166 South Carter, Genoa City, WI 53128

Company:	RF Technologies
Model Tested:	9450-5262 and 9450-5066
Report Number:	16647
Project Number:	4331

Code of Federal Regulations 47 Part 15 – Radio Frequency Devices

Subpart C – Intentional Radiators
Section 15.231
Periodic operation in the band 40.66 - 40.70 MHz
and above 70 MHz
&
Section 15.209
Radiated Emission Limits: General Requirements

THE FOLLOWING **MEETS** THE ABOVE TEST SPECIFICATION

Formal Name:	Smart Sense Infant Transmitter
Kind of Equipment:	Wireless Infant Security Device
Frequency Range:	318 MHz and 262 kHz (Model 9450-5262) 318 MHz and 66 kHz (Model 9450-5066)
Test Configuration:	Body-worn, battery operated device tested in three orthogonal positions.
Model Number(s):	9450-5262, 9450-5066
Model(s) Tested:	9450-5262, 9450-5066
Serial Number(s):	none (Test Sample)
Date of Tests:	December 1, 2,3 and August 30 ,2010
Test Conducted For:	RF Technologies, Inc. 3125 N. 126th Street Brookfield, WI 53005

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.

166 South Carter, Genoa City, WI 53128

Company:	RF Technologies
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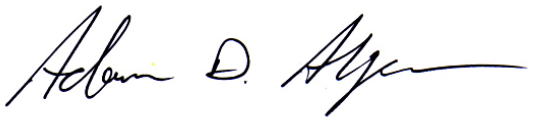
SIGNATURE PAGE

Report By:



Adam Alger
Test Engineer

Reviewed By:

William Stumpf
OATS Manager

Approved By:

Brian Mattson
General Manager

Table of Contents

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

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).

2010-10-01 through 2011-09-30
Effective dates

Sally S. Bruce
For the National Institute of Standards and Technology

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

1.0 Summary of Test Report

It was determined that the Smart Sense Infant Transmitter, Models 9450-5262 and 9450-5066, comply with the requirements of CFR 47 Part 15 Subpart C Section 15.231 and 15.209.

Subpart C Applicable Technical Requirements Tested:

Section	Description	Procedure	Note	Compliant?
15.231(c)	20 dB Emission Bandwidth	ANSI C63.4-2009 & ANSI C63.10-2009	1,2	Yes
15.231(a)(2)	Transmission Deactivation	ANSI C63.4-2009 & ANSI C63.10-2009	2	Yes
15.231(a)(3)	Periodic Transmissions	ANSI C63.4-2009 & ANSI C63.10-2009	2	Yes
15.231(b)	Field Strength of Emissions - Fundamental and Spurious -	ANSI C63.4-2009 & ANSI C63.10-2009	1,2	Yes
15.35(c)	Duty Cycle Correction for Pulsed operation	ANSI C63.4-2009 & ANSI C63.10-2009	2	Informative
15.209	Intentional Radiator - General Requirements -	ANSI C63.4-2009 & ANSI C63.10-2009	1,2,3	Yes

Note 1: Tested in 3 orthogonal planes.
Note 2: Radiated emission measurement.
Note 3: 66 kHz and 262 kHz intentional radiators exempt from certification (See additional descriptions).

2.0 Introduction

On December 1, 2,3 and August 30 ,2010 the Smart Sense Infant Transmitter, Models 9450-5262 and 9450-5066, as provided from RF Technologies Inc. was tested to the requirements of CFR 47 Part 15 Subpart C Section 15.231 and 15.209. 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 is a wireless security device intended to prevent the abduction of an infant from a healthcare facility. The device is attached to the ankle of an infant with a stretchable band material and it is this attachment which enables the monitoring features. Once enabled, the device will periodically send status OK messages wirelessly on a 318 MHz RF signal to a central computer server which means the infant is safe and within the safe boundary at the healthcare facility. The device can sense security breaches using one or more of the following features: physical cutting of the stretchy band material, a change in resistance of the band material, a change in temperature of the device or a change in capacitive patient proximity measurement. Once a security breach is experienced, the device sends a special alarm signal wirelessly on a 318 MHz RF signal to a central computer server thereby notifying the facility staff. The device also transmits wirelessly periodically at 262 kHz (or 66 kHz depending on the model) which will cause wireless receivers mounted for example at doors to indicate a security breach in the event the device is brought in appropriate proximity to those receivers. The transmitters do not transmit simultaneously.

Type of Equipment / Frequency Range:

Body-Worn / 318 MHz and 262 kHz or 318 MHz and 66 kHz

Physical Dimensions of Equipment Under Test:

Length: 1.6 in. x Width: 1.2 in. x Height: 0.675 in.

Power Source:

3.6 VDC battery

Internal Frequencies:

4.194304 MHz

Transmit Frequencies Used For Test Purpose:

318 MHz, 262 kHz, and 66 kHz

4.0 Description of Test Sample (continued)

Type of Modulation(s) / Antenna Type:

OOK / 262 kHz and 66 kHz transmitters use a coil on the circuit board
315 MHz transmitter uses a short non-resonant strip on the circuit board.

Description of Circuit Board(s) / Part Number:

Circuit Board (9450-5262 model)	0830-0080 Rev. A
Circuit Board (9450-5066 model)	0830-0109 Rev. A

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 – SAC G1 - Test Equipment:

Description	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Dates	Cal Due Dates
Receiver	Rohde & Schwarz	ESI 40	837808/005	20 Hz – 40 GHz	7/10	7/11
Preamplifier	Rohde & Schwarz	TS-PR10	032001/003	9 kHz – 1 GHz	1/10	1/11
Antenna	EMCO	3104C	9810-4849	20 MHz – 200 MHz	2/10	2/12
Antenna	EMCO	3146	1604	200 MHz – 1 GHz	8/10	8/12
Preamp	Planar	PTB-60-120-5R0-10-115VAC-SFF	PL3291	1 GHz -20 GHz	5/10	5/11
Horn Antenna	Com-Power	AH-118	071127	1-18GHz	4/10	4/12
High-Pass Filter	Mini-Circuits	NHP-600	391193	600 MHz – 5 GHz	8/10	8/11
Loop Antenna	EMCO	6502	2038	9 kHz – 30 MHz	9/09	9/11

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 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

7.0 Test Conditions

Temperature and Humidity:

72°F at 29% RH

Battery Voltage:

3.6 VDC

8.0 Modifications Made To EUT For Compliance

None noted at time of test.

9.0 Additional Descriptions

All tests were performed with a new battery to comply with 15.31(e). The battery voltage was verified before and after each test.

This device uses circuit board antennas that are not user serviceable, which complies with the requirements of 15.203.

This device uses periodic transmissions for security or safety application as defined in FCC Part 15.231(a) (3) and does not exceed a total transmission time of two seconds per hour. Appendix B of this report shows data to confirm compliance with this rule section.

The EUT was programmed to transmit in a special test mode that allowed it to stay transmitting for one second, then off for two seconds, and then repeat that sequence continuously. For testing done in "normal operation mode" the EUT was programmed to use the largest duty cycle possible during normal operation.

Note that the 66 kHz and 262 kHz transmitters are exempt from certification as defined by section 15.201(a). All emissions from those transmitters are greater than 40dB below the limit. Measurement data can be seen in Appendix B of this report.

Both models, 9450-5262 and 9450-5066, were tested for fundamental and spurious emissions and measurement data can be seen in Appendix B of this report.

10.0 Results

Measurements were performed in accordance with ANSI C63.4-2009 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 Smart Sense Infant Transmitter, Models 9450-5262 and 9450-5066 as provided from RF Technologies, Inc., tested on December 1, 2,3 and August 30 ,2010 **meets** the requirements of CFR 47 Part 15 Subpart C Section 15.231 and 15.209.

