Shenzhen EBO Technology Co., Ltd.

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Fax: +86-755-22639141

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: SPORTS CAM

Model No.: S1, S2, S3, S4, S5, S6, S7, S8, S9, G1, G2, G3, G4, G5, G6, G7, G8, G9, H1, H2, H3, H4, H5, H6, H7, H8, H9, I1, I2, I3, I4, I5, I6, I7, I8, I9, N1, N2, N3, N4, N5, N6, N7, N8, N9, M1, M2, M3, M4, M5, M6, M7, M8, M9

FCC ID: 2ADDG-G2

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

Date of sample receipt: May 21, 2015

Date of Test: May 21, 2015 To May 27, 2015

Date of report issue: May 27, 2015

Test Result : PASS *

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

Authorized Signature:

Kevin Yu
Laboratory Manager

2 Version

Version No.	Date	Description
00	*May 27, 2015*	*Original*

Prepared By:  ***Date:*** *May 27, 2015*

Project Engineer

Check By:  ***Date:*** *May 27, 2015*

Reviewer

3 Contents

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.

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:	SPORTS CAM
Model No.:	S1, S2, S3, S4, S5, S6, S7, S8, S9, G1, G2, G3, G4, G5, G6, G7, G8, G9, H1, H2, H3, H4, H5, H6, H7, H8, H9, I1, I2, I3, I4, I5, I6, I7, I8, I9, N1, N2, N3, N4, N5, N6, N7, N8, N9, M1, M2, M3, M4, M5, M6, M7, M8, M9
Test Model No.:	G2
Power supply:	Adapter: Model:XDSS-051000E Input:100-240V~,50/60Hz,0.4A Output:5Vdc, 1A Or DC 3.7V Li-ion Battery

5.3 Test mode

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

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 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

5.6 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC Approval
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.

6 Test Instruments list

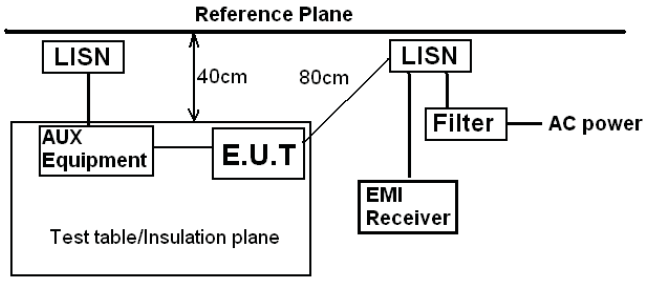
Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	GTS250	Mar. 29 2014	Mar. 28 2016
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	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. 27 2015	Mar. 26 2016
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 27 2015	Mar. 26 2016
11	Thermo meter	N/A	N/A	GTS256	Mar. 27 2015	Mar. 26 2016

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

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

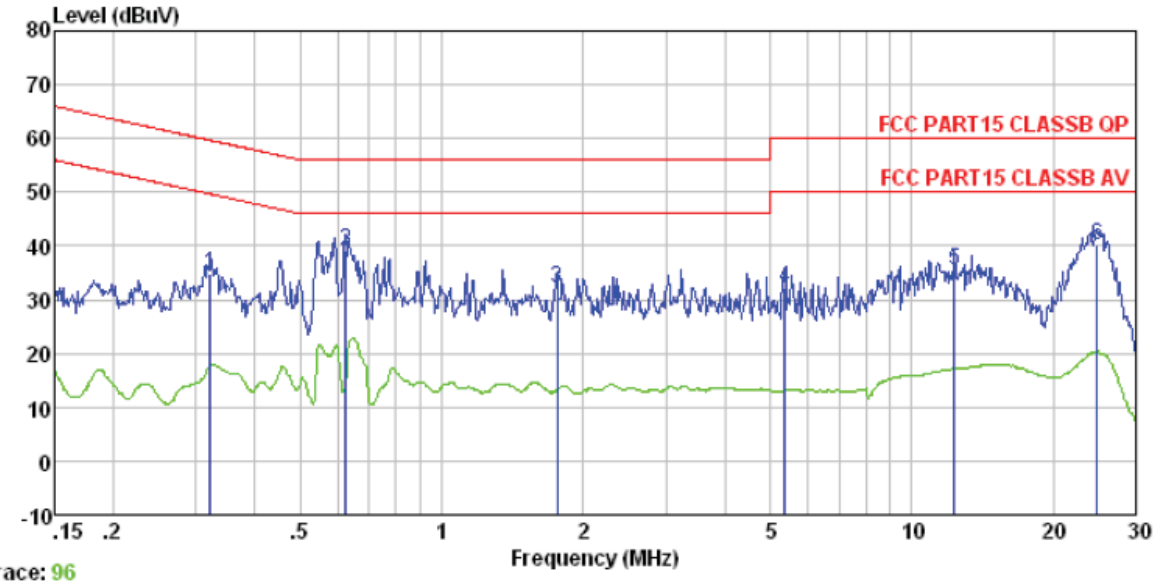
7 Test Results and Measurement Data

7.1 Conducted Emissions

Test Requirement:	FCC Part15 B Section 15.107
Test Method:	ANSI C63.4:2009
Test Frequency Range:	150KHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto
Limit:	Frequency range (MHz) / Limit (dBuV): 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 of the frequency.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test procedure:	1. The E.U.T is 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. 2. 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). 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 C63.4:2009 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

