



FOR THE SCOPE OF ACCREDITATION UNDER NVLAP LAB CODE 500051-0

TEST REPORT #300913

STANDARD: FCC PART 15

SUBPART C--INTENTIONAL RADIATORS

**SECTION 15. 247 OPERATION WITHIN THE BANDS 902-928 MHZ,
2400-2483.5 MHZ, AND 5725-5850 MHZ**

EQUIPMENT TESTED:

EXTREME TECHNOLOGIES, LLC.

FCC ID: 2AA5N-POV-STREAM

MODEL: POV STREAM

TEST DATE: 30 SEPTEMBER 2013

1100 Falcon Avenue
Glencoe, MN 55336



Tele: 320-864-4444
Fax: 320-864-6611

Prepared for:

Extreme Technologies, LLC.
3943 Quebec Avenue North
Minneapolis, MN 55427

Test agent:

International Certification Services, Inc.
1100 Falcon Avenue
Glencoe, MN 55336
Tele: 320-864-4444
Fax: 320-864-6611

Test location:

International Certification Services, Inc.
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Tele: 320-864-4444
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Prepared by:

International Certification Services, Inc.
1100 Falcon Avenue
Glencoe, MN 55336

International Certification Services represents to the client that testing is done in accordance with standard procedures applicable and that reported test results are accurate within generally accepted commercial ranges of accuracy.

• This report only applies to the specific samples tested under stated test conditions. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. International Certification Services shall have no liability for any deductions, inferences or generalizations drawn by the client or others from this report.

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1.0 TEST SUMMARY

TEST REPORT: #300913

COMPANY: Extreme Technologies, LLC

AGENT: International Certification Services, Inc.

PHONE: 320-864-4444

TEST DATE: 30 September, 2013

EQUIPMENT UNDER TEST: Mobile Point of View Video Camera (DVR) with Wi-Fi and streaming capability Model: POV Stream

GENERAL TEST SUMMARY: The testing was performed at International Certification Services, Inc. at 1100 Falcon Ave, Glencoe, MN 55336

VERIFICATION / CERTIFICATION STATUS: The Model: POV Stream was found to be in compliance with the FCC Part 15 Subpart C, Section 15.247 DTS requirements.

MODIFICATIONS NECESSARY: None

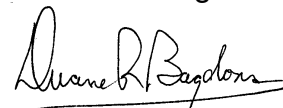
TESTED BY

Steve Wendlandt



WRITTEN BY

Duane R. Bagdons



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Applicable Standards

47 CFR Ch.1 (10/21/13 Edition)

FCC Part 15 Radio Frequency Devices

Subpart C Intentional Radiators

Section 15.247 Operation within the bands 902-928 Mhz, 2400-2483.5 Mhz and 5725-5850 Mhz.

2.1 Referenced Standards

ANSI C63.4-2003 Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 KHz to 40 Ghz.

558074 D01 DTS Meas Guidance v03r01 Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247

2.2 Equipment Units Tested

The equipment tested is a battery powered 2400 to 2483.5 Mhz Mobile Point of View Camera (DVR) with Wi-Fi and streaming capability model: POV Stream. It is a DTS type of device and does not use FHSS features. The integral antenna is a high frequency ceramic component 2.45 Ghz antenna P/N: 2450AT18A100 made by Johanson Technology. This component is mounted on the PC Board of the camera tested. This antenna component has a gain of 0.5 dBi. The POV Stream uses a Taiyo-Yuden Wireless LAN / Bluetooth Module P/N: WYSBCVGXA. The POV Stream is not a FHSS type of device, it seeks an open channel and transmits on that channel. The Taiyo-Yuden device is designed to be used for 802.11b/g/n applications. All the various options that are available for transmission are listed in the tables below:

Operating Mode	Channel Bandwidth (Mhz)	Channel Frequencies (Mhz)
802.11 b	22	2412 (1)
802.11 b	22	2437 (6)
802.11 b	22	2462 (11)
802.11g/h	20	2412 (1)
802.11g/h	20	2432 (5)
802.11g/h	20	2452 (9)
802.11n	40	2422 (3)
802.11n	40	2462 (11)

Each mode and each frequency was tested to determine which conditions were worst case for the full testing of this device. When the POV Stream links up with 802.11b the bandwidth is 22 Mhz and only 1 of 3 channels are used, namely channels 1, 6 or 11. When the device links up with a 802.11g/h device, the channel bandwidth is then 20 Mhz and the device uses channels 1, 5 or 9. Finally when the device links up with a 802.11 n device the

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channel bandwidth is then 40 Mhz and the device uses channels 3 or 11. Each mode can operate on up to 20 different data rates namely: 1, 2, 5.5, 11, 6, 9, 12, 18, 24, 36, 48, 54, 6.5, 150, MCS0, MCS1, MCS2, MCS3, MCS4, MCS5, MCS6, MCS7. To determine the worst case output signal for testing, each data rate was tested in each mode of operation (b, g, n). For 802.11b mode, Channel 6 was selected to test each data rate, and for 802.11g mode, Channel 5 was selected and for 802.11n mode, Channel 3 was selected. From all these tests, the worst case test configuration was determined as 802.11g Mode, Channel 3 with a 11 Mb Data Rate and all further testing was done with this configuration. See table below

Channel 3 (2422 Mhz)								
MODE	802.11b			802.11g			802.11n	
Data Rate	Freq (Mhz)	Corr Data (dBuV)		Freq (Mhz)	Corr Data (dBuV)		Freq (Mhz)	Corr Data (dBuV)
1	2435.975	89.11898		2430.775	95.21378		2410.85	87.79385
2	2424.5	61.0075		2430.475	95.81348		2413.95	88.49695
5.5	2437.725	89.72073		2431.375	96.41438		2414.95	89.09795
11	2438.4	91.1214		2433.275	97.71628		2413.65	90.59665
6	2432.675	84.11568		2428.625	91.31163		2419.15	82.00215
9	2432.775	84.21578		2427.925	90.91093		2416.55	81.89955
12	2431.925	84.71493		2426.925	91.50993		2416.15	82.89915
18	2432.025	84.01503		2425.475	91.20848		2408.45	81.69145
24	2432.275	85.21528		2425.175	91.90818		2415.75	83.19875
36	2438.525	84.92153		2429.075	91.91208		2413.55	82.49655
48	2435.575	84.71858		2427.075	91.31008		2431.65	82.71465
54	2438.775	84.82178		2426.275	92.80928		2413.85	83.19685
MCS0	2431.725	84.11473		2426.875	90.90988		2418.55	81.70155
MCS1	2429.575	84.11258		2430.025	90.81303		2428.75	82.11175
MCS2	2434.875	83.91788		2429.825	90.81283		2414.65	82.89765
MCS3	2434.775	84.01778		2429.825	90.71283		2405.55	82.28855
MCS4	2430.675	84.21368		2428.425	90.71143		2414.75	82.49775
MCS5	2441.075	84.12408		2439.325	91.22233		2427.05	82.51005
MCS6	2435.075	83.91808		2429.975	91.01298		2411.95	83.09495
MCS7	2434.975	84.11798		2434.625	91.11763		2405.45	81.78845

2.3 Equipment and Cable Configuration

See photo of the EUT test configuration setup in Attachment A

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2.4 List of Test Equipment

The Calibration cycle on all of this equipment is 2 years

<u>Test Equipment</u>	<u>Model</u>	<u>S/N</u>	<u>Calibration Date</u>
Spectrum Analyzer	Hewlett-Packard 8566B	2421A00458	05/25/12
Preamp	Nextec Model: NB0031	378	05/17/12
Biconical Antenna	EMCO 93110	105799	08/22/12
Log Periodic Antenna (200-1000 MHz)	EMCO 3146	9111-3280	08/15/12
Horn Antenna (1-18 Gh)	EMCO 3115	2334	08/17/12
Horn Antenna (18-26 Ghz)	Alpha Industries, Inc. 61932500	55	05/26/12
Loop Antenna	Electro Metrics ALP-11 / EM-6870	286	06/25/12
Loop Antenna	EMCO 6512	8912-1074	06/25/12

Measurement cable losses, and antenna correction factors are included in the data sheets.

2.5 Units of Measurement.

All measurements were taken in dBuV/m with the antenna located at 1 meter distance from the EUT. Frequency measurements are recorded in Mhz.

2.6 Location of Test Site

The open area test site (OATS) measurement facility used to collect the data was International Certification Services, Inc. at 1100 Falcon Ave in Glencoe, MN 55336. This site has been certified to be in spec of the normalized site attenuation per ANSI C63.4-2009 and is NVLAP certified (Lab Code: 500051-0).

2.7 Measurement Procedures

The antenna was placed at a distance of 1 meter from the EUT. The EUT was set on an insulating table in the OATS site and rotated through 360 degrees **and three orthogonal axes to determine the worst case EUT orientation**. The antenna was then positioned vertical and horizontal to determine which antenna polarity orientation was worst case. Then certification data was recorded at all the transmitter frequencies from the fundamental to the 10th harmonic at an antenna height variation of from 1-4 meters.

2.8 Reporting Measurement Data

See data sheets and plots in Attachment B.

