

FCC Part 15C Measurement and Test Report

For

Global Takeoff Inc.

11175 Cicero Drive, Suit 100 Alpharetta, Georgia, USA

FCC ID: RT9-AS206C

FCC Rules: FCC Part 15C

Product Description: AS206C HDMI Dongle

Tested Model: AS206C

Report No.: STR12128365I-1

Tested Date: 2012-12-24 to 2013-01-28

Issued Date: 2013-01-29

Tested By: Vigoss Xiong / Engineer

Reviewed By: Lahm Peng / EMC Manager

Approved & Authorized By: Jandy so / PSQ Manager

Prepared By:

SEM.Test Compliance Service Co., Ltd

3/F, Jinbao Commerce Building, Xin'an Fanshen Road,
Bao'an District, Shenzhen, P.R.C. (518101)

Tel.: +86-755-33663308 Fax.: +86-755-33663309 Website: www.semtest.com.cn

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by SEM.Test Compliance Service Co., Ltd

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Global Takeoff Inc.
Address of applicant: 11175 Cicero Drive, Suit 100 Alpharetta, Georgia, USA
Manufacturer: Riverstone Electronics Co., Ltd.
Address of manufacturer: RM503, No.2 Building, Chaguang Industrial Zone, Shahe West Zone, Nanshan Dist., Shenzhen

General Description of EUT	
Product Name:	AS206C HDMI Dongle
Trade Name:	Yupp TV
Model No.:	AS206C
Adding Model(s):	/
Rated Voltage:	DC 5.0V
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Support Standards:	802.11b, 802.11g, 802.11n-HT20, 802.11n-HT40
Frequency Range:	2412-2462MHz for 11b/g/n(HT20) 2422-2452MHz for 11n(HT40)
RF Output Power:	15.85dBm (Conducted)
Data Rate:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Modulation:	1-11Mbps, 6-54Mbps, up to 150Mbps
Quantity of Channels:	13 for 802.11b/g/n-HT20, 9 for 802.11n-HT40
Channel Separation:	5MHz
Antenna Type:	Integral Antenna
Antenna Gain:	0.5dBi
Lowest Internal Frequency of EUT:	12MHz
Device Category:	Mobile Device

1.2 Test Standards

The following report is prepared on behalf of the Global Takeoff Inc. in accordance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 of the Federal Communication Commissions rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz. The public notice KDB 558074 for digital transmission systems shall be performed also.

1.4 Test Facility

- **FCC – Registration No.: 994117**

SEM.Test Compliance Services Co., Ltd. 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 our files and the Registration is 994117.

- **Industry Canada (IC) Registration No.: 7673A**

The 3m Semi-anechoic chamber of SEM.Test Compliance Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 7673A.

- **CNAS Registration No.: L4062**

Shenzhen SEM.Test Electronics Service Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C (518101)

1.5 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	802.11b	2412MHz, 2437MHz, 2462MHz
TM2	802.11g	2412MHz, 2437MHz, 2462MHz
TM3	802.11n-HT20	2412MHz, 2437MHz, 2462MHz
TM4	802.11n-HT40	2422MHz, 2437MHz, 2452MHz

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
USB Cable	1.0	Shielded	Without Ferrite
HDMI Cable	0.3	Shielded	Without Ferrite

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Adapter	Trythink	S0500100-3C-U1	/

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§ 15.203; § 15.247(b)(4)(i)	Antenna Requirement	Compliant
§ 15.207(a)	Conducted Emission	Compliant
§ 15.247(e)	Power Spectral Density	Compliant
§ 15.247(a)(2)	6 dB Bandwidth	Compliant
§ 15.247(b)(3)	RF Output Power	Compliant
§ 15.209(a)(d)	Radiated Emission	Compliant
§ 15.247(d)	Band Edge (Out of Band Emissions)	Compliant

N/A: not applicable

3. Antenna Requirement

3.1 Standard Applicable

According to FCC Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

3.2 Evaluation Information

This product has a permanent antenna, fulfill the requirement of this section.

4. Power Spectral Density

4.1 Standard Applicable

According to 15.247(a)(1)(iii), 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.

4.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	Agilent	E4402B	US41192821	2012-03-28	2013-03-27
Attenuator	ATTEN	ATS100-4-20	/	2012-03-28	2013-03-27

4.3 Test Procedure

According to the KDB 558074, the test method of option 1(section 9.1) of power spectral density as below:

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set analyzer center frequency to DTS channel center frequency.
3. Set the span to 1.5 times the DTS channel bandwidth.
4. Set the spectrum analyzer as RBW=3 kHz, VBW=10 kHz.
5. Detector = peak, Sweep time = auto, Trace mode = max hold, allow trace to fully stabilize.
6. Use the peak marker function to determine the maximum amplitude level.
7. Repeat above procedures until all frequency measured was complete.

4.4 Environmental Conditions

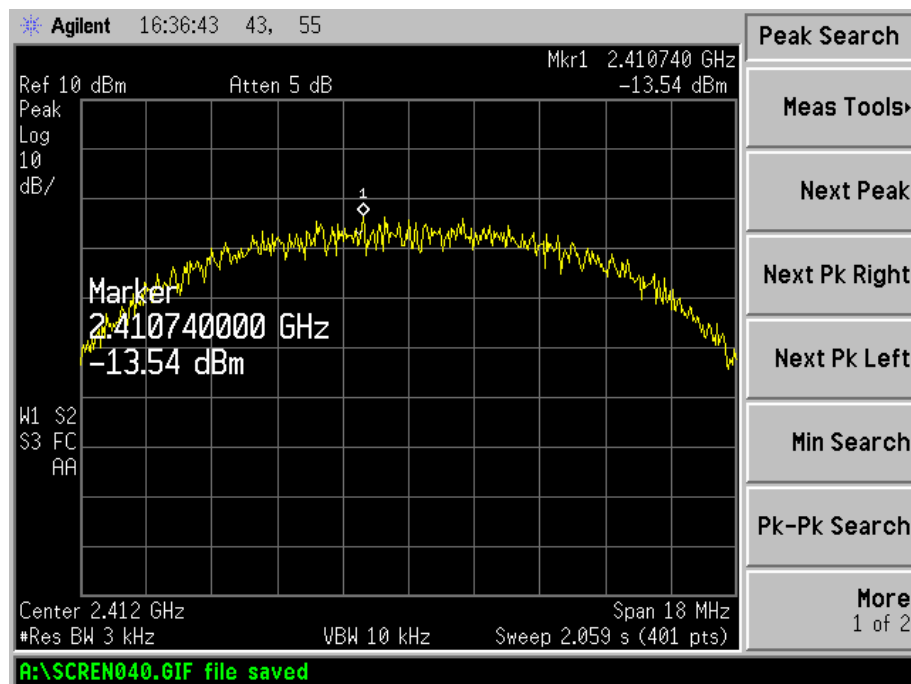
Temperature:	20° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

4.5 Summary of Test Results/Plots

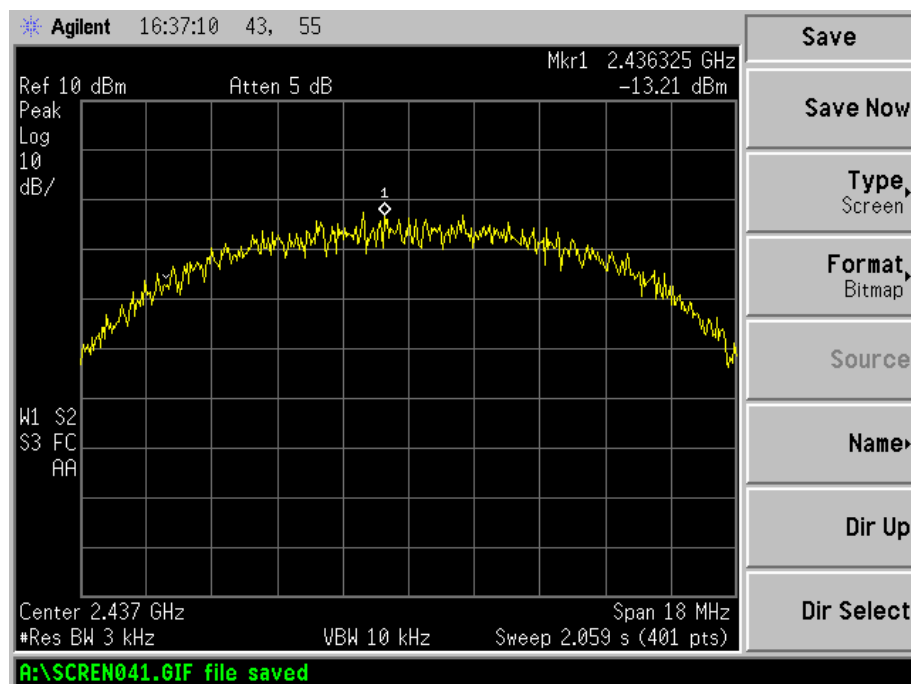
Test Mode	Test Channel MHz	Power Spectral Density dBm/3kHz	Limit dBm/3kHz
802.11b	2412	-13.54	8
	2437	-13.21	8
	2462	-10.91	8
802.11g	2412	-15.65	8
	2437	-16.50	8
	2462	-14.67	8
802.11n HT20	2412	-16.47	8
	2437	-16.50	8
	2462	-16.63	8
802.11n HT40	2422	-20.08	8
	2437	-19.85	8
	2452	-18.72	8

Please refer to the following test plots:

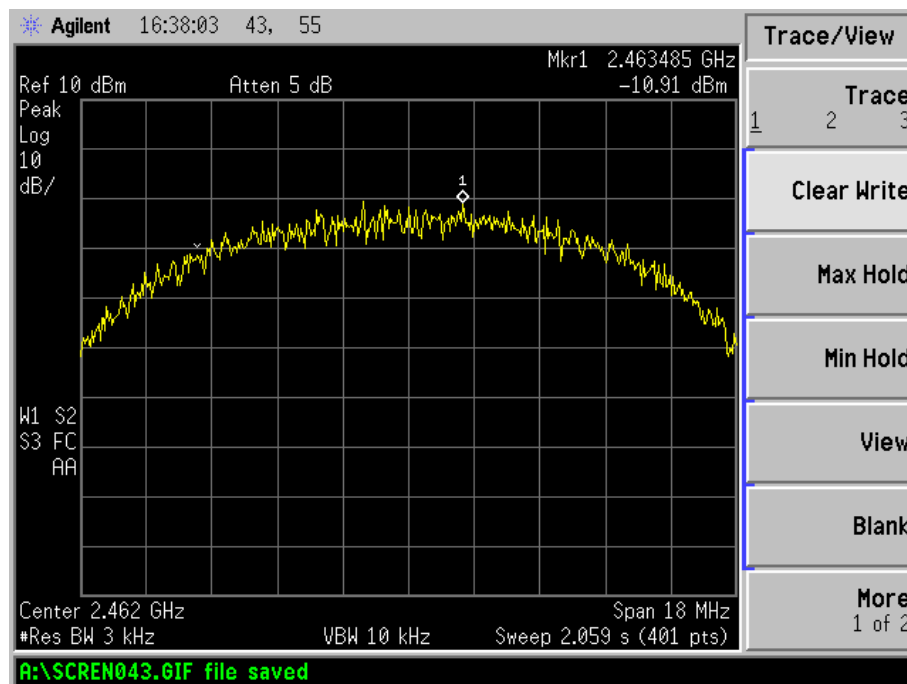
802.11b-Low Channel



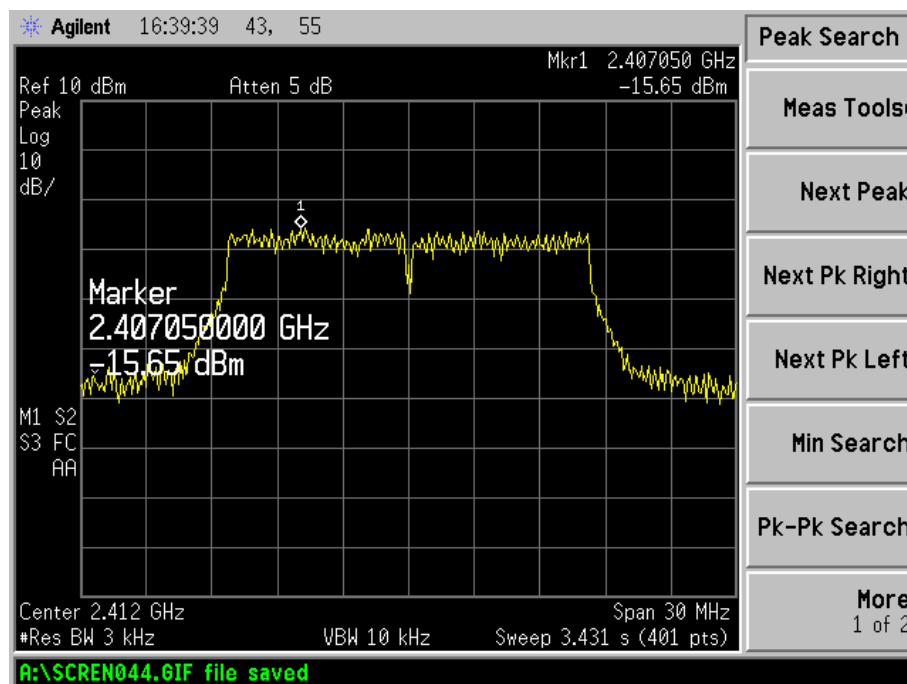
802.11b-Middle Channel



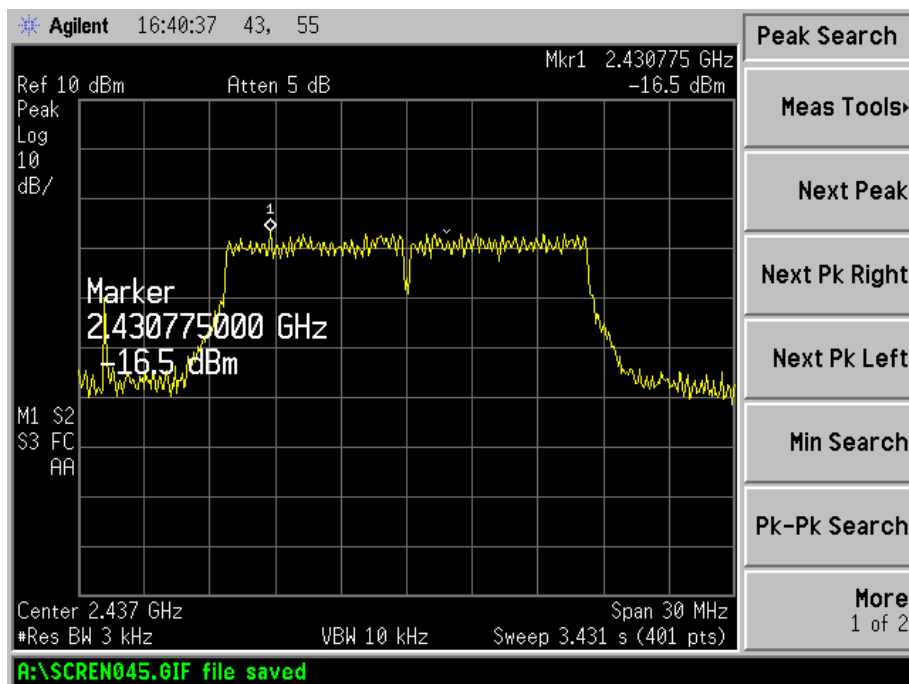
802.11b-High Channel



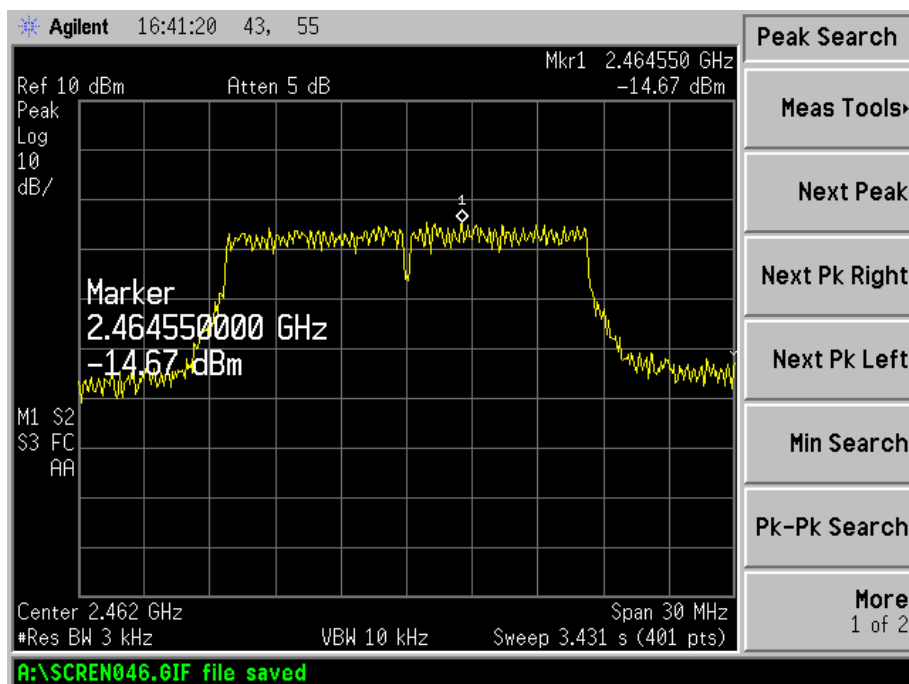
802.11g-Low Channel



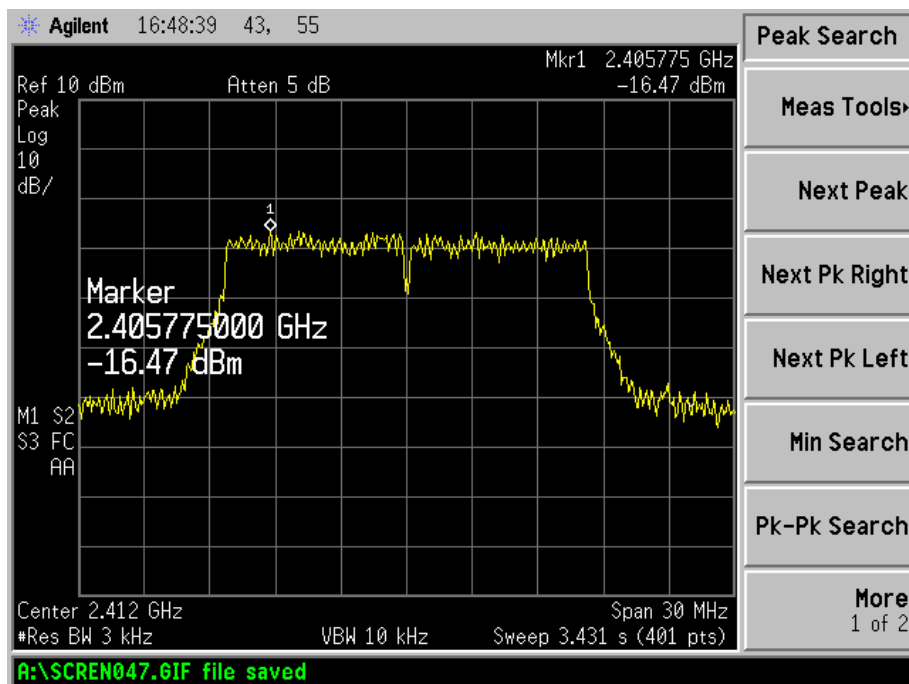
802.11g-Middle Channel



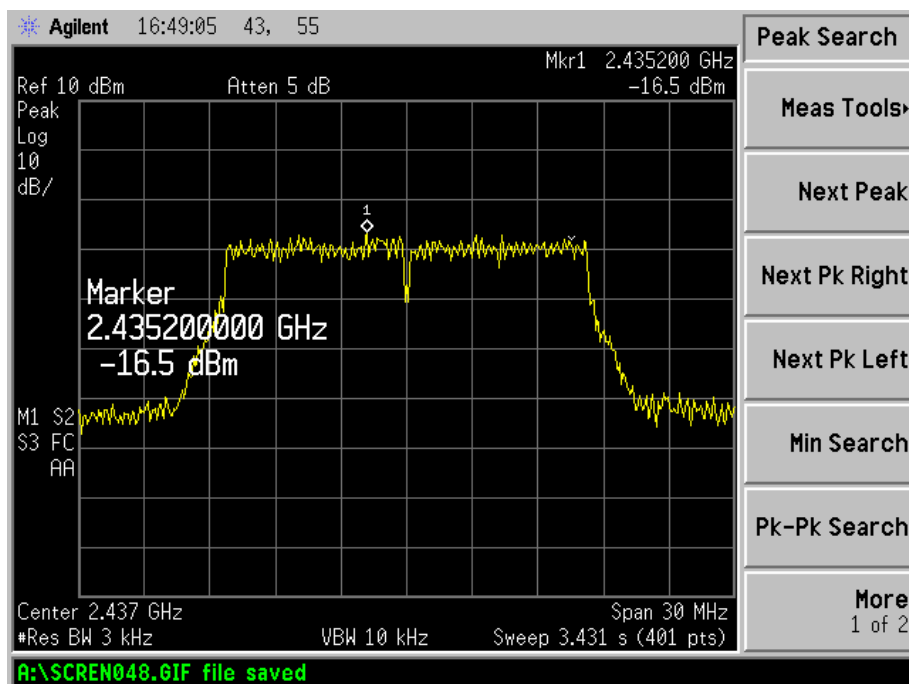
802.11g-High Channel



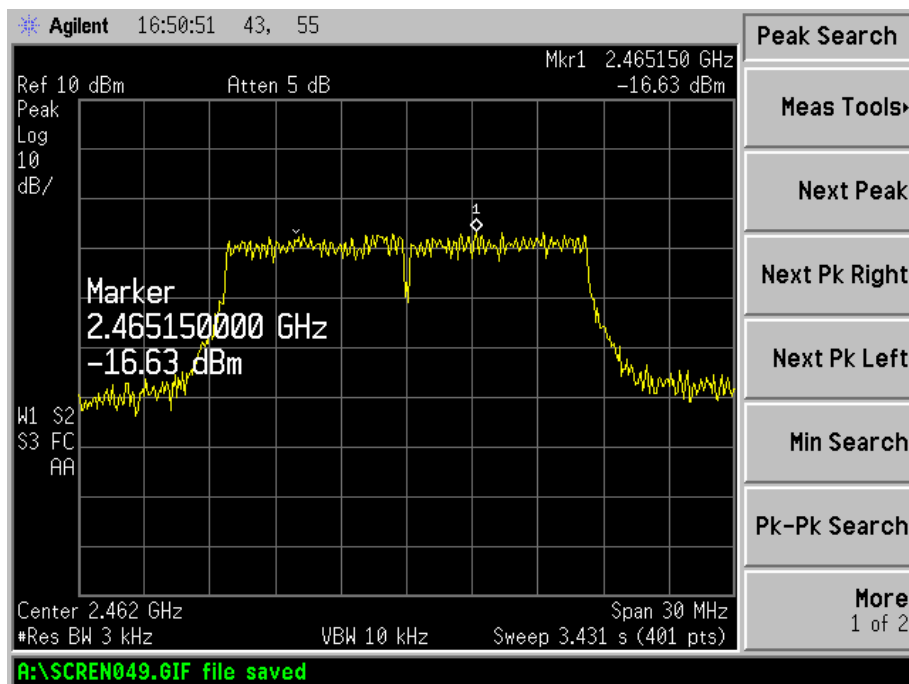
802.11n-HT20-Low Channel



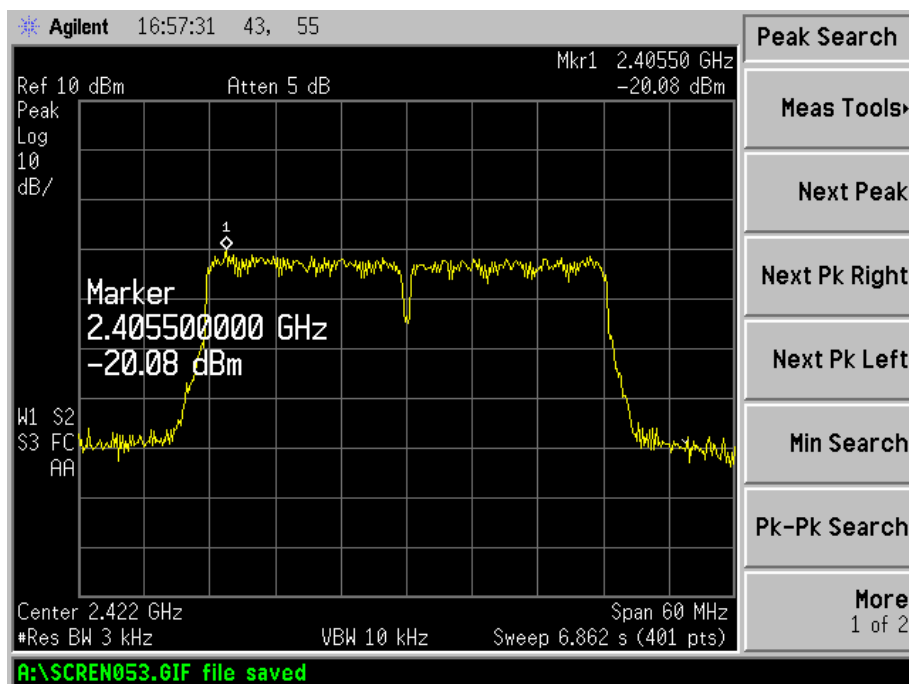
802.11n-HT20-Middle Channel



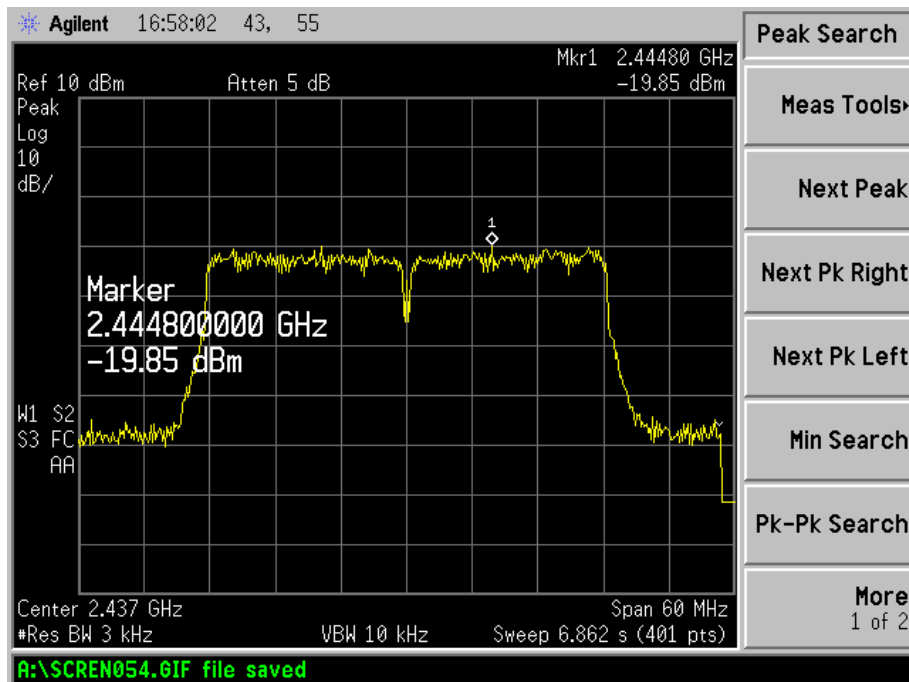
802.11n-HT20-High Channel



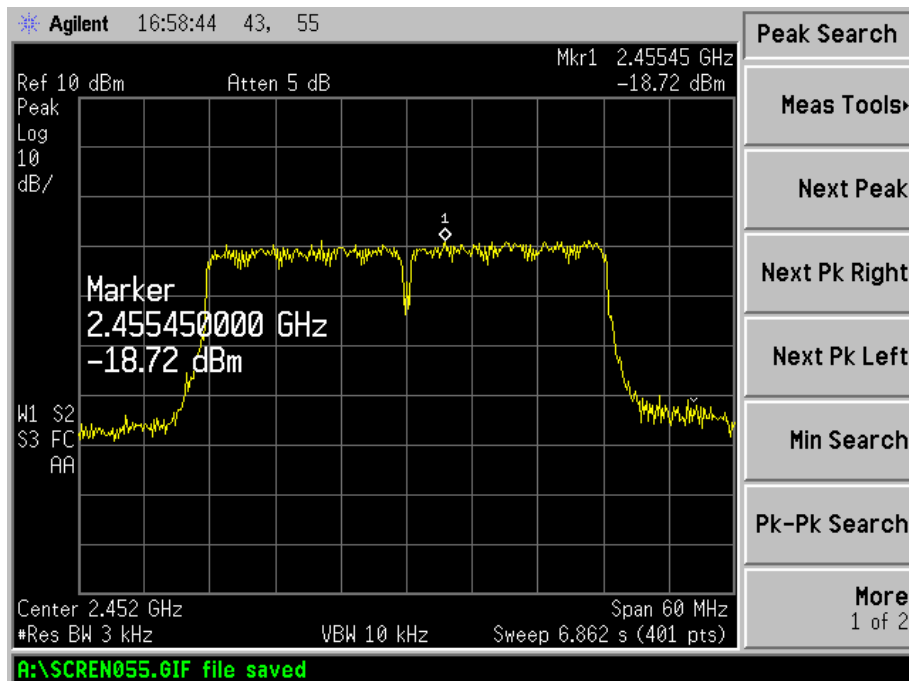
802.11n-HT40-Low Channel



802.11n-HT40-Middle Channel



802.11n-HT40-High Channel



5. 6dB Bandwidth

5.1 Standard Applicable

According to 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.

