Nemko Test Report: 37576RUS2

Applicant: Weathermatic, Inc.
3301 W. Kingsley Rd.
Garland, Texas 75041
USA

Equipment Under Test: (E.U.T.) OLPSLHHR24

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: _____ **DATE:** **06 April 2010**
David Light, Wireless Engineer

APPROVED BY: _____ **DATE:** **07 April 2010**
Tom Tidwell, Telecom Direct

Total Number of Pages: 16

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Section 1. Summary Of Test Results

Manufacturer: Weathermatic, Inc.

Model No.: OLPSLHHR24

Serial No.: H1091111320368

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".

NVLAP Lab Code 100426-0

Summary Of Test Data

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

Footnotes:

* The device is battery powered.

Section 2. General Equipment Specification

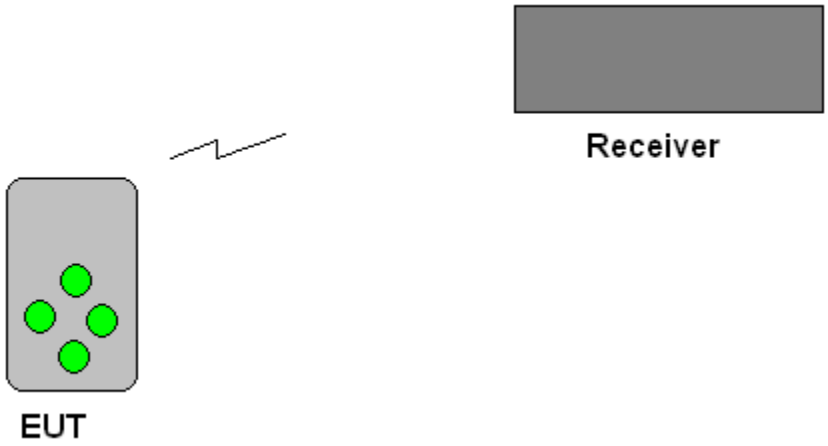
Frequency Range:	2400 to 2483.5 MHz
Operating Frequency(ies) of Sample:	2405 MHz (single channel)
Number of Channels:	1
Channel Spacing:	NA
User Frequency Adjustment:	None

	Yes	**No**
Integral Antenna	☒	☐

Description of EUT

Product is a four button remote control. The remote is used for controlling the irrigation system.

System Diagram



Section 3. Radiated Emissions

NAME OF TEST: Radiated Emissions	PARA. NO.: 15.249
TESTED BY: David Light	DATE: 05 April 2010

Minimum Standard: Para no. 15.249

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

Carrier (MHz)	Field Strength (mV/m)	Field Strength (dBμV)	Harmonic (μV/m)	Harmonic (dBμV)
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.

Spectrum analyzer settings:

RBW/VBW: 1 MHz

Detector: Peak

Test Results: Complies

Measurement Data: See attached table.

Test Equipment: 993-1484-1485-1464-1016-1480-791

Test Data - Radiated Emissions

#	Freq MHz	Rdng dBµV	Cable Duty dB	Cable dB	Pre-A dB	Horn dB	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2405.0	78.7	+0.7 +0.0	+2.3	-0.0	+28.9	110.6	114.0	-3.4	Vert
2	2405.0 Ave	78.7	+0.7 -40.0	+2.3	-32.8	+28.9	37.8	94.0	-56.2	Vert
3	4810.0	55.7	+1.0 +0.0	+3.2	-32.4	+33.1	60.6	74.0	-13.4	Vert
4	4810.0 Ave	55.7	+1.0 -40.0	+3.2	-32.4	+33.1	20.6	54.0	-33.4	Vert
5	7215.0	53.8	+1.2 +0.0	+3.9	-32.2	+35.8	62.5	74.0	-11.5	Vert
6	7215.0 Ave	53.8	+1.2 -40.0	+3.9	-32.2	+35.8	22.5	54.0	-31.5	Vert
7	9620.0	51.5	+1.1 +0.0	+4.7	-34.3	+37.1	60.1	74.0	-13.9	Vert
8	9620.0 Ave	51.5	+1.1 -40.0	+4.7	-34.3	+37.1	20.1	54.0	-33.9	Vert
9	12025.0	51.5	+1.8 +0.0	+5.5	-34.9	+39.6	63.5	74.0	-10.5	Vert
10	12025.0 Ave	51.5	+1.8 -40.0	+5.5	-34.9	+39.6	23.5	54.0	-30.5	Vert
11	14430.0	44.2	+1.6 +0.0	+5.6	-33.0	+41.2	59.6	74.0	-14.4	Vert
12	14430.0 Ave	44.2	+1.6 -40.0	+5.6	-33.0	+41.2	19.6	54.0	-34.4	Vert
13	16835.0	43.8	+2.0 +0.0	+6.3	-33.2	+41.2	60.1	74.0	-13.9	Vert
14	16835.0 Ave	43.8	+2.0 -40.0	+6.3	-33.2	+41.2	20.1	54.0	-33.9	Vert

