



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## Code of Federal Regulations 47 Part 15 – Radio Frequency Devices

### Subpart C – Intentional Radiators

#### Section 15.247

Operation within the bands 902 - 928 MHz,  
2400 - 2483.5 MHz, 5725 - 5875 MHz,  
and 24.0 - 24.25 GHz.

THE FOLLOWING MEETS THE ABOVE TEST SPECIFICATION

Formal Name: 3 Series Smart Switch

Kind of Equipment: Wireless Switch

Frequency Range: 2405-2480 MHz

Test Configuration: Tabletop

Model Number(s): 3130

Model(s) Tested: 3130 (prototype)  
- nicknamed Honolulu on data sheets

Serial Number(s): SN1

Date of Tests: June 25th through June 27th, 2014

Test Conducted For: CentraLite Systems, Inc.  
1000 Cody Road South STE-A  
Mobile, AL 36695, USA

**NOTICE:** "This test report relates only to the items tested and must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government". Please see the "Description of Test Sample" page listed inside of this report.

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166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## SIGNATURE PAGE

Tested By:

A handwritten signature in black ink that reads 'Craig Brandt'.

Craig Brandt  
Test Engineer

Reviewed By:

A handwritten signature in black ink that reads 'William Stumpf'.

William Stumpf  
OATS Manager

Approved By:

A handwritten signature in black ink that reads 'Brian J. Mattson'.

Brian Mattson  
General Manager



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## Table of Contents

i.	Cover Page .....	1
ii.	Signature Page .....	2
iii.	Table of Contents .....	3
iv.	NVLAP Certificate of Accreditation .....	4
1.0	Summary of Test Report .....	5
2.0	Introduction .....	6
3.0	Test Facilities .....	6
4.0	Description of Test Sample .....	6
5.0	Test Equipment .....	8
6.0	Test Arrangements .....	9
7.0	Test Conditions .....	9
8.0	Modifications Made To EUT For Compliance .....	10
9.0	Additional Descriptions .....	10
10.0	Results .....	10
11.0	Conclusion .....	10
	Appendix A – Test Photos .....	11
	Appendix B – Measurement Data .....	17
1.0	Duty Cycle of Test Unit .....	17
2.0	DTS Bandwidth .....	19
3.0	Fundamental Emission Output Power .....	23
4.0	Maximum Power Spectral Density (PSD) .....	27
5.0	Emissions in Non-Restricted Frequency Bands - RF Conducted .....	31
6.0	Emissions in Restricted Frequency Bands – Radiated .....	47
7.0	Band-Edge Measurements – RF Conducted .....	61
8.0	Band-Edge Measurements – Radiated .....	65
8.0a	- Channel 26 .....	66
8.0b	- Channel 25 .....	70



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

United States Department of Commerce  
National Institute of Standards and Technology



## Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 100276-0

D.L.S. Electronic Systems, Inc.  
Wheeling, IL

is accredited by the National Voluntary Laboratory Accreditation Program for specific services,  
listed on the Scope of Accreditation, for:

### ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.  
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality  
management system (refer to joint ISO/ILAC-IAF Communique dated January 2009).



2013-10-01 through 2014-09-30  
Effective dates

For the National Institute of Standards and Technology

NVLAP-01C (REV. 2005-01-28)



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## 1.0 Summary of Test Report

It was determined that the CentraLite Systems, Inc. 3 Series Smart Switch, Model 3130, complies with the requirements of CFR 47 Part 15 Subpart C Section 15.247.

### Subpart C Section 15.247 Applicable Technical Requirements Tested:

Section	Description	Procedure	Note	Compliant?
15.35(c)	Duty Cycle	558074 D01 DTS Meas Guidance v03r02 Section 6.0(b) & ANSI C63.10-2009	1	N/A
15.247(a)(2)	DTS Bandwidth (6 dB bandwidth)	558074 D01 DTS Meas Guidance v03r02 Section 8.1	2	Yes
15.247(b)(3)	Fundamental Emission Output Power	558074 D01 DTS Meas Guidance v03r02 Sections 9.1 & 9.1.1	2	Yes
15.247(e)	Maximum Power Spectral Density	558074 D01 DTS Meas Guidance v03r02 Sections 10.0 & 10.2	2	Yes
15.247(d)	Emissions in Non- Restricted Frequency Bands - RF Conducted	558074 D01 DTS Meas Guidance v03r02 Sections 11.1(a), 11.2 & 11.3	2	Yes
15.247(d) 15.205(a) 15.209(a)	Emissions in Restricted Frequency Bands - Radiated	558074 D01 DTS Meas Guidance v03r02 Section 12.1 & ANSI C63.10-2009	3	Yes
15.247(d)	Band-Edge Measurements - RF Conducted	558074 D01 DTS Meas Guidance v03r02 Sections 11.1(a), 11.2 & 11.3	2	Yes
15.247(d) 15.205(a) 15.209(a)	Band-Edge Measurements - Radiated	558074 D01 DTS Meas Guidance v03r02 Sections 12.1, 13.0, 13.3 & 13.3.1 & ANSI C63.10-2009	3	Yes

Note 1: Informative

Note 2: RF conducted measurement.

Note 3: Radiated emission measurement.



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## 2.0 Introduction

In June, 2014 the 3 Series Smart Switch, Model 3130, as provided from CentraLite Systems, Inc. was tested to the requirements of CFR 47 Part 15 Subpart C Section 15.247. To meet these requirements, the procedures contained within this report were performed by personnel of D.L.S Electronic Systems, Inc.

## 3.0 Test Facilities

D.L.S. Electronic Systems, Inc. is a full service EMC/Safety Testing Laboratory accredited to ISO 17025. NVLAP Certificate and Scope can be viewed at <http://www.dlsemc.com/certificate>. Our facilities are registered with the FCC, Industry Canada, and VCCI.

### Wisconsin Test Facility:

D.L.S. Electronic Systems, Inc.  
166 S. Carter Street  
Genoa City, Wisconsin 53128

### Wheeling Test Facility:

D.L.S. Electronic Systems, Inc.  
1250 Peterson Drive  
Wheeling, IL 60090

## 4.0 Description of Test Sample

### Description:

The device consists of two momentary push buttons connected to the GPIO of a MCU. When one of the buttons are pressed, a message can be transmitted wirelessly to some other device or end node.

### Type of Equipment / Frequency Range:

Portable wireless switch / 2405-2480 MHz

### Physical Dimensions of Equipment Under Test:

4 inch x 2 inch x 1 inch



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

#### 4.0 Description of Test Sample (continued)

##### Power Source:

3VDC (Lab DC bench power supply used for testing)

##### Internal Frequencies:

24 MHz

##### Transmit / Receive Frequencies Used For Test Purpose:

Low channel: 2405 MHz  
Middle channel: 2440 MHz  
High channel: 2480 MHz

##### Type of Modulation(s) / Antenna Type:

O-QPSK (802.15.4) / PCB Trace Antenna

##### Description of Circuit Board(s) / Part Number:

PCB	0016-00-01-04-00-001 Rev X1
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166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
 Model Tested: 3130  
 Report Number: 20178  
 DLS Project: 6685

## 5.0 Test Equipment

A list of the equipment used can be found in the table below. All primary equipment was calibrated against known reference standards with a verified traceable path to NIST.

### D.L.S. Wisconsin - G1

#### 30 – 1000 MHz

Description	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Date	Cal Due Dates
Receiver	Rohde & Schwarz	ESI 26	835336/003	20 Hz – 26.5 GHz	3-13-14	3-13-15
Low Pass Filter	Mini-Circuits	VLFX-1125	R UU92600920	DC - 1 GHz	8-13-13	8-13-14
Preamplifier	Rohde & Schwarz	TS-PR10	032001/004	9 kHz – 1 GHz	1-4-14	1-4-15
Antenna	EMCO	3104C	00054892	20 MHz – 200 MHz	9-13-12	9-13-14
Antenna	EMCO	3146	1205	200 MHz – 1 GHz	9-19-12	9-19-14
Test Software	Rohde & Schwarz	ESK-1	V1.7.1	N/A	N/A	N/A

#### Additional if 1-18 GHz

Description	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Date	Cal Due Dates
Spectrum Analyzer	Agilent	E4446A	MY48250278	3 Hz - 44 GHz	9-25-13	9-25-14
Receiver	Rohde & Schwarz	ESI 40	837808/005	20 Hz – 40 GHz	7-23-13	7-23-14
High Pass Filter	Q Microwave	100462	2	4.2 -18 GHz	6-24-14	6-24-15
Preamp	Ciao	CA118-4010	101	1GHz-18GHz	2-14-14	2-14-15
Horn Antenna	EMCO	3115	6204	1-18GHz	6-5-13	6-5-15
Test Software	Rohde & Schwarz	ESK-1	V1.7.1	N/A	N/A	N/A

#### Additional if 18-26 GHz

Description	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Date	Cal Due Dates
Receiver	Rohde & Schwarz	ESI 26	835336/003	20 Hz – 26.5 GHz	3-13-14	3-13-15
High Pass Filter	K & L	11SH10-18000/T40000-K-K	8	18 - 40 GHz	3-6-14	3-6-15
Preamp	Miteq	AMF-8B-180265-40-10P-H/S	438727	18GHz-26GHz	8-13-13	8-13-14
Horn Antenna	ETS Lindgren	3116	00062917	18 – 40GHz	8-15-13	8-15-15
Test Software	Rohde & Schwarz	ESK-1	V1.7.1	N/A	N/A	N/A



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## 6.0 Test Arrangements

### Radiated Emissions Measurement Arrangement:

All radiated emission measurements were performed at D.L.S. Electronic Systems, Inc. and set up according to FCC KDB 558074 D01 DTS Meas Guidance v03r02, ANSI C63.4-2009 and ANSI C63.10-2009, unless otherwise noted. Description of procedures and measurements can be found in Appendix B – Measurement Data. See Appendix A for additional photos of the test set up.

Unless otherwise noted, the bandwidth of the measuring receiver / analyzer used during testing is shown below.

Frequency Range	Bandwidth (-6 dB)
10 to 150 kHz	200 Hz
150 kHz to 30 MHz	9 kHz
30 MHz to 1 GHz	120 kHz
Above 1 GHz	1 MHz

### RF Conducted Emissions Measurement Arrangement:

All RF conducted emission measurements were performed at D.L.S. Electronic Systems, Inc. and set up according to FCC KDB 558074 D01 DTS Meas Guidance v03r02, ANSI C63.4-2009 and ANSI C63.10-2009, unless otherwise noted. Description of procedures and measurements can be found in Appendix B – Measurement Data. See Appendix A for additional photos of the test set up.

## 7.0 Test Conditions

### Normal Test Conditions:

### Temperature and Humidity:

68°F at 62% RH or noted on test data

### Supply Voltage:

3VDC



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## 8.0 Modifications Made To EUT For Compliance

The output power setting on channel 26 was changed from 8 to -3 to meet the radiated band-edge requirement at the 2.4835 GHz restricted band edge.

## 9.0 Additional Descriptions

The EUT was connected to the measuring equipment through a temporary SMA connector, soldered in place of the antenna, for RF conducted measurements.

The EUT was powered with an external DC bench supply.

The EUT was tested stand-alone.

The EUT was programmed to transmit continuously at Low, Mid, and High channels.

The EUT was rotated through 2 orthogonal axis (upright or laying down) to find worst-case. (This represents actual usage.)

## 10.0 Results

Measurements were performed in accordance with FCC KDB 558074 D01 DTS Meas Guidance v03r02 and ANSI C63.10-2009. Graphical and tabular data can be found in Appendix B at the end of this report.

## 11.0 Conclusion

The 3 Series Smart Switch, Model 3130, as provided from CentraLite Systems, Inc., tested in June, 2014 **meets** the requirements of CFR 47 Part 15 Subpart C Section 15.247.



166 South Carter, Genoa City, WI 53128

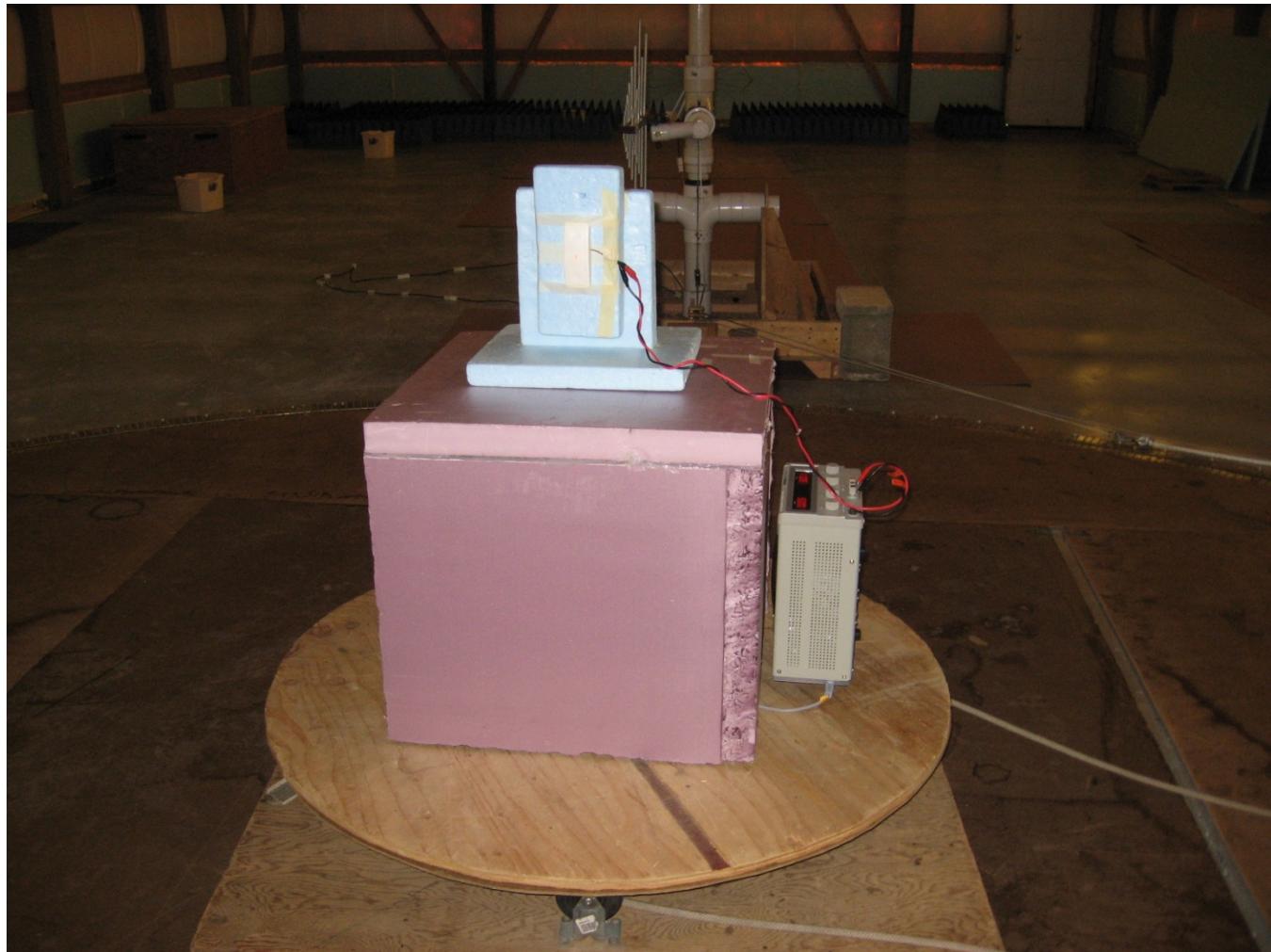
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Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## Appendix A – Test Photos

### Photo Information and Test Setup:

Item0: 3 Series Smart Switch, Model 3130  
Item1: DC Power cable to DC bench supply, 1.4 meter long

