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Certification Test Report

In Accordance With:	FCC Part 15 Subpart C, 15.231(e)
Applicant:	Rockrose Technology 15530 Rockfield Blvd., Suite C Irvine, CA 92618
Equipment Under Test (EUT):	WaterDex
Model:	800001
FCC ID:	O7GWDTX21
Tested By:	Nemko USA Inc. 2210 Faraday Avenue, Suite 150 Carlsbad, CA 92008
Test Report Number:	2012 06207734-1 FCCTR
Date:	June 26, 2012
Project Number	10223091
NEX Number	207734
Total Number of Pages:	26

Applicant Affirmation

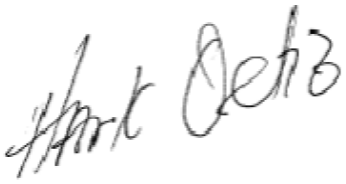
Hank Ortiz representing Rockrose Technology hereby affirms:

a) That he/she has reviewed and concurs that the test shown in this report are reflective of the operational characteristics of the device for which certification is sought;

b) That the device in this test report will be representative of production units;

c) That all changes (in hardware and software/firmware) to the subject device will be reviewed.

d) That any changes impacting the attributes, functionality or operational characteristics documented in this report will be communicated to the body responsible for approving (certifying) the subject equipment.



Hank Ortiz
Printed name of official

Signature of official

15530 Rockfield Blvd., Suite C
Address

July 2, 2012
Date

949 540 0645
Telephone number

hank.ortiz@cognetive-systems.com
Email address of official

NOTE—This affirmation must be signed by the responsible party before it is submitted to a regulatory body for approval.

Section 1. Summary of Test Results

1.1 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 Part 15; Subpart C. Radiated tests were conducted is accordance with ANSI C63.4-2003. Radiated emissions are made on an open area test site. A description of the test facility is on file with the FCC.

The assessment summary is as follows:

Apparatus Assessed:	WaterDex
Model:	800001
Specification:	FCC Part 15 Subpart C, 15.231(e)
Date Received in Laboratory:	June 20, 2012
Compliance Status:	Complies
Exclusions:	None
Non-compliances:	None

1.2 Report Release History

REVISION	DATE	COMMENTS
-	June 26, 2012	Prepared By: Andreas Gillmeier
-	June 26, 2012	Initial Release: Alan Laudani

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025.

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Andreas Gillmeier, Sr. EMC/Wireless Engineer

Alan Laudani, RF/EMC Test Engineer

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Section 2: Equipment Under Test

2.1 Theory of Operation

The WaterDex Remote Control (WRC) is an intentional radiator which utilizes the Micrel MICRF-112 radio transmitter operating at a transmit frequency of 433.92 MHz utilizing OOK modulation. Much like the transmissions generated by keyless entry systems, WRC transmissions are thus initialized by random and periodic human interaction. The WRC continuously monitors the potentiometer value every second to detect a potentiometer change by the user. When a change is detected, the WRC transmits a single message. If another change is detected right after the transmission it will wait at least 10 seconds and transmit another single message.
Because the WRC is a transmitter only and thus utilizes a one-way communication channel, the WRC re-transmits once every 4 hours to ensure transmission reliability. The EUT was exercised by transmitting continuously.

Highest frequency generated or used: 434 MHz

2.2 Technical Specifications of the EUT

Manufacturer:	Rockrose Technology
Operating Frequency:	433.9 MHz
Measured Power:	71.1 dBuV/m @ 3m
Modulation:	OOK
Antenna Data:	Integral, ¼ wave loop, integrated on PWB
Antenna Connector:	NONE
Power Source:	3V battery (2 x 1.5V AA)

Section 3: Test Conditions

3.1 Specifications

The apparatus was assessed against the following specifications:

15.231 Periodic operation in the band 40.66–40.70 MHz and above 70 MHz.

(a) The provisions of this section are restricted to periodic operation within the band 40.66–40.70 MHz and above 70 MHz. Except as shown in paragraph (e) of this section, the intentional radiator is restricted to the transmission of a control signal such as those used with alarm systems, door openers, remote switches, etc. Continuous transmissions, voice, video and the radio control of toys are not permitted. Data is permitted to be sent with a control signal. The following conditions shall be met to comply with the provisions for this periodic operation:

(1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

(2) A transmitter activated automatically shall cease transmission within 5 seconds after activation.

(3) Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed more than two seconds per hour for each transmitter. There is no limit on the number of individual transmissions, provided the total transmission time does not exceed two seconds per hour.

