

TEST REPORT

Reference No..... : WTH21X04041842W-1
FCC ID : XOMD55A114-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 : 55" SMART 4K UHD TV
Test Model. : D55A114-U-A-I
Standards : FCC Part 15.407
Date of Receipt sample : Apr. 30, 2021
Date of Test..... : Apr. 30, 2021 to May. 26, 2021
Date of Issue : May. 26, 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.

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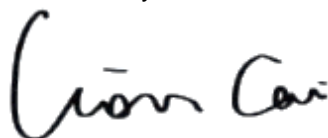
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TABLE OF CONTENTS

1. GENERAL INFORMATION	5
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT).....	5
1.2 TEST STANDARDS.....	6
1.3 TEST METHODOLOGY.....	6
1.4 TABLE FOR PARAMETERS OF TEST SOFTWARE SETTING	6
1.5 EUT OPERATING DURING TEST	7
1.6 TEST FACILITY	7
1.7 EUT SETUP AND TEST MODE.....	8
1.8 MEASUREMENT UNCERTAINTY	9
1.9 TEST EQUIPMENT LIST AND DETAILS	10
2. SUMMARY OF TEST RESULTS	12
3. ANTENNA REQUIREMENT	13
3.1 STANDARD APPLICABLE.....	13
3.2 EVALUATION INFORMATION	13
4. AUTOMATICALLY DISCONTINUE TRANSMISSION	14
4.1 STANDARD APPLICABLE.....	14
4.2 SUMMARY OF TEST RESULTS	14
5. POWER SPECTRAL DENSITY	15
5.1 STANDARD APPLICABLE.....	15
5.2 TEST PROCEDURE.....	15
5.3 SUMMARY OF TEST RESULTS/PLOTS	16
6. EMISSION BANDWIDTH AND OCCUPIED BANDWIDTH	17
6.1 STANDARD APPLICABLE.....	17
6.2 TEST PROCEDURE.....	17
6.3 SUMMARY OF TEST RESULTS/PLOTS	19
7. MAXIMUM CONDUCTED OUTPUT POWER	20
7.1 STANDARD APPLICABLE.....	20
7.2 TEST PROCEDURE.....	20
7.3 SUMMARY OF TEST RESULTS/PLOTS	21
8. RADIATED SPURIOUS EMISSIONS	22
8.1 STANDARD APPLICABLE.....	22
8.2 TEST PROCEDURE.....	22
8.3 TEST RECEIVER SETUP	24
8.4 CORRECTED AMPLITUDE & MARGIN CALCULATION.....	24
8.5 SUMMARY OF TEST RESULTS/PLOTS	25
9. FREQUENCY STABILITY	46
9.1 STANDARD APPLICABLE.....	46
9.2 TEST PROCEDURE.....	46
9.3 SUMMARY OF TEST RESULTS/PLOTS	46
10 CONDUCTED EMISSIONS	47
10.1 TEST PROCEDURE.....	47
10.2 BASIC TEST SETUP BLOCK DIAGRAM.....	47
10.3 TEST RECEIVER SETUP	47
10.4 SUMMARY OF TEST RESULTS/PLOTS	47
APPENDIX SUMMARY	50
APPENDIX A	51
APPENDIX B	64
APPENDIX C	83
APPENDIX D	96

APPENDIX PHOTOGRAPHS.....98

Report version

Version No.	Date of issue	Description
Rev.00	May. 26, 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:	55" SMART 4K UHD TV
Trade Name:	RCA, PROSCAN, RCA SCENIUM, TECHNICOLOR, SYLVANIA, RCASMA TV VIRTUOSO
Model No.:	D55A114-U-A-I
Adding Model(s):	RWOSU5549-B, XXXXXXXXXXXX55XXXXXXXXXXXXXXXXX (Where "X" can be any alphanumeric of A-Z or 0-9 or blank or -, indicates different client)
Rated Voltage:	AC100-120V/60Hz
Battery Capacity:	/
Power Adapter:	/
Software Version:	/
Hardware Version:	/
<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 D55A114-U-A-I, but the circuit and the electronic construction do not change, declared by the manufacturer.</i>	

Technical Characteristics of EUT	
Support Standards:	802.11a, 802.11n(HT20), 802.11n-HT40, 802.11ac-HT80
Frequency Range:	5150-5250MHz, 5725-5850MHz
RF Output Power:	Antenna 1:14.36dBm (Conducted) Antenna 2: 14.62dBm (Conducted)
Type of Modulation:	BPSK, QPSK, 16QAM, 64QAM
Type of Antenna:	Integral Antenna
Antenna Gain:	2dBi

1.2 Test Standards

The tests were performed according to following standards:

FCC Rules Part 15.407: General technical requirements.

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

KDB789033 D02 v02r01: GUIDELINES FOR COMPLIANCE TESTING OF UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII) DEVICES PART 15, SUBPARTE.

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, KDB789033 D02 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 Table for parameters of Test Software setting

Use “QATool_Dbg.exe” and follow the instructions given by the manufacturer, you can start to test. During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Mode	Ant.	Test Frequency (MHz)													
		NCB: 20MHz													
		5180	5200	5240	5260	5300	5320	5500	5580	5700	5720	5745	5785	5825	
802.11a 6Mbps	ANT 1	1F	1F	1F	/	/	/	/	/	/	/	22	22	22	
	ANT 2	24	24	24	/	/	/	/	/	/	/	22	22	22	
802.11n-HT20 MCS0	ANT 1	1F	1F	1F	/	/	/	/	/	/	/	21	22	22	
	ANT 2	23	23	23	/	/	/	/	/	/	/	23	23	23	
Mode	Ant.	NCB: 40MHz													
		5190	5230	5270	5310	5510	5550	5670	5710	5755	5795				
802.11n-HT40 MCS0	ANT 1	1F	1F	/	/	/	/	/	/	/	/	22	22		
	ANT 2	23	23	/	/	/	/	/	/	/	/	22	22		
Mode	Ant.	NCB: 80MHz													
		5210	5290	5530	5610	5690	5775								
802.11ac-VH80 MCS0/Nss2	ANT 1	1E	/	/	/	/	21								
	ANT 2	22	/	/	/	/	21								

1.5 EUT Operating during test

EUT was programmed to be in continuously transmitting mode. During the test, EUT operation to normal function and programs under Android were executed.

1.6 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, Bao'an District, Shenzhen, P.R.C. (518101)

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.

1.7 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	802.11a	5180MHz,5200MHz,5240MHz, 5745MHz, 5785MHz,5825MHz
TM2	802.11n-HT20	5180MHz,5200MHz,5240MHz,5745MHz, 5785MHz,5825MHz
TM3	802.11n-HT40	5190MHz,5230MHz, 5755MHz,5795MHz
TM4	802.11ac-VH80	5210MHz ,5775 MHz

Note: 802.11ac-VHT20, 802.11ac-VHT40 covered by 802.11n-HT20 and 802.11n-HT40.

