



Company: Saris Cycling Group Inc.
Model Tested: J3CONFT3
Report Number: 15672

1250 Peterson Dr., Wheeling, IL 60090

FCC Rules and Regulations / Intentional Radiators

Operational in the 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz Bands

Part 15, Subpart C, Section 15.249

THE FOLLOWING MEETS THE ABOVE TEST SPECIFICATION

Formal Name: Joule 3.0
FCC ID: T8P-CON2FT3
Kind of Equipment: Bicycle Computer
Frequency Range: 2405 MHz - 2480 MHz
Test Configuration: Handlebar Mounted (Tested at 3 vdc)
Model Number(s): J3CONFT3
Model(s) Tested: J3CONFT3
Serial Number(s): N/A
Date of Tests: September 12, 10, 2009
Test Conducted For: Saris Cycling Group Inc.
5253 Verona Rd
Madison, WI 53711

NOTICE: "This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government". Please see the "Additional Description of Equipment Under Test" page listed inside of this report.

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SIGNATURE PAGE

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General Manager



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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 18 June 2005).*



2008-10-01 through 2009-09-30

Effective dates

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

NVLAP-01C (REV. 2006-09-13)



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1.0 SUMMARY OF TEST REPORT

It was found that the Joule 3.0, Model Number(s) J3CONFT3 **meets** the radio interference radiated emission requirements of the FCC "Rules and Regulations", Part 15, Subpart C, Section 15.249 for operational in the 902-928 MHz, **2400-2483.5 MHz**, 5725-5875 MHz, and 24.0-24.25 GHz Bands. The AC Power Line conducted emissions test was not required because the Joule 3.0 is powered from a D.C. power source. It does not have a line cord to plug into the A.C. power line.

2.0 INTRODUCTION

On September 12, 10, 2009, a series of radio frequency interference measurements was performed on Joule 3.0, Model Number(s) J3CONFT3, Serial Number: N/A. The tests were performed according to the procedures of the FCC as stated in the "Methods of Measurement of Radio-Noise Emissions for Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz" found in the American National Standards Institute, ANSI C63.4-2003. Tests were performed by personnel of D.L.S. Electronic Systems, Inc. who are responsible to Donald L. Sweeney, Senior EMC Engineer.

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.

Main Test Facility:

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

O.A.T.S. Test Facility:

D.L.S. Electronic Systems, Inc.
166 S. Carter Street
Genoa City, Wisconsin 53128
FCC Registration Number: 334127

3.0 OBJECT

The purpose of this series of tests was to determine if the test sample could meet the radio frequency interference emission requirements of the FCC "Rules and Regulations", Part 15, Subpart C, Sections 15.35(b), 15.37(d), 15.209 & 15.249 for Intentional Radiators operating in the Bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24-24.25 GHz.



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4.0 TEST SET-UP

All emission tests were performed at D.L.S. Electronic Systems, Inc. and set up according to the ANSI C63.4-2003, Annex H. The conducted tests were performed with the test item placed on a non-conductive table (table top equipment), located in the test room. Equipment normally operated on the floor was tested by placing it on the metal ground plane. The ground plane has an electrical isolation layer over its surface approximately 7mm thick. The power line supplied was connected to a dual line impedance stabilization network electrically bonded to the ground plane, located on the floor. The networks were constructed per the requirements of the ANSI C63.4-2003, Annex H.

All radiated emissions tests were performed with the test item placed on a 80 cm high rotating non-conductive table, located in the test room. Equipment normally operated on the floor was placed on a metal covered turntable which is flush with the surrounding conducting ground plane. The ground plane has an electrical isolation layer over its surface approximately 7 mm thick. The EUT is separated from the turntable ground plane by a non-conductive layer. The equipment under test was set up according to ANSI C63.4-2003, Sections 6 and 8.



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5.0 TEST EQUIPMENT (Bandwidths and Detector Function)

All preliminary data below 1000 MHz was automatically plotted using the ESI 26/40 Fixed Tuned Receiver. The data was taken using Peak, Quasi-Peak or the Average Detector Functions as required. This information was then used to determine the frequencies of maximum emissions. Above 1000 MHz, final data was taken using the Average Detector.

Below 1000 MHz, final data was taken using the ESI 26/40 Fixed Tuned Receiver. These plots were made using the Peak or Quasi-Peak Detector functions, with manual measurements performed on the questionable frequencies using the Quasi-Peak or the Average Detector Function of the ESI 26/40 Fixed Tuned Receiver as required. Above 1000 MHz, final data was taken using the Average Detector on the Spectrum Analyzer.

The bandwidths shown below are 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

A list of the equipment used can be found in Table 1. All primary equipment was calibrated against known reference standards with a verified traceable path to NIST.



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6.0 AMBIENT MEASUREMENTS

For emissions measurements, broadband antennas and an EMI Test Receiver with a panoramic spectrum display are used. First the frequency range is scanned and displayed on the test receiver display. Next the scanned frequency range is divided into smaller ranges, and then it is manually tuned through to determine the emissions from the EUT. A headset or loudspeaker is connected to the test receiver's AM/FM demodulated output as an aid in detecting ambient signals and finding frequencies of significant emission from the EUT. If there is any doubt as to the source of the emission, it is further investigated by rotating the EUT, or by disconnecting the power from the EUT.

