	Horiz
56	444.698M	34.8	+0.0 +0.0 +0.0	+16.6 +0.0 +0.0	-29.9 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	21.8	46.0	-24.2	Vert
57	284.115M	37.3	+0.0 +0.0 +0.0	+12.8 +0.0 +0.0	-29.1 +0.0 +0.0	+0.2 +0.0 +0.0	+0.0	21.2	46.0	-24.8	Vert
58	2404.460M	100.3	+0.0 +0.5 -32.9	+0.0 +0.7 +28.4	+0.0 +0.5 +0.5	+0.0 +2.2 +0.0	+0.0	100.2	125.2 Fundamental-- 2405MHz	-25.0	Horiz
59	2404.500M	93.6	+0.0 +0.5 -32.9	+0.0 +0.7 +28.4	+0.0 +0.5 +0.5	+0.0 +2.2 +0.0	+0.0	93.5	125.2 Fundamental-- 2405MHz	-31.7	Vert

CKC Laboratories, Inc. Date: 10/31/2013 Time: 15:52:00 SynapSense WO#: 94614
15.247(d) / 15.209 Radiated Spurious Emissions Test Distance: 3 Meters Sequence#: 1 Ext ATTN: 0 dB



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

Customer: **SynapSense**
Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**
Work Order #: **94614** Date: 10/23/2013
Test Type: **Maximized Emissions** Time: 10:45:39
Equipment: **Intelligent Gateway** Sequence#: 1
Manufacturer: SynapSense Corporation Tested By: Chuck Kendall
Model: 1156
S/N: 14

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02660	Spectrum Analyzer	E4446A	8/23/2012	8/23/2014
T2	AN01991	Biconilog Antenna	CBL6111C	3/14/2012	3/14/2014
T3	AN00062	Preamp	8447D	6/6/2012	6/6/2014
T4	ANP05686	Cable	RG214/U	1/24/2012	1/24/2014
T5	ANP05922	Cable	RG/214	8/15/2012	8/15/2014
	AN00226	Loop Antenna	6502	3/28/2012	3/28/2014
T6	AN03358	Cable	32022-2-29094K-36TC	2/7/2013	2/7/2015
T7	AN03360	Cable	32022-2-29094-36TC	2/4/2013	2/4/2015
T8	AN03355	Cable	32026-2-29094K-48TC	2/7/2013	2/7/2015
T9	AN03356	Cable	32026-2-29094K-48TC	2/7/2013	2/7/2015
T10	ANP05904	Cable	32022-2-29094K-144TC	2/15/2013	2/15/2015
T11	AN03155	Preamp	83017A	6/26/2013	6/26/2015
T12	AN00327	Horn Antenna	3115	4/13/2012	4/13/2014
T13	AN02751	Band Pass Filter	6IH40-500/T3000-O/O	2/20/2013	2/20/2015
T14	AN3011	Cable		2/4/2013	2/4/2015
	AN02046	Horn Antenna-ANSI C63,5 (2006) 3m (dB)	MWH-1826/B	2/4/2013	2/4/2015

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

Function	Manufacturer	Model #	S/N
Intelligent Gateway*	SynapSense Corporation	1156	14
Power Supply	Condor	SA-54A0IV	None

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Lenovo	8744	63-BZ456 07/06
Laptop Computer	Lenovo	7650	63-P621B 08/02

Test Conditions / Notes:

EUT is set up atop some insulation some 80 cm off the ground plane. A power brick is furnishing 5 VDC to the EUT. There are two Ethernet cables attached which go to separate lap top computers. Pinging with 1400 byte packets of data. The USB interface port is just for manufacturing and service only. There is no cable attached to this port. Power cord to the power supply is greater than 80cm.

Frequencies of interest are: 9kHz to 30MHz, 30 MHz to 1000 MHz, & 1-26GHz
From 1 to 26GHz - BBW =1MHz; VBW = 3MHz
From 30-1000 MHz -RBW =120kHz; VBW = 300kHz
From 9kHz to 30MHz; RBW =9kHz; VBW =30kHz

Transmitter is set to 2445MHz.

Environmental conditions:

Temperature = 80°F
Relative Humidity = 40%
Pressure = 97.7 kPa

Ext Attn: 0 dB

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

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10 T14	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	250.001M	59.8	+0.0 +0.1 +0.0 +0.0	+12.3 +0.0 +0.0 +0.0	-29.0 +0.0 +0.0	+0.2 +0.0 +0.0	+0.0	43.4	46.0	-2.6	Horiz
	QP										
^	249.996M	60.6	+0.0 +0.1 +0.0 +0.0	+12.3 +0.0 +0.0 +0.0	-29.0 +0.0 +0.0	+0.2 +0.0 +0.0	+0.0	44.2	46.0	-1.8	Horiz
^	249.995M	56.8	+0.0 +0.1 +0.0 +0.0	+12.3 +0.0 +0.0 +0.0	-29.0 +0.0 +0.0	+0.2 +0.0 +0.0	+0.0	40.4	46.0 EUT is now in the vertical orientation.	-5.6	Horiz
4	249.995M	56.2	+0.0 +0.1 +0.0 +0.0	+12.3 +0.0 +0.0 +0.0	-29.0 +0.0 +0.0	+0.2 +0.0 +0.0	+0.0	39.8	46.0	-6.2	Vert
	QP										
^	249.998M	56.9	+0.0 +0.1 +0.0 +0.0	+12.3 +0.0 +0.0 +0.0	-29.0 +0.0 +0.0	+0.2 +0.0 +0.0	+0.0	40.5	46.0	-5.5	Vert
^	249.995M	51.9	+0.0 +0.1 +0.0 +0.0	+12.3 +0.0 +0.0 +0.0	-29.0 +0.0 +0.0	+0.2 +0.0 +0.0	+0.0	35.5	46.0 EUT is now in the vertical orientation.	-10.5	Vert

