

Radio Exposure Evaluation Report

FCC ID : 2AEUPBHAIJB001

Equipment : Video Doorbell Elite

Brand Name : RING

Model Name : Video Doorbell Elite

Applicant : Ring LLC
1523 26th St, Santa Monica, CA 90404, USA

Manufacturer : Chicony Electronics Co.,Ltd.
No.69, Sec. 2, Guangfu Rd., Sanchong Dist.
New Taipei City 241 Taiwan

Standard : 47 CFR Part 2.1091

The product was received on Apr. 11, 2017, and testing was started from Apr. 12, 2017 and completed on Nov. 01, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR Part 2.1091 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of United States government.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.



Approved by: Allen Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



Table of Contents

HISTORY OF THIS TEST REPORT3

1 GENERAL DESCRIPTION5

1.1 EUT General Information5

1.2 Table for Permissive Change5

1.3 Testing Location5

2 MAXIMUM PERMISSIBLE EXPOSURE6

2.1 Limit of Maximum Permissible Exposure6

2.2 MPE Calculation Method6

2.3 Calculated Result and Limit7

Photographs of EUT V01



Summary of Test Result

| Report Clause | Ref Std. Clause | Test Items | Result (PASS/FAIL) | Remark |
|---------------|-----------------|---------------------|--------------------|--------|
| 2 | - | Exposure evaluation | PASS | - |

| |
|--|
| Declaration of Conformity: |
| The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. |
| Comments and Explanations: |
| None. |

Reviewed by: Sam Tsai

Report Producer: Ann Hou

1 General Description

1.1 EUT General Information

| RF General Information | | | |
|------------------------|--|--|---|
| Evaluation Mode | Frequency Range (MHz) | Operating Frequency (MHz) | Modulation Type |
| 2.4GHz WLAN | 2400-2483.5 | 2412-2462 | 802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) |
| 5GHz WLAN | 5150-5250 5250-5350 5470-5725 5725-5850 | 5180-5240 5260-5320 5500-5700 5745-5825 | 802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) |
| Bluetooth | 2400-2483.5 | 2402-2480 | LE: DSSS (GFSK) |

1.2 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FA740630-01

Below is the table for the change of the product with respect to the original one.

| Modifications | Performance Checking |
|----------------------------------|----------------------|
| U-NII-2A and UNII-2C were added. | N/A |

1.3 Testing Location

| Testing Location | | | |
|--|--------|--|----------------------|
| <input checked="" type="checkbox"/> | HWA YA | ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) | |
| | | TEL : 886-3-327-3456 | FAX : 886-3-327-0973 |
| Test site Designation No. TW1190 with FCC. | | | |
| <input type="checkbox"/> | JHUBEI | ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.) | |
| | | TEL : 886-3-656-9065 | FAX : 886-3-656-9085 |
| Test site Designation No. TW0006 with FCC. | | | |

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 ²) | Averaging Time E ² , H ² or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|--|--|
| 0.3-3.0 | 614 | 1.63 | (100)* | 6 |
| 3.0-30 | 1842 / f | 4.89 / f | (900 / f ²)* | 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 ²) | Averaging Time E ² , H ² or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|--|--|
| 0.3-1.34 | 614 | 1.63 | (100)* | 30 |
| 1.34-30 | 824/f | 2.19/f | (180/f ²)* | 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

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

2.4GHz WLAN

| Mode | DG (dBi) | Power (dBm) | EIRP (dBm) | EIRP (W) | Distance (cm) | S (mW/cm ²) | S Limit (mW/cm ²) |
|----------|----------|-------------|------------|----------|---------------|-------------------------|-------------------------------|
| 2.4G;G1D | 1.44 | 21 | 22.44 | 0.17539 | 20 | 0.03256 | 1.00000 |

5GHz WLAN

| Mode | DG (dBi) | Power (dBm) | EIRP (dBm) | EIRP (W) | Distance (cm) | S (mW/cm ²) | S Limit (mW/cm ²) |
|----------|----------|-------------|------------|----------|---------------|-------------------------|-------------------------------|
| 5.2G;D1D | 1.57 | 17.88 | 19.45 | 0.08810 | 20 | 0.01753 | 1.00000 |
| 5.3G;D1D | 1.43 | 17.84 | 19.27 | 0.08453 | 20 | 0.01682 | 1.00000 |
| 5.6G;D1D | 2.58 | 17.50 | 20.08 | 0.10186 | 20 | 0.02026 | 1.00000 |
| 5.8G;D1D | 1.57 | 18.83 | 20.40 | 0.10965 | 20 | 0.02181 | 1.00000 |

Bluetooth

| Mode | DG (dBi) | Power (dBm) | EIRP (dBm) | EIRP (W) | Distance (cm) | S (mW/cm ²) | S Limit (mW/cm ²) |
|------------|----------|-------------|------------|----------|---------------|-------------------------|-------------------------------|
| 2.4G;BT-LE | 1.44 | 7.5 | 8.94 | 0.00783 | 20 | 0.00143 | 1.00000 |

—————THE END—————