Measurement Data

Test mode:	PC mode		LINE

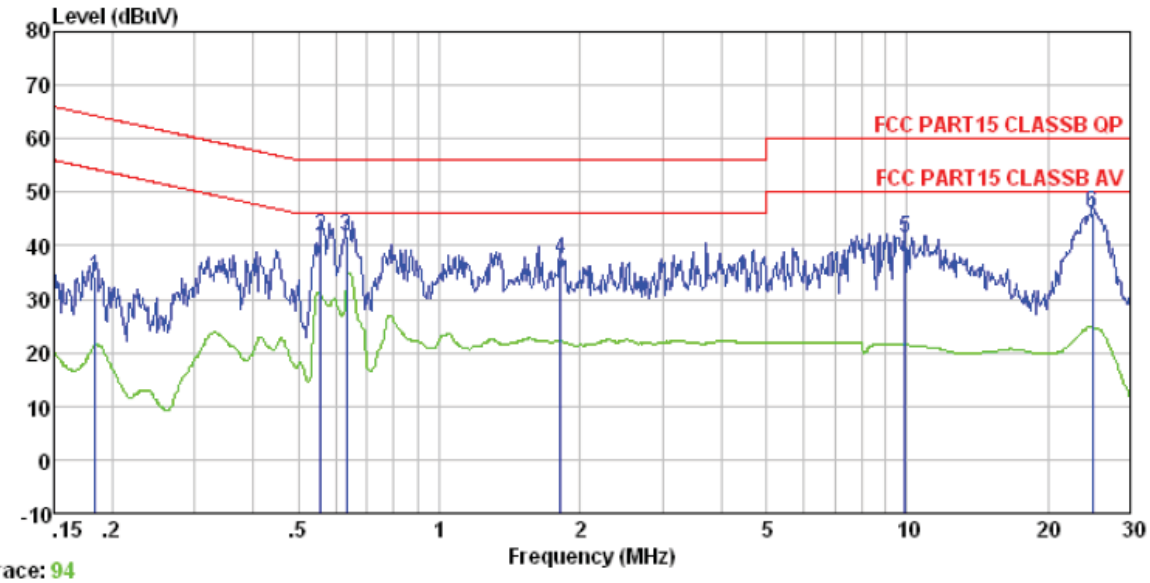


Trace: 96

Condition : FCC PART15 CLASSB QP LISN-2013 LINE

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.322	34.65	0.11	0.10	34.86	59.66	-24.80	QP
2	0.624	38.85	0.13	0.12	39.10	56.00	-16.90	QP
3	1.762	31.79	0.12	0.14	32.05	56.00	-23.95	QP
4	5.362	31.68	0.21	0.15	32.04	60.00	-27.96	QP
5	12.318	35.09	0.36	0.20	35.65	60.00	-24.35	QP
6	24.790	38.95	1.12	0.23	40.30	60.00	-19.70	QP

Test mode:	PC mode		NEUTRAL



Trace: 94

Condition : FCC PART15 CLASSB QP LISN-2013 NEUTRAL

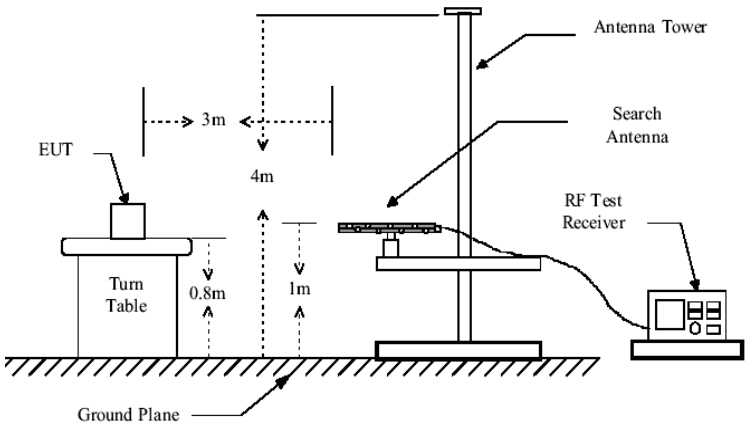
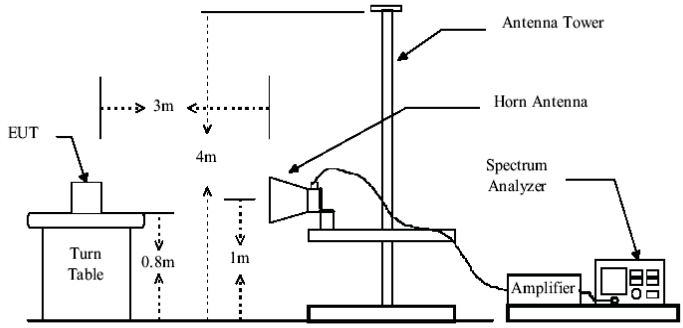
	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.183	34.06	0.07	0.13	34.26	64.33	-30.07	QP
2	0.558	41.74	0.07	0.12	41.93	56.00	-14.07	QP
3	0.634	41.56	0.07	0.13	41.76	56.00	-14.24	QP
4	1.819	37.15	0.09	0.14	37.38	56.00	-18.62	QP
5	9.913	41.14	0.24	0.19	41.57	60.00	-18.43	QP
6	24.922	44.93	1.04	0.23	46.20	60.00	-13.80	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.

