

TEST REPORT

Reference No..... : WTH22X02020563W-2
FCC ID : 2AUZB-RAX1500
Applicant : SHENZHEN ZK TECHNOLOGY CO., LTD
Address..... : SHENZHEN CITY LONGGANG DISTRICT STREETS QINGLIN ROAD
SHENZHEN CITY STUDENTS (LONGGANG) BUSINESS PA... CHINA
Manufacturer : The same as Applicant
Address..... : The same as Applicant
Product Name : Wireless Router
Model No..... : RAX1500
Standards : FCC Part 15.247
Date of Receipt sample : 2022-02-18
Date of Test..... : 2022-02-18 to 2022-03-30
Date of Issue : 2022-03-30
Test Report Form No. : WTX_Part 15_247W
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 approver.

Prepared By:

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Report version

Version No.	Date of issue	Description
Rev.00	2022-03-30	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	Wireless Router
Trade Name:	HNK
Model No.:	RAX1500
Adding Model(s):	/
Rated Voltage:	DC12V
Power Adapter Model:	MODEL:APS-M012120100W-G INPUT: AC100-240, 50/60Hz, 0.35A Max OUTPUT:DC12V,1.0A
Note: The test data is gathered from a production sample provided by the manufacturer.	

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: 16.59dBm (Conducted) Antenna 2: 15.30dBm (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:	External Antenna
Antenna Gain:	5dBi
Note: The Antenna Gain is provided by the customer and can affect the validity of results.	

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
DC Cable	1.54	Unshielded	Without Ferrite
RJ45 Cable	1.00	Unshielded	Without Ferrite

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

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	E445	EB12648265

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

2021 Equipment Calibration List

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-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	/	/	/
☒ Chamber A: Below 1GHz						
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-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
☒ Chamber A: Above 1GHz						
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-1043	Amplifier	C&D	PAP-1G18	2002	2021-04-12	2022-04-11
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
☐ Chamber B:Below 1GHz						
SEMT-1068	Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2021-04-09	2023-04-08
SEMT-1067	Amplifier	Agilent	8447D	2944A10179	2021-04-12	2022-04-11
SEMT-1066	EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2021-05-06	2022-05-05
☐ Chamber C:Below 1GHz						
SEMT-1319	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2021-12-03	2022-12-02
SEMT-1343	Trilog Broadband Antenna	Schwarz beck	VULB 9168	1194	2021-05-28	2023-05-27
SEMT-1333	Amplifier	HP	8447F	2944A03869	2021-04-15	2022-04-14
☒ Conducted Room 1#						
SEMT-1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2021-04-12	2022-04-11
SEMT-1002	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2021-04-15	2022-04-14
SEMT-1003	AC LISN	Schwarz beck	NSLK8126	8126-224	2021-04-12	2022-04-11
☐ Conducted Room 2#						
SEMT-1334	EMI Test Receiver	Rohde & Schwarz	ESPI	101259	2021-04-12	2022-04-11
SEMT-1336	LISN	Rohde & Schwarz	ENV 216	100097	2021-04-12	2022-04-11

2022 Equipment Calibration List

No.	Description	Manufacturer	Model	Serial No.	Cal Date	Due. Date
SEMT-1075	Communication Tester	Rohde & Schwarz	CMW500	148650	2022-03-22	2023-03-21
SEMT-1063	GSM Tester	Rohde & Schwarz	CMU200	114403	2022-03-22	2023-03-21
SEMT-1072	Spectrum Analyzer	Agilent	E4407B	MY41440400	2022-03-25	2023-03-24
SEMT-1079	Spectrum Analyzer	Agilent	N9020A	US47140102	2022-03-22	2023-03-21
SEMT-1080	Signal Generator	Agilent	83752A	3610A01453	2022-03-22	2023-03-21
SEMT-1081	Vector Signal Generator	Agilent	N5182A	MY47070202	2022-03-22	2023-03-21
SEMT-1028	Power Divider	Weinschel	1506A	PM204	2022-03-22	2023-03-21
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	/	/	/
☒ Chamber A: Below 1GHz						
SEMT-1031	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2022-03-22	2023-03-21
SEMT-1007	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2022-03-21	2023-03-20
SEMT-1008	Amplifier	Agilent	8447F	3113A06717	2022-01-07	2023-01-06
SEMT-1069	Loop Antenna	Schwarz beck	FMZB 1516	9773	2021-03-20	2023-03-19
SEMT-1068	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2021-03-20	2023-03-19
☒ Chamber A: Above 1GHz						
SEMT-1031	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2022-03-22	2023-03-21
SEMT-1007	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2022-03-21	2023-03-20
SEMT-1043	Amplifier	C&D	PAP-1G18	2002	2022-03-21	2023-03-20
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	2022-03-22	2023-03-21
☐ Chamber B:Below 1GHz						
SEMT-1068	Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2021-04-09	2023-04-08
SEMT-1067	Amplifier	Agilent	8447D	2944A10179	2022-03-21	2023-03-20
SEMT-1066	EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2022-03-25	2023-03-24
☐ Chamber C:Below 1GHz						
SEMT-1319	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2022-01-07	2023-01-06
SEMT-1343	Trilog Broadband Antenna	Schwarz beck	VULB 9168	1194	2021-05-28	2023-05-27
SEMT-1333	Amplifier	HP	8447F	2944A03869	2022-03-21	2023-03-20
☒ Conducted Room 1#						
SEMT-1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2022-03-21	2023-03-20
SEMT-1002	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2022-03-25	2023-03-24
SEMT-1003	AC LISN	Schwarz beck	NSLK8126	8126-224	2022-03-21	2023-03-20
☐ Conducted Room 2#						
SEMT-1334	EMI Test Receiver	Rohde & Schwarz	ESPI	101259	2022-03-21	2023-03-20
SEMT-1336	LISN	Rohde & Schwarz	ENV 216	100097	2022-03-21	2023-03-20

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

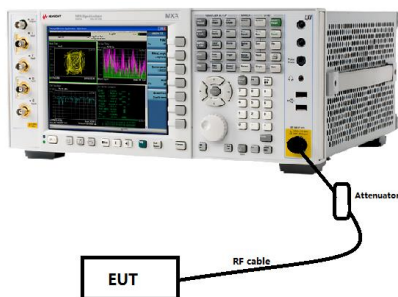
This product has two permanently attached External antennas, fulfill the requirement of this section. And the signals at the antennas are completely uncorrelated.

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

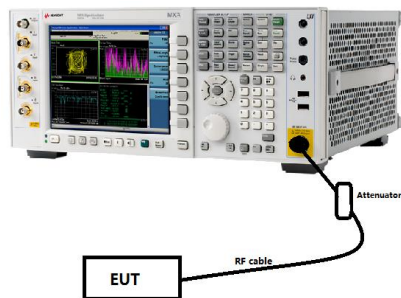
Please refer to Appendix A

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) $\geq 3 \times \text{RBW}$.
- 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

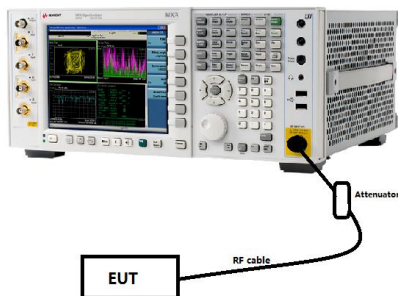
Please refer to Appendix B

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

- Set span to at least 1.5 times the OBW.
- Set RBW = 1-5% of the OBW, not to exceed 1MHz.
- Set VBW $\geq 3 \times$ RBW.
- Number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$. (This gives bin-to-bin spacing $\leq \text{RBW}/2$, so that narrowband signals are not lost between frequency bins.)
- Sweep time = auto.
- Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- 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”.
- Trace average at least 100 traces in power averaging (i.e., RMS) mode.
- 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.

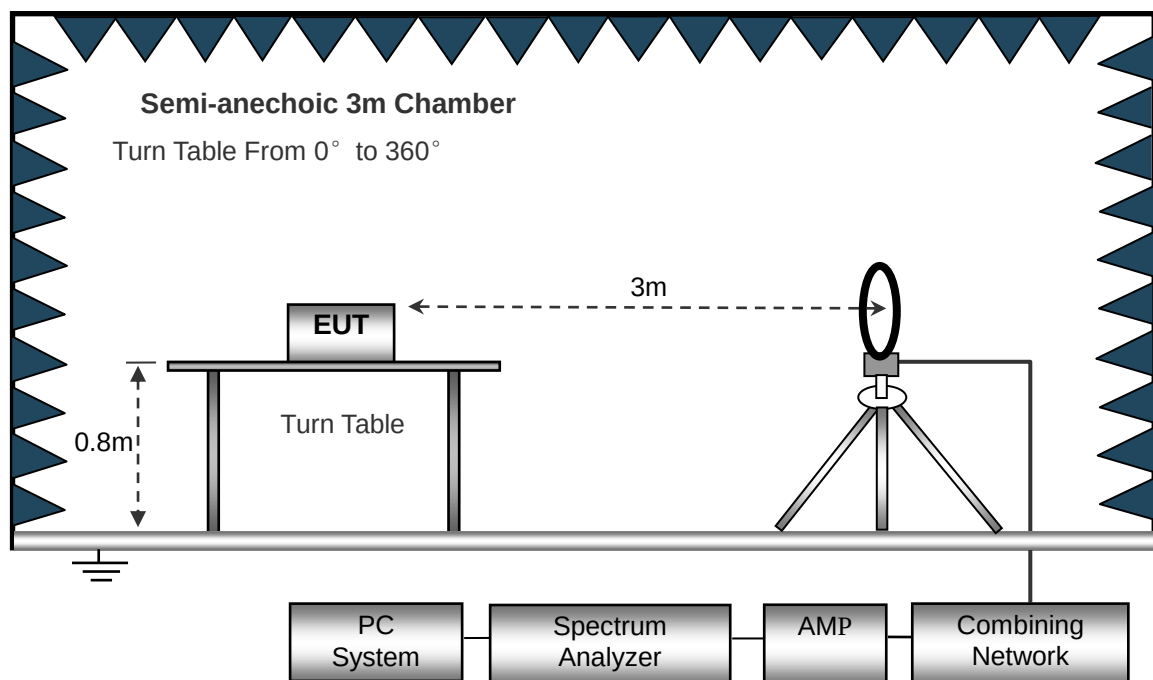
7.2 Test Procedure

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.

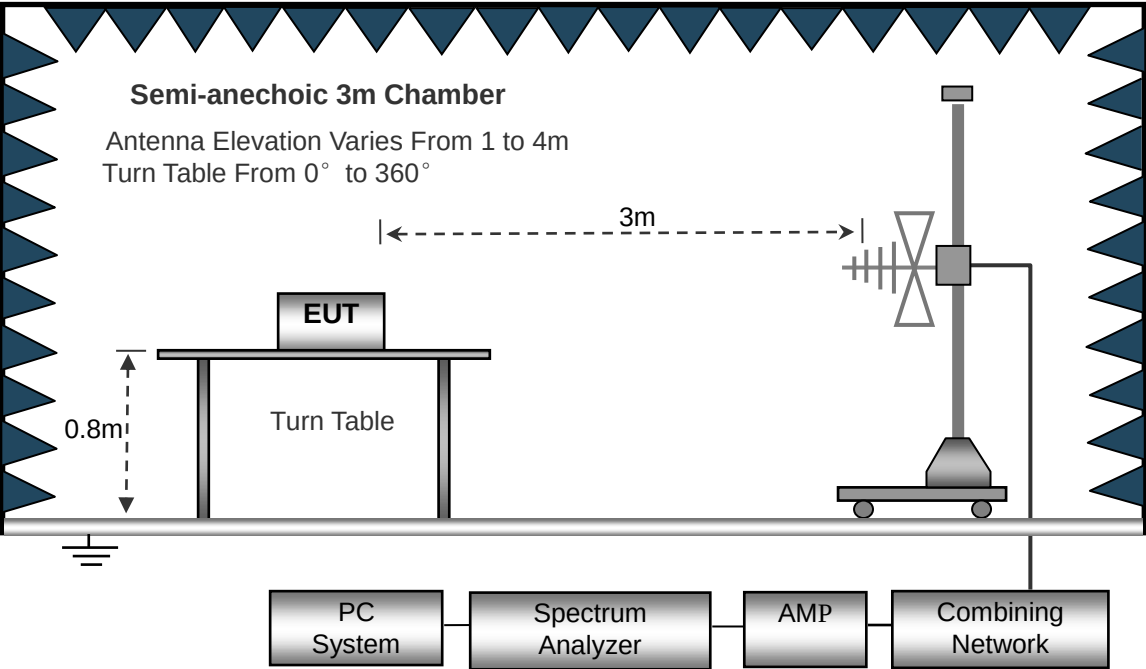
The external I/O cables were draped along the test table and formed a bundle 30 to 40cm long in the middle.

The spacing between the peripherals was 10cm.

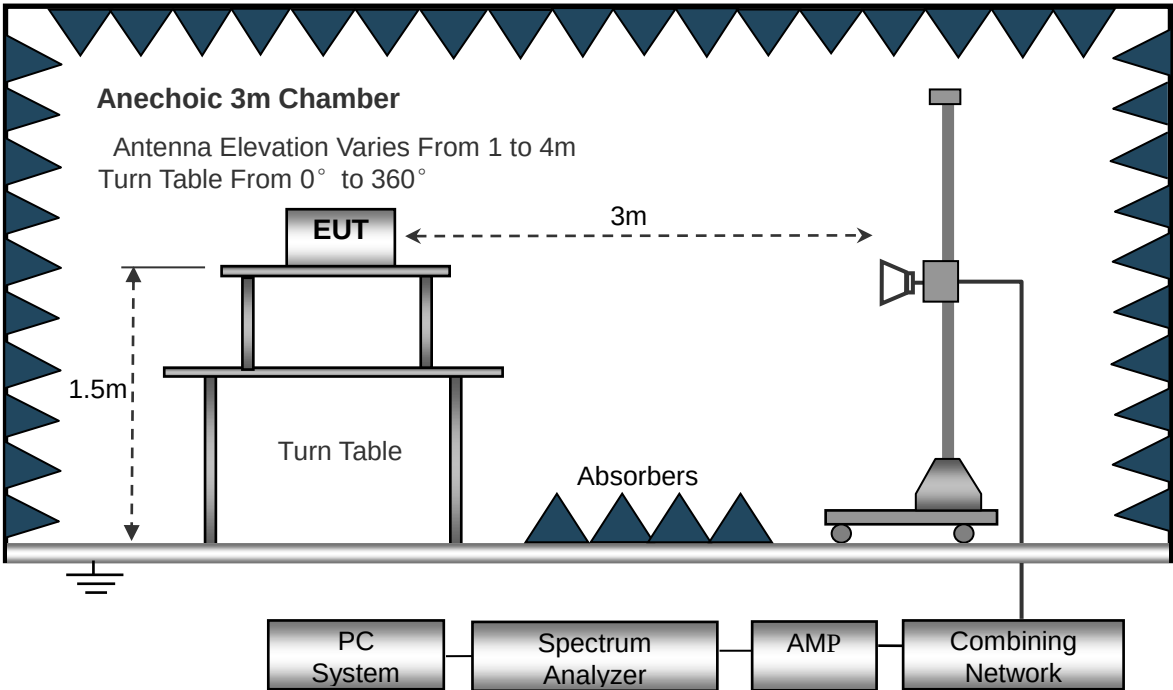
The test setup for emission measurement below 30MHz.



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:

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

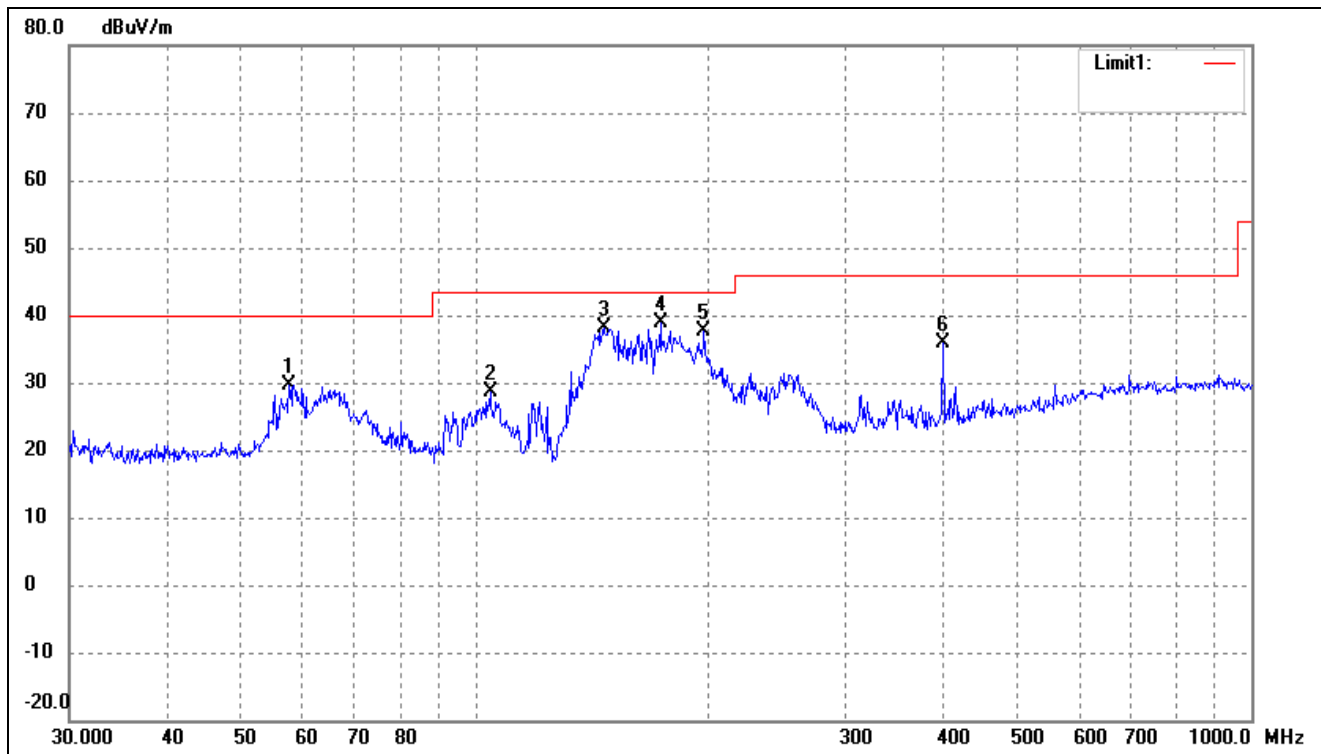
7.4 Summary of Test Results/Plots

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.

