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Maximum Permissible Exposure Evaluation

FCC ID: 2AKXB-W3211600

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b).

EUT Specification

| | |
|----------------------------|--|
| Product Name: | SwitchBot Floor Cleaning Robot S10 Water Station |
| Trade Mark: | SwitchBot |
| Model/Type Reference: | W3211600 |
| Listed Model(s): | W3211601, W3211602, W3211603, W3211604, W3211605 |
| Model Differences: | All these models are identical in the same PCB, layout, electrical circuit and enclosure. The difference is model name. |
| Frequency Band (Operating) | BT: 2402MHz ~ 2480MHz |
| Device Category | <input type="checkbox"/> Portable (<5mm separation) <input type="checkbox"/> Mobile (>20cm separation) <input checked="" type="checkbox"/> Fixed (>20cm separation) <input type="checkbox"/> Others ____ |
| Exposure Classification | <input type="checkbox"/> Occupational/Controlled exposure (S=5mW/cm ²) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm ²) |
| Antenna Diversity | <input checked="" type="checkbox"/> Single antenna <input type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity |
| Antenna Gain (Max) | 4.28dBi |
| Evaluation Applied | <input checked="" type="checkbox"/> MPE Evaluation <input type="checkbox"/> SAR Evaluation |

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For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn



Limits for Maximum Permissible Exposure (MPE)

| Frequency Range (MHz) | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density (mW/cm ²) | Averaging Time (minutes) |
|---|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| (A) Limits for Occupational/Controlled Exposure | | | | |
| 300-1500 | -- | -- | F/300 | <6 |
| 1500-100000 | -- | -- | 5 | <6 |
| (B) Limits for General Population/Uncontrolled Exposure | | | | |
| 300-1500 | -- | -- | F/1500 | <30 |
| 1500-100000 | -- | -- | 1 | <30 |

Calculation Method

Friis transmission formula: $Pd=(P_{out} *G)/(4*Pi*R^2)$

Where:

Pd= Power density in mW/cm²

P_{out}= output power to antenna in mW

G= gain of antenna in linear scale

Pi= 3.1416

R= distance between observation point and center of the radiator in cm

Pd limit of MPE is 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

| Mode | Frequency (MHz) | Antenna Gain (dBi) | Maximum Power (dBm) | Tune Up Tolerance (dB) | Max. Tune Up Power (dBm) | Power Density at 20cm (mW/cm ²) | Limit (mW/cm ²) |
|------|-----------------|--------------------|---------------------|------------------------|--------------------------|---|-----------------------------|
| BLE | 2402 | 4.28 | -1.21 | ±1 | -0.5 | 0.0005 | 1 |

Note:

1. Calculate in the worst-case mode.
2. Max. Tune Up Power is declared by manufacturer, and used to calculate.
3. For a more detailed features description, please refer to the RF Test Report.

*****THE END*****