7.2 Radiated Emission

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 B Section 15.109</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4:2009</td></tr>
<tr><td>Test Frequency Range:</td><td>30MHz to 6GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m (Semi-Anechoic Chamber)</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td>30MHz-88MHz</td><td>40.00</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.50</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.00</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.00</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.00</td><td>Average Value</td></tr>
<tr><td>74.00</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Test Procedure:</td><td>
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.
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.
</td></tr>
</table>

Test setup:	Below 1GHz  Above 1GHz 
Test environment:	Temp.: 25 °C Humid.: 52% Press.: 1 012mbar
Measurement Record:	Uncertainty: ± 4.5dB
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

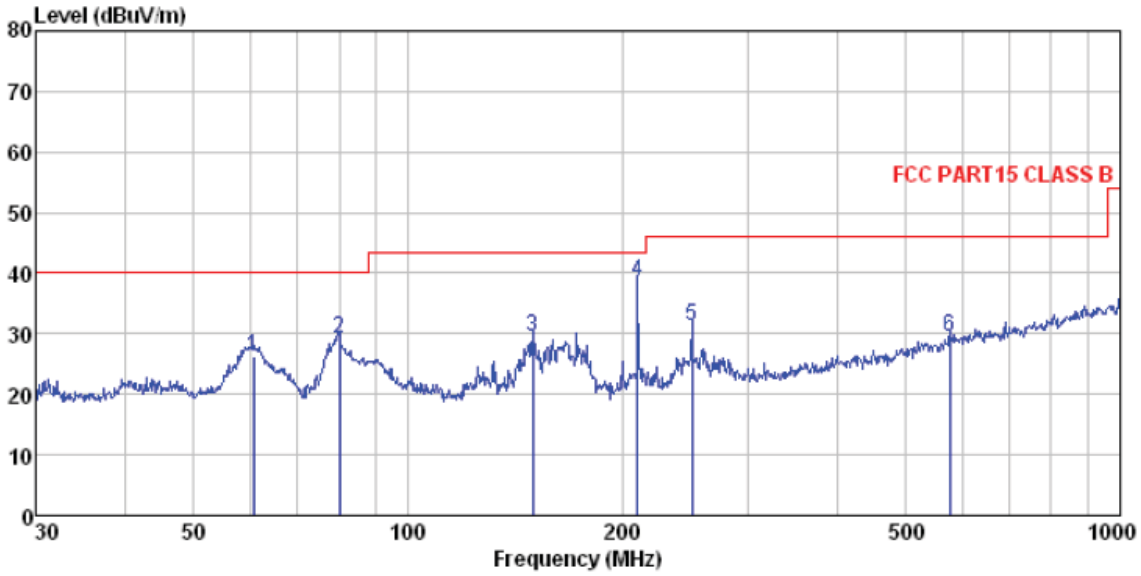
Note:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

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

Measurement Data

Below 1GHz

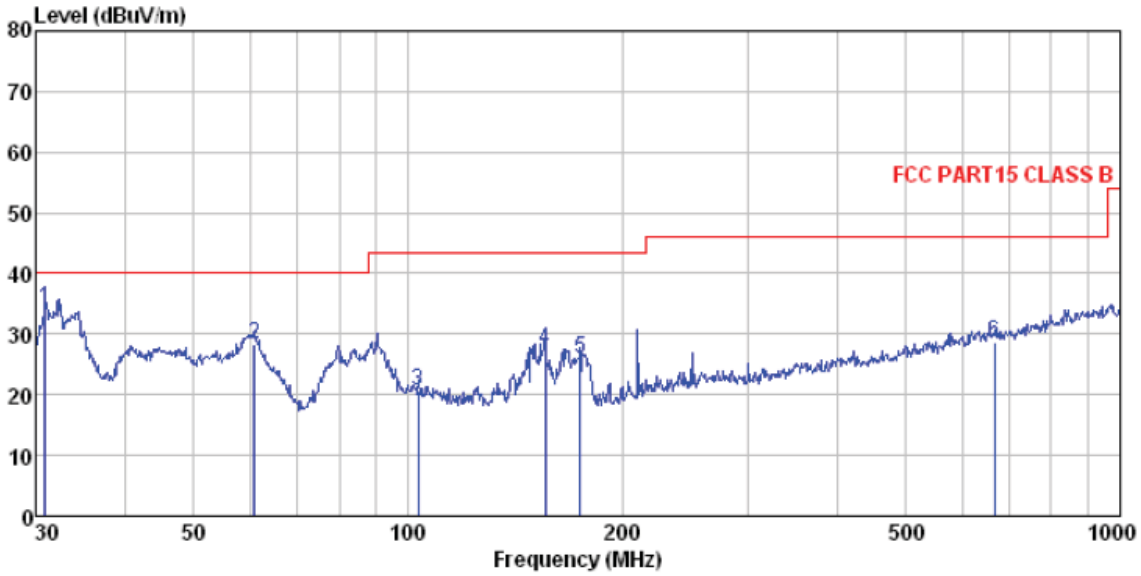
Test mode:	PC mode	Ant Pol.	Horizontal



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163-2013M HORIZONTAL

	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	60.704	42.82	14.43	0.87	31.94	26.18	40.00	-13.82	QP
2	80.081	49.40	10.54	1.03	31.76	29.21	40.00	-10.79	QP
3	149.486	49.78	10.26	1.56	31.98	29.62	43.50	-13.88	QP
4	210.048	56.06	12.87	1.90	32.15	38.68	43.50	-4.82	QP
5	250.301	47.27	14.07	2.12	32.16	31.30	46.00	-14.70	QP
6	576.644	36.88	20.03	3.63	31.15	29.39	46.00	-16.61	QP