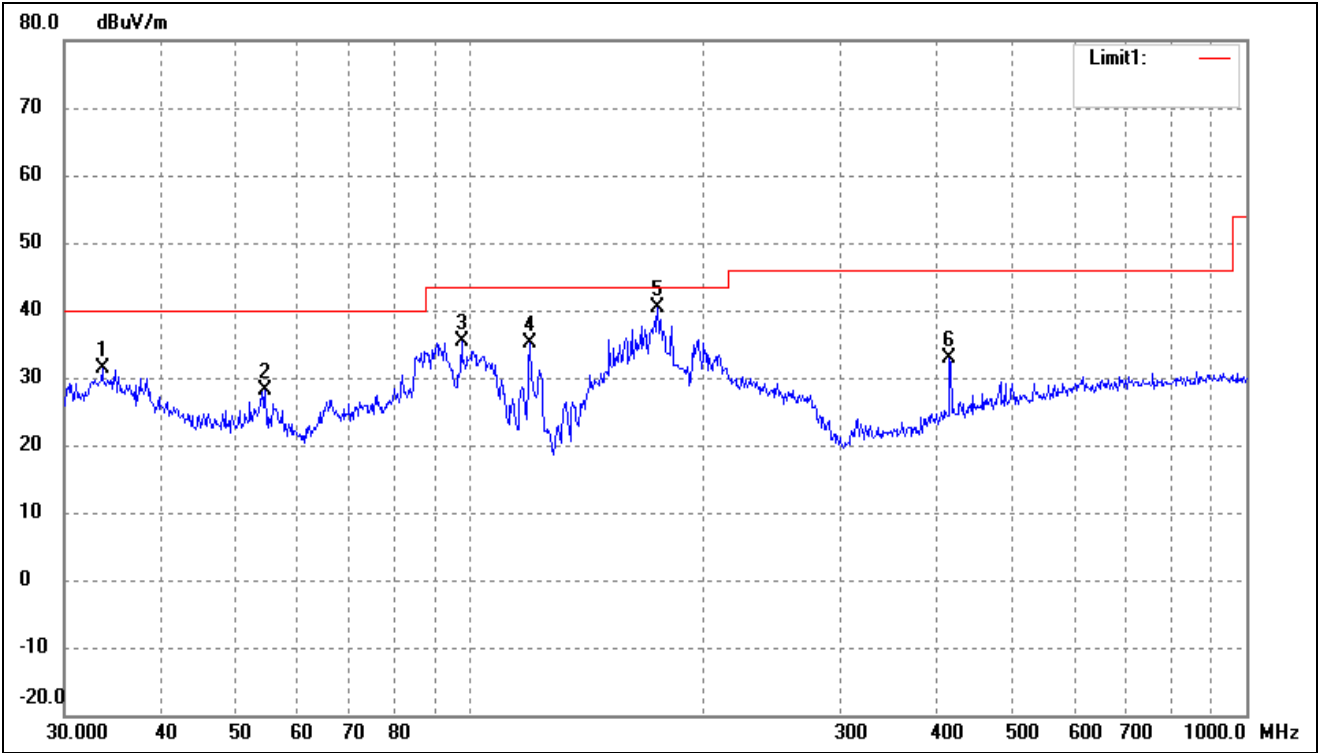
- Spurious Emissions Below 1GHz
- Worst case Antenna 1

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



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	57.5939	37.75	-8.07	29.68	40.00	-10.32	-	-	peak
2	104.5361	37.41	-8.79	28.62	43.50	-14.88	-	-	peak
3	146.3735	50.53	-12.48	38.05	43.50	-5.45	-	-	peak
4	173.2051	50.34	-11.58	38.76	43.50	-4.74	-	-	peak
5	197.2001	47.32	-9.79	37.53	43.50	-5.97	-	-	peak
6	400.4319	39.77	-3.88	35.89	46.00	-10.11	-	-	peak

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



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	33.5624	40.07	-8.58	31.49	40.00	-8.51	-	-	peak
2	54.4516	35.64	-7.62	28.02	40.00	-11.98	-	-	peak
3	97.4560	44.69	-9.20	35.49	43.50	-8.01	-	-	peak
4	119.4361	44.61	-9.56	35.05	43.50	-8.45	-	-	peak
5	174.4241	52.01	-11.53	40.48	43.50	-3.02	-	-	peak
6	414.7223	36.49	-3.50	32.99	46.00	-13.01	-	-	peak

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)

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2412MHz							
4821.757	53.97	-6.08	47.89	74.00	-26.11	H	PK
7236.000	51.23	-1.63	49.60	74.00	-24.40	H	PK
4821.757	55.27	-6.08	49.19	74.00	-24.81	V	PK
7236.000	51.13	-1.63	49.50	74.00	-24.50	V	PK
Middle Channel-2437MHz							
4874.000	50.27	-5.94	44.33	74.00	-29.67	H	PK
7311.000	51.43	-1.59	49.84	74.00	-24.16	H	PK
4871.103	54.38	-5.95	48.43	74.00	-25.57	V	PK
7311.000	50.95	-1.59	49.36	74.00	-24.64	V	PK
High Channel-2462MHz							
4924.000	50.45	-5.81	44.64	74.00	-29.36	H	PK
7386.000	48.70	-1.55	47.15	74.00	-26.85	H	PK
4920.955	54.48	-5.81	48.67	74.00	-25.33	V	PK
7386.000	48.08	-1.55	46.53	74.00	-27.47	V	PK

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) $VBW \geq [3 \times RBW]$.
- 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

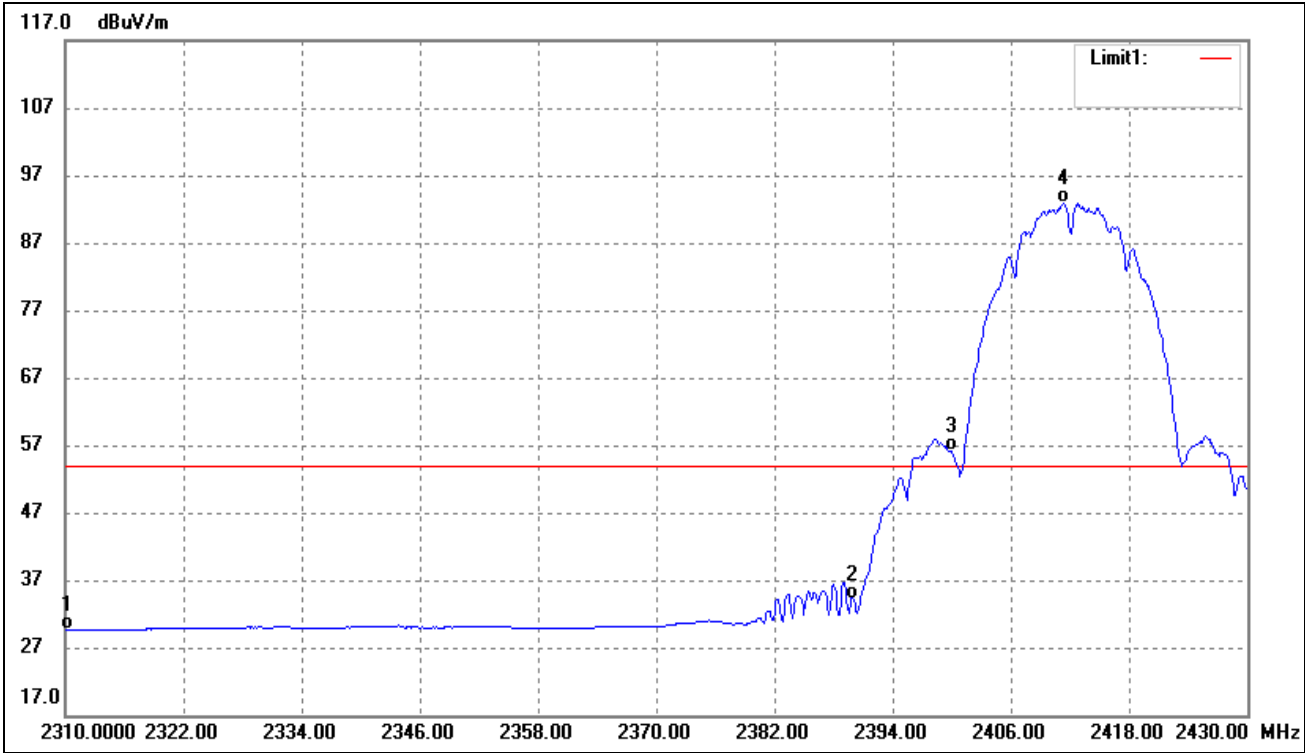
If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

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

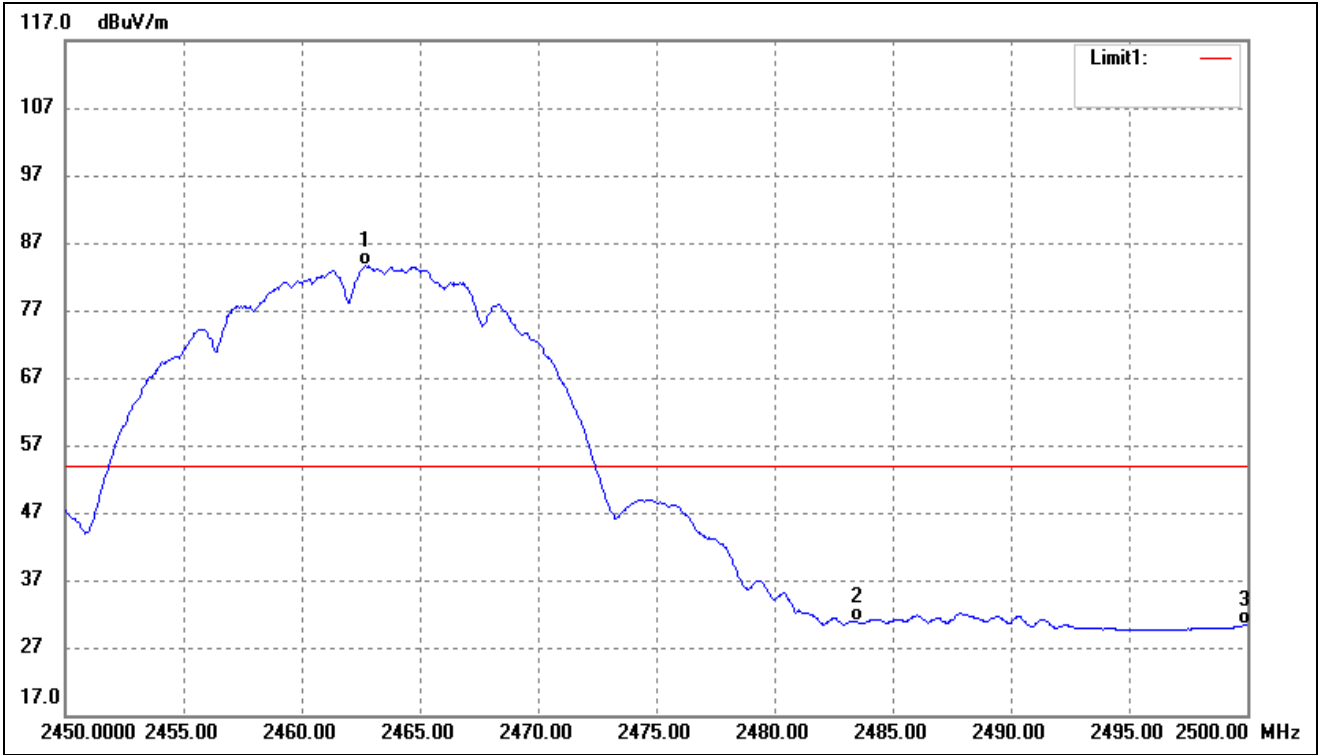
- Radiated test
- Antenna 1(worst case)

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



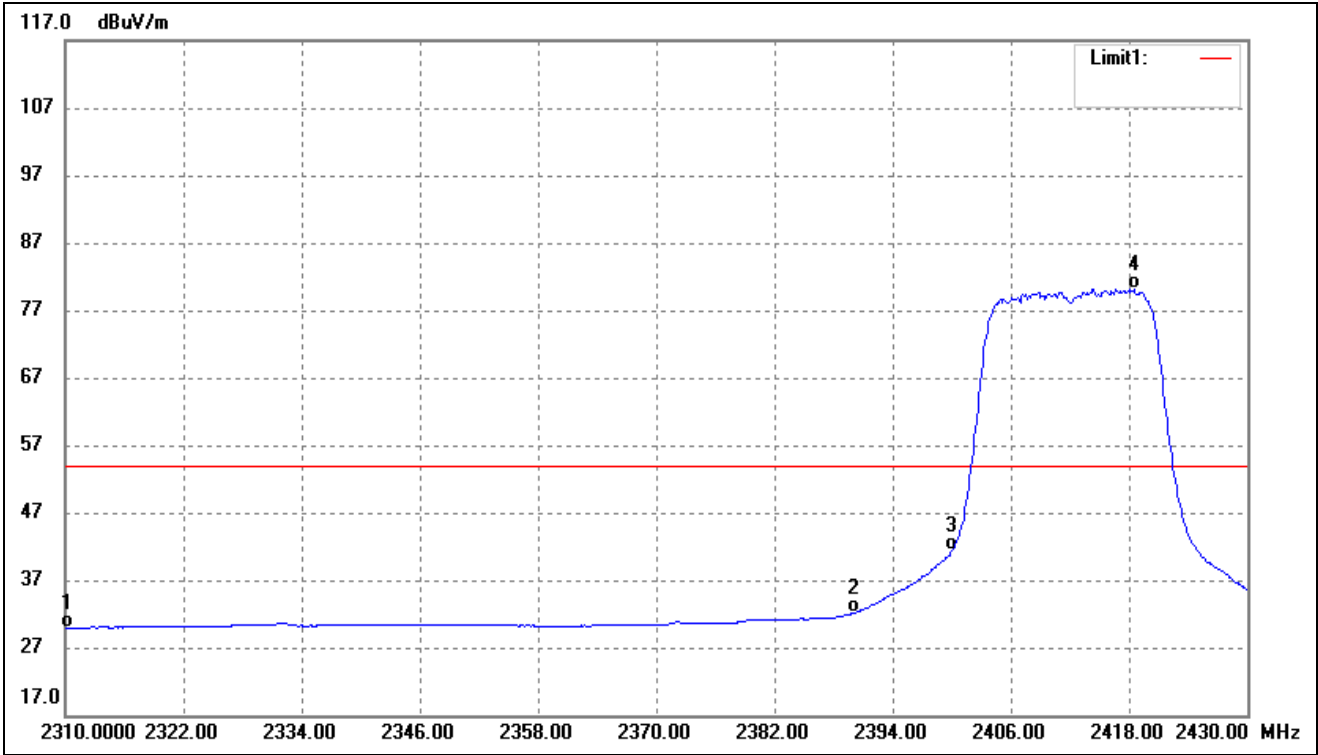
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	40.45	-10.82	29.63	54.00	-24.37	Average Detector
	2310.000	52.61	-10.82	41.79	74.00	-32.21	Peak Detector
2	2390.000	44.93	-10.70	34.23	54.00	-19.77	Average Detector
	2390.000	55.76	-10.70	45.06	74.00	-28.94	Peak Detector
3	2400.000	66.70	-10.69	56.01	Delta=36.90dBc		Average Detector
4	2411.280	103.59	-10.68	92.91			Average Detector

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



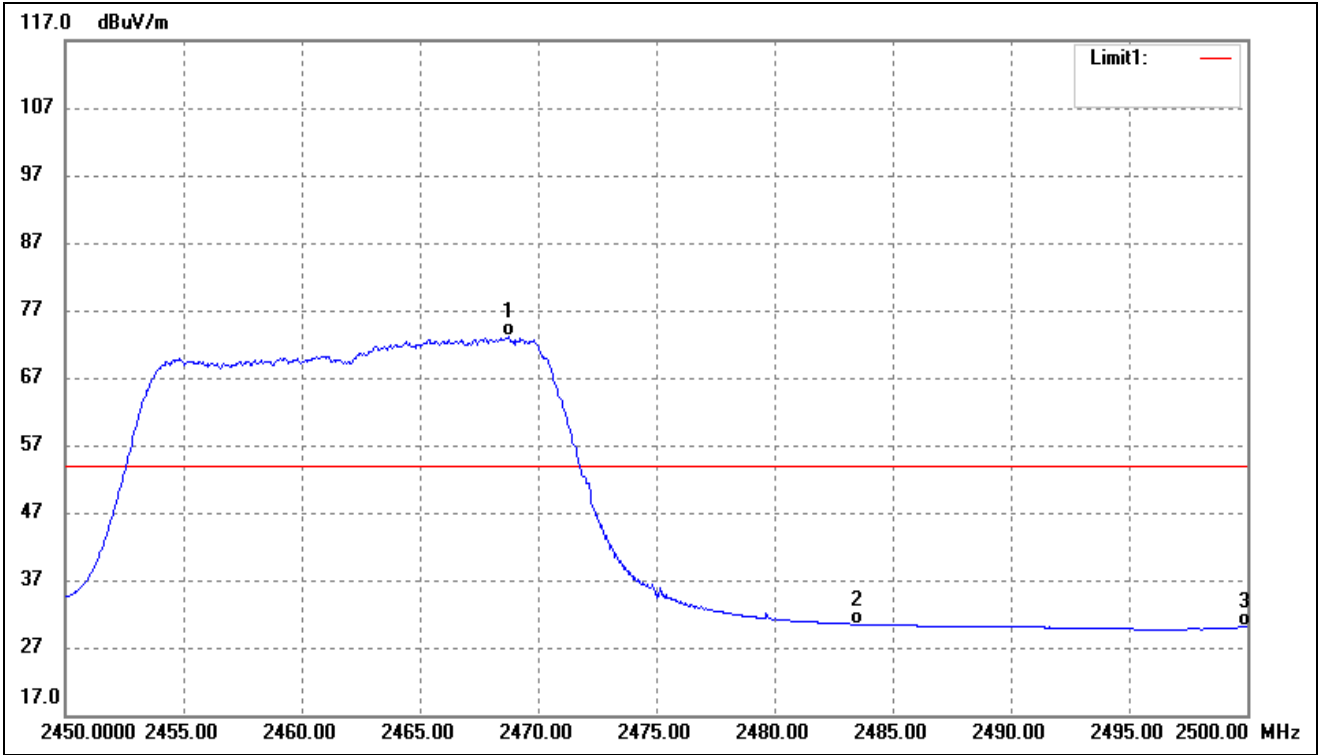
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2462.700	94.20	-10.60	83.60	/	/	Average Detector
	2463.350	100.01	-10.60	89.41	/	/	Peak Detector
2	2483.500	41.39	-10.58	30.81	54.00	-23.19	Average Detector
	2483.500	53.24	-10.58	42.66	74.00	-31.34	Peak Detector
3	2500.000	40.90	-10.55	30.35	54.00	-23.65	Average Detector
	2500.000	53.23	-10.55	42.68	74.00	-31.32	Peak Detector

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



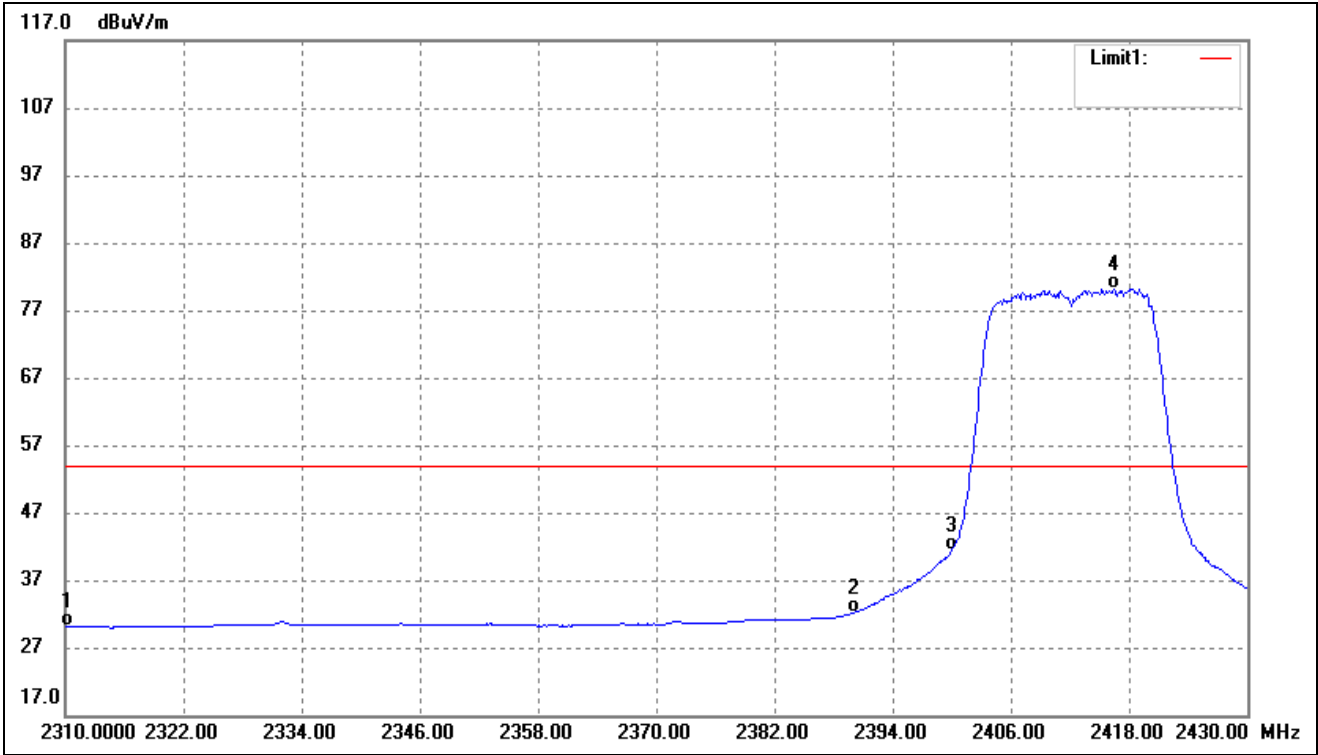
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	40.76	-10.82	29.94	54.00	-24.06	Average Detector
	2310.000	52.27	-10.82	41.45	74.00	-32.55	Peak Detector
2	2390.000	42.84	-10.70	32.14	54.00	-21.86	Average Detector
	2390.000	56.97	-10.70	46.27	74.00	-27.73	Peak Detector
3	2400.000	52.07	-10.69	41.38	Delta=38.78dBc		Average Detector
4	2418.480	90.82	-10.66	80.16			Average Detector