### Radiated Emissions below 1 GHz – Position 1





166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## Appendix A

### Radiated Emissions below 1 GHz – Position 2



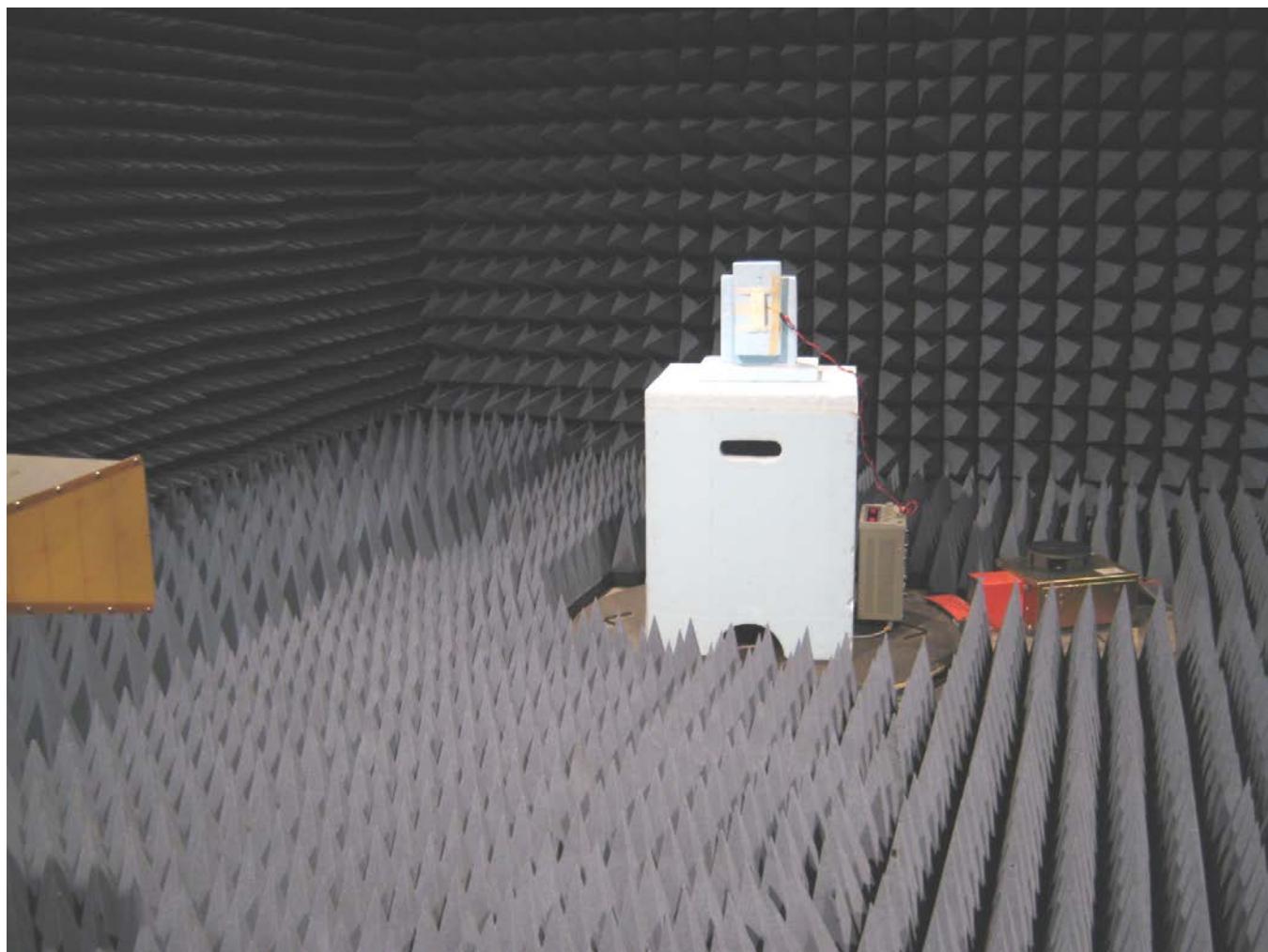


166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## Appendix A

### Radiated Emissions above 1 GHz



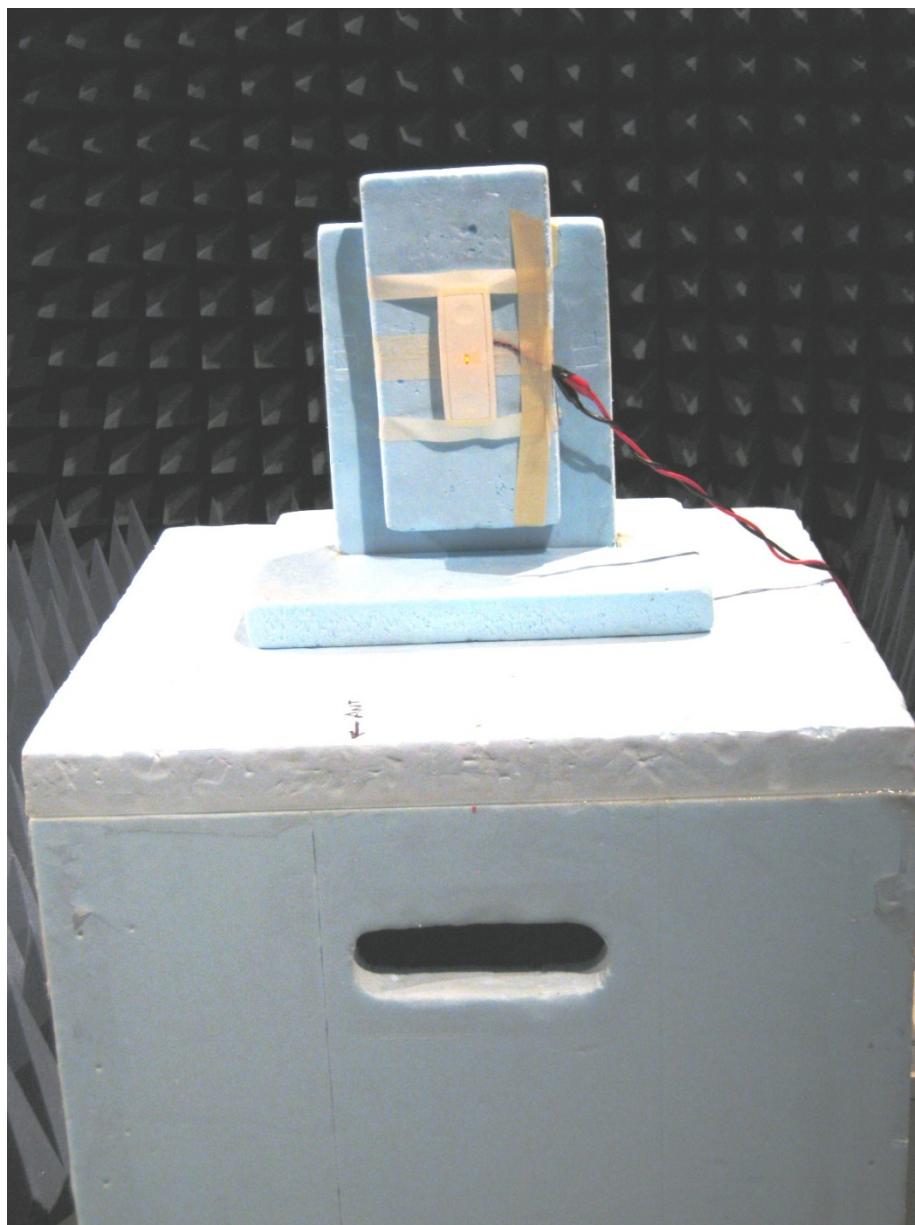


166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## Appendix A

### Radiated Emissions above 1 GHz – Position 1



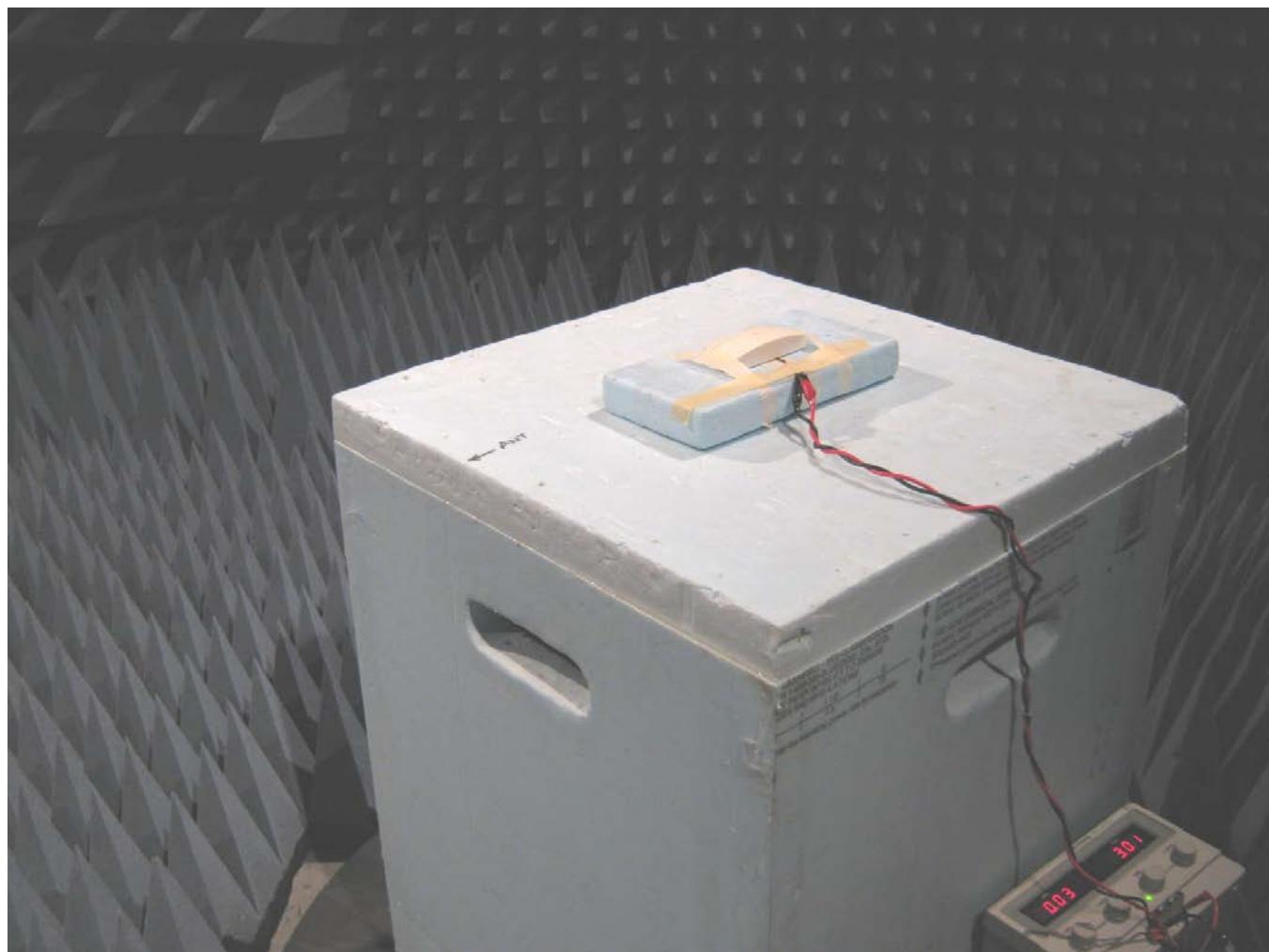


166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## Appendix A

### Radiated Emissions above 1 GHz – Position 2



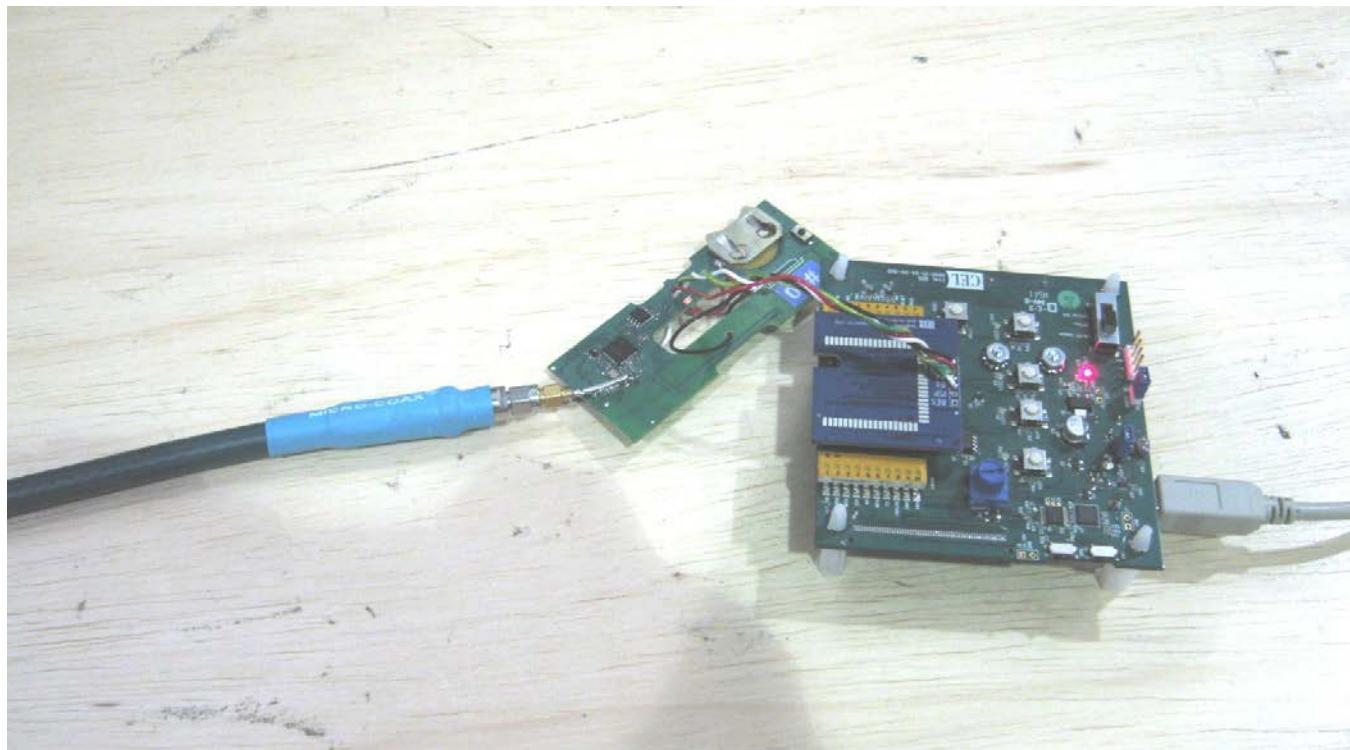


166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## Appendix A

### RF Conducted





166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## Appendix B – Measurement Data

### 1.0 Duty Cycle of Test Unit

**Rule Part:** FCC Section 15.35(c)

**Test Procedure:** ANSI C63.10-2009  
KDB 558074 D01 DTS Meas Guidance v03r02, section 6.0(b)

**Limits:** Informative

**Results:** EUT is continuously transmitting (duty cycle = 100%).

**Sample Equations:** None

**Notes:** No duty cycle correction factor was applied to measurements for this device.

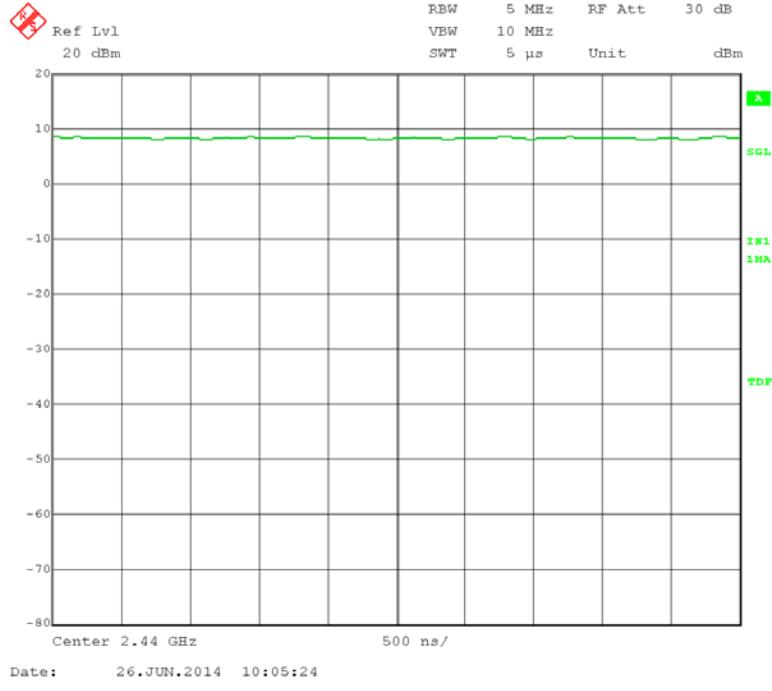
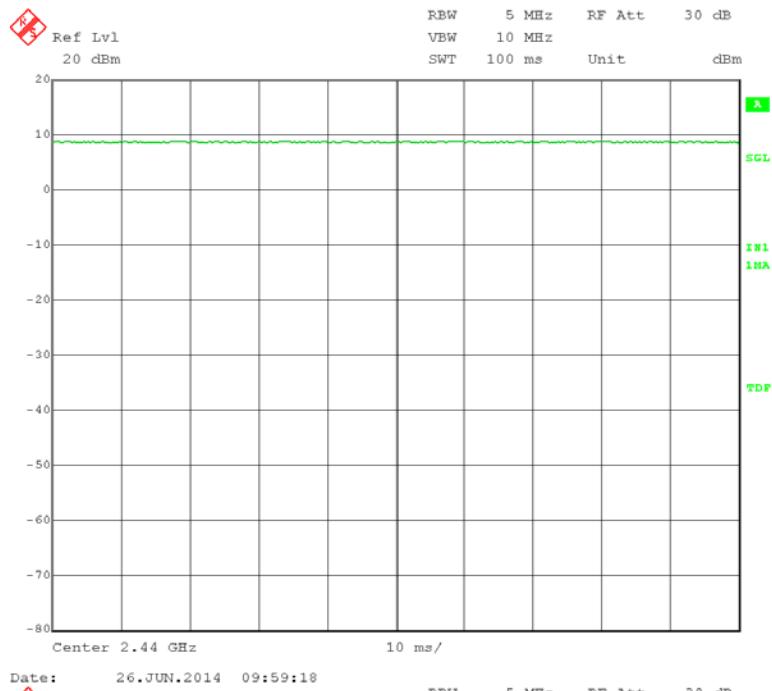


166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Duty Cycle of test unit  
Operator: Craig B

Comment: Total ON time in 100 ms = 100 ms; Duty cycle = 100%





166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## Appendix B

### 2.0 DTS Bandwidth

#### Rule Part:

Section 15.247(a)(2)

#### Test Procedure:

KDB 558074 D01 DTS Meas Guidance v03r02, section 8.1

#### Limit:

6 dB bandwidth shall be at least 500 kHz

#### Results:

Compliant  
Minimum 6 dB bandwidth: **1.62 MHz**

#### Notes:

This was an RF conducted measurement. The EUT was connected to the measuring equipment through an SMA connector soldered in place of the antenna. Cable loss and attenuation was accounted for in the transducer factors set in the analyzer.

The EUT was powered through a cable that was connected to the bench supply set to 3.0 VDC. The EUT was set to transmit continuously at its maximum power (power setting 8), with a modulating signal representative of the worst-case signal encountered in a real system operation on the low, middle, and high channels of the operating band.



166 South Carter, Genoa City, WI 53128

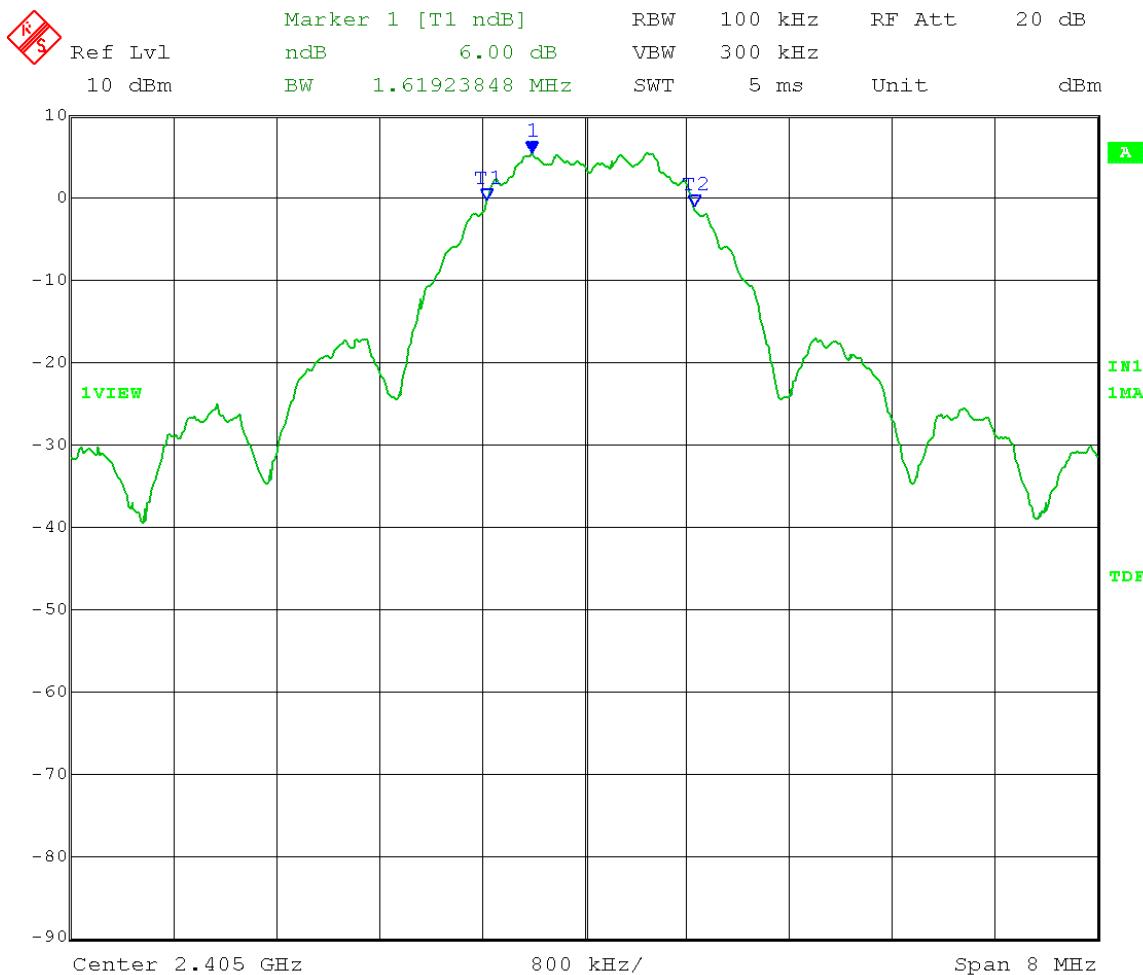
Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: DTS Emission Bandwidth (6 dB) - Conducted  
Operator: Craig B

Comment: RBW = 100 kHz  
VBW = 300 kHz  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

Comment: **Low Channel: Frequency – 2.405 GHz**  
Output power setting: 8

6 dB Emission Bandwidth = 1.62 MHz



Date: 26.JUN.2014 09:12:37



166 South Carter, Genoa City, WI 53128

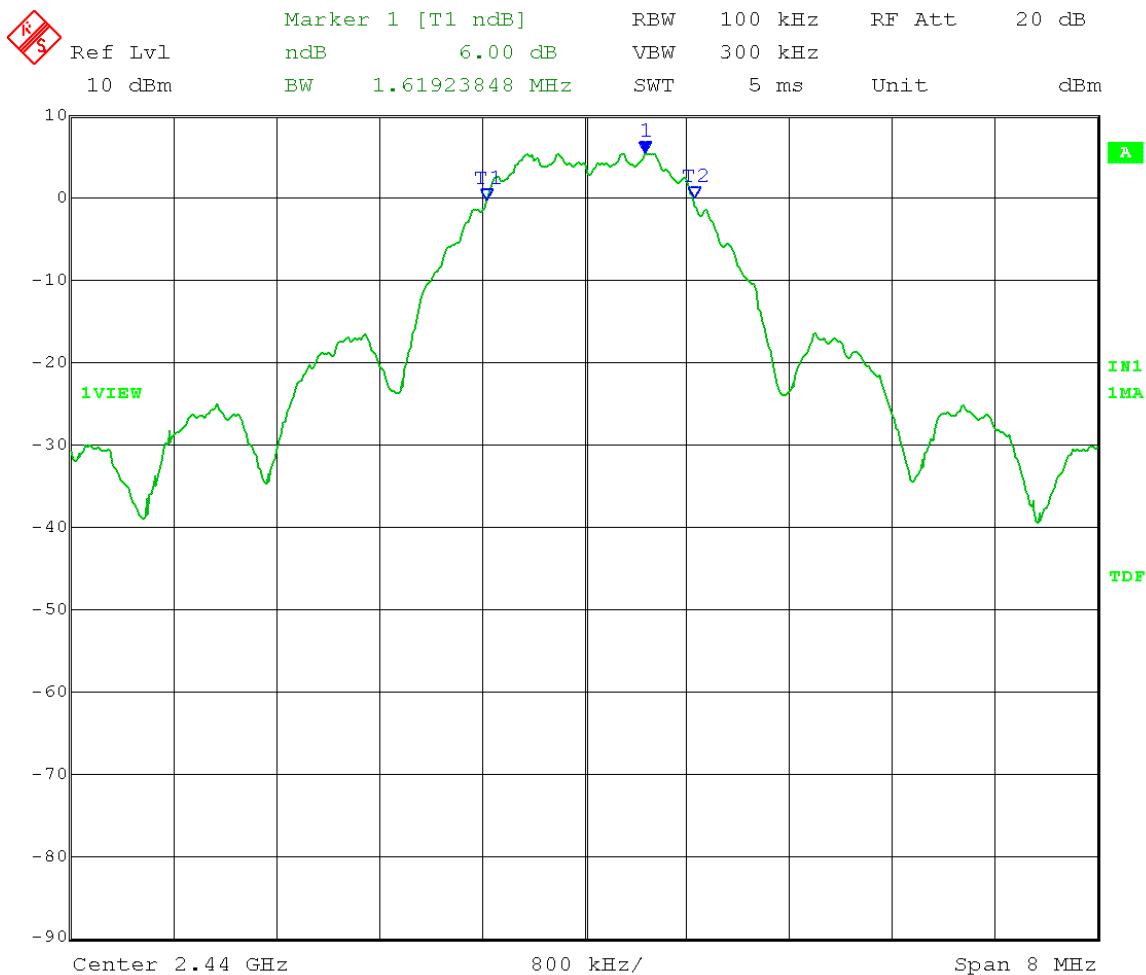
Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: DTS Emission Bandwidth (6 dB) - Conducted  
Operator: Craig B

Comment: RBW = 100 kHz  
VBW = 300 kHz  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

Comment: **Mid Channel: Frequency – 2.440 GHz**  
Output power setting: 8

6 dB Emission Bandwidth = 1.62 MHz



Date: 26.JUN.2014 09:27:37



166 South Carter, Genoa City, WI 53128

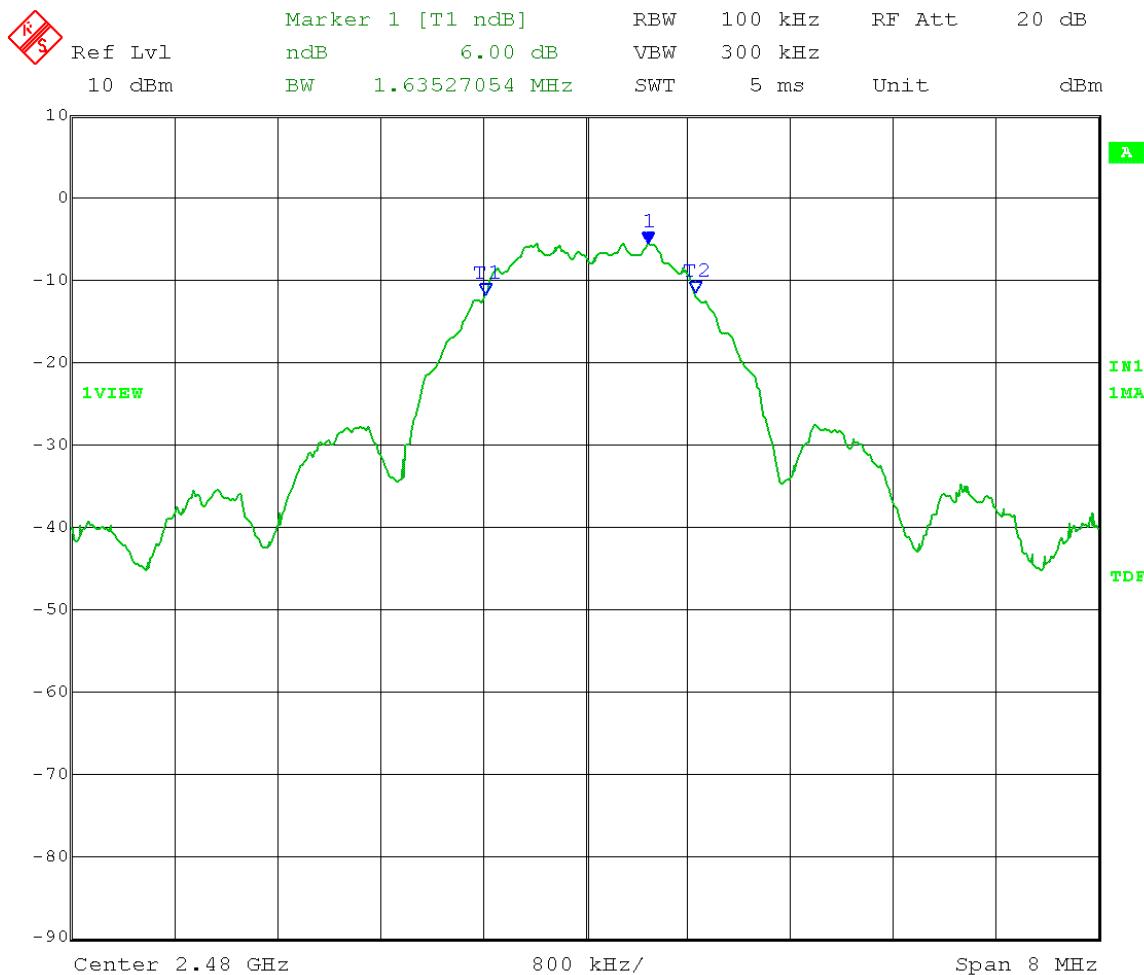
Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: DTS Emission Bandwidth (6 dB) - Conducted  
Operator: Craig B

Comment: RBW = 100 kHz  
VBW = 300 kHz  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

Comment: High Channel: Frequency – 2.480 GHz  
Output power setting: -3

6 dB Emission Bandwidth = 1.63 MHz



Date: 26.JUN.2014 09:23:41



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## Appendix B

### 3.0 Fundamental Emission Output Power

#### Rule Part:

15.247(b)(3)

#### Test Procedure:

KDB 558074 D01 DTS Meas Guidance v03r02  
Maximum Peak Conducted Output Power, Section 9.1  
RBW  $\geq$  DTS bandwidth, Section 9.1.1

#### Limit:

The maximum peak conducted output power limit is 1 watt (30 dBm).

#### Results:

Compliant  
Maximum peak conducted output power: **7.48 mW (8.74 dBm)**

#### Notes:

This was an RF conducted measurement. The EUT was connected to the measuring equipment through an SMA connector soldered in place of the antenna. Cable loss and attenuation was accounted for in the transducer factors set in the analyzer.

The EUT was powered through a cable that was connected to the bench supply set to 3.0 VDC. The EUT was set to transmit continuously at its maximum power (power setting 8), with a modulating signal representative of the worst-case signal encountered in a real system operation on the low, middle, and high channels of the operating band.

The High channel (channel 26) power setting was reduced from 8 to -3 to meet the radiated upper band-edge requirement at the 2.4835 GHz restricted frequency band edge.