3.2 Deviations From Laboratory Test Procedures

No deviations from Laboratory Test Procedure

3.3 Test Environment

All tests were performed under the following environmental conditions:

Temperature range	:	21-24 ºC
Humidity range	:	45-49 %
Pressure range	:	100.5-101.0 kPa
Power supply range	:	+/- 5% of rated voltages

3.4 Test Equipment

Nemko ID	Device	Manufacturer	Model	Serial Number	Cal Date	Cal Due Date
E1018	9kHz to 7GHz Spectrum Analyzer	Rohde & Schwarz	FSP7	835363/0003	2/23/2012	2/23/2013
110	Antenna, LPA	Electrometrics	LPA-25	1217	4/1/2011	4/1/2013
128	Antenna, Bicon	EMCO	3104	2882	3/21/2011	3/21/2013
E1029	Preamplifier (20MHz to 18GHz)	A.H. Systems, Inc.	PAM-0118	343	2/21/2012	2/21/2013
752	Antenna, DRG Horn, .7-18GHz	EMCO	3115	4943	12/2/2010	12/2/2012
901	pre amp	Sonoma	310 N	130607	10/27/2011	10/27/2012
911	Spectrum Analyzer	Agilent	E4440A	US41421266	10/27/2011	10/27/2012
835	Spectrum Analyzer	Rohde & Schwarz	FSEK	8290258/005	07/22/2011	07/22/2012

Section 4: Observations

4.1 Modifications Performed During Assessment

No modifications were performed during assessment.

4.2 Record Of Technical Judgements

No technical judgements were made during the assessment.

4.3 EUT Parameters Affecting Compliance

The user of the apparatus could not alter parameters that would affect compliance.

4.4 Tests Deleted

No Tests were deleted from this assessment.

4.5 Additional Observations

There were no additional observations made during this assessment.

Section 5: Results Summary

This section contains the following:

FCC Part 15 Subpart C: Test Results.

The column headed “Required” indicates whether the associated clauses were invoked for the apparatus under test. The following abbreviations are used:

N No: not applicable / not relevant
Y Yes: Mandatory i.e. the apparatus shall conform to these tests.
N/T Not Tested, mandatory but not assessed. (See section 4.4 Test deleted)

The results contained in this section are representative of the operation of the apparatus as originally submitted.

5.1 Test Results

Part 15	RSS	Test Description	Required	Result
15.231 (b)	A1.1.2	Field Strengths and Frequency Bands	N	NA
15.231 (e)	A1.1.5	Reduced Field Strengths	Y	Pass
15.215(c) 15.231(c)	A1.1.3	Occupied Bandwidth/ 99% Bandwidth	Y	Pass
15.231 (a)	A1.1 Table A RSS-Gen 7.2.2	Types of Momentary Signals	Y	Pass
15.231 (d)	A1.1.4	Frequency Stability	N	NA**
15.231 (b)	A1.1.2	Spurious Emissions	N	NA
15.231 (e)	A1.1.5	Spurious Emissions (reduced field strengths)	Y	Pass
15.207 (a)	RSS-Gen 7.2.4	Power line Conducted Emissions	N	NA*
15.107 (a)	RSS-Gen 7.2.4	Receiver Spurious Conducted Emissions	N	NA***
15.109 (a)	RSS-Gen 6.1	Receiver Spurious Radiated Emissions	Y	NA*

* Battery Powered
** Not transmitting in the band requiring Frequency Stability
*** Only transmitter, no receiver included

Appendix A: Test Results

Conducted Emissions

Not applicable as EUT is battery powered.

Occupied Bandwidth

15.231(c) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

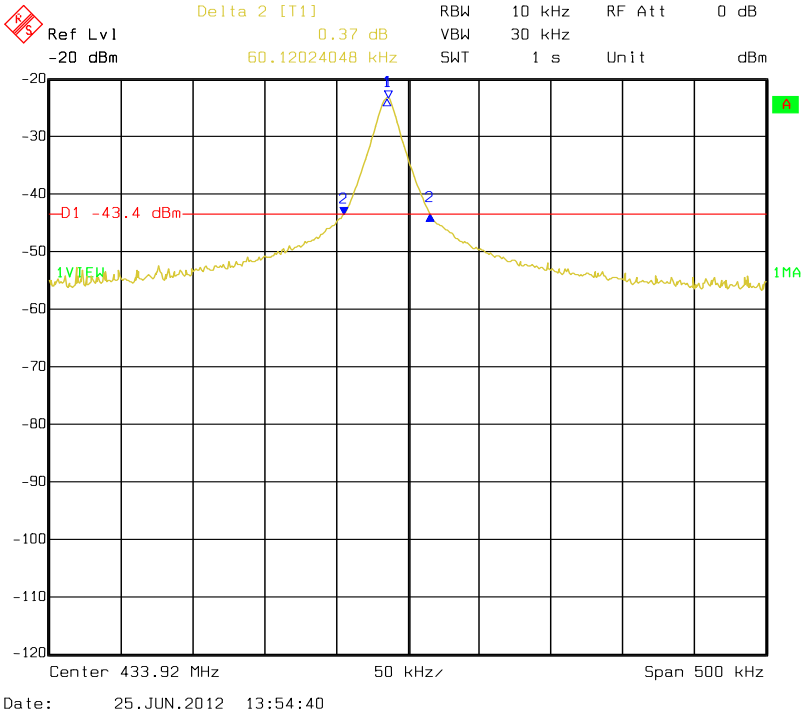
15.215(c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in Sec. Sec. 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

Test Conditions:

Client	Rockrose Technology	Temperature	24	°C
NEX #	207734	Relative Humidity	45	%
EUT Name	WaterDex			
EUT Model	800001	Test Location	Ground Plane 3	
Governing Doc	CFR 47, Part 15C	Test Engineer	Andreas Gillmeier	
Basic Standard	Sec. 15.231 Transmit	Date of test	06/25/2012	

Test Results:
Measured Occupied Bandwidth: 60.1 kHz

Plot-- 20 dB bandwidth:



Max peak hold.