The EUT is set up in its typical configuration and operated in its various modes. For tabletop systems, cables are manipulated within the range of likely configurations. For floor-standing equipment, the cables are located in the same manner as the user would install them and no further manipulation is made. If the manner of cable installation is not known, or if it changes with each installation, cables or wires for floor-standing equipment shall be manipulated to the extent possible to produce the maximum level of emissions. For each mode of operation, the frequency spectrum is monitored. Variations in antenna height, antenna polarization, EUT azimuth, and cable or wire placement (each variable within bounds specified elsewhere) are explored to produce the emissions that have the highest amplitude relative to the limit. These methods are performed to the specifications in ANSI C63.4-2003.



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7.0 DESCRIPTION OF TEST SAMPLE: (See also Paragraph 8.0)

7.1 Description:

The Joule 3.0 is a bicycle computer that is mounted to bicycle handlebars or stem and is used to provide feedback to assist training. Typical cycling computer parameters such as speed and cadence can be displayed, as well as more advanced parameters such as power and grade. These values come from sensors that communicate wirelessly to the Joule 3.0. The Joule 3.0 displays these values in real-time and stores them in memory for later analysis.

7.2 PHYSICAL DIMENSIONS OF EQUIPMENT UNDER TEST

4in x 4in x 1in

7.3 LINE FILTER USED:

None

7.4 INTERNAL CLOCK FREQUENCIES:

Switching Power Supply Frequencies:

up to 1000 kHz (backlight driver)

Clock Frequencies:

48, 16 12, 0.032768 MHz

7.5 DESCRIPTION OF ALL CIRCUIT BOARDS:

- | | |
|------------------------------------|------------------|
| 1. Joule 3.0 Main Circuit Assembly | PN: 18937 Rev A4 |
| 2. USB Adapter Assembly | PN: 18800 Rev A |



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8.0 ADDITIONAL DESCRIPTION OF TEST SAMPLE:
(See also Paragraph 7.0)

1: There were no additional descriptions noted at the time of test.

NOTE:

For ITE testing the EUT was connected to PC via USB for charging.

For the purpose of transmitter testing the EUT was placed in continuous transmit mode using firmware installed on the device for setting the low, mid and high channels.

To configure the EUT for continuous receive mode, a USB cable was connected to the device and to a computer where a new set of firmware was uploaded for the purpose of continuous receive mode testing on the low, mid, and high channels.

The USB cable was removed prior to testing the EUT in both transmit and receive modes.

9.0 PHOTO INFORMATION AND TEST SET-UP

Item 0 Joule 3.0

Model Number: J3CONFT3 Serial Number: N/A



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10.0 RADIATED PHOTOS TAKEN DURING TESTING



Vertical Axis



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10.0 RADIATED PHOTOS TAKEN DURING TESTING (CON'T)



Horizontal Axis



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11.0 RESULTS OF TESTS

The radio interference emission charts can be seen on the pages at the end of this report. Data sheets indicating the test measurements taken during testing can also be found at the end of this report.

12.0 CONCLUSION

It was found that the Joule 3.0, Model Number(s) J3CONFT3 **meets** the radio interference radiated emission requirements of the FCC "Rules and Regulations", Part 15, Subpart C, Section 15.249 for operational in the 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz Bands. The conducted emissions test was not required because the Joule 3.0 is powered from a D.C. power source. It does not have a line cord to plug into the A.C. power line.



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TABLE 1 – EQUIPMENT LIST

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	1/10
Antenna	EMCO	3104C	9810-4849	20 MHz – 200 MHz	4/10
Antenna	EMCO	3146	1205	200 MHz – 1 GHz	4/10
Preamp	Ciao	CA118-4010	101	1 GHz-18 GHz	1/10
Horn Antenna	EMCO	3115	9502-4451	1-18 GHz	4/11
Filter- High-Pass	Q-Microwave	100462	2	4.2 GHz-18 GHz	5/10
Horn Antenna	Com-Power	AH-118	071127	1-18 GHz	4/10
Signal Generator	Rhode & Schwarz	SMR40	100092	1-40 GHz	12/09
Preamp	Miteq	AMF-8B-180265-40-10P-H/S	438727	18GHz-26 GHz	8/10
Horn Antenna	ETS Lindgren	3116	00062917	18 – 40 GHz	11/09
High Pass Filter	Planar	CL22500-9000-CD-SS	PF1229/0728	15-40 GHz	7/10

All primary equipment is calibrated against known reference standards with a verified traceable path to NIST.



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APPENDIX A

TEST PROCEDURE

Part 15, Subpart C, Section 15.249(a)(c)(d)(e)

Operation within the Bands 902-928 MHz,

2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz



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APPENDIX A

1.0 CONDUCTED EMISSION MEASUREMENTS

Conducted emissions were measured over the frequency range from 150 kHz to 30 MHz in accordance with the power line measurements as specified in FCC Part 15, Subpart C, Section 15.207 & ANSI C63.4-2003. Since the device is operated from the public utility lines, the 120 Vac, 60 Hz power leads, high (hot) and low (neutral) sides, were measured by connecting the measuring equipment to the appropriate meter terminal of the LISN. During the test, the cables were placed and items moved (when appropriate) to maximize emissions. All signals were then recorded. The allowed levels for Intentional Radiators which is designed to connected to the public utility (AC) power line cannot exceed the following:

Frequency of Emissions (MHz)	Conducted Limits (dBuV)	
	Quasi Peak	Average
.15 to .5	66 to 56	56 to 46
.5 to 5	56	46
5 to 30	60	50

NOTE:

The conducted emissions test was not required because the Joule 2.0 is powered from a D.C. power source. It does not have a line cord to plug into the A.C. power line.