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
/	/	/	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
/	/	/	/

1.8 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 $\pm 3.84\text{dB}$
		6-18GHz $\pm 3.92\text{dB}$

1.9 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; §15.405	Antenna Requirement	Compliant
15.407 (c)	Automatically Discontinue Transmission	Compliant
§15.207; §15.407(b)(6)	Conducted Emission	Compliant
§15.407(a)(1),(2)	Power Spectral Density	Compliant
§15.407(e)	Emission Bandwidth and Occupied Bandwidth	Compliant
§15.407(a)(1),(2)	Maximum Conducted Output Power	Compliant
§15.407(b)(1),(2),(3),(4)	Undesirable emission	Compliant
§15.205; §15.407(b)(1),(2),(3)	Radiated Emission	Compliant
§15.407(g)	Frequency Stability	Compliant
§15.407(h)	Dynamic Frequency Selection (DFS)	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.

4. Automatically Discontinue Transmission

4.1 Standard Applicable

According to FCC Part 15.407(c), the device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

4.2 Summary of Test Results

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

5. Power Spectral Density

5.1 Standard Applicable

Section 15.407(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

5.2 Test Procedure

According to 789033 D02 v02r01 General UNII Test Procedures New Rules v02, the following is the measurement procedure.

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500

kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500kHz bandwidth, the following adjustments to the procedures apply:

- a) Set $RBW \geq 1/T$, where T is defined in section II.B.1.a).
- b) Set $VBW \geq 3 RBW$.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500\text{kHz}/RBW)$ to the measured result, whereas $RBW (< 500 \text{ kHz})$ is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add $10\log(1\text{MHz}/RBW)$ to the measured result, whereas $RBW (< 1 \text{ MHz})$ is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 kHz for the sections 5.c) and 5.d) above, since $RBW=100 \text{ kHz}$ is available on nearly all spectrum analyzers.

5.3 Summary of Test Results/Plots

Please refer to Appendix A

6. Emission Bandwidth and Occupied Bandwidth

6.1 Standard Applicable

According to 15.407(a) and (e):

(1) For the band 5.15-5.25 GHz.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(e) Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

6.2 Test Procedure

According to 789033 D02 v02r0r section C&D, the following is the measurement procedure.

1. Emission Bandwidth (EBW)

- a) Set RBW = approximately 1% of the emission bandwidth.
- b) Set the VBW > RBW.
- c) Detector = Peak.

- d) Trace mode = max hold.
- e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

2. Minimum Emission Bandwidth for the band 5.725-5.85 GHz

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.715-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

- a) Set RBW = 100 kHz.
- 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 6 dB relative to the maximum level measured in the fundamental emission.

Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.

D. 99 Percent Occupied Bandwidth

The 99-percent occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5 % of the total mean power of the given emission. Measurement of the 99-percent occupied bandwidth is required only as a condition for using the optional band-edge measurement techniques described in section II.G.3.d). Measurements of 99-percent occupied bandwidth may also optionally be used in lieu of the EBW to 789033 D02 v02r01 General UNII Test Procedures New Rules v01 define the minimum frequency range over which the spectrum is integrated when measuring maximum conducted output power as described in section II.E. However, the EBW must be measured to determine bandwidth dependent limits on maximum conducted output power in accordance with 15.407(a).

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW $\geq 3 * RBW$
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

6.3 Summary of Test Results/Plots

Please refer to Appendix B

7. Maximum Conducted Output Power

7.1 Standard Applicable

Section 15.407(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

7.2 Test Procedure

According to KDB789033 D02 v02r01 section E, the following is the measurement procedure.

- (i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- (ii) Set RBW = 1 MHz.
- (iii) Set VBW \geq 3 MHz.
- (iv) Number of points in sweep \geq 2 Span / RBW. (This ensures that bin-to-bin spacing is \leq RBW/2, so that narrowband signals are not lost between frequency bins.)

Waltek Testing Group (Shenzhen) Co., Ltd.

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- (v) Sweep time = auto.
- (vi) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- (vii) If transmit duty cycle < 98 percent, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must 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 \geq 98 percent, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run”.
- (viii) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
- (ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument’s band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

7.3 Summary of Test Results/Plots

Please refer to Appendix C

8. Radiated Spurious Emissions

8.1 Standard Applicable

According to §15.407(b), undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band:
 - (i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

According to §15.407(b)(6), Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

According to §15.407(b)(7), The provisions of §15.205 apply to intentional radiators operating under this section.
789033 D02 v02r01 General UNII Test Procedures New Rules v01

If radiated measurements are performed, field strength is then converted to EIRP as follows:

$$\text{EIRP} = ((E*d)^2) / 30$$

where:

- E is the field strength in V/m;
- d is the measurement distance in meters;
- EIRP is the equivalent isotropically radiated power in watts.

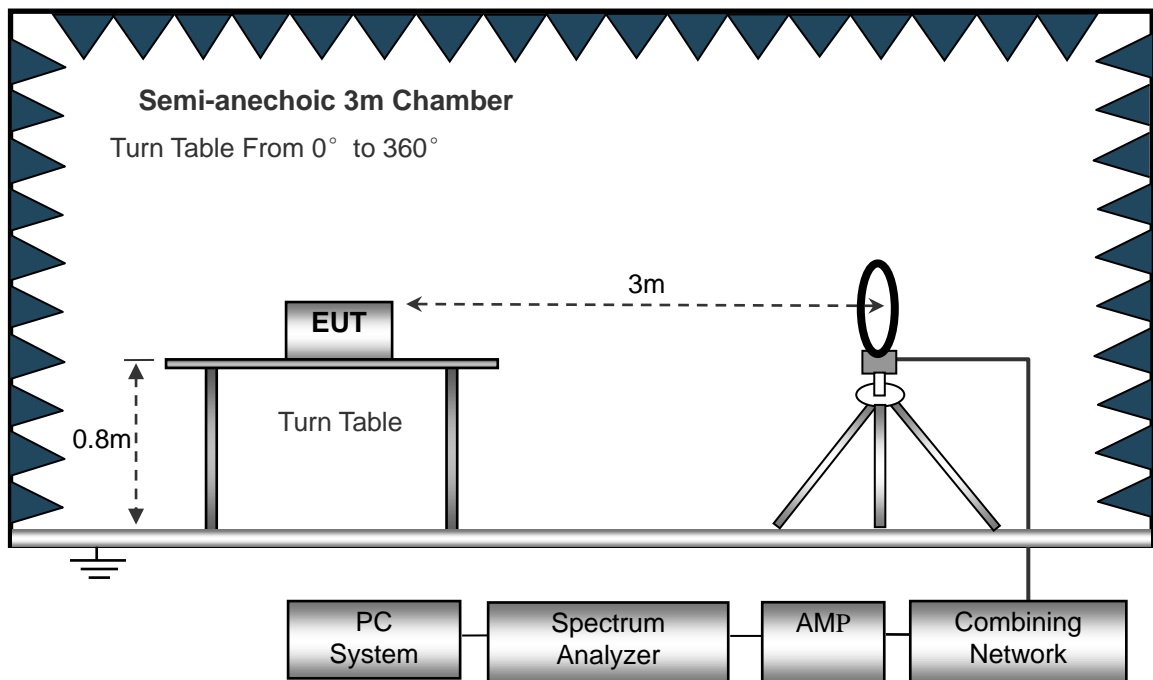
8.2 Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.205 15.407(b)(6) and FCC Part 15.209 Limit..