Frequency Stability

The EUT does not transmit within the 40.66—40.70 MHz band, therefore this test is not applicable.

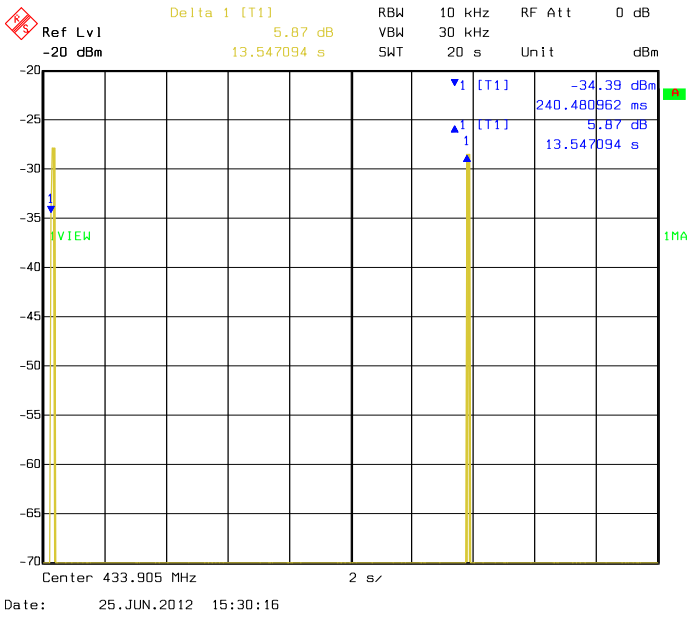
Types of Momentary Signals

15.231(e) In addition, devices operated under the provisions of this paragraph shall be provided with a means for automatically limiting operation so that the duration of each transmission shall not be greater than one second and the silent period between transmissions shall be at least 30 times the duration of the transmission but in no case less than 10 seconds

Client	Rockrose Technology	Temperature	24	°C
NEX #	207734	Relative Humidity	45	%
EUT Name	WaterDex			
EUT Model	800001	Test Location	Ground Plane 3	
Governing Doc	CFR 47, Part 15C	Test Engineer	Andreas Gillmeier	
Basic Standard	Sec. 15.231 Transmit	Date of test	06/25/2012	

The WRC continuously monitors the potentiometer value every second to detect a potentiometer change by the user. When a change is detected, the WRC transmits a single message. If another change is detected right after the transmission it will wait at least 10 seconds and then transmit another single message.

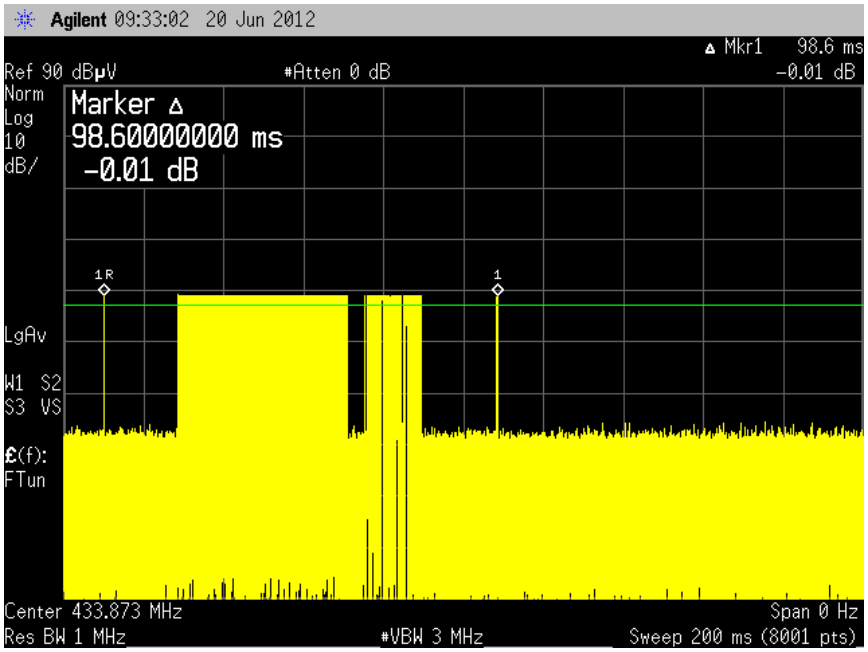
This plot shows the transmitter transmits again after 13.5 s while the potentiometer is changed continuously.



