

**IEEE C95.1
KDB 447498 D03
47 C.F.R. Part 1, Subpart I, Section 1.1310
47 C.F.R. Part 2, Subpart J, Section 2.1091**

RF EXPOSURE REPORT

For

WIRELESS REFRIGERANT SCALE

Model: WRS220

Data Applies To: WRS110

Trade Name:



Issued to

**Universal Enterprises Inc.
8030 SW Nimbus Beaverton, OR 97008**

**Issued By
Compliance Certification Services Inc.**

**Tainan Laboratory
No.8, Jiucengling, Xinhua Dist., Tainan City
712, Taiwan (R.O.C.)
TEL: 886-6-580-2201
FAX: 886-6-580-2202
<http://www.ccsrf.com>
E-Mail : service@ccsrf.com**

Issued Date: November 11, 2016



Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	November 11, 2016	Initial Issue	ALL	Sunny Chang

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1. TEST RESULT CERTIFICATION

We hereby certify that:

The equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirement of the applicable standards. The test record, data evaluation and Equipment under Test (EUT) configurations represented herein are true and accurate accounts of the measurement of the sample's RF characteristics under the conditions specified in this report.

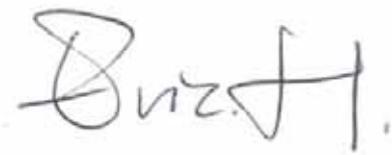
APPLICABLE STANDARDS	
STANDARD	TEST RESULT
IEEE C95.1 2005 KDB 447498 D03 47 C.F.R. Part 1, Subpart I, Section 1.1310 47 C.F.R. Part 2, Subpart J, Section 2.1091	No non-compliance noted

Approved by:



Jeter Wu
Assistant Manager

Reviewed by:



Eric Huang
Assistant Section Manager

2. LIMIT

According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

3. EUT SPECIFICATION

EUT	WIRELESS REFRIGERANT SCALE		
Model	WRS220		
Data Applies To	WRS110		
Brand			
RF Module	CHY2400M	Model:	CC2540
Frequency band (Operating)	<input type="checkbox"/> 802.11b/g/n HT20: 2.412GHz ~ 2.462GHz <input type="checkbox"/> 802.11n HT40: 2.422GHz ~ 2.452GHz <input type="checkbox"/> 802.11a/n HT20: 5.180GHz ~ 5.240GHz / 5.745 ~ 5.825GHz <input type="checkbox"/> 802.11n HT40: 5.190GHz ~ 5.230GHz / 5.755~ 5.795GHz <input type="checkbox"/> 802.11ac VHT80: 5.210GHz / 5.775GHz <input checked="" type="checkbox"/> Others		
Device category	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others		
Exposure classification	<input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm ²) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm ²)		
Antenna Specification	PCB Antenna / Gain: 1.300 dBi (Numeric gain: 1.35) worst		
Maximum Average output power	Bluetooth 4.0: 1.300 dBm (1.349 mW)		
Evaluation applied	<input checked="" type="checkbox"/> MPE Evaluation* <input type="checkbox"/> SAR Evaluation <input type="checkbox"/> N/A		

4. TEST RESULTS

No non-compliance noted.

Calculation

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and

d (cm) = d (m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm^2

5. MAXIMUM PERMISSIBLE EXPOSURE

Substituting the MPE safe distance using $d = 20$ cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm^2

Bluetooth 4.0 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)	Result
Low	2402	1.349	1.35	20	0.0004	1	Pass