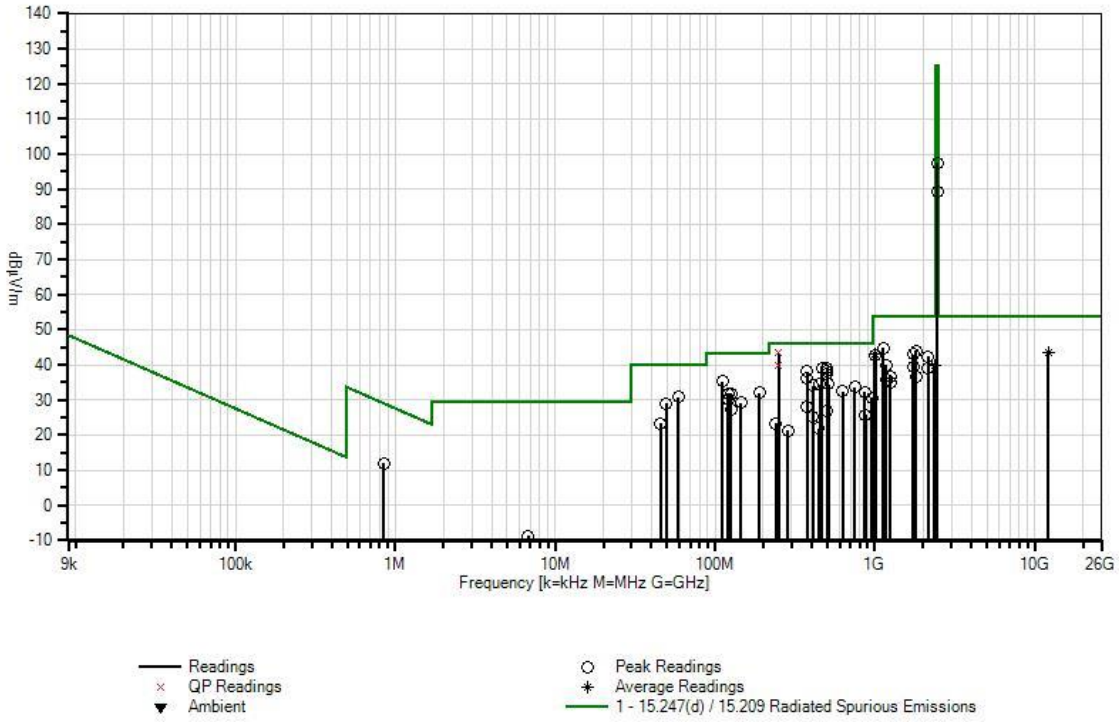
7	464.799M	51.6	+0.0 +0.2 +0.0 +0.0	+17.0 +0.0 +0.0 +0.0	-29.9 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	39.2	46.0	-6.8	Vert
8	499.985M	50.9	+0.0 +0.2 +0.0 +0.0	+17.7 +0.0 +0.0 +0.0	-30.0 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	39.1	46.0	-6.9	Vert
9	499.984M	50.2	+0.0 +0.2 +0.0 +0.0	+17.7 +0.0 +0.0 +0.0	-30.0 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	38.4	46.0	-7.6	Horiz
10	374.988M	52.3	+0.0 +0.2 +0.0 +0.0	+15.0 +0.0 +0.0 +0.0	-29.6 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	38.2	46.0	-7.8	Vert
11	111.595M	54.8	+0.0 +0.1 +0.0 +0.0	+10.5 +0.0 +0.0 +0.0	-30.1 +0.0 +0.0	+0.1 +0.0 +0.0	+0.0	35.4	43.5	-8.1	Vert
12	499.991M	49.1	+0.0 +0.2 +0.0 +0.0	+17.7 +0.0 +0.0 +0.0	-30.0 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	37.3	46.0	-8.7	Horiz
13	1124.897M	51.9	+0.0 +0.0 +0.0 +0.0	+0.0 +0.0 +1.7 +0.4	+0.0 +0.5 -34.8	+0.0 +0.4 +24.7	+0.0	44.8	54.0	-9.2	Vert
14	58.746M	53.8	+0.0 +0.0 +0.0 +0.0	+7.3 +0.0 +0.0 +0.0	-30.4 +0.0 +0.0	+0.1 +0.0 +0.0	+0.0	30.8	40.0	-9.2	Vert
15	375.000M	50.5	+0.0 +0.2 +0.0 +0.0	+15.0 +0.0 +0.0 +0.0	-29.6 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	36.4	46.0	-9.6	Horiz
16	1796.470M	48.2	+0.0 +0.0 +0.0 +0.0	+0.0 +0.0 +2.1 +0.5	+0.0 +0.6 -33.3	+0.0 +0.5 +25.4	+0.0	44.0	54.0	-10.0	Horiz
17	12070.000 M Ave	26.4	+0.0 +0.0 +0.0 +0.0	+0.0 +1.7 +5.4 +0.0	+0.0 +1.6 -32.4	+0.0 +2.0 +38.9	+0.0	43.6	54.0	-10.4	Vert
^	12070.000 M	37.3	+0.0 +0.0 +0.0 +0.0	+0.0 +0.0 +5.4 +1.2	+0.0 +1.6 -32.4	+0.0 +2.0 +38.9	+0.0	54.0	54.0	+0.0	Vert
19	49.381M	50.9	+0.0 +0.0 +0.0 +0.0	+8.7 +0.0 +0.0 +0.0	-30.6 +0.0 +0.0	+0.1 +0.0 +0.0	+0.0	29.1	40.0	-10.9	Horiz

20	1000.003M	50.3	+0.0	+0.0	+0.0	+0.0	+0.0	43.0	54.0	-11.0	Vert
	Ave		+0.0	+0.0	+0.5	+0.4					
			+0.0	+1.6	-35.5	+25.3					
			+0.0	+0.4							
^	1000.025M	57.4	+0.0	+0.0	+0.0	+0.0	+0.0	50.1	54.0	-3.9	Vert
			+0.0	+0.0	+0.5	+0.4					
			+0.0	+1.6	-35.5	+25.3					
			+0.0	+0.4							
22	1732.560M	47.7	+0.0	+0.0	+0.0	+0.0	+0.0	43.0	54.0	-11.0	Horiz
			+0.0	+0.0	+0.6	+0.5					
			+0.0	+2.1	-33.4	+25.0					
			+0.0	+0.5							
23	1000.065M	49.9	+0.0	+0.0	+0.0	+0.0	+0.0	42.6	54.0	-11.4	Horiz
			+0.0	+0.0	+0.5	+0.4					
			+0.0	+1.6	-35.5	+25.3					
			+0.0	+0.4							
24	454.065M	47.1	+0.0	+16.8	-29.9	+0.3	+0.0	34.5	46.0	-11.5	Vert
			+0.2	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
25	189.415M	52.2	+0.0	+9.0	-29.5	+0.2	+0.0	32.0	43.5	-11.5	Vert
			+0.1	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
26	2146.600M	44.2	+0.0	+0.0	+0.0	+0.0	+0.0	42.5	54.0	-11.5	Vert
			+0.0	+0.0	+0.7	+0.5					
			+0.0	+2.1	-32.9	+27.4					
			+0.0	+0.5							
27	510.125M	45.9	+0.0	+17.9	-30.0	+0.3	+0.0	34.4	46.0	-11.6	Horiz
			+0.3	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
28	124.998M	51.1	+0.0	+10.7	-30.1	+0.1	+0.0	31.9	43.5	-11.6	Vert
			+0.1	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
29	119.991M	50.8	+0.0	+10.7	-30.1	+0.1	+0.0	31.6	43.5	-11.9	Vert
			+0.1	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
30	406.217M	47.5	+0.0	+15.7	-29.7	+0.3	+0.0	34.0	46.0	-12.0	Vert
			+0.2	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
31	750.002M	42.7	+0.0	+20.0	-29.7	+0.4	+0.0	33.7	46.0	-12.3	Vert
			+0.3	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
32	119.988M	49.4	+0.0	+10.7	-30.1	+0.1	+0.0	30.2	43.5	-13.3	Horiz
			+0.1	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							

