



Nemko Test Report: 13810RUS1Rev1


Applicant: Weathermatic
3301 W. Kingsley Road
Garland, TX 75041
USA

Equipment Under Test: SLW15
(E.U.T.)

In Accordance With: **FCC Part 15, Subpart C, 15.249**
Operation within the bands 902-928 MHz,
2400-2483.5 MHz, 5725-5875 MHz, and
24.0-24.25 GHz.

Tested By: Nemko USA Inc.
802 N. Kealy
Lewisville, Texas 75057-3136

TESTED BY:



David Light, Senior Wireless Engineer

DATE: 23 June, 2008

APPROVED BY:



Mike Cantwell, Frontline Manager

DATE: 24 June, 2008

Total Number of Pages: 14

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Section 1. Summary Of Test Results

Manufacturer: Weathermatic

Model No.: SLW15

Serial No.: HWM87510400003

General: **All measurements are traceable to national standards.**

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 15.249. All tests were conducted using measurement procedure ANSI C63.4-2003. Radiated Emissions were made on an open area test site.



New Submission



Production Unit



Class II Permissive Change



Pre-Production Unit

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST
SPECIFICATIONS HAVE BEEN MADE.

See "Summary of Test Data".



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Summary Of Test Data

NAME OF TEST	PARA. NO.	RESULT
Conducted Emissions	15.207	NA
Radiated Emissions	15.249	Complies

Footnotes For N/A's:

The device is battery powered.

