

## 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: 2AQA6-H6199

### EUT Specification

<b>EUT</b>	Govee Immersion
<b>Frequency band (Operating)</b>	<input checked="" type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz <input type="checkbox"/> WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz <input type="checkbox"/> WLAN: 5.745GHz ~ 5825GHz <input checked="" type="checkbox"/> Others: BLE: 2402-2480MHz
<b>Device category</b>	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others ____
<b>Exposure classification</b>	<input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm <sup>2</sup> ) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm <sup>2</sup> )
<b>Antenna diversity</b>	<input type="checkbox"/> Single antenna <input checked="" type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity
<b>Max. output power</b>	15.75dBm (0.0376W) for WIFI 1.649dBm (0.0015W) for BLE
<b>Antenna gain (Max)</b>	3 dBi for WIFI 2 dBi for BT
<b>Evaluation applied</b>	<input checked="" type="checkbox"/> MPE Evaluation <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: $Pd=(Pout \cdot G) \cdot \frac{1}{4 \cdot \pi \cdot R^2}$

Where

$Pd$ = Power density in  $mW/cm^2$

$Pout$ =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

$Pd$  the limit of MPE,  $1mW/cm^2$ . 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	Channel Frequency (MHz)	Measured Power (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Antenna Gain (dBi)	Power density at 20cm (mW/ cm <sup>2</sup> )	Power density Limits (mW/cm <sup>2</sup> )
802.11b	2412	14.46	14.46 ±1	15.46	3	0.0140	1
	2437	14.19	14.19 ±1	15.19	3	0.0131	1
	2462	15.19	15.19 ±1	16.19	3	0.0165	1
802.11g	2412	13.40	13.40 ±1	14.40	3	0.0109	1
	2437	15.56	15.56 ±1	16.56	3	0.0180	1
	2462	14.36	14.36 ±1	15.36	3	0.0136	1
802.11n (HT20)	2412	13.36	13.36 ±1	14.36	3	0.0108	1
	2437	15.10	15.10 ±1	16.10	3	0.0162	1
	2462	15.75	15.75 ±1	16.75	3	0.0188	1
BLE	2402	-0.922	-0.922 ±1	0.078	2	0.0003	1
	2440	-0.832	-0.832 ±1	0.168	2	0.0003	1
	2480	1.649	1.649 ±1	2.649	2	0.0006	1

*Note: BT and 2.4G WIFI cannot support simultaneous transmission.*