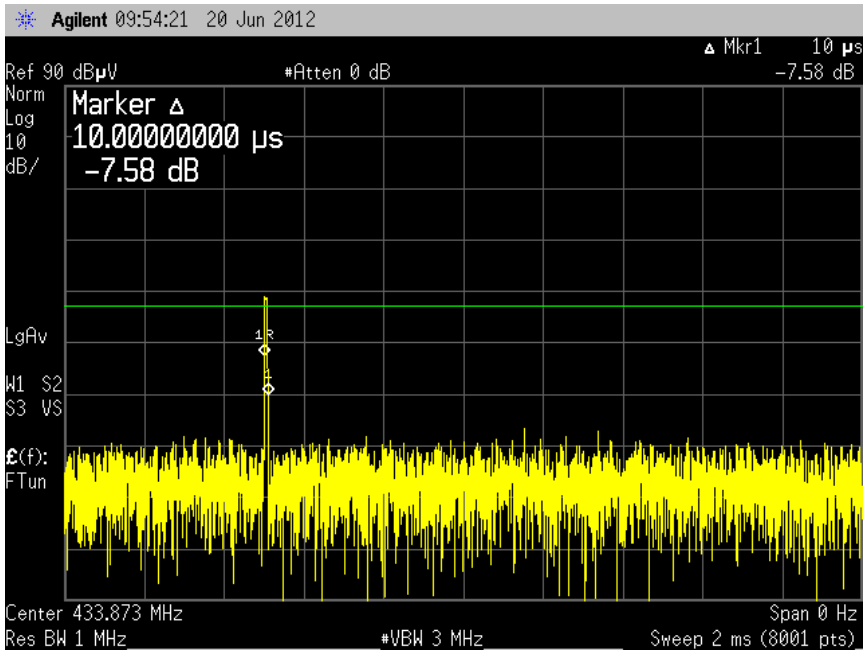
Because the WRC is a transmitter only and thus utilizes a one-way communication channel, the WRC re-transmits once every 4 hours to ensure transmission reliability.

Duty Cycle Factor

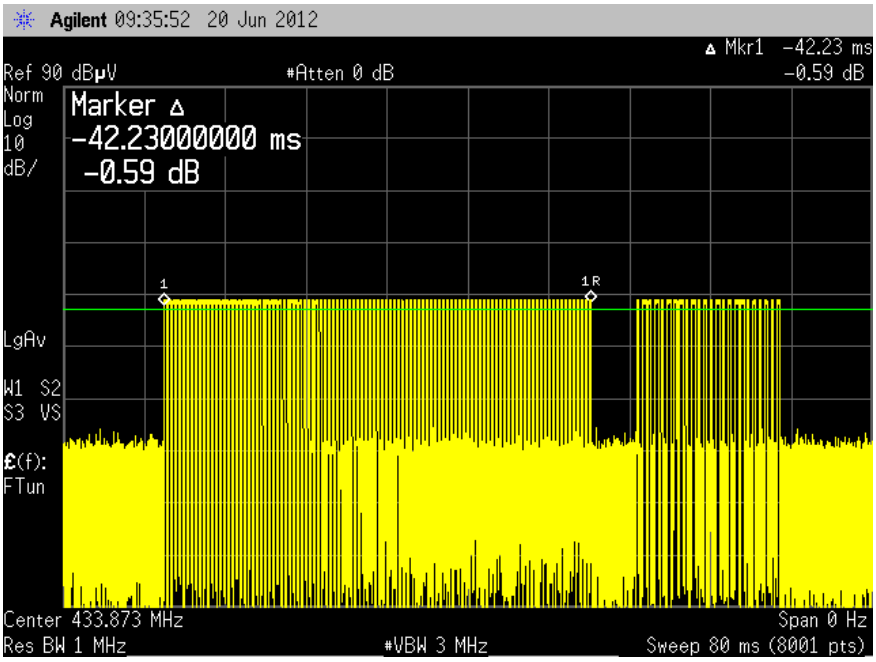
This plot shows one complete transmission (98.6ms):



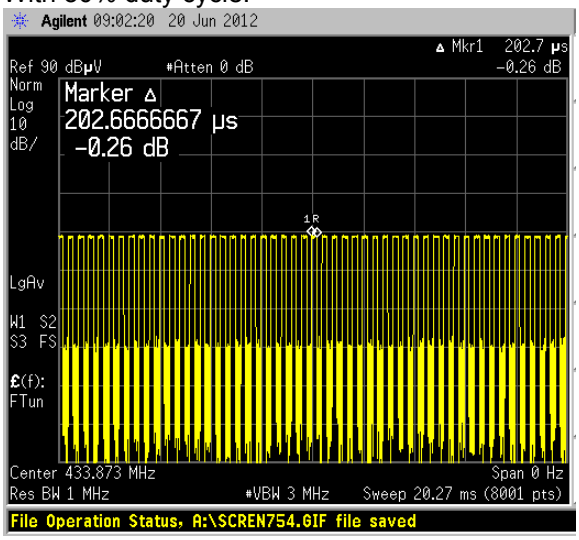
It consists of a start and stop burst (10 µs each)…