33	624.999M	42.7	+0.0	+19.2	-30.0	+0.3	+0.0	32.5	46.0	-13.5	Vert
			+0.3	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
34	860.861M	40.7	+0.0	+20.1	-29.3	+0.4	+0.0	32.3	46.0	-13.7	Horiz
			+0.4	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
35	2340.610M Ave	41.0	+0.0	+0.0	+0.0	+0.0	+0.0	40.1	54.0	-13.9	Vert
			+0.0	+0.0	+0.7	+0.5					
			+0.0	+2.2	-33.0	+28.2					
			+0.0	+0.5							
^	2340.600M	50.2	+0.0	+0.0	+0.0	+0.0	+0.0	49.3	54.0	-4.7	Vert
			+0.0	+0.0	+0.7	+0.5					
			+0.0	+2.2	-33.0	+28.2					
			+0.0	+0.5							
37	1176.000M	47.2	+0.0	+0.0	+0.0	+0.0	+0.0	40.0	54.0	-14.0	Vert
			+0.0	+0.0	+0.5	+0.4					
			+0.0	+1.7	-34.7	+24.5					
			+0.0	+0.4							
38	145.427M	47.3	+0.0	+11.6	-29.9	+0.2	+0.0	29.3	43.5	-14.2	Vert
			+0.1	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
39	1732.525M	44.1	+0.0	+0.0	+0.0	+0.0	+0.0	39.4	54.0	-14.6	Vert
			+0.0	+0.0	+0.6	+0.5					
			+0.0	+2.1	-33.4	+25.0					
			+0.0	+0.5							
40	2146.555M	40.9	+0.0	+0.0	+0.0	+0.0	+0.0	39.2	54.0	-14.8	Horiz
			+0.0	+0.0	+0.7	+0.5					
			+0.0	+2.1	-32.9	+27.4					
			+0.0	+0.5							
41	952.313M	38.2	+0.0	+20.8	-29.1	+0.4	+0.0	30.7	46.0	-15.3	Vert
			+0.4	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
42	124.998M	46.4	+0.0	+10.7	-30.1	+0.1	+0.0	27.2	43.5	-16.3	Horiz
			+0.1	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
43	45.715M	43.5	+0.0	+10.4	-30.6	+0.1	+0.0	23.4	40.0	-16.6	Horiz
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							
44	1249.925M	44.0	+0.0	+0.0	+0.0	+0.0	+0.0	36.8	54.0	-17.2	Vert
			+0.0	+0.0	+0.5	+0.4					
			+0.0	+1.8	-34.4	+24.1					
			+0.0	+0.4							
45	843.200k	31.9	+0.0	+0.0	+0.0	+0.0	-20.0	11.9	29.1	-17.2	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0							

46	1797.500M	40.7	+0.0 +0.0 +0.0 +0.0	+0.0 +0.0 +2.1 +0.5	+0.0 +0.6 -33.3	+0.0 +0.5 +25.4	+0.0	36.5	54.0	-17.5	Vert
47	375.015M	42.3	+0.0 +0.2 +0.0 +0.0	+15.0 +0.0 +0.0 +0.0	-29.6 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	28.2	46.0	-17.8	Vert
48	1176.010M	42.9	+0.0 +0.0 +0.0 +0.0	+0.0 +0.0 +1.7 +0.4	+0.0 +0.5 -34.7	+0.0 +0.4 +24.5	+0.0	35.7	54.0	-18.3	Horiz
49	1249.985M	42.3	+0.0 +0.0 +0.0 +0.0	+0.0 +0.0 +1.8 +0.4	+0.0 +0.5 -34.4	+0.0 +0.4 +24.1	+0.0	35.1	54.0	-18.9	Horiz
50	499.992M	38.6	+0.0 +0.2 +0.0 +0.0	+17.7 +0.0 +0.0 +0.0	-30.0 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	26.8	46.0	-19.2	Vert
51	875.002M	34.2	+0.0 +0.4 +0.0 +0.0	+20.0 +0.0 +0.0 +0.0	-29.2 +0.0 +0.0	+0.4 +0.0 +0.0	+0.0	25.8	46.0	-20.2	Vert
52	406.217M	38.9	+0.0 +0.2 +0.0 +0.0	+15.7 +0.0 +0.0 +0.0	-29.7 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	25.4	46.0	-20.6	Horiz
53	240.012M	40.5	+0.0 +0.1 +0.0 +0.0	+11.6 +0.0 +0.0 +0.0	-29.1 +0.0 +0.0	+0.2 +0.0 +0.0	+0.0	23.3	46.0	-22.7	Horiz
54	444.698M	34.8	+0.0 +0.2 +0.0 +0.0	+16.6 +0.0 +0.0 +0.0	-29.9 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	22.0	46.0	-24.0	Vert
55	284.115M	37.3	+0.0 +0.2 +0.0 +0.0	+12.8 +0.0 +0.0 +0.0	-29.1 +0.0 +0.0	+0.2 +0.0 +0.0	+0.0	21.4	46.0	-24.6	Vert
56	2445.475M	98.0	+0.0 +0.0 +0.0 +0.0	+0.0 +0.0 +2.2 +0.5	+0.0 +0.7 -32.9	+0.0 +0.5 +28.6	+0.0	97.6	125.2 Fundamental-2445 MHz	-27.6	Horiz
57	2444.510M	89.7	+0.0 +0.0 +0.0 +0.0	+0.0 +0.0 +2.2 +0.5	+0.0 +0.7 -32.9	+0.0 +0.5 +28.6	+0.0	89.3	125.2 Fundamental-2445MHz	-35.9	Vert
58	6.762M	11.4	+0.0 +0.0 +0.0 +0.0	+0.0 +0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	-20.0	-8.6	29.5	-38.1	Horiz

CKC Laboratories, Inc. Date: 10/23/2013 Time: 10:45:39 SynapSense WO#: 94614
15.247(d) / 15.209 Radiated Spurious Emissions Test Distance: 3 Meters Sequence#: 1 Ext ATTN: 0 dB



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

Customer: **SynapSense**
Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**
Work Order #: **94614** Date: 10/31/2013
Test Type: **Maximized Emissions** Time: 16:00:50
Equipment: **Intelligent Gateway** Sequence#: 3
Manufacturer: SynapSense Corporation Tested By: Chuck Kendall
Model: 1156
S/N: 14

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02660	Spectrum Analyzer	E4446A	8/23/2012	8/23/2014
T2	AN01991	Biconilog Antenna	CBL6111C	3/14/2012	3/14/2014
T3	AN00062	Preamp	8447D	6/6/2012	6/6/2014
T4	ANP05686	Cable	RG214/U	1/24/2012	1/24/2014
T5	ANP05922	Cable	RG/214	8/15/2012	8/15/2014
T6	AN03358	Cable	32022-2-29094K-36TC	2/7/2013	2/7/2015
T7	AN03360	Cable	32022-2-29094-36TC	2/4/2013	2/4/2015
T8	AN03355	Cable	32026-2-29094K-48TC	2/7/2013	2/7/2015
T9	ANP05904	Cable	32022-2-29094K-144TC	2/15/2013	2/15/2015
T10	AN03155	Preamp	83017A	6/26/2013	6/26/2015
T11	AN00327	Horn Antenna	3115	4/13/2012	4/13/2014
	AN02751	Band Pass Filter	6IH40-500/T3000-O/O	2/20/2013	2/20/2015
T12	AN3011	Cable		2/4/2013	2/4/2015
	AN02046	Horn Antenna-ANSI C63,5 (2006) 3m (dB)	MWH-1826/B	2/4/2013	2/4/2015
T13	AN00432	Loop Antenna	6502	4/2/2013	4/2/2015

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

Function	Manufacturer	Model #	S/N
Intelligent Gateway*	SynapSense Corporation	1156	14
Power Supply	Condor	SA-54A0IV	None

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Lenovo	8744	63-BZ456 07/06
Laptop Computer	Lenovo	7650	63-P621B 08/02

Test Conditions / Notes:

EUT is set up atop some insulation some 80 cm off the ground plane. A power brick is furnishing 5 VDC to the EUT. There are two Ethernet cables attached which go to separate lap top computers. Pinging with 1400 byte packets of data. The USB interface port is just for manufacturing and service only. There is no cable attached to this port. Power cord to the power supply is greater than 80cm.

