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TEST REPORT

Applicant:	EKEN GROUP LIMITED
Address of Applicant:	Room 2511-2512, Meilan Business Center, Qianjin Two Road,
	Xixiang, Baoan District, Shenzhen, China
Equipment Under Test (E	EUT)
Product Name:	ACTION CAMERA
Model No.:	R360, H350, R350, K350, G350, H360, K360, G360
FCC ID:	2ADDG-R360
Applicable standards:	FCC CFR Title 47 Part 15 Subpart B:2014
Date of sample receipt:	July 27, 2016
Date of Test:	July 27, 2016 To August 22, 2016
Date of report issue:	August 22, 2016
Test Result :	PASS *

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

Authorized Signature:

centr

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.

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2 Version

Version No.	Date	Description
00	August 22, 2016	Original

Prepared By:

ason

Date:

August 22, 2016

Project Engineer

Date:

August 22, 2016

Reviewer

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Check By:



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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. Test according to ANSI C63.4-2014

4.1 Measurement Uncertainty

Test Item	Test Item Frequency Range Measurement Un		Notes
Radiated Emission	9kHz ~ 30MHz	± 4.34dB	(1)
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)
Radiated Emission	1GHz ~ 26.5GHz	± 4.68dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	$\pm 3.45 \text{dB}$	(1)
Note (1): The measurement unce	ertainty is for coverage factor of k	=2 and a level of confidence of §	95%.



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5 General Information

5.1 Client Information

Applicant:	EKEN GROUP LIMITED
Address of Applicant:	Room 2511-2512, Meilan Business Center, Qianjin Two Road,
	Xixiang, Baoan District, Shenzhen, China
Manufacturer:	EKEN GROUP LIMITED
Address of Manufacturer:	Room 2511-2512, Meilan Business Center, Qianjin Two Road,
	Xixiang, Baoan District, Shenzhen, China

5.2 General Description of EUT

ACTION CAMERA	
R360, H350, R350, K350, G350, H360, K360, G360	
R360	
DC 5V 1A	
Or	
DC 3.7V, 1200mAh Li-ion Battery	
Adapter:	
Model:ZXT-051000E	
Input:100-240V~, 50/60Hz, 0.4A	
Output:5V === 1A	

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
HDMI mode	Keep the EUT in playback with HDMI output 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:

• FCC — Registration No.: 600491

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fuly 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
DELL	PC	EX745	N/A	DoC
Kingston	USB disk	4GB	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

Radiated Emission:						
ltem	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	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 27 2016	Mar. 26 2017
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June 14 2016	June 13 2017
4	Loop Antenna	ZHINAN	ZN30900A	GTS534	June 14 2016	June 13 2017
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June 14 2016	June 13 2017
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 14 2016	June 13 2017
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 27 2016	Mar. 26 2017
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial Cable	GTS	N/A	GTS213	Mar. 27 2016	Mar. 26 2017
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 27 2016	Mar. 26 2017
11	Coaxial cable	GTS	N/A	GTS210	Mar. 27 2016	Mar. 26 2017
12	Coaxial Cable	GTS	N/A	GTS212	Mar. 27 2016	Mar. 26 2017
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June 14 2016	June 13 2017
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	June 14 2016	June 13 2017
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 14 2016	June 13 2017
16	Band filter	Amindeon	82346	GTS219	Mar. 27 2016	Mar. 26 2017
17	Constant temperature and humidity box	Oregon Scientific	BA-888	GTS248	June 14 2016	June 13 2017
18	D.C. Power Supply	Instek	PS-3030	GTS232	June 14 2016	June 13 2017



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Cond	Conducted Emission:						
ltem	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	June 14 2016	June 13 2017	
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	June 14 2016	June 13 2017	
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	June 14 2016	June 13 2017	
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June 14 2016	June 13 2017	
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	June 14 2016	June 13 2017	
6	Coaxial Cable	GTS	N/A	GTS227	June 14 2016	June 13 2017	
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A	





