COMPLIANCE WORLDWIDE INC.
TEST REPORT 211-06

In Accordance with the Requirements of

Industry Canada RSS 210, Issue 6, Annex 1
Federal Communications Commission CFR Title 47 Part 15.231, Subpart C
Low Power License-Exempt Radio Communication Devices
Intentional Radiators

Issued to

Lasershield Systems, Inc.
277 East Amador Road, Suite 304
Las Cruces, NM 88001

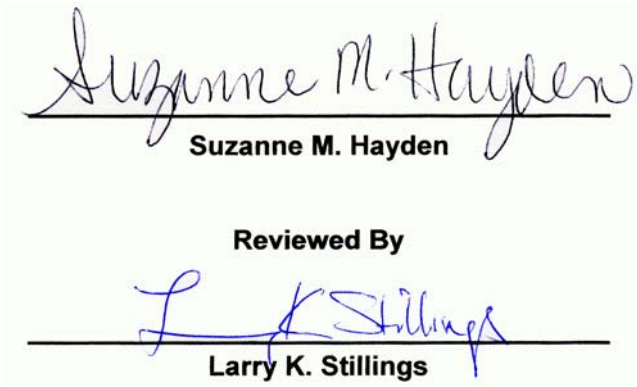
for

Keychain Remote

FCC ID: RIHK0011500
IC: 4740A-K0011500

Report Issued on October 6, 2006

Prepared by



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Compliance Worldwide, Inc. - 357 Main Street - Sandown, NH 03873
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http://www.cw-inc.com

1. Scope

This test report certifies that the LaserShield Systems, Inc. Keychain Remote, as tested, meets the RSS 210 Annex 1 Rules and FCC Part 15.231, Subpart C requirements. The scope of this test report is limited to the test sample provided by the client, only in as much as that sample represents other production units. If any significant changes are made to the unit, the changes shall be evaluated and a retest may be required

2. Product Details

2.1. Manufacturer: Lasershield Systems, Inc.

2.2. Model Number: KCR-0011501

2.3. Serial Number: N/A

2.4. Description: Key chain remote transmitter

2.5. Power Source: Battery powered

2.6. EMC Modifications: None

3. Product Configuration

3.1. Cables

Cable Type	Length	Shield	From	To
N/A				

3.2. Support Equipment

Device	Manufacturer	Model	Serial No.	Comment
N/A				

3.3. Operational Characteristics

For the sake of performing the measurements, the manufacturer has configured the DUT to remain in transmit mode by pressing the alarm button while inserting the battery.

3.4. Block Diagram

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4 Measurements Parameters

4.1 Measurement Equipment Used to Perform Test

Device	Manufacturer	Model No.	Serial No.	Last Cal	Cal Due
EMI Receiver	Hewlett Packard	8546A	3650A00360	1/5/2005	1/5/2007
Spectrum Analyzer	Hewlett Packard	8593E	3829A03887	3/13/2006	3/13/2007
Microwave Preamp	Hewlett Packard	8449B	3008A01323	9/22/2006	9/22/2008
Biconilog Antenna	Com-Power	AC220	25509	1/31/2006	1/31/2007
Horn Antenna	Electro-Metrics	EM-6961	6337	8/25/2006	8/25/2008

4.2 Measurement & Equipment Setup

Test Date:	7/202006
Test Engineer:	Mike Desmarais
Normal Site Temperature (15 - 35°C):	21.7
Extreme Test Temperatures (°C):	0 and +35
Relative Humidity (20 -75%RH):	32
Frequency Range:	418 MHz
Measurement Distance:	3 Meters
EMI Receiver IF Bandwidth:	Depends on measurement
EMI Receiver Avg Bandwidth:	Depends on measurement
Detector Function:	Depends on measurement

4.3 Test Procedure

Test measurements were made in accordance FCC Part 15.231: Operation within the bands 40.66 – 40.70 MHz and above 70 MHz.

