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Report No.: EBO1409120-E366

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TEST REPORT

Applicant: EKEN GROUP LIMITED

Address of Applicant: 3A21-3A22, Block B-4, Baoyuan Huanfeng Economy

Headquarters Building, Xixiang, Baoan District, Shenzhen,

China

Equipment Under Test (EUT)

Product Name: SPORTS CAM

Model No.: A3, S3, W3, A5, S5, W5, A6, S6, W6, A7, S7, W7, A8, S8, W8,

A9, S9, W9, A10, S10, W10

FCC ID: 2ADDG-W8

Applicable standards: FCC CFR Title 47 Part 15 Subpart B:2013

Date of sample receipt: September 24, 2014

Date of Test: September 24, 2014 To October 14, 2014

Date of report issue: October 14, 2014

Test Result: PASS *

Authorized Signature:

Kevin Yu Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the EBO product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of EBO International Electrical Approvals or testing done by EBO International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by EBO International Electrical Approvals in writing.

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^{*} In the configuration tested, the EUT complied with the standards specified above.



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2 Version

Version No.	Date	Description
00	October 14, 2014	Original

Prepared By:	Jason	Date:	October 14, 2014	
	Project Engineer			
Check By:	Coury	Date:	October 14, 2014	
	Reviewer			



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4 Test Summary

Test Item	Section in CFR 47	Result
Conducted Emission	Part15.107	PASS
Radiated Emissions	Part15.109	PASS

PASS: The EUT complies with the essential requirements in the standard.



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5 General Information

5.1 Client Information

Applicant:	EKEN GROUP LIMITED
Address of Applicant:	3A21-3A22, Block B-4, Baoyuan Huanfeng Economy Headquarters
	Building, Xixiang, Baoan District, Shenzhen, China
Manufacturer:	EKEN GROUP LIMITED
Address of Manufacturer:	3A21-3A22, Block B-4, Baoyuan Huanfeng Economy Headquarters
	Building, Xixiang, Baoan District, Shenzhen, China

5.2 General Description of EUT

Product Name:	SPORTS CAM
Model No.:	A3, S3, W3, A5, S5, W5, A6, S6, W6, A7, S7, W7, A8, S8, W8, A9,
	S9, W9, A10, S10, W10
Test Model No.:	W8
Power supply:	Input: DC 5V, 1000mA from adapter
	Or
	DC 3.7V, 900mAh Li-ion Battery

5.3 Test mode

Test mode:	
REC mode	Keep the EUT in REC mode
PC mode	Keep the EUT in data exchanging with PC mode
Test voltage:	
AC 120V/60Hz	



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5.4 Test Facility

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

• CNAS —Registration No.: CNAS L5775

CNAS has accredited Global United Technology Services Co., Ltd. To ISO/IEC 17025 General Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• FCC —Registration No.: 600491

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, July 20, 2010.

• Industry Canada (IC)

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. Has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, June 26, 2013.

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China



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5.6 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC Approval
HP	Printer	CB495A	05257893	DoC
DELL	PC Host	OPTIPLEX745	GTS312	DoC
AOC	LCD TV	TFT24660AG	T49A5JA0006600 B9	DoC
PHILIPS	LCD TV	19PFL3120/T3	AU1A1212002906	DoC
DELL	KEYBOARD	SK-8115	N/A	DoC
DELL	MOUSE	MOC5UO	N/A	DoC

5.7 Deviation from Standards

Biconical, log.per. antenna and horn antenna were used instead of dipole antenna. Semi-anechoic Chamber was used as alternation of open air test sites, and all test suites were performed with radiated method in it.

5.8 Abnormalities from Standard Conditions

None.

5.9 Other Information Requested by the Customer

None.