166 South Carter, Genoa City, WI 53128

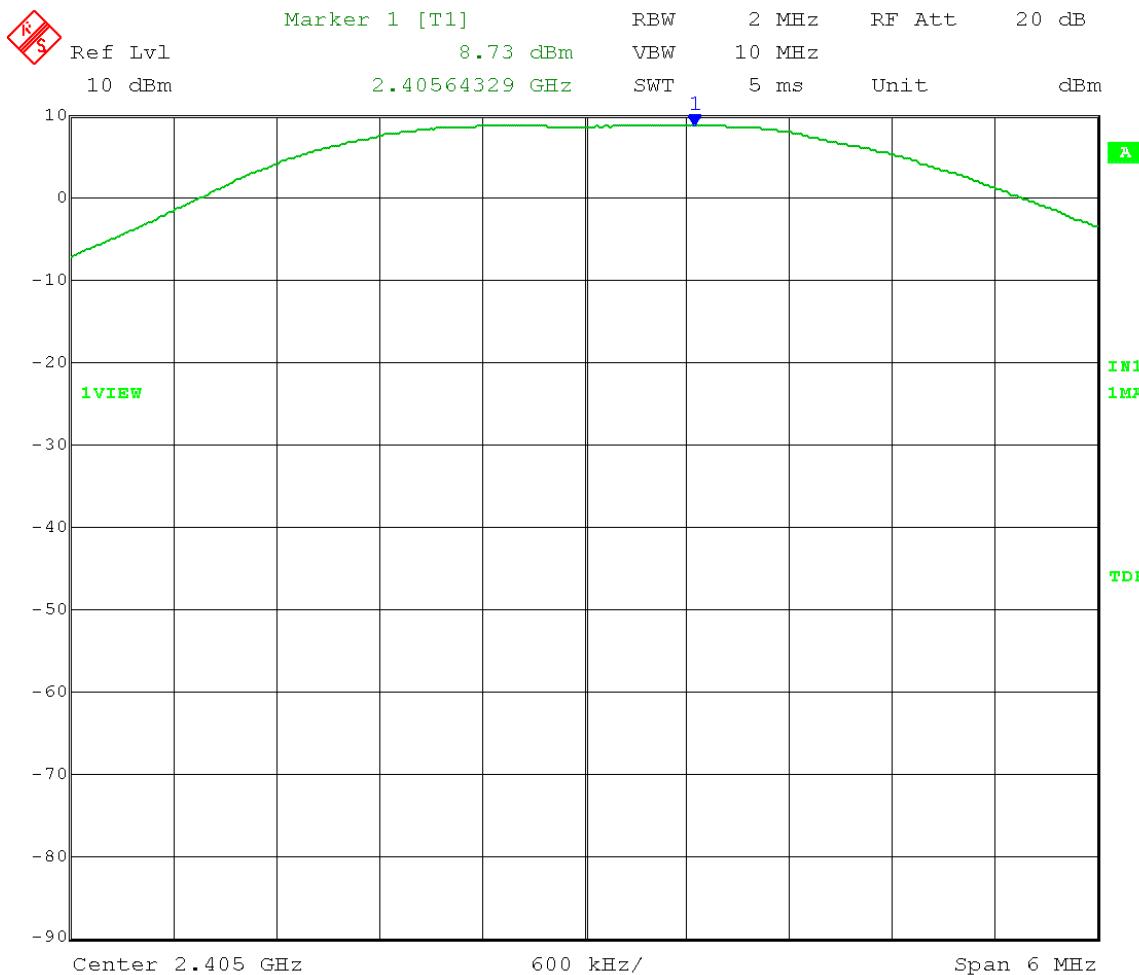
Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Fundamental Emission Output Power – Peak Conducted Power  
Operator: Craig B

Comment: RBW  $\geq$  DTS bandwidth  
 $\text{VBW} \geq 3 \times \text{RBW}$   
 $\text{Span} \geq 3 \times \text{RBW}$   
Sweep time = auto couple  
Detector = peak  
Trace = max hold

Comment: Low Channel: Frequency – 2.405 GHz  
Output power setting: 8

Fundamental Emission Output Power = 8.73 dBm = **7.46 mW**



Date: 26.JUN.2014 10:31:40



166 South Carter, Genoa City, WI 53128

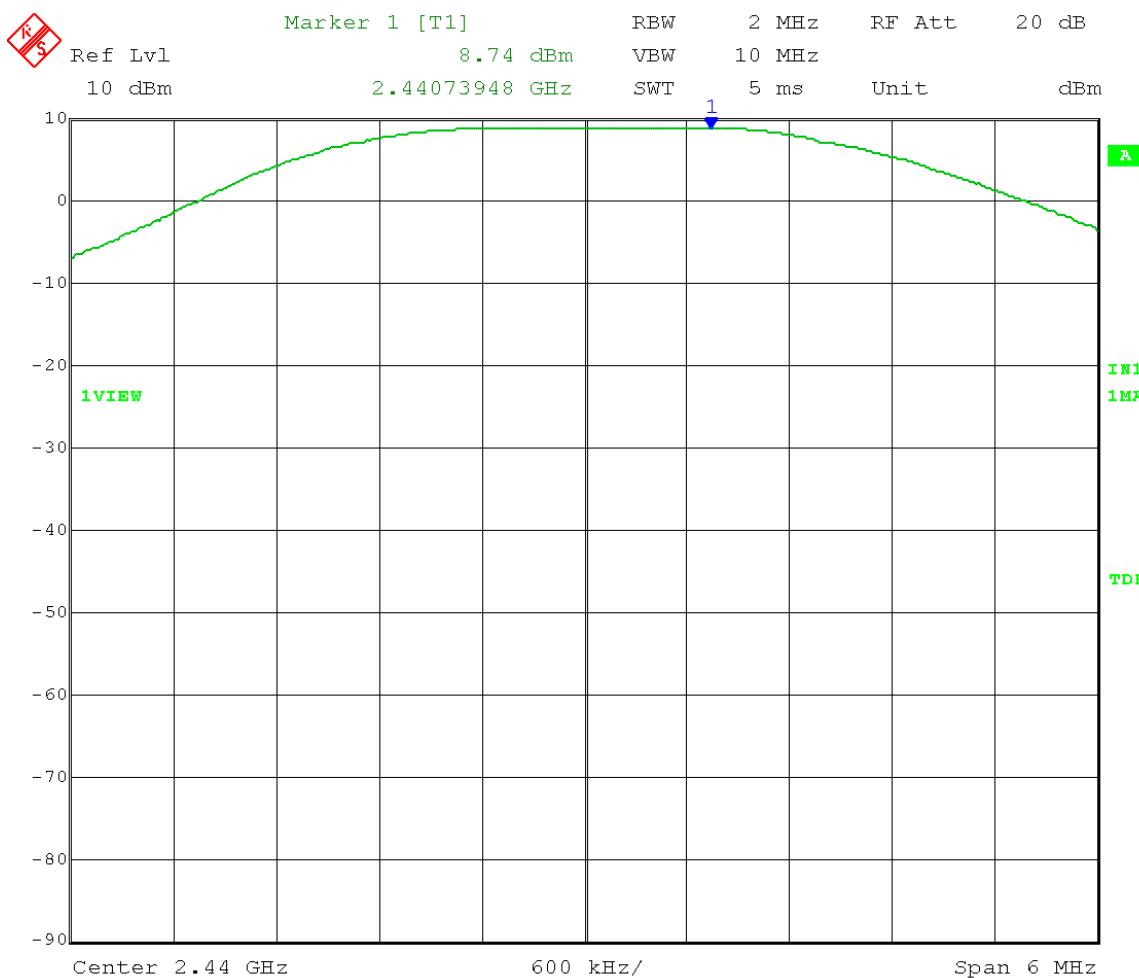
Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Fundamental Emission Output Power – Peak Conducted Power  
Operator: Craig B

Comment: RBW  $\geq$  DTS bandwidth  
 $\text{VBW} \geq 3 \times \text{RBW}$   
 $\text{Span} \geq 3 \times \text{RBW}$   
Sweep time = auto couple  
Detector = peak  
Trace = max hold

Comment: Mid Channel: Frequency = 2.440 GHz  
Output power setting: 8

Fundamental Emission Output Power = 8.74 dBm = **7.48 mW**



Date: 26.JUN.2014 10:35:23



166 South Carter, Genoa City, WI 53128

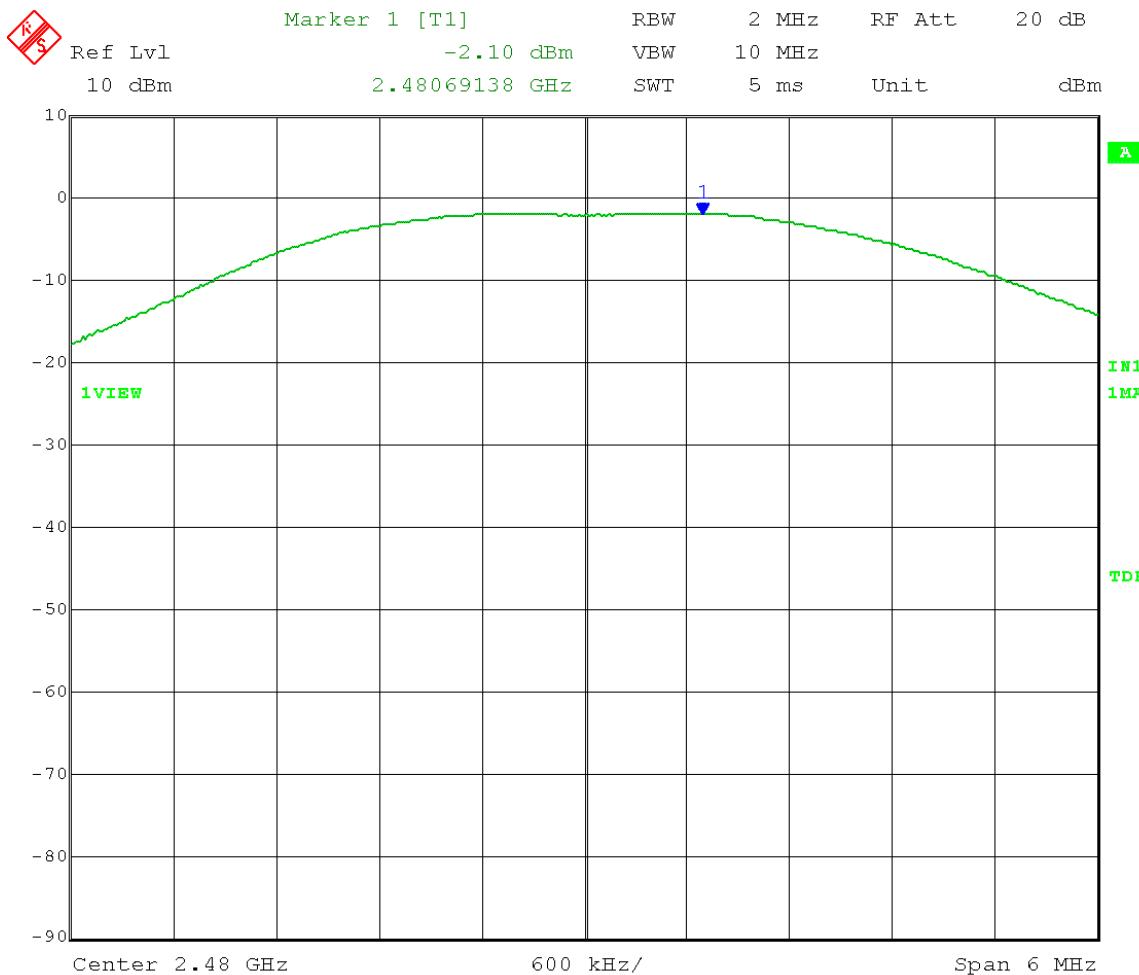
Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Fundamental Emission Output Power – Peak Conducted Power  
Operator: Craig B

Comment: RBW  $\geq$  DTS bandwidth  
 $\text{VBW} \geq 3 \times \text{RBW}$   
 $\text{Span} \geq 3 \times \text{RBW}$   
Sweep time = auto couple  
Detector = peak  
Trace = max hold

Comment: High Channel: Frequency – 2.480 GHz  
Output power setting: -3

Fundamental Emission Output Power = -2.10 dBm = **0.62 mW**



Date: 26.JUN.2014 10:38:51



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## Appendix B

### 4.0 Maximum Power Spectral Density (PSD)

#### Rule Part:

15.247(e)

#### Test Procedure:

KDB 558074 D01 DTS Meas Guidance v03r02  
Maximum Power Spectral Density Level in the Fundamental Emission, Section 10.0  
Measurement Procedure PKPSD (peak PSD), Section 10.2

#### Limit:

8 dBm in any 3 kHz band segment within the DTS bandwidth during any time interval of continuous transmission.

#### Results:

Compliant  
Peak conducted power spectral density (peak PSD): **1.69 dBm / 30 kHz**

#### Notes:

This was an RF conducted measurement. The EUT was connected to the measuring equipment through an SMA connector soldered in place of the antenna. Cable loss and attenuation was accounted for in the transducer factors set in the analyzer.

The EUT was powered through a cable that was connected to the bench supply set to 3.0 VDC. The EUT was set to transmit continuously at its maximum power (power setting 8), with a modulating signal representative of the worst-case signal encountered in a real system operation on the low, middle, and high channels of the operating band.

The High channel (channel 26) power setting was reduced from 8 to -3 to meet the radiated upper band-edge requirement at the 2.4835 GHz restricted frequency band edge.



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

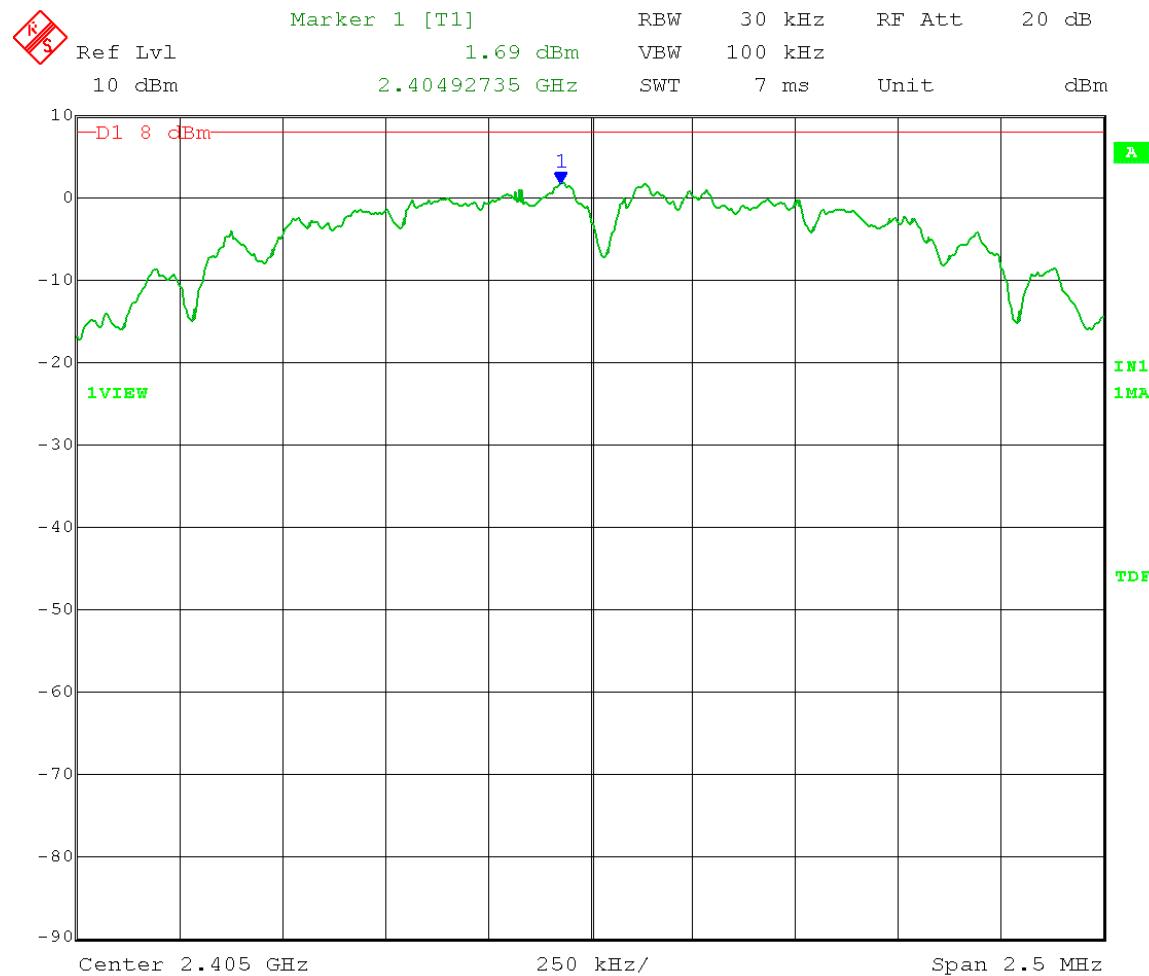
Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Maximum Power Spectral Density – Peak PSD - Conducted  
Operator: Craig B

Comment: RBW:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$   
 $\text{VBW} \geq 3 \times \text{RBW}$   
 $\text{Span} \geq 1.5 \times \text{DTS bandwidth}$   
Detector = Peak  
Sweep = auto couple  
Trace = max hold

Low Channel: Frequency – 2.405 GHz

Output power setting: 8  
Limit: 8 dBm / 3 kHz

Peak PSD = 1.69 dBm / 30 kHz



Date: 26.JUN.2014 10:53:30



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

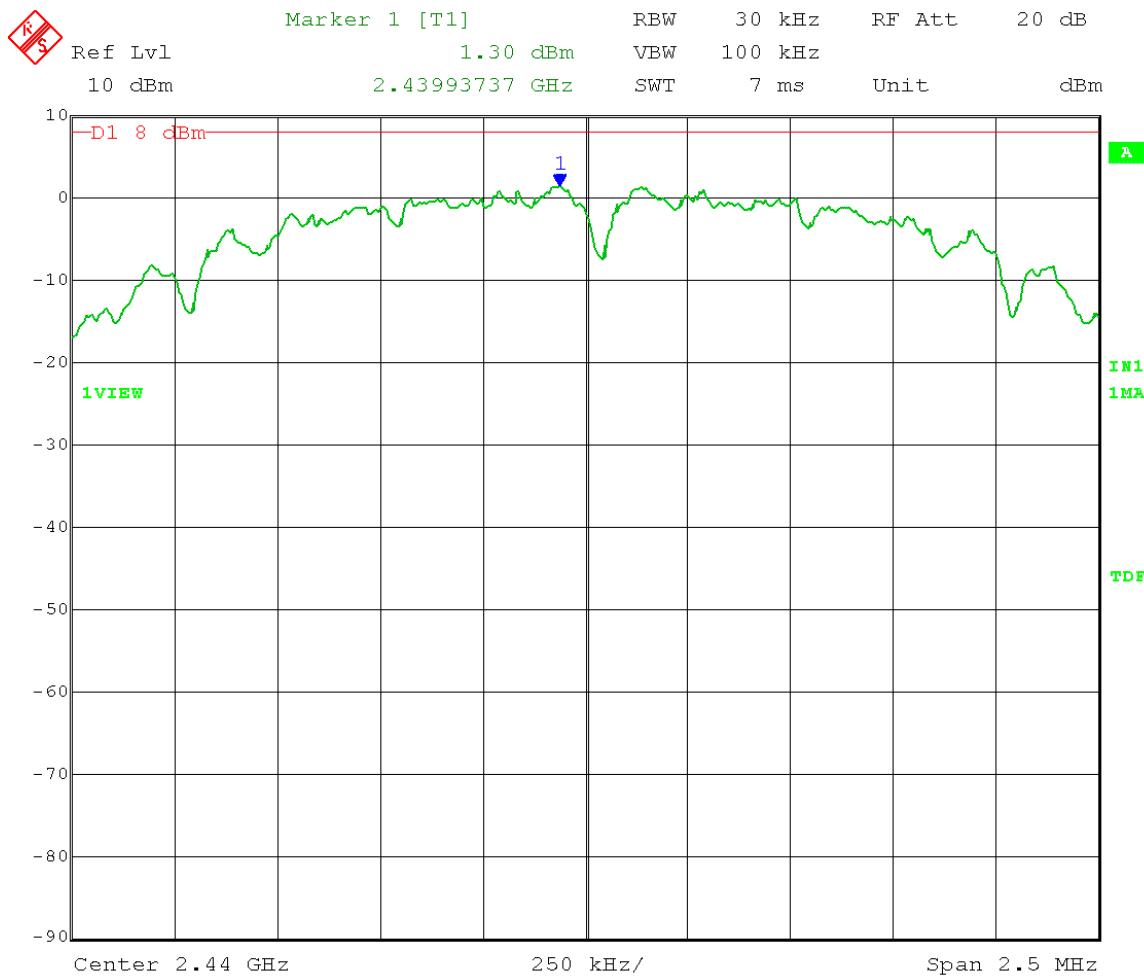
Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Maximum Power Spectral Density – Peak PSD - Conducted  
Operator: Craig B

Comment: RBW:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$   
 $\text{VBW} \geq 3 \times \text{RBW}$   
 $\text{Span} \geq 1.5 \times \text{DTS bandwidth}$   
Detector = Peak  
Sweep = auto couple  
Trace = max hold

Mid Channel: Frequency – 2.440 GHz

Output power setting: 8  
Limit: 8 dBm / 3 kHz

Peak PSD = 1.30 dBm / 30 kHz



Date: 26.JUN.2014 10:56:35



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

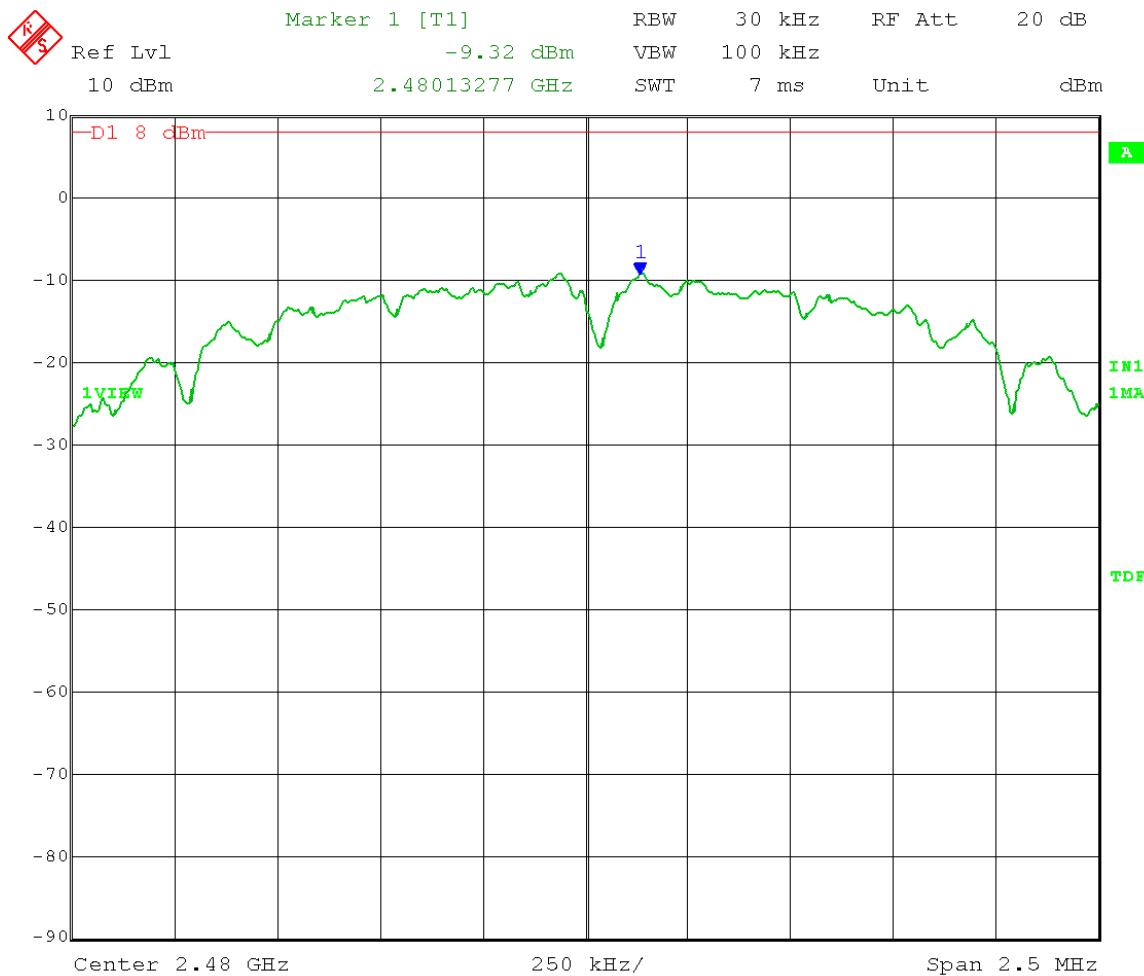
Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Maximum Power Spectral Density – Peak PSD - Conducted  
Operator: Craig B

Comment: RBW:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$   
 $\text{VBW} \geq 3 \times \text{RBW}$   
 $\text{Span} \geq 1.5 \times \text{DTS bandwidth}$   
Detector = Peak  
Sweep = auto couple  
Trace = max hold

High Channel: Frequency – 2.480 GHz

Output power setting: -3  
Limit: 8 dBm / 3 kHz

Peak PSD = -9.32 dBm / 30 kHz



Date: 26.JUN.2014 10:59:29



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## Appendix B

### 5.0 Emissions in Non-Restricted Frequency Bands - RF Conducted

#### Rule Part:

15.247(d)

#### Test Procedure:

KDB 558074 D01 DTS Meas Guidance v03r02  
Emissions in non-restricted frequency bands, Section 11.1(a)  
Measurement procedure – Reference level, Section 11.2  
Measurement procedure – Emission level, Section 11.3

#### Limit:

The peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.

#### Results:

Compliant

#### Notes:

This was an RF conducted measurement. The EUT was connected to the measuring equipment through an SMA connector soldered in place of the antenna. Cable loss and attenuation was accounted for in the transducer factors set in the analyzer.

The EUT was powered through a cable that was connected to the bench supply set to 3.0 VDC. The EUT was set to transmit continuously at its maximum power (power setting 8), with a modulating signal representative of the worst-case signal encountered in a real system operation on the low, middle, and high channels of the operating band.

The High channel (channel 26) power setting was reduced from 8 to -3 to meet the radiated upper band-edge requirement at the 2.4835 GHz restricted frequency band edge.

