# MAXIMUM PERMISSIBLE EXPOSURE REPORT (Measurement)

**FOR THE** 

500W / RIVAWA Model: ERW-1601-001\*

\*(See Appendix D for Manufacturer's Declaration)

Report No.: 107748-23

Date of issue: June 19, 2023

#### **PREPARED FOR:**

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The test data contained in this report documents the observed testing parameters pertaining to and are relevant for only the sample equipment tested in the agreed upon operational mode(s) and configuration(s) as identified herein. Compliance assessment remains the client's responsibility. This report may not be used to claim product endorsement by A2LA or any government agencies. This test report has been authorized for release under quality control from CKC Laboratories, Inc.

Steve Behm

Director of Quality Assurance & Engineering Services CKC Laboratories, Inc.

Page 1 of 19 Report No: 107748-23



#### **Purpose:**

To demonstrate compliance with United States, Canada, Australia and/or European Union RF Exposure requirements for Mobile Equipment (devices used >20cm from the body), where MPE measurements apply.

#### **Device and Antenna Operating Configuration:**

Device operating at maximum output power with continuous transmission of modulated data.

#### Test Procedure:

This equipment is evaluated in accordance with the guidelines set forth in KDB 447498 & ANSI C95.1 for the US, Health Canada Safety Code 6 & RSS 102 for Canada, ARPANSA RPS3 for AU and EN 62479 or EN 62311 for EU.

#### Other Considerations:

Report considers stand-alone configuration only. RF Exposure limits are calculated at the mid-point of each operating band. Multi-transmitter devices are assumed to permit simultaneous transmission, unless indicated otherwise. Simultaneous transmissions aggregated providing a worst case assessment.

The scope of this report is for permissive change testing to add a new data/rate modulation (150kbps GFSK), that is only modulation considered for this report.

#### Referenced Test Reports:

The following test reports were referenced in conjunction with this assessment:

107748-1A

107748-2A

107748-3B

107748-4B

# **MPE Measurements**

	Operational Details					
Power Reported is:	⊠ Peak □	⊠ Peak □ Average				
Limit Used is:	⊠ Genera	l Population 🗆 Occ	cupational Ex	xposure		
Operating Band MHz	Power	Power Ant Type/Gain EIRP TX Antenna Configuration				
	dBm	dBi	dBm	Simultaneous		
902.4-927.6	26.6	Internal Trace Meander (4.78dBi)	31.38	No	Internal Antenna	
902.4-927.6	26.6	External Omni (2.5dBi))	29.1	No	External Antenna (investigated both on simulated vehicle top and standalone)	

	Test Equipment					
Asset	Description	Manufacturer	Model	Cal Date	Cal Due	
P07880	USB to Fiber Optic Interface	ETS Lindgren	HI-4413	3/15/2022	3/15/2024	
03620	Field Probe	ETS	HI-6053	3/20/2023	3/20/2025	
03790	Field Probe	ETS-Lindgren	HI-6023	12/1/2021	12/1/2023	

Page 3 of 19 Report No: 107748-23

# Configuration 4 (External Antenna, Metal Lid w ground plane)

Equipment Under Test:

Device	Manufacturer	Model #	S/N
500W / RIVAWA	Itron, Inc.	ERW-1601-001	2803441-rivawa-rad-2

Support Equipment:

Device	Manufacturer	Model #	S/N	
Antenna	Itron, Inc.	CFG-0900-003	12194430	
Ground Plane	Itron, Inc.	4ft	NA	
Openway Riva Gas	Itorn, Inc.	TEL-7103-008	54AADFWYRAW	
Disconnect Flood Sensor 8'				

# **Configuration 5 (External Antenna, Plastic Lid no ground plane)**

**Equipment Under Test:** 

Device	Manufacturer	Model #	S/N
500W / RIVAWA	Itron, Inc.	ERW-1601-001	2803441-rivawa-rad-2

Support Equipment:

Device	Manufacturer	Model #	S/N
Antenna	Itron, Inc.	CFG-0900-003	12194430
Openway Riva Gas	Itorn, Inc.	TEL-7103-008	54AADFWYRAW
Disconnect Flood Sensor 8'			

#### **Configuration 6 (Internal Antenna)**

Equipment Under Test:

Device	Manufacturer	Model #	S/N
500W / RIVAWA	Itron, Inc.	ERW-1601-001	2803441-rivawa-rad-2

Support Equipment:

Device	Manufacturer	Model #	S/N
Openway Riva Gas	Itorn, Inc.	TEL-7103-008	54AADFWYRAW
Disconnect Flood Sensor 8'			

Page 4 of 19 Report No: 107748-23



Configuration 4 – 20cm Point



Configuration 4 – Vehicle 10cm Below



Configuration 5 – External Antenna, No Ground Plane, 20cm



Configuration 6 – Internal Antenna, 20cm

#### **US - Configuration 4 Data (External Antenna on Vehicle)**

#### MPE Measurements for Static Fields (Free Space Configuration)

For equipment where the fields are invariant in time, measurements are performed at a fixed height between 1.0m to 1.8mrepresenting worst case measurements as determined by preliminary assessment.