2.9 Radiated Emissions Data

The frequency and amplitude of the tuned frequency of the EUT along with the frequencies and amplitudes of the harmonics up **to the 10th harmonic** are reported in the data sheets in Attachment B. This information is plotted against the limit of section 15.247 of FCC Part 15 subpart C. Both Horizontal and Vertical antenna polarities as well as antenna heights of 1

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to 4 meters were observed but all maximum signal strengths occurred in the Horizontal antenna polarity and at 1 meter antenna height.

The Final Level, expressed in dBuV/m, is arrived at by taking the reading from the spectrum analyzer (Level dBuV) and adding the antenna correction factor and cable loss factor (Factor dB) and subtracting the preamp gain. This result then has the FCC limit subtracted from it to provide the margin which gives the tabular data as shown in the data sheets in Attachment B.

Example:

<u>Frequency</u> <u>(MHz)</u>	<u>Level</u> <u>(dBuV)</u>	+	<u>Factor</u> <u>(dB)</u>	=	<u>Corr Data</u> <u>(dBuV/m)</u>	-	<u>FCC Limit</u> <u>(dBuV/m)</u>	=	<u>Margin</u> <u>(dB)</u>
100.0	20.6	+	11.0	=	31.6	-	43.5	=	-11.9

2.10 Operating Frequency Data for Intentional Radiators

All operating frequencies and harmonic frequencies and ambient temperature at which all data was taken at is recorded in the data sheets in Attachment B.

2.11 Occupied Bandwidth Data for Intentional Radiators

The occupied BW data for the EUT is listed in the data sheets in Attachment B.

2.12 Summary of Results

The EUT passed the requirements of FCC Part 15 Subpart C, Section 15.247 with a maximum EIRP of 0.188 mW (-7.754 dBm) when operated in a 802.11g Mode with a 11 Mb data rate. This equates to a Peak Power Spectral Density of 1.5511 mW using the ANSI - 26 dBc OBW. The limit for 15.247 is 1.0 Watt. No modifications were necessary to accomplish this compliance. The EIRP method of determining the output power was used per the FCC document 558074 D01 DTS Meas Guidance v03r01 (Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247) since there this device has an integral antenna and there is no antenna connector.

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ATTACHMENT A

RADIATED MEASUREMENT

TEST SET UP

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**Extreme Technologies, LLC
Model: POV Stream
Radiated Emissions
Test Configuration**



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ATTACHMENT B

DETAILED TEST DATA SHEETS

Each radiated emissions plot indicates the receiving antenna measurement distance in meters and the emission amplitudes with respect to their applicable limits. The associated tabulation for each radiated plot lists the emission frequency, the final emission level, and the margin from the limit.

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Versa Electronics, LLC
 Model: POV Stream
 Temperature: 20 Deg C.
 Humidity: 54 % R.H.

Test Technician: Duane R. Bagdons

Frequency Band: 2400 to 2483.5 Mhz

Preliminary testing was done to determine what antenna polarity and antenna height generated the highest signal levels. Tests were performed at this test configuration and then each frequency was maximized to 0-360 degrees orientation and antenna height of 1-4 meters.

15.247 (a) (2) Systems using digital modulation techniques may operate in the 902-928 Mhz, 2400-2483.5 Mhz and 5725-5850 Mhz bands. The minimum 6 dB bandwidth shall be at least 500 Khz.

From Section 2.2 of this report, it was determined by testing that the 802.11 g mode using a data rate of 11 Mb was the worst case configuration. The data for all the different modes of operation and different data rates are listed in the table below:

Worst Case configuration evaluation:

MODE	802.11b			802.11g			802.11n	
Data Rate	Freq (Mhz)	Corr Data (dBuV)		Freq (Mhz)	Corr Data (dBuV)		Freq (Mhz)	Corr Data (dBuV)
1	2435.975	89.11898		2430.775	95.21378		2410.85	87.79385
2	2424.5	61.0075		2430.475	95.81348		2413.95	88.49695
5.5	2437.725	89.72073		2431.375	96.41438		2414.95	89.09795
11	2438.4	91.1214		2433.275	97.71628		2413.65	90.59665
6	2432.675	84.11568		2428.625	91.31163		2419.15	82.00215
9	2432.775	84.21578		2427.925	90.91093		2416.55	81.89955
12	2431.925	84.71493		2426.925	91.50993		2416.15	82.89915
18	2432.025	84.01503		2425.475	91.20848		2408.45	81.69145
24	2432.275	85.21528		2425.175	91.90818		2415.75	83.19875
36	2438.525	84.92153		2429.075	91.91208		2413.55	82.49655
48	2435.575	84.71858		2427.075	91.31008		2431.65	82.71465
54	2438.775	84.82178		2426.275	92.80928		2413.85	83.19685
MCS0	2431.725	84.11473		2426.875	90.90988		2418.55	81.70155
MCS1	2429.575	84.11258		2430.025	90.81303		2428.75	82.11175
MCS2	2434.875	83.91788		2429.825	90.81283		2414.65	82.89765
MCS3	2434.775	84.01778		2429.825	90.71283		2405.55	82.28855
MCS4	2430.675	84.21368		2428.425	90.71143		2414.75	82.49775
MCS5	2441.075	84.12408		2439.325	91.22233		2427.05	82.51005
MCS6	2435.075	83.91808		2429.975	91.01298		2411.95	83.09495

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MCS7	2434.975	84.11798		2434.625	91.11763		2405.45	81.78845
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Data for this requirement was gathered using the 802.11g mode. Data was recorded for each of the 20 different data rates. The measured Bandwidth of any of the 20 different data rates all fall well within the 500 KHz requirement. See the table below.

Data Rate (Mb)	6 dB Bandwidth (Mhz)
1	10.85
2	10.525
5.5	10.725
11	10.475
6	16.825
9	17.225
12	17.125
18	16.875
24	17.075
36	16.825
48	17.175
54	16.65
MCS0	18.025
MCS1	17.975
MCS2	18.025
MCS3	18.125
MCS4	18.075
MCS5	17.975
MCS6	17.975
MCS7	18.025

EUT complies with this requirement. (15.247 (a)(2))

15.247 (b) (3) For systems using digital modulation in the 902-928 Mhz, 2400-2483.5 Mhz and 5725-5850 Mhz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g. alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

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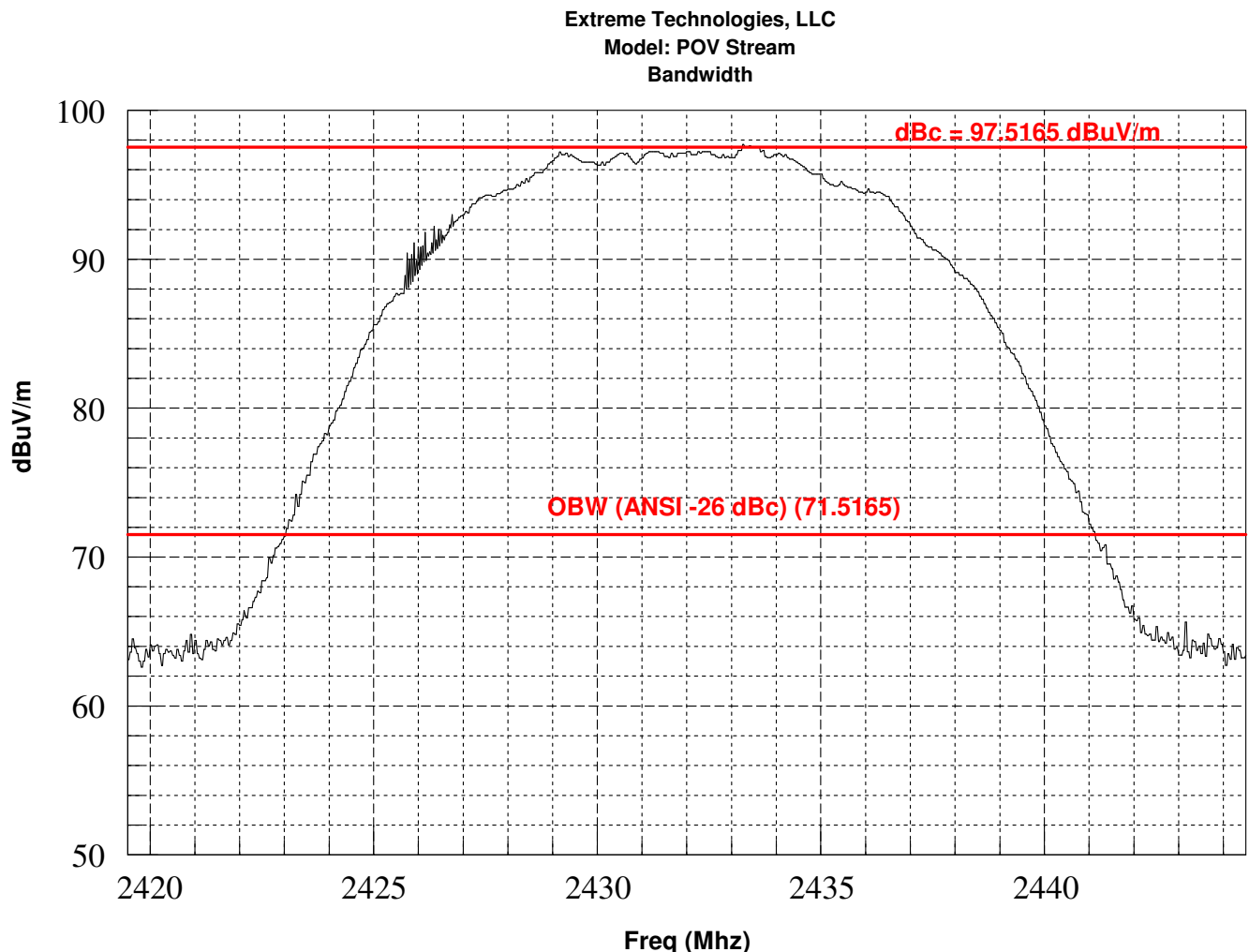
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The FCC Guidance document 558074 D01 DTS Meas Guidance v03r01 (Guidance for Performing Compliance Measurements on Digital transmission Systems (DTS) Operating Under §15.247.(Section 9.2.2.2 Method AVGSA-1 (trace averaging with the EUT transmitting at full power throughout each sweep) was used for this measurement.