Frequencies of interest are: 9kHz to 30MHz, 30 MHz to 1000 MHz, & 1-26GHz
From 1 to 26GHz - BBW =1MHz; VBW = 3MHz
From 30-1000 MHz -RBW =120kHz; VBW = 300kHz
From 9kHz to 30MHz; RBW =9kHz; VBW =30kHz

Transmitter is set to 2480MHz.

Environmental conditions:

Temperature = 80°F
Relative Humidity = 40%
Pressure = 97.7 kPa

Ext Attn: 0 dB

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

#	Freq	Rdng	T1 T5 T9 T13	T2 T6 T10	T3 T7 T11	T4 T8 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	249.998M	56.9	+0.0 +0.1 +0.0 +0.0	+12.3 +0.0 +0.0	-29.0 +0.0 +0.0	+0.2 +0.0 +0.0	+0.0	40.5	46.0	-5.5	Vert
2	374.992M	53.8	+0.0 +0.2 +0.0 +0.0	+15.0 +0.0 +0.0	-29.6 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	39.7	46.0	-6.3	Horiz
3	499.985M	50.9	+0.0 +0.2 +0.0 +0.0	+17.7 +0.0 +0.0	-30.0 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	39.1	46.0	-6.9	Vert
4	374.988M	52.3	+0.0 +0.2 +0.0 +0.0	+15.0 +0.0 +0.0	-29.6 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	38.2	46.0	-7.8	Vert
5	1124.897M	51.9	+0.0 +0.0 +1.7 +0.0	+0.0 +0.5 -34.8	+0.0 +0.5 +24.7	+0.0 +0.4 +0.4	+0.0	45.3	54.0	-8.7	Vert
6	499.991M	49.1	+0.0 +0.2 +0.0 +0.0	+17.7 +0.0 +0.0	-30.0 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	37.3	46.0	-8.7	Horiz

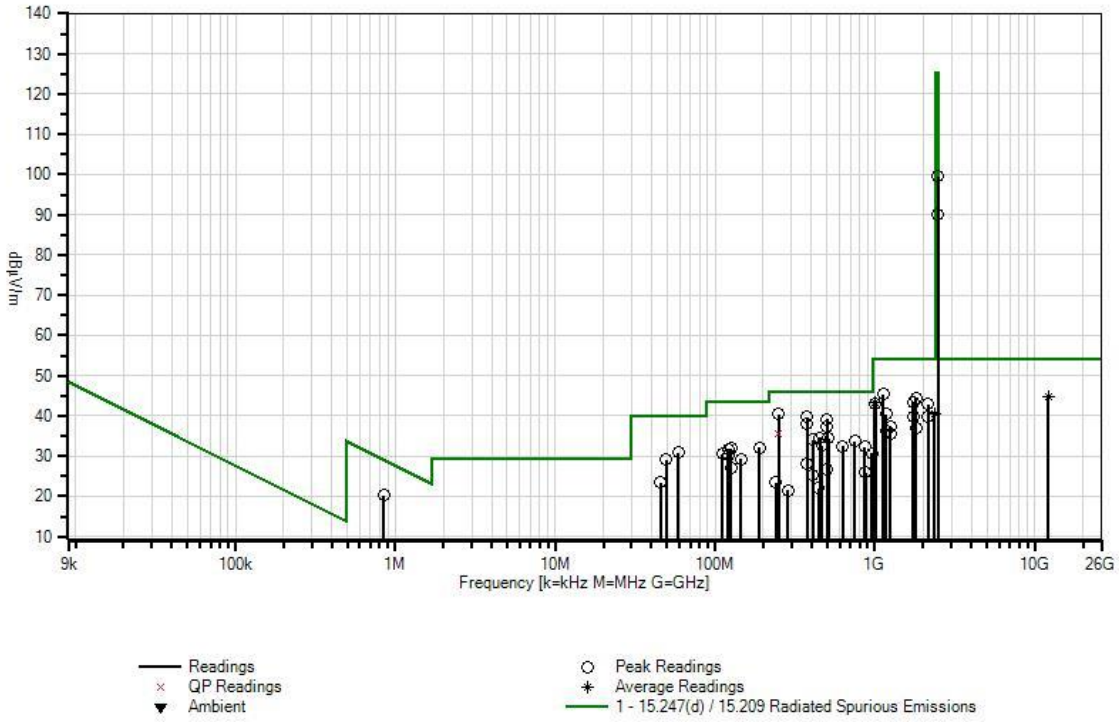
7	500.002M	49.0	+0.0 +0.2 +0.0 +0.0	+17.7 +0.0 +0.0	-30.0 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	37.2	46.0	-8.8	Horiz
8	843.200k	30.8	+0.0 +0.0 +0.0 +9.4	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	-20.0	20.2	29.1	-8.9	Horiz
9	12070.000 M Ave	26.4	+0.0 +0.0 +5.4 +0.0	+0.0 +1.7 -32.4	+0.0 +1.6 +38.9	+0.0 +2.0 +1.2	+0.0	44.8	54.0	-9.2	Vert
^	12070.000 M	37.3	+0.0 +0.0 +5.4 +0.0	+0.0 +1.7 -32.4	+0.0 +1.6 +38.9	+0.0 +2.0 +1.2	+0.0	55.7	54.0	+1.7	Vert
11	58.746M	53.8	+0.0 +0.0 +0.0 +0.0	+7.3 +0.0 +0.0	-30.4 +0.0 +0.0	+0.1 +0.0 +0.0	+0.0	30.8	40.0	-9.2	Vert
12	1796.470M	48.2	+0.0 +0.0 +2.1 +0.0	+0.0 +0.5 -33.3	+0.0 +0.6 +25.4	+0.0 +0.5 +0.5	+0.0	44.5	54.0	-9.5	Horiz
13	250.001M QP	51.9	+0.0 +0.1 +0.0 +0.0	+12.3 +0.0 +0.0	-29.0 +0.0 +0.0	+0.2 +0.0 +0.0	+0.0	35.5	46.0	-10.5	Horiz
^	250.002M	57.4	+0.0 +0.1 +0.0 +0.0	+12.3 +0.0 +0.0	-29.0 +0.0 +0.0	+0.2 +0.0 +0.0	+0.0	41.0	46.0	-5.0	Horiz
15	1732.560M	47.7	+0.0 +0.0 +2.1 +0.0	+0.0 +0.5 -33.4	+0.0 +0.6 +25.0	+0.0 +0.5 +0.5	+0.0	43.5	54.0	-10.5	Horiz
16	1000.003M Ave	50.3	+0.0 +0.0 +1.6 +0.0	+0.0 +0.4 -35.5	+0.0 +0.5 +25.3	+0.0 +0.4 +0.4	+0.0	43.4	54.0	-10.6	Vert
^	1000.025M	57.4	+0.0 +0.0 +1.6 +0.0	+0.0 +0.4 -35.5	+0.0 +0.5 +25.3	+0.0 +0.4 +0.4	+0.0	50.5	54.0	-3.5	Vert
18	49.381M	50.9	+0.0 +0.0 +0.0 +0.0	+8.7 +0.0 +0.0	-30.6 +0.0 +0.0	+0.1 +0.0 +0.0	+0.0	29.1	40.0	-10.9	Horiz
19	2146.600M	44.2	+0.0 +0.0 +2.1 +0.0	+0.0 +0.5 -32.9	+0.0 +0.7 +27.4	+0.0 +0.5 +0.5	+0.0	43.0	54.0	-11.0	Vert

