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Report No.: EBO1509060-E236

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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 (EUT)

Product Name: ACTIOL CAMERA

Model No.: H9, A7, A8, A9, W9, G1, G2, G3, G4, G5, G6, G7, G8, G9, H1,

H2, H3, H4, H5, H6, H7, H8, I1, I2, I3, I4, I5, I6, I7, I8, K1, K2, K3, K4, K5, K6, K7, K8, K9, N1, N2, N3, N4, N5, N6, N7, N8, N9, M1, M2, M3, M4, M5, M6, M7, M8, M9, X1, X2, X3, X4, X5,

X6, X7, X8, X9

FCC ID: 2ADDG-H9

Applicable standards: FCC CFR Title 47 Part 15 Subpart B:2014

Date of sample receipt: September 15, 2015

Date of Test: September 15, 2015 To September 30, 2015

Date of report issue: September 30, 2015

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	September 30, 2015	Original

Prepared By:	Jason	Date:	September 30, 2015
	Project Engineer		
Check By:	Canyo	Date:	September 30, 2015
	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:	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

Product Name:	ACTIOL CAMERA
Model No.:	H9, A7, A8, A9, W9, G1, G2, G3, G4, G5, G6, G7, G8, G9, H1, H2,
	H3, H4, H5, H6, H7, H8, I1, I2, I3, I4, I5, I6, I7, I8, K1, K2, K3, K4, K5,
	K6, K7, K8, K9, N1, N2, N3, N4, N5, N6, N7, N8, N9, M1, M2, M3,
	M4, M5, M6, M7, M8, M9, X1, X2, X3, X4, X5, X6, X7, X8, X9
Test Model No.:	H9
Power supply:	DC 5V == 1A
	Or
	DC 3.7V, 1050mAh Li-ion Battery
	Adapter:
	Model:XDSS-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 HDMI 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 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
Apple	PC	A1278	C1MN99ERDTY3	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

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	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 29 2014	Mar. 28 2016
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	Spectrum Analyzer	Agilent	E4440A	GTS533	July 08 2015	July 07 2016
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	July 08 2015	July 07 2016
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	July 08 2015	July 07 2016
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	July 08 2015	July 07 2016
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 27 2015	Mar. 26 2016
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial Cable	GTS	N/A	GTS213	Mar. 27 2015	Mar. 26 2016
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 27 2015	Mar. 26 2016
11	Coaxial Cable	GTS	N/A	GTS210	Mar. 27 2015	Mar. 26 2016
12	Coaxial Cable	GTS	N/A	GTS212	Mar. 27 2015	Mar. 26 2016
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	July 08 2015	July 07 2016
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	July 08 2015	July 07 2016
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	July 08 2015	July 07 2016
16	Band filter	Amindeon	82346	GTS219	Mar. 27 2015	Mar. 26 2016
17	Power Meter	Anritsu	ML2495A	GTS540	July 08 2015	July 07 2016
18	Power Sensor	Anritsu	MA2411B	GTS541	July 08 2015	July 07 2016

Cond	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 08 2015	July 07 2016
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	July 08 2015	July 07 2016
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	July 08 2015	July 07 2016
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	July 08 2015	July 07 2016
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	July 08 2015	July 07 2016
6	Coaxial Cable	GTS	N/A	GTS227	July 08 2015	July 07 2016
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A



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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 2015	July 07 2016



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7 Test Results and Measurement Data

