

## RF EXPOSURE EVALUATION

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)

FCC ID: [2A78L-SRP2210A](#)

### EUT Specification

| EUT                               | ProWash S                                                                                                                                                                                                                                           |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Frequency band (Operating)</b> | <input checked="" type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz<br><input checked="" type="checkbox"/> WLAN: 5.18GHz ~ 5.240GHz<br><input checked="" type="checkbox"/> WLAN: 5.745GHz ~ 5825GHz<br><input type="checkbox"/> Others: BLE: 2402-2480MHz |
| <b>Device category</b>            | <input type="checkbox"/> Portable (<20cm separation)<br><input type="checkbox"/> Mobile (>20cm separation)<br><input checked="" type="checkbox"/> Others <u>Fixed</u>                                                                               |
| <b>Exposure classification</b>    | <input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm <sup>2</sup> )<br><input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm <sup>2</sup> )                                                       |
| <b>Antenna diversity</b>          | <input checked="" type="checkbox"/> Single antenna<br><input type="checkbox"/> Multiple antennas<br><input type="checkbox"/> Tx diversity<br><input type="checkbox"/> Rx diversity<br><input type="checkbox"/> Tx/Rx diversity                      |
| <b>Max. output power</b>          | <a href="#">WiFi 2.4G: 15.22 (0.0333W)</a><br><a href="#">WiFi 5.2G: 14.77 (0.0300W)</a><br><a href="#">WiFi 5.8G: 15.85 (0.0385W)</a>                                                                                                              |
| <b>Antenna gain (Max)</b>         | WiFi 2.4G: 2.28 dBi<br>WiFi 5.2G: 1.42 dBi<br>WiFi 5.8G: 2.45dBi                                                                                                                                                                                    |
| <b>Evaluation applied</b>         | <input checked="" type="checkbox"/> MPE Evaluation<br><input type="checkbox"/> SAR Evaluation                                                                                                                                                       |

Limits for Maximum Permissible Exposure(MPE)

| Frequency Range(MHz)                                         | Electric Field Strength(V/m) | Magnetic Field Strength(A/m) | Power Density(mW/cm <sup>2</sup> ) | Average Time |
|--------------------------------------------------------------|------------------------------|------------------------------|------------------------------------|--------------|
| <b>(A) Limits for Occupational/Control Exposures</b>         |                              |                              |                                    |              |
| <b>300-1500</b>                                              | --                           | --                           | <b>F/300</b>                       | <b>6</b>     |
| <b>1500-100000</b>                                           | --                           | --                           | <b>5</b>                           | <b>6</b>     |
| <b>(B) Limits for General Population/Uncontrol Exposures</b> |                              |                              |                                    |              |
| <b>300-1500</b>                                              | --                           | --                           | <b>F/1500</b>                      | <b>6</b>     |
| <b>1500-100000</b>                                           | --                           | --                           | <b>1</b>                           | <b>30</b>    |

## **Friis transmission formula: $P_d = \frac{P_{out} * G}{4 * \pi * R^2}$**

Where

$P_d$ = Power density in mW/cm<sup>2</sup>

$P_{out}$ =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

$P_d$  the limit of MPE, 1mW/cm<sup>2</sup>. 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**

| Operating Mode | Measured Power | Tune up tolerance (dBm) | Max. Tune up Power | Max Tune Up Power (mW) | Antenna Gain | Power density at 20cm | Power density Limits (mW/cm <sup>2</sup> ) |
|----------------|----------------|-------------------------|--------------------|------------------------|--------------|-----------------------|--------------------------------------------|
|                | (dBm)          | (±)                     | (dBm)              |                        | (dBi)        | (mW/cm <sup>2</sup> ) |                                            |
| WIFI 2.4G      | 15.22          | 1                       | 16.22              | 41.8794                | 2.28         | 0.0141                | 1                                          |
| WIFI 5.2G      | 14.77          | 1                       | 15.77              | 37.7572                | 1.42         | 0.0104                | 1                                          |
| WIFI 5.8G      | 15.85          | 1                       | 16.85              | 48.4172                | 2.45         | 0.0169                | 1                                          |