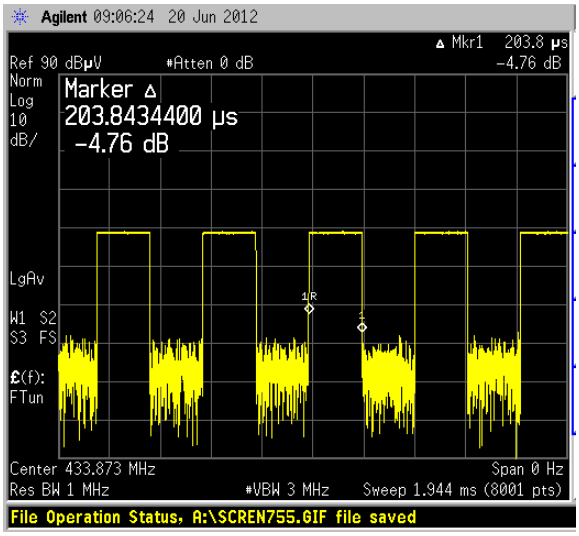


…a preamble (42.23 ms)…

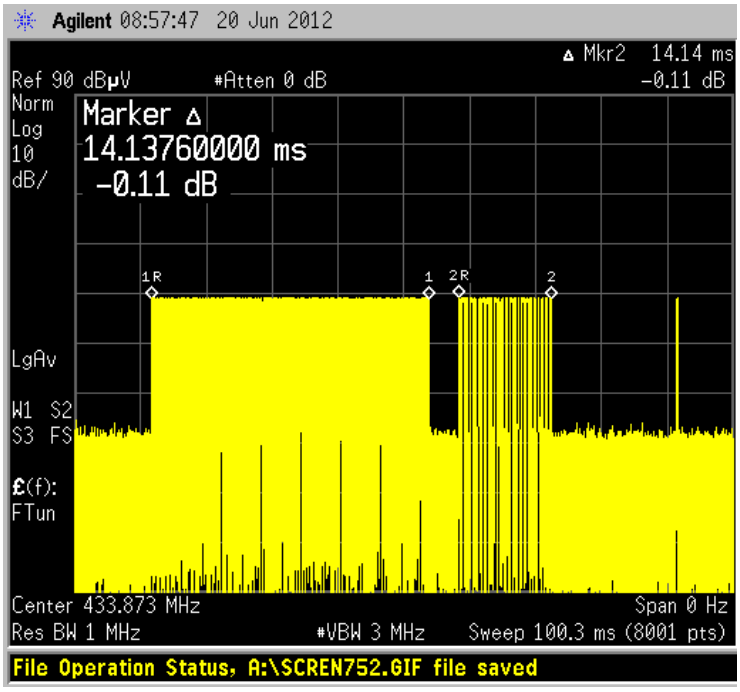


With 50% duty cycle:

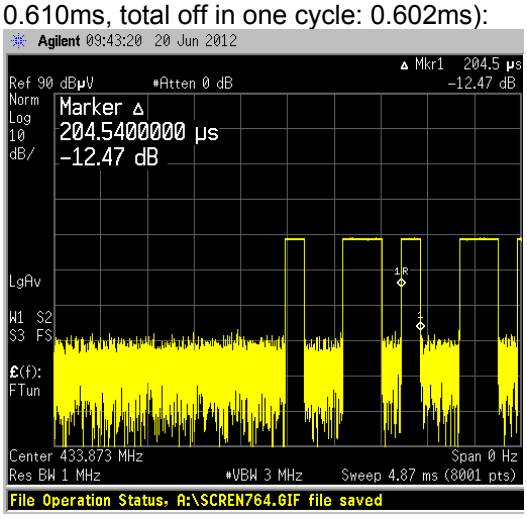


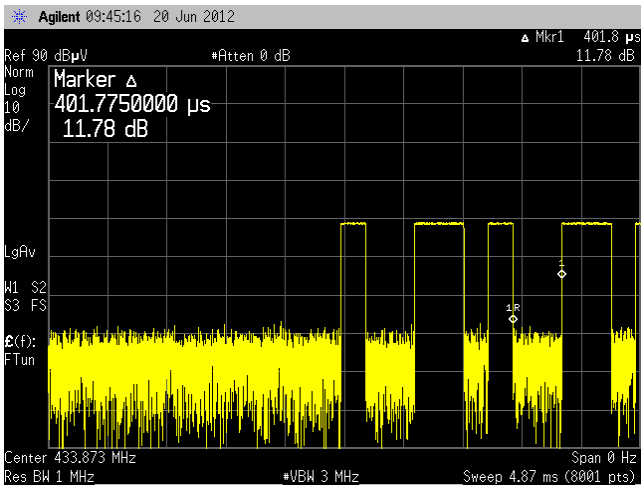


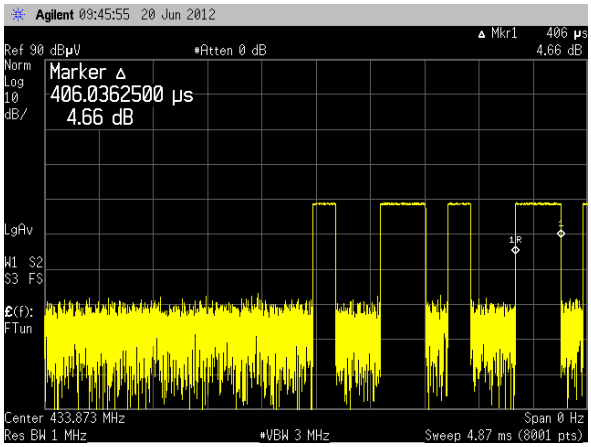
… and a payload (14.14ms) and stop burst equal to the start burst.