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2.0 BAND EDGE AND RESTRICTED BAND COMPLIANCE

The field strength of any emissions appearing outside the 2405 – 2480 MHz band shall not exceed the general radiated emissions limits as stated Section 15.209. The fundamental from the Joule 3.0 transmitter shall not be inside the restricted bands 2310.0 to 2390 MHz and 2483.5 to 2500 MHz.

As stated in Section 15.205a, the fundamental emission from the Joule 3.0 shall not fall within any of the bands listed below:

Frequency in MHz	Frequency in MHz	Frequency in MHz	Frequency in GHz
.0900 to .1100	162.0125 to 167.17	2310.0 to 2390	9.30 to 9.50
.4900 to .5100	167.7200 to 173.20	2483.5 to 2500	10.60 to 12.70
2.1735 to 2.1905	240.000 to 285.00	2655.0 to 2900	13.25 to 13.40
8.362 to 8.3660	322.200 to 335.40	3260.0 to 3267	14.47 to 14.50
13.36 to 13.410	399.900 to 410.00	3332.0 to 3339	15.35 to 16.20
25.50 to 25.670	608.000 to 614.00	3345.8 to 3358	17.70 to 21.40
37.50 to 38.250	960.000 to 1240.00	3600.0 to 4400	22.01 to 23.13
73.00 to 75.500	1300.000 to 1427.00	4500.0 to 5250	23.60 to 24.00
108.00 to 121.94	1435.000 to 1626.50	5350.0 to 5450	31.20 to 31.80
123.00 to 138.00	1660.000 to 1710.00	7250.0 to 7750	36.43 to 36.50
149.90 to 150.00	1718.800 to 1722.20	8025.0 to 8500	ABOVE 38.60
156.70 to 156.90	2200.000 to 2300.00	9000.0 to 9200	

NOTE:

The noise floor within the Restricted Bands for the EMC Receiver will typically lay 20 dB below the limit.

See the following page (s) for the graph (s) made showing compliance for Band Edge Also see the table of measurements made for the Fundamental, Harmonic and Restricted Band emissions in paragraph 4 of this section.



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BAND EDGE DATA AND GRAPH(S)

PART 15.249



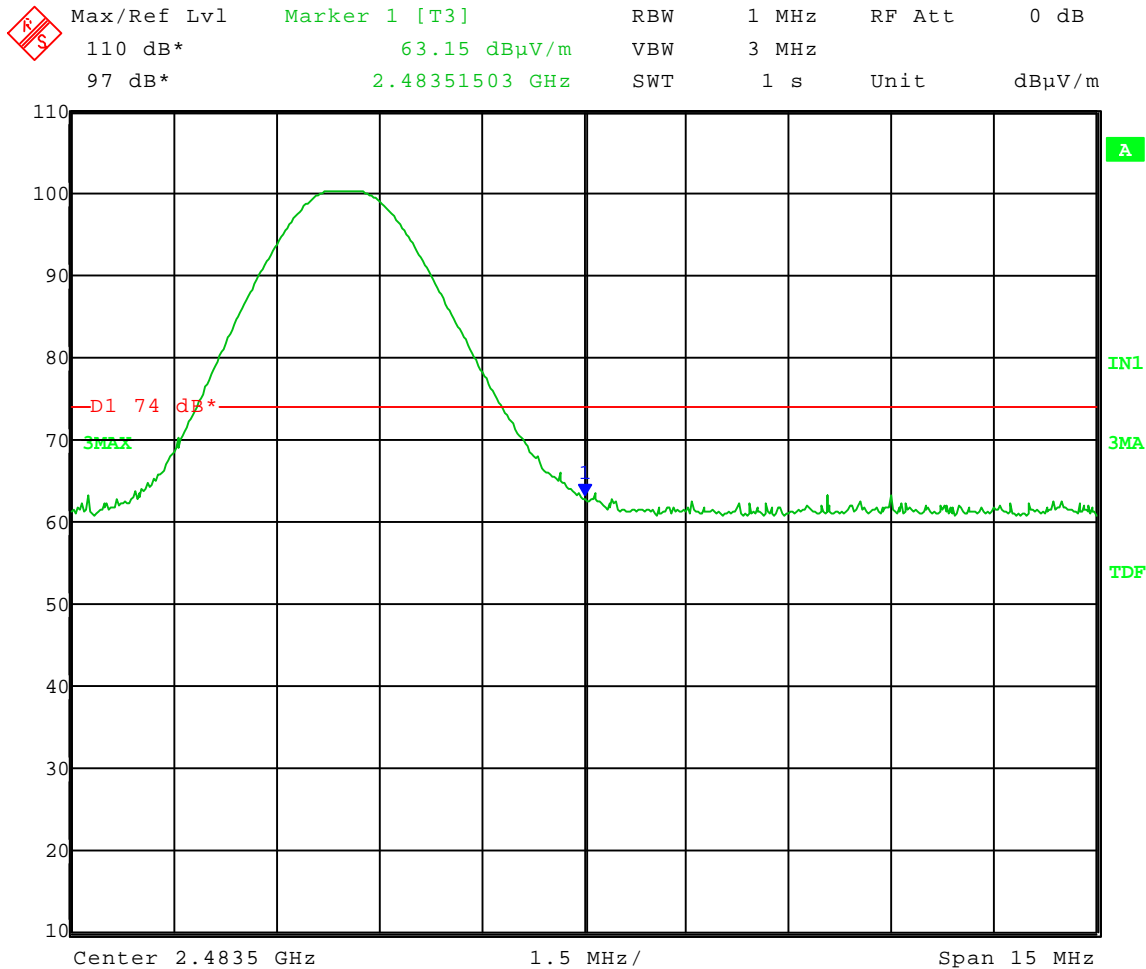
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Test Date: 09-10-2009
Company: Saris Cycling Group
EUT: Joule 3.0
Test: Band edge 2.4835 GHz (FCC Pt. 15.249, FCC Pt. 15.205, FCC Pt.15.209)
Operator: Adam A