20	1000.065M	49.9	+0.0 +0.0 +0.4 +0.5 +0.4 +1.6 -35.5 +25.3 +0.4 +0.0	+0.0	+0.0	+0.0	+0.0	43.0	54.0	-11.0	Horiz
21	454.065M	47.1	+0.0 +16.8 -29.9 +0.3 +0.2 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0	+0.0	+0.0	+0.0	+0.0	34.5	46.0	-11.5	Vert
22	189.415M	52.2	+0.0 +9.0 -29.5 +0.2 +0.1 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0	+0.0	+0.0	+0.0	+0.0	32.0	43.5	-11.5	Vert
23	510.125M	45.9	+0.0 +17.9 -30.0 +0.3 +0.3 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0	+0.0	+0.0	+0.0	+0.0	34.4	46.0	-11.6	Horiz
24	124.998M	51.1	+0.0 +10.7 -30.1 +0.1 +0.1 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0	+0.0	+0.0	+0.0	+0.0	31.9	43.5	-11.6	Vert
25	119.991M	50.8	+0.0 +10.7 -30.1 +0.1 +0.1 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0	+0.0	+0.0	+0.0	+0.0	31.6	43.5	-11.9	Vert
26	406.217M	47.5	+0.0 +15.7 -29.7 +0.3 +0.2 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0	+0.0	+0.0	+0.0	+0.0	34.0	46.0	-12.0	Vert
27	750.002M	42.7	+0.0 +20.0 -29.7 +0.4 +0.3 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0	+0.0	+0.0	+0.0	+0.0	33.7	46.0	-12.3	Vert
28	111.596M	49.9	+0.0 +10.5 -30.1 +0.1 +0.1 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0	+0.0	+0.0	+0.0	+0.0	30.5	43.5	-13.0	Horiz
29	119.988M	49.4	+0.0 +10.7 -30.1 +0.1 +0.1 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0	+0.0	+0.0	+0.0	+0.0	30.2	43.5	-13.3	Horiz
30	464.787M	45.0	+0.0 +17.0 -29.9 +0.3 +0.2 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0	+0.0	+0.0	+0.0	+0.0	32.6	46.0	-13.4	Horiz
31	2340.610M Ave	41.0	+0.0 +0.0 +0.5 +0.7 +0.5 +2.2 -33.0 +28.2 +0.5 +0.0	+0.0	+0.0	+0.0	+0.0	40.6	54.0	-13.4	Vert
^	2340.600M	50.2	+0.0 +0.0 +0.5 +0.7 +0.5 +2.2 -33.0 +28.2 +0.5 +0.0	+0.0	+0.0	+0.0	+0.0	49.8	54.0	-4.2	Vert

33	1176.000M	47.2	+0.0 +0.0 +1.7 +0.0	+0.0 +0.5 -34.7	+0.0 +0.5 +24.5	+0.0 +0.4 +0.4	+0.0	40.5	54.0	-13.5	Vert
34	624.999M	42.7	+0.0 +0.3 +0.0 +0.0	+19.2 +0.0 +0.0	-30.0 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	32.5	46.0	-13.5	Vert
35	860.861M	40.7	+0.0 +0.4 +0.0 +0.0	+20.1 +0.0 +0.0	-29.3 +0.0 +0.0	+0.4 +0.0 +0.0	+0.0	32.3	46.0	-13.7	Horiz
36	1732.525M	44.1	+0.0 +0.0 +2.1 +0.0	+0.0 +0.5 -33.4	+0.0 +0.6 +25.0	+0.0 +0.5 +0.5	+0.0	39.9	54.0	-14.1	Vert
37	145.427M	47.3	+0.0 +0.1 +0.0 +0.0	+11.6 +0.0 +0.0	-29.9 +0.0 +0.0	+0.2 +0.0 +0.0	+0.0	29.3	43.5	-14.2	Vert
38	2146.555M	40.9	+0.0 +0.0 +2.1 +0.0	+0.0 +0.5 -32.9	+0.0 +0.7 +27.4	+0.0 +0.5 +0.5	+0.0	39.7	54.0	-14.3	Horiz
39	952.313M	38.2	+0.0 +0.4 +0.0 +0.0	+20.8 +0.0 +0.0	-29.1 +0.0 +0.0	+0.4 +0.0 +0.0	+0.0	30.7	46.0	-15.3	Vert
40	124.998M	46.4	+0.0 +0.1 +0.0 +0.0	+10.7 +0.0 +0.0	-30.1 +0.0 +0.0	+0.1 +0.0 +0.0	+0.0	27.2	43.5	-16.3	Horiz
41	45.715M	43.5	+0.0 +0.0 +0.0 +0.0	+10.4 +0.0 +0.0	-30.6 +0.0 +0.0	+0.1 +0.0 +0.0	+0.0	23.4	40.0	-16.6	Horiz
42	1249.925M	44.0	+0.0 +0.0 +1.8 +0.0	+0.0 +0.5 -34.4	+0.0 +0.5 +24.1	+0.0 +0.4 +0.4	+0.0	37.3	54.0	-16.7	Vert
43	1797.500M	40.7	+0.0 +0.0 +2.1 +0.0	+0.0 +0.5 -33.3	+0.0 +0.6 +25.4	+0.0 +0.5 +0.5	+0.0	37.0	54.0	-17.0	Vert
44	375.015M	42.3	+0.0 +0.2 +0.0 +0.0	+15.0 +0.0 +0.0	-29.6 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	28.2	46.0	-17.8	Vert
45	1176.010M	42.9	+0.0 +0.0 +1.7 +0.0	+0.0 +0.5 -34.7	+0.0 +0.5 +24.5	+0.0 +0.4 +0.4	+0.0	36.2	54.0	-17.8	Horiz

46	1249.985M	42.3	+0.0 +0.0 +1.8 +0.0	+0.0 +0.5 -34.4	+0.0 +0.5 +24.1	+0.0 +0.4 +0.4	+0.0	35.6	54.0	-18.4	Horiz
47	499.992M	38.6	+0.0 +0.2 +0.0 +0.0	+17.7 +0.0 +0.0	-30.0 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	26.8	46.0	-19.2	Vert
48	875.002M	34.2	+0.0 +0.4 +0.0 +0.0	+20.0 +0.0 +0.0	-29.2 +0.0 +0.0	+0.4 +0.0 +0.0	+0.0	25.8	46.0	-20.2	Vert
49	406.217M	38.9	+0.0 +0.2 +0.0 +0.0	+15.7 +0.0 +0.0	-29.7 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	25.4	46.0	-20.6	Horiz
50	240.012M	40.5	+0.0 +0.1 +0.0 +0.0	+11.6 +0.0 +0.0	-29.1 +0.0 +0.0	+0.2 +0.0 +0.0	+0.0	23.3	46.0	-22.7	Horiz
51	444.698M	34.8	+0.0 +0.2 +0.0 +0.0	+16.6 +0.0 +0.0	-29.9 +0.0 +0.0	+0.3 +0.0 +0.0	+0.0	22.0	46.0	-24.0	Vert
52	284.115M	37.3	+0.0 +0.2 +0.0 +0.0	+12.8 +0.0 +0.0	-29.1 +0.0 +0.0	+0.2 +0.0 +0.0	+0.0	21.4	46.0	-24.6	Vert
53	2480.449M	99.1	+0.0 +0.0 +2.3 +0.0	+0.0 +0.6 -32.9	+0.0 +0.7 +28.7	+0.0 +0.5 +0.5	+0.0	99.5	125.2 Fundamental- 2480MHz	-25.7	Horiz
54	2479.388M	89.8	+0.0 +0.0 +2.3 +0.0	+0.0 +0.6 -32.9	+0.0 +0.7 +28.7	+0.0 +0.5 +0.5	+0.0	90.2	125.2 Fundamental-2480 MHz	-35.0	Vert