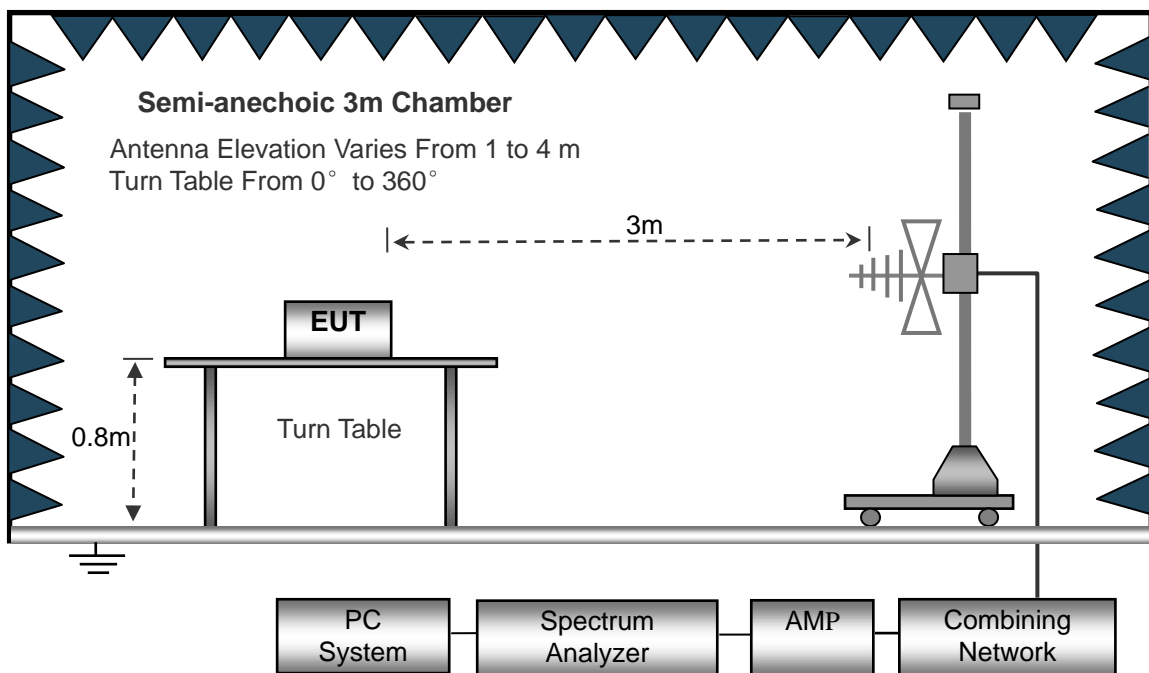
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

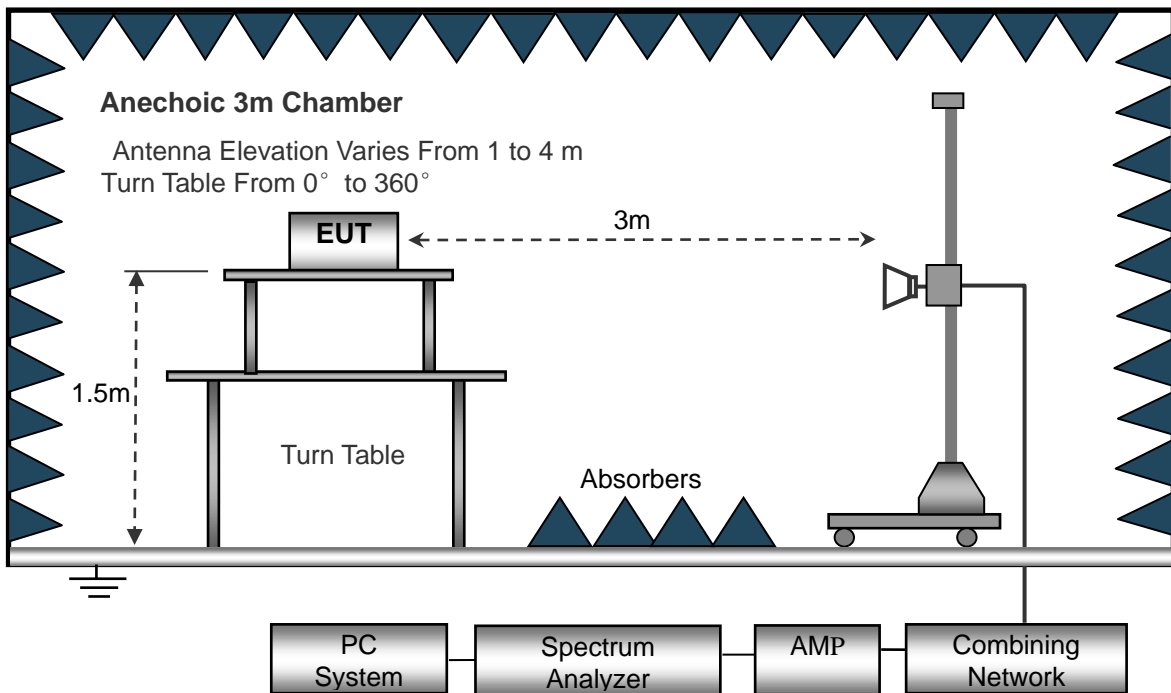
The test setup for emission measurement below 30MHz..



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



The test setup for emission measurement above 1 GHz..