Section 2. General Equipment Specification

Frequency Range: 2405 Single channel

Operating Frequency(ies) of Sample: 2405 MHz

Number of Channels: 1

Input Voltage: 3 Vdc

Channel Spacing: NA

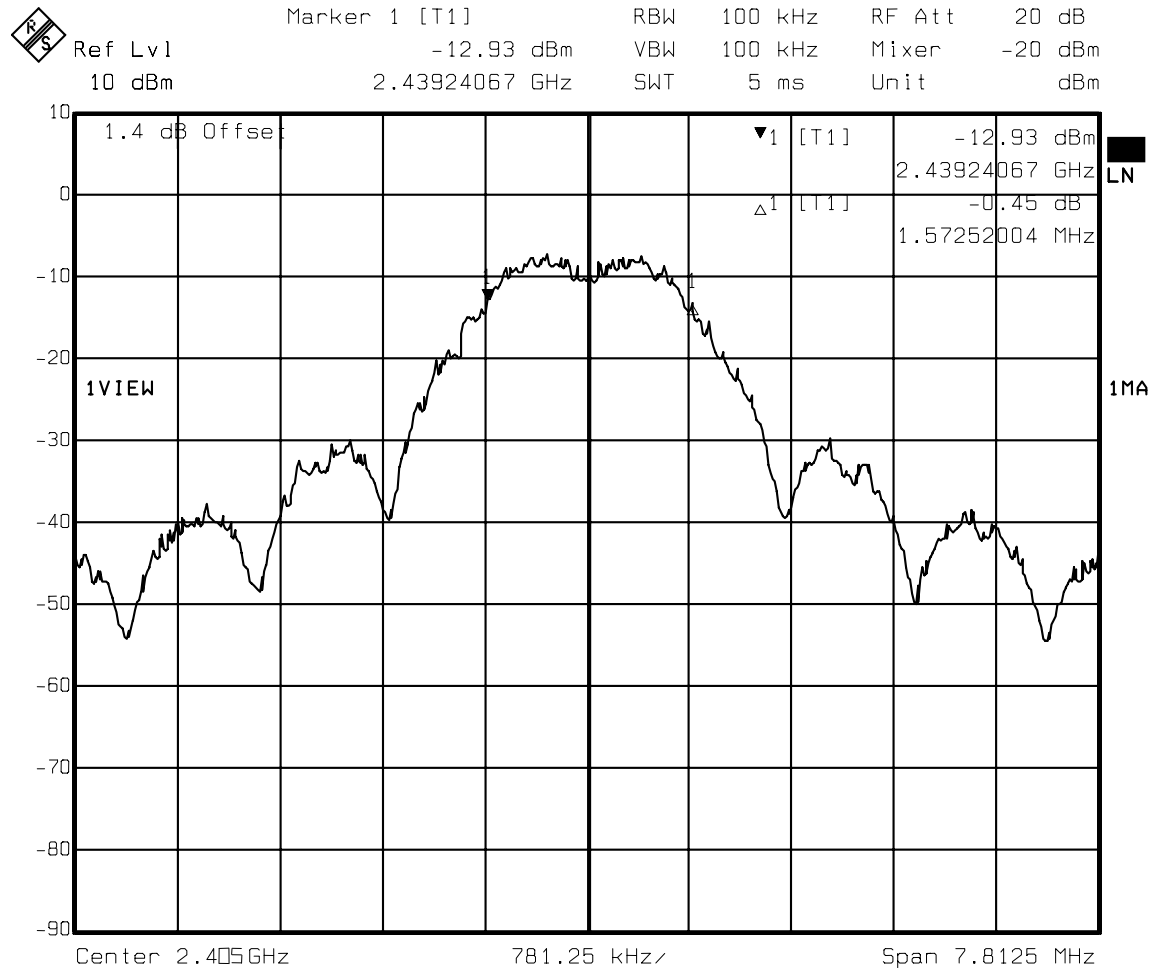
User Frequency Adjustment: NA

Integral Antenna

Yes



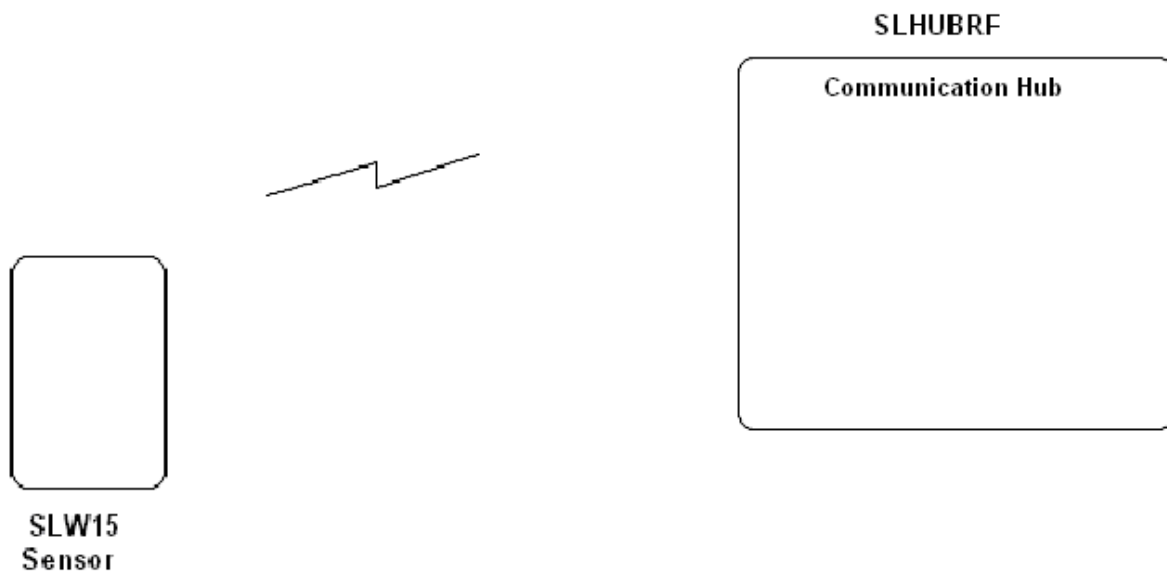
No



Description of EUT

The SLW15 is a wireless weather station operating on a 2.4GHz frequency. Maximum range is 600 feet (182m) Line of Sight (LOS).

System Diagram



Section 3. Radiated Emissions

NAME OF TEST: Radiated Emissions	PARA. NO.: 15.249
TESTED BY: David Light	DATE: 23 June 2008

Minimum Standard: Para no. 15.249

(a) The field strengths shall not exceed the following:

Carrier (MHz)	Field Strength (mV/m)	Field Strength (dB μ V)	Harmonic (μ V/m)	Harmonic (dB μ V)
902-928	50	94	500	54
2400-2483.5	50	94	500	54
5725-5875	50	94	500	54
24000-24250	250	108	2500	68

(b) Field strength limits are specified at a distance of 3 metres.

(c) 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 limits of 15.209 whichever is the less attenuation.

(d) ...for frequencies above 1000 MHz, the above field strength limits 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.

Test Results: Complies

Measurement Data: See attached table.

All measurements are Peak unless otherwise indicated.