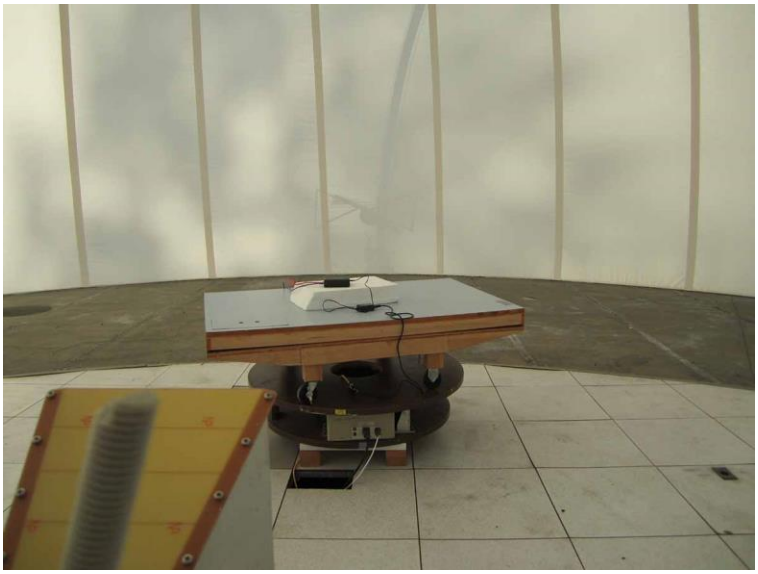
CKC Laboratories, Inc. Date: 10/31/2013 Time: 16:00:50 SynapSense WO#: 94614
15.247(d) / 15.209 Radiated Spurious Emissions Test Distance: 3 Meters Sequence#: 3 Ext ATTN: 0 dB



Test Setup Photos

Low Frequency

Middle Frequency



High Frequency

15.247(b) Band Edge

Test Data

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

Customer: **SynapSense**
Specification: **15.247(b) Power Output (2400-2483.5 MHz DTS)**
Work Order #: **94614** Date: 10/22/2013
Test Type: **Maximized Emissions** Time: 14:11:26
Equipment: **Intelligent Gateway** Sequence#: 4
Manufacturer: SynapSense Corporation Tested By: Chuck Kendall
Model: 1156
S/N: 14

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02660	Spectrum Analyzer	E4446A	8/23/2012	8/23/2014
T1	AN03358	Cable	32022-2-29094K-36TC	2/7/2013	2/7/2015
T2	AN03360	Cable	32022-2-29094-36TC	2/4/2013	2/4/2015
T3	AN03355	Cable	32026-2-29094K-48TC	2/7/2013	2/7/2015
T4	ANP05904	Cable	32022-2-29094K-144TC	2/15/2013	2/15/2015
T5	AN03155	Preamp	83017A	6/26/2013	6/26/2015
T6	AN00327	Horn Antenna	3115	4/13/2012	4/13/2014
T7	AN3011	Cable		2/4/2013	2/4/2015

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

Function	Manufacturer	Model #	S/N
Intelligent Gateway*	SynapSense Corporation	1156	14
Power Supply	Condor	SA-54A0IV	None

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Lenovo	8744	63-BZ456 07/06
Laptop Computer	Lenovo	7650	63-P621B 08/02

Test Conditions / Notes:

EUT is set up atop some insulation some 80 cm off the ground plane. A power brick is furnishing 5 VDC to the EUT. There are two Ethernet cables attached which go to separate lap top computers. Pinging with 1400 byte packets of data. The USB interface port is just for manufacturing and service only. There is no cable attached to this port. Power cord to the power supply is greater than 80cm.

Frequencies of interest are: 2400 - 2483.5 MHz
From 2400tMHz to 2483.5MHz - RBW =30/100kHz; VBW = 300kHz
Freq Span: 12MHz.

Transmitter is set to 2405, 2445, & 2480MHz.

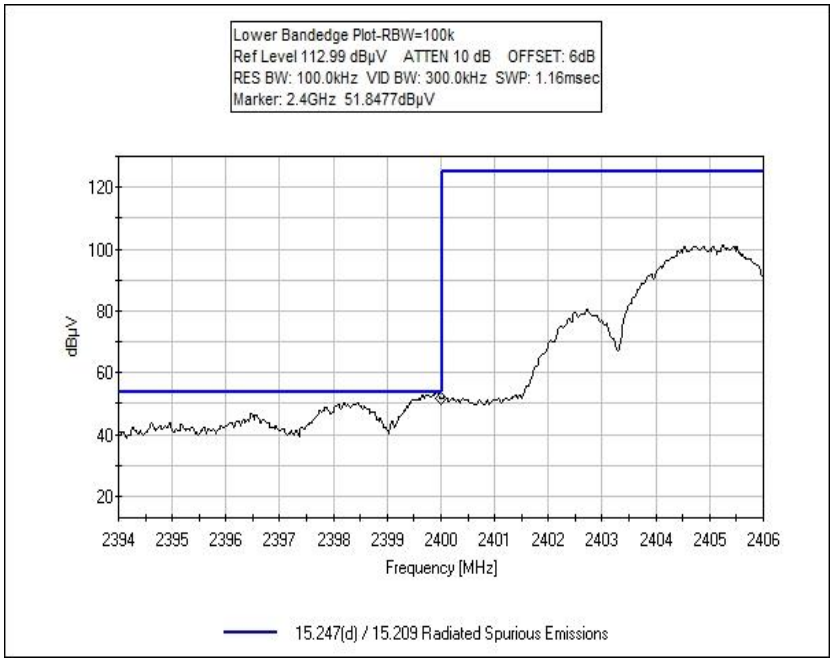
Environmental conditions:
Temperature = 80°F
Relative Humidity = 40%
Pressure = 97.7 kPa