5.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	Agilent	E4402B	US41192821	2012-03-28	2013-03-27
Attenuator	ATTEN	ATS100-4-20	/	2012-03-28	2013-03-27

5.3 Test Procedure

According to the KDB 558074, the test method of option 1 (section 7.1) of emission bandwidth as below:

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set center frequency of spectrum analyzer = operating frequency.
3. Set the spectrum analyzer as RBW = 100kHz (1-5% of Bandwidth.), VBW $\geq$ 3 x RBW.
4. Set Detector = Peak, Trace mode = Max hold, Sweep time = Auto, allow the trace to stabilize.
5. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

5.4 Environmental Conditions

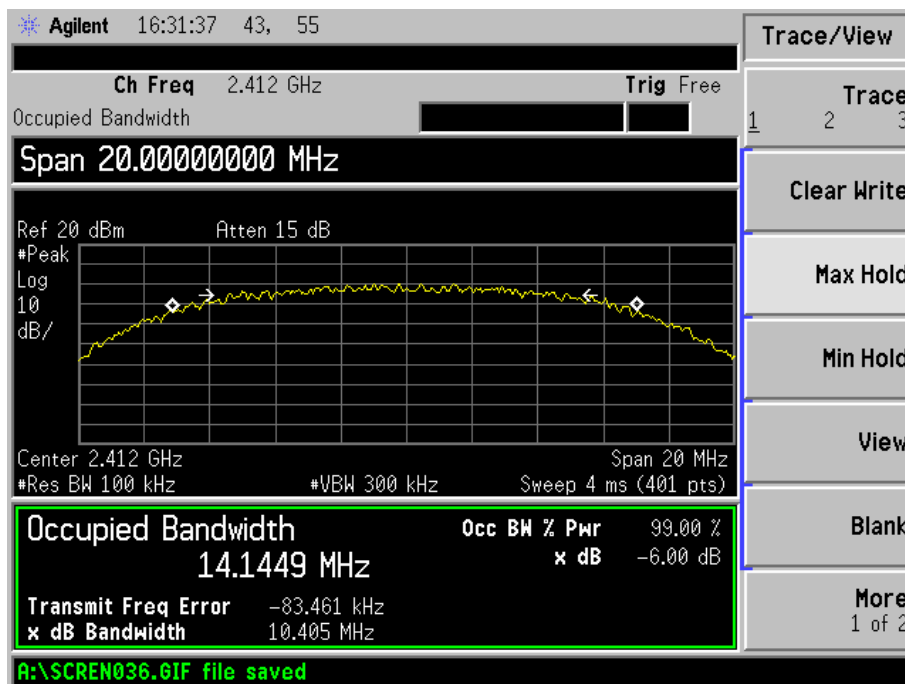
Temperature:	24° C
Relative Humidity:	53%
ATM Pressure:	1018 mbar

5.5 Summary of Test Results/Plots

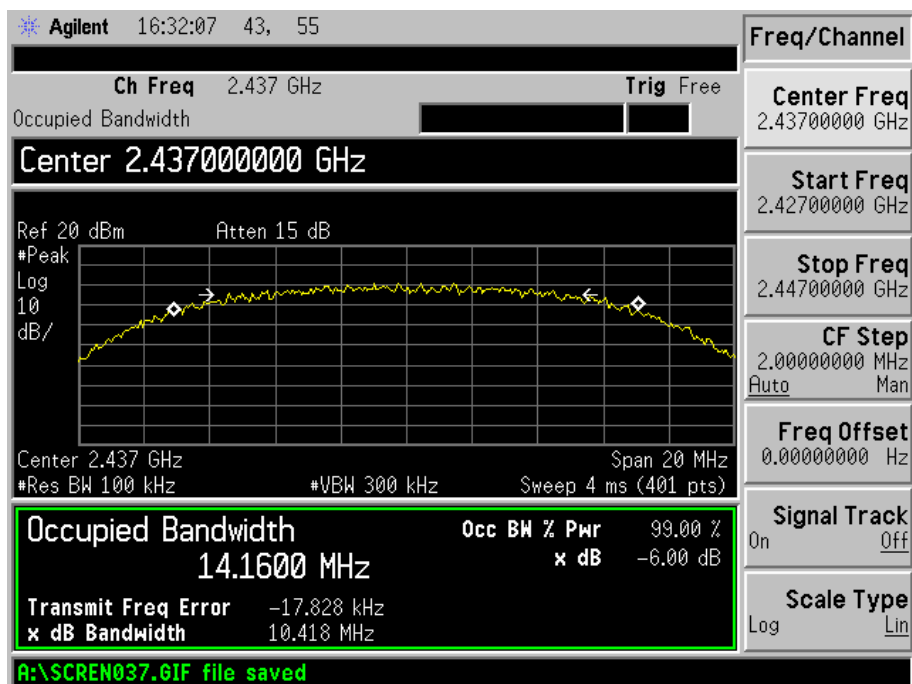
Test Mode	Test Channel MHz	6 dB Bandwidth kHz	Limit kHz
802.11b	2412	10405	500
	2437	10418	500
	2462	11074	500
802.11g	2422	16624	500
	2437	16560	500
	2452	16545	500
802.11n-HT20	2412	17811	500
	2437	17786	500
	2462	17805	500
802.11n-HT40	2422	36435	500
	2437	36577	500
	2452	36530	500

Please refer to the following test plots:

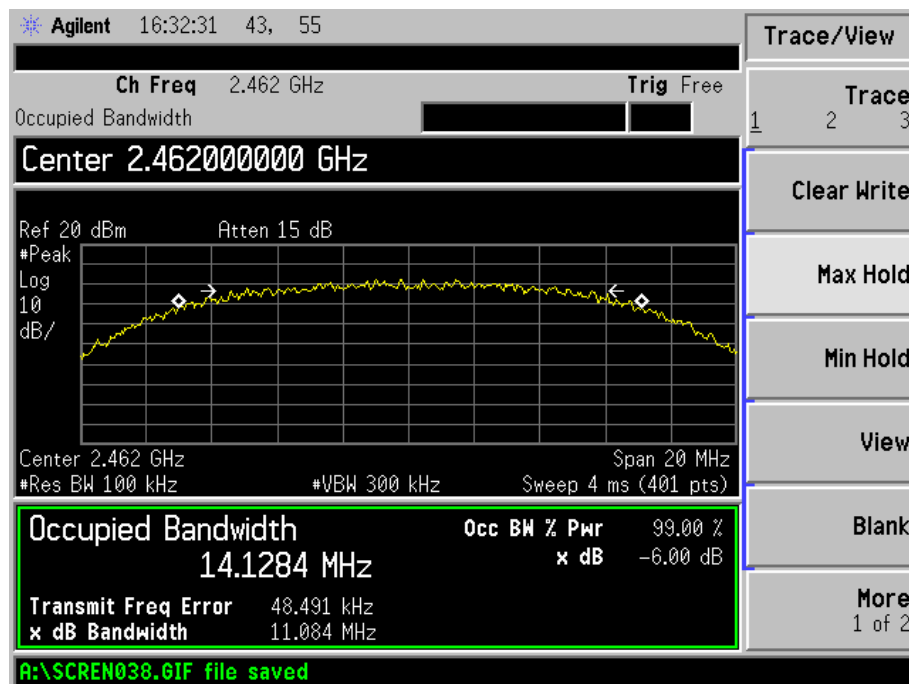
802.11b-Low Channel



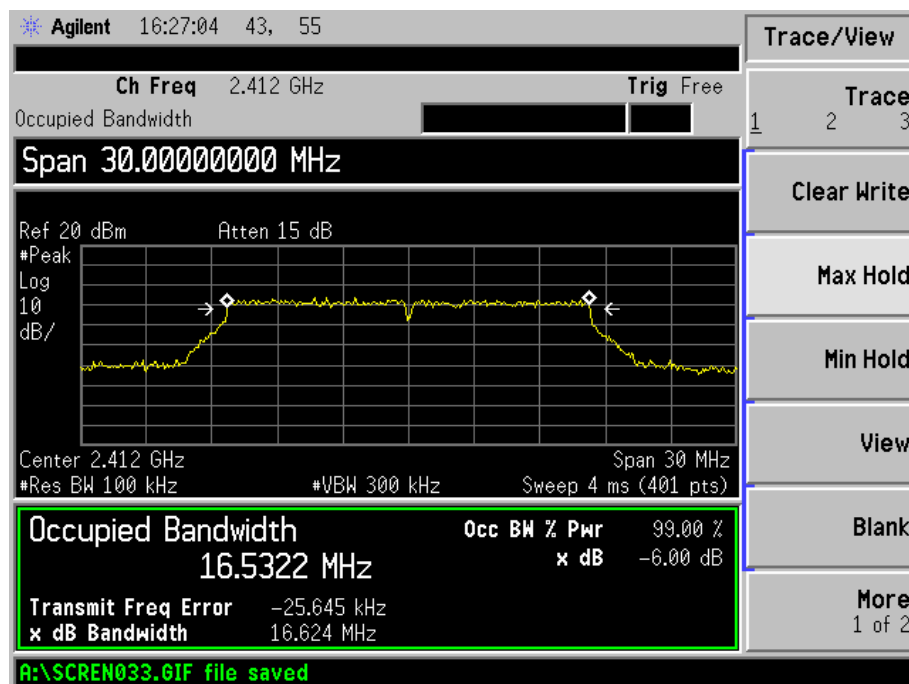
802.11b-Middle Channel



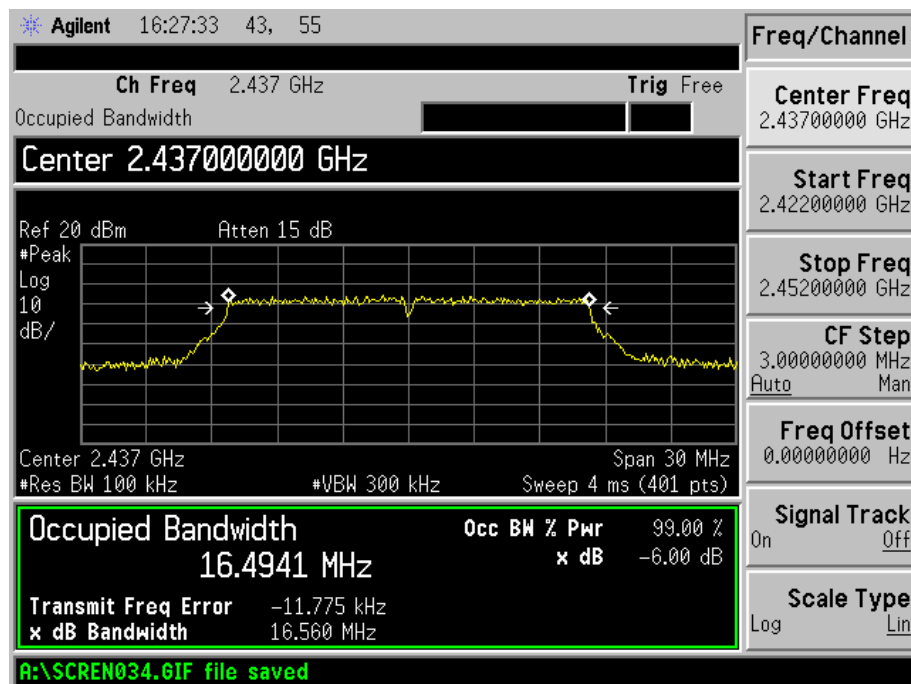
802.11b-High Channel



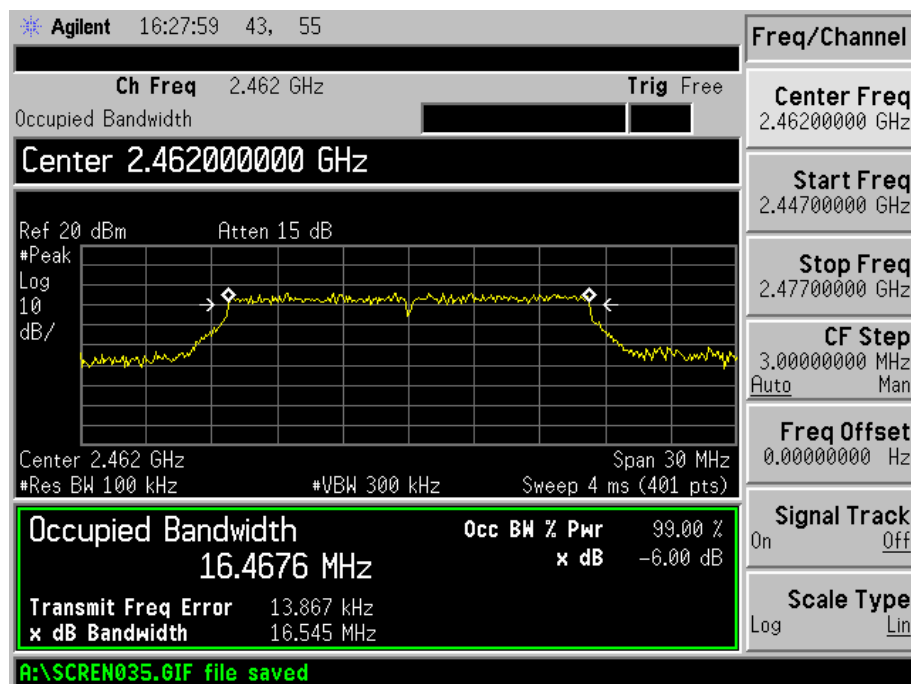
802.11g-Low Channel



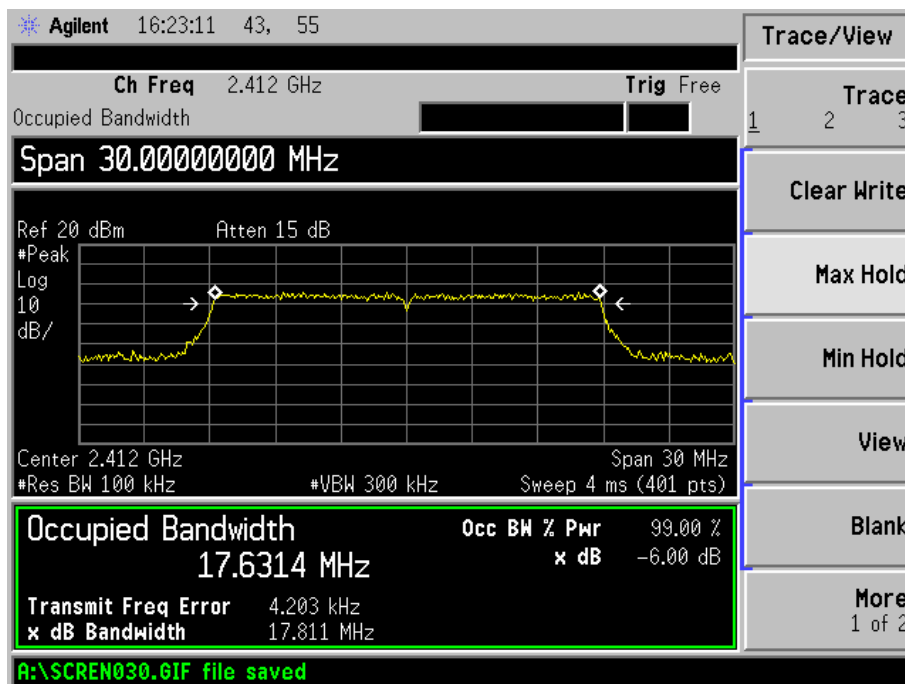
802.11g-Middle Channel



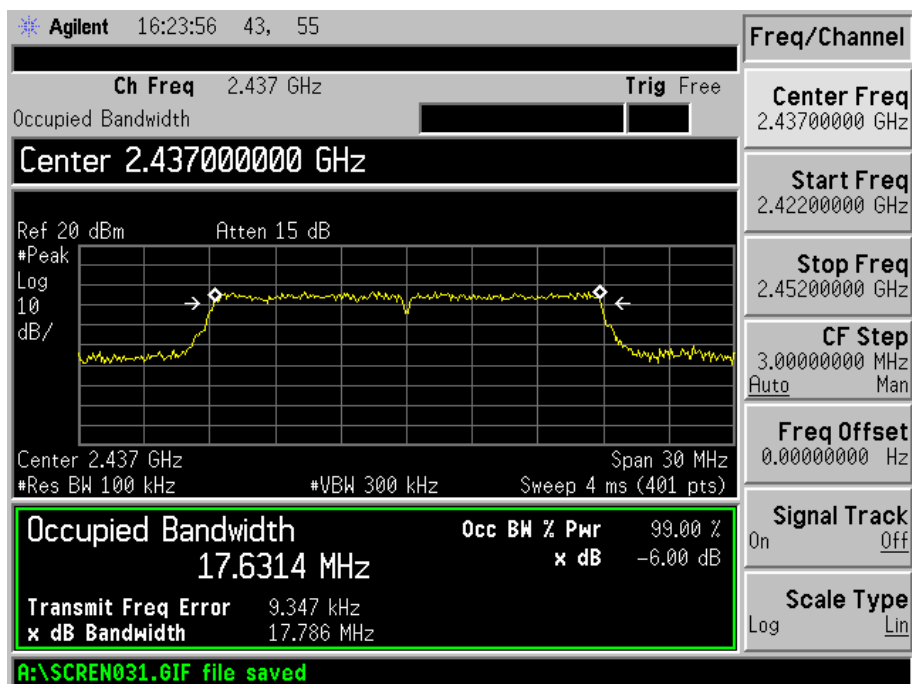
802.11g-High Channel



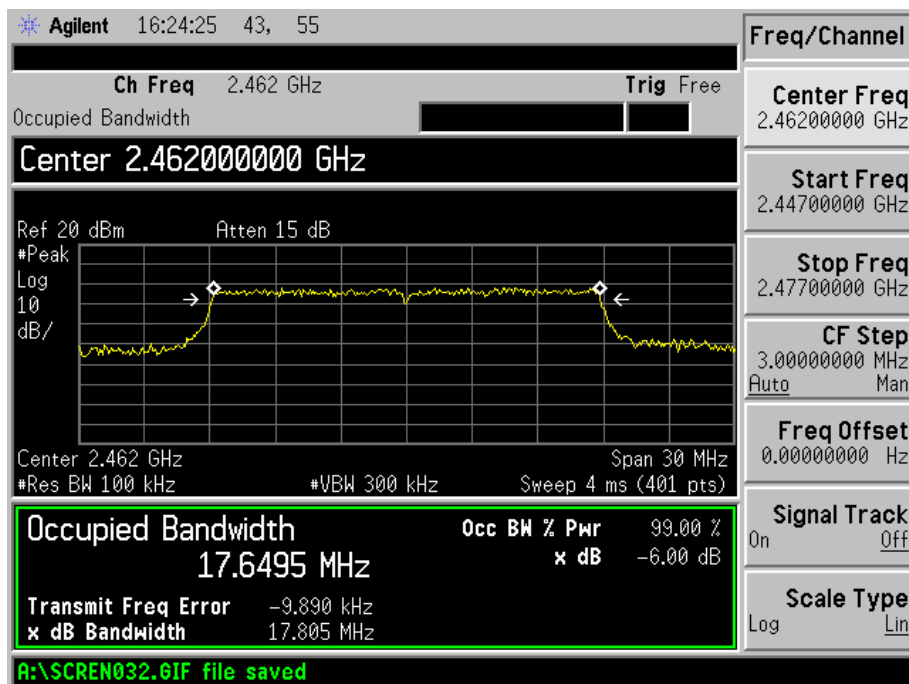
802.11n-HT20-Low Channel



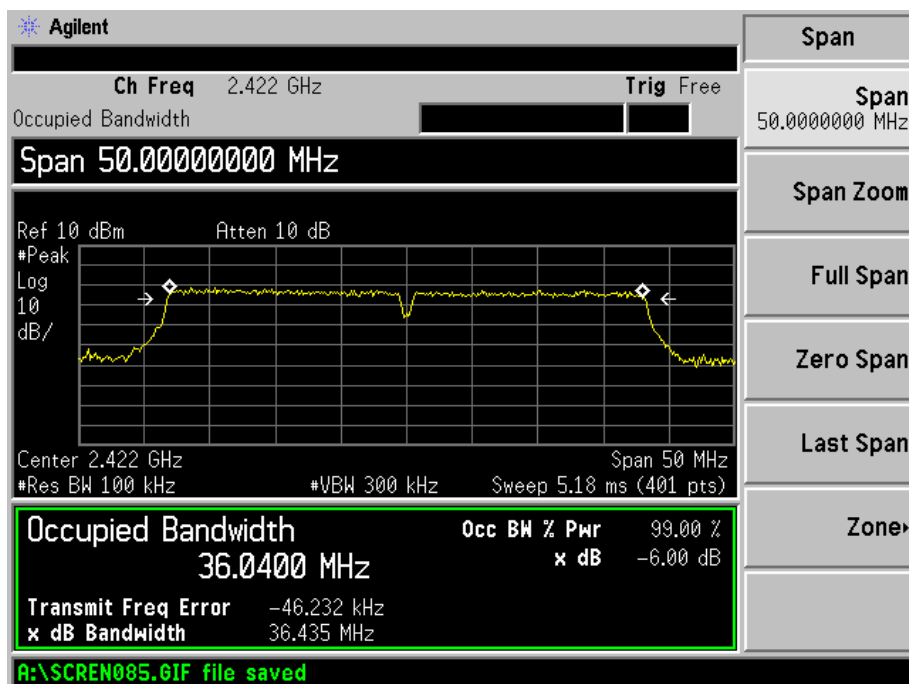
802.11n-HT20-Middle Channel



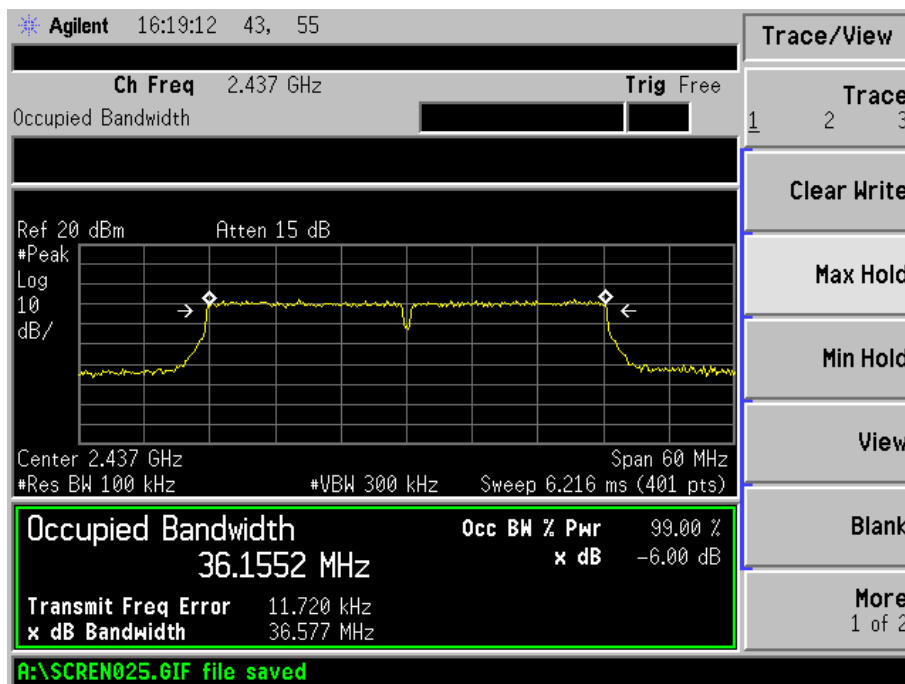
802.11n-HT20-High Channel



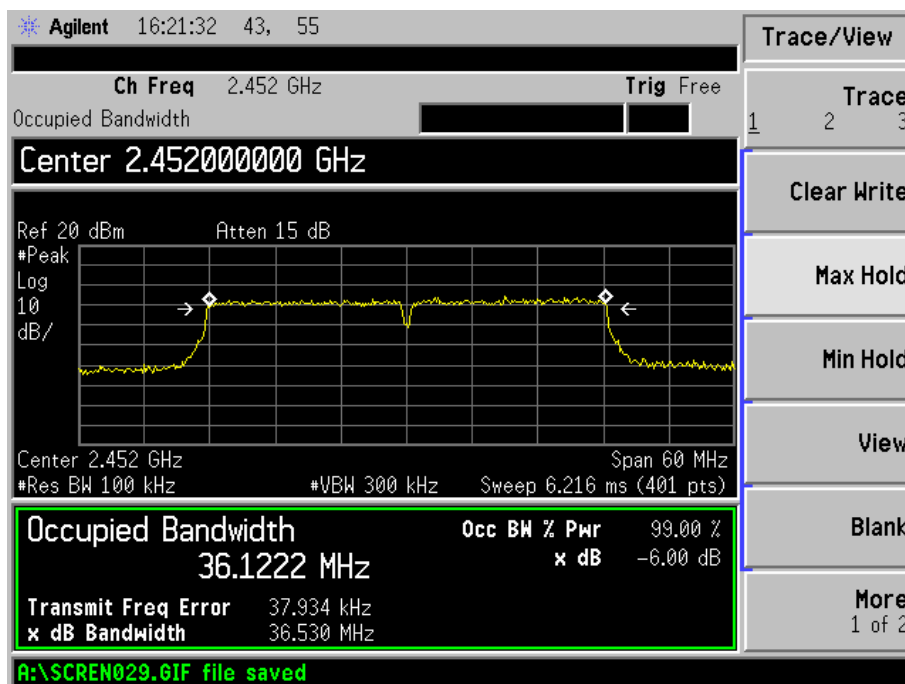
802.11n-HT40-Low Channel



802.11n-HT40-Middle Channel



802.11n-HT40-High Channel



6. RF Output Power

6.1 Standard Applicable

According to 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.

6.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	Agilent	E4402B	US41192821	2012-03-28	2013-03-27
Attenuator	ATTEN	ATS100-4-20	/	2012-03-28	2013-03-27

6.3 Test Procedure

According to the KDB 558074, the test method of option 2 (section 8.1.2) of maximum peak conducted output power as below:

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set the RBW = 1 MHz.
3. Set the VBW = 3 MHz.
4. Set the span to fully encompass the DTS bandwidth.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the spectrum analyzer's band/channel power measurement function with band limits set equal to the DTS bandwidth edges (for some analyzers, this may require a manual override to ensure use of peak detector).

6.4 Environmental Conditions

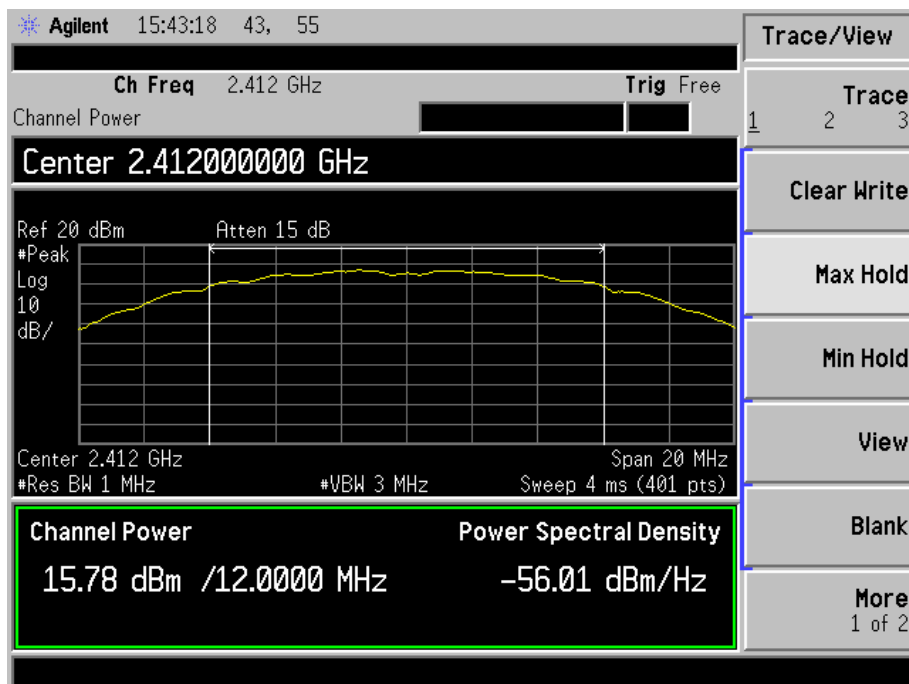
Temperature:	21° C
Relative Humidity:	55%
ATM Pressure:	1011 mbar

6.5 Summary of Test Results/Plots

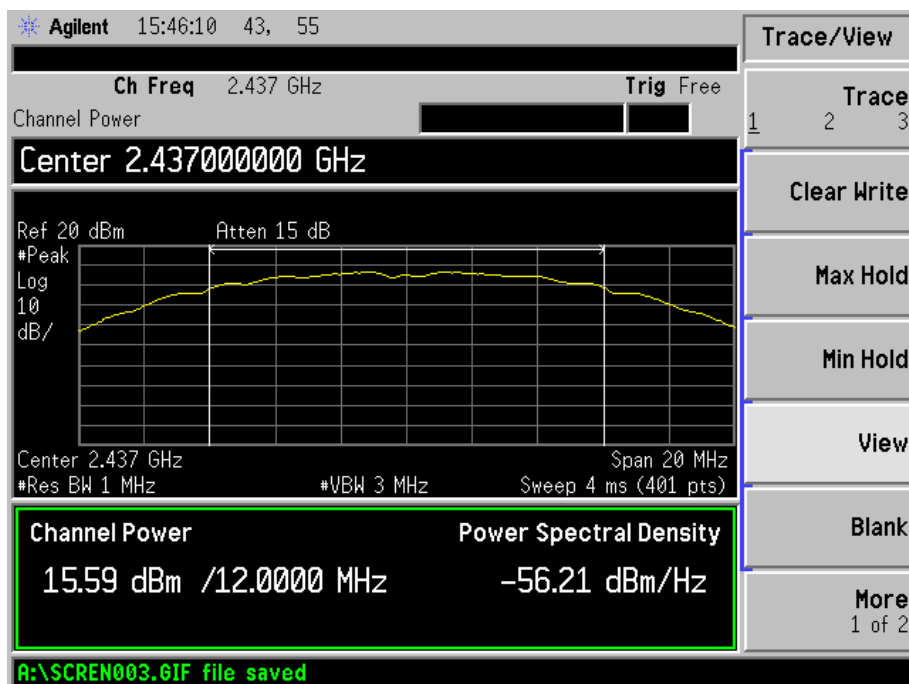
Test Mode	Frequency MHz	Reading dBm	Output Power mW	Limit mW
802.11b _1Mbps	2412	15.78	37.84	1000
	2437	15.59	36.22	1000
	2462	15.29	33.81	1000
802.11b _11Mbps	2412	15.74	37.50	1000
	2437	15.41	34.75	1000
	2462	15.85	38.46	1000
802.11g_6Mbps	2412	12.47	17.66	1000
	2437	12.30	16.98	1000
	2462	12.34	17.14	1000
802.11g_54Mbps	2412	12.47	17.66	1000
	2437	12.39	17.34	1000
	2462	12.53	17.91	1000
802.11n HT20_MCS0	2412	12.35	17.18	1000
	2437	12.34	17.14	1000
	2462	12.35	17.18	1000
802.11n HT20_MCS7	2412	12.40	17.38	1000
	2437	12.32	17.06	1000
	2462	12.37	17.26	1000
802.11n HT40_MCS0	2422	12.28	16.90	1000
	2437	12.33	17.10	1000
	2452	12.44	17.54	1000
802.11n HT40_MCS7	2422	12.41	17.42	1000
	2437	12.29	16.94	1000
	2452	12.75	18.84	1000

Please refer to the following test plots:

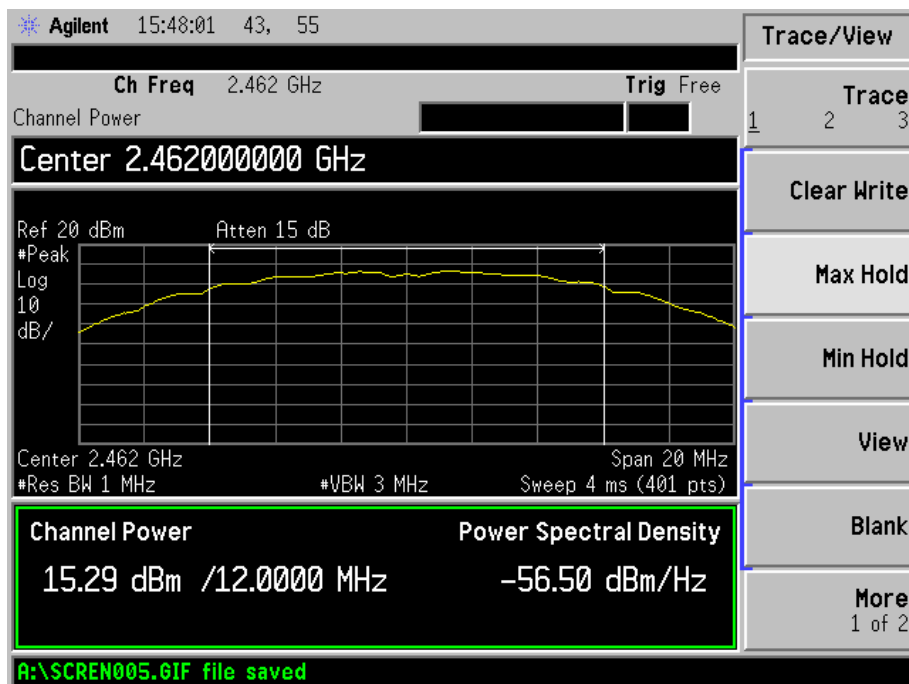
802.11b-1Mbps-Low Channel



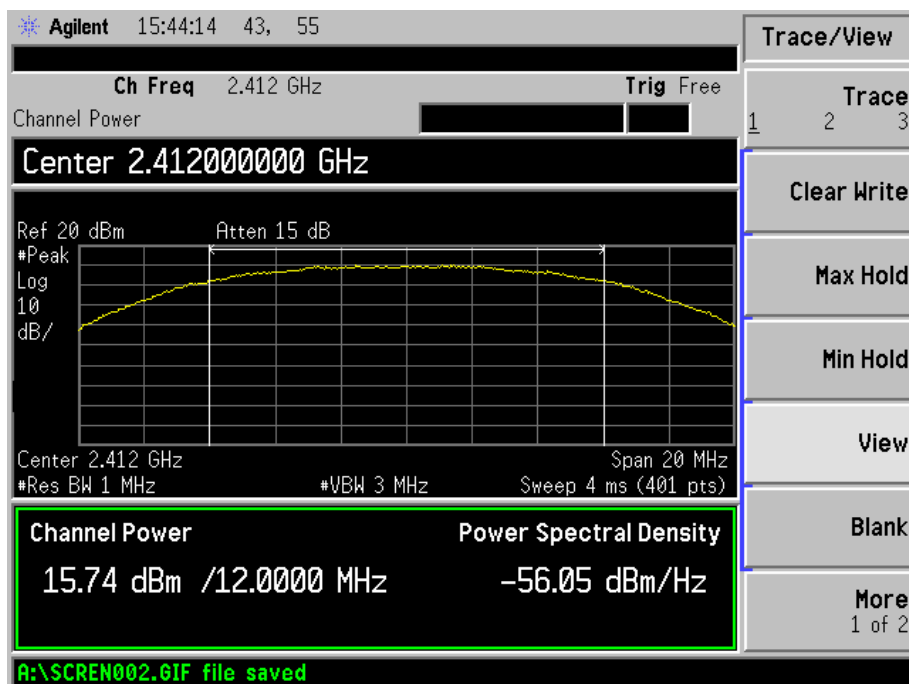
802.11b-1Mbps-Middle Channel



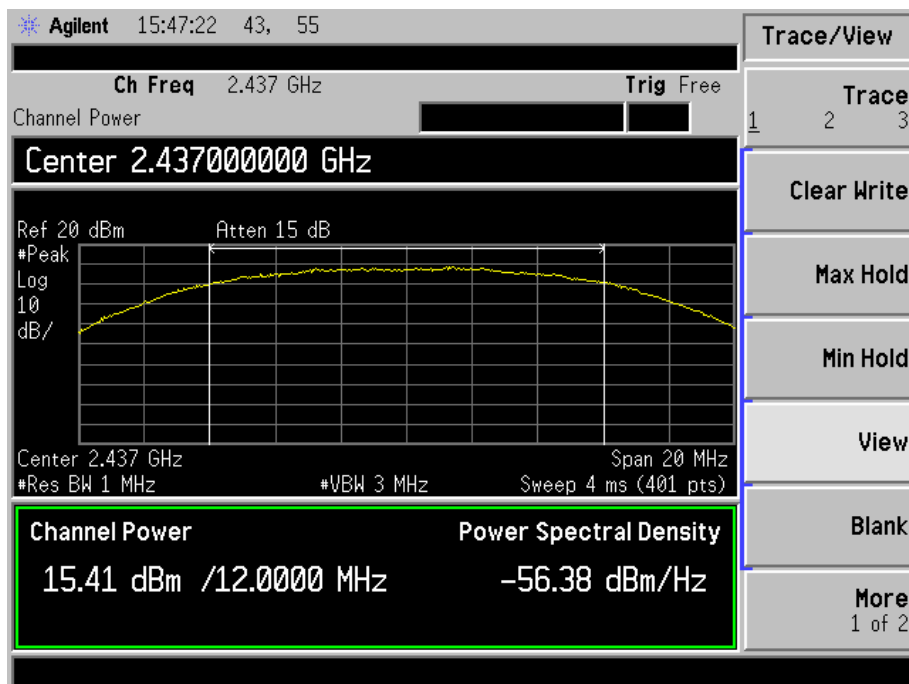
802.11b-1Mbps-High Channel



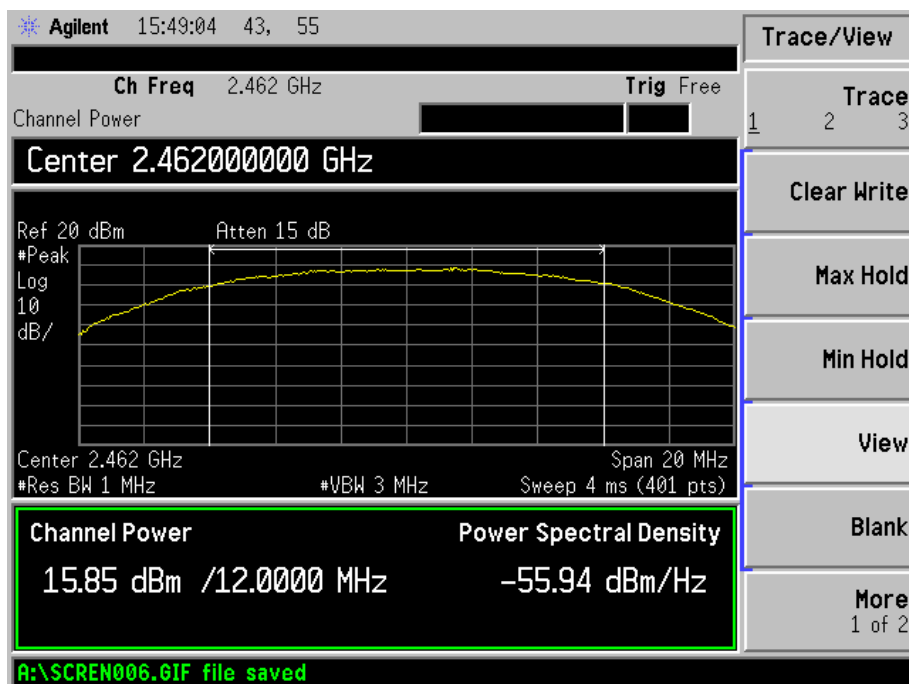
802.11b-11Mbps-Low Channel



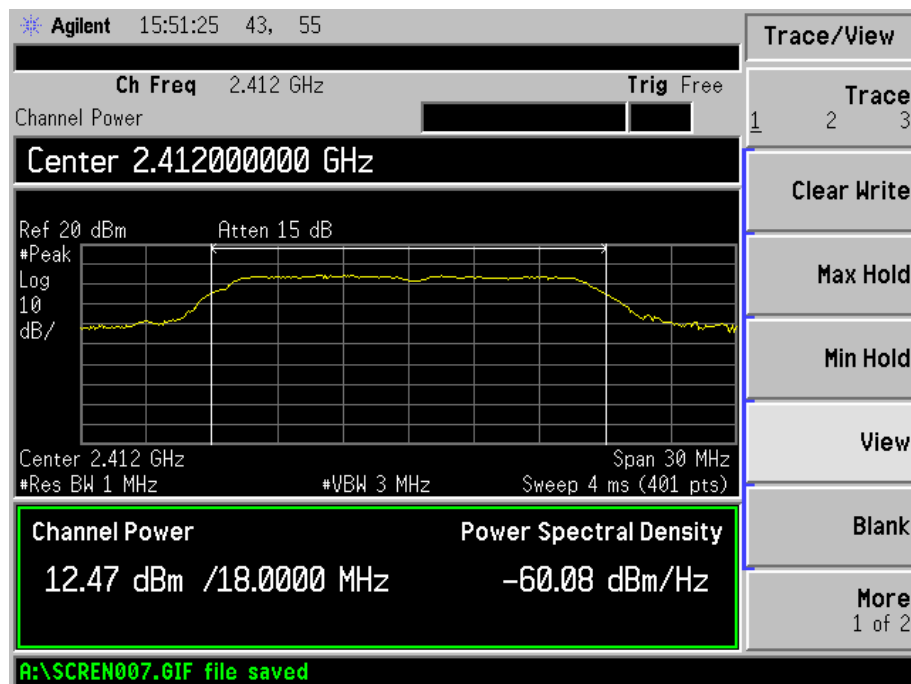
802.11b-11Mbps-Middle Channel



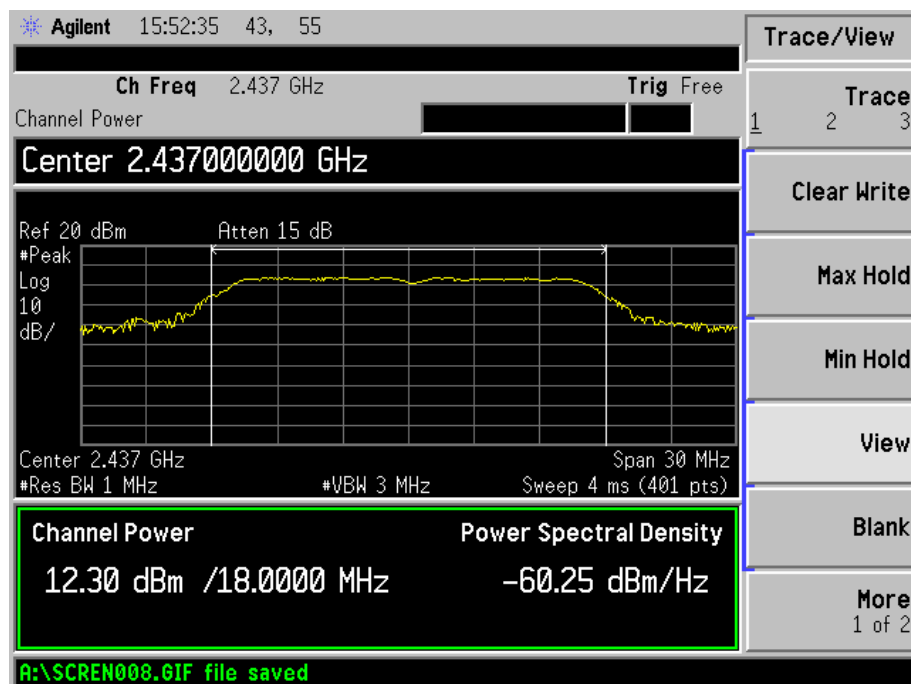
802.11b-11Mbps-High Channel



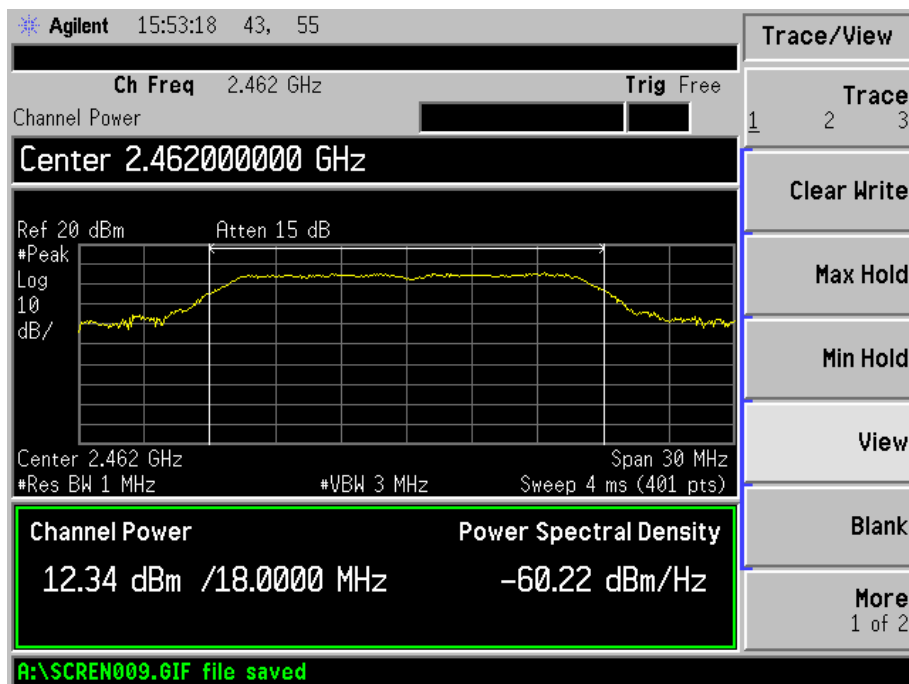
802.11g-6Mbps-Low Channel



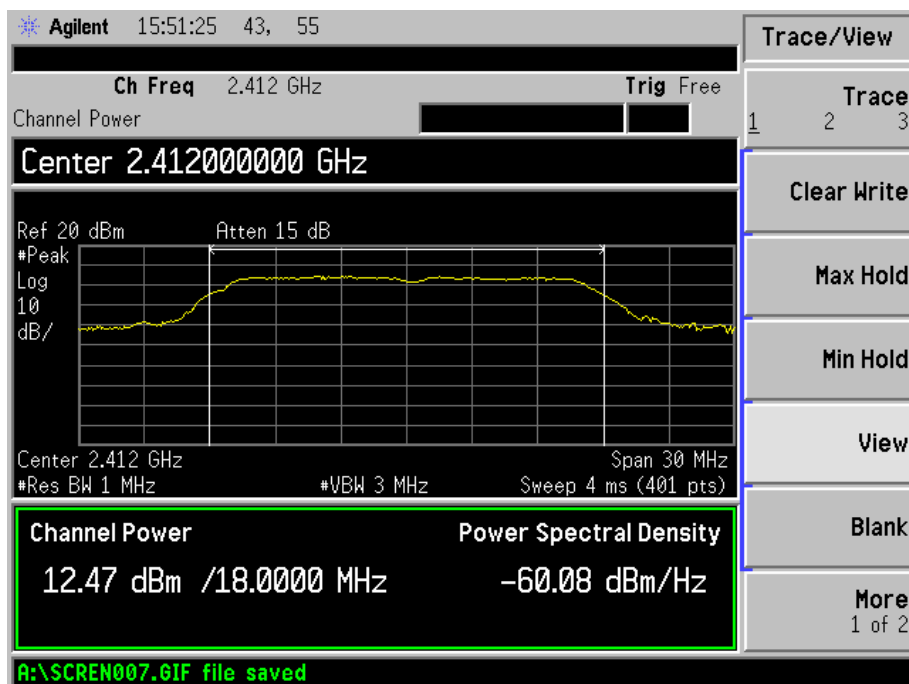
802.11g-6Mbps-Middle Channel



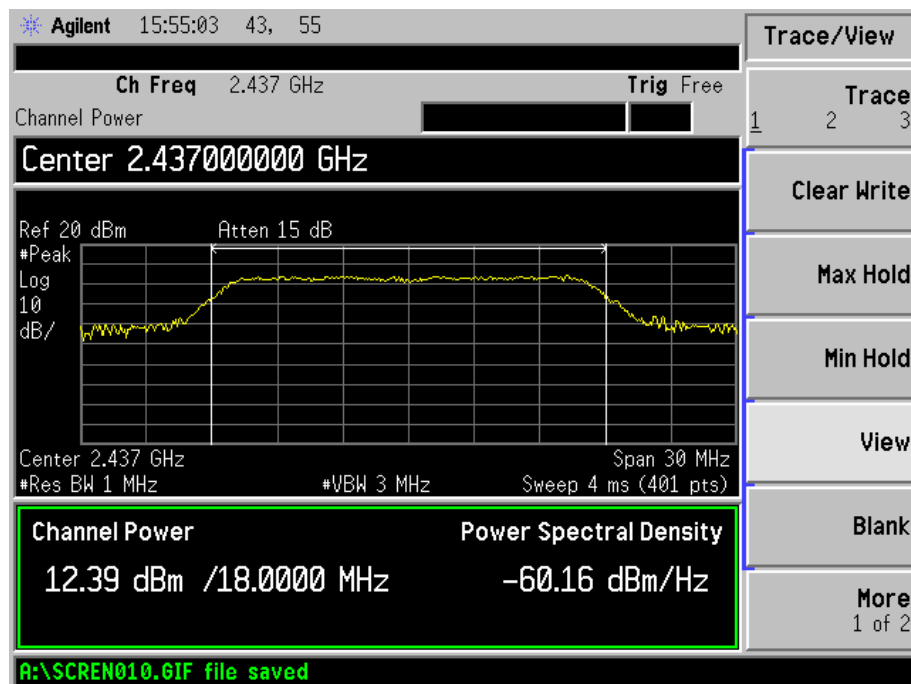
802.11 g-6Mbps-High Channel



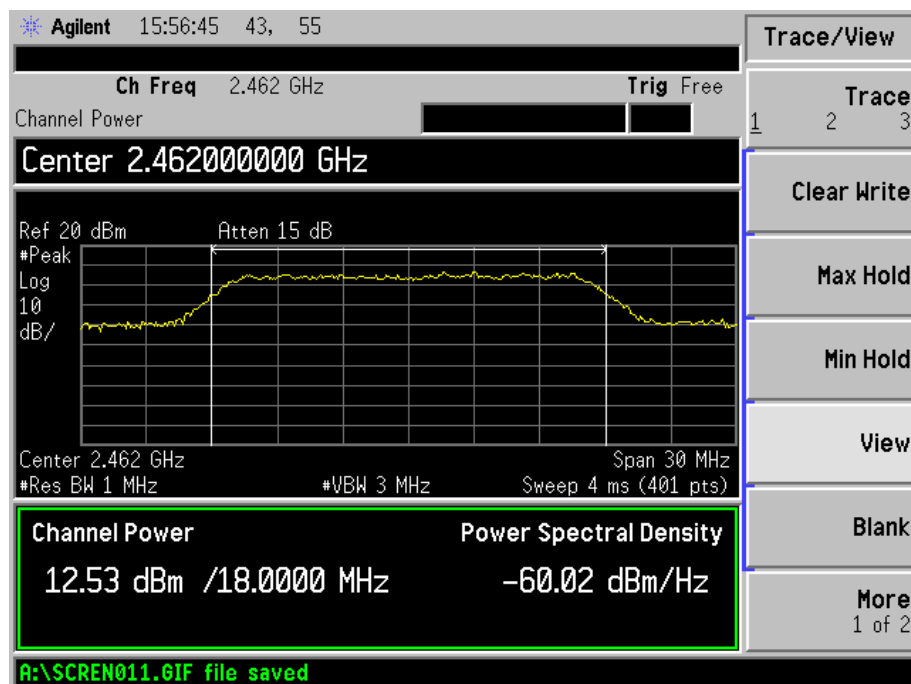
802.11g-54Mbps-Lows Channel



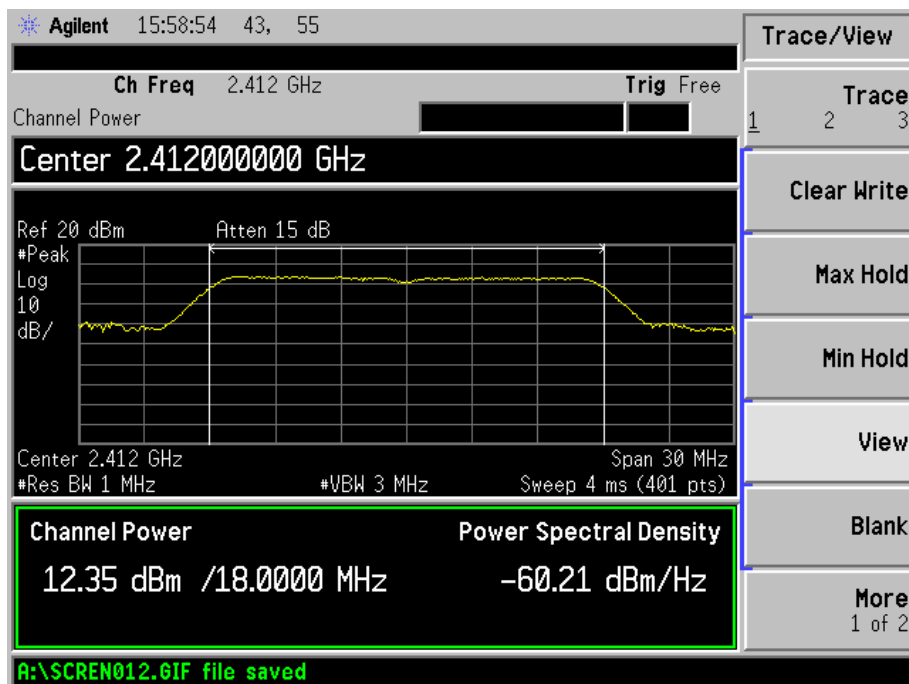
802.11g-54Mbps-Middle Channel



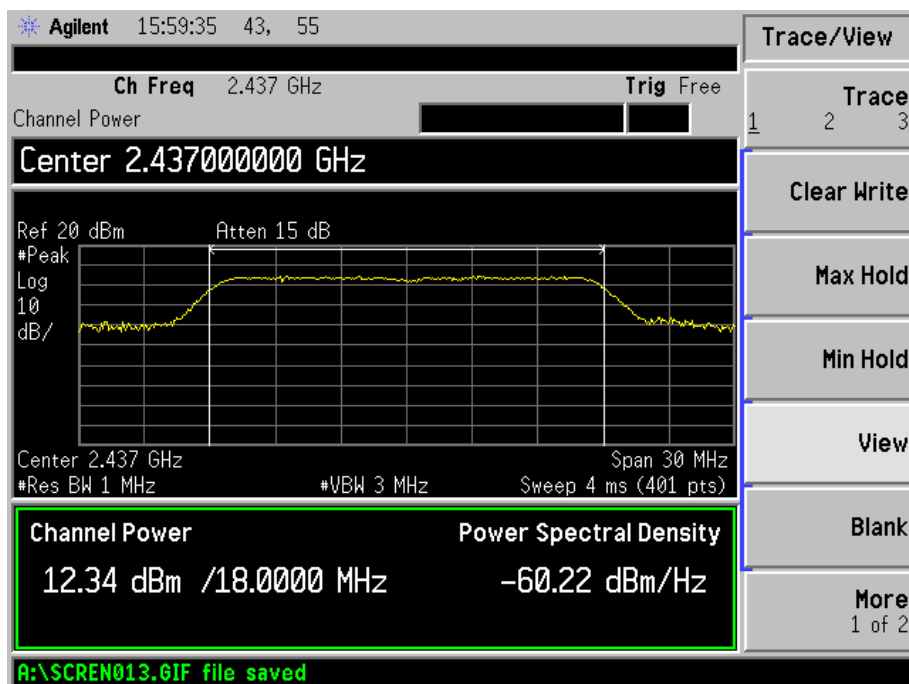
802.11g-54Mbps-High Channel



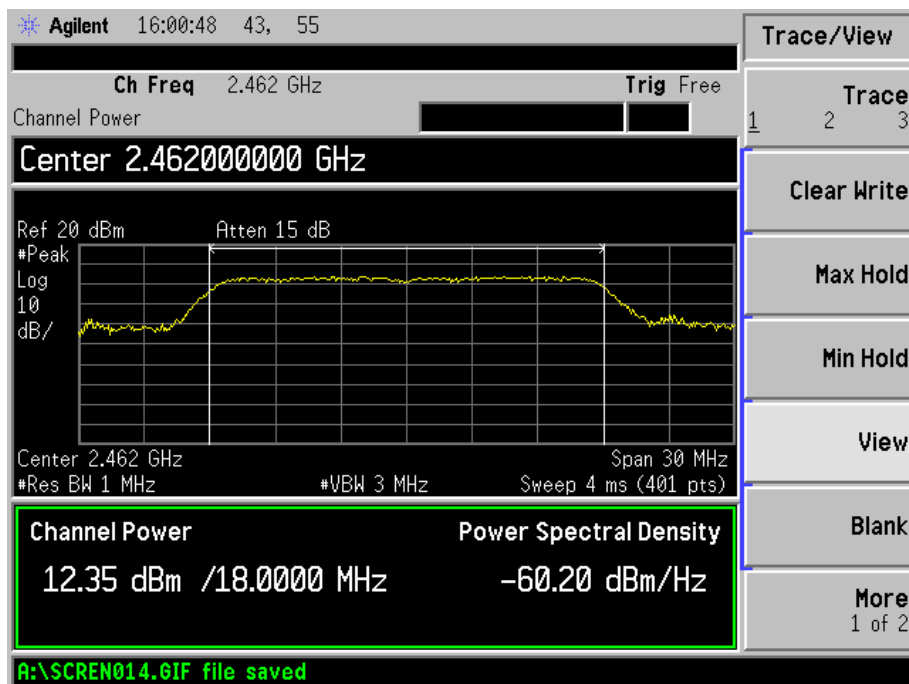
802.11n-HT20-MCS0-Low Channel



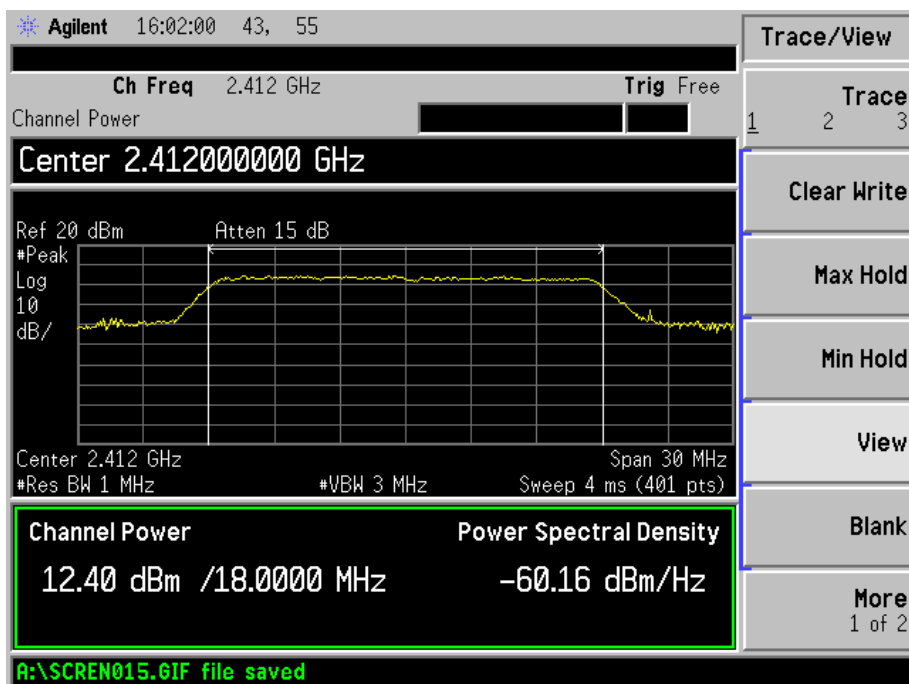
802.11n-HT20-MCS0-Middle Channel



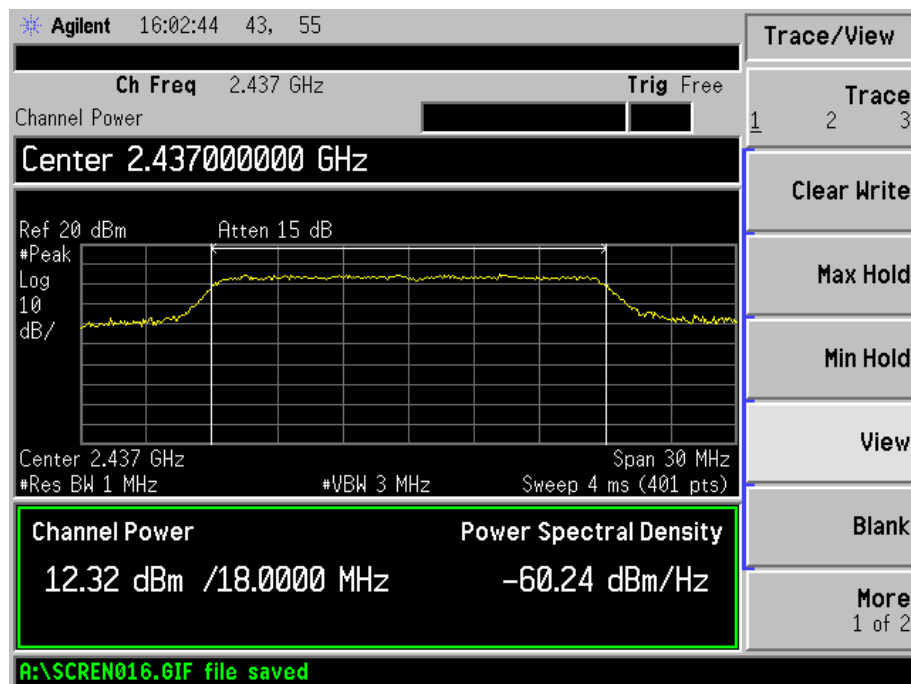
802.11n-HT20-MCS0-High Channel



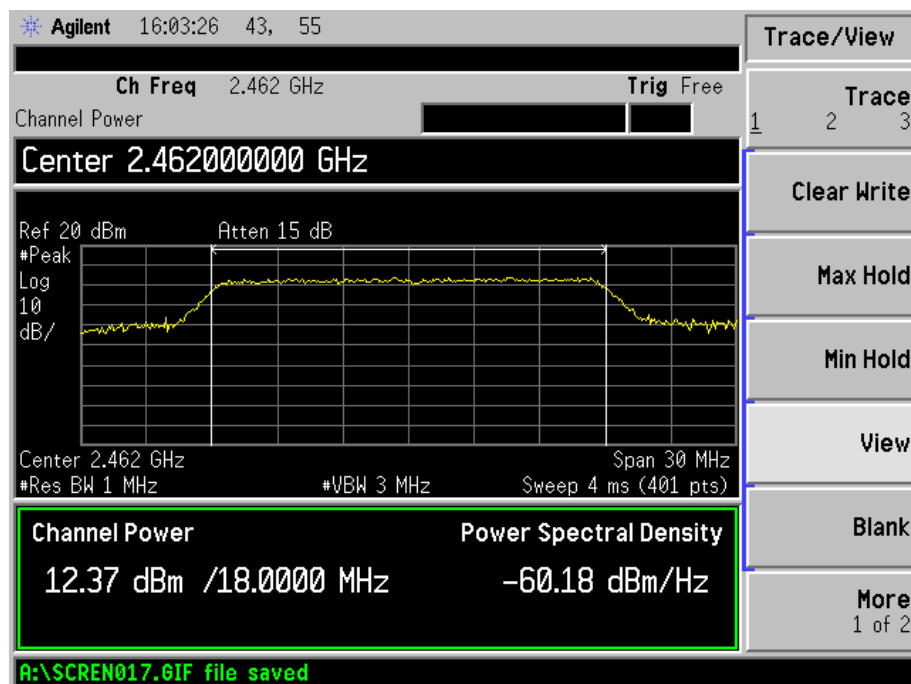
802.11n-HT20-MCS7-Low Channel



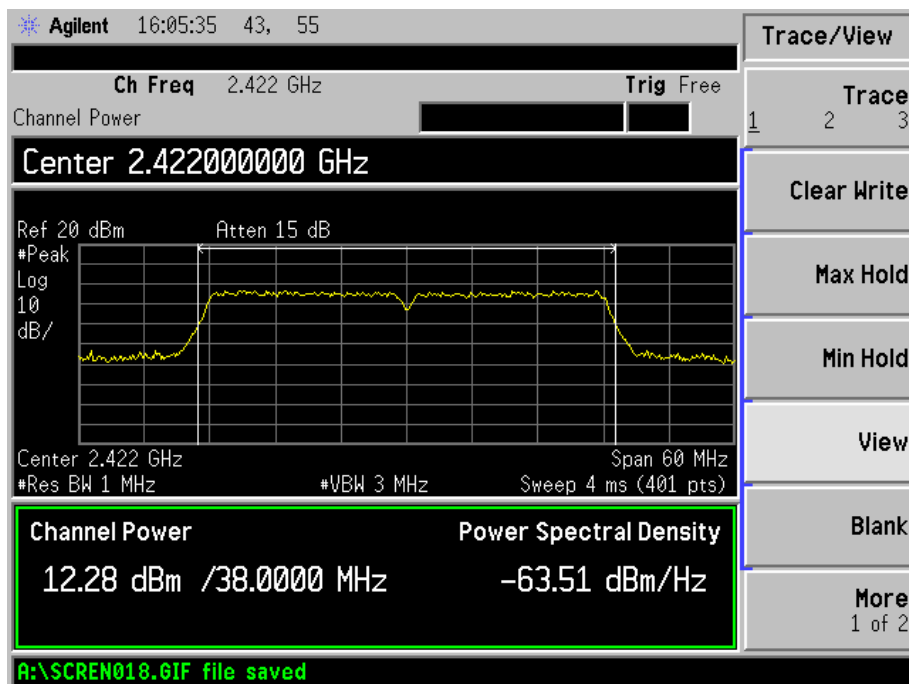
802.11n-HT20-MCS7-Middle Channel



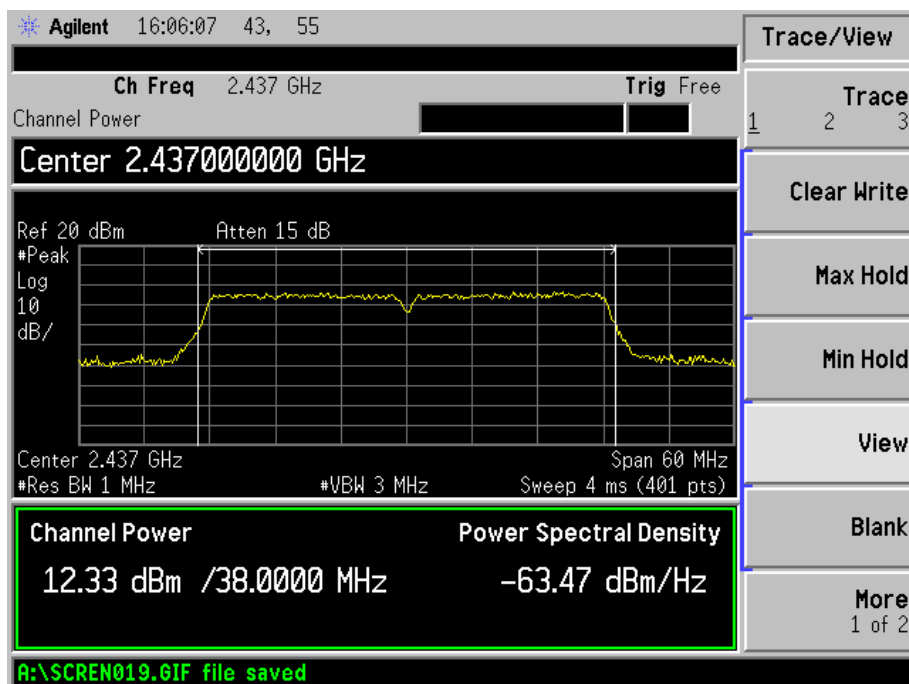
802.11n-HT20-MCS7-High Channel



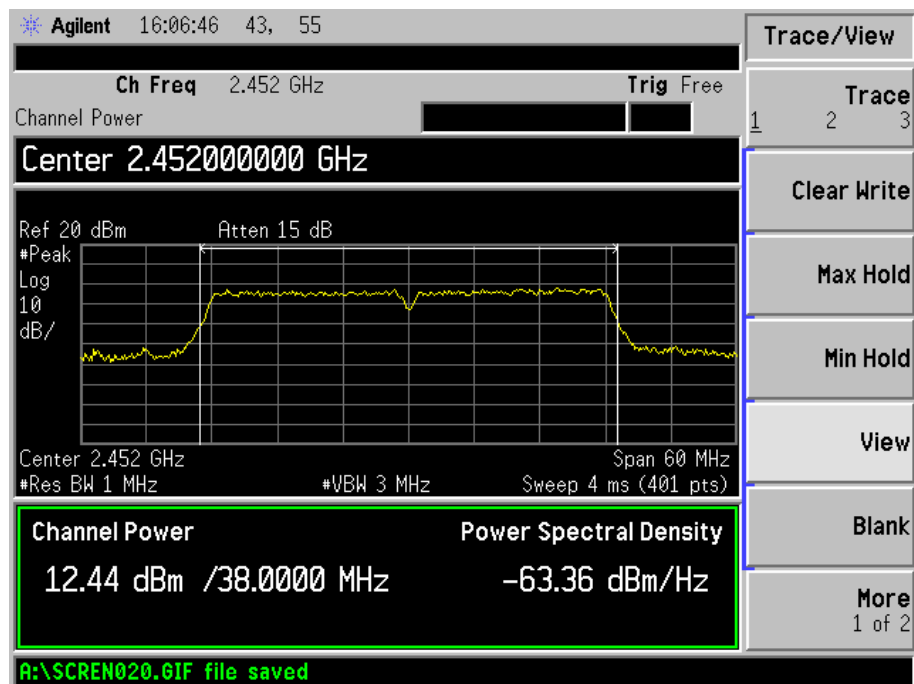
802.11n-HT40-MCS0-Low Channel



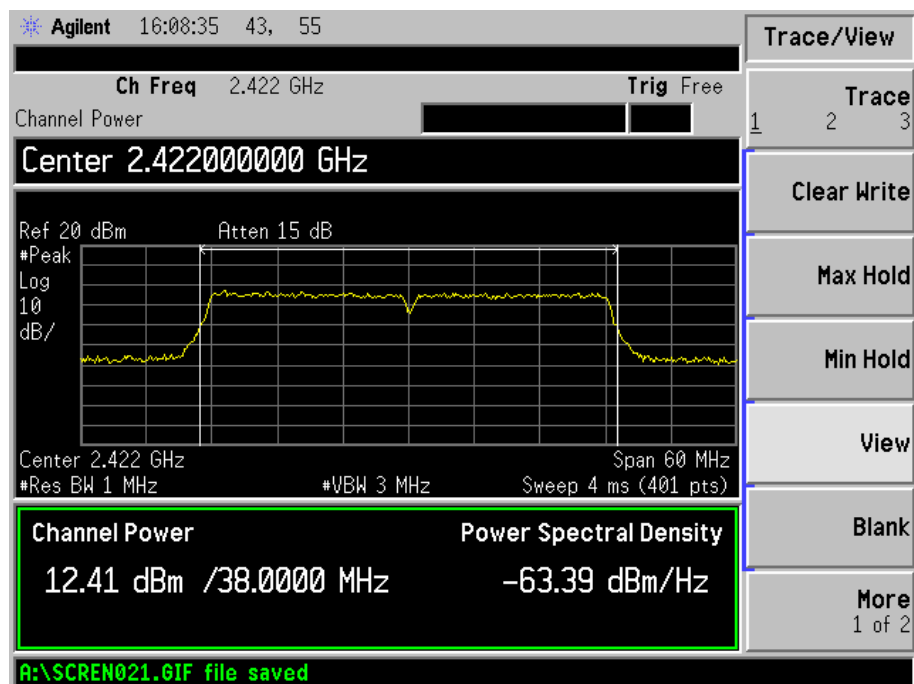
802.11n-HT40-MCS0-Middle Channel



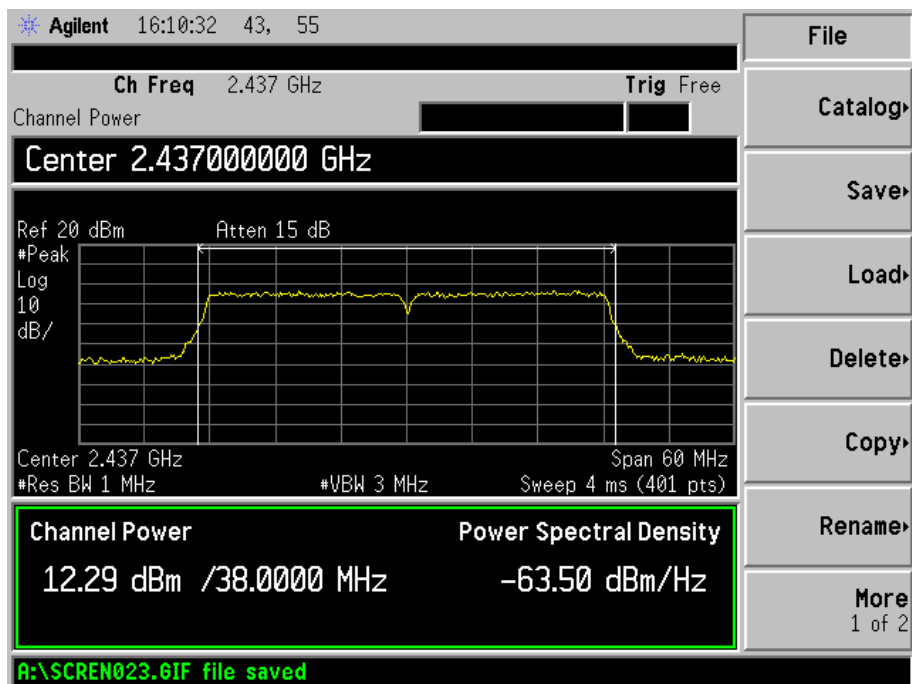
802.11n-HT40-MCS0-High Channel



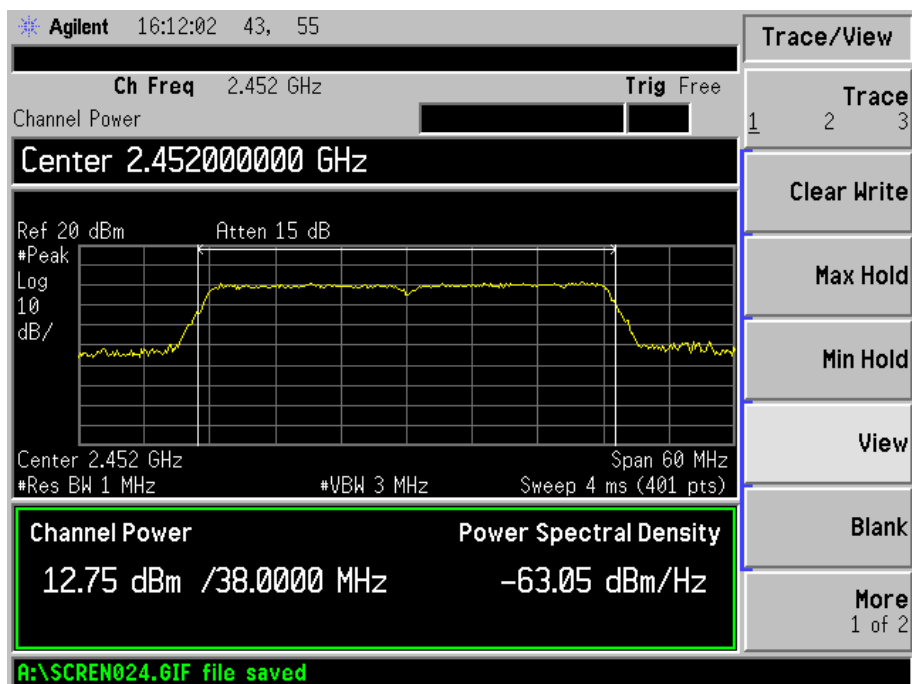
802.11n-HT40-MCS7-Low Channel



802.11n-HT40-MCS7-Middle Channel



802.11n-HT40-MCS7-High Channel



7. Field Strength of Spurious Emissions

7.1 Measurement Uncertainty

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is ± 5.10 dB.