802.11 g MODE

maximum EIRP of 0.188 mW (-7.754 dBm) when operated in a 802.11g Mode with a 11 Mb data rate. This equates to a Peak Power Spectral Density of 1.5511 mW

This test was performed with the EUT in 802.11g mode with a 11 M data rate. The ANSI OBW bandwidth (-26 dBc) was determined to be 18.33 Mhz. The table used for the power integration is below showing the resultant integrated output power of 1.5511 mW



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September 11, 2013

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Total Integrated Output Power Calculations using FCC 558074 D01 DTS Meas Guidance
v03r01 Section 9.2.2.2.

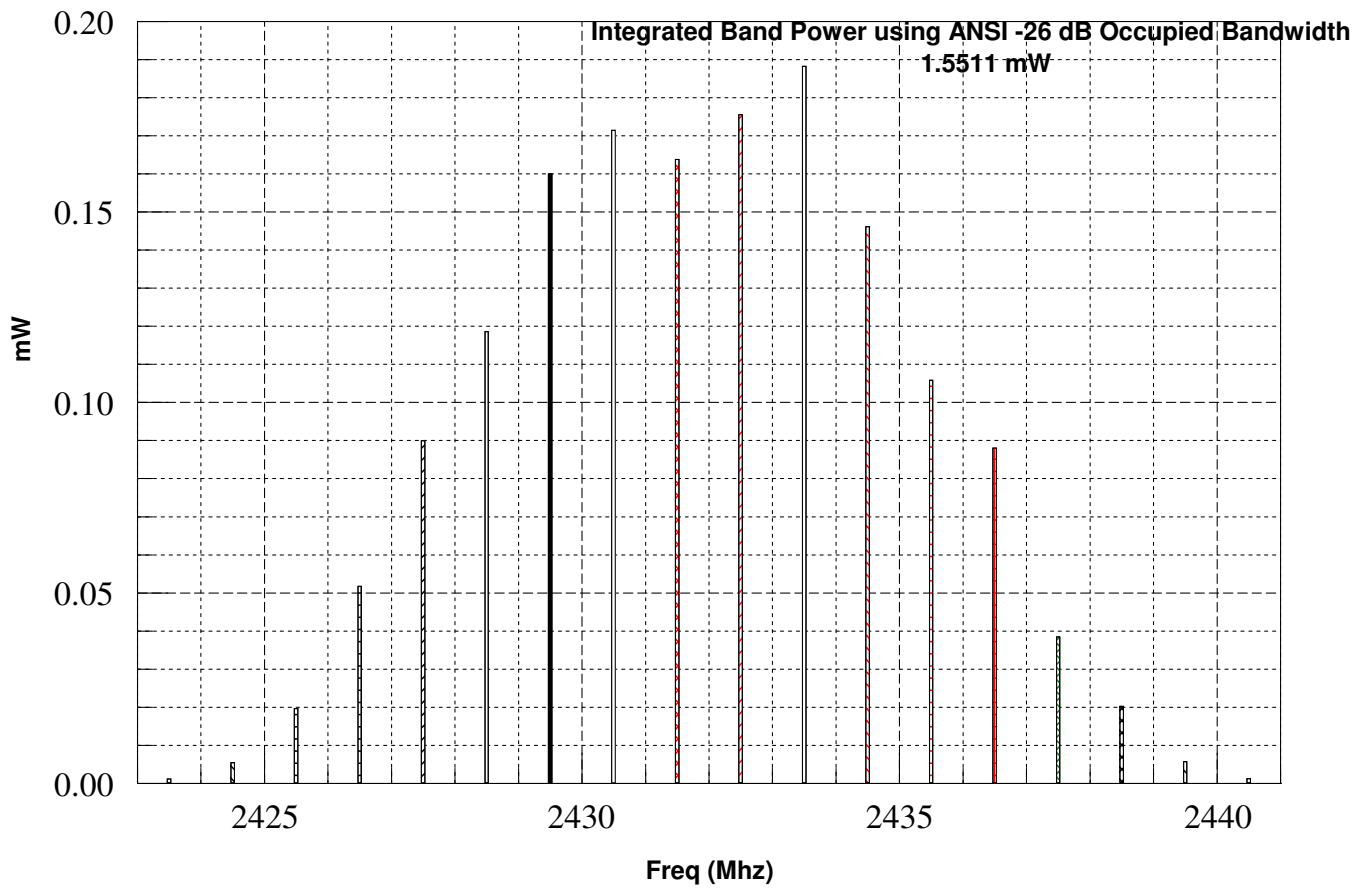
Freq (Mhz)	EIRP (mW)	EIRP (dBm)	Antenna gain (dBi)	Corrected EIRP Output Power (dBm)
2423.5	0.001184	-29.2647	0.5	-29.7647125
2424.5	0.005415	-22.6637	0.5	-23.1637125
2425.5	0.019667	-17.0627	0.5	-17.5627125
2426.5	0.05174	-12.8617	0.5	-13.3617125
2427.5	0.089935	-10.4607	0.5	-10.9607125
2428.5	0.118585	-9.25971	0.5	-9.75971255
2429.5	0.160003	-7.95871	0.5	-8.45871255
2430.5	0.171486	-7.65771	0.5	-8.15771255
2431.5	0.163806	-7.85671	0.5	-8.35671255
2432.5	0.175561	-7.55571	0.5	-8.05571255
2433.5	0.188161	-7.25471	0.5	-7.75471255
2434.5	0.146093	-8.35371	0.5	-8.85371255
2435.5	0.105859	-9.75271	0.5	-10.2527125
2436.5	0.08807	-10.5517	0.5	-11.0517125
2437.5	0.038453	-14.1507	0.5	-14.6507125
2438.5	0.020185	-16.9497	0.5	-17.4497125
2439.5	0.00569	-22.4487	0.5	-22.9487125
2440.5	0.001245	-29.0477	0.5	-29.5477125
	0.188	mW	Max EIRP power	
	1.551139	mW	Peak Integrated Power Spectral Density using ANSI -26 dBc OBW	

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Extreme Technologies, Inc.
POV Stream Camera (USB Configuration)
FCC Part 15.247 Output Power
Channel 6, 802.11 g Mode, 11 M data rate



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September 11, 2013

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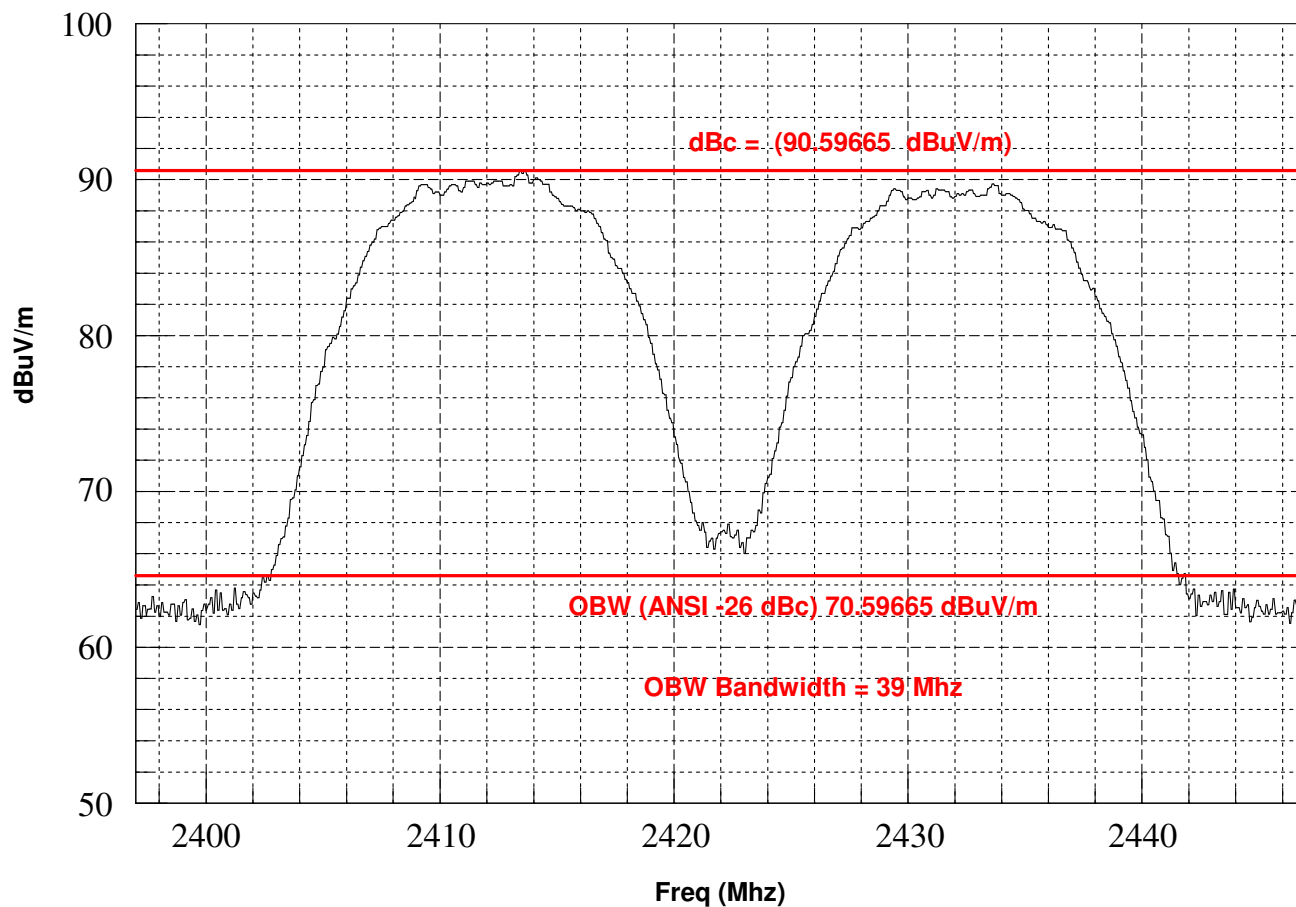
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802.11 n MODE