8.3 Test Receiver Setup

During the radiated emission test for above 1GHz, the test receiver was set with the following configurations:

For peak detector:

RBW = 1000kHz, VBW = 3000kHz, Sweep Time = Auto

For average detector:

RBW = 1000kHz, VBW = 10Hz, Sweep Time = Auto

8.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated 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 for Class B. The equation for margin calculation is as follows:

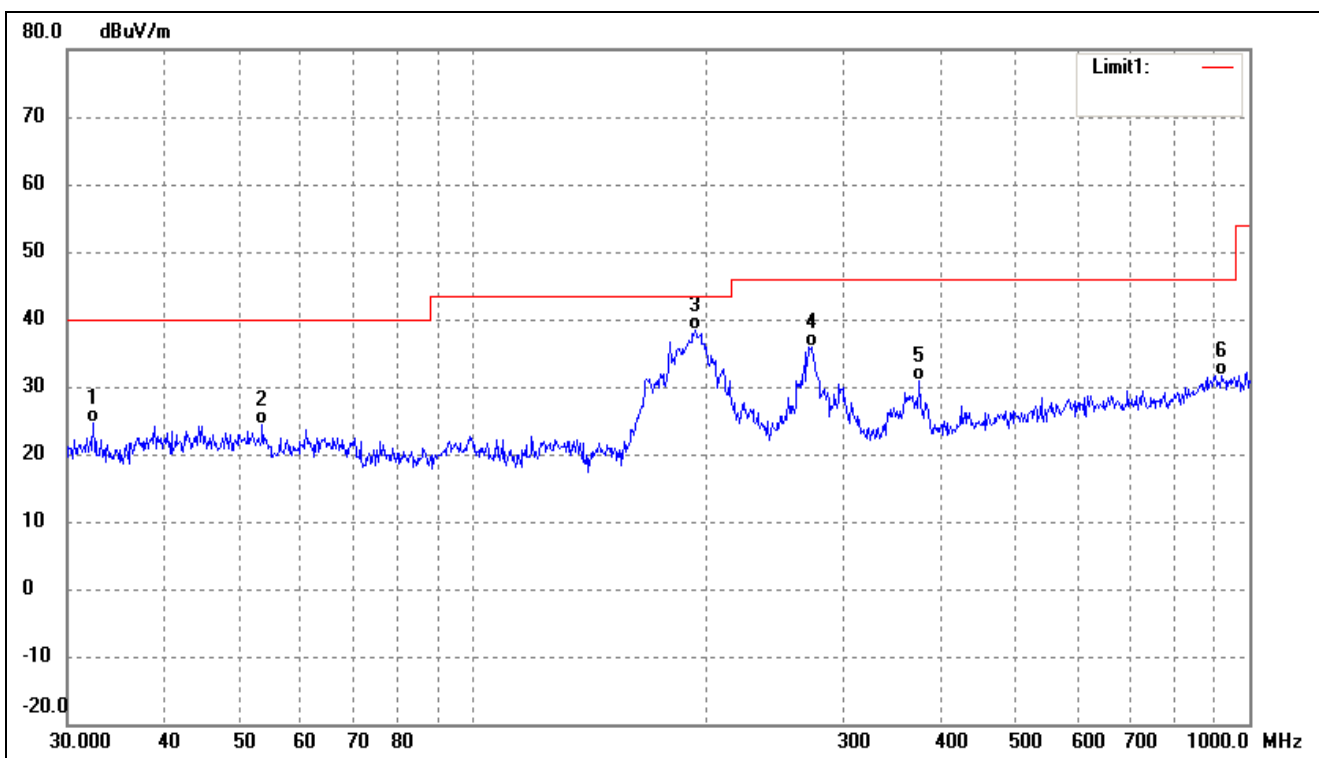
$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15 Limit}$$

8.5 Summary of Test Results/Plots

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

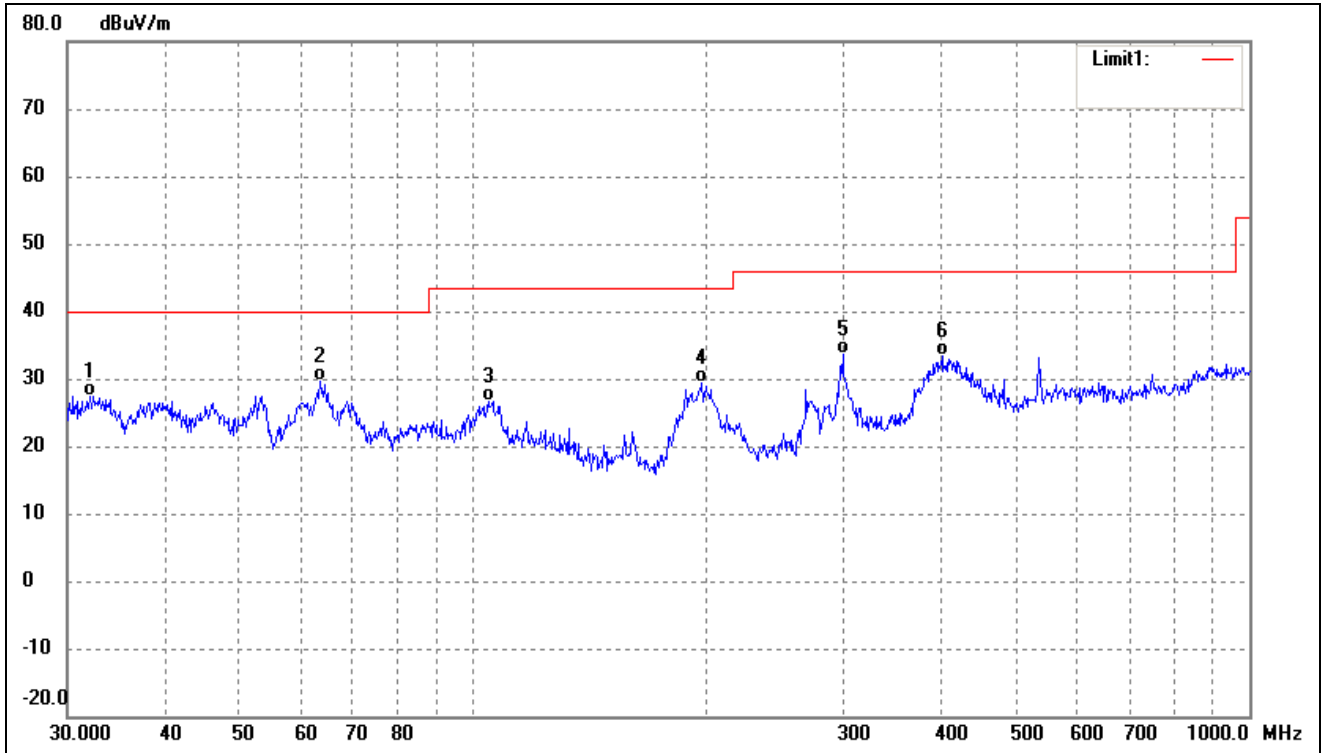
- Spurious Emission From 30 MHz to 1 GHz
- Antenna 1(Worst case)
- 5150-5250MHz