7.2 Standard Applicable

According to §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 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).

The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

7.3 Test Equipment List and Details

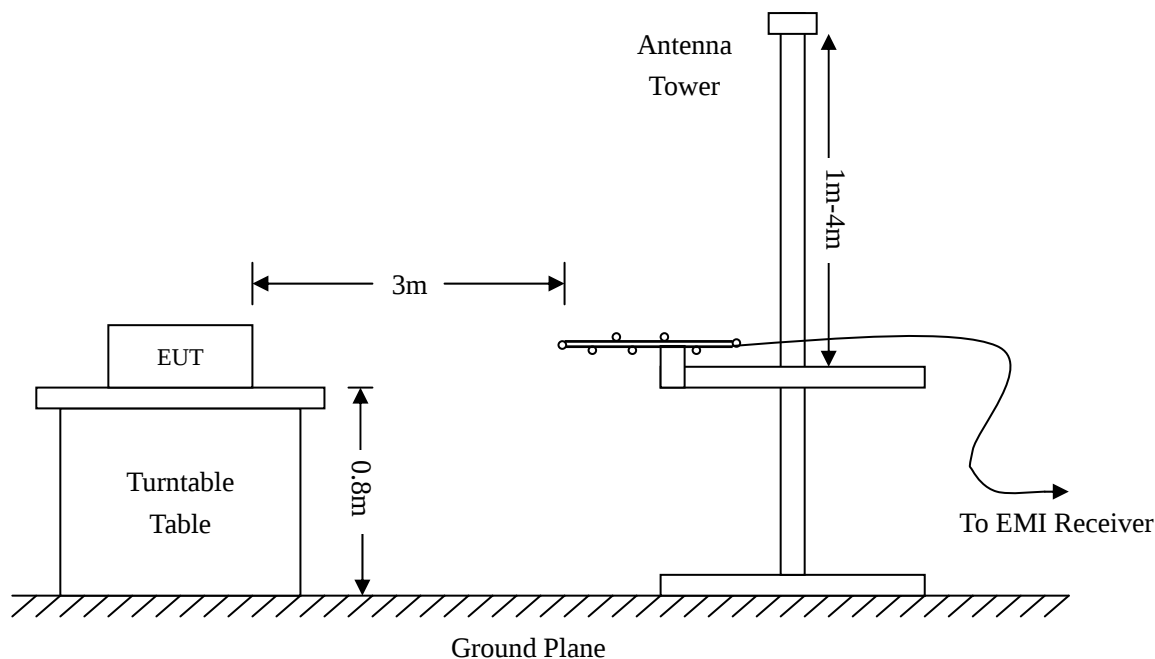
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2012-03-28	2013-03-27
EMI Test Receiver	R&S	ESVB	825471/005	2012-03-28	2013-03-27
Pre-amplifier	Agilent	8447F	3113A06717	2012-03-28	2013-03-27
Pre-amplifier	Compliance Direction	PAP-0118	24002	2012-03-28	2013-03-27
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2012-02-25	2013-02-24
Horn Antenna	ETS	3117	00086197	2012-02-25	2013-02-24
Horn Antenna	ETS	3116B	00088203	2012-02-25	2013-02-24
Loop Antenna	SCHWARZECK	HFRA 5165	9365	2012-02-25	2013-02-24

7.4 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.205 15.247(a) and FCC Part 15.209 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.



7.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Ant. Factor} + \text{Cable Loss} - \text{Ampl. Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for Class B. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15 Limit}$$

7.6 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

7.7 Summary of Test Results/Plots

According to the data below, the FCC Part 15.205, 15.209 and 15.247 standards, and had the worst margin of:

-4.59 dB at 297.2241 MHz in the Horizontal polarization for 802.11b-Low Channel, 9kHz to 25 GHz, 3 Meters

Note: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

Plot of Radiated Emissions Test Data (30MHz to 1GHz)

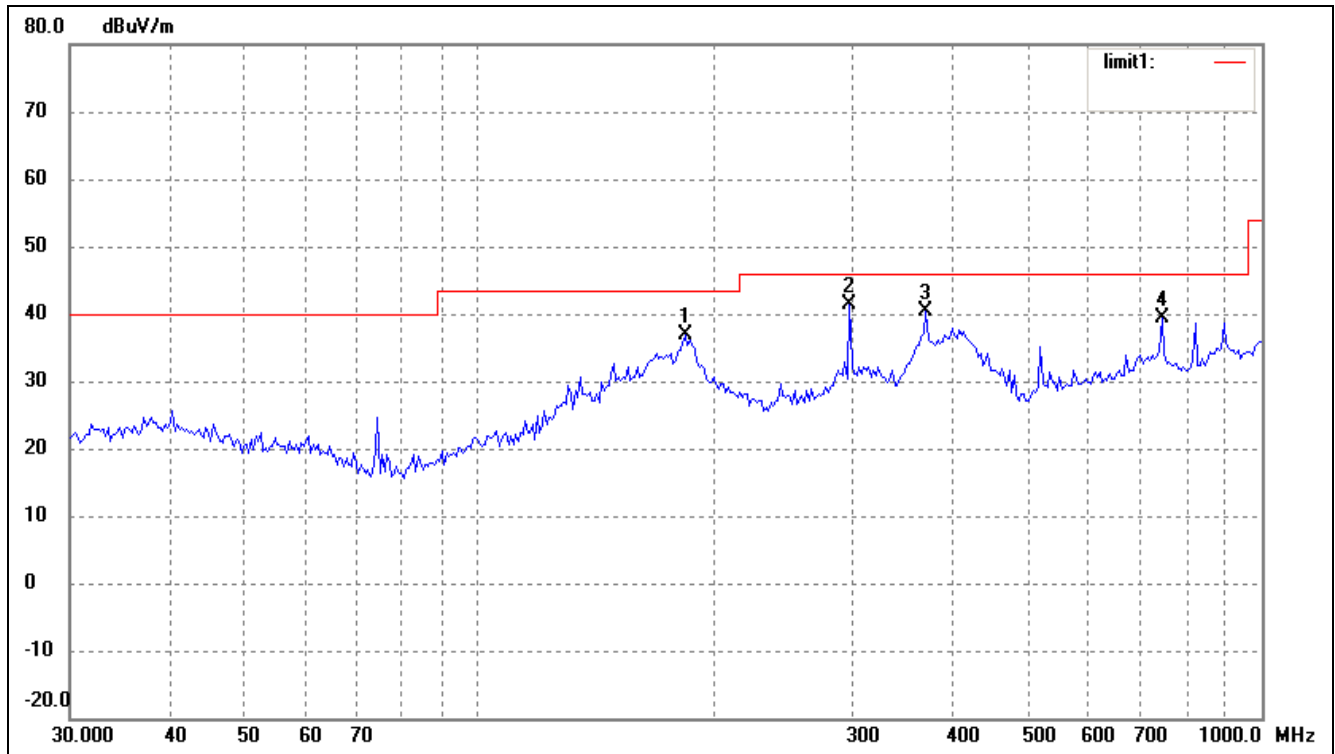
EUT: AS206C HDMI Dongle

Tested Model: AS206C

Operating Condition: 802.11b Transmitting Low Channel-2412MHz

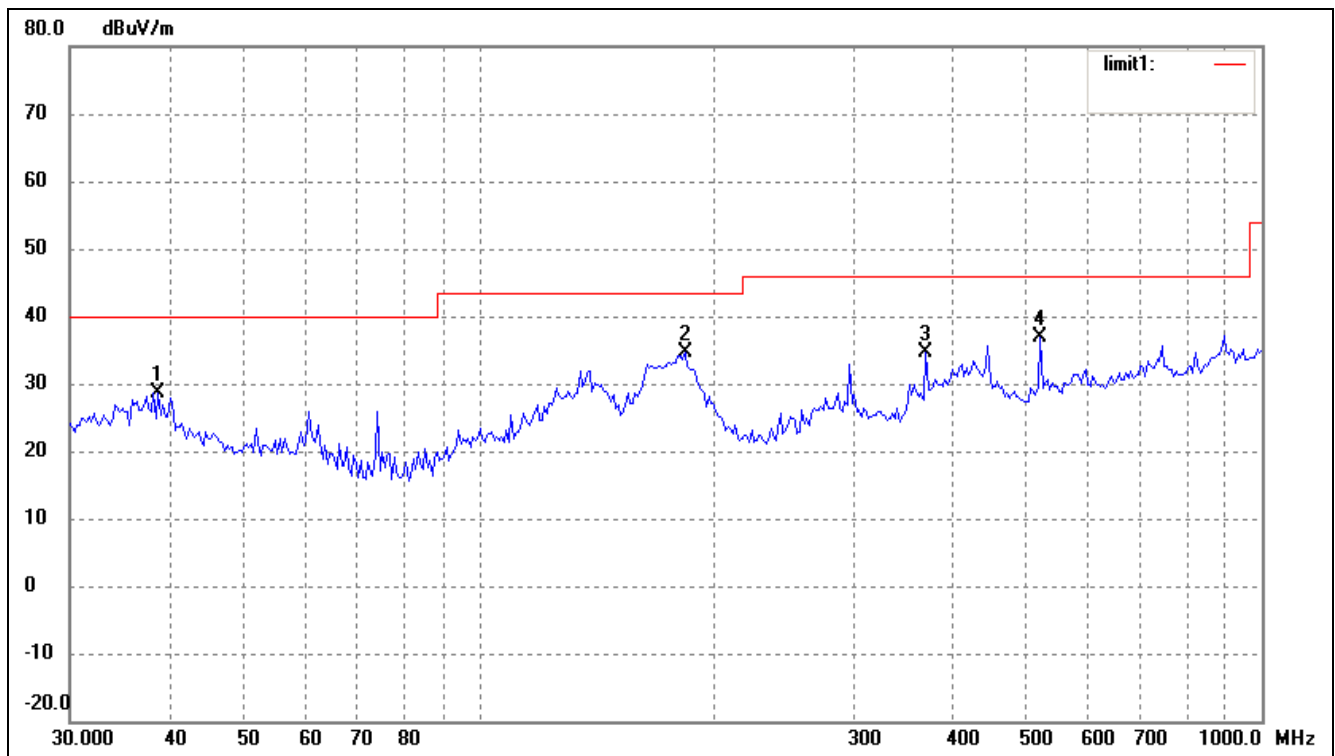
Comment: USB 5V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	183.2005	32.93	3.89	36.82	43.50	-6.68	264	100	peak
2	297.2241	31.37	10.04	41.41	46.00	-4.59	113	200	peak
3	372.0045	29.78	10.65	40.43	46.00	-5.57	287	100	peak
4	744.8661	21.37	17.95	39.32	46.00	-6.68	185	200	peak

Test Specification: Vertical

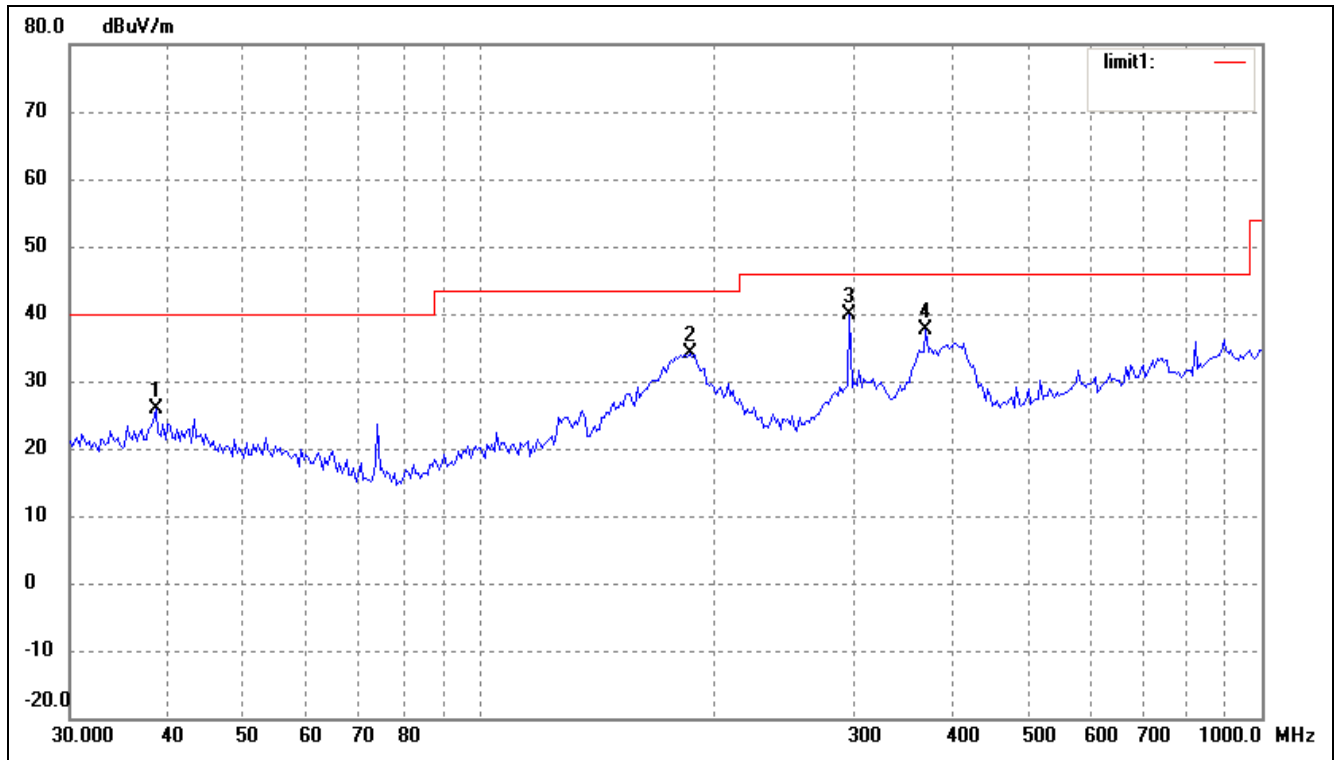


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	38.8879	19.24	9.50	28.74	40.00	-11.26	240	100	peak
2	183.2005	30.71	3.89	34.60	43.50	-8.90	187	100	peak
3	372.0045	24.01	10.65	34.66	46.00	-11.34	220	100	peak
4	520.8882	24.01	12.93	36.94	46.00	-9.06	359	100	peak

Operating Condition: 802.11b Transmitting Middle Channel-2437MHz

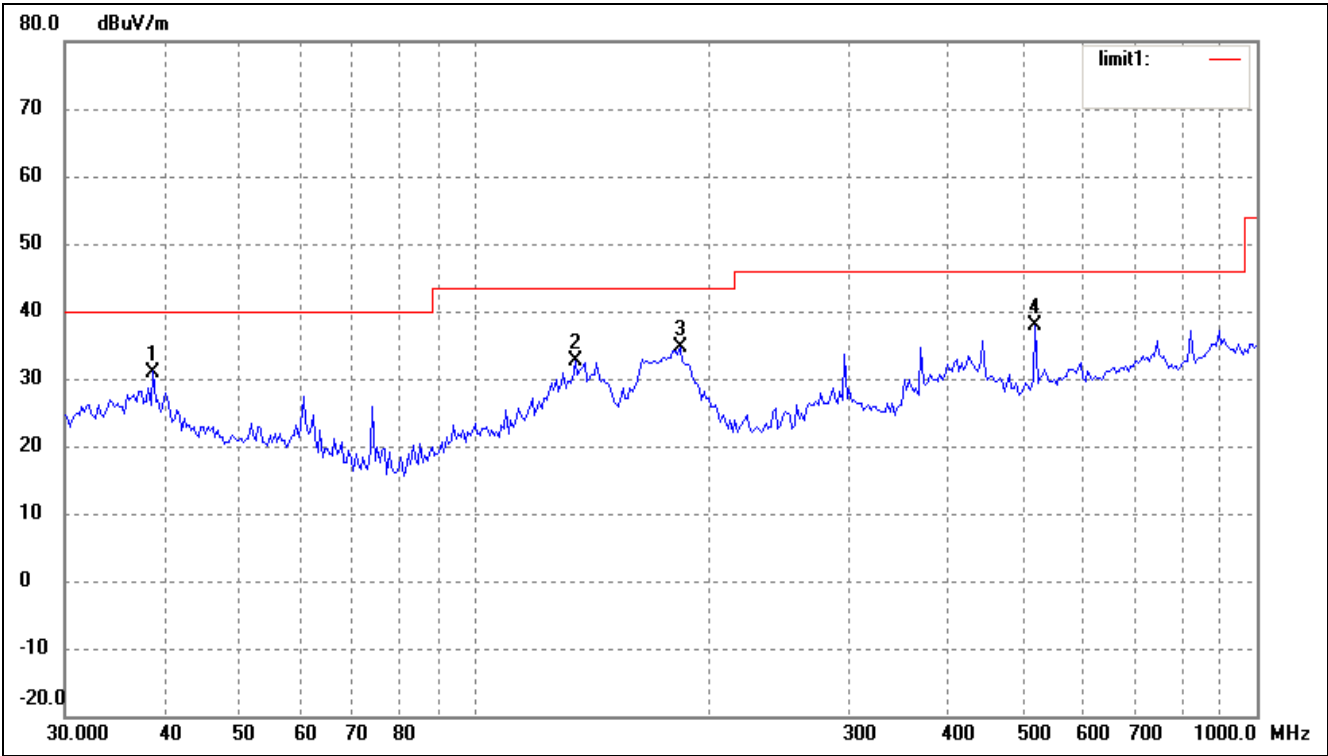
Comment: USB 5V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	38.6161	16.40	9.46	25.86	40.00	-14.14	162	100	peak
2	185.7882	30.15	4.01	34.16	43.50	-9.34	200	100	peak
3	297.2241	29.83	10.04	39.87	46.00	-6.13	359	200	peak
4	372.0045	27.03	10.65	37.68	46.00	-8.32	359	200	peak

Test Specification: Vertical

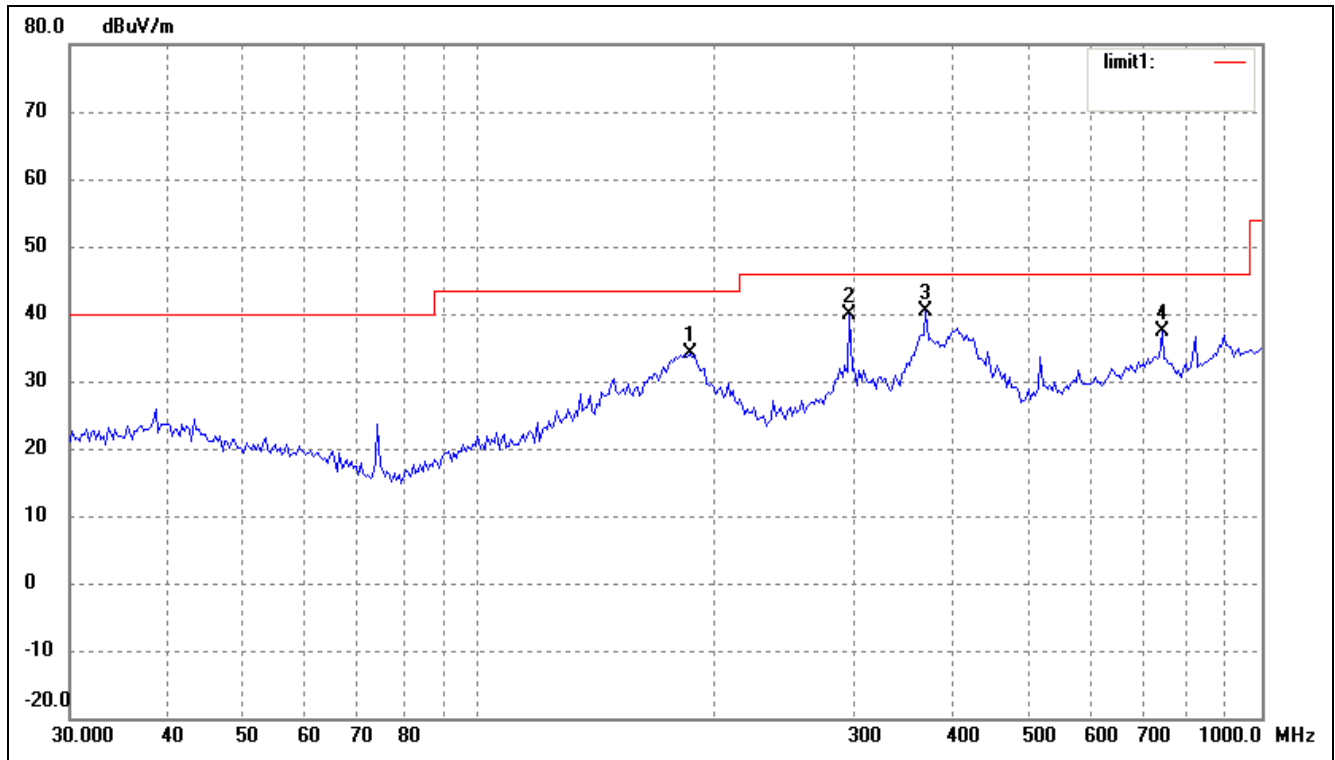


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	38.8879	21.50	9.50	31.00	40.00	-9.00	240	100	peak
2	134.5592	28.76	3.78	32.54	43.50	-10.96	187	100	peak
3	183.2005	30.71	3.89	34.60	43.50	-8.90	220	100	peak
4	520.8882	24.97	12.93	37.90	46.00	-8.10	359	100	peak

Operating Condition: 802.11b Transmitting High Channel-2462MHz

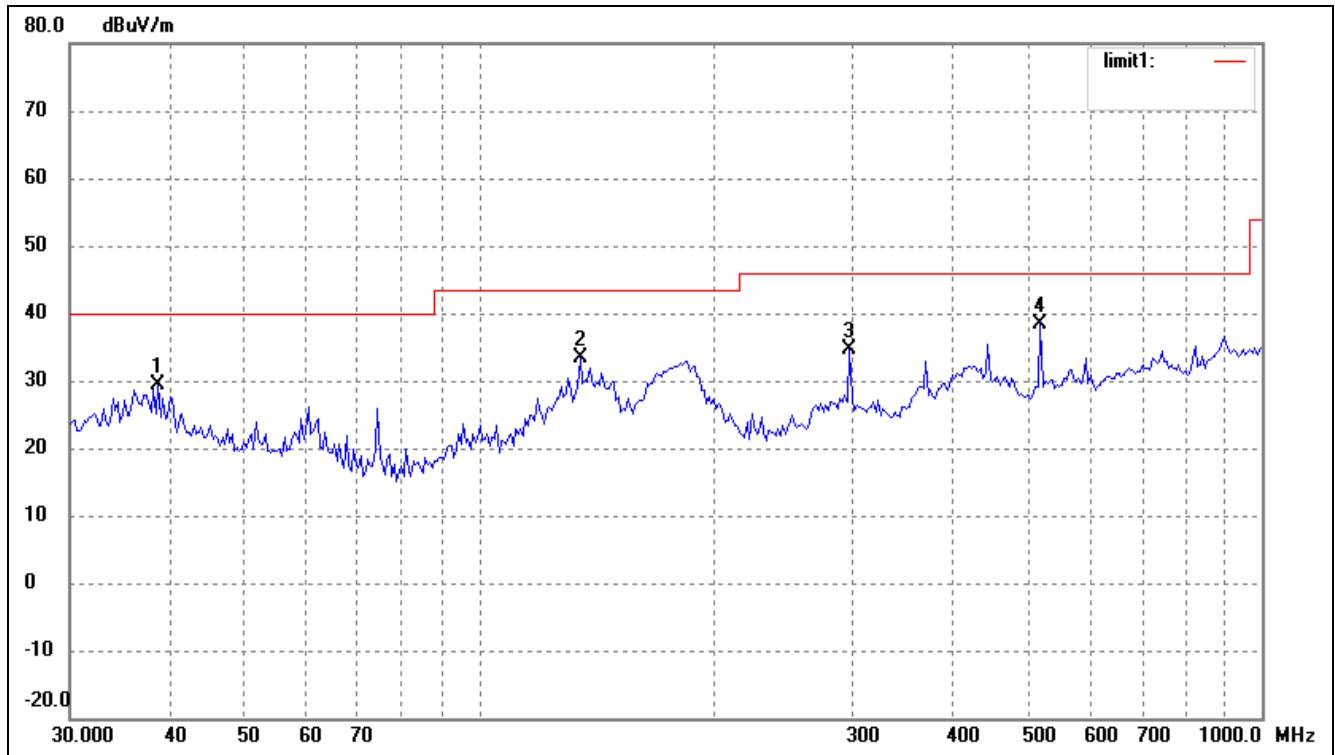
Comment: USB 5V

Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	185.7882	30.15	4.01	34.16	43.50	-9.34	162	100	peak
2	297.2241	29.88	10.04	39.92	46.00	-6.08	200	100	peak
3	372.0045	29.75	10.65	40.40	46.00	-5.60	359	200	Peak
4	744.8661	19.35	17.95	37.30	46.00	-8.70	359	200	peak

Test Specification: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	38.8879	19.78	9.50	29.28	40.00	-10.72	240	100	peak
2	134.5592	29.60	3.78	33.38	43.50	-10.12	187	100	peak
3	297.2241	24.56	10.04	34.60	46.00	-11.40	220	100	peak
4	520.8882	25.36	12.93	38.29	46.00	-7.71	359	100	peak

Plot of Radiated Emissions Test Data (30MHz to 1GHz)

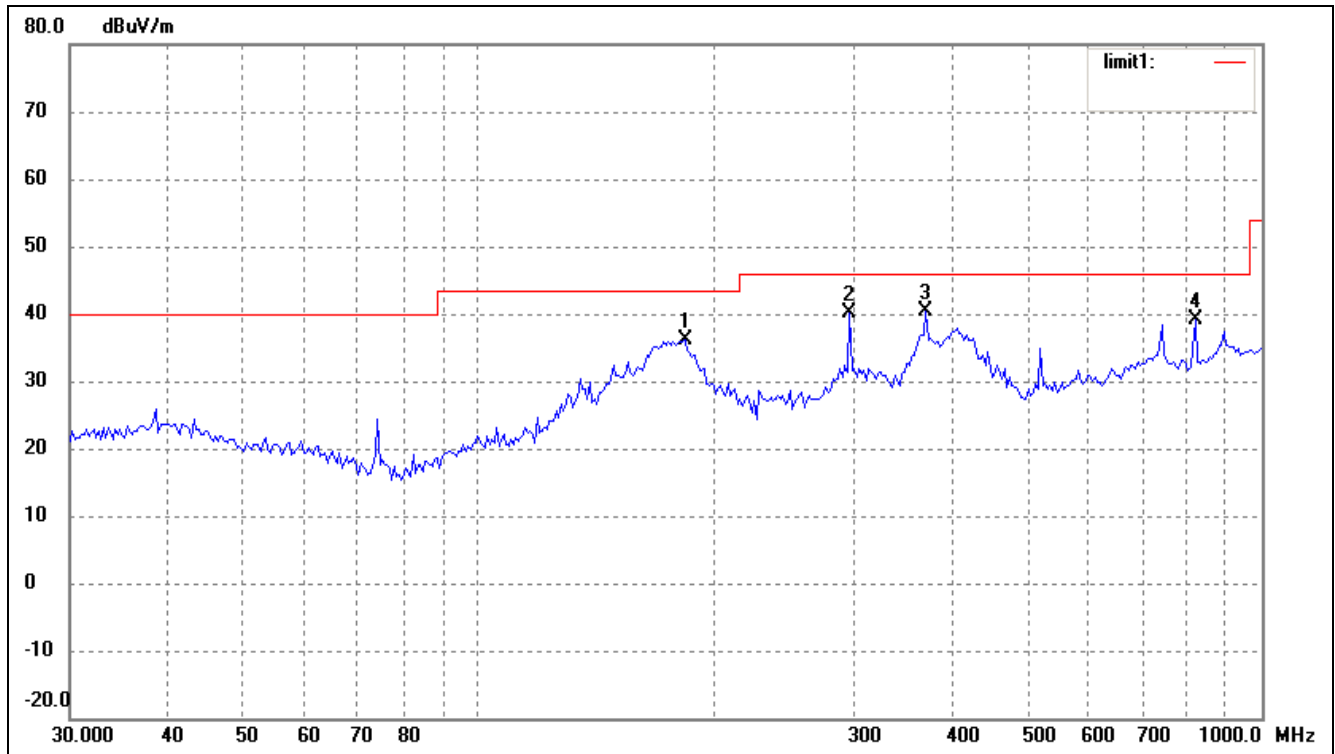
EUT: AS206C HDMI Dongle

Tested Model: AS206C

Operating Condition: 802.11g Transmitting Low Channel-2412MHz

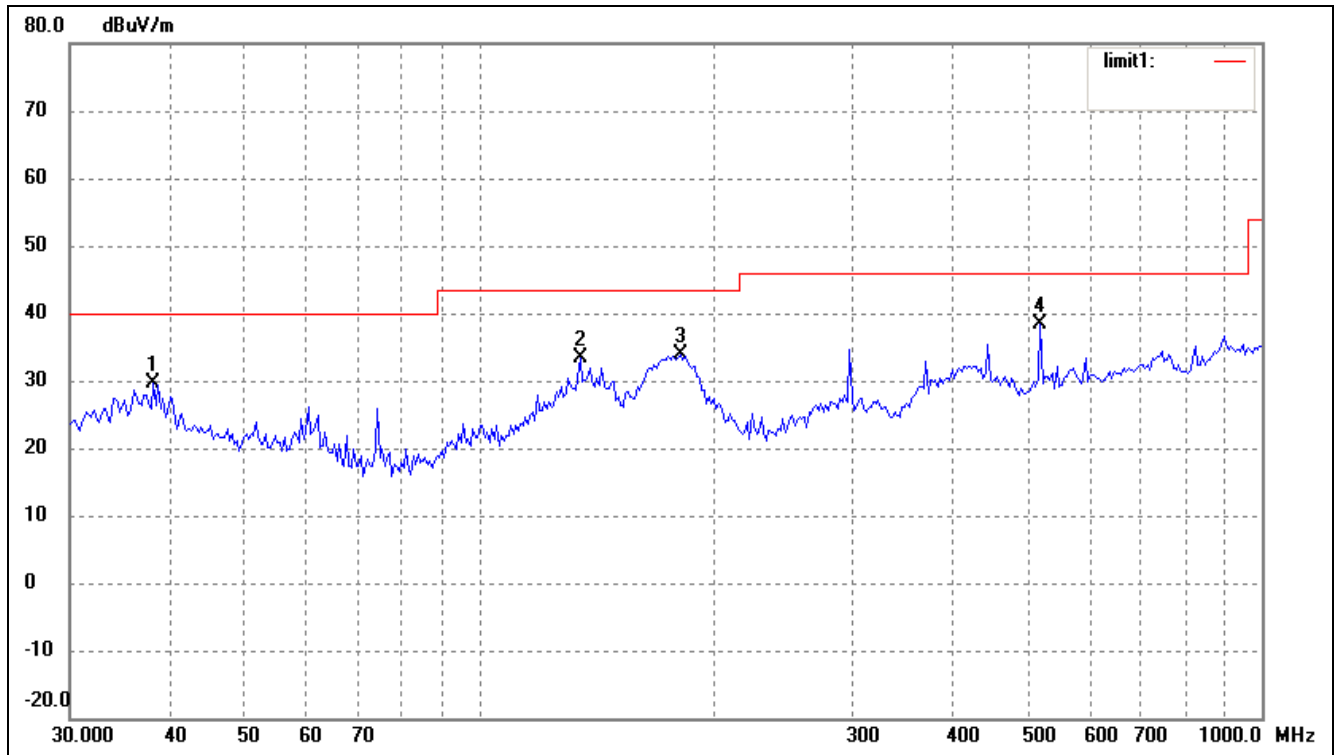
Comment: USB 5V

Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	183.2005	32.18	3.89	36.07	43.50	-7.43	264	100	peak
2	297.2241	30.17	10.04	40.21	46.00	-5.79	113	200	peak
3	372.0045	29.75	10.65	40.40	46.00	-5.60	287	100	peak
4	821.7104	22.38	16.84	39.22	46.00	-6.78	185	200	peak

