

FCC Test Report

Report No.: AGC00003130401FE01

FCC ID : NW71008

Application Purpose : Original

Product Designation : iON Adventure/Adventure/HD Sports Video Camera/

Brand Name : iON

MoDEL NAME : 1008, 1028, 1029, 1030, 1031, 1032

Client : World Wide Licenses Limited

Date of Issue : May 07,2013

STANDARD(S) : FCC Part 15 Rules

REPORT VERSION : V1.0

Attestation of **Global Compliance (Shenzhen) Co., Ltd**

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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	May 07,2013	Valid	Original Report

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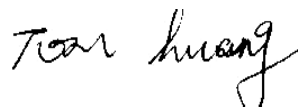
1. VERIFICATION OF CONFORMITY

Applicant	World Wide Licenses Limited
Address	SuiteD,16/F, On Hing Building, No.1 On Hing Terrace, Central, HongKong
Manufacturer	SKY LIGHT Electronic (ShenZhen) Limited
Address	No. 6 Building, JinBi Industrial Area, HuangTian, BaoAn, Shenzhen, China
Product Designation	iON Adventure/Adventure/HD Sports Video Camera/
Brand Name	iON
Test Model	1008
Series Model	1028, 1029, 1030, 1031, 1032
Difference description	All the same except for the model name.
Measurement Procedure	ANSI C63.4: 2003
Date of test	May 02~ May 06,2013
Deviation	None
Condition of Test Sample	Normal
Report Template	AGCRT-US-IT/AC(2013-03-01)

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. for compliance with the requirements set forth in the FCC Rules and Regulations Part 15, the measurement procedure according to ANSI C63.4:2003. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements.

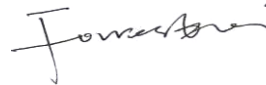
The test results of this report relate only to the tested sample identified in this report.

Prepared By



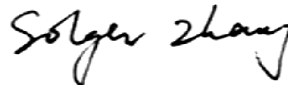
Tom Huang May 07,2013

Checked By



Forrest Lei May 07,2013

Authorized By



Solger Zhang May 07,2013

2. SYSTEM DESCRIPTION

TEST MODE DESCRIPTION	
NO.	TEST MODE DESCRIPTION
1	Charging+ Camera
2	DC Charging+ Camera
3	USB+TF Playing
4	Camera (With Battery)
5	Video Playing
6	USB+ Copying
7	GPS

Note: 1.All mode RE data recorded in the test report.

3. MEASUREMENT UNCERTAINTY

Conducted measurement: +/- 2.75dB

Radiated measurement: +/- 3.2dB

4. PRODUCT INFORMATION

Housing Type	Plastic
Adapter Input Rating	AC100-240V
Adapter Output Rating	DC5V,100mA

I/O Port Information (Applicable Not Applicable)

I/O Port of EUT			
I/O Port Type	Number	Cable Description	Tested With
USB Port	1	1.2m Unshielded	1
USB Port (Bluetooth Module Port)	1	1.2m Unshielded	1
TF CARD Port	2	0	2

5. SUPPORT EQUIPMENT

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
PC	Dell Inc	N5110	354116	N/A	1.0.m unshielded

6. TEST FACILITY

Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	2/F., Building 2, No.1-No.4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Bao'an District, Shenzhen, Guangdong, China
Description	The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2003.

TEST EQUIPMENT OF LINE CONDUCTED EMISSION TEST

Description	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	100694	04/01/2013	03/31/2014
LISN	R&S	ESH3-Z5	8389791009	07/18/2012	07/17/2013

TEST EQUIPMENT OF RADIATED EMISSION

Description	Manufacturer	Model	S/N	Cal. Date	Cal. Due
SPECTRUM ANALYZER	AGILENT	E4440A	US41421290	07/18/2012	07/17/2013
ANTENNA	A.H.	SAS-521-4	128	06/08/2012	06/07/2013
HORN ANTENNA	EM	EM-AH-10180	N/A	04/21/2012	04/20/2014
AMPLIFIER	EM	EM30180	0607030	02/28/2013	02/27/2014
POSITIONING CONTROLLER	MF	MF-7802	MF780208147	--	--

Note: "--" means it's not applicable.

7. FCCLINE CONDUCTED EMISSION TEST

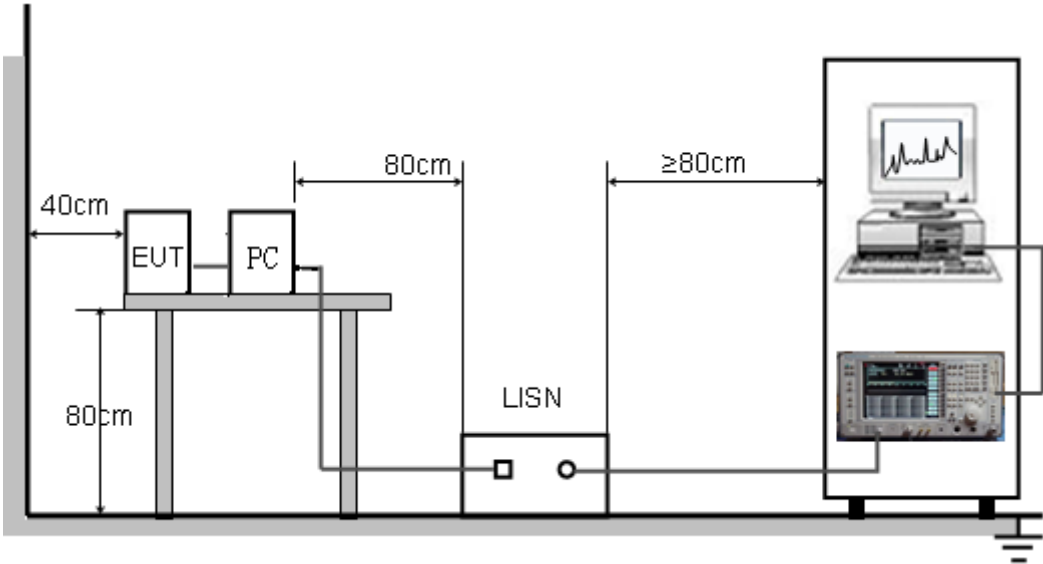
7.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz-500kHz	66-56	56-46
500kHz-5MHz	56	46
5MHz-30MHz	60	50

Note:

1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50MHz.

7.2. BLOCK DIAGRAM OF TEST SETUP



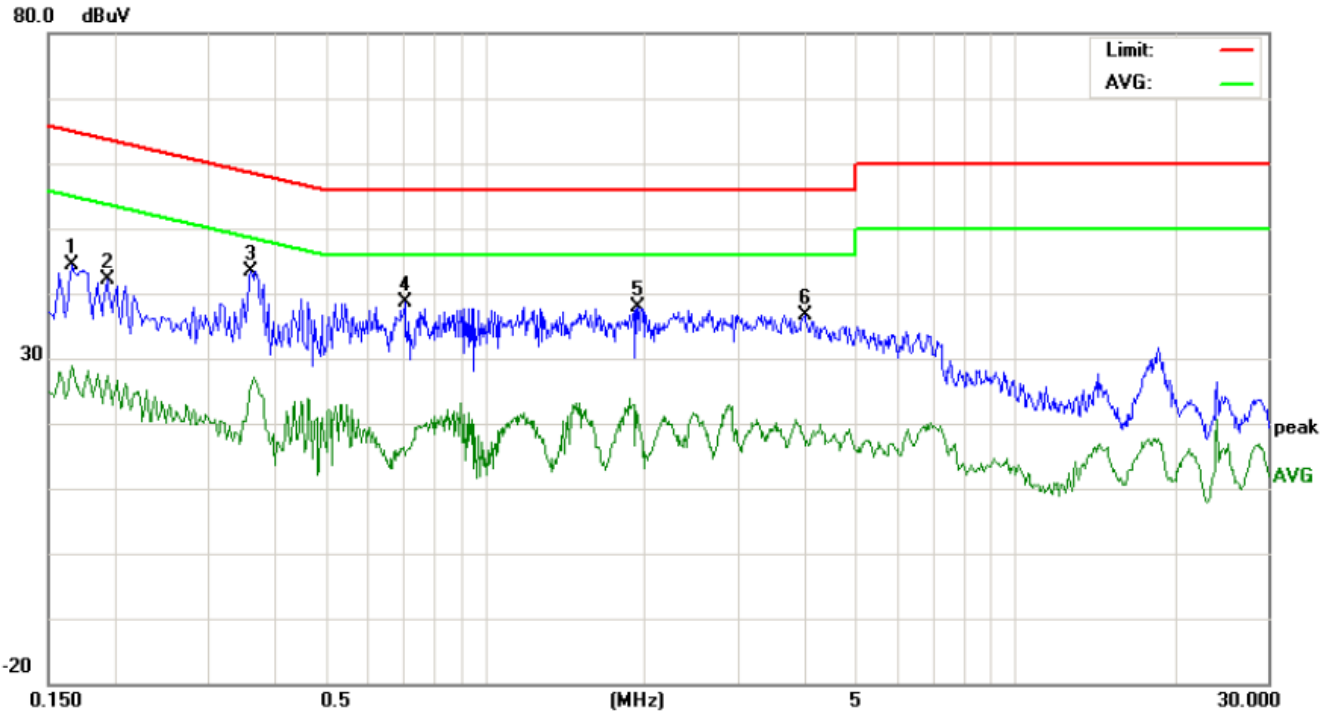
7.3. PROCEDURE OF LINE CONDUCTED EMISSION TEST

