

## FCC RF Exposure

EUT Description: Smoke Purifier

ModelNo.: Falcon AP1, Creality Falcon AP1, Creality Falcon AP, Falcon AP2, Creality Falcon AP2, APR, APR2, APR Series, APF, APF2, APF Series, AP, AP Series

FCC ID: 2BP7M-FALCON-AP1

Equipment type: mobile equipment

Test procedures according to the technical standards: KDB 447498 D01 V06 and FCC 2.1091.

### 1. Limits

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)

#### 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> )	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

F = frequency in MHz

Formula:  $Pd = (P_{out} * G) / (4 * \pi * r^2)$

Where :

Pd = power density in mW/cm<sup>2</sup>,

P<sub>out</sub> = output power to antenna in mW;

G = gain of antenna in linear scale,

$\pi = 3.14$ ;

R = distance between observation point and center of the radiator in cm

Pd is the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

### 2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest

channel individually.

### 3. Test Result of RF Exposure Evaluation

#### WiFi

	Output power(dBm)	Max tune-up(mW)	Antenna Gain(dBi)	Power Density at R=20cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Result
802.11b	5.48	3.532	1.88	0.0011	1.0	Pass
802.11g	6.55	4.519	1.88	0.0014	1.0	Pass
802.11n20	5.42	3.483	1.88	0.0011	1.0	Pass

#### BLE

Frequency(MHz)	Output power(dBm)	Max tune-up(mW)	Antenna Gain(dBi)	Power Density at R=20cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Result
2402	-2.97	0.505	1.88	0.0002	1.0	Pass
2440	-2.14	0.611	1.88	0.0002	1.0	Pass
2480	-2.90	0.51	1.88	0.0002	1.0	Pass

Wifi: Conclusion: the max result 0.0014:  $\leq$  1.0 compliance with FCC's RF Exposure.

BLE: Conclusion: the max result 0.0002:  $\leq$  1.0 compliance with FCC's RF Exposure.

Note: WiFi 2.4G and BLE cannot be sent simultaneously