The test methods used to generate the data in this test report are in accordance with ANSI C63.4: 2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

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5 Measurement Summary

Test Requirement	FCC Rule Requirement	Test Report Section	Result	Comment
Antenna Requirement	15.203	N.A	Compliant	Unit has an internal pcb mount antenna.
Radiated Field Strength of Fundamental	15.231 (b)	6.1	Compliant	
Radiated Field Strength of Harmonics	15.231 (a)	6.2	Compliant	
Occupied Bandwidth		6.3	Compliant	
Band Width Measurements		6.4	Compliant	
Spurious Radiated Emissions	15.231 (b), 15.209	6.5	Compliant	
Determination of Average Factor		6.7	Compliant	
Conducted Emissions	15.207	N.A	Compliant	Unit is battery operated

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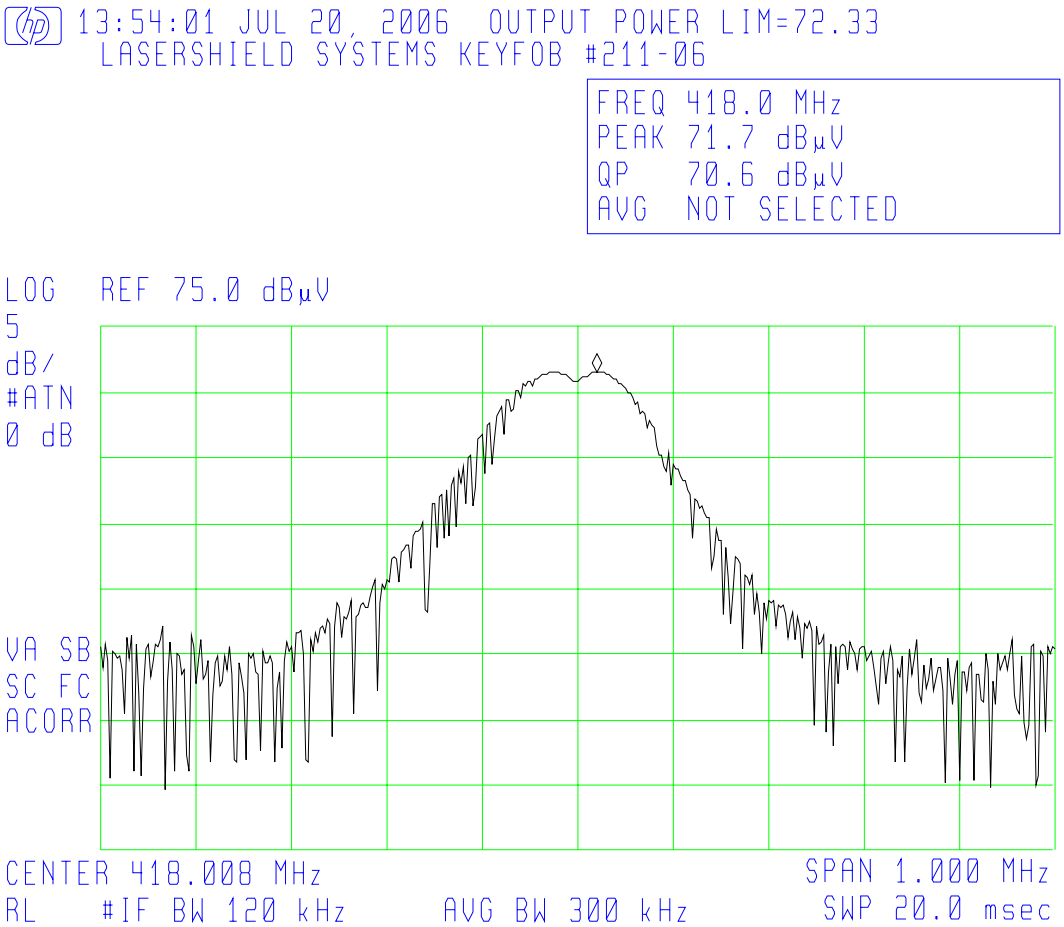
6 Measurement Data

6.1 Radiated Field Strength of Fundamental (15.231, Section (b))

Requirement: The 3 meter field strength of the fundamental emissions from intentional radiators operated within the 418.0 MHz frequency bands shall comply with the following requirement: 4,133 microvolts/meter (72.33 dBµV/m), average or quasi-peak mode measurement.

6.1.1 Radiated Field Strength of Fundamental

Frequency (MHz)	Amplitude (dBµV/m)		Q-Peak Limit	Margin (dB)	Ant Pol	Ant Ht	TT Pos	Result
	Peak	Q-Peak			H/V	cm	Deg	P/F
418.0	71.7	70.6	72.33	-1.73	H	107	4	Passed



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6 Measurement Data (continued)

6.2 Radiated Field Strength of Harmonics (15.231, Section (a))

Requirement: The 3 meter field strength of the harmonic emissions from intentional radiators operated within the 418.0 MHz frequency bands shall comply with the following: 500 microvolts/meter (54 dBµV/m), average mode measurement. Peak field strength may not be greater than 20 dB above the average limit (74 dBµV/m).

At frequencies equal to or less than 1000 MHz, emissions measurements were made using a receiver that employs a CISPR quasi-peak detector. Above 1000 MHz, measurements were made using a receiver that employs an average detector.