7.1 Conducted Emissions

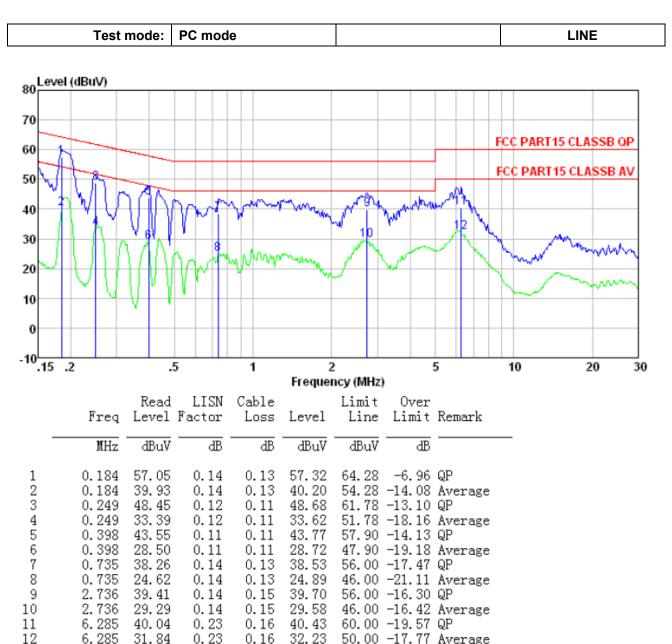
Test Requirement:	FCC Part15 B Section 15.107			
Test Method:	ANSI C63.4:2014			
Test Frequency Range:	150KHz to 30MHz			
Class / Severity:	Class B			
Receiver setup:	RBW=9KHz, VBW=30KHz, Sv	weep time=auto		
Limit:	Fraguesov rango (MHz)	Limit (c	dBuV)	
	Frequency range (MHz)	Quasi-peak	Average	
	0.15-0.5	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 L/SN 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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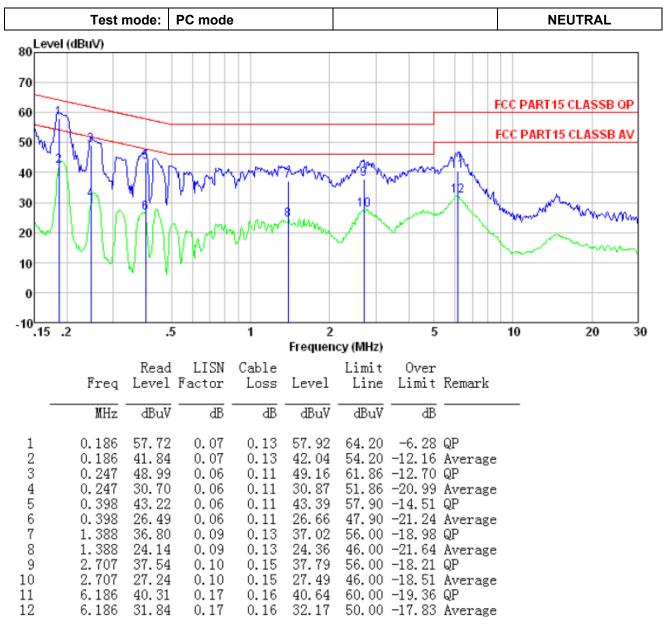
Measurement Data





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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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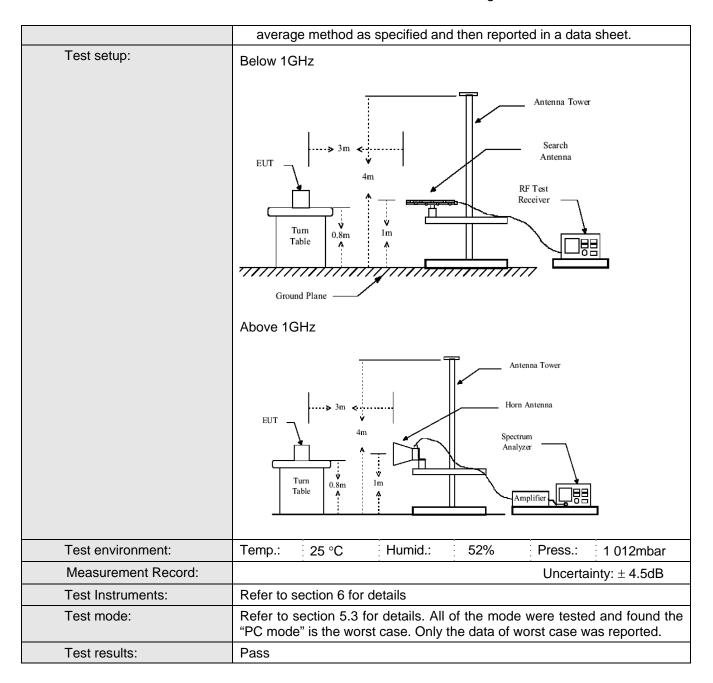
7.2 Radiated Emission

