

TEST REPORT

Reference No..... : WTH21X08091780W-2
FCC ID : XOMQ50S218-U-A-I
Applicant : SHENZHEN QIYUE OPTRONICS COMPANY LIMITED
Address..... : Flat3,Tower 3, Excellence Meilin Center Plaza, Zhongkang Road 128,
Shangmeilin, Futian District, Shenzhen , China
Product Name : 50" SMART 4K UHD TV
Test Model. : Q50S218-U-A-I
Standards : FCC Part 15.247
Date of Receipt sample : Aug. 31, 2021
Date of Test..... : Aug. 31, 2021 to Sept. 09, 2021
Date of Issue : Sept. 09, 2021
Test Result..... : **Pass**

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:

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Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road,
Block 70 Bao'an District, Shenzhen, Guangdong, China

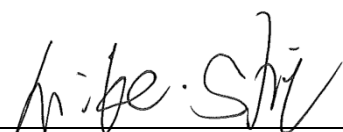
Tel.: +86-755-33663308

Fax.: +86-755-33663309

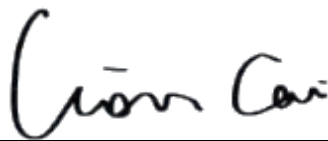
Tested by:

Reviewed By:

Approved & Authorized By:



Mike Shi / Project Engineer



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Silin Chen / Manager

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Report version

Version No.	Date of issue	Description
Rev.00	Sept. 09, 2021	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: SHENZHEN QIYUE OPTRONICS COMPANY LIMITED
 Address of applicant: Flat3,Tower 3, Excellence Meilin Center Plaza, Zhongkang Road 128, Shangmeilin, Futian District, Shenzhen , China

Manufacturer: SHENZHEN QIYUE OPTRONICS COMPANY LIMITED
 BRANCH
 Address of manufacturer: A/B/C/D Building, Xitian Industrial Park, Dashuikeng Community,Guanlan Street, Longhua New District, Shenzhen City, China

General Description of EUT	
Product Name:	50" SMART 4K UHD TV
Trade Name:	RCA, PROSCAN, RCA SCENIUM, TECHNICOLOR, SYLVANIA, RCASMA TVIRTUOSO
Model No.:	Q50S218-U-A-I
Adding Model(s):	RWOSQU5050-B, RWOSQU5050,XXXXXXXXXX50XXXXXXXXXXXXXXXXX (Where "X" can be any alphanumeric of A-Z or 0-9 or blank or -, indicates different client)
Rated Voltage:	AC120V/60Hz
<p><i>Note: The test data is gathered from a production sample provided by the manufacturer. The appearance of others models listed in the report is different from main-test model Q50S218-U-A-I, but the circuit and the electronic construction do not change, declared by the manufacturer.</i></p>	

Technical Characteristics of EUT	
Support Standards:	802.11b, 802.11g, 802.11n
Frequency Range:	2412-2462MHz for 802.11b/g/n(HT20) 2422-2452MHz for 802.11n(HT40)
RF Output Power:	Antenna 1:15.37dBm (Conducted) Antenna 2:16.72dBm (Conducted)
Type of Modulation:	DBPSK,BPSK,DQPSK,QPSK,16QAM,64QAM
Quantity of Channels:	11 for 802.11b/g/n(HT20); 7 for 802.11n(HT40)
Channel Separation:	5MHz
Type of Antenna:	Integral
Antenna Gain:	2dBi

1.2 Test Standards

The tests were performed according to following standards:

FCC Rules Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz.

558074 D01 15.247 Meas Guidance v05r02: Guidance for Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating under section 15.247 of the Fcc rules.

662911 D01 Multiple Transmitter Output v02r01: Emissions Testing of Transmitters with Multiple Outputs in the Same Band.

ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.

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 C63.10-2013, KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 662911 D01 Multiple Transmitter Output v02r01

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the Operating Instructions.

1.4 Test Facility

Address of the test laboratory

Laboratory: Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China

FCC – Registration No.: 125990

Waltek Testing Group (Shenzhen) 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. The Designation Number is CN5010, and Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Waltek Testing Group (Shenzhen) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

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, with a duty cycle equal to 100%, and to measure its highest possible emissions level, more detailed description as follows:

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

Test Conditions	
Temperature:	22~25 °C
Relative Humidity:	45~55 %.
ATM Pressure:	1019 mbar

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
AC Cable	1.5	Unshielded	Without Ferrite

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
HDMI	1.5	Shielded	Without Ferrit

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Computer	Dell	9MMJ442	/

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
RF Output Power	Conducted	$\pm 0.42\text{dB}$
Occupied Bandwidth	Conducted	$\pm 1.5\%$
Power Spectral Density	Conducted	$\pm 1.8\text{dB}$
Conducted Spurious Emission	Conducted	$\pm 2.17\text{dB}$
Conducted Emissions	Conducted	9-150kHz $\pm 3.74\text{dB}$
		0.15-30MHz $\pm 3.34\text{dB}$
Transmitter Spurious Emissions	Radiated	30-200MHz $\pm 4.52\text{dB}$
		0.2-1GHz $\pm 5.56\text{dB}$
		1-6GHz $\pm 3.84\text{dB}$
		6-26GHz $\pm 3.92\text{dB}$

1.7 Test Equipment List and Details

No.	Description	Manufacturer	Model	Serial No.	Cal Date	Due. Date
SEMT-1075	Communication Tester	Rohde & Schwarz	CMW500	148650	2021-03-27	2022-03-26
SEMT-1063	GSM Tester	Rohde & Schwarz	CMU200	114403	2021-03-27	2022-03-26
SEMT-1072	Spectrum Analyzer	Agilent	E4407B	MY41440400	2021-03-27	2022-03-26
SEMT-1079	Spectrum Analyzer	Agilent	N9020A	US47140102	2021-03-27	2022-03-26
SEMT-1080	Signal Generator	Agilent	83752A	3610A01453	2021-03-27	2022-03-26
SEMT-1081	Vector Signal Generator	Agilent	N5182A	MY47070202	2021-03-27	2022-03-26
SEMT-1028	Power Divider	Weinschel	1506A	PM204	2021-03-27	2022-03-26
SEMT-1082	Power Divider	RF-Lambda	RFLT4W5M18G	14110400027	2021-03-27	2022-03-26
SEMT-1031	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2021-03-27	2022-03-26
SEMT-1007	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2021-03-27	2022-03-26
SEMT-1008	Amplifier	Agilent	8447F	3113A06717	2021-04-12	2022-04-11
SEMT-1043	Amplifier	C&D	PAP-1G18	2002	2021-04-12	2022-04-11
SEMT-1069	Loop Antenna	Schwarz beck	FMZB 1516	9773	2021-03-19	2023-03-18
SEMT-1068	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2021-03-19	2023-03-18
SEMT-1042	Horn Antenna	ETS	3117	00086197	2021-03-19	2023-03-18
SEMT-1121	Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170582	2021-04-27	2023-04-26
SEMT-1169	Pre-amplifier	Direction Systems Inc.	PAP-2640	14145-14153	2021-04-27	2022-04-26
SEMT-1163	Spectrum Analyzer	Rohde & Schwarz	FSP40	100612	2021-03-27	2022-03-26
SEMT-1166	Power Limiter	Agilent	N9356B	MY45450376	2021-03-27	2022-03-26
SEMT-1076	RF Switcher	Top Precision	RCS03-A2	/	2021-03-19	2023-03-18
SEMT-C001	Cable	Zheng DI	LL142-07-07-10M(A)	/	/	/
SEMT-C002	Cable	Zheng DI	ZT40-2.92J-2.92J-6M	/	/	/
SEMT-C003	Cable	Zheng DI	ZT40-2.92J-2.92J-2.5M	/	/	/
SEMT-C004	Cable	Zheng DI	2M0RFC	/	/	/
SEMT-C005	Cable	Zheng DI	1M0RFC	/	/	/
SEMT-C006	Cable	Zheng DI	1M0RFC	/	/	/

Software List			
Description	Manufacturer	Model	Version
EMI Test Software (Radiated Emission)*	Farad	EZ-EMC	RA-03A1
EMI Test Software (Conducted Emission)*	Farad	EZ-EMC	RA-03A1

*Remark: indicates software version used in the compliance certification testing.

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§15.203; §15.247(b)(4)(i)	Antenna Requirement	Compliant
§15.205	Restricted Band of Operation	Compliant
§15.207(a)	Conducted Emission	Compliant
§15.247(e)	Power Spectral Density	Compliant
§15.247(a)(2)	DTS Bandwidth	Compliant
§15.247(b)(3)	RF Output Power	Compliant
§15.209(a)	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 two integral antennas, fulfill the requirement of this section. And the signals at the antennas are completely uncorrelated.

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 8dBm in any 3kHz band during any time interval of continuous transmission.

4.2 Test Setup Block Diagram



4.3 Test Procedure

According to the KDB 558074 D01 v05r02 Subclause 8.4 and ANSI C63.10-2013 Subclause 11.10.3, such specifications require that the same method as used to determine the conducted output power shall also be used to determine the power spectral density. The test method of power spectral density as below:

- a) Set instrument center frequency to DTS channel center frequency.
- b) Set span to at least 1.5 times the OBW.
- c) Set RBW to: $3\text{kHz} \leq \text{RBW} \leq 100\text{kHz}$.
- d) Set VBW $\geq 3 \times \text{RBW}$.
- e) Detector = power averaging (RMS) or sample detector (when RMS not available).
- f) Ensure that the number of measurement points in the sweep $\geq 2 \times \text{span}/\text{RBW}$.
- g) Sweep time = auto couple.
- h) Employ trace averaging (RMS) mode over a minimum of 100 traces.
- i) Use the peak marker function to determine the maximum amplitude level.
- j) If measured value exceeds limit, reduce RBW (no less than 3kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span in order to meet the minimum measurement point requirement as the RBW is reduced).

4.4 Summary of Test Results/Plots

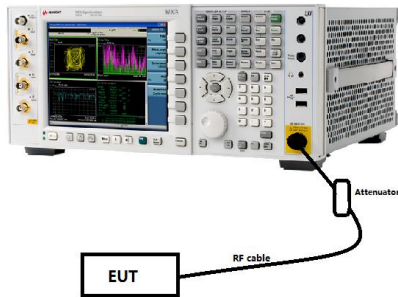
Please refer to Appendix A

5. DTS Bandwidth

5.1 Standard Applicable

According to 15.247(a)(2), systems using digital modulation techniques may operate in the 902–928MHz, 2400–2483.5MHz, and 5725–5850MHz bands. The minimum 6dB bandwidth shall be at least 500kHz.

5.2 Test Setup Block Diagram



5.3 Test Procedure

According to the KDB 558074 D01 v05r02 Subclause 8.2 and ANSI C63.10-2013 Subclause 11.8.1, the test method of DTS Bandwidth as below:

- a) Set RBW = 100kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6dB relative to the maximum level measured in the fundamental emission.

5.4 Summary of Test Results/Plots

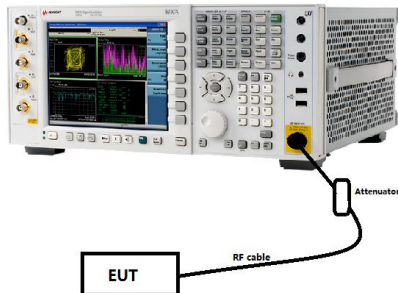
Please refer to Appendix B

6. RF Output Power

6.1 Standard Applicable

According to 15.247(b)(3), for systems using digital modulation in the 902–928MHz, 2400–2483.5MHz, and 5725–5850MHz bands: 1 Watt.

6.2 Test Setup Block Diagram



6.3 Test Procedure

According to the KDB-558074 D01 v05r02 Subclause 8.3.2.2 and ANSI C63.10-2013 Subclause 11.9.2.2, when this option is exercised, the measured power is to be referenced to the OBW rather than the DTS bandwidth

- a) Set span to at least 1.5 times the OBW.
- b) Set RBW = 1-5% of the OBW, not to exceed 1MHz.
- c) Set VBW $\geq 3 \times$ RBW.
- d) Number of points in sweep $\geq 2 \times$ span / RBW. (This gives bin-to-bin spacing \leq RBW/2, so that narrowband signals are not lost between frequency bins.)
- e) Sweep time = auto.
- f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- g) If transmit duty cycle < 98 %, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 %, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run”.
- h) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
- i) Compute power by integrating the spectrum across the OBW of the signal using the instrument’s band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

6.4 Summary of Test Results/Plots

Please refer to Appendix C

7. Field Strength of Spurious Emissions

7.1 Standard Applicable

According to §15.247(d), in any 100kHz 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 20dB below that in the 100kHz 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 30dB instead of 20dB. 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.

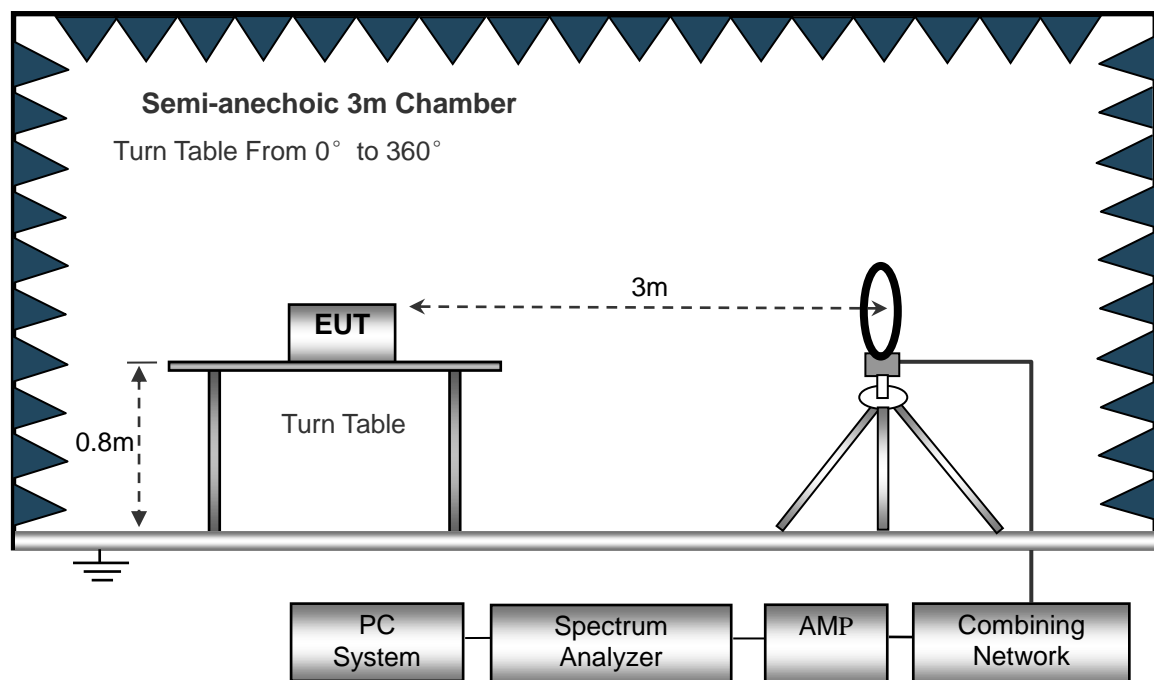
7.2 Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.205 15.247(a) and FCC Part 15.209 Limit.

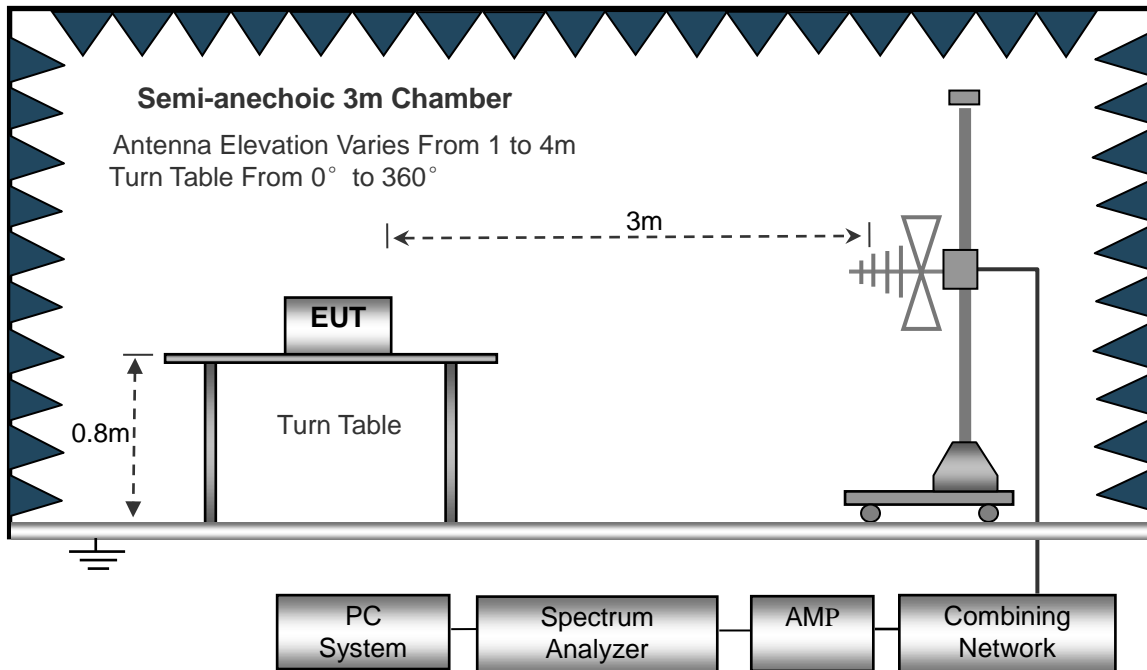
The external I/O cables were draped along the test table and formed a bundle 30 to 40cm long in the middle.

The spacing between the peripherals was 10cm.

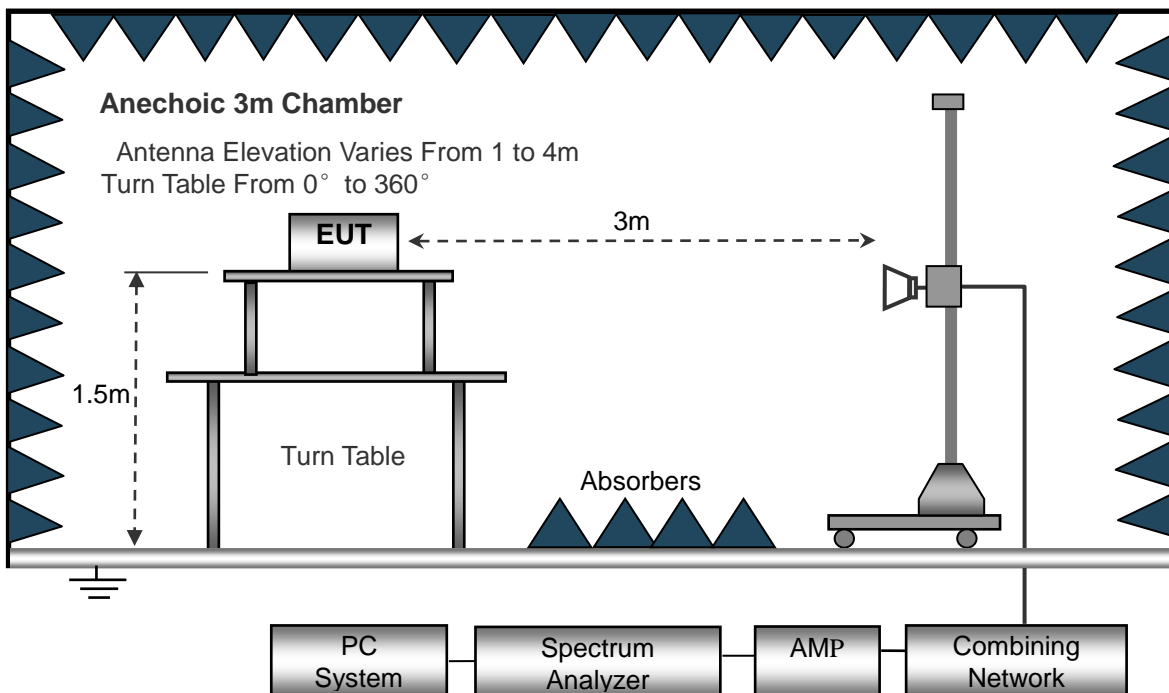
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30MHz to 1GHz.



The test setup for emission measurement above 1GHz.



Frequency :9kHz-30MHz	Frequency :30MHz-1GHz	Frequency :Above 1GHz
RBW=10KHz,	RBW=120KHz,	RBW=1MHz,
VBW =30KHz	VBW=300KHz	VBW=3MHz(Peak), 10Hz(AV)
Sweep time= Auto	Sweep time= Auto	Sweep time= Auto
Trace = max hold	Trace = max hold	Trace = max hold
Detector function = peak	Detector function = peak, QP	Detector function = peak, AV

7.3 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 -6dB μ V means the emission is 6dB μ V below the maximum limit. The equation for margin calculation is as follows:

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

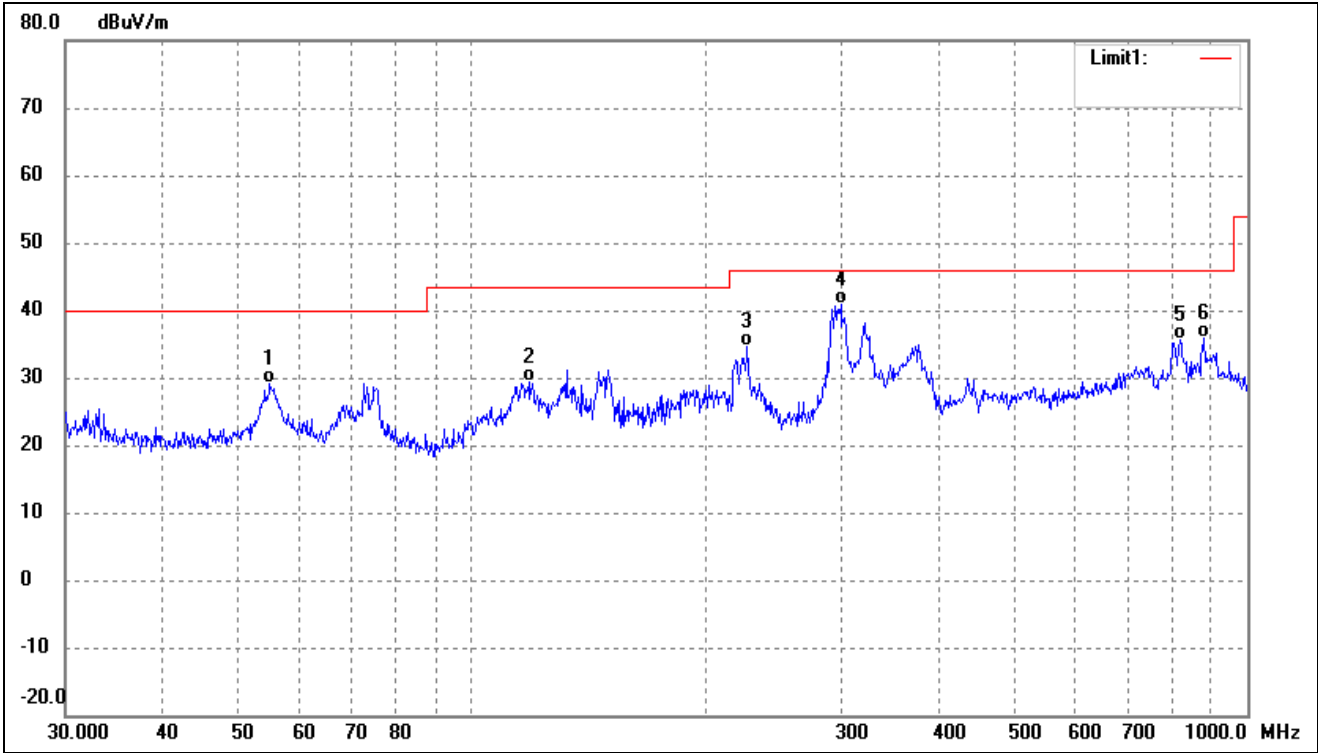
7.4 Summary of Test Results/Plots

Note: 1.This EUT was tested in 3 orthogonal positions and the worst case position data was reported.

All test modes (different data rate and different modulation) are performed, but only the worst case(802.11b_11Mbps) is recorded in this report.

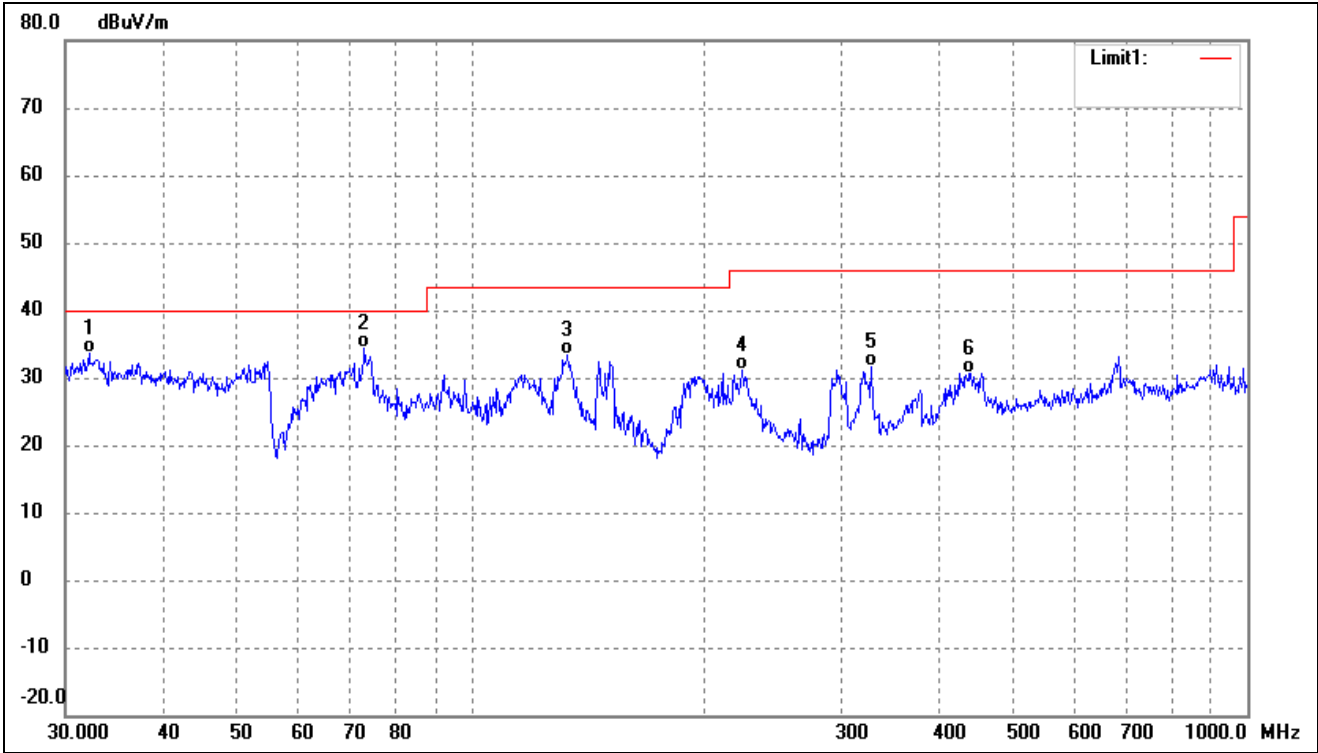
- Spurious Emissions Below 1GHz
- Worst case Antenna 1(worst case)