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



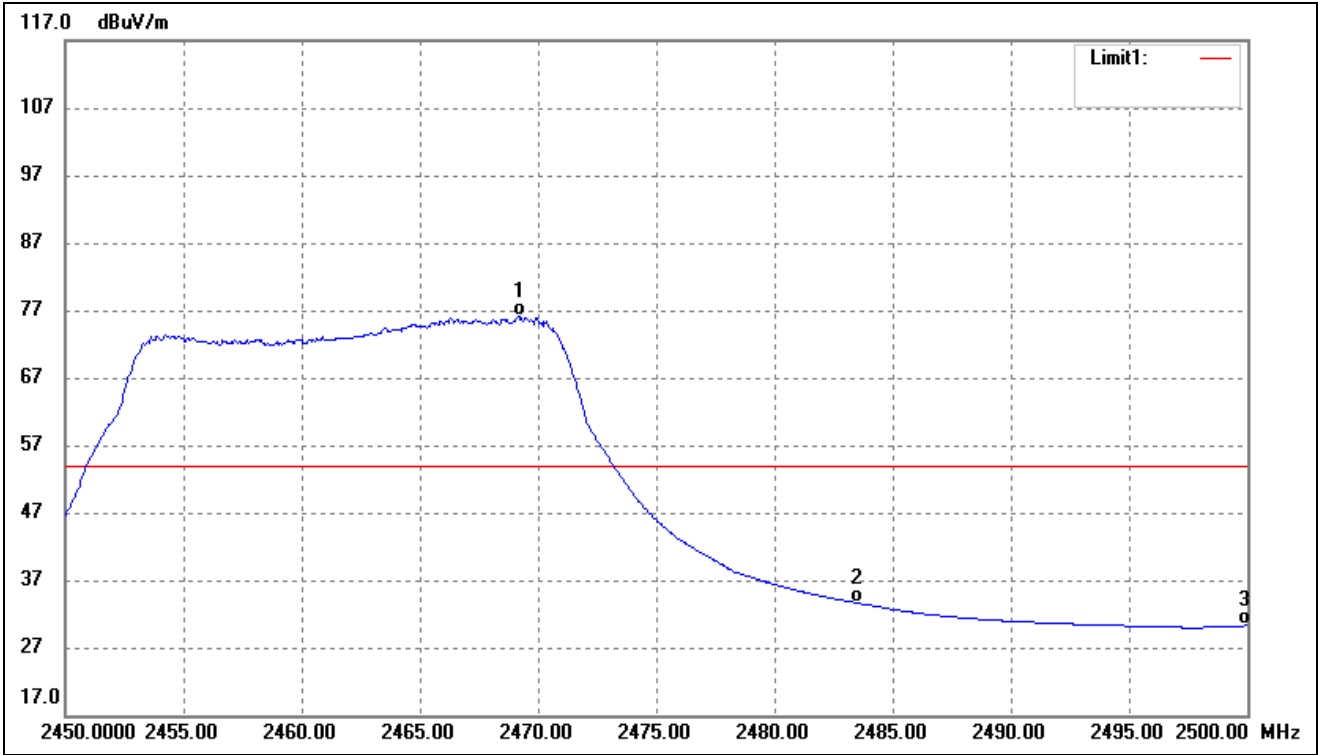
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2468.750	83.63	-10.59	73.04	/	/	Average Detector
	2467.750	97.07	-10.59	86.48	/	/	Peak Detector
2	2483.500	41.03	-10.58	30.45	54.00	-23.55	Average Detector
	2483.500	53.75	-10.58	43.17	74.00	-30.83	Peak Detector
3	2500.000	40.69	-10.55	30.14	54.00	-23.86	Average Detector
	2500.000	53.40	-10.55	42.85	74.00	-31.15	Peak Detector

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



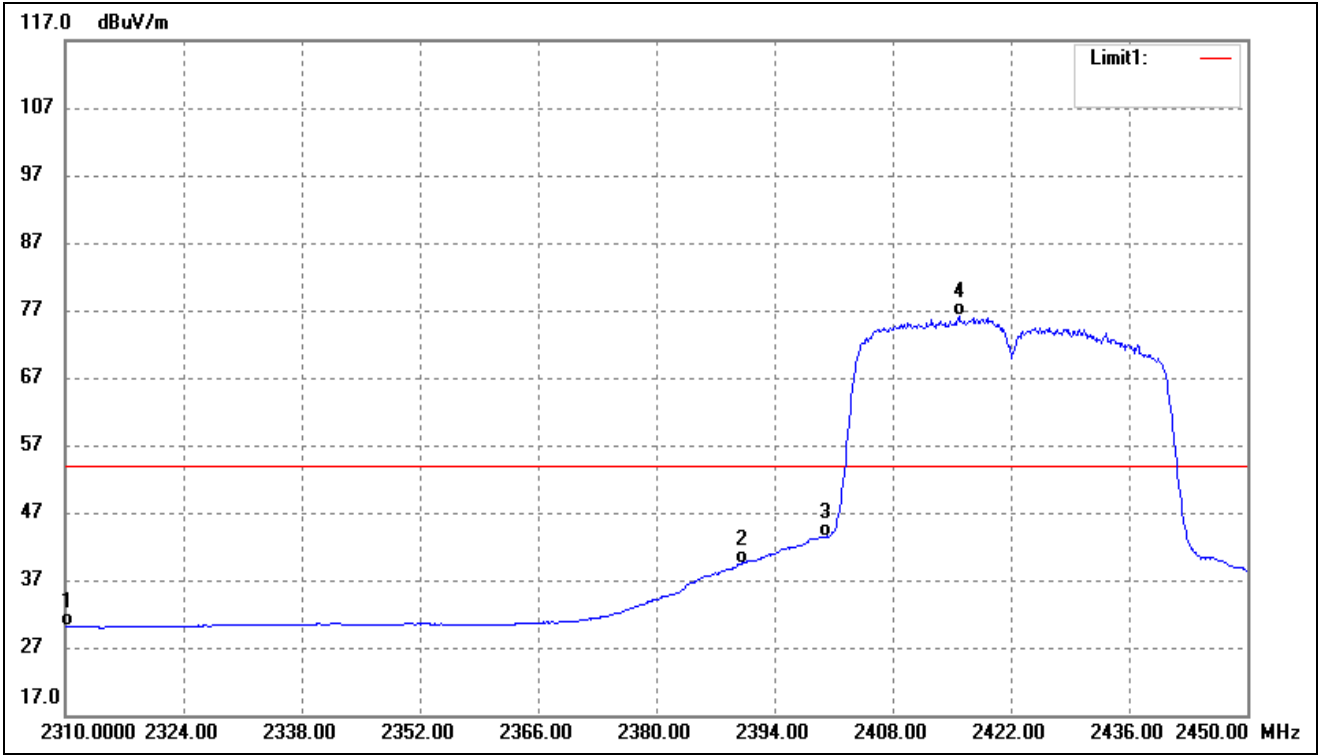
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	40.89	-10.82	30.07	54.00	-23.93	Average Detector
	2310.000	53.61	-10.82	42.79	74.00	-31.21	Peak Detector
2	2390.000	42.89	-10.70	32.19	54.00	-21.81	Average Detector
	2390.000	57.41	-10.70	46.71	74.00	-27.29	Peak Detector
3	2400.000	52.08	-10.69	41.39	Delta=38.82dBc		Average Detector
4	2416.440	90.87	-10.66	80.21			Average Detector

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



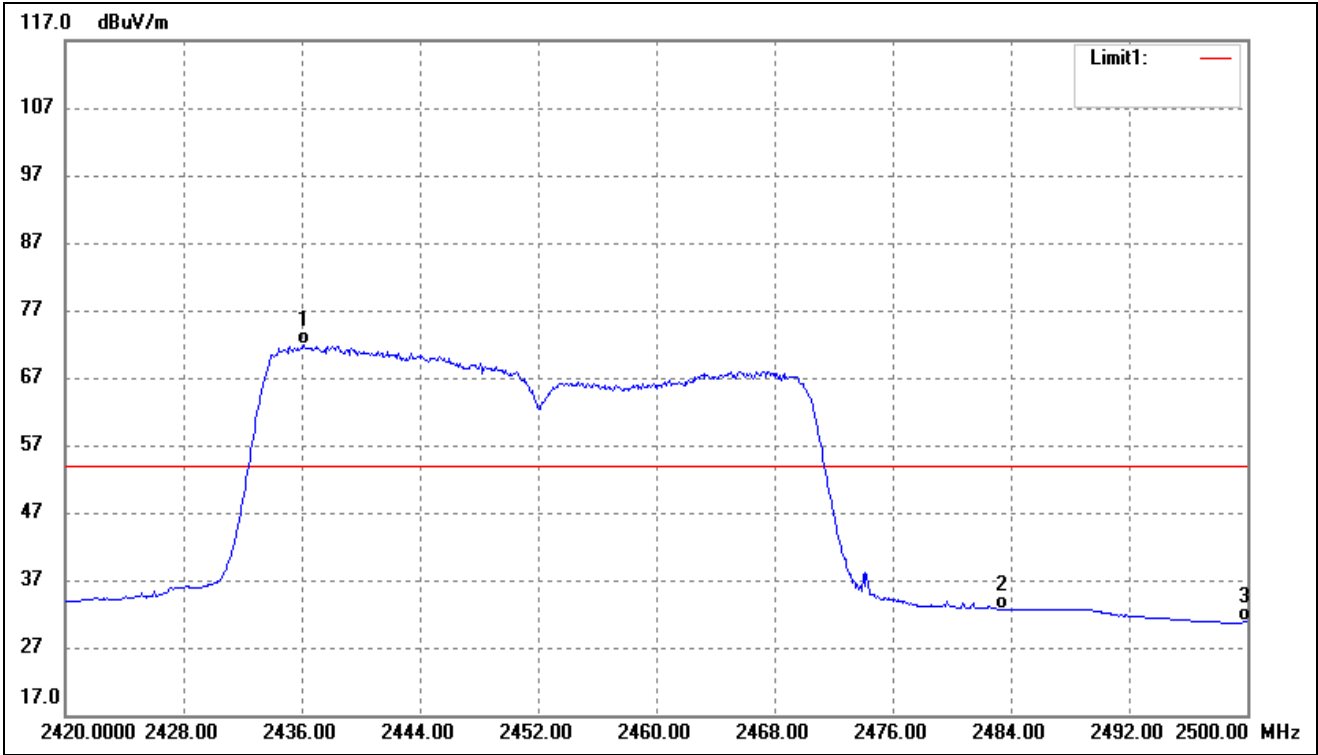
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2469.200	86.63	-10.59	76.04	/	/	Average Detector
	2469.200	99.95	-10.59	89.36	/	/	Peak Detector
2	2483.500	44.21	-10.58	33.63	54.00	-20.37	Average Detector
	2483.500	63.23	-10.58	52.65	74.00	-21.35	Peak Detector
3	2500.000	40.83	-10.55	30.28	54.00	-23.72	Average Detector
	2500.000	52.02	-10.55	41.47	74.00	-32.53	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	40.86	-10.82	30.04	54.00	-23.96	Average Detector
	2310.000	53.02	-10.82	42.20	74.00	-31.80	Peak Detector
2	2390.000	50.17	-10.70	39.47	54.00	-14.53	Average Detector
	2390.000	69.32	-10.70	58.62	74.00	-15.38	Peak Detector
3	2400.000	54.13	-10.69	43.44	Delta=32.64dBc		Average Detector
4	2415.840	86.74	-10.66	76.08			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	2436.160	82.53	-10.64	71.89	/	/	Average Detector
	2438.320	100.72	-10.63	90.09	/	/	Peak Detector
2	2483.500	43.25	-10.58	32.67	54.00	-21.33	Average Detector
	2483.500	58.12	-10.58	47.54	74.00	-26.46	Peak Detector
3	2500.000	41.48	-10.55	30.93	54.00	-23.07	Average Detector
	2500.000	53.90	-10.55	43.35	74.00	-30.65	Peak Detector