Tradiated Eliliosion	Τ						
Test Requirement:	FCC Part15 B Section 15.109						
Test Method:	ANSI C63.4:2014						
Test Frequency Range:	30MHz to 6GHz						
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)						
Receiver setup:							
	Frequency Detector		RBW	VBW	Remark		
	30MHz- 1GHz	Quasi-pea		300kHz	Quasi-peak Value		
	Above 1GHz	Peak	1MHz	3MHz	Peak Value		
		Peak	1MHz	10Hz	Average Value		
Limit:	_			, o			
	Freque	-	Limit (dBuV		Remark		
	30MHz-8		40.0		Quasi-peak Value		
	88MHz-2		43.5		Quasi-peak Value		
	216MHz-9	60MHz	46.0	0	Quasi-peak Value		
	960MHz-	·1GHz	54.0	0	Quasi-peak Value		
	Above 1	IGH ₇	54.0	0	Average Value		
	7,5070	0112	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.				r 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						



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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



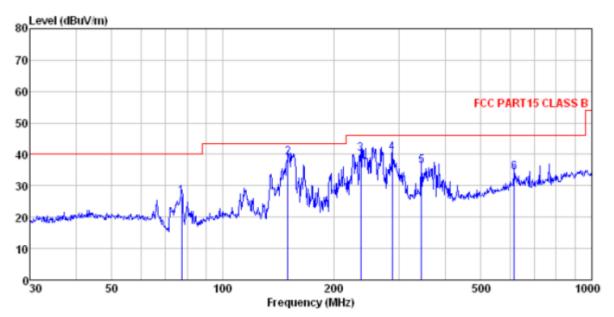
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Measurement Data

Below 1GHz

Test mode: PC mode	Ant Pol. Horizontal
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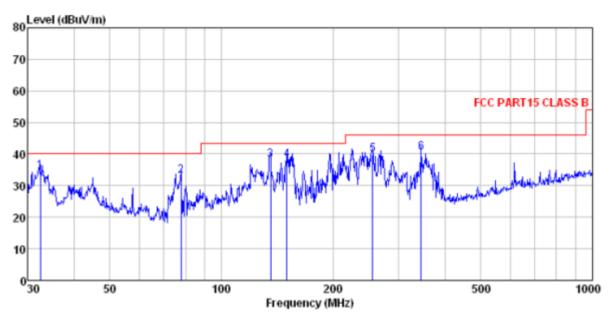
Site	:	3m char	nber						
Condit	tion :	FCC PAR	RT15 CLA	ASS B 3r	n VULB91	163-2013	3M HORIZ	ZONTAL	
			Ant enna				Limit	Over	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBu∜	<u>dB</u> /m	dB	dB	dBuV/m	dBuV/m	dB	
1	77.321	47.31	10.14	1.01	31.79	26.67	40.00	-13.33	QP
2	150.011	59.05	10.26	1.57	31.98	38.90	43.50	-4.60	QP
3	236.645	56.22	13.93	2.05	32.16	40.04	46.00	-5.96	QP
4 5	287.990	55.40	14.84	2.31	32.18	40.37	46.00	-5.63	QP
5	345.595	49.57	16.20	2.60	32.04	36.33	46.00	-9.67	QP
6	616.372	41.06	20.52	3.79	31.07	34.30	46.00	-11.70	QP