Test mode:	PC mode	Ant Pol.	Vertical

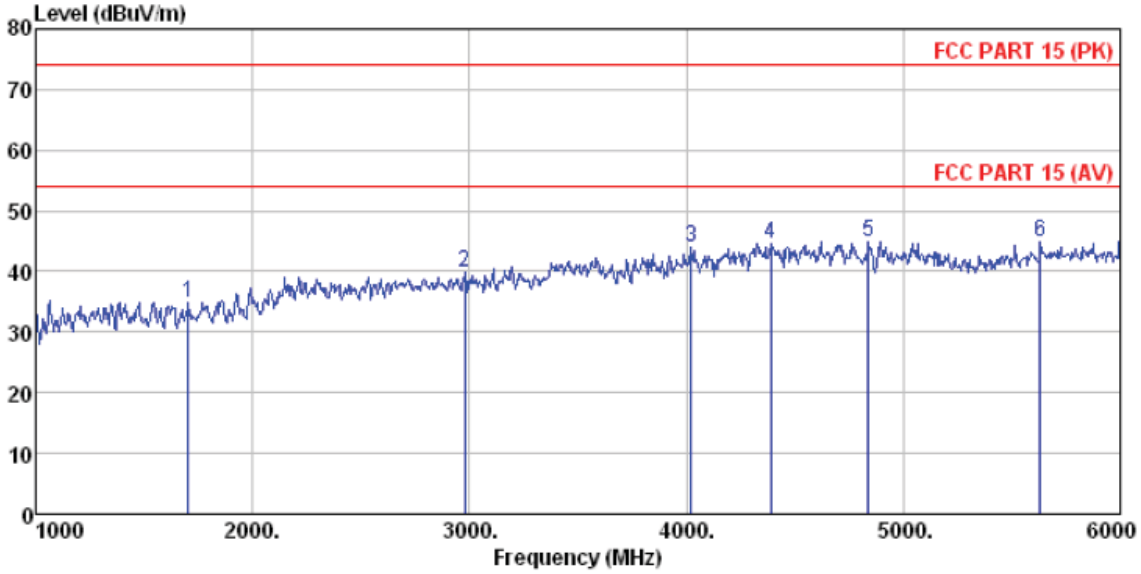


Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163-2013M VERTICAL

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	30.962	51.56	14.32	0.56	32.06	34.38	40.00	-5.62	QP
2	60.918	45.07	14.43	0.87	31.93	28.44	40.00	-11.56	QP
3	103.442	36.31	14.82	1.22	31.78	20.57	43.50	-22.93	QP
4	155.910	47.45	10.51	1.60	32.00	27.56	43.50	-15.94	QP
5	174.424	44.95	11.29	1.71	32.06	25.89	43.50	-17.61	QP
6	665.804	35.23	20.69	3.97	31.14	28.75	46.00	-17.25	QP

Above 1GHz

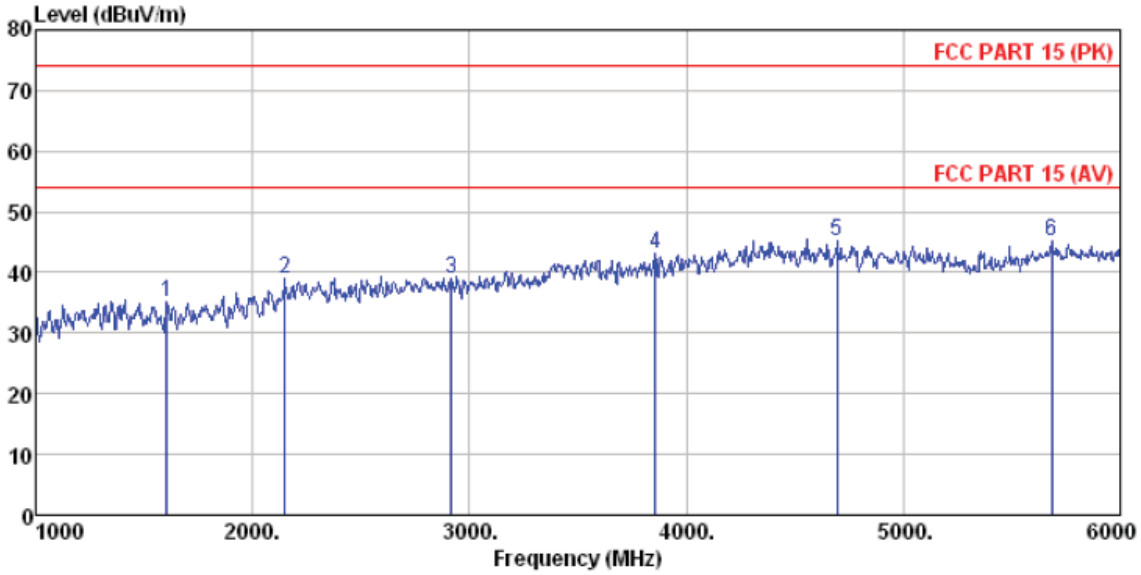
Test mode:	PC mode	Ant Pol.	Horizontal



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) HORIZONTAL

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1705.000	38.97	24.99	4.81	33.94	34.83	74.00	-39.17	Peak
2	2980.000	38.75	28.45	5.91	33.35	39.76	74.00	-34.24	Peak
3	4020.000	38.41	29.73	7.88	32.15	43.87	74.00	-30.13	Peak
4	4390.000	37.13	31.05	8.24	31.88	44.54	74.00	-29.46	Peak
5	4840.000	36.49	31.81	8.63	32.11	44.82	74.00	-29.18	Peak
6	5630.000	35.18	32.32	9.70	32.36	44.84	74.00	-29.16	Peak