- (1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- (2) Support equipment, if needed, was placed as per ANSI C63.4.
- (3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- (4) The EUT received 120V/60Hz power from a LISN.
- (5) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- (6) Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- (7) During the above scans, the emissions were maximized by cable manipulation.
- (8) A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions.
- (9) Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less -2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.

The test data of the worst case condition (mode 1) was reported on the Summary Data page.

7.4. TEST RESULT OF LINE CONDUCTED EMISSION TEST

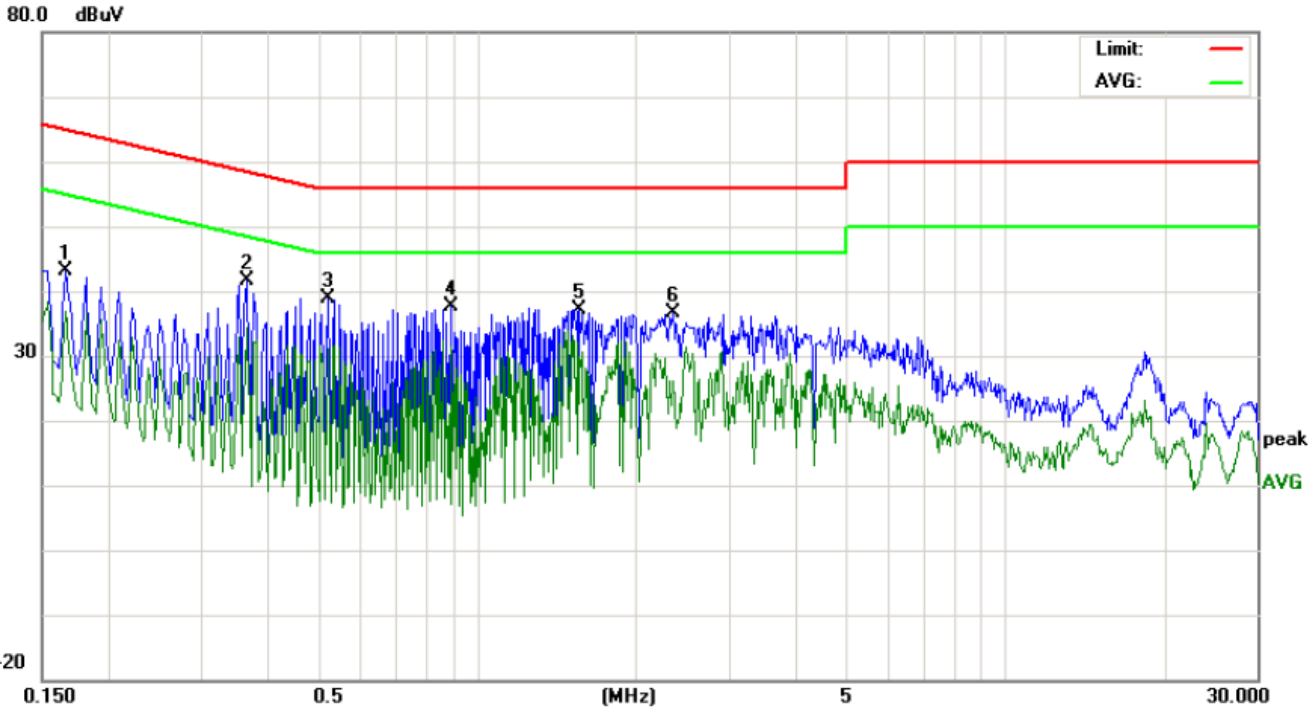
LINE CONDUCTED EMISSION TEST-L



Site: Conduction Phase: **L1** Temperature: 26
 Limit: FCC Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 60 %
 EUT: iON Adventure/Adventure/HD Sports Video Camera/
 M/N: 1008
 Mode: Mode 1
 Note:

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor (dB)	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1660	34.11		18.67	10.18	44.29		28.85	65.15	55.15	-20.86	-26.30	P	
2	0.1940	32.02		17.23	10.21	42.23		27.44	63.86	53.86	-21.63	-26.42	P	
3	0.3620	33.04		15.24	10.31	43.35		25.55	58.68	48.68	-15.33	-23.13	P	
4	0.7060	28.21		4.83	10.35	38.56		15.18	56.00	46.00	-17.44	-30.82	P	
5	1.9460	27.65		10.87	10.24	37.89		21.11	56.00	46.00	-18.11	-24.89	P	
6	4.0140	26.23		6.79	10.42	36.65		17.21	56.00	46.00	-19.35	-28.79	P	

LINE CONDUCTED EMISSION TEST-N



Site: Conduction Phase: **N** Temperature: 26
 Limit: FCC Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 60 %
 EUT: iON Adventure/Adventure/HD Sports Video Camera/
 M/N: 1008
 Mode: Mode 1
 Note:

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor (dB)	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1660	32.87		26.74	10.18	43.05		36.92	65.15	55.15	-22.10	-18.23	P	
2	0.3660	31.41		24.10	10.32	41.73		34.42	58.59	48.59	-16.86	-14.17	P	
3	0.5220	28.62		20.63	10.38	39.00		31.01	56.00	46.00	-17.00	-14.99	P	
4	0.8900	27.25		20.97	10.40	37.65		31.37	56.00	46.00	-18.35	-14.63	P	
5	1.5620	26.87		19.55	10.36	37.23		29.91	56.00	46.00	-18.77	-16.09	P	
6	2.3540	26.20		15.85	10.37	36.57		26.22	56.00	46.00	-19.43	-19.78	P	

RESULT: PASS

8. FCC RADIATED EMISSION TEST

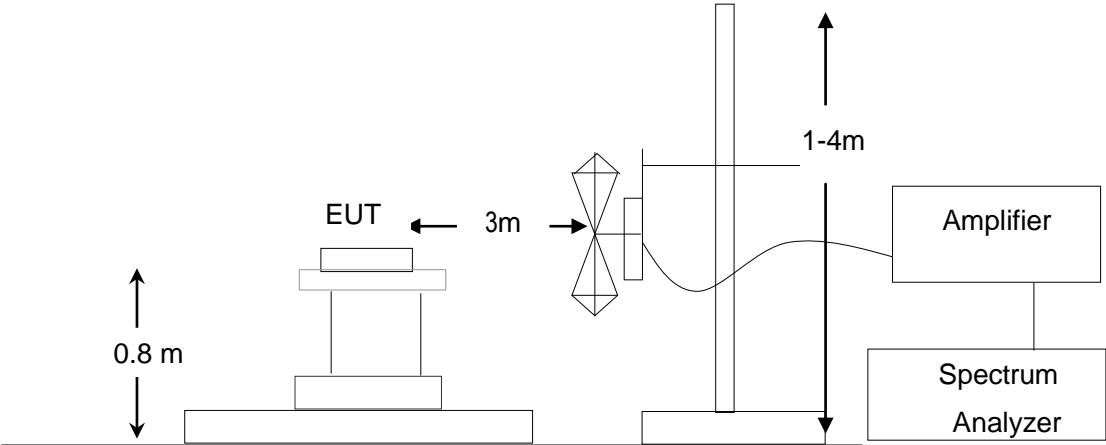
8.1. LIMITS OF RADIATED EMISSION TEST

Frequency (MHz)	Distance (m)	Maximum Field Strength Limit (dBuV/m/ Q.P.)
30~88	3	40.0
88~216	3	43.5
216~960	3	46.0
Above 960	3	54.0

Note: The lower limit shall apply at the transition frequency.

