

## FCC RF Exposure

EUT Description: Dash Camera  
ModelNo.: S50  
FCC ID: 2A8O4-S50  
Equipment type: mobile equipment

### 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:  $Pd = (Pout \cdot G) / (4 \cdot \pi \cdot r^2)$

Where :

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

Pout = 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

| Modulation | Channel Freq. (MHz) | Conducted power (dBm) | Max tune-up power (mW) | Antenna Gain (dBi) | Antenna gain numeric | Evaluation result (mW/cm2 ) | Power density Limits (mW/cm2) |
|------------|---------------------|-----------------------|------------------------|--------------------|----------------------|-----------------------------|-------------------------------|
| 802.11b    | 2412                | 10.49                 | 11.19                  | 1.96               | 1.57                 | 0.00350                     | 1                             |
|            | 2437                | 9.75                  | 9.44                   | 1.96               | 1.57                 | 0.00295                     | 1                             |
|            | 2462                | 9.78                  | 9.51                   | 1.96               | 1.57                 | 0.00297                     | 1                             |
| 802.11g    | 2412                | 10.29                 | 10.69                  | 1.96               | 1.57                 | 0.00334                     | 1                             |
|            | 2437                | 9.35                  | 8.61                   | 1.96               | 1.57                 | 0.00269                     | 1                             |
|            | 2462                | 9.06                  | 8.05                   | 1.96               | 1.57                 | 0.00252                     | 1                             |
| 802.11n    | 2412                | 9.99                  | 9.98                   | 1.96               | 1.57                 | 0.00312                     | 1                             |
|            | 2437                | 9.07                  | 8.07                   | 1.96               | 1.57                 | 0.00252                     | 1                             |
|            | 2462                | 8.89                  | 7.74                   | 1.96               | 1.57                 | 0.00242                     | 1                             |

Conclusion: the max result :  $0.00350 \leq 1.0$  compliance with FCC's RF Exposure.