802.11b_11Mbps(worst case)			
Test Channel	Low	Polarity:	Horizontal



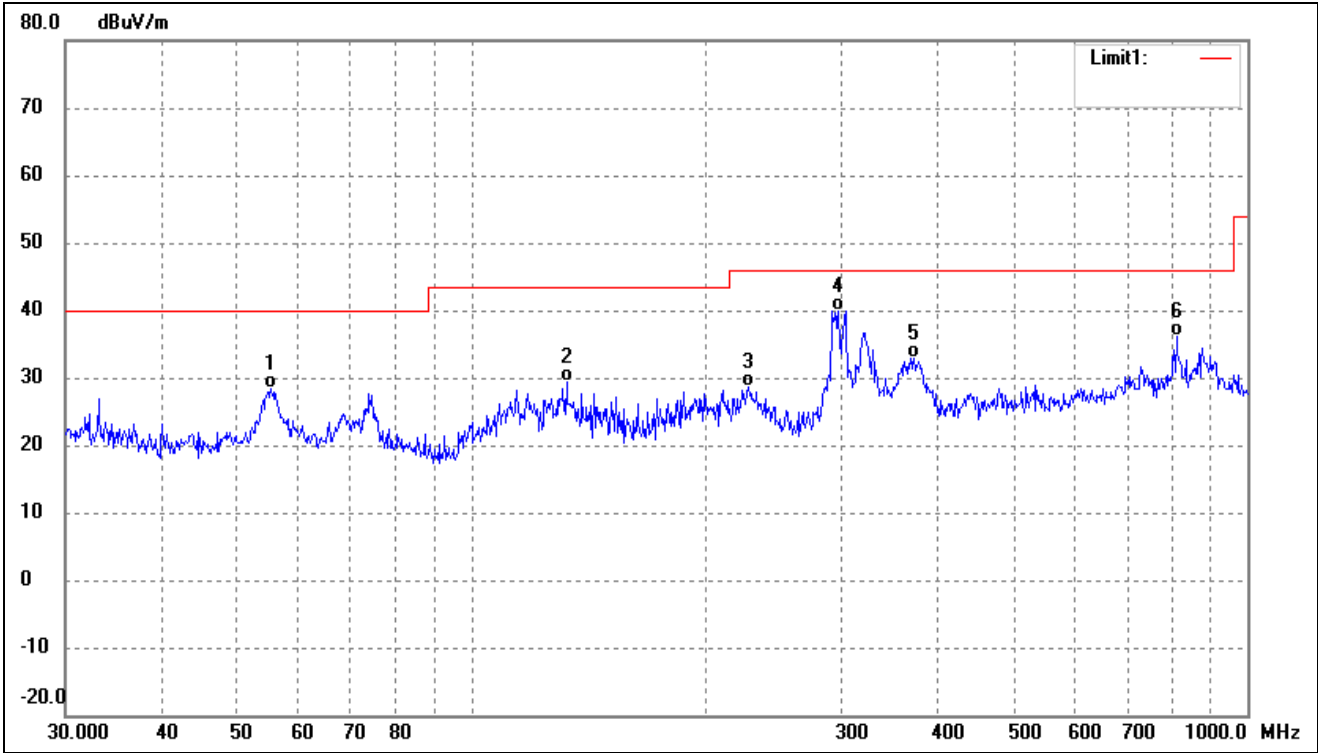
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	55.0274	36.78	-7.69	29.09	40.00	-10.91	-	-	QP
2	118.6014	38.78	-9.50	29.28	43.50	-14.22	-	-	QP
3	226.8936	43.66	-8.96	34.70	46.00	-11.30	-	-	QP
4	299.3158	47.74	-6.98	40.76	46.00	-5.24	-	-	QP
5	818.8341	33.52	2.20	35.72	46.00	-10.28	-	-	QP
6	878.3214	33.18	2.59	35.77	46.00	-10.23	-	-	QP

802.11b_11Mbps(worst case)			
Test Channel	Low	Polarity:	Vertical



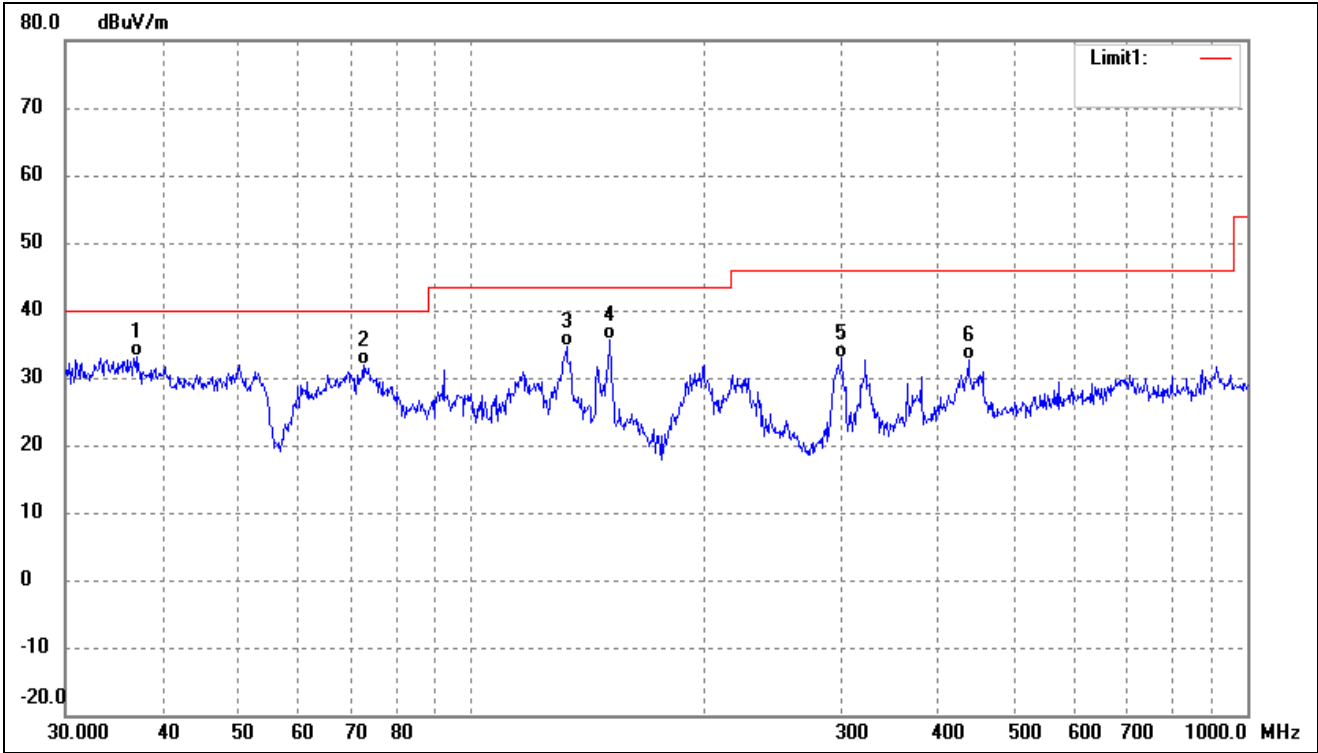
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	32.1795	42.55	-8.92	33.63	40.00	-6.37	-	-	QP
2	72.8466	44.72	-10.34	34.38	40.00	-5.62	-	-	QP
3	133.1511	45.01	-11.69	33.32	43.50	-10.18	-	-	QP
4	223.7334	40.10	-9.05	31.05	46.00	-14.95	-	-	QP
5	327.8873	37.78	-6.08	31.70	46.00	-14.30	-	-	QP
6	438.6554	33.59	-2.86	30.73	46.00	-15.27	-	-	QP

802.11b_11Mbps(worst case)			
Test Channel	Middle	Polarity:	Horizontal



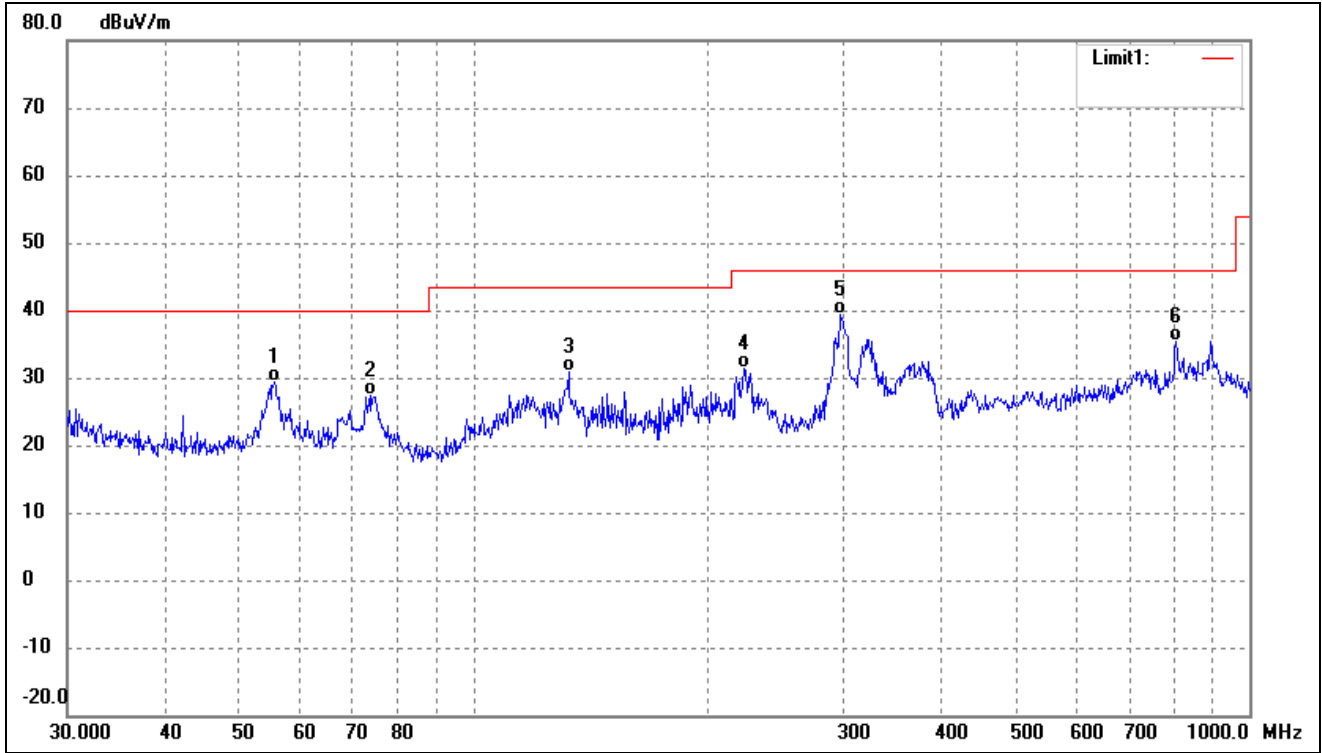
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	55.2207	36.21	-7.73	28.48	40.00	-11.52	-	-	QP
2	132.6850	40.98	-11.66	29.32	43.50	-14.18	-	-	QP
3	227.6906	37.63	-8.94	28.69	46.00	-17.31	-	-	QP
4	297.2241	47.00	-7.03	39.97	46.00	-6.03	-	-	QP
5	372.0045	37.68	-4.74	32.94	46.00	-13.06	-	-	QP
6	810.2654	33.87	2.16	36.03	46.00	-9.97	-	-	QP

802.11b_11Mbps(worst case)			
Test Channel	Middle	Polarity:	Vertical



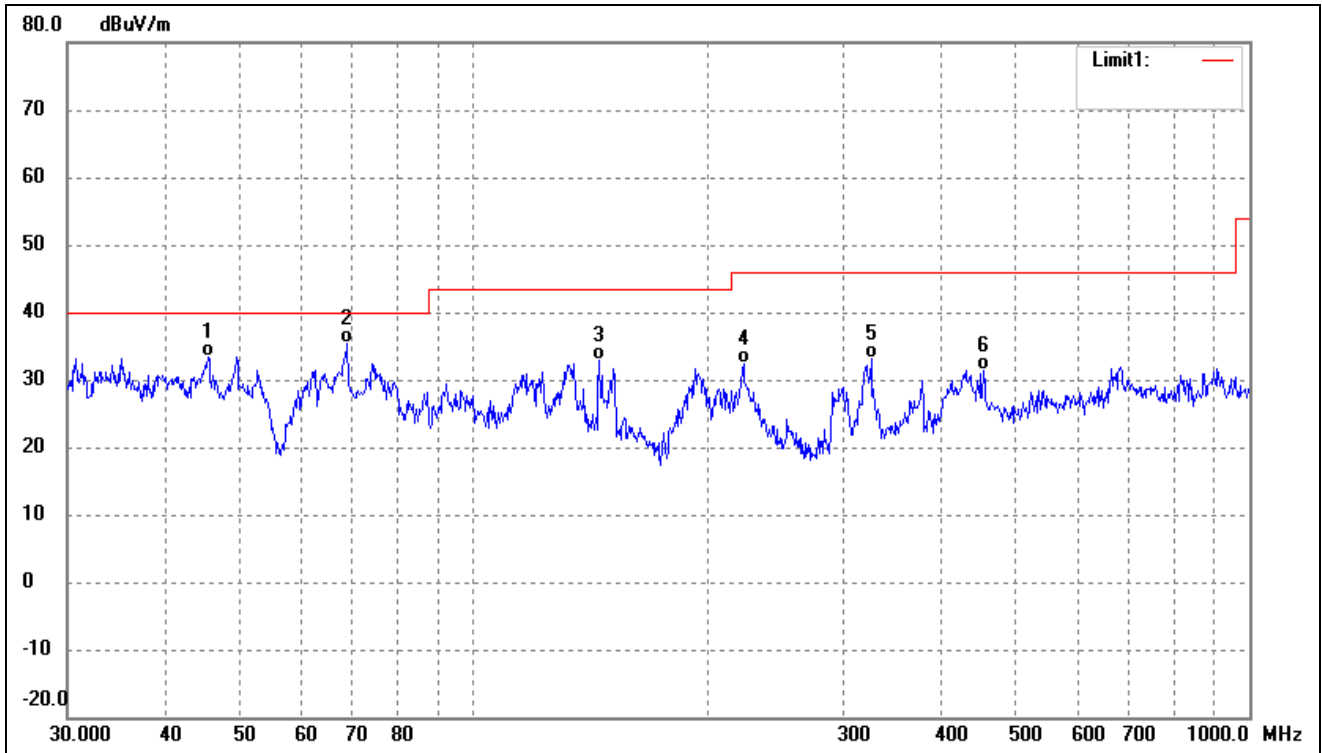
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	37.1550	40.86	-7.70	33.16	40.00	-6.84	-	-	QP
2	72.5917	42.22	-10.31	31.91	40.00	-8.09	-	-	QP
3	132.6850	46.25	-11.66	34.59	43.50	-8.91	-	-	QP
4	151.0666	48.18	-12.56	35.62	43.50	-7.88	-	-	QP
5	300.3673	39.91	-6.95	32.96	46.00	-13.04	-	-	QP
6	437.1199	35.63	-2.90	32.73	46.00	-13.27	-	-	QP

802.11b_11Mbps(worst case)			
Test Channel	High	Polarity:	Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	55.4147	37.22	-7.75	29.47	40.00	-10.53	-	-	QP
2	73.6170	37.68	-10.38	27.30	40.00	-12.70	-	-	QP
3	132.6850	42.51	-11.66	30.85	43.50	-12.65	-	-	QP
4	222.9502	40.57	-9.07	31.50	46.00	-14.50	-	-	QP
5	297.2241	46.38	-7.03	39.35	46.00	-6.65	-	-	QP
6	804.6028	33.15	2.12	35.27	46.00	-10.73	-	-	QP

802.11b_11Mbps(worst case)			
Test Channel	High	Polarity:	Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	45.5348	40.38	-6.98	33.40	40.00	-6.60	-	-	QP
2	68.8721	45.25	-9.97	35.28	40.00	-4.72	-	-	QP
3	145.3506	45.32	-12.44	32.88	43.50	-10.62	-	-	QP
4	222.9502	41.52	-9.07	32.45	46.00	-13.55	-	-	QP
5	325.5958	39.23	-6.17	33.06	46.00	-12.94	-	-	QP
6	454.3100	33.87	-2.45	31.42	46.00	-14.58	-	-	QP

Remark: '-' Means' the test Degree and Height are not recorded by the test software and only show the worst case in the test report.

- Spurious Emissions Above 1GHz
- Test Mode: 802.11b_11Mbps(worst case)
- Antenna 1

Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Polar H/V	Detector
Low Channel-2412MHz							
4824.000	59.76	-3.86	55.90	74	-18.10	H	PK
4824.000	43.48	-3.86	39.62	54	-14.38	H	AV
7236.000	58.78	1.10	59.88	74	-14.12	H	PK
7236.000	39.38	1.10	40.48	54	-13.52	H	AV
4824.000	60.38	-3.86	56.52	74	-17.48	V	PK
4824.000	46.07	-3.86	42.21	54	-11.79	V	AV
7236.000	54.35	1.10	55.45	74	-18.55	V	PK
7236.000	38.74	1.10	39.84	54	-14.16	V	AV
Middle Channel-2437MHz							
4874.000	59.60	-3.86	55.74	74	-18.26	H	PK
4874.000	44.40	-3.86	40.54	54	-13.46	H	AV
7311.000	57.83	1.10	58.93	74	-15.07	H	PK
7311.000	39.07	1.10	40.17	54	-13.83	H	AV
4874.000	59.42	-3.86	55.56	74	-18.44	V	PK
4874.000	45.15	-3.86	41.29	54	-12.71	V	AV
7311.000	53.69	1.10	54.79	74	-19.21	V	PK
7311.000	38.67	1.10	39.77	54	-14.23	V	AV
High Channel-2462MHz							
4924.000	60.53	-3.63	56.90	74	-17.10	H	PK
4924.000	43.36	-3.63	39.73	54	-14.27	H	AV
7386.000	56.65	1.62	58.27	74	-15.73	H	PK
7386.000	40.03	1.62	41.65	54	-12.35	H	AV
4924.000	61.11	-3.63	57.48	74	-16.52	V	PK
4924.000	44.50	-3.63	40.87	54	-13.13	V	AV
7386.000	55.88	1.62	57.50	74	-16.50	V	PK
7386.000	40.97	1.62	42.59	54	-11.41	V	AV

➤ Antenna 2

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2412MHz							
4824.000	59.72	-3.86	55.86	74	-18.14	H	PK
4824.000	44.45	-3.86	40.59	54	-13.41	H	AV
7236.000	56.48	1.10	57.58	74	-16.42	H	PK
7236.000	41.20	1.10	42.30	54	-11.70	H	AV
4824.000	60.79	-3.86	56.93	74	-17.07	V	PK
4824.000	42.46	-3.86	38.60	54	-15.40	V	AV
7236.000	59.44	1.10	60.54	74	-13.46	V	PK
7236.000	41.63	1.10	42.73	54	-11.27	V	AV
Middle Channel-2437MHz							
4874.000	61.50	-3.74	57.76	74	-16.24	H	PK
4874.000	42.53	-3.74	38.79	54	-15.21	H	AV
7311.000	56.92	1.47	58.39	74	-15.61	H	PK
7311.000	39.78	1.47	41.25	54	-12.75	H	AV
4874.000	61.63	-3.74	57.89	74	-16.11	V	PK
4874.000	44.22	-3.74	40.48	54	-13.52	V	AV
7311.000	55.28	1.47	56.75	74	-17.25	V	PK
7311.000	41.11	1.47	42.58	54	-11.42	V	AV
High Channel-2462MHz							
4924.000	61.62	-3.63	57.99	74	-16.01	H	PK
4924.000	42.11	-3.63	38.48	54	-15.52	H	AV
7386.000	53.97	1.62	55.59	74	-18.41	H	PK
7386.000	41.06	1.62	42.68	54	-11.32	H	AV
4924.000	60.99	-3.63	57.36	74	-16.64	V	PK
4924.000	45.46	-3.63	41.83	54	-12.17	V	AV
7386.000	53.60	1.62	55.22	74	-18.78	V	PK
7386.000	41.78	1.62	43.40	54	-10.60	V	AV

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

8. Out of Band Emissions

8.1 Standard Applicable

According to §15.247(d), in any 100kHz 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 20dB below that in the 100kHz 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 30dB instead of 20dB. 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 Procedure

According to the KDB 558074D01 v05r02 Subclause 8.4 and ANSI C63.10-2013 Subclause 11.11, the Emissions in nonrestricted frequency bands test method as follows:

- a) Set the center frequency and span to encompass frequency range to be measured.
- b) Set the RBW = 100kHz.
- c) Set the VBW $\geq [3 \times \text{RBW}]$.
- d) Detector = peak.
- e) Sweep time = auto couple.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use the peak marker function to determine the maximum amplitude level.

According to the KDB 558074 D01 v05r02 Subclause 8.5 and ANSI C63.10-2013 Subclause 11.12, the Emissions in restricted frequency bands test method as follows:

A. Radiated emission measurements:

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.

B. Antenna-port conducted measurements

Peak emission levels are measured by setting the instrument as follows:

- a) RBW = as specified in Table 9.
- b) VBW \geq $[3 \times \text{RBW}]$.
- c) Detector = peak.
- d) Sweep time = auto.
- e) Trace mode = max hold.
- f) Allow sweeps to continue until the trace stabilizes. (Note that the required measurement time may be lengthened for low-duty-cycle applications.)

Table 9—RBW as a function of frequency

Frequency	RBW
9 kHz to 150 kHz	200 Hz to 300 Hz
0.15 MHz to 30 MHz	9 kHz to 10 kHz
30 MHz to 1000 MHz	100 kHz to 120 kHz
>1000 MHz	1 MHz

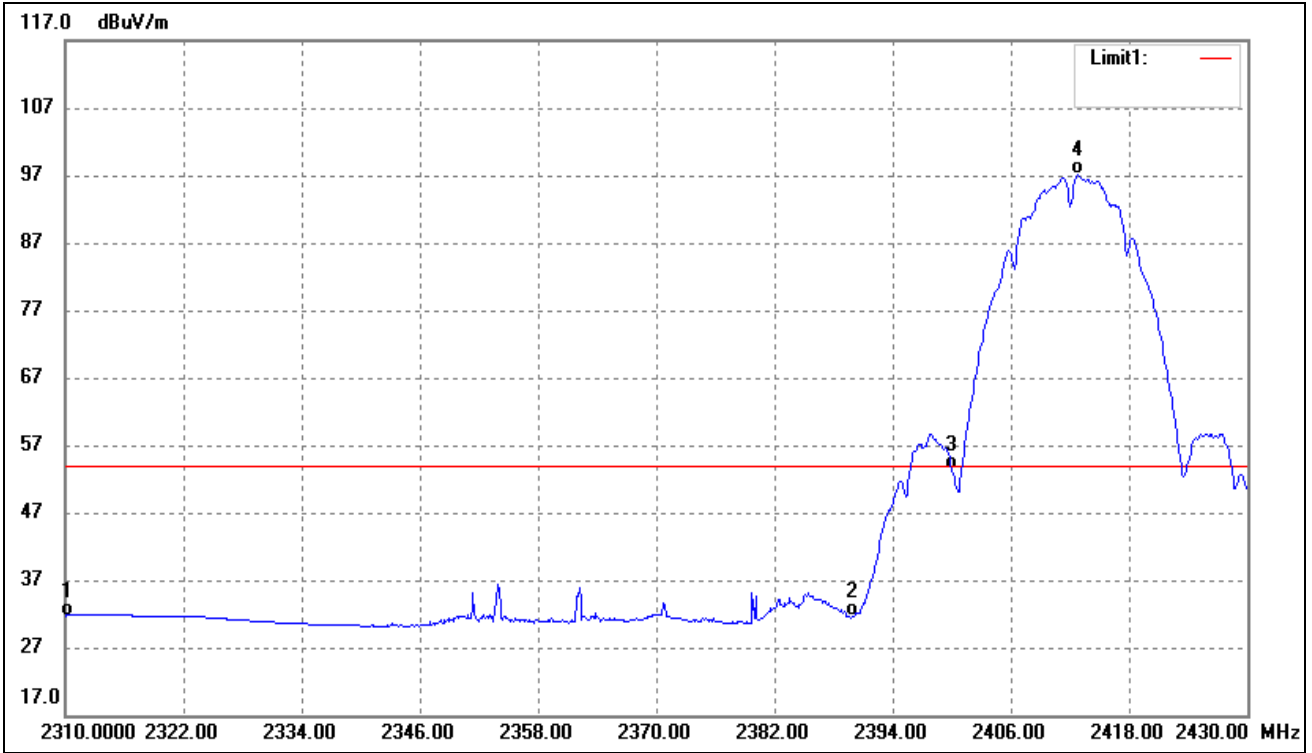
If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements specified in section 8.1. Report the three highest emissions relative to the limit.

8.3 Summary of Test Results/Plots

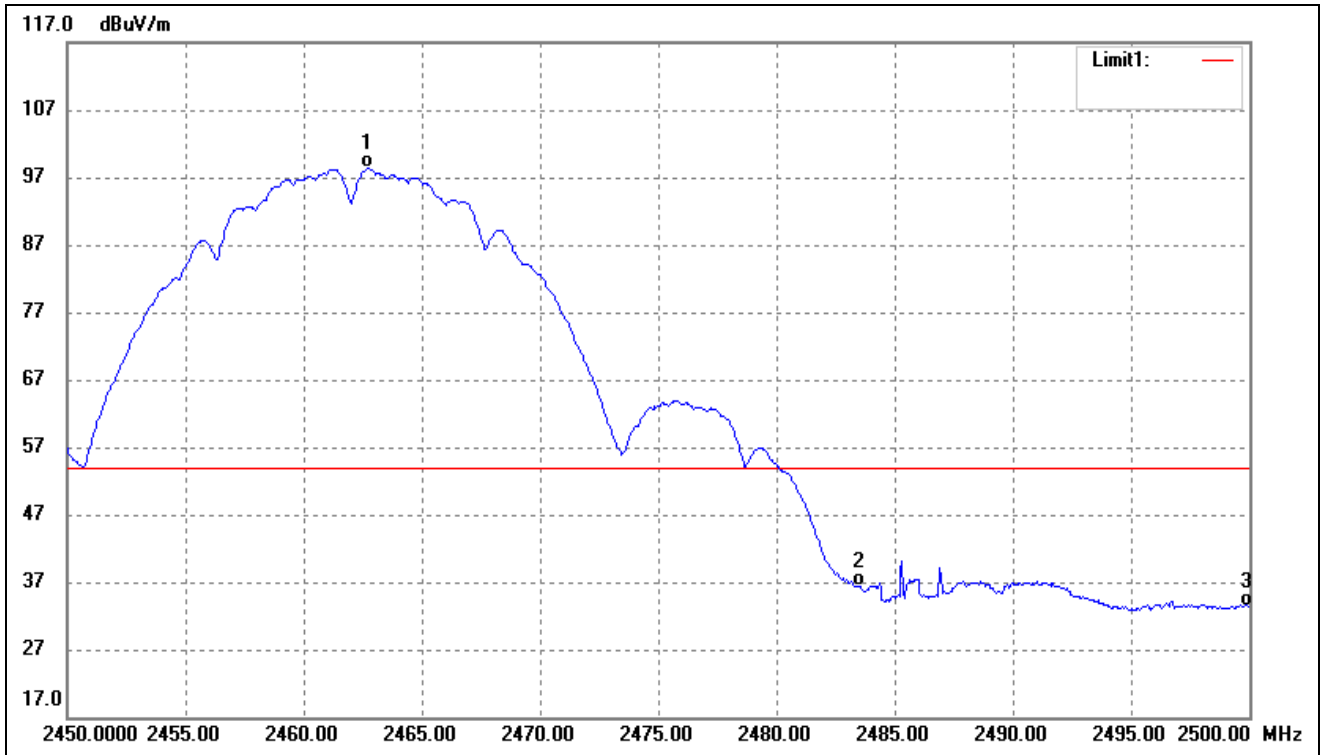
- Radiated test
- Antenna 1(worst case)

802.11b_11Mbps			
Test Channel	Low	Polarity:	Horizontal (worst case)



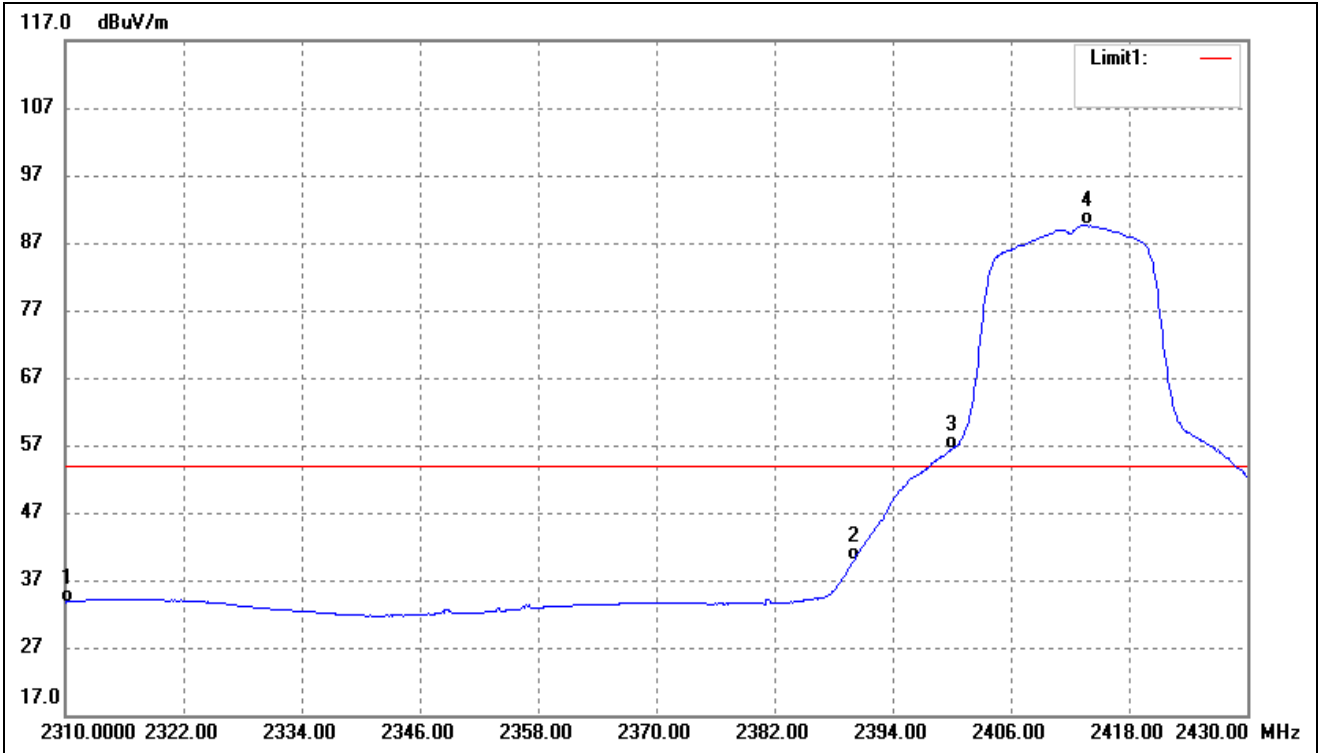
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	42.57	-10.82	31.75	54.00	-22.25	Average Detector
		55.28	-10.82	44.46	74.00	-29.54	Peak Detector
2	2390.000	42.40	-10.70	31.70	54.00	-22.30	Average Detector
		54.13	-10.70	43.43	74.00	-30.57	Peak Detector
3	2400.000	64.01	-10.69	53.32	Delta=43.79dBc		Average Detector
4	2412.840	107.78	-10.67	97.11			Average Detector