Corrected Reading (dBµV/m) = RDNG(dB) + Cable Loss(dBµV) + AF(dB) + Amp Gain(dB) + Duty Cycle(dB)

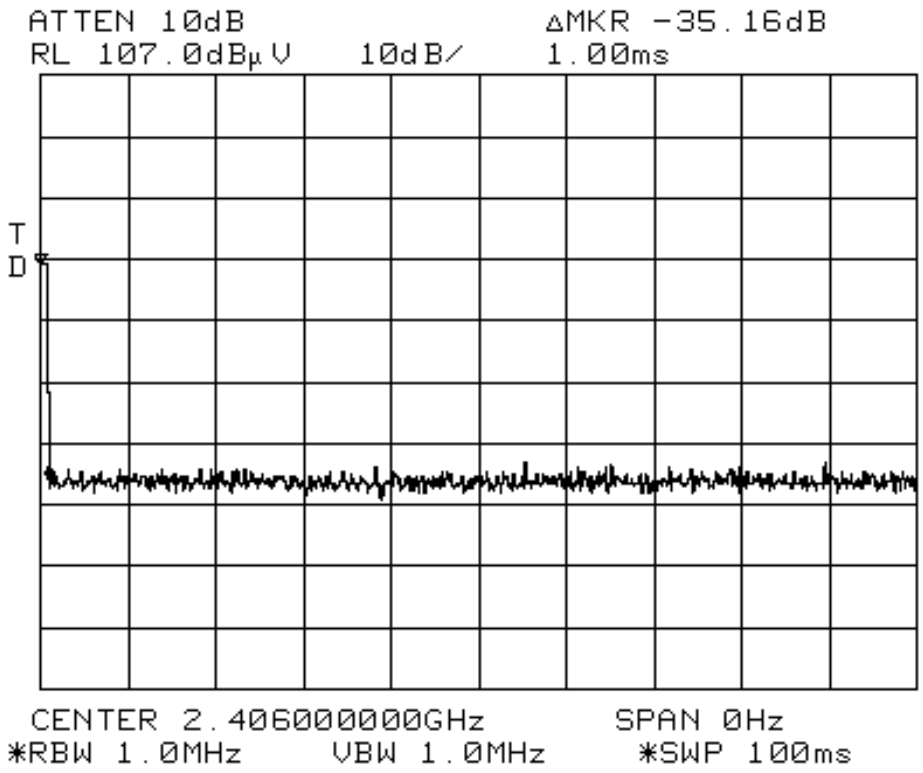
The spectrum was searched from 30 MHz to the 10th harmonic of the carrier.

The device was tested with a fresh battery.

Test Data - Radiated Emissions

#	Freq MHz	Rdng dBµV	Cable Duty dB	Cable dB	Pre-A dB	Horn dB	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
15	2405.0	73.3	+0.7 +0.0	+2.3	-0.0	+28.9	105.2	114.0	-8.8	Horiz
16	2405.0 Ave	73.3	+0.7 -40.0	+2.3	-32.8	+28.9	32.4	94.0	-61.6	Horiz
17	4810.0	58.0	+1.0 +0.0	+3.2	-32.4	+33.1	62.9	74.0	-11.1	Horiz
18	4810.0 Ave	58.0	+1.0 -40.0	+3.2	-32.4	+33.1	22.9	54.0	-31.1	Horiz
19	7215.0	54.7	+1.2 +0.0	+3.9	-32.2	+35.8	63.4	74.0	-10.6	Horiz
20	7215.0 Ave	54.7	+1.2 -40.0	+3.9	-32.2	+35.8	23.4	54.0	-30.6	Horiz
21	9620.0	55.5	+1.1 +0.0	+4.7	-34.3	+37.1	64.1	74.0	-9.9	Horiz
22	9620.0 Ave	55.5	+1.1 -40.0	+4.7	-34.3	+37.1	24.1	54.0	-29.9	Horiz
23	12025.0	51.8	+1.8 +0.0	+5.5	-34.9	+39.6	63.8	74.0	-10.2	Horiz
24	12025.0 Ave	51.8	+1.8 -40.0	+5.5	-34.9	+39.6	23.8	54.0	-30.2	Horiz
25	14430.0	43.3	+1.6 +0.0	+5.6	-33.0	+41.2	58.7	74.0	-15.3	Horiz
26	14430.0 Ave	43.3	+1.6 -40.0	+5.6	-33.0	+41.2	18.7	54.0	-35.3	Horiz
27	16835.0	42.8	+2.0 +0.0	+6.3	-33.2	+41.2	59.1	74.0	-14.9	Horiz
28	16835.0 Ave	42.8	+2.0 -40.0	+6.3	-33.2	+41.2	19.1	54.0	-34.9	Horiz

