

RF EXPOSURE REPORT

CERTIFICATE OF CONFORMITY

FCC Rule Part: FCC Part 2 (Section 2.1093)

Report No.: MFBIDGE-WTW-P24090003

FCC ID: E2K-DWRFID2403

Product: RFID 13.56MHz Wireless Module

Brand: DELL

Model No.: DWRFID2403

Received Date: 2024/9/2

Test Date: 2024/9/24

Issued Date: 2024/11/7

Applicant: DELL INC.

Address: One Dell Way Round Rock, Texas 78682 United States

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lin Kou Laboratories

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Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kewi Shan Dist., Taoyuan City 33383, Taiwan

FCC Registration /

Designation Number: 788550 / TW0003

Approved by:

Jeremy Lin

Date:

2024/11/7

Jeremy Lin / Project Engineer

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Prepared by : Pettie Chen / Senior Specialist

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Release Control Record

Issue No.	Description	Date Issued
MFBIDGE-WTW-P24090003	Original release.	2024/11/7

1 Certificate

Product: RFID 13.56MHz Wireless Module

Brand: DELL

Test Model: DWRFID2403

Sample Status: Engineering sample

Applicant: DELL INC.

Test Date: 2024/9/24

FCC Rule Part: FCC Part 2 (Section 2.1093)

Standard: KDB 447498 D04 Interim General RF Exposure Guidance v01

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 RF characteristics under the conditions specified in this report.

2 Applicable RF Exposure Limit

§ 1.1310 Radiofrequency radiation exposure limits.

(a) Specific absorption rate (SAR) shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in § 1.1307(b) of this part within the frequency range of 100 kHz to 6 GHz (inclusive).

(b) The SAR limits for occupational/controlled exposure are 0.4 W/kg, as averaged over the whole body, and a peak spatial-average SAR of 8 W/kg, averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the parts of the human body treated as extremities, such as hands, wrists, feet, ankles, and pinnae, where the peak spatial-average SAR limit for occupational/controlled exposure is 20 W/kg, averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). Exposure may be averaged over a time period not to exceed 6 minutes to determine compliance with occupational/controlled SAR limits.

(c) The SAR limits for general population/uncontrolled exposure are 0.08 W/kg, as averaged over the whole body, and a peak spatial-average SAR of 1.6 W/kg, averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the parts of the human body treated as extremities, such as hands, wrists, feet, ankles, and pinnae, where the peak spatial-average SAR limit is 4 W/kg, averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). Exposure may be averaged over a time period not to exceed 30 minutes to determine compliance with general population/uncontrolled SAR limits.

(e) Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields

➤ Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
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
300-1,500	f/1500	<30
1,500-100,000	1.0	<30

f = frequency in MHz. * = Plane-wave equivalent power density.

➤ Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
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
300-1,500			f/300	<6
1,500-100,000			5	<6

f = frequency in MHz. * = Plane-wave equivalent power density.

1 mW Blanket Exemption – §1.1307(b)(3)(i)(A)

- The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A).

3 Test Results

Environmental Conditions:	23°C, 63% RH	Tested By:	Vincent Chen
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1 mW Blanket Exemption				
Operation Mode	Frequency Band (MHz)	Maximum ERP (mW)	Limit (mW)	Test Result
NFC	13.553-13.567	0.00000007798	1	Pass

Notes:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- Calculate the ERP of NFC from the radiated field strength:

$$\text{ERP (dBm)} = \text{Radiated field strength (dBuV/m)} + 20 \times \text{Log}(d) - 104.77 - 2.15$$
 d is the distance, in 30 m.

$$\text{ERP} = 6.3 + 20 \times \text{Log}(30) - 104.77 - 2.15 = -71.08 \text{ dBm (0.00000007798 mW)}$$
- The maximum output power used is the max tune-up power (including tolerances).

4 Conclusion

Source-base time average power is below Exemption Criteria and/or Routine Evaluation MPE thresholds, therefore the device is compliant FCC RF exposure requirement.

5 Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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The address and road map of all our labs can be found in our web site also.

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