



# RF Exposure Evaluation Report

**Equipment** : Wireless Genie Mini  
**Brand Name** : AT&T  
**Model No.** : C61W-400, C61WBP-400, C61WNC-400  
**FCC ID** : NKR-ATTC61W  
**Standard** : 47 CFR Part 2.1091  
**Applicant** : Wistron NeWeb Corporation  
20 Park Avenue II Hsinchu Science Park Hsinchu,  
308 Taiwan  
**Manufacturer** : Wistron NeWeb Corporation  
20 Park Avenue II Hsinchu Science Park Hsinchu,  
308 Taiwan

The product sample received on Feb. 11, 2017 and completely tested on Mar. 24, 2017. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with 47 CFR Part 2.1091, and pass the limit.

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Cliff Chang  
SPORTON INTERNATIONAL INC.





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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA730747	Rev. 01	Initial issue of report	Apr. 17, 2017



# 1 General Description

## 1.1 EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
RF4CE wireless	2400-2483.5	2425-2475	O-QPSK
5GHz WLAN	5150-5250 5250-5350 5470-5725 5725-5850	5180-5240 5260-5320 5500-5720 5745-5825	802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)

## 1.2 Table for Multiple Listing

The model names in the following table are all refer to the identical product.

Model Name	Description
C61W-400	All the models are identical, the different model names served as package different.
C61WBP-400	
C61WNC-400	

Note: Assessed as above, there is only model: C61W-400 selected to test and recorded in the report as a result.

## 1.3 Testing Location

Testing Location		
<input type="checkbox"/>	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-327-0973
<input checked="" type="checkbox"/>	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

## 2 Maximum Permissible Exposure

### 2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; \*Plane-wave equivalent power density

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### 2.2 MPE Calculation Method

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

**E** = Electric field (V/m)

**P** = RF output power (W)

**G** = EUT Antenna numeric gain (numeric)

**d** = Separation distance between radiator and human body (m)

The formula can be changed to

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



## 2.3 Calculated Result and Limit

**Exposure Environment: General Population / Uncontrolled Exposure**

**For 4T1S**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )
5.2G;D1D	7.20	27.46	34.66	2.92415	20	0.58174	1.00000
5.3G;D1D	6.79	23.14	29.93	0.98401	20	0.19576	1.00000
5.6G;D1D	6.43	23.48	29.91	0.97949	20	0.19486	1.00000
5.8G;D1D	7.03	27.66	34.69	2.94442	20	0.58577	1.00000

**For 4T2S**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )
5.2G;D1D	4.23	27.43	31.66	1.46555	20	0.29156	1.00000
5.3G;D1D	3.85	23.93	27.78	0.59979	20	0.11932	1.00000
5.6G;D1D	3.43	23.93	27.36	0.54450	20	0.10832	1.00000
5.8G;D1D	4.03	27.12	31.15	1.30317	20	0.25926	1.00000

**For RF4CE**

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )
2.4G;G1D	3.00	2.66	5.66	0.00368	20	0.00073	1.00000

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )	Ratio (S/Limit)
5.8G;D1D	7.03	27.66	34.69	2.94442	20	0.58577	1.00000	0.58577
2.4G;G1D	3.00	2.66	5.66	0.00368	20	0.00073	1.00000	0.00073
							Sum Ratio	0.58650
							Ratio Limit	1