



166 South Carter, Genoa City, WI 53128

Company: Renaissance Learning
Model Tested: RESP
Report Number: 16149

Code of Federal Regulations 47 Part 15 – Radio Frequency Devices

Subpart C – Intentional Radiators

Section 15.249

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:	Renaissance Responder
Kind of Equipment:	Wireless Communication Device
Frequency Range:	2405 MHz to 2480 MHz
Test Configuration:	Hand held
Model Number(s):	RESP
Model(s) Tested:	RESP
Serial Number(s):	0015070000004842 and 0015070000004841
Date of Tests:	April 20, 2010
Test Conducted For:	Renaissance Learning, Inc. 2911 Peach Street Wisconsin Rapids, WI 54494

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.

© Copyright 1983 - 2010 D.L.S. Electronic Systems, Inc.

COPYRIGHT NOTICE

This report must not be reproduced (except in full), without the approval of D.L.S. Electronic Systems, Inc.



166 South Carter, Genoa City, WI 53128

Company:
Model Tested:
Report Number:

Renaissance Learning
RESP
16149

SIGNATURE PAGE

Report By:

A handwritten signature in black ink, appearing to read "AA", with a long horizontal flourish extending to the right.

Adam Alger
Test Engineer

Reviewed By:

A handwritten signature in black ink, appearing to read "William Stumpf", written in a cursive style.

William Stumpf
OATS Manager

Approved By:

A handwritten signature in black ink, appearing to read "Brian J. Mattson", written in a cursive style.

Brian Mattson
General Manager



166 South Carter, Genoa City, WI 53128

Company:
Model Tested:
Report Number:

Renaissance Learning
RESP
16149

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	5
3.0	Facilities	5
4.0	Description of Test Sample	6
5.0	Test Equipment	7
6.0	Test Arrangements	8
7.0	Test Conditions	8
8.0	Modifications Made To EUT For Compliance	8
9.0	Additional Descriptions	8
10.0	Results	9
11.0	Conclusion	9
Appendix A – Test Photos		10
Appendix B – Measurement Data		13
1.0	Field Strength of Fundamental and Harmonics	13
1.1.1	Field Strength of Fundamental (Serial Number 0015070000004841)	14
1.1.2	Field Strength of Fundamental (Serial Number 0015070000004842)	15
1.2.1	Field Strength of Harmonics and Spurious (Serial Number 0015070000004841)	16
1.2.2	Field Strength of Harmonics and Spurious (Serial Number 0015070000004842)	17
2.0	Restricted Bands of Operation	18
2.1	Restricted Bands of Operation (Serial Number 0015070000004841)	19
2.2	Restricted Bands of Operation (Serial Number 0015070000004842)	20
3.0	Emission Bandwidth - 20 dB	21
4.0	Duty Cycle Correction	23

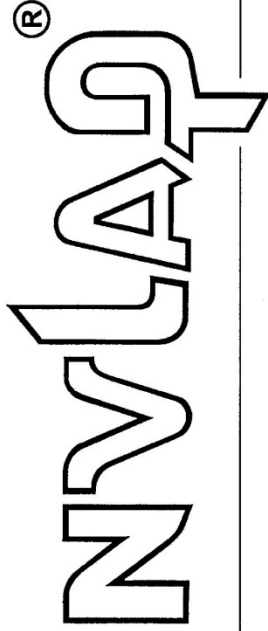


166 South Carter, Genoa City, WI 53128

Company:
Model Tested:
Report Number:

Renaissance Learning
RESP
16149

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 Communiqué dated January 2009).

2009-10-01 through 2010-09-30

Effective dates



Dolly J. Buice
For the National Institute of Standards and Technology

NVLAP-01C (REV. 2009-01-28)



166 South Carter, Genoa City, WI 53128

Company: Renaissance Learning
Model Tested: RESP
Report Number: 16149

1.0 Summary of Test Report

It was determined that the Renaissance Responder, Model RESP, complies with the requirements of CFR 47 Part 15 Subpart C Section 15.249.

Subpart C Section 15.249 Applicable Technical Requirements Tested:

Section	Description	Procedure	Note	Compliant?
15.249(a)	Field Strength of Fundamental Frequency	ANSI C63.4-2003 Annex H	1	Yes
15.249(a)	Field Strength of Harmonics	ANSI C63.4-2003 Annex H	1	Yes
15.205	Restricted Bands of Operation (Band-Edge)	FCC Publication 913591	1	Yes
15.215(c)	20 dB Emission Bandwidth	ANSI C63.4-2003 Annex H	2	NA
15.35(c)	Duty Cycle Correction	ANSI C63.4-2003 Annex H	2	NA

Note 1: EUT tested at a distance of 3 meters in three orthogonal planes.

Note 2: Informative.

NA: Not Applicable.

2.0 Introduction

On April 20, 2010 the Renaissance Responder, Model RESP, as provided from Renaissance Learning Inc. was tested to the requirements of CFR 47 Part 15 Subpart C Section 15.249. To meet these requirements, the procedures contained within this report were performed by personnel of D.L.S. Electronic Systems, Inc. who are responsible to Donald L. Sweeney, Senior EMC Engineer.