Appendix A – Test Setup Photos

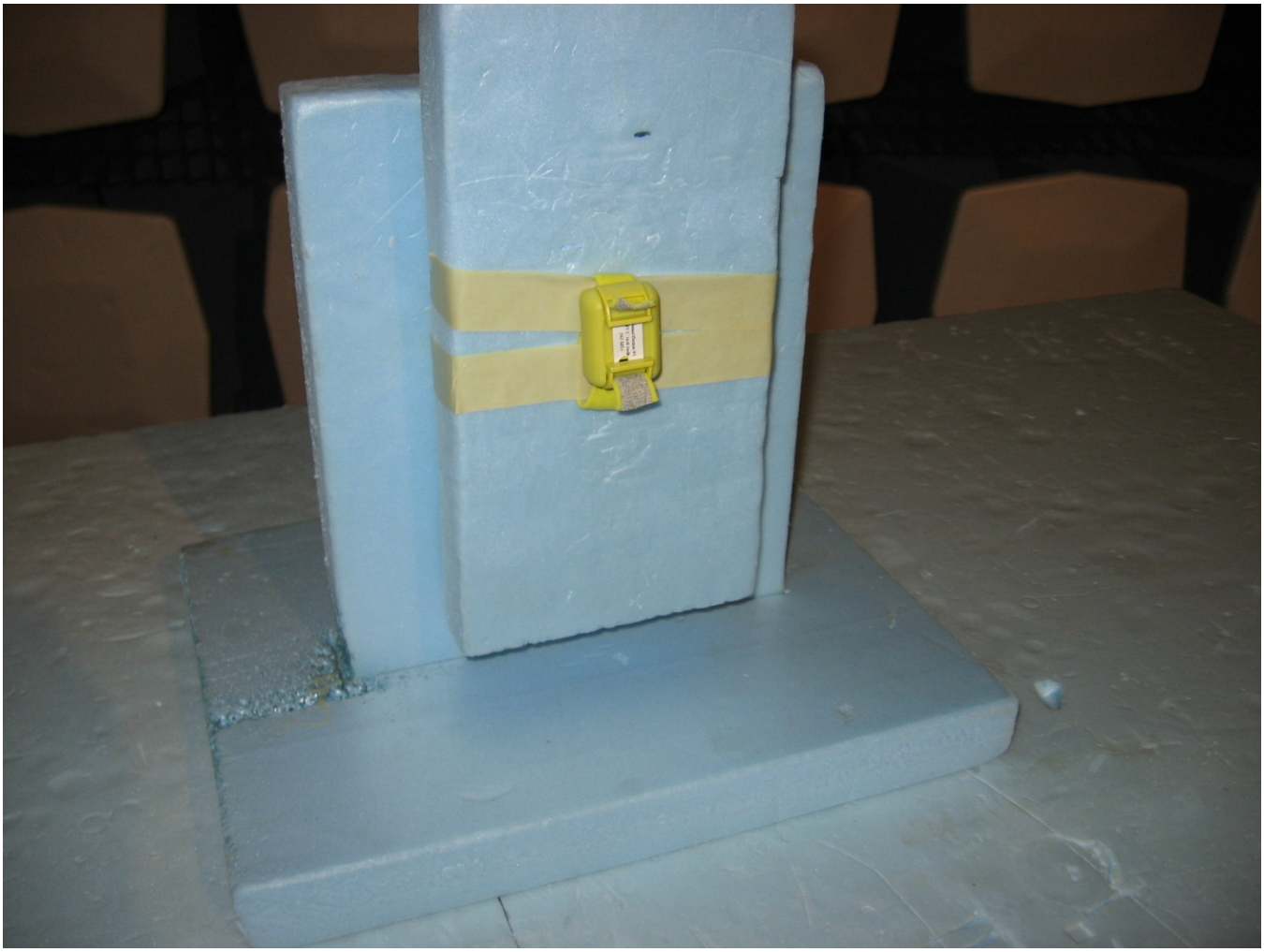
Photo Information and Test Setup:

Item: EUT – Smart Sense Infant Transmitter

Radiated X Position

Appendix A

Radiated Y Position



Appendix A

Radiated Z Position

Appendix A

Radiated Z Prime Position

Appendix B – Measurement Data

1.0 Emission Bandwidth – 20 dB

Rule Part:

Section 15.231 (c)

Test Procedure:

ANSI C63.4-2009 and ANSI C63.10-2009

Limit:

Section 15.231 (c):

318 MHz x 0.25% = 795 kHz

Results:

Compliant
20 dB bandwidth: **117.2 kHz**

Sample Equation(s):

None

Notes:

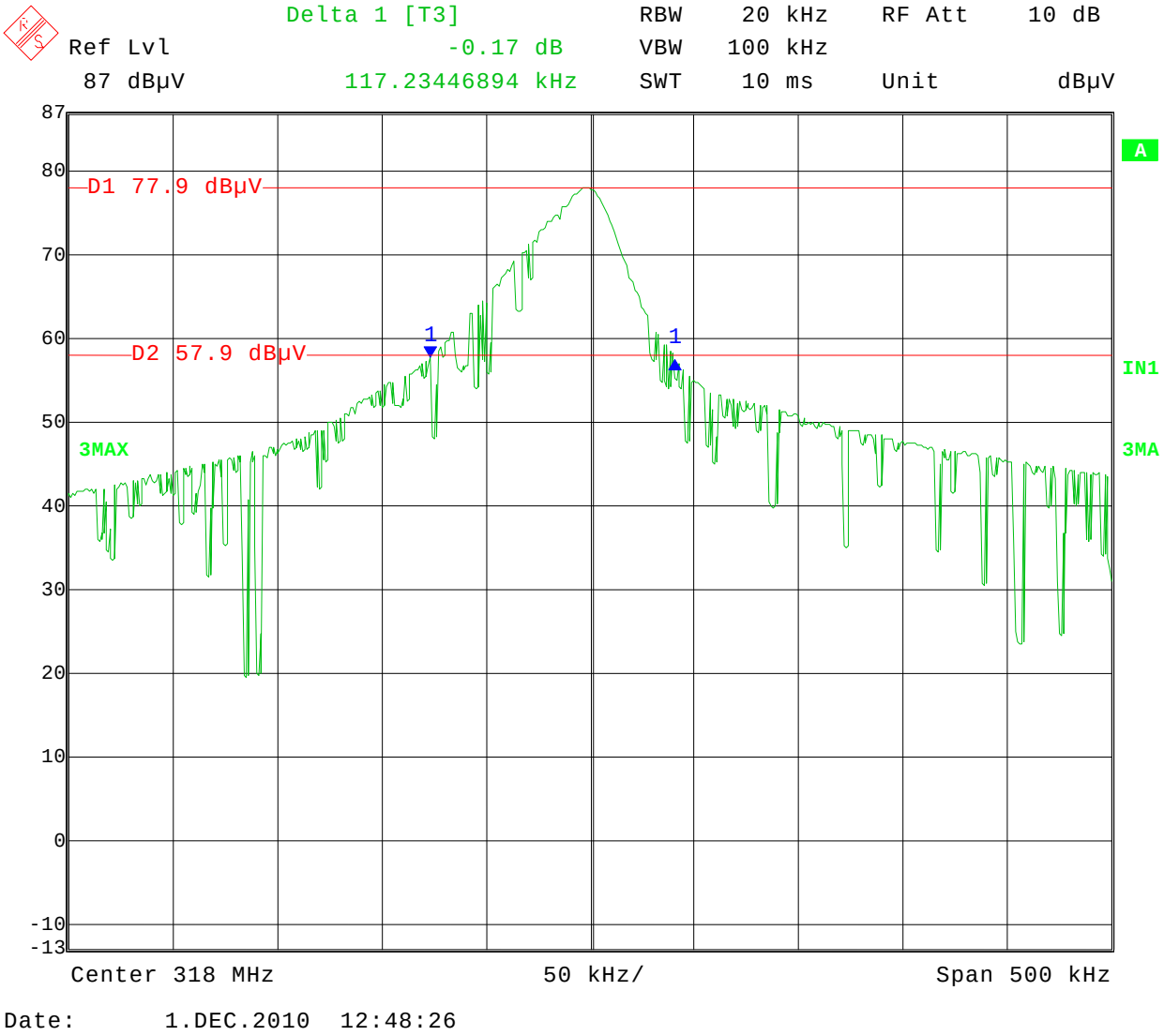
This was a radiated emissions measurement. The maximum field strength of the emission was determined and the bandwidth was measured from the points at 20 dB down from the modulated carrier. Both models were evaluated and the bandwidth was identical.

166 South Carter, Genoa City, WI 53128

Company: RF Technologies
Model Tested: 9450-5262 and 9450-5066
Report Number: 16647
Project Number: 4331

Appendix B

Test Date: 12-01-2010
Company: RF Technologies
EUT: 9600-5066: Safe Place Infant Tx 66 kHz w/ Smart Sense
Test: 20 dB Bandwidth
Operator: Craig B
Comment: 20 dB Bandwidth = 117.2 kHz



Appendix B

2.0 Automatic Deactivation

Rule Part:

15.231 (a) (2)

Test Procedure:

ANSI C63.4-2009and ANSI C63.10-2009

Limit:

A transmitter activated automatically shall cease transmission within 5 seconds after activation.

Results:

Compliant

Sample Equation(s):

None

Notes:

No transmission for five seconds after deactivation.
Both models were evaluated and the results were identical.