RBW = VBW = 1 MHz, Peak detector

Measurement distance = 3 meters

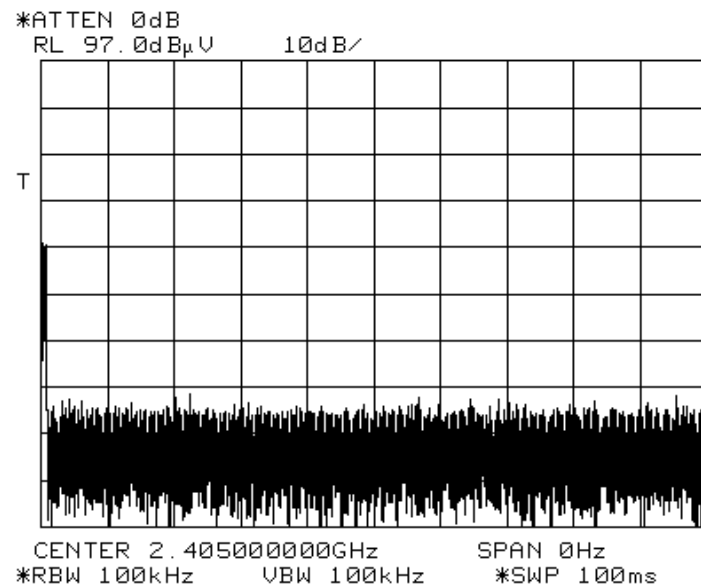
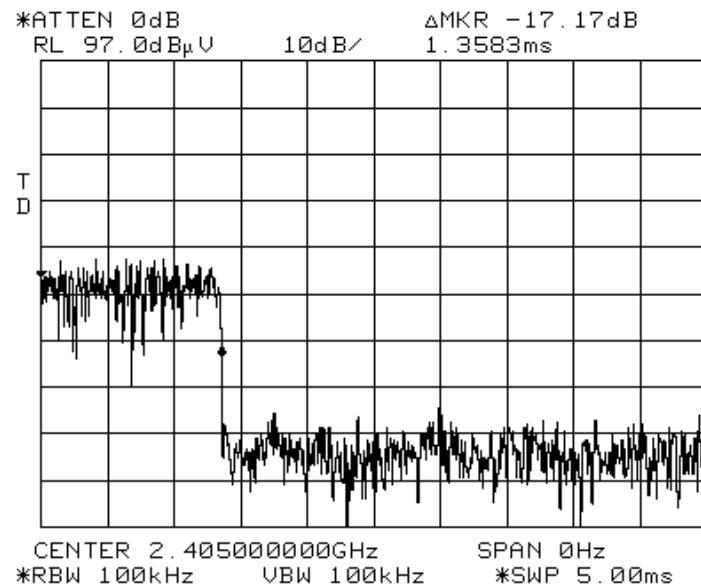
The device was tested with a fresh battery..

The spectrum was searched from 30 MHz to 25 GHz.