6.2.1 Channel (418.0 MHz)

Frequency (MHz)	Amplitude (dBµV)		Corr. Fact. (dB)	Amplitude (dBµV/m)		Quasi-Pk Limit	Margin (dB)	Ant Pol	Ant Ht	TT Pos	Result
	Peak	QP		Peak	QP			H/V	cm	Deg	
836.0000	17.4	15.7	26.2	43.6	41.9	72.33	-30.43	H	107	4	Passed

Frequency (MHz)	Amplitude (dBµV)		Corr. Fact. (dB)	Amplitude (dBµV/m)		Average Limit	Margin (dB)	Ant Pol	Ant Ht	TT Pos	Result
	Peak	Avg		Peak	Avg			H/V	cm	Deg	
1254.0698	14.73	11.13	25.9	40.60	37.00	54.00	-17.0	H	100	88	Passed
1672.0000	0.37	-4.53	29.2	29.60	24.70	54.00	-29.3	H	100	14	Passed
2090.1398	1.67	-3.53	31.3	33.00	27.80	54.00	-26.2	H	112	30	Passed
2508.0000	-2.99	-8.89	29.9	26.90	21.00	54.00	-33.0	Noise Floor			Passed

[1] Frequency falls within the Restricted Bands of Operation. See FCC Part 15, Section 15.205 for additional information.

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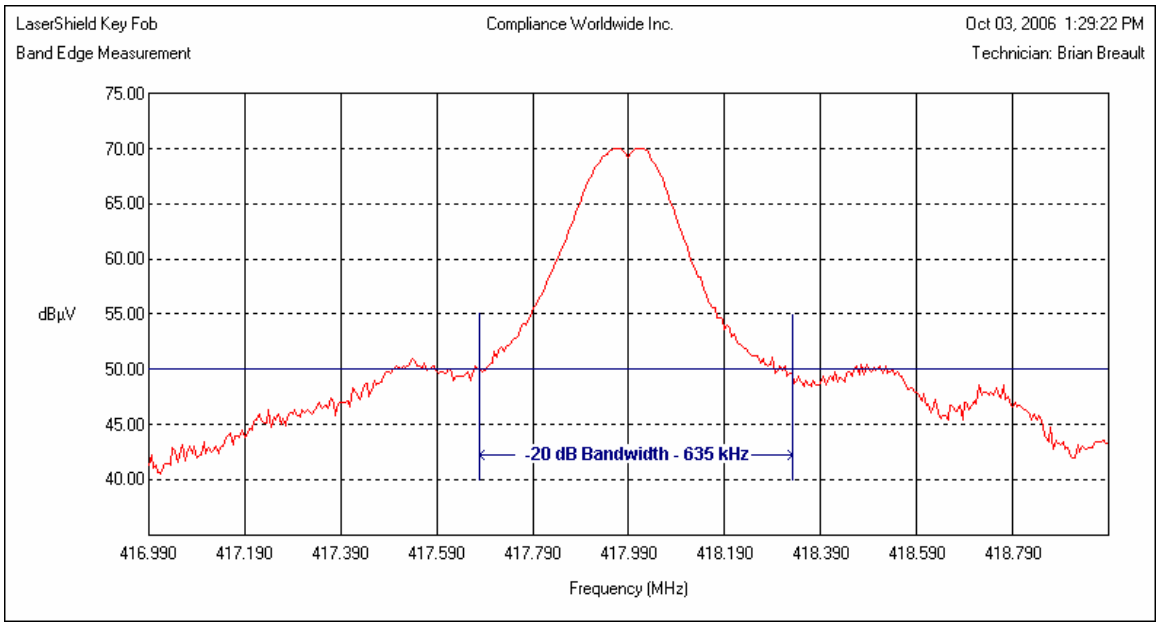
6 Measurement Data (continued)

6.3 Occupied Bandwidth

6.3.1 Occupied Bandwidth

-20 dB Bandwidth = 635 kHz



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6.5 Spurious Radiated Emissions, 30 MHz to 1 GHz (15.231, Section (b))

Requirement: Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

6.5.1. Spurious Radiated Emissions, 30 MHz to 1 GHz Test Setup

6.5.1.1 Regulatory Limit: FCC Part 209, Quasi-Peak

Frequency Range (MHz)	Distance (Meters)	Limit (dBµV/m)
30 to 88	3	40.0
88 to 216	3	43.5
216 to 960	3	46.0
960 to 1000	3	54.0