maximum EIRP of 0.0382 mW (-14.175 dBm) when operated in a 802.11n Mode with a 11 Mb data rate. This equates to a Peak Power Spectral Density of 0.5739 mW

This test was performed with the EUT in 802.11n mode with a 11 M data rate. The ANSI OBW bandwidth (-26 dBc) was determined to be 39 Mhz. The table used for the power integration is below showing the resultant integrated output power of 0.5739 mW

Extreme Technologies, Inc.
POV Stream Camera (USB Configuration)
FCC Part 15.247 Radiated Emissions
Output Power
RBW=1 Mhz, VBW = 3 Mhz
Channel 3, 802.11 n Mode



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September 27, 2013

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Total Integrated Output Power Calculations using FCC 558074 D01 DTS Meas Guidance
v03r01 Section 9.2.2.2.

Freq (Mhz)	EIRP (mW)	EIRP (dBm)	Antenna gain (dBi)	Corrected EIRP Output Power (dBm)
2402	7.4367E-05	-41.28621	0.5	-41.78621
2403	0.00012926	-38.88521	0.5	-39.38521
2404	0.00048037	-33.18421	0.5	-33.68421
2405	0.00209739	-26.78321	0.5	-27.28321
2406	0.00577802	-22.38221	0.5	-22.88221
2407	0.01264383	-18.98121	0.5	-19.48121
2407.8	0.01745656	-17.58041	0.5	-18.08041
2409	0.02831905	-15.47921	0.5	-15.97921
2410	0.02643497	-15.77821	0.5	-16.27821
2411	0.02966735	-15.27721	0.5	-15.77721
2412	0.03179646	-14.97621	0.5	-15.47621
2413	0.03107984	-15.07521	0.5	-15.57521
2413.65	0.03824228	-14.17456	0.5	-14.67456
2414	0.03331032	-14.77421	0.5	-15.27421
2415	0.02527428	-15.97321	0.5	-16.47321
2416	0.02102707	-16.77221	0.5	-17.27221
2417	0.01389565	-18.57121	0.5	-19.07121
2418	0.00729422	-21.37021	0.5	-21.87021
2419	0.0029722	-25.26921	0.5	-25.76921
2420	0.00074676	-31.26821	0.5	-31.76821
2421	0.00020104	-36.96721	0.5	-37.46721
2422	0.00018339	-37.36621	0.5	-37.86621
2423	0.00013289	-38.76521	0.5	-39.26521
2424	0.00041075	-33.86421	0.5	-34.36421
2425	0.00179341	-27.46321	0.5	-27.96321
2426	0.0044033	-23.56221	0.5	-24.06221
2427	0.01081132	-19.66121	0.5	-20.16121
2428	0.01636736	-17.86021	0.5	-18.36021
2429	0.02259845	-16.45921	0.5	-16.95921
2430	0.02536172	-15.95821	0.5	-16.45821
2431	0.02536756	-15.95721	0.5	-16.45721
2432	0.02596443	-15.85621	0.5	-16.35621
2433	0.02597041	-15.85521	0.5	-16.35521
2434	0.02658145	-15.75421	0.5	-16.25421
2435	0.02111926	-16.75321	0.5	-17.25321
2436	0.01639754	-17.85221	0.5	-18.35221
2437	0.01215846	-19.15121	0.5	-19.65121
2438	0.00595633	-22.25021	0.5	-22.75021
2439	0.00242705	-26.14921	0.5	-26.64921

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2440	0.00076768	-31.14821	0.5	-31.64821
2441	0.00017591	-37.54721	0.5	-38.04721
	0.0382	mW	Max EIRP power	
	0.5739	mW	Peak Integrated Power Spectral Density using ANSI - 26 dBc OBW	

maximum EIRP of 0.0382 mW (-14.175 dBm) when operated in a 802.11n Mode with a 11 Mb data rate. This equates to a Peak Power Spectral Density of 0.5739 mW

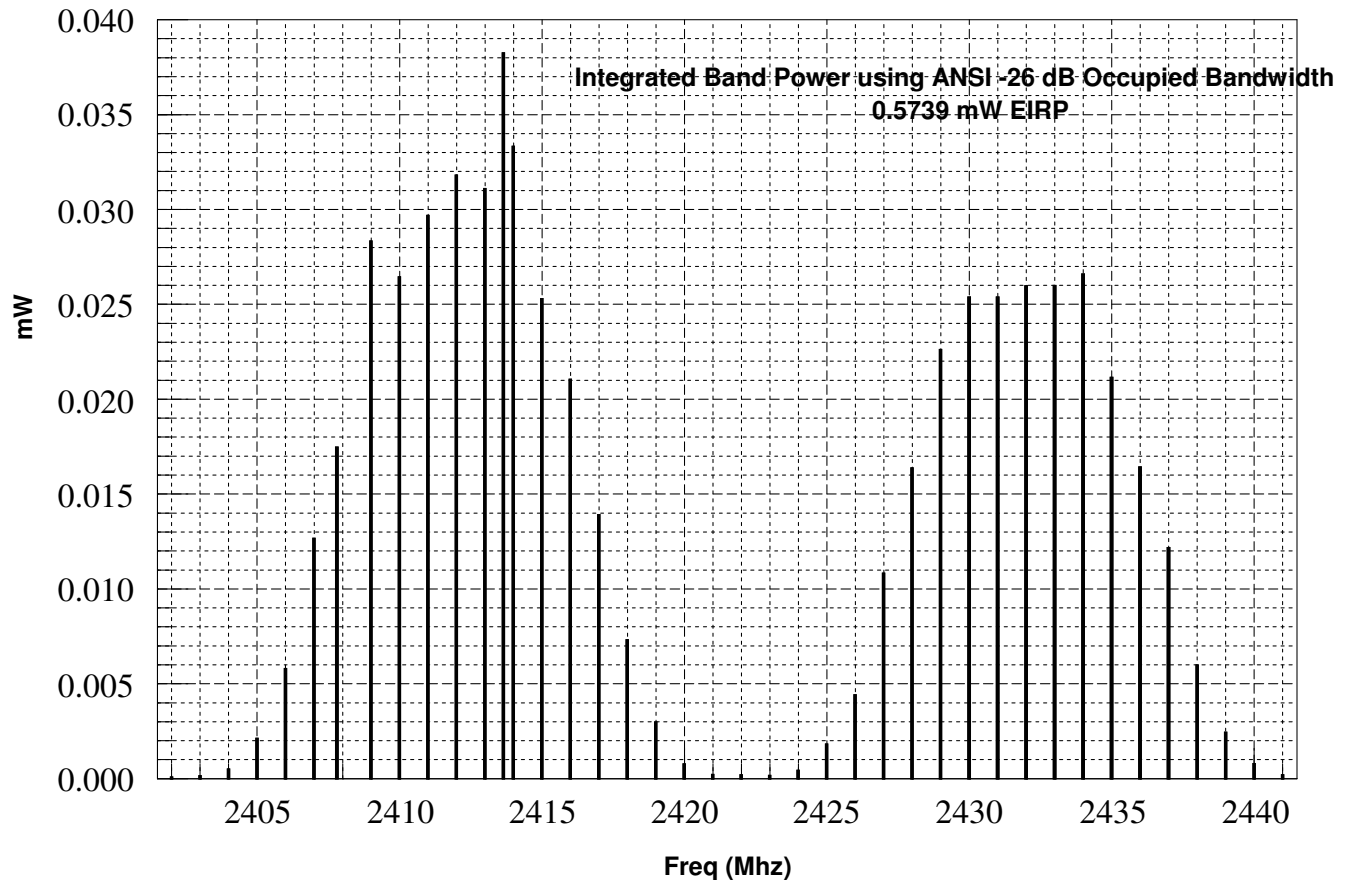
This test was performed with the EUT in 802.11n mode with a 11 M data rate. The ANSI OBW bandwidth (-26 dBc) was determined to be 39 Mhz. The table used for the power integration is below showing the resultant integrated output power of 0.5739 mW

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Extreme Technologies, Inc.
POV Stream Camera (USB Configuration)
FCC Part 15.247 Output Power
Channel 3, 802.11 n Mode, 11 M data rate



International Certification Services, Inc.