802.11b_11Mbps			
Test Channel	High	Polarity:	Horizontal (worst case)



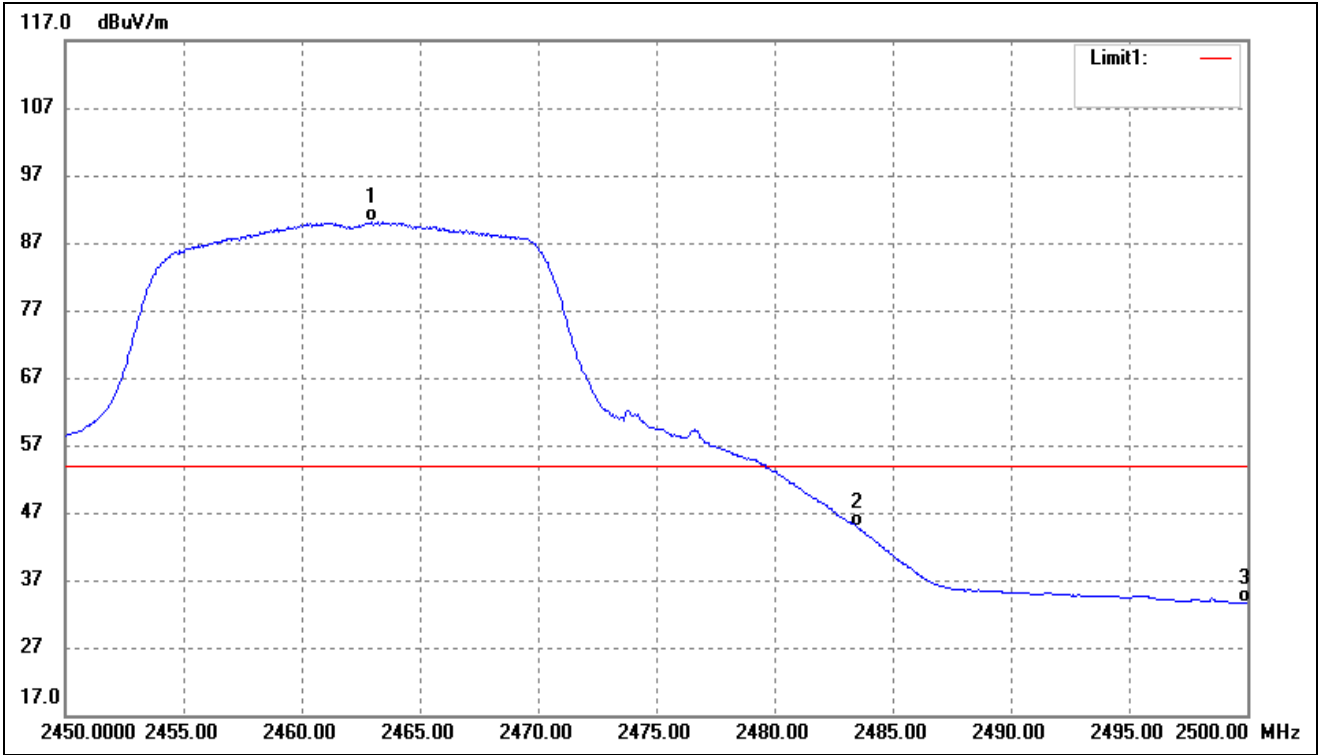
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2462.700	108.87	-10.60	98.27	/	/	Average Detector
	2463.050	113.16	-10.60	102.56	/	/	Peak Detector
2	2483.500	46.94	-10.58	36.36	54.00	-17.64	Average Detector
	2483.500	58.49	-10.58	47.91	74.00	-26.09	Peak Detector
3	2500.000	43.84	-10.55	33.29	54.00	-20.71	Average Detector
	2500.000	54.76	-10.55	44.21	74.00	-29.79	Peak Detector

802.11g_54Mbps			
Test Channel	Low	Polarity:	Horizontal (worst case)



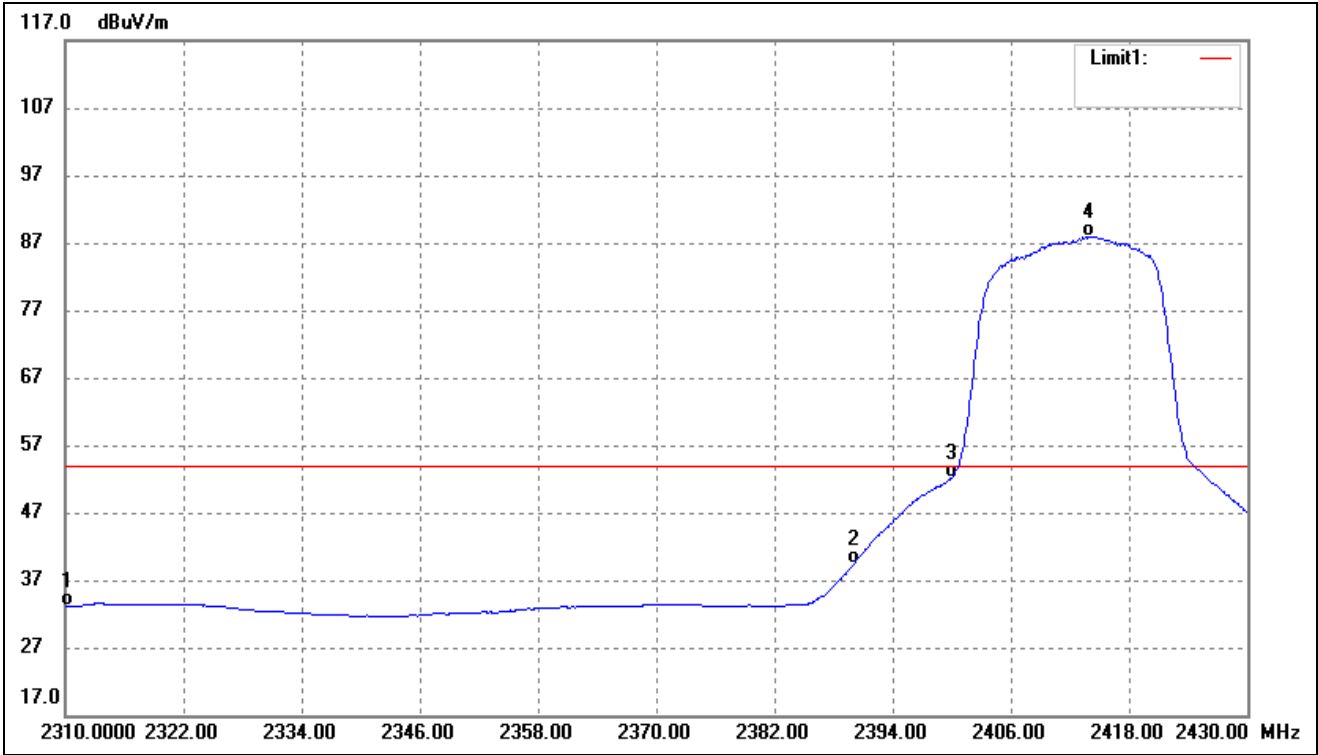
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	44.55	-10.82	33.73	54.00	-20.27	Average Detector
	2310.000	56.55	-10.82	45.73	74.00	-28.27	Peak Detector
2	2390.000	50.56	-10.70	39.86	54.00	-14.14	Average Detector
	2390.000	67.29	-10.70	56.59	74.00	-17.41	Peak Detector
3	2400.000	67.12	-10.69	56.43	Delta=33.19dBc		Average Detector
4	2413.680	100.28	-10.66	89.62			Average Detector

802.11g_54Mbps			
Test Channel	High	Polarity:	Horizontal (worst case)



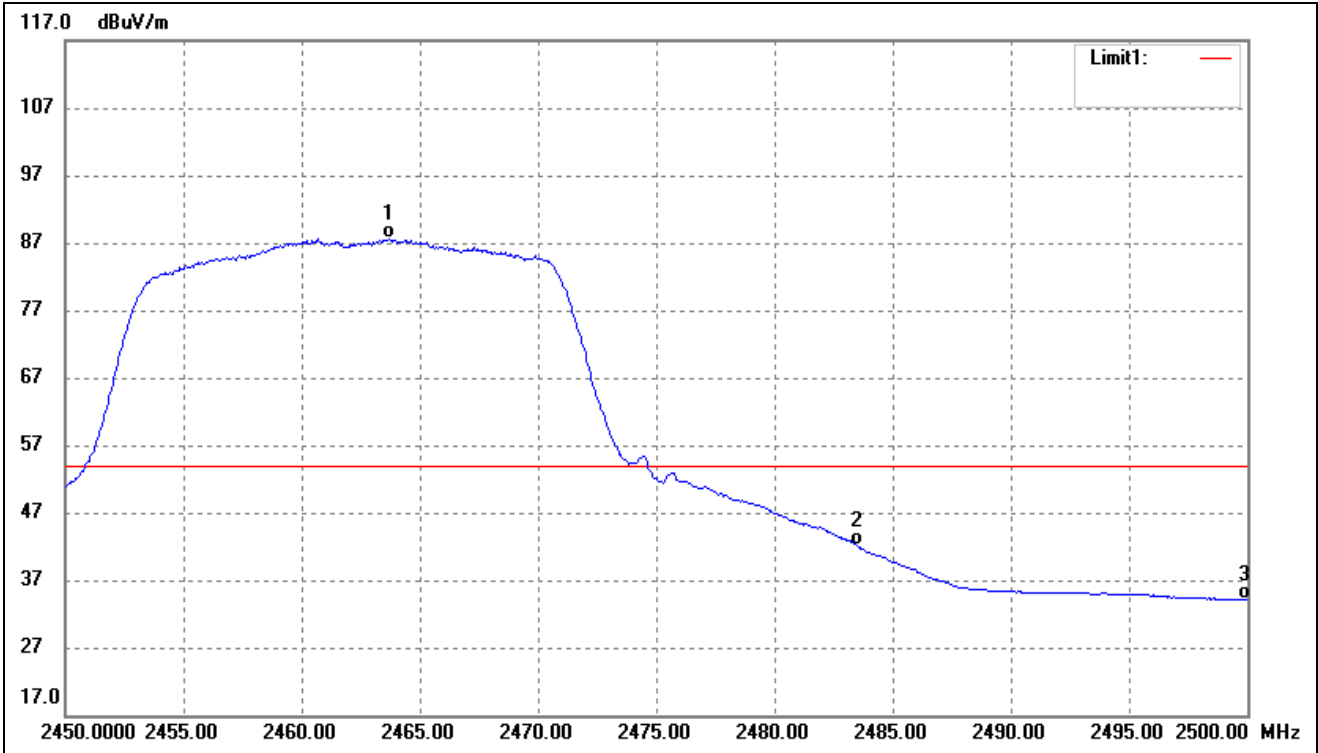
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2462.950	100.68	-10.60	90.08	/	/	Average Detector
	2463.500	112.24	-10.60	101.64	/	/	Peak Detector
2	2483.500	55.35	-10.58	44.77	54.00	-9.23	Average Detector
	2483.500	75.47	-10.58	64.89	74.00	-9.11	Peak Detector
3	2500.000	44.13	-10.55	33.58	54.00	-20.42	Average Detector
	2500.000	57.12	-10.55	46.57	74.00	-27.43	Peak Detector

802.11n-HT20_MCS7			
Test Channel	Low	Polarity:	Horizontal (worst case)



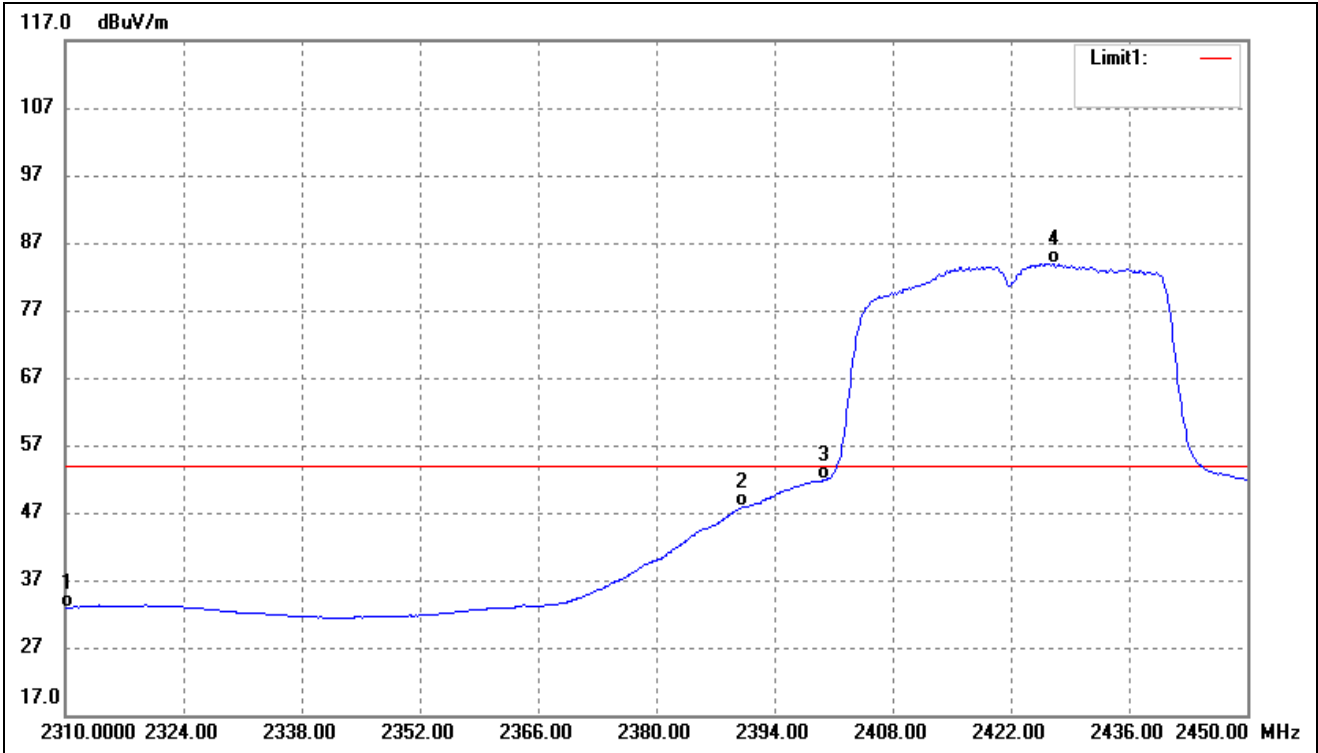
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	43.90	-10.82	33.08	54.00	-20.92	Average Detector
		55.83	-10.82	45.01	74.00	-28.99	Peak Detector
2	2390.000	50.08	-10.70	39.38	54.00	-14.62	Average Detector
		67.87	-10.70	57.17	74.00	-16.83	Peak Detector
3	2400.000	62.93	-10.69	52.24	Delta=35.75dBc		Average Detector
4	2413.920	98.65	-10.66	87.99			Average Detector

802.11n-HT20_MCS7			
Test Channel	High	Polarity:	Horizontal (worst case)



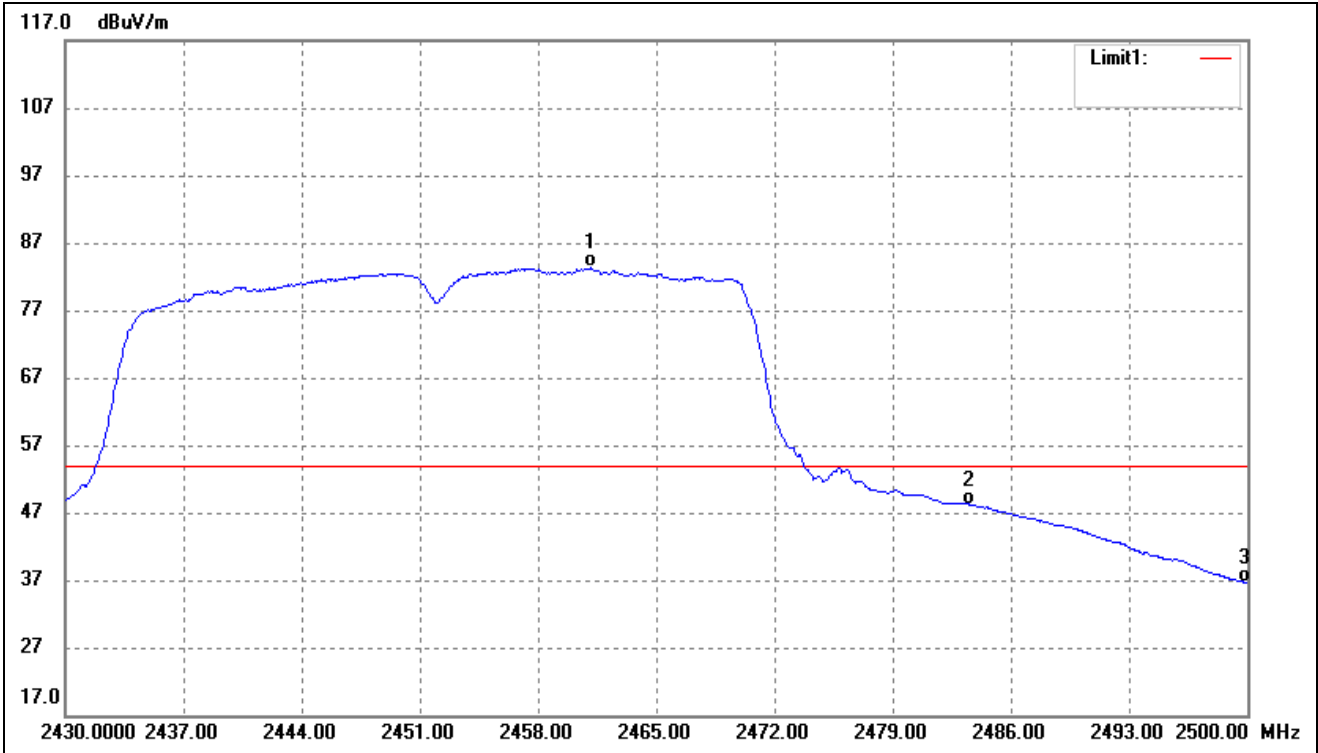
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2463.700	98.24	-10.60	87.64	/	/	Average Detector
	2460.500	110.10	-10.61	99.49	/	/	Peak Detector
2	2483.500	52.64	-10.58	42.06	54.00	-11.94	Average Detector
	2483.500	70.86	-10.58	60.28	74.00	-13.72	Peak Detector
3	2500.000	44.57	-10.55	34.02	54.00	-19.98	Average Detector
	2500.000	55.86	-10.55	45.31	74.00	-28.69	Peak Detector

802.11n-HT40_MCS7			
Test Channel	Low	Polarity:	Horizontal worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	43.71	-10.82	32.89	54.00	-21.11	Average Detector
		56.27	-10.82	45.45	74.00	-28.55	Peak Detector
2	2390.000	58.49	-10.70	47.79	54.00	-6.21	Average Detector
		78.93	-10.70	68.23	74.00	-5.77	Peak Detector
3	2400.000	62.52	-10.69	51.83	Delta=32.12dBc		Average Detector
4	2427.040	94.60	-10.65	83.95			Average Detector

802.11n-HT40_MCS7			
Test Channel	High	Polarity:	Horizontal (worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2461.150	93.87	-10.61	83.26	/	/	Average Detector
	2460.100	106.23	-10.61	95.62	/	/	Peak Detector
2	2483.500	58.78	-10.58	48.20	54.00	-5.80	Average Detector
	2483.500	81.56	-10.58	70.98	74.00	-3.02	Peak Detector
3	2500.000	47.09	-10.55	36.54	54.00	-17.46	Average Detector
	2500.000	63.60	-10.55	53.05	74.00	-20.95	Peak Detector

➤ Conducted test

Please refer to Appendix D

9. Conducted Emissions

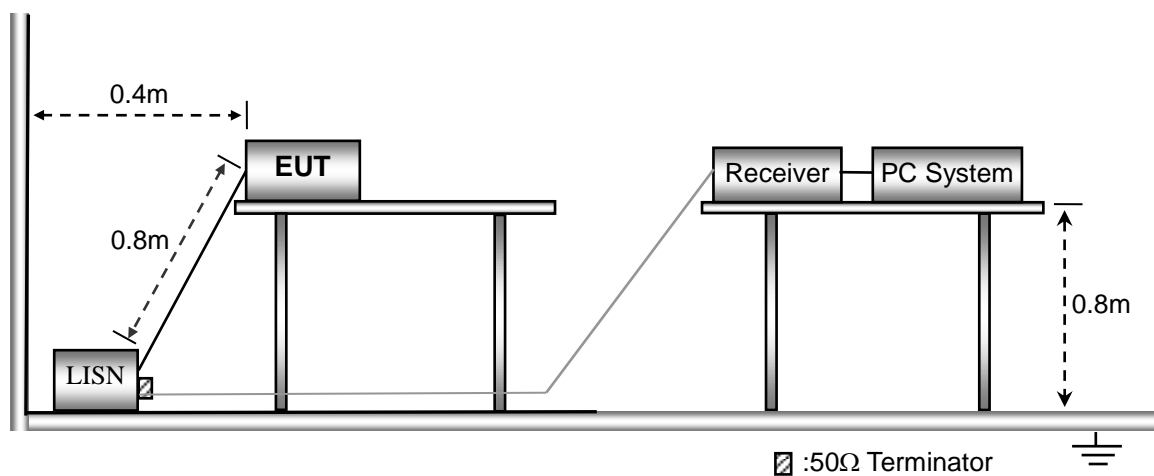
9.1 Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 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 40cm long in the middle.

The spacing between the peripherals was 10cm.

9.2 Basic Test Setup Block Diagram



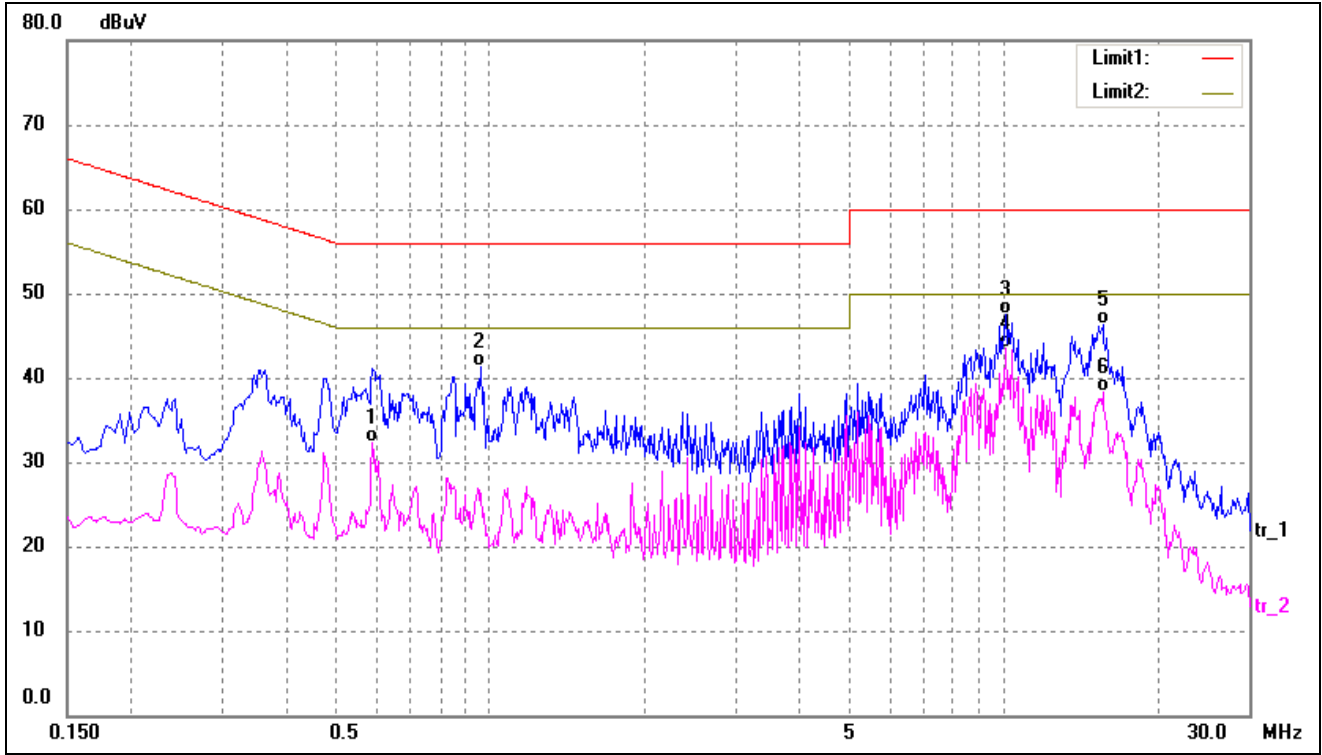
9.3 Test Receiver Setup

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

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

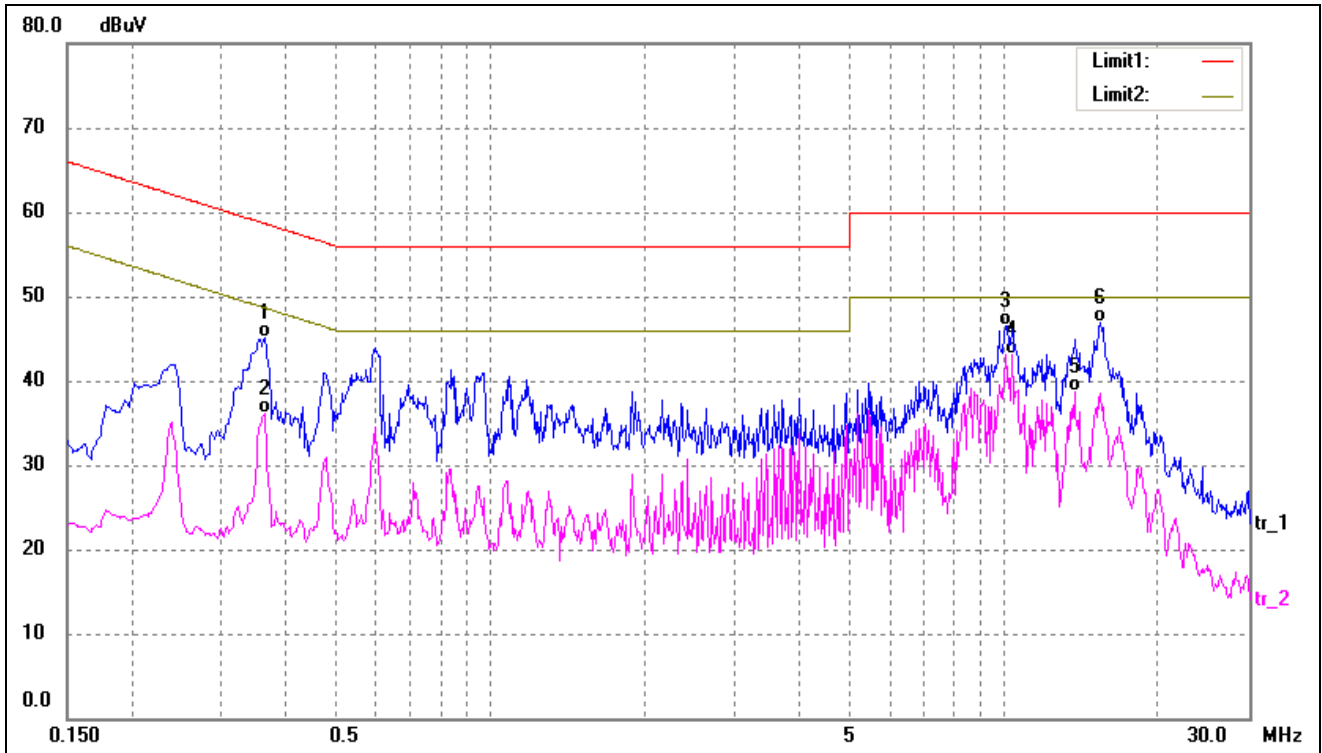
9.4 Summary of Test Results/Plots

Test Mode	Communication	AC120V 60Hz	Polarity:	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.5898	22.12	10.21	32.33	46.00	-13.67	AVG
2	0.9618	31.01	10.21	41.22	56.00	-14.78	QP
3	10.0938	37.22	10.28	47.50	60.00	-12.50	QP
4*	10.0938	33.14	10.28	43.42	50.00	-6.58	AVG
5	15.5700	35.80	10.58	46.38	60.00	-13.62	QP
6	15.5700	27.77	10.58	38.35	50.00	-11.65	AVG

