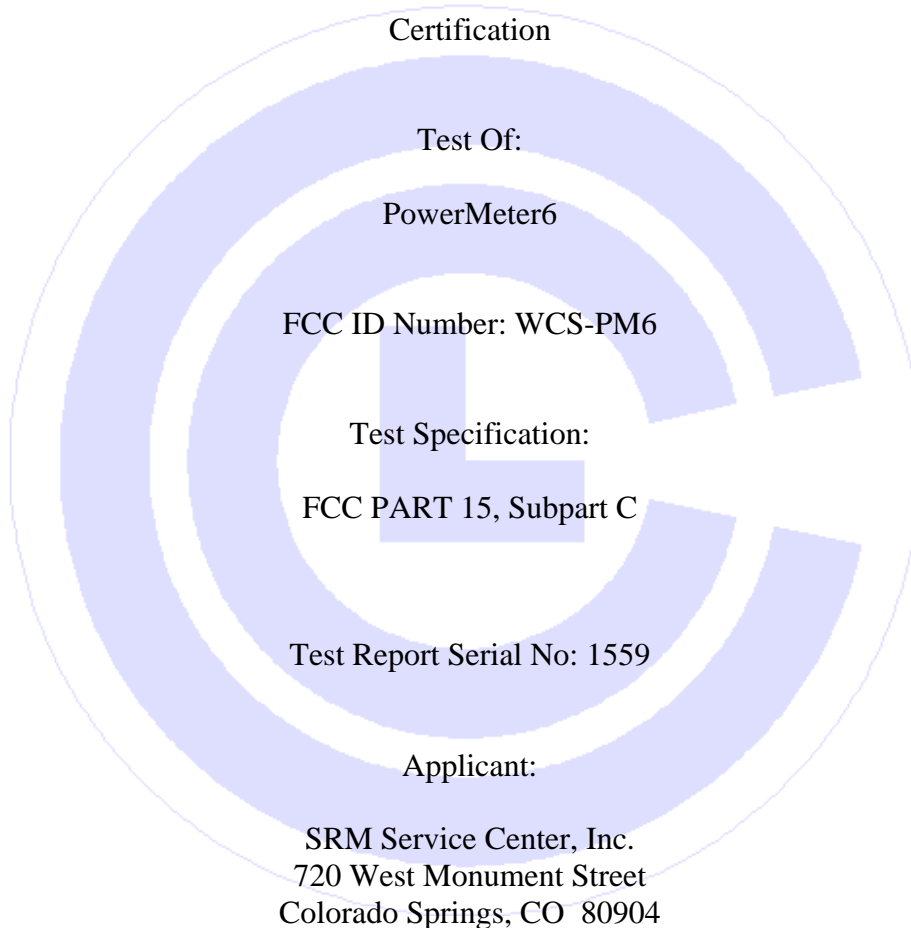


COMMUNICATION CERTIFICATION LABORATORY

1940 West Alexander Street
Salt Lake City, UT 84119
801-972-6146

Test Report



Date of Test: May 27, 2008

Issue Date: June 5, 2008

Accredited Testing Laboratory By:



NVLAP Lab Code 100272-0

CERTIFICATION OF ENGINEERING REPORT

This report has been prepared by Communication Certification Laboratory to document compliance of the device described below with the requirements of Federal Communications Commission (FCC) Part 15, Subpart C. This report may be reproduced in full. Partial reproduction may only be made with the written consent of the laboratory. The results in this report apply only to the sample tested.

- Applicant: SRM Service Center, Inc.
- Manufacturer: SRM Service Center, Inc.
- Brand Name: SRM
- Model Number: PowerMeter6
- FCC ID Number: WCS-PM6

On this 5th day of June 2008, I, individually, and for Communication Certification Laboratory, certify that the statements made in this engineering report are true, complete, and correct to the best of my knowledge, and are made in good faith.