Test Specification: Vertical

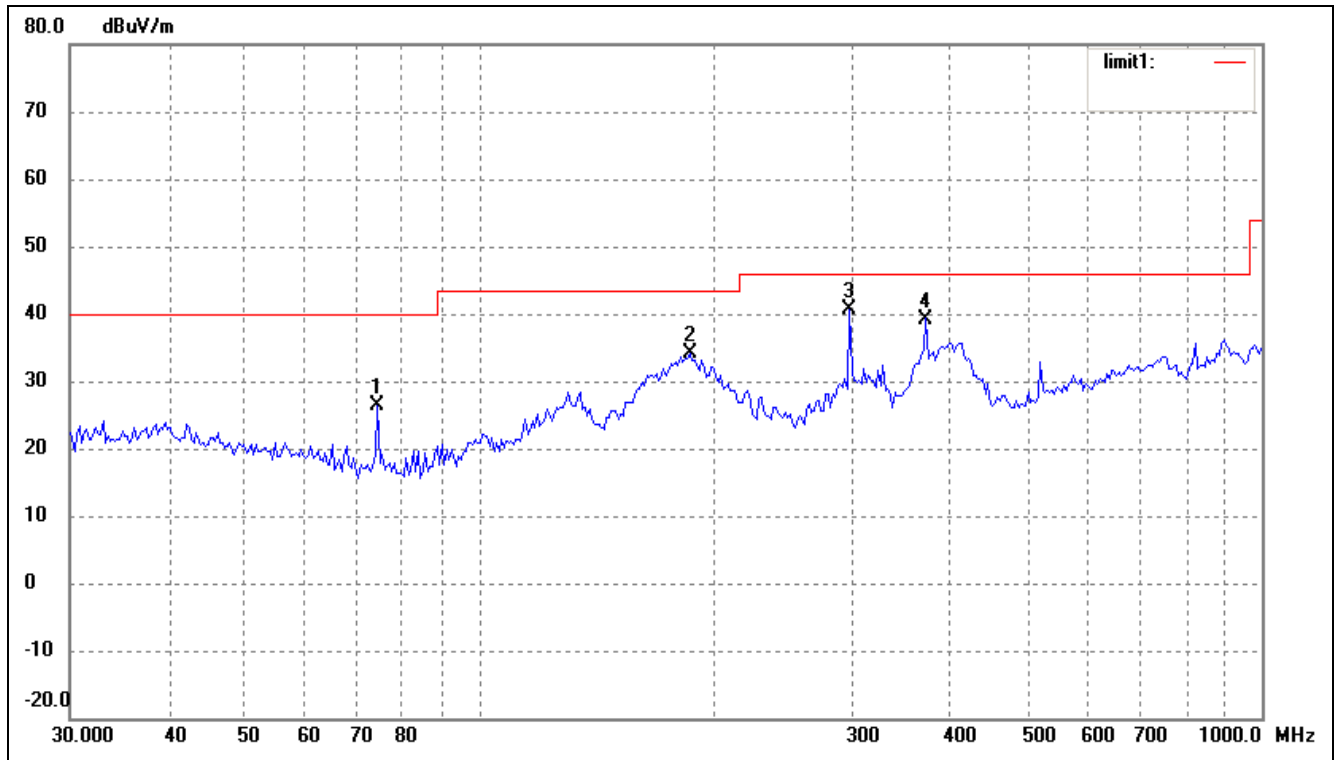


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	38.3462	20.25	9.42	29.67	40.00	-10.33	240	100	peak
2	134.5592	29.60	3.78	33.38	43.50	-10.12	187	100	peak
3	180.6488	30.13	3.78	33.91	43.50	-9.59	220	100	peak
4	520.8882	25.36	12.93	38.29	46.00	-7.71	359	100	peak

Operating Condition: 802.11g Transmitting Middle Channel-2437MHz

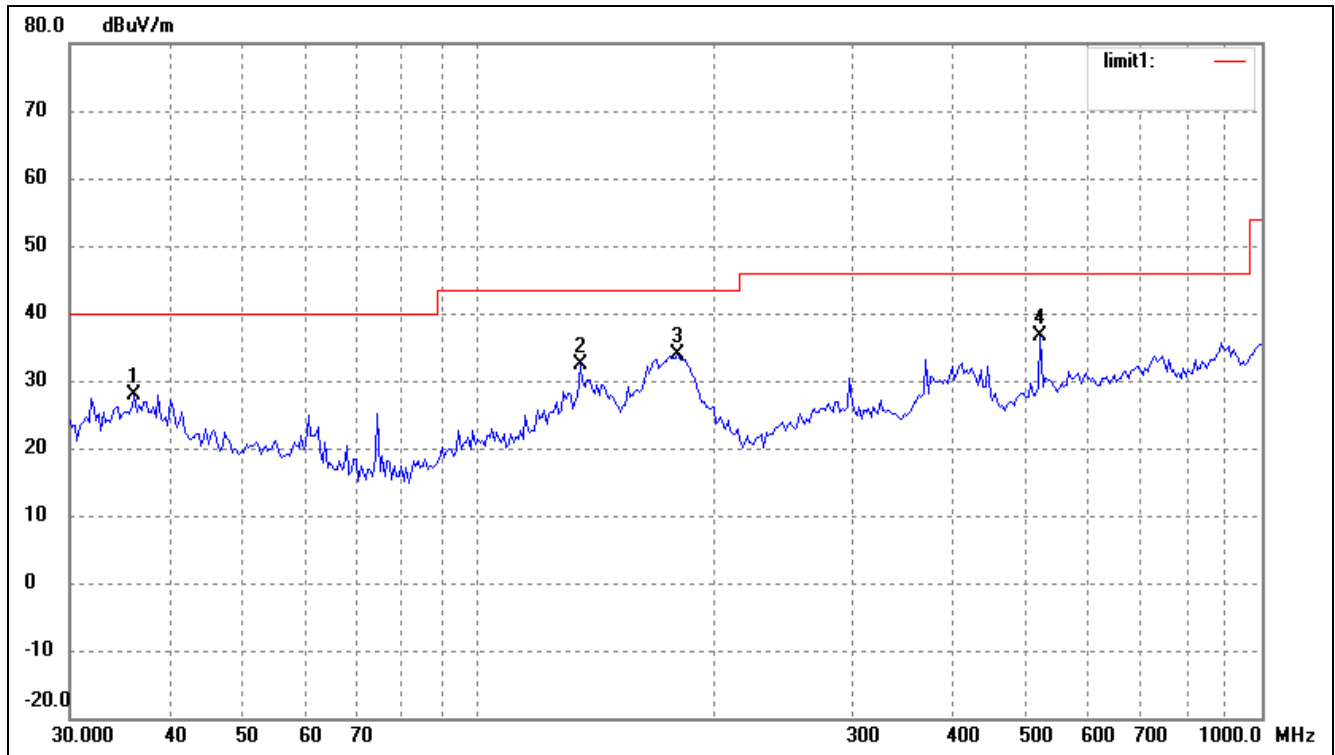
Comment: USB 5V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	74.1351	24.24	2.05	26.29	40.00	-13.71	162	100	peak
2	185.7882	30.18	4.01	34.19	43.50	-9.31	200	100	peak
3	297.2241	30.62	10.04	40.66	46.00	-5.34	359	200	peak
4	372.0045	28.60	10.65	39.25	46.00	-6.75	359	200	peak

Test Specification: Vertical

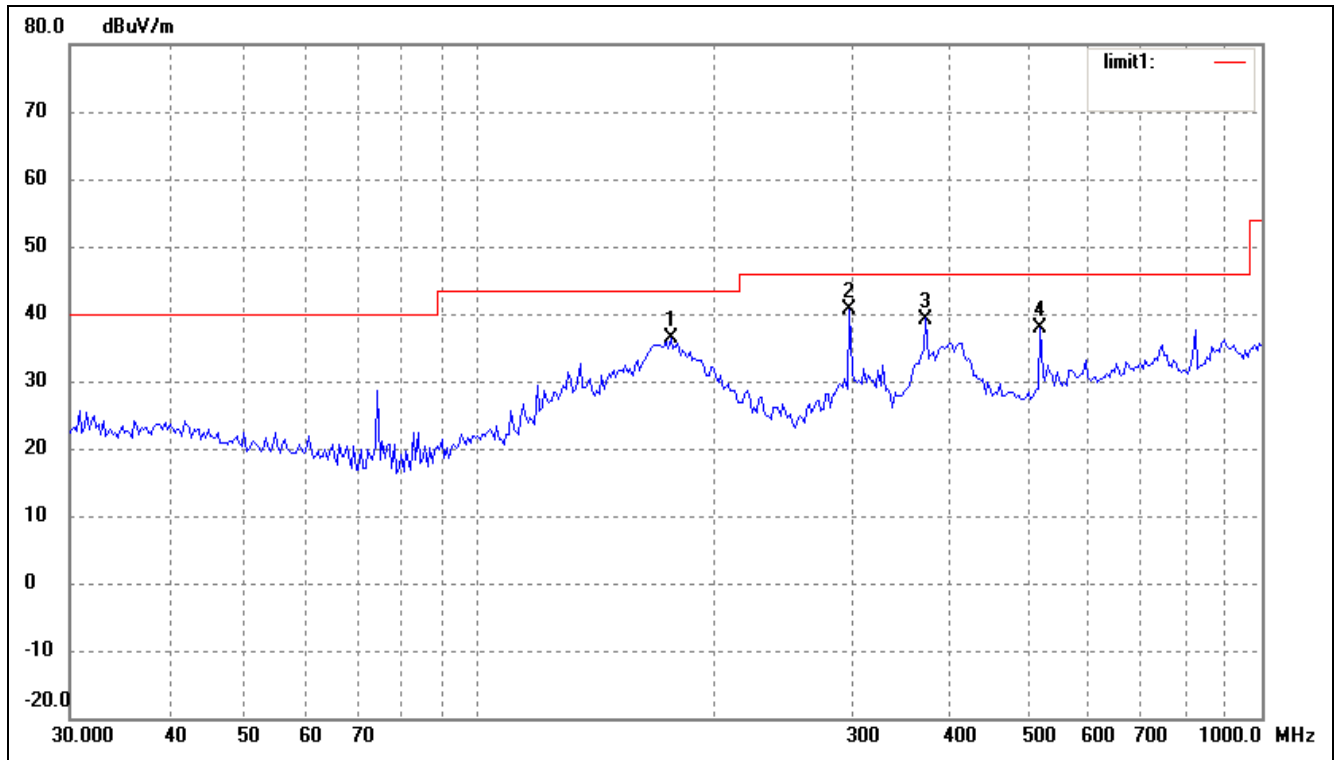


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	36.2541	18.84	9.09	27.93	40.00	-12.07	240	100	peak
2	134.5592	28.56	3.78	32.34	43.50	-11.16	187	100	peak
3	179.3864	30.16	3.74	33.90	43.50	-9.60	220	100	peak
4	520.8882	23.61	12.93	36.54	46.00	-9.46	359	100	peak

Operating Condition: 802.11g Transmitting High Channel-2462MHz

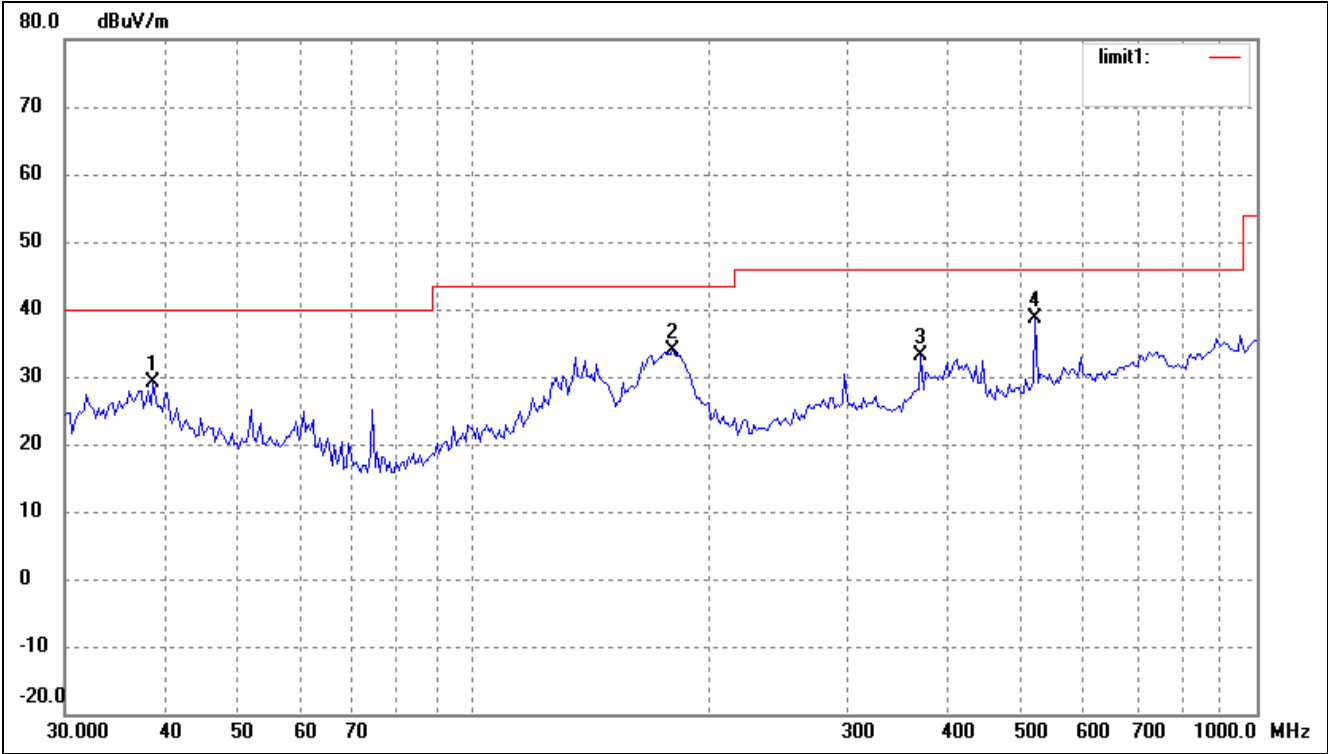
Comment: USB 5V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	175.6516	32.71	3.73	36.44	43.50	-7.06	162	100	peak
2	297.2241	30.62	10.04	40.66	46.00	-5.34	200	100	peak
3	372.0045	28.60	10.65	39.25	46.00	-6.75	359	200	Peak
4	520.8882	24.83	12.93	37.76	46.00	-8.24	359	200	peak

Test Specification: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	38.8879	19.68	9.50	29.18	40.00	-10.82	240	100	peak
2	179.3864	30.16	3.74	33.90	43.50	-9.60	187	100	peak
3	372.0045	22.55	10.65	33.20	46.00	-12.80	220	100	peak
4	520.8882	25.65	12.93	38.58	46.00	-7.42	359	100	peak

Plot of Radiated Emissions Test Data (30MHz to 1GHz)

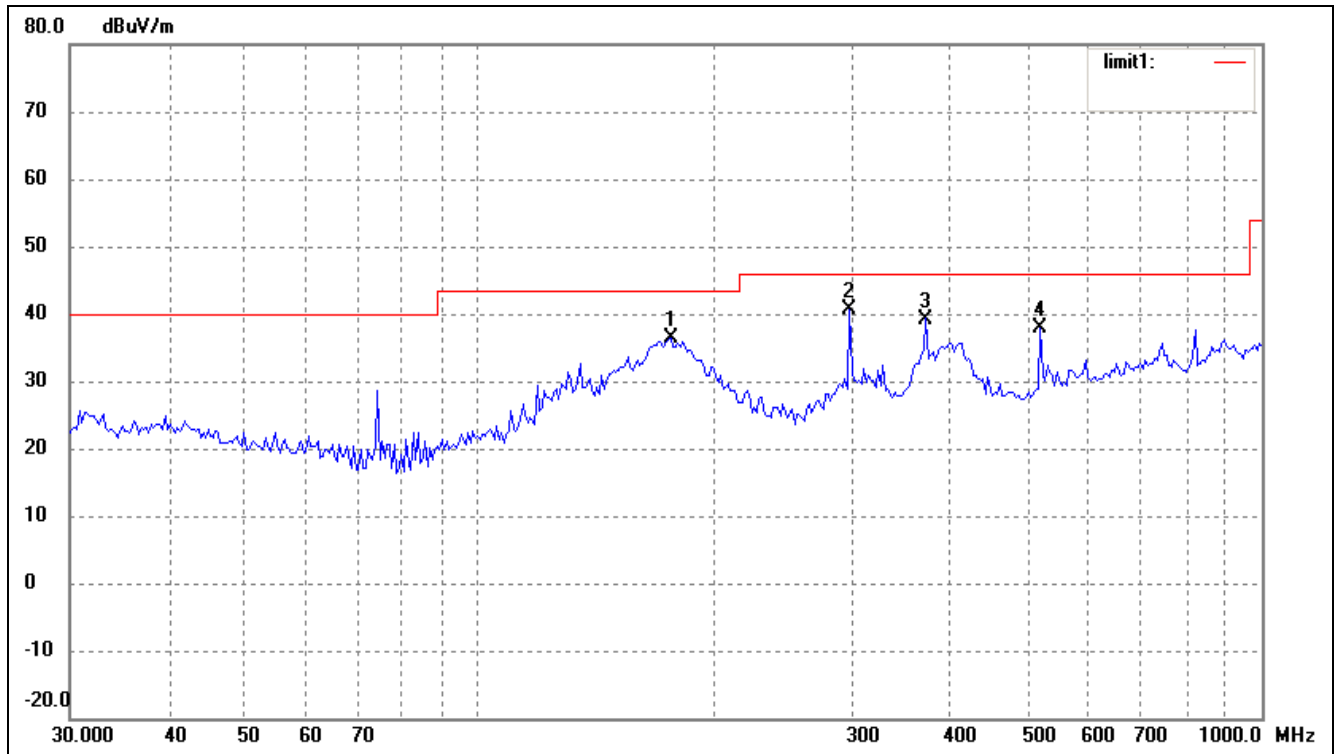
EUT: AS206C HDMI Dongle

Tested Model: AS206C

Operating Condition: 802.11n-HT20 Transmitting Low Channel-2412MHz

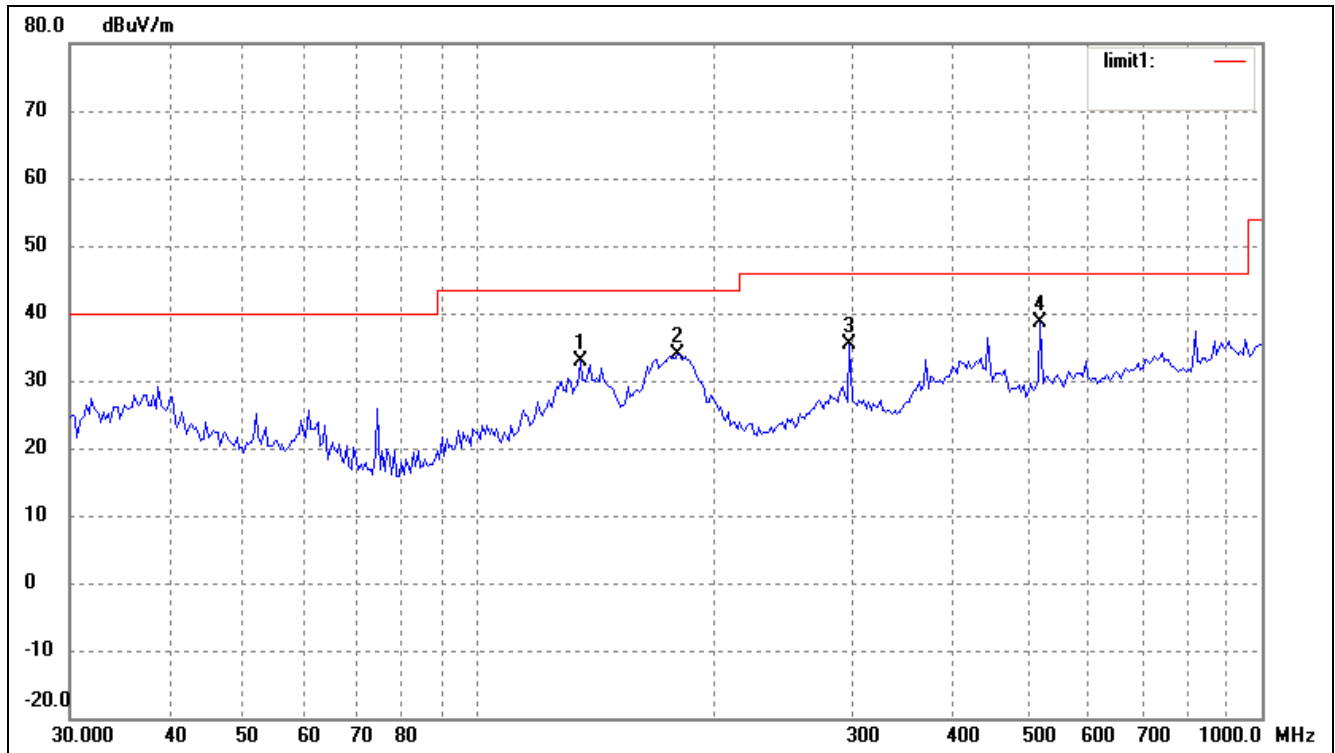
Comment: USB 5V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	175.6516	32.71	3.73	36.44	43.50	-7.06	264	100	peak
2	297.2241	30.62	10.04	40.66	46.00	-5.34	113	200	peak
3	372.0045	28.60	10.65	39.25	46.00	-6.75	287	100	peak
4	520.8882	24.83	12.93	37.76	46.00	-8.24	185	200	peak

Test Specification: Vertical

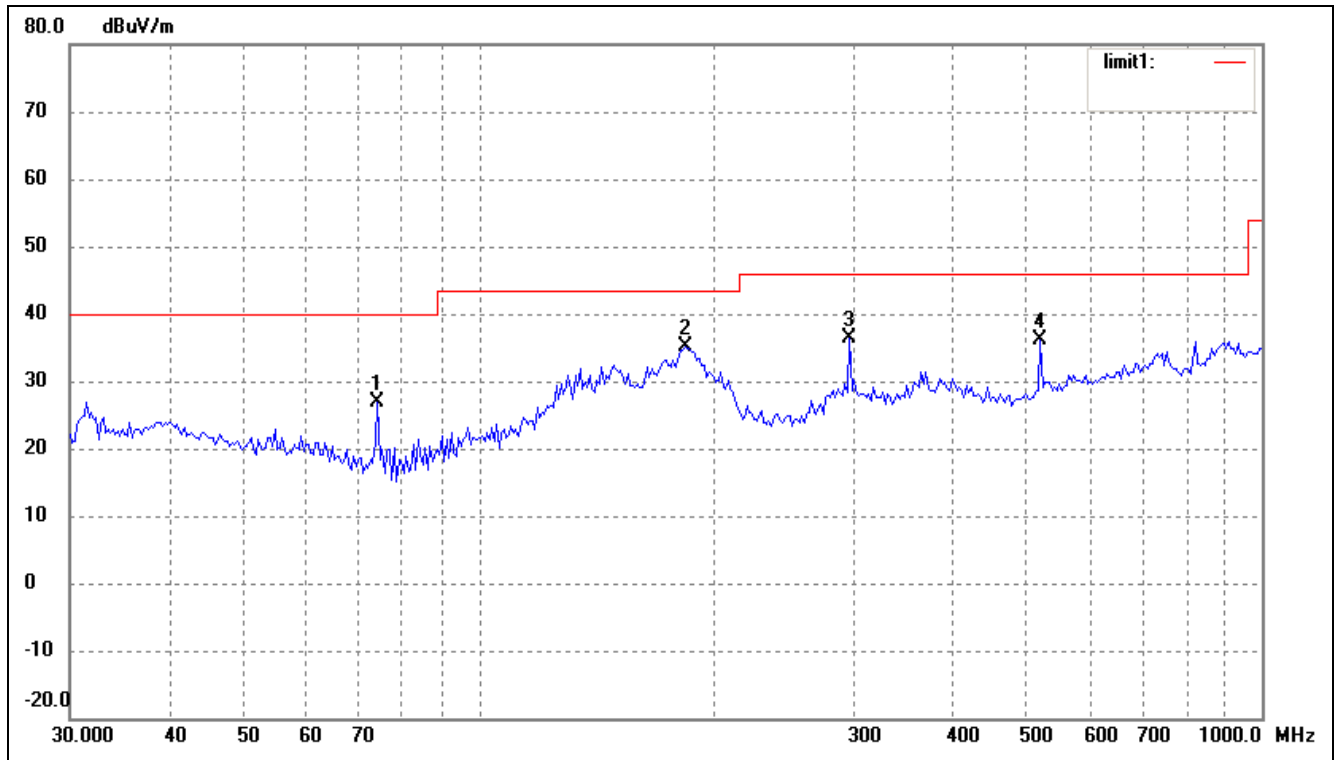


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	134.5592	29.03	3.78	32.81	43.50	-10.69	240	100	peak
2	179.3864	30.16	3.74	33.90	43.50	-9.60	187	100	peak
3	297.2241	25.41	10.04	35.45	46.00	-10.55	220	100	peak
4	520.8882	25.65	12.93	38.58	46.00	-7.42	359	100	peak

Operating Condition: 802.11n-HT20 Transmitting Middle Channel-2437MHz

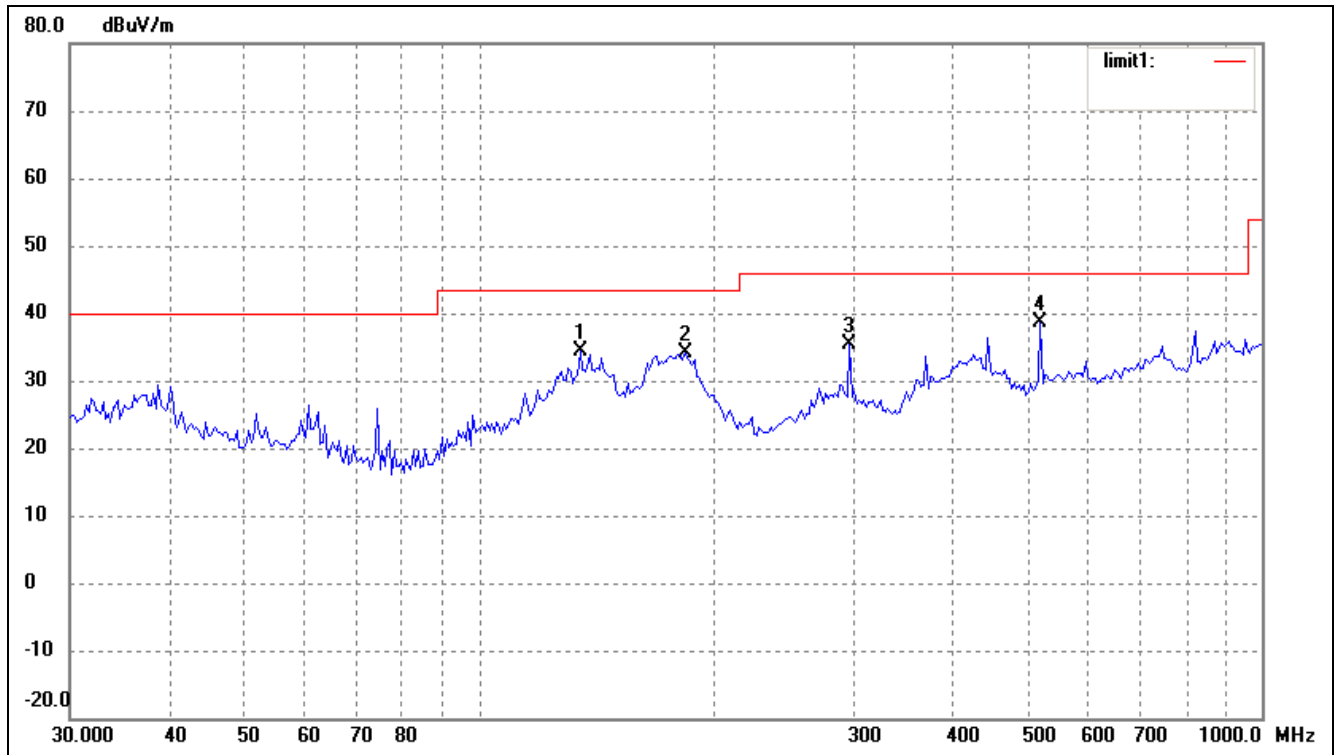
Comment: USB 5V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	74.1351	24.93	2.05	26.98	40.00	-13.02	162	100	peak
2	183.2005	31.20	3.89	35.09	43.50	-8.41	200	100	peak
3	297.2241	26.30	10.04	36.34	46.00	-9.66	359	200	peak
4	520.8882	23.08	12.93	36.01	46.00	-9.99	359	200	peak

Test Specification: Vertical

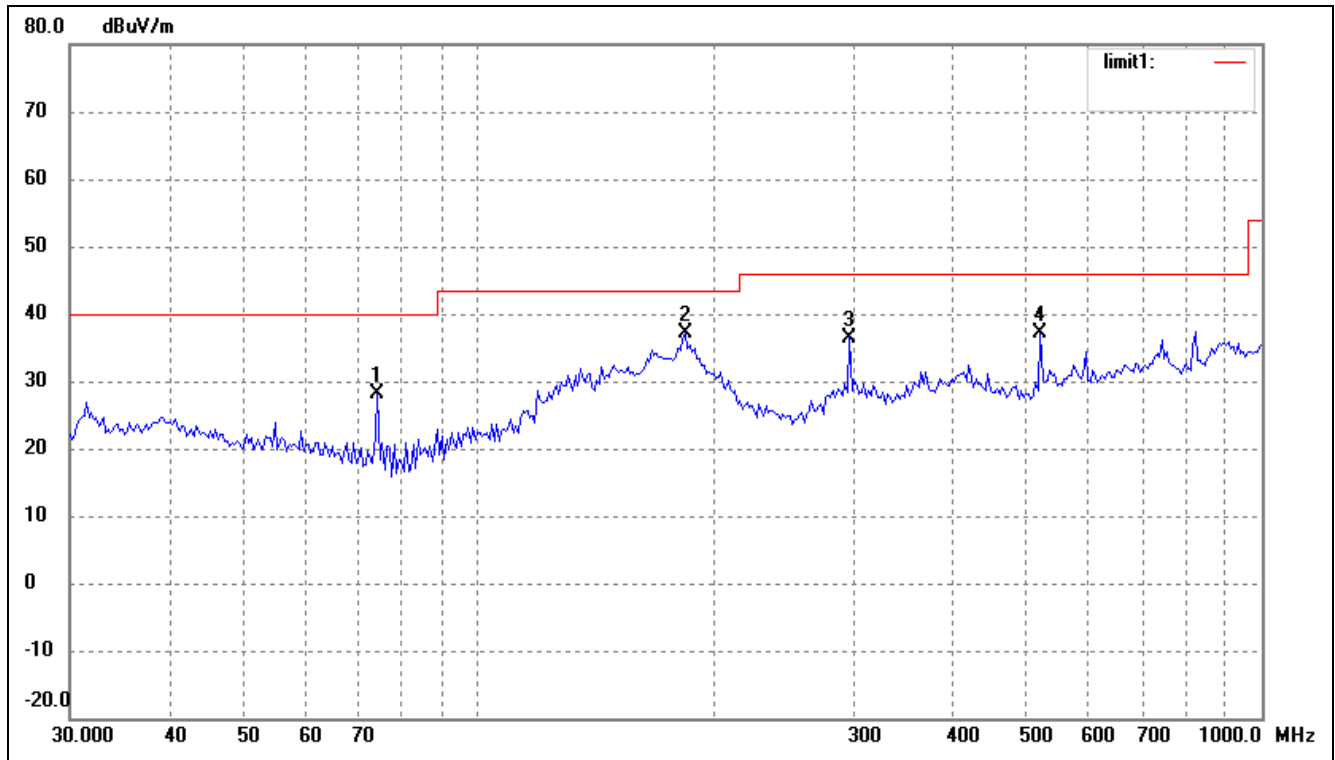


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	134.5592	30.53	3.78	34.31	43.50	-9.19	240	100	peak
2	183.2005	30.16	3.89	34.05	43.50	-9.45	187	100	peak
3	297.2241	25.45	10.04	35.49	46.00	-10.51	220	100	peak
4	520.8882	25.74	12.93	38.67	46.00	-7.33	359	100	peak