8.2. BLOCK DIAGRAM OF TEST SETUP

System Diagram of Connections between EUT and Simulators

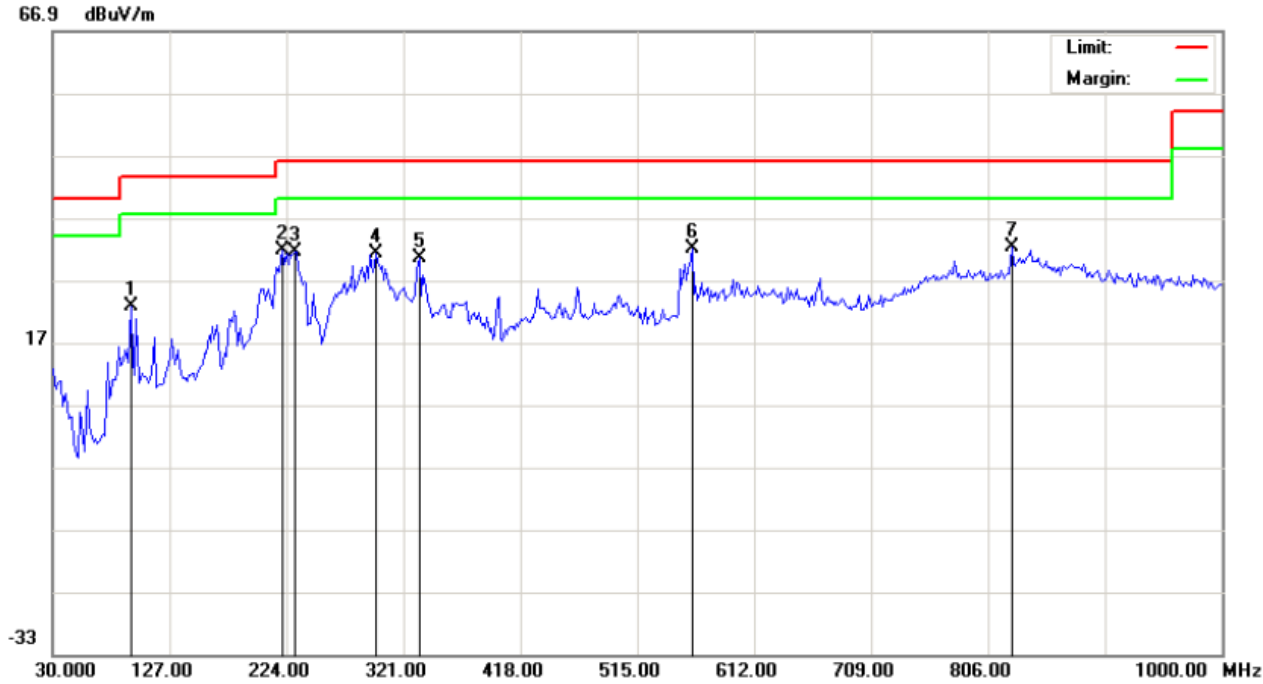


8.3. PROCEDURE OF RADIATED EMISSION TEST

- (1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- (2) Support equipment, if needed, was placed as per ANSI C63.4.
- (3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- (4) The EUT received DC 5V power from PC with receive 120V/60Hz power from socket under the turntable.
- (5) The antenna was placed at 3 meter away from the EUT as stated in FCC Part 15. The antenna connected to the Analyzer via a cable and at times a pre-amplifier would be used.
- (6) The Analyzer / Receiver quickly scanned from 30MHz to 1000MHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- (7) The test mode(s) were scanned during the test:
- (8) Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and Q.P./Peak reading is presented.

The test data of the worst case condition (mode 1) was reported on the Summary Data page.

Radiated Emission Test at 3m Distance-Horizontal



Site: site #1
 Limit: FCC Class B 3M Radiation
 EUT: iON Adventure/Adventure/HD Sports Video Camera/
 M/N: 1008
 Mode: Mode 4
 Note:

Polarization: *Horizontal*
 Power: AC 120V/60Hz

Temperature: 26
 Humidity: 60 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		94.6667	7.82	15.06	22.88	43.50	-20.62	peak			
2		220.7667	19.24	12.47	31.71	46.00	-14.29	peak			
3		230.4667	18.99	12.49	31.48	46.00	-14.52	peak			
4		298.3667	14.35	17.02	31.37	46.00	-14.63	peak			
5		333.9333	11.64	18.78	30.42	46.00	-15.58	peak			
6		560.2667	7.94	24.02	31.96	46.00	-14.04	peak			
7	*	825.4000	3.35	28.96	32.31	46.00	-13.69	peak			

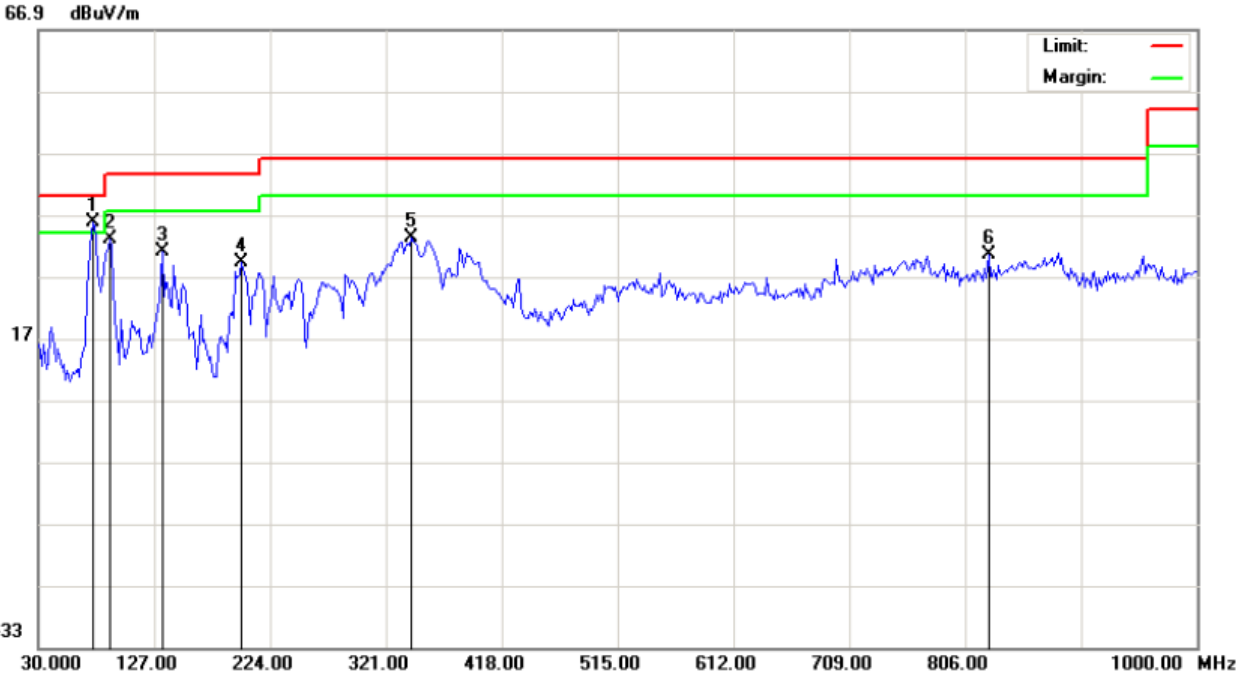
Radiated Emission Test at 3m Distance-Horizontal