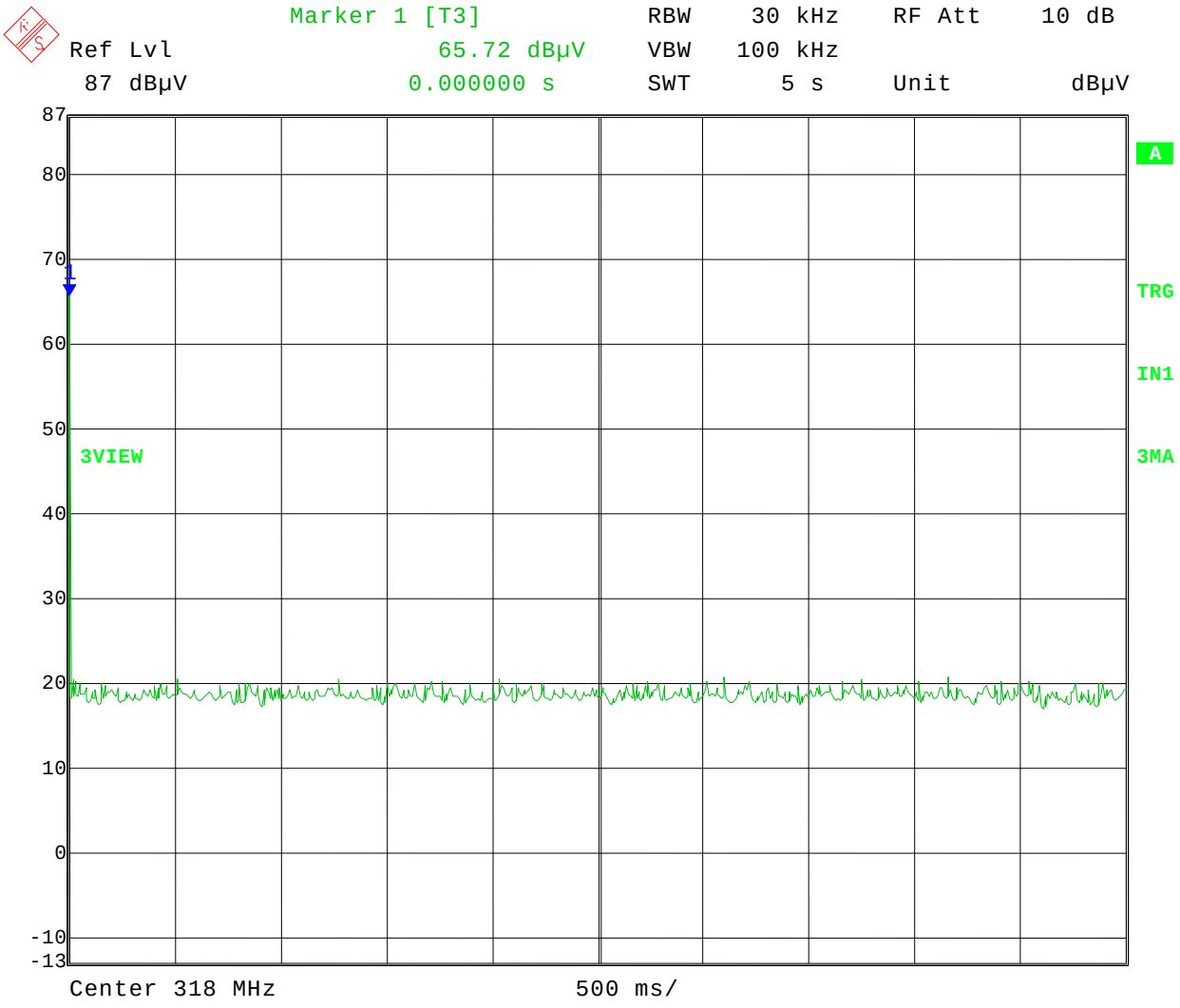
166 South Carter, Genoa City, WI 53128

Company: RF Technologies
Model Tested: 9450-5262 and 9450-5066
Report Number: 16647
Project Number: 4331

Appendix B

Test Date: 12-03-2010
Company: RF Technologies
EUT: 9600-5066: Safe Place Infant Tx 66 kHz w/ Smart Sense
Test: Dwell Time
Operator: Craig B

Comment: A transmitter activated automatically shall cease transmission within 5 seconds after activation.



Date: 3.DEC.2010 13:39:02

Appendix B

3.0 Periodic Transmissions

Rule Part:

15.231 (a) (3)

Test Procedure:

ANSI C63.4-2009and ANSI C63.10-2009

Limit:

Total transmission time does not exceed two seconds in an hour.

Results:

Compliant
Total time of transmission in an hour: 1.91 seconds

Sample Equation(s):

None

Notes:

Worst case predetermined transmissions observed.
Both models were evaluated and the results were identical.

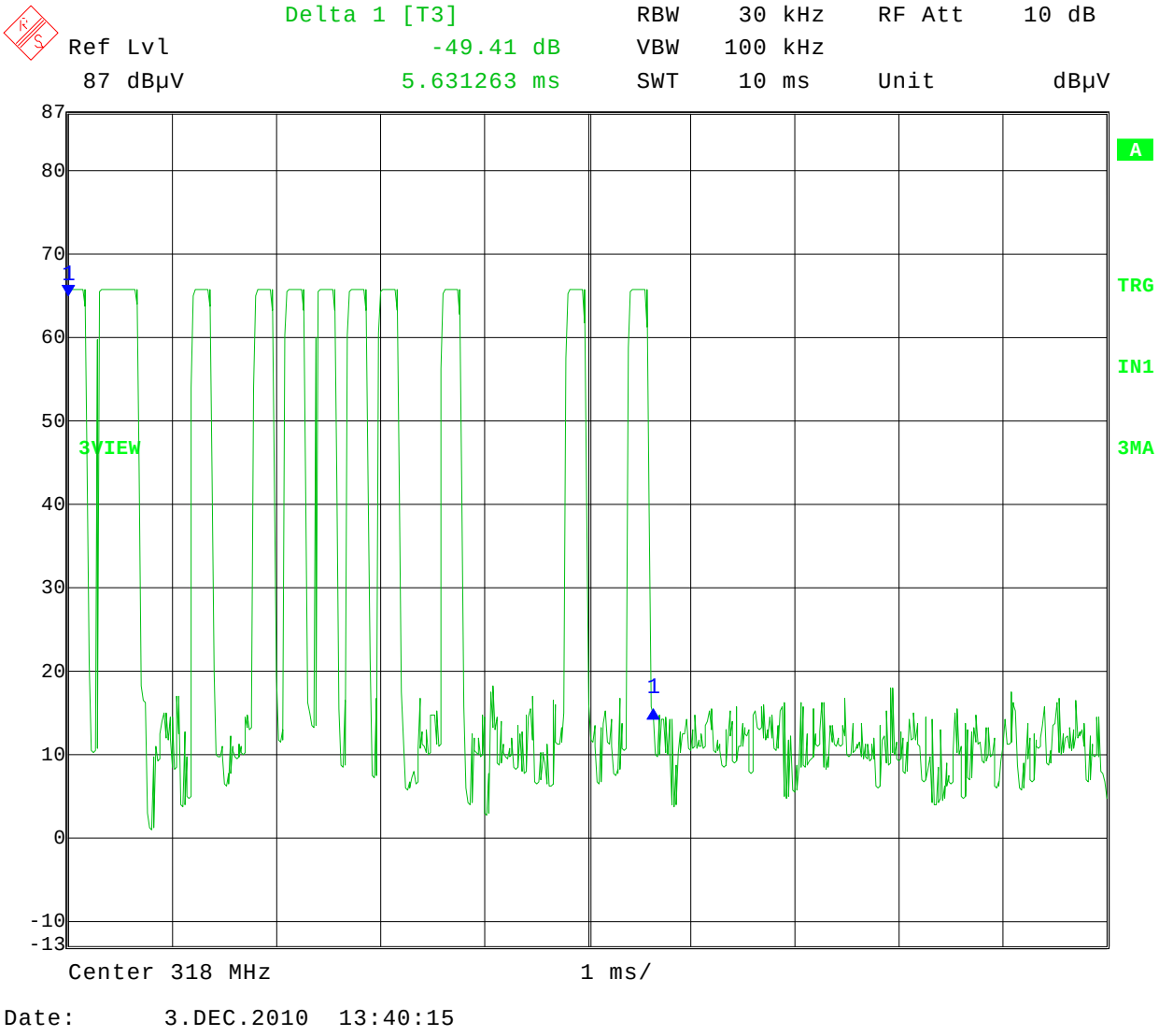
166 South Carter, Genoa City, WI 53128

Company: RF Technologies
Model Tested: 9450-5262 and 9450-5066
Report Number: 16647
Project Number: 4331

Appendix B

Test Date: 12-03-2010
Company: RF Technologies
EUT: 9600-5066: Safe Place Infant Tx 66 kHz w/ Smart Sense
Test: Periodic transmissions over one hour
Operator: Craig B
Comment: EUT transmits at regular predetermined intervals for supervision purposes.
Total transmission time must not exceed two seconds per hour.

Transmission time = 5.631263 ms.
Transmission every 10.626874 seconds = 339 transmissions per hour.
Total transmission time for one hour = 339 x 5.631263 ms = **1.91 seconds**.
Transmission Time:



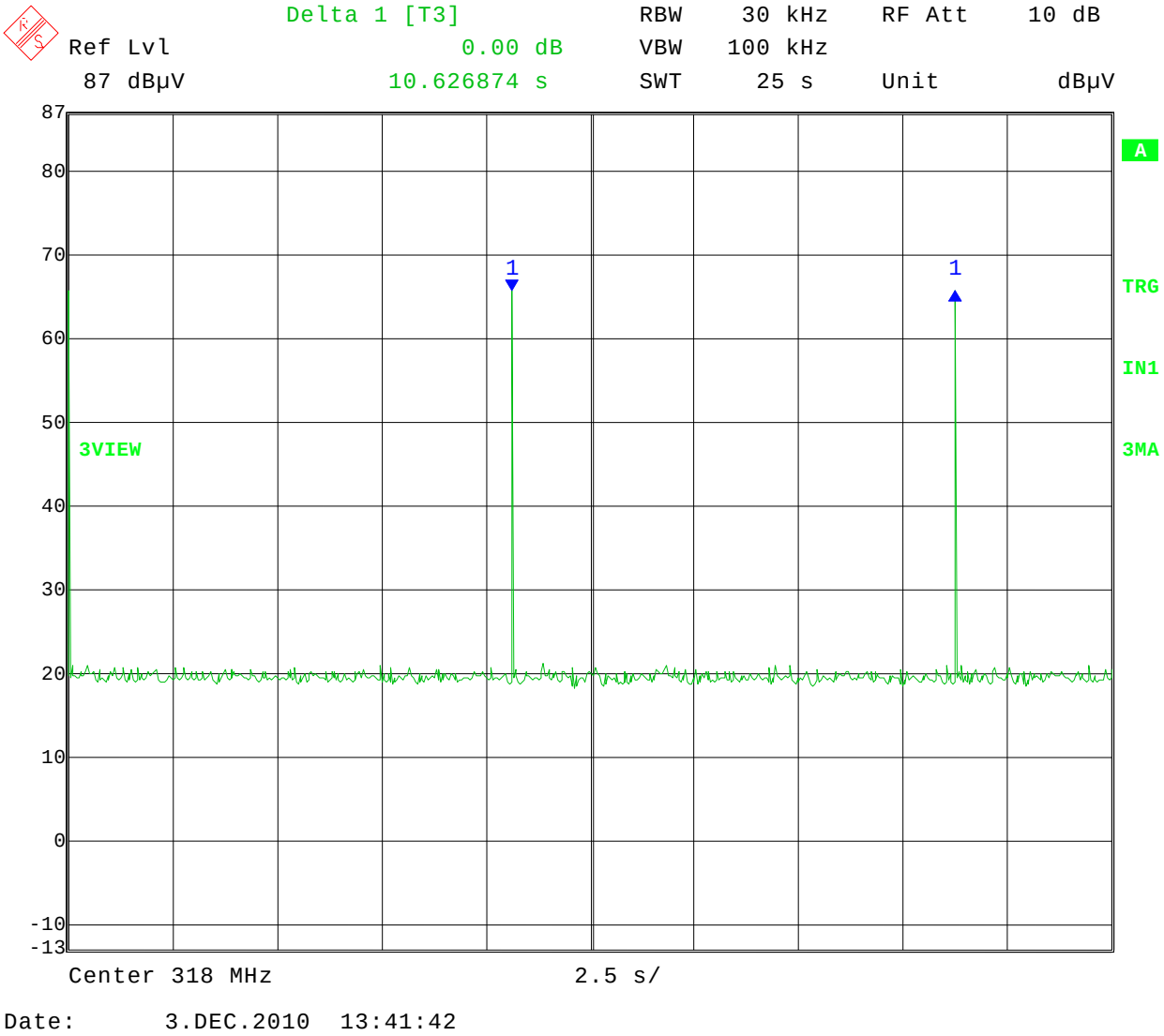
166 South Carter, Genoa City, WI 53128

Company: RF Technologies
Model Tested: 9450-5262 and 9450-5066
Report Number: 16647
Project Number: 4331

Appendix B

Test Date: 12-03-2010
Company: RF Technologies
EUT: 9600-5066: Safe Place Infant Tx 66 kHz w/ Smart Sense
Test: Periodic transmissions over one hour
Operator: Craig B
Comment: EUT transmits at regular predetermined intervals for supervision purposes.
Total transmission time must not exceed two seconds per hour.

Transmission time = 5.631263 ms.
Transmission every 10.626874 seconds = 339 transmissions per hour.
Total transmission time for one hour = 339 x 5.631263 ms = **1.91 seconds**.
Time between transmissions:



Appendix B

4.0 Field Strength of Emissions – Fundamental and Spurious (318 MHz)

Rule Part:

15.231 (b) including 15.205

Test Procedure:

ANSI C63.4-2009 and ANSI C63.10-2009

Limit:

Fundamental (F) µV/m at 3 meters: 41.6667(F) – 7083.3333
The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.

Results:

Compliant

Sample Equation(s):

41.6667(F) – 7083.3333 = 6166.67 µV/m at 3 meters

20*log (6166.67) = 70.80 dB µV/m at 3 meters

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

Notes:

The emissions were measured of the fundamental and spurious at a distance of three meters between the EUT and the measuring antenna. The EUT was rotated in 3 orthogonal planes and the highest emission was recorded. Since the unit was not able to transmit continuously, at a 100 % duty cycle, compliance is determined by comparing peak data, minus duty cycle correction, to the average limit.

Appendix B

Model 9600-5066:

Radiated Fundamental and Spurious Emissions – 9 kHz to 30 MHz	
Tested at a 3 Meter Distance	
EUT:	9600-5066: Safe Place Infant Tx 66 kHz w/ Smart Sense
Manufacturer:	RF Technologies
Operating Condition:	70 deg F; 28% R.H.
Test Site:	Site 2
Operator:	Craig B
Test Specification:	FCC Part 15.231(b)
Comment:	Battery Operated
Date:	12-02-2010
Notes:	All other emissions at least 20 dB under the limit.
	Since unit was not able to transmit continuously, all measurements were made with a peak detector.

Frequency (MHz)	Measurement Type	Antenna Polarization	Level (dBuV)	Antenna Factor (dB/m)	System Loss (dB)	Total Level (dBuV/m)	Duty Cycle Correction	Final Corrected (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	EUT Angle (deg)	Comment
318.000	Max Peak	Vertical	73.44	14.92	-22.1	66.26	0	66.26	95.80	29.5	1.9	10	F
	Average						20	46.26	75.80				
	Max Peak	Horizontal	76.23	14.92	-22.1	69.05	0	69.05	95.80	26.8	1.0	270	F
	Average						20	49.05	75.80				
636.000	Max Peak	Vertical	53	19.86	-19.8	53.06	0	53.06	75.80	22.7	1.0	315	H
	Average						20	33.06	55.80				
	Max Peak	Horizontal	52.55	19.86	-19.8	52.61	0	52.61	75.80	23.2	1.5	100	H
	Average						20	32.61	55.80				
954.000	Max Peak	Vertical	50.56	23.78	-17.1	57.24	0	57.24	75.80	18.6	1.2	300	H
	Average						20	37.24	55.80				
	Max Peak	Horizontal	50.57	23.78	-17.1	57.25	0	57.25	75.80	18.6	1.5	135	H
	Average						20	37.25	55.80				
1272.000	Max Peak	Vertical	94.02	25.47	-55.5	63.99	0	63.99	75.80	11.8	1.0	340	H
	Average						20	43.99	55.80				
	Max Peak	Horizontal	94.92	25.47	-55.5	64.89	0	64.89	75.80	10.9	1.7	260	H
	Average						20	44.89	55.80				
1590.000	Max Peak	Vertical	88.8	25.41	-55.4	58.81	0	58.81	74.00	15.2	1.7	290	H / RB
	Average						20	38.81	54.00				
	Max Peak	Horizontal	86.93	25.41	-55.4	56.94	0	56.94	74.00	17.1	1.9	300	H / RB
	Average						20	36.94	54.00				
1908.000	Max Peak	Vertical	79.77	27.28	-55.3	51.75	0	51.75	75.80	24.1	1.2	315	H
	Average						20	31.75	55.80				
	Max Peak	Horizontal	80.66	27.28	-55.3	52.64	0	52.64	75.80	23.2	1.0	320	H
	Average						20	32.64	55.80				
2226.000	Max Peak	Vertical	75	28.4	-55.2	48.20	0	48.20	74.00	25.8	1.0	190	H / RB
	Average						20	28.20	54.00				
	Max Peak	Horizontal	74.52	28.4	-55.2	47.72	0	47.72	74.00	26.3	1.2	260	H / RB
	Average						20	27.72	54.00				

166 South Carter, Genoa City, WI 53128

Company: RF Technologies
Model Tested: 9450-5262 and 9450-5066
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Appendix B

Model 9600-5262:

Radiated Fundamental and Spurious Emissions – 30 MHz to 4 GHz	
Tested at a 3 Meter Distance	
EUT:	9600-5262: Safe Place Infant Tx 262 kHz w/ Smart Sense
Manufacturer:	RF Technologies
Operating Condition:	72 deg F; 29% R.H.
Test Site:	Site G1
Operator:	Craig B
Test Specification:	FCC Part 15.231(b)
Comment:	Battery Operated
Date:	12-01-2010
Notes:	All other emissions at least 20 dB under the limit.
	Since unit was not able to transmit continuously, all measurements were made with a peak detector.

Frequency (MHz)	Measurement Type	Antenna Polarization	Level (dBuV)	Antenna Factor (dB/m)	System Loss (dB)	Total Level (dBuV/m)	Duty Cycle Correction	Final Corrected (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	EUT Angle (deg)	Comment
318.000	Max Peak	Vertical	74.59	14.92	-22.1	67.41	0	67.41	95.80	28.4	1.6	340	F
	Average						20	47.41	75.80				
	Max Peak	Horizontal	77.52	14.92	-22.1	70.34	0	70.34	95.80	25.5	1.0	335	
	Average						20	50.34	75.80				
636.000	Max Peak	Vertical	51.56	19.86	-19.8	51.62	0	51.62	75.80	24.2	1.0	315	H
	Average						20	31.62	55.80				
	Max Peak	Horizontal	49.79	19.86	-19.8	49.85	0	49.85	75.80	26.0	1.4	315	
	Average						20	29.85	55.80				
954.000	Max Peak	Vertical	51.66	23.78	-17.1	58.34	0	58.34	75.80	17.5	1.2	30	H
	Average						20	38.34	55.80				
	Max Peak	Horizontal	52.47	23.78	-17.1	59.15	0	59.15	75.80	16.7	2.6	280	
	Average						20	39.15	55.80				
1272.000	Max Peak	Vertical	99.65	25.47	-55.5	69.62	0	69.62	75.80	6.2	1.0	80	H
	Average						20	49.62	55.80				
	Max Peak	Horizontal	99.55	25.47	-55.5	69.52	0	69.52	75.80	6.3	1.1	290	
	Average						20	49.52	55.80				
1590.000	Max Peak	Vertical	84.48	25.41	-55.4	54.49	0	54.49	74.00	19.5	1.1	270	H / RB
	Average						20	34.49	54.00				
	Max Peak	Horizontal	84	25.41	-55.4	54.01	0	54.01	74.00	20.0	1.3	135	
	Average						20	34.01	54.00				
1908.000	Max Peak	Vertical	88.24	27.28	-55.3	60.22	0	60.22	75.80	15.6	1.2	10	H
	Average						20	40.22	55.80				
	Max Peak	Horizontal	86.18	27.28	-55.3	58.16	0	58.16	75.80	17.6	1.1	80	
	Average						20	38.16	55.80				
2226.000	Max Peak	Vertical	74.34	28.4	-55.2	47.54	0	47.54	74.00	26.5	1.2	340	H / RB
	Average						20	27.54	54.00				
	Max Peak	Horizontal	78.82	28.4	-55.2	52.02	0	52.02	74.00	22.0	1.2	170	
	Average						20	32.02	54.00				
2544.000	Max Peak	Vertical	78	29.26	-55.3	51.96	0	51.96	75.80	23.8	1.2	180	H
	Average						20	31.96	55.80				
	Max Peak	Horizontal	79.23	29.26	-55.3	53.19	0	53.19	75.80	22.6	1.3	330	
	Average						20	33.19	55.80				

