Maximum Permissible Exposure Evaluation

FCC ID: 2ARER-FA10

1. Client Information

Applicant	:	Shenzhen Apeman Innovations Technology Co.,Ltd
Address	:	1808, Heng Lu E Times Building, No. 159, North Pingji Road, Hehua Community, Pinghu Street, Longgang District,Shenzhen,Guangdong, China
Manufacturer	:	Shenzhen Apeman Innovations Technology Co.,Ltd
Address	:	1808, Heng Lu E Times Building, No. 159, North Pingji Road, Hehua Community, Pinghu Street, Longgang District,Shenzhen,Guangdong, China

2. General Description of EUT

EUT Name	:	Smart Plug	
Models No.	:	FA10, FA15,FA20	
Model Different	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is model name for commercial.	
Brand Name	:	FOKOOS	
Product Description	:	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz
		Number of Channel:	802.11b/g/n(HT20):11 channels
		RF Output Power:	802.11b: 16.77Bm 802.11g: 15.54dBm 802.11n (HT20): 15.55dBm
		Antenna Gain:	1dBi PCB Antenna
Power Rating	:	Rated Voltage: AC 110-240V 50/60Hz Rated Current: 10A (Max) Max. Power: 1200W	
Software Version	:	V1.0.0	
Hardware Version	:	V1.0	
Connecting I/O Port(S)	:	Please refer to the User's Manual	
Remark	:	the MPE report used the EUT(TBBJ-20200804-01#).	

MPE Calculations for WIFI

1. **Antenna Gain:**
   PCB Antenna:1dBi.

2. **EUT Operation Condition:**
   Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3. **Exposure Evaluation:**
   Equation from page 18 of OET Bulletin 65, Edition 97-01
   $S=(PG)/4\pi R^2$
   Where
   S: power density
   P: power input to the antenna
   G: power gain of the antenna in the direction of interest relative to an isotropic radiator.
   R: distance to the center of radiation of the antenna

4. **Test Result:**

2.4G WiFi

Mode	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm^2) [S]	Limit of Power Density (mW/ cm^2) (S)
802.11B	16.77	16±1	17	1	20	0.01255	1
802.11G	15.54	15±1	16	1	20	0.00997	1
802.11N(HT20)	15.55	15±1	16	1	20	0.00997	1

5. Conclusion:

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

Limits for General Population/ Uncontrolled Exposure

Frequency Range (MHz)	Power density (mW/cm^2)
300-1,500	F/1500
1,500-100,000	1.0

For 2.4WIFI:2412~2462 MHz

MPE limit S: 1mW/ cm^2

The MPE is calculated as ***0.01255mW / cm² < limit 1mW / cm²***. So, RF exposure limit warning or SAR test are not required.

The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR2.1091 (b).

The RF Exposure Information page from the manual is included here for reference.

Note

For a more detailed features description, please refer to the RF Test Report.

6. Conclusion:

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

-----END OF REPORT-----