802.11a(Worst case)			
Test Channel	5180MHz	Polarity:	Horizontal



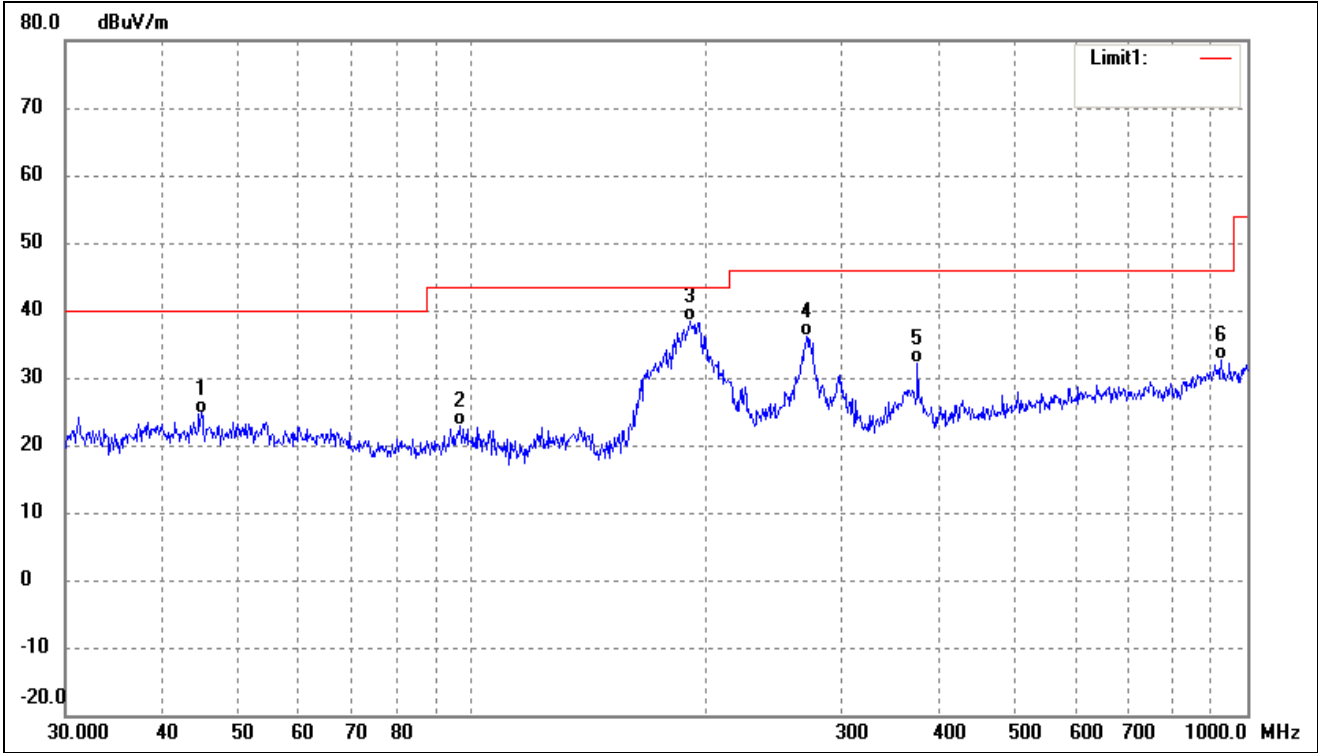
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	32.4059	38.54	-14.02	24.52	40.00	-15.48	-	-	QP
2	53.5052	36.78	-12.52	24.26	40.00	-15.74	-	-	QP
3	193.0945	51.18	-12.89	38.29	43.50	-5.21	-	-	QP
4	273.2341	46.67	-10.76	35.91	46.00	-10.09	-	-	QP
5	375.9385	37.92	-7.16	30.76	46.00	-15.24	-	-	QP
6	919.2866	29.81	1.78	31.59	46.00	-14.41	-	-	QP

802.11a(Worst case)			
Test Channel	5180MHz	Polarity:	Vertical



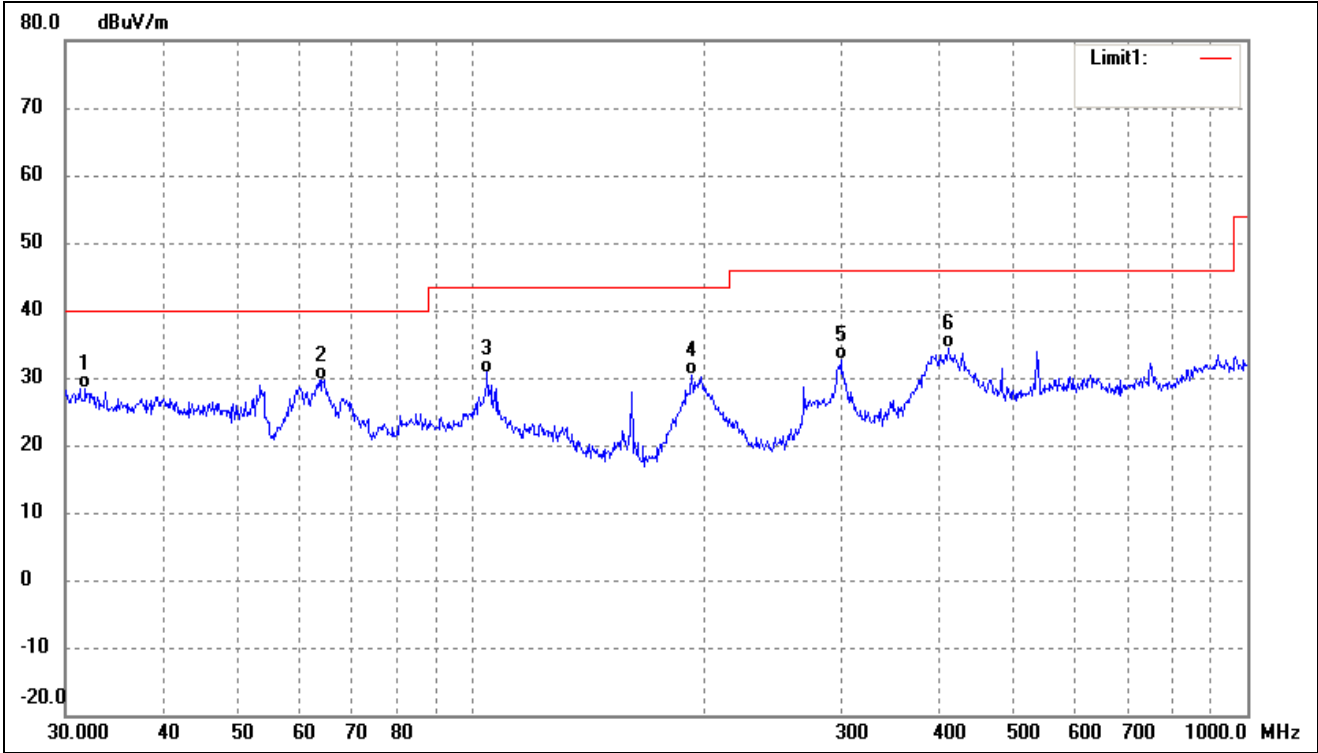
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	32.0668	41.33	-14.04	27.29	40.00	-12.71	-	-	QP
2	63.5356	43.35	-13.65	29.70	40.00	-10.30	-	-	QP
3	104.5361	39.89	-13.32	26.57	43.50	-16.93	-	-	QP
4	197.2001	41.92	-12.62	29.30	43.50	-14.20	-	-	QP
5	299.3158	42.51	-8.96	33.55	46.00	-12.45	-	-	QP
6	401.8385	39.84	-6.42	33.42	46.00	-12.58	-	-	QP