Test Mode	Communication	AC120V 60Hz	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.3620	34.77	10.25	45.02	58.68	-13.66	QP
2	0.3620	25.80	10.25	36.05	48.68	-12.63	AVG
3	10.0820	36.31	10.28	46.59	60.00	-13.41	QP
4*	10.3500	32.79	10.30	43.09	50.00	-6.91	AVG
5	13.7420	28.13	10.51	38.64	50.00	-11.36	AVG
6	15.4060	36.39	10.58	46.97	60.00	-13.03	QP

APPENDIX SUMMARY

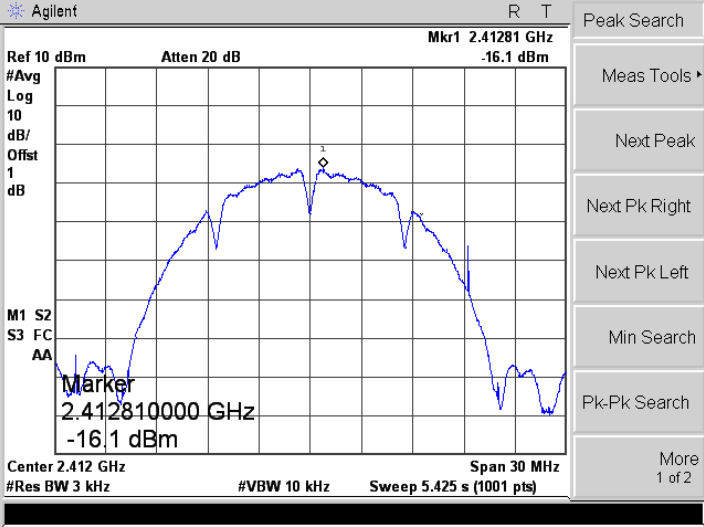
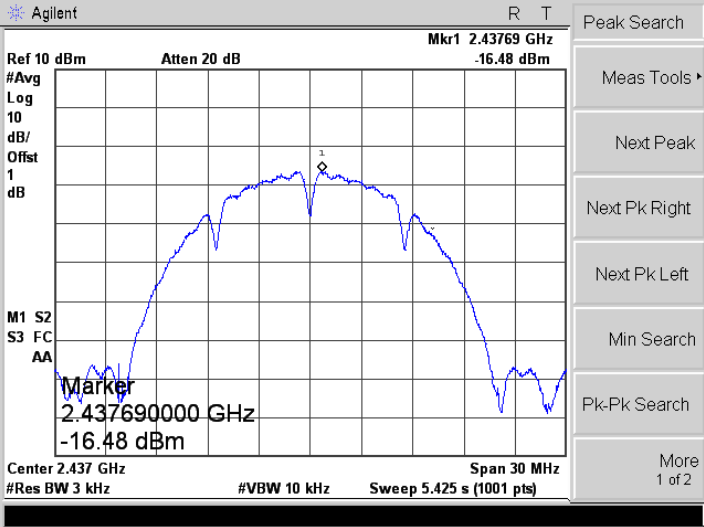
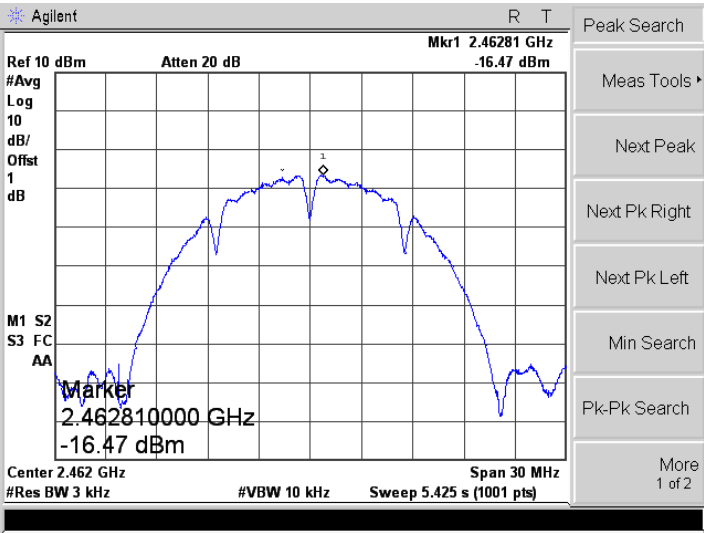
Project No.	WTH21X08091780W	Test Engineer	Gala
Start date	2021/09/06	Finish date	2021/9/22
Temperature	23°C	Humidity	45%
RF specifications	WIFI-2.4G		

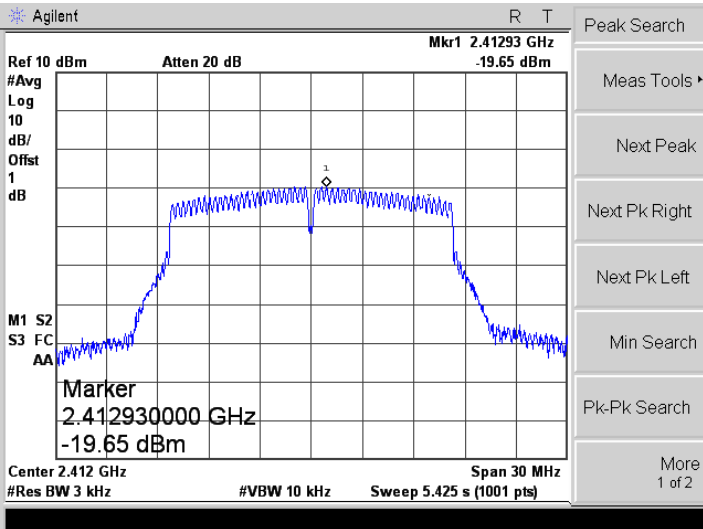
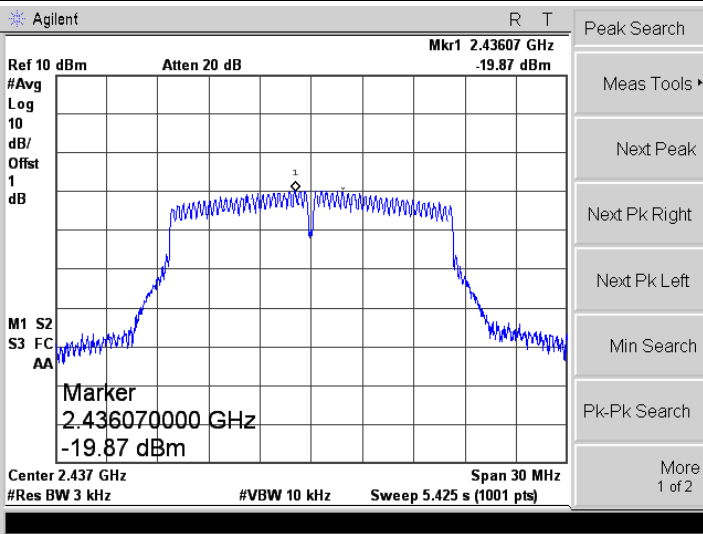
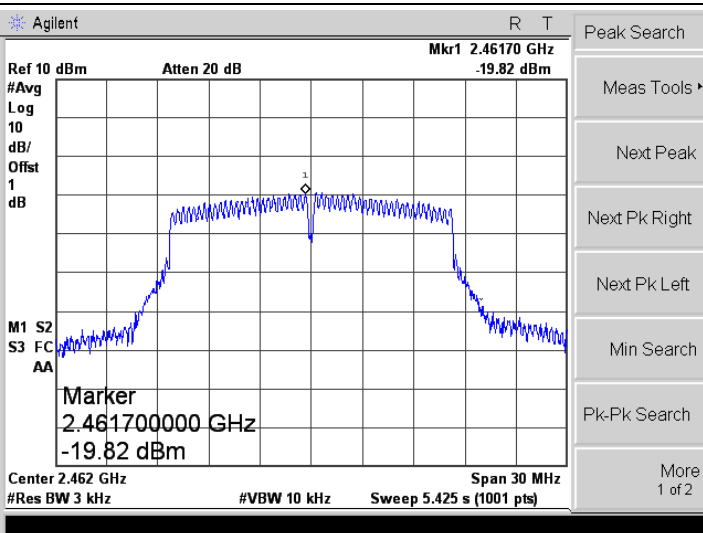
APPENDIX	Description of Test Item	Result
A	Power Spectral Density	Compliant
B	DTS Bandwidth	Compliant
C	RF Output Power	Compliant
D	Conducted Out of Band Emissions	Compliant

APPENDIX A

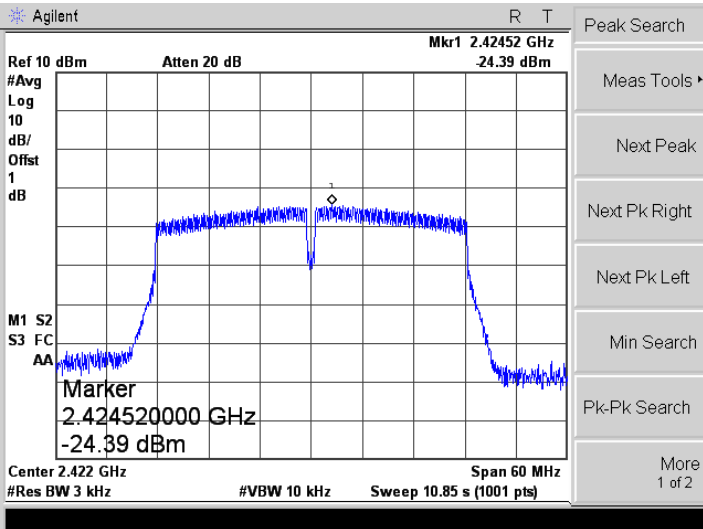
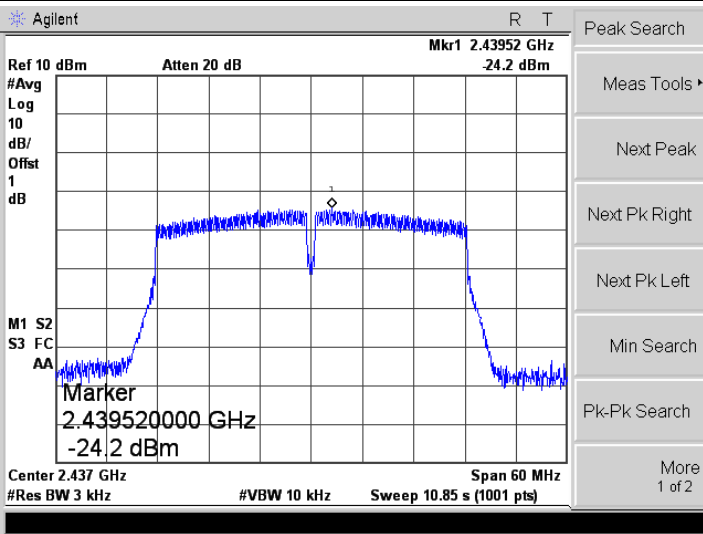
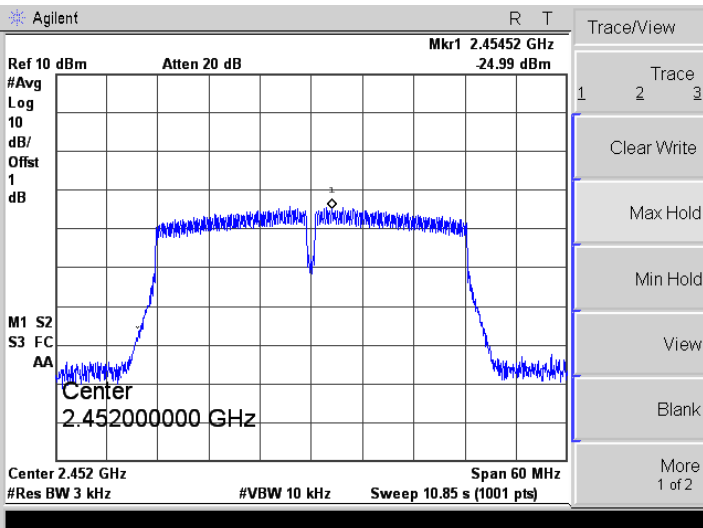
Power Spectral Density					
Test Mode	Test Channel MHz	Test Result(dBm/3kHz)		Total dBm	Limit dBm/3kHz
		Antenna 1	Antenna 2		
802.11b_1Mbps	2412	-16.1	-15.35	/	8
	2437	-16.48	-15.34	/	8
	2462	-16.47	-15.73	/	8
802.11g_6Mbps	2412	-19.65	-18.69	/	8
	2437	-19.87	-18.29	/	8
	2462	-19.82	-18.49	/	8
802.11n-HT20_MCS0	2412	-21.17	-19.74	-17.39	8
	2437	-21.23	-19.98	-17.55	8
	2462	-20.53	-19.22	-16.82	8
802.11n-HT40_MCS0	2422	-24.39	-23.66	-21.00	8
	2437	-24.2	-22.90	-20.49	8
	2452	-24.99	-23.36	-17.39	8

Antenna 1

<p>802.11b-Low</p>	
<p>802.11b-Middle</p>	
<p>802.11b-High</p>	

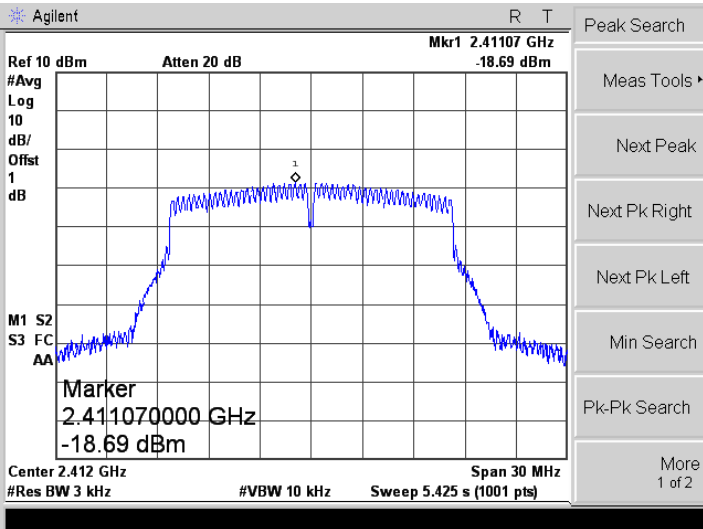
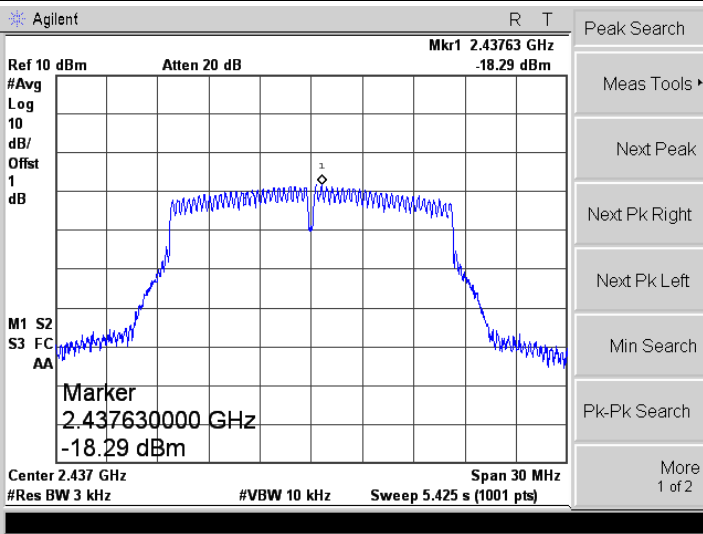
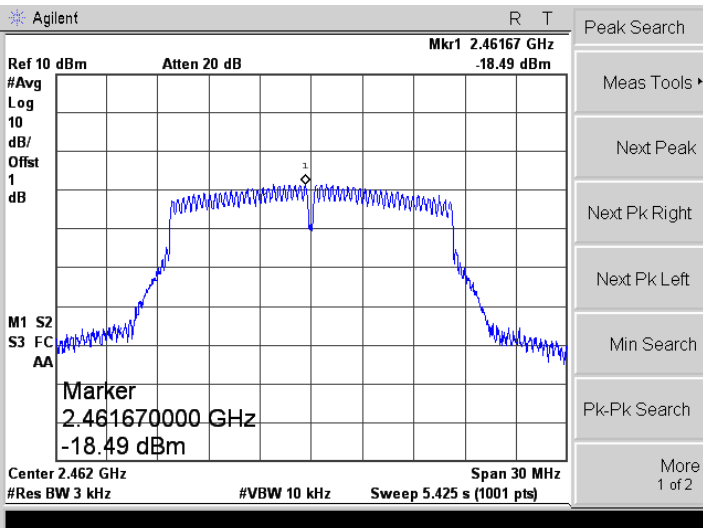
<p>802.11g-Low</p>	
<p>802.11g-Middle</p>	
<p>802.11g-High</p>	

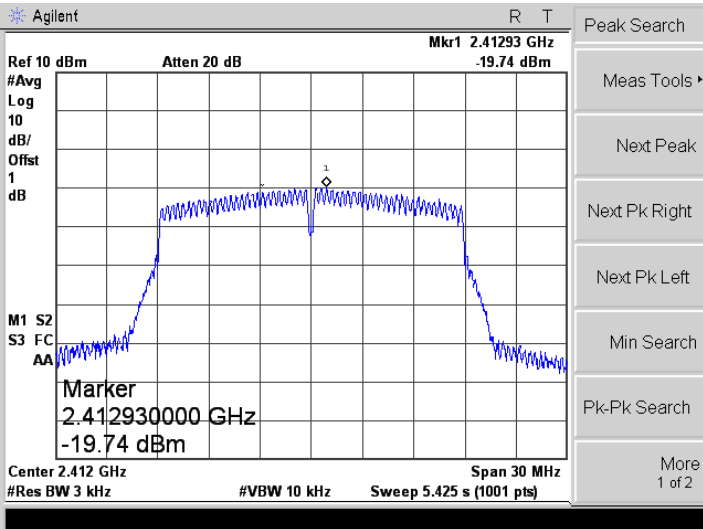
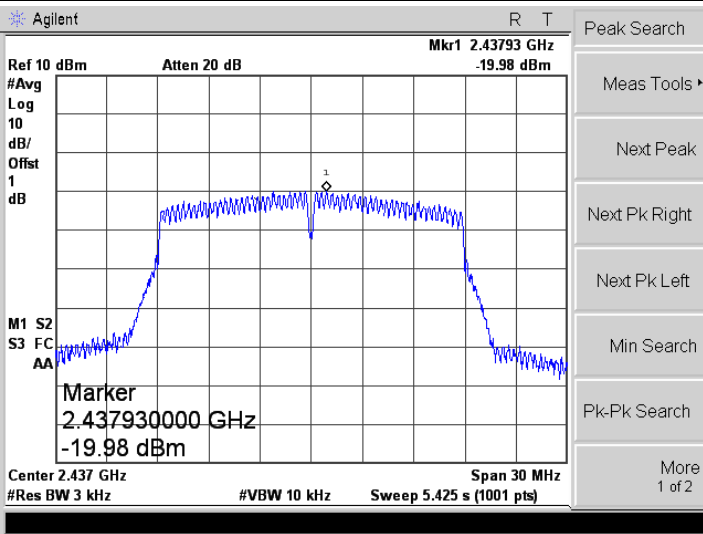
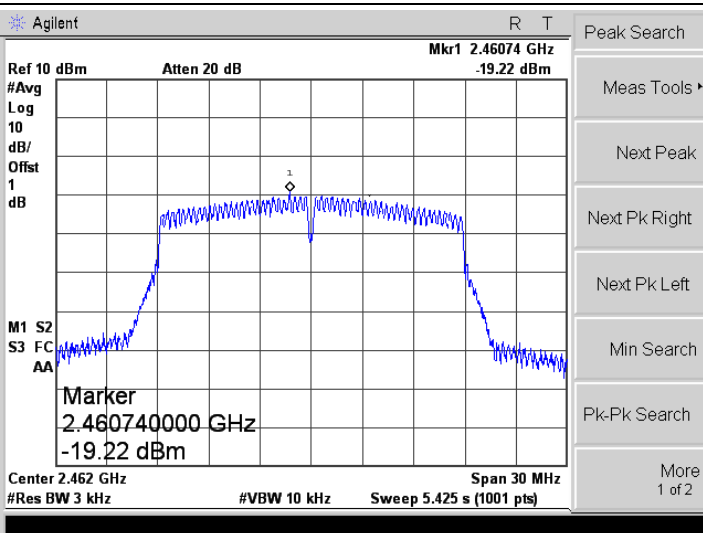
<p>802.11n-HT20-Low</p>	<p>Agilent R T Ref 10 dBm Atten 20 dB Mkr1 2.41074 GHz -21.17 dBm #Avg 10 Log dB/ Offst 1 dB M1 S2 S3 FC AA Marker 2.410740000 GHz -21.17 dBm Center 2.412 GHz Span 30 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 5.425 s (1001 pts)</p>
<p>802.11n-HT20-Middle</p>	<p>Agilent R T Ref 10 dBm Atten 20 dB Mkr1 2.43730 GHz -21.23 dBm #Avg 10 Log dB/ Offst 1 dB M1 S2 S3 FC AA Marker 2.437300000 GHz -21.23 dBm Center 2.437 GHz Span 30 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 5.425 s (1001 pts)</p>
<p>802.11n-HT20-High</p>	<p>Agilent R T Ref 10 dBm Atten 20 dB Mkr1 2.46074 GHz -20.53 dBm #Avg 10 Log dB/ Offst 1 dB M1 S2 S3 FC AA Marker 2.460740000 GHz -20.53 dBm Center 2.462 GHz Span 30 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 5.425 s (1001 pts)</p>

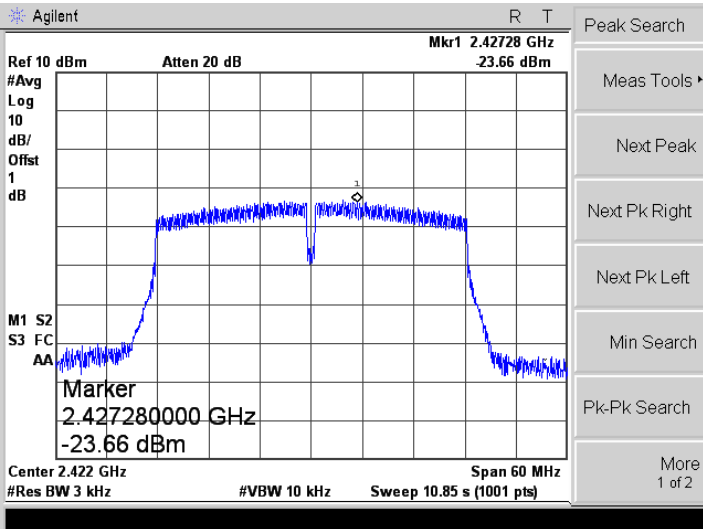
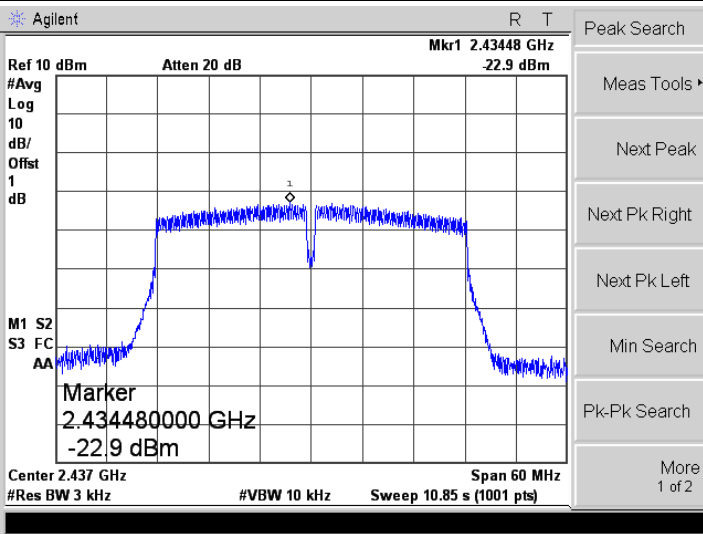
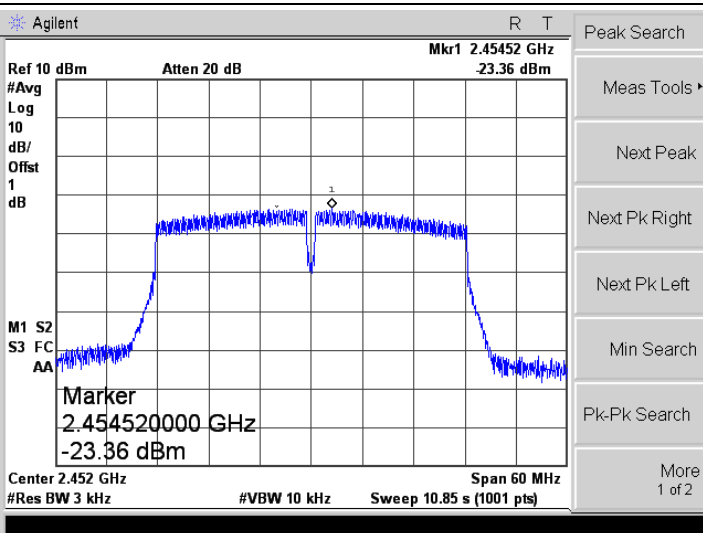
<p>802.11n-HT40-Low</p>	
<p>802.11n-HT40-Middle</p>	
<p>802.11n-HT40-High</p>	

Antenna 2

<p>802.11b-Low</p>	<p>Agilent R T Ref 10 dBm Atten 20 dB Mkr1 2.41272 GHz -15.35 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 2.412720000 GHz -15.35 dBm Center 2.412 GHz Span 30 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 5.425 s (1001 pts)</p>
<p>802.11b-Middle</p>	<p>Agilent R T Ref 10 dBm Atten 20 dB Mkr1 2.43766 GHz -15.34 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Center 2.437 GHz Span 30 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 5.425 s (1001 pts)</p>
<p>802.11b-High</p>	<p>Agilent R T Ref 10 dBm Atten 20 dB Mkr1 2.46107 GHz -15.73 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 2.461070000 GHz -15.73 dBm Center 2.462 GHz Span 30 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 5.425 s (1001 pts)</p>

<p>802.11g-Low</p>	
<p>802.11g-Middle</p>	
<p>802.11g-High</p>	

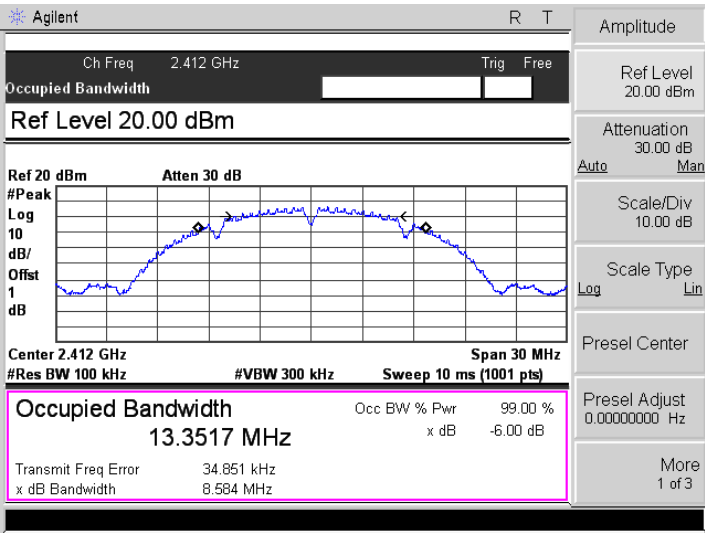
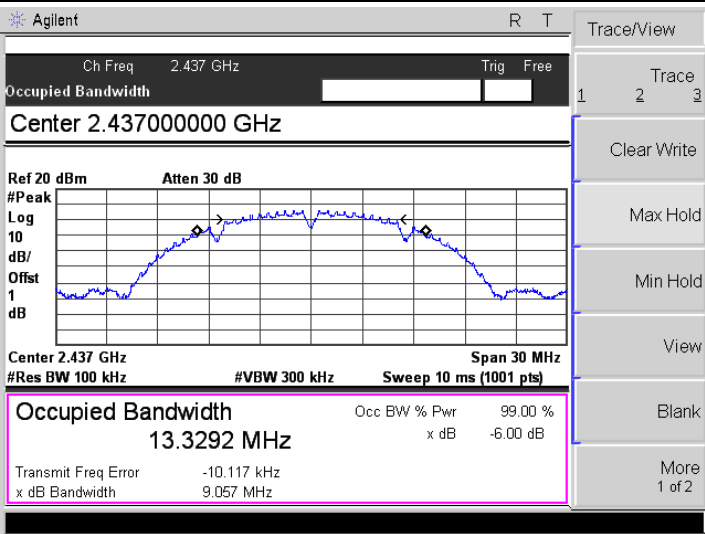
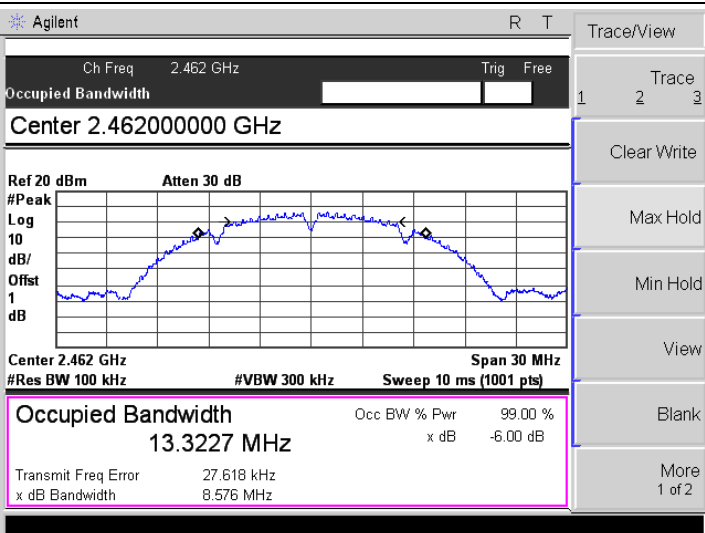
<p>802.11n-HT20-Low</p>	
<p>802.11n-HT20-Middle</p>	
<p>802.11n-HT20-High</p>	