Test mode:	PC mode	Ant Pol.	Vertical

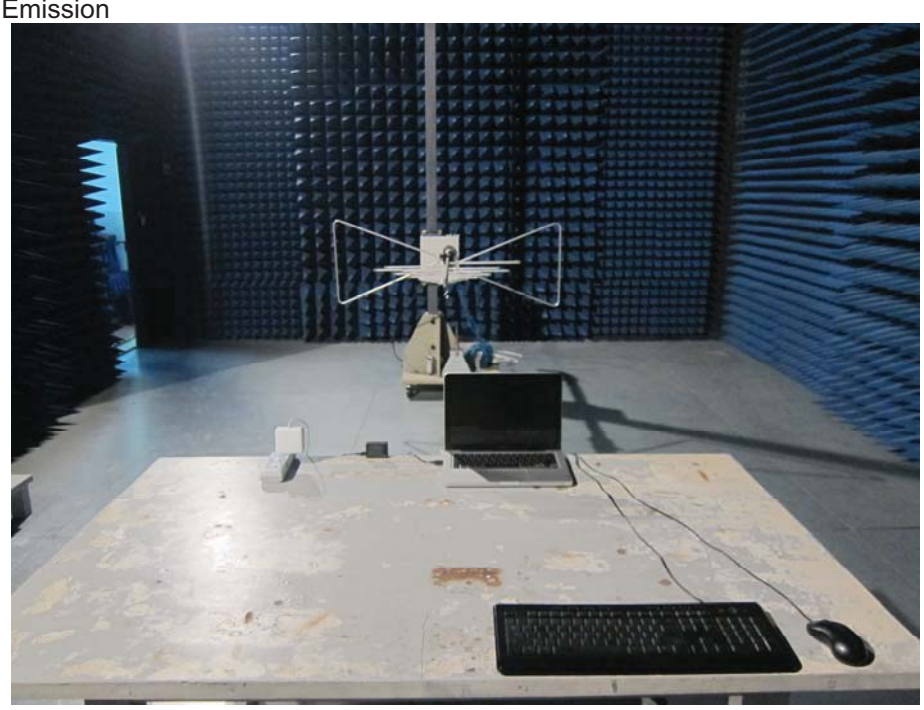


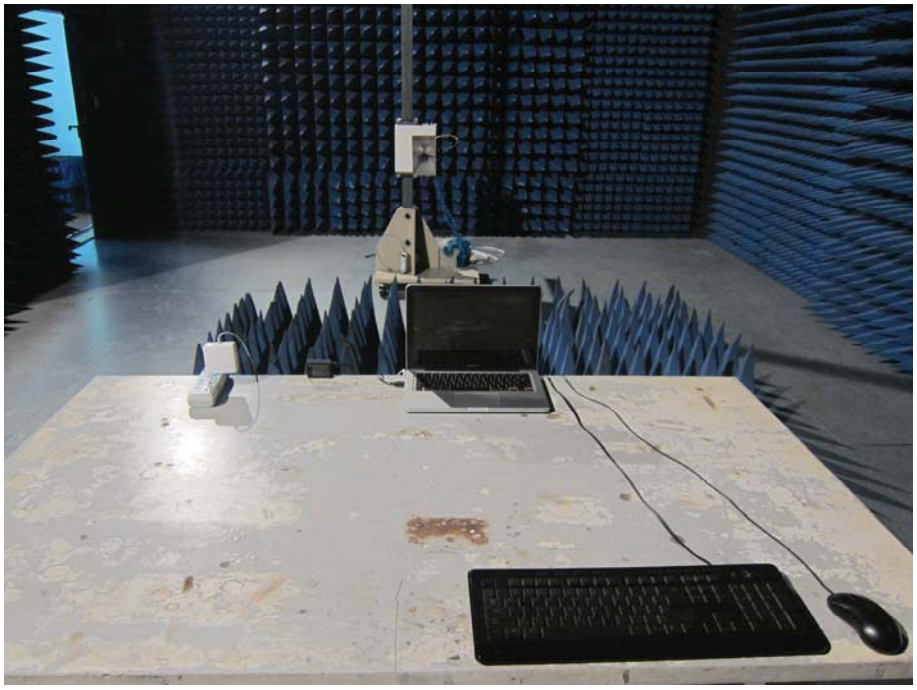
Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) VERTICAL

	Freq	ReadLevel	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1605.000	39.34	24.97	4.75	33.79	35.27	74.00	-38.73	Peak
2	2150.000	40.60	27.52	5.13	34.29	38.96	74.00	-35.04	Peak
3	2915.000	38.06	28.44	5.85	33.41	38.94	74.00	-35.06	Peak
4	3855.000	38.39	29.44	7.62	32.34	43.11	74.00	-30.89	Peak
5	4695.000	36.93	31.65	8.51	32.03	45.06	74.00	-28.94	Peak
6	5685.000	35.30	32.47	9.77	32.31	45.23	74.00	-28.77	Peak