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6 Test Instruments list

Radia	Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)	
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	GTS250	Mar. 29 2014	Mar. 28 2015	
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A	
3	ESU EMI Test Receiver	R&S	ESU26	GTS203	July 01 2014	June 30 2015	
4	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	July 01 2014	June 30 2015	
5	Double -ridged waveguide horn	SCHWARZBECK	9120D	GTS208	June 27 2014	June 26 2015	
6	RF Amplifier	HP	8347A	GTS204	July 01 2014	June 30 2015	
7	Preamplifier	HP	8349B	GTS206	July 01 2014	June 30 2015	
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A	
9	Coaxial cable	GTS	N/A	GTS210	Mar. 29 2014	Mar. 28 2015	
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 29 2014	Mar. 28 2015	
11	Thermo meter	N/A	N/A	GTS256	Mar. 29 2014	Mar. 28 2015	

Con	Conducted Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)	
1	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS264	July 01 2014	June 30 2015	
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	July 01 2014	June 30 2015	
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	July 01 2014	June 30 2015	
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	July 01 2014	June 30 2015	
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	July 01 2014	June 30 2015	
6	Coaxial Cable	GTS	N/A	GTS227	July 01 2014	June 30 2015	
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A	

Gen	General used equipment:					
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Barometer	ChangChun	DYM3	GTS257	July 08 2014	July 07 2015



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7 Test Results and Measurement Data

7.1 Conducted Emissions

Test Requirement:	FCC Part15 B Section 15.107			
Test Method:	ANSI C63.4:2003			
Test Frequency Range:	150KHz to 30MHz			
Class / Severity:	Class B			
Receiver setup:	RBW=9KHz, VBW=30KHz, Sv	weep time=auto		
Limit:	Frequency range (MHz)	Limit (c	dBuV)	
	Frequency range (IVII 12)	Quasi-peak	Average	
	0.15-0.5	66 to 56*	56 to 46*	
	0.5-5	56	46	
	5-30	60	50	
	* Decreases with the logarithm	n of the frequency.		
Test setup:	Reference Plane		•	
	AUX Equipment Test table/Insulation plane Remark: E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m			
Test procedure:	 The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 500hm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 500hm/50uH coupling impedance with 500hm termination. (Please refer to the block diagram of the test setup and 			
	 photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement. 			
Test Instruments:	Refer to section 6 for details			
Test mode:	Refer to section 5.3 for details. All of the mode were tested and found the "PC mode" is the worst case. Only the data of worst case was reported.			
Test results:	Pass			

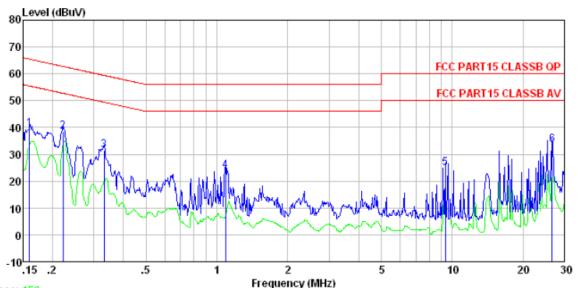


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Measurement Data

Line:



Trace: 156

Condition : FCC PART15 CLASSB QP LISN-2013 LINE

Test mode : PC mode Test Engineer: Mike

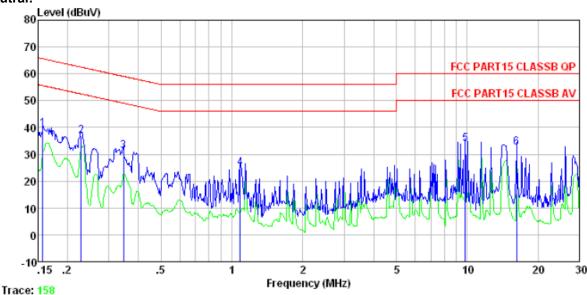
	Freq		Cable Loss			Over Limit	Remark
	MHz	dBu₹	dB	dBuV	dBuV	dB	
1 2 3 4 5 6		31. 28 23. 76 24. 33	0.12 0.10 0.13 0.19	38. 52 31. 49 24. 02 24. 81	62.74 59.40 56.00 60.00	-27.91 -31.98 -35.19	QP QP QP QP