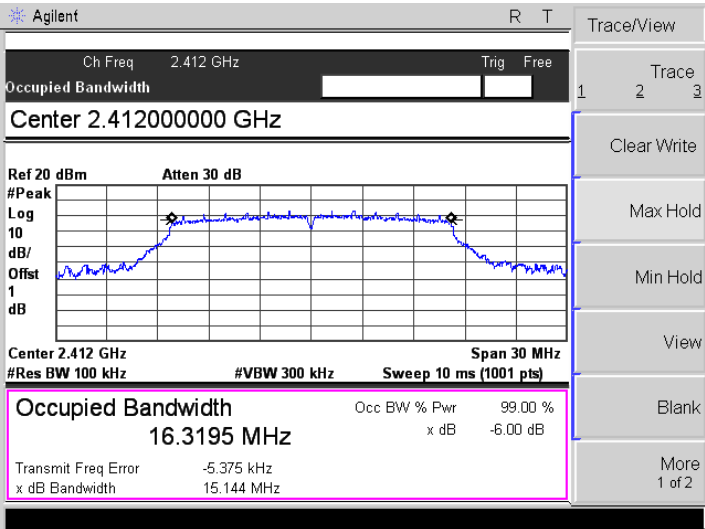
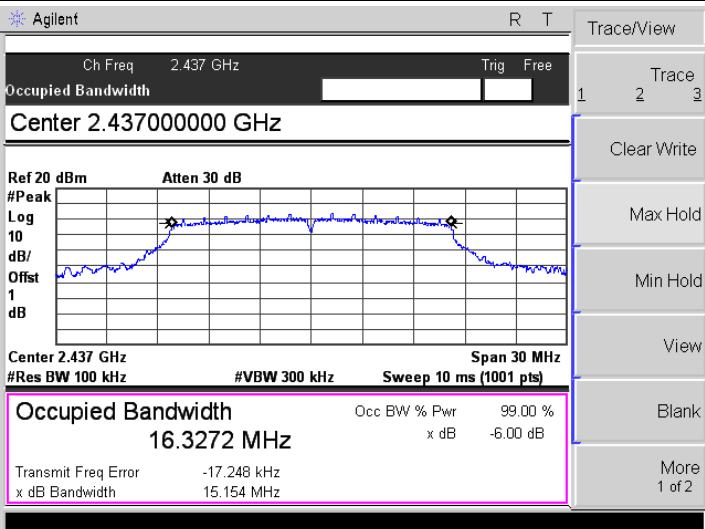
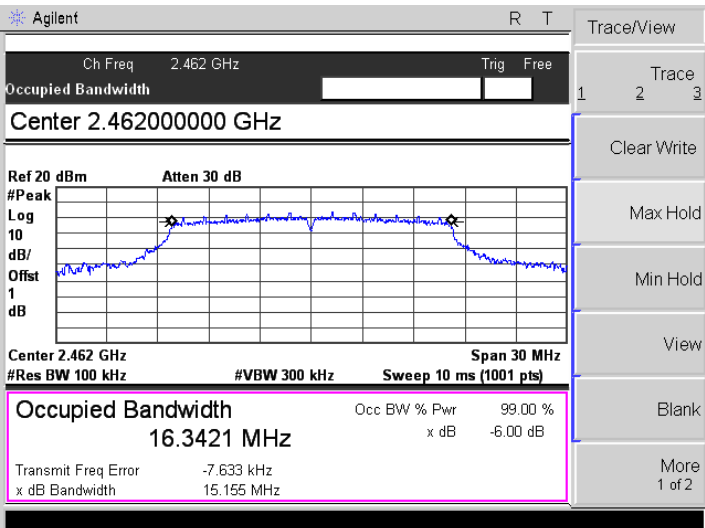
<p>802.11n-HT40-Low</p>	
<p>802.11n-HT40-Middle</p>	
<p>802.11n-HT40-High</p>	

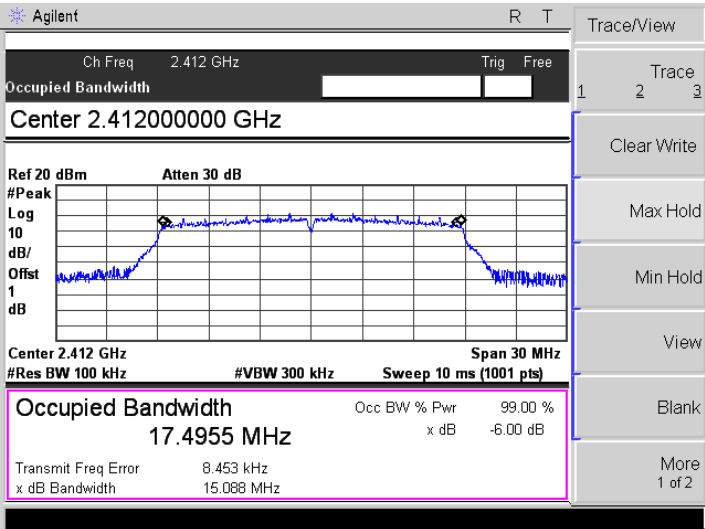
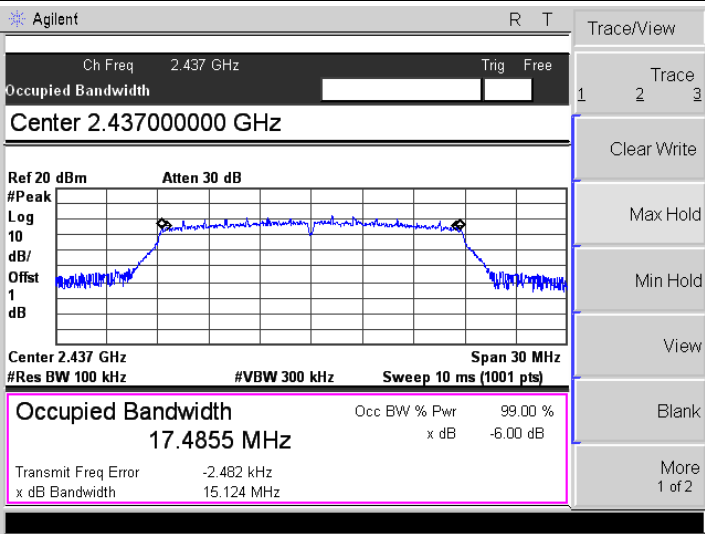
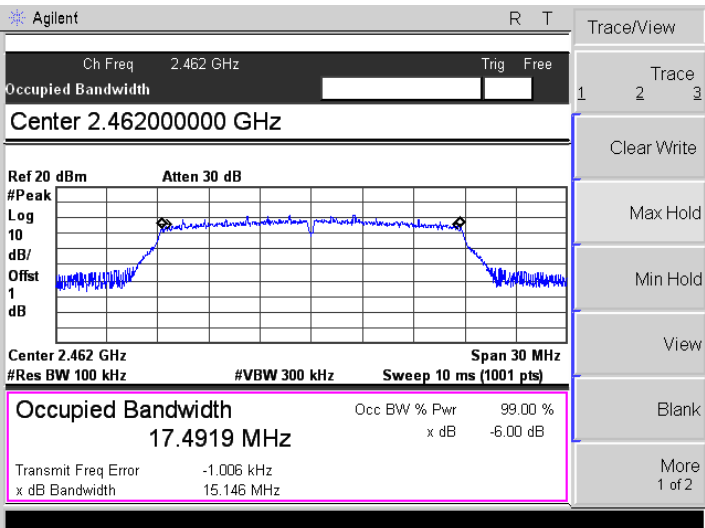
APPENDIX B

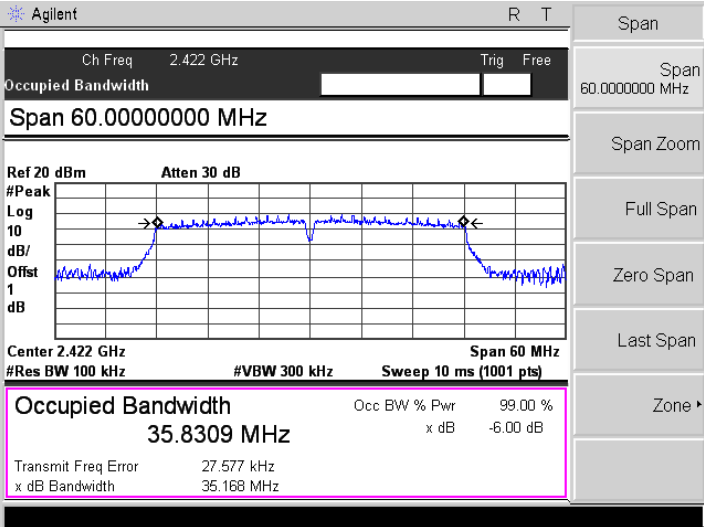
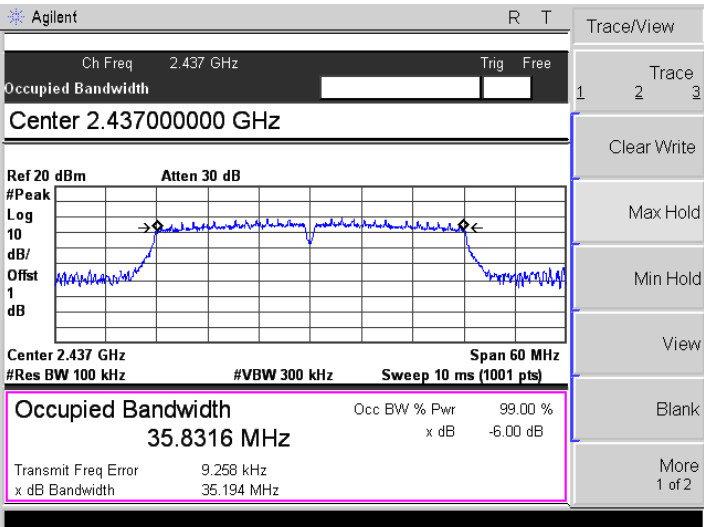
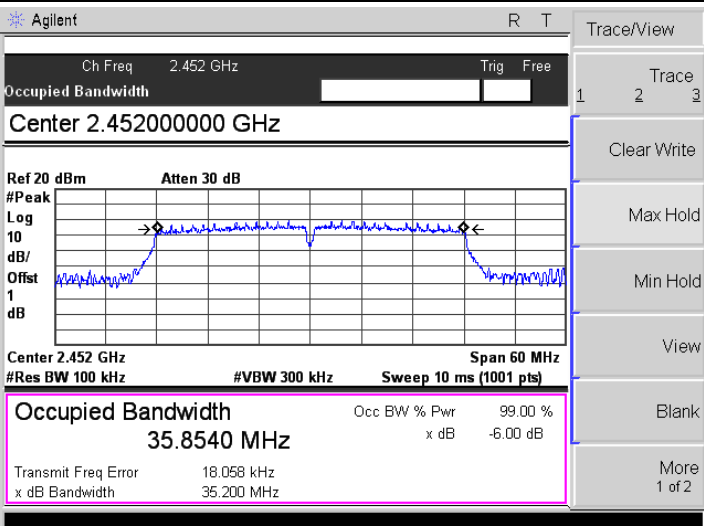
DTS Bandwidth				
Test Mode	Test Channel MHz	Test Result(MHz)		Limit kHz
		Antenna 1	Antenna 2	
802.11b_1Mbps	2412	8.584	9.117	≥500
	2437	9.057	9.079	≥500
	2462	8.576	9.068	≥500
802.11g_6Mbps	2412	15.144	15.095	≥500
	2437	15.154	15.259	≥500
	2462	15.155	15.033	≥500
802.11n-HT20_MCS0	2412	15.088	15.017	≥500
	2437	15.124	13.574	≥500
	2462	15.146	15.269	≥500
802.11n-HT40_MCS0	2422	35.168	34.053	≥500
	2437	35.194	35.108	≥500
	2452	35.200	34.133	≥500

Antenna 1

<p>802.11b-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref Level 20.00 dBm</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offst 1 dB</p> <p>Center 2.412 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 13.3517 MHz Occ BW % Pwr 99.00% x dB -6.00 dB</p> <p>Transmit Freq Error 34.851 kHz x dB Bandwidth 8.584 MHz</p> <p>Amplitude</p> <p>Ref Level 20.00 dBm</p> <p>Attenuation 30.00 dB Auto Man</p> <p>Scale/Div 10.00 dB</p> <p>Scale Type Log Lin</p> <p>Presel Center</p> <p>Presel Adjust 0.00000000 Hz</p> <p>More 1 of 3</p>
<p>802.11b-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.43700000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offst 1 dB</p> <p>Center 2.437 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 13.3292 MHz Occ BW % Pwr 99.00% x dB -6.00 dB</p> <p>Transmit Freq Error -10.117 kHz x dB Bandwidth 9.057 MHz</p> <p>Trace/View</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11b-High</p>	 <p>Agilent R T</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.46200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offst 1 dB</p> <p>Center 2.462 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 13.3227 MHz Occ BW % Pwr 99.00% x dB -6.00 dB</p> <p>Transmit Freq Error 27.618 kHz x dB Bandwidth 8.576 MHz</p> <p>Trace/View</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

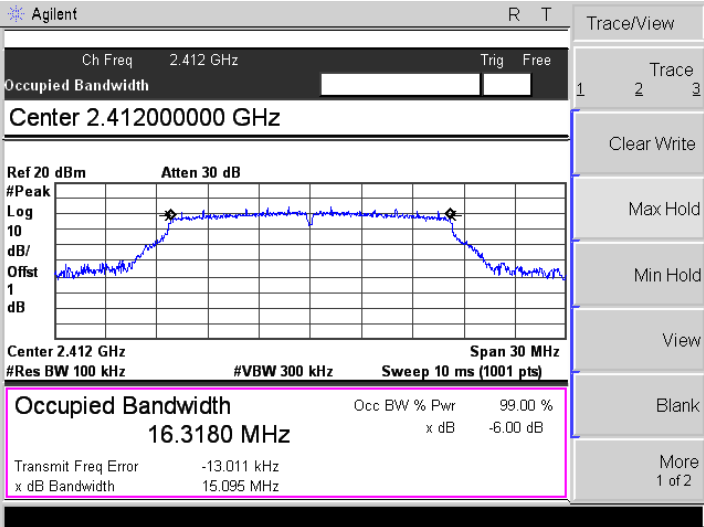
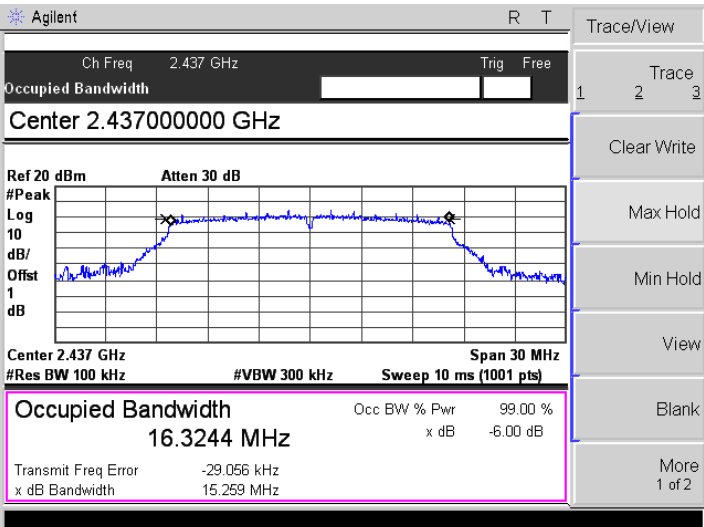
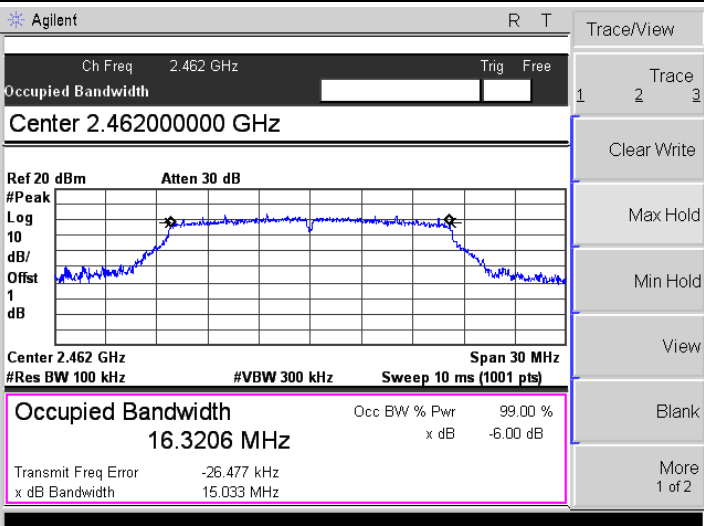
<p>802.11g-Low</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.41200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10</p> <p>dB/</p> <p>Offst 1</p> <p>dB</p> <p>Center 2.412 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.3195 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -5.375 kHz</p> <p>x dB Bandwidth 15.144 MHz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11g-Middle</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.43700000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10</p> <p>dB/</p> <p>Offst 1</p> <p>dB</p> <p>Center 2.437 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.3272 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -17.248 kHz</p> <p>x dB Bandwidth 15.154 MHz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11g-High</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.46200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10</p> <p>dB/</p> <p>Offst 1</p> <p>dB</p> <p>Center 2.462 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.3421 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -7.633 kHz</p> <p>x dB Bandwidth 15.155 MHz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

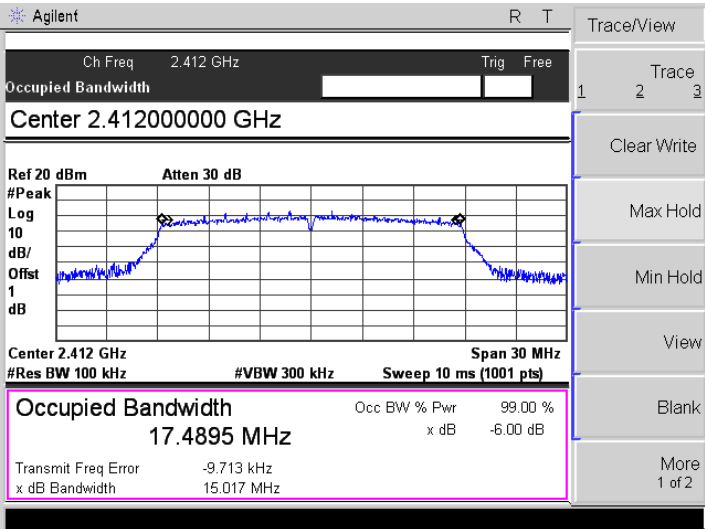
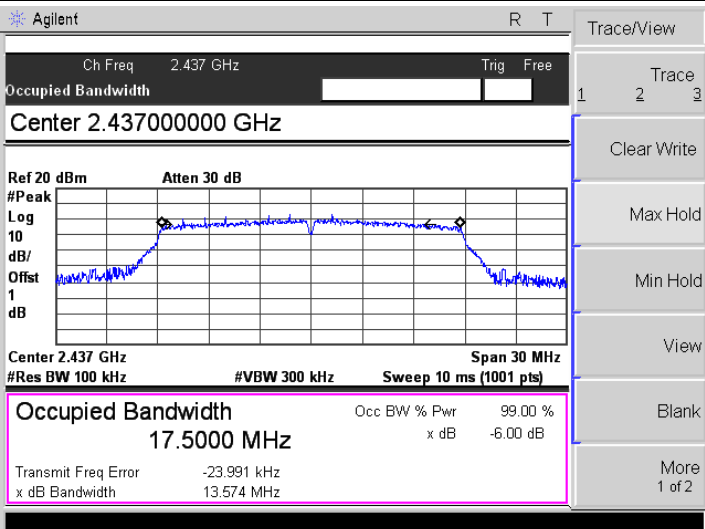
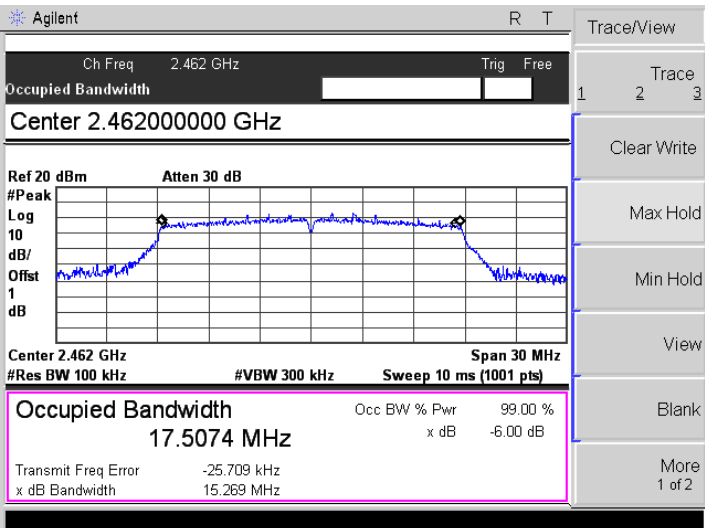
<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.41200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 2.412 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.4955 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error 8.453 kHz x dB Bandwidth 15.088 MHz</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.43700000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 2.437 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.4855 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -2.482 kHz x dB Bandwidth 15.124 MHz</p>
<p>802.11n-HT20-High</p>	 <p>Agilent R T</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.46200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 2.462 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.4919 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -1.006 kHz x dB Bandwidth 15.146 MHz</p>

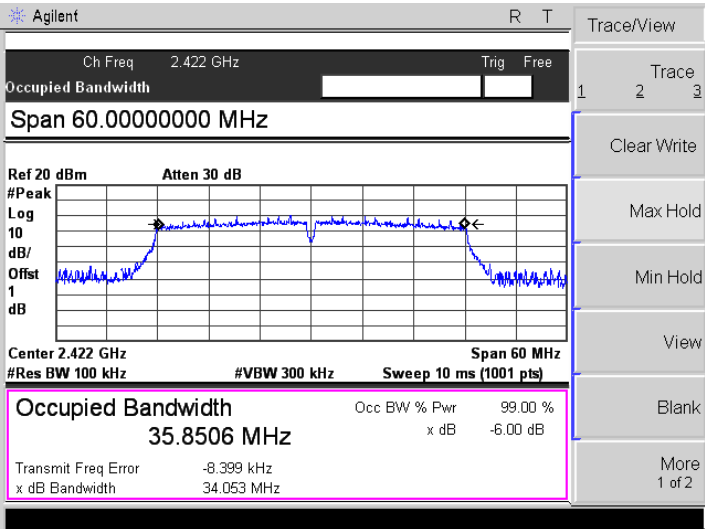
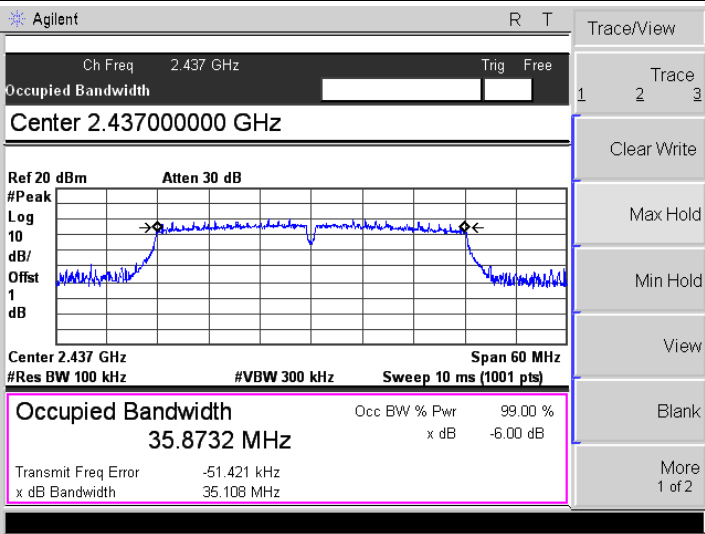
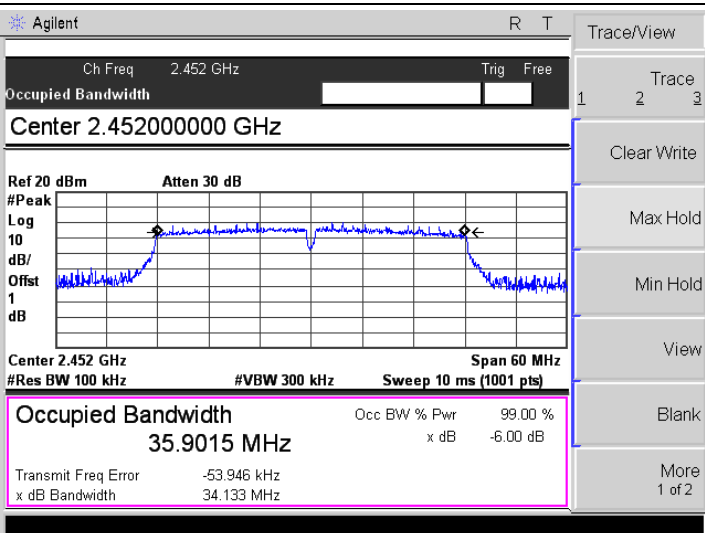
<p>802.11n-HT40-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 2.422 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Span 60.00000000 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 2.422 GHz Span 60 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 35.8309 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error 27.577 kHz x dB Bandwidth 35.168 MHz</p> <p>Span Zoom Full Span Zero Span Last Span Zone ▶</p>
<p>802.11n-HT40-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.43700000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 2.437 GHz Span 60 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 35.8316 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error 9.258 kHz x dB Bandwidth 35.194 MHz</p> <p>Trace/View 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2</p>
<p>802.11n-HT40-High</p>	 <p>Agilent R T</p> <p>Ch Freq 2.452 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.45200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 2.452 GHz Span 60 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 35.8540 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error 18.058 kHz x dB Bandwidth 35.200 MHz</p> <p>Trace/View 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2</p>

Antenna 2

<p>802.11b-Low</p>	<p>Agilent R T</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref Level 20.00 dBm</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offst 1 dB</p> <p>Center 2.412 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 13.4824 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error 58.305 kHz x dB Bandwidth 9.117 MHz</p> <p>Amplitude</p> <p>Ref Level 20.00 dBm</p> <p>Attenuation 30.00 dB Auto Man</p> <p>Scale/Div 10.00 dB</p> <p>Scale Type Log Lin</p> <p>Presel Center</p> <p>Presel Adjust 0.00000000 Hz</p> <p>More 1 of 3</p>
<p>802.11b-Middle</p>	<p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref Level 20.00 dBm</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offst 1 dB</p> <p>Center 2.437 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 13.5341 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -29.781 kHz x dB Bandwidth 9.079 MHz</p> <p>Trace/View</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11b-High</p>	<p>Agilent R T</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.46200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offst 1 dB</p> <p>Center 2.462 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 13.6675 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -54.602 kHz x dB Bandwidth 9.068 MHz</p> <p>Trace/View</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

<p>802.11g-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.41200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>10 dB/</p> <p>Offset</p> <p>1 dB</p> <p>Center 2.412 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.3180 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -13.011 kHz</p> <p>x dB Bandwidth 15.095 MHz</p> <p>Trace/View</p> <p>1 Trace 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11g-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.43700000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>10 dB/</p> <p>Offset</p> <p>1 dB</p> <p>Center 2.437 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.3244 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -29.056 kHz</p> <p>x dB Bandwidth 15.259 MHz</p> <p>Trace/View</p> <p>1 Trace 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11g-High</p>	 <p>Agilent R T</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.46200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>10 dB/</p> <p>Offset</p> <p>1 dB</p> <p>Center 2.462 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.3206 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -26.477 kHz</p> <p>x dB Bandwidth 15.033 MHz</p> <p>Trace/View</p> <p>1 Trace 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