➤ Conducted test
Please refer to Appendix D

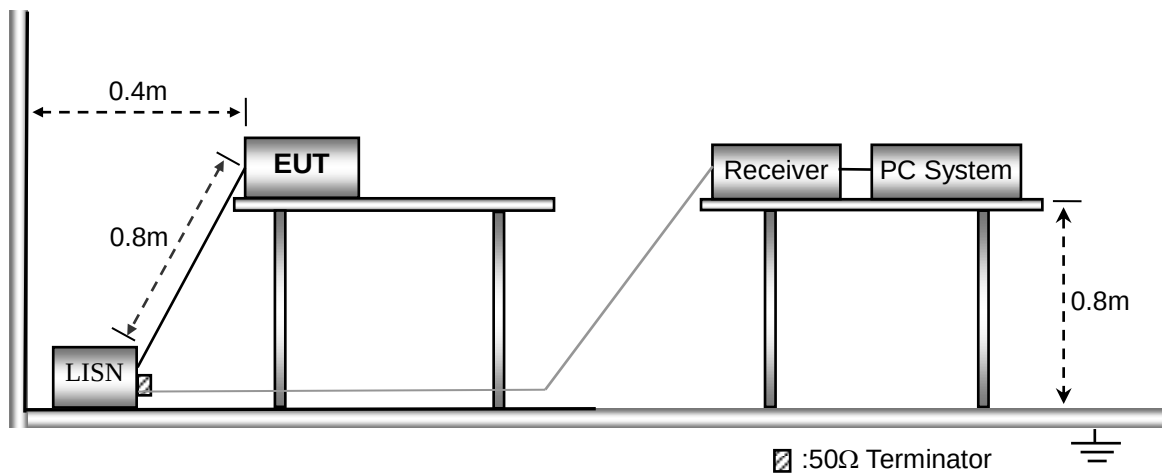
9. Conducted Emissions

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



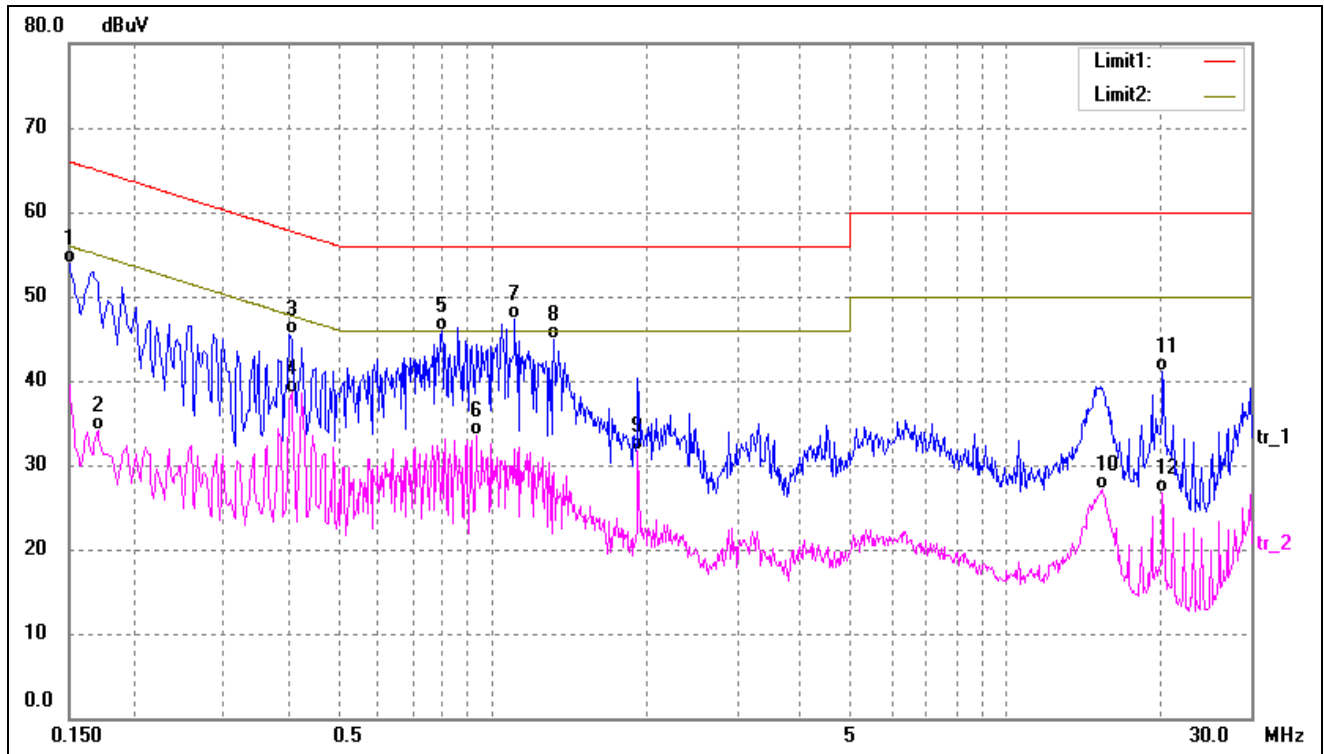
9.3 Test Receiver Setup

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

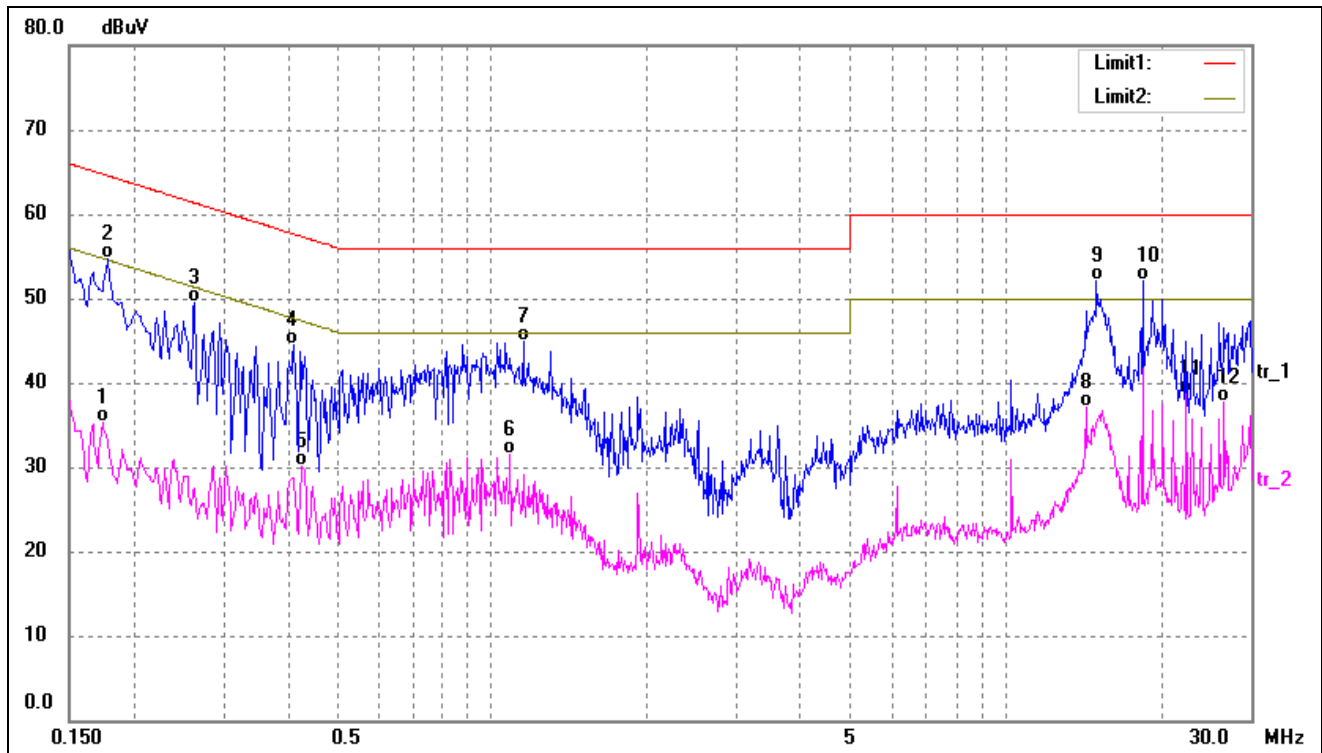
9.4 Summary of Test Results/Plots

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	0.1500	43.51	10.38	53.89	65.99	-12.10	QP
2	0.1700	23.67	10.37	34.04	54.96	-20.92	AVG
3	0.4020	35.17	10.29	45.46	57.81	-12.35	QP
4	0.4060	28.26	10.29	38.55	47.73	-9.18	AVG
5	0.7980	35.51	10.44	45.95	56.00	-10.05	QP
6	0.9300	22.89	10.52	33.41	46.00	-12.59	AVG
7*	1.1100	36.75	10.52	47.27	56.00	-8.73	QP
8	1.3220	34.45	10.42	44.87	56.00	-11.13	QP
9	1.9260	21.51	10.16	31.67	46.00	-14.33	AVG
10	15.3980	16.90	10.16	27.06	50.00	-22.94	AVG
11	20.2660	30.89	10.25	41.14	60.00	-18.86	QP
12	20.2660	16.47	10.25	26.72	50.00	-23.28	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	0.1740	24.86	10.37	35.23	54.77	-19.54	AVG
2	0.1780	44.25	10.37	54.62	64.58	-9.96	QP
3	0.2620	39.10	10.35	49.45	61.37	-11.92	QP
4	0.4100	34.21	10.29	44.50	57.65	-13.15	QP
5	0.4260	19.89	10.28	30.17	47.33	-17.16	AVG
6	1.0860	20.98	10.53	31.51	46.00	-14.49	AVG
7	1.1500	34.32	10.50	44.82	56.00	-11.18	QP
8	14.3340	26.99	10.12	37.11	50.00	-12.89	AVG
9	15.0180	41.88	10.15	52.03	60.00	-7.97	QP
10*	18.4340	41.88	10.22	52.10	60.00	-7.90	QP
11	22.5300	28.56	10.23	38.79	50.00	-11.21	AVG
12	26.6220	27.42	10.22	37.64	50.00	-12.36	AVG

APPENDIX SUMMARY

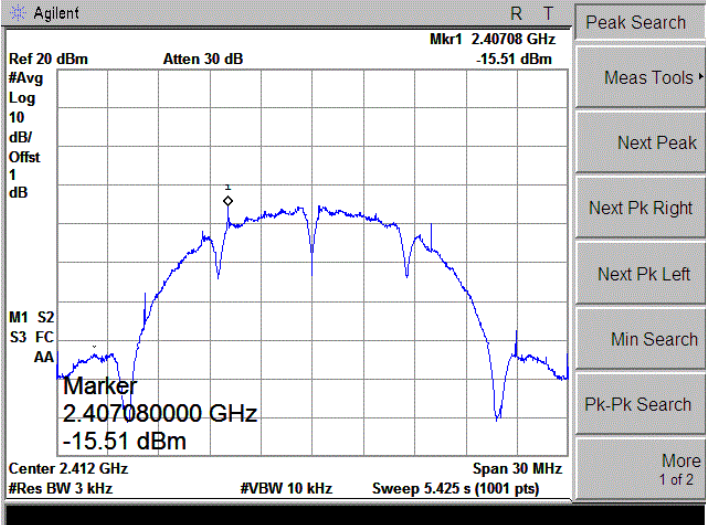
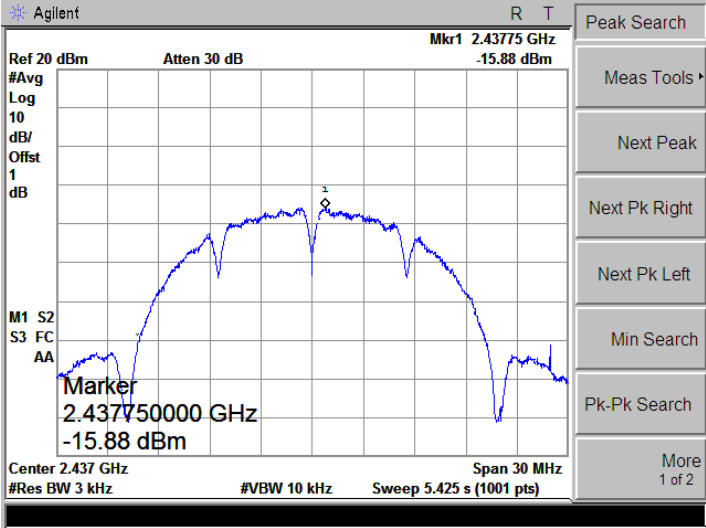
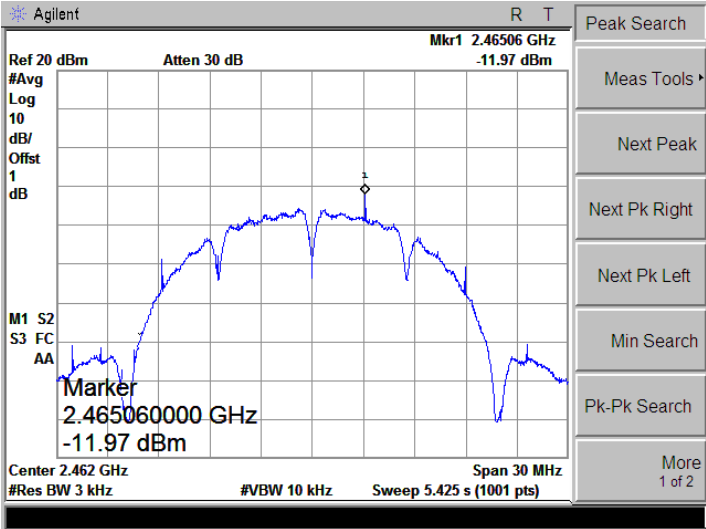
Project No.	WTH22X02020563W	Test Engineer	Gala
Start date	2022/3/8	Finish date	2022/3/8
Temperature	23℃	Humidity	45%
RF specifications	WIFI-2.4G		

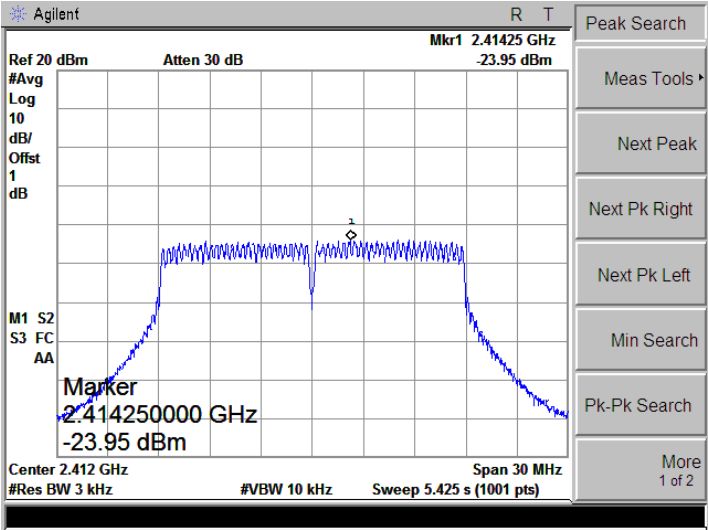
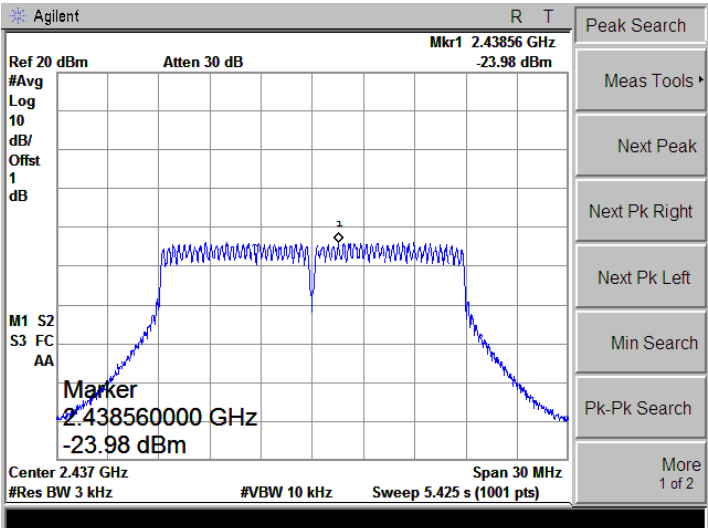
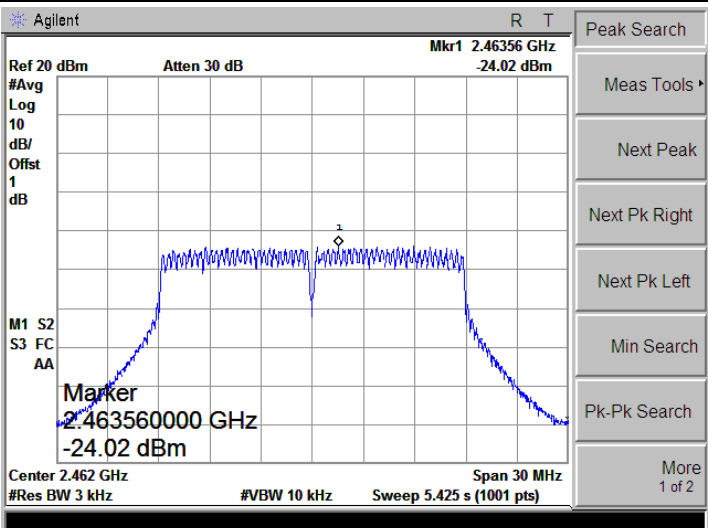
APPENDIX	Description of Test Item	Result
A	Power Spectral Density	Compliant
B	DTS Bandwidth	Compliant
C	RF Output Power	Compliant
D	Conducted Out of Band Emissions	Compliant

APPENDIX A

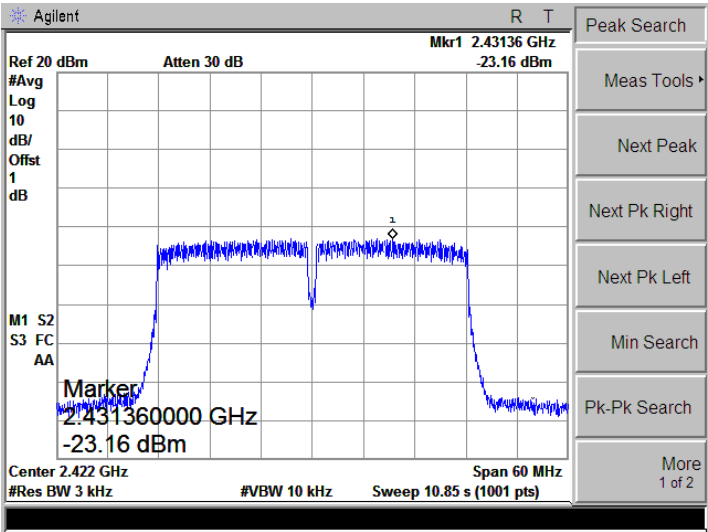
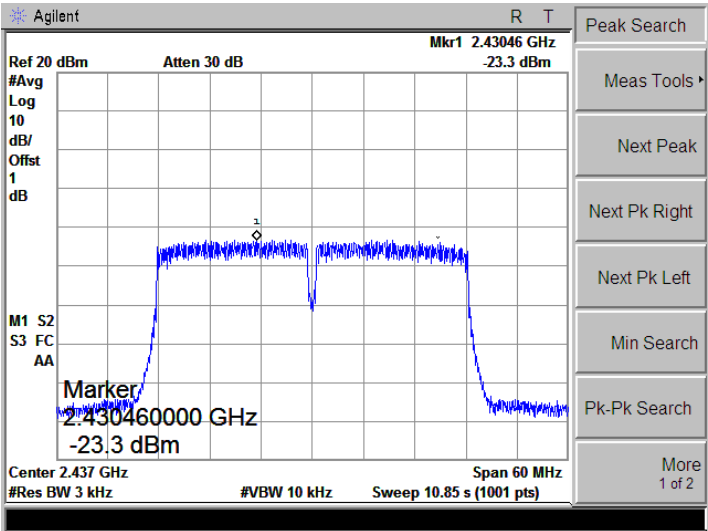
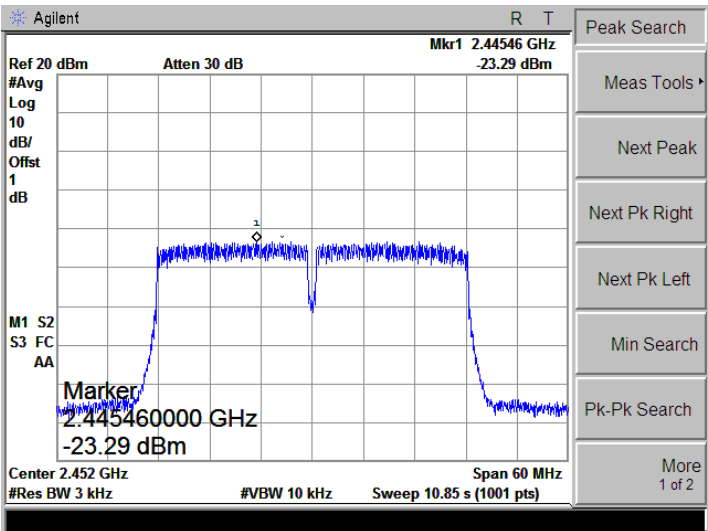
Power Spectral Density					
Test Mode	Test Channel MHz	Test Result(dBm/3kHz)		Total dBm	Limit dBm/3kHz
		Antenna 1	Antenna 2		
802.11b_1Mbps	2412	-15.51	-16.83	/	8
	2437	-15.88	-17.12	/	8
	2462	-11.97	-14.42	/	8
802.11g_6Mbps	2412	-23.95	-20.90	/	8
	2437	-23.98	-20.41	/	8
	2462	-24.02	-20.80	/	8
802.11n-HT20_MCS0	2412	-20.07	-21.32	-17.64	8
	2437	-20.12	-20.69	-17.39	8
	2462	-20.78	-20.71	-17.73	8
802.11n-HT40_MCS0	2422	-23.16	-25.73	-21.25	8
	2437	-23.30	-25.40	-21.21	8
	2452	-23.29	-25.65	-21.30	8

Antenna 1

802.11b-Low	
802.11b-Middle	
802.11b-High	

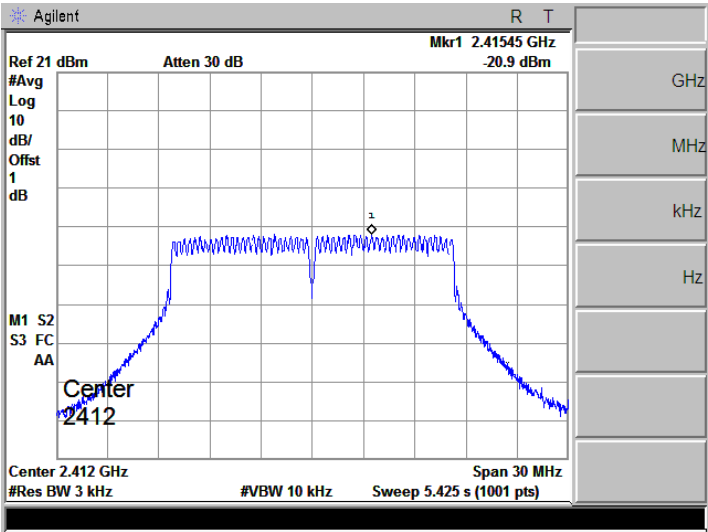
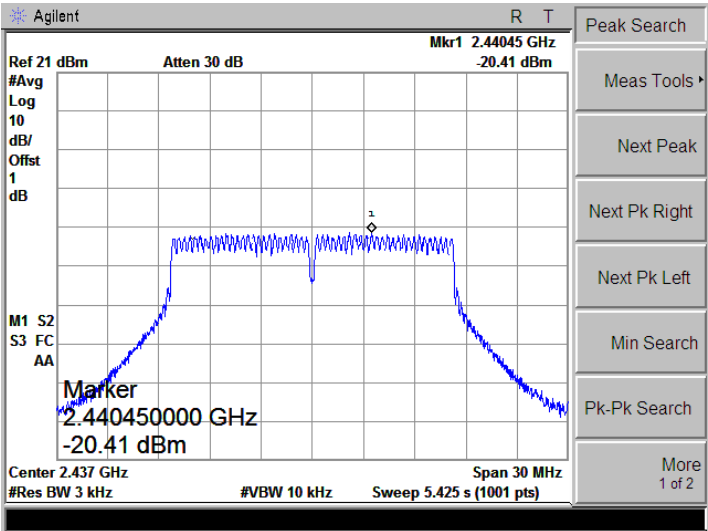
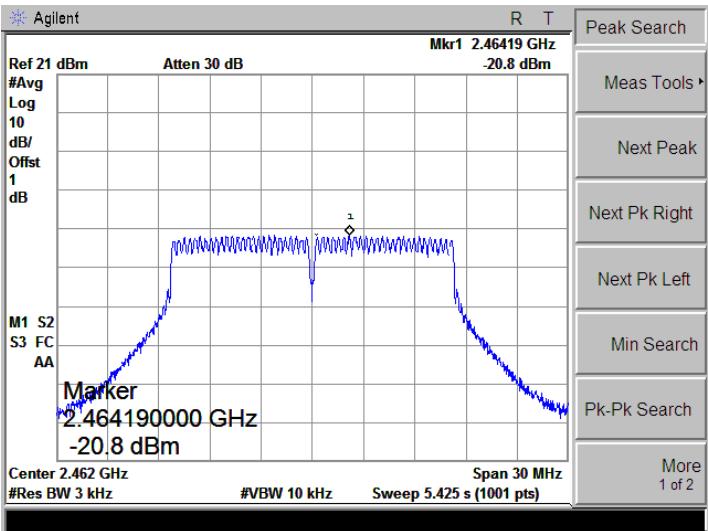
802.11g-Low	
802.11g-Middle	
802.11g-High	

802.11n-HT20-Low	Agilent Ref 20 dBm Atten 30 dB Mkr1 2.41794 GHz -20.07 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 2.417940000 GHz -20.07 dBm Center 2.412 GHz #Res BW 3 kHz #VBW 10 kHz Sweep 5.425 s (1001 pts) Span 30 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-Middle	Agilent Ref 20 dBm Atten 30 dB Mkr1 2.43079 GHz -20.12 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 2.430790000 GHz -20.12 dBm Center 2.437 GHz #Res BW 3 kHz #VBW 10 kHz Sweep 5.425 s (1001 pts) Span 30 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-High	Agilent Ref 20 dBm Atten 30 dB Mkr1 2.46698 GHz -20.78 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 2.466980000 GHz -20.78 dBm Center 2.462 GHz #Res BW 3 kHz #VBW 10 kHz Sweep 5.425 s (1001 pts) Span 30 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