802.11a(Worst case)			
Test Channel	5200MHz	Polarity:	Horizontal



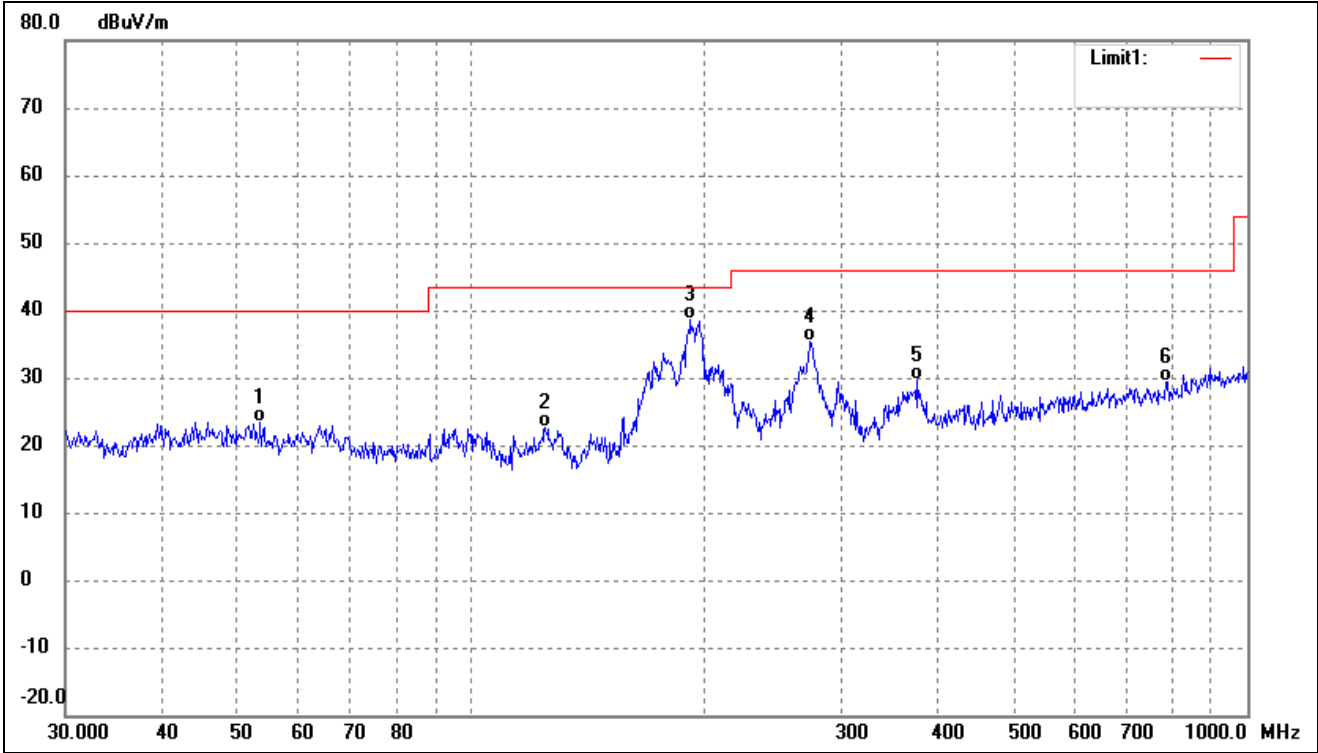
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	44.9006	36.55	-11.80	24.75	40.00	-15.25	-	-	QP
2	96.7749	36.70	-13.86	22.84	43.50	-20.66	-	-	QP
3	191.7450	51.33	-12.99	38.34	43.50	-5.16	-	-	QP
4	270.3748	46.99	-10.78	36.21	46.00	-9.79	-	-	QP
5	375.9385	39.36	-7.16	32.20	46.00	-13.80	-	-	QP
6	925.7563	30.85	1.84	32.69	46.00	-13.31	-	-	QP

802.11a(Worst case)			
Test Channel	5200MHz	Polarity:	Vertical



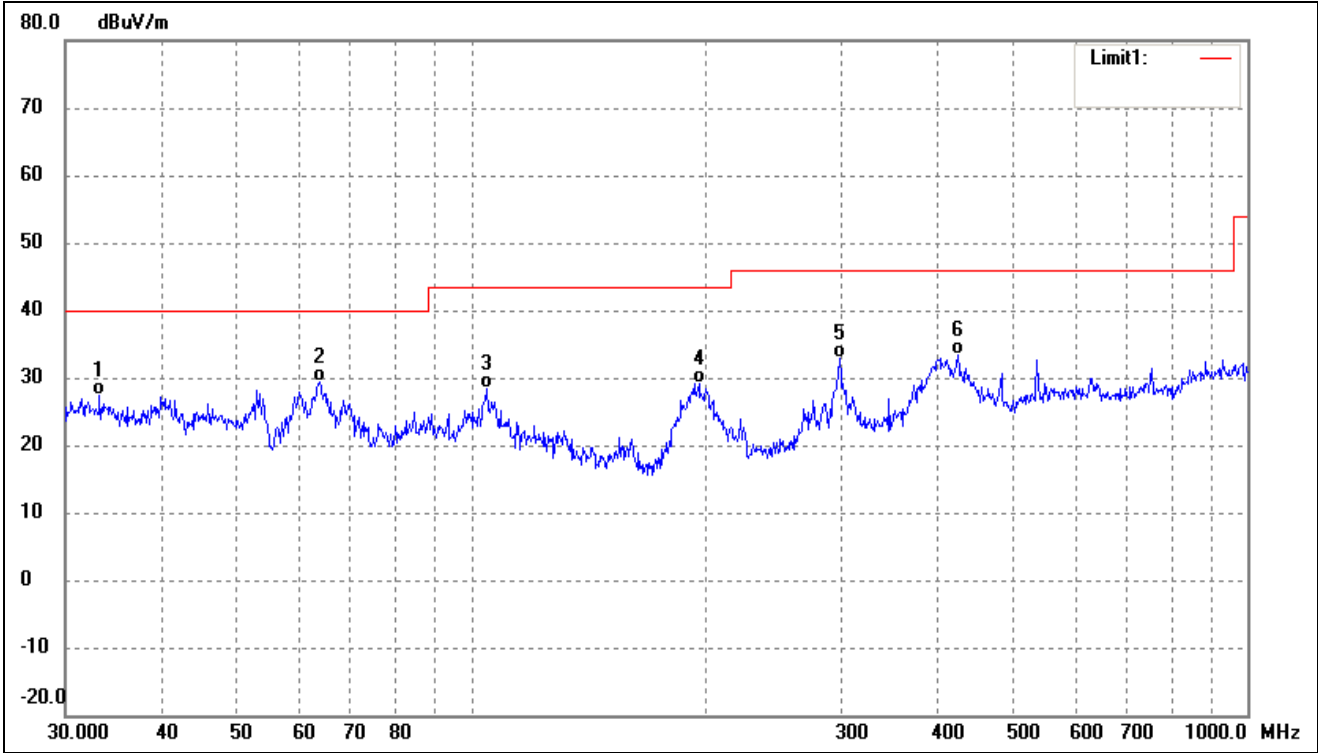
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	31.8427	42.32	-14.05	28.27	40.00	-11.73	-	-	QP
2	64.2075	43.48	-13.77	29.71	40.00	-10.29	-	-	QP
3	104.9033	44.07	-13.32	30.75	43.50	-12.75	-	-	QP
4	192.4186	43.38	-12.94	30.44	43.50	-13.06	-	-	QP
5	299.3158	41.50	-8.96	32.54	46.00	-13.46	-	-	QP
6	411.8240	40.64	-6.19	34.45	46.00	-11.55	-	-	QP