Operating Condition: 802.11n-HT20 Transmitting High Channel-2462MHz

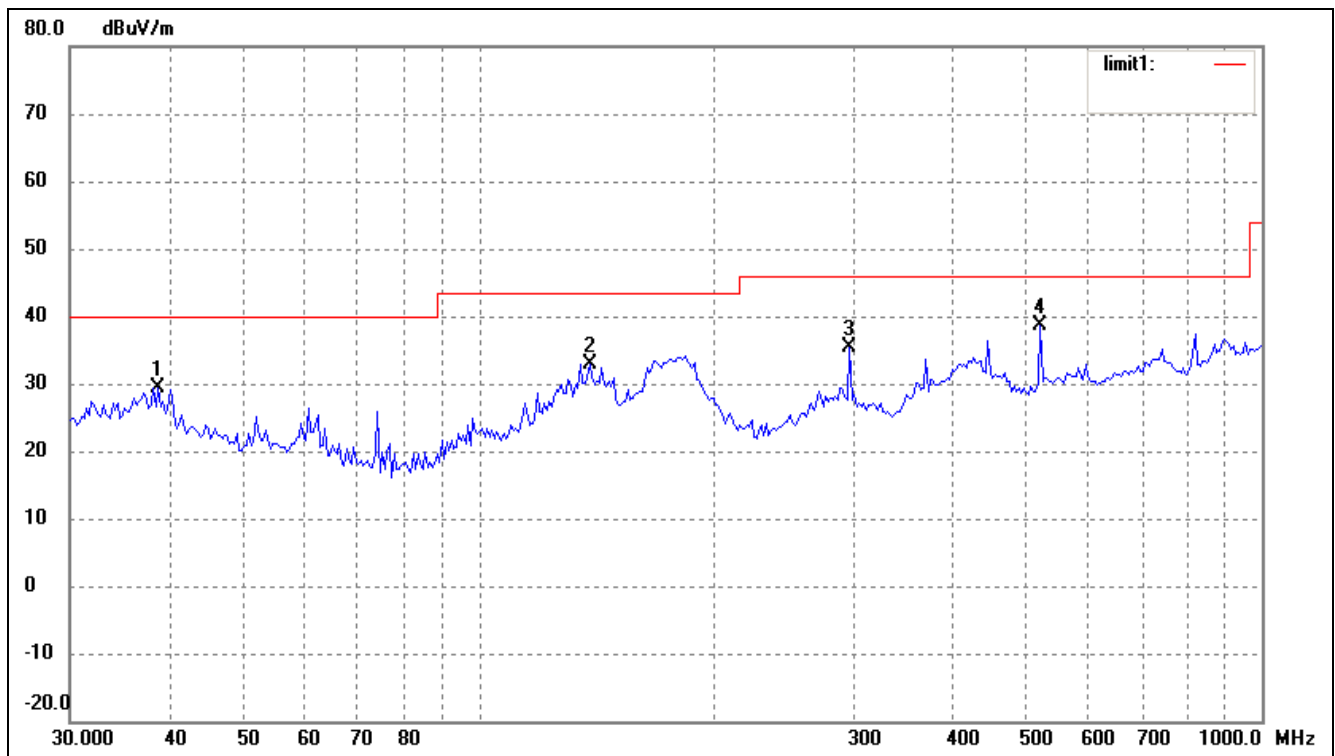
Comment: USB 5V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	74.1351	26.05	2.05	28.10	40.00	-11.90	162	100	peak
2	183.2005	33.24	3.89	37.13	43.50	-6.37	200	100	peak
3	297.2241	26.46	10.04	36.50	46.00	-9.50	359	200	Peak
4	520.8882	24.30	12.93	37.23	46.00	-8.77	359	200	peak

Test Specification: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	38.8879	19.96	9.50	29.46	40.00	-10.54	240	100	peak
2	138.3873	29.35	3.51	32.86	43.50	-10.64	187	100	peak
3	297.2241	25.45	10.04	35.49	46.00	-10.51	220	100	peak
4	520.8882	25.74	12.93	38.67	46.00	-7.33	359	100	peak

Plot of Radiated Emissions Test Data (30MHz to 1GHz)

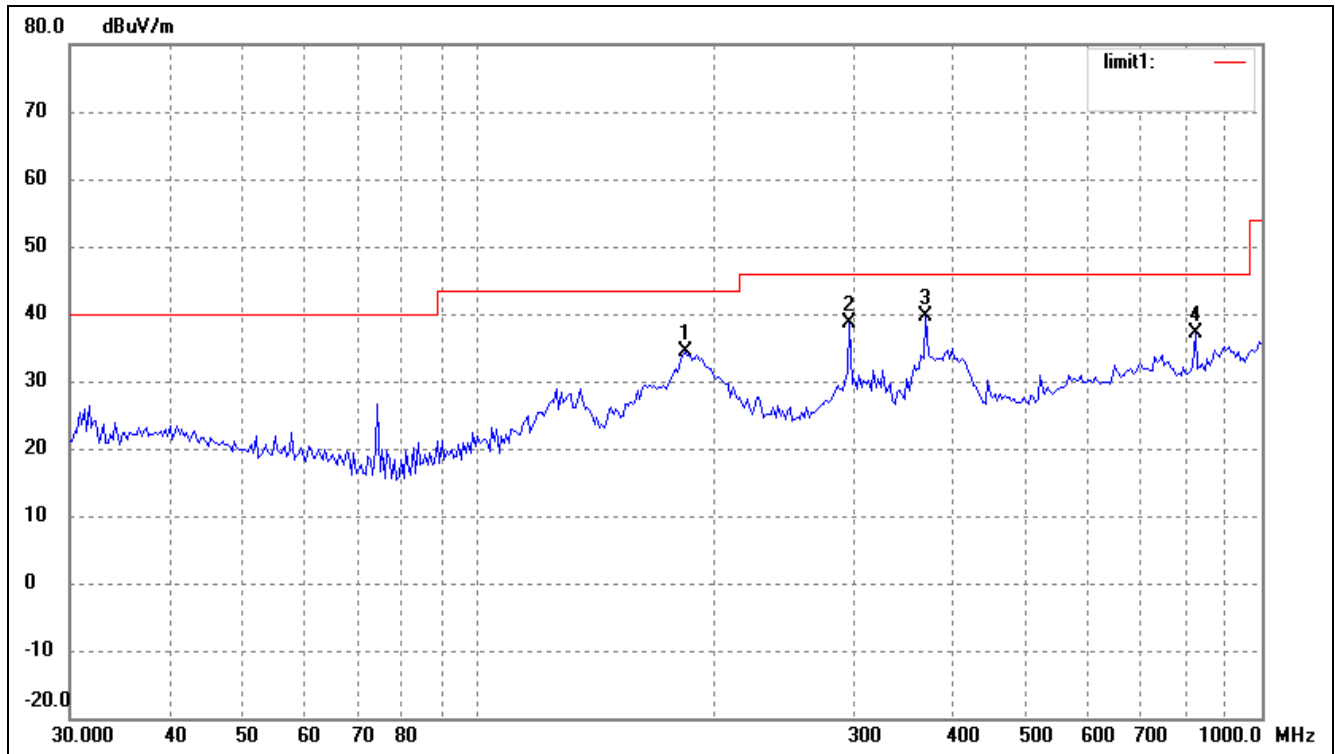
EUT: AS206C HDMI Dongle

Tested Model: AS206C

Operating Condition: 802.11n-HT40 Transmitting Low Channel-2412MHz

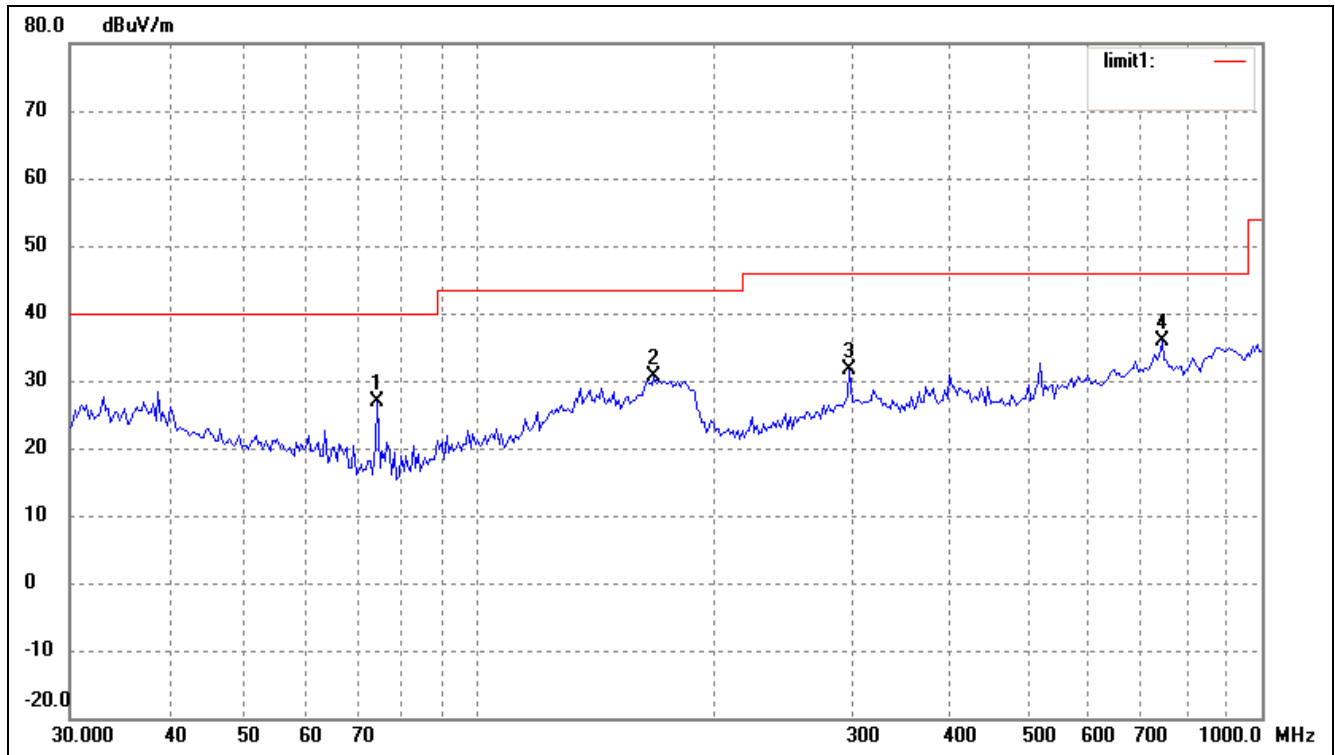
Comment: USB 5V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	183.2005	30.37	3.89	34.26	43.50	-9.24	264	100	peak
2	297.2241	28.58	10.04	38.62	46.00	-7.38	113	200	peak
3	372.0045	28.97	10.65	39.62	46.00	-6.38	287	100	peak
4	821.7104	20.34	16.84	37.18	46.00	-8.82	185	200	peak

Test Specification: Vertical

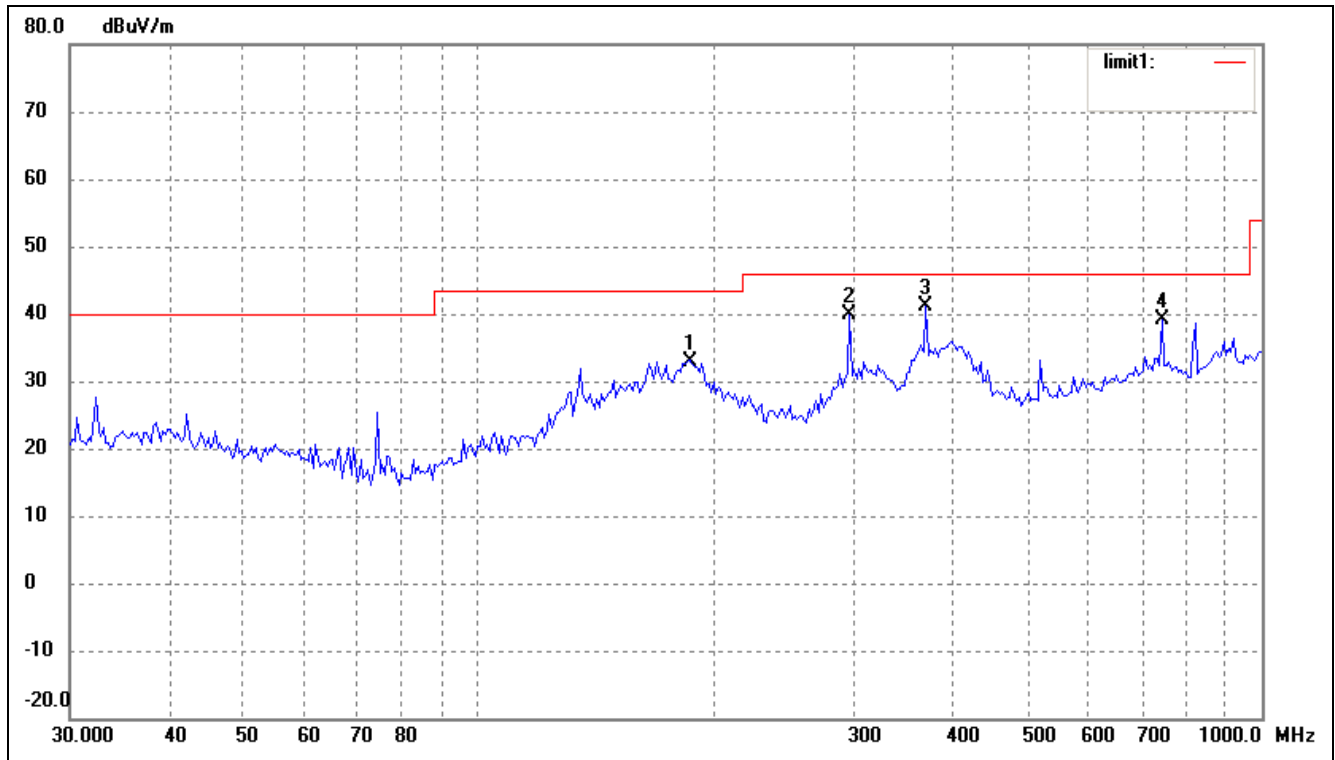


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	74.1351	24.77	2.05	26.82	40.00	-13.18	240	100	peak
2	167.2368	26.91	3.68	30.59	43.50	-12.91	187	100	peak
3	297.2241	21.68	10.04	31.72	46.00	-14.28	220	100	peak
4	744.8661	17.87	17.95	35.82	46.00	-10.18	359	100	peak

Operating Condition: 802.11n-HT40 Transmitting Middle Channel-2437MHz

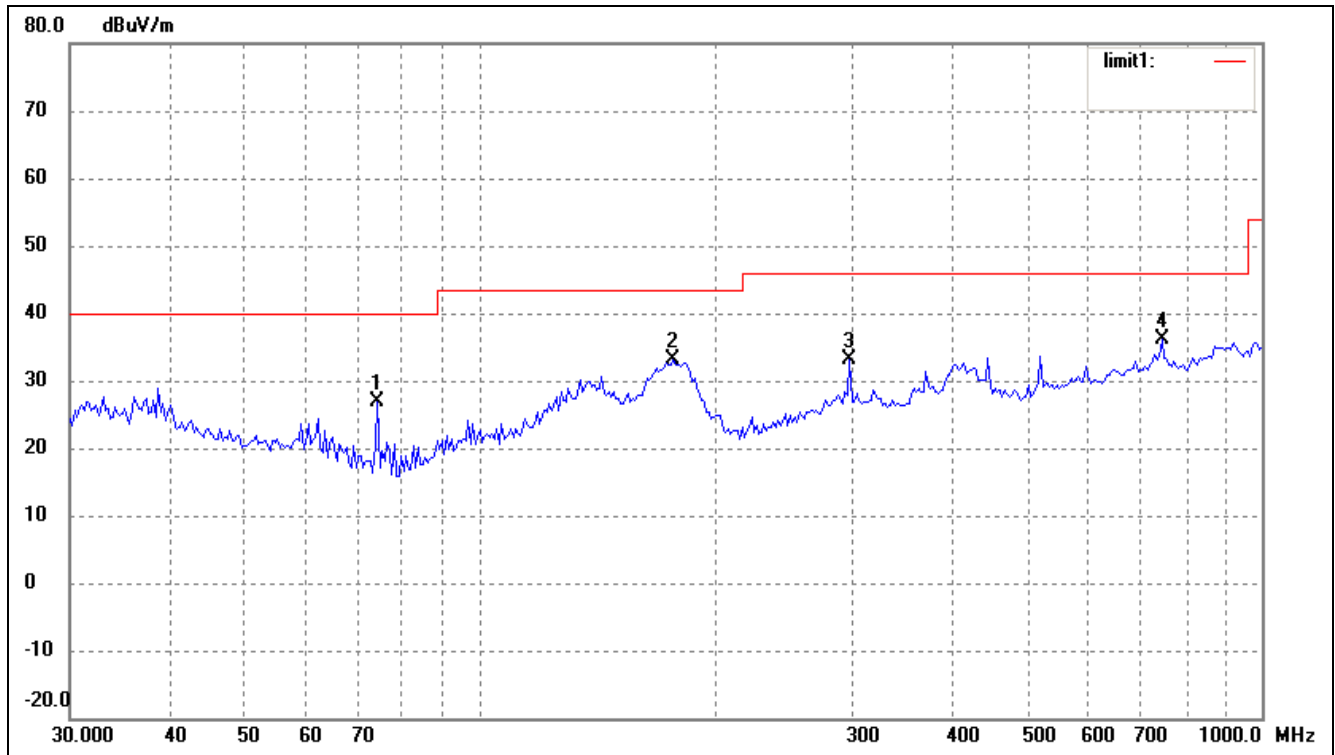
Comment: USB 5V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	185.7882	28.99	4.01	33.00	43.50	-10.50	162	100	peak
2	297.2241	29.91	10.04	39.95	46.00	-6.05	200	100	peak
3	372.0045	30.40	10.65	41.05	46.00	-4.95	359	200	peak
4	744.8661	21.14	17.95	39.09	46.00	-6.91	359	200	peak

Test Specification: Vertical

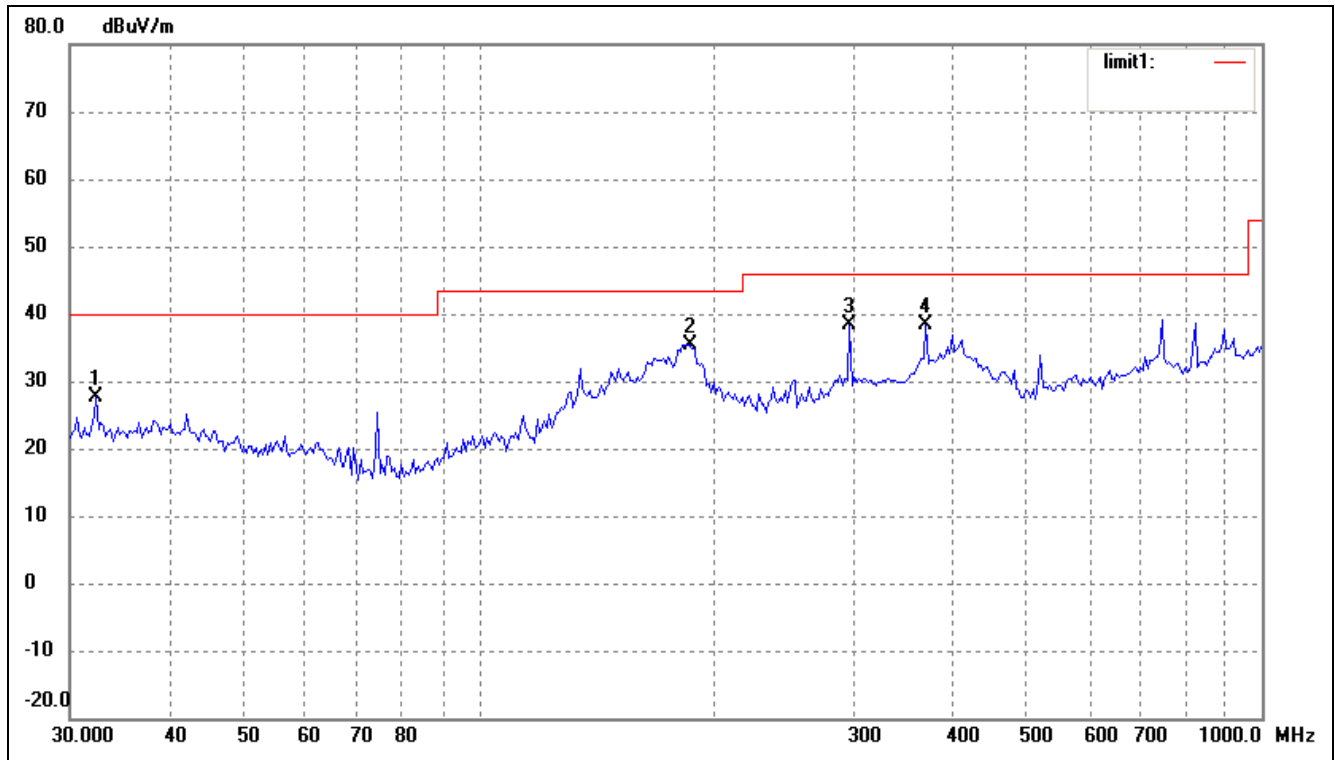


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	74.1351	24.77	2.05	26.82	40.00	-13.18	240	100	peak
2	176.8878	29.43	3.73	33.16	43.50	-10.34	187	100	peak
3	297.2241	23.08	10.04	33.12	46.00	-12.88	220	100	peak
4	744.8661	18.20	17.95	36.15	46.00	-9.85	359	100	peak

Operating Condition: 802.11n-HT40 Transmitting High Channel-2462MHz

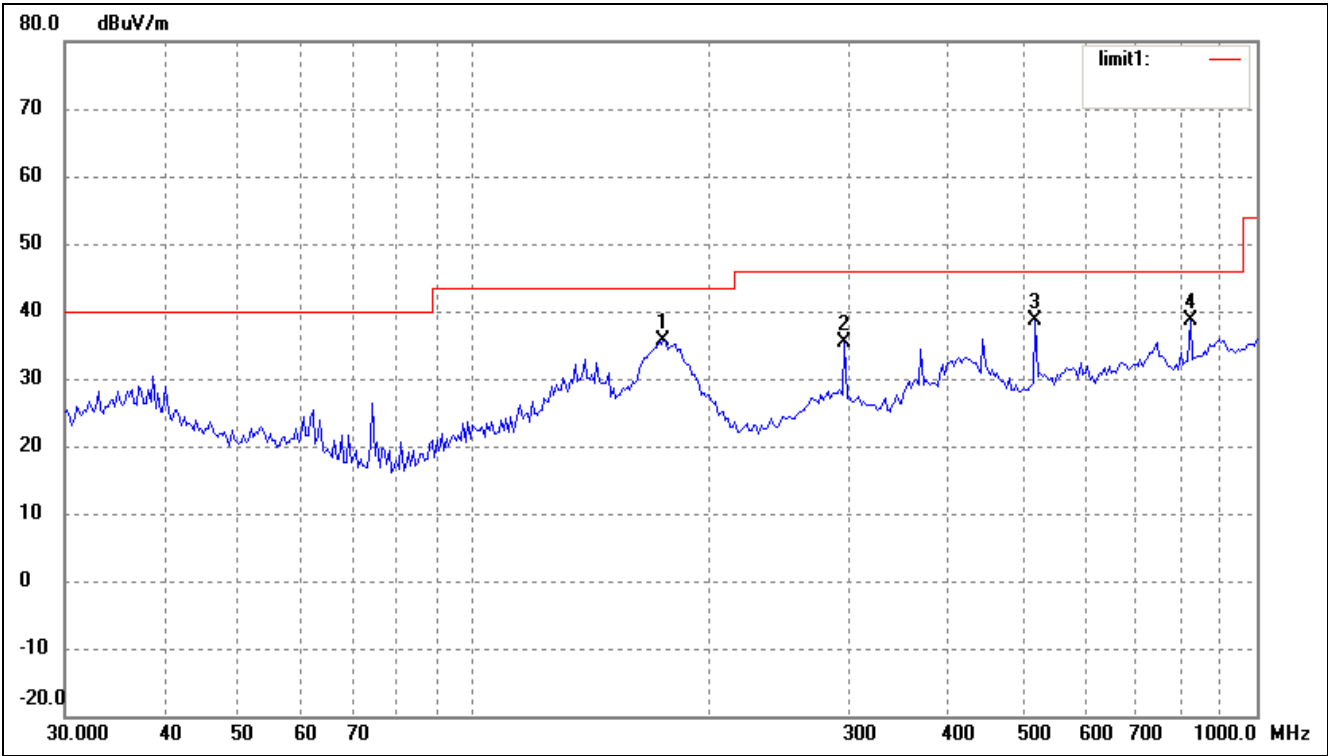
Comment: USB 5V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	32.4059	19.23	8.44	27.67	40.00	-12.33	162	100	peak
2	185.7882	31.45	4.01	35.46	43.50	-8.04	200	100	peak
3	297.2241	28.41	10.04	38.45	46.00	-7.55	359	200	Peak
4	372.0045	27.78	10.65	38.43	46.00	-7.57	359	200	peak

Test Specification: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	174.4241	31.91	3.72	35.63	43.50	-7.87	240	100	peak
2	297.2241	25.41	10.04	35.45	46.00	-10.55	187	100	peak
3	520.8882	25.75	12.93	38.68	46.00	-7.32	220	100	peak
4	821.7104	21.78	16.84	38.62	46.00	-7.38	359	100	peak

*Spurious Emissions Above 1GHz**Test Mode: 802.11b*

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2412MHz							
4824	57.09	-3.85	53.24	74.00	-20.76	H	PK
4824	40.65	-3.85	36.80	54.00	-17.20	H	AV
7236	46.93	1.26	48.19	74.00	-25.81	H	PK
7236	34.64	1.26	35.90	54.00	-18.10	H	AV
4824	58.07	-3.85	54.22	74.00	-19.78	V	PK
4824	41.93	-3.85	37.98	54.00	-16.02	V	AV
7236	47.94	1.26	49.20	74.00	-24.80	V	PK
7236	34.82	1.26	36.08	54.00	-17.92	V	AV
Middle Channel-2437MHz							
4874	58.21	-3.71	54.50	74.00	-19.50	H	PK
4874	42.16	-3.71	38.45	54.00	-15.55	H	AV
7311	46.79	1.59	48.38	74.00	-25.62	H	PK
7311	35.13	1.59	36.72	54.00	-17.28	H	AV
4874	67.46	-3.71	63.75	74.00	-10.25	V	PK
4874	50.36	-3.71	46.65	54.00	-7.35	V	AV
7311	54.82	1.59	56.41	74.00	-17.59	V	PK
7311	39.18	1.59	40.77	54.00	-13.23	V	AV
High Channel-2462MHz							
4924	57.25	-3.57	53.68	74.00	-20.32	H	PK
4924	40.92	-3.57	37.35	54.00	-16.65	H	AV
7386	46.74	1.91	48.65	74.00	-25.35	H	PK
7386	34.73	1.91	36.64	54.00	-17.36	H	AV
4924	63.25	-3.57	59.68	74.00	-14.32	V	PK
4924	45.99	-3.57	42.42	54.00	-11.58	V	AV
7386	49.09	1.91	51.00	74.00	-23.00	V	PK
7386	35.91	1.91	37.82	54.00	-16.18	V	AV

Test Mode: 802.11g

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2412MHz							
4824	53.66	-3.85	49.81	74.00	-24.19	H	PK
4824	39.53	-3.85	35.68	54.00	-18.32	H	AV
7236	45.33	1.26	46.59	74.00	-27.41	H	PK
7236	34.49	1.26	35.75	54.00	-18.25	H	AV
4824	62.19	-3.85	58.34	74.00	-15.66	V	PK
4824	47.70	-3.85	43.85	54.00	-10.15	V	AV
7236	54.24	1.26	55.50	74.00	-18.50	V	PK
7236	36.49	1.26	37.75	54.00	-16.25	V	AV
Middle Channel-2437MHz							
4874	59.08	-3.71	55.37	74.00	-18.63	H	PK
4874	43.41	-3.71	39.70	54.00	-14.30	H	AV
7311	46.95	1.59	48.54	74.00	-25.46	H	PK
7311	35.14	1.59	36.73	54.00	-17.27	H	AV
4874	65.95	-3.71	62.24	74.00	-11.76	V	PK
4874	52.35	-3.71	48.64	54.00	-5.36	V	AV
7311	58.89	1.59	60.48	74.00	-13.52	V	PK
7311	39.97	1.59	41.56	54.00	-12.44	V	AV
High Channel-2462MHz							
4924	56.91	-3.57	53.34	74.00	-20.66	H	PK
4924	43.15	-3.57	39.58	54.00	-14.42	H	AV
7386	47.45	1.91	49.36	74.00	-24.64	H	PK
7386	35.37	1.91	37.28	54.00	-16.72	H	AV
4924	62.30	-3.57	58.73	74.00	-15.27	V	PK
4924	48.25	-3.57	44.68	54.00	-9.32	V	AV
7386	52.06	1.91	53.97	74.00	-20.03	V	PK
7386	36.55	1.91	38.46	54.00	-15.54	V	AV

Test Mode: 802.11n-HT20

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2412MHz							
4824	55.30	-3.85	51.45	74.00	-22.55	H	PK
4824	42.76	-3.85	38.91	54.00	-15.09	H	AV
7236	46.08	1.26	47.34	74.00	-26.66	H	PK
7236	34.49	1.26	35.75	54.00	-18.25	H	AV
4824	58.58	-3.85	54.73	74.00	-19.27	V	PK
4824	46.91	-3.85	43.06	54.00	-10.94	V	AV
7236	48.36	1.26	49.50	74.00	-24.50	V	PK
7236	36.39	1.26	37.65	54.00	-16.35	V	AV
Middle Channel-2437MHz							
4874	60.69	-3.71	56.98	74.00	-17.02	H	PK
4874	46.15	-3.71	42.44	54.00	-11.56	H	AV
7311	50.54	1.59	52.13	74.00	-21.87	H	PK
7311	35.71	1.59	37.30	54.00	-16.70	H	AV
4874	67.46	-3.71	63.75	74.00	-10.25	V	PK
4874	52.01	-3.71	48.30	54.00	-5.70	V	AV
7311	57.83	1.59	59.42	74.00	-14.58	V	PK
7311	40.19	1.59	41.78	54.00	-12.22	V	AV
High Channel-2462MHz							
4924	58.34	-3.57	54.77	74.00	-19.23	H	PK
4924	43.94	-3.57	40.37	54.00	-13.63	H	AV
7386	47.18	1.91	49.09	74.00	-24.91	H	PK
7386	35.19	1.91	37.10	54.00	-16.90	H	AV
4924	64.67	-3.57	61.10	74.00	-12.90	V	PK
4924	49.49	-3.57	45.92	54.00	-8.08	V	AV
7386	52.40	1.91	54.31	74.00	-19.69	V	PK
7386	37.35	1.91	39.26	54.00	-14.74	V	AV

Test Mode: 802.11n-HT40

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2422MHz							
4844	56.22	-3.90	52.32	74.00	-21.68	H	PK
4844	42.44	-3.90	38.54	54.00	-15.46	H	AV
7266	47.29	1.06	48.35	74.00	-25.65	H	PK
7266	34.17	1.06	35.23	54.00	-18.77	H	AV
4844	57.44	-3.90	53.54	74.00	-20.46	V	PK
4844	44.22	-3.90	40.32	54.00	-13.68	V	AV
7266	47.91	1.06	48.97	74.00	-25.03	V	PK
7266	37.56	1.06	38.62	54.00	-15.38	V	AV
Middle Channel-2437MHz							
4874	56.24	-3.74	52.50	74.00	-21.50	H	PK
4874	44.09	-3.74	40.35	54.00	-13.65	H	AV
7311	45.88	1.47	47.35	74.00	-26.65	H	PK
7311	40.88	1.47	42.35	54.00	-11.65	H	AV
4874	58.42	-3.74	54.68	74.00	-19.32	V	PK
4874	44.17	-3.74	40.43	54.00	-13.57	V	AV
7311	49.03	1.47	50.50	74.00	-23.50	V	PK
7311	41.15	1.47	42.62	54.00	-11.38	V	AV
High Channel-2452MHz							
4904	54.84	-3.63	51.21	74.00	-22.79	H	PK
4904	40.83	-3.63	37.20	54.00	-16.80	H	AV
7356	48.18	1.62	49.80	74.00	-24.20	H	PK
7356	35.12	1.62	36.74	54.00	-17.26	H	AV
4904	55.93	-3.63	52.30	74.00	-21.70	V	PK
4904	42.10	-3.63	38.47	54.00	-15.53	V	AV
7356	47.92	1.62	49.54	74.00	-24.46	V	PK
7356	34.84	1.62	36.46	54.00	-17.54	V	AV

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, which above 5th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured. The measurements greater than 20dB below the limit from 9kHz to 30MHz..

8. Out of Band Emissions

8.1 Standard Applicable

According to §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 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).

8.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2012-03-28	2013-03-27
EMI Test Receiver	R&S	ESVB	825471/005	2012-03-28	2013-03-27
Pre-amplifier	Agilent	8447F	3113A06717	2012-03-28	2013-03-27
Pre-amplifier	Compliance Direction	PAP-0118	24002	2012-03-28	2013-03-27
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2012-02-25	2013-02-24
Horn Antenna	ETS	3117	00086197	2012-02-25	2013-02-24

8.3 Test Procedure

According to the KDB 558074, the band-edge radiated test method as follows:

Set span = wide enough to capture the peak level of the emission operating on the channel closest to the bandedge, as well as any modulation products which fall outside of the authorized band of operation (2310MHz to 2420MHz for low bandedge, 2460MHz to 2500MHz for the high bandedge)

RBW = 1MHz, VBW = 1MHz for peak value measured

RBW = 1MHz, VBW = 10Hz for average value measured

Sweep = auto; Detector function = peak/average; Trace = max hold

All the trace to stabilize, set the marker on the emission at the bandedge, or on the highest modulation product outside of the band, if this level is greater than that at the bandedge. Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band emission. Those emission must comply with the 15.209 limit for fall in the restricted bands listed in section 15.205. Note that the method of measurement KDB publication number: 913591 may be used for the radiated bandedge measurements.

According to the DA 00-705, the band-edge conducted test method as follows:

Set span = wide enough to capture the peak level of the emission operating on the channel closest to the bandedge, as well as any modulation products which fall outside of the authorized band of operation (2380MHz to 2410MHz for low bandedge, 2470MHz to 2500MHz for the high bandedge)

RBW = 100kHz, VBW = 300kHz

Sweep = auto; Detector function = peak; Trace = max hold

All the trace to stabilize, set the marker on the emission at the bandedge, or on the highest modulation product outside of the band, if this level is greater than that at the bandedge. Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band emission. Those emission must comply with the limit specified in this section (at least 20dB attenuation).