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7 Test Results and Measurement Data

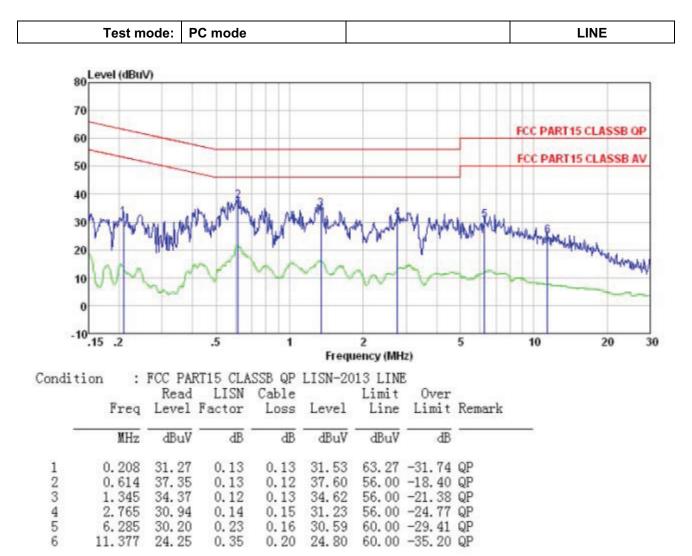
7.1 Conducted Emissions

Test Requ	irement [.]	FCC Part15 B Section 15.107			
Test Meth		ANSI C63.4:2014			
	uency Range:	150KHz to 30MHz Class B			
Class / Se	, ,				
	-	RBW=9KHz, VBW=30KHz, Sv	voon timo-outo		
Receiver	setup:				
Limit:		Frequency range (MHz)	Limit (d		
		0.15-0.5	Quasi-peak 66 to 56*	Average 56 to 46*	
		0.5-5	56	46	
		5-30	60	50	
		* Decreases with the logarithm	n of the frequency.		
Test setup	D:	Reference Plane			
		AUX Filter AUX Filter AUX Filter AC power Equipment E.U.T Test table/Insulation plane Remark: E.U.T: Equipment Under Test LISN: Line impedence Stabilization Network Test table height=0.8m			
Test proce	edure:	 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 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 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: 2014 on conducted measurement. 			
Test Instru	uments:	Refer to section 6 for details			
Test mode	ə:	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 resul	ts:	Pass			



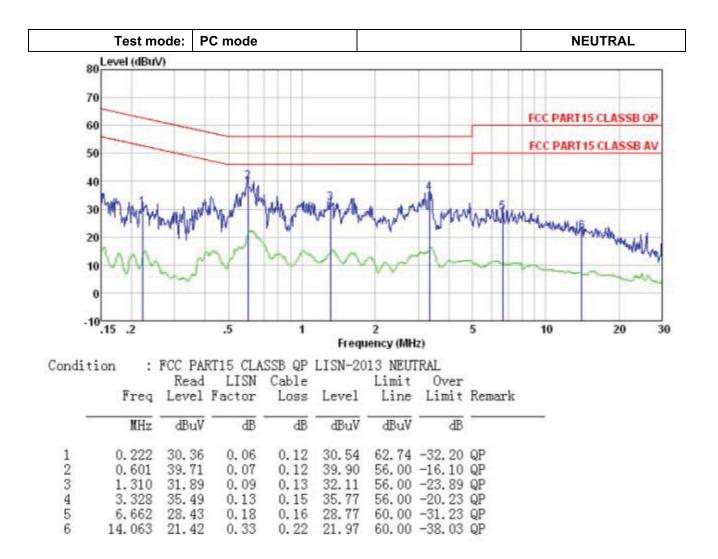
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Measurement Data





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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.