Test Data - Radiated Emissions

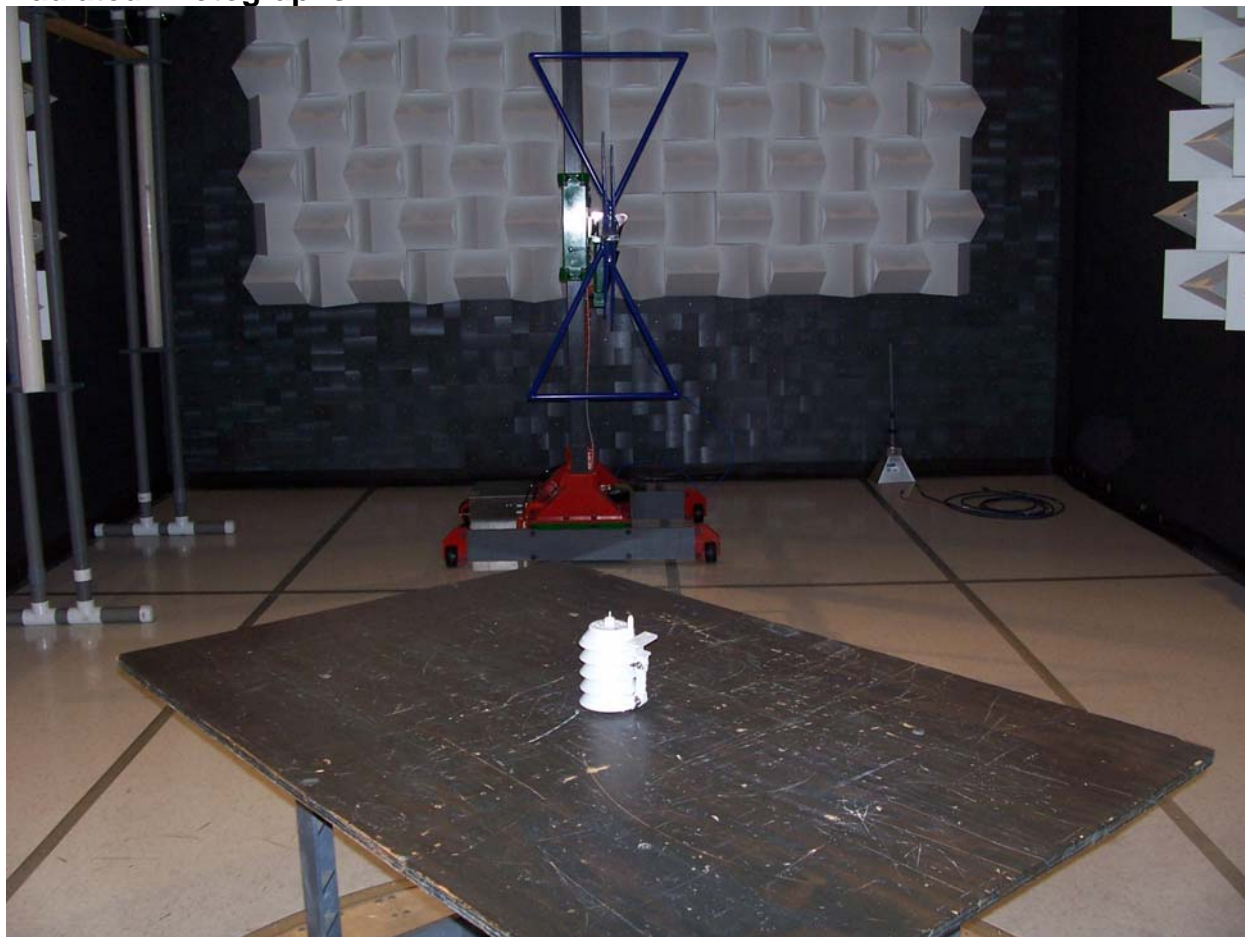
	Freq MHz	Rdng dBμV	Cable Duty dB	Cable dB	Horn dB	Pre-A dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
	2405.0	72.3	+0.7 +0.0	+2.3	+28.9	-0.0	+0.0	104.2	114.0	-9.8	Horiz
Ave	2405.0	72.3	+0.7 -37.3	+2.3	+28.9	-0.0	+0.0	66.9	94.0	-27.1	Horiz
	4810.0	42.7	+1.0 +0.0	+3.2	+33.1	-32.5	+0.0	47.5	54.0	-6.5	Horiz
	7215.0	41.2	+1.2 +0.0	+3.9	+35.8	-32.1	+0.0	50.0	54.0	-4.0	Horiz
	9620.0	43.3	+1.1 +0.0	+4.7	+37.1	-35.8	+0.0	50.4	54.0	-3.6	Horiz
	12025.0	41.5	+1.8 +0.0	+5.5	+39.6	-35.2	+0.0	53.2	54.0	-0.8	Horiz
	14430.0	40.7	+1.6 +0.0	+5.6	+41.2	-31.6	+0.0	57.5	74.0	-16.5	Horiz
Ave	14430.0	40.7	+1.6 -37.3	+5.6	+41.2	-31.6	+0.0	20.2	54.0	-33.8	Horiz
	16835.0	40.5	+2.0 +0.0	+6.3	+41.2	-33.8	+0.0	56.2	74.0	-17.8	Horiz
Ave	16835.0	40.5	+2.0 -37.3	+6.3	+41.2	-33.8	+0.0	18.9	54.0	-35.1	Horiz
	2405.0	81.2	+0.7 +0.0	+2.3	+28.9	-0.0	+0.0	113.1	114.0	-0.9	Vert
Ave	2405.0	81.2	+0.7 -37.3	+2.3	+28.9	-0.0	+0.0	75.8	94.0	-18.2	Vert
	4810.0	42.8	+1.0 +0.0	+3.2	+33.1	-32.5	+0.0	47.6	54.0	-6.4	Vert
Ave	4810.0	42.8	+1.0 -37.3	+3.2	+33.1	-32.5	+0.0	10.3	54.0	-43.7	Vert
	7215.0	42.2	+1.2 +0.0	+3.9	+35.8	-32.1	+0.0	51.0	54.0	-3.0	Vert
Ave	7215.0	42.2	+1.2 -37.3	+3.9	+35.8	-32.1	+0.0	13.7	54.0	-40.3	Vert
	9620.0	42.8	+1.1 +0.0	+4.7	+37.1	-35.8	+0.0	49.9	54.0	-4.1	Vert
	12025.0	42.8	+1.8 +0.0	+5.5	+39.6	-35.2	+0.0	54.5	74.0	-19.5	Vert
Ave	12025.0	42.8	+1.8 -37.3	+5.5	+39.6	-35.2	+0.0	17.2	54.0	-36.8	Vert
	14430.0	40.8	+1.6 +0.0	+5.6	+41.2	-31.6	+0.0	57.6	74.0	-16.4	Vert
Ave	14430.0	40.8	+1.6 -37.3	+5.6	+41.2	-31.6	+0.0	20.3	54.0	-33.7	Vert
	16835.0	40.8	+2.0 +0.0	+6.3	+41.2	-33.8	+0.0	56.5	74.0	-17.5	Vert
Ave	16835.0	40.8	+2.0 -37.3	+6.3	+41.2	-33.8	+0.0	19.2	54.0	-34.8	Vert