802.11n-HT40-Low	
802.11n-HT40-Middle	
802.11n-HT40-High	

Antenna 2

802.11b-Low	Agilent R T Ref 21 dBm Atten 30 dB Mkr1 2.41131 GHz -16.83 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 2.411310000 GHz -16.83 dBm Center 2.412 GHz #Res BW 3 kHz #VBW 10 kHz Sweep 5.425 s (1001 pts) Span 30 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11b-Middle	Agilent R T Ref 21 dBm Atten 30 dB Mkr1 2.43769 GHz -17.12 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 2.437690000 GHz -17.12 dBm Center 2.437 GHz #Res BW 3 kHz #VBW 10 kHz Sweep 5.425 s (1001 pts) Span 30 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11b-High	Agilent R T Ref 21 dBm Atten 30 dB Mkr1 2.46158 GHz -14.42 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 2.461580000 GHz -14.42 dBm Center 2.462 GHz #Res BW 3 kHz #VBW 10 kHz Sweep 5.425 s (1001 pts) Span 30 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

802.11g-Low	
802.11g-Middle	
802.11g-High	

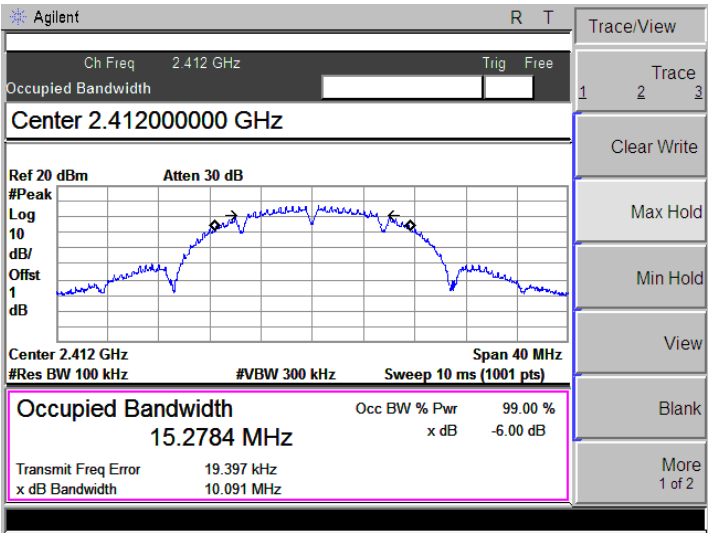
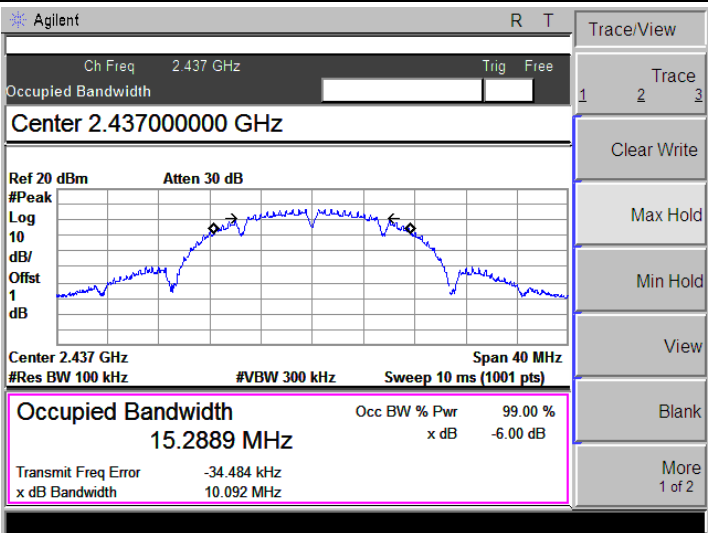
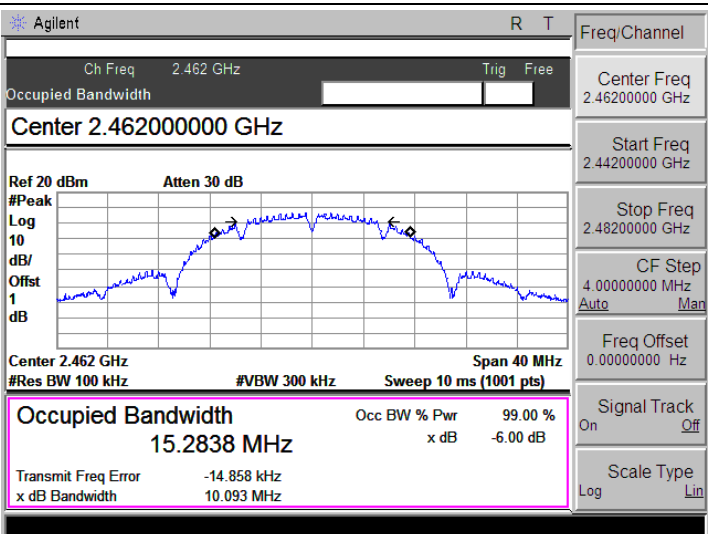
802.11n-HT20-Low	Agilent Ref 21 dBm Atten 30 dB Mkr1 2.41890 GHz -21.32 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 2.418900000 GHz -21.32 dBm Center 2.412 GHz #Res BW 3 kHz #VBW 10 kHz Sweep 5.425 s (1001 pts) Span 30 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-Middle	Agilent Ref 21 dBm Atten 30 dB Mkr1 2.43202 GHz -20.69 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 2.432020000 GHz -20.69 dBm Center 2.437 GHz #Res BW 3 kHz #VBW 10 kHz Sweep 5.425 s (1001 pts) Span 30 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-High	Agilent Ref 21 dBm Atten 30 dB Mkr1 2.45702 GHz -20.71 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 2.457020000 GHz -20.71 dBm Center 2.462 GHz #Res BW 3 kHz #VBW 10 kHz Sweep 5.425 s (1001 pts) Span 30 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

802.11n-HT40-Low	Agilent Ref 21 dBm Atten 30 dB Mkr1 2.42950 GHz -25.73 dBm #Avg Log 10 dB/ Offst 1 dB W1 S2 S3 FC AA Marker 2.429500000 GHz -25.73 dBm Center 2.422 GHz #Res BW 3 kHz #VBW 10 kHz Sweep 10.85 s (1001 pts) Span 60 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT40-Middle	Agilent Ref 21 dBm Atten 30 dB Mkr1 2.43046 GHz -25.4 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 2.430460000 GHz -25.4 dBm Center 2.437 GHz #Res BW 3 kHz #VBW 10 kHz Sweep 10.85 s (1001 pts) Span 60 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT40-High	Agilent Ref 21 dBm Atten 30 dB Mkr1 2.45890 GHz -25.65 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 2.458900000 GHz -25.65 dBm Center 2.452 GHz #Res BW 3 kHz #VBW 10 kHz Sweep 10.85 s (1001 pts) Span 60 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

APPENDIX B

DTS Bandwidth				
Test Mode	Test Channel MHz	Test Result(MHz)		Limit kHz
		Antenna 1	Antenna 2	
802.11b_1Mbps	2412	10.091	10.068	≥ 500
	2437	10.092	10.074	≥ 500
	2462	10.093	10.059	≥ 500
802.11g_6Mbps	2412	16.352	16.333	≥ 500
	2437	16.314	16.351	≥ 500
	2462	16.360	16.346	≥ 500
802.11n-HT20_MCS0	2412	17.563	17.540	≥ 500
	2437	17.556	17.567	≥ 500
	2462	17.571	17.527	≥ 500
802.11n-HT40_MCS0	2422	35.391	35.696	≥ 500
	2437	35.651	35.739	≥ 500
	2452	35.691	35.384	≥ 500

Antenna 1

802.11b-Low	
802.11b-Middle	
802.11b-High	

802.11g-Low	Agilent Ch Freq 2.412 GHz Occupied Bandwidth Center 2.41200000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.4249 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -5.967 kHz x dB Bandwidth 16.352 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11g-Middle	Agilent Ch Freq 2.437 GHz Occupied Bandwidth Center 2.43700000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.4348 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -19.513 kHz x dB Bandwidth 16.314 MHz Freq/Channel Center Freq 2.43700000 GHz Start Freq 2.41700000 GHz Stop Freq 2.45700000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11g-High	Agilent Ch Freq 2.462 GHz Occupied Bandwidth Center Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.4305 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -19.044 kHz x dB Bandwidth 16.360 MHz GHz MHz kHz Hz

802.11n-HT20-Low	Agilent Ch Freq 2.412 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.5993 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 13.197 kHz x dB Bandwidth 17.563 MHz Trace/View 1 2 3 Trace Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT20-Middle	Agilent Ch Freq 2.437 GHz Trig Free Occupied Bandwidth Center 2.437000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.6025 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -959.845 Hz x dB Bandwidth 17.556 MHz Trace/View 1 2 3 Trace Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT20-High	Agilent Ch Freq 2.462 GHz Trig Free Occupied Bandwidth Center 2.462000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.6231 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 10.491 kHz x dB Bandwidth 17.571 MHz Trace/View 1 2 3 Trace Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT40-Low	Agilent Ch Freq 2.422 GHz Trig Free Occupied Bandwidth Center 2.42200000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 2.422 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 35.8168 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -5.094 kHz x dB Bandwidth 35.391 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT40-Middle	Agilent Ch Freq 2.437 GHz Trig Free Occupied Bandwidth Center 2.43700000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 35.8206 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -3.306 kHz x dB Bandwidth 35.651 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT40-High	Agilent Ch Freq 2.452 GHz Trig Free Occupied Bandwidth VBW 300.000000 kHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 2.452 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 35.8505 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -3.338 kHz x dB Bandwidth 35.691 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

Antenna 2

802.11b-Low	Agilent Ch Freq 2.412 GHz Occupied Bandwidth x dB -6.00 dB Ref 21 dBm Atten 30 dB Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 15.2298 MHz Transmit Freq Error 55.182 kHz x dB Bandwidth 10.068 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Meas Setup Avg Number 10 On Off Avg Mode Repeat Exp Max Hold On Off Occ BW % Pwr 99.00 % OBW Spar 40.000000 MHz x dB -6.00 dB Optimize Ref Level
802.11b-Middle	Agilent Ch Freq 2.437 GHz Occupied Bandwidth Center 2.43700000 GHz Ref 21 dBm Atten 30 dB Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 15.2358 MHz Transmit Freq Error -14.558 kHz x dB Bandwidth 10.074 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11b-High	Agilent Ch Freq 2.462 GHz Occupied Bandwidth Center 2.46200000 GHz Ref 21 dBm Atten 30 dB Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 15.2539 MHz Transmit Freq Error -1.503 kHz x dB Bandwidth 10.059 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11g-Low	Agilent Ch Freq 2.412 GHz Trig Free Occupied Bandwidth Center 2.41200000 GHz Ref 21 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.4050 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 2.119 kHz x dB Bandwidth 16.333 MHz Trace/View 1 Trace 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11g-Middle	Agilent Ch Freq 2.437 GHz Trig Free Occupied Bandwidth Center 2.43700000 GHz Ref 21 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.4285 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -19.381 kHz x dB Bandwidth 16.351 MHz Trace/View 1 Trace 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11g-High	Agilent Ch Freq 2.462 GHz Trig Free Occupied Bandwidth Center 2.46200000 GHz Ref 21 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.4143 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -9.536 kHz x dB Bandwidth 16.346 MHz Trace/View 1 Trace 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT20-Low	Agilent Ch Freq 2.412 GHz Occupied Bandwidth Center 2.41200000 GHz Ref 21 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.6103 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 19.574 kHz x dB Bandwidth 17.540 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT20-Middle	Agilent Ch Freq 2.437 GHz Occupied Bandwidth Center 2.43700000 GHz Ref 21 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.6026 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 697.635 Hz x dB Bandwidth 17.567 MHz Freq/Channel Center Freq 2.43700000 GHz Start Freq 2.41700000 GHz Stop Freq 2.45700000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-High	Agilent Ch Freq 2.462 GHz Occupied Bandwidth Center 2.46200000 GHz Ref 21 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.6044 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 8.860 kHz x dB Bandwidth 17.527 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT40-Low	Agilent Ch Freq 2.422 GHz Trig Free Occupied Bandwidth Center 2.42200000 GHz Ref 21 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 2.422 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 35.8783 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 27.747 kHz x dB Bandwidth 35.696 MHz Trace/View 1 Trace 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT40-Middle	Agilent Ch Freq 2.437 GHz Trig Free Occupied Bandwidth Center 2.43700000 GHz Ref 21 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 35.8992 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 5.987 kHz x dB Bandwidth 35.739 MHz Trace/View 1 Trace 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT40-High	Agilent Ch Freq 2.452 GHz Trig Free Occupied Bandwidth Center 2.45200000 GHz Ref 21 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 2.452 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 35.8612 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 4.166 kHz x dB Bandwidth 35.384 MHz Trace/View 1 Trace 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

APPENDIX C

RF Output Power					
Test Mode	Frequency MHz	Antenna 1 dBm	Antenna 2 dBm	Total Power dBm	Limit dBm
802.11b _1Mbps	2412	16.59	14.88	/	30.00
	2437	15.85	15.30	/	30.00
	2462	15.94	15.00	/	30.00
802.11g_6Mbps	2412	14.33	13.20	/	30.00
	2437	14.45	13.66	/	30.00
	2462	14.40	12.72	/	30.00
802.11n HT20_MCS0	2412	13.60	12.44	16.07	30.00
	2437	12.33	13.34	15.87	30.00
	2462	12.95	13.17	16.07	30.00
802.11n HT40_MCS0	2422	10.86	10.68	13.78	30.00
	2437	10.74	11.22	14.00	30.00
	2452	10.65	9.81	13.26	30.00

Antenna 1

802.11b-Low	Agilent R T Ch Freq 2.412 GHz Trig Free Channel Power VBW 1.00000000 MHz Ref 20 dBm Atten 30 dB #Avg 10 Log dB/ Offst 1 dB Center 2.412 GHz Span 30 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Channel Power Power Spectral Density 16.59 dBm / 20.0000 MHz -56.42 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11b-Middle	Agilent R T Ch Freq 2.437 GHz Trig Free Channel Power Center 2.43700000 GHz Ref 20 dBm Atten 30 dB #Avg 10 Log dB/ Offst 1 dB Center 2.437 GHz Span 30 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Channel Power Power Spectral Density 15.85 dBm / 20.0000 MHz -57.16 dBm/Hz Freq/Channel Center Freq 2.43700000 GHz Start Freq 2.42200000 GHz Stop Freq 2.45200000 GHz CF Step 3.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11b-High	Agilent R T Ch Freq 2.462 GHz Trig Free Channel Power Center 2.46200000 GHz Ref 20 dBm Atten 30 dB #Avg 10 Log dB/ Offst 1 dB Center 2.462 GHz Span 30 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Channel Power Power Spectral Density 15.94 dBm / 20.0000 MHz -57.07 dBm/Hz Freq/Channel Center Freq 2.46200000 GHz Start Freq 2.44700000 GHz Stop Freq 2.47700000 GHz CF Step 3.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

802.11g-Low	Agilent Ch Freq 2.412 GHz Channel Power Center 2.412000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 2.412 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 30 MHz Channel Power Power Spectral Density 14.33 dBm / 20.0000 MHz -58.68 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11g-Middle	Agilent Ch Freq 2.437 GHz Channel Power Center 2.437000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 2.437 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 30 MHz Channel Power Power Spectral Density 14.45 dBm / 20.0000 MHz -58.56 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11g-High	Agilent Ch Freq 2.462 GHz Channel Power Center 2.462000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 2.462 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 30 MHz Channel Power Power Spectral Density 14.40 dBm / 20.0000 MHz -58.61 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT20-Low	Agilent Ch Freq 2.412 GHz Channel Power Center 2.41200000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 2.412 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 30 MHz Channel Power Power Spectral Density 13.60 dBm / 20.0000 MHz -59.41 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT20-Middle	Agilent Ch Freq 2.437 GHz Channel Power Center 2.43700000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 2.437 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 30 MHz Channel Power Power Spectral Density 12.33 dBm / 20.0000 MHz -60.68 dBm/Hz Freq/Channel Center Freq 2.43700000 GHz Start Freq 2.42200000 GHz Stop Freq 2.45200000 GHz CF Step 3.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-High	Agilent Ch Freq 2.462 GHz Channel Power Center 2.46200000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 2.462 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 30 MHz Channel Power Power Spectral Density 12.95 dBm / 20.0000 MHz -60.06 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT40-Low	Agilent Ch Freq 2.422 GHz Channel Power Center 2.422000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 2.422 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 60 MHz Channel Power Power Spectral Density 10.86 dBm / 40.0000 MHz -65.16 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT40-Middle	Agilent Ch Freq 2.437 GHz Channel Power Center 2.437000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 2.437 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 60 MHz Channel Power Power Spectral Density 10.74 dBm / 40.0000 MHz -65.28 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT40-High	Agilent Ch Freq 2.452 GHz Channel Power Center 2.452000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 2.452 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 60 MHz Channel Power Power Spectral Density 10.65 dBm / 40.0000 MHz -65.37 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

Antenna 2

802.11b-Low	Agilent R T Ch Freq 2.412 GHz Trig Free Channel Power VBW 1.00000000 MHz Ref 21 dBm Atten 30 dB #Avg 10 Log dB/ Offst 1 dB Center 2.412 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 30 MHz Channel Power Power Spectral Density 14.88 dBm / 20.0000 MHz -58.13 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11b-Middle	Agilent R T Ch Freq 2.437 GHz Trig Free Channel Power Center 2.43700000 GHz Ref 21 dBm Atten 30 dB #Avg 10 Log dB/ Offst 1 dB Center 2.437 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 30 MHz Channel Power Power Spectral Density 15.30 dBm / 20.0000 MHz -57.71 dBm/Hz Freq/Channel Center Freq 2.43700000 GHz Start Freq 2.42200000 GHz Stop Freq 2.45200000 GHz CF Step 3.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11b-High	Agilent R T Ch Freq 2.462 GHz Trig Free Channel Power Center 2.46200000 GHz Ref 21 dBm Atten 30 dB #Avg 10 Log dB/ Offst 1 dB Center 2.462 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 30 MHz Channel Power Power Spectral Density 15.00 dBm / 20.0000 MHz -58.01 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11g-Low	Agilent Ch Freq 2.412 GHz Channel Power Center 2.412000000 GHz Ref 21 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 2.412 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 30 MHz Channel Power Power Spectral Density 13.20 dBm / 20.0000 MHz -59.81 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11g-Middle	Agilent Ch Freq 2.437 GHz Channel Power Center 2.437000000 GHz Ref 21 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 2.437 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 30 MHz Channel Power Power Spectral Density 13.66 dBm / 20.0000 MHz -59.35 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11g-High	Agilent Ch Freq 2.462 GHz Channel Power Center 2.462 GHz Ref 21 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 2.462 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 30 MHz Channel Power Power Spectral Density 12.72 dBm / 20.0000 MHz -60.29 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