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Maximum Unwanted Emission Levels - Conducted  
Operator: Craig B

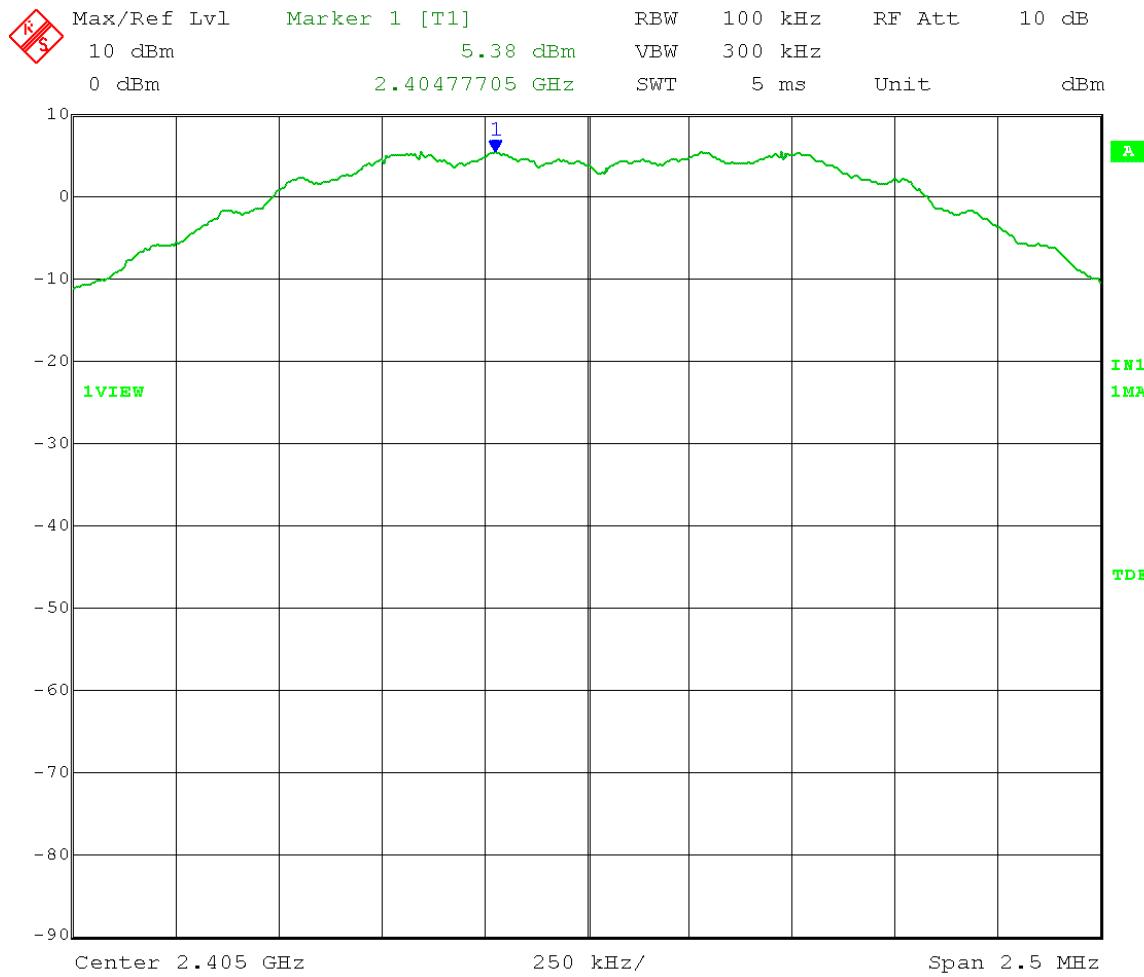
Comment: RBW = 100 kHz  
VBW  $\geq$  300 kHz  
Span  $\geq$  1.5 x DTS bandwidth  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

**Low Channel Transmit = 2.405 GHz**

Output power setting: 8

**Reference Level** measurement

Limit = 5.38 dBm - 20 dB = -14.62 dBm



Date: 26.JUN.2014 11:29:33

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Maximum Unwanted Emission Levels - Conducted  
Operator: Craig B

Comment: RBW = 100 kHz  
VBW  $\geq$  300 kHz  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

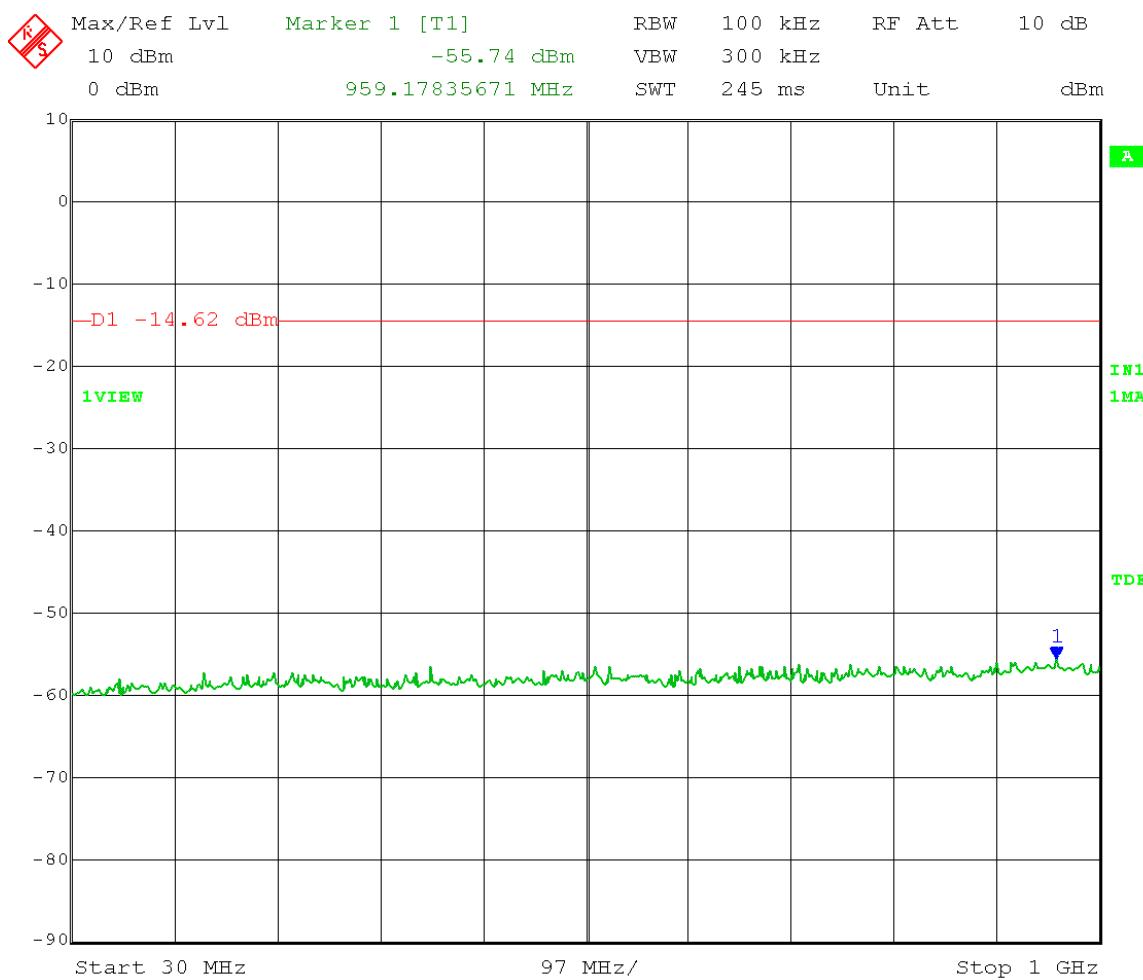
Low Channel Transmit = 2.405 GHz

Output power setting: 8

**Emission Level** measurement

Limit = 5.38 dBm - 20 dB = -14.62 dBm

Frequency Range: 30 – 1000 MHz



Date: 26.JUN.2014 11:42:10

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Maximum Unwanted Emission Levels - Conducted  
Operator: Craig B

Comment: RBW = 100 kHz  
VBW  $\geq$  300 kHz  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

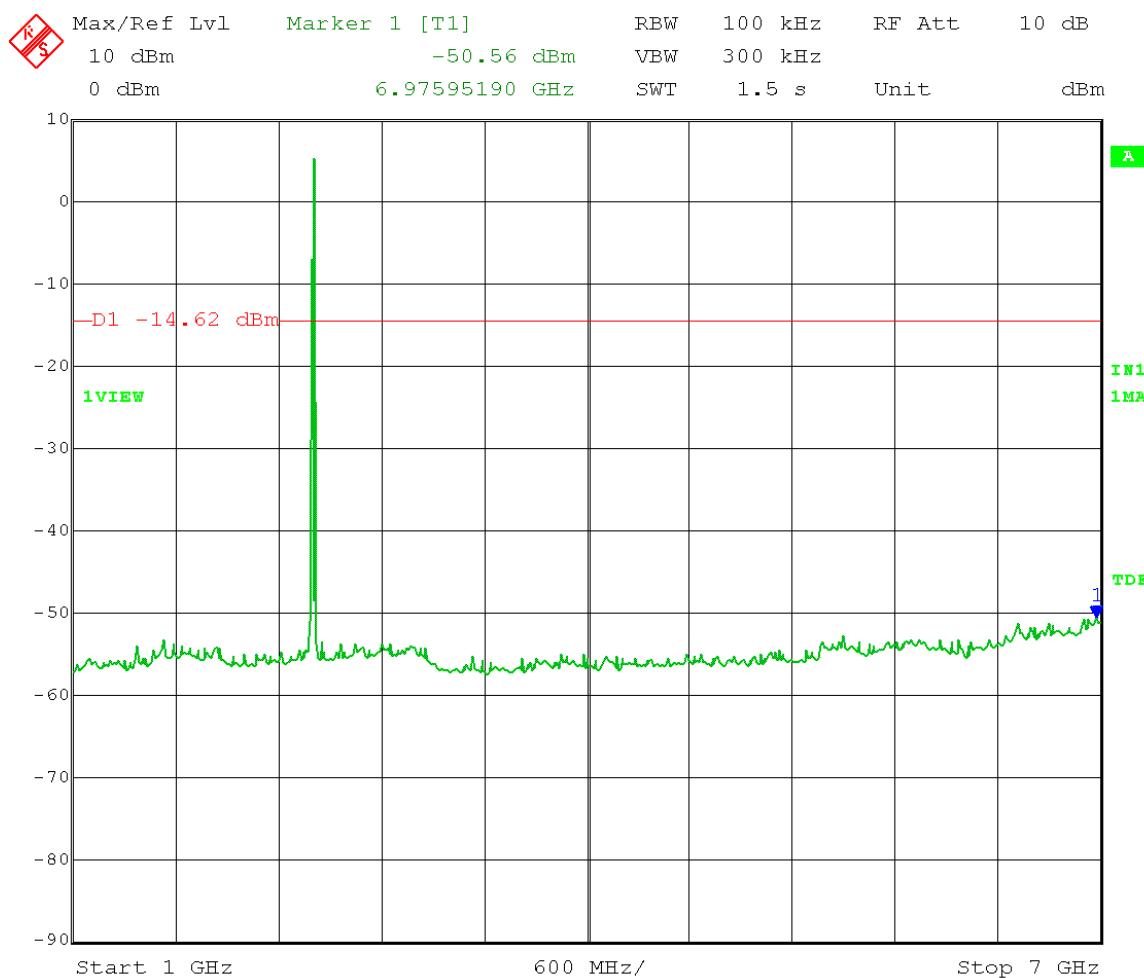
Low Channel Transmit = 2.405 GHz

Output power setting: 8

**Emission Level** measurement

Limit = 5.38 dBm - 20 dB = -14.62 dBm

Frequency Range: 1 - 7 GHz



Date: 26.JUN.2014 11:32:56

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Maximum Unwanted Emission Levels - Conducted  
Operator: Craig B

Comment: RBW = 100 kHz  
VBW  $\geq$  300 kHz  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

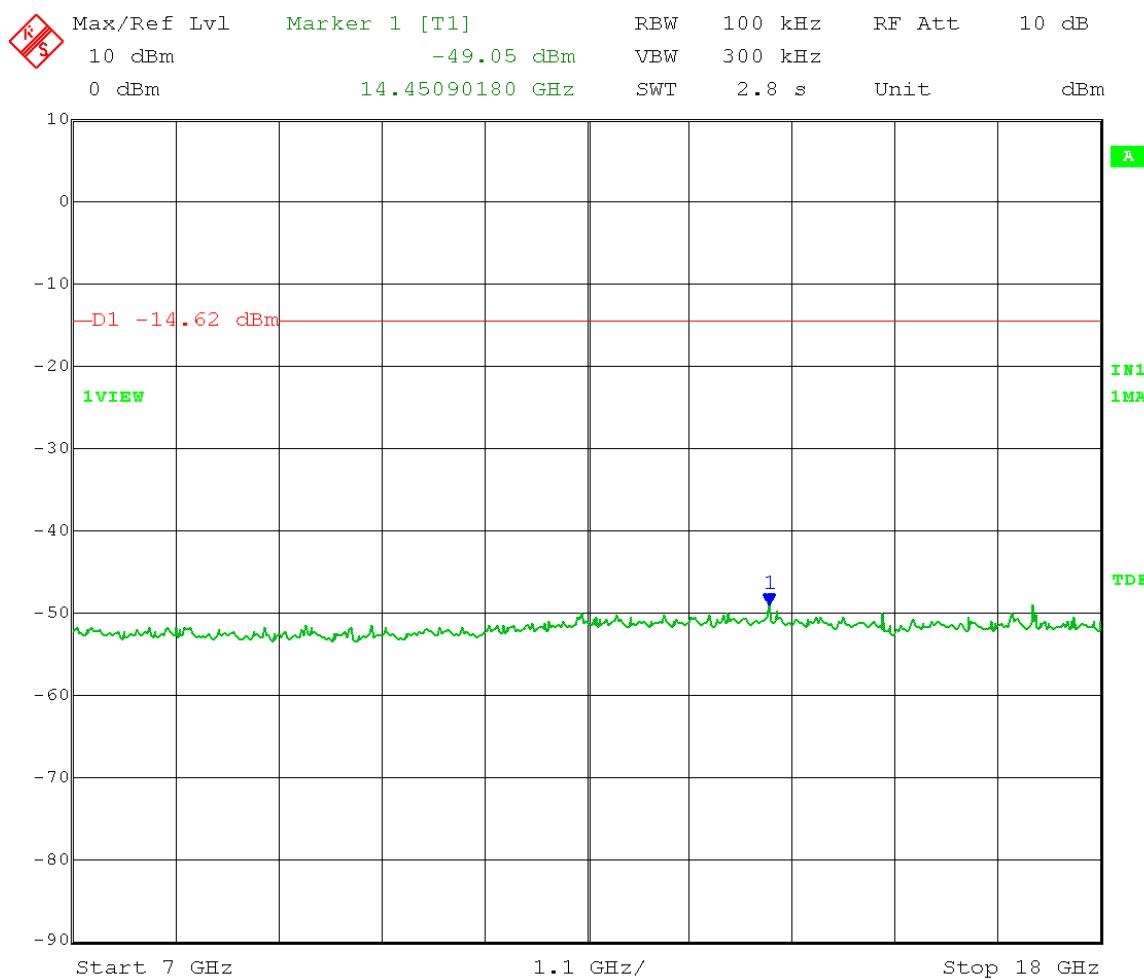
Low Channel Transmit = 2.405 GHz

Output power setting: 8

**Emission Level** measurement

Limit = 5.38 dBm – 20 dB = -14.62 dBm

Frequency Range: 7 – 18 GHz



Date: 26.JUN.2014 11:35:45

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Maximum Unwanted Emission Levels - Conducted  
Operator: Craig B

Comment: RBW = 100 kHz  
VBW  $\geq$  300 kHz  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

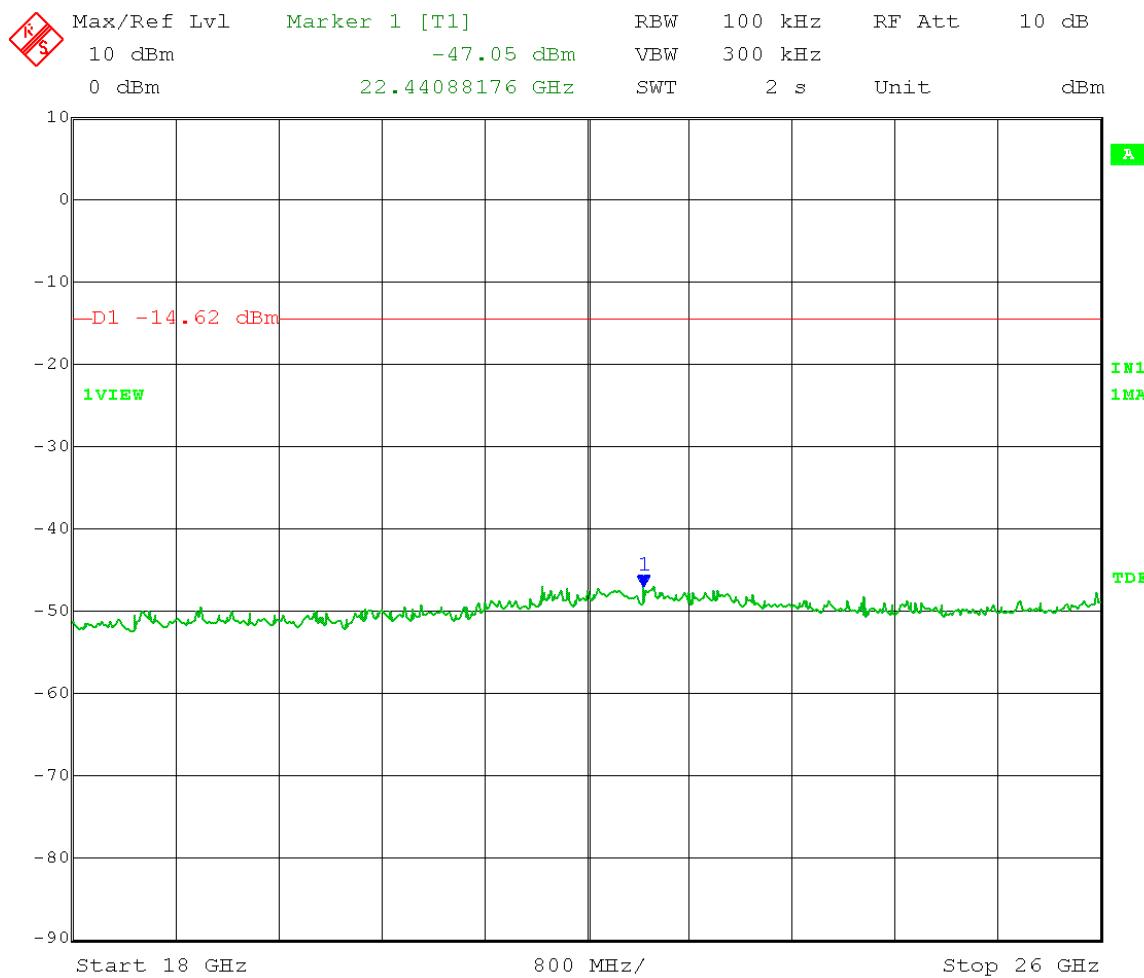
Low Channel Transmit = 2.405 GHz

Output power setting: 8

**Emission Level** measurement

Limit = 5.38 dBm - 20 dB = -14.62 dBm

Frequency Range: 18 – 26 GHz



Date: 26.JUN.2014 11:40:01

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Maximum Unwanted Emission Levels - Conducted  
Operator: Craig B

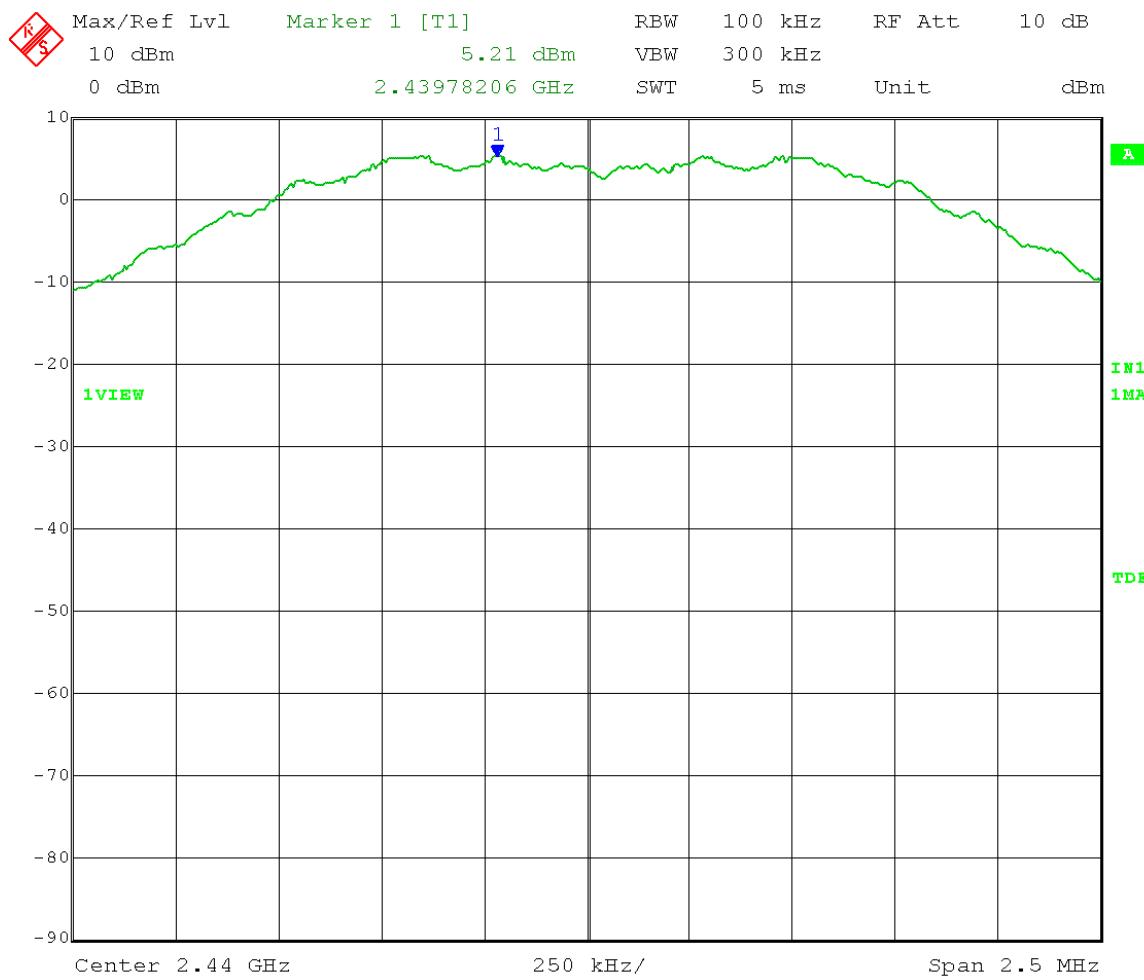
Comment: RBW = 100 kHz  
VBW  $\geq$  300 kHz  
Span  $\geq$  1.5 x DTS bandwidth  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

**Mid Channel Transmit = 2.440 GHz**

Output power setting: 8

**Reference Level** measurement

Limit = 5.21 dBm - 20 dB = -14.79 dBm



Date: 26.JUN.2014 12:42:42

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Maximum Unwanted Emission Levels - Conducted  
Operator: Craig B

Comment: RBW = 100 kHz  
VBW  $\geq$  300 kHz  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

Mid Channel Transmit = 2.440 GHz

Output power setting: 8

**Emission Level** measurement

Limit = 5.21 dBm – 20 dB = -14.79 dBm

Frequency Range: 30 – 1000 MHz



Date: 26.JUN.2014 12:53:00

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Maximum Unwanted Emission Levels - Conducted  
Operator: Craig B

Comment: RBW = 100 kHz  
VBW  $\geq$  300 kHz  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

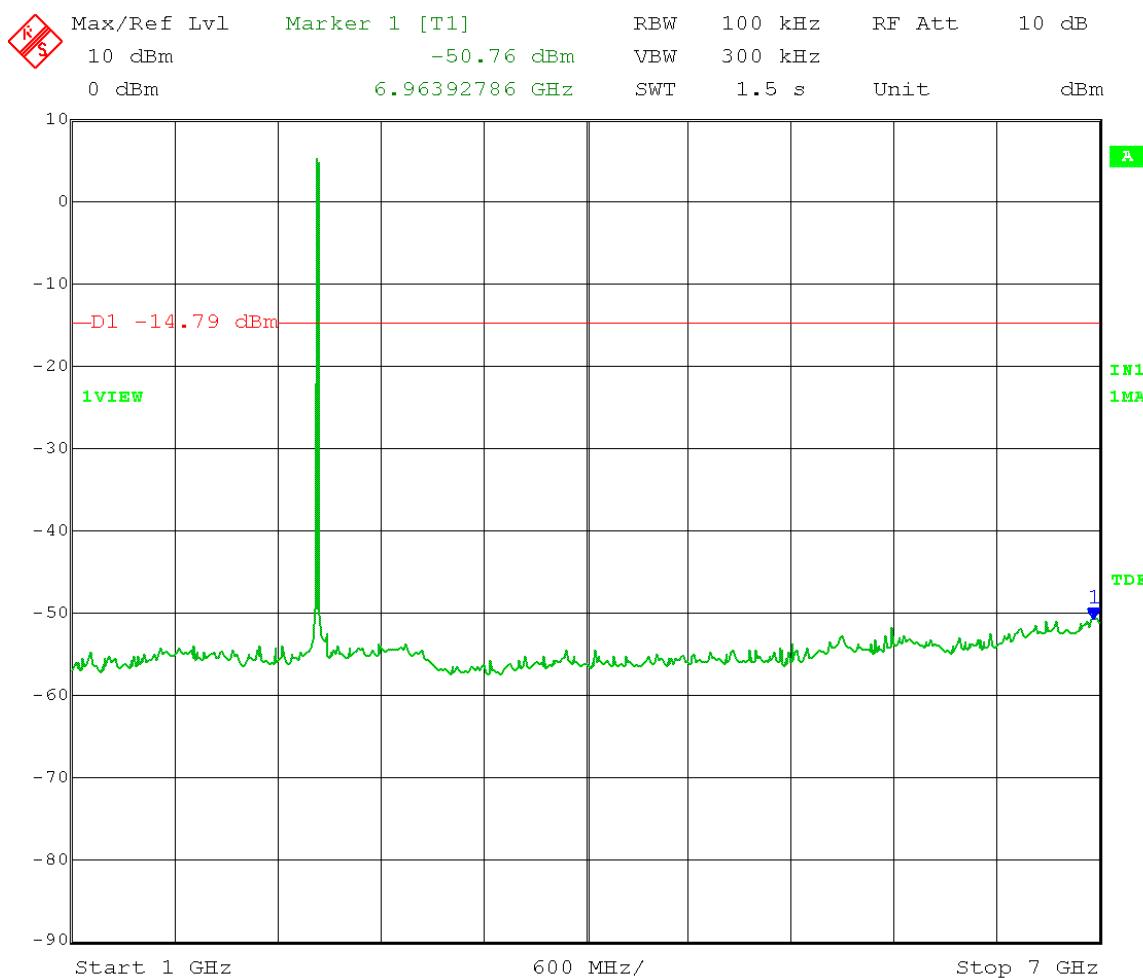
Mid Channel Transmit = 2.440 GHz

Output power setting: 8

**Emission Level** measurement

Limit = 5.21 dBm - 20 dB = -14.79 dBm

Frequency Range: 1 - 7 GHz



Date: 26.JUN.2014 12:45:20

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Maximum Unwanted Emission Levels - Conducted  
Operator: Craig B

Comment: RBW = 100 kHz  
VBW  $\geq$  300 kHz  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