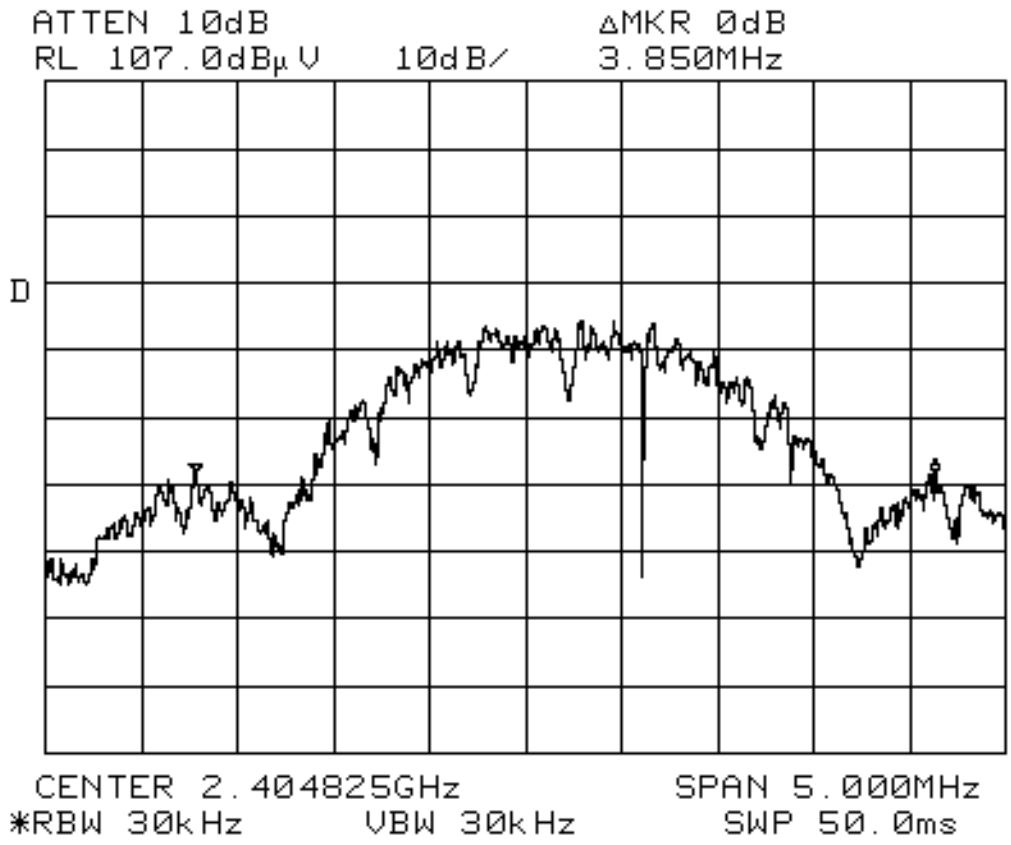
Test Data – Duty Cycle Correction



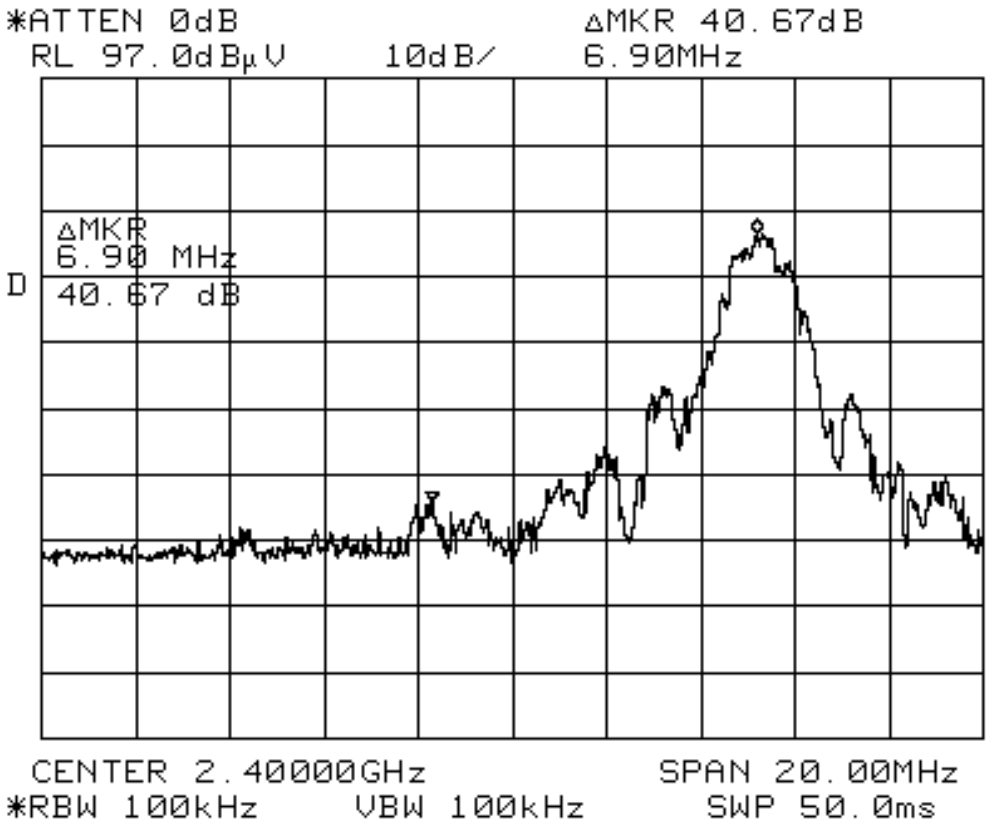
Duty Cycle Correction (dB) = 20 log (Time ON/100 mS)