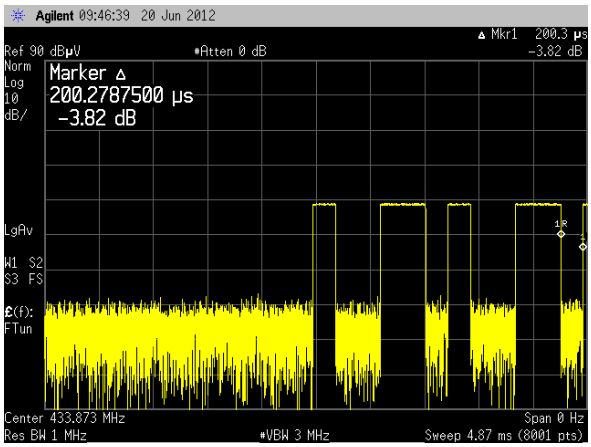


With 50% duty cycle (on 0.204ms, off 0.402ms, on 0.406ms, off 0.200ms; total on in one cycle: 0.610ms, total off in one cycle: 0.602ms):









Summary:

Function	Time on - burst	Duty cycle	Total Time on
Start Burst	0.010 ms		0.010 ms
Preamble	42.23 ms	50%	21.11 ms
Payload	14.14 ms	50%	7.07 ms
Stop Burst	0.010 ms		0.010 ms
Total in 98.6 ms			28.2 ms

Duty cycle factor = 20 x log(on /100 ms)
on: 2 x 0.010ms + (42.23ms * 0.5) + (14.14ms * 0.5) = 28.205ms

= 20 x log(28.205ms/100ms)

= -11.0 dB

Field Strength and Radiated Spurious Emissions

(e) Intentional radiators may operate at a periodic rate exceeding that specified in paragraph (a) of this section and may be employed for any type of operation, including operation prohibited in paragraph (a) of this section, provided the intentional radiator complies with the provisions of paragraphs (b) through (d) of this section, except the field strength table in paragraph (b) of this section is replaced by the following:

Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of spurious emission (microvolts/meter)
40.66–40.70	1,000	100
70–130	500	50
130–174	500 to 1,500[1]	50 to 150[1]
174–260	1,500	150
260–470	1,500 to 5,000[1]	150 to 500[1]
Above 470	5,000	500

[1]Linear interpolations.

At 434 MHz this interpolates to 3765 microVolts/m or 72.9 dBuV/m at 3m
Unwanted emissions 52.9 dBuV/m at 3m or FCC15.209, whatever is higher.

Client	Rockrose Technology	Temperature	21	°C
NEX #	207734	Relative Humidity	49	%
EUT Name	WaterDex			
EUT Model	800001	Test Location	10 m Chamber	
Governing Doc	CFR 47, Part 15C	Test Engineer	Andreas Gillmeier	
Basic Standard	Sec. 15.231 Transmit	Date of test	June 20, 2012	

Test Results:

See Table. EUT complies for fundamental power and spurious emissions.

Additional Observations:

The Spectrum was searched from 30MHz to the 10th Harmonic (4350 MHz).

The EUT was investigated with a fresh battery. The emissions were measured with a test mode to repeat the emission so measurements could be maximized for the rotation of the sample and height and polarity of the measurement antenna.

All Measurements below 1GHz were performed at 3m employing a CISPR quasi-peak detector, except for the radio's fundamental. Fundamental power was measured at 1 MHz RBW, 3 MHz VBW to ensure capture of entire emissions envelope.

Peak measurements above 1GHz were done utilizing RBW of 1MHz and VBW of 3MHz.

Average measurements were calculated: average = peak + duty cycle factor.

Measurements made at the 3 meter distance of the 10m Semi-anechoic chamber, all measurements max hold after peaking for EUT rotation and antenna height from 1 to 4 meters.

No other emissions found within 20 dB of the limits. Harmonic emissions measured in same EUT configuration of highest fundamental transmission orientation—proven worst case.

Emissions were measured on a 80cm (height) table.

Since the EUT has no defined use position: emissions were measured at x, y and z EUT configurations.

Note: Corrected Reading Computations
Average = Peak Maximum Meter Reading + Antenna Factor + Path Loss + DUTY CYCLE FACTOR
70.9 = 61.3 + 16.6 + 4.0 –11.0

EUT passes
Limit paragraph 231(e) = 3765 uV/m
Corrected Average Reading = 70.9 dBuV/m
$10^{(70.9/20)}$ = 3508 uV/m

Radiated Emissions Data

Job # : 10223091 Date : June 20, 2012 Page 1 of 1
NEX#: 207734 Time : 10:25
Staff : AG

Client Name : Rock Rose
EUT Name : Waterdex
EUT Model # :
EUT Serial # : Engineering #1a
EUT Config. : continuous transmit, CW

Specification : FCC Part 15C 15.247 & 15.209
Loop Ant. #: NA
Bicon Ant.#: 128_3m
Log Ant.#: 110_3m
DRG Ant. # 752
Cable LF#: SAC_10m
Cable HF#: WCC
Preamp LF#: 901
Preamp HF# _E1029

Temp. (°C) : 21
Humidity (%) : 49
Spec Analyzer #: 911
Analyzer Display #: 911
Quasi-Peak Detector #: 911
Duty Cycle (%): 28.20

EUT Voltage : 3V batt
EUT Frequency : N/A
Phase: N/A

Distance < 1000 MHz: 3 m
Distance > 1000 MHz: 3 m

Peak	RBW: 1 MHz
	Video Bandwidth 3 MHz
Average = Peak + Duty Cycle Factor	
DCF = 20 x log(duty cyle)	

Measurements below 1 GHz are Quasi-Peak values, unless otherwise stated.
Measurements above 1 GHz are Average values, unless otherwise stated.

