

RF Exposure Report

Report No.: SABEDW-WTW-P20110459

FCC ID: E2K-DWRFID2002

Test Model: DWRFID2002

Received Date: Nov. 14, 2020

Date of Evaluation: Dec. 08, 2020

Issued Date: Dec. 11, 2020

Applicant: Dell Inc.

Address: One Dell Way, Round Rock, Texas 78682, USA

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

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

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

FCC Registration /
Designation Number: 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
SABEDW-WTW-P20110459	Original Release	Dec. 11, 2020

1 Certificate of Conformity

Product: RFID 13.56MHz Wireless Module

Brand: DELL

Test Model: DWRFID2002

Sample Status: Production Unit


Applicant: Dell Inc.

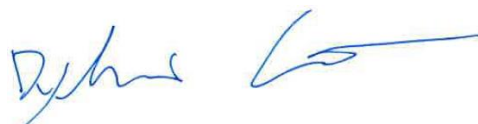
Date of Evaluation: Dec. 08, 2020

Standards: FCC Part 2 (Section 2.1091)

References Test Guidance : KDB 447498 D01 General RF Exposure Guidance v06
IEEE C95.3 -2002

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.

Prepared by :  , **Date:** Dec. 11, 2020
Vera Huang / Specialist

Approved by :  , **Date:** Dec. 11, 2020
Dylan Chiou / Senior Project Engineer

2 Evaluation Result

Following FCC KDB 447498 D01 “General SAR test exclusion guidance”

The corresponding SAR Exclusion Threshold condition, listed below:

- 1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot [\sqrt{f(\text{GHz})}]$$
$$\leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$
 - $f(\text{GHz})$ is the RF channel transmit frequency in GHz.
 - Power and distance are rounded to the nearest mW and mm before calculation.
 - The result is rounded to one decimal place for comparison. The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.
- 2) At 100 MHz to 6 GHz and for test separation distances > 50 mm, the SAR test exclusion threshold is determined according to the following:
 - a) [Threshold at 50 mm in step 1) + (test separation distance - 50mm) · ($f(\text{MHz})/150$)] mW, at 100MHz to 1500 MHz
 - b) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm) · 10] mW at > 1500 MHz and ≤ 6 GHz
- 3) At frequencies below 100 MHz, the following may be considered for SAR test exclusion.
 - a) The threshold at the corresponding test separation distance at 100 MHz in step 2) is multiplied by $[1 + \log(100/f(\text{MHz}))]$ for test separation distances > 50 mm and < 200 mm.
 - b) The threshold determined by the equation in a) for 50 mm and 100 MHz is multiplied by $\frac{1}{2}$ for test separation distances ≤ 50 mm.
 - c) SAR measurement procedures are not established below 100 MHz. When SAR test exclusion cannot be applied, a KDB inquiry is required to determine SAR evaluation requirements for any test results to be acceptable.

3 SAR Test Exclusion Thresholds

Maximum measured transmitter power:

Frequency (MHz)	Max. Field Strength (dBuV/m)@30m	Max. Power (mW)	Min. test separation distance (mm)	SAR test exclusion calculation value ^(NOTE)	1-g SAR test exclusion thresholds	Result
13.56	8.0	0.0000189	5	0.0000189	1107.433774	Pass

Note:

1. Calculate SAR test exclusion thresholds from condition “3” formulas.
2. $\text{Field Strength(dBuV/m)@3m} = \text{Field Strength(dBuV/m)@30m} + 40 * \log(30/3)$
3. $\text{Output power (dBm)} = \text{Field Strength (dBuV/m)@3m} - 95.23$, $\text{Output power (mW)} = 10^{\frac{(\text{Max power (dBm)})}{10}}$
4. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

4 Conclusion

Since Source-base time average power is below SAR test exclusion power thresholds, the SAR evaluation is not required.

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