September 11, 2013

The POV Stream complies with this requirement 15.247 (b)(3)

15.247 (c) Operation with directional antenna gains greater than 6 dBi

This section is not applicable since the peak listed gain of the antenna is only 0.5 dBi 15.247 (c)

15.247 (d) In any 100 Khz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 Khz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the

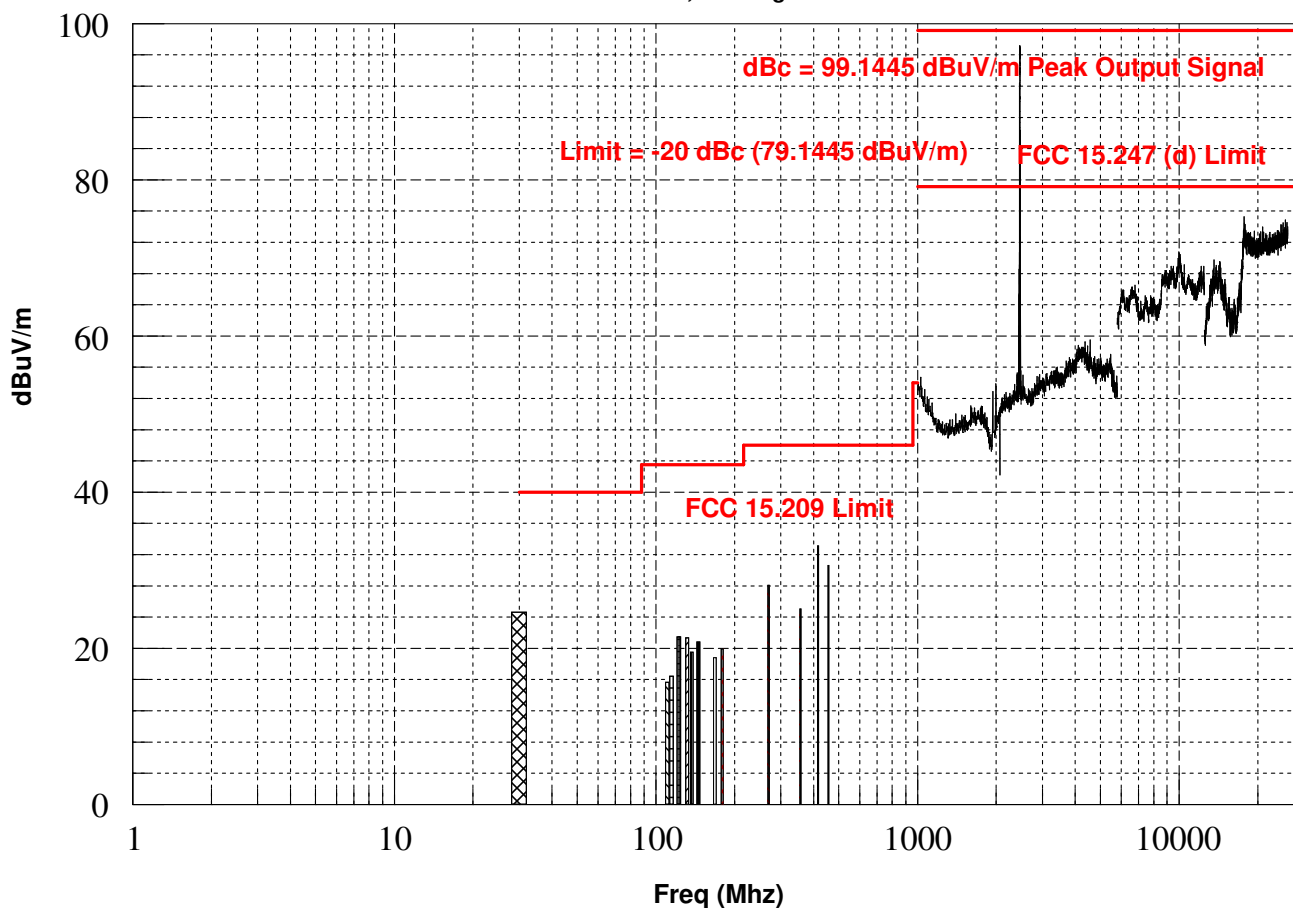
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attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209 (a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205 (a), must also comply with the radiated emission limits specified in §15.209 (a) (see §15.205 (c)).

Extreme Technologies, Inc.
POV Stream Camera (USB Configuration)
FCC Part 15.247 Signals Outside the Frequency Band
RBW=100 KHz, VBW = 300 KHz
Channel 11, 802.11 g Mode



International Certification Services, Inc.

September 30, 2013

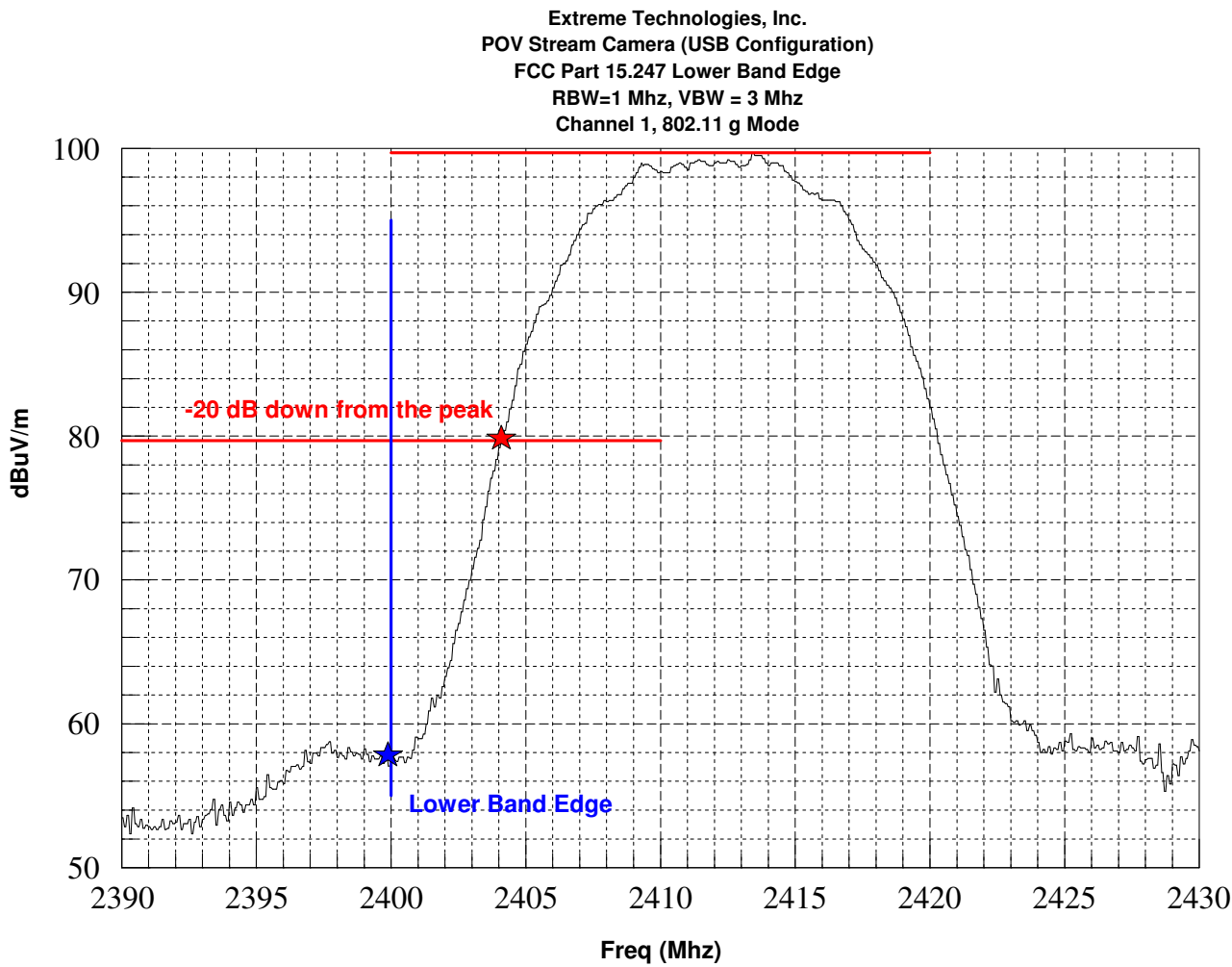
NOTE: No signals were observed below 30 Mhz.