3.0 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



166 South Carter, Genoa City, WI 53128

Company: Renaissance Learning
Model Tested: RESP
Report Number: 16149

4.0 Description of Test Sample

Description:

The device is a hand held unit that transfers and receives data using an RF 802.15.4 radio. The device displays the data received from a wireless host and / or entered by the user using the keypad. The information received and or response entered by the user is displayed on the Liquid Crystal Display (LCD). The user can read the information on the display, enter the appropriate response using the keypad, and transmit the response to the host wirelessly.

Type of Equipment / Frequency Range:

Hand held / 2405 MHz to 2480 MHz

Physical Dimensions of Equipment Under Test:

Length: 6 in. x Width: 2.5 in. x Height: 1 in.

Power Source:

2 AA batteries in series; 3 VDC

Internal Frequencies:

32 MHz

Transmit / Receive Frequencies Used For Test Purpose:

2405 MHz, 2440 MHz, 2480 MHz

Type of Modulation(s) / Antenna Type:

GFSK Integral(Inverted_F)

Description of Circuit Board(s) / Part Number:

Responder II PCB assembly	36-00302 Rev 1.4
---------------------------	------------------



166 South Carter, Genoa City, WI 53128

Company: Renaissance Learning
Model Tested: RESP
Report Number: 16149

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 – Chamber G1 - Test Equipment:

Description	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Due Dates
Receiver	Rohde & Schwarz	ESI 40	837808/005	20 Hz – 40 GHz	7/10
Preamplifier	Rohde & Schwarz	TS-PR10	032001/003	9 kHz – 1 GHz	1/11
Antenna	EMCO	3104C	9810-4849	20 MHz – 200 MHz	2/12
Antenna	EMCO	3146	1205	200 MHz – 1 GHz	7/11
Horn Antenna	EMCO	3115	9502-4451	1-18GHz	4/11
Filter- High-Pass	Q-Microwave	100462	2	4.2GHz-18GHz	5/10
Preamp	Miteq	AMF-6D-100200-50	313936	1GHz-10GHz	5/10
Preamp	Miteq	AMF-6D-010100-50	213976	10GHz-18GHz	5/10
Preamp	Miteq	AMF-8B-180265-40-10P-H/S	438727	18GHz-26GHz	8/10
Horn Antenna	ETS Lindgren	3116	00062917	18 – 40GHz	10/11
High Pass Filter	Planar	CL22500-9000-CD-SS	PF1229/0728	15-40 GHz	7/10



166 South Carter, Genoa City, WI 53128

Company: Renaissance Learning
Model Tested: RESP
Report Number: 16149

6.0 Test Arrangements

Radiated Arrangement:

All emission tests were performed at D.L.S. Electronic Systems, Inc. and set up according to ANSI C63.4-2003 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. Specified by ANSI C63.4-2003, Section 4.2.

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

7.0 Test Conditions

Temperature and Humidity:

71°F at 29% RH

Battery Voltage:

3.0 VDC

8.0 Modifications Made To EUT For Compliance

None noted at time of test.

9.0 Additional Descriptions

Test Software loaded onto device to control transmit and receive. User selectable for channel and power. Maximum Power setting as chosen by Renaissance Learning for certification and testing: -0.5 dBm.

Channels used 11 (2405 MHz); 18 (2440 MHz); 26 (2480 MHz)

Test Software Version: 1.04 Apr 15 2010 08:36:07

FCC / IC Testing on Serial Number 0015070000004842 and 0015070000004841. (Different crystals)



166 South Carter, Genoa City, WI 53128

Company:	Renaissance Learning
Model Tested:	RESP
Report Number:	16149

10.0 Results

Two test samples were provided for testing. Different crystal manufactures are being used in this application. The frequency of the two crystals is the same, 32 MHz, and the crystal provides a sinusoidal clock for the CC2530. Serial number 0015070000004841 has a SQC Technology Ltd. crystal and serial number 0015070000004842 has a Precision Devices Inc. crystal.

Measurements were performed in accordance with ANSI C63.4-2003 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 Renaissance Responder, Model RESP as provided from Renaissance Learning Inc., tested on April 20, 2010 **meets** the requirements of CFR 47 Part 15 Subpart C Section 15.249.



166 South Carter, Genoa City, WI 53128

Company:
Model Tested:
Report Number:

Renaissance Learning
RESP
16149

Appendix A – Test Photos

Photo Information and Test Setup:

Item: EUT – Renaissance Responder



Radiated X Position



166 South Carter, Genoa City, WI 53128

Company:
Model Tested:
Report Number:

Renaissance Learning
RESP
16149

Appendix A

Radiated Y Position





166 South Carter, Genoa City, WI 53128

Company:
Model Tested:
Report Number:

Renaissance Learning
RESP
16149

Appendix A

Radiated Z Position





166 South Carter, Genoa City, WI 53128

Company: Renaissance Learning
Model Tested: RESP
Report Number: 16149

Appendix B – Measurement Data

1.0 Field Strength of Fundamental and Harmonics

Rule Part: Section 15.249(a) including 15.209(a)

Test Procedure: ANSI C63.4-2003 Annex H

Limits:

Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Field Strength of Harmonics (microvolts/meter)
2400 – 2483.5 MHz	50	500

Results: Compliant

Sample Equations:

Level = Total Level - System Loss - Antenna Factor
Final Corrected = Total Level - Duty Cycle Correction
Margin = Limit - Final Corrected

Notes:

Two units were tested. (Serial Number 0015070000004842 and 0015070000004841)
Tested at a 3 meter distance 30 MHz to 10 GHz
Tested at a 1 meter distance 10 GHz to 26 GHz
All other emissions at least 20 dB below the limit
Since the EUT was not able to transmit continuously, compliance is shown by measurement with a peak detector and applying a duty cycle corrected value to the average limit (see above equations).