Comment: 2.480 GHz Transmit Frequency
Horizontal (worst-case)
Peak Detector
Limit: 74 dB μ V/m at 3 meters



Date: 10.SEP.2009 08:56:45



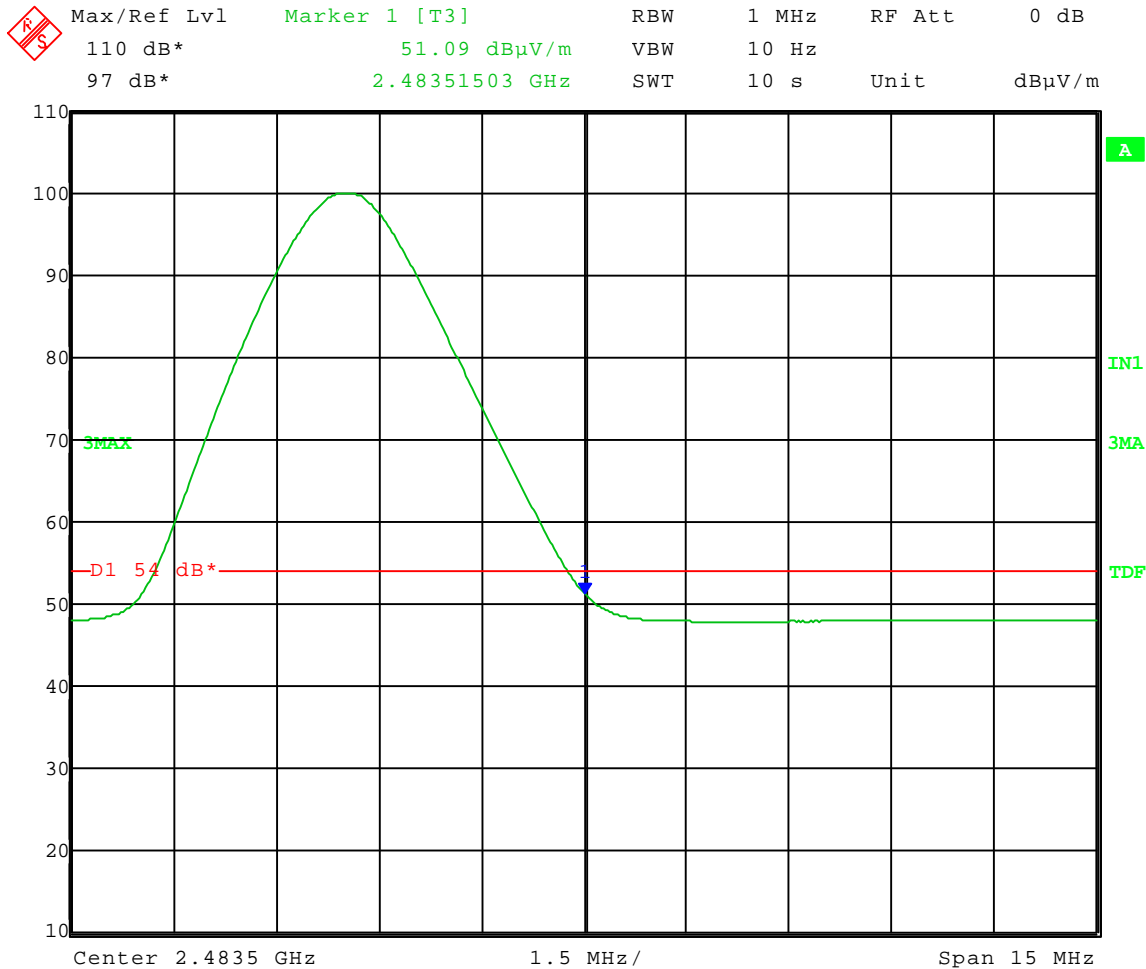
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Test Date: 09-10-2009
Company: Saris Cycling Group
EUT: Joule 3.0
Test: Band edge 2.4835 GHz (FCC Pt. 15.249, FCC Pt. 15.205, FCC Pt.15.209)
Operator: Adam A

Comment: 2.480 GHz Transmit Frequency
Horizontal (worst-case)
Average Detector
Limit: 54 dB μ V/m at 3 meters



Date: 10.SEP.2009 08:58:00



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3.0 ANTENNA CONNECTOR – 15.203

As stated in 15.203 the Joule 3.0 was designed to ensure that no antenna other than that furnished by Saris Cycling Group Inc will be used with the EUT. The use of a permanently attached antenna or antenna that uses an unique coupling to the intentional radiator was considered to comply with section 15.203.