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3m chamber
FCC PARTI5 CLASS B 3m VULB9163-2013M VERTICAL
ReadAntenna Cable Preamp Limit O Site Condition Over Freq Level Factor Loss Factor Level Line Limit Remark MHz dBuV dB/m 碅 dB dBuV/m dBuV/m ₫Ē 32.520 51.83 0.58 32.06 34.66 40.00 -5.34 QP 14.31 -6.93 QP 2 77.865 53.58 10.26 1.01 31.78 33.07 40.00 3 135.506 58.12 10.51 1.47 31.93 38.17 43.50 -5.33 QP 1.57 4 150.011 58.32 10.26 31.98 38.17 43.50 -5.33 QP 2.15 -6.07 QP 5 14.06 255.623 55.88 32.16 39.93 46.00 345.595 53.64 16.20 2.60 32.04 40.40 46.00 -5.60 QP

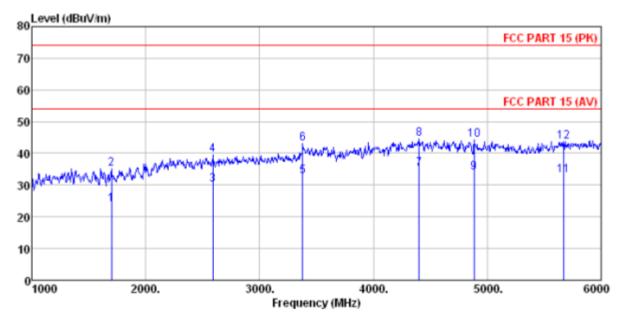


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Above 1GHz

Test mode: PC mode	Ant Pol. Horizontal
--------------------	---------------------



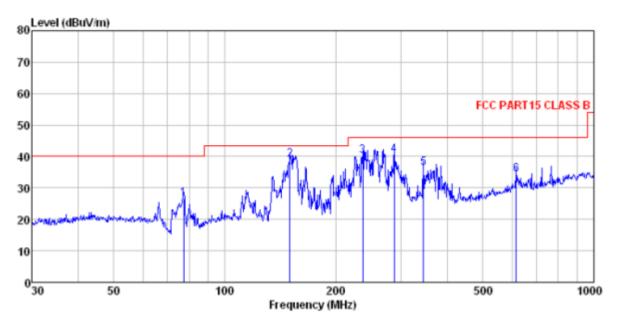
Site Condi	tion :	Read	nber RT 15 (F Antenna Factor	Cable	Preamp		Limit	Over	
	MHz	dBu₹	<u>dB</u> /m	dB	dB	dBuV/n	dBuV/m	dB	
1 2 3 4 5 6 7 8 9	1700.000 1700.000 2590.000 2590.000 3380.000 4400.000 4400.000	39. 23 30. 66 40. 13 30. 32 40. 72 27. 64	31.09	4.80 5.57 5.57 6.72 6.72 8.25	33. 94 33. 78 33. 78 32. 89 32. 89 31. 89 31. 89	35. 07 30. 22 39. 69 32. 69 43. 09 35. 09	74.00 54.00 74.00 54.00 74.00 54.00	-38.93 -23.78 -34.31 -21.31 -30.91	Average Peak Average Peak Average
9 10 11 12	4885.000 4885.000 5670.000 5670.000	25.65 35.88 23.32	31.86	8.67 8.67	32.13 32.13	34.05 44.28 33.17	54.00 74.00 54.00	-19.95 -29.72	Average Peak Average



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Site Condit	ion :	3m char FCC PAI Read/ Level	RT15 CLA Antenna	Cable	Preamp		Limit	Over	Remark
-	MHz	dBu∜	<u>dB</u> /m	dB	₫B	dBuV/m	dBuV/n	₫B	
1 2 3 4 5	287.990	56.22 55.40	13.93 14.84	2.05	32.18 32.04	38.90 40.04 40.37 36.33	43.50 46.00 46.00	-5.96 -5.63 -9.67	QP QP QP QP