Distance (m)	Height (m)	Measured Exposure	Limit mW/cm <sup>2</sup>	Result
` '	` '	mW/cm²		
0.2	1.1	0.09	0.61	Pass

#### MPE Measurements with Spatial Averaging (Roof Mounted Antenna Configuration)

#### **Operator Exposure Measurements**

Measurement of the operator made directly under the ground plane at a separation of 10cm beneath and 10cm forward of the base of the transmitting antenna

Distance (m)	Height (m)	Measured Exposure mW/cm <sup>2</sup>	Limit mW/cm <sup>2</sup>	Result
Directly Below Antenna	0.9 (-0.1 from GP)	0.001	0.61	Pass

#### Canada - Configuration 4 Data (External Antenna on Vehicle)

#### MPE Measurements for Static Fields (Free Space Configuration)

For equipment where the fields are invariant in time, measurements are performed at a fixed height between 1.0m to 1.8mrepresenting worst case measurements as determined by preliminary assessment.

	Distance (m)	Height (m)	Measured Exposure W/cm²	Limit W/cm²	Result
ì	0.2	1.1	0.9	2.77	Pass

#### MPE Measurements with Spatial Averaging (Roof Mounted Antenna Configuration)

#### **Operator Exposure Measurements**

Measurement of the operator made directly under the ground plane at a separation of 10cm beneath and 10cm forward of the base of the transmitting antenna

Distance (m)	Height (m)	Measured Exposure W/cm²	Limit W/cm²	Result
Directly Below Antenna	0.9 (-0.1 from GP)	0.01	2.77	Pass

#### US - Configuration 5 Data (External Antenna, no ground plane)

#### MPE Measurements for Static Fields (Free Space Configuration)

For equipment where the fields are invariant in time, measurements are performed at a fixed height between 1.0m to 1.8mrepresenting worst case measurements as determined by preliminary assessment.

Distance (m)	Height (m)	Measured Exposure mW/cm <sup>2</sup>	Limit mW/cm <sup>2</sup>	Result
0.2	1.1	0.09	0.61	Pass

#### Canada - Configuration 5 Data (External Antenna, no ground plane)

#### MPE Measurements for Static Fields (Free Space Configuration)

For equipment where the fields are invariant in time, measurements are performed at a fixed height between 1.0m to 1.8mrepresenting worst case measurements as determined by preliminary assessment.

Distance (m)	Height (m)	Measured Exposure W/cm²	Limit W/cm²	Result
0.2	1.1	0.9	2.77	Pass

#### US - Configuration 6 Data (Internal Antenna)

#### MPE Measurements for Static Fields (Free Space Configuration)

For equipment where the fields are invariant in time, measurements are performed at a fixed height between 1.0m to 1.8mrepresenting worst case measurements as determined by preliminary assessment.

Distance (m)	Height (m)	Measured Exposure mW/cm²	Limit mW/cm <sup>2</sup>	Result
0.2	1	0.13	0.61	Pass

#### Canada - Configuration 6 Data (Internal Antenna)

#### MPE Measurements for Static Fields (Free Space Configuration)

For equipment where the fields are invariant in time, measurements are performed at a fixed height between 1.0m to 1.8mrepresenting worst case measurements as determined by preliminary assessment.

	Distance (m)	Height (m)	Measured Exposure W/cm²	Limit W/cm²	Result
l	0.2	1	1.3	2.77	Pass

Page 8 of 19 Report No: 107748-23

#### **Summary:**

#### **MPE Measurement Results:**

Equipment demonstrating compliance with MPE measurement have been evaluated for use under mobile RF exposure configurations as identified herein. Additional configurations including collocation or simultaneous transmission with other transmitters (including necessary separation distances) are subject to further assessment. It is assumed that the manufacturer shall design the equipment such that the minimum separation distance of 20cm (or greater, as listed above) is met or that the manufacturer provides a protection guide (e.g. installation instructions) to the end user such that the antenna(s) may be installed in accordance with the manufacturer's instructions in such a manor to maintain the minimum separation distance.