8.4 Environmental Conditions

Temperature:	23°C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

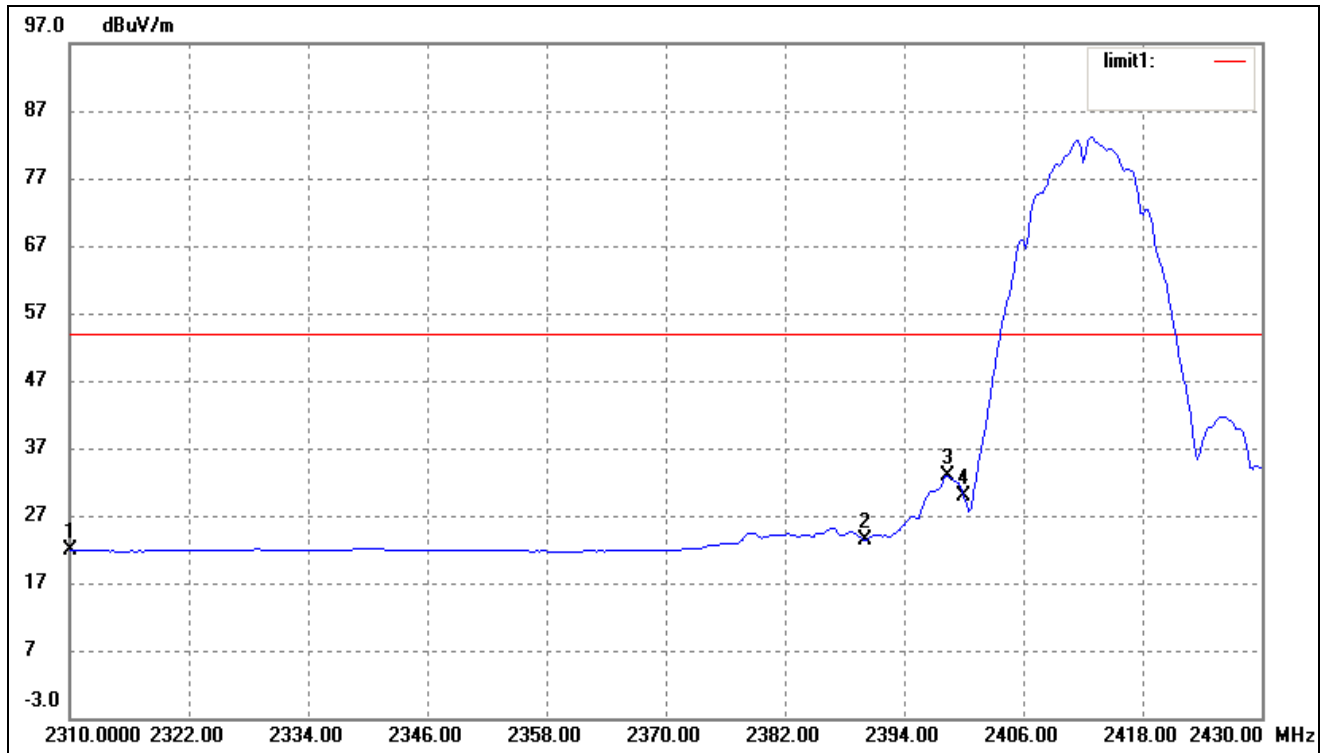
8.5 Summary of Test Results/Plots

Test Mode	Test Frequency MHz	Limit dBuV / dBc	Result
802.11b	2390.00	<54 dBuV	Pass
	2400.00	<54 dBuV	Pass
	2483.50	<54 dBuV	Pass
802.11g	2390.00	<54 dBuV	Pass
	2400.00	<54 dBuV	Pass
	2483.50	<54 dBuV	Pass
802.11n-HT20	2390.00	<54 dBuV	Pass
	2400.00	<54 dBuV	Pass
	2483.50	<54 dBuV	Pass
802.11n-HT40	2390.00	<54 dBuV	Pass
	2400.00	<54 dBuV	Pass
	2483.50	<54 dBuV	Pass

The edge emissions are below the FCC 15.209 Limits or complies with the 15.247(d) requirements.

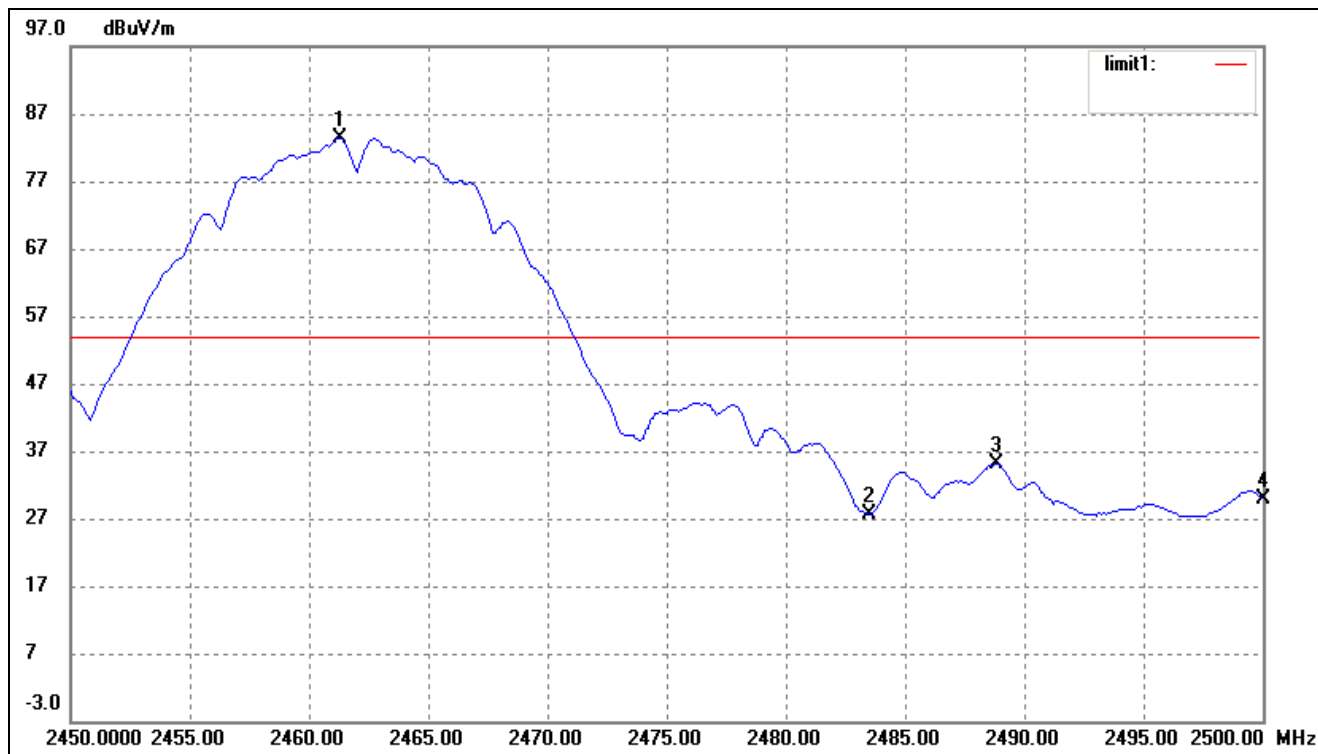
Please refer to the test plots as below.

802.11b-Lowest Bandedge



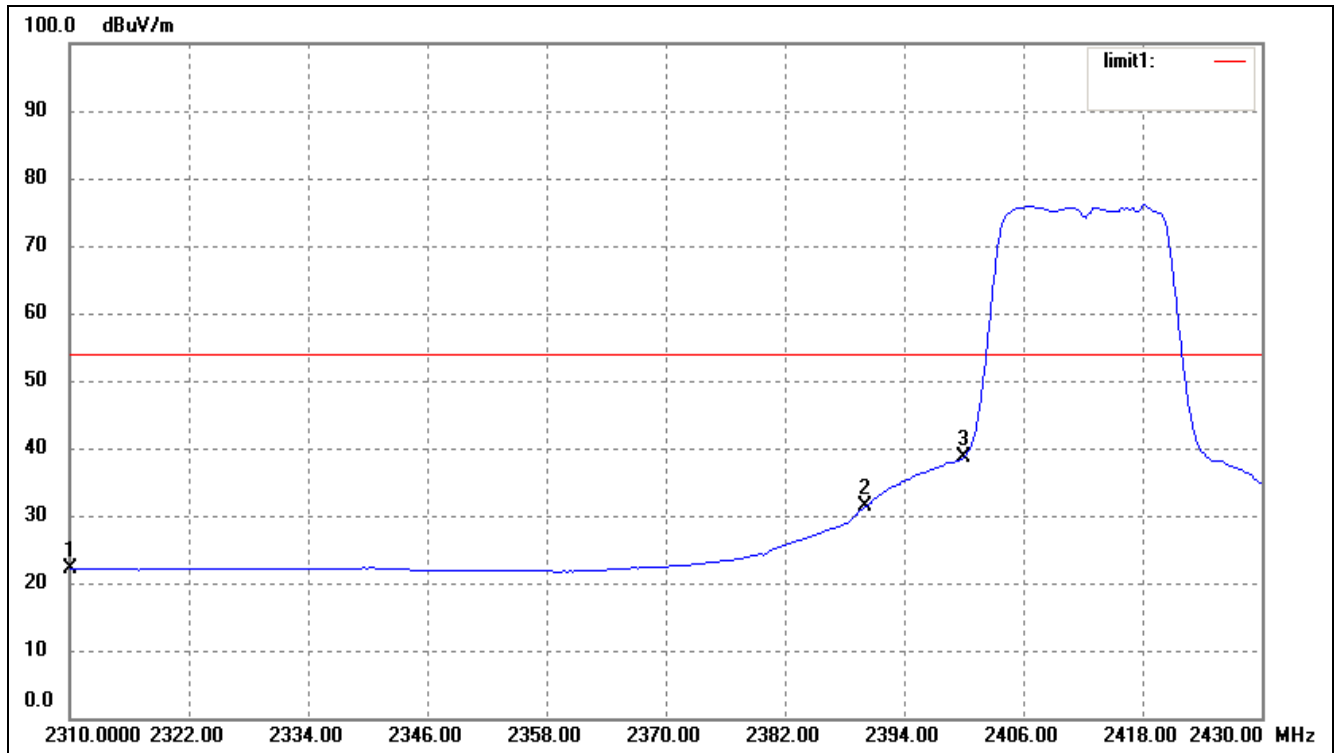
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	33.62	-11.72	21.90	54.00	-32.10	Average Detector
	2310.000	46.46	-11.72	34.74	74.00	-39.26	Peak Detector
2	2390.000	35.20	-11.75	23.45	54.00	-30.55	Average Detector
	2390.000	47.66	-11.75	35.91	74.00	-38.09	Peak Detector
3	2398.320	44.68	-11.75	32.93	54.00	-21.07	Average Detector
	2398.320	52.67	-11.75	40.92	74.00	-33.08	Peak Detector
4	2400.000	41.62	-11.75	29.87	54.00	-24.13	Average Detector
	2400.000	50.96	-11.75	39.21	74.00	-34.79	Peak Detector

802.11b-Highest Bandedge

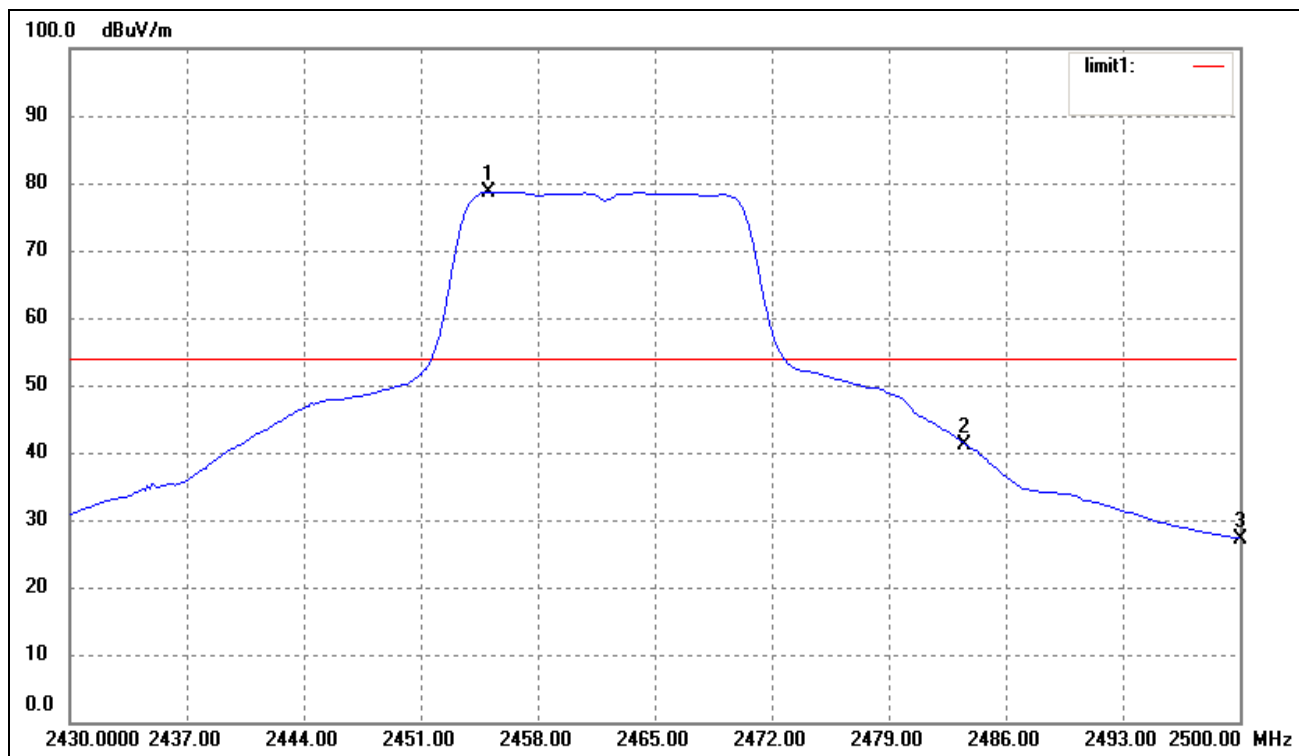


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2462.000	95.07	-11.77	83.30	/	/	Average Detector
	2462.000	99.59	-11.77	87.82	/	/	Peak Detector
2	2483.500	Delta = 56.91dBc		26.39	54.00	-27.61	Average Detector
	2483.500			30.90	74.00	-43.10	Peak Detector
3	2488.800	46.93	-11.78	35.15	54.00	-18.85	Average Detector
	2488.800	55.54	-11.78	43.76	74.00	-30.24	Peak Detector
4	2500.000	41.66	-11.78	29.88	54.00	-24.12	Average Detector
	2500.000	53.93	-11.78	42.15	74.00	-28.91	Peak Detector

802.11g-Lowest Bandedge

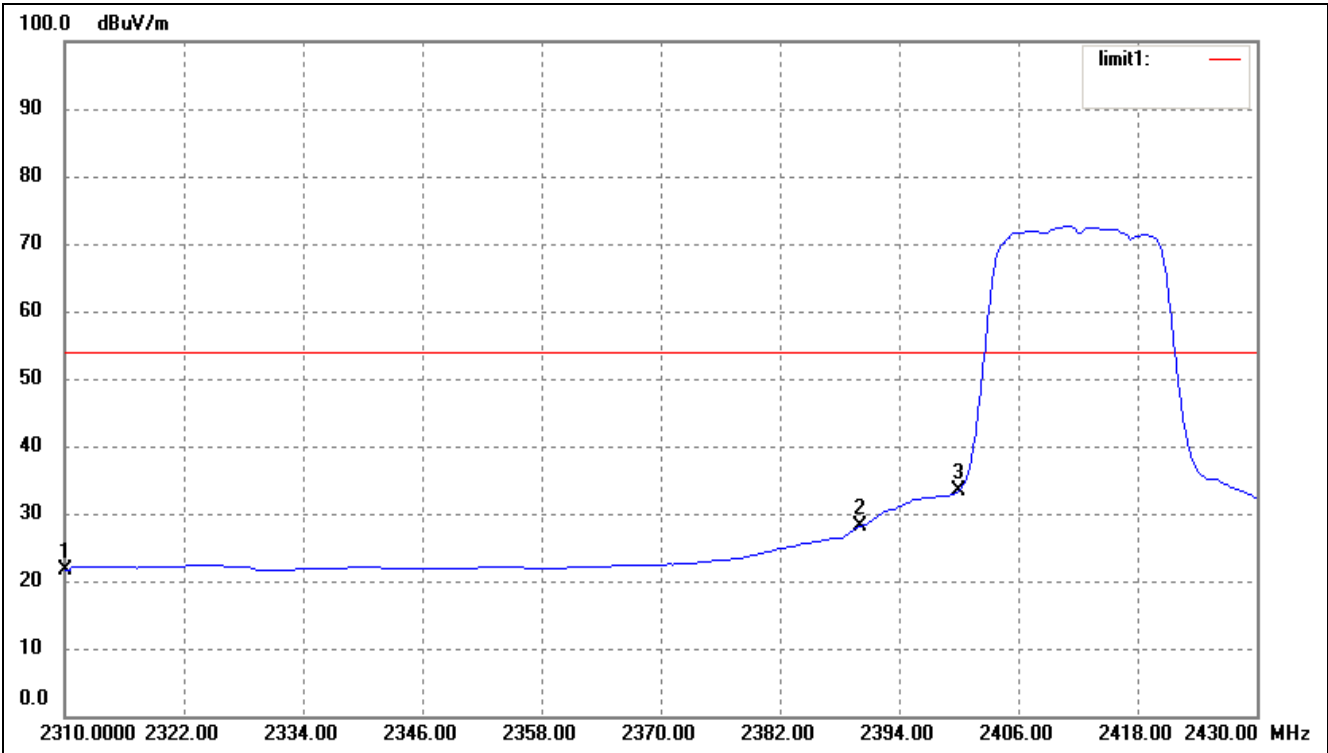


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	33.86	-11.72	22.14	54.00	-31.86	Average Detector
	2310.000	46.93	-11.72	35.21	74.00	-38.79	Peak Detector
2	2390.000	43.15	-11.75	31.40	54.00	-22.60	Average Detector
	2390.000	56.99	-11.75	52.13	74.00	-21.87	Peak Detector
3	2400.000	50.37	-11.75	38.62	54.00	-15.38	Average Detector
	2400.000	72.72	-11.75	60.97	74.00	13.03	Peak Detector



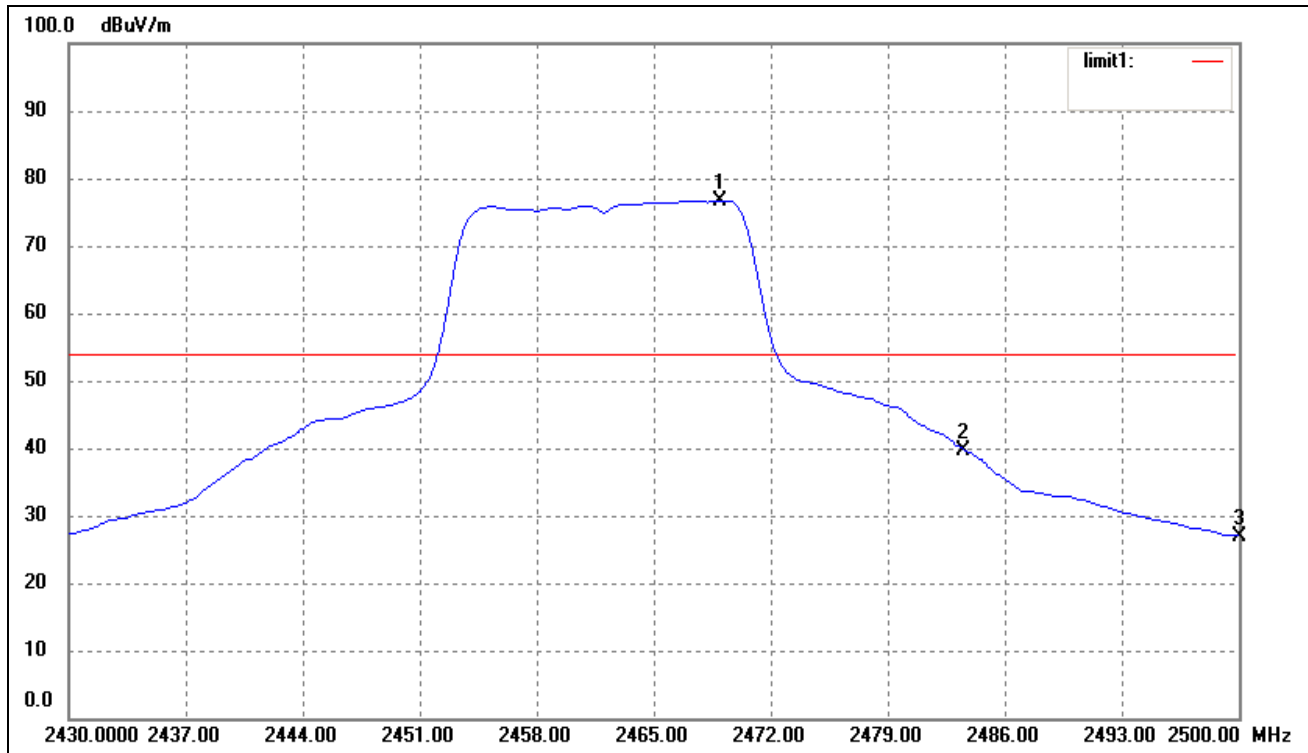
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2455.060	90.49	-11.76	78.73	/	/	Average Detector
	2455.060	100.11	-11.76	88.35	/	/	Peak Detector
2	2483.500	Delta = 40.6dBc		38.13	54.00	-15.87	Average Detector
	2483.500			47.74	74.00	-26.26	Peak Detector
3	2500.000	38.99	-11.78	27.21	54.00	-26.79	Average Detector
	2500.000	51.13	-11.78	39.35	74.00	-34.65	Peak Detector

802.11n-HT20-Lowest Bandedge



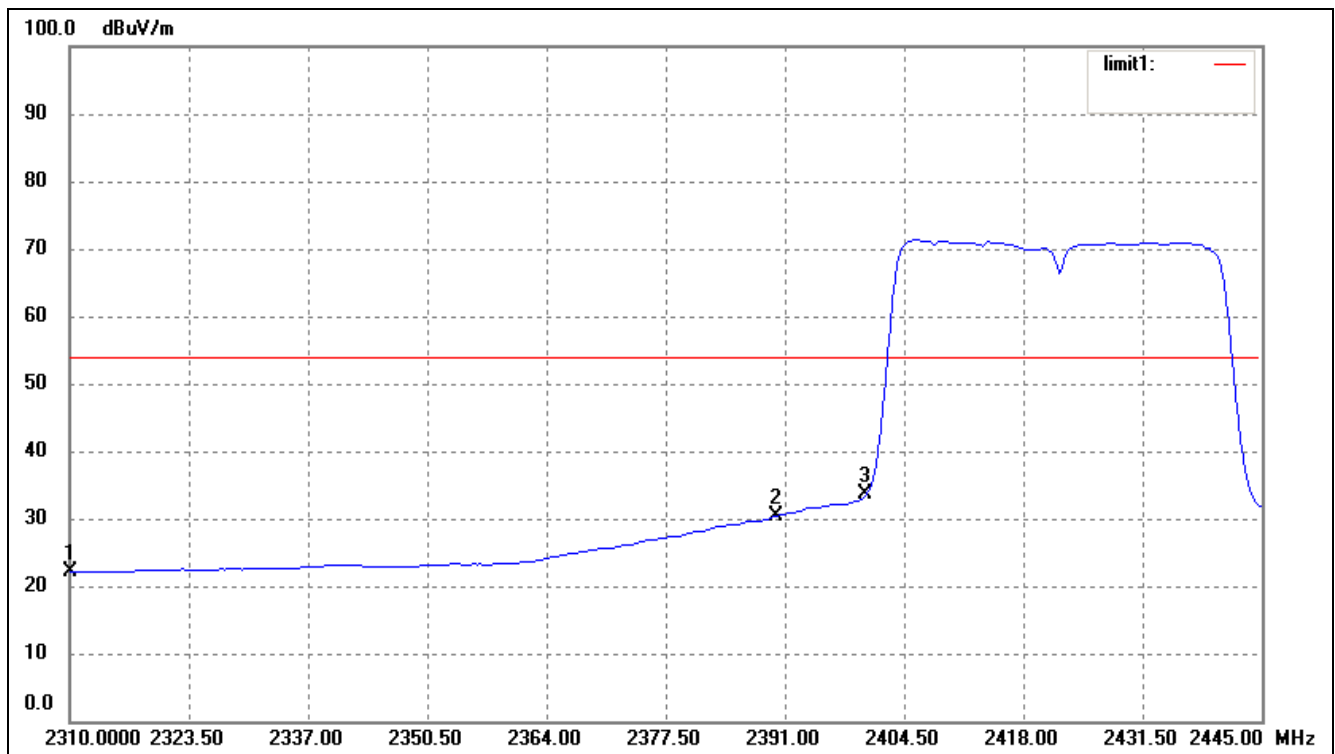
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	33.38	-11.72	21.66	54.00	-32.34	Average Detector
	2310.000	44.20	-11.72	32.48	74.00	-41.52	Peak Detector
2	2390.000	39.95	-11.75	28.20	54.00	-25.80	Average Detector
	2390.000	56.74	-11.75	44.99	74.00	-29.01	Peak Detector
3	2400.000	45.20	-11.75	33.45	54.00	-20.55	Average Detector
	2400.000	66.96	-11.75	55.21	74.00	18.79	Peak Detector

802.11n-HT20-Highest Bandedge



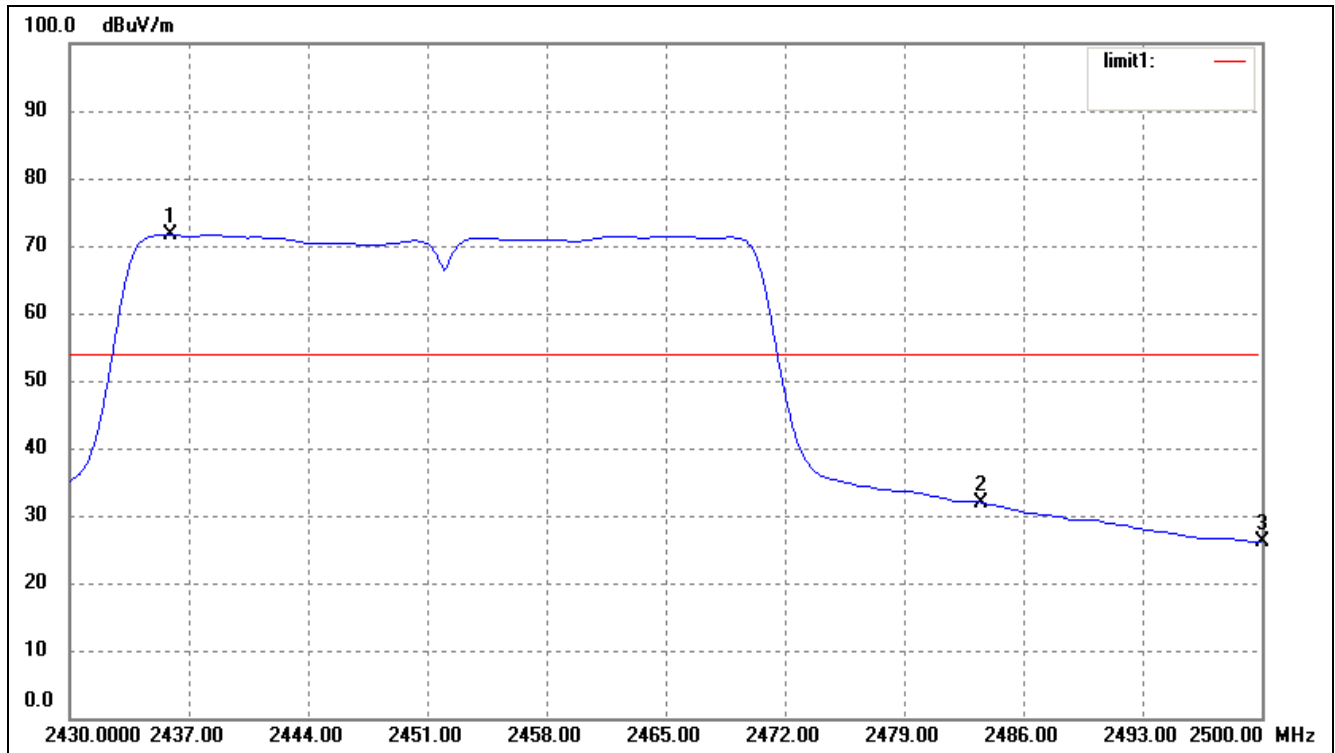
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2468.920	88.53	-11.78	76.75	/	/	Average Detector
	2468.920	99.49	-11.78	87.71	/	/	Peak Detector
2	2483.500	Delta = 40.59dBc		36.16	54.00	-17.84	Average Detector
	2483.500			47.13	74.00	-26.87	Peak Detector
3	2500.000	38.72	-11.78	26.94	54.00	-27.06	Average Detector
	2500.000	55.37	-11.78	43.59	74.00	-30.41	Peak Detector

802.11n-HT40-Lowest Bandedge

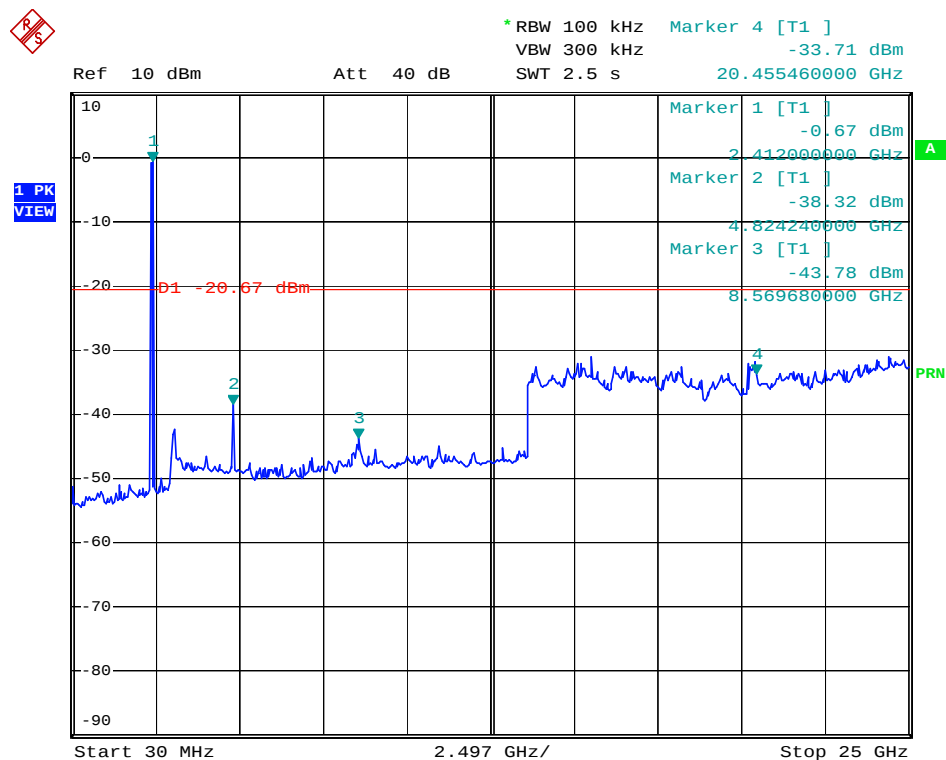
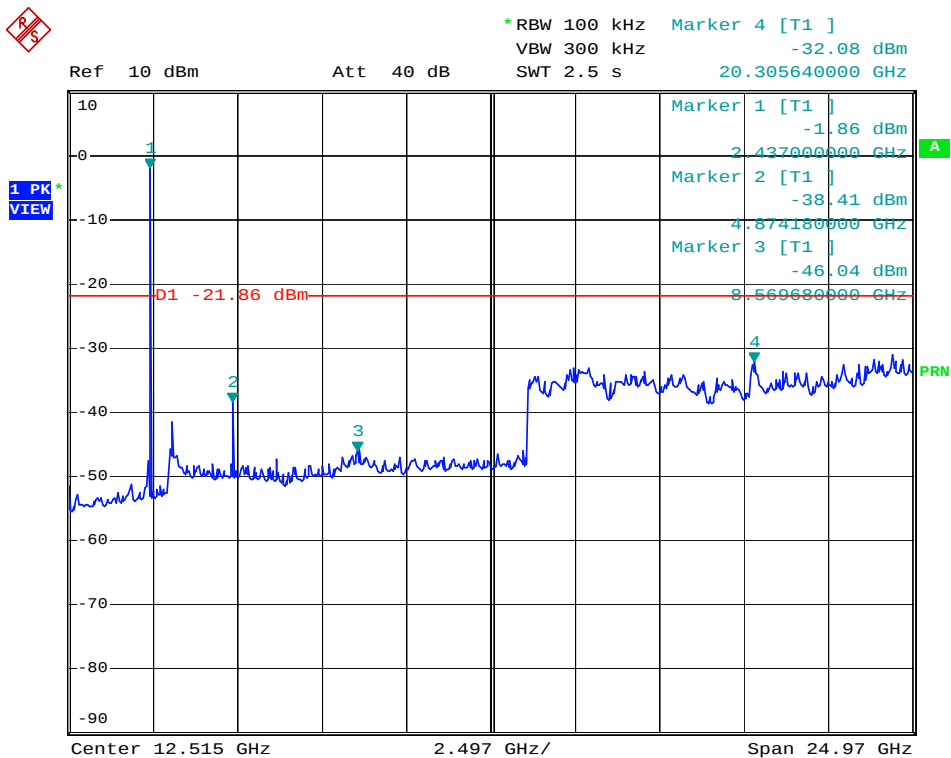


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	33.86	-11.72	22.14	54.00	-31.86	Average Detector
	2310.000	45.77	-11.72	34.05	74.00	-39.95	Peak Detector
2	2390.000	42.19	-11.75	30.44	54.00	-23.56	Average Detector
	2390.000	57.39	-11.75	45.64	74.00	-28.36	Peak Detector
3	2400.000	45.37	-11.75	33.62	54.00	-20.38	Average Detector
	2400.000	61.29	-11.75	49.54	74.00	-24.46	Peak Detector