166 South Carter, Genoa City, WI 53128

Company: Renaissance Learning
 Model Tested: RESP
 Report Number: 16149

Appendix B

1.1.1 Field Strength of Fundamental (Serial Number 0015070000004841)

Frequency (MHz)	Measurement Type	Antenna	Level (dBuV)	Antenna Factor (dB/m)	System Loss (dB)	Total Level (dBuV/m)	Duty Cycle Correction (dB)	Final Corrected (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	EUT Angle (deg)
2405.000	Max Peak	Vert	57.31	28.33	9.9	95.54	0	95.54	114	18.5	1.1	89
2405.000	Average	Vert	57.31	28.33	9.9	95.54	14.31	81.23	94	12.8	1.1	89
2405.000	Max Peak	Horz	59.05	28.33	9.9	97.28	0	97.28	114	16.7	1.0	160
2405.000	Average	Horz	59.05	28.33	9.9	97.28	14.31	82.97	94	11.0	1.0	160
2440.000	Max Peak	Vert	56.99	28.45	10	95.44	0	95.44	114	18.6	1.1	89
2440.000	Average	Vert	56.99	28.45	10	95.44	14.31	81.13	94	12.9	1.1	89
2440.000	Max Peak	Horz	59.3	28.45	10	97.75	0	97.75	114	16.3	1.0	160
2440.000	Average	Horz	59.3	28.45	10	97.75	14.31	83.44	94	10.6	1.0	160
2480.000	Max Peak	Vert	56.9	28.56	10	95.46	0	95.46	114	18.5	1.1	128
2480.000	Average	Vert	56.9	28.56	10	95.46	14.31	81.15	94	12.9	1.1	128
2480.000	Max Peak	Horz	58.94	28.56	10	97.5	0	97.5	114	16.5	1.1	162
2480.000	Average	Horz	58.94	28.56	10	97.5	14.31	83.19	94	10.8	1.1	162



166 South Carter, Genoa City, WI 53128

Appendix B

Company: Renaissance Learning
 Model Tested: RESP
 Report Number: 16149

1.1.2 Field Strength of Fundamental (Serial Number 0015070000004842)

Frequency (MHz)	Measurement Type	Antenna	Level (dBuV)	Antenna Factor (dB/m)	System Loss (dB)	Total Level (dBuV/m)	Duty Cycle Correction (dB)	Final Corrected (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	EUT Angle (deg)
2405.000	Max Peak	Vert	58.33	28.33	9.9	96.56	0	96.56	114	17.4	1.0	75
2405.000	Average	Vert	58.33	28.33	9.9	96.56	14.31	82.25	94	11.8	1.0	75
2405.000	Max Peak	Horz	60.52	28.33	9.9	98.75	0	98.75	114	15.3	1.0	160
2405.000	Average	Horz	60.52	28.33	9.9	98.75	14.31	84.44	94	9.6	1.0	160
2440.000	Max Peak	Vert	58.92	28.45	10	97.37	0	97.37	114	16.6	1.1	62
2440.000	Average	Vert	58.92	28.45	10	97.37	14.31	83.06	94	10.9	1.1	62
2440.000	Max Peak	Horz	59.42	28.45	10	97.87	0	97.87	114	16.1	1.1	159
2440.000	Average	Horz	59.42	28.45	10	97.87	14.31	83.56	94	10.4	1.1	159
2480.000	Max Peak	Vert	57.36	28.56	10	95.92	0	95.92	114	18.1	1.1	72
2480.000	Average	Vert	57.36	28.56	10	95.92	14.31	81.61	94	12.4	1.1	72
2480.000	Max Peak	Horz	59.04	28.56	10	97.6	0	97.6	114	16.4	1.1	155
2480.000	Average	Horz	59.04	28.56	10	97.6	14.31	83.29	94	10.7	1.1	155