Appendix B

5.0 Duty Cycle Correction (318 MHz)

Rule Part:

15.35 (c)

Test Procedure:

ANSI C63.4-2009and ANSI C63.10-2009

Limit:

Informative

Results:

Informative

Sample Equation(s):

See data

Notes:

Since the unit was not able to transmit continuously, compliance is determined by comparing peak data, minus duty cycle correction, to the average limit. Both models were evaluated and the results were identical.

166 South Carter, Genoa City, WI 53128

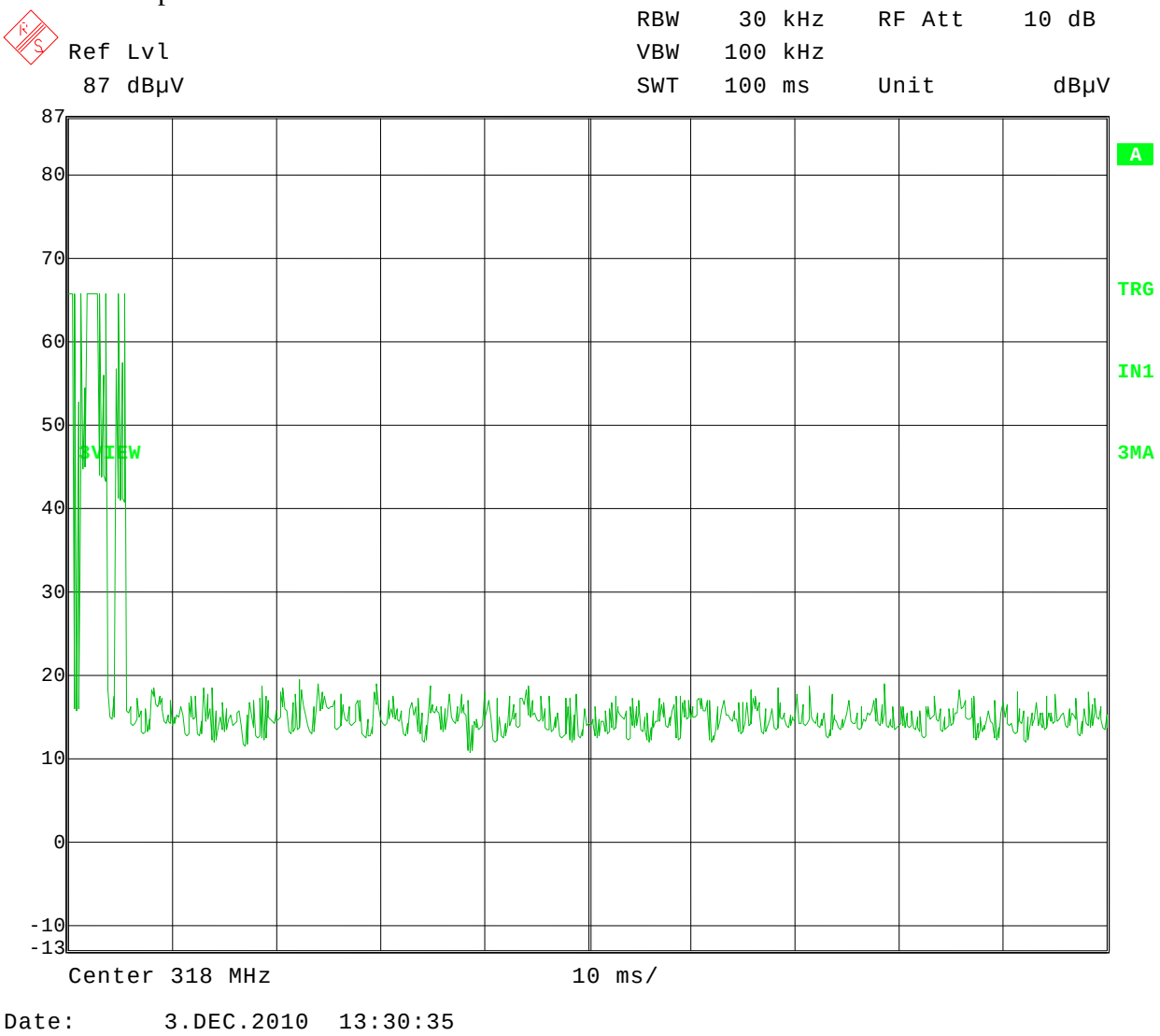
Company: RF Technologies
Model Tested: 9450-5262 and 9450-5066
Report Number: 16647
Project Number: 4331

Appendix B

Normal Operation

Test Date: 12-03-2010
Company: RF Technologies
EUT: 9600-5066: Safe Place Infant Tx 66 kHz w/ Smart Sense
Test: Duty Cycle – worst case for normal operation
Operator: Craig B
Comment: One wide pulse: 0.460921844 ms
Ten narrow pulses: 0.260521042 ms each
Total ON time in 100 ms = 3.07 ms
Duty Cycle correction = 20 Log(3.07/100) = -30.3 dB

100 ms sweep:



166 South Carter, Genoa City, WI 53128

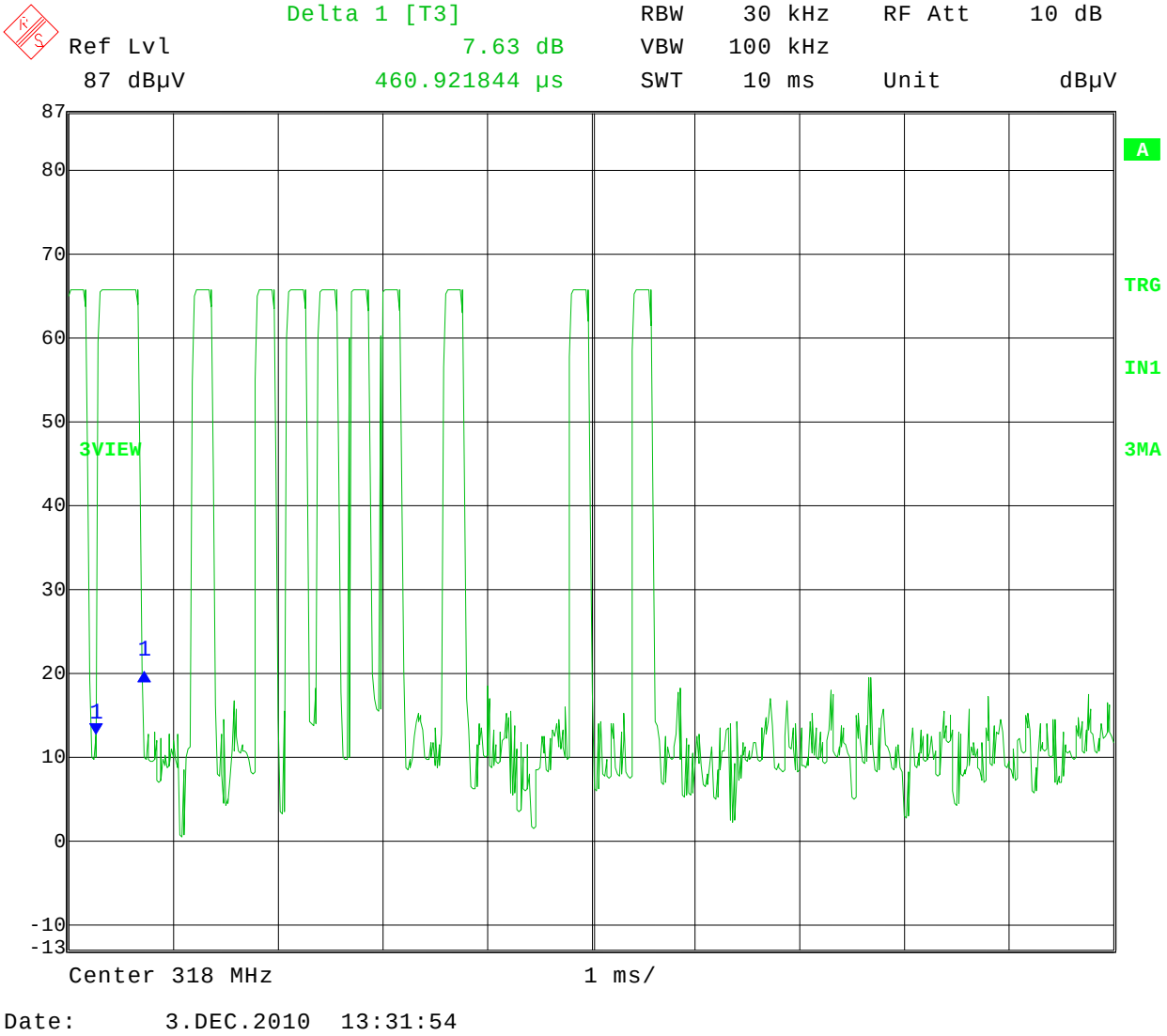
Company: RF Technologies
Model Tested: 9450-5262 and 9450-5066
Report Number: 16647
Project Number: 4331