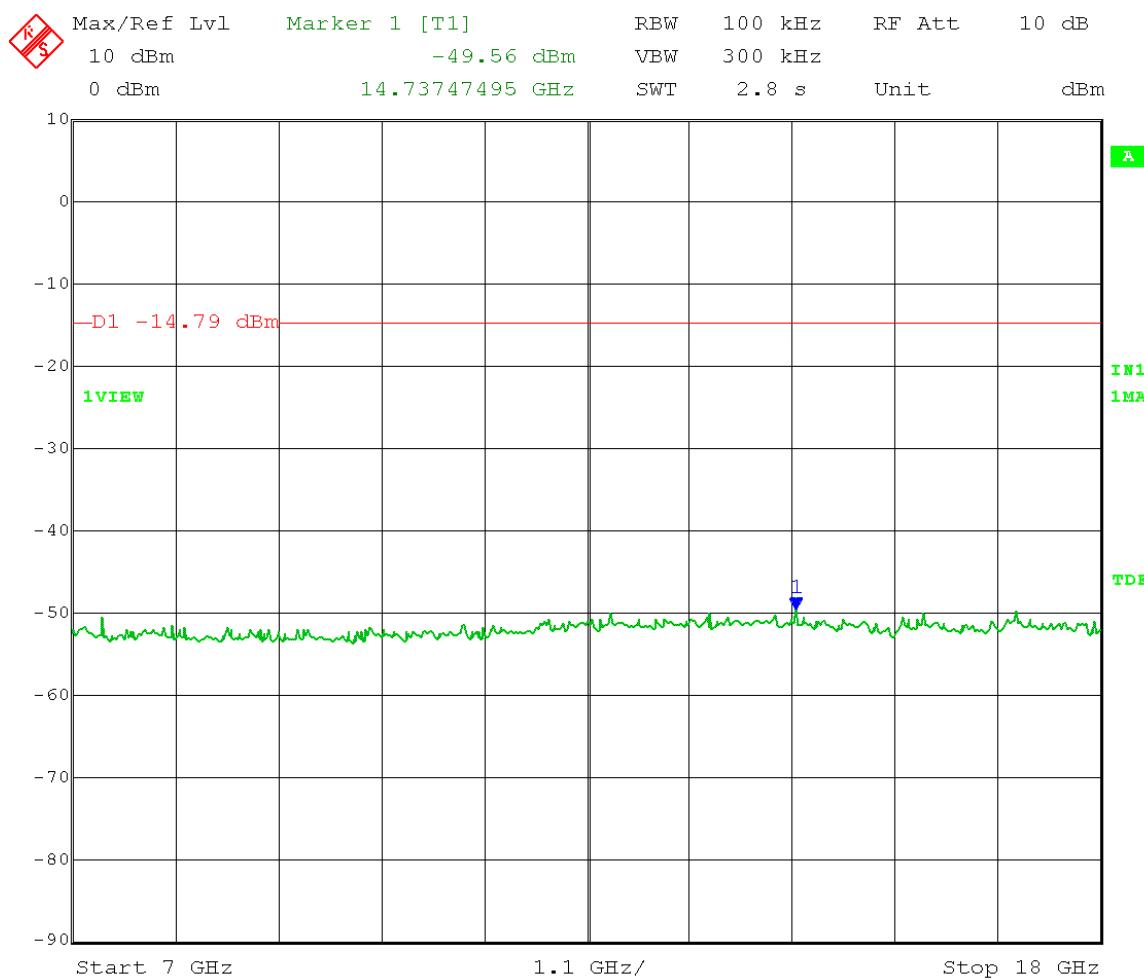
Mid Channel Transmit = 2.440 GHz

Output power setting: 8

**Emission Level** measurement

Limit = 5.21 dBm – 20 dB = -14.79 dBm

Frequency Range: 7 – 18 GHz



Date: 26.JUN.2014 12:48:42

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Maximum Unwanted Emission Levels - Conducted  
Operator: Craig B

Comment: RBW = 100 kHz  
VBW  $\geq$  300 kHz  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

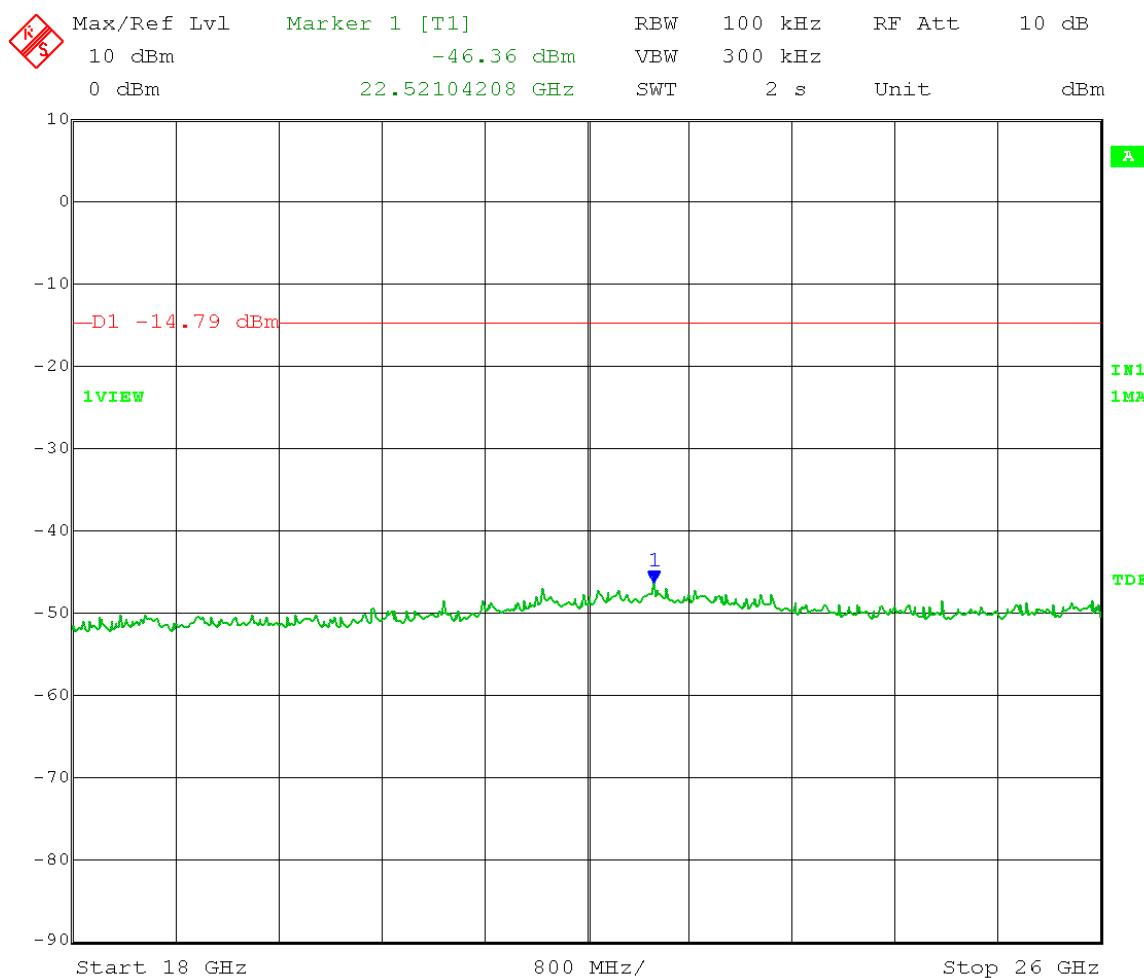
Mid Channel Transmit = 2.440 GHz

Output power setting: 8

**Emission Level** measurement

Limit = 5.21 dBm – 20 dB = -14.79 dBm

Frequency Range: 18 – 26 GHz



Date: 26.JUN.2014 12:51:25

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Maximum Unwanted Emission Levels - Conducted  
Operator: Craig B

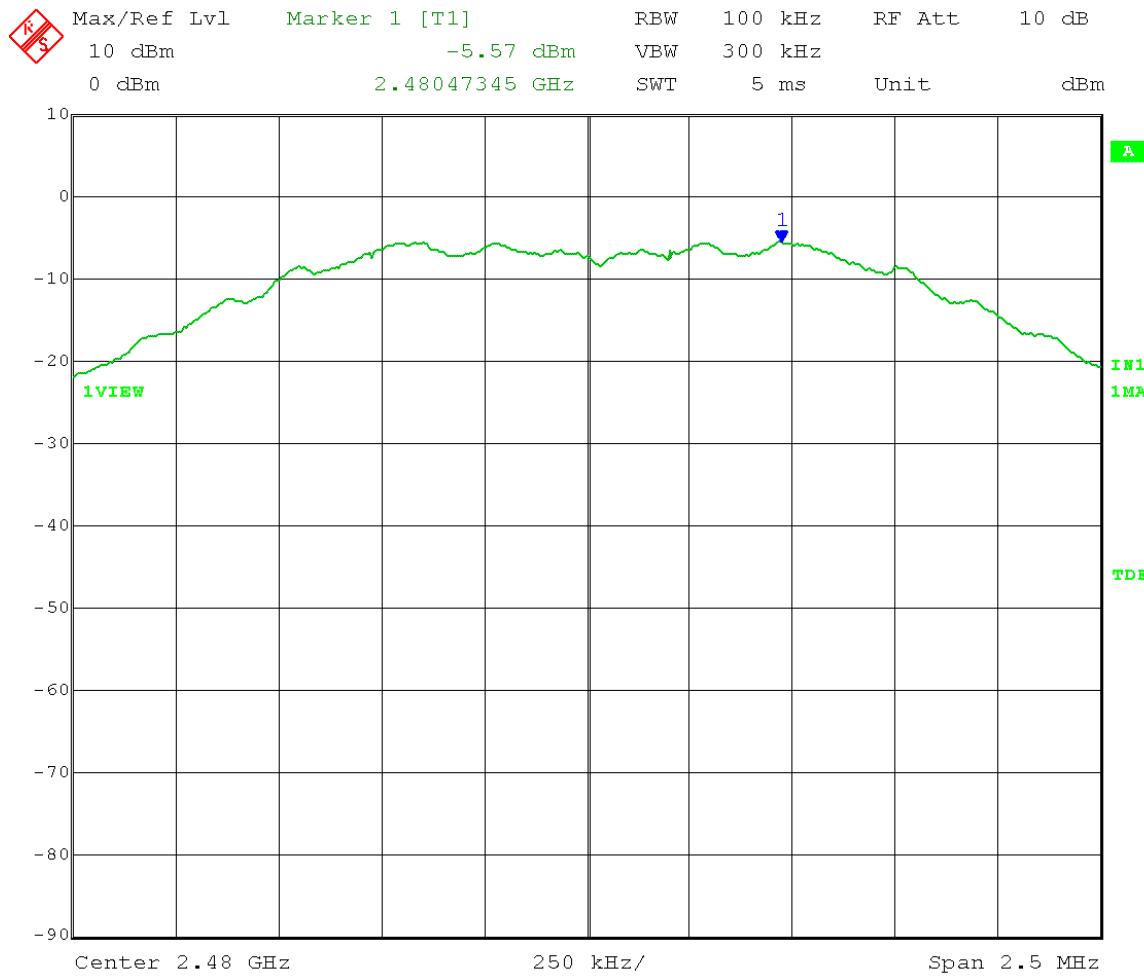
Comment: RBW = 100 kHz  
VBW  $\geq$  300 kHz  
Span  $\geq$  1.5 x DTS bandwidth  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

High Channel Transmit = 2.480 GHz

Output power setting: -3

**Reference Level** measurement

Limit = -5.57 dBm - 20 dB = -25.57 dBm



Date: 26.JUN.2014 12:56:18

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Maximum Unwanted Emission Levels - Conducted  
Operator: Craig B

Comment: RBW = 100 kHz  
VBW  $\geq$  300 kHz  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

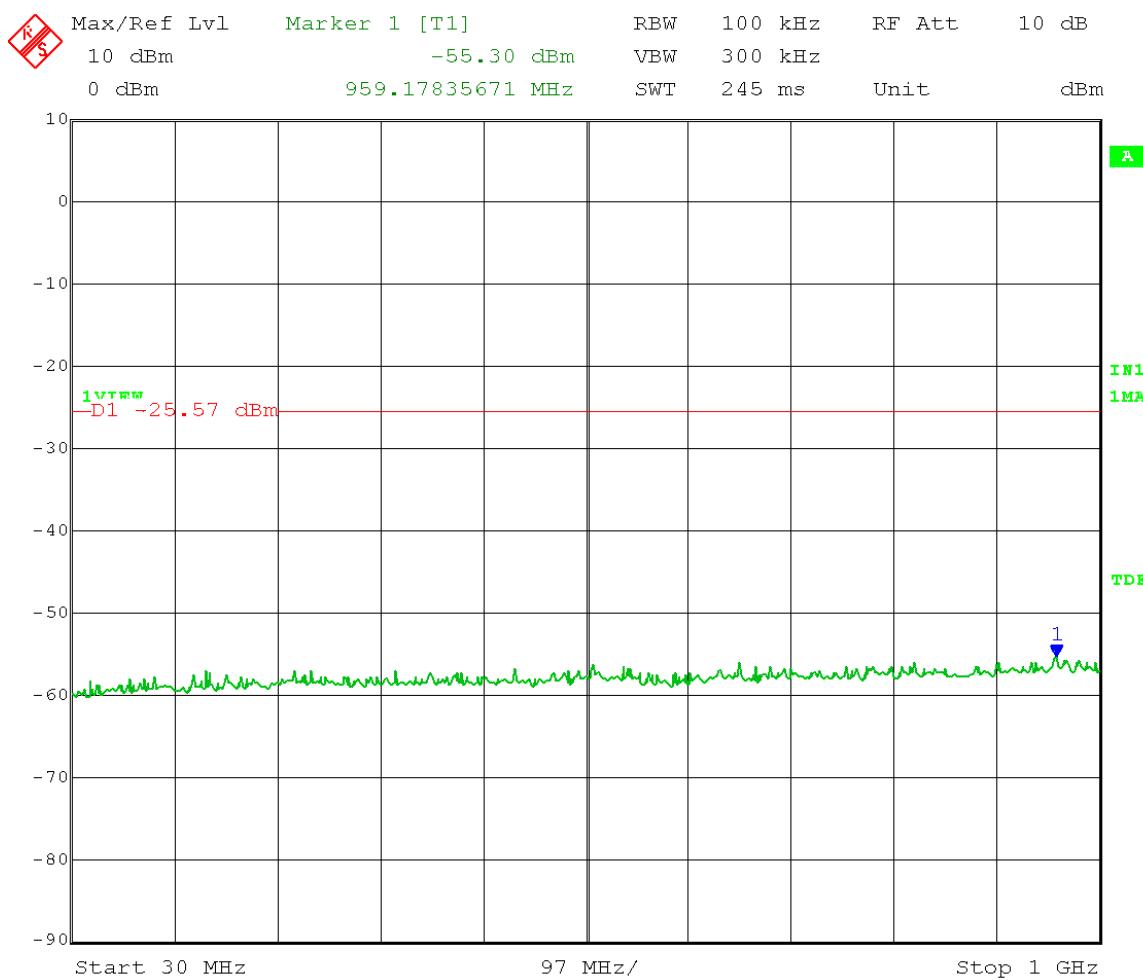
High Channel Transmit = 2.480 GHz

Output power setting: -3

**Emission Level** measurement

Limit = -5.57 dBm - 20 dB = -25.57 dBm

Frequency Range: 30 – 1000 MHz



Date: 26.JUN.2014 13:07:21

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Maximum Unwanted Emission Levels - Conducted  
Operator: Craig B

Comment: RBW = 100 kHz  
VBW  $\geq$  300 kHz  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

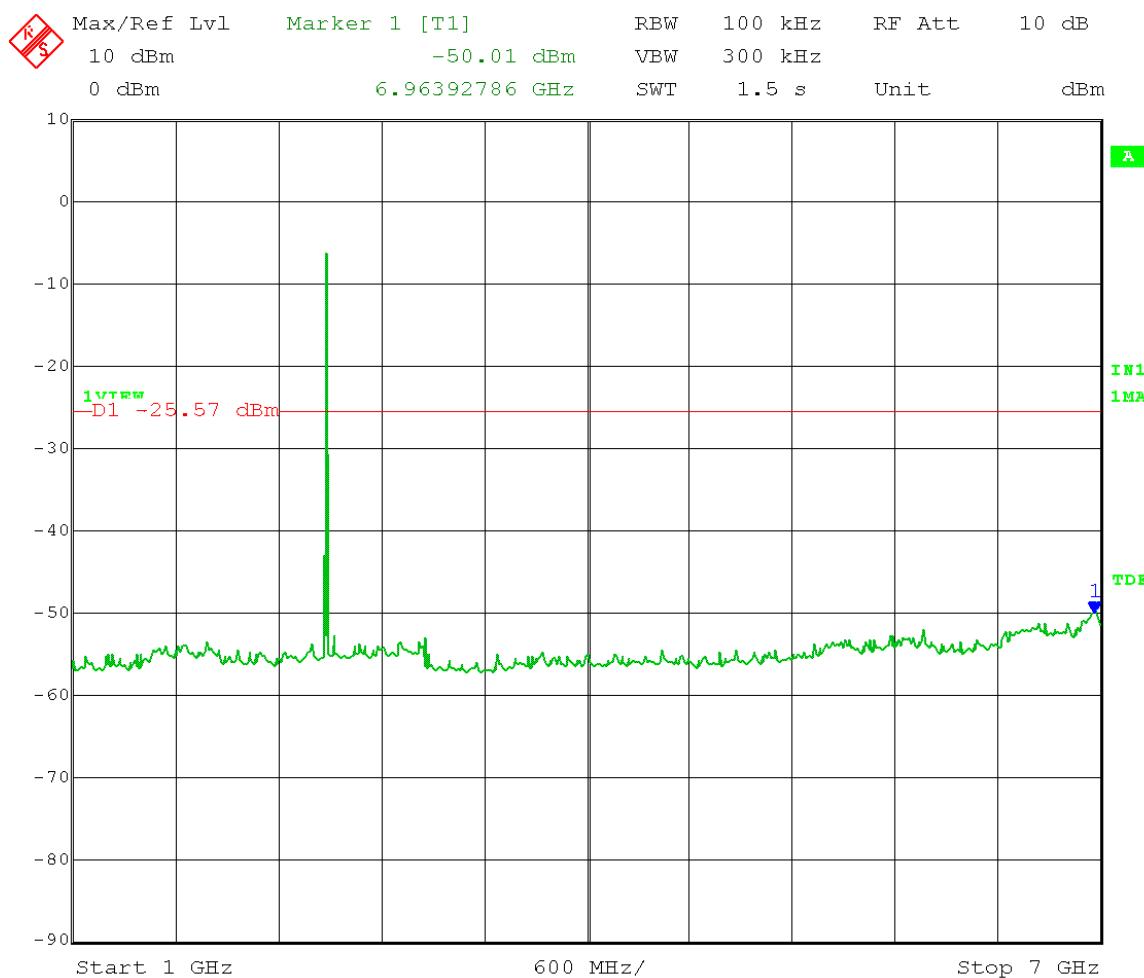
High Channel Transmit = 2.480 GHz

Output power setting: -3

**Emission Level** measurement

Limit = -5.57 dBm - 20 dB = -25.57 dBm

Frequency Range: 1 - 7 GHz



Date: 26.JUN.2014 13:01:18

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Maximum Unwanted Emission Levels - Conducted  
Operator: Craig B

Comment: RBW = 100 kHz  
VBW  $\geq$  300 kHz  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

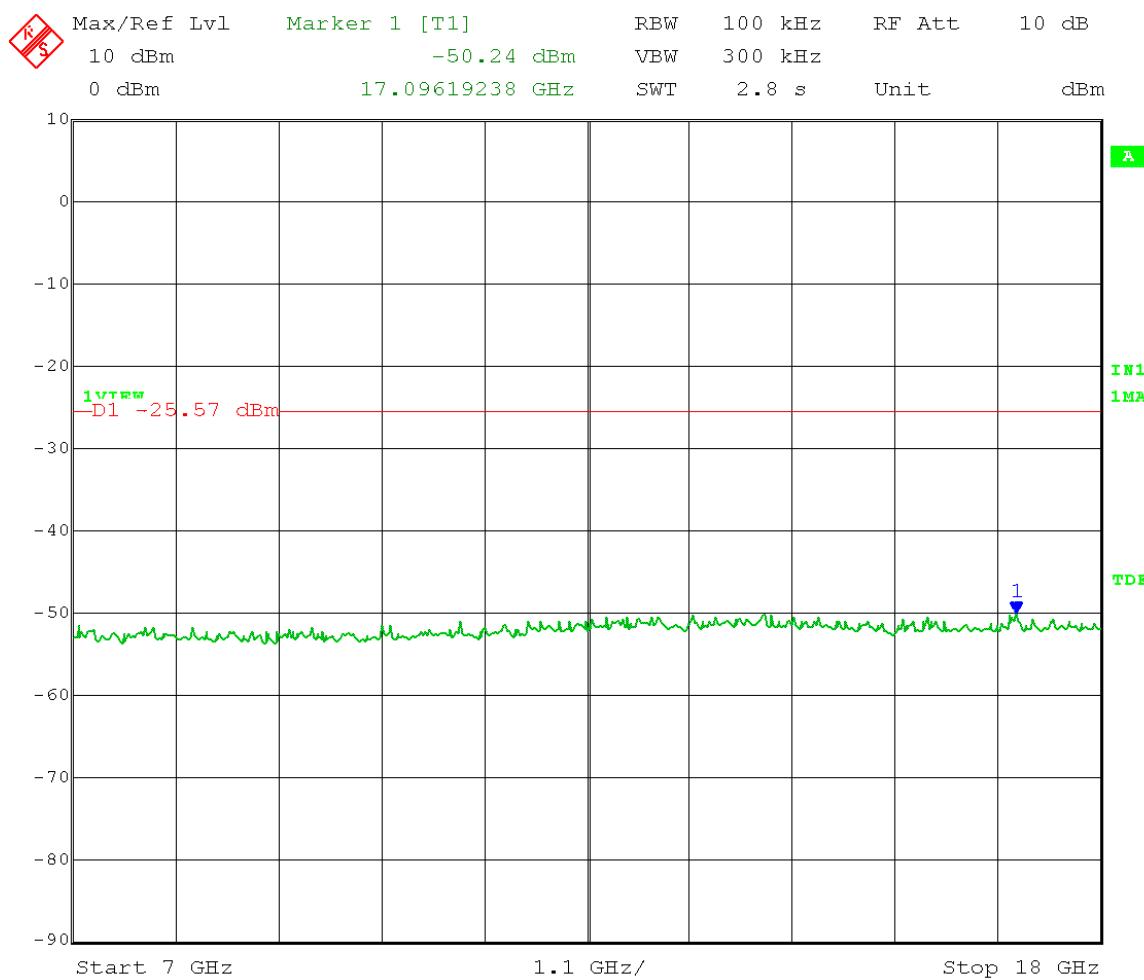
High Channel Transmit = 2.480 GHz

Output power setting: -3

**Emission Level** measurement

Limit = -5.57 dBm - 20 dB = -25.57 dBm

Frequency Range: 7 – 18 GHz



Date: 26.JUN.2014 13:03:17

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Maximum Unwanted Emission Levels - Conducted  
Operator: Craig B

Comment: RBW = 100 kHz  
VBW  $\geq$  300 kHz  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

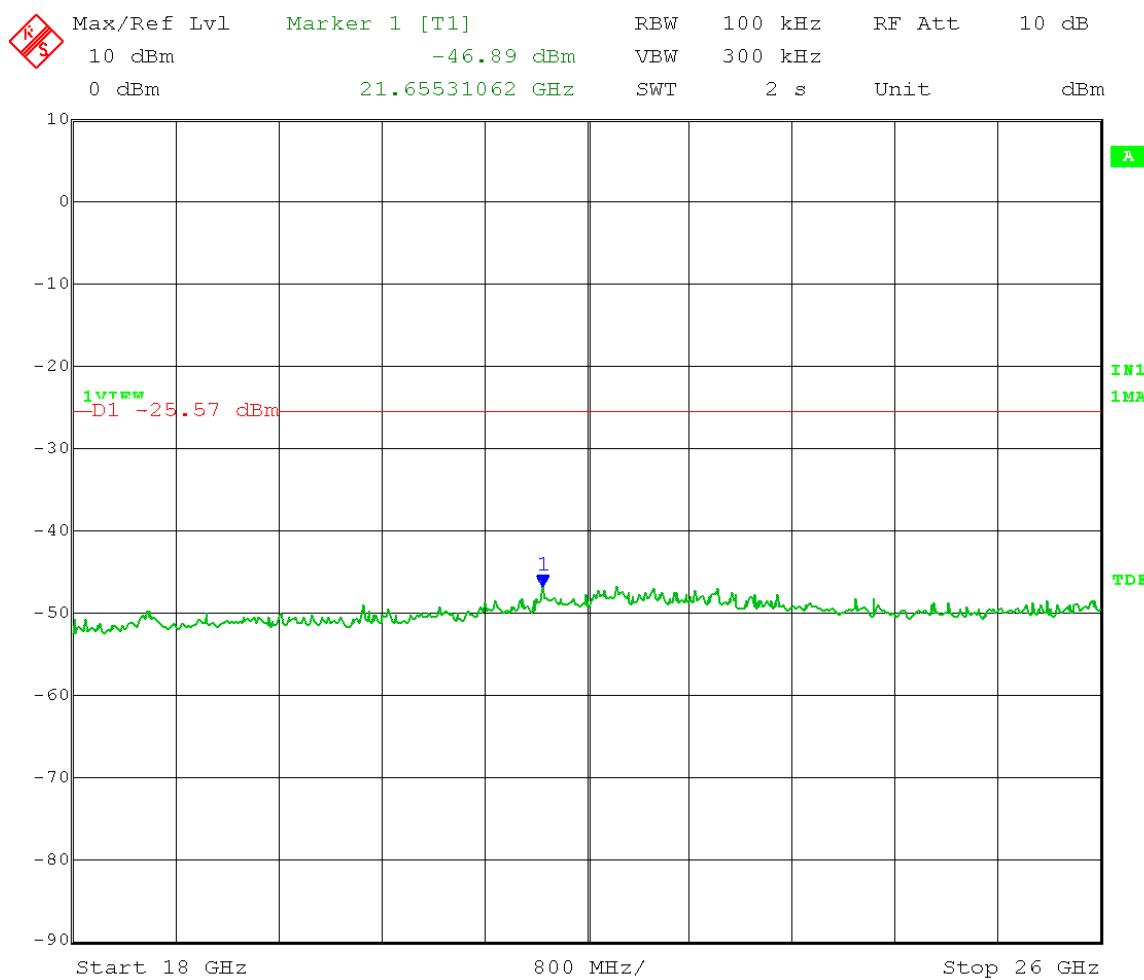
High Channel Transmit = 2.480 GHz

Output power setting: -3

**Emission Level measurement**

Limit = -5.57 dBm - 20 dB = -25.57 dBm

Frequency Range: 18 – 26 GHz



Date: 26.JUN.2014 13:05:18



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## Appendix B

### 6.0 Emissions in Restricted Frequency Bands – Radiated

#### Rule Part:

15.247(d), 15.205(a), 15.209(a)

#### Test Procedure:

KDB 558074 D01 DTS Meas Guidance v03r02  
Emissions in restricted frequency bands, Section 12.1  
Measurement Procedure – ANSI C63.10-2009

#### Limits:

15.209(a)

#### Results:

Compliant

#### Notes:

This was a radiated measurement. The EUT was transmitting from its integrated PCB trace antenna. The EUT was powered through a serial interface cable that was connected to the bench supply set to 3.0 VDC. The EUT was set to transmit continuously at its maximum power (power setting 8), with a modulating signal representative of the worst-case signal encountered in a real system operation on the low, middle, and high channels of the operating band.