4.0 FIELD STRENGTH OF SPURIOUS EMISSION MEASUREMENTS (SECTION 15.249a-d)

The radiated measurements made at D.L.S. Electronic Systems, Inc., for the Joule 3.0, Model Number: J3CONFT3, are shown in tabulated and graph form. Preliminary radiation measurements were performed at a 3 meter test distance with the limits adjusted linearly when required. The frequency range from 30 MHz to over 960 MHz, depending upon the fundamental frequency as stated in Part 15.33a, was automatically scanned and plotted at various angles.

Measurements for the Joule 3.0 were made up to 26000 MHz, in accordance with Section 15.33a for Intentional Radiators with a fundamental frequency of 2405 - 2480 MHz. For intentional radiators, the frequency range to be investigated is determined by the lowest radio frequency generated by the device without going below 30 MHz, up to at least the tenth harmonic of the highest fundamental frequency or 10 GHz, whichever is lower. At those frequencies where significant signals were detected, measurements were made over the entire frequency range specified in FCC Part 15, Subpart C, Section 15.249 at the open field test site, located at Genoa City, Wisconsin, FCC file number **31040/SIT**. When required, levels were extrapolated from 10 meters to 3 meters using a linear extrapolation.

All signals in the frequency range of 30 MHz to 2000 MHz were measured with a Biconical Antenna or tuned dipoles and from 200 MHz to 1000 MHz, a Log Periodic or Tuned Dipoles were used. From 1000 MHz to 10 GHz Horn Antennas were used. During the test the equipment was rotated and the antenna was raised and lowered from 1 meter to 4 meters to find the maximum level of emissions. In order to find maximum emissions, the cables were moved through all the positions the equipment would be expected to experience in the field. The EUT, peripheral equipment and cables were configured to meet the conditions in ANSI C63.4-2003, Clauses 6 & 8. Tests were made with the receive antenna(s) in both the horizontal and vertical planes of polarization. In each case, the table was rotated to find the maximum emissions.



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4.0 FIELD STRENGTH OF SPURIOUS EMISSION MEASUREMENTS (CON'T)

For operation in the bands 902 to 928 MHz, 2400 to 2483.5 MHz, 5725 to 5875 MHz, and 24.0 to 24.25 GHz the field strength of any emissions within this band shall not exceed the field strength levels specified in the following table as stated in FCC, Part 15, Section 15.249(a).

Frequency range in MHz	Field Strength of Fundamental millivolts/meter	Field Strength of Fundamental dBuV/meter	Field Strength of Harmonics microvolts/meter	Field Strength of Harmonics dBuV/meter
902 to 928	50	93.98	500	53.98
2400 to 2483.5	50	93.98	500	53.98
5725 to 5875	50	93.98	500	53.98
24000 to 24250	250	107.96	2500	67.96

Field strength limits are at a distance of 3 meters. The emission limits shown are based on measurement instrumentation employing an average detector.

Emissions radiated outside of the specified frequency bands, except for harmonics are 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.

Preliminary radiated emission measurements were performed at a 3 meter test distance. The frequency range from 30 MHz to 1000 MHz was automatically scanned and plotted at various angles.

NOTE:

All radiated emissions measurements were made at a test room temperature of **72°F** at **62%** relative humidity.



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APPENDIX A

RADIATED DATA TAKEN FOR
FUNDAMENTAL, HARMONIC & SPURIOUS
EMISSIONS MEASUREMENTS
PART 15.249



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APPENDIX A

Radiated Fundamental and Spurious Emissions – 30 MHz to 26 GHz
30 MHz – 18 GHz Tested at a 3 Meter Distance and 18 – 26 GHz Tested at a 1 Meter Distance

EUT: Joule 3.0
Manufacturer: Saris Cycling Group Inc.
Operating Condition: 63 deg F; 66% R.H.
Test Site: Chamber G1
Operator: Adam A
Test Specification: FCC Part 15.249 and FCC Part 15.205
Comment: Continuous transmit – **Low channel**: 2405 MHz
Date: 9/02/2009

Note: All other emissions at least 20 dB under the limit.

Frequency (GHz)	Measurement Type	Ant. Pol.	Level (dBuV)	Antenna Factor (dBuV/m)	System Loss (dB)	Total Level (dBuV/m)	Duty Cycle Correction (dB)	Final Corrected (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Comment
2.405	Max Peak	Vert	66.29	28.33	5.1	99.72	---	99.72	114	14.28	Fundamental
2.405	Average	Vert	66.29	28.33	5.1	99.72	20	79.72	94	14.28	Fundamental
2.405	Max Peak	Horz	67.47	28.33	5.1	100.90	---	100.90	114	13.10	Fundamental
2.405	Average	Horz	67.47	28.33	5.1	100.90	20	80.90	94	13.10	Fundamental
4.810	Max Peak	Vert	56.28	32.88	-31.9	57.26	---	57.26	74	16.74	Restricted Band
4.810	Average	Vert	56.28	32.88	-31.9	57.26	20	37.26	54	16.74	Restricted Band
4.810	Max Peak	Horz	57.98	32.88	-31.9	58.96	---	58.96	74	15.04	Restricted Band
4.810	Average	Horz	57.98	32.88	-31.9	58.96	20	38.96	54	15.04	Restricted Band



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APPENDIX A

Radiated Fundamental and Spurious Emissions – 30 MHz to 26 GHz
30 MHz – 18 GHz Tested at a 3 Meter Distance and 18 – 26 GHz Tested at a 1 Meter Distance

EUT: Joule 3.0
Manufacturer: Saris Cycling Group Inc.
Operating Condition: 63 deg F; 66% R.H.
Test Site: Chamber G1
Operator: Adam A
Test Specification: FCC Part 15.249 and FCC Part 15.205
Comment: Continuous transmit – **Mid channel:** 2441 MHz
Date: 9/02/2009

Note: All other emissions at least 20 dB under the limit.