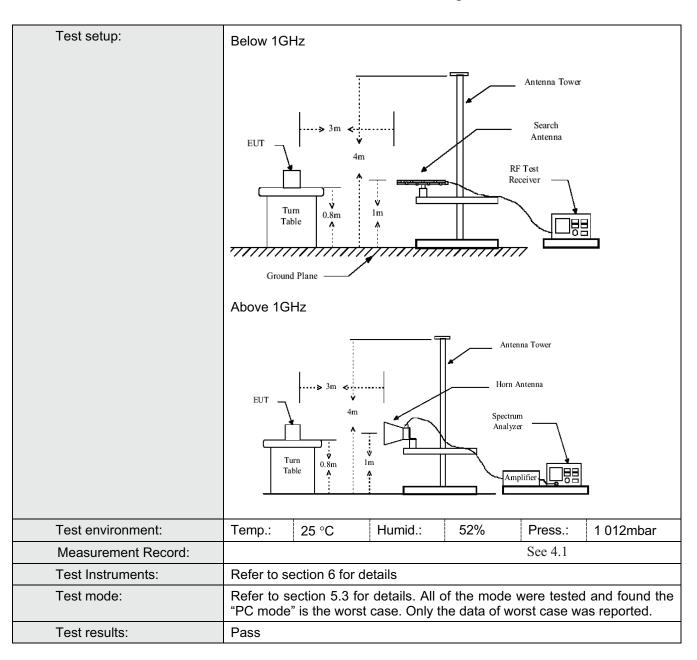
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7.2 Radiated Emission

Test Requireme	ent:	FCC Part15 B Section 15.109					
Test Method:		ANSI C63.4:2014					
Test Frequency	Range:	30MHz to 25GHz					
Test site:		Measurement Distance: 3m (Semi-Anechoic Cha		ic Chambe	r)		
Receiver setup:							
		Frequency 30MHz-	Detector	RBW	VBW	Remark Quasi-peak Value	
		30MHz- Quasi-pea 1GHz		k 120kHz	300kHz	Quasi-peak value	
		Above 1GHz	Peak	1MHz	3MHz	Peak Value	
		Above Toriz	Peak	1MHz	10Hz	Average Value	
Limit:							
		Frequency		Limit (dBuV/m @3m)		Remark	
		30MHz-88MHz		40.00		Quasi-peak Value	
		88MHz-216MHz		43.50		Quasi-peak Value	
		216MHz-960MHz		46.00		Quasi-peak Value	
		960MHz-1GHz		54.00		Quasi-peak Value	
		Above 1GHz		54.00		Average Value	
				74.00		Peak Value	
Test Procedure		1. 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.					
		2. 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.					
	 The test-receiver system was set to Peak Detect Function and Speci Bandwidth with Maximum Hold Mode. 				unction and Specified		
 6. If the emission level of the EUT in peak mode wa limit specified, then testing could be stopped and EUT would be reported. Otherwise the emissions 10dB margin would be re-tested one by one usin average method as specified and then reported i 					pped and th emissions th one using	ne peak values of the nat did not have peak, quasi-peak or	



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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