802.11a(Worst case)			
Test Channel	5240MHz	Polarity:	Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	53.5052	35.96	-12.52	23.44	40.00	-16.56	-	-	QP
2	124.5690	38.09	-15.52	22.57	43.50	-20.93	-	-	QP
3	191.7450	51.53	-12.99	38.54	43.50	-4.96	-	-	QP
4	273.2341	46.21	-10.76	35.45	46.00	-10.55	-	-	QP
5	375.9385	36.86	-7.16	29.70	46.00	-16.30	-	-	QP
6	785.0935	30.49	-1.16	29.33	46.00	-16.67	-	-	QP

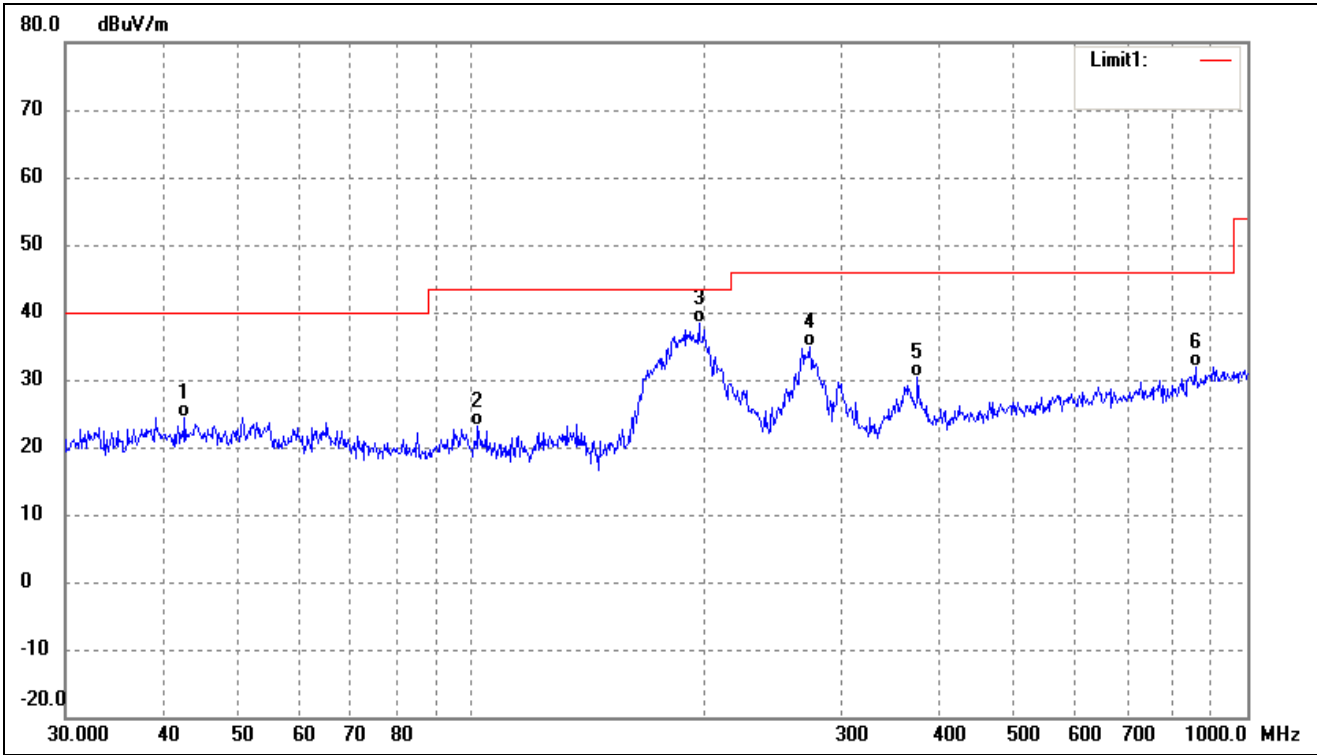
802.11a(Worst case)			
Test Channel	5240MHz	Polarity:	Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	33.2112	41.33	-13.97	27.36	40.00	-12.64	-	-	QP
2	63.7588	43.09	-13.69	29.40	40.00	-10.60	-	-	QP
3	104.5361	41.73	-13.32	28.41	43.50	-15.09	-	-	QP
4	196.5098	41.84	-12.66	29.18	43.50	-14.32	-	-	QP
5	298.2681	42.03	-9.05	32.98	46.00	-13.02	-	-	QP
6	423.5403	39.20	-5.91	33.29	46.00	-12.71	-	-	QP