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Lower Band Edge:

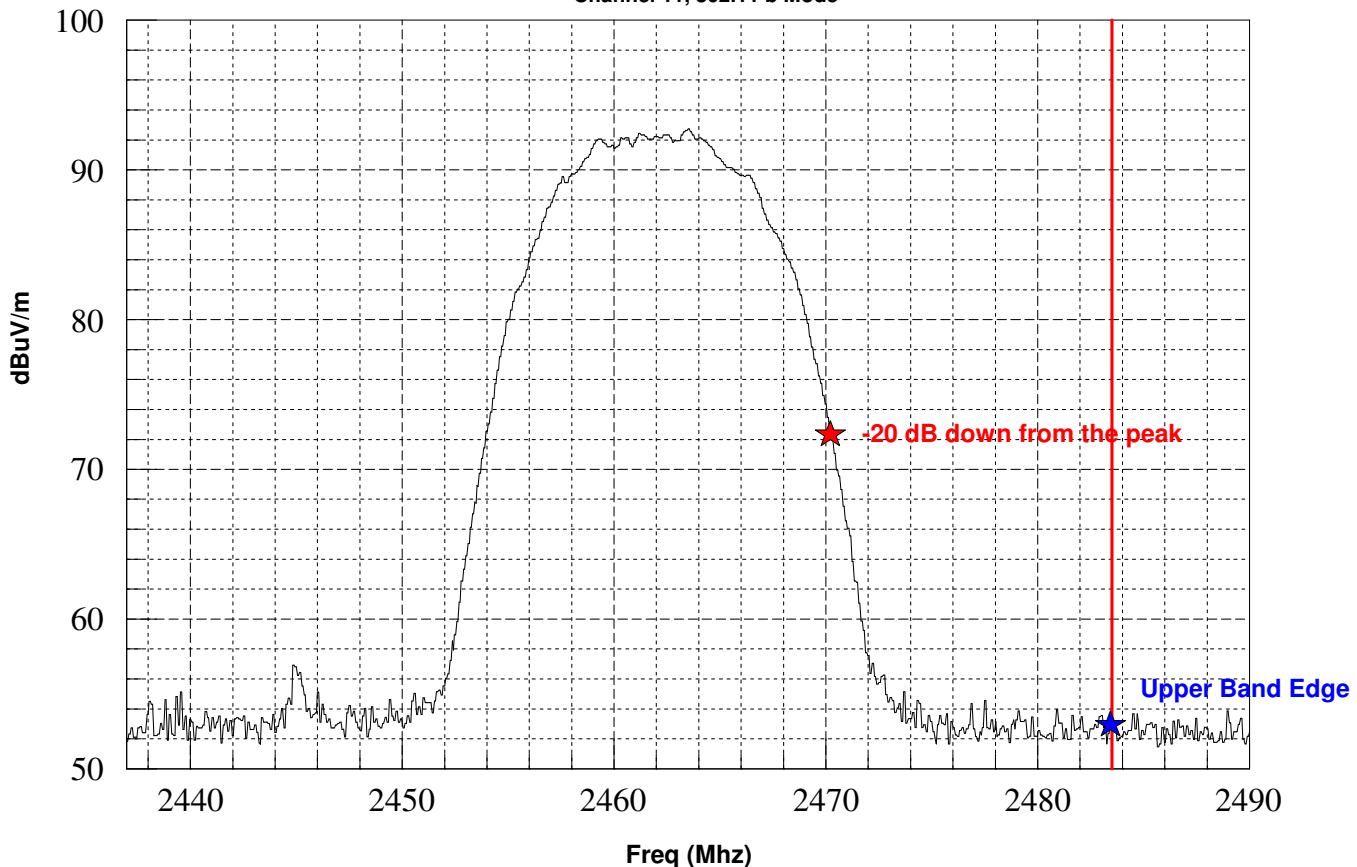


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Upper Band Edge:

Extreme Technologies, Inc.
POV Stream Camera (USB Configuration)
FCC Part 15.247 Upper Band Edge
RBW=1 Mhz, VBW = 3 Mhz
Channel 11, 802.11 b Mode



International Certification Services, Inc.

September 30, 2013

EUT complies with this requirement. 15.247 (d)

15.247 (e) For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 KHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provision of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

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The FCC Guidance document 558074 D01 DTS Meas Guidance v03r01 (Guidance for Performing Compliance Measurements on Digital transmission Systems (DTS) Operating Under §15.247.(Section 9.2.2.2 Method AVGSA-1 (trace averaging with the EUT transmitting at full power throughout each sweep) was used for this measurement.

802.11 g MODE

This test was performed with the EUT in 802.11g mode with a 11 M data rate. The ANSI OBW bandwidth was determined to be 18.33 Mhz. The table used for the power integration is below showing the resultant integrated output power of 4.65E-05 mW (-43.325 dBm)

Total Integrated Output Power Calculations using FCC 558074 D01 DTS Meas Guidance v03r01 Section 9.2.2.2.

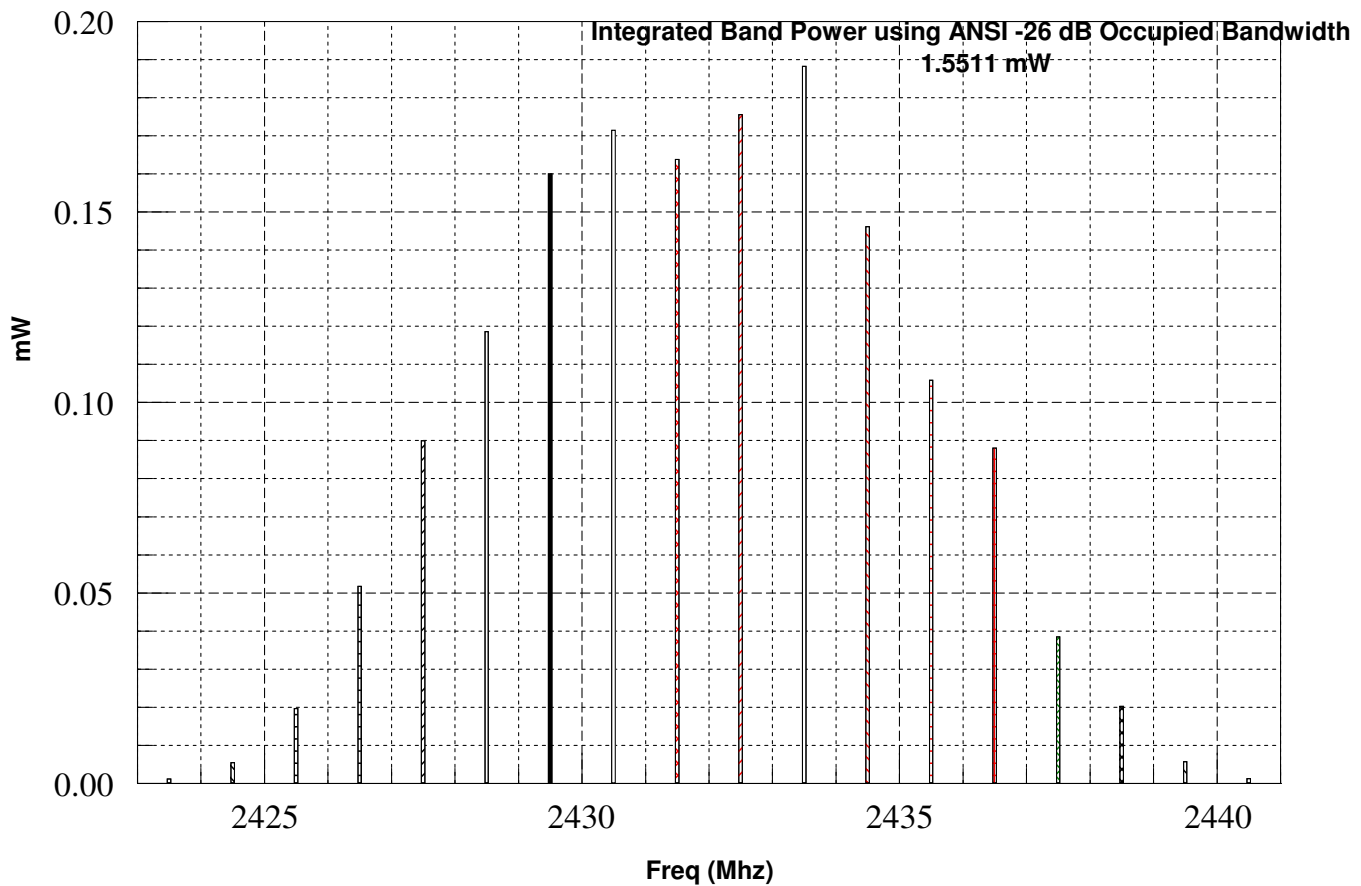
Freq (Mhz)	EIRP (mW)	EIRP (dBm)	Antenna gain (dBi)	Corrected EIRP Output Power (dBm)
2423.5	0.001184	-29.2647	0.5	-29.7647125
2424.5	0.005415	-22.6637	0.5	-23.1637125
2425.5	0.019667	-17.0627	0.5	-17.5627125
2426.5	0.05174	-12.8617	0.5	-13.3617125
2427.5	0.089935	-10.4607	0.5	-10.9607125
2428.5	0.118585	-9.25971	0.5	-9.75971255
2429.5	0.160003	-7.95871	0.5	-8.45871255
2430.5	0.171486	-7.65771	0.5	-8.15771255
2431.5	0.163806	-7.85671	0.5	-8.35671255
2432.5	0.175561	-7.55571	0.5	-8.05571255
2433.5	0.188161	-7.25471	0.5	-7.75471255
2434.5	0.146093	-8.35371	0.5	-8.85371255
2435.5	0.105859	-9.75271	0.5	-10.2527125
2436.5	0.08807	-10.5517	0.5	-11.0517125
2437.5	0.038453	-14.1507	0.5	-14.6507125
2438.5	0.020185	-16.9497	0.5	-17.4497125
2439.5	0.00569	-22.4487	0.5	-22.9487125
2440.5	0.001245	-29.0477	0.5	-29.5477125
	1.551139	mW	Peak Integrated Power	
			Spectral Density Using	
			ANSI -26 dBc OBW	
	1.9065	dBm		

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CERTIFICATION SERVICES, INC.