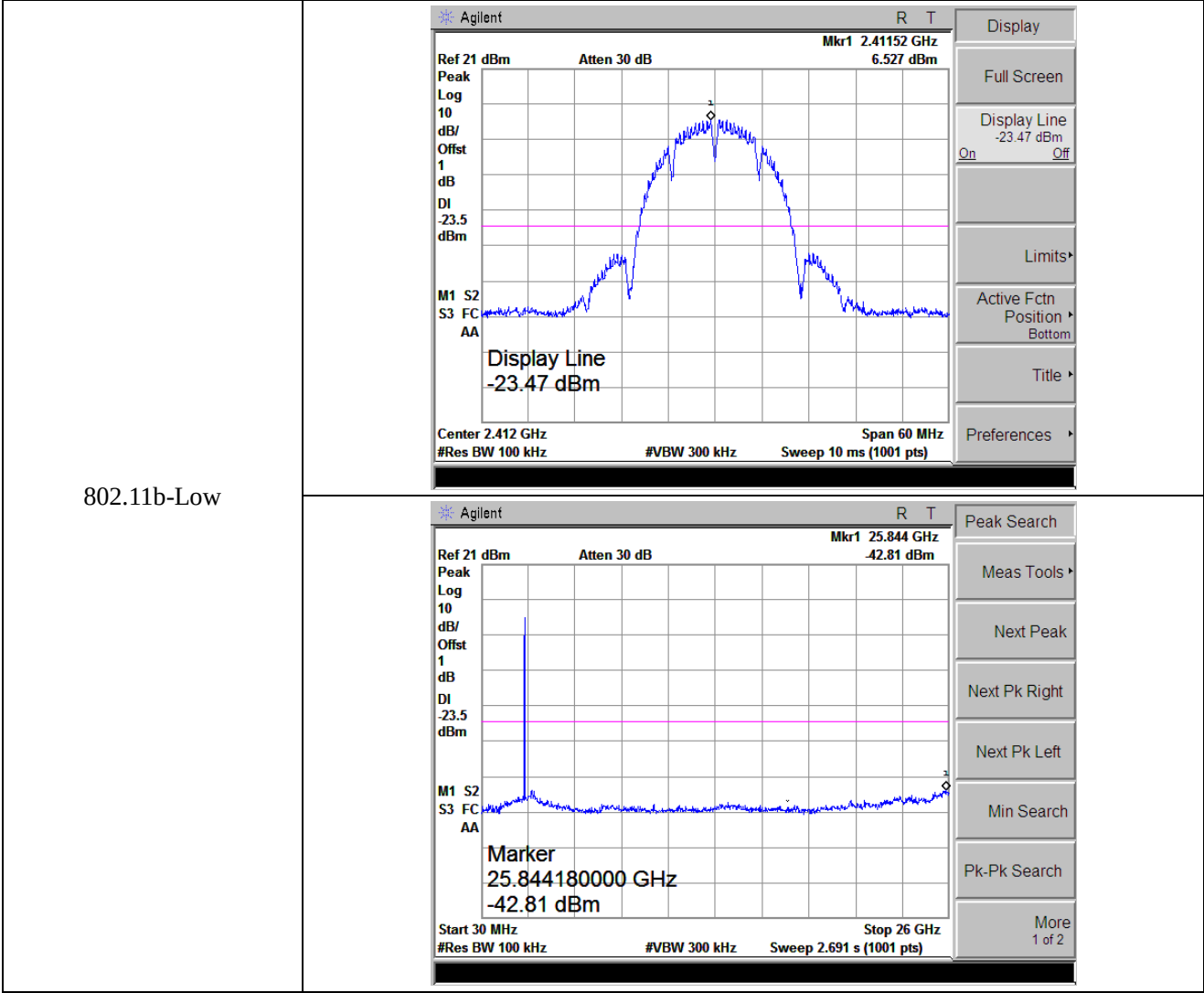
802.11n-HT20-Low	Agilent Ch Freq 2.412 GHz Channel Power Center 2.412000000 GHz Ref 21 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 2.412 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 30 MHz Channel Power Power Spectral Density 12.44 dBm / 20.0000 MHz -60.57 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT20-Middle	Agilent Ch Freq 2.437 GHz Channel Power Center 2.437000000 GHz Ref 21 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 2.437 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 30 MHz Channel Power Power Spectral Density 13.34 dBm / 20.0000 MHz -59.67 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT20-High	Agilent Ch Freq 2.462 GHz Channel Power Center 2.462000000 GHz Ref 21 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 2.462 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 30 MHz Channel Power Power Spectral Density 13.17 dBm / 20.0000 MHz -59.84 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

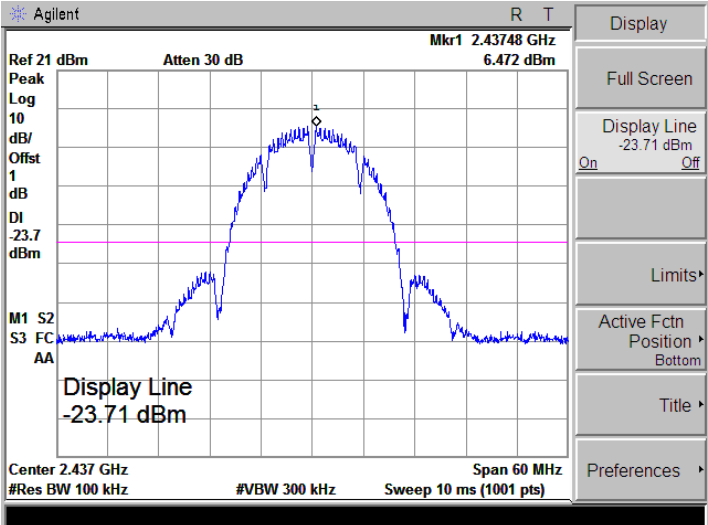
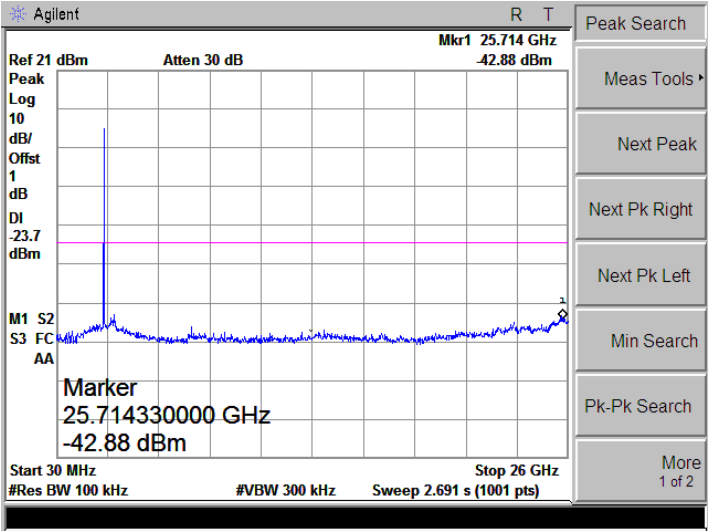
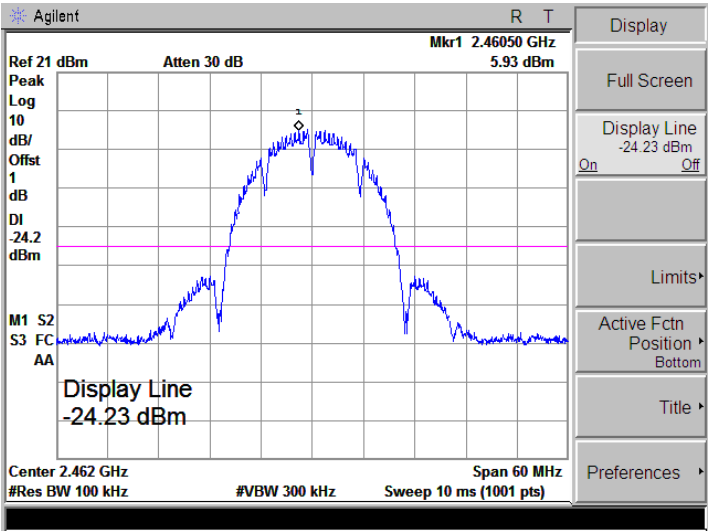
802.11n-HT40-Low	Agilent Ch Freq 2.422 GHz Channel Power Center 2.422000000 GHz Ref 21 dBm #Avg Log 10 dB/ Offst 1 dB Atten 30 dB Center 2.422 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 60 MHz Channel Power Power Spectral Density 10.68 dBm / 40.0000 MHz -65.34 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT40-Middle	Agilent Ch Freq 2.437 GHz Channel Power Center 2.437000000 GHz Ref 21 dBm #Avg Log 10 dB/ Offst 1 dB Atten 30 dB Center 2.437 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 60 MHz Channel Power Power Spectral Density 11.22 dBm / 40.0000 MHz -64.81 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT40-High	Agilent Ch Freq 2.452 GHz Channel Power Center 2.452000000 GHz Ref 21 dBm #Avg Log 10 dB/ Offst 1 dB Atten 30 dB Center 2.452 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 60 MHz Channel Power Power Spectral Density 9.81 dBm / 40.0000 MHz -66.21 dBm/Hz Freq/Channel Center Freq 2.45200000 GHz Start Freq 2.42200000 GHz Stop Freq 2.48200000 GHz CF Step 6.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

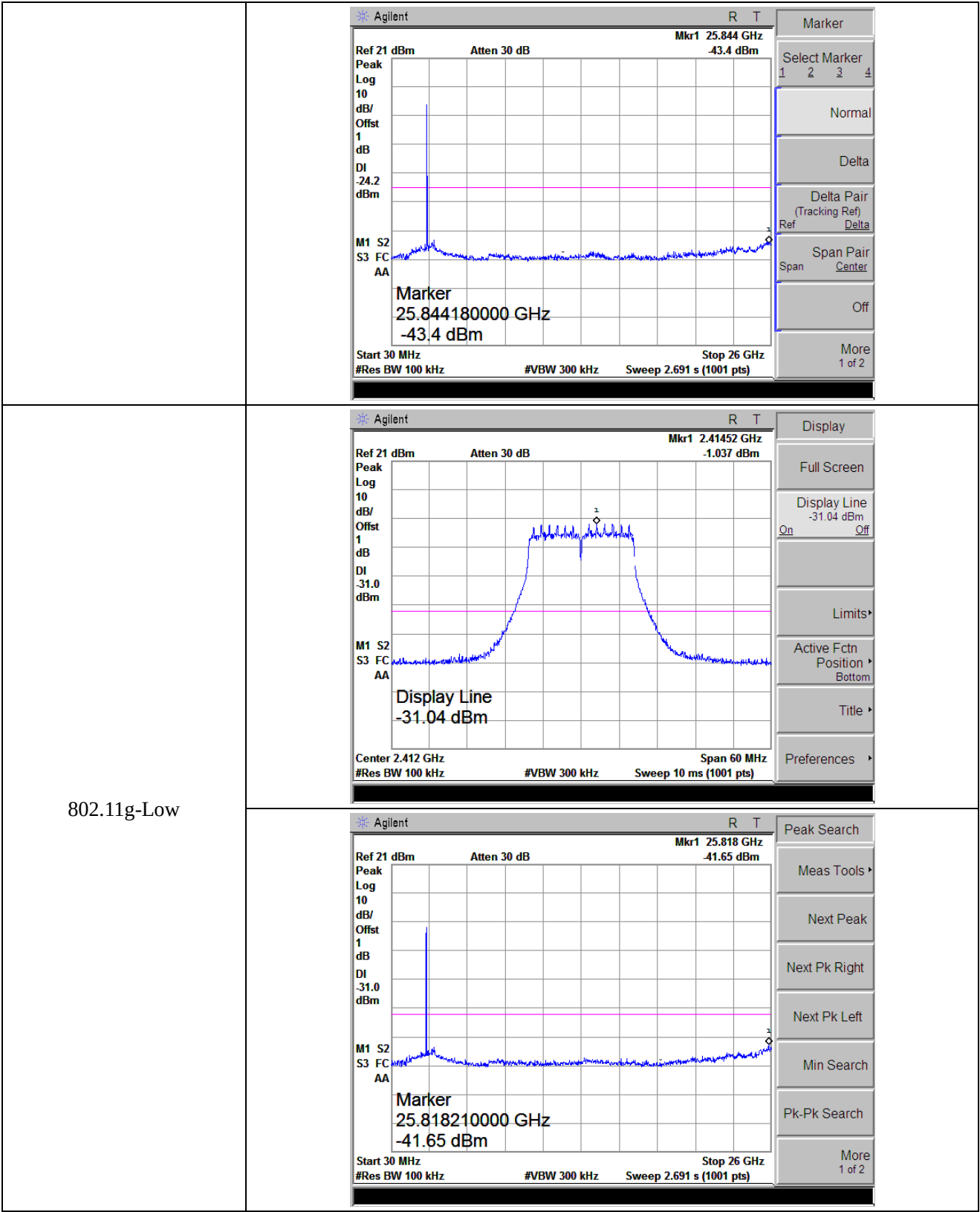
APPENDIX D

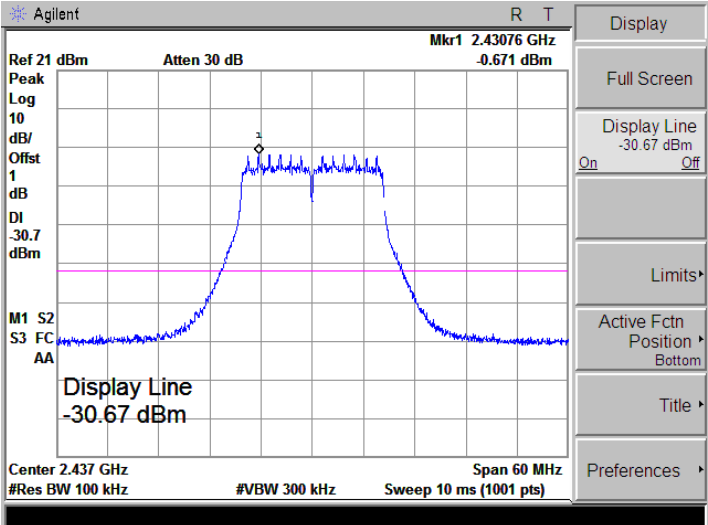
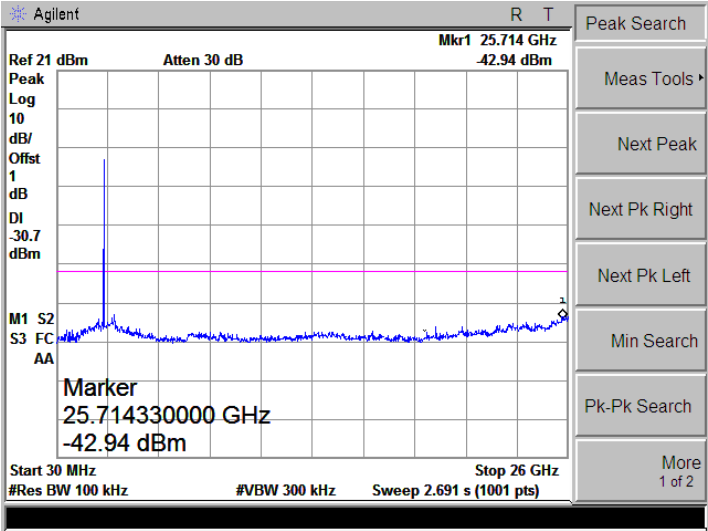
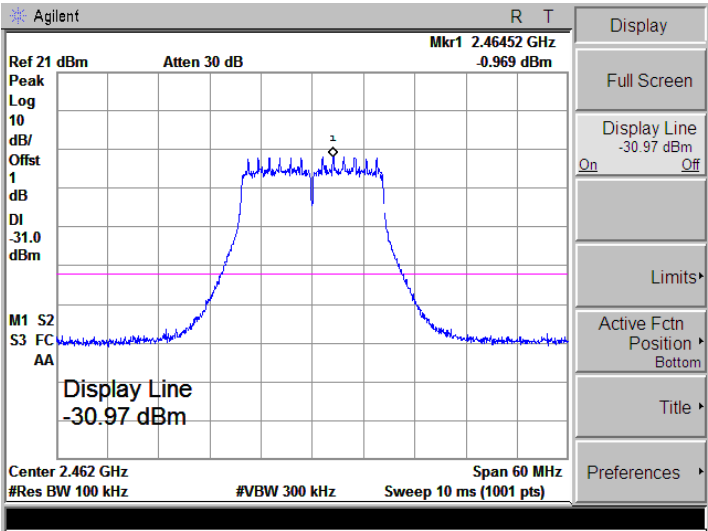
Conducted Out of Band Emissions

Antenna 1

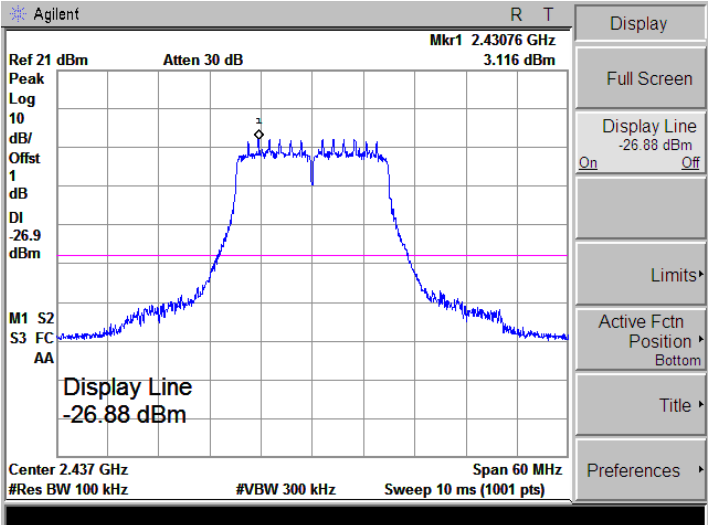
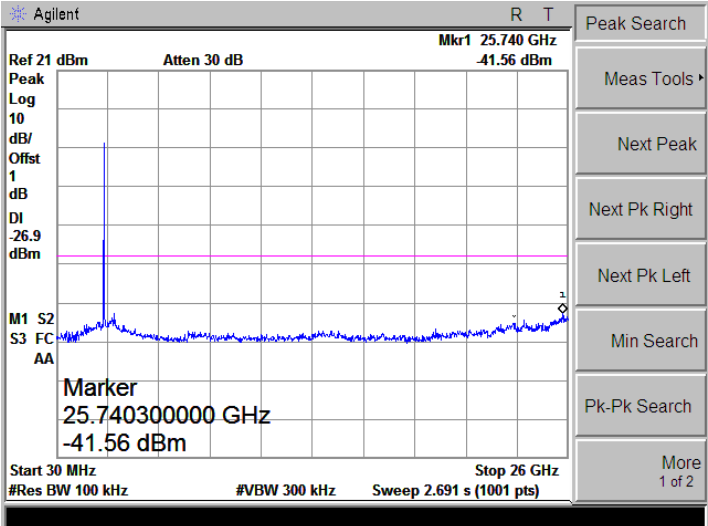
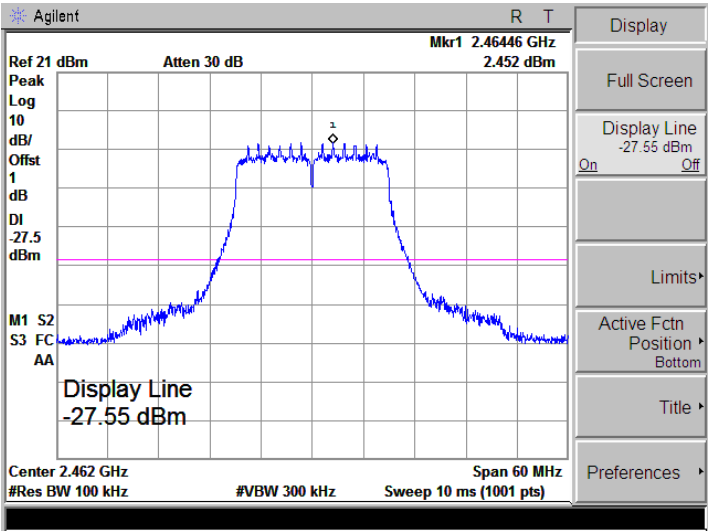