8 Test Setup Photo

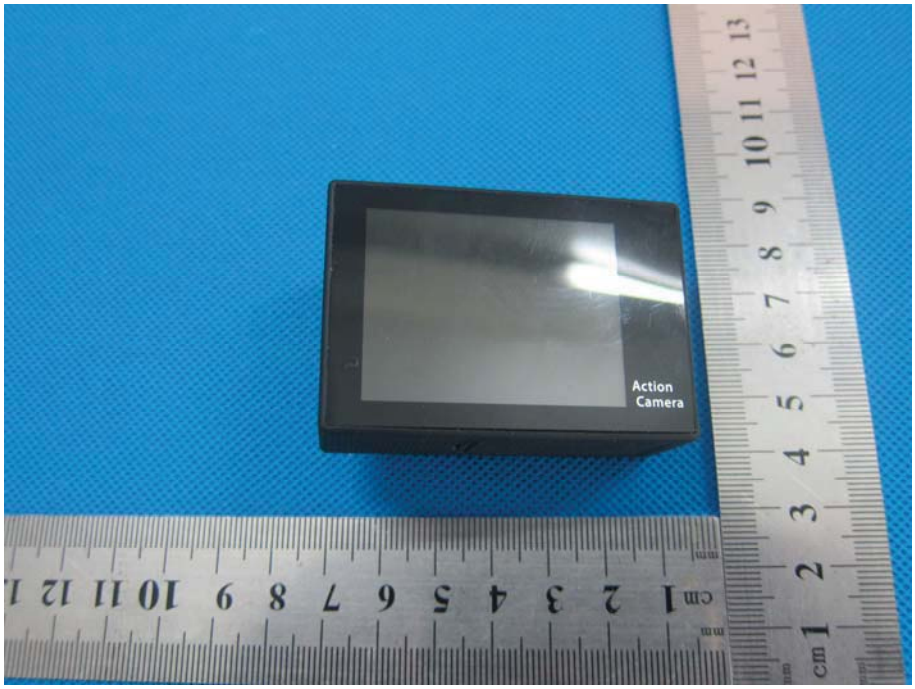
Radiated Emission

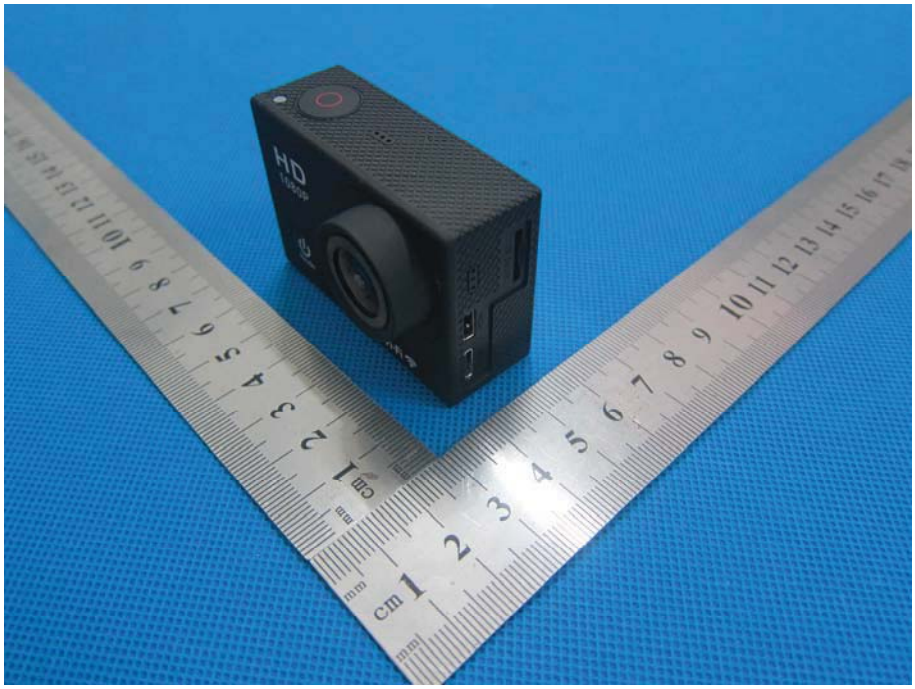


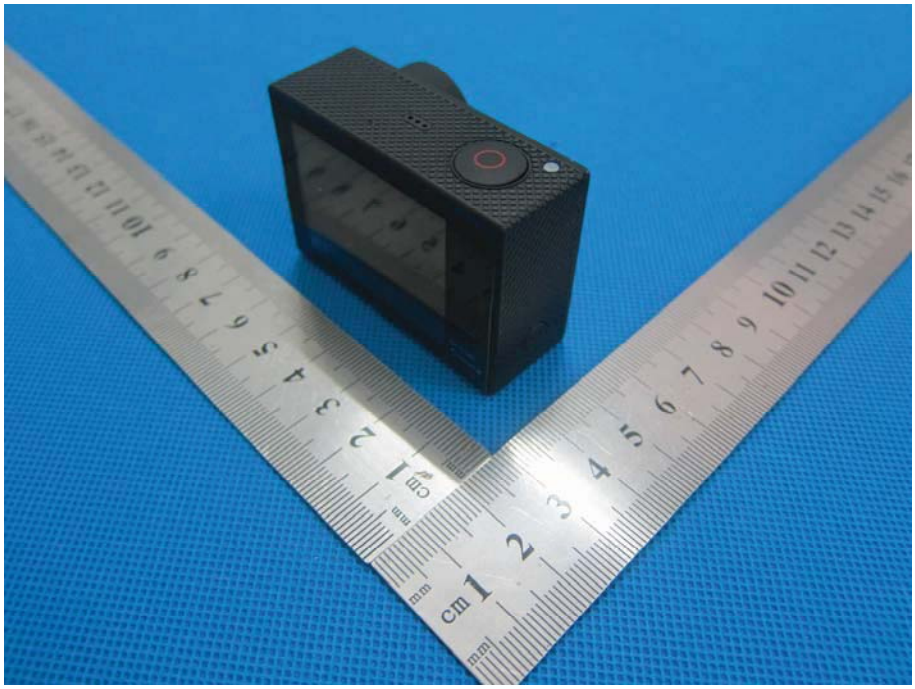