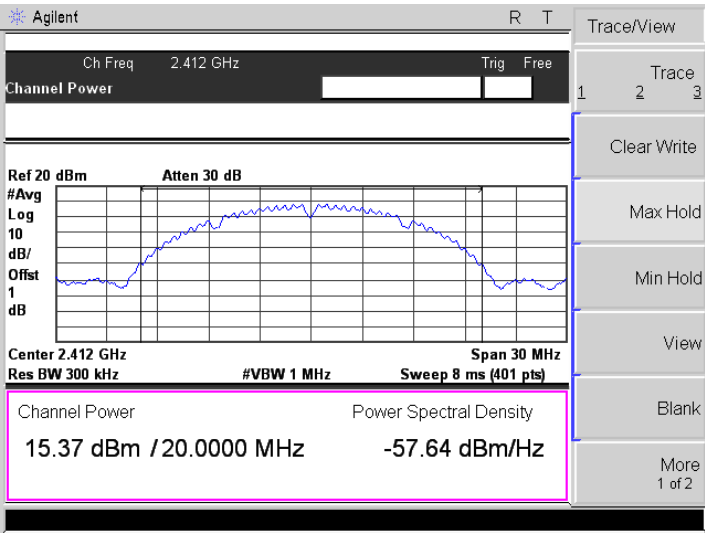
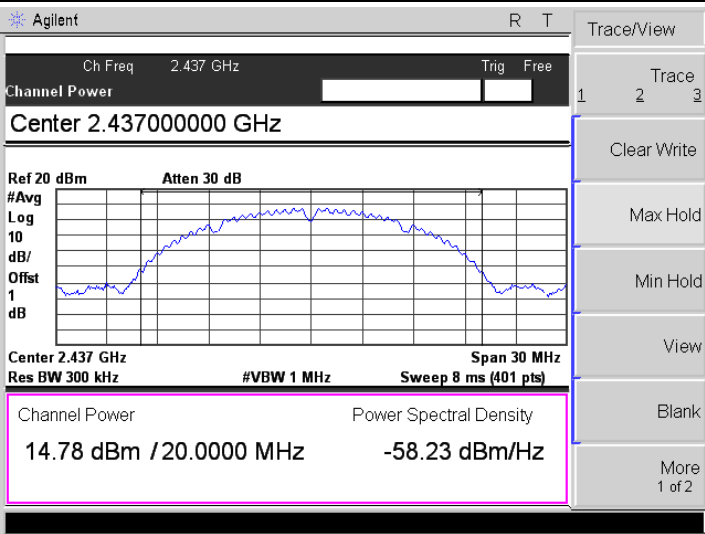
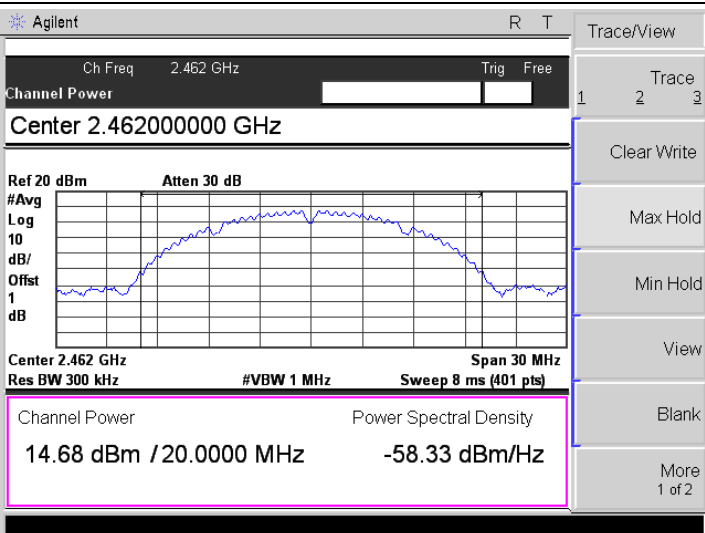
<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.41200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 2.412 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.4895 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -9.713 kHz x dB Bandwidth 15.017 MHz</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.43700000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 2.437 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.5000 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -23.991 kHz x dB Bandwidth 13.574 MHz</p>
<p>802.11n-HT20-High</p>	 <p>Agilent R T</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.46200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 2.462 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.5074 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -25.709 kHz x dB Bandwidth 15.269 MHz</p>

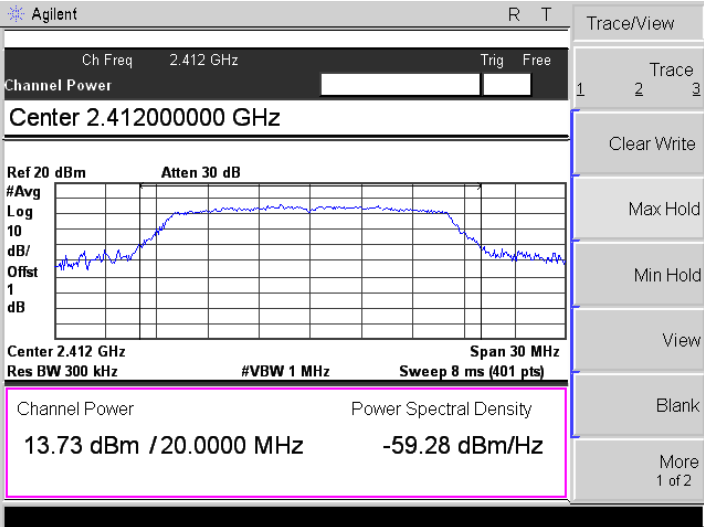
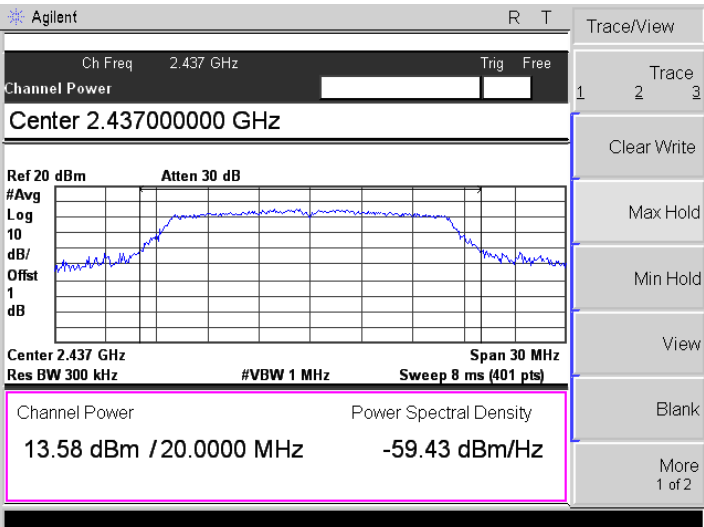
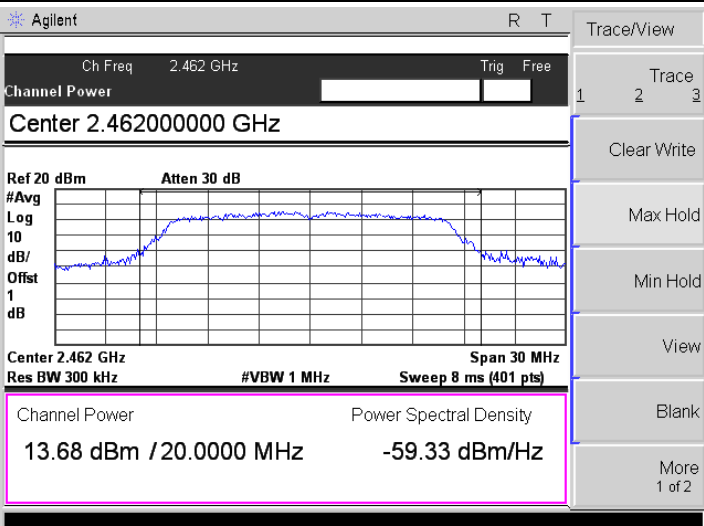
<p>802.11n-HT40-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 2.422 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Span 60.0000000 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>10 dB/</p> <p>Offst</p> <p>1 dB</p> <p>Center 2.422 GHz Span 60 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 35.8506 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -8.399 kHz</p> <p>x dB Bandwidth 34.053 MHz</p> <p>Trace/View</p> <p>1 2 3</p> <p>Trace</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-HT40-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.43700000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>10 dB/</p> <p>Offst</p> <p>1 dB</p> <p>Center 2.437 GHz Span 60 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 35.8732 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -51.421 kHz</p> <p>x dB Bandwidth 35.108 MHz</p> <p>Trace/View</p> <p>1 2 3</p> <p>Trace</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-HT40-High</p>	 <p>Agilent R T</p> <p>Ch Freq 2.452 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 2.45200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>10 dB/</p> <p>Offst</p> <p>1 dB</p> <p>Center 2.452 GHz Span 60 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 35.9015 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -53.946 kHz</p> <p>x dB Bandwidth 34.133 MHz</p> <p>Trace/View</p> <p>1 2 3</p> <p>Trace</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

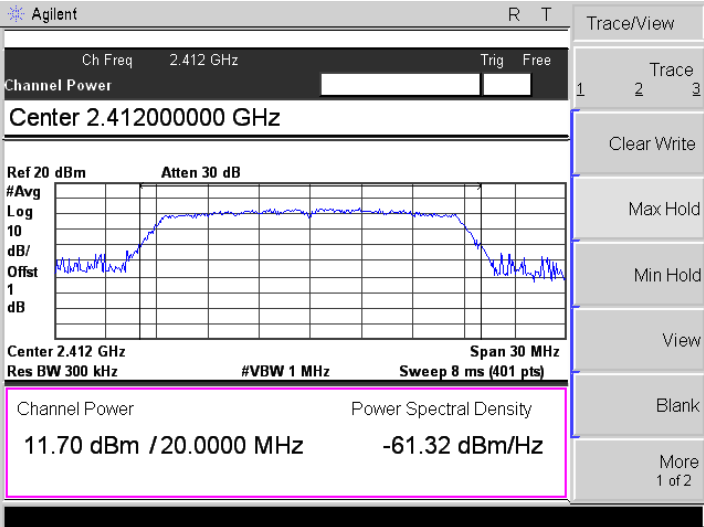
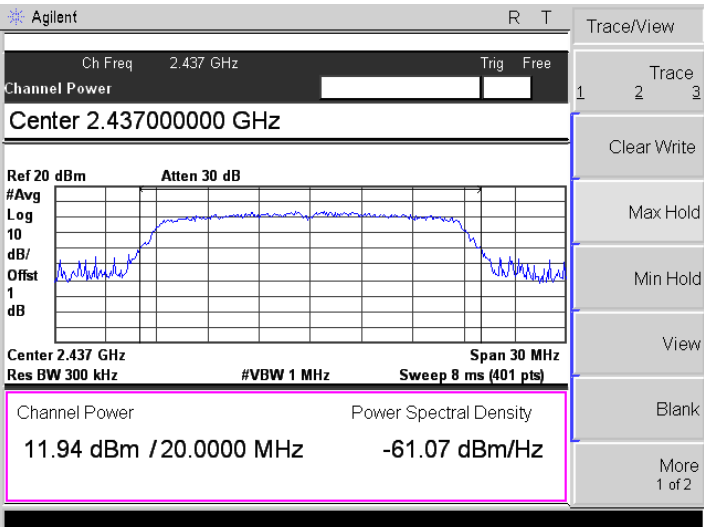
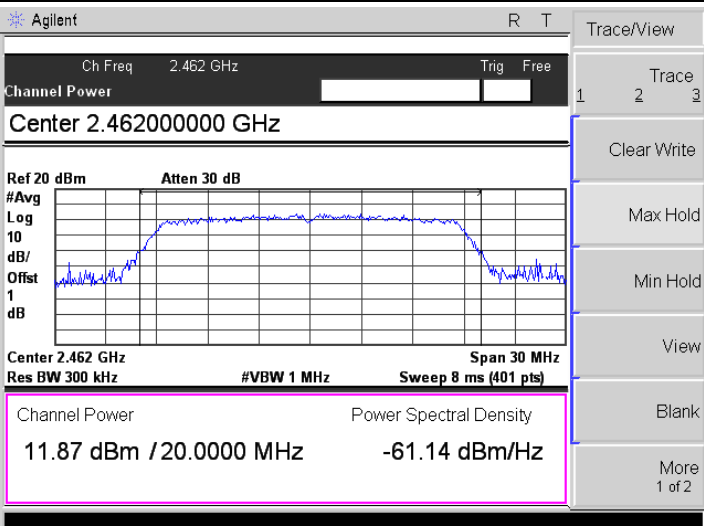
APPENDIX C

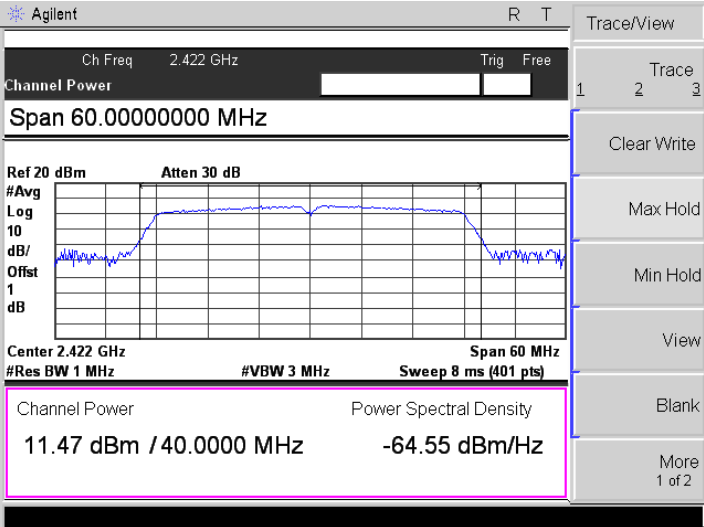
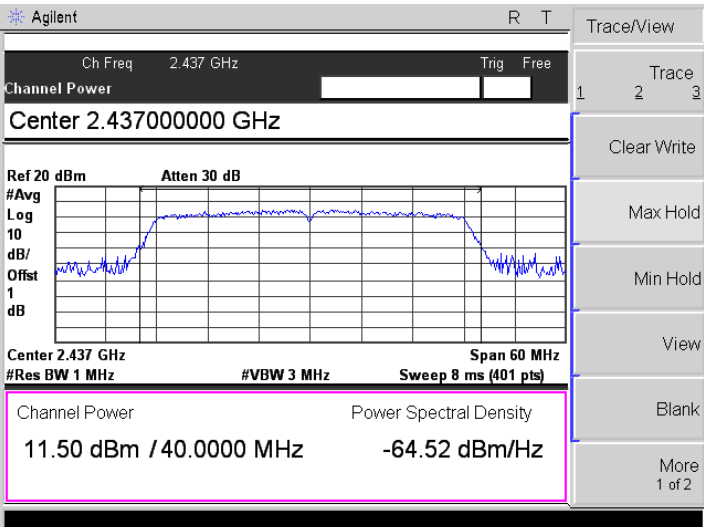
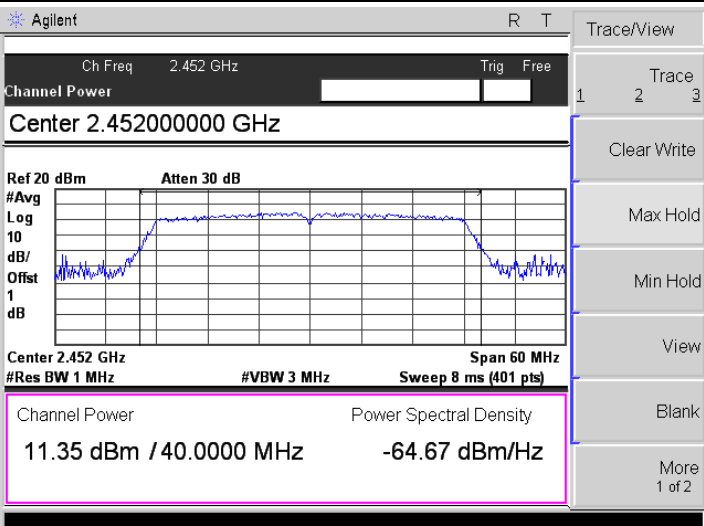
RF Output Power					
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802.11b _1Mbps	2412	15.37	15.80	/	30.00
	2437	14.78	16.72	/	30.00
	2462	14.68	15.92	/	30.00
802.11g_6Mbps	2412	13.73	14.38	/	30.00
	2437	13.58	14.27	/	30.00
	2462	13.68	13.63	/	30.00
802.11n HT20_MCS0	2412	11.70	13.13	15.48	30.00
	2437	11.94	13.08	15.56	30.00
	2462	11.87	13.36	15.69	30.00
802.11n HT40_MCS0	2422	11.47	12.40	14.97	30.00
	2437	11.50	12.66	15.13	30.00
	2452	11.35	12.66	15.48	30.00

Antenna 1

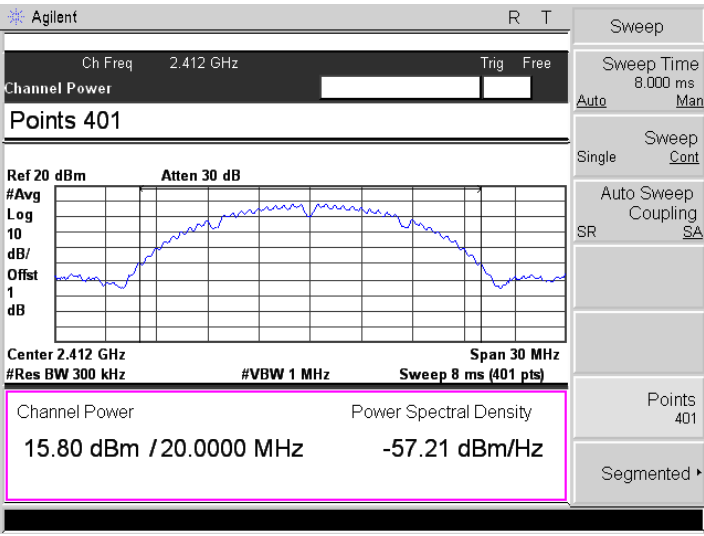
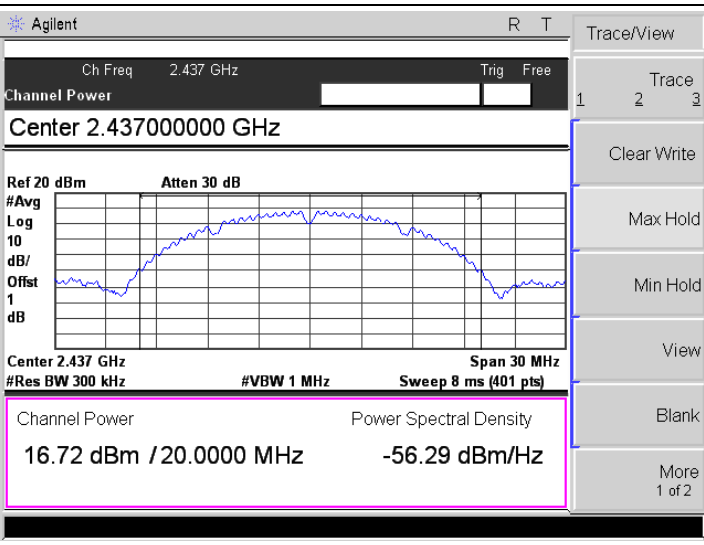
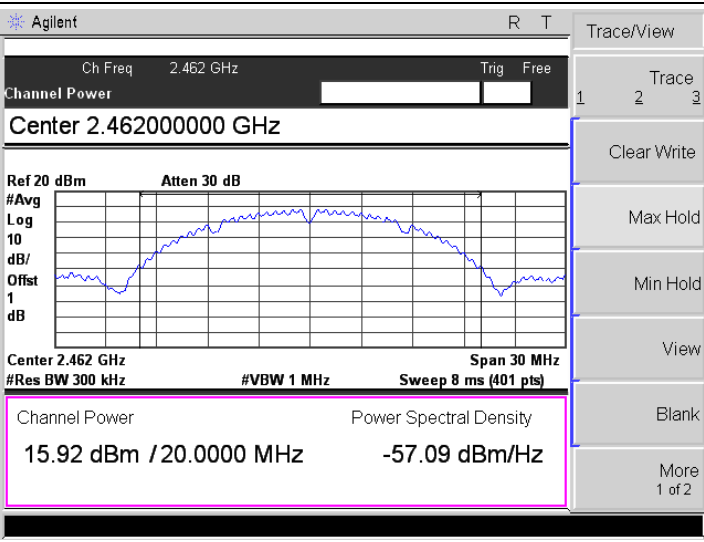
<p>802.11b-Low</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Channel Power</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offst 1 dB</p> <p>Center 2.412 GHz Span 30 MHz</p> <p>Res BW 300 kHz #VBW 1 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>15.37 dBm / 20.0000 MHz -57.64 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11b-Middle</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.43700000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offst 1 dB</p> <p>Center 2.437 GHz Span 30 MHz</p> <p>Res BW 300 kHz #VBW 1 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>14.78 dBm / 20.0000 MHz -58.23 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11b-High</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.46200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offst 1 dB</p> <p>Center 2.462 GHz Span 30 MHz</p> <p>Res BW 300 kHz #VBW 1 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>14.68 dBm / 20.0000 MHz -58.33 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

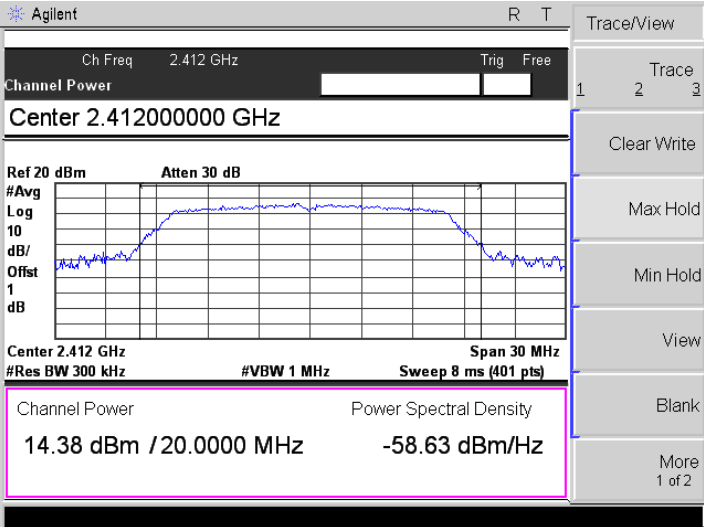
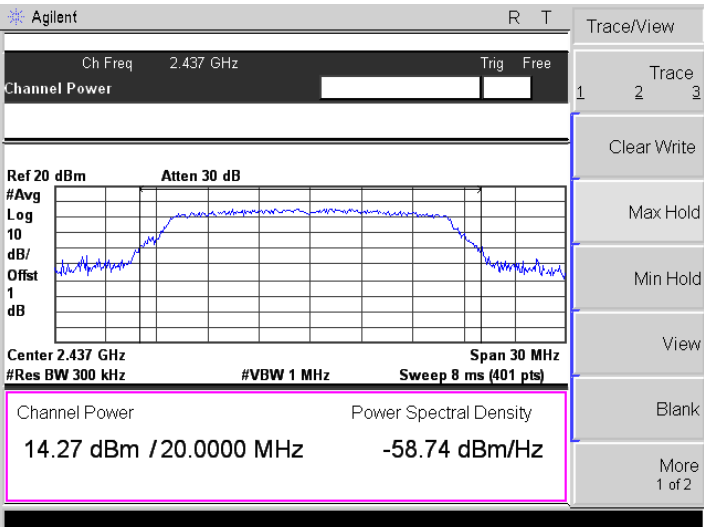
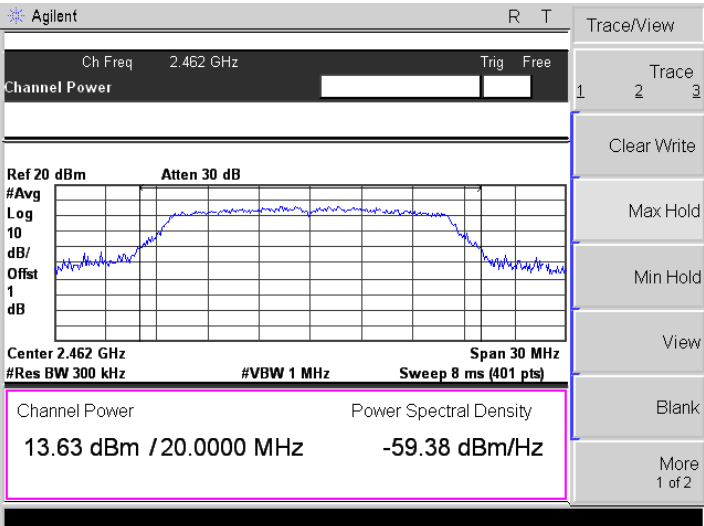
<p>802.11g-Low</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.41200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 2.412 GHz Res BW 300 kHz #VBW 1 MHz Sweep 8 ms (401 pts) Span 30 MHz</p> <p>Channel Power Power Spectral Density</p> <p>13.73 dBm / 20.0000 MHz -59.28 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11g-Middle</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.43700000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 2.437 GHz Res BW 300 kHz #VBW 1 MHz Sweep 8 ms (401 pts) Span 30 MHz</p> <p>Channel Power Power Spectral Density</p> <p>13.58 dBm / 20.0000 MHz -59.43 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11g-High</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.46200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 2.462 GHz Res BW 300 kHz #VBW 1 MHz Sweep 8 ms (401 pts) Span 30 MHz</p> <p>Channel Power Power Spectral Density</p> <p>13.68 dBm / 20.0000 MHz -59.33 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

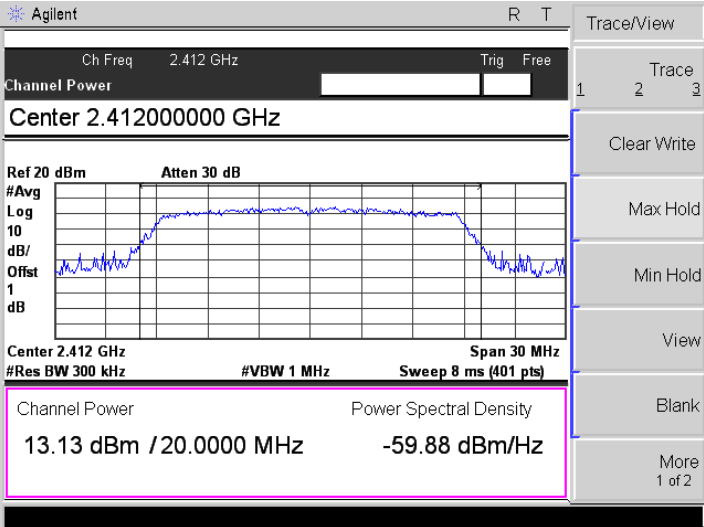
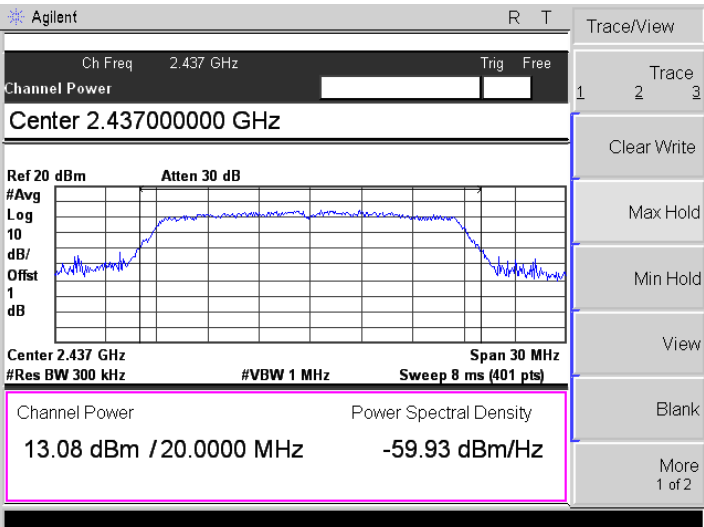
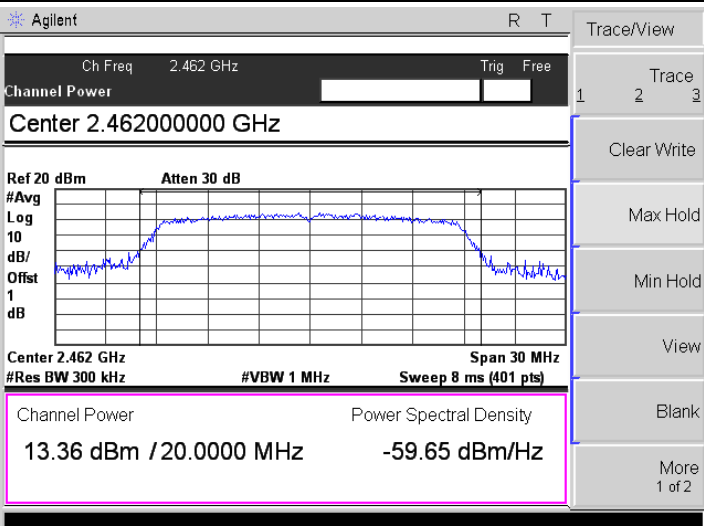
<p>802.11n-HT20-Low</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.41200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 2.412 GHz Res BW 300 kHz Span 30 MHz #VBW 1 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>11.70 dBm / 20.0000 MHz -61.32 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.43700000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 2.437 GHz Res BW 300 kHz Span 30 MHz #VBW 1 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>11.94 dBm / 20.0000 MHz -61.07 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-HT20-High</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.46200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 2.462 GHz Res BW 300 kHz Span 30 MHz #VBW 1 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>11.87 dBm / 20.0000 MHz -61.14 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