6.5.1.2 Measurement Equipment Used to Perform Test

Device	Manufacturer	Model No.	Serial No.	Cal Due
EMI Receiver	Hewlett Packard	8546A	3650A00360	1/5/2007
Biconilog Antenna	Com-Power	AC220	25509	1/31/2007

6.5.1.3. Measurement & Equipment Setup

Test Date:	07/05/2006
Test Engineer:	Michael Desmarais
Site Temperature (°C):	19.2
Relative Humidity (%RH):	37
Frequency Range:	30 MHz to 1 GHz
Measurement Distance:	10 Meters
EMI Receiver IF Bandwidth:	120 kHz
EMI Receiver Avg Bandwidth:	300 kHz
Detector Functions:	Peak and Quasi-Peak.
Antenna Height:	1 to 4 meters

6.5.1.4. Test Procedure

Test measurements were made in accordance with ANSI C63.4-2003, Standard Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronics Equipment in the Range of 9 kHz to 40 GHz.

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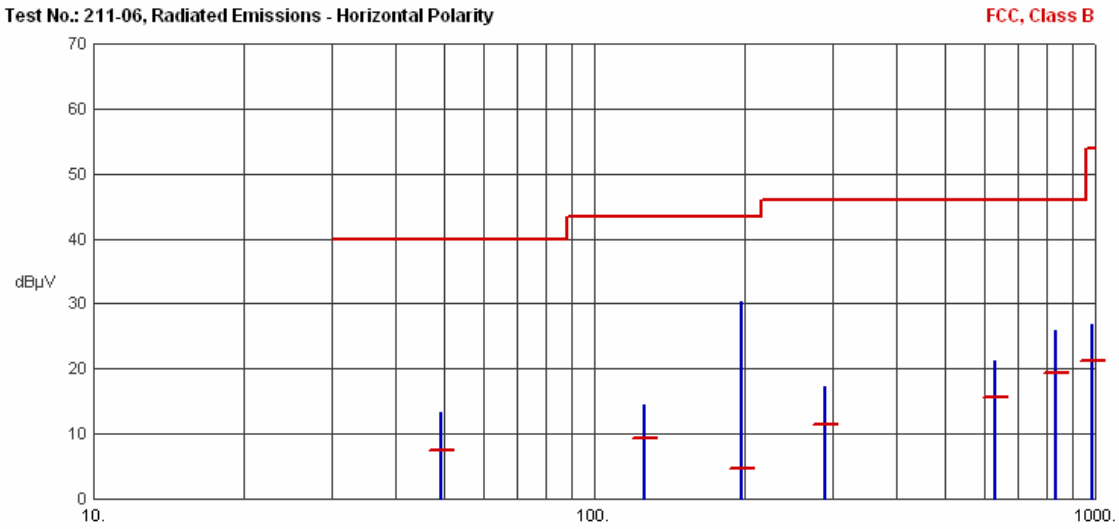
6.5 Spurious Radiated Emissions (30 MHz to 1 GHz) Test Results (continued)

6.5.2 Horizontal Polarity



Frequency (MHz)	Pk Amp (dBµV/m)	QP Amp (dBµV/m)	QP Limit (dBµV/m)	Margin (dB)	Ant Ht (cm)	Table (Deg)	Comments
49.4196	13.40	7.55	40.00	-32.45	N/A	N/A	
125.7321	14.54	9.34	43.50	-34.16	N/A	N/A	
197.1512	30.24	4.56	43.50	-38.94	N/A	N/A	
289.3547	17.29	11.33	46.00	-34.67	N/A	N/A	
629.4938	21.25	15.62	46.00	-30.38	N/A	N/A	
836.8872	25.95	19.28	46.00	-26.72	N/A	N/A	
982.9552	26.75	21.29	54.00	-32.71	N/A	N/A	