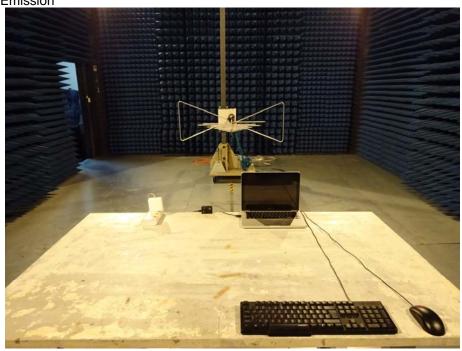


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8 Test Setup Photo

Radiated Emission







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Conducted Emission



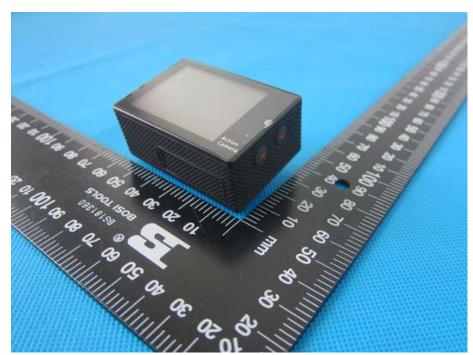


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9 EUT Constructional Details



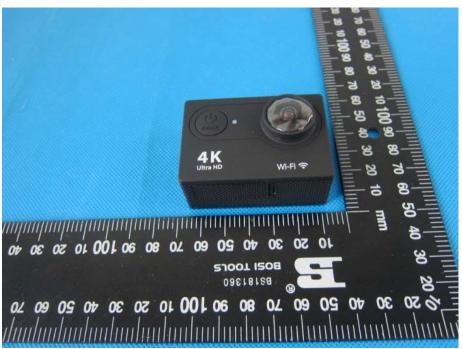




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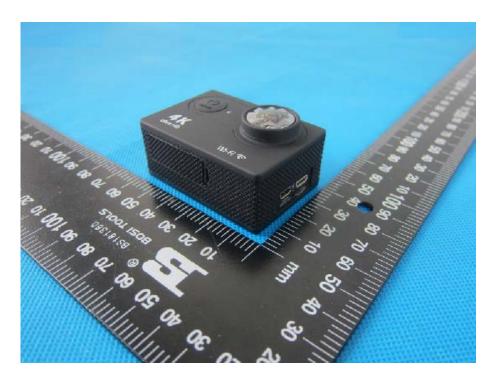


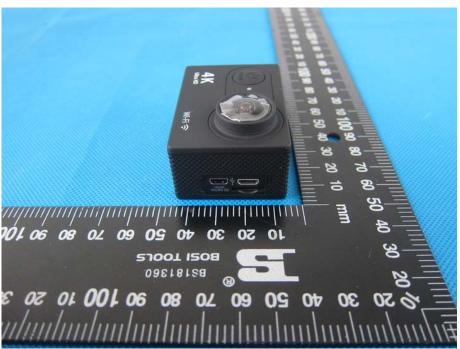




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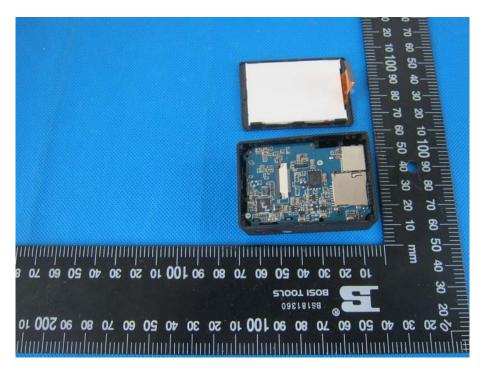


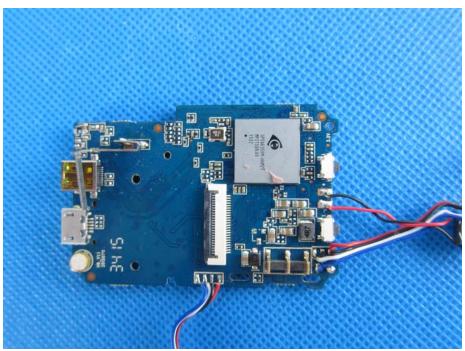




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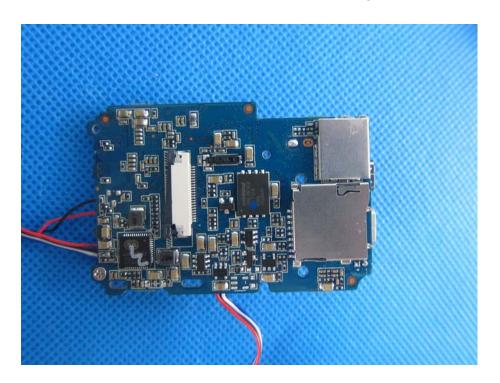