Frequency (GHz)	Measurement Type	Ant. Pol.	Level (dBuV)	Antenna Factor (dBuV/m)	System Loss (dB)	Total Level (dBuV/m)	Duty Cycle Correction (dB)	Final Corrected (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Comment
2.441	Max Peak	Vert	64.80	28.44	5.1	98.34	---	98.34	114	15.66	Fundamental
2.441	Average	Vert	64.80	28.44	5.1	98.34	20	78.34	94	15.66	Fundamental
2.441	Max Peak	Horz	66.48	28.44	5.1	100.02	---	100.02	114	13.98	Fundamental
2.441	Average	Horz	66.48	28.44	5.1	100.02	20	80.02	94	13.98	Fundamental
4.882	Max Peak	Vert	55.18	32.98	-31.8	56.36	---	56.36	74	17.64	Restricted Band
4.882	Average	Vert	55.18	32.98	-31.8	56.36	20	36.36	54	17.64	Restricted Band
4.882	Max Peak	Horz	57.16	32.98	-31.8	58.34	---	58.34	74	15.66	Restricted Band
4.882	Average	Horz	57.16	32.98	-31.8	58.34	20	38.34	54	15.66	Restricted Band



Company: Saris Cycling Group Inc.
 Model Tested: J3CONFT3
 Report Number: 15672

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APPENDIX A

Radiated Fundamental and Spurious Emissions – 30 MHz to 26 GHz
30 MHz – 18 GHz Tested at a 3 Meter Distance and 18 – 26 GHz Tested at a 1 Meter Distance

EUT: Joule 3.0
Manufacturer: Saris Cycling Group Inc.
Operating Condition: 63 deg F; 66% R.H.
Test Site: Chamber G1
Operator: Adam A
Test Specification: FCC Part 15.249 and FCC Part 15.205
Comment: Continuous transmit – **High channel:** 2480 MHz
Date: 9/02/2009

Note: All other emissions at least 20 dB under the limit.

Frequency (GHz)	Measurement Type	Ant. Pol.	Level (dBuV)	Antenna Factor (dBuV/m)	System Loss (dB)	Total Level (dBuV/m)	Duty Cycle Correction (dB)	Final Corrected (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Comment
2.480	Max Peak	Vert	66.56	28.56	5.2	100.32	---	100.32	114	13.68	Fundamental
2.480	Average	Vert	66.56	28.56	5.2	100.32	20	80.32	94	13.68	Fundamental
2.480	Max Peak	Horz	66.58	28.56	5.2	100.34	---	100.34	114	13.66	Fundamental
2.480	Average	Horz	66.58	28.56	5.2	100.34	20	80.34	94	13.66	Fundamental
4.960	Max Peak	Vert	55.95	33.08	-31.9	57.13	---	57.13	74	16.87	Restricted Band
4.960	Average	Vert	55.95	33.08	-31.9	57.13	20	37.13	54	16.87	Restricted Band
4.960	Max Peak	Horz	56.34	33.08	-31.9	57.52	---	57.52	74	16.48	Restricted Band
4.960	Average	Horz	56.34	33.08	-31.9	57.52	20	37.52	54	16.48	Restricted Band



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Company: Saris Cycling Group Inc.
Model Tested: J3CONFT3
Report Number: 15672

APPENDIX A

20 dB BANDWIDTH DATA AND GRAPH(S)

