

FCC 47 CFR MPE REPORT

Shenzhen Proscenic Technology Co., Ltd

Robot Vacuum Cleaner

Model Number: D800

Additional Model: LR1, L8050, L8150, L8250, L8650, L8750, L8350,
LDS M7 PRO, LDS M8 PRO,LDS M7(MAX),LDS U6,LDS M8,LDS M8 MAX,
L8450, Lxxxx (xxxx represent number or numeric alphabetic combination)

FCC ID: 2ARZX-LDSM7PRO

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Maximum Permissible Exposure

1. Applicable Standards

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

1.1. Limits for Maximum Permissible Exposure (MPE)

(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 Times 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)* | 6 |
| 30-300 | 61.4 | 0.163 | 1.0 | 6 |
| 300-1500 | | | F/300 | 6 |
| 1500-10000 | | | 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 Times 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)* | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1500 | | | F/1500 | 30 |
| 1500-10000 | | | 1.0 | 30 |

Note: f=frequency in MHz; *Plane-wave equivalent power density

1.2. MPE Calculation Method

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric Field (V/m)

P = Peak 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

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

2. Conducted Power Result

| Mode | Frequency (MHz) | Peak output power (dBm) | Peak output power (mW) | Target power (dBm) | Antenna gain | |
|-------------------|-----------------|-------------------------|------------------------|--------------------|--------------|----------|
| | | | | | (dBi) | (Linear) |
| IEEE 802.11b | 2412 | 17.82 | 60.534 | 17±1 | 2 | 1.585 |
| | 2437 | 19.25 | 84.140 | 19±1 | 2 | 1.585 |
| | 2462 | 18.62 | 72.778 | 18±1 | 2 | 1.585 |
| IEEE 802.11g | 2412 | 17.95 | 62.373 | 17±1 | 2 | 1.585 |
| | 2437 | 18.65 | 73.282 | 18±1 | 2 | 1.585 |
| | 2462 | 18.57 | 71.945 | 18±1 | 2 | 1.585 |
| IEEE 802.11n HT20 | 2412 | 16.39 | 43.551 | 16±1 | 2 | 1.585 |
| | 2437 | 17.35 | 54.325 | 17±1 | 2 | 1.585 |
| | 2462 | 17.97 | 62.661 | 17±1 | 2 | 1.585 |
| IEEE 802.11n HT40 | 2422 | 16.57 | 45.394 | 16±1 | 2 | 1.585 |
| | 2437 | 17.22 | 52.723 | 17±1 | 2 | 1.585 |
| | 2452 | 17.51 | 56.364 | 17±1 | 2 | 1.585 |

3. Calculated Result and Limit

| Mode | Target power (dBm) | Antenna gain | | Power Density (S) (mW/cm ²) | Limited of Power Density (S) (mW/cm ²) | Test Result |
|-------------------|--------------------|--------------|----------|---|--|-------------|
| | | (dBi) | (Linear) | | | |
| IEEE 802.11b | 20 | 2 | 1.585 | 0.03153 | 1 | Compiles |
| IEEE 802.11g | 19 | 2 | 1.585 | 0.02504 | 1 | Compiles |
| IEEE 802.11n HT20 | 18 | 2 | 1.585 | 0.01989 | 1 | Compiles |
| IEEE 802.11n HT40 | 18 | 2 | 1.585 | 0.01989 | 1 | Compiles |

End of Test Report