Meas. Freq. (MHz)	Meter Reading **Vertical**	Meter Reading **Horizontal**	Det.	EUT Side DEG	Ant. Height cm	Max. Reading (dBµV)	Corrected Reading (dBµV)	Spec. limit (dBµV)	CR/SL Diff. (dB)	Pass Fail	Comment
433.9	49.4	61.3	P	327.0	100.0	61.3	81.9	92.9	-11.0	Pass	flat on table, ant left
433.9	49.4	61.3	A			61.3	70.9	72.9	-2.0	Pass	flat on table
433.9	58.7	53.7	P	269.0	146.0	58.7	79.3	92.9	-13.6	Pass	up on long edge, ant left
433.9	58.7	53.7	A			58.7	68.3	72.9	-4.6	Pass	up on long edge
433.9	60.2	52.8	P	77.0	115.0	60.2	80.8	92.9	-12.1	Pass	up on short edge (ant down)
433.9	60.2		A			60.2	69.8	72.9	-3.1	Pass	up on short edge (ant down)
867.9	53.3	56.7	P	335.0	106.0	56.7	53.2	72.9	-19.7	Pass	flat on table, ant left
867.9	53.3	56.7	A			56.7	42.2	52.9	-10.7	Pass	flat on table
1301.9	48.9	45.3	P	336.0	190.0	48.9	35.2	74.0	-38.8	Pass	
1301.9	48.9	45.3	A			48.9	24.2	54.0	-29.8	Pass	
1735.3	46.2	47.2	P	9.0	100.0	47.2	36.6	74.0	-37.3	Pass	
1735.3	46.2	47.2	A			47.2	25.6	54.0	-28.3	Pass	
2169.3	54.7	51.7	P	98.0	140.0	54.7	46.9	74.0	-27.1	Pass	
2169.3	54.7	51.7	A			54.7	35.9	54.0	-18.1	Pass	
2603.2	57.6	53.6	P	95.0	115.0	57.6	51.9	74.0	-22.1	Pass	
2603.2	57.6	53.6	A			57.6	40.9	54.0	-13.1	Pass	
3037.5	54.3	57.8	P	32.0	123.0	57.8	54.1	74.0	-19.8	Pass	
3037.5	54.3	57.8	A			57.8	43.1	54.0	-10.8	Pass	
3471.3	46.8	47.5	P	159.0	141.0	47.5	44.2	74.0	-29.7	Pass	
3471.3	46.8	47.5	A			47.5	33.2	54.0	-20.7	Pass	

Conducted Emissions Test Data—Receive Mode

EUT does not have need for AC power as it is battery powered.

Radiated Emissions Test Data—Receive Mode

EUT does not have a receive mode.
No emissions evident while in standby mode

APPENDIX B

B. Radiated Emissions Measurement Uncertainties

1. Introduction

ISO/IEC 17025:2005 and ANSI/NCSL Z540.3: 2006 require that all measurements contained in a test report be “traceable”. “Traceability” is defined in the *International Vocabulary of Basic and General Terms in Metrology* (ISO: 1993) as: “the property of the result of a measurement... whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons, *all having stated uncertainties*”.

The purposes of this Appendix are to “state the *Measurement Uncertainties*” of the conducted emissions and radiated emissions measurements contained in Section 5 of this Test Report, and to provide a practical explanation of the meaning of these measurement uncertainties.

2. Statement of the Worst-Case Measurement Uncertainties for the Conducted and Radiated Emissions Measurements Contained in This Test Report

Table 1: Worst-Case Expanded Uncertainty "U" of Measurement for a k=2 Coverage Factor

Radiated Emissions Measurement Detection Systems	Applicable Frequency Range	"U” for a k=2 Coverage Factor
Spectrum Analyzer with QPA & Preamplifier	30 MHz - 200 MHz	+3.9 dB, -4.0 dB
Spectrum Analyzer with QPA & Preamplifier	200 MHz-1000 MHz	+/- 3.5 dB
Spectrum Analyzer with Preamplifier	1 GHz - 18 GHz	+2.5 dB, -2.6 dB
Spectrum Analyzer with Preamplifier	18 GHz - 40 GHz	+/- 3.4 dB

NOTES:
1. Applies to 3 and 10 meter measurement distances
2. Applies to all valid combinations of Transducers (i.e. LISNs, Line Voltage Probes, and Antennas, as appropriate)
3. Excludes the Repeatability of the EUT

3. Practical Explanation of the Meaning of Radiated Emissions Measurement Uncertainties

In general, a "Statement of Measurement Uncertainty" means that with a certain (specified) confidence level, the "true" value of a measurand will be between a (stated) upper bound and a (stated) lower bound.