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Neutral:



Condition : FCC PART15 CLASSB QP LISN-2013 NEUTRAL

Test mode : PC mode Test Engineer: Mike

	Freq		Cable Loss				Remark
	MHz	dBu₹	dB	dBu₹	dBuV	dB	
1	0.157	39.28				-26.13	
2 3	0.229	36.77	0.12	36.95	62.48	-25.53	QP
	0.346	30.91	0.10	31.07	59.05	-27.98	QP
4	1.082	24.76	0.13	24.97	56.00	-31.03	QP
5	9.809	33.44	0.19	33.87	60.00	-26.13	QP
6	16.226	32.01	0.22	32.59	60.00	-27.41	QP

Notes:

- 1. An initial pre-scan was performed on the line and neutral lines with peak detector.
- 2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3. Final Level =Receiver Read level + LISN Factor + Cable Loss
- 4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.



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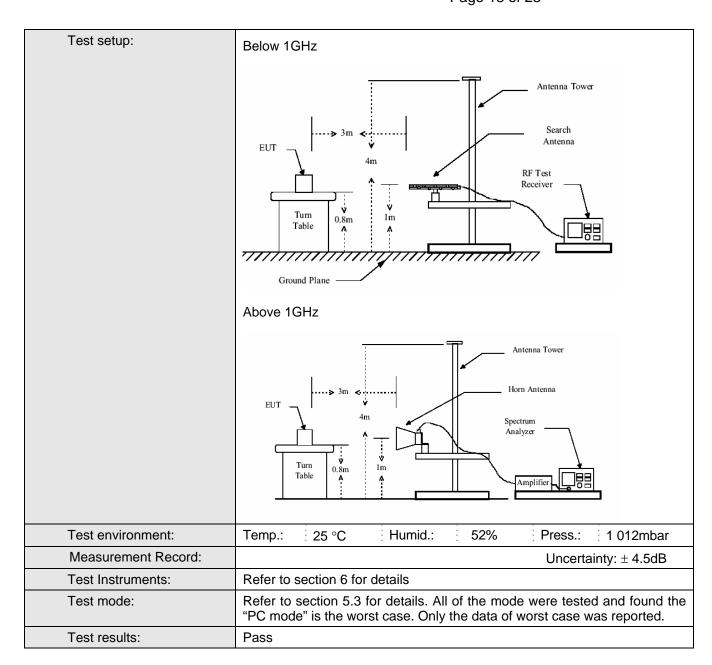
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7.2 Radiated Emission

 Tradiated Ellission								
Test Requirement:	FCC Part15 B Section 15.109							
Test Method:	ANSI C63.4:2003							
Test Frequency Range:	30MHz to 6GHz							
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)							
Receiver setup:	Frequency Detector RBW VBW Remark							
	Frequency							
	30MHz- 1GHz	•			Quasi-peak Value			
	Above 1GHz	Peak	1MHz	3MHz	Peak Value			
		Peak	1MHz	10Hz	Average Value			
Limit:								
	Freque	Remark						
	30MHz-8	8MHz	40.0	0	Quasi-peak Value			
	88MHz-2	16MHz	43.5	0	Quasi-peak Value			
	216MHz-9	216MHz-960MHz 46.00						
	960MHz-	1GHz	0	Quasi-peak Value				
	Above 1	GH ₇	54.0	0	Average Value			
	Above	OFIZ	74.0	0	Peak Value			
Test Procedure:	The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.							
	The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.							
	3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.							
	4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.							
	5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.							
	6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.							