Site: site #1 Polarization: *Horizontal* Temperature: 26
 Limit: FCC Class B 3M Radiation Power: AC 120V/60Hz Humidity: 60 %
 EUT: iON Adventure/Adventure/HD Sports Video Camera/
 M/N: 1008
 Mode: Mode 5
 Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		94.6667	11.80	15.06	26.86	43.50	-16.64	peak			
2		224.0000	15.62	12.48	28.10	46.00	-17.90	peak			
3		274.1167	15.28	17.21	32.49	46.00	-13.51	peak			
4		299.9833	16.79	17.00	33.79	46.00	-12.21	peak			
5	*	327.4667	15.96	18.56	34.52	46.00	-11.48	peak			
6		620.0833	5.97	25.06	31.03	46.00	-14.97	peak			

Radiated Emission Test at 3m Distance-Vertical

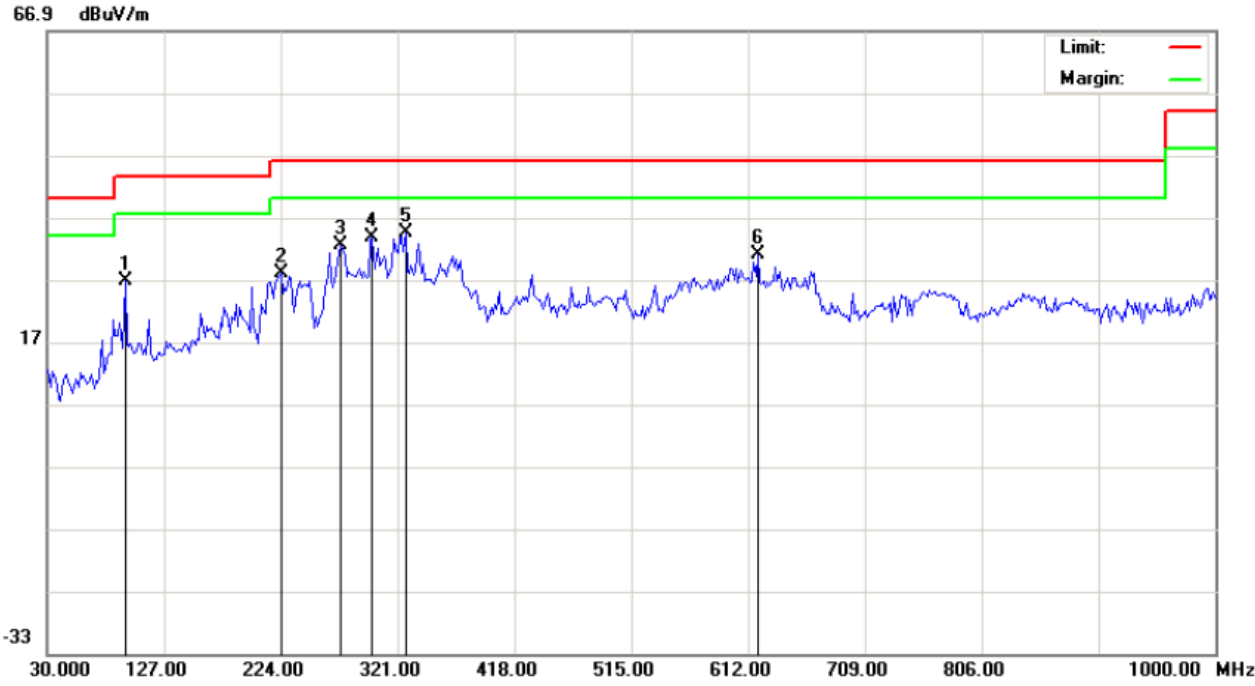


Site: site #1 Polarization: *Vertical* Temperature: 26
Limit: FCC Class B 3M Radiation Power: AC 120V/60Hz Humidity: 60 %
EUT: iON Adventure/Adventure/HD Sports Video Camera/
M/N: 1008
Mode: Mode 6
Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	75.2667	30.02	5.75	35.77	40.00	-4.23	peak			
2		89.8167	24.73	8.37	33.10	43.50	-10.40	peak			
3		133.4667	20.82	10.26	31.08	43.50	-12.42	peak			
4		199.7500	20.96	8.23	29.19	43.50	-14.31	peak			
5		342.0167	14.24	18.99	33.23	46.00	-12.77	peak			
6		825.4000	2.33	28.27	30.60	46.00	-15.40	peak			

RESULT: PASS

Radiated Emission Test at 3m Distance-Horizontal

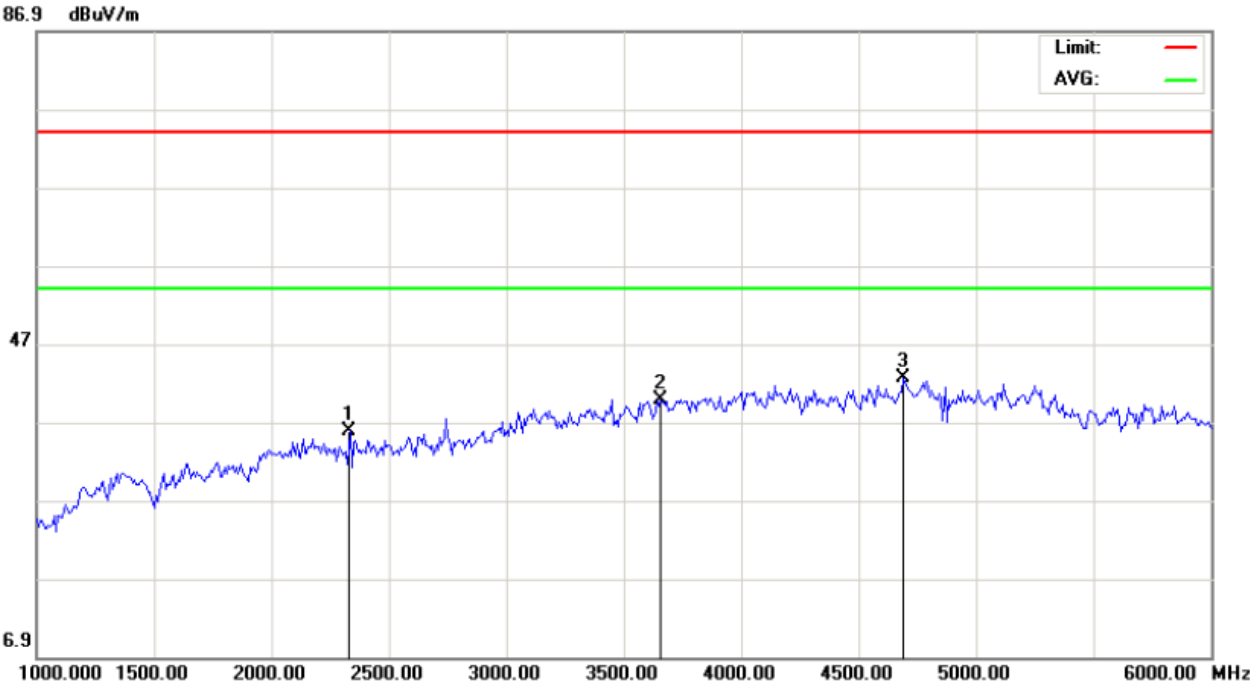


Site: site #1 Polarization: **Horizontal** Temperature: 26
 Limit: FCC Class B 3M Radiation Power: AC 120V/60Hz Humidity: 60 %
 EUT: iON Adventure/Adventure/HD Sports Video Camera/
 M/N: 1008
 Mode: Mode 7
 Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		94.6667	11.80	15.06	26.86	43.50	-16.64	peak			
2		224.0000	15.62	12.48	28.10	46.00	-17.90	peak			
3		274.1167	15.28	17.21	32.49	46.00	-13.51	peak			
4		299.9833	16.79	17.00	33.79	46.00	-12.21	peak			
5	*	327.4667	15.96	18.56	34.52	46.00	-11.48	peak			
6		620.0833	5.97	25.06	31.03	46.00	-14.97	peak			