166 South Carter, Genoa City, WI 53128

Appendix B

Company: Renaissance Learning
 Model Tested: RESP
 Report Number: 16149

1.2.1 Field Strength of Harmonics and Spurious (Serial Number 0015070000004841)

Frequency (MHz)	Measurement Type	Antenna	Level (dBuV)	Antenna Factor (dB/m)	System Loss (dB)	Total Level (dBuV/m)	Duty Cycle Correction (dB)	Final Corrected (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	EUT Angle (deg)
4810.000	Max Peak	Vert	48.71	32.89	-25.2	56.4	0	56.4	74	17.6	1.0	347
4810.000	Average	Vert	48.71	32.89	-25.2	56.4	14.31	42.09	54	11.9	1.0	347
4810.000	Max Peak	Horz	47.6	32.89	-25.2	55.29	0	55.29	74	18.7	1.0	3
4810.000	Average	Horz	47.6	32.89	-25.2	55.29	14.31	40.98	54	13.0	1.0	3
4880.000	Max Peak	Vert	47.91	32.98	-25.1	55.79	0	55.79	74	18.2	1.0	356
4880.000	Average	Vert	47.91	32.98	-25.1	55.79	14.31	41.48	54	12.5	1.0	356
4880.000	Max Peak	Horz	46.9	32.98	-25.1	54.78	0	54.78	74	19.2	1.0	221
4880.000	Average	Horz	46.9	32.98	-25.1	54.78	14.31	40.47	54	13.5	1.0	221
4960.000	Max Peak	Vert	46.24	33.08	-25	54.32	0	54.32	74	19.7	1.0	350
4960.000	Average	Vert	46.24	33.08	-25	54.32	14.31	40.01	54	14.0	1.0	350
4960.000	Max Peak	Horz	45.98	33.08	-25	54.06	0	54.06	74	19.9	1.0	204
4960.000	Average	Horz	45.98	33.08	-25	54.06	14.31	39.75	54	14.3	1.0	204



166 South Carter, Genoa City, WI 53128

Company: Renaissance Learning
 Model Tested: RESP
 Report Number: 16149

Appendix B

1.2.2 Field Strength of Harmonics and Spurious (Serial Number 0015070000004842)

Frequency (MHz)	Measurement Type	Antenna	Level (dBuV)	Antenna Factor (dB/m)	System Loss (dB)	Total Level (dBuV/m)	Duty Cycle Correction (dB)	Final Corrected (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	EUT Angle (deg)
4810.000	Max Peak	Vert	47.05	32.89	-25.2	54.74	0	54.74	74	19.3	1.0	27
4810.000	Average	Vert	47.05	32.89	-25.2	54.74	14.31	40.43	54	13.6	1.0	27
4810.000	Max Peak	Horz	47.99	32.89	-25.2	55.68	0	55.68	74	18.3	1.0	30
4810.000	Average	Horz	47.99	32.89	-25.2	55.68	14.31	41.37	54	12.6	1.0	30
4880.000	Max Peak	Vert	46	32.98	-25.1	53.88	0	53.88	74	20.1	1.1	33
4880.000	Average	Vert	46	32.98	-25.1	53.88	14.31	39.57	54	14.4	1.1	33
4880.000	Max Peak	Horz	46.92	32.98	-25.1	54.8	0	54.8	74	19.2	1.0	217
4880.000	Average	Horz	46.92	32.98	-25.1	54.8	14.31	40.49	54	13.5	1.0	217
4960.000	Max Peak	Vert	44.13	33.08	-25	52.21	0	52.21	74	21.8	1.0	24
4960.000	Average	Vert	44.13	33.08	-25	52.21	14.31	37.9	54	16.1	1.0	24
4960.000	Max Peak	Horz	46.43	33.08	-25	54.51	0	54.51	74	19.5	1.0	33
4960.000	Average	Horz	46.43	33.08	-25	54.51	14.31	40.2	54	13.8	1.0	33



166 South Carter, Genoa City, WI 53128

Company: Renaissance Learning
Model Tested: RESP
Report Number: 16149

Appendix B

2.0 Restricted Bands of Operation

Rule Part: Section 15.249 including 15.205, 15.209, and 15.35

Test Procedure: Measurement of Digital Transmission Systems Operating under Section 15.247 (March 23, 2005) and FCC Publication Number 913591

Limits:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
Above 960	50	3

Results: Compliant

Sample Equations:

Band-Edge Field Strength = Field Strength – Duty Cycle Correction* – Delta Marker

*Used to compare to the average limit. Peak detector used, then a correction applied.

Notes:

Two units were tested. (Serial Number 0015070000004842 and 0015070000004841)
Because the upper band-edge coincides with a restricted band, band edge compliance for the upper band-edge was determined using the radiated mark-delta method. The radiated field strength of the fundamental emission was first determined and then the mark-delta method was used to determine the field strength of the band-edge emissions.