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Note:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor



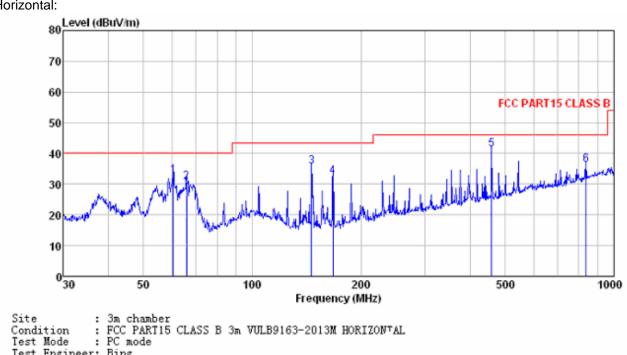
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Measurement Data

Below 1GHz

Horizontal:



Test Engineer: Bing

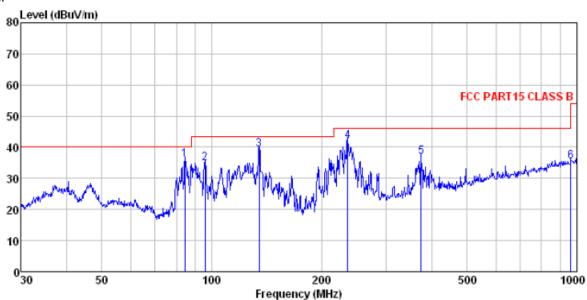
1050	Freq	ReadAntenna		ReadAntenna		ReadAntenna Cable Preamp Q Level Factor Loss Factor							
	MHz	dBu₹	dB/m	āB	āB	dBuV/m	dBuV/m	<u>d</u> B					
1 2 3 4 5 6	145.861 167.237	49. 29 55. 88 52. 05 52. 26	10.87 17.59	1.54 1.67 3.13	31.90 31.97 32.04 31.69	32.71 30.60 35.68 32.55 41.29 36.21	40.00 43.50 43.50 46.00	-7.82 -10.95 -4.71	QP QP QP QP				



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Vertical:



Site

: 3m chamber : FCC PART15 CLASS B 3m VULB9163-2013M VERTICAL : PC mode Condition

Test Mode

Test Engineer: Bing

	Freq		intenna Factor					Over Limit	Remark
	MHz	dBu∀	<u>dB</u> /m	₫B	dB	dBuV/m	dBuV/m	<u>dB</u>	
1 2 3 4 5	84.405 95.762 135.032 235.816 374.623 962.162	59.03 58.27 49.51	10.56 13.88 16.54	1.16 1.47 2.05 2.74		34.70 39.14 42.04 36.83	43.50 43.50 46.00 46.00	-8.80 -4.36 -3.96 -9.17	QP QP QP QP

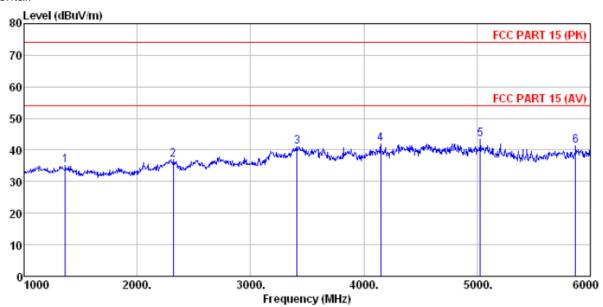


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Above 1GHz

Horizontal:



Site : 3m chamber

Condition : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) HORIZONTAL Test Mode : PC mode

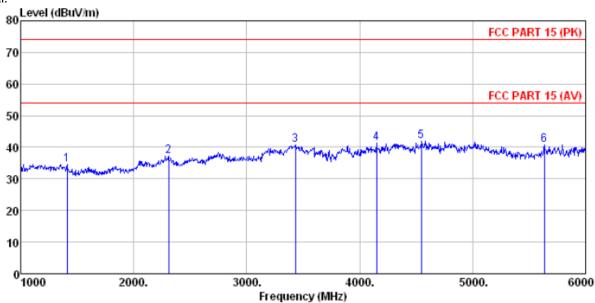
Test Mode : PC mode Test Engineer: Bing

ReadAntenna Cable Preamp Over Limit Level Factor Loss Factor Level Line Limit Remark MHz dBu₹ ₫B/m 碅 dB dBuV/m dBuV/m 1365.000 38.30 25.67 33.36 35.20 74.00 -38.80 Peak 4.5927.88 2320.000 37.92 5.31 34.09 37.02 74.00 -36.98 Peak 3 3410.000 38.50 28.64 6.78 32.85 41.07 74.00 -32.93 Peak 74.00 -32.10 Peak 4 4150.000 35.84 30.06 8.01 32.01 41.90 43.29 5030.000 32.20 74.00 -30.71 Peak 5 34.70 31.98 8.81 32.21 74.00 -32.55 Peak 5870.000 30.90 32.74 10.02 41.45