RESULT: PASS

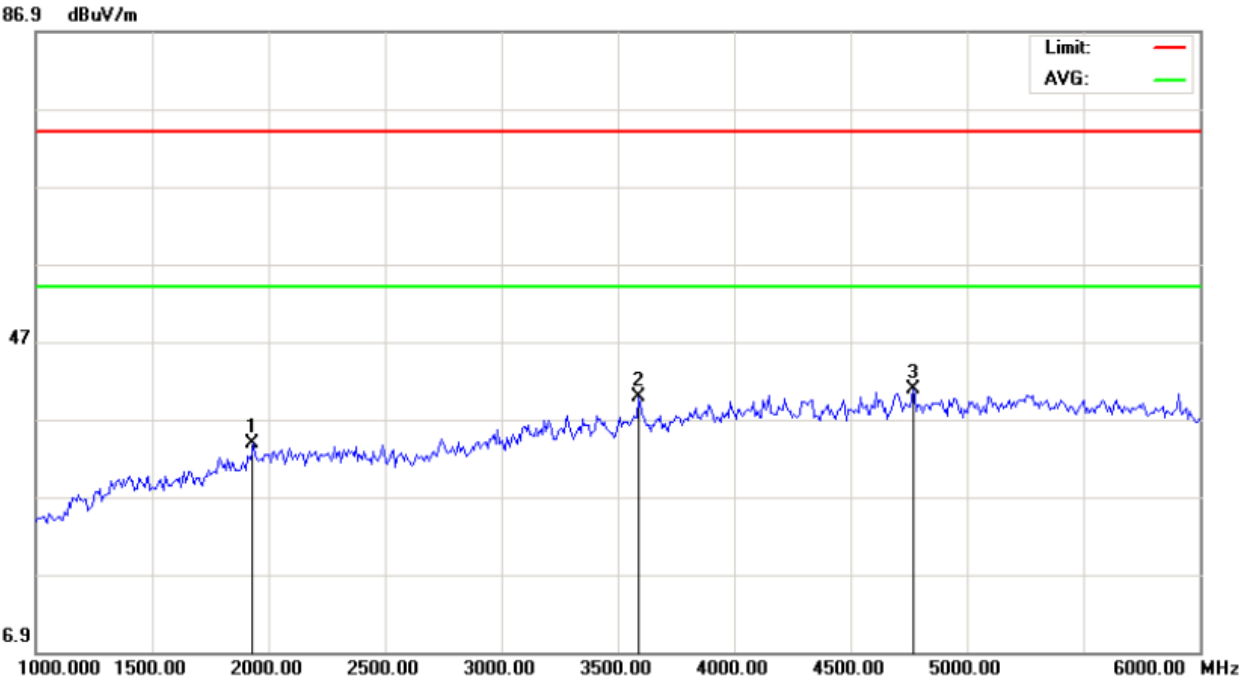
Above 1G Test Data
 Radiated Emission Test at 3m Distance-Horizontal



Site: site #1 Polarization: *Horizontal* Temperature: 26
 Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: AC 120V/60Hz Humidity: 60 %
 EUT: iON Adventure/Adventure/HD Sports Video Camera/
 M/N: 1008
 Mode: Mode 1
 Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2333.333	45.48	-9.75	35.73	74.00	-38.27	peak			
2		3658.333	46.73	-6.91	39.82	74.00	-34.18	peak			
3	*	4691.667	45.19	-2.61	42.58	74.00	-31.42	peak			

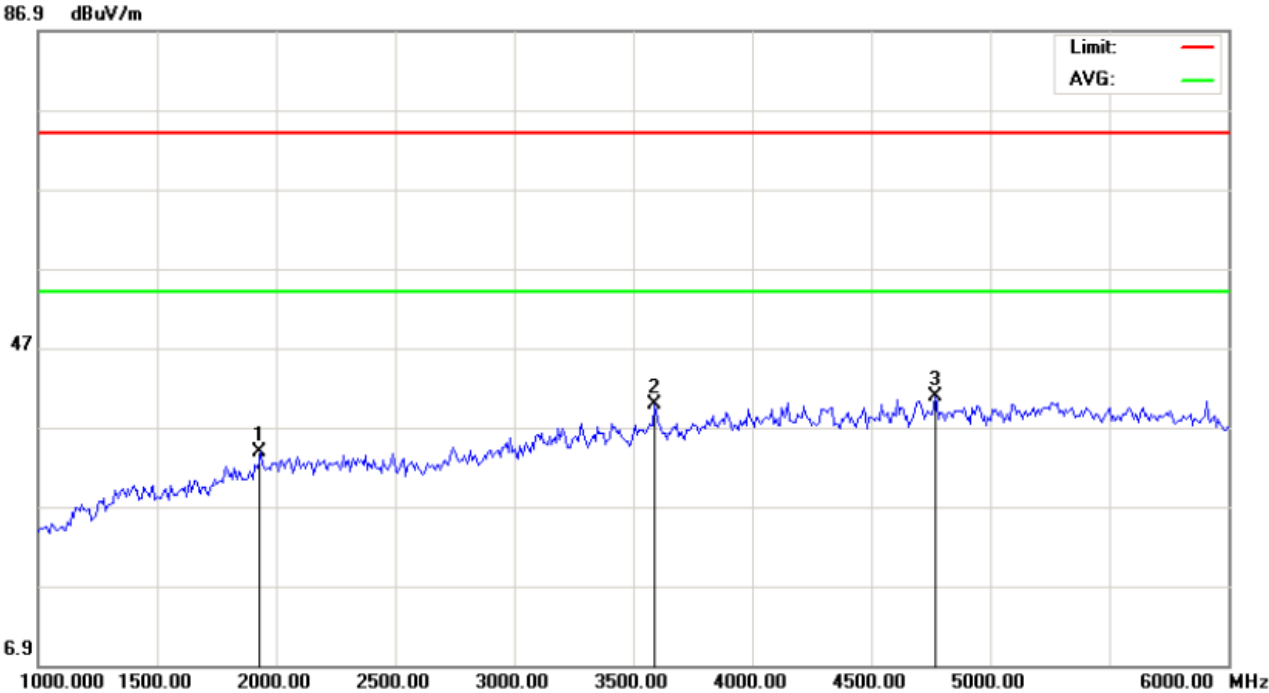
Radiated Emission Test at 3m Distance-Vertical



Site: site #1 Polarization: **Vertical** Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: AC 120V/60Hz Humidity: 60 %
EUT: iON Adventure/Adventure/HD Sports Video Camera/
M/N: 1008
Mode: Mode 2
Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		1933.333	44.69	-10.82	33.87	74.00	-40.13	peak			
2		3591.667	47.22	-7.33	39.89	74.00	-34.11	peak			
3	*	4766.667	43.23	-2.41	40.82	74.00	-33.18	peak			