Corrected Reading = Reading + Duty Cycle + AF + Cable Loss + PreAmp

Duty Cycle Calculation

$$\text{Duty Cycle} = 20 \log (1.3583/100) = -37.3 \text{ dB}$$

Radiated Photographs



Section 4. Test Equipment List

Nemko ID	Description	Manufacturer Model Number	Serial Number	Calibration Date	Calibration Due
1464	Spectrum analyzer	Hewlett Packard 8563E	3551A04428	01/24/07	01/24/09
1484	Cable	Storm PR90-010-072	N/A	05/07/08	05/07/09
1485	Cable	Storm PR90-010-216	N/A	05/07/08	05/07/09
1016	Pre-Amp	HEWLETT PACKARD 8449A	2749A00159	05/07/08	05/07/09
993	Horn antenna	A.H. Systems SAS-200/571	XXX	08/31/07	08/30/08
1763	Bilog Antenna	Schaffner CBL 6111D	22926	09/21/07	09/20/08
791	PREAMP, 25dB	Nemko USA, Inc. LNA25	398	05/07/08	05/07/09

Nemko USA, Inc.

CFR 47, PART 15, SUBPART C, Paragraph 15.249

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2400-2483.5 MHz, 5725-5875 MHz,
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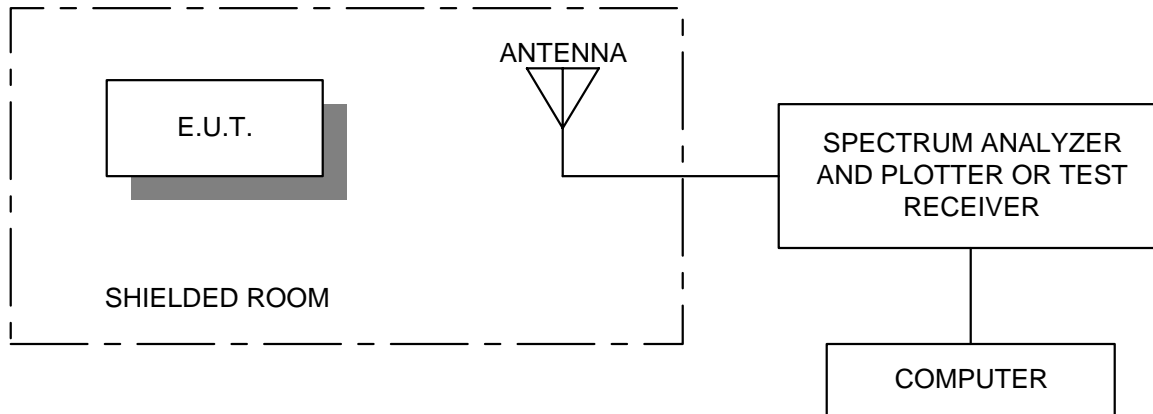
EQUIPMENT: SLW15

PROJECT NO.:13810RUS1Rev1

ANNEX A

TEST DIAGRAMS

Radiated Prescan



Test Site For Radiated Emissions

