

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.

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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.

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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:
$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$
 - $f(\text{GHz})$ 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) $[\text{Threshold at } 50 \text{ mm in step 1}) + (\text{test separation distance} - 50\text{mm}) \cdot (f(\text{MHz})/150)] \text{ mW}$, at 100MHz to 1500 MHz
 - b) $[\text{Threshold at } 50 \text{ mm in step 1}) + (\text{test separation distance} - 50 \text{ mm}) \cdot 10] \text{ mW}$ 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. Field Strength(dBuV/m)@3m = Field Strength(dBuV/m)@30m + 40* log(30/3)
3. Output power (dBm) = Field Strength (dBuV/m)@3m - 95.23, Output power (mW) = 10^{(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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