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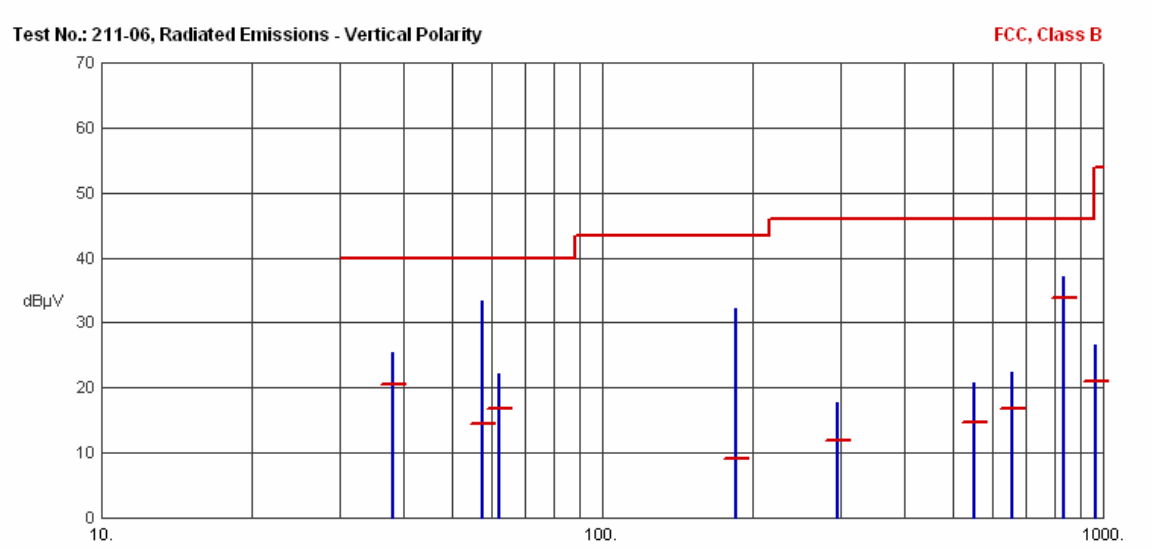
6.5 Spurious Radiated Emissions (30 MHz to 1 GHz) Test Results (continued)

6.5.3 Vertical Polarity



Frequency (MHz)	Pk Amp (dBµV/m)	QP Amp (dBµV/m)	QP Limit (dBµV/m)	Margin (dB)	Ant Ht (cm)	Table (Deg)	Comments
38.1754	25.33	20.51	40.00	-19.49	N/A	N/A	
57.5068	33.46	14.50	40.00	-25.50	N/A	N/A	
62.1837	22.16	16.80	40.00	-23.20	N/A	N/A	
184.9609	32.25	9.01	43.50	-34.49	N/A	N/A	
295.0746	17.66	11.90	46.00	-34.10	N/A	N/A	
551.2993	20.85	14.76	46.00	-31.24	N/A	N/A	
657.1319	22.33	16.72	46.00	-29.28	N/A	N/A	
836.0597	37.05	33.89	46.00	-12.11	N/A	N/A	
965.2411	26.50	21.00	54.00	-33.00	N/A	N/A	

6.6 Spurious Radiated Emissions (> 1 GHz) Test Results

There were no spurious emissions above 1 GHz other than the harmonics previously reported.

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7. Conducted Emissions Test Setup

7.1. Regulatory Limit: 15.207

Frequency Range (MHz)	Limits (dBµV)	
	Quasi-Peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5.0	56	46
5.0 to 30.0	60	50
* Decreases with the logarithm of the frequency.		

7.2. Measurement Equipment Used to Perform Test

Device	Manufacturer	Model No.	Serial No.	Last Cal	Cal Due
EMI Receiver	Hewlett Packard	8546A	3650A00360	1/5/2005	1/5/2007
LISN	EMCO	3825/2	9109-1860	12/15/2004	12/15/2006

7.3. Measurement & Equipment Setup

Test Date:	08/16/2006
Test Engineer:	Michael Desmarais
Site Temperature (°C):	21.9
Relative Humidity (%RH):	31
Frequency Range:	0.15 MHz to 30 MHz
EMI Receiver IF Bandwidth:	9 kHz
EMI Receiver Avg Bandwidth:	30 kHz
Detector Functions:	Peak, Quasi-Peak. & Average

7.4. Test Procedure

Test measurements were made in accordance with ANSI C63.4-2003, Standard Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronics Equipment in the Range of 9 kHz to 40 GHz.

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8. Conducted Emissions Test Results

The EUT, Keychain remote transmitter, is battery powered only, Conducted limits do no apply

9. Test Site Description

Compliance Worldwide is located at 357 Main Street in Sandown, New Hampshire. The test sites at Compliance Worldwide are used for conducted and radiated emissions testing in accordance with Federal Communications Commission (FCC) and Industry Canada standards. A description of the test sites is on file with the FCC (registration number **96392**) and Industry Canada (file number **IC 3023A-1)**..

The radiated emissions test site is a 3 and 10 meter enclosed open area test site (OATS). Personnel, support equipment and test equipment are located in the basement beneath the OATS ground plane.

The conducted emissions site is part of a 16' x 20' x 12' ferrite tile chamber and uses one of the walls for the vertical ground plane required by EN 55022.

Both sites are designed to test products or systems 1.5 meters W x 1.5 meters L x 2.0 meters H, floor standing or table top.

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