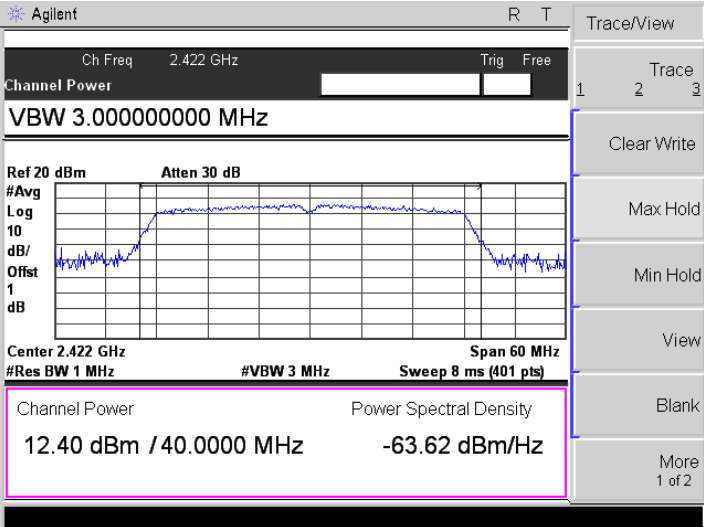
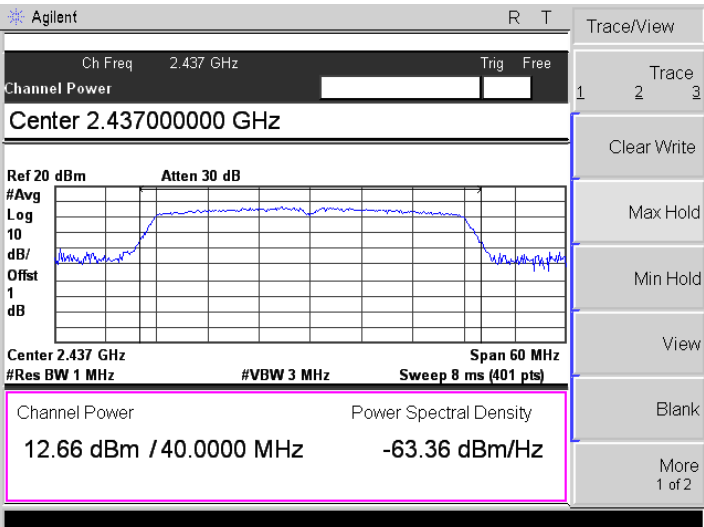
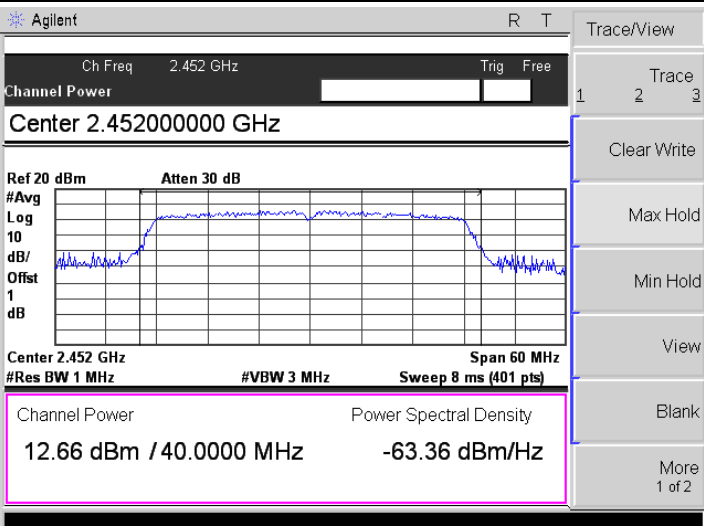
<p>802.11n-HT40-Low</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.422 GHz Trig Free</p> <p>Channel Power</p> <p>Span 60.00000000 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 2.422 GHz Span 60 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>11.47 dBm / 40.0000 MHz -64.55 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-HT40-Middle</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.43700000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 2.437 GHz Span 60 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>11.50 dBm / 40.0000 MHz -64.52 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-HT40-High</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.452 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.45200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 2.452 GHz Span 60 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>11.35 dBm / 40.0000 MHz -64.67 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

Antenna 2

<p>802.11b-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Channel Power</p> <p>Points 401</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offst 1 dB</p> <p>Center 2.412 GHz Span 30 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>15.80 dBm / 20.0000 MHz -57.21 dBm/Hz</p> <p>Sweep</p> <p>Sweep Time 8.000 ms</p> <p>Auto Man</p> <p>Sweep Single Cont</p> <p>Auto Sweep Coupling SA</p> <p>SR</p> <p>Points 401</p> <p>Segmented ▶</p>
<p>802.11b-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.43700000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offst 1 dB</p> <p>Center 2.437 GHz Span 30 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>16.72 dBm / 20.0000 MHz -56.29 dBm/Hz</p> <p>Trace/View</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11b-High</p>	 <p>Agilent R T</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.46200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offst 1 dB</p> <p>Center 2.462 GHz Span 30 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>15.92 dBm / 20.0000 MHz -57.09 dBm/Hz</p> <p>Trace/View</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

<p>802.11g-Low</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.41200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 2.412 GHz Span 30 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>14.38 dBm / 20.0000 MHz -58.63 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11g-Middle</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.437 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 2.437 GHz Span 30 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>14.27 dBm / 20.0000 MHz -58.74 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11g-High</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.462 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 2.462 GHz Span 30 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>13.63 dBm / 20.0000 MHz -59.38 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

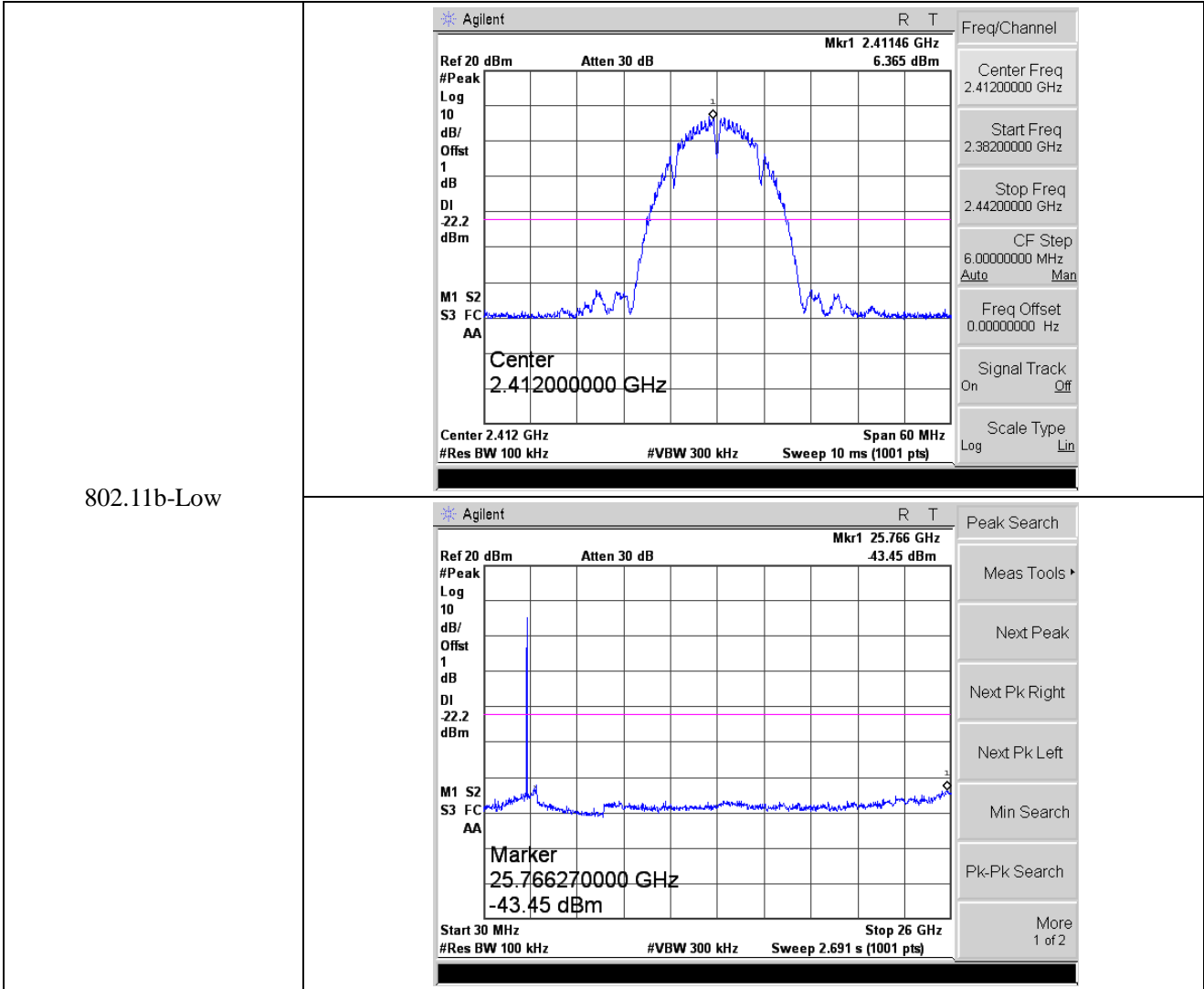
<p>802.11n-HT20-Low</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.41200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 2.412 GHz Span 30 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>13.13 dBm / 20.0000 MHz -59.88 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.43700000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 2.437 GHz Span 30 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>13.08 dBm / 20.0000 MHz -59.93 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-HT20-High</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.46200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 2.462 GHz Span 30 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>13.36 dBm / 20.0000 MHz -59.65 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

<p>802.11n-HT40-Low</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.422 GHz Trig Free</p> <p>Channel Power</p> <p>VBW 3.00000000 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 2.422 GHz Span 60 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>12.40 dBm / 40.0000 MHz -63.62 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-HT40-Middle</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.43700000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 2.437 GHz Span 60 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>12.66 dBm / 40.0000 MHz -63.36 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-HT40-High</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 2.452 GHz Trig Free</p> <p>Channel Power</p> <p>Center 2.45200000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 2.452 GHz Span 60 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 8 ms (401 pts)</p> <p>Channel Power Power Spectral Density</p> <p>12.66 dBm / 40.0000 MHz -63.36 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

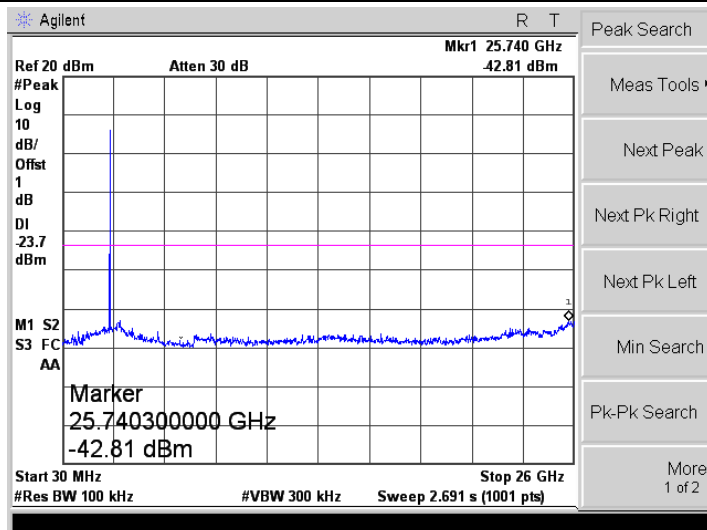
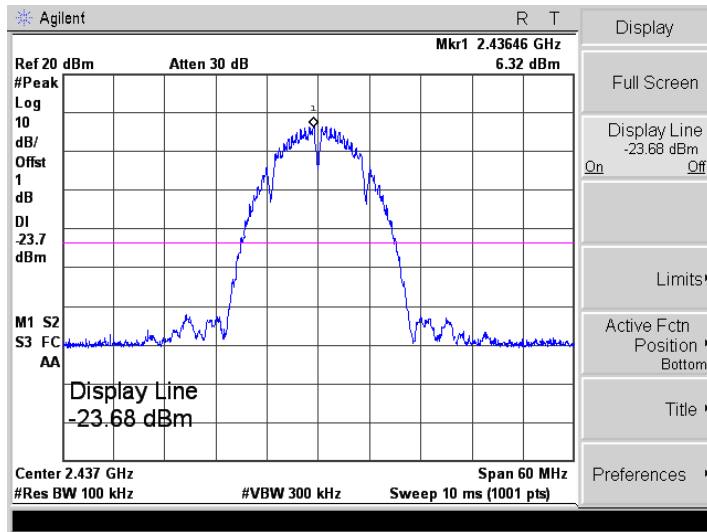
APPENDIX D

Conducted Out of Band Emissions

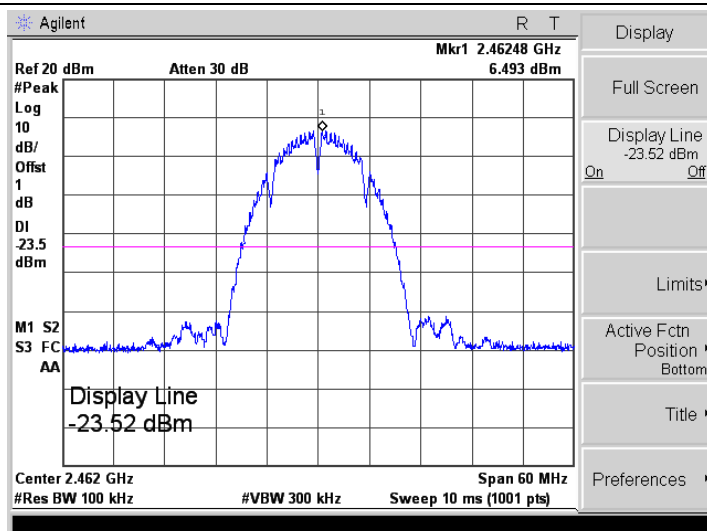
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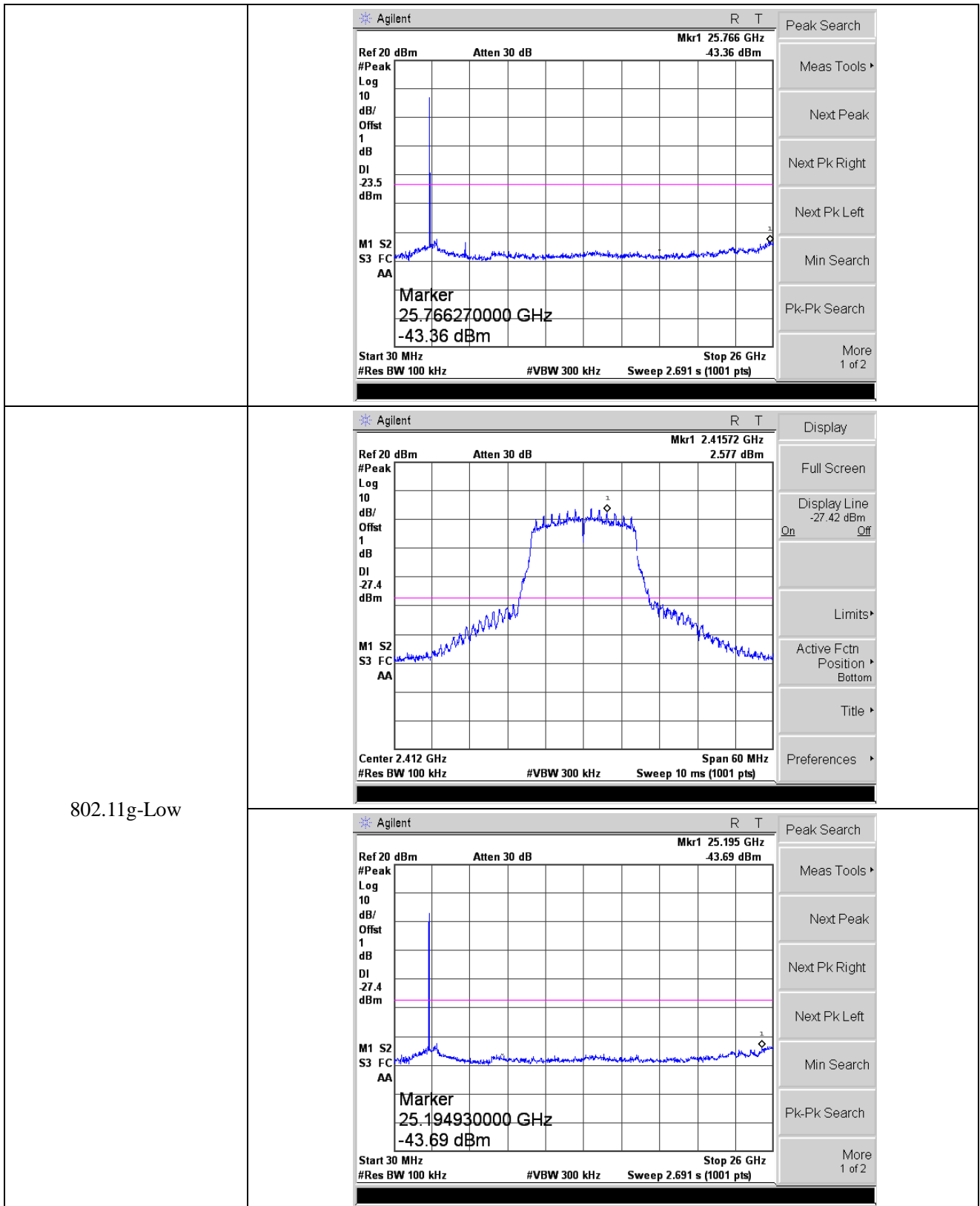


802.11b-Middle

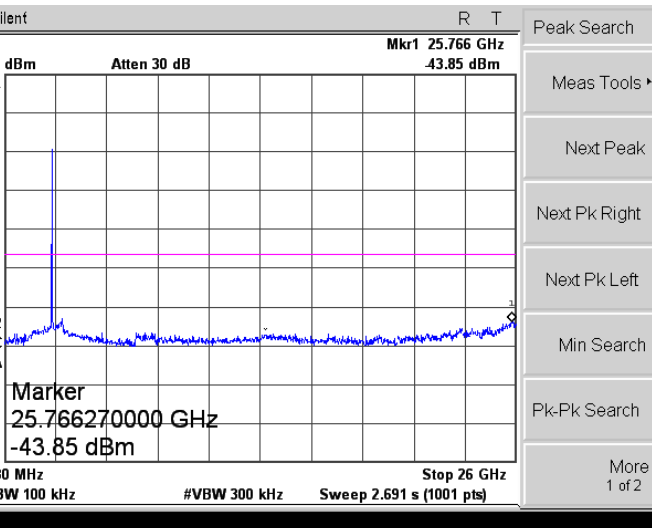
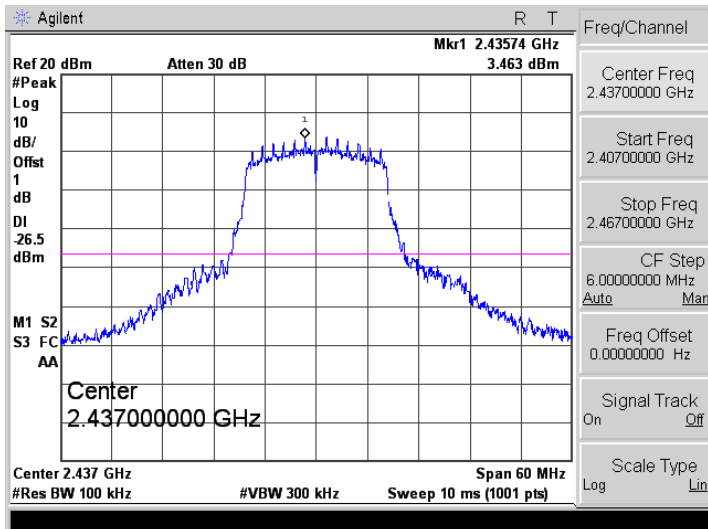


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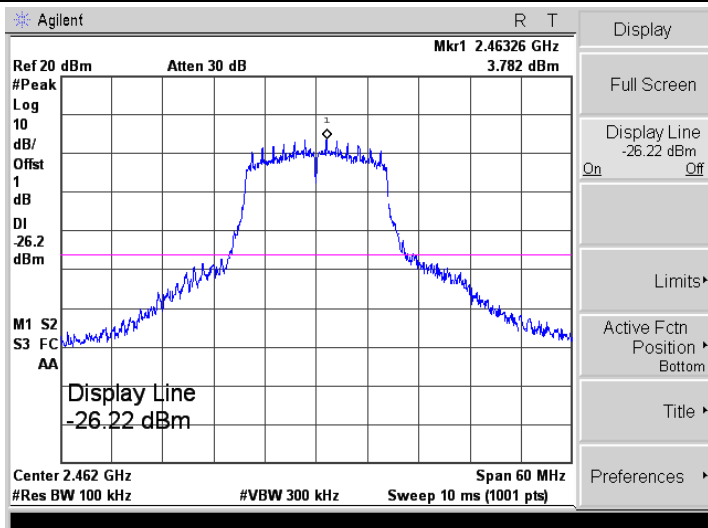


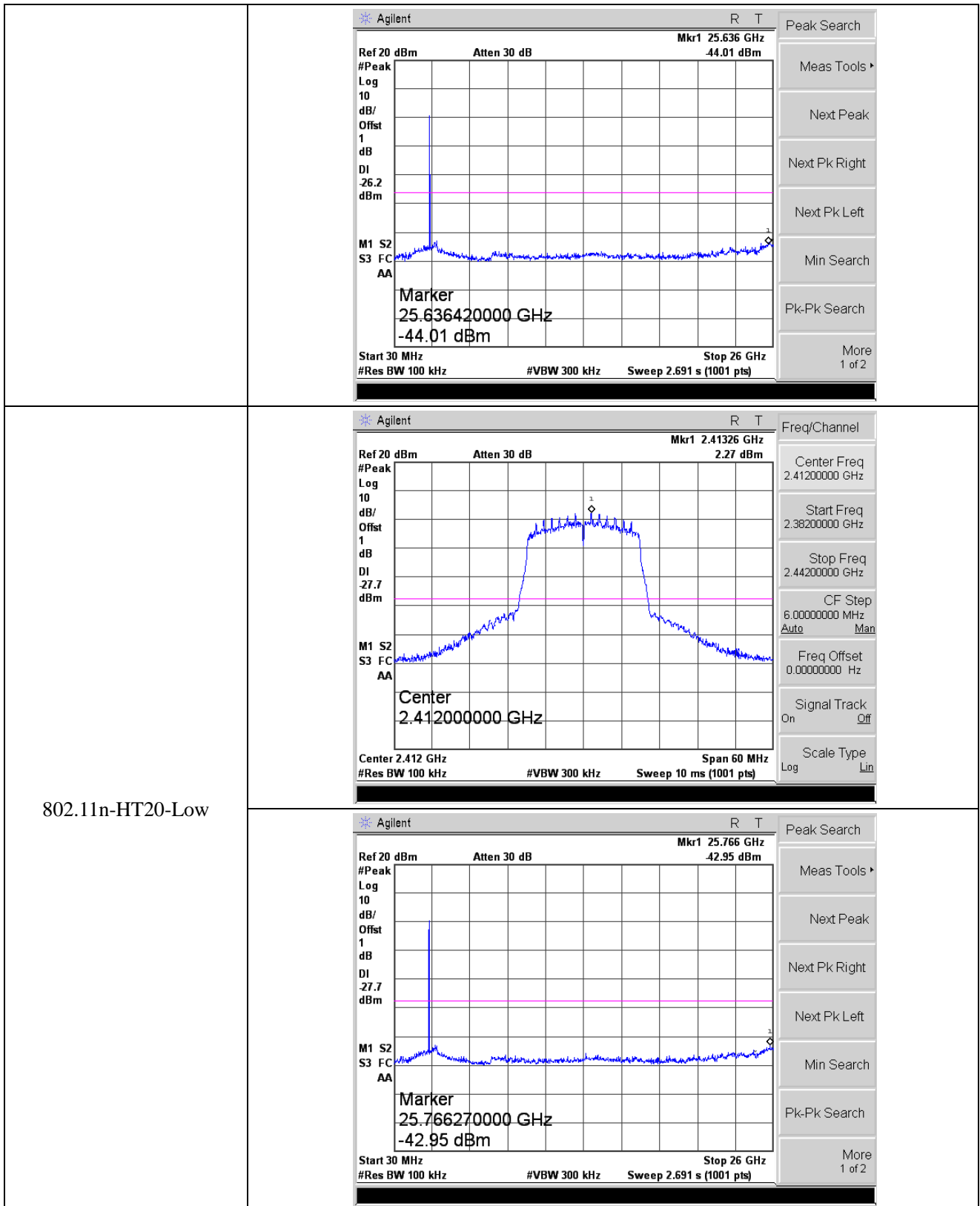


802.11g-Middle

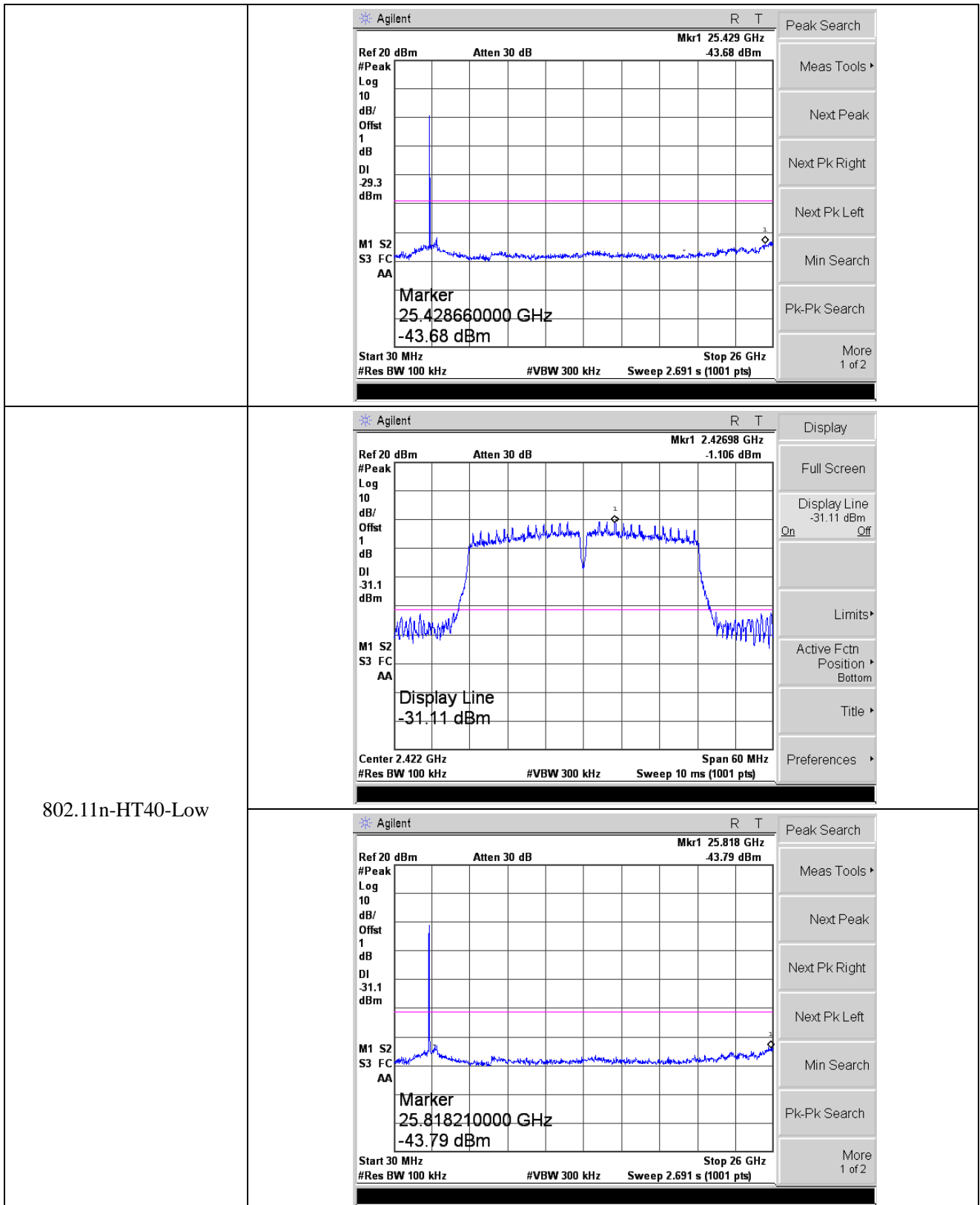


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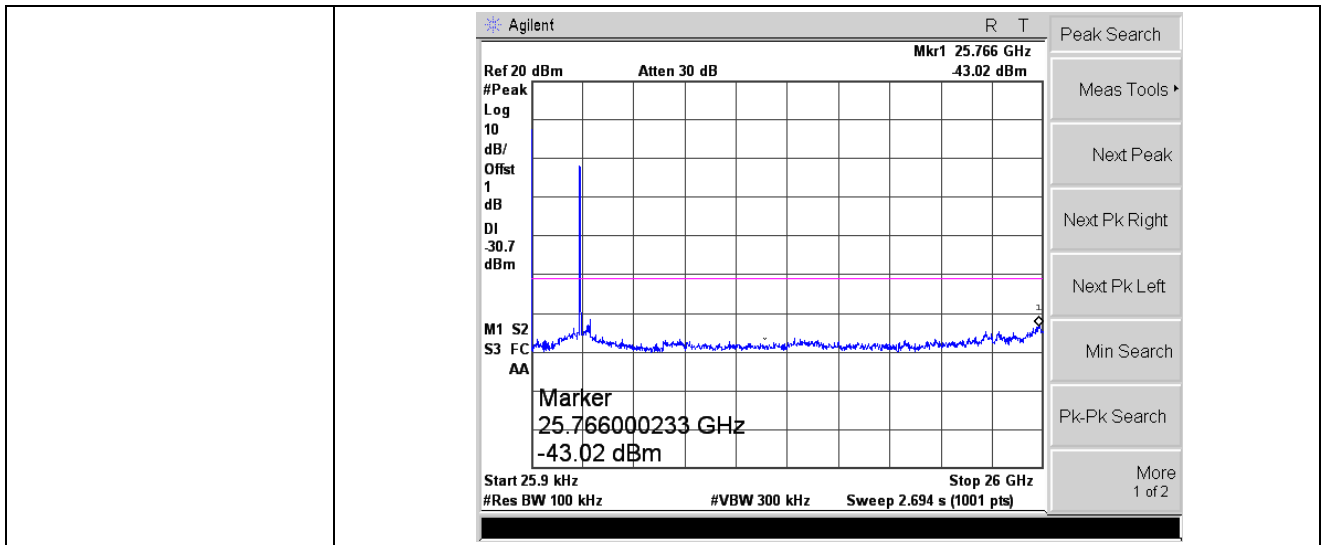