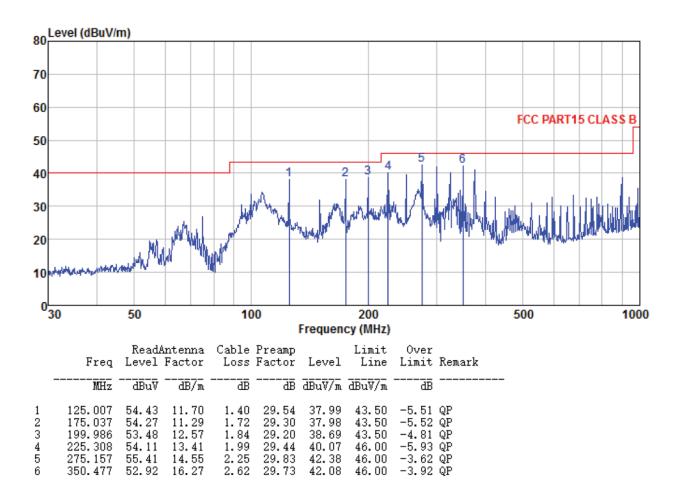


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Measurement Data

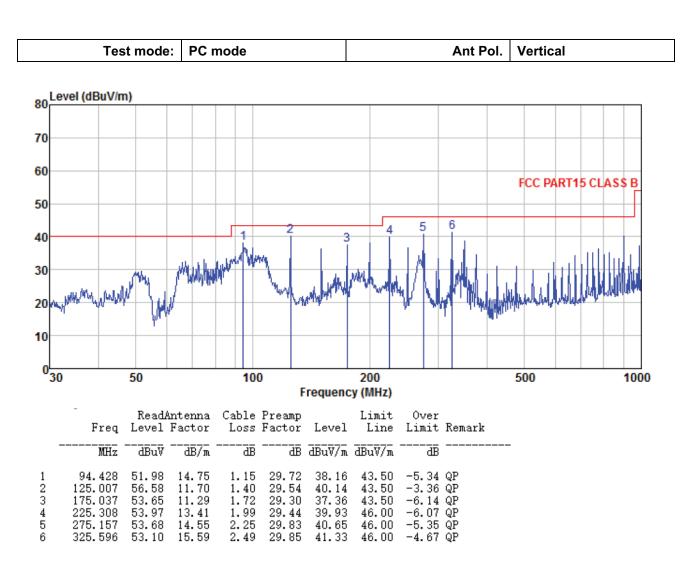
Below 1GHz

Test mode: PC mode	Ant Pol. Horizontal
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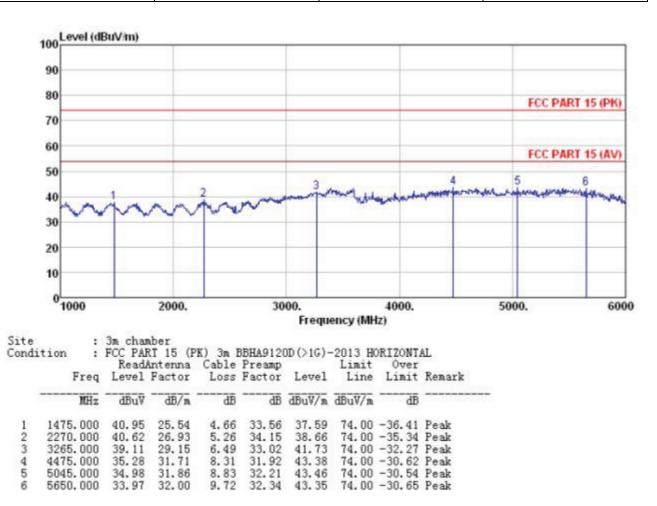




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Above 1GHz



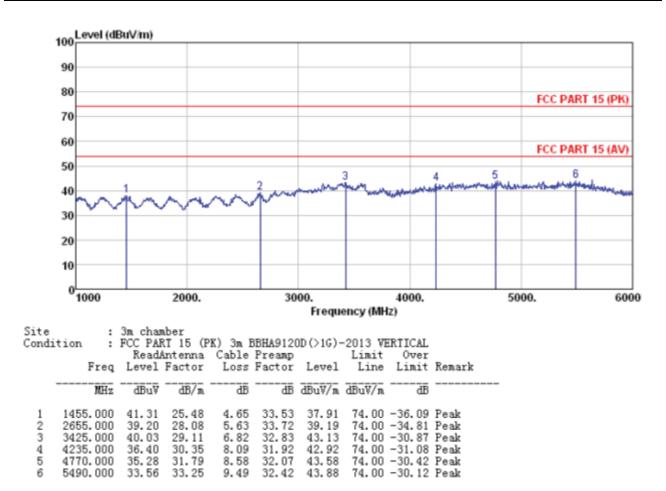


Note: From 6GHz to 25GHz, no emission found,only worse case 1GHz to 6GHz is reported