Radiated Emission Test at 3m Distance-Vertical

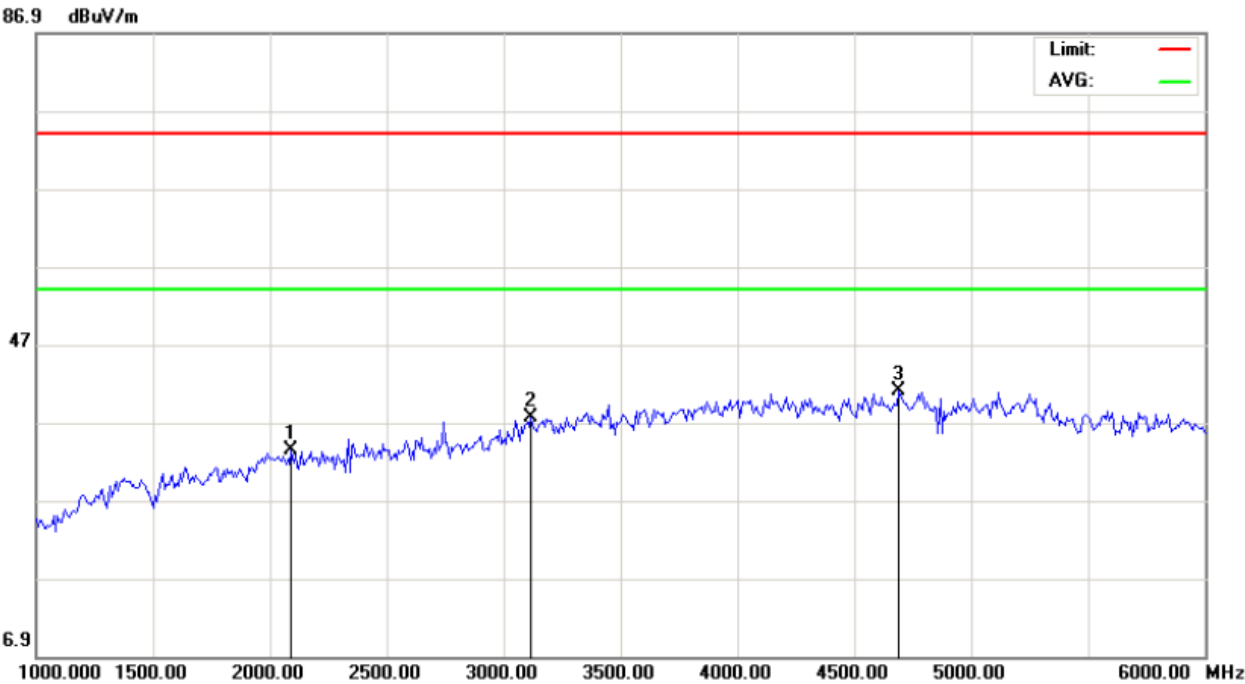


Site: site #1 Polarization: **Vertical** Temperature: 26
 Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: AC 120V/60Hz Humidity: 60 %
 EUT: iON Adventure/Adventure/HD Sports Video Camera/
 M/N: 1008
 Mode: Mode 5
 Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		1933.333	44.69	-10.82	33.87	74.00	-40.13	peak			
2		3591.667	47.22	-7.33	39.89	74.00	-34.11	peak			
3	*	4766.667	43.23	-2.41	40.82	74.00	-33.18	peak			

RESULT: PASS

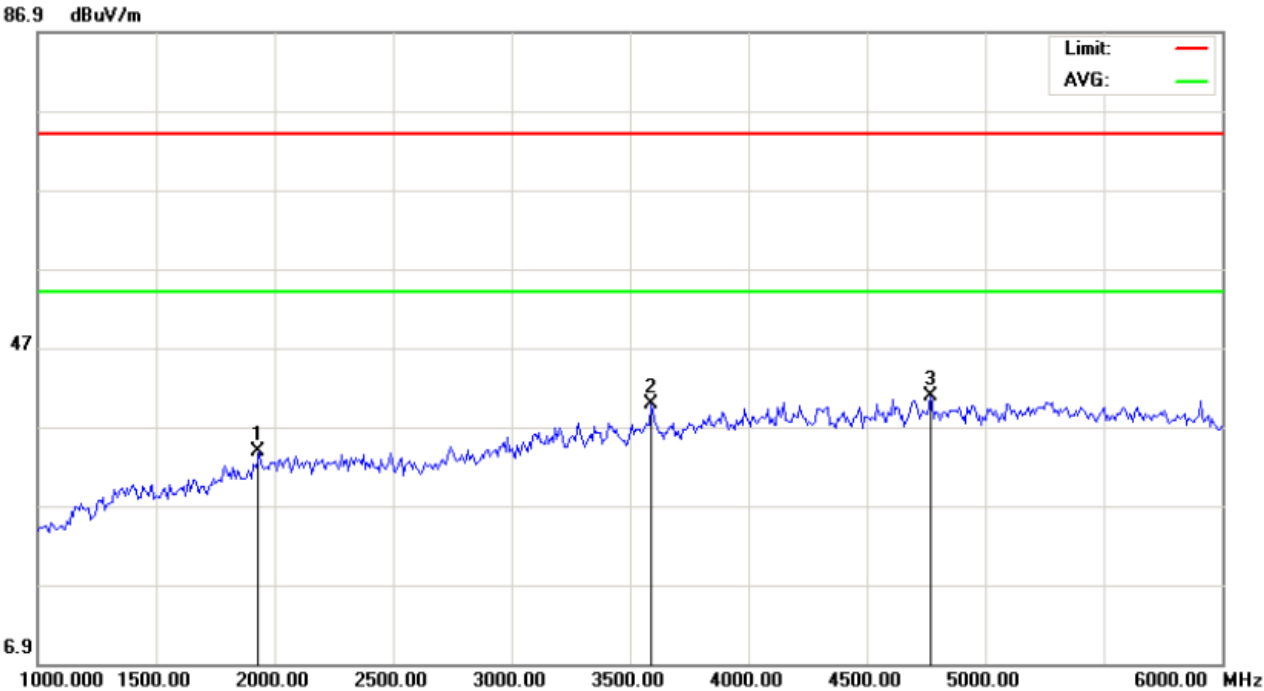
Radiated Emission Test at 3m Distance-Horizontal



Site: site #1 Polarization: *Horizontal* Temperature: 26
 Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: AC 120V/60Hz Humidity: 60 %
 EUT: iON Adventure/Adventure/HD Sports Video Camera/
 M/N: 1008
 Mode: Mode 6
 Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2091.667	43.46	-10.02	33.44	74.00	-40.56	peak			
2		3116.667	45.79	-8.25	37.54	74.00	-36.46	peak			
3	*	4691.667	43.69	-2.61	41.08	74.00	-32.92	peak			

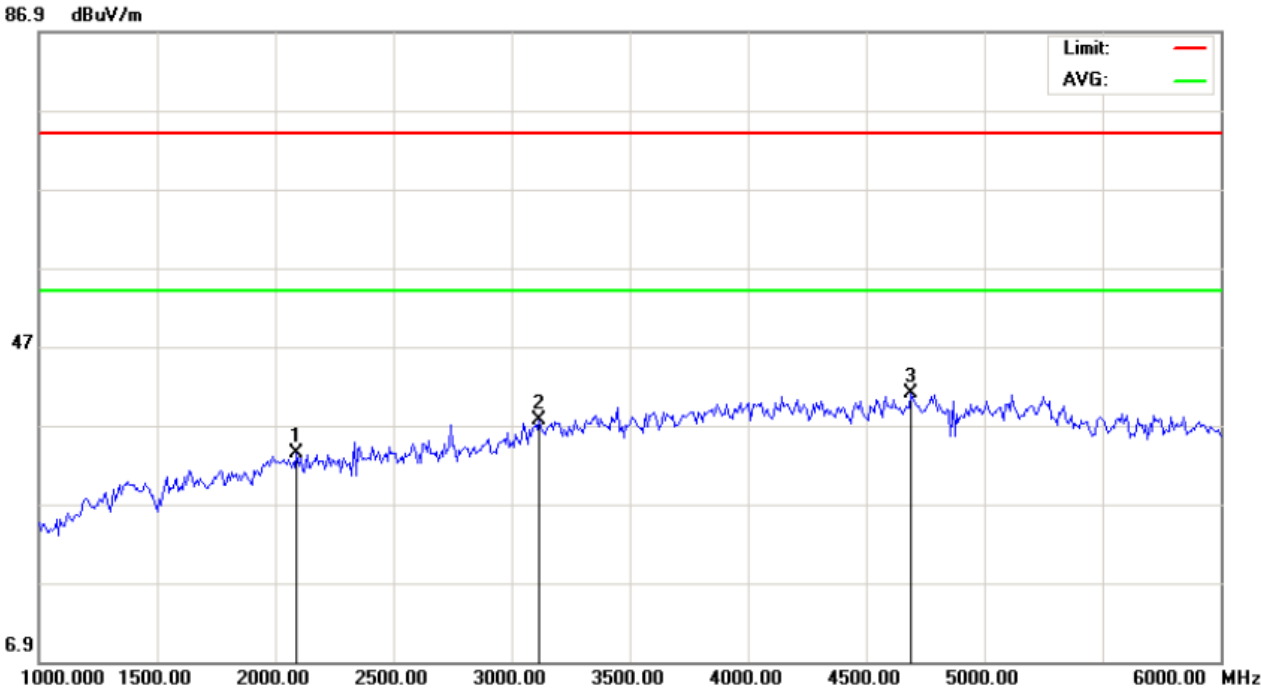
Radiated Emission Test at 3m Distance-Vertical