Although NVLAP has accredited the Communication Certification Laboratory EMC testing facilities, this report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

COMMUNICATION CERTIFICATION LABORATORY



Tested by: Norman P. Hansen
EMC Technician

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SECTION 1.0 CLIENT INFORMATION

1.1 Applicant:

Company Name: SRM Service Center, Inc.
720 West Monument Street
Colorado Springs, CO 80904

Contact Name: Ulrich Schoberer
Title: Owner

1.2 Manufacturer:

Company Name: SRM Service Center, Inc.
720 West Monument Street
Colorado Springs, CO 80904

Contact Name: Ulrich Schoberer
Title: Owner

SECTION 2.0 EQUIPMENT UNDER TEST (EUT)**2.1 Identification of EUT:**

Brand Name:	SRM
Model Number:	PowerMeter6
Serial Number:	None
Options Fitted:	N/A

2.2 Description of EUT:

The SRM PowerControl6 and PowerMeter6 create a system for monitoring and measuring the torque applied to a bicycle crank. The PowerControl6 is the receiving and display unit. The PowerMeter6 is the torque sensor. Both units contain a 2.457 GHz transceiver that uses ANT+Sport Protocol for communication. The PowerMeter6 is battery powered.

This report covers the transceiver circuitry of the device subject to FCC Part 15, Subpart C. The circuitry, subject to FCC Part 15, Subpart B and ICES-003 is to be tested and the results shown in separate reports.

2.3 EUT and Support Equipment:

The FCC ID numbers for all the EUT and support equipment used during the test are listed below:

Brand Name Model Number Serial No.	FCC ID Number	Description	Name of Interface Ports / Interface Cables
BN: SRM MN: PowerMeter6 (Note 1)	WCS-PM6	Power Meter Assembly	See Section 2.4

Note: (1) EUT

The support equipment listed above was not modified in order to achieve compliance with this standard.

2.4 Interface Ports on EUT:

There are no cabled interface ports on the EUT.

2.5 Modification Incorporated/Special Accessories on EUT:

The following modifications were made to the PowerMeter6 by the Client during testing to comply with the specification. These modifications will be implemented during manufacturing.

1. The software was changed to set the transmitter power at the level 1 setting.

Signature: _____

Typed Name: Ulrich Schoberer

Title: Owner

SECTION 3.0 TEST SPECIFICATION, METHODS & PROCEDURES**3.1 Test Specification:**

Title: FCC PART 15, Subpart C (47 CFR 15)
15.203 and 15.249

Limits and methods of measurement of radio interference characteristics of radio frequency devices.

Purpose of Test: The tests were performed to demonstrate initial compliance.

3.2 Methods & Procedures:**3.2.1 §15.203 Antenna Requirement**

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

3.2.2 §15.249 Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz, 5725 - 5875 MHz, and 24.0 - 24.25 GHz

(a) Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Field Strength of Harmonics (Microvolts/meter)
902 - 928 MHz	50	500
2400 - 2483.5 MHz	50	500
5725 - 5875 MHz	50	500
24.0 - 24.25 GHz	250	2500

(b) Fixed, point-to-point operation as referred to in this paragraph shall be limited to systems employing a fixed transmitter transmitting to a fixed remote location. Point-to-multipoint systems, omnidirectional applications, and multiple co-located intentional radiators transmitting the same information are not allowed. Fixed, point-to-point operation is permitted in the 24.05-24.25 GHz band subject to the following conditions:

(1) The field strength of emissions in this band shall not exceed 2500 millivolts/meter.

(2) The frequency tolerance of the carrier signal shall be maintained within + 0.001% of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

(3) Antenna gain must be at least 33 dBi. Alternatively, the main lobe beamwidth must not exceed 3.5 degrees. The beamwidth limit shall apply to both the azimuth and elevation planes. At antenna gains over 33 dBi or beamwidths narrower than 3.5 degrees, power must be reduced to ensure that the field strength does not exceed 2500 millivolts/meter.

(c) Field strength limits are specified at a distance of 3 meters.

(d) 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.

(e) As shown in Section 15.35(b), for frequencies above 1000 MHz, the above field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any

condition of modulation. For point-to-point operation under paragraph (b) of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.

(f) Parties considering the manufacture, importation, marketing or operation of equipment under this section should also note the requirement in Section 15.37(d).

3.3 Test Procedure

The radiated emissions testing was performed according to the procedures in ANSI C63.4 (2003). Testing was performed at CCL's Wanship open area test site #2, located at 550 West Wanship Road, Wanship, UT. This site has been fully described in a report submitted to the FCC, and was accepted in a letter dated June 6, 2006 (90504).

CCL participates in the National Voluntary Laboratory Accreditation Program (NVLAP) and has been accredited under NVLAP Lab Code:100272-0, which is effective until September 30, 2008.