Appendix B

Normal Operation

Test Date: 12-03-2010
Company: RF Technologies
EUT: 9600-5066: Safe Place Infant Tx 66 kHz w/ Smart Sense
Test: Duty Cycle – worst case for normal operation
Operator: Craig B
Comment: One wide pulse: 0.460921844 ms
Ten narrow pulses: 0.260521042 ms each
Total ON time in 100 ms = 3.07 ms
Duty Cycle correction = 20 Log(3.07/100) = -30.3 dB

ON time of wide pulse:



166 South Carter, Genoa City, WI 53128

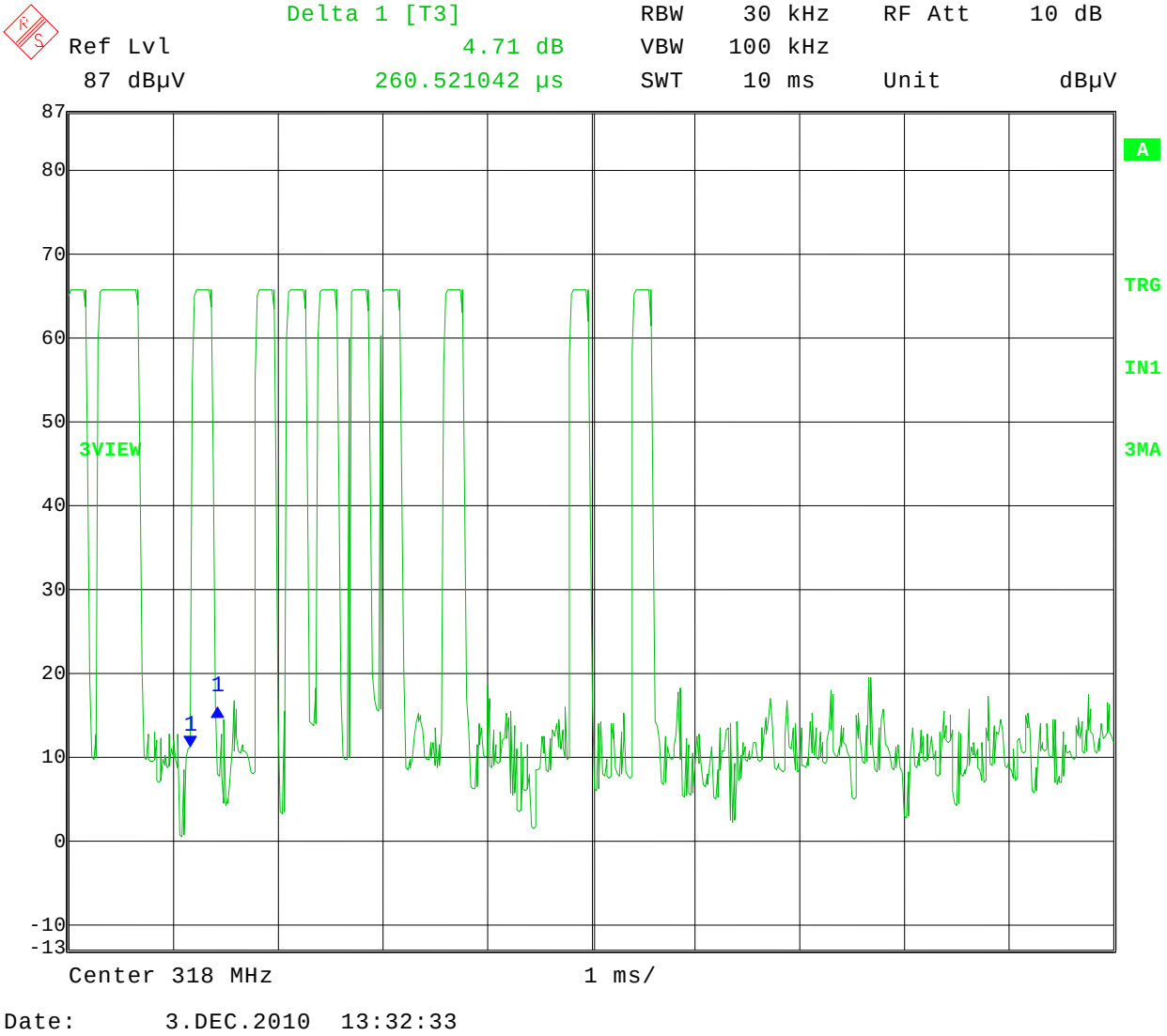
Company: RF Technologies
Model Tested: 9450-5262 and 9450-5066
Report Number: 16647
Project Number: 4331

Appendix B

Normal Operation

Test Date: 12-03-2010
Company: RF Technologies
EUT: 9600-5066: Safe Place Infant Tx 66 kHz w/ Smart Sense
Test: Duty Cycle – worst case for normal operation
Operator: Craig B
Comment: One wide pulse: 0.460921844 ms
Ten narrow pulses: 0.260521042 ms each
Total ON time in 100 ms = 3.07 ms
Duty Cycle correction = 20 Log(3.07/100) = -30.3 dB

ON time of narrow pulse:



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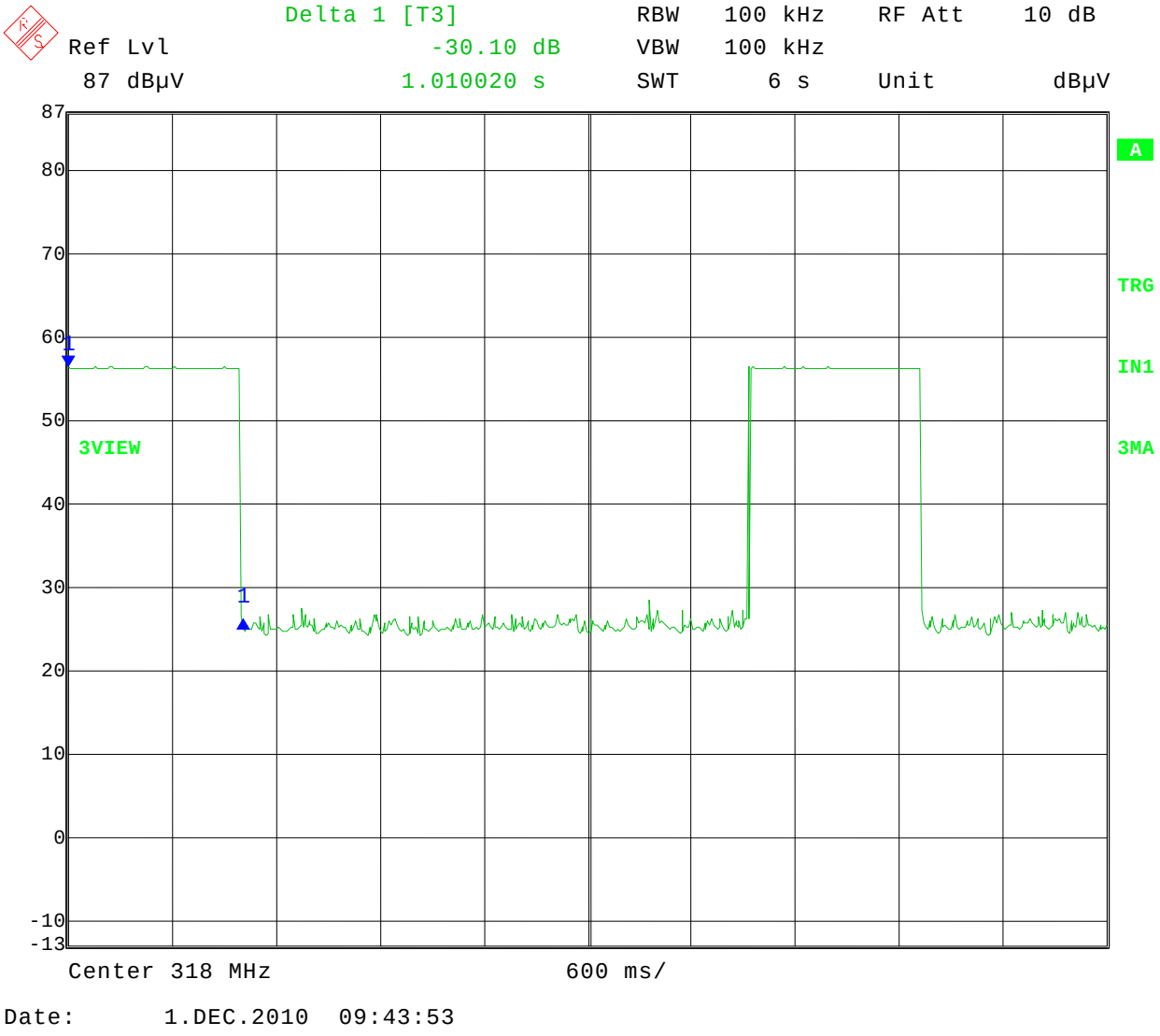
Company: RF Technologies
Model Tested: 9450-5262 and 9450-5066
Report Number: 16647
Project Number: 4331

Appendix B

Test Mode

Test Date: 12-02-2010
Company: RF Technologies
EUT: 9600-5066: Safe Place Infant Tx 66 kHz w/ Smart Sense
Test: Duty Cycle – special mode for testing purposes
Operator: Craig B

Comment: One wide pulse: 1 second
Total ON time in 100 ms = 100 ms



Appendix B

6.0 Field Strength of Emissions – Fundamental and Spurious (66 & 262 kHz)

Rule Part: Section 15.209

Test Procedure: ANSI C63.4-2009

Limits:

15.209 (a)

Results: Compliant
Note that the 66 kHz and 262 kHz transmitters are exempt from certification as defined by section 15.201(a).