**Electric Field Strength**

EUT: Honolulu  
Manufacturer: Centralite  
Operating Condition: 68 deg. F; 62% R.H.  
Test Site: DLS O.F. Site 2  
Operator: Craig B; DLS#6685  
Test Specification: Radiated emissions in restricted bands  
Comment: Low, Mid, High channels; continuous transmit  
Date: 06-27-2014

**TEXT: "Horz 3 meters"**

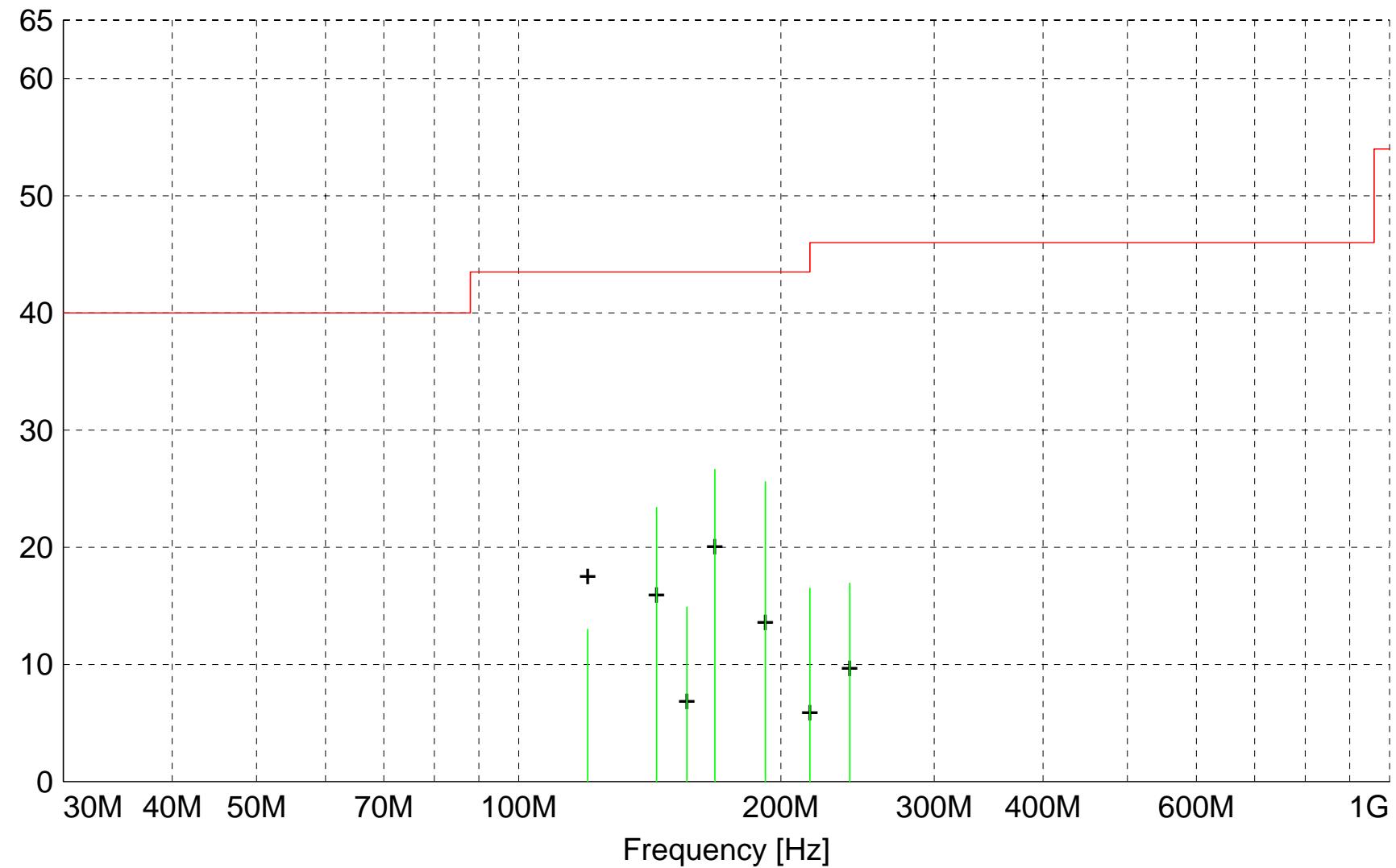
Short Description: Test Set-up

Test Set-up: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization

Equations: Total Level(dB $\mu$ V/m) = Level(dB $\mu$ V) + System Loss(dB) + Antenna Factor(dB $\mu$ V/m)  
Margin(dB) = Limit(dB $\mu$ V/m) - Total Level(dB $\mu$ V/m)

Graph Markers: + Frequency marker (Level of marker not related to final level)  
| Final maximized level using Quasi-Peak detector  
X Final maximized level using Average detector  
# Final maximized level using Peak detector

Level [dB $\mu$ V/m]



||||| MES A627a\_F1H\_Quasi-Peak

++ · MES A627a\_F1H\_Peak\_List

— LIM FCC ClassB F 3m FCC ClassB, field strength 3m

**MEASUREMENT RESULT: "A627a\_F1H\_Final"**

6/27/2014 11:40AM

Frequency MHz	Level dB $\mu$ V	Antenna Factor	System Loss dB	Total dB $\mu$ V/m	Limit dB $\mu$ V/m	Margin dB	Height Ant. m	EuT Angle deg	Final Detector	Comment
									Final Detector	
168.000000	34.87	14.10	-22.3	26.6	43.5	16.9	1.80	150	QUASI-PEAK	None
192.000000	30.43	17.40	-22.2	25.6	43.5	17.9	1.60	160	QUASI-PEAK	None
144.000000	34.06	12.00	-22.7	23.4	43.5	20.1	2.40	135	QUASI-PEAK	None
216.000000	27.07	11.48	-22.0	16.5	43.5	27.0	1.80	30	QUASI-PEAK	None
156.000000	25.06	12.40	-22.6	14.9	43.5	28.6	3.00	160	QUASI-PEAK	None
240.000000	26.68	12.00	-21.7	16.9	46.0	29.1	1.70	25	QUASI-PEAK	None
120.000000	23.02	12.80	-22.8	13.0	43.5	30.5	2.70	30	QUASI-PEAK	None

**Electric Field Strength**

EUT: Honolulu  
Manufacturer: Centralite  
Operating Condition: 68 deg. F; 62% R.H.  
Test Site: DLS O.F. Site 2  
Operator: Craig B; DLS#6685  
Test Specification: Radiated emissions in restricted bands  
Comment: Low, Mid, High channels; continuous transmit  
Date: 06-27-2014

**TEXT: "Vert 3 meters"**

Short Description: Test Set-up

Test Set-up: EUT Measured at 3 Meters with VERTICAL Antenna Polarization

Sample Equations: Total Level(dB $\mu$ V/m) = Level(dB $\mu$ V) + System Loss(dB) + Antenna Factor(dB $\mu$ V/m)  
24.6 = 35.51 + (-22.1) + 11.20

Margin(dB) = Limit(dB $\mu$ V/m) - Total Level(dB $\mu$ V/m)  
15.4 = 40 - 24.6

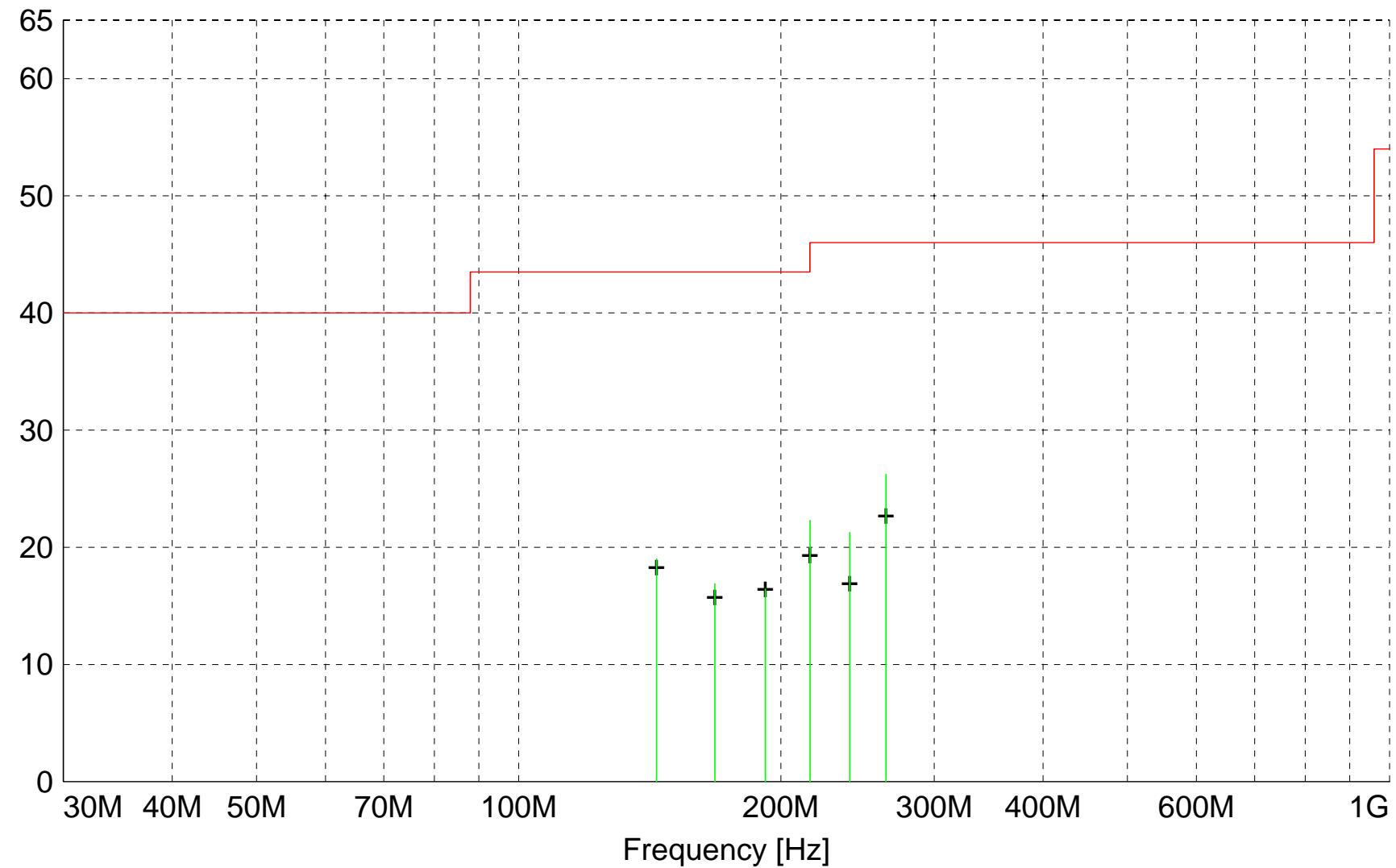
Graph Markers: + Frequency marker (Level of marker not related to final level)

| Final maximized level using Quasi-Peak detector

X Final maximized level using Average detector

# Final maximized level using Peak detector

Level [dB $\mu$ V/m]



||||| MES A627a\_F1V\_Quasi-Peak

++ · MES A627a\_F1V\_Peak\_List

— LIM FCC ClassB F 3m FCC ClassB, field strength 3m

**MEASUREMENT RESULT: "A627a\_F1V\_Final"**

6/27/2014 12:28PM

Frequency MHz	Level dB $\mu$ V	Antenna Factor	System Loss dB	Total dB $\mu$ V/m	Limit dB $\mu$ V/m	Margin dB	Height		EuT Angle deg	Final Detector	Comment
							Ant.	m			
264.050000	34.65	13.16	-21.6	26.2	46.0	19.8	1.00	45	QUASI-PEAK	None	
216.040000	32.85	11.48	-22.0	22.3	46.0	23.7	1.00	175	QUASI-PEAK	None	
144.000000	29.67	12.00	-22.7	19.0	43.5	24.5	1.00	135	QUASI-PEAK	None	
240.000000	31.02	12.00	-21.7	21.3	46.0	24.7	1.00	315	QUASI-PEAK	None	
168.005000	25.13	14.10	-22.3	16.9	43.5	26.6	1.00	315	QUASI-PEAK	None	
192.000000	21.28	17.40	-22.2	16.5	43.5	27.1	1.00	0	QUASI-PEAK	None	

**Electric Field Strength**

EUT: Honolulu  
Manufacturer: Centralite  
Operating Condition: 73 deg C 57% R.H.  
Test Site: DLS O.F. G1  
Operator: Paul L / Craig B - DLS#6685  
Test Specification: Radiated emissions in restricted bands  
Comment: L, M, H channels; Power setting 8  
Date: 06-25-2014

**TEXT: "Horz 3 meters"**

Short Description: Test Set-up

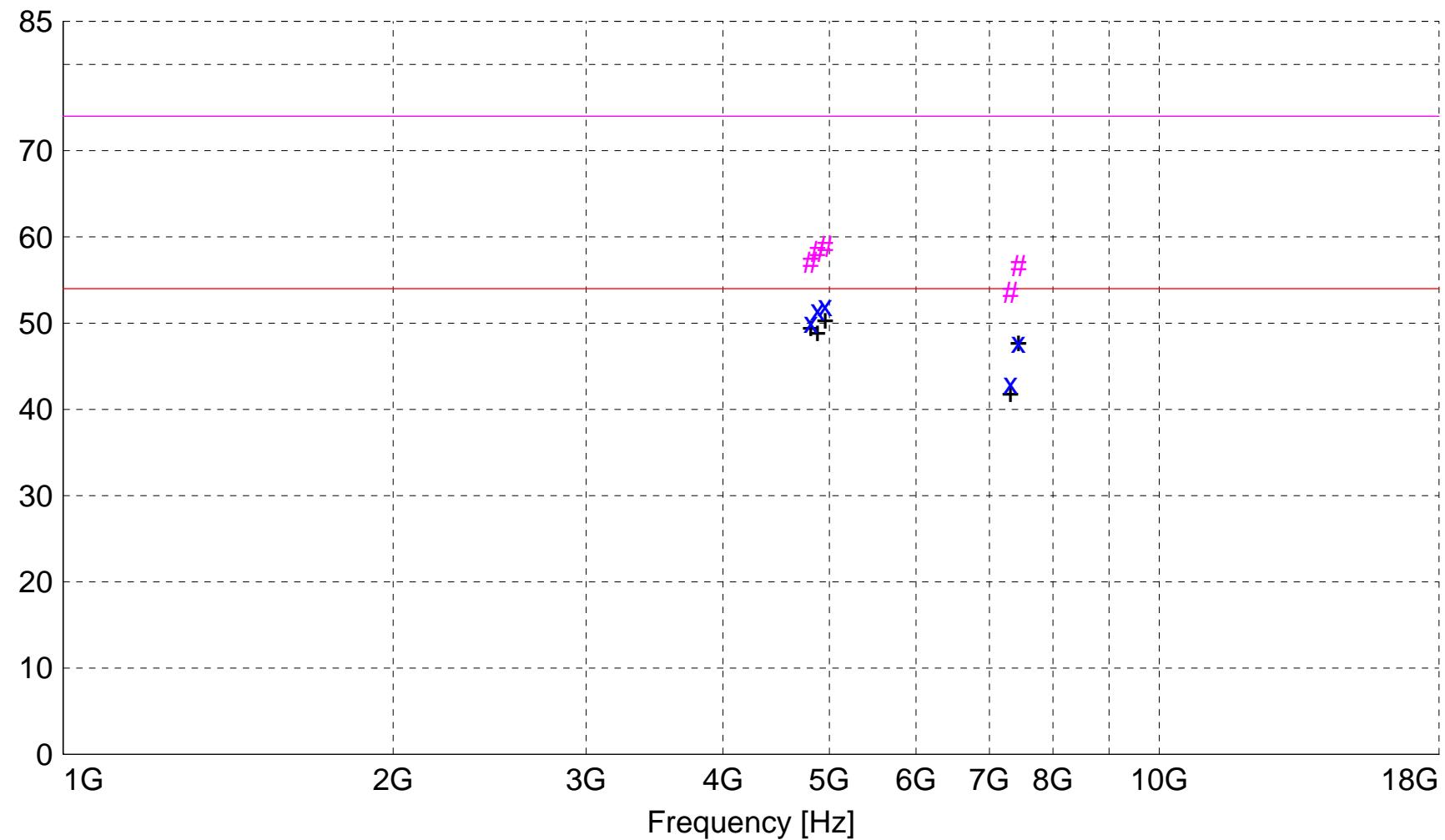
Test Set-up: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization

Sample Equations: Total Level (dB $\mu$ V/m) = Level (dB $\mu$ V) + System Loss (dB) + Antenna Factor (dB $\mu$ V/m)  
24.6 = 35.51 + (-22.1) + 11.20

Margin (dB) = Limit (dB $\mu$ V/m) - Total Level (dB $\mu$ V/m)  
15.4 = 40 - 24.6

Graph Markers: + Frequency marker (Level of marker not related to final level)  
| Final maximized level using Quasi-Peak detector  
X Final maximized level using Average detector  
# Final maximized level using Peak detector  
- Background Scan Peak Detector (Optional)  
- Background Scan Average Detector (Optional)

Level [dB $\mu$ V/m]



**x x** : MES A625b\_sh\_Average  
**# #** : MES A625b\_sh\_Peak  
**+** : MES A625b\_sh\_Peak\_List  
**— LIM** FCC Class B F 3m AVG Field Strength AVG Limit 3m  
**— LIM** FCC Class B F 3m PK Field Strength PEAK Limit 3m

**MEASUREMENT RESULT: "A625b\_sh\_Final"**

6/25/2014 10:49AM

Frequency MHz	Level dB $\mu$ V	Antenna Factor dB $\mu$ V/m	System Loss dB	Total Level dB $\mu$ V/m	Limit dB $\mu$ V/m	Margin dB	Height Ant. m	EuT Angle deg	Final Detector	Comment
4959.040000	56.58	33.20	-37.8	52.0	54.0	2.0	1.28	355	AVERAGE	High ch
4878.960000	56.24	33.06	-37.8	51.5	54.0	2.5	1.00	350	AVERAGE	Mid ch
4809.040000	54.67	32.94	-37.5	50.1	54.0	3.9	1.00	352	AVERAGE	Low ch
7441.580000	45.61	36.51	-34.3	47.8	54.0	6.2	1.43	118	AVERAGE	High ch
7318.520000	41.89	36.18	-35.0	43.0	54.0	11.0	1.43	252	AVERAGE	Mid ch
4959.040000	63.48	33.20	-37.8	58.9	74.0	15.1	1.28	355	MAX PEAK	High ch
4878.960000	63.03	33.06	-37.8	58.3	74.0	15.7	1.00	350	MAX PEAK	Mid ch
4809.040000	61.62	32.94	-37.5	57.0	74.0	17.0	1.00	352	MAX PEAK	Low ch
7441.580000	54.46	36.51	-34.3	56.7	74.0	17.4	1.43	118	MAX PEAK	High ch
7318.520000	52.42	36.18	-35.0	53.6	74.0	20.4	1.43	252	MAX PEAK	Mid ch

**Electric Field Strength**

EUT: Honolulu  
Manufacturer: Centralite  
Operating Condition: 73 deg C 57% R.H.  
Test Site: DLS O.F. G1  
Operator: Paul L / Craig B - DLS#6685  
Test Specification: Radiated emissions in restricted bands  
Comment: L, M, H channels; Power setting 8  
Date: 06-25-2014

**TEXT: "Vert 3 meters"**

Short Description: Test Set-up

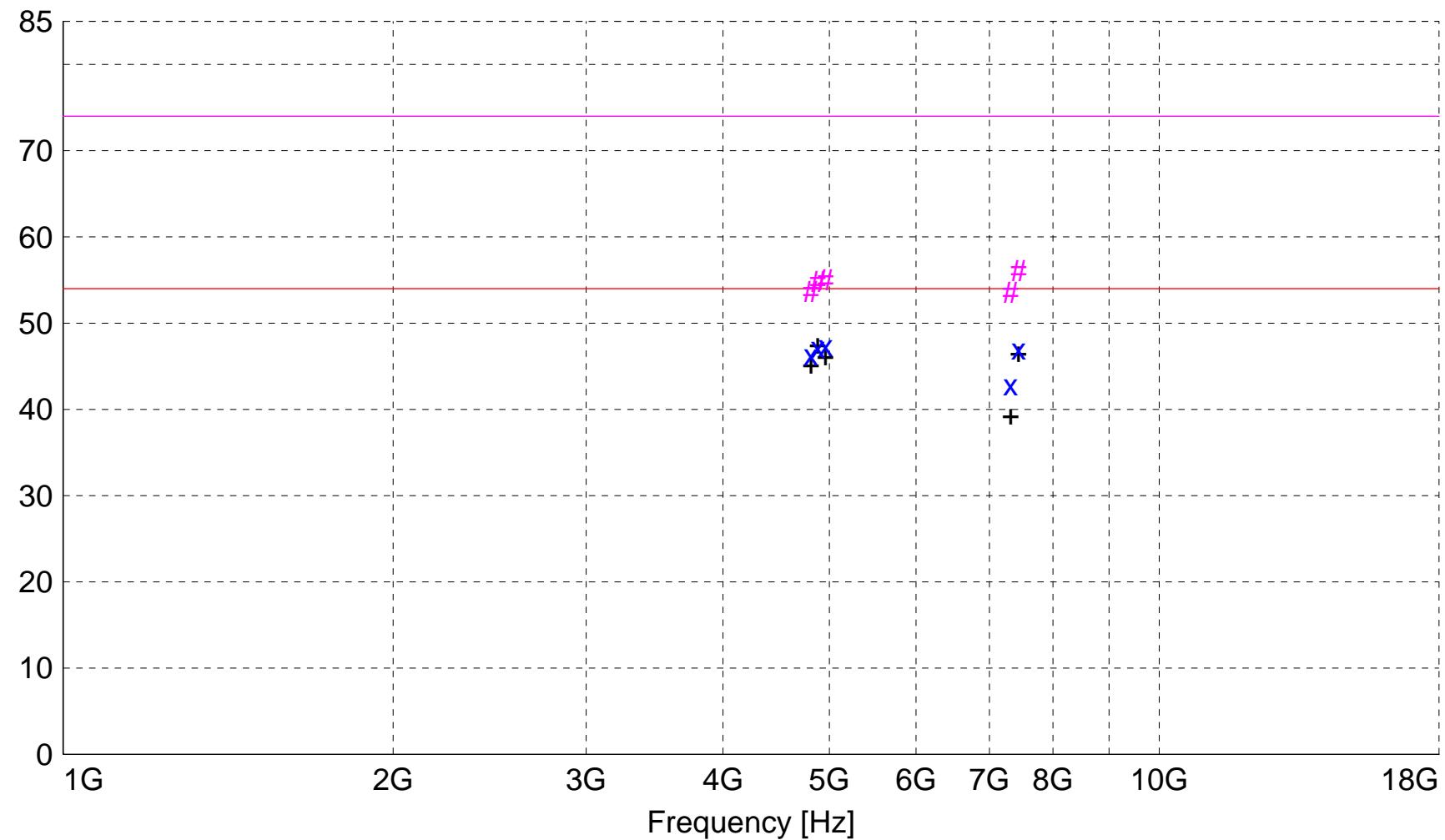
Test Set-up: EUT Measured at 3 Meters with VERTICAL Antenna Polarization

Sample Equations: Total Level (dB $\mu$ V/m) = Level (dB $\mu$ V) + System Loss (dB) + Antenna Factor (dB $\mu$ V/m)  
24.6 = 35.51 + (-22.1) + 11.20

Margin (dB) = Limit (dB $\mu$ V/m) - Total Level (dB $\mu$ V/m)  
15.4 = 40 - 24.6

Graph Markers: + Frequency marker (Level of marker not related to final level)  
| Final maximized level using Quasi-Peak detector  
X Final maximized level using Average detector  
# Final maximized level using Peak detector  
- Background Scan Peak Detector (Optional)  
- Background Scan Average Detector (Optional)

Level [dB $\mu$ V/m]



x x : MES A625b\_sv\_Average  
# # : MES A625b\_sv\_Peak  
+ + : MES A625b\_sv\_Peak\_List  
— LIM FCC Class B F 3m AVG Field Strength AVG Limit 3m  
— LIM FCC Class B F 3m PK Field Strength PEAK Limit 3m

**MEASUREMENT RESULT: "A625b\_sv\_Final"**

6/25/2014 12:56PM

Frequency MHz	Level dB $\mu$ V	Antenna Factor	System Loss dB	Total dB $\mu$ V/m	Limit dB $\mu$ V/m	Margin dB	Height Ant. m	EuT Angle deg	Final Detector	Comment
4961.000000	51.90	33.20	-37.8	47.3	54.0	6.7	1.22	2	AVERAGE	High ch
4881.020000	51.91	33.07	-37.8	47.2	54.0	6.8	1.01	22	AVERAGE	Mid ch
7441.580000	44.81	36.51	-34.3	47.0	54.0	7.0	1.95	58	AVERAGE	High ch
4811.000000	50.90	32.95	-37.6	46.3	54.0	7.7	1.27	15	AVERAGE	Low ch
7318.480000	41.71	36.18	-35.0	42.8	54.0	11.2	1.69	285	AVERAGE	Mid ch
7441.580000	53.93	36.51	-34.3	56.1	74.0	17.9	1.95	58	MAX PEAK	High ch
4961.000000	59.61	33.20	-37.8	55.0	74.0	19.0	1.22	2	MAX PEAK	High ch
4881.020000	59.55	33.07	-37.8	54.9	74.0	19.2	1.01	22	MAX PEAK	Mid ch
4811.000000	58.32	32.95	-37.6	53.7	74.0	20.3	1.27	15	MAX PEAK	Low ch
7318.480000	52.42	36.18	-35.0	53.6	74.0	20.4	1.69	285	MAX PEAK	Mid ch

**No measurable emissions  
were detected  
from the EUT  
above 18 GHz.**

**Radiated emissions  
testing was performed  
up to 26 GHz.**



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## Appendix B

### 7.0 Band-Edge Measurements – RF Conducted

#### Rule Part:

15.247(d)

#### Test Procedure:

KDB 558074 D01 DTS Meas Guidance v03r02  
Emissions in non-restricted frequency bands, Section 11.1(a)  
Measurement procedure – Reference level, Section 11.2  
Measurement procedure – Emission level, Section 11.3

#### Limit:

The peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.