#### **General Comments:**

The absorption and distribution of Electromagnetic energy in the body is a very complex phenomena that depends on the mass, shape and physiological condition of the body; the orientation of the body with respect to the fields; and, the electrical properties of the body and the environment. Variables that may play a substantial role in possible biological effects are those that characterize the environment (including but not limited to: ambient temperature, air velocity, relative humidity and body insulation); and those that characterize the individual (including but not limited to: age, gender, activity level and existing debilitation or disease). Because innumerable factors may interact to determine specific biological effects of exposure to electromagnetic fields, any protection guide should consider both intended and unintended operational environments and provide guidance for installation and use of the product such that proper separation distances can be maintained. (ANSI C95.1)

Page 9 of 19 Report No: 107748-23

#### **APPENDIX A - Assessment Procedure**

#### **TEST CONFIGURATION**

The EUT antenna is placed in a configuration typical of normal installation. Where antenna mounting is required, non-conductive materials are used for support structures. In the special case of magnetically mounted vehicle antennas, a reference ground plane is used to simulate actual installation. In order to limit external interference effects, the test is performed in a semi-anechoic chamber. The EUT equipment is setup in a configuration representative of normal use. Support equipment for the measurement instruments are located outside of the testing area.

#### **TEST PROCEDURE**

Measurements are performed using a broadband detector with three orthogonal measurement axes. Values recorded are RMS based on the maximum measurements. To determine the direction of the maximum measurement, the detector is moved throughout the RF field generated by the transmit antenna. The detector is positioned at a minimum of 12 radials and at varying distances from the antenna along each radial. The area of maximum RF energy determined during preliminary investigation shall be used for the remainder of the tests. In the case where a transmitter may have multiple frequency bands, the preliminary investigation shall be repeated for each band.

For time varying fields, the appropriate averaging time is used. For spatially uniform fields, the measurement height is selected based on maximum preliminary measurements.

For spatially non-uniform fields (e.g. distances close to a magnetically mounted vehicle antenna), spatial averaging may be performed. The method for performing spatially averaged measurements is as follows:

- 1. Determine the direction of the maximum measurement.
- 2. At a specific distance measure vertically from the floor 5 points comprising a linear cross section of an adult human body, beginning at 0.2m and at each 40cm up to 1.8m.
- 3. Calculate the average of the measurements and compare with the established limit.

Since the applicable limits exist in several different measurement units, the following outlines the most common calculations used for determining the spatially averaged field.

Case 1: Where limits are applied in electric field strength (V/m), the spatially averaged electric field strength along a grid of n points is calculated using:

$$E = \left[\frac{1}{n} \sum_{i=1}^{n} E_i^2\right]^{\frac{1}{2}}$$

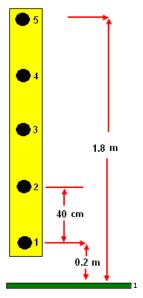
Case 2: Where limits are applied in units of power density (mW/cm<sup>2</sup>), assuming measurements are made in the far field, where the E and H vectors are mutually orthogonal, power density is first calculated using:

$$S = \frac{E^2}{3770}$$

And the spatially averaged power density along a grid of n points is calculated using:

$$S = \frac{1}{n} \sum_{i=1}^{n} S_i$$

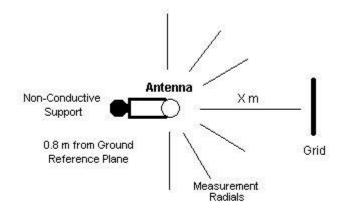
The following diagram is an example of the grid used to perform local measurements for RF exposure evaluation over a whole-body spatial average.



The following diagram is an example of the setup used for most tests, excluding magnetically mounted vehicle antennas.

# Setup Used for RF Evaluation Measurements

(excluding magnetically mounted vehicle antennas)



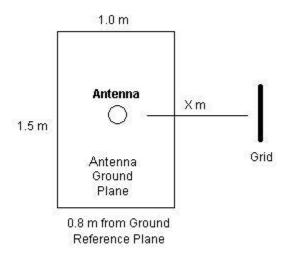
**Top View** 

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<sup>&</sup>lt;sup>1</sup> Source: IC GL-01

The following diagram is an example of the setup used for vehicle-mounted antennas. In the case where vehicle glass mounted antennas are used, this setup shall not apply. The letter X represents the test distance used for RF exposure measurements. The distance X is measured from the phase center of the transmitting antenna to the volumetric center of the measurement instrument. In order to more accurately simulate normal installation, the antenna ground plane is not bonded to the ground reference plane. The transmitting antenna is placed in the center of the antenna ground plane.

