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# RF EXPOSURE REPORT

**REPORT NO.:** SA140515D01

**MODEL NO.:** V5US14

**FCC ID:** R48V5US

**RECEIVED:** Jun. 26, 2014

**TESTED:** Sep. 10 ~ Oct. 8, 2014

**ISSUED:** Oct. 14, 2014

**APPLICANT:** MEILOON INDUSTRIAL CO., LTD

**ADDRESS:** No. 77, Lane 1775, Chuen-Ryh Road, Taoyuan City,  
Taiwan

**ISSUED BY:** Bureau Veritas Consumer Products Services (H.K.)  
Ltd., Taoyuan Branch

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## RELEASE CONTROL RECORD

| ISSUE NO.   | REASON FOR CHANGE | DATE ISSUED   |
|-------------|-------------------|---------------|
| SA140515D01 | Original release  | Oct. 14, 2014 |



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## 1. CERTIFICATION

**PRODUCT:** Universal Wireless Speaker

**MODEL NO.:** V5US14

**BRAND:** WREN

**APPLICANT:** MEILOON INDUSTRIAL CO., LTD

**TESTED:** Sep. 10 ~ Oct. 8, 2014

**TEST SAMPLE:** ENGINEERING SAMPLE

**STANDARDS:** FCC Part 2 (Section 2.1091)

KDB 447498 D03

IEEE C95.1

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**PREPARED BY** : Jessica Cheng , **DATE:** Oct. 14, 2014  
( Jessica Cheng / Senior Specialist )

**APPROVED BY** : Rex Lai , **DATE:** Oct. 14, 2014  
( Rex Lai / Assistant Manager )

## 2. RF EXPOSURE LIMIT

### LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

| FREQUENCY RANGE (MHz)                                 | ELECTRIC FIELD STRENGTH (V/m) | MAGNETIC FIELD STRENGTH (A/m) | POWER DENSITY (mW/cm <sup>2</sup> ) | AVERAGE TIME (minutes) |
|-------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|------------------------|
| LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE |                               |                               |                                     |                        |
| 300-1500                                              | ...                           | ...                           | F/1500                              | 30                     |
| 1500-100,000                                          | ...                           | ...                           | 1.0                                 | 30                     |

F = Frequency in MHz

## 3. MPE CALCULATION FORMULA

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

$\pi$  = 3.1416

R = distance between observation point and center of the radiator in cm

## 4. CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

## 5. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

| Function        | FREQUENCY BAND (MHz) | MAX POWER (dBm) | ANTENNA GAIN (dBi) | DISTANCE (cm) | POWER DENSITY (mW/cm <sup>2</sup> ) | LIMIT (mW/cm <sup>2</sup> ) |
|-----------------|----------------------|-----------------|--------------------|---------------|-------------------------------------|-----------------------------|
| (Bluetooth EDR) | 2402 ~ 2480          | 1.71            | -0.29              | 20            | 0.0003                              | 1.00                        |
| WLAN (2.4G)     | 2412 ~ 2462          | 22.45           | 2.79               | 20            | 0.0665                              | 1.00                        |
| WLAN (5.0G)     | 5180 ~ 5240          | 13.42           | 6.62               | 20            | 0.0201                              | 1.00                        |
|                 | 5260 ~ 5320          | 13.09           | 6.62               | 20            | 0.0186                              | 1.00                        |
|                 | 5500 ~ 5700          | 13.04           | 6.62               | 20            | 0.0184                              | 1.00                        |
|                 | 5745 ~ 5825          | 13.18           | 6.62               | 20            | 0.0190                              | 1.00                        |

### CONCLUSION:

Both of the modules can transmit simultaneously, the formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

1. BLUETOOTH + WLAN =  $0.0003 / 1 + 0.0665 / 1 = 0.0668$

| FREQUENCY BAND (MHz) | MAX POWER (dBm) |             |               | TOTAL POWER (dBm) | POWER LIMIT (dBm) |
|----------------------|-----------------|-------------|---------------|-------------------|-------------------|
|                      | WIFI (2.4G)     | WIFI (5.0G) | Bluetooth EDR |                   |                   |
| 2400                 | 22.45           | -           | 1.71          | 22.49             | 30                |
| 5180 ~ 5240          | -               | 13.42       | -             | 13.42             | 30                |
| 5260 ~ 5320          | -               | 13.09       | -             | 13.09             | 30                |
| 5500 ~ 5700          | -               | 13.04       | -             | 13.04             | 30                |
| 5745 ~ 5825          | -               | 13.18       | -             | 13.18             | 30                |

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