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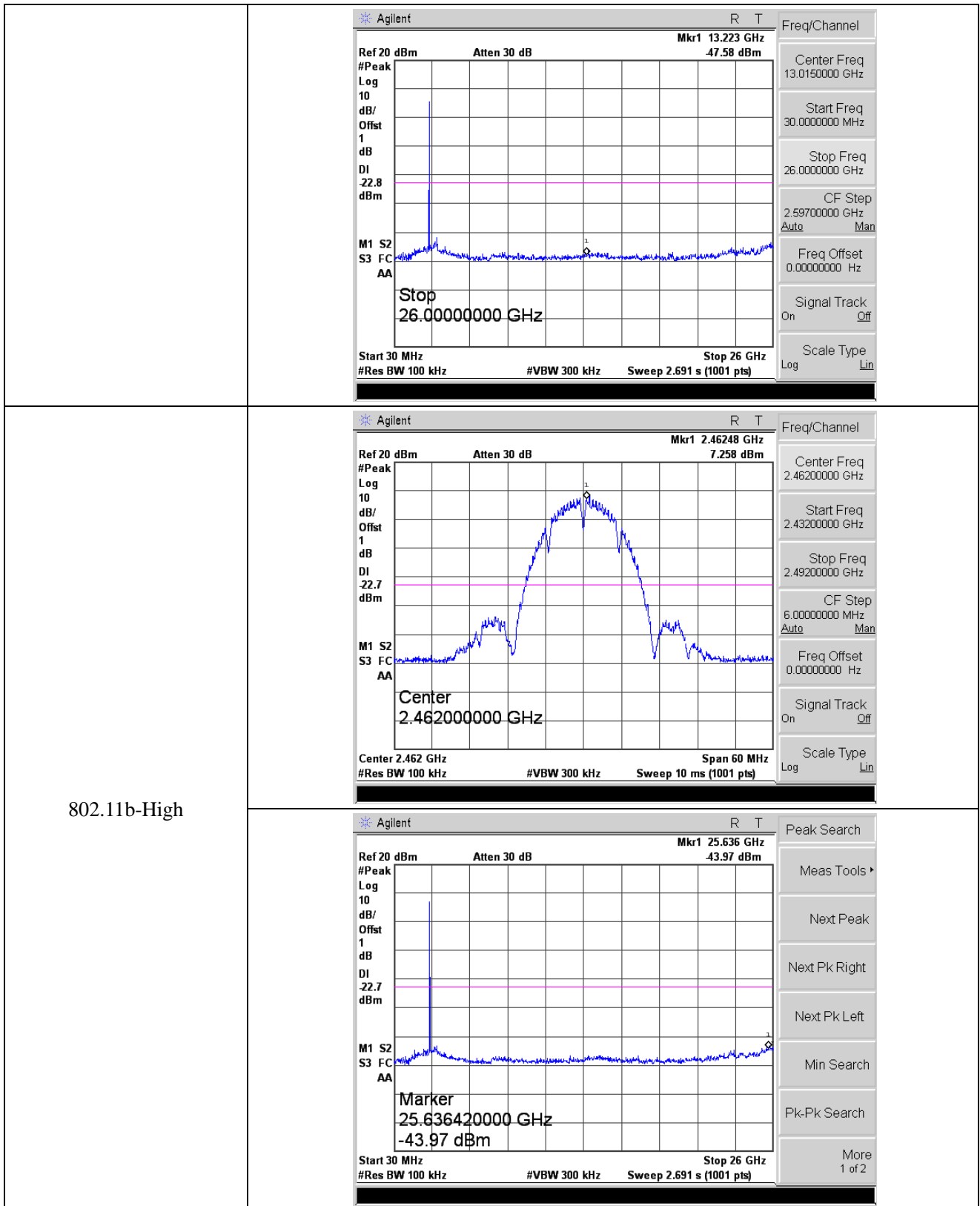


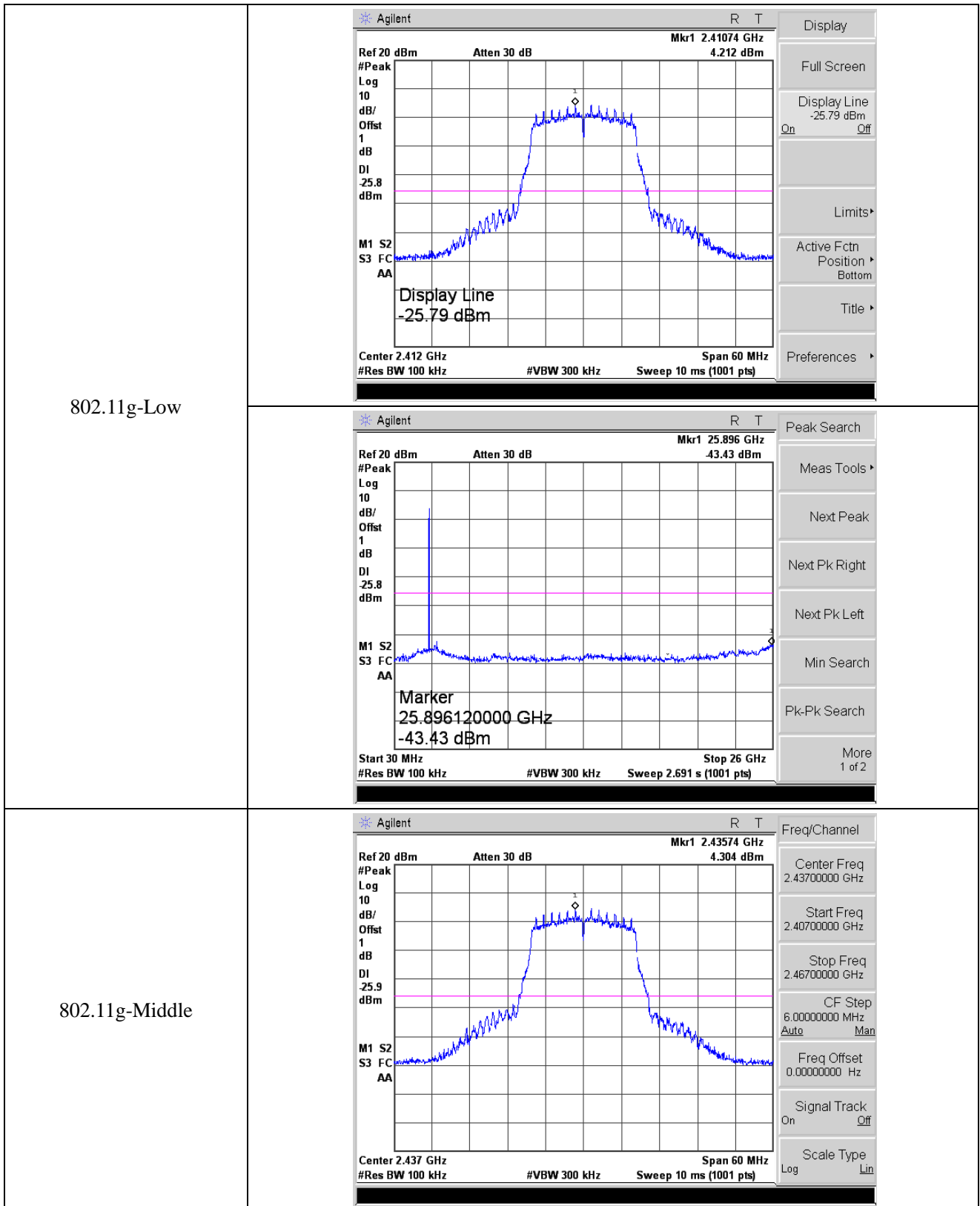
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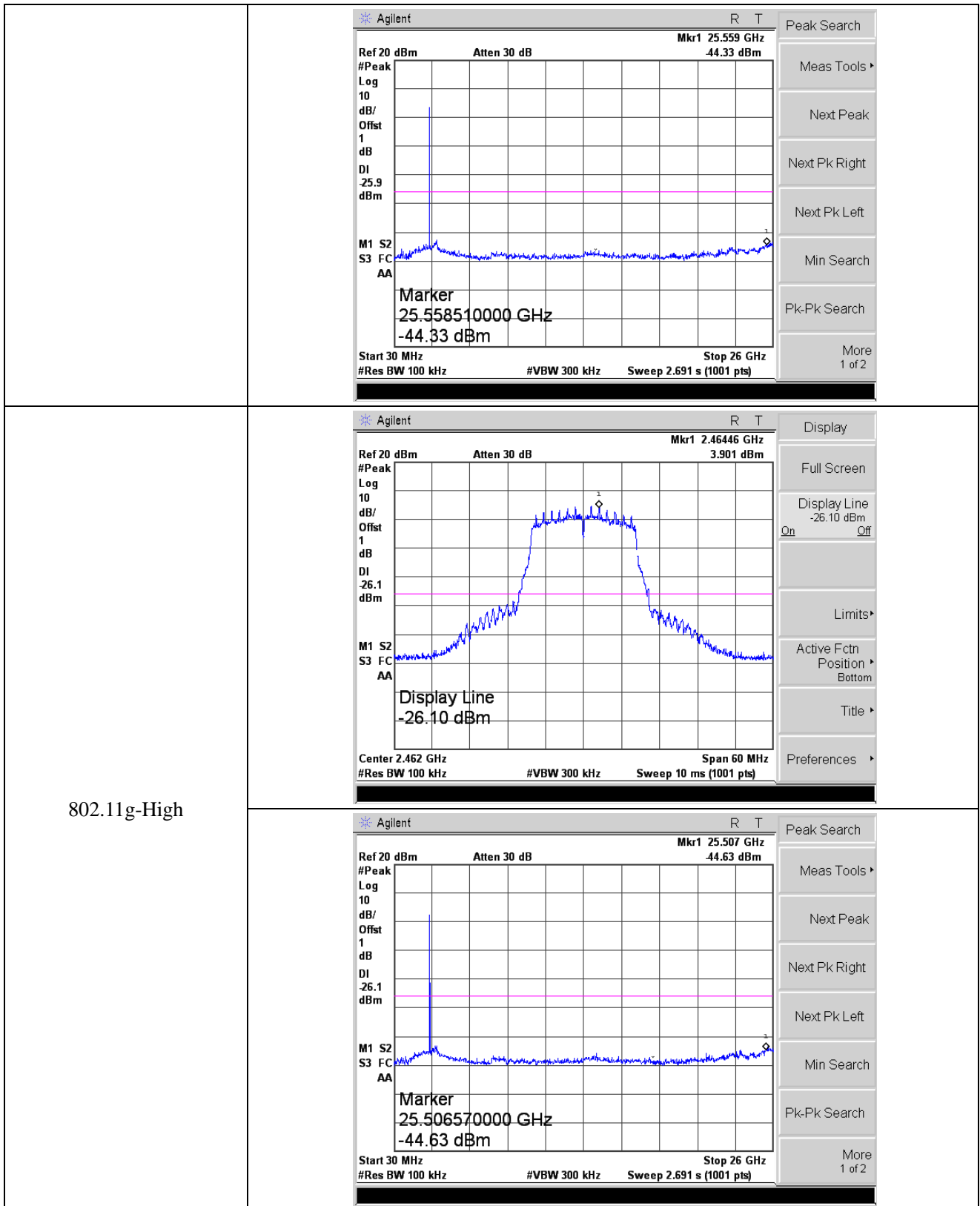


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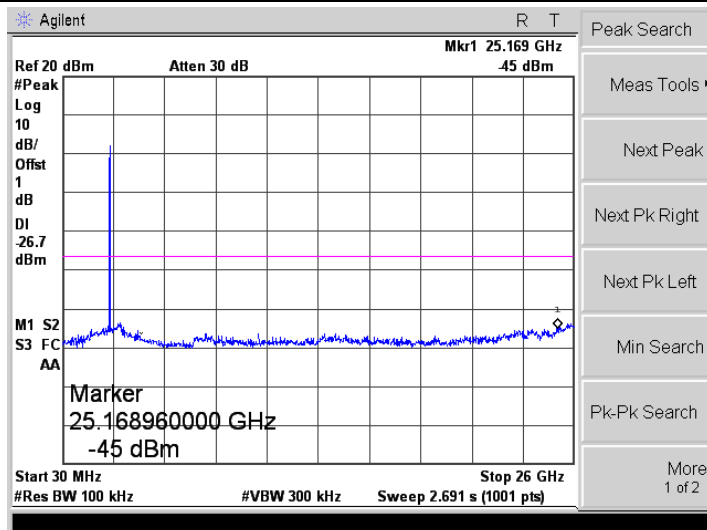
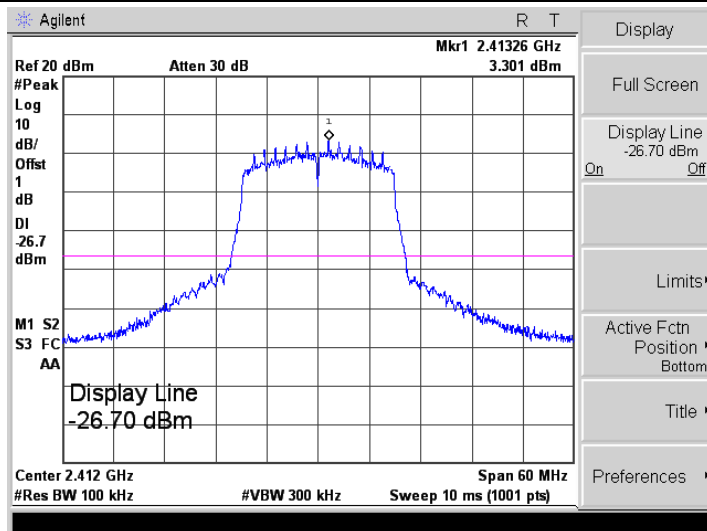
<p>802.11b-Low</p>	<p>Agilent R T Ref 20 dBm Atten 30 dB Mkr1 2.41146 GHz 7.251 dBm #Peak Log 10 dB/Offst 1 dB DI -22.7 dBm M1 S2 S3 FC AA Display Line -22.75 dBm Center 2.412 GHz Span 60 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p>
<p>802.11b-Middle</p>	<p>Agilent R T Ref 20 dBm Atten 30 dB Mkr1 25.792 GHz 43.33 dBm #Peak Log 10 dB/Offst 1 dB DI -22.7 dBm M1 S2 S3 FC AA Marker 25.792240000 GHz -43.33 dBm Start 30 MHz Stop 26 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.691 s (1001 pts)</p>
<p>802.11b-High</p>	<p>Agilent R T Ref 20 dBm Atten 30 dB Mkr1 2.43748 GHz 7.227 dBm #Peak Log 10 dB/Offst 1 dB DI -22.8 dBm M1 S2 S3 FC AA Display Line -22.77 dBm Center 2.437 GHz Span 60 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p>



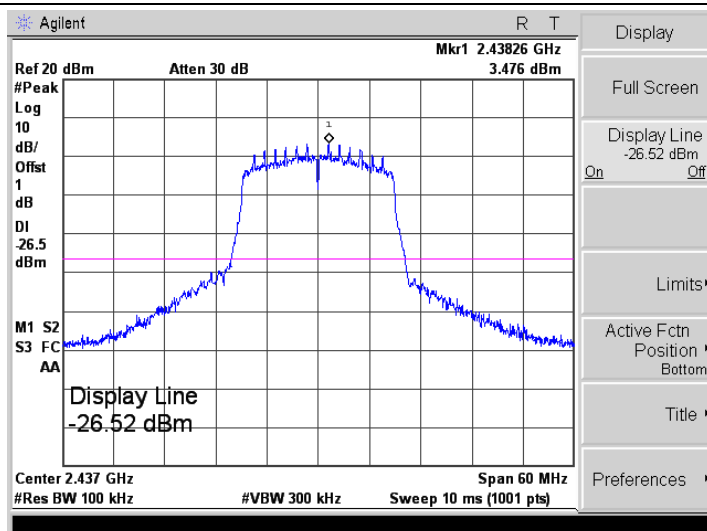


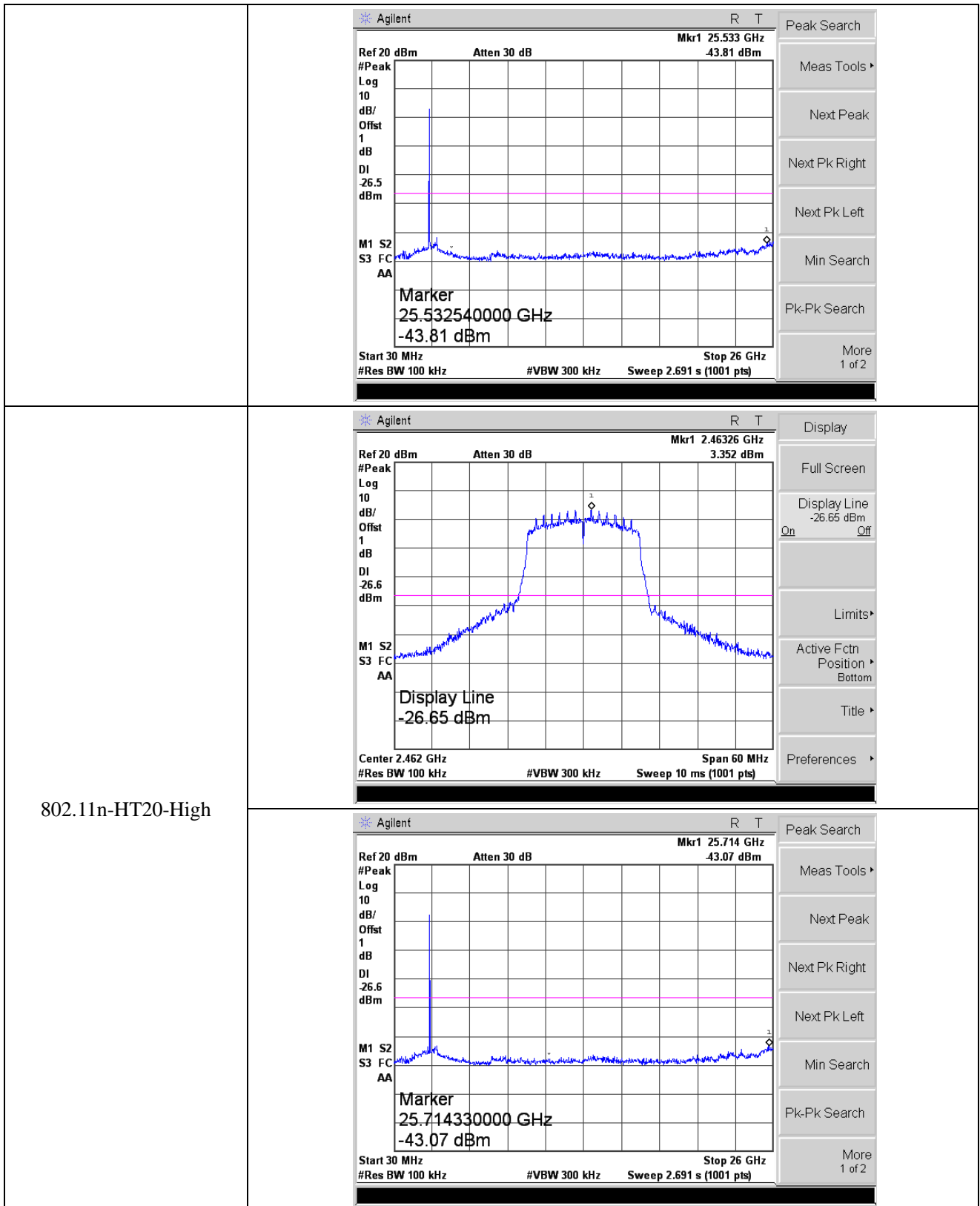


802.11n-HT20-Low

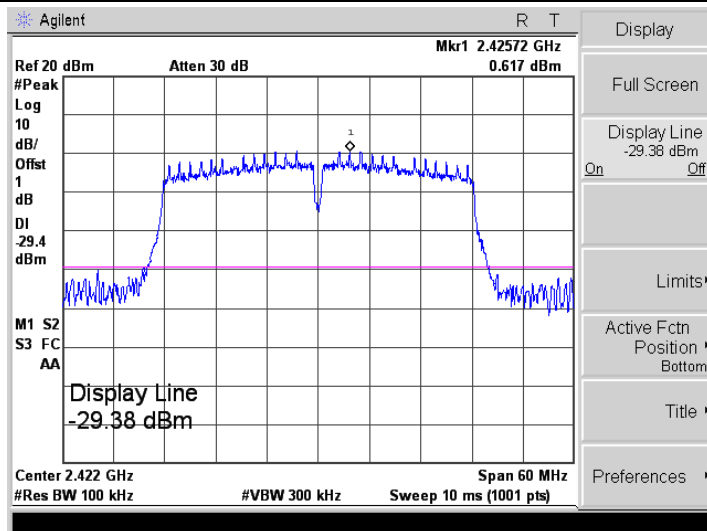


802.11n-HT20-Middle

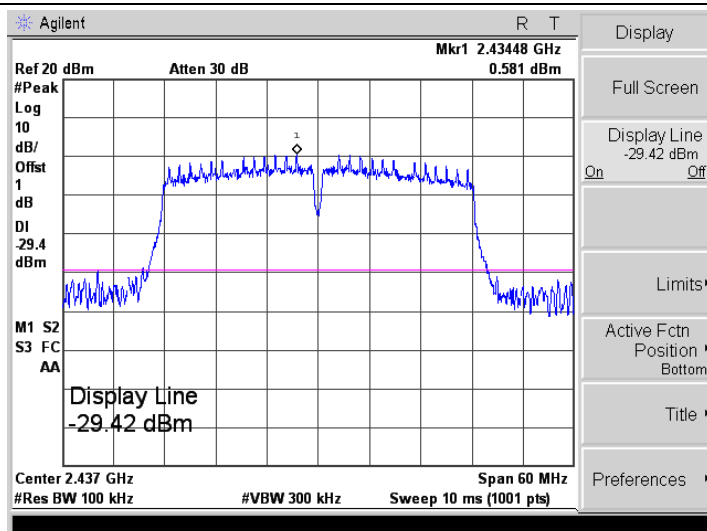
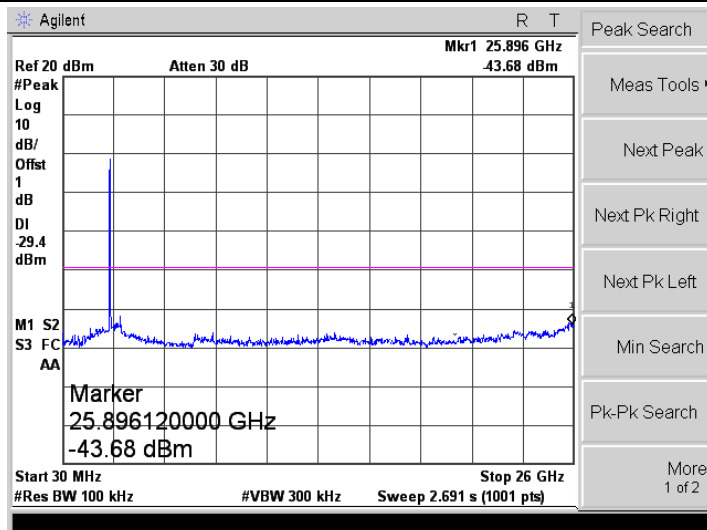


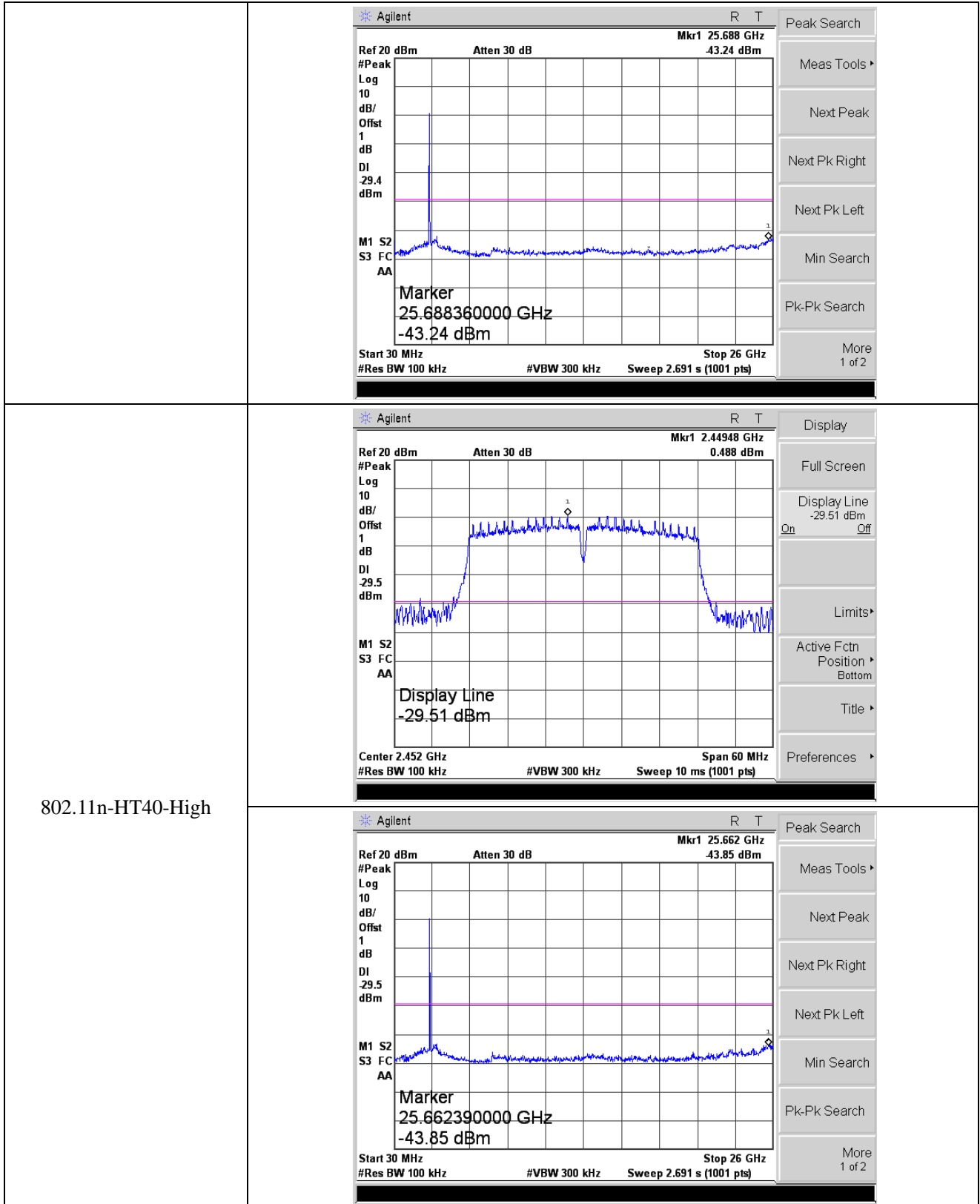


802.11n-HT40-Low



802.11n-HT40-Middle





APPENDIX PHOTOGRAPHS

Please refer to “ANNEX”

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