#### Results:

Compliant

#### Notes:

This was an RF conducted measurement. The EUT was connected to the measuring equipment through an SMA connector soldered in place of the antenna. Cable loss and attenuation was accounted for in the transducer factors set in the analyzer.

The EUT was powered through a cable that was connected to the bench supply set to 3.0 VDC. The EUT was set to transmit continuously at its maximum power (power setting 8), with a modulating signal representative of the worst-case signal encountered in a real system operation on the low and high channels of the operating band.

The High channel (channel 26) power setting was reduced from 8 to -3 to meet the radiated upper band-edge requirement at the 2.4835 GHz restricted frequency band edge.

Testing was also performed on channel 25 to show that the output power setting for this channel does not need to be lowered to meet the band-edge requirements.



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Band-Edge Measurements - Conducted  
Operator: Craig B

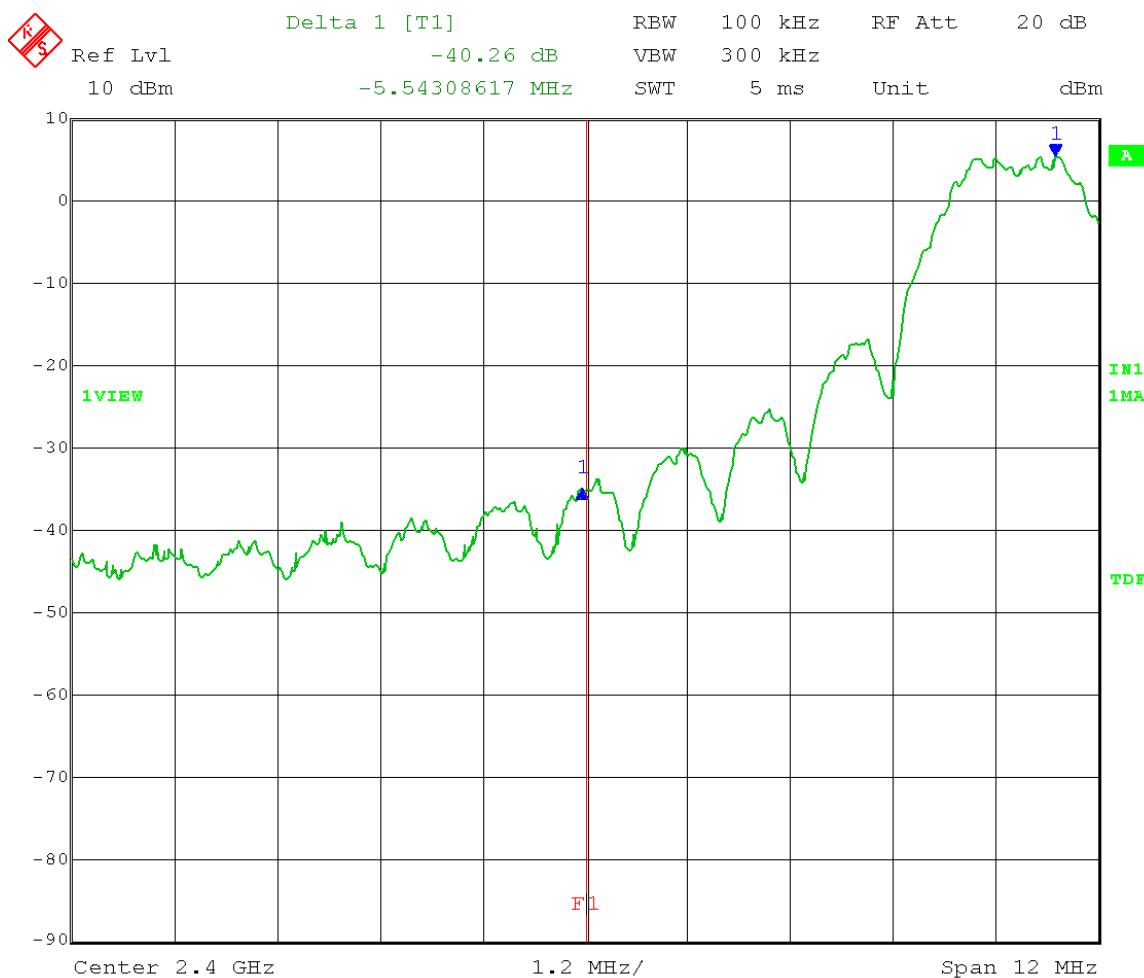
Comment: RBW = 100 kHz  
VBW  $\geq$  300 kHz  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

Low Channel: Transmit = 2.405 GHz

Output power setting: 8

Limit: Band-Edge > 20 dB Below Peak In-Band Emission

Band-Edge Frequency = 2.4 GHz



Date: 26.JUN.2014 11:10:38



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Band-Edge Measurements - Conducted  
Operator: Craig B

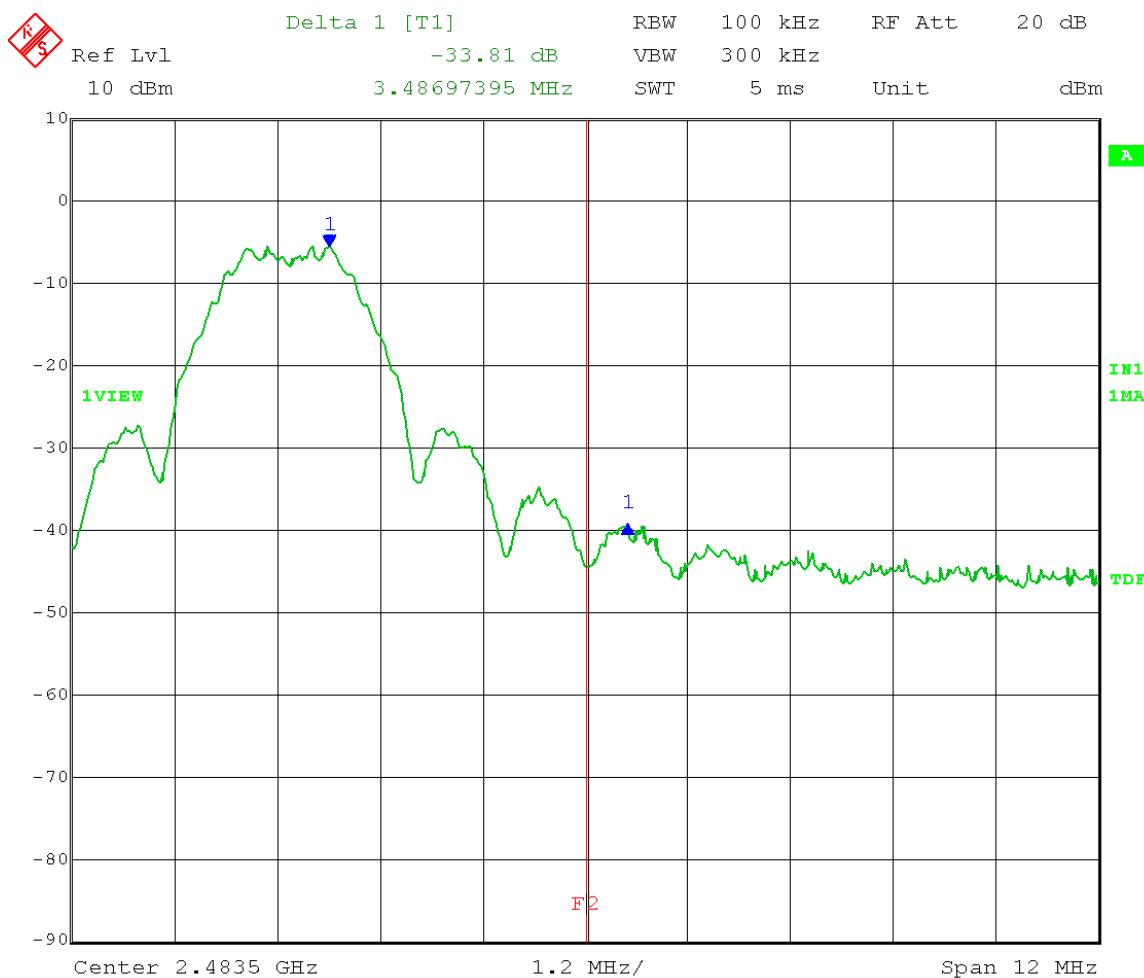
Comment: RBW = 100 kHz  
VBW  $\geq$  300 kHz  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

High Channel: Transmit = 2.480 GHz (channel 26)

Output power setting: -3

Limit: Band-Edge > 20 dB Below Peak In-Band Emission

Band-Edge Frequency = 2.4835 GHz



Date: 26.JUN.2014 11:15:17



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

Test Date: 06-26-2014  
Company: Centralite  
EUT: Honolulu  
Test: Band-Edge Measurements - Conducted  
Operator: Craig B

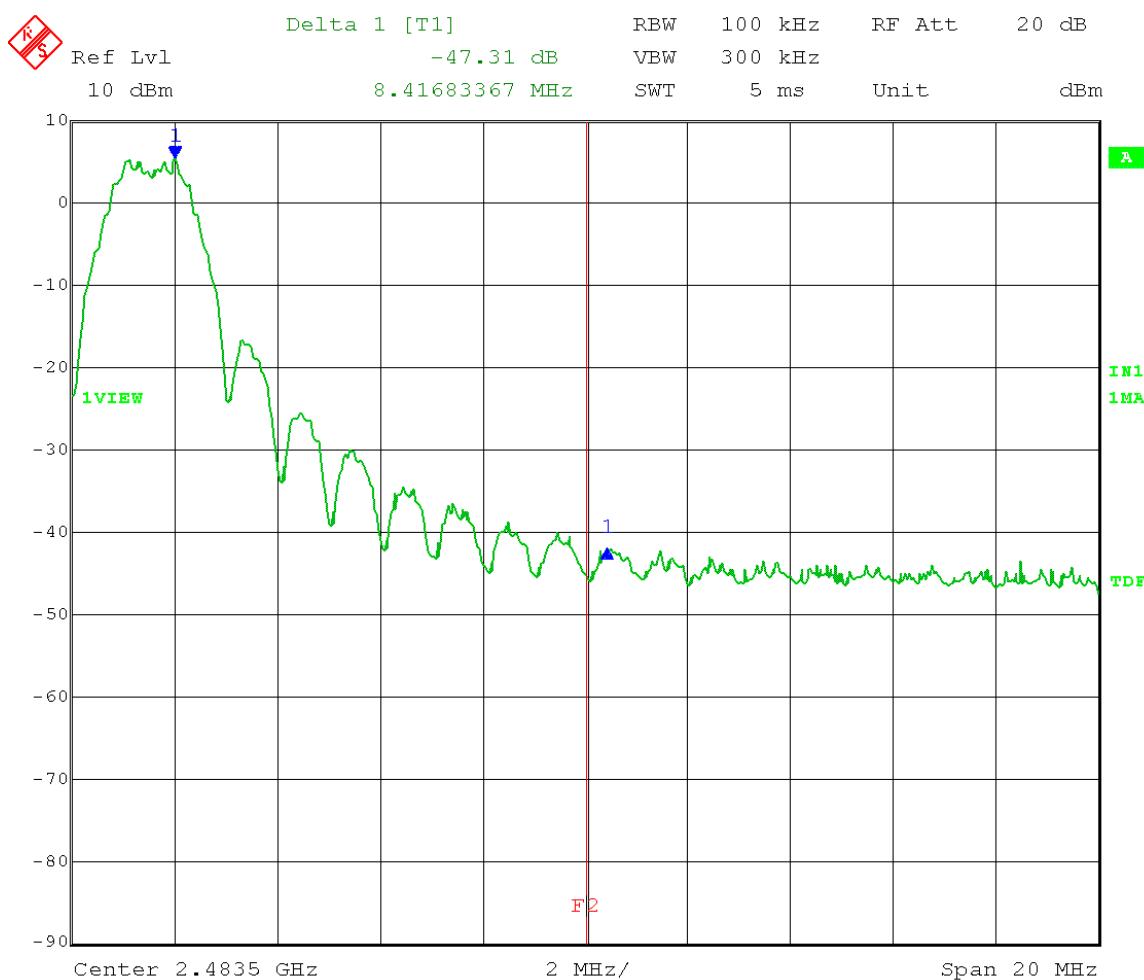
Comment: RBW = 100 kHz  
VBW  $\geq$  300 kHz  
Detector = Peak  
Sweep = auto couple  
Trace = max hold

Next-to-High Channel (channel 25): Transmit = 2.475 GHz

Output power setting: 8

Limit: Band-Edge > 20 dB Below Peak In-Band Emission

Band-Edge Frequency = 2.4835 GHz



Date: 26.JUN.2014 11:19:29



166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## Appendix B

### 8.0 Band-Edge Measurements – Radiated

#### Rule Part:

15.247(d), 15.205(a), 15.209(a)

#### Test Procedure:

KDB 558074 D01 DTS Meas Guidance v03r02  
Emissions in restricted frequency bands, Section 12.1  
13.0 Band-edge measurements  
13.3 Integration method  
13.3.1 Trace averaging with continuous EUT transmission at full power  
ANSI C63.10-2009

#### Limits:

15.209(a)

#### Results:

Compliant

#### Notes:

This was a radiated measurement. The EUT was transmitting from its integrated PCB trace antenna. The EUT was powered through a serial interface cable that was connected to the bench supply set to 3.0 VDC. The EUT was set to transmit continuously at its maximum power, with a modulating signal representative of the worst-case signal encountered in a real system operation on the high channel of the operating band.

The High channel (channel 26) power setting was reduced from 8 to -3 to meet the radiated upper band-edge requirement at the 2.4835 GHz restricted frequency band edge.

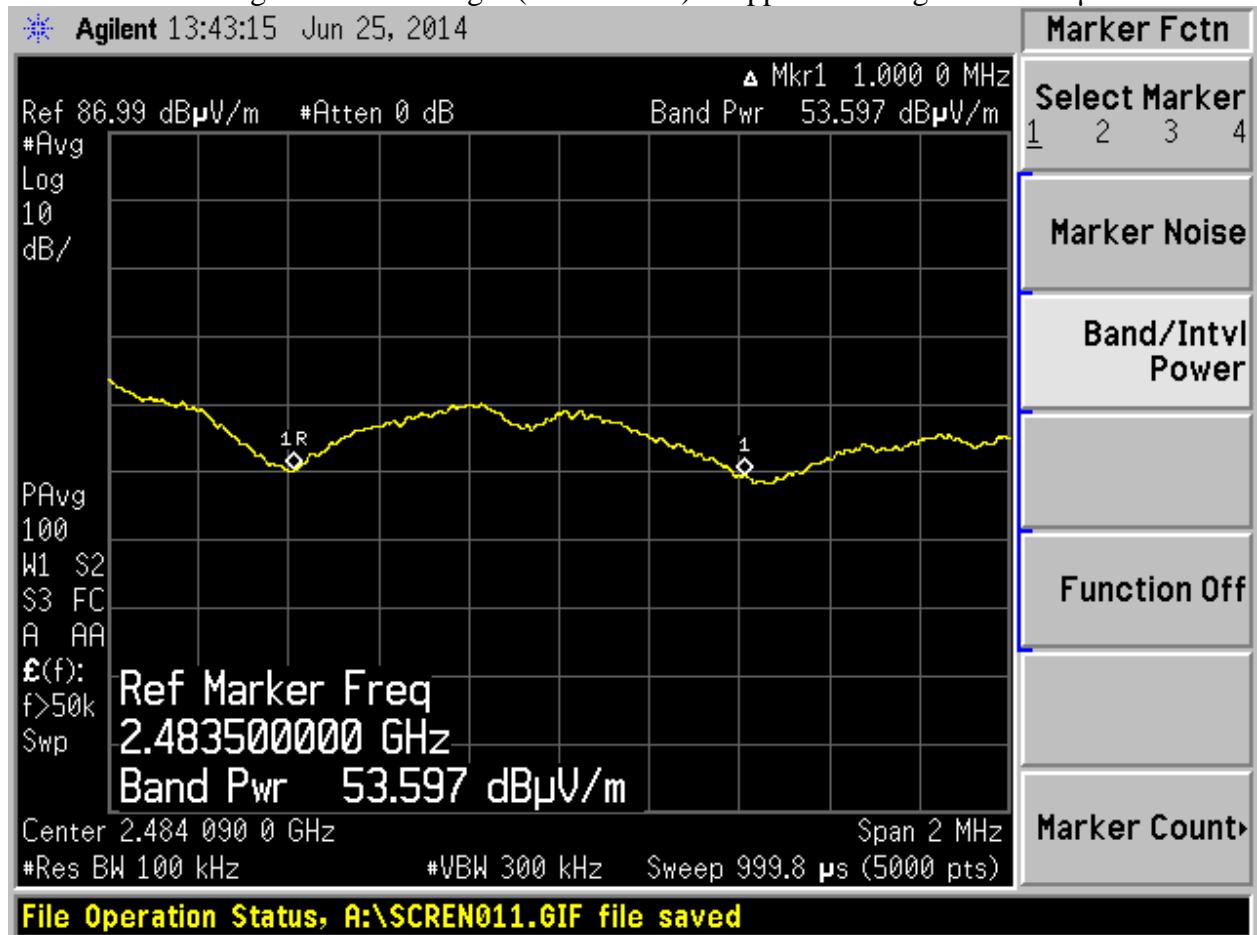
Testing was also performed on channel 25 to show that the output power setting for this channel does not need to be lowered to meet the band-edge requirements.

Test Date: 06-25-2014  
 Company: Centralite  
 EUT: Honolulu  
 Test: Upper Band-Edge Radiated – Integration Method  
 Rule part: FCC Part 15.247(d) and FCC Part 15.205  
 Operator: Craig B  
 Comment: Channel 26: Frequency – 2.480 GHz  
 Power setting -3

Because the upper band-edge coincides with a restricted band, band-edge compliance for the upper band-edge was determined using the radiated integration method as outlined in FCC KDB 558074 D01 DTS Meas Guidance v03r02, Section 13.3.1.

#### HORIZONTAL:

AVERAGE: Integrated field strength (over 1 MHz) at upper band edge = 53.6 dB $\mu$ V/m

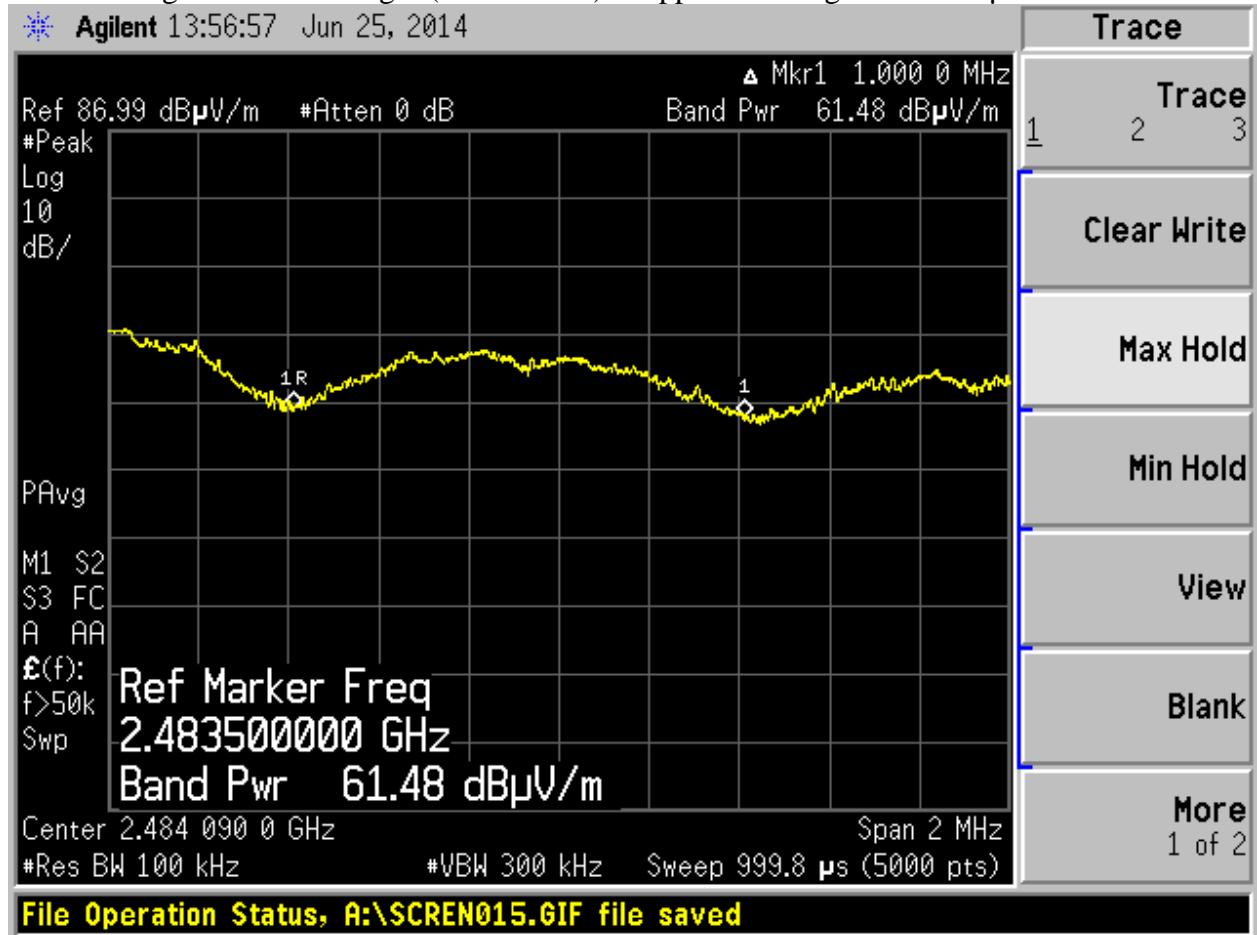


Test Date: 06-25-2014  
 Company: Centralite  
 EUT: Honolulu  
 Test: Upper Band-Edge Radiated – Integration Method  
 Rule part: FCC Part 15.247(d) and FCC Part 15.205  
 Operator: Craig B  
 Comment: Channel 26: Frequency – 2.480 GHz  
 Power setting -3

Because the upper band-edge coincides with a restricted band, band-edge compliance for the upper band-edge was determined using the radiated integration method as outlined in FCC KDB 558074 D01 DTS Meas Guidance v03r02, Section 13.3.1.