166 South Carter, Genoa City, WI 53128

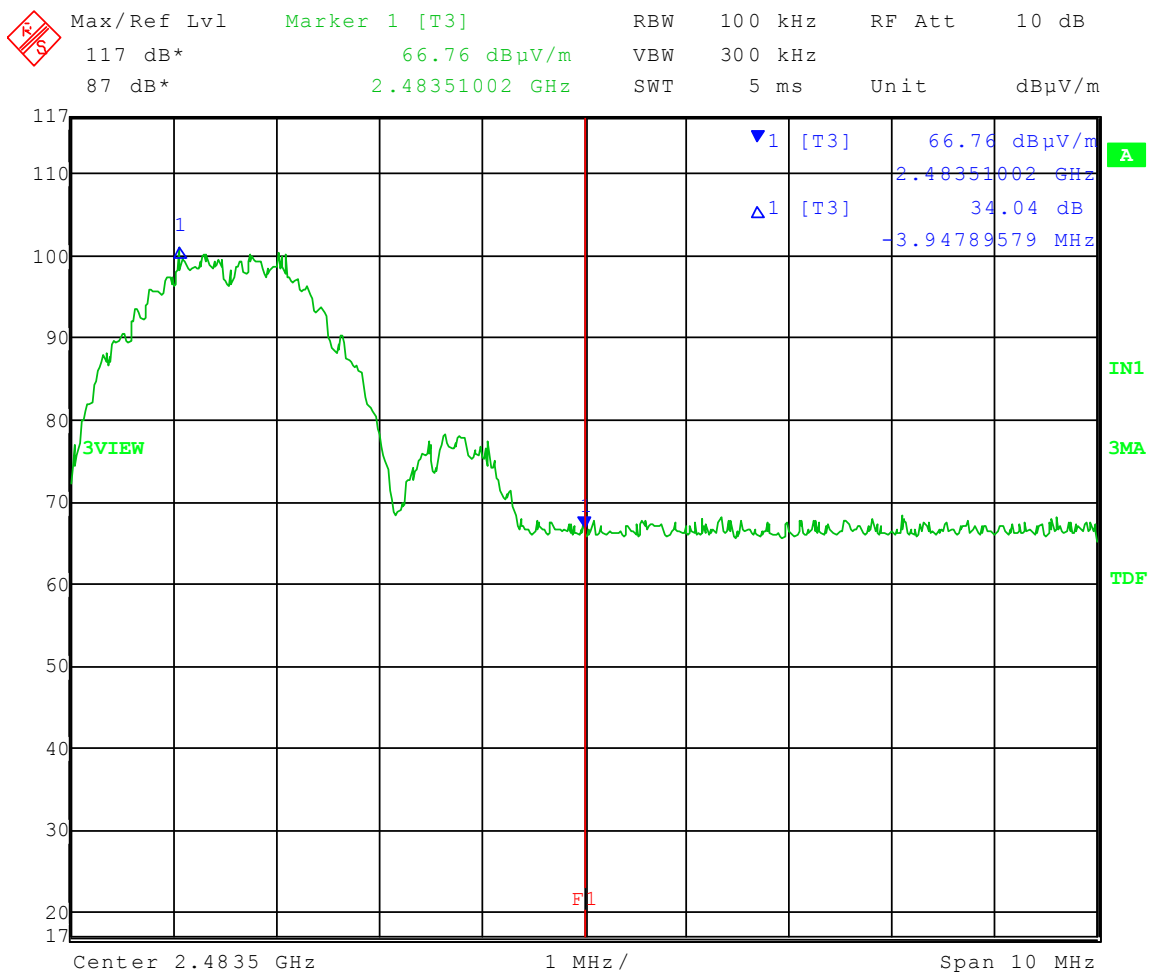
Company: Renaissance Learning
Model Tested: RESP
Report Number: 16149

Appendix B

2.1 Restricted Bands of Operation (Serial Number 0015070000004841)

Upper Band-Edge Marker Delta Method

Frequency (MHz)	Antenna Polarity (H/V)	Fundamental Field Strength (dB μ V/m)	Duty Cycle Correction (dB)	Delta-Marker (dB)	Band-Edge Field Strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
2480 (Peak)	H	97.50	N/A	-34.04	63.46	74	10.54
2480 (Avg)	H	97.50	-14.31	-34.04	49.15	54	4.85