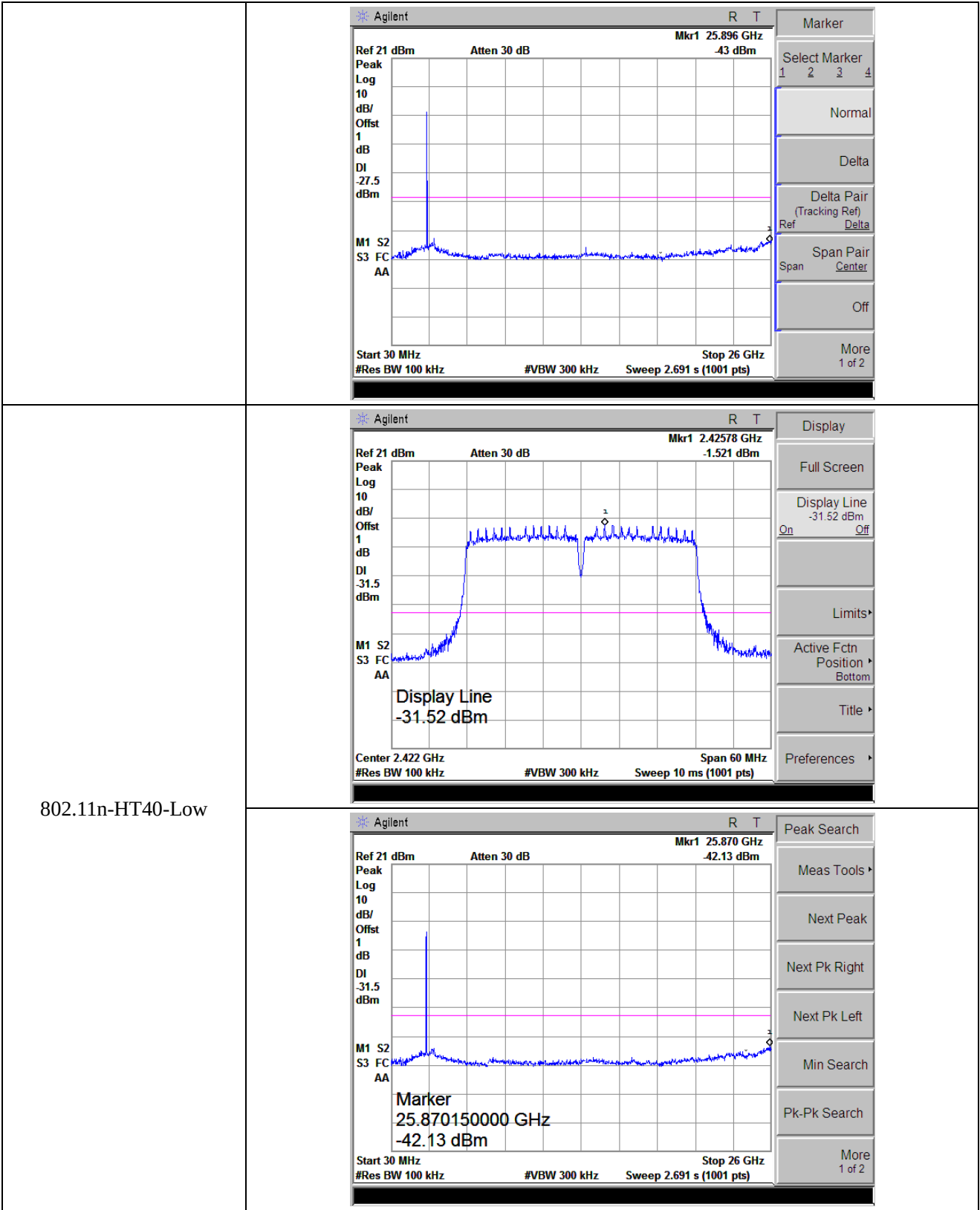
802.11b-Middle	
	
802.11b-High	

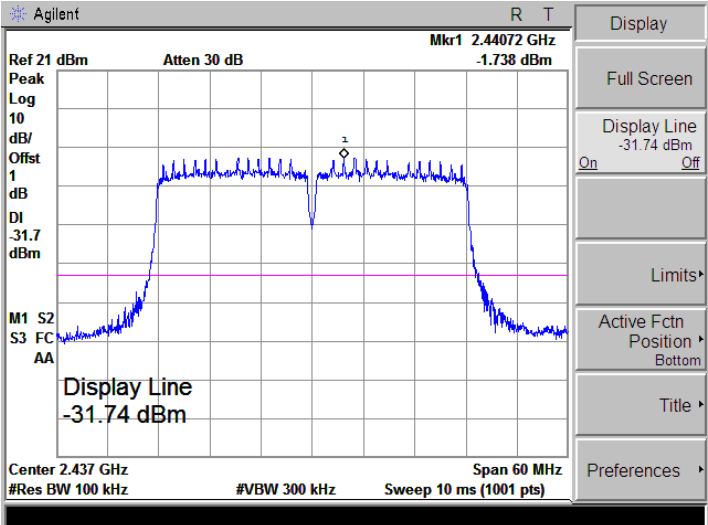
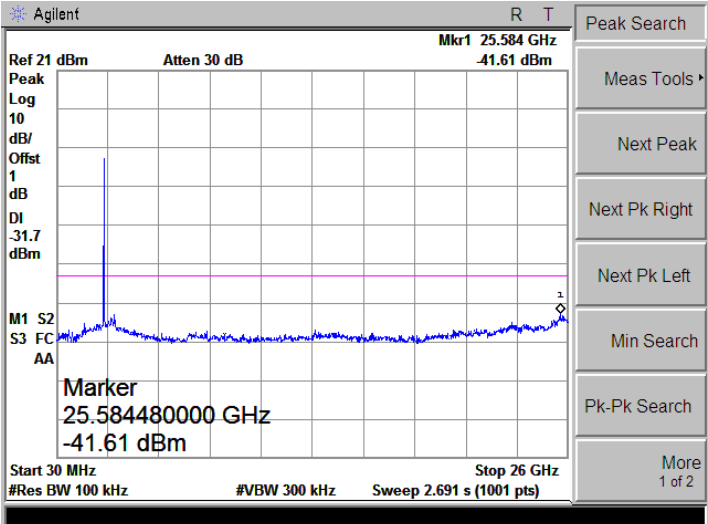
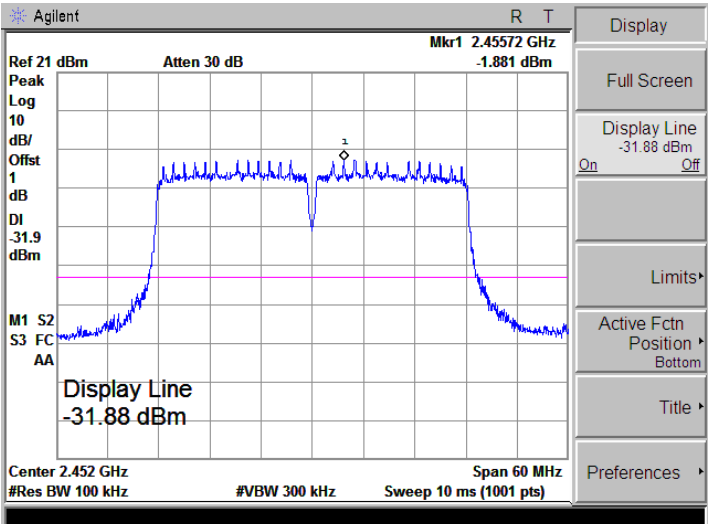


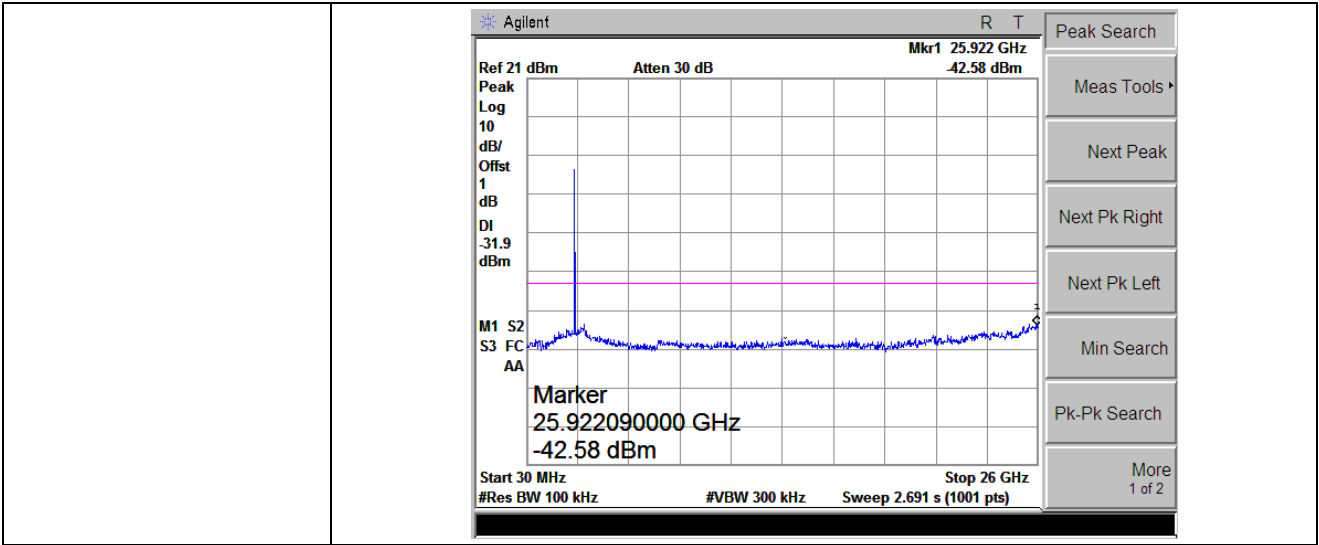
802.11g-Middle	
	
802.11g-High	

	Agilent R T Ref 21 dBm Atten 30 dB Mkr1 25.740 GHz -43.34 dBm Peak Log 10 dB/ Offset 1 dB DI -31.0 dBm M1 S2 S3 FC AA Marker 25.740300000 GHz -43.34 dBm Start 30 MHz Stop 26 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.691 s (1001 pts) Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-Low	Agilent R T Ref 21 dBm Atten 30 dB Mkr1 2.41572 GHz 3.009 dBm Peak Log 10 dB/ Offset 1 dB DI -27.0 dBm M1 S2 S3 FC AA Display Line -27.01 dBm Center 2.412 GHz Span 60 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Display Full Screen Display Line -27.01 dBm On Off Limits▶ Active Fctn Position ▶ Bottom Title ▶ Preferences ▶
	Agilent R T Ref 21 dBm Atten 30 dB Mkr1 25.740 GHz -42.26 dBm Peak Log 10 dB/ Offset 1 dB DI -27.0 dBm M1 S2 S3 FC AA Marker 25.740300000 GHz -42.26 dBm Start 30 MHz Stop 26 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.691 s (1001 pts) Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

802.11n-HT20-Middle	
	
802.11n-HT20-High	

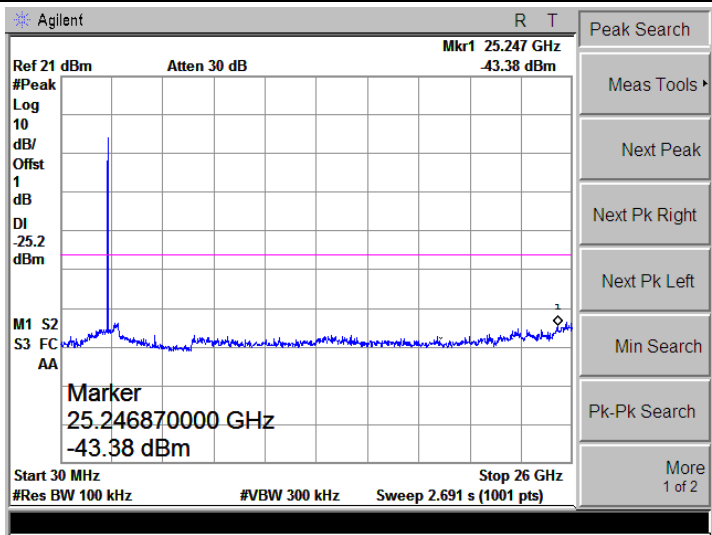
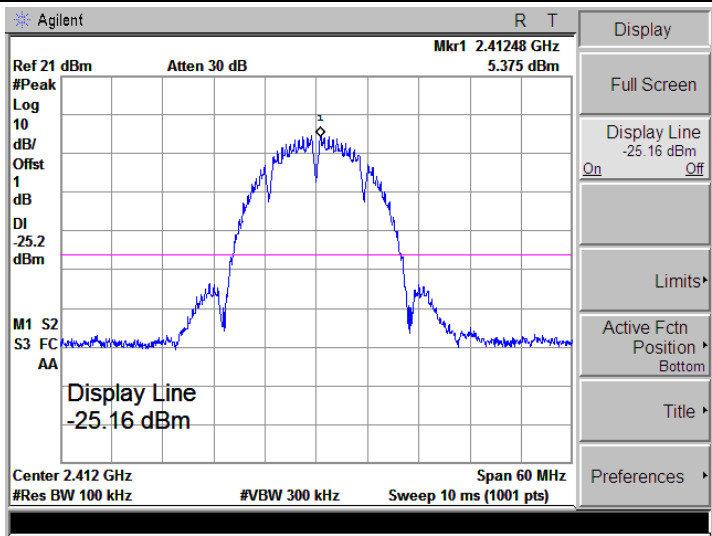


802.11n-HT40-Middle	
	
802.11n-HT40-High	

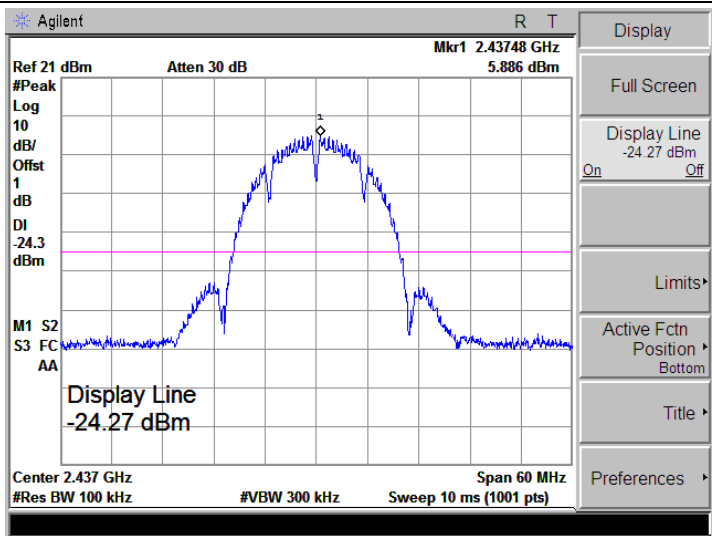


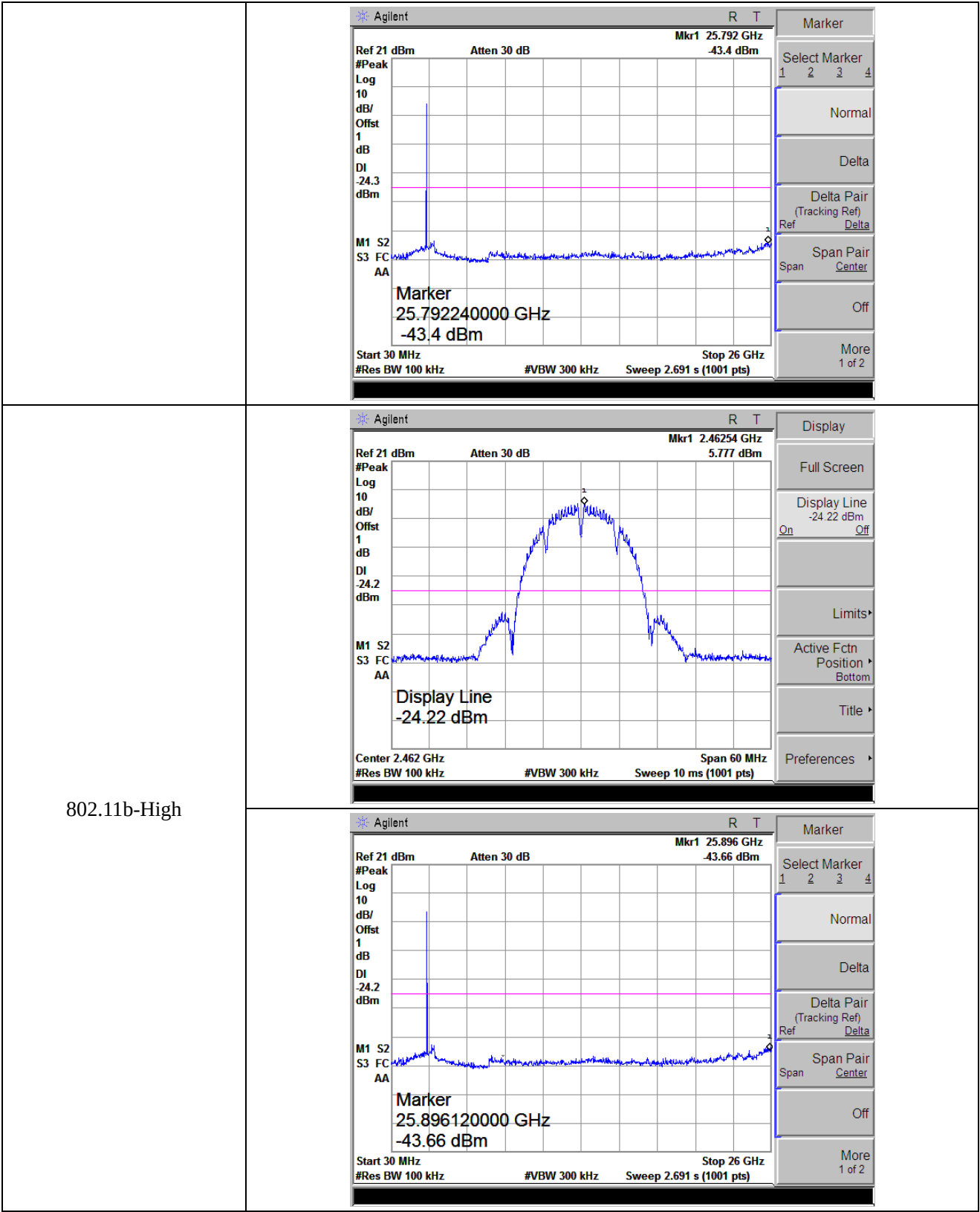
Antenna 2

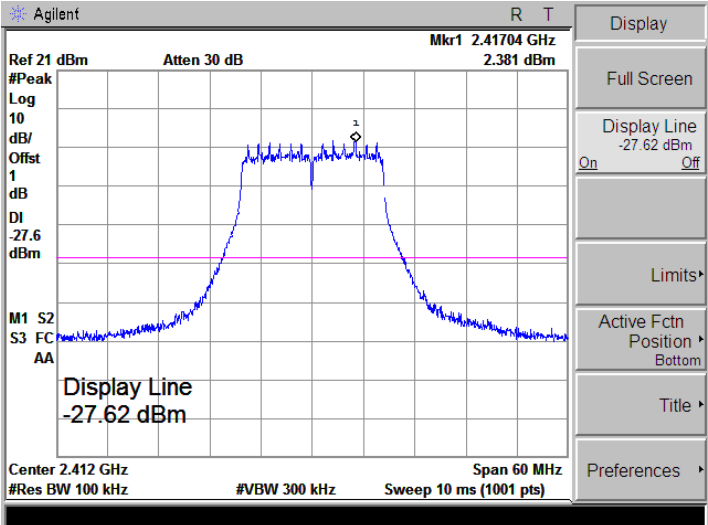
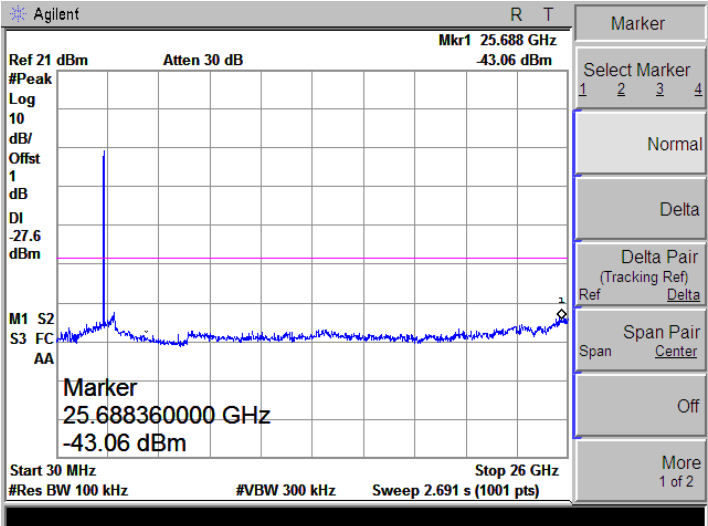
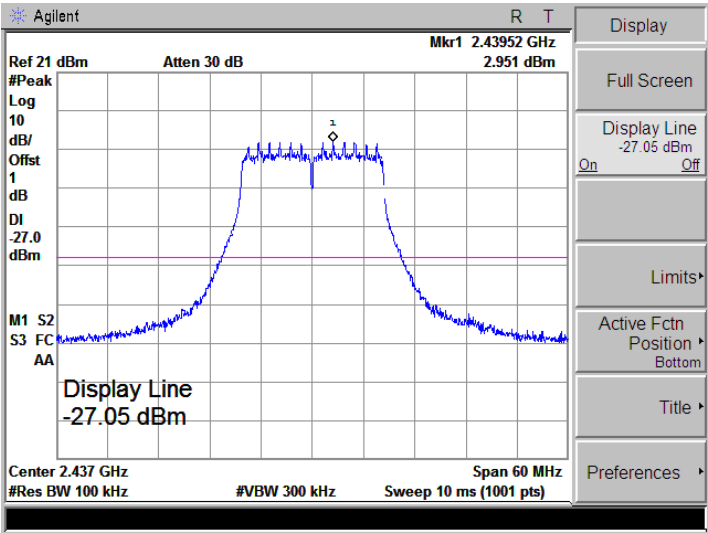
802.11b-Low