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Vertical:



Site : 3m chamber

Condition : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) VERTICAL

Test Mode : PC mode

Test Engineer: Bing

est	Engineer:				_				
					Preamp		Limit	Over	ъ.
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Kemark
	MHz	dBu∜	<u>dB</u> /m	dB	ā	dBuV/m	dBuV/m	dB	
1	1410.000	37.84	25.53	4.62	33.45	34.54	74.00	-39.46	Peak
2	2310.000	38.09	27.91	5.30	34.11	37.19	74.00	-36.81	Peak
3	3430.000	37.89	28.72	6.82	32.83	40.60	74.00	-33.40	Peak
4	4150.000	35.36	30.06	8.01	32.01	41.42	74.00	-32.58	Peak
5	4545.000	34.14	31.42	8.38	31.96	41.98	74.00	-32.02	Peak
6	5635.000	31.06	32.36	9.70	32.35	40.77	74.00	-33.23	Peak



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8 Test Setup Photo

Radiated Emission







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Conducted Emission



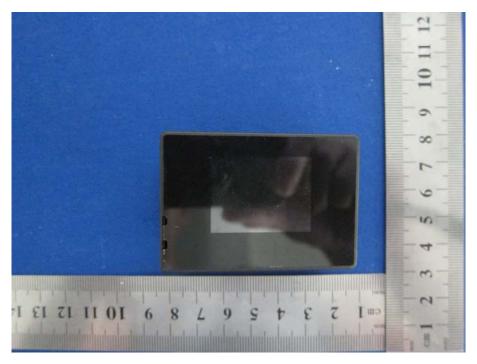


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9 EUT Constructional Details



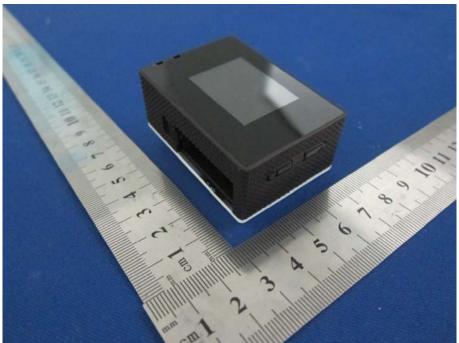




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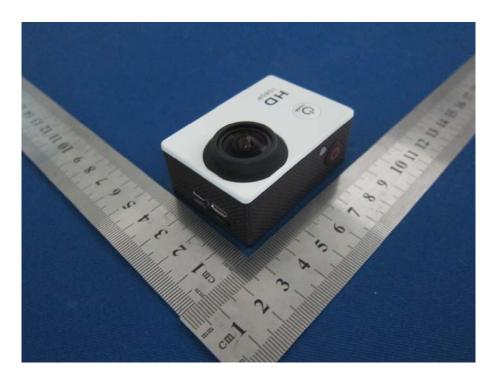


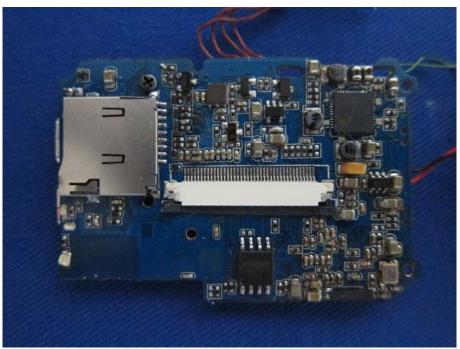




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