PART 15.249



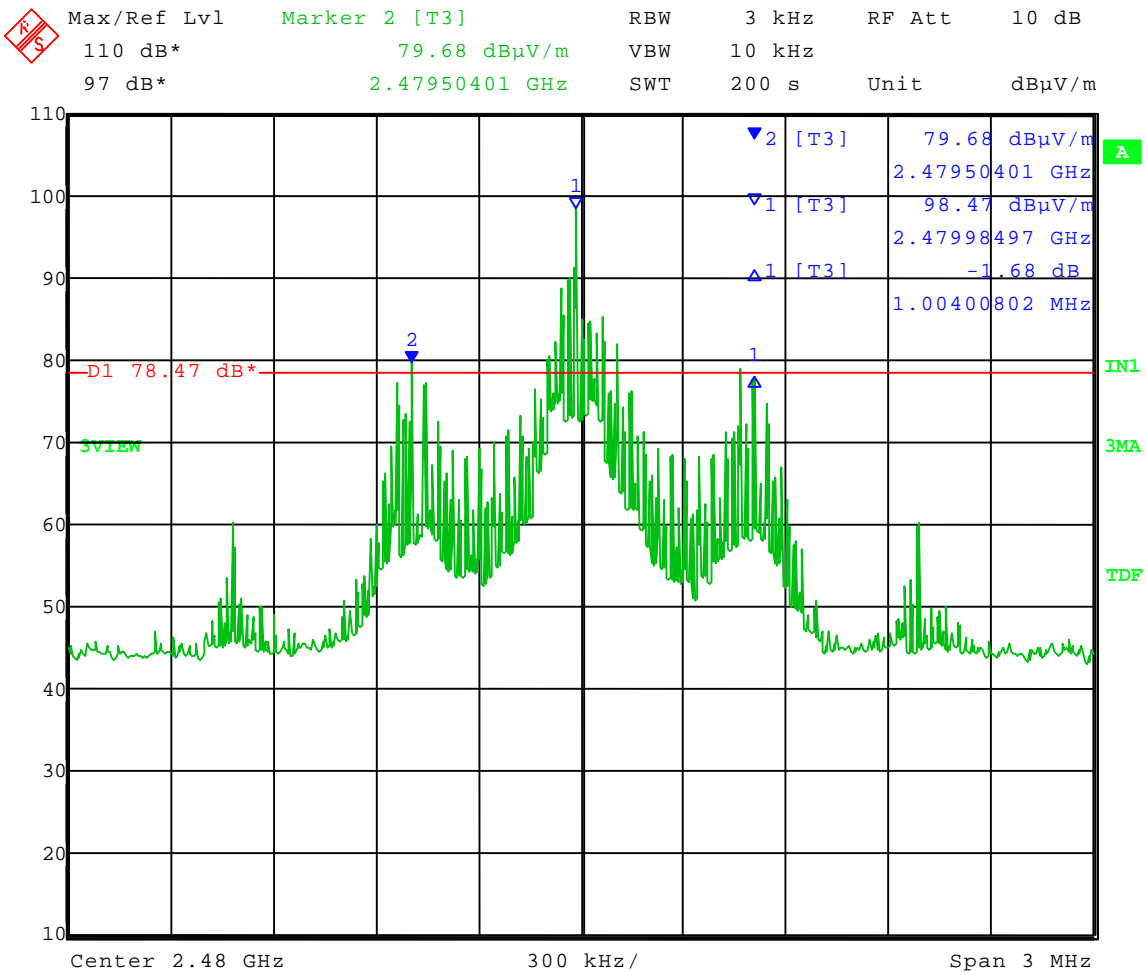
Company: Saris Cycling Group Inc.
 Model Tested: J3CONF3
 Report Number: 15672

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

Test Date: 09-10-2009
 Company: Saris Cycling Group
 EUT: Joule 3.0
 Test: 20 dB Bandwidth (FCC Part 15.249)
 Operator: Adam A
 Comment: Frequency - 2.480 GHz

20 dB Bandwidth = 1.004 MHz



Date: 10.SEP.2009 09:04:52



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Company: Saris Cycling Group Inc.
Model Tested: J3CONFT3
Report Number: 15672

APPENDIX A

TRANSMITTER DUTY CYCLE GRAPHS

PART 15.35(c)



Company: Saris Cycling Group Inc.
 Model Tested: J3CONF3
 Report Number: 15672

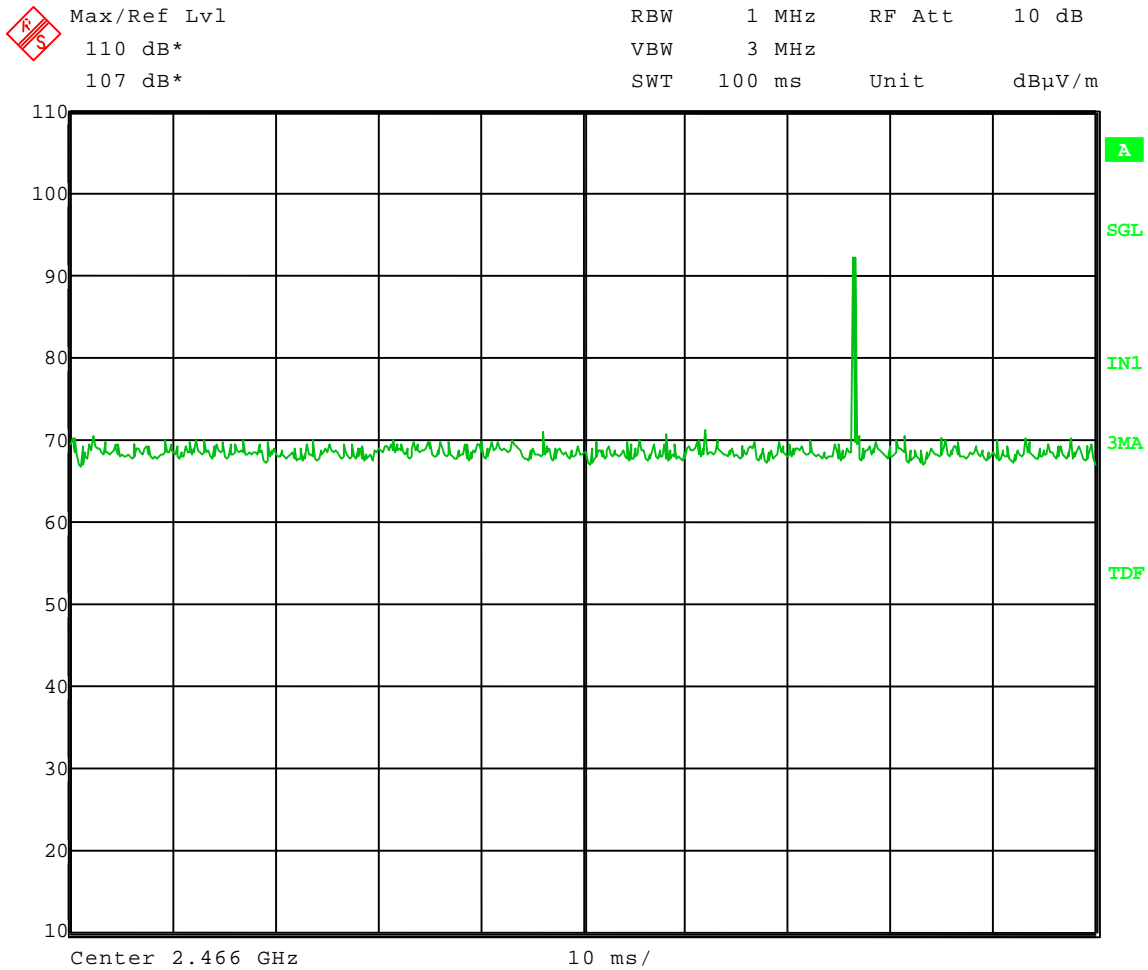
1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