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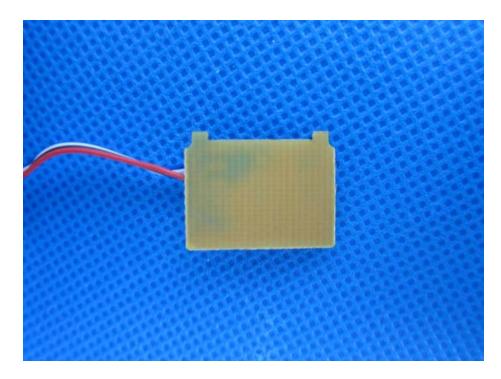


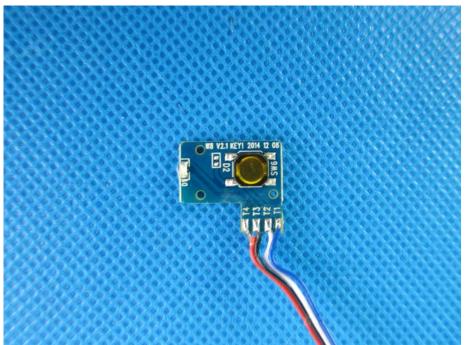




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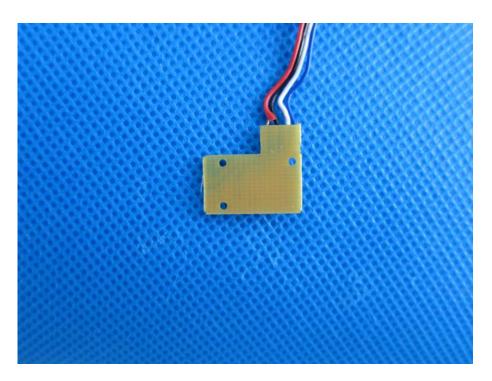


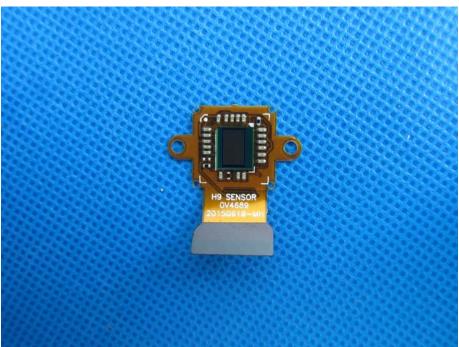




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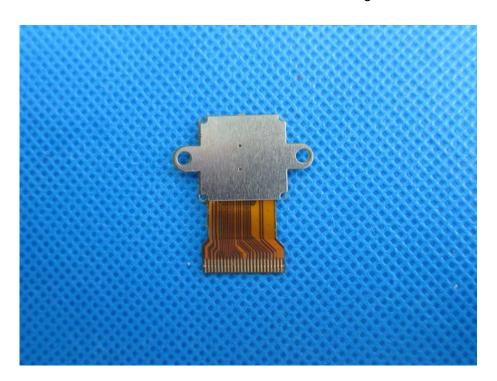


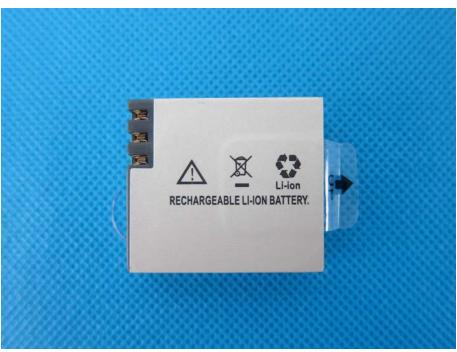




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