



RF EXPOSURE EVALUATION REPORT

Application No.: GZEM2012017637CR
Applicant: Zhongshan Dashan Photographic Equipment Co., Ltd.
Address of Applicant: District A, 1st Floor, Building A, No.147, Chenggui Road, Sanxiang Town, Zhongshan City, Guangdong, China
Manufacturer: The same as applicant
Address of Manufacturer: The same as applicant
Factory: The same as applicant
Address of Factory: The same as applicant
Equipment Under Test (EUT):
EUT Name: iFootage Shark Slider Nano Standard
Model No.: N1-S
Trade Mark: IFOOTAGE
Standard(s) : 47 CFR Part 1.1307
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2021-05-31
Date of Evaluation: 2021-05-31 to 2021-05-31
Date of Issue: 2021-08-09

Evaluation Result:

Pass*

* In the configuration evaluated, the EUT complied with the standards specified above.



Kobe Jian

EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-08-09		Original

Authorized for issue by:			
Tested By	 Kevin Zhang/Project Engineer		
Reviewed By	 Ricky Liu/Reviewer		

2 Evaluation Summary

Note:

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.



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4 General Information

4.1 Details of E.U.T.

Power supply: DC 7.4 V for normal working
DC 5 V for charging

Cable(s): Type C charging ports with type C cables (unshielded, 0.8m)

Function: iFootage Shark Slider Nano Standard with BT and 2.4GHz function

For BLE

Operation Frequency: 2402MHz to 2480MHz

Modulation Type: GFSK

Number of Channels: 40

Channel Spacing: 2MHz

Antenna Type: Integral Antenna

Antenna Gain: 2 dBi declared by applicant

Sample No.: GZ_SP_20210422336

Firmware Version: SV01

Hardware Version: FSC-BT630 V1.0

Test Software: nRF_DTM.exe

Power Setting: -1 dBm can not be changed by user

For 2.4 GHz

Operating Frequency: 2402MHz, 2442MHz, 2480MHz

Channel number: 3

Channel Spacing: N/A

Modulation Type: GFSK

Antenna Type: PCB Antenna

Antenna Gain: 0 dBi declared by applicant

Sample No.: GZ_SP_20210422336

Firmware Version: SV01

Hardware Version: LC12S_V2.03

Test Software: None

Power Setting: Default

4.2 Evaluating Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,
Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.



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4.3 Facility

The facility is recognized, certified, or accredited by the following organizations:

- **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

- **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

- **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

- **ISED (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

- **VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)**

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

- **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

4.4 Deviation from Standards

None

4.5 Abnormalities from Standard Conditions

None



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5 Technical Requirements Specification

5.1 RF Exposure Evaluation

5.1.1 Limit & Test Method

According to FCC Part1.1310: 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 Part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			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 ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30
f = frequency in MHz				
* = Plane-wave equivalent power density				

According to IEEE C95.3:2002 section 5.5.1.1, The power density S at a point on the axis at a distance d from a transmitting antenna is given by the Friis free-space transmission formula

$$S = \frac{PG}{4\pi d^2}$$

S = power density (mW/cm²)

P = the net power delivered to the antenna (mW)

G = gain of the antenna in linear scale

d = distance between observation point and center of the radiator (cm)



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5.1.2 Conclusion

Normal use condition for
Distance between antenna and body: 20cm declared by applicant

BLE Antenna Gain: 2 dBi

Frequency (MHz)	Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2402	1.585	-1.6	0.692	0.00022	1	Complies
2442	1.585	-1.8	0.661	0.00021	1	Complies
2480	1.585	-2.11	0.615	0.00019	1	Complies

So SAR report is not required.

2.4GHz self defined Antenna Gain: 0 dBi

Frequency (MHz)	E-field (dBuV/m @3m)	E-field* (dBuV/m @20cm)	E.I.R.P** (mW)
2402	85.29	132.33	0.023
2442	84.44	131.48	0.019
2480	84.81	131.85	0.020

*: E-field (dBuV/m @20cm)= E-field (dBuV/m @3m)+40log(3/0.2)

** E.I.R.P (W) = (E*d)²/(30*G)

Frequency (MHz)	Antenna Gain (Numeric)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2402	1	0.023	0.0000046	1	Complies
2442	1	0.019	0.0000038	1	Complies
2480	1	0.020	0.0000040	1	Complies

The BLE and 2.4 GHz can be transmitted together, the result is
0.00023/1 + 0.0000046/1 =0.0002346 < 1.0

So SAR report is not required.

Note: Refer to report No. GZEM201201763702 for BLE of EUT test Max Conducted Peak Output Power value and GZEM201201763704 for 2.4GHz of EUT Max EIRP value.



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6 EUT Constructional Details (EUT Photos)

Refer to external and internal photos for GZEM2012017637CR

- End of the Report -