In the specific case of EMC Measurements in this test report, the measurement uncertainties of the conducted emissions measurements and the radiated emissions measurements have been calculated in accordance with the method detailed in the following documents:

- *ANSI Z540.2 (2002) Guide to the Expression of Uncertainty in Measurement*
- NIS 81:1994, *The Treatment of Uncertainty in EMC Measurements* (NAMAS, 1994)
- NIST Technical Note 1297(1994), *Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results* (NIST, 1994)

The calculation method used in these documents requires that the stated uncertainty of the measurements be expressed as *an "exNEXded uncertainty", U, with a k=2 coverage factor*. The practical interpretation of this method of expressing measurement uncertainty is shown in the following example:

EXAMPLE: Assume that at 39.51 MHz, the (measured) radiated emissions level was equal to +26.5 dBuV/m, and that the +/- 2 standard deviations (i.e. 95% confidence level) measurement uncertainty was +/- 3.4 dB.

APPENDIX C

C. Nemko USA, Inc. Test Equipment & Facilities Calibration Program

Nemko USA, Inc. operates a comprehensive Periodic Calibration Program in order to ensure the validity of all test data. Nemko USA's Periodic Calibration Program is fully compliant to the requirements of NVLAP Policy Guide PG-1-1988, ANSI/NCSL Z540.3: 2006, ISO 10012:2003, ISO/IEC 17025:2005, and ISO-9000: 2000. Nemko USA, Inc.'s calibrations program therefore meets or exceeds the US national commercial and military requirements [N.B. ANSI/NCSL Z540.1-1994 replaced MIL-STD-45662A].

Specifically, all of Nemko USA's *primary reference standard devices* (e.g. vector voltmeters, multimeters, attenuators and terminations, RF power meters and their detector heads, oscilloscope mainframes and plug-ins, spectrum analyzers, RF preselectors, quasi-peak adapters, interference analyzers, impulse generators, signal generators and pulse/function generators, field-strength meters and their detector heads, etc.) and certain *secondary standard devices* (e.g. RF Preamplifiers used in CISPR 11/22 and FCC Part 15/18 tests) are periodically recalibrated by:

- A Nemko USA-approved independent (third party) metrology laboratory that uses NIST-traceable standards and that is ISO Guide 25-accredited as a calibration laboratories by NIST; or,
- A Nemko USA-approved independent (third party) metrology laboratory that uses NIST-traceable standards and that is ISO Guide 25-accredited as a calibration laboratory by another accreditation body (such as A2LA) that is mutually recognized by NIST; or,
- A manufacturer of Measurement and Test Equipment (M&TE), if the manufacturer uses NIST-traceable standards and is ISO Guide 25-accredited as calibration laboratory either by NIST or by another accreditation body (such as A2LA) that is mutually recognized by NIST; or
- A manufacturer of M&TE (or by a Nemko USA-approved independent third party metrology laboratory) that is not ISO Guide 25-accredited. (In these cases, Nemko USA conducts an annual audit of the manufacturer or metrology laboratory for the purposes of proving traceabilty to NIST, ensuring that adequate and repeatable calibration procedures are being applied, and verifying conformity with the other requirements of ISO Guide 25).

In all cases, the entity performing the Calibration is required to furnish Nemko USA with a calibration test report and/or certificate of calibration, and a "calibration sticker" on each item of M&TE that is successfully calibrated.

Calibration intervals are normally one year, except when the manufacture advises a shorter interval or if US Government directives or client requirements demand a shorter interval. Items of instrumentation/related equipment which fail during routine use, or which suffer visible mechanical damage (during use or while in transit), are sidelined pending repair and recalibration. (Repairs are carried out either in-house [if minor] or by a Nemko USA-approved independent [third party] metrology laboratory, or by the manufacturer of the item of M&TE).

Each antenna used for CISPR 11 and CISPR 22 and FCC Part 15 and Part 18 radiated emissions testing (and for testing to the equivalent European Norms) is calibrated annually by either a NIST (or A2LA) ISO Standard 17025-Accredited third-party Antenna Calibration Laboratory or by the antenna's OEM if the OEM is NIST or A2LA ISO Standard 17025-accredited as an antenna calibration laboratory. The antenna calibrations are performed using the methods specified in Annex G.5 of CISPR 16-1(2003) or ANSI C63.5-2004, including the "Three-Antenna Method". Certain other kinds of antennas (e.g. magnetic-shielded loop antennas) are calibrated annually by either a NIST (or A2LA) ISO Standard 17025-accredited third-party antenna calibration laboratory, or by the antenna's OEM if the OEM is NIST or A2LA ISO Standard 17025-accredited as an antenna calibration laboratory using the procedures specified in the latest version of SAE ARP-958.

In accordance with FCC and other regulations, Nemko USA recalibrates its suite of antennas used for radiated emissions tests on an annual basis. These calibrations are performed as a precursor to the FCC-required annual revalidation of the Normalized Site Attenuation properties of Nemko USA's Open Area Test Site. Nemko USA, Inc. uses the procedures given in both Sub clause 16.6 and Annex G.2 of CISPR 16-1 (2003), and, ANSI C63.4-2003 when performing the normalized site attenuation measurements.