Test Date: 9-10-2009
 Company: Saris Cycling Group
 EUT: Joule 3.0
 Test: Duty Cycle (FCC Part 15.249)
 Operator: Adam A

Comment: Duty Cycle Correction: $20\log(.2124/100) = -53.5$
 Duty Cycle Correction factor: 53.5 dB
 Maximum Duty Cycle Correction: **20 dB**

100 ms sweep:



Date: 10.SEP.2009 14:00:04



Company: Saris Cycling Group Inc.
Model Tested: J3CONF3
Report Number: 15672

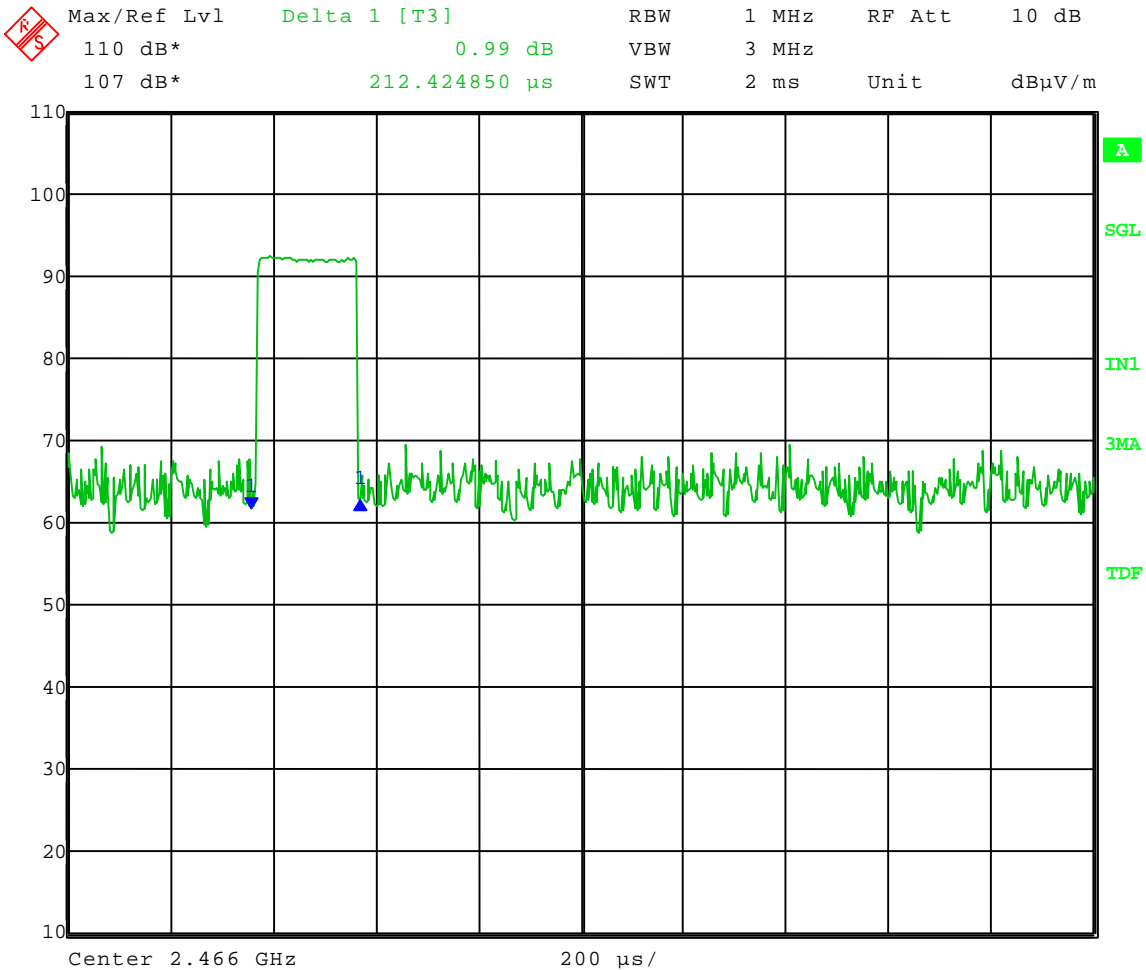
1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

Test Date: 9-10-2009
Company: Saris Cycling Group
EUT: Joule 3.0
Test: Duty Cycle (FCC Part 15.249)
Operator: Adam A

Comment: Duty Cycle Correction: $20\log(.2124/100) = -53.5$
Duty Cycle Correction factor: 53.5 dB
Maximum Duty Cycle Correction: **20 dB**

Duration of one pulse:



Date: 10.SEP.2009 14:02:36