Date: 20.APR.2010 13:03:38



166 South Carter, Genoa City, WI 53128

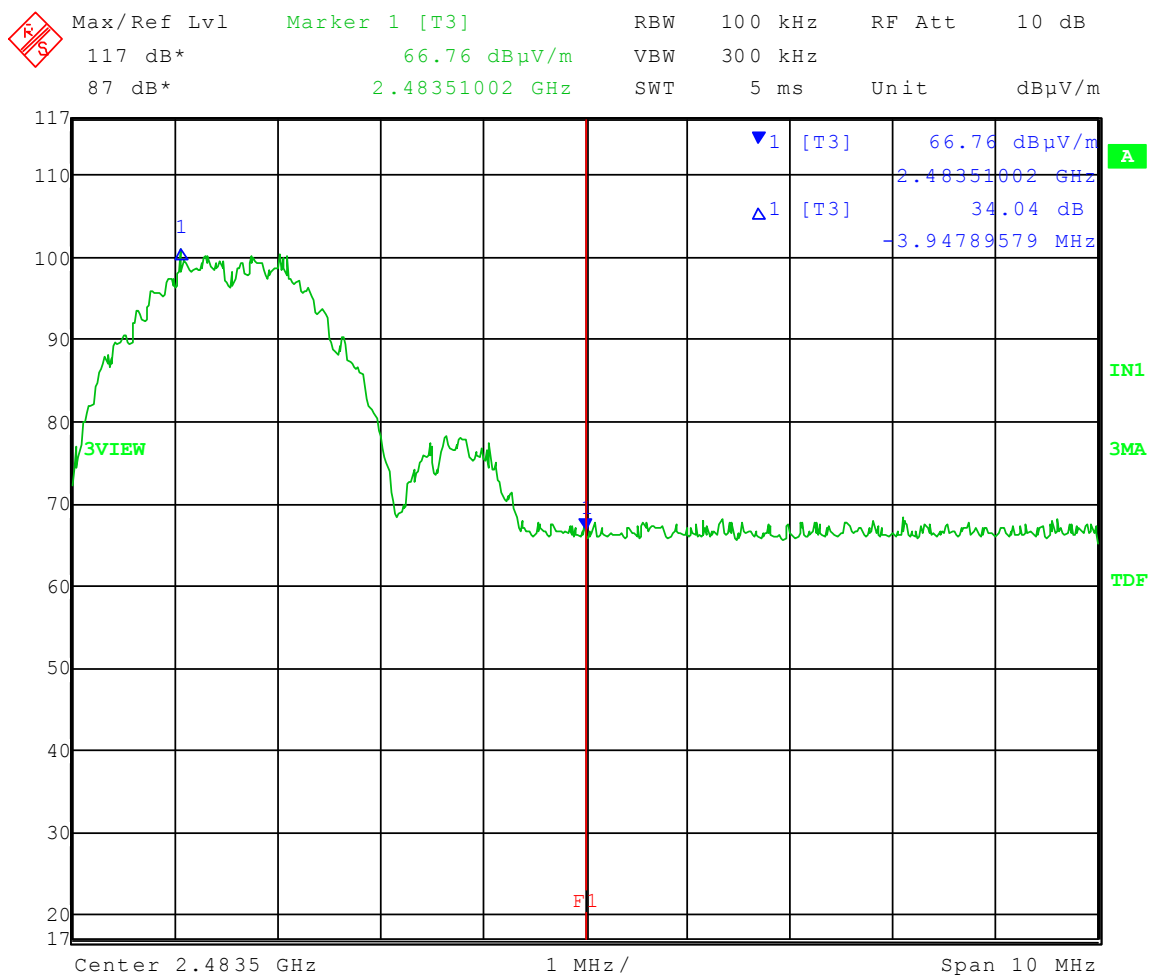
Company: Renaissance Learning
Model Tested: RESP
Report Number: 16149

Appendix B

2.2 Restricted Bands of Operation (Serial Number 0015070000004842)

Upper Band-Edge Marker Delta Method

Frequency (MHz)	Antenna Polarity (H/V)	Fundamental Field Strength (dB μ V/m)	Duty Cycle Correction (dB)	Delta-Marker (dB)	Band-Edge Field Strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
2480 (Peak)	H	97.60	N/A	-34.04	63.56	74	10.54
2480 (Avg)	H	97.60	-14.31	-34.04	49.25	54	4.75



Date: 20.APR.2010 13:03:38



166 South Carter, Genoa City, WI 53128

Company:
Model Tested:
Report Number:

Renaissance Learning
RESP
16149

Appendix B

3.0 Emission Bandwidth - 20 dB

Rule Part: Section 15.215(c)

Test Procedure: ANSI C63.4-2003 Annex H

Limits: Not Applicable

Results: 20 dB Bandwidth = 4.85 MHz

Sample Equations:

None

Notes:

Both units were tested and found to have similar bandwidths.