Ext Attn: 0 dB

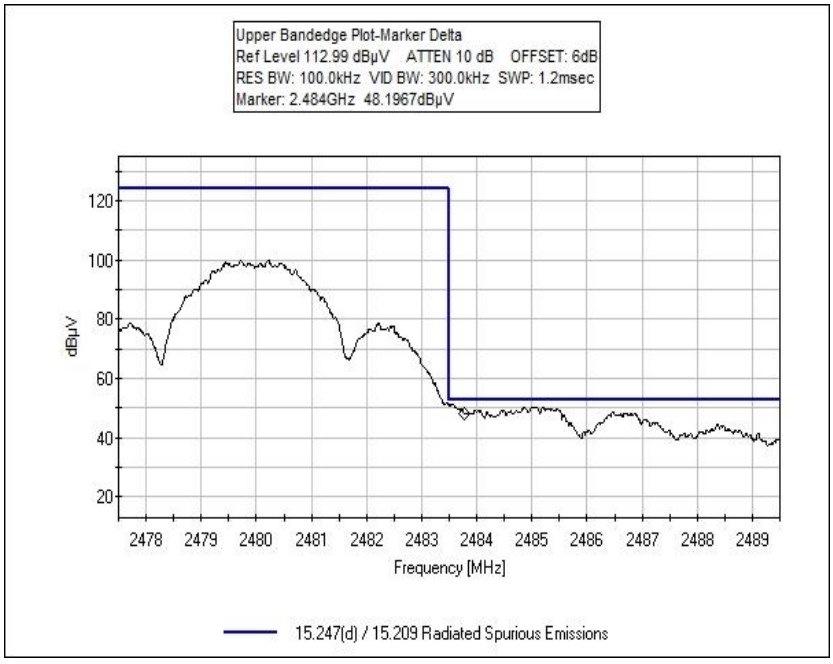
Measurement Data: Reading listed by order taken. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3 T7	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	2405.002M	90.0	+0.5 -32.9	+0.7 +28.4	+0.5 +0.5	+2.2	+9.5	99.4	137.0 Fundamental-2405 MHz	-37.6	Vert
2	2444.510M	89.7	+0.6 -32.9	+0.7 +28.6	+0.5 +0.5	+2.2	+9.5	99.4	137.0 Fundamental-2445MHz	-37.6	Vert
3	2479.388M	89.8	+0.6 -32.9	+0.7 +28.7	+0.5 +0.5	+2.3	+9.5	99.7	137.0 Fundamental-2480 MHz	-37.3	Vert
4	2479.564M	97.3	+0.6 -32.9	+0.7 +28.7	+0.5 +0.5	+2.3	+9.5	107.2	137.0	-29.8	Horiz
5	2404.978M	97.8	+0.5 -32.9	+0.7 +28.4	+0.5 +0.5	+2.2	+9.5	107.2	137.0	-29.8	Horiz
6	2444.916M	98.4	+0.6 -32.9	+0.7 +28.6	+0.5 +0.5	+2.2	+9.5	108.1	137.0	-28.9	Horiz

Test Plots

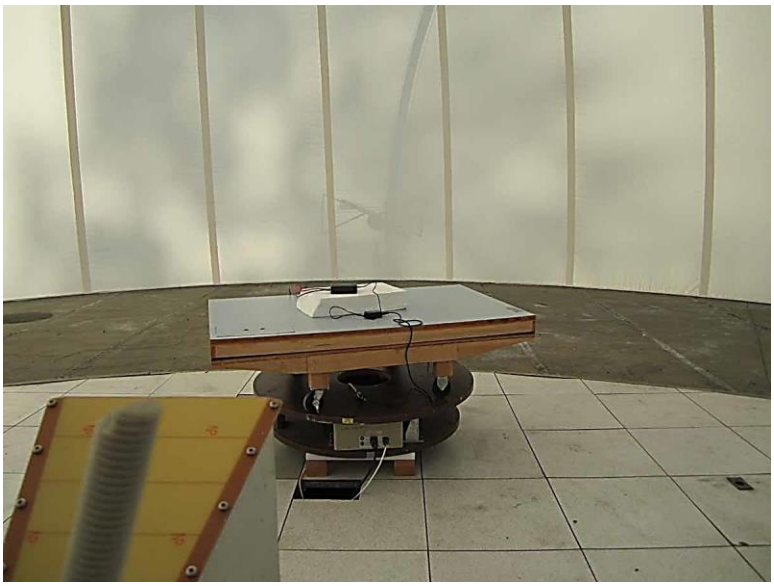


Lower Band Edge Plot



Upper Band Edge Plot

Test Setup Photo



15.247(e) Peak Power Spectral Density

Test Data

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

Customer: **SynapSense**
Specification: **15.247(e) Peak Power Spectral Density (2400-2483.5 MHz DTS)**
Work Order #: **94614** Date: 10/29/2013
Test Type: **Maximized Emissions** Time: 14:40:24
Equipment: **Intelligent Gateway** Sequence#: 5
Manufacturer: SynapSense Corporation Tested By: Chuck Kendall
Model: 1156
S/N: 14

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02660	Spectrum Analyzer	E4446A	8/23/2012	8/23/2014
T1	AN03358	Cable	32022-2-29094K-36TC	2/7/2013	2/7/2015
T2	AN03360	Cable	32022-2-29094-36TC	2/4/2013	2/4/2015
T3	AN03355	Cable	32026-2-29094K-48TC	2/7/2013	2/7/2015
T4	ANP05904	Cable	32022-2-29094K-144TC	2/15/2013	2/15/2015
T5	AN03155	Preamp	83017A	6/26/2013	6/26/2015
T6	AN00327	Horn Antenna	3115	4/13/2012	4/13/2014
T7	AN3011	Cable		2/4/2013	2/4/2015

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

Function	Manufacturer	Model #	S/N
Intelligent Gateway*	SynapSense Corporation	1156	14
Power Supply	Condor	SA-54A0IV	None

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Lenovo	8744	63-BZ456 07/06
Laptop Computer	Lenovo	7650	63-P621B 08/02

Test Conditions / Notes:

EUT is set up atop some insulation some 80 cm off the ground plane. A power brick is furnishing 5 VDC to the EUT. There are two Ethernet cables attached which go to separate lap top computers. Pinging with 1400 byte packets of data. The USB interface port is just for manufacturing and service only. There is no cable attached to this port. Power cord to the power supply is greater than 80cm.

Frequencies of interest are: 2400 - 2483.5 MHz
From 2400MHz to 2483.5 MHz - RBW =30 kHz; VBW = 6MHz
Freq Span: 2.460 to 2.525 MHz.

Ant Gain = 3.3dBi

PSD Plots are uncorrected. Corrected readings in the tables were used in calculating the PSD with the following formula:
PSD = $p_t \cdot g_t = (E \cdot d)^2 / 30$
where
p_t is the transmitter output power in watts
g_t is the numeric gain of the transmitting antenna (dimensionless)
E is the electric field strength in V/m
d is the measurement distance in meters (m)

Transmitter is set to 2405, 2445, & 2480MHz.

Testing IAW KDB 558074 and ANSI C63.10.

Frequency in MHz	PSD measured in dBm	Limit in dBm	Pass or Fail
2405	-6.829	8	Pass
2445	-7.029	8	Pass
2480	-8.029	8	Pass

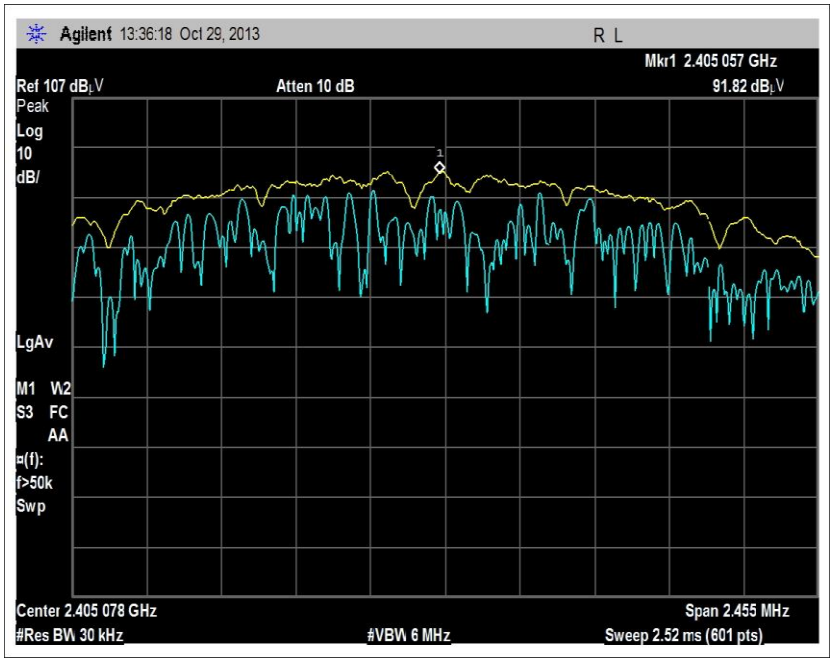
Environmental conditions:
Temperature = 80°F
Relative Humidity = 40%
Pressure = 97.7 kPa