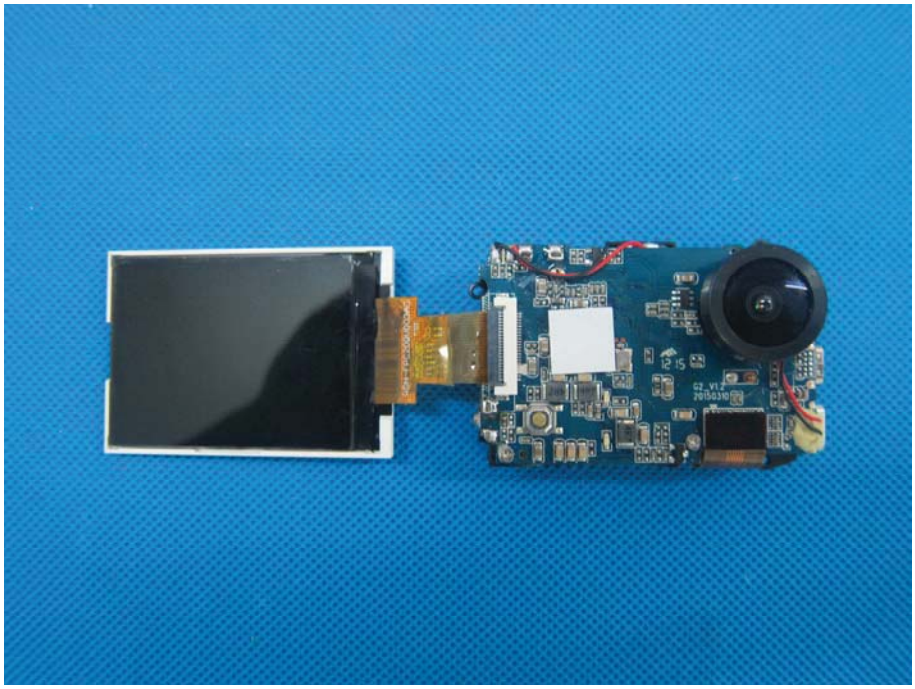
Conducted Emission

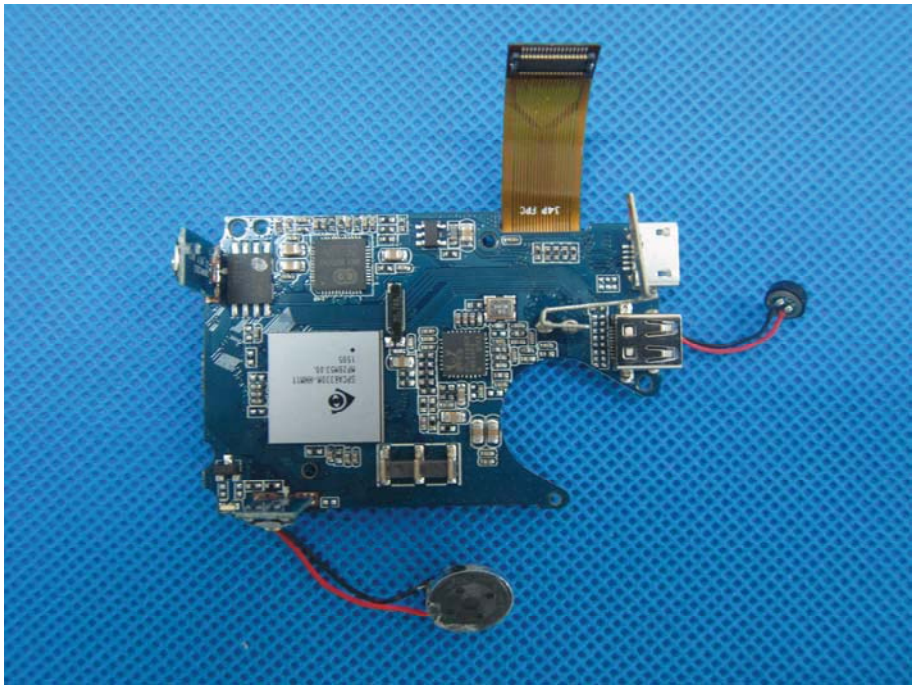
9 EUT Constructional Details

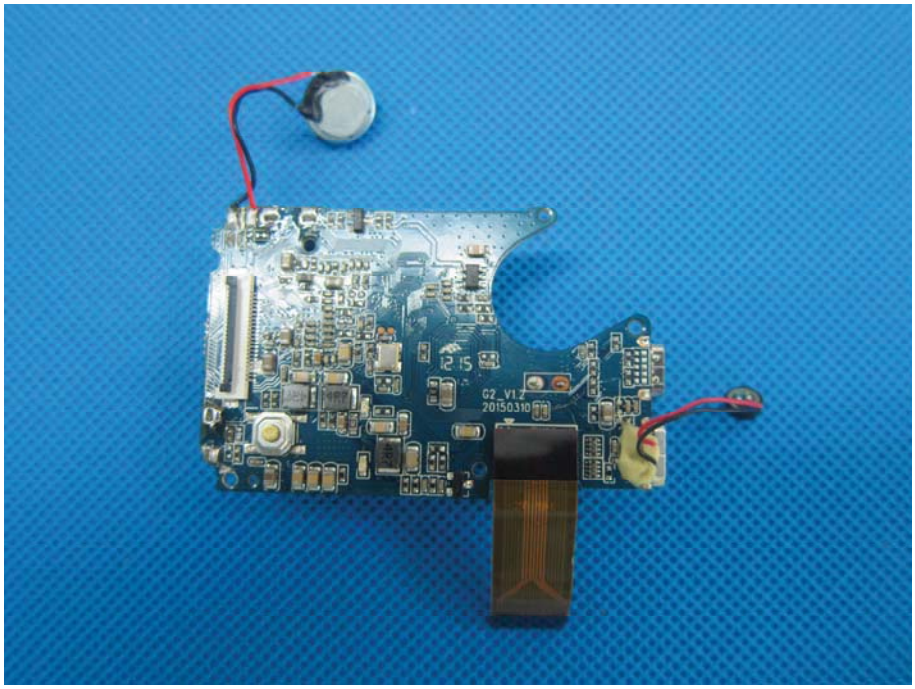