Sample Equations:

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

Notes: Tested at a 3 meter distance 30 MHz to 4 GHz.
All other emissions at least 60 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).

Appendix B

6.1 Measurement Data – 262 kHz fundamental – 9 kHz to 30 MHz

Tested at a 3 Meter Distance - 262 kHz (Fundamental)
Tested at a 1 Meter Distance - Harmonics

EUT: 9450-5262: Safe Place Infant Tx, 262 kHz w/ Smart Sense
Manufacturer: RF Technologies
Operating Condition: 73 deg F; 52% R.H.
Test Site: Site 2
Operator: Craig B
Test Specification: FCC Part 15.209
Comment: Battery Operated
Date: 08-30-2010

Notes: All other emissions at least **60** dB under the limit.
Since unit was not able to transmit continuously, compliance is shown by comparing Peak data against the Average limits.

Frequency (kHz)	Measurement Type	Antenna Polarization	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)	Comment
262.000	Max Peak	Vert	66.66	7.88	0.3	74.84	0	74.84	119.24	44.4	1.0	90	F
	Average						20	54.84	99.24				
524.000	Max Peak	Vert	58.54	8.1	0.4	67.04	0	67.04	112.30	45.3	1.0	180	H
	Average						20	47.04	92.30				
1843.000	Max Peak	Vert	15.65	9.43	0.6	25.68	0	25.68	108.63	83.0	1.0	180	H
	Average						20	5.68	88.63				

Legend: H=Harmonic ; RB=Restricted Band ; F=Fundamental
Level = Total Level - System Loss - Antenna Factor
Final Corrected = Total Level - Duty Cycle Correction
Margin = Limit - Final Corrected

Appendix B

6.2 Measurement Data – 66 kHz fundamental – 9 kHz to 30 MHz

Tested at a 3 Meter Distance - 66 kHz (Fundamental)
Tested at a 1 Meter Distance - Harmonics

EUT: 9450-5066: Safe Place Infant Tx, 66 kHz w/ Smart Sense
Manufacturer: RF Technologies
Operating Condition: 72 deg F; 51% R.H.
Test Site: Site 2
Operator: Craig B
Test Specification: FCC Part 15.209
Comment: Battery Operated
Date: 08-30-2010

Notes: All other emissions at least **60** dB under the limit.
Since unit was not able to transmit continuously, compliance is shown by comparing Peak data against the Average limits.

Frequency (kHz)	Measurement Type	Antenna Polarization	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)	Comment
65.530	Max Peak	Vert	69.07	9.09	0.3	78.46	0	78.46	131.28	52.8	1.0	135	F
	Average						20	58.46	111.28				
131.060	Max Peak	Vert	60.07	8.55	0.3	68.92	0	68.92	144.34	75.4	1.0	315	H
	Average						20	48.92	124.34				
196.590	Max Peak	Vert	47.09	8.03	0.3	55.42	0	55.42	140.82	85.4	1.0	315	H
	Average						20	35.42	120.82				

Legend: H=Harmonic ; RB=Restricted Band ; F=Fundamental
Level = Total Level - System Loss - Antenna Factor
Final Corrected = Total Level - Duty Cycle Correction
Margin = Limit - Final Corrected

7.0 Duty Cycle Correction (66 & 262 kHz)

Rule Part:

15.35 (c)

Test Procedure:

ANSI C63.4-2009and ANSI C63.10-2009

Limit:

Informative

Results:

Informative

Sample Equation(s):

See data

Notes:

Since the unit was not able to transmit continuously, compliance is determined by comparing peak data, minus duty cycle correction, to the average limit. Both models were evaluated.

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Company: RF Technologies
Model Tested: 9450-5262 and 9450-5066
Report Number: 16647
Project Number: 4331

Appendix B

Test Date: 6-28-2010
Company: RF Technologies
EUT: 9600-5262: Safe Place Infant Tx 262 kHz w/ Smart Sense
Test: Duty Cycle – worst case for normal operation
Operator: Craig B
Comment: One pulse: 554.110220 µs
Eight pulses: 4.43288 ms
Duty Cycle correction = 20 Log (4.43288/100) = -27.066 dB
Maximum Useful duty cycle correction: 20 dB

100 ms sweep:

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Company: RF Technologies
Model Tested: 9450-5262 and 9450-5066
Report Number: 16647
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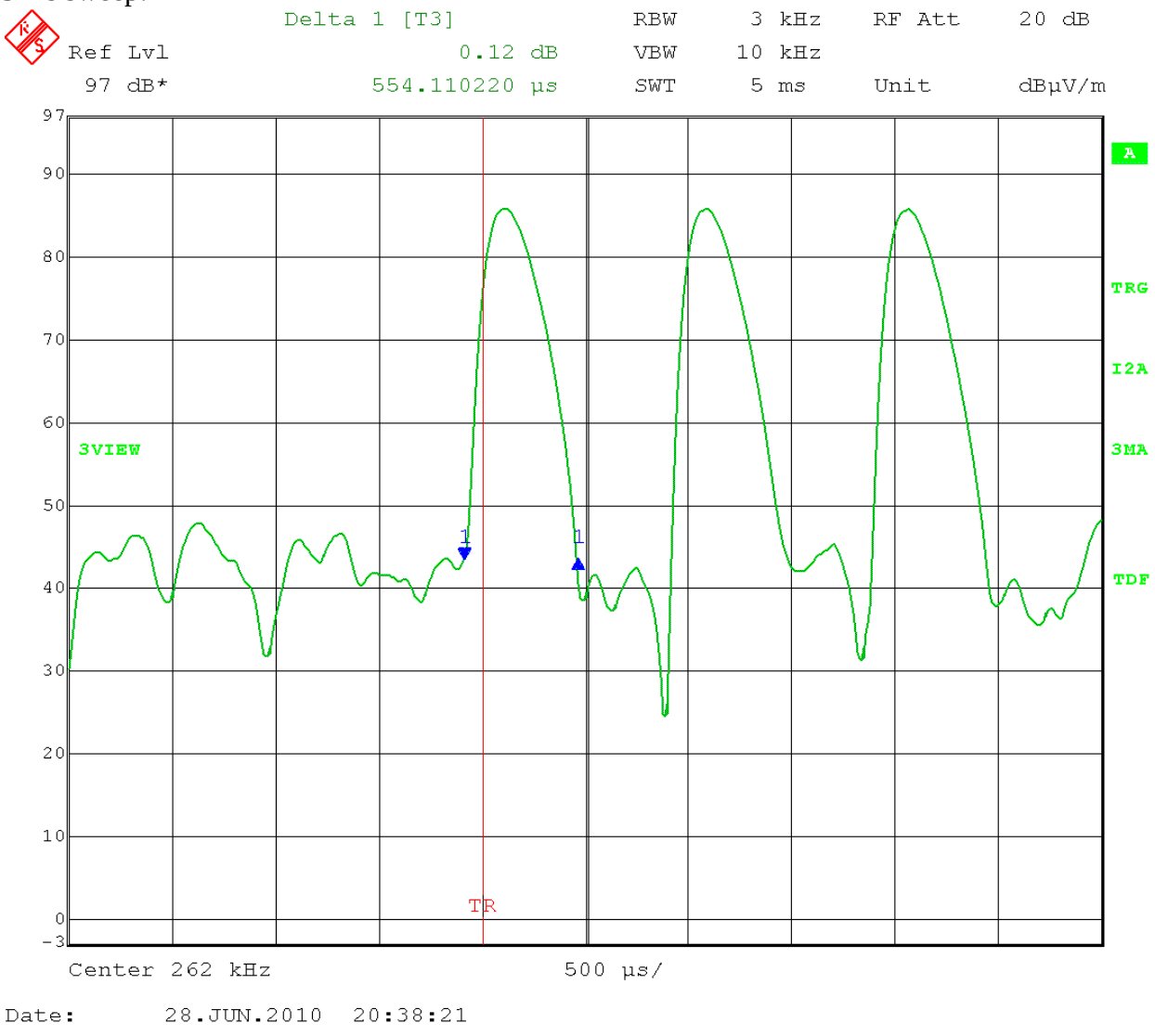
Appendix B