Ext Attn: 0 dB

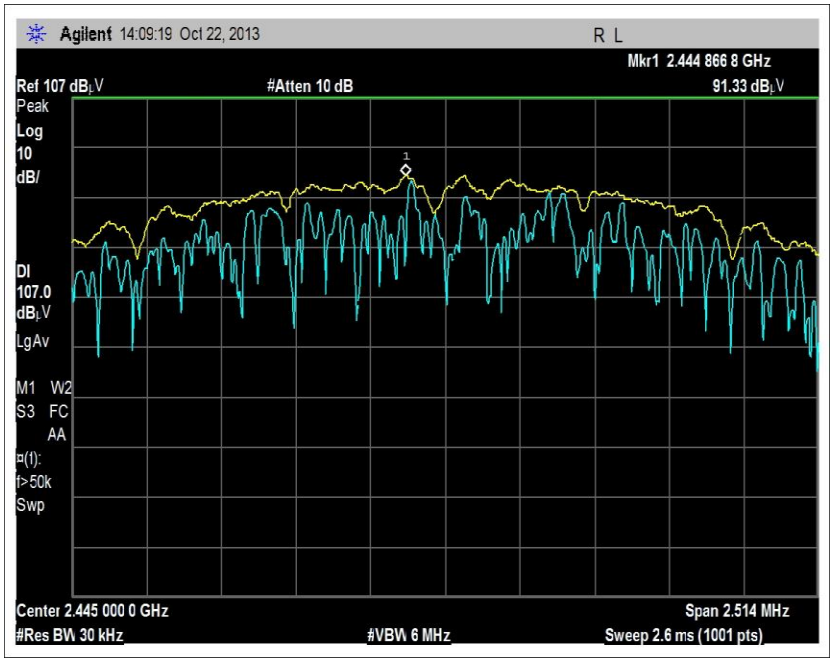
Measurement Data: Reading listed by frequency. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3 T7	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV	dBµV	dB	Ant
1	2405.057M	91.8	+0.5 -32.9	+0.7 +28.4	+0.5 +0.5	+2.2		91.7	115.0		Horiz
2	2444.867M	91.3	+0.6 -32.9	+0.7 +28.6	+0.5 +0.5	+2.2		91.5	115.0		Horiz
3	2480.062M	90.1	+0.6 -32.9	+0.7 +28.7	+0.5 +0.5	+2.3		90.5	115.0		Horiz

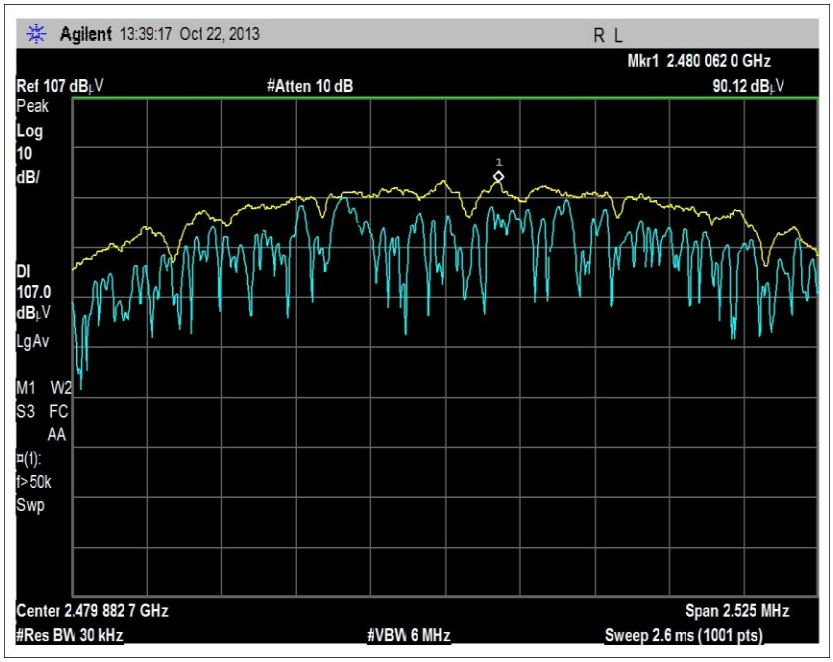
Test Plots



2405MHz

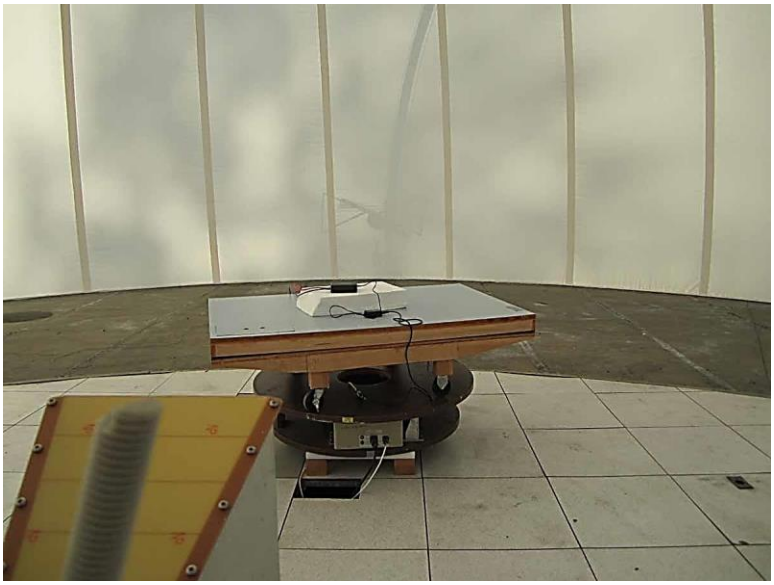


2445MHz



2480MHz

Test Setup Photo



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

Unless otherwise indicated, the following configuration parameters are used for equipment setup: 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. Unless otherwise specified, 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	9 kHz	150 kHz	200 Hz
RADIATED 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 "positive peak" detector mode. Whenever a "quasi-peak" or "average" reading was recorded, the measurement was annotated with a "QP" or an "Ave" on the appropriate rows of the data sheets. In cases where quasi-peak or average limits were employed and data exists for multiple measurement types for the same frequency then the peak measurement was retained in the report for reference, however the numbering for the affected row was removed and an arrow or carrot ("^") was placed in the far left-hand column indicating that the row above takes precedence for comparison to the limit. 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 or receiver recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature called "peak hold," the measurement device had the ability to measure intermittent 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

Quasi-peak measurements were taken using the quasi-peak detector when the true peak values exceeded or were within 2 dB of a quasi-peak specification limit. Additional QP measurements may have been taken at the discretion of the operator.

Average

Average measurements were taken using the average detector when the true peak values exceeded or were within 2 dB of an average specification limit. Additional average measurements may have been taken at the discretion of the operator. If the specification or test procedure requires trace averaging, then the averaging was performed using 100 samples or as required by the specification. All other average measurements are performed using video bandwidth averaging. 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.