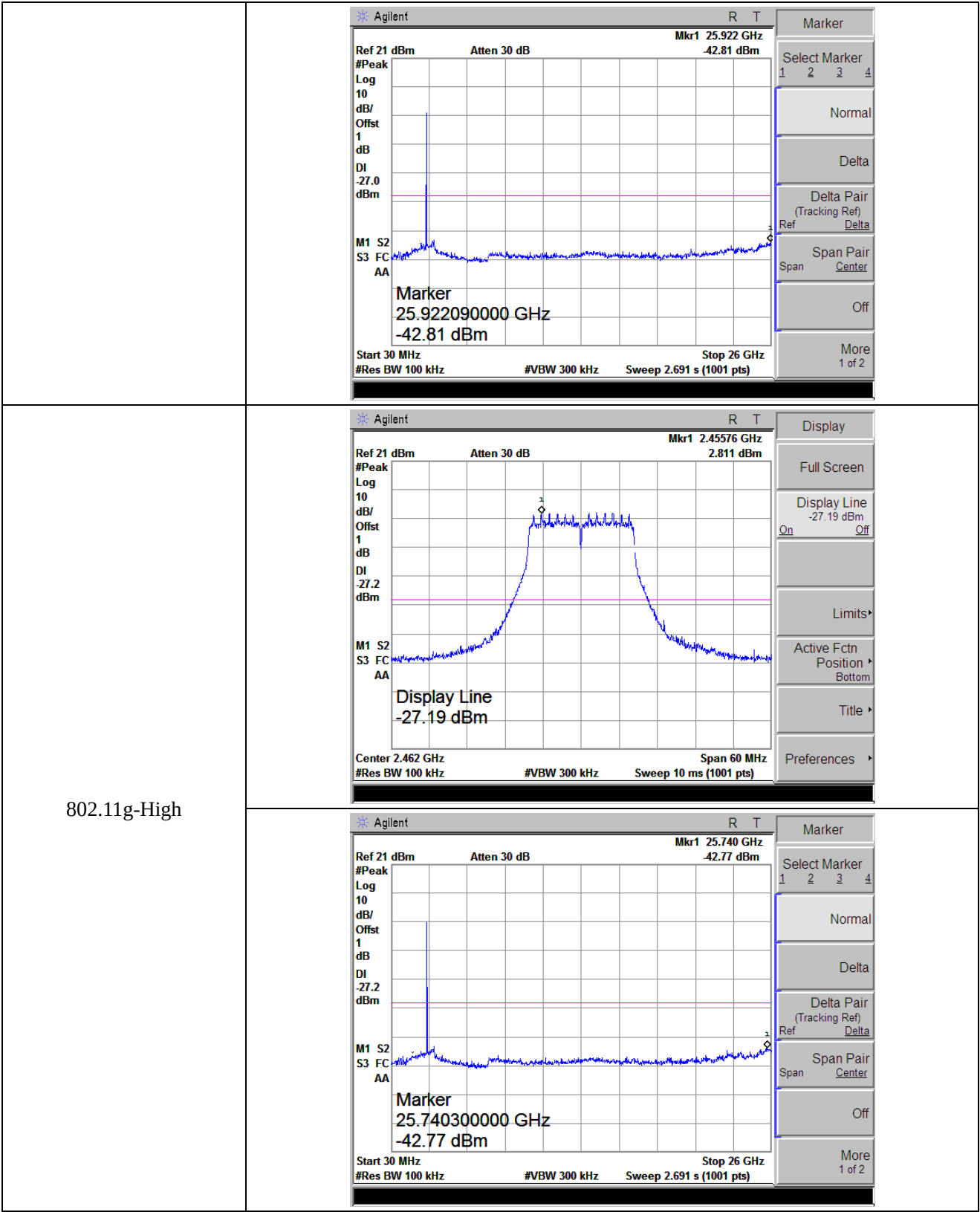


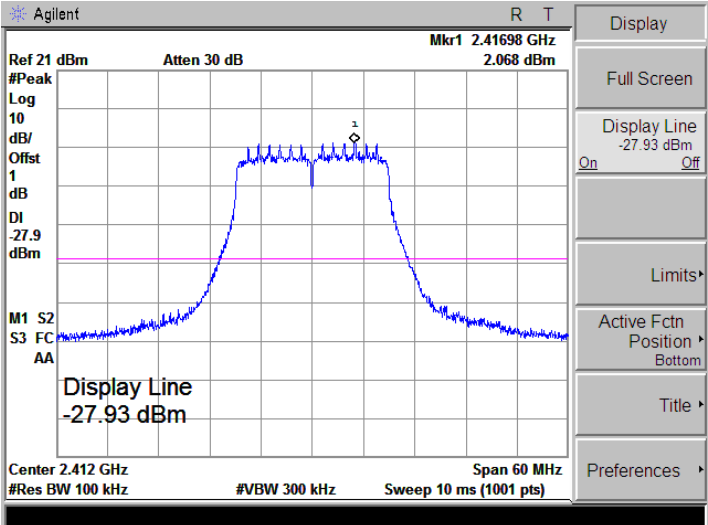
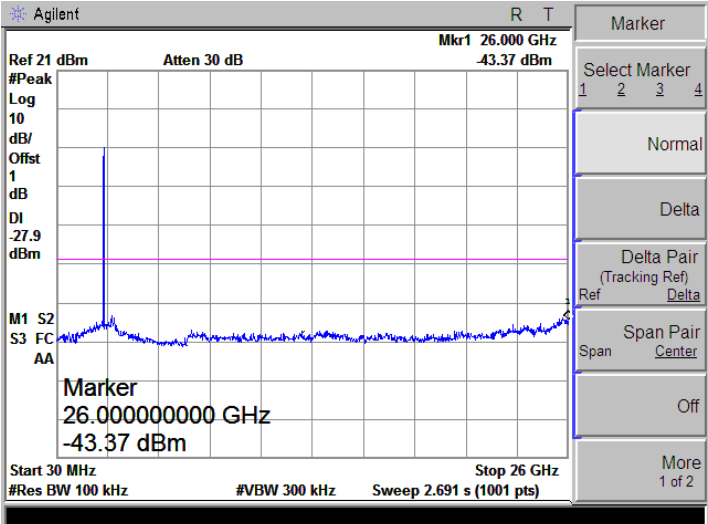
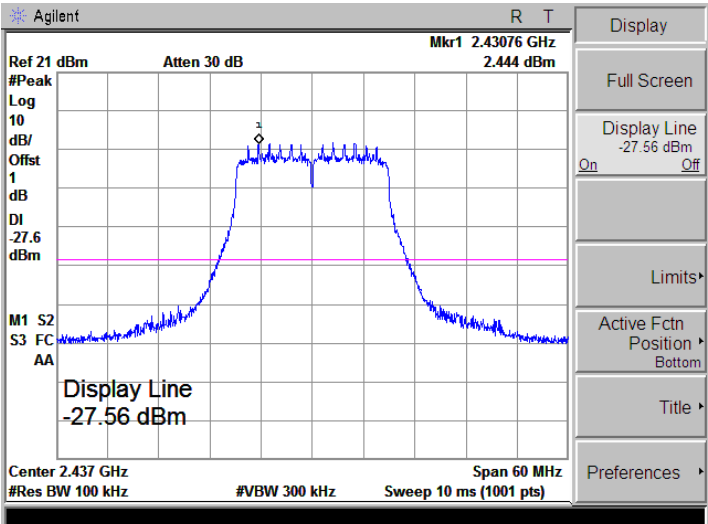
802.11b-Middle

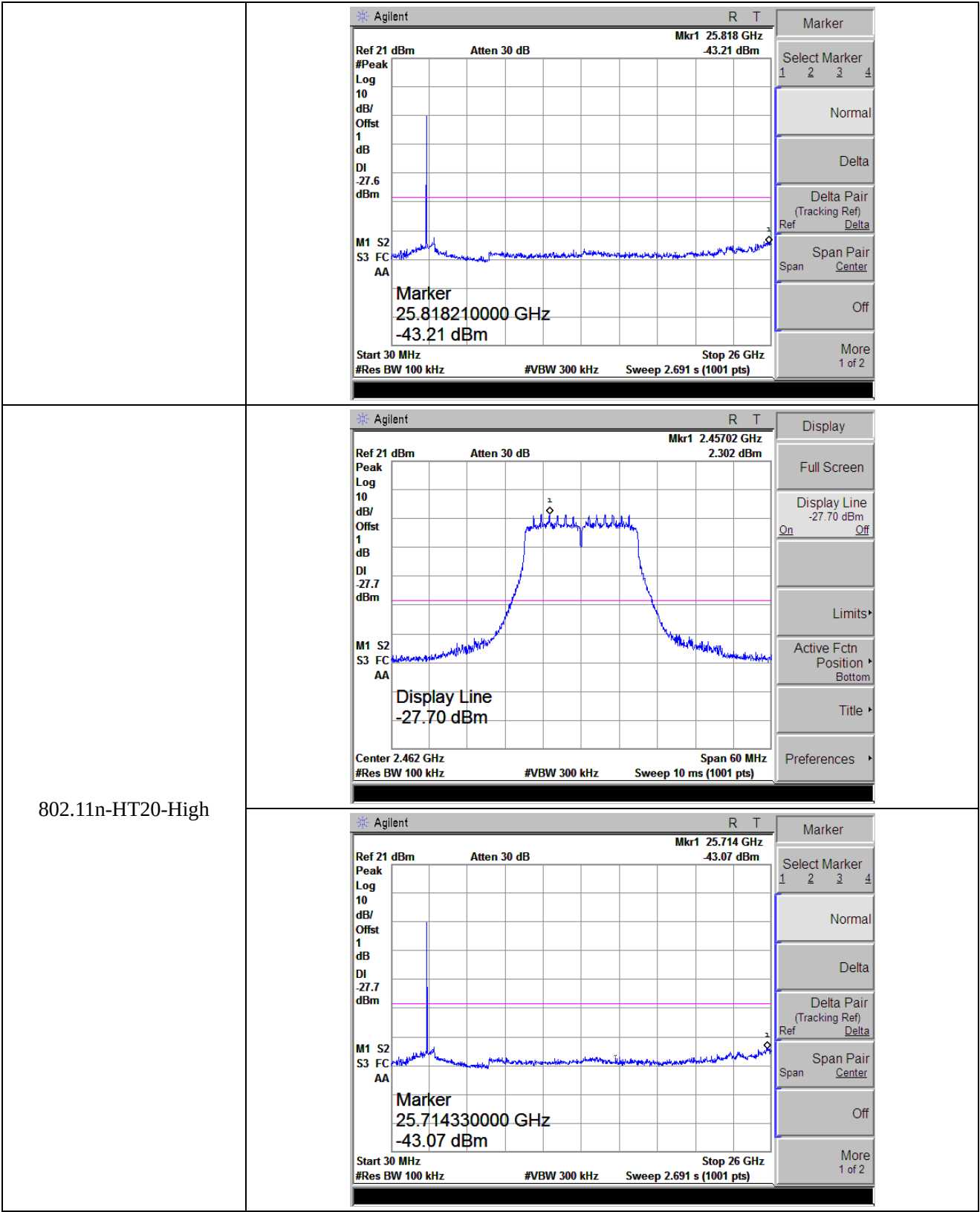


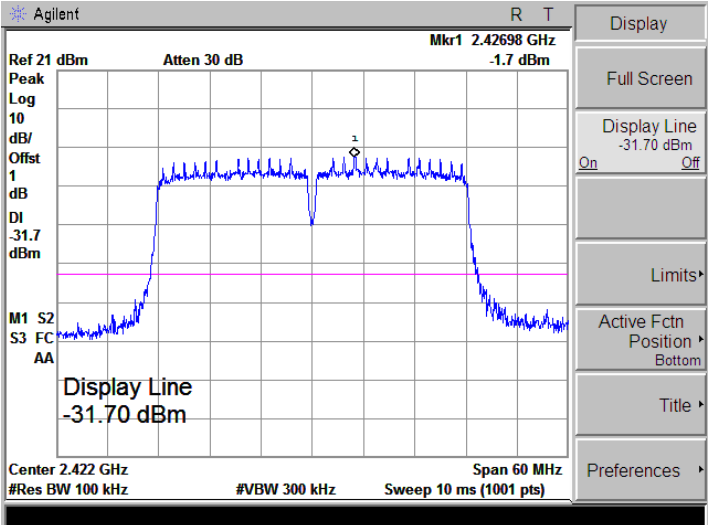
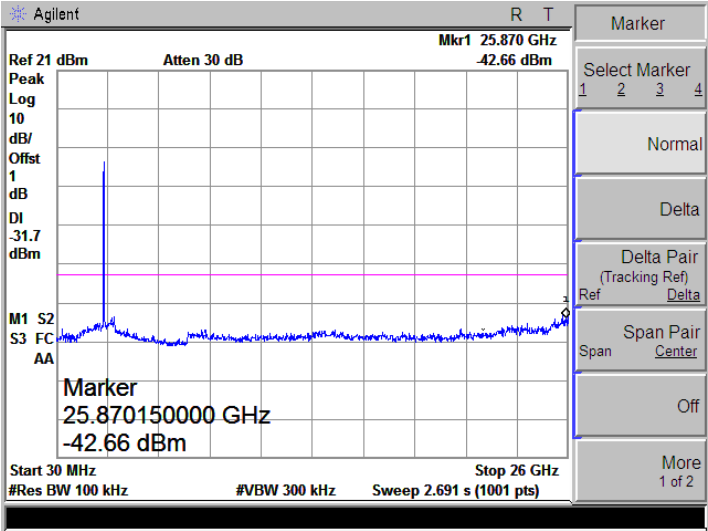
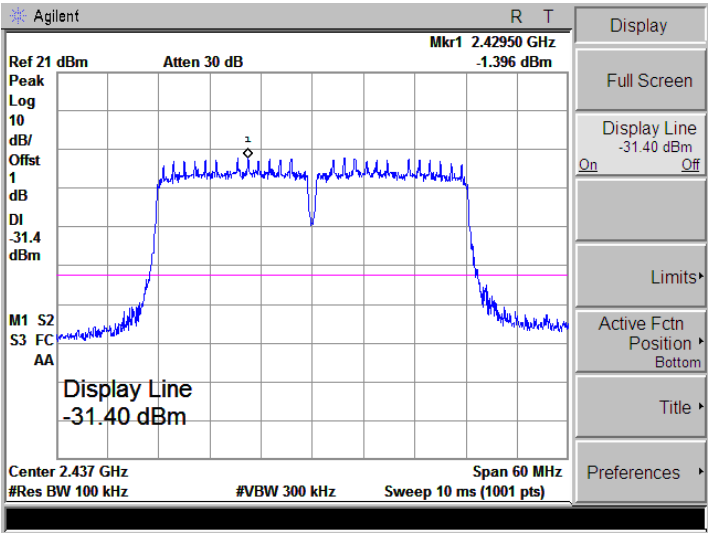


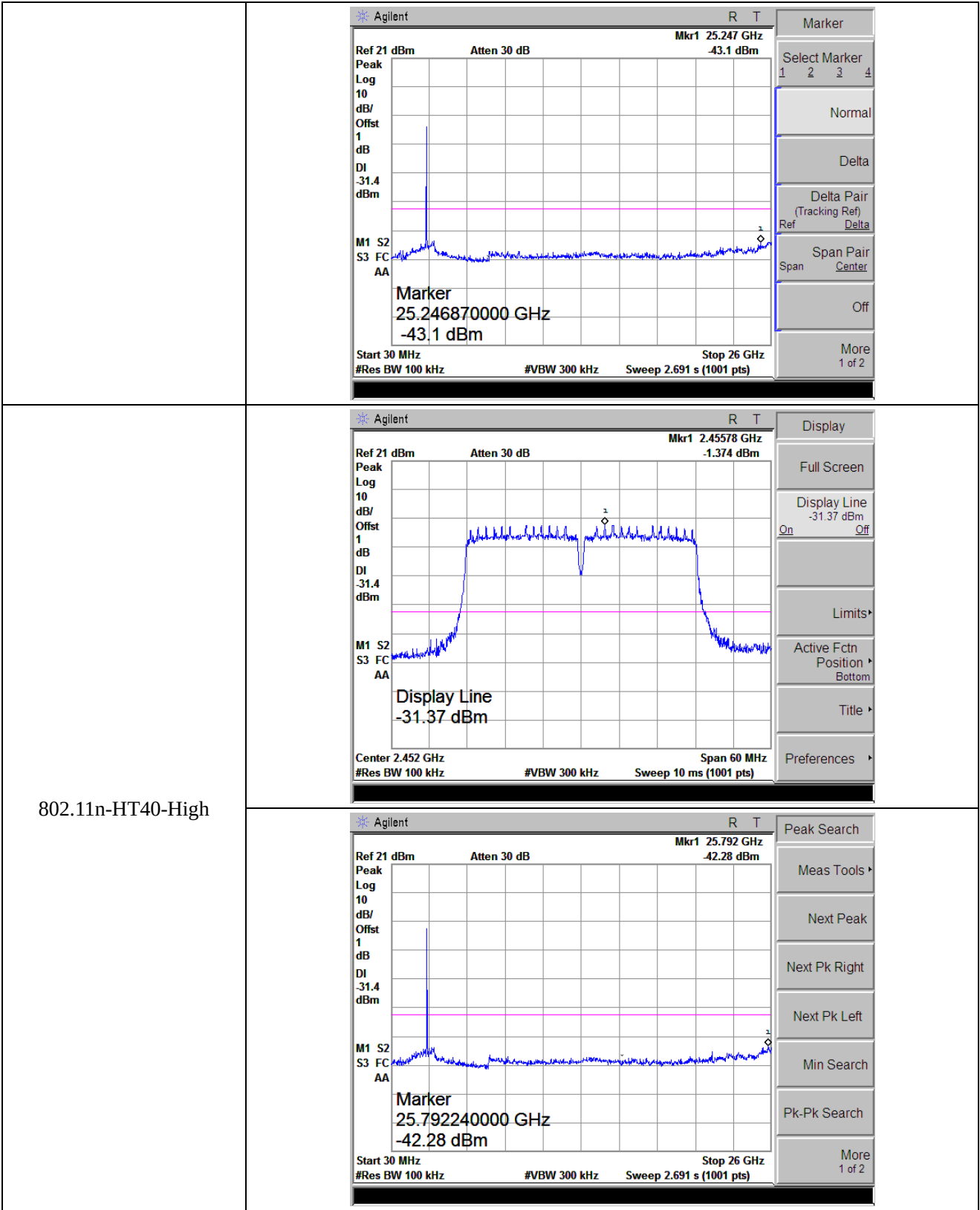
802.11g-Low	
	
802.11g-Middle	



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 *******