For radiated emissions testing at 30 MHz or above that is performed at distances closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

SECTION 4.0 OPERATION OF EUT DURING TESTING

4.1 Operating Environment:

Power Supply: 3.6 VDC battery

4.2 Operating Modes:

The EUT was tested on three orthogonal axes while transmitting.

4.3 EUT Exercise Software:

Internal firmware was used to exercise the EUT.

SECTION 5.0 SUMMARY OF TEST RESULTS**5.1 FCC Part 15, Subpart C****5.1.1 Summary of Tests:**

Paragraph	Requirements	Frequency Range (MHz)	Result
15.203	Antenna Requirements	N/A	Complied
15.249	Radiated Field Strengths	30 to 1000	Complied

5.2 Result

In the configuration tested, the EUT complied with the requirements of the specification.

SECTION 6.0 MEASUREMENTS, EXAMINATIONS AND DERIVED RESULTS**6.1 General Comments:**

This section contains the test results only. Details of the test methods used and a list of the test equipment used during the measurements can be found in Appendix 1 of this report.

6.2 Test Results:**6.2.1 §15.203 Antenna Requirements**

The EUT uses a Murata 2.4 GHz chip antenna that is soldered to the PCB and is not user replaceable.

6.2.2 Radiated Field Strength (Vertical Polarity)

Frequency (MHz)	Detector	Receiver Reading (dBμV)	Correction Factor (dB/m)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2457.1	Peak	43.0	30.8	73.8	94.0	-20.2
4914.2	Peak	15.2	36.2	51.4	74.0	-22.6
4914.2	Average	6.5	36.2	42.7	54.0	-11.3
7371.3	Peak	19.1	40.7	59.8	74.0	-14.2
7371.3	Average	5.7	40.7	46.4	54.0	-7.6
9828.4	Peak	10.7	42.8	53.5	74.0	-20.5
9828.4	Average	-1.8	42.8	41.0	54.0	-13.0
12285.5	Peak	7.5	44.5	52.0	74.0	-22.0
12285.5	Average	-4.2	44.5	40.3	54.0	-13.7
14742.6	Peak	13.2	47.6	60.8	74.0	-13.2
14742.6	Average	0.1	47.6	47.7	54.0	-6.3
17199.7	Peak	14.2	49.0	63.2	74.0	-10.8
17199.7	Average	-3.0	49.0	46.0	54.0	-8.0
19656.8	Peak	15.8	49.8	65.6	74.0	-8.4
19656.8	Average	-2.6	49.8	47.2	54.0	-6.8
22113.9	Peak	16.3	50.6	66.9	74.0	-7.1
22113.9	Average	-2.2	50.6	48.4	54.0	-5.6
24571.0	Peak	17.0	51.0	68.0	74.0	-6.0
24571.0	Average	-1.9	51.0	49.1	54.0	-4.9

RESULT

The EUT complied with the specification limit by a margin of 4.9 dB.

6.2.3 Radiated Disturbance Data (Horizontal Polarity)

Frequency (MHz)	Detector	Receiver Reading (dB μ V)	Correction Factor (dB/m)	Field Strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
2457.1	Peak	40.4	30.8	71.2	94.0	-22.8
4914.2	Peak	15.2	36.2	51.4	74.0	-22.6
4914.2	Average	7.2	36.2	43.4	54.0	-10.6
7371.3	Peak	19.4	40.7	60.1	74.0	-13.9
7371.3	Average	5.6	40.7	46.3	54.0	-7.7
9828.4	Peak	11.0	42.8	53.8	74.0	-20.2
9828.4	Average	-1.8	42.8	41.0	54.0	-13.0
12285.5	Peak	8.6	44.5	53.1	74.0	-20.9
12285.5	Average	-4.2	44.5	40.3	54.0	-13.7
14742.6	Peak	11.9	47.6	59.5	74.0	-14.5
14742.6	Average	0.1	47.6	47.7	54.0	-6.3
17199.7	Peak	14.2	49.0	63.2	74.0	-10.8
17199.7	Average	-3.0	49.0	46.0	54.0	-8.0
19656.8	Peak	15.8	49.8	65.6	74.0	-8.4
19656.8	Average	-2.6	49.8	47.2	54.0	-6.8
22113.9	Peak	16.3	50.6	66.9	74.0	-7.1
22113.9	Average	-2.2	50.6	48.4	54.0	-5.6
24571.0	Peak	17.0	51.0	68.0	74.0	-6.0
24571.0	Average	-1.9	51.0	49.1	54.0	-4.9

RESULT

The EUT complied with the specification limit by a margin of 4.9 dB.