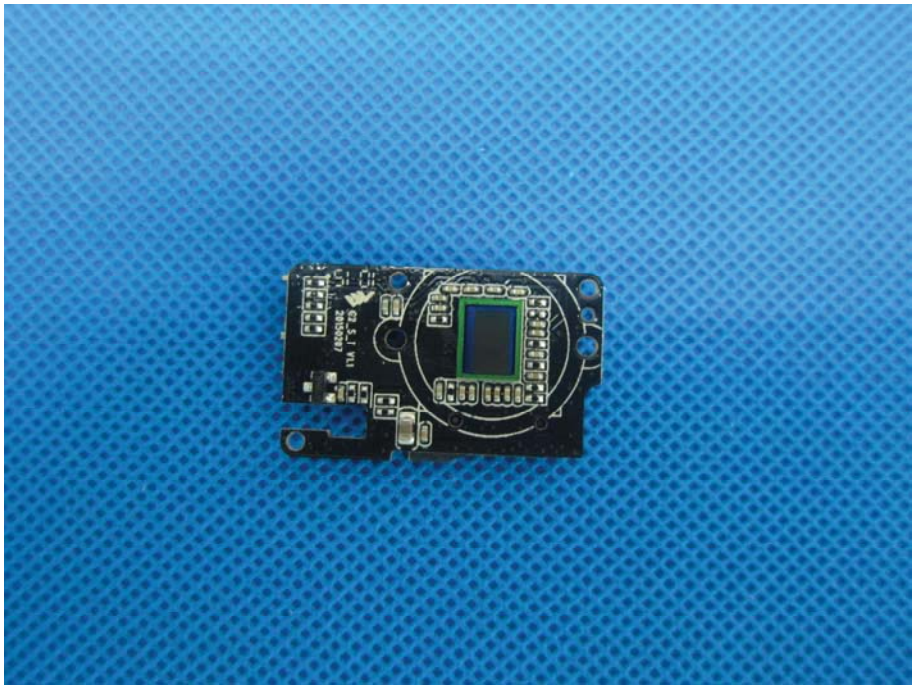


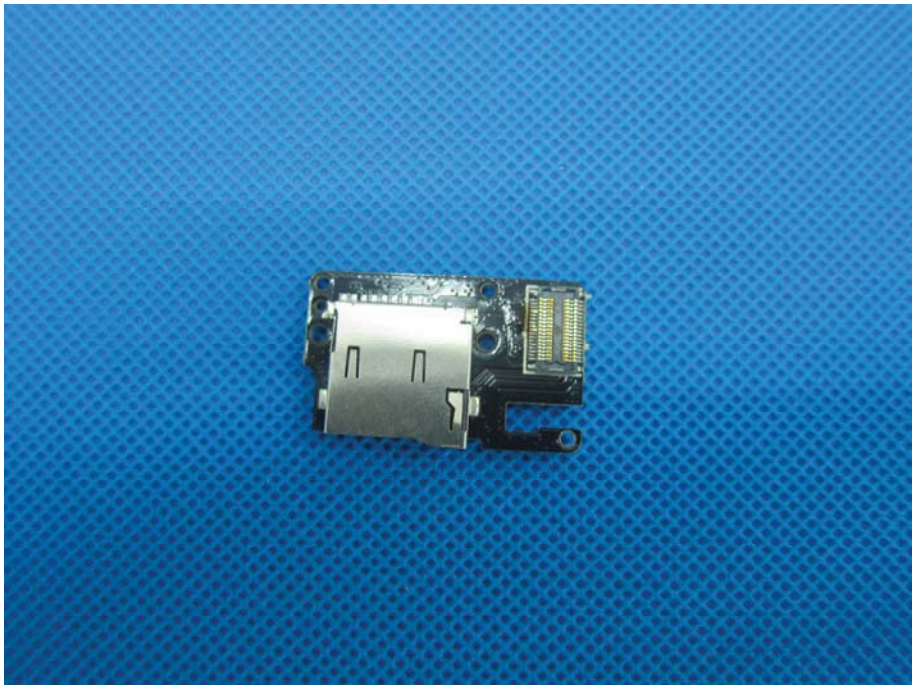












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