-40 dB = 20 log 0.01

20 dB Bandwidth plot



Lower band edge



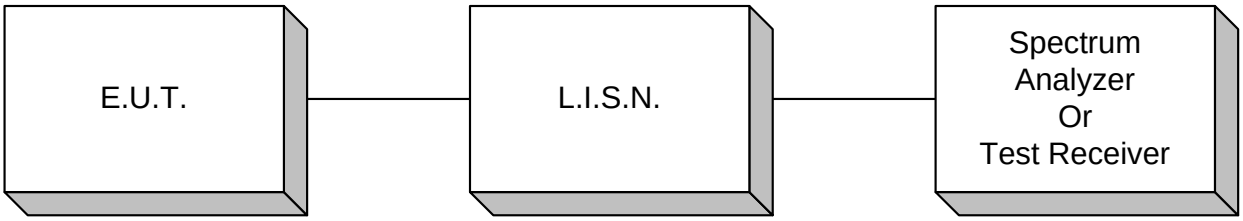
Section 4. Test Equipment List

Asset Tag	Description	Manufacturer	Model	Serial #	Last Cal	Next Cal
993	Antenna, Horn	A.H. Systems	SAS-200/571	162	09-Sep-2009	09-Sep-2011
1016	Preamplifier	Hewlett Packard	8449A	2749A00159	23-Jun-2009	23-Jun-2010
1464	Spectrum Analyzer	Hewlett Packard	8563E	3551A04428	27-Feb-2009	27-Feb-2011
1480	Antenna, Bilog	Schaffner-Chase	CBL6111C	2572	18-Jan-2010	18-Jan-2011
1484	Cable	Storm	PR90-010-072		23-Jun-2009	23-Jun-2010
1485	Cable	Storm	PR90-010-216		23-Jun-2009	23-Jun-2010
791	PreAmp	Nemko, USA			03-Aug-2009	03-Aug-2010

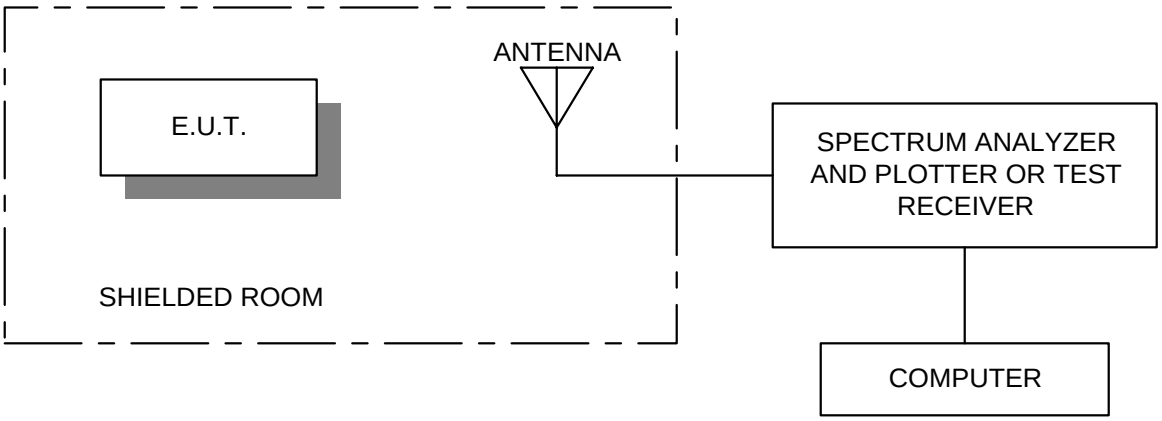
ANNEX A

TEST DIAGRAMS

Conducted Emissions



Radiated Prescan



Test Site For Radiated Emissions