Extreme Technologies, Inc.
POV Stream Camera (USB Configuration)
FCC Part 15.247 Power Spectral Density
Channel 6, 802.11 g Mode, 11 N data rate



International Certification Services, Inc.

September 11, 2013

The Power Spectral Density of the EUT is 1.9065 dBm. The Limit is 8 dBm

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802.11 n MODE

This test was performed with the EUT in 802.11n mode with a 11 M data rate. The ANSI OBW bandwidth was determined to be 39 Mhz. The table used for the power integration is below showing the resultant integrated output power of 4.65E-05 mW (-43.325 dBm)

Total Integrated Output Power Calculations using FCC 558074 D01 DTS Meas Guidance v03r01 Section 9.2.2.2.

Freq (Mhz)	EIRP (mW)	EIRP (dBm)	Antenna gain (dBi)	Corrected EIRP Output Power (dBm)
2402	7.4367E-05	-41.28621	0.5	-41.78621
2403	0.00012926	-38.88521	0.5	-39.38521
2404	0.00048037	-33.18421	0.5	-33.68421
2405	0.00209739	-26.78321	0.5	-27.28321
2406	0.00577802	-22.38221	0.5	-22.88221
2407	0.01264383	-18.98121	0.5	-19.48121
2407.8	0.01745656	-17.58041	0.5	-18.08041
2409	0.02831905	-15.47921	0.5	-15.97921
2410	0.02643497	-15.77821	0.5	-16.27821
2411	0.02966735	-15.27721	0.5	-15.77721
2412	0.03179646	-14.97621	0.5	-15.47621
2413	0.03107984	-15.07521	0.5	-15.57521
2413.65	0.03824228	-14.17456	0.5	-14.67456
2414	0.03331032	-14.77421	0.5	-15.27421
2415	0.02527428	-15.97321	0.5	-16.47321
2416	0.02102707	-16.77221	0.5	-17.27221
2417	0.01389565	-18.57121	0.5	-19.07121
2418	0.00729422	-21.37021	0.5	-21.87021
2419	0.0029722	-25.26921	0.5	-25.76921
2420	0.00074676	-31.26821	0.5	-31.76821
2421	0.00020104	-36.96721	0.5	-37.46721
2422	0.00018339	-37.36621	0.5	-37.86621
2423	0.00013289	-38.76521	0.5	-39.26521
2424	0.00041075	-33.86421	0.5	-34.36421
2425	0.00179341	-27.46321	0.5	-27.96321
2426	0.0044033	-23.56221	0.5	-24.06221
2427	0.01081132	-19.66121	0.5	-20.16121
2428	0.01636736	-17.86021	0.5	-18.36021
2429	0.02259845	-16.45921	0.5	-16.95921
2430	0.02536172	-15.95821	0.5	-16.45821
2431	0.02536756	-15.95721	0.5	-16.45721
2432	0.02596443	-15.85621	0.5	-16.35621

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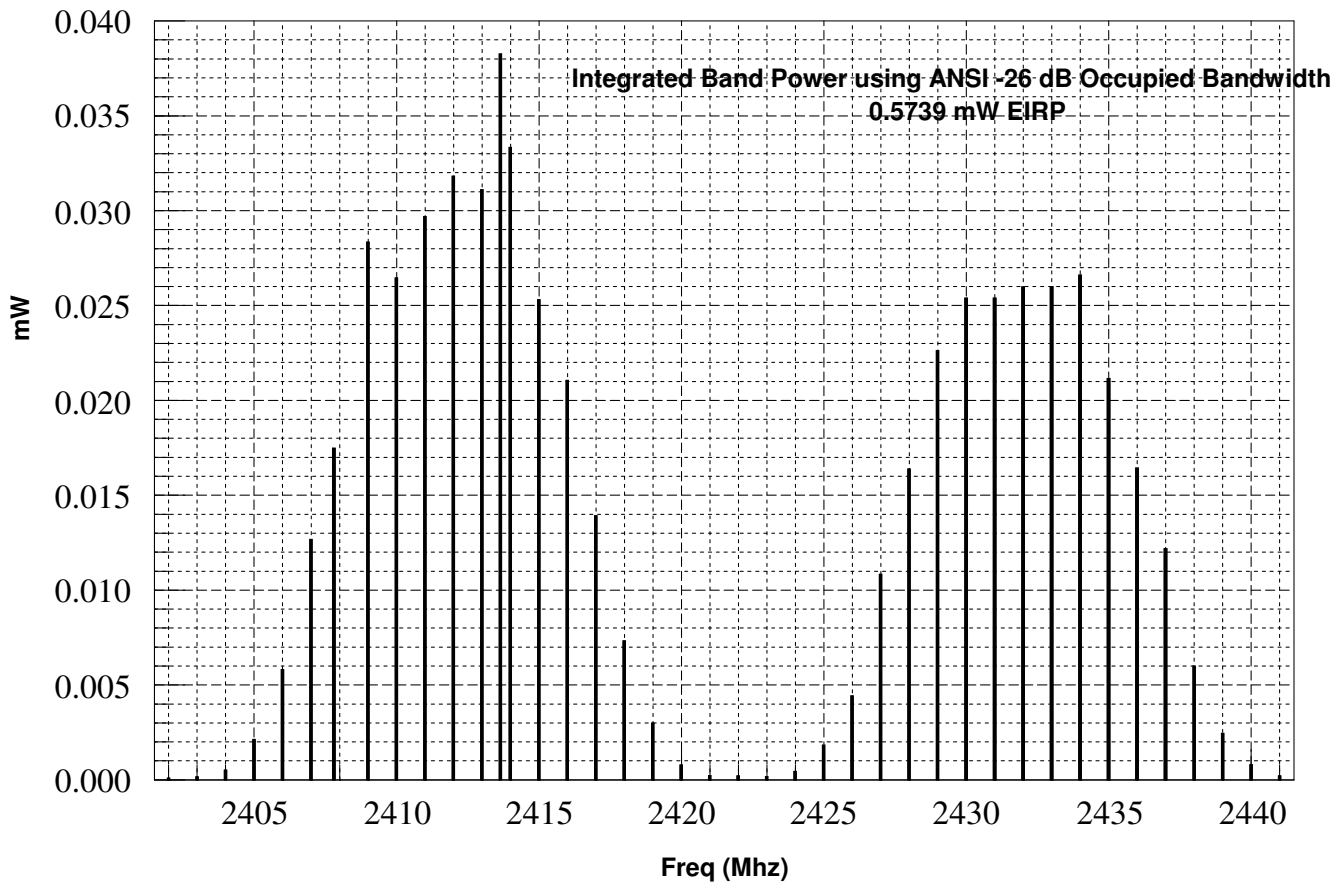
2433	0.02597041	-15.85521	0.5	-16.35521
2434	0.02658145	-15.75421	0.5	-16.25421
2435	0.02111926	-16.75321	0.5	-17.25321
2436	0.01639754	-17.85221	0.5	-18.35221
2437	0.01215846	-19.15121	0.5	-19.65121
2438	0.00595633	-22.25021	0.5	-22.75021
2439	0.00242705	-26.14921	0.5	-26.64921
2440	0.00076768	-31.14821	0.5	-31.64821
2441	0.00017591	-37.54721	0.5	-38.04721
	0.57386996	mW	Peak Integrated Power Spectral Density using ANSI - 26 dBc OBW	
	-2.41	dBm		

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CERTIFICATION SERVICES, INC.

Extreme Technologies, Inc.
POV Stream Camera (USB Configuration)
FCC Part 15.247 Output Power
Channel 3, 802.11 n Mode, 11 M data rate



International Certification Services, Inc.

September 11, 2013

The Power Spectral Density of the EUT is -2.41 dBm. The Limit is 8 dBm

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The EUT complies with this requirement. 15.247 (e)

15.247 (f) For the purposes of this section, hybrid systems are those that employ a combination of both frequency hopping and digital modulation techniques. The frequency hopping operation of the hybrid system, with the direct sequence or digital modulation operation turned off, shall have an average time of occupancy on any frequency not to exceed 0.4 seconds within a time period in seconds equal to the number of hopping frequencies employed multiplied by 0.4. The digital modulation operation of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section.

This section is not applicable since the EUT does not operate in a FHSS mode 15.247 (f)

15.247 (g) Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. However, the system, consisting of both the transmitter and the receiver, must be designed to comply with all of the regulations in this section should the transmitter be presented with a continuous data (or information) stream. In addition, a system employing short transmission bursts must comply with the definition of a frequency hopping system and must distribute its transmissions over the minimum number of hopping channels specified in this section.

This section is not applicable since the EUT does not operate in a FHSS mode 15.247 (g)

15.247 (h) The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hopsets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

This section is not applicable since the EUT does not operate in a FHSS mode 15.247 (h)

15.247 (i) Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See §1.1307 (b)(1) of this chapter.

