

1. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

1.1 General Information

Client Information

Applicant: ShenZhen Foscam Intelligent Technology Co., Limited
Address of applicant: Room A, 9/F, Block F5, TCL International E City, No. 1001
Zhongshanyuan Road, Xili Street, Nanshan District, shenzhen

Manufacturer: ShenZhen Foscam Intelligent Technology Co., Limited
Address of manufacturer: Room A, 9/F, Block F5, TCL International E City, No. 1001
Zhongshanyuan Road, Xili Street, Nanshan District, shenzhen

General Description of EUT:

Product Name: HD IP Camera
Trade Name: FOSCAM
Model No.: FC1602P
Adding Model(s): FC1602P VX, Q1, Q1 VX, CC1, CC1 VX, M1, M1 VX, Smart Q1,
Smart Q1 VX, Cloud C3, Cloud CX, Aurora, Aurora VX,
Cloud Q1, Cloud Q1 VX, C2E, C2E VX
FCC ID: ZDEFC1602P
Rated Voltage: DC 5V
Battery Capacity:

Technical Characteristics of EUT:

Support Standards: 802.11b, 802.11g, 802.11n
Frequency Range: 2412-2462MHz for 11b/g/n(HT20)
2422-2452MHz for 11n(HT40)
Max RF Output Power: 11.15dBm (Conducted)
Type of Modulation: CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Type of Antenna: Integral Antenna
Antenna Gain: 3.0dBi
Device Category: fixed Device

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 equivalents 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

WIFI:

Maximum Tune-Up output power: 11.15 (dBm)

Maximum peak output power at antenna input terminal: 13.03 (mW)

Prediction distance: >20(cm)

Prediction frequency: 2437(MHz)

Antenna gain: 3.0(dBi)

Directional gain (numeric gain): 2.0

The worst case is power density at prediction frequency at 20cm: 0.005(mw/cm²)

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

Result: Pass

1.5 Test Setup Photos