APPENDIX 1 TEST PROCEDURES AND TEST EQUIPMENT**A1.1 Radiated Disturbance:**

The radiated disturbance from the EUT was measured using a spectrum analyzer with a quasi-peak adapter for peak and quasi-peak readings. A preamplifier with a fixed gain of 26 dB and a power amplifier with a fixed gain of 22 dB were used to increase the sensitivity of the measuring instrumentation. The quasi-peak adapter uses a bandwidth of 120 kHz, with the spectrum analyzer's resolution bandwidth set at 1 MHz, for readings in the 30 to 1000 MHz frequency ranges.

A biconilog antenna was used to measure the frequency range of 30 to 1000 MHz, at a distance of 3 or 10 meters from the EUT. The readings obtained by these antennas are correlated to the levels obtained with a tuned dipole antenna by adding antenna factors.

The configuration of the EUT was varied to find the maximum radiated emission. The EUT was connected to the peripherals listed in Section 2.3 via the interconnecting cables listed in Section 2.4. A technician manually manipulated these interconnecting cables to obtain worst-case radiated disturbance. The EUT was rotated 360 degrees, and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission. Where there was multiple interface ports all of the same type, cables are either placed on all of the ports or cables added to these ports until the emissions do not increase by more than 2 dB.

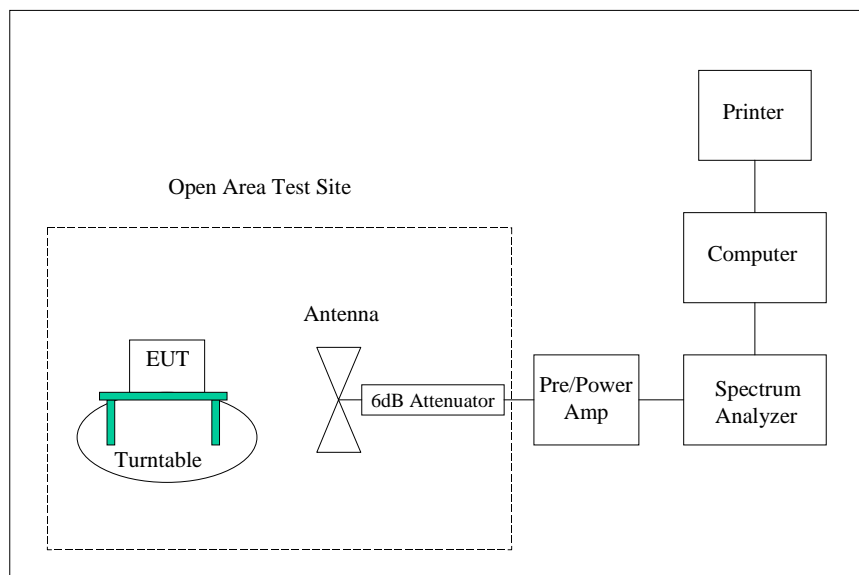
Desktop EUT are measured on a non-conducting table 0.8 meters above the ground plane. The table is placed on a turntable, which is level with the ground plane. For equipment normally placed on floors, the equipment shall be placed directly on the turntable.

Type of Equipment	Manufacturer	Model Number	Serial Number	Date of Last Calibration
Wanship Open Area Test Site #2	CCL	N/A	N/A	10/24/2007
Test Software	CCL	Radiated Emissions	Revision 1.3	N/A
Spectrum Analyzer	Hewlett Packard	8566B	2332A02726	04/29/2008
Quasi-Peak Detector	Hewlett Packard	85650A	2043A00287	04/02/2008
Biconilog Antenna	EMCO	3142	9601-1008	9/27/2007
Double Ridged Guide Antenna	EMCO	3115	9604-4779	03/17/2008

Type of Equipment	Manufacturer	Model Number	Serial Number	Date of Last Calibration
Amplifier	Hewlett Packard	11975A	2738A2030	05/18/2006
Harmonic Mixer	Hewlett Packard	11970K	3003A05756	04/19/2006
2.4 GHz Filter	Microtronics	HPM50111-03	001	09/06/2006
High Frequency Amplifier	Miteq	AFS4-01001800-43-10P-4	1096455	05/29/2007
20' High Frequency Cable	Utiflex	UFA210A-1-2400-30050U	1175	04/12/2007
3 Meter Radiated Emissions Cable Wanship Site #2	CCL	Cable K	N/A	12/31/2007
Pre/Power-Amplifier	Hewlett Packard	8447F	3113A05161	09/04/2007
6 dB Attenuator	Hewlett Packard	8491A	32835	12/31/2007

An independent calibration laboratory or CCL personnel calibrates all the equipment listed above at intervals defined in ANSI C63.4:2003 Section 4.4 following outlined calibration procedures. All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to tractability is on file and is available for examination upon request.