# Setup Used for Vehicle-Mounted Antennas



**Top View** 

Page 12 of 19 Report No: 107748-23

# **APPENDIX B - RF Exposure Limits**

#### **United States Compliance Requirements (1.1310):**

# RF Exposure Evaluation Limits Occupational / Controlled Exposure

Frequency Range (MHz)	, , ,		Power Density (mW/cm²)	Averaging Time (minutes)	
0.3-3.0	614	1.63	*(100)	6	
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6	
30-300	61.4	0.163	1	6	
300-1500			f/300	6	
1500-100,000			5.0	6	

# RF Exposure Evaluation Limits General Population / Uncontrolled Exposure

Concern of Grand Concerns Conc							
Frequency Range (MHz)	. , , , , , , , , , , , , , , , , , , ,		Power Density (mW/cm²)	Averaging Time (minutes)			
0.3-1.34	614	1.63	*(100)	30			
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	30			
30-300	27.5	0.073	0.2	30			
300-1500			f/1500	30			
1500-100,000			1.0	30			

<sup>\*</sup> Plane wave equivalent power density

Limit is calculated based on the mid-band frequency used in the operating frequency range.

#### **Stand-Alone Evaluation Exemption Levels:**

In accordance with KDB 447498 D01 v05r02

	Max Output Power at Exemption Limit (mW)					
Frequency (MHz)	d ≤ 50mm	50mm < d ≤ 20cm				
<100	$\frac{1}{2} \cdot \left(\frac{R \cdot 50}{\sqrt{0.1}}\right) \cdot \left(1 + LOG\left(\frac{100}{f_{MHz}}\right)\right)$	$\left(\frac{R\cdot 50}{\sqrt{0.1}} + (d-50)\frac{100}{150}\right) \cdot \left(1 + LOG\left(\frac{100}{f_{MHz}}\right)\right)$				
100-1500	$(R \cdot d)$	$\left(\frac{R\cdot 50}{\sqrt{f_{GHz}}} + (d-50)\frac{f_{MHz}}{150}\right)$				
1500-6000	$\sqrt{f_{GHz}}$	$\left(\frac{R\cdot 50}{\sqrt{f_{GHz}}} + (d-50)\cdot 10\right)$				

R is the allowed ratio: 3 for 1-g SAR and 7.5 for 10-g extremity SAR.

d is distance in mm, rounded to the nearest mm.

# **Canadian Compliance Requirements (RSS-102):**

# RF Exposure Evaluation Limits Occupational / Controlled Exposure:

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (W/m²)	Averaging Time (minutes)			
0.003-10	170	180		Instantaneous			
0.1-10		1.6 / f		6			
1.29-10	193 / f <sup>0.5</sup>			6			
10-20	61.4	0.163	10	6			
20-48	129.8 / f <sup>0.5</sup>	0.3444 / f <sup>0.25</sup>	44.72 / f <sup>0.5</sup>	6			
48-100	49.33	0.1309	6.455	6			
100-6000	15.60 f <sup>0.25</sup>	0.04138 f <sup>0.25</sup>	0.6455 f <sup>0.5</sup>	6			
6000-15000	137	0.364	50	6			
15000-150,000	150,000 137		50	616000/ f <sup>1.2</sup>			
150,000-300,000	0.354 f <sup>0.5</sup>	9.40x10 <sup>-4</sup> f <sup>0.5</sup>	3.33x10 <sup>-4</sup> f	616000/ f <sup>1.2</sup>			

# RF Exposure Evaluation Limits General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (W/m²)	Averaging Time (minutes)
0.003-10	83	90		Instantaneous
0.1-10		0.73 / f		6
1.1-10	87 / f <sup>0.5</sup>			6
10-20	27.46	0.0728	2	6
20-48	58.07 / f <sup>0.25</sup>	0.1540 / f <sup>0.25</sup>	8.944 / f <sup>0.5</sup>	6
48-300	22.06	0.05852	1.291	6
300-6000	3.142 f <sup>0.3417</sup>	0.008335 f <sup>0.3417</sup>	0.02619 f <sup>0.6834</sup>	6
6000-15000	61.4	0.163	10	6
15000-150,000	61.4 0.163 10		10	616000/ f <sup>1.2</sup>
150,000-300,000	0.158 f <sup>0.5</sup>	4.21x10 <sup>-4</sup> f <sup>0.5</sup>	6.67x10 <sup>-5</sup> f	616000/ f <sup>1.2</sup>