Test Date: 6-28-2010
Company: RF Technologies
EUT: 9600-5262: Safe Place Infant Tx 262 kHz w/ Smart Sense
Test: Duty Cycle – worst case for normal operation
Operator: Craig B
Comment: One pulse: 554.110220 µs
Eight pulses: 4.43288 ms
Duty Cycle correction = 20 Log (4.43288/100) = -27.066 dB
Maximum Useful duty cycle correction: 20 dB

5 ms sweep:



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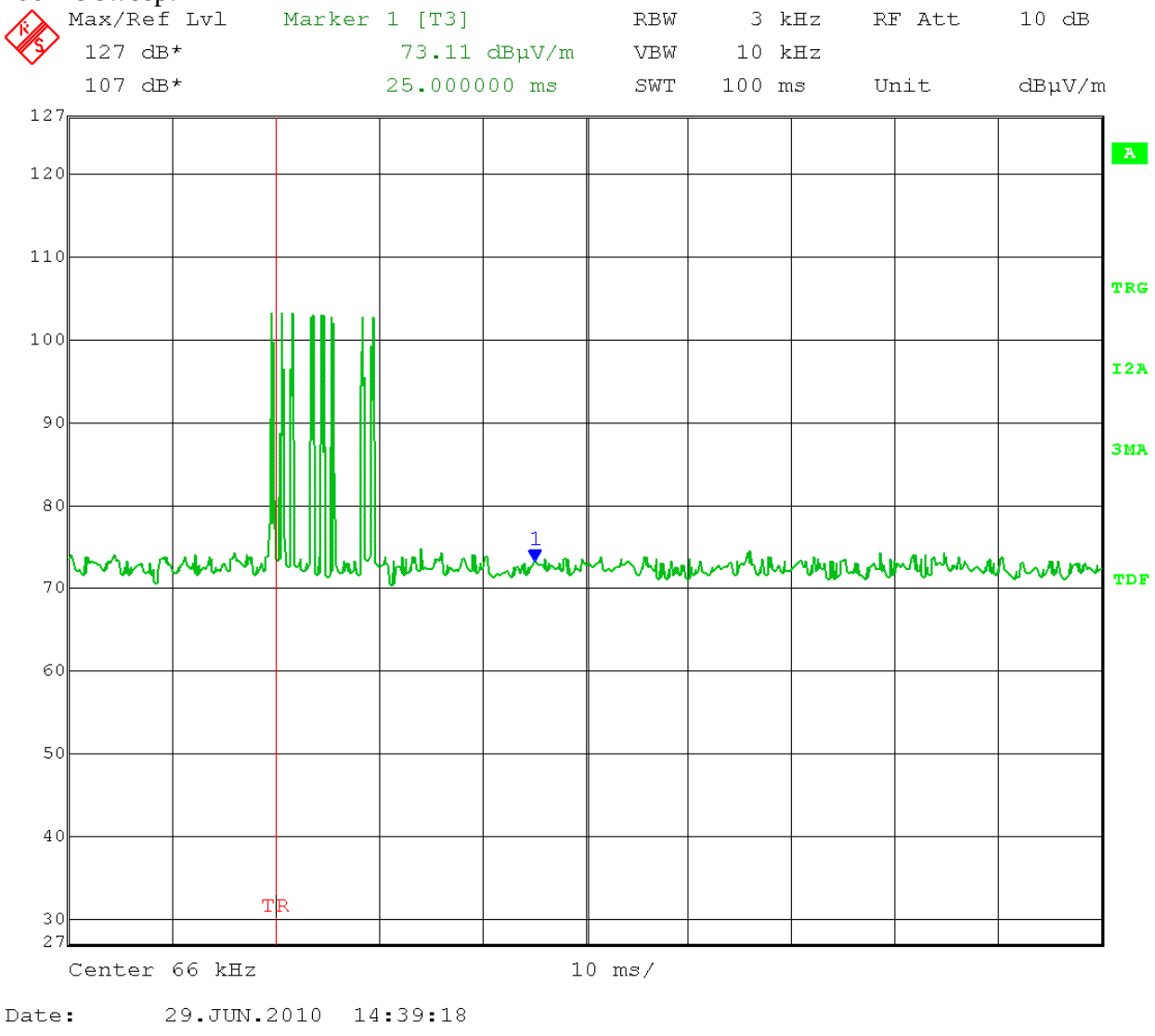
Company: RF Technologies
Model Tested: 9450-5262 and 9450-5066
Report Number: 16647
Project Number: 4331

Appendix B

Test Date: 6-29-2010
Company: RF Technologies
EUT: 9600-5066: Safe Place Infant Tx 66 kHz w/ Smart Sense
Test: Duty Cycle – worst case for normal operation
Operator: Craig B
Comment: One pulse: 554.110220 µs
Eight pulses: 4.43288 ms
Duty Cycle correction = 20 Log (4.43288/100) = -27.066 dB
Maximum Useful duty cycle correction: 20 dB

100 ms sweep:



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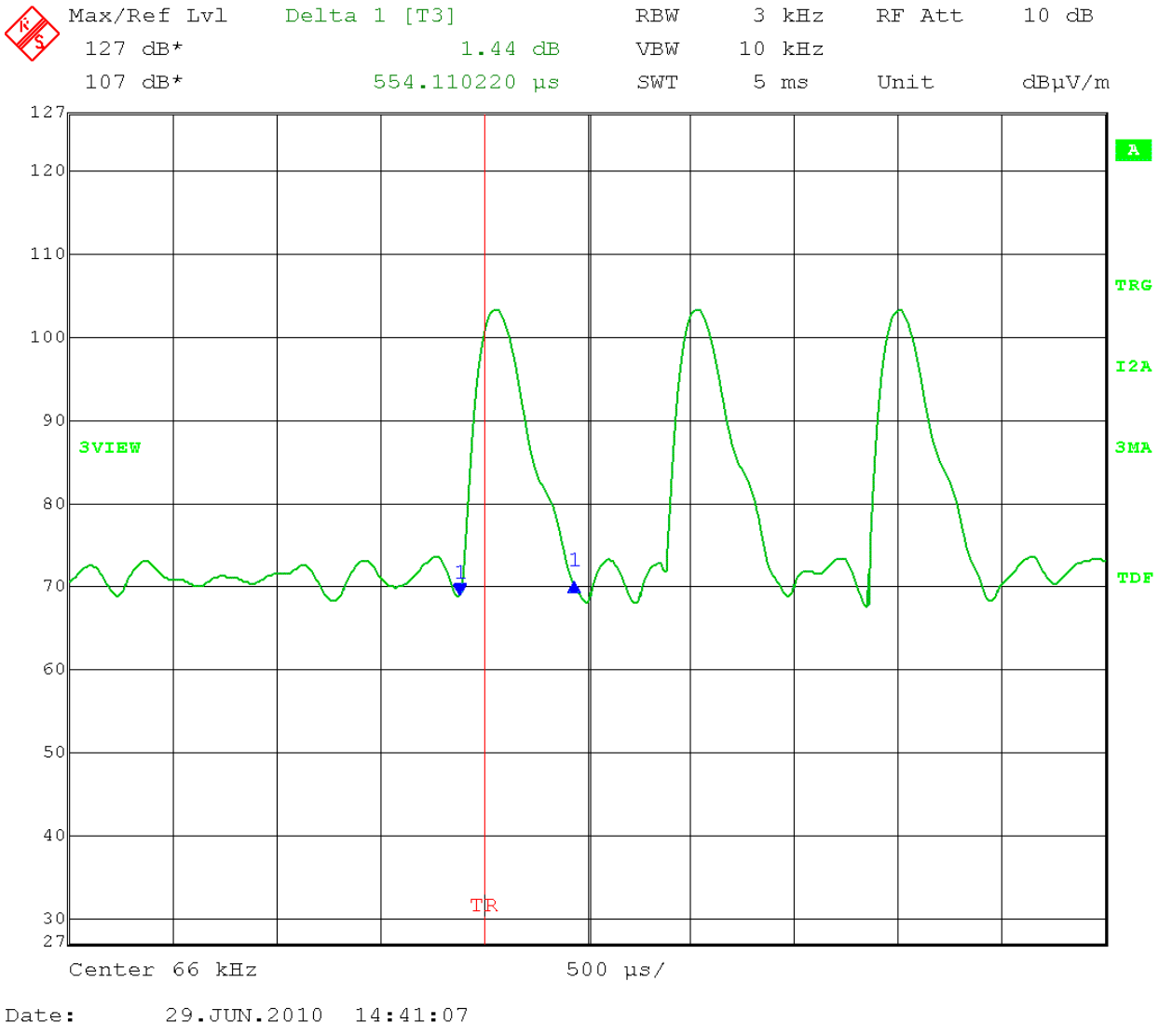
Company: RF Technologies
Model Tested: 9450-5262 and 9450-5066
Report Number: 16647
Project Number: 4331

Appendix B

Test Date: 6-29-2010
Company: RF Technologies
EUT: 9600-5066: Safe Place Infant Tx 66 kHz w/ Smart Sense
Test: Duty Cycle – worst case for normal operation
Operator: Craig B
Comment: One pulse: 554.110220 µs
Eight pulses: 4.43288 ms
Duty Cycle correction = 20 Log (4.43288/100) = -27.066 dB
Maximum Useful duty cycle correction: 20 dB

5 ms sweep:



END OF REPORT

Revision #	Date	Comments	By
1.0	12-06-2010	Initial Release	AA