RF EXPOSURE EVALUATION

KDB 447498 D01 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies v06.

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

FCC ID	2A7VD-H61F2
EUT	Govee Strip Light 2 Pro
Frequency band (Operating)	☒ BT: 2.402GHz ~ 2.480GHz
	☒ WLAN: 2.412GHz ~ 2.462GHz
	☐ RLAN: 5.180GHz ~ 5.240GHz
	☐ RLAN: 5.260GHz ~ 5.320GHz
	☐ RLAN: 5.500GHz ~ 5.700GHz
	☐ RLAN: 5.745GHz ~ 5.825GHz
	☐ Others:
Device category	☐ Portable (<20cm separation)
	☒ Mobile (>20cm separation)
	☐ Others ___
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm2)
	☒ General Population/Uncontrolled exposure (S=1mW/cm2)
Antenna diversity	☐ Single antenna
	☒ Multiple antennas
	☐ Tx diversity
	☐ Rx diversity
	☐ Tx/Rx diversity
Antenna gain (Max)	BLE: 2.45dBi
	WiFi 2.4G: 1.54dBi
Evaluation applied	☒ MPE Evaluation
	☐ SAR Evaluation

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Limits for Maximum Permissible Exposure(MPE)

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm²)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	F/1500	6
1500-100000	--	--	1	30

Friis transmission formula: Pd=(Pout*G)\(4*pi*R2)

Where

Pd= Power density in mW/cm²

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/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.

Max Measurement Result

Operating Mode	Measured Power (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Antenna Gain (dBi)	Power density at 20cm (mW/ cm2)	Power density Limits (mW/cm2)
BLE	2.12	2.12 ±1	3.12	2.45	0.0007	1
WiFi 2.4G	15.00	15.00 ±1	16.00	1.54	0.0113	1

The simultaneous transmission for BLE + WiFi 2.4G:

$$\sum_i \frac{S_i}{S_{Limit,i}}$$

$=S_{BLE}/S_{limit-BLE}+ S_{WiFi\ 2.4G}/S_{limit-2.4G}$

$=0.0007/1+0.0113/1$

$=0.0120$

< 1.0

Result: PASS.