#### HORIZONTAL:

PEAK: Integrated field strength (over 1 MHz) at upper band edge = 61.5 dB $\mu$ V/m

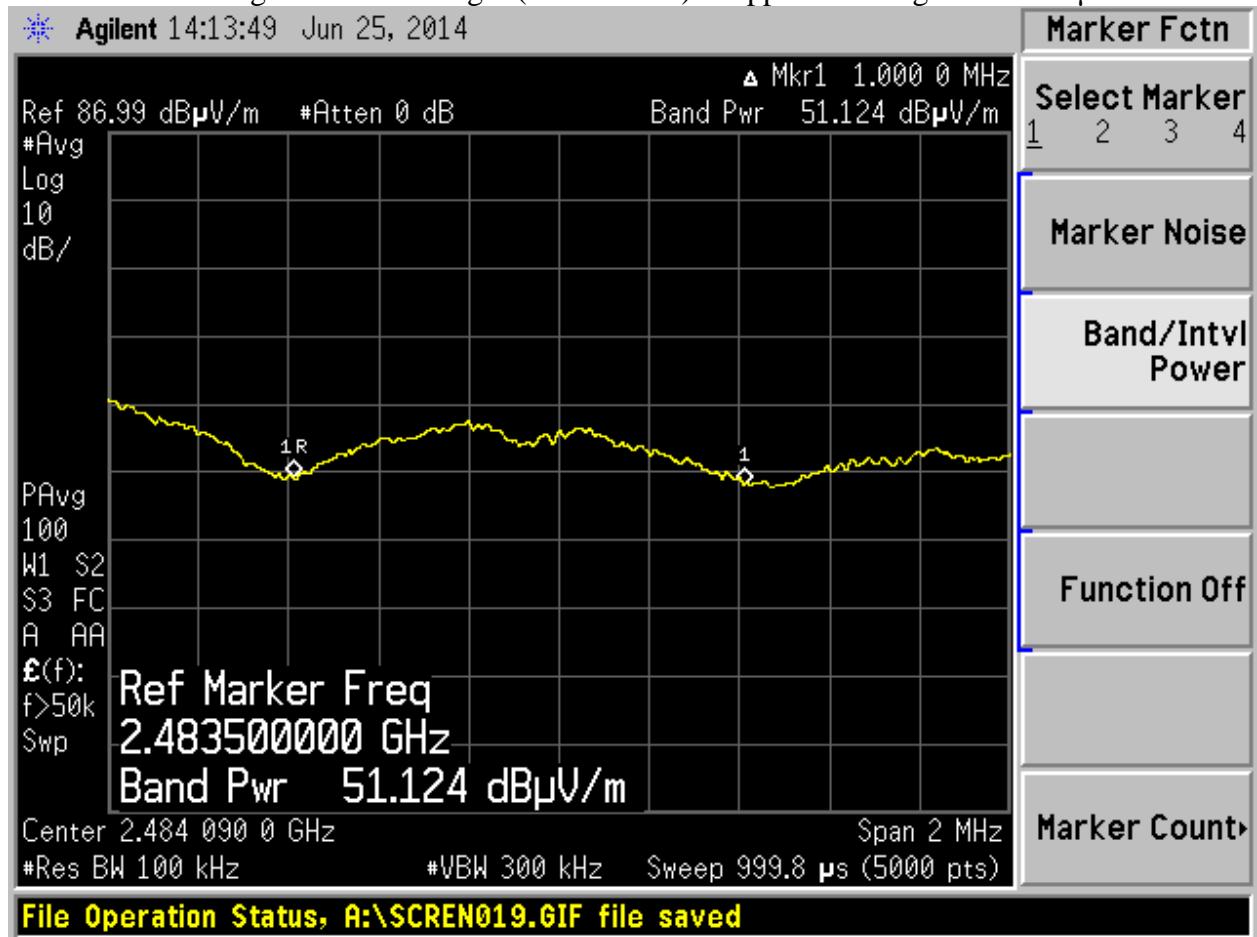


Test Date: 06-25-2014  
 Company: Centralite  
 EUT: Honolulu  
 Test: Upper Band-Edge Radiated – Integration Method  
 Rule part: FCC Part 15.247(d) and FCC Part 15.205  
 Operator: Craig B  
 Comment: Channel 26: Frequency – 2.480 GHz  
 Power setting -3

Because the upper band-edge coincides with a restricted band, band-edge compliance for the upper band-edge was determined using the radiated integration method as outlined in FCC KDB 558074 D01 DTS Meas Guidance v03r02, Section 13.3.1.

VERTICAL:

AVERAGE: Integrated field strength (over 1 MHz) at upper band edge = 51.1 dB $\mu$ V/m

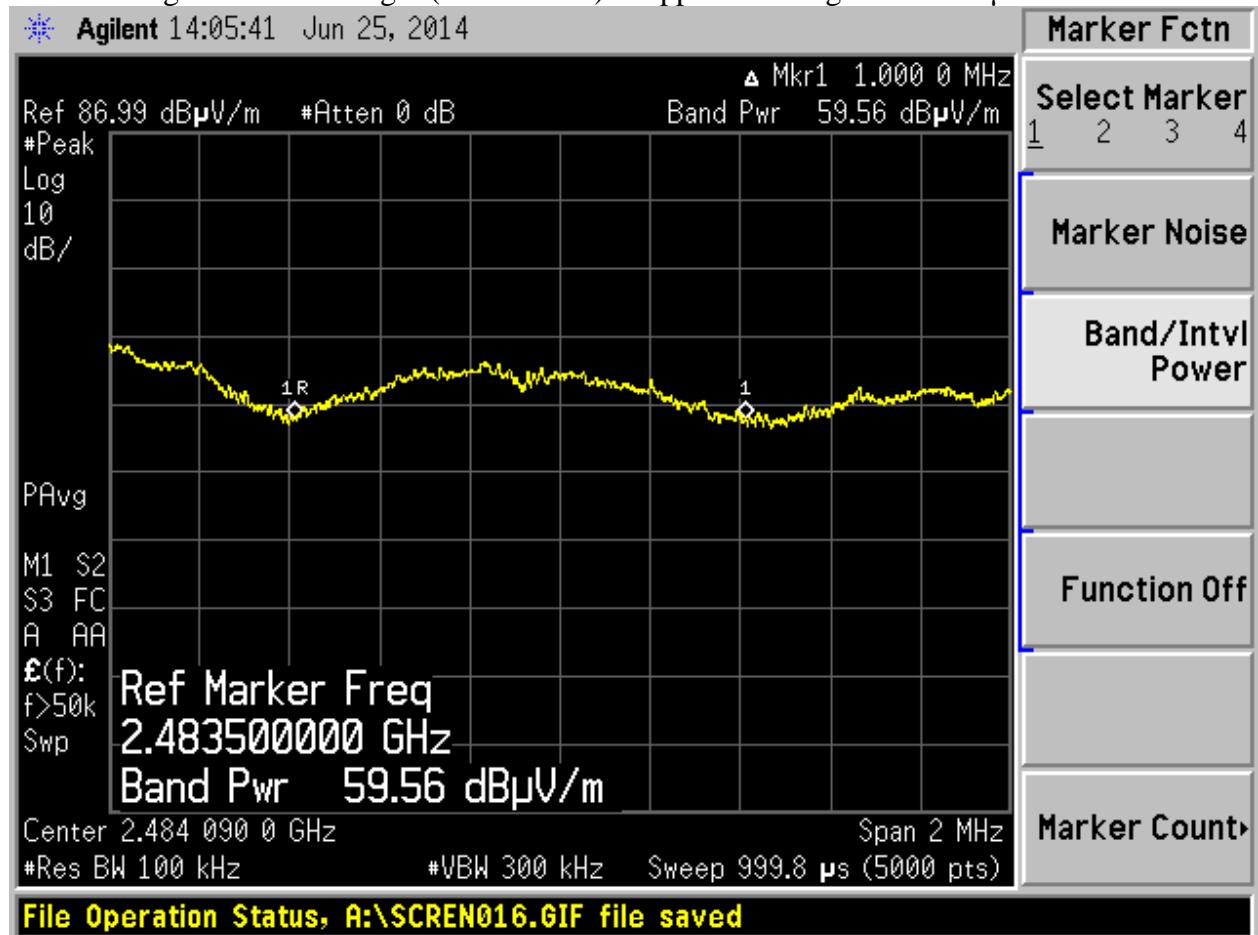


Test Date: 06-25-2014  
 Company: Centralite  
 EUT: Honolulu  
 Test: Upper Band-Edge Radiated – Integration Method  
 Rule part: FCC Part 15.247(d) and FCC Part 15.205  
 Operator: Craig B  
 Comment: Channel 26: Frequency – 2.480 GHz  
 Power setting -3

Because the upper band-edge coincides with a restricted band, band-edge compliance for the upper band-edge was determined using the radiated integration method as outlined in FCC KDB 558074 D01 DTS Meas Guidance v03r02, Section 13.3.1.

VERTICAL:

PEAK: Integrated field strength (over 1 MHz) at upper band edge = 59.6 dB $\mu$ V/m

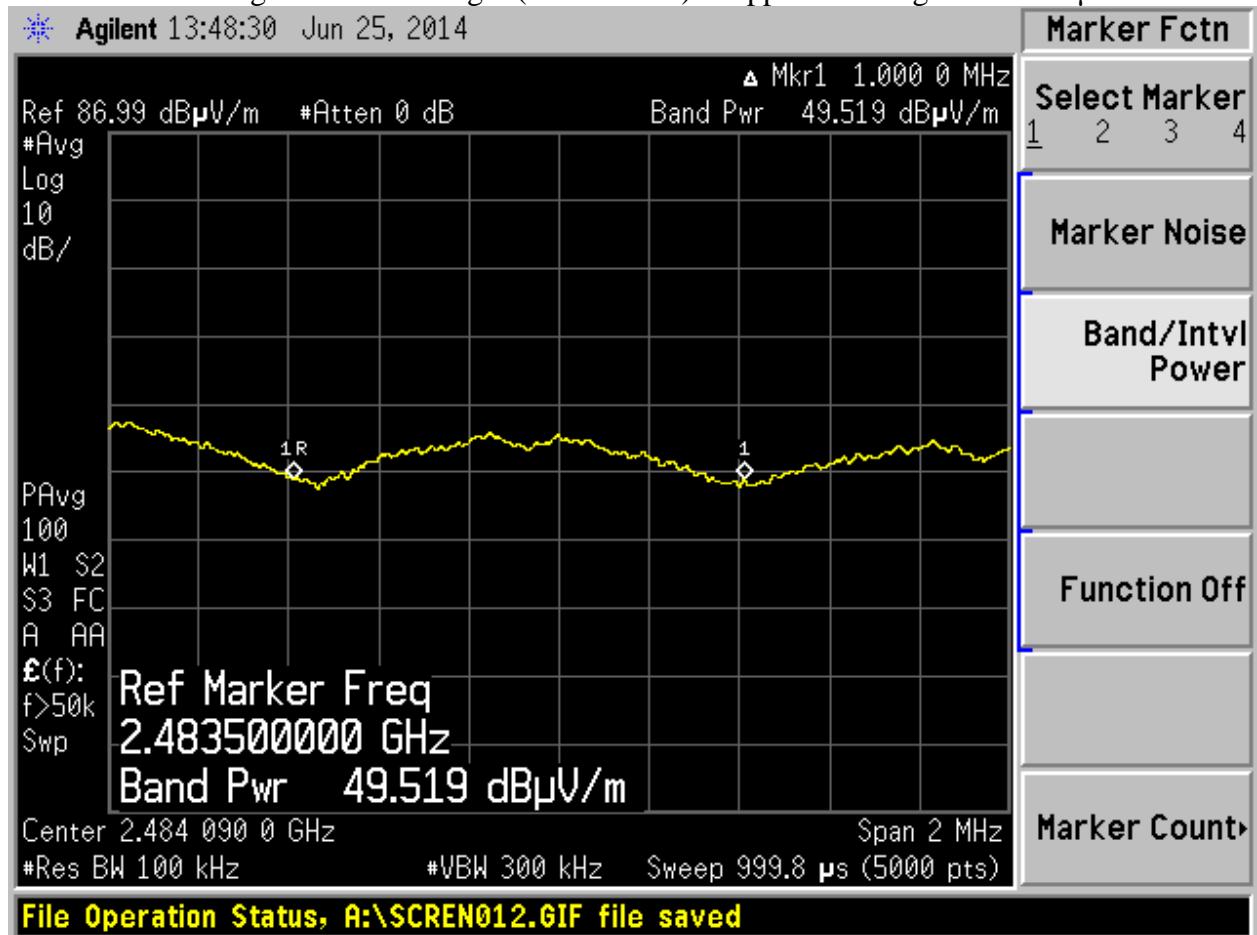


Test Date: 06-25-2014  
 Company: Centralite  
 EUT: Honolulu  
 Test: Upper Band-Edge Radiated – Integration Method  
 Rule part: FCC Part 15.247(d) and FCC Part 15.205  
 Operator: Craig B  
 Comment: Channel 25: Frequency – 2.475 GHz  
 Power setting: 8

Because the upper band-edge coincides with a restricted band, band-edge compliance for the upper band-edge was determined using the radiated integration method as outlined in FCC KDB 558074 D01 DTS Meas Guidance v03r02, Section 13.3.1.

#### HORIZONTAL:

AVERAGE: Integrated field strength (over 1 MHz) at upper band edge = 49.5 dB $\mu$ V/m

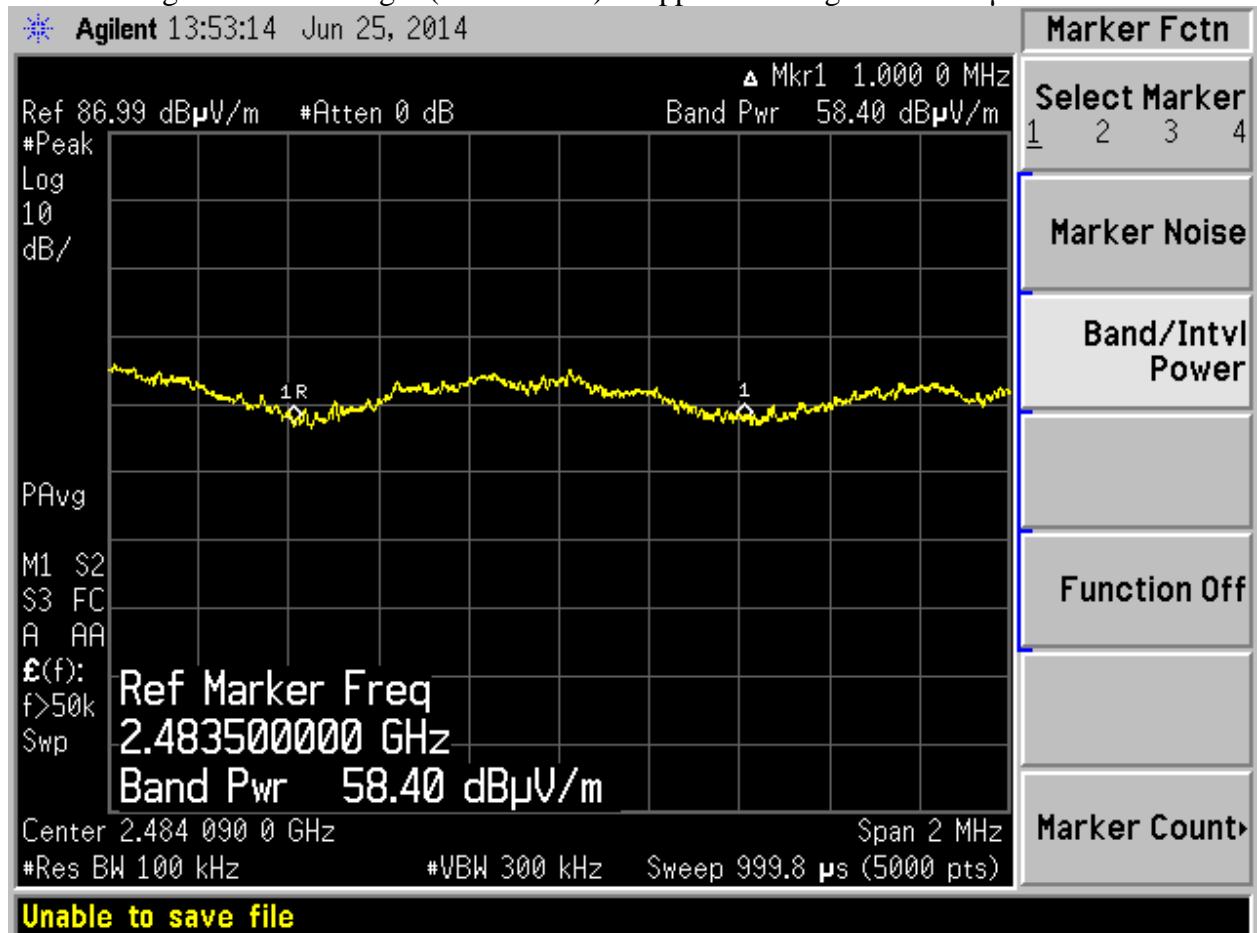


Test Date: 06-25-2014  
 Company: Centralite  
 EUT: Honolulu  
 Test: Upper Band-Edge Radiated – Integration Method  
 Rule part: FCC Part 15.247(d) and FCC Part 15.205  
 Operator: Craig B  
 Comment: Channel 25: Frequency – 2.475 GHz  
 Power setting: 8

Because the upper band-edge coincides with a restricted band, band-edge compliance for the upper band-edge was determined using the radiated integration method as outlined in FCC KDB 558074 D01 DTS Meas Guidance v03r02, Section 13.3.1.

#### HORIZONTAL:

PEAK: Integrated field strength (over 1 MHz) at upper band edge = 58.4 dB $\mu$ V/m

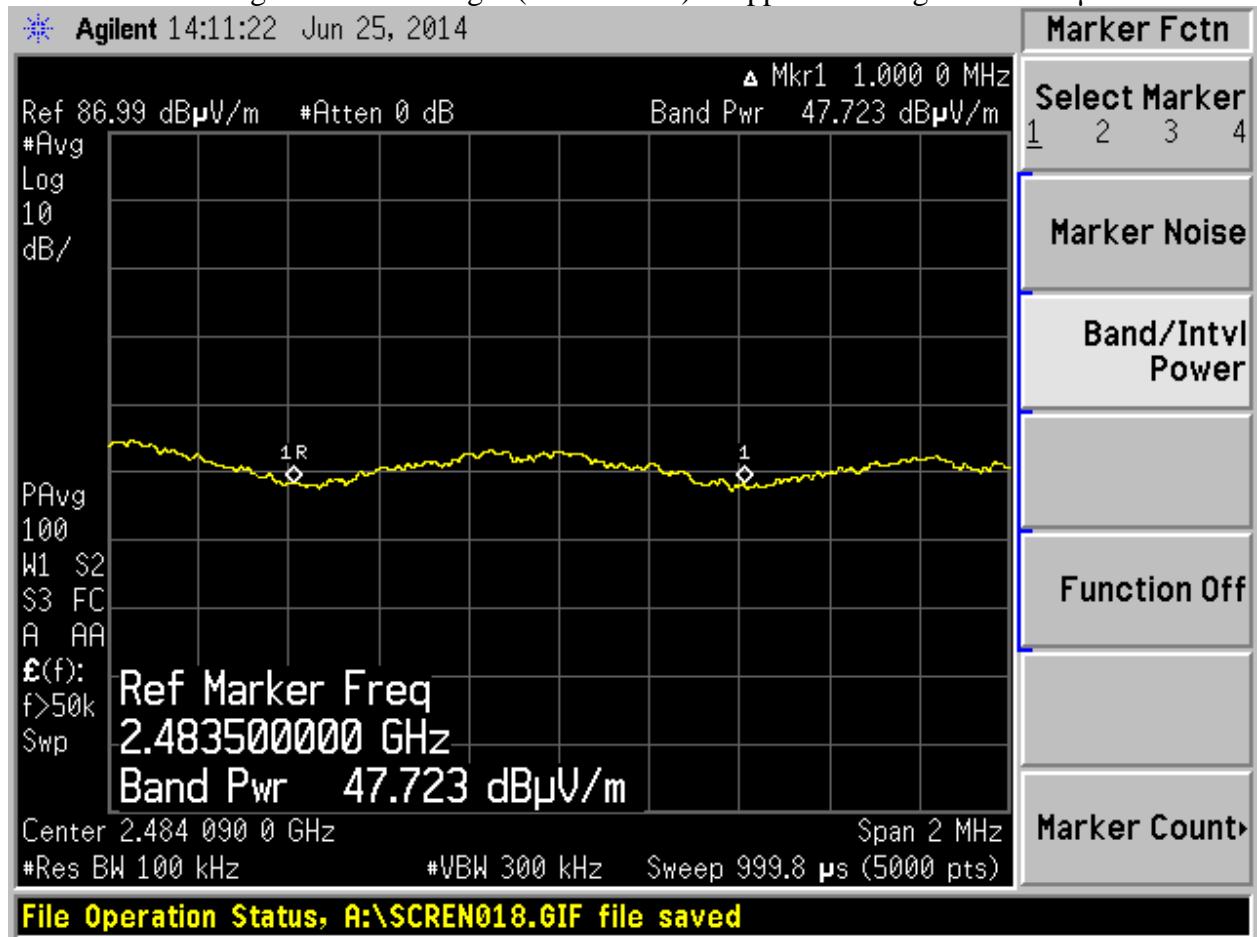


Test Date: 06-25-2014  
 Company: Centralite  
 EUT: Honolulu  
 Test: Upper Band-Edge Radiated – Integration Method  
 Rule part: FCC Part 15.247(d) and FCC Part 15.205  
 Operator: Craig B  
 Comment: Channel 25: Frequency – 2.475 GHz  
 Power setting: 8

Because the upper band-edge coincides with a restricted band, band-edge compliance for the upper band-edge was determined using the radiated integration method as outlined in FCC KDB 558074 D01 DTS Meas Guidance v03r02, Section 13.3.1.

VERTICAL:

AVERAGE: Integrated field strength (over 1 MHz) at upper band edge = 47.7 dB $\mu$ V/m

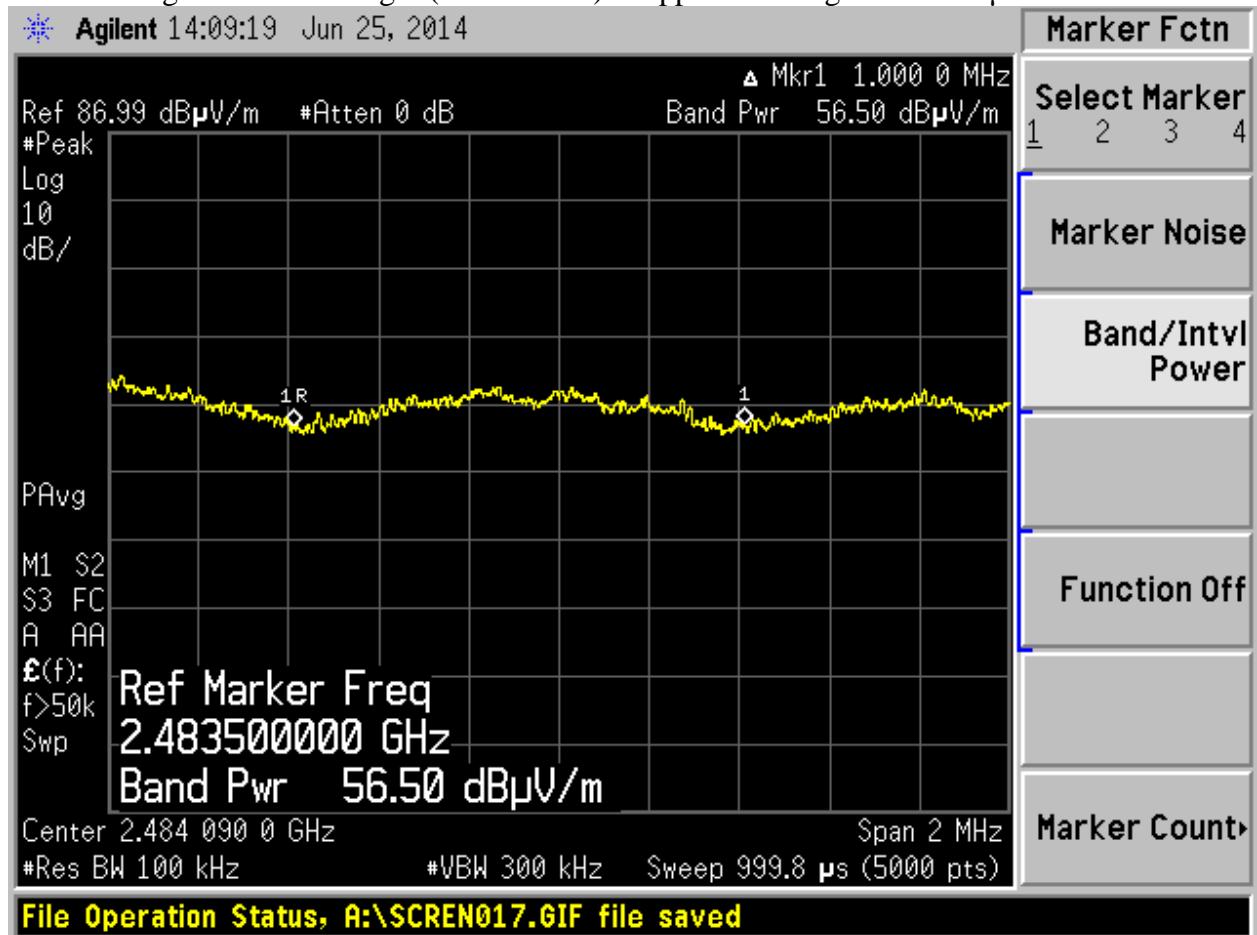


Test Date: 06-25-2014  
Company: Centralite  
EUT: Honolulu  
Test: Upper Band-Edge Radiated – Integration Method  
Rule part: FCC Part 15.247(d) and FCC Part 15.205  
Operator: Craig B  
Comment: Channel 25: Frequency – 2.475 GHz  
Power setting: 8

Because the upper band-edge coincides with a restricted band, band-edge compliance for the upper band-edge was determined using the radiated integration method as outlined in FCC KDB 558074 D01 DTS Meas Guidance v03r02, Section 13.3.1.

VERTICAL:

PEAK: Integrated field strength (over 1 MHz) at upper band edge = 56.5 dB $\mu$ V/m





166 South Carter, Genoa City, WI 53128

Company: CentraLite Systems, Inc.  
Model Tested: 3130  
Report Number: 20178  
DLS Project: 6685

## END OF REPORT

Revision #	Date	Comments	By
1.0	07-24-2014	Preliminary Release	JS