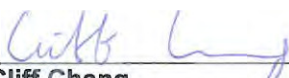


# RF Exposure Evaluation Report

**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

[illegible]

# 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<br>5250-5350<br>5470-5725<br>5725-5850 | 5180-5240<br>5260-5320<br>5500-5720<br>5745-5825 | 802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)<br>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.<br>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.<br>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

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

### 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:

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

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

| Mode     | DG<br>(dBi) | Power<br>(dBm) | EIRP<br>(dBm) | EIRP<br>(W) | Distance<br>(cm) | S<br>(mW/cm <sup>2</sup> ) | S Limit<br>(mW/cm <sup>2</sup> ) | Ratio<br>(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                  |