

## 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: 2A2Z5-MF01

### EUT Specification

| EUT                        | Wifi Digital Photo Frame                                                                                                                                                                                                                                  |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency band (Operating) | <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 |
| Device category            | <input type="checkbox"/> Portable (<20cm separation)<br><input checked="" type="checkbox"/> Mobile (>20cm separation)<br><input type="checkbox"/> Others ____                                                                                             |
| Exposure classification    | <input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm2)<br><input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm2)                                                                                       |
| Antenna diversity          | <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                            |
| Antenna gain (Max)         | WiFi 2.4G: 0.81 dBi<br>WiFi 5.2G/ 5.8G: 1.89 dBi                                                                                                                                                                                                          |
| Evaluation applied         | <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> ) |                                            |
| 2.4G WIFI      | 16.73          | 16.73 ±1          | 17.73              | 0.81         | 0.0167                 | 1                                          |
| 5G WIFI        | 14.64          | 14.64 ±1          | 15.64              | 1.89         | 0.0103                 | 1                                          |