

## 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: 2A9SPHH9880-BA

### EUT Specification

| EUT                               | Wifi Digital Photo Frame  |
|-----------------------------------|---|
| <b>Frequency band (Operating)</b> | <input checked="" type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz<br><input checked="" type="checkbox"/> WLAN: 5.18GHz ~ 5.24GHz<br><input checked="" type="checkbox"/> WLAN: 5.745GHz ~ 5.825GHz<br><input type="checkbox"/> Others: Bluetooth: 2402-2480MHz |
| <b>Device category</b>            | <input type="checkbox"/> Portable (<20cm separation)<br><input checked="" type="checkbox"/> Mobile (>20cm separation)<br><input type="checkbox"/> Others _____  |
| <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 type="checkbox"/> Single antenna<br><input checked="" type="checkbox"/> Multiple antennas<br><input type="checkbox"/> Tx diversity<br><input type="checkbox"/> Rx diversity<br><input type="checkbox"/> Tx/Rx diversity                            |
| <b>Antenna gain (Max)</b>         | Wi-Fi 2.4G ANT1/2/3: 2.32dBi (Provided by customer)<br>Wi-Fi 5.2G ANT1/2/3: 1.59dBi (Provided by customer)<br>Wi-Fi 5.8G ANT1/2/3: 4.51dBi (Provided by customer)   |
| <b>Directional antenna gain</b>   | Wi-Fi 2.4G: 7.09dBi<br>Wi-Fi 5.2G: 6.36dBi<br>Wi-Fi 5.8G: 9.28dBi   |
| <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:  $P_d = (P_{out} * G) / (4 * \pi * R^2)$**

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.

### Max Measurement Result

| Operating Mode  | Measured Power | Tune up tolerance | Max. Tune up Power | Antenna Gain | Power density at 20cm  | Power density Limits (mW/cm <sup>2</sup> ) |
|-----------------|----------------|-------------------|--------------------|--------------|------------------------|--|
|                 | (dBm)          | (dBm)             | (dBm)              | (dBi)        | (mW/ cm <sup>2</sup> ) |  |
| Wi-Fi 2.4G MIMO | 18.44          | 18.44 $\pm 1$     | 19.44              | 7.09         | 0.0895                 | 1  |
| Wi-Fi 5.2G MIMO | 19.02          | 19.02 $\pm 1$     | 20.02              | 6.36         | 0.0865                 | 1  |
| Wi-Fi 5.8G MIMO | 18.77          | 18.77 $\pm 1$     | 19.77              | 9.28         | 0.1599                 | 1  |

Note: The device does not support simultaneous transmission of Wi-Fi 2.4G & Wi-Fi 5G.

**Result:** No Standalone SAR test is required.