Site: site #1 Polarization: **Vertical** Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: AC 120V/60Hz Humidity: 60 %
EUT: iON Adventure/Adventure/HD Sports Video Camera/
M/N: 1008
Mode: Mode 6
Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		1933.333	44.69	-10.82	33.87	74.00	-40.13	peak			
2		3591.667	47.22	-7.33	39.89	74.00	-34.11	peak			
3	*	4766.667	43.23	-2.41	40.82	74.00	-33.18	peak			

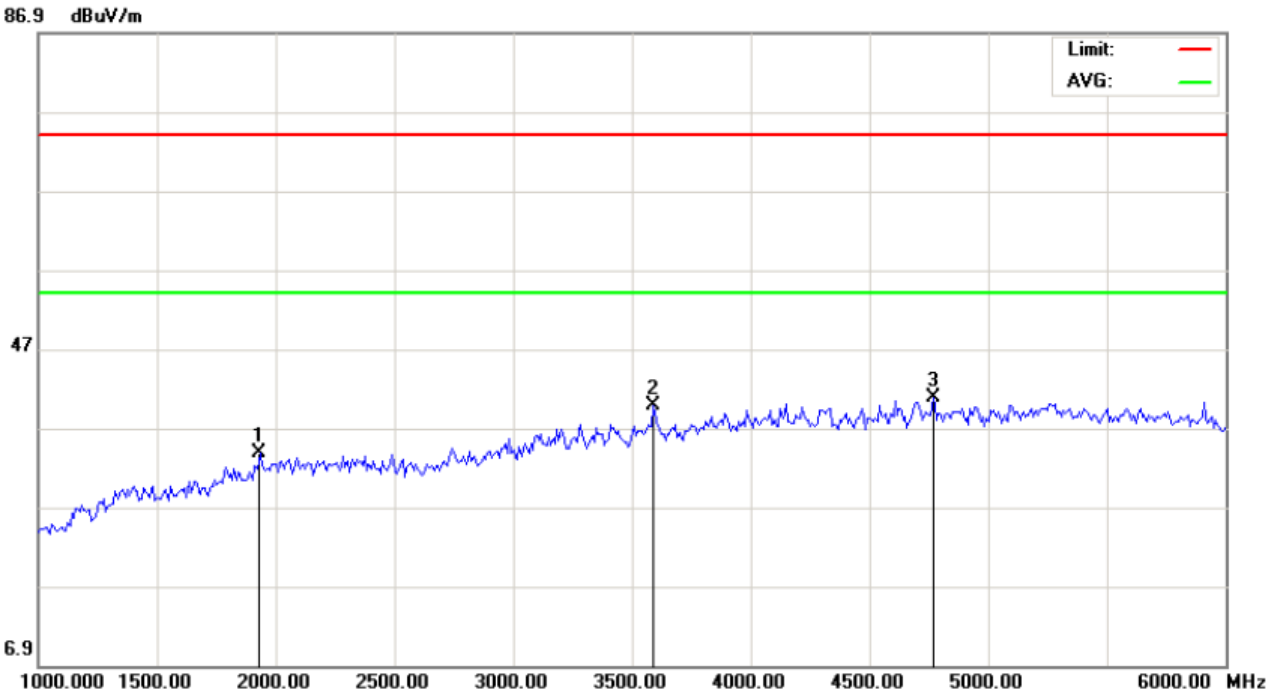
Radiated Emission Test at 3m Distance-Horizontal



Site: site #1 Polarization: **Horizontal** Temperature: 26
 Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: AC 120V/60Hz Humidity: 60 %
 EUT: iON Adventure/Adventure/HD Sports Video Camera/
 M/N: 1008
 Mode: Mode 7
 Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2091.667	43.46	-10.02	33.44	74.00	-40.56	peak			
2		3116.667	45.79	-8.25	37.54	74.00	-36.46	peak			
3	*	4691.667	43.69	-2.61	41.08	74.00	-32.92	peak			

Radiated Emission Test at 3m Distance-Vertical



Site: site #1 Polarization: **Vertical** Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: AC 120V/60Hz Humidity: 60 %
EUT: iON Adventure/Adventure/HD Sports Video Camera/
M/N: 1008
Mode: Mode 7
Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		1933.333	44.69	-10.82	33.87	74.00	-40.13	peak			
2		3591.667	47.22	-7.33	39.89	74.00	-34.11	peak			
3	*	4766.667	43.23	-2.41	40.82	74.00	-33.18	peak			

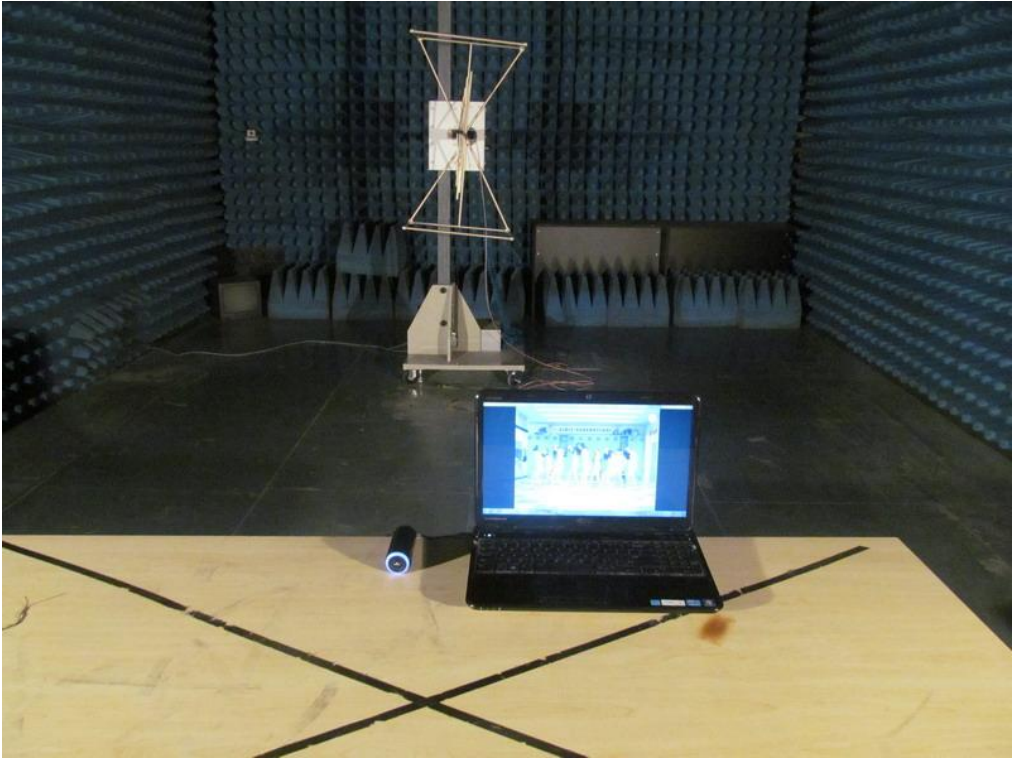
RESULT: PASS

Note: Measurement = Reading + Factor, Over = Measurement – Limit.