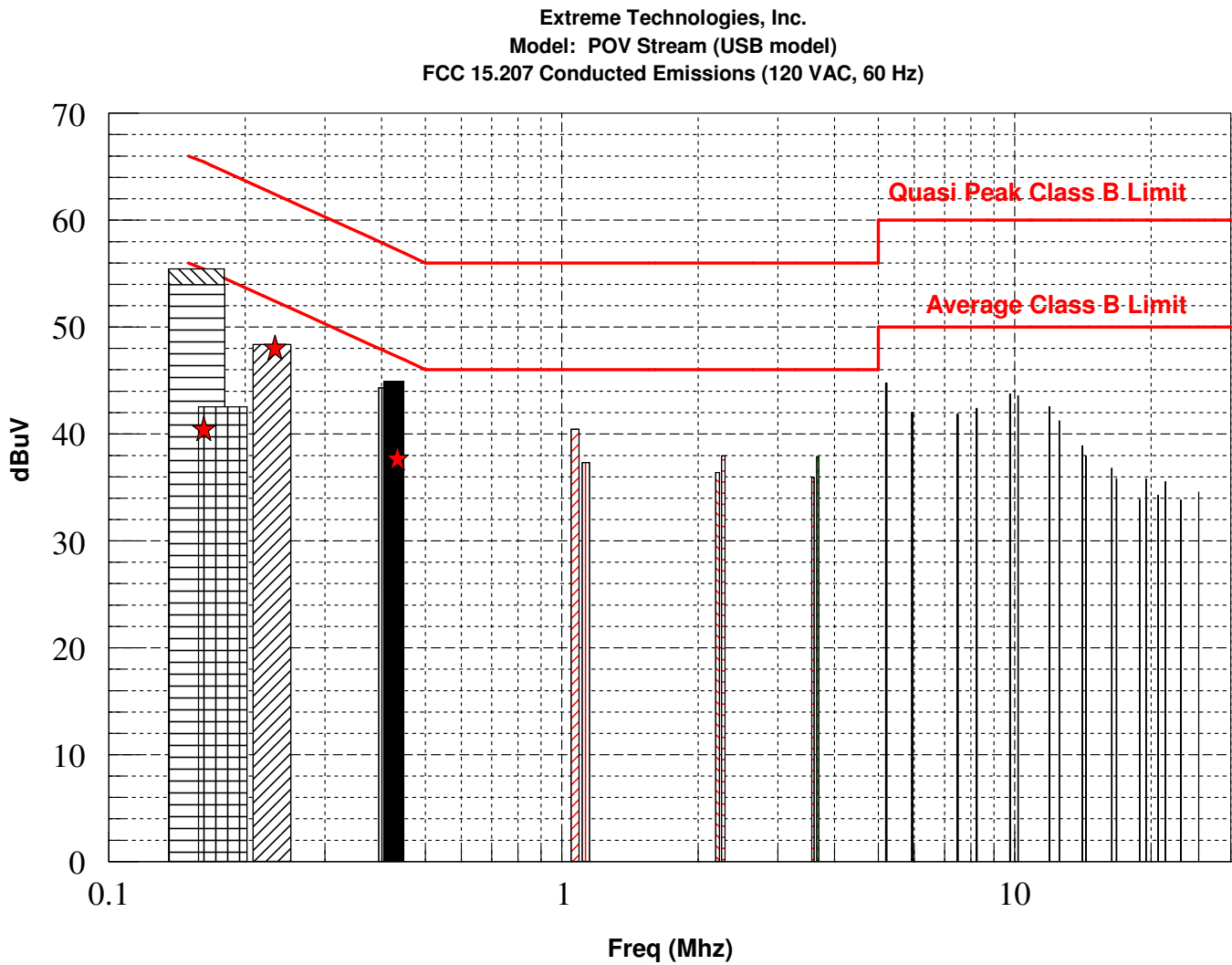
EUT complies with this requirement. 15.247 (i)

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15..207 Conducted Emissions:



★ Average Detected Data

International Certification Services, Inc.

June 03, 2013

EUT complies with this requirement. 15.207

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ATTACHMENT C

**PRODUCT DATA SHEET OR PRODUCT INFORMATION FORM AS SUPPLIED
BY THE CUSTOMER**

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CERTIFICATION SERVICES, INC.

COMPANY NAME: Extreme Technologies, LLC

CUSTOMER REPRESENTATIVE: International Certification Services, Inc.

EQUIPMENT DESCRIPTION: Mobile Point of View Video Camera (DVR) with Wi-Fi and streaming capability.

MODEL NUMBER: POV Stream

SERIAL NUMBER: Stream 1234

TYPE OF TEST: ☐ Development
☐ Initial Design Verification
☐ Design Change (Please describe exact changes below)
☒ Production Sample (Audit Test)
Changes made: NONE

OSCILLATOR FREQUENCIES:

32.768 Khz (X2), 24 Mhz, 432 Mhz, 340 Mhz, 88.5 Mhz, 1.2 Mhz,

PRODUCT SHIELDING PROVISION:

Metal enclosure

SOFTWARE AND / OR OPERATING MODES:

Testing used Taiyo Yuden Wifi Lab tool with special code rev 1.5018 for Intentional Radiator testing, used rev 1.5026 software for normal usage testing

POWER SUPPLY:

Type: Battery

Manufacturer: Shenzhen Shirui Battery Co., Ltd.

Model: NP120

I/O CABLES: NONE

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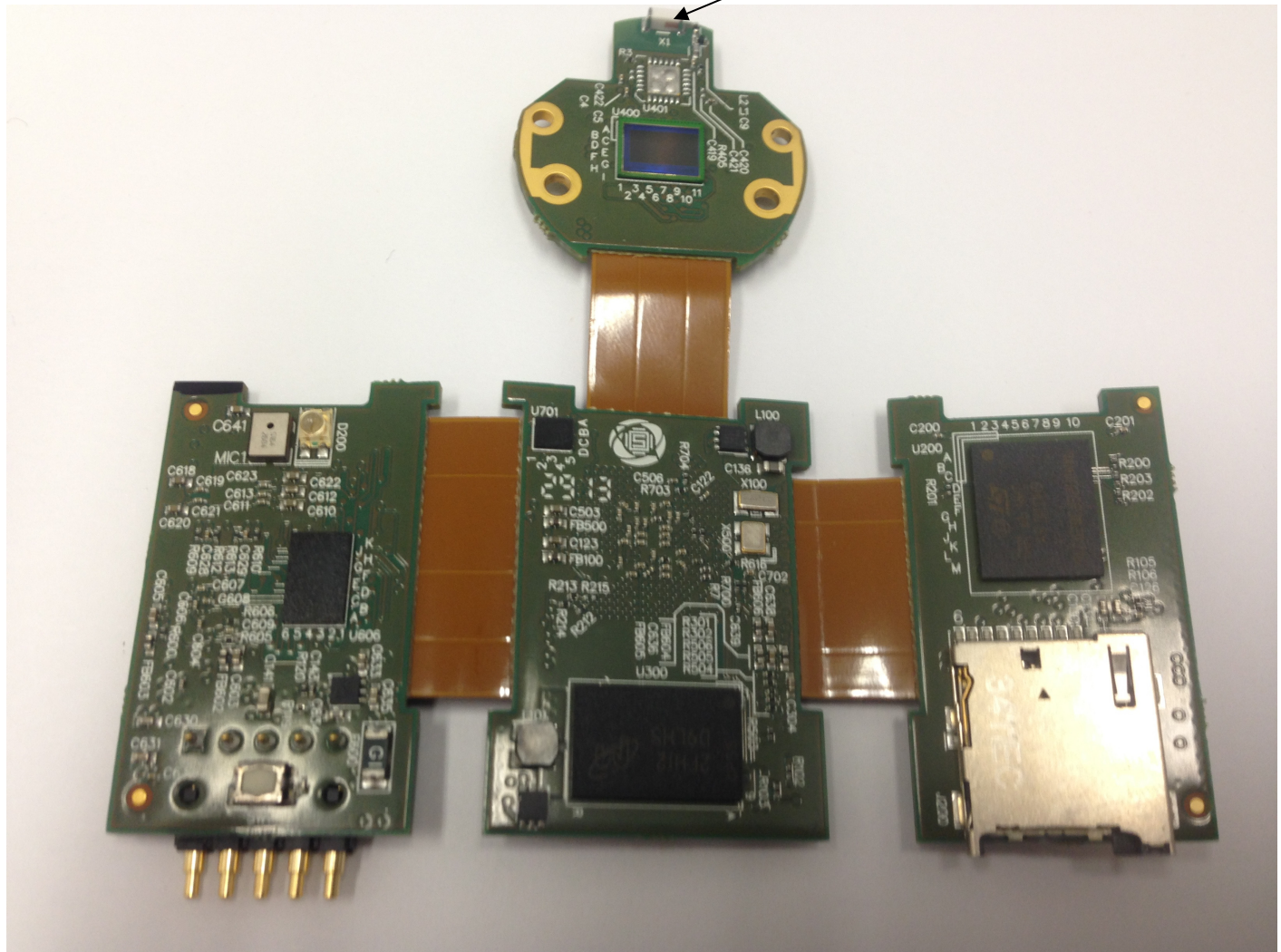


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Internal Photos:

PC Board Side 1:

PC Board antenna
component



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