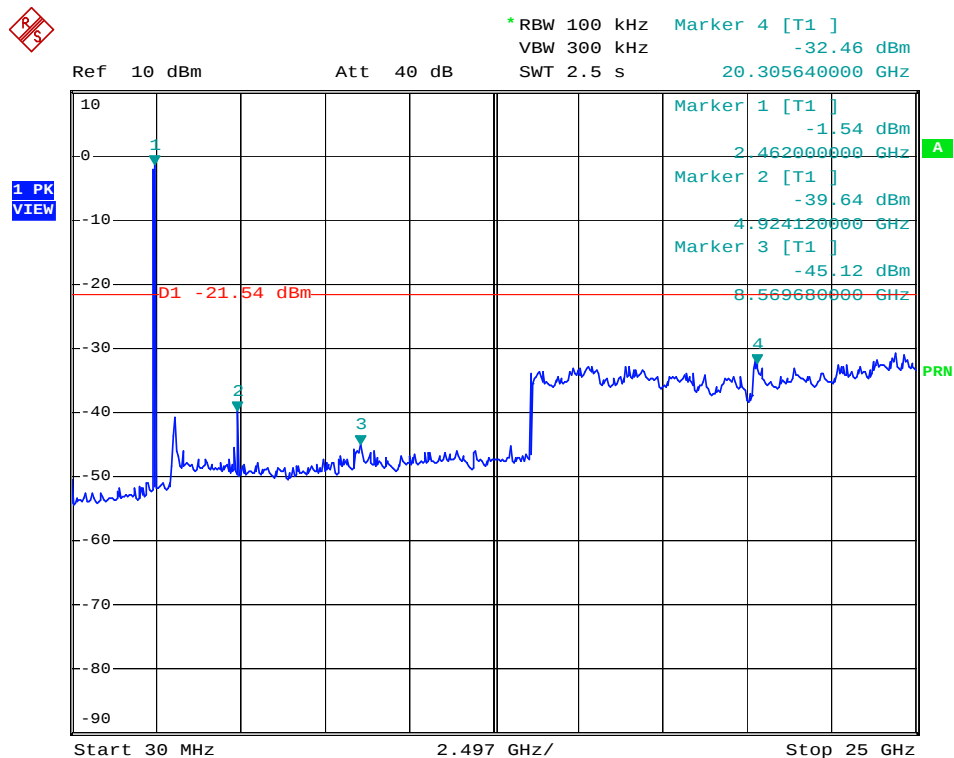
802.11n-HT40-Highest Bandedge



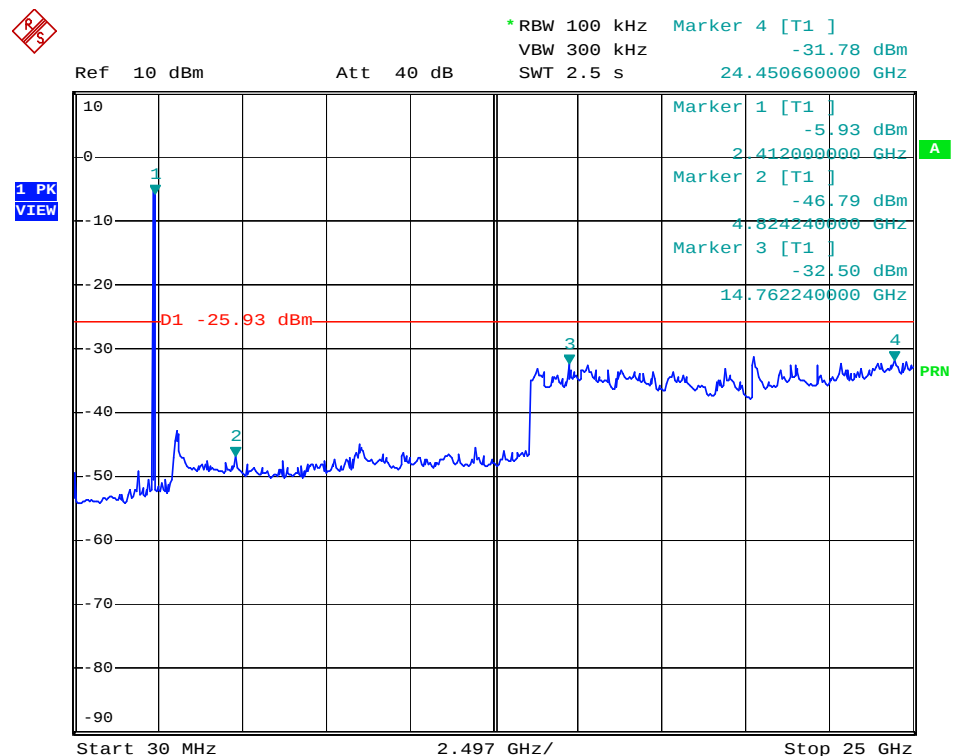
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2435.880	83.34	-11.76	71.58	/	/	Average Detector
	2435.880	94.28	-11.76	82.52	/	/	Peak Detector
2	2483.500	Delta = 44.57 dBc		27.01	54.00	-26.99	Average Detector
	2483.500			37.95	74.00	-36.05	Peak Detector
3	2500.000	37.94	-11.78	26.16	54.00	-27.84	Average Detector
	2500.000	54.44	-11.78	42.66	74.00	-31.34	Peak Detector

Conducted Spurious Emissions**802.11b-Low Channel****802.11b-Middle Channel**

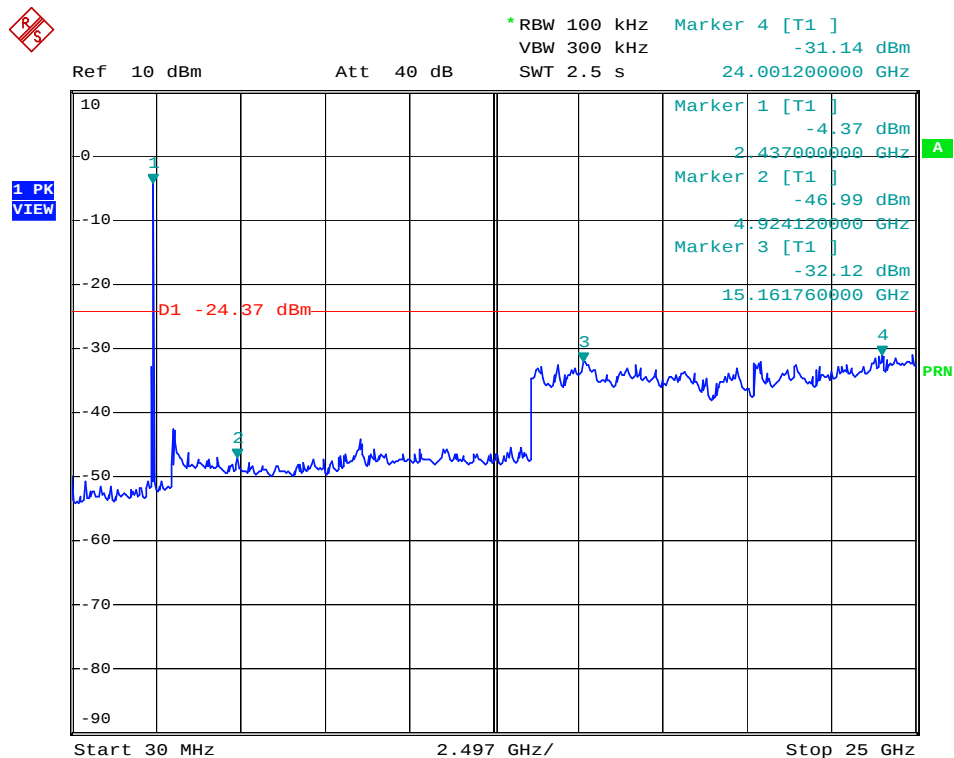
802.11b High-Channel



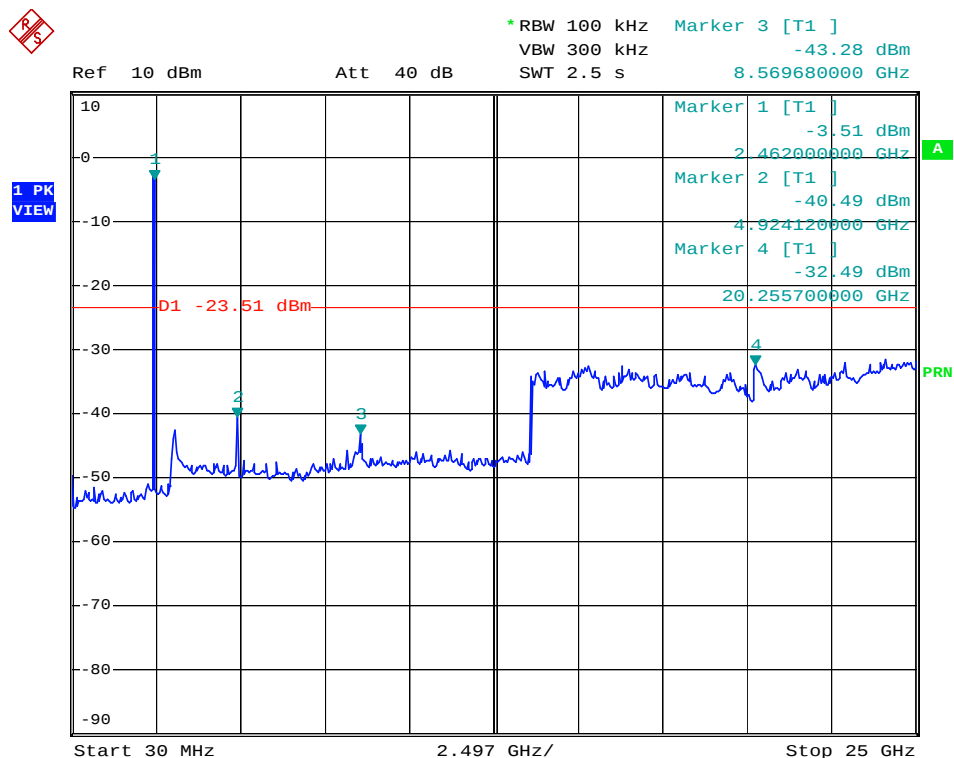
802.11g Low-Channel



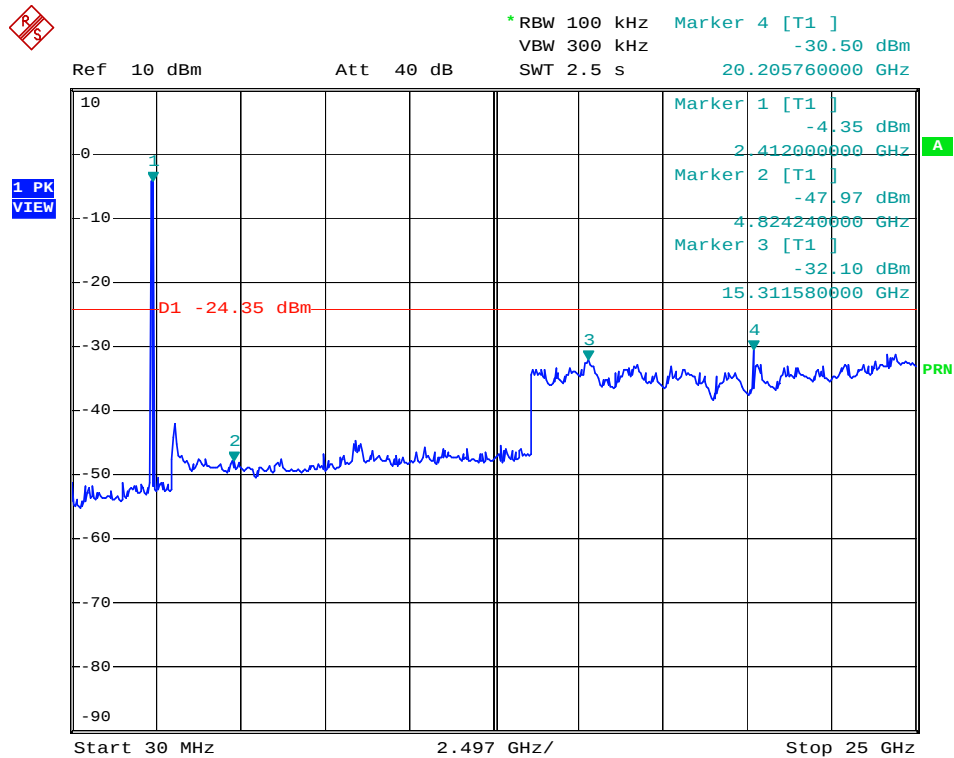
802.11g-Middle Channel



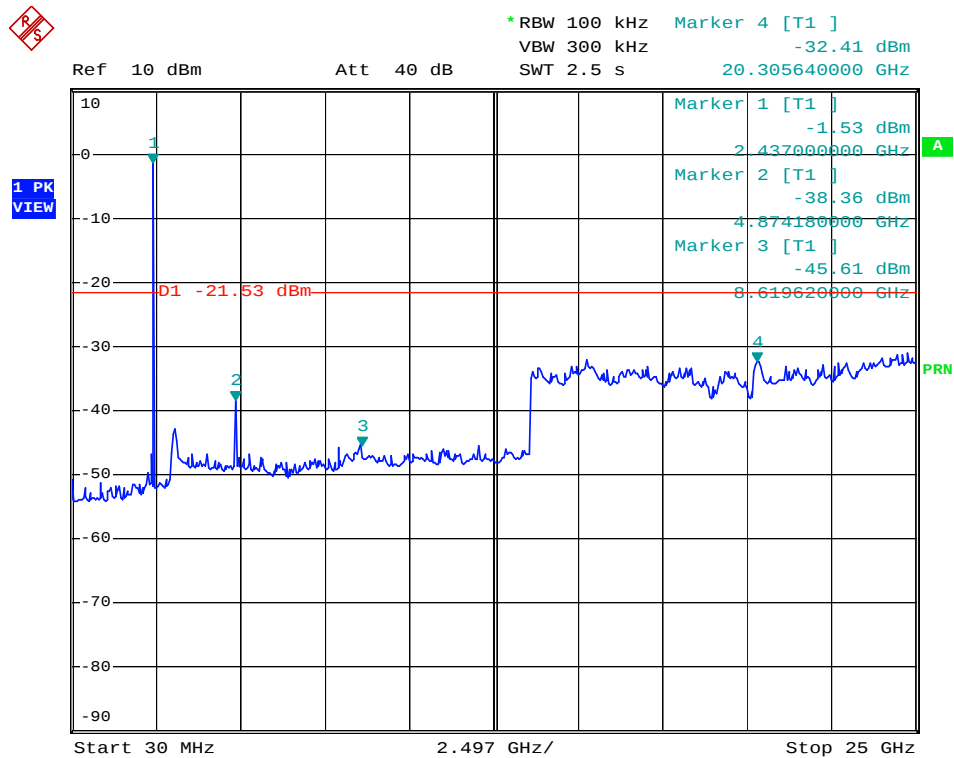
802.11g-High Channel



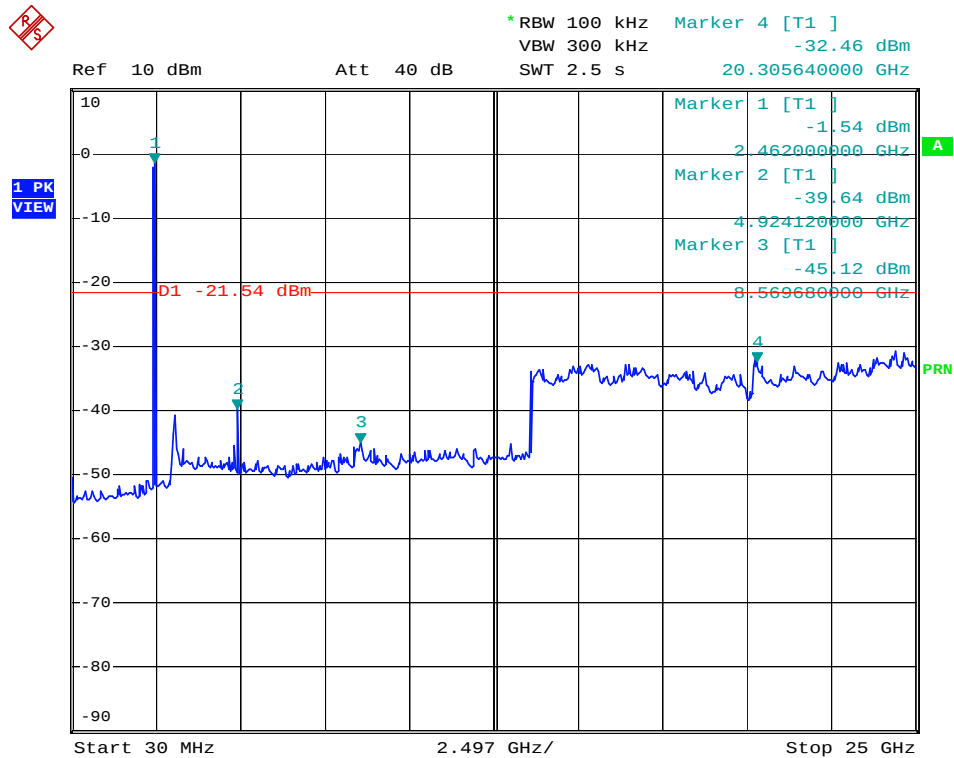
802.11n-HT20 Low Channel



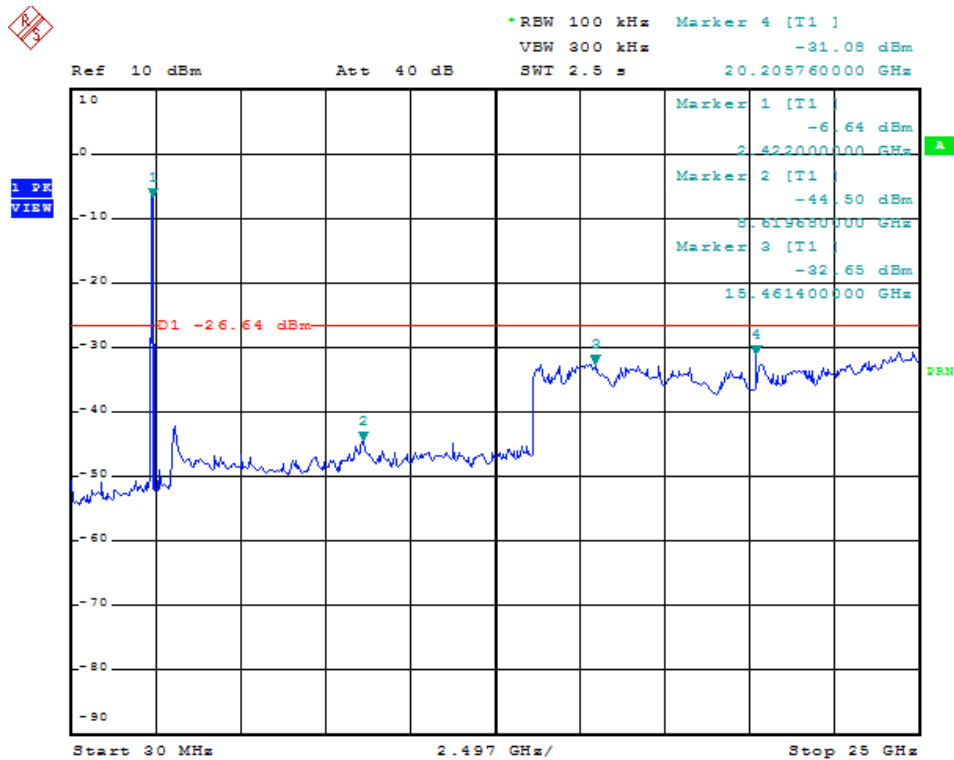
802.11n-HT20 Middle Channel



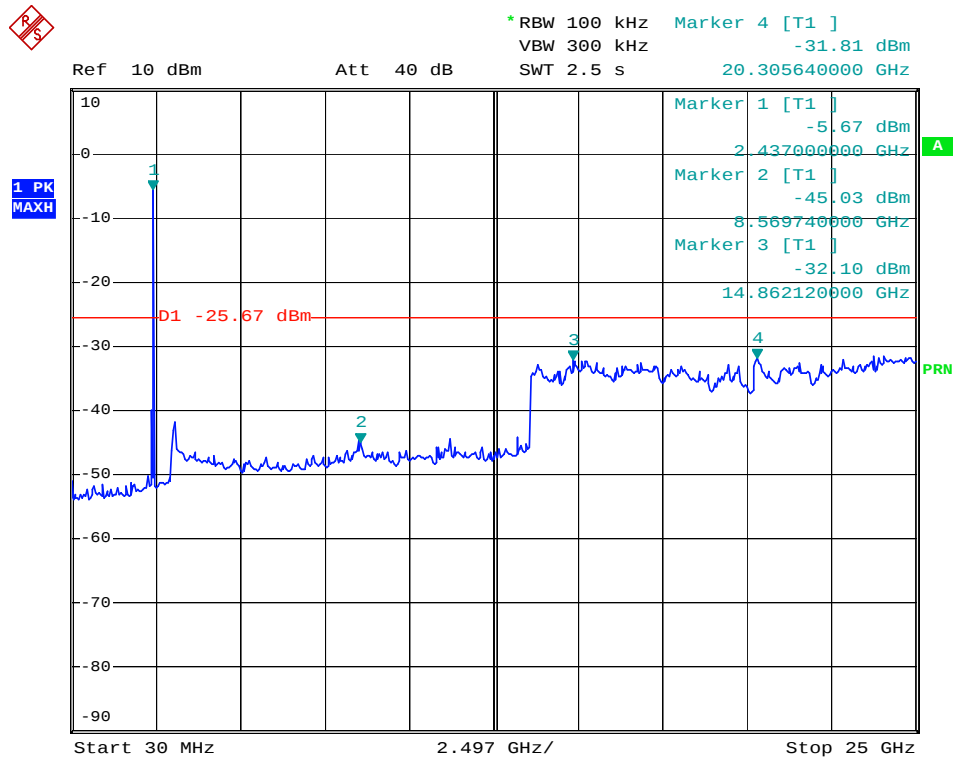
802.11n-HT20 High Channel



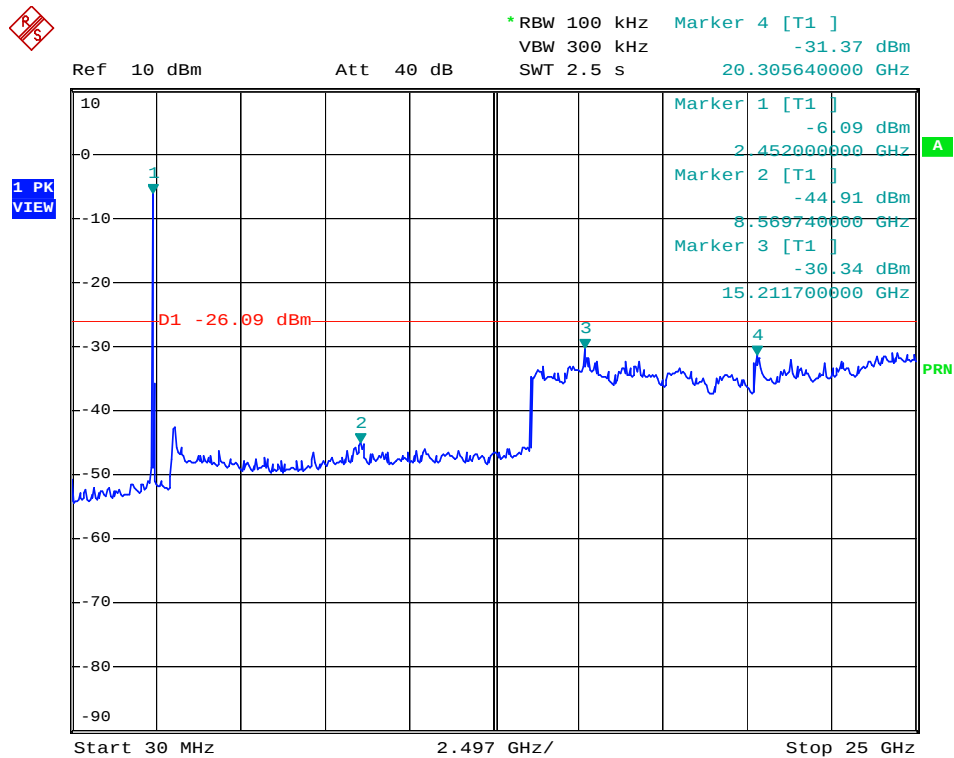
802.11n-HT40 Low Channel



802.11n-HT40 Middle Channel



802.11n-HT40 High Channel



9. Conducted Emissions

9.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

9.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2012-03-28	2013-03-27
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2012-03-28	2013-03-27
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2012-03-28	2013-03-27

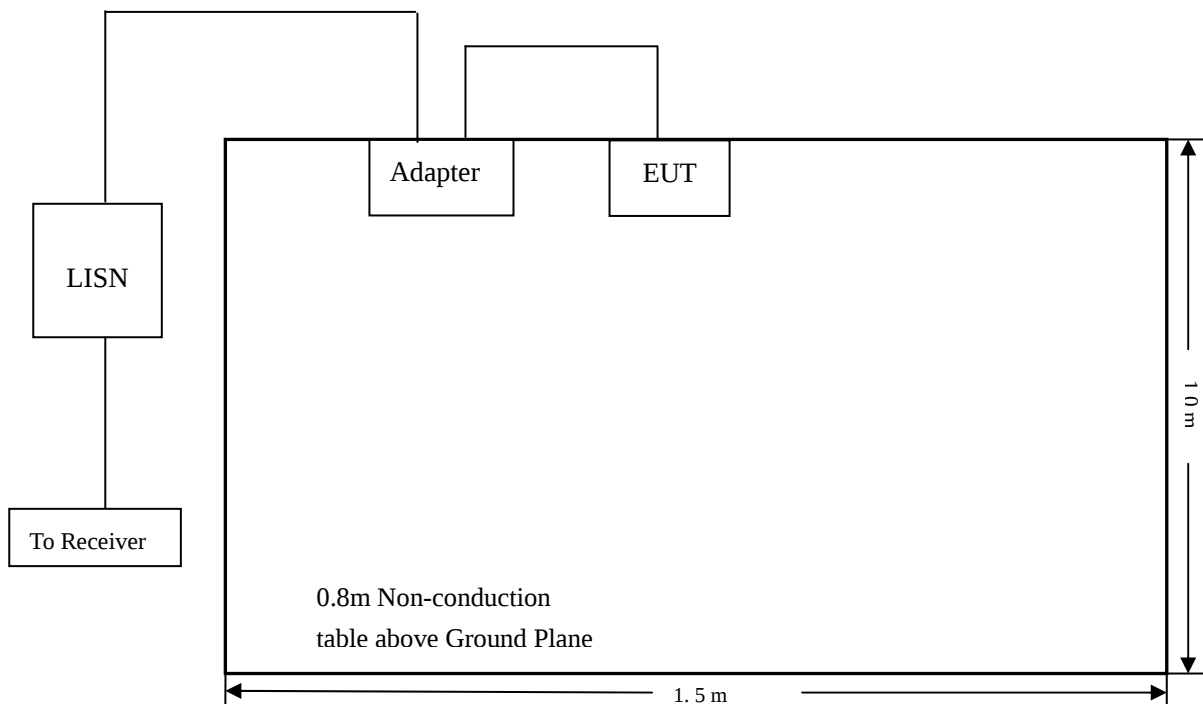
9.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.207 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

9.4 Basic Test Setup Block Diagram



9.5 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

9.6 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency 150 kHz
Stop Frequency..... 30 MHz
Sweep Speed Auto
IF Bandwidth..... 10 kHz
Quasi-Peak Adapter Bandwidth 9 kHz
Quasi-Peak Adapter Mode Normal

9.7 Summary of Test Results/Plots

According to the data in section 3.8, the EUT complied with the FCC Part 15.207 Conducted margin for a Class B device, with the *worst* margin reading of:

-3.33 dB at 0.198 MHz in the Line mode, Ave detector, 0.15-30MHz

9.8 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

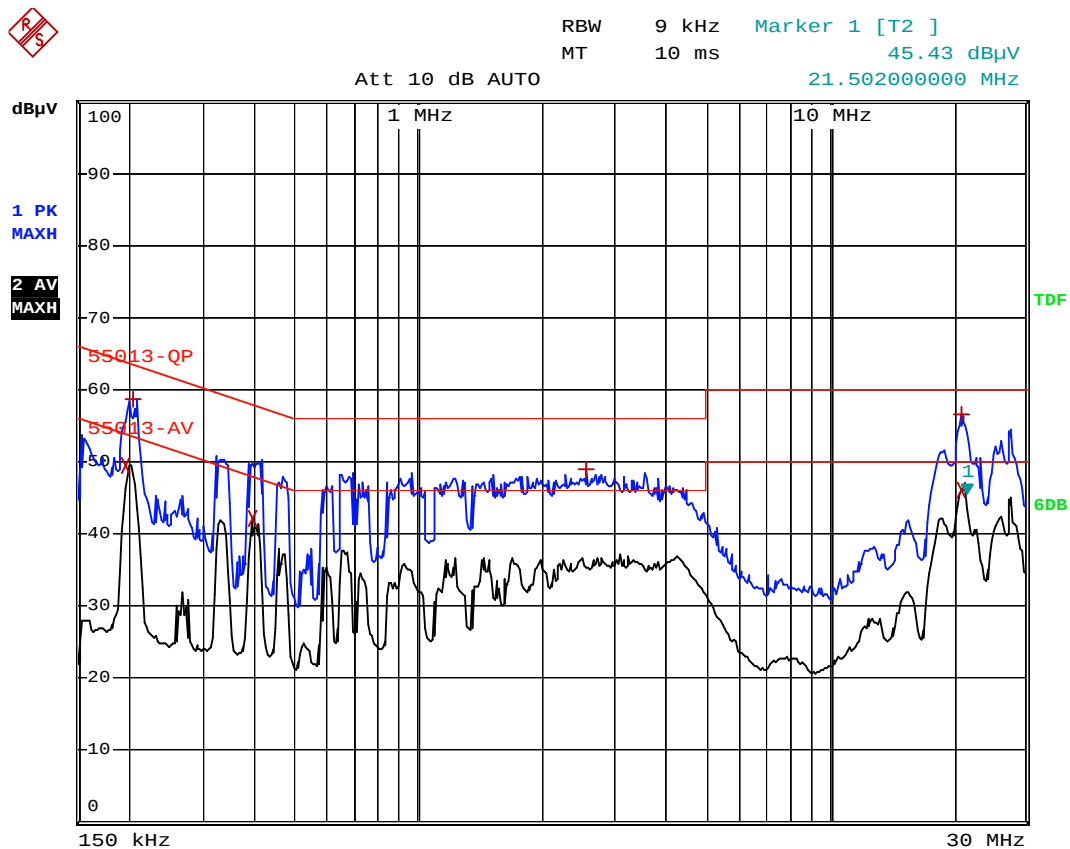
EUT:AS206C HDMI Dongle

Tested Model:AS206C

Operating Condition:Transmitting

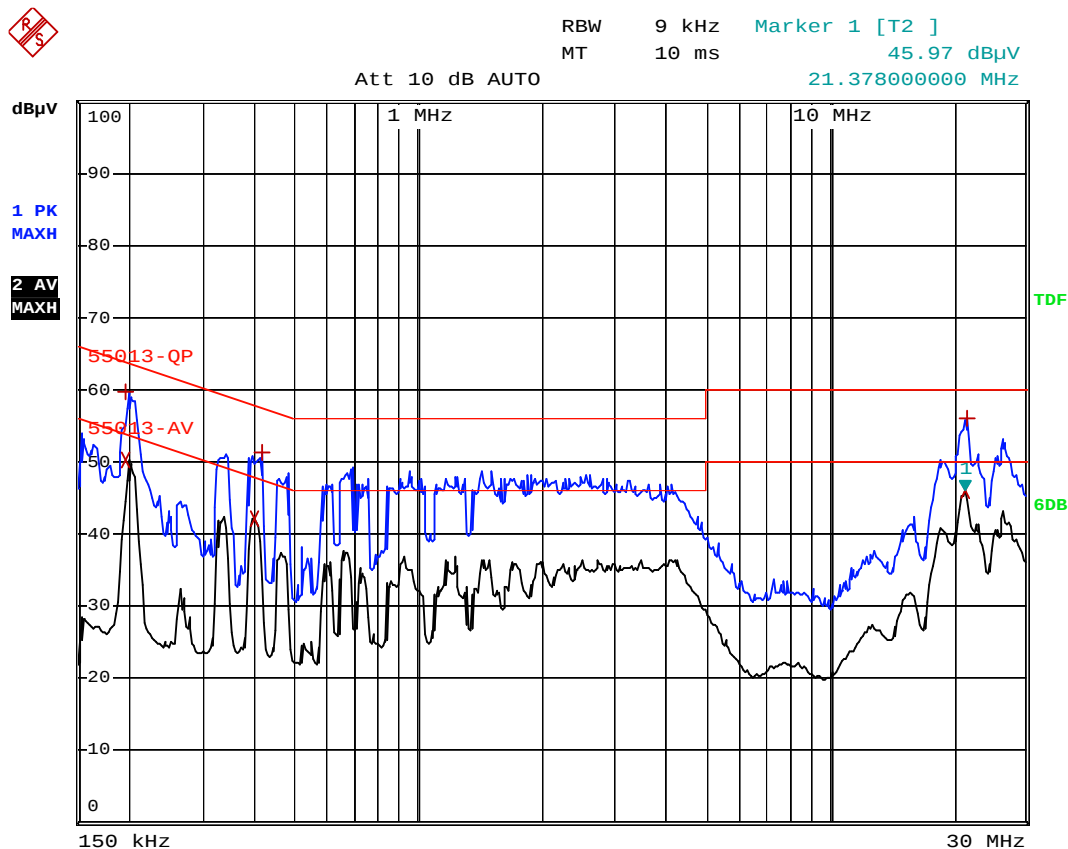
Comment:AC 230V/50Hz, DC 5V USB Adapter

Test Specification:Neutral



EDIT PEAK LIST (Prescan Results)			
Trace1:	55013-QP		
Trace2:	55013-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	198 kHz	49.54	-4.15
1 Max Peak	206 kHz	58.77	-4.59
2 Average	394 kHz	42.03	-5.93
1 Max Peak	2.55 MHz	48.97	-7.02
1 Max Peak	20.938 MHz	56.62	-3.37
2 Average	20.998 MHz	46.13	-3.86

Test Specification: Live



EDIT PEAK LIST (Prescan Results)

Trace1:	55013-QP		
Trace2:	55013-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
1 Max Peak	198 kHz	59.59	-4.09
2 Average	198 kHz	50.35	-3.33
2 Average	398 kHz	42.07	-5.82
1 Max Peak	414 kHz	51.30	-6.25
2 Average	21.378 MHz	45.97	-4.03
1 Max Peak	21.574 MHz	55.95	-4.04

***** END OF REPORT *****