Radiated Emissions Test Setup



APPENDIX 2 PHOTOGRAPHS

Photograph 1 - View Radiated Disturbance - On-Edge - Worst Case Configuration



Photograph 2 - View Radiated Disturbance - Vertical Placement



Photograph 3 - Radiated Disturbance - Horizontal Placement



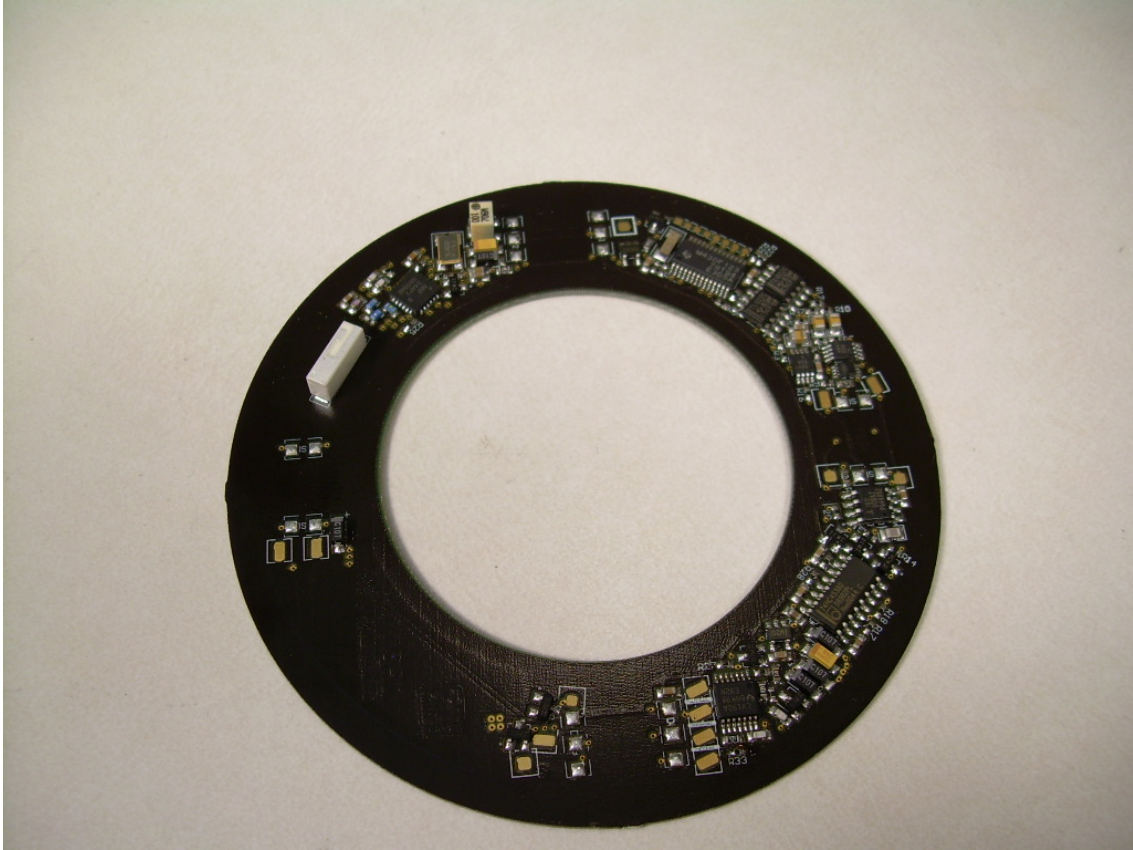
Photograph 4 - Front View of the PowerMeter6



Photograph 5 - Back View of the PowerMeter6



Photograph 6 - View of the Component Side of the PowerMeter6 PCB



Photograph 7 - View of the Trace Side of the PowerMeter6 PCB