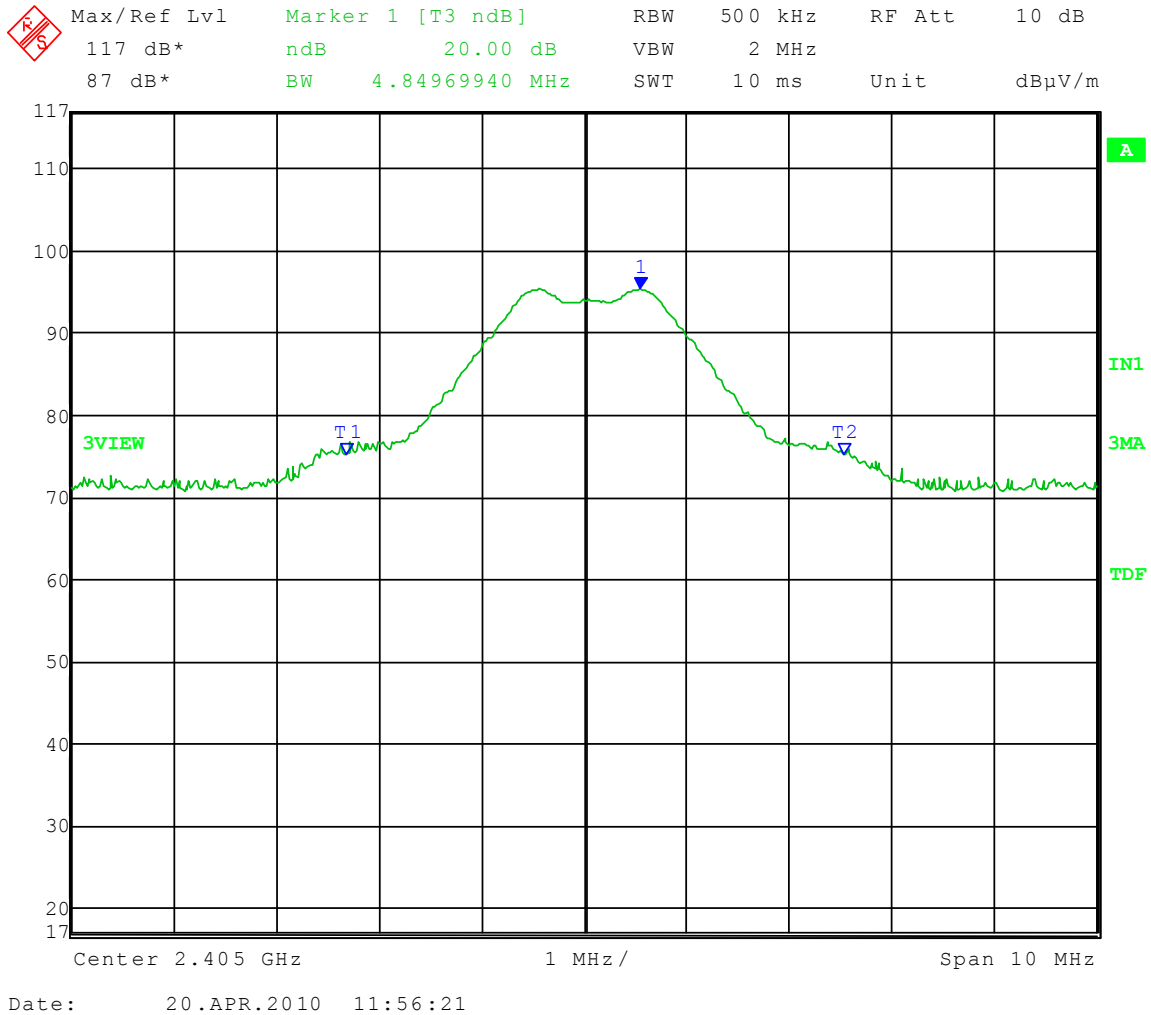
166 South Carter, Genoa City, WI 53128

Company:
Model Tested:
Report Number:

Renaissance Learning
RESP
16149

Appendix B

3.0 Emission Bandwidth – 20 dB





166 South Carter, Genoa City, WI 53128

Company:
Model Tested:
Report Number:

Renaissance Learning
RESP
16149

Appendix B

4.0 Duty Cycle Correction

Rule Part: Section 15.35(c)

Test Procedure: ANSI C63.4-2003 Annex H

Limits: Not Applicable

Results: Duty Cycle Correction 14.31dB

Sample Equations:

One pulse at 3.8477 ms
5 pulses during 100 ms sweep

Total on Time = 19.2385 ms during 100 ms Sweep
 $20 \log (19.2385 / 100) = -14.31$
Duty Cycle Correction Factor = 14.31dB

Notes:

Both units were tested and found to have similar duty cycles.



166 South Carter, Genoa City, WI 53128

Company:
Model Tested:
Report Number:

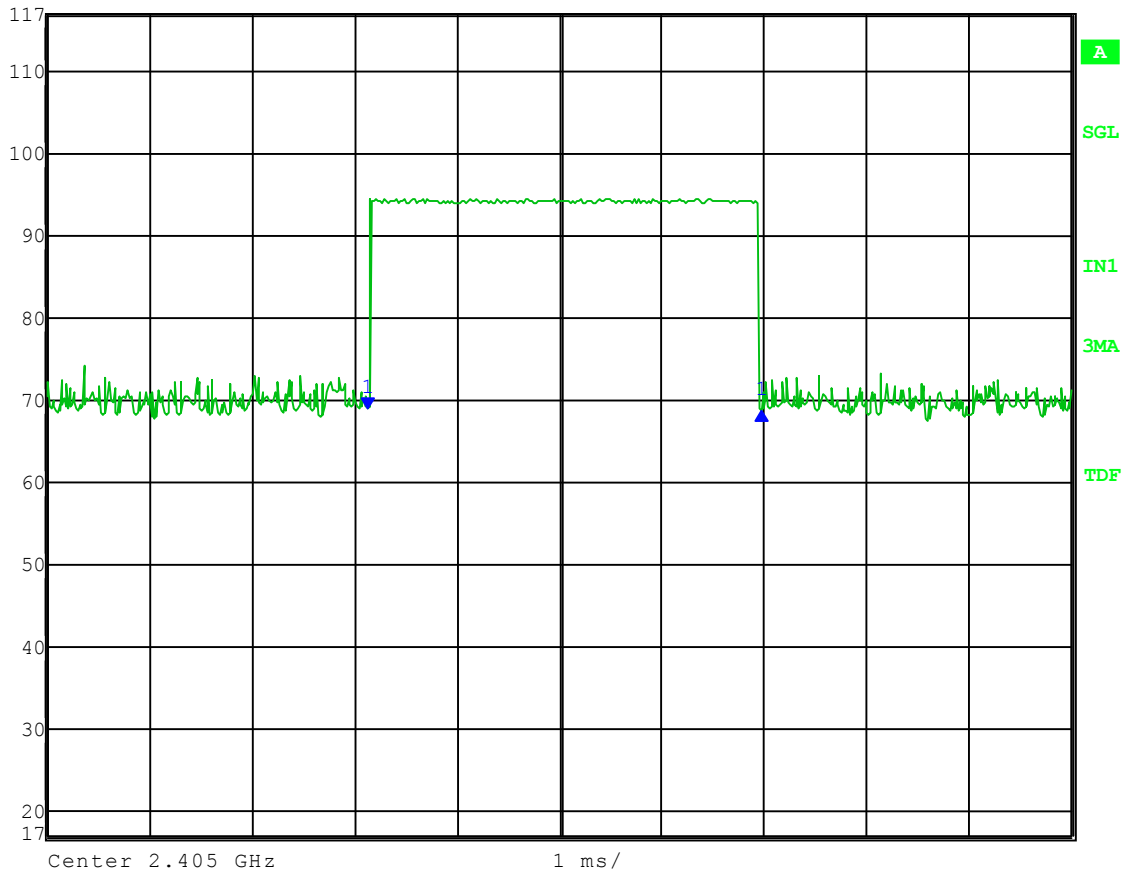
Renaissance Learning
RESP
16149

Appendix B

4.0 Duty Cycle Correction

ON time of one pulse:

	Max/Ref Lvl	Delta 1 [T3]	RBW	1 MHz	RF Att	10 dB
	117 dB*	-0.38 dB	VBW	3 MHz		
	87 dB*	3.847695 ms	SWT	10 ms	Unit	dBuV/m



Date: 20.APR.2010 11:42:52



166 South Carter, Genoa City, WI 53128

Company:
Model Tested:
Report Number:

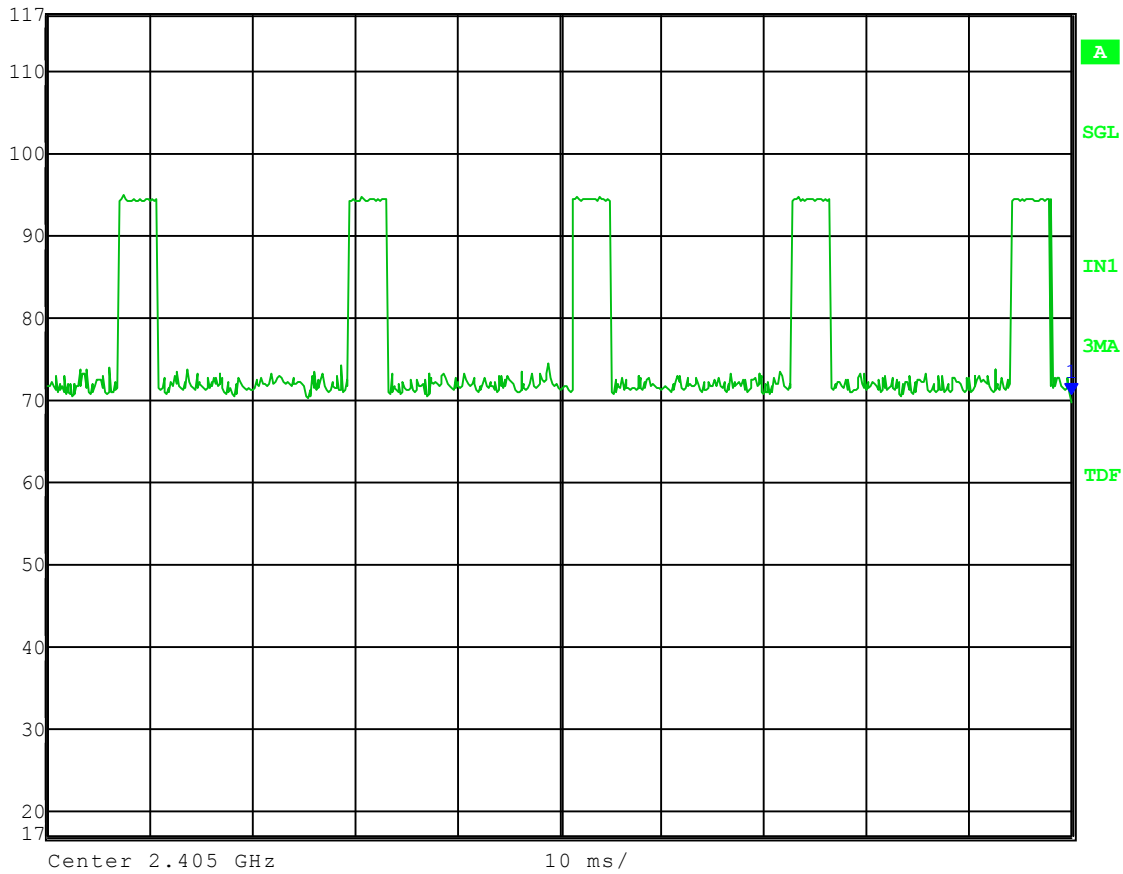
Renaissance Learning
RESP
16149

Appendix B

4.0 Duty Cycle Correction

Number of pulses during 100 ms:

	Max/Ref Lvl	Marker 1 [T3]	RBW	1 MHz	RF Att	10 dB
	117 dB*	70.60 dBμV/m	VBW	3 MHz		
	87 dB*	100.000000 ms	SWT	100 ms	Unit	dBμV/m



Date: 20.APR.2010 11:42:01



166 South Carter, Genoa City, WI 53128

Company:
Model Tested:
Report Number:

Renaissance Learning
RESP
16149

END OF REPORT