Page 14 of 19 Report No: 107748-23

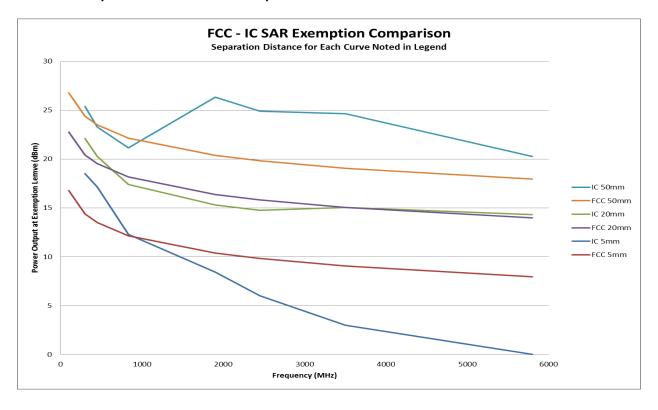
#### **Stand-Alone Evaluation Exemption Levels:**

	Exemption Limits (mW) at Separation Distance (mm)									
Freq(MHz)	≤5	10	15	20	25	30	35	40	45	≥50
≤300	71	101	132	162	193	223	254	284	315	345
450	52	70	88	106	123	141	159	177	195	213
835	17	30	42	55	67	80	92	105	117	130
1900	7	10	18	34	60	99	153	225	316	431
2450	4	7	15	30	52	83	123	173	235	309
3500	2	6	16	32	55	86	124	170	225	290
5800	1	6	15	27	41	56	71	85	97	106

#### **Stand-Alone Evaluation Exemption Levels:**

Frequency (MHz)	RF Exposure Exemption Limit (mW)
<20	1000
20-48	22480 / f <sup>0.5</sup>
48-300	600
300-6000	1310 f <sup>0.6834</sup>
≥6000	5000

# General<sup>2</sup> Comparison of FCC and IC Exemption Limits



<sup>&</sup>lt;sup>2</sup> Non-Exhaustive

Page 15 of 19 Report No: 107748-23

#### Australian Radiation Protection and Nuclear Safety Agency Requirements (ARPANSA):

# RF Exposure Evaluation Limits Occupational / Controlled Exposure:

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (W/m²)	Averaging Time (minutes)
0.1 – 1.0	614	1.63/f		6
1.0-10	614/f	1.63/f	1000/f <sup>2</sup>	6
10-400	61.4	0.163	10	6
400-2000	3.07 * f <sup>0.5</sup>	0.00814 * f <sup>0.5</sup>	f/40	6
2000-10,000	137	0.36	50	6
10,000 - 300,000	137	0.36	50	9.6x10 <sup>4</sup> / f <sup>1.05</sup>

# RF Exposure Evaluation Limits General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (W/m²)	Averaging Time (minutes)
0.10-0.15	86.8	4.86		6
0.150-1.0	86.8	0.729/f		6
1.0-10	86.8/f <sup>0.5</sup>	0.729/f		6
10-400	27.4	0.0729	2	6
400-2000	1.37 f <sup>0.5</sup>	0.00364*f <sup>0.5</sup>	f/200	6
2000-10,000	61.4	0.163	10	6
10,000 - 300,000	61.4	0.163	10	9.6x10 <sup>4</sup> / f <sup>1.05</sup>

<sup>\*</sup>Power density limit applicable >100MHz

#### **Stand-Alone Evaluation Exemption Levels:**

Occupational Exposure: 100mW Portable - General Public: 20mW

Mobile – General Public: Separation distance >20cm and power < ARPANSA RPS3 Table S2

Or according to ARPANSA RPS3 Table S1

Table S2

Operating Frequency (MHz)	Nominal Mean Power Output (W)
0.1-450	7
450-2500	3150 / f

## **European Union Compliance Requirements (ICNIRP):**

### **RF Exposure Evaluation Limits** Occupational / Controlled Exposure:

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (W/m²)	Averaging Time (minutes)
0.00082-0.065	610	24.4		6
0.065-1.0	610	1.6/f		
1.0-10	610/f	1.6/f		6
10-400	61	0.16	10	6
400-2000	3.0 * f <sup>0.5</sup>	0.008 * f <sup>0.5</sup>	f/40	6
2000-300,000	137	0.36	50	6