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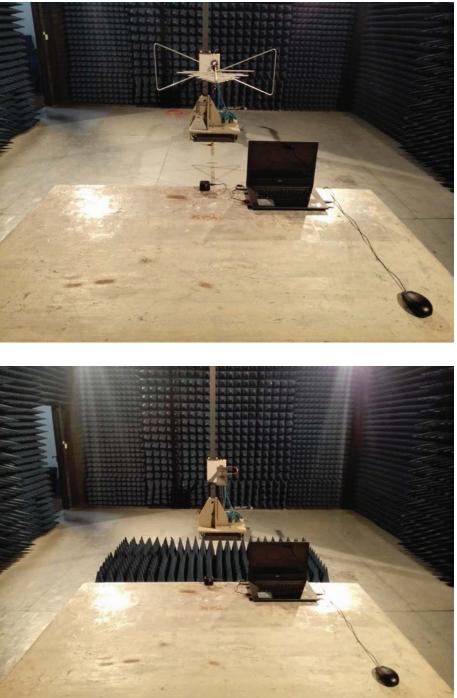
Note: From 6GHz to 25GHz, no emission found,only worse case 1GHz to 6GHz is reported



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8 Test Setup Photo

Radiated Emission





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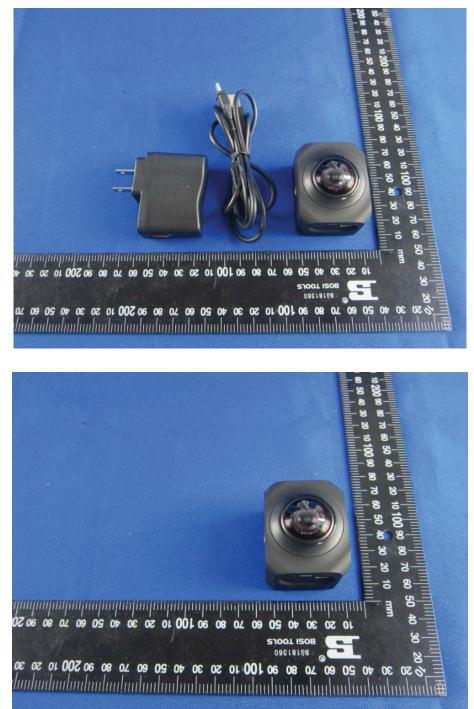
Conducted Emission





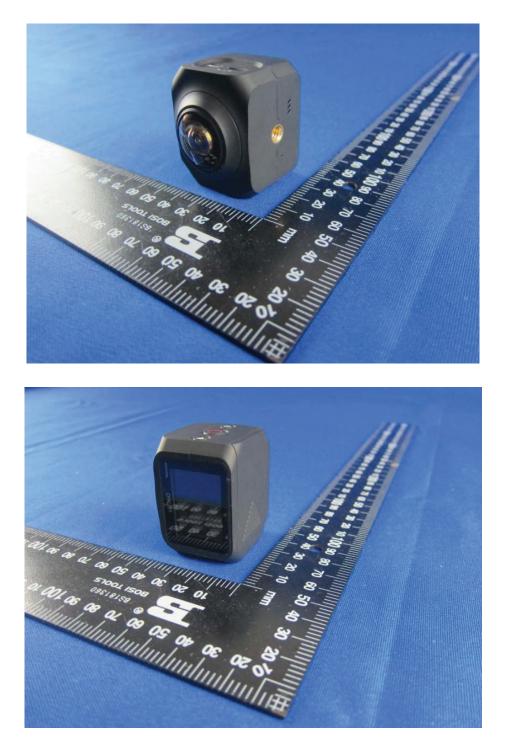
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9 EUT Constructional Details