APPENDIX A: PHOTOGRAPHS OF TEST SETUP
FCC LINE CONDUCTED EMISSION TEST SETUP



FCC RADIATED EMISSION TEST SETUP



APPENDIX B: PHOTOGRAPHS OF EUT
All VIEW OF EUT



TOP VIEW OF EUT



BOTTOM VIEW OF EUT



FRONT VIEW OF EUT



BACK VIEW OF EUT



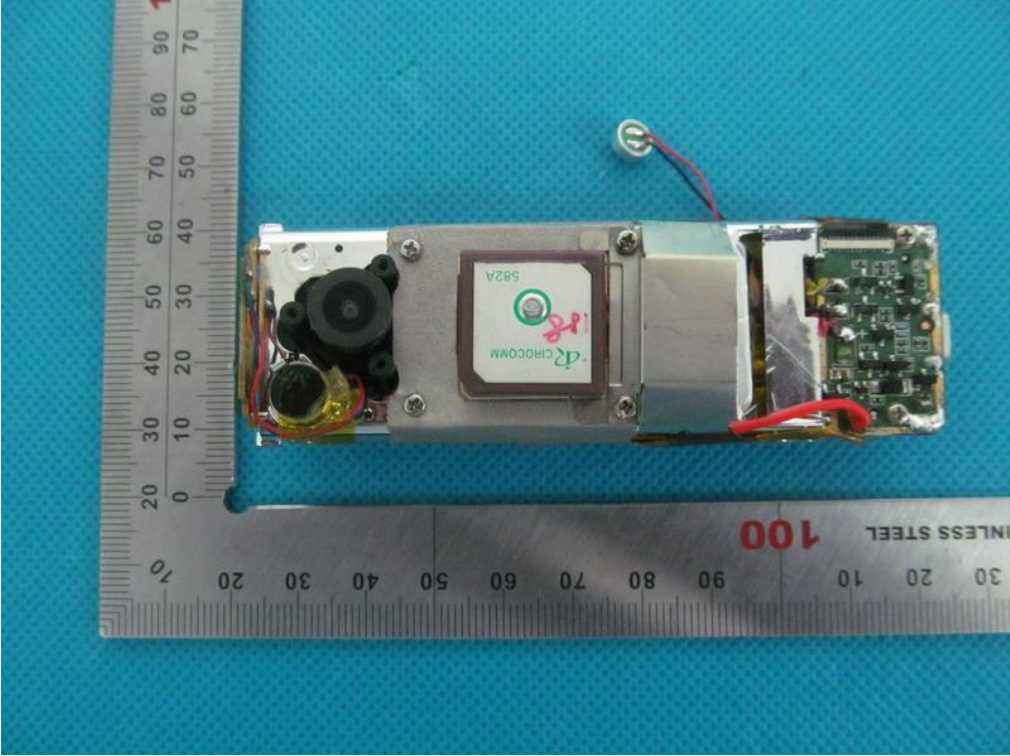
LEFT VIEW OF EUT



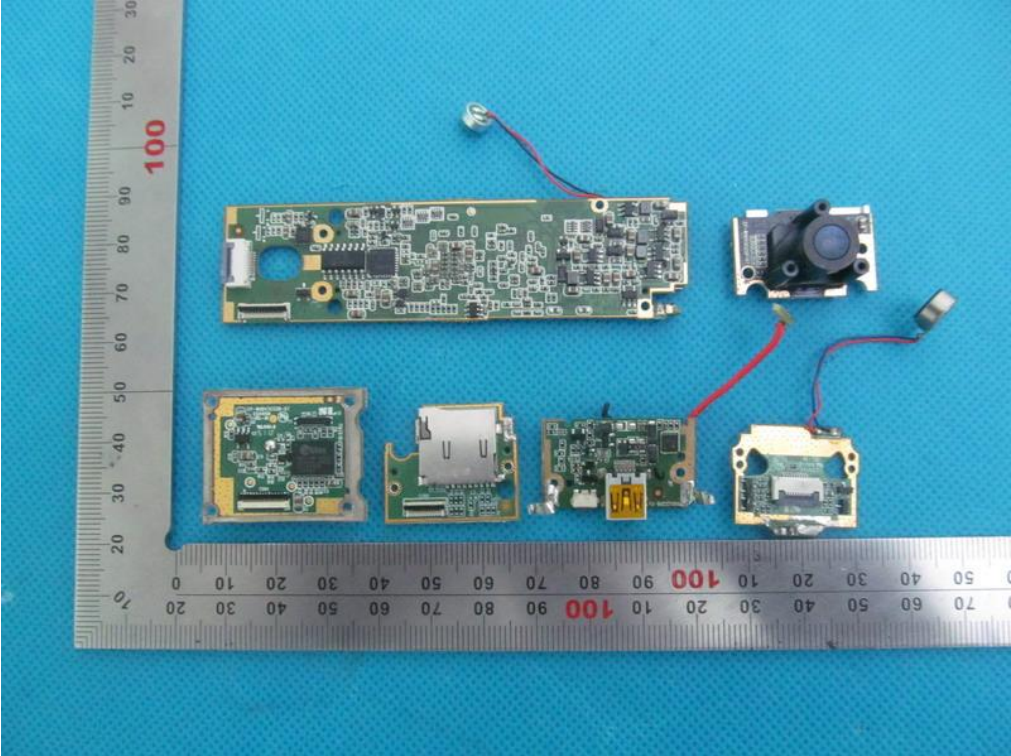
RIGHT VIEW OF EUT



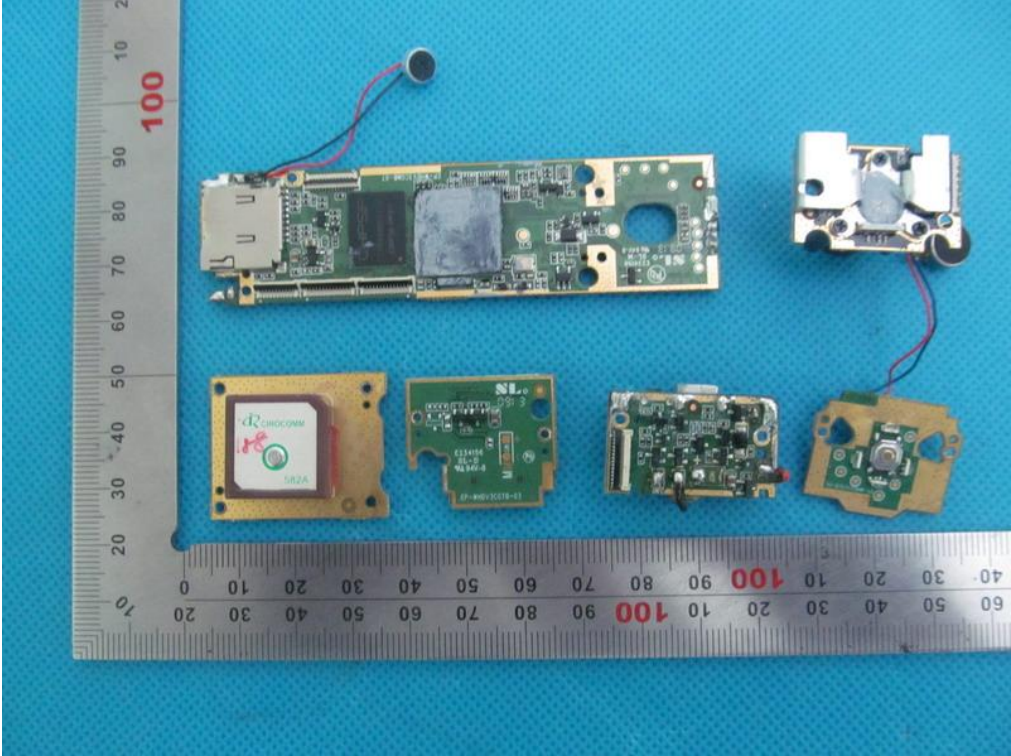
OPEN VIEW OF EUT



INTERNAL VIEW OF EUT-1



INTERNAL VIEW OF EUT-2



----END OF REPORT----