## **RF Exposure Evaluation Limits** General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (W/m²)	Averaging Time (minutes)
0.003-0.150	87	5.0		6
0.150-1.0	87	0.73/f		6
1.0-10	87/f <sup>0.5</sup>	0.73/f		6
10-400	28	0.073	2	6
400-2000	1.375 f <sup>0.5</sup>	0.0037*f <sup>0.5</sup>	f/200	6
2000-300,000	61	0.16	10	6

<sup>\*</sup>Power density limit applicable >100MHz

#### **Stand-Alone Evaluation Exemption<sup>3</sup> Levels:**

Head / Body: 20mW Extremity: 40mW

<sup>&</sup>lt;sup>3</sup> EN 62479 Annex A, General Public

#### **APPENDIX C - References**

- 1. ACMA Radiocommunications (Electromagnetic Radio Human Exposure) Standard, 2014.
- 2. AS/NZS 2772.2, Radiofrequency fields Principles and method of measurement and computation 3 kHz to 300 GHz, 2011.
- 3. Australian Radiation Protection and Nuclear Safety Agency, ARPANSA RPS 3, <u>Maximum Exposure Levels to Radiofrequency Fields 3 kHz to 300 GHz</u>, 2002 (&Errata, 2003).
- 4. New Zealand Standard, NZS 2772.1, <u>Radiofrequency Fields Part 1: Maximum Exposure Levels 3 kHz to 300 GHz, 2009.</u>
- 5. Federal Communications Commission Knowledge Database (KDB) Publication 447498, "What are the RF exposure requirements and procedures for mobile and portable devices?" As in effect on the issue date of this report.
- 6. Title 47 Code of Federal Regulations, Part 1.1310, "Radiofrequency radiation exposure limits." As in effect on the issue date of this report.
- 7. Title 47 Code of Federal Regulations, Part 2.1091, "Radiofrequency radiation exposure evaluation: mobile devices." As in effect on the issue date of this report.
- 8. ANSI C95.1 (2005) <u>IEEE Standard for Safety Level with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3kHz to 300 GHz, 2005.</u>
- 9. Health Canada Safety Code 6 <u>Limits of Human Exposure to Radiofrequency Electromagnetic Energy in the Frequency Range from 3 kHz to 300 GHz, 2015.</u>
- 10. Industry Canada GL-01 <u>Guidelines for the Measurement of Radio Frequency Fields at Frequencies From 3 kHz to</u> 300 GHz, Issue 3, March 2015.
- 11. Industry Canada RSS-102 <u>Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)</u>, Issue 5, March 2015.
- 12. EC Council Recommendation 1999/519/EC "On the limitation of exposure of the general public to electromagnetic fields (0Hz to 300GHz)," (1999).
- 13. European Committee for Electrotechnical Standardization. European Normative, EN 62311 <u>Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz to 300 GHz), 2008.</u>
- 14. European Committee for Electrotechnical Standardization. European Normative, EN 62479 <u>Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz), 2010.</u>
- 15. International Commission on Non-Ionizing Radiation Protection. Guidelines for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). Health Physics 74 (4): 494-522; 1998.
- 16. International Commission on Non-Ionizing Radiation Protection Statement on the "Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields (up to 300 GHz). Health Physics 97(3):257-259, 2009.

Page 18 of 19 Report No: 107748-23

# **APPENDIX D – Manufacturer Declaration**

The following Models have been tested by CKC Laboratories:

Model: ERW-1601-001

The manufacturer declares that the following additional models are identical electrically or any differences between them do not affect their EMC characteristics, and therefore meets the level of testing equivalent to the tested models.

Device	Manufacturer	Model #	S/N	
500W / RIVAWA	Itron, Inc.	ERW-1601-002	NA	
500W / RIVAWA	Itron, Inc.	ERW-1601-003	NA	
500W / RIVAWA	Itron, Inc.	ERW-1601-004	NA	
500W / RIVAWA	Itron, Inc.	ERW-1601-005	NA	
500W / RIVAWA	Itron, Inc.	ERW-1601-006	NA	
500W / RIVAWA	Itron, Inc.	ERW-1601-007	NA	
500W / RIVAWA	Itron, Inc.	ERW-1601-008	NA	
500WR / RIVAWA	Itron, Inc.	ERW-1601-010	NA	