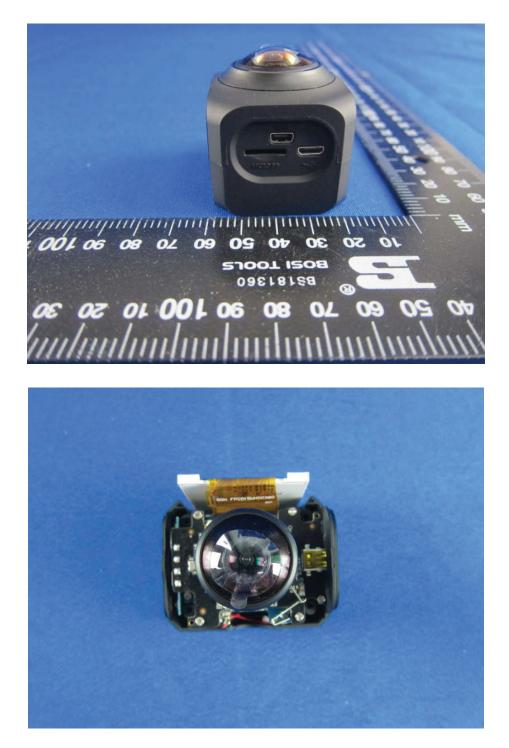


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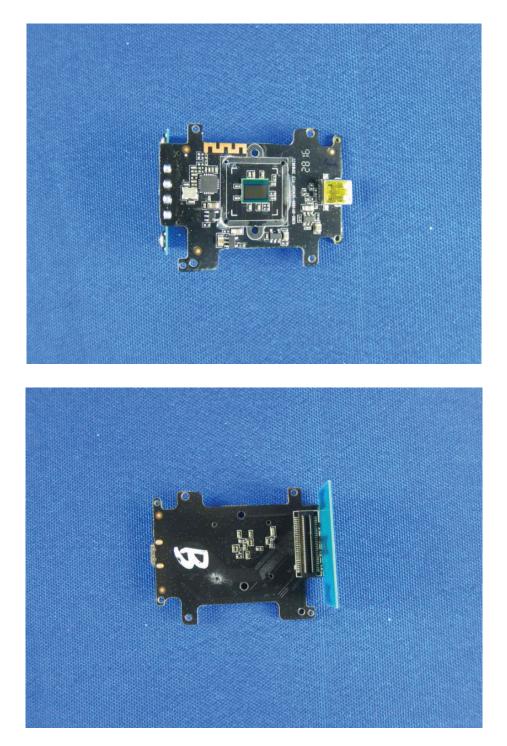


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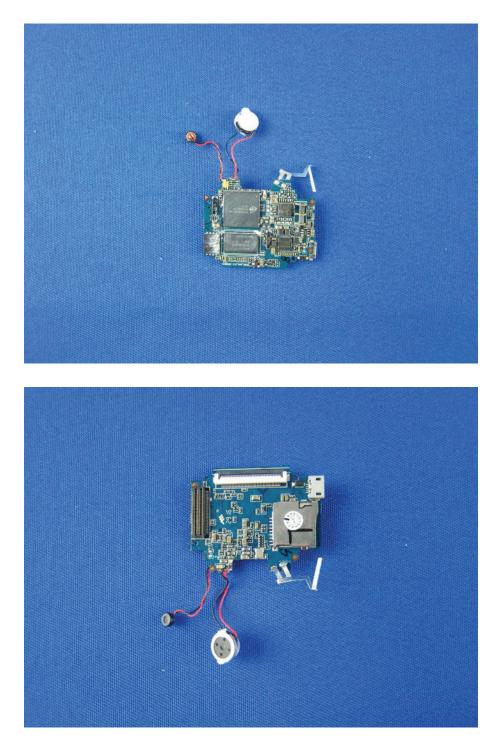


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