

1. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

1.1 Client Information

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Applicant: Foshanshi chuborui jiajuyouxianzerengongsi
Address of applicant: Lianfashangyed lou505shi, Lecong dadaoxi B113hao,
Foshanshi Shundequ Lecong zhen, Guangdong Sheng, China

Manufacturer: Foshanshi chuborui jiajuyouxianzerengongsi
Address of manufacturer: Lianfashangyed lou505shi, Lecong dadaoxi B113hao,
Foshanshi Shundequ Lecong zhen, Guangdong Sheng, China

General Description of EUT

Product Name: CHUBORY F89 Foldable Drone
Trade Name: CHUBORY
Model No.: F89
Adding Model(s): /
Rated Voltage: Battery DC 3.7V/1600mAh
Power Adapter Model: /
Serial number: 20213698547DD36
FCC ID: 2A4QIF89

Technical Characteristics of EUT

Support Standards: 802.11b, 802.11g, 802.11n
Frequency Range: 2412-2462MHz for 802.11b/g/n(HT20)
2422-2452MHz for 802.11n(HT40)
RF Output Power: 16.73dBm (Conducted)
Type of Modulation: DBPSK, BPSK, DQPSK, QPSK, 16QAM, 64QAM
Quantity of Channels: 11 for 802.11b/g/n(HT20); 7 for 802.11n(HT40)
Channel Separation: 5MHz
Type of Antenna: Integral Antenna
Antenna Gain: 0.68dBi

1.2 Standard Applicable

According to §1.1307(b)(1) and KDB 447498 D01 General RF Exposure Guidance v06, system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

(a) Limits for Occupational / Controlled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	F/300	6
1500-100000	/	/	5	6

(b) Limits for General Population / Uncontrolled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	F/1500	30
1500-100000	/	/	1	30

Note: f = frequency in MHz: * = Plane-wave equivalent power density

1.3 MPE Calculation Method

$$S = (30 * P * G) / (377 * R^2)$$

S = power density (in appropriate units, e.g., mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor is normally numeric gain.

R = distance to the center of radiation of the antenna (in appropriate units, e.g., cm)

1.4 MPE Calculation Result

Maximum peak output power: 16.73 (dBm)

Max Tune-Up output power: 16.80(dBm)

Maximum peak output power at antenna input terminal: 47.098(mW)

Prediction distance: >20(cm)

Prediction frequency: 2462 (MHz)

Antenna gain: 0.68 (dBi)

Directional gain: 1.17 (numeric)

The worst case is power density at prediction frequency at 20cm: 0.011(mw/cm²)

MPE limit for general population exposure at prediction frequency: 1 (mw/cm²)

$$0.011(\text{mw}/\text{cm}^2) < 1 (\text{mw}/\text{cm}^2)$$

So the transmitter complies with the RF exposure requirements and the SAR is not required.