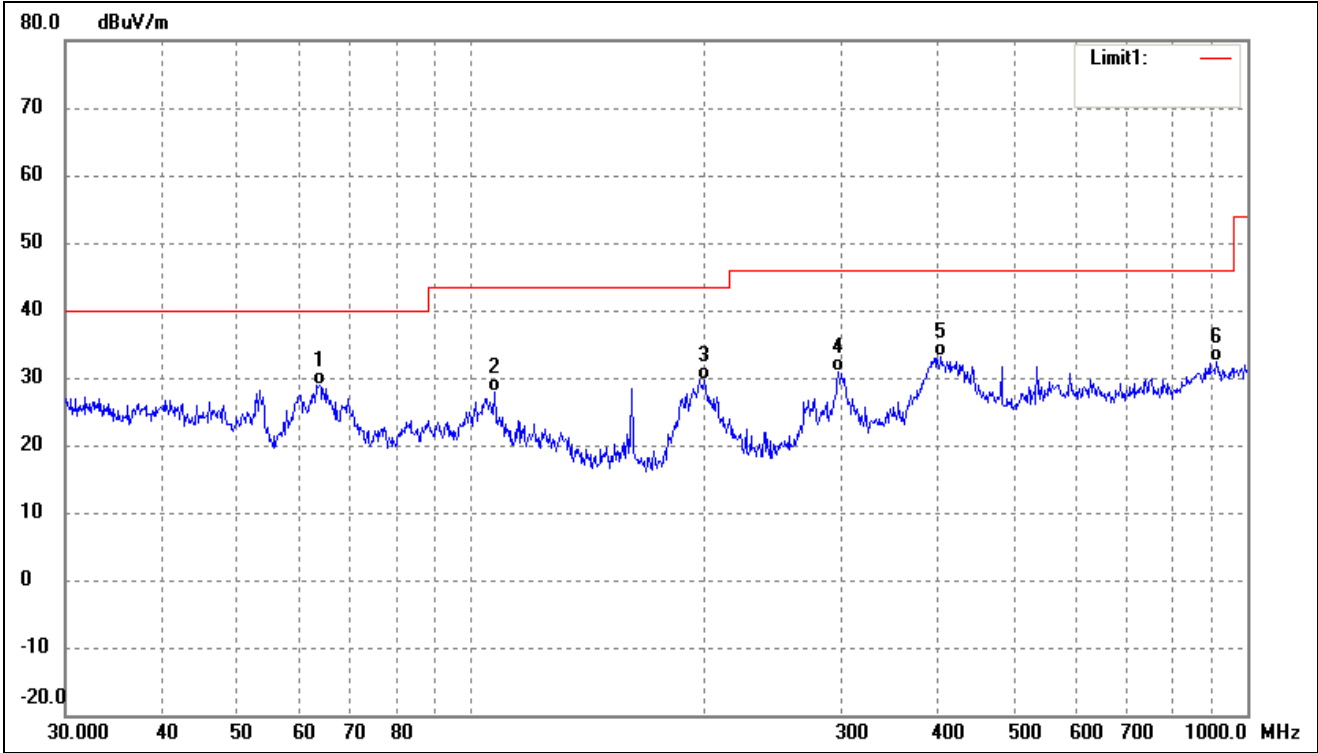
➤ Antenna 1: 5725-5850MHz

802.11a(Worst case)			
Test Channel	5745MHz	Polarity:	Horizontal



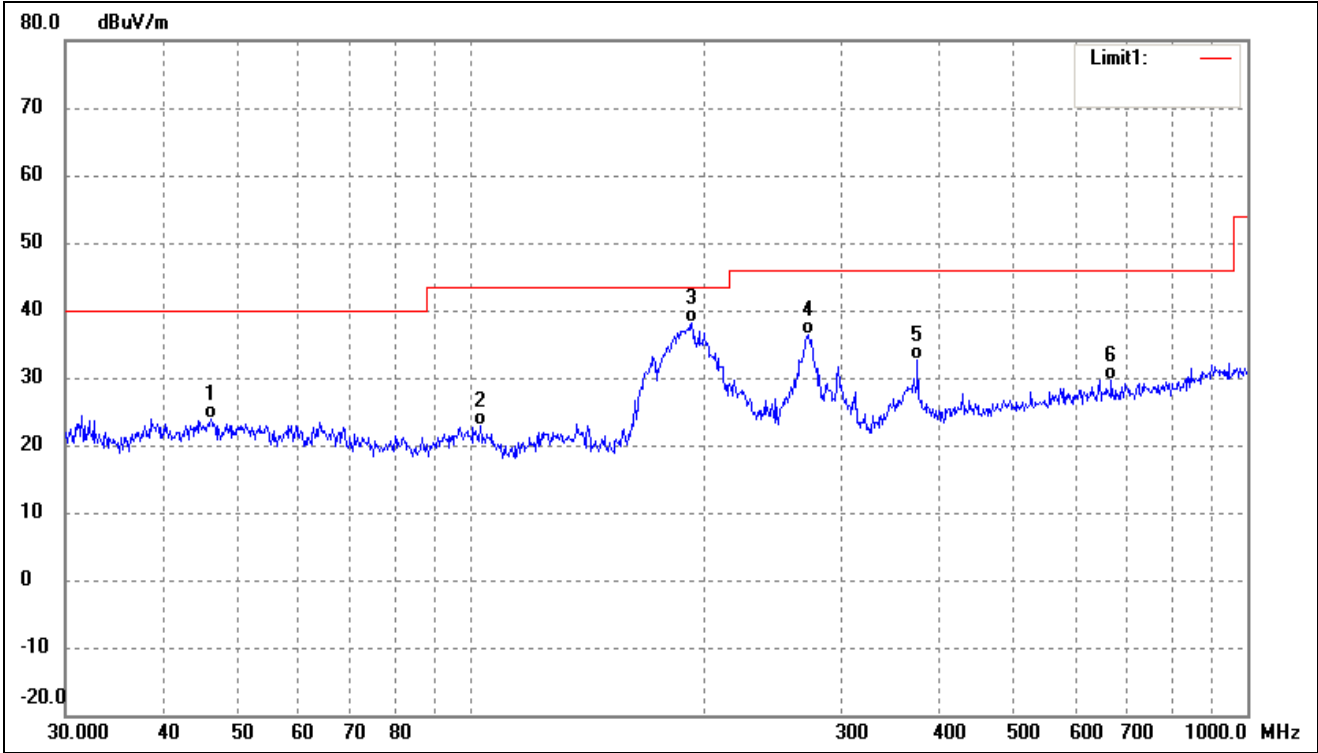
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	42.7496	36.37	-11.88	24.49	40.00	-15.51	-	-	QP
2	102.0014	36.48	-13.32	23.16	43.50	-20.34	-	-	QP
3	196.5098	50.96	-12.66	38.30	43.50	-5.20	-	-	QP
4	273.2341	45.73	-10.76	34.97	46.00	-11.03	-	-	QP
5	375.9385	37.55	-7.16	30.39	46.00	-15.61	-	-	QP
6	857.0247	31.55	0.38	31.93	46.00	-14.07	-	-	QP

802.11a(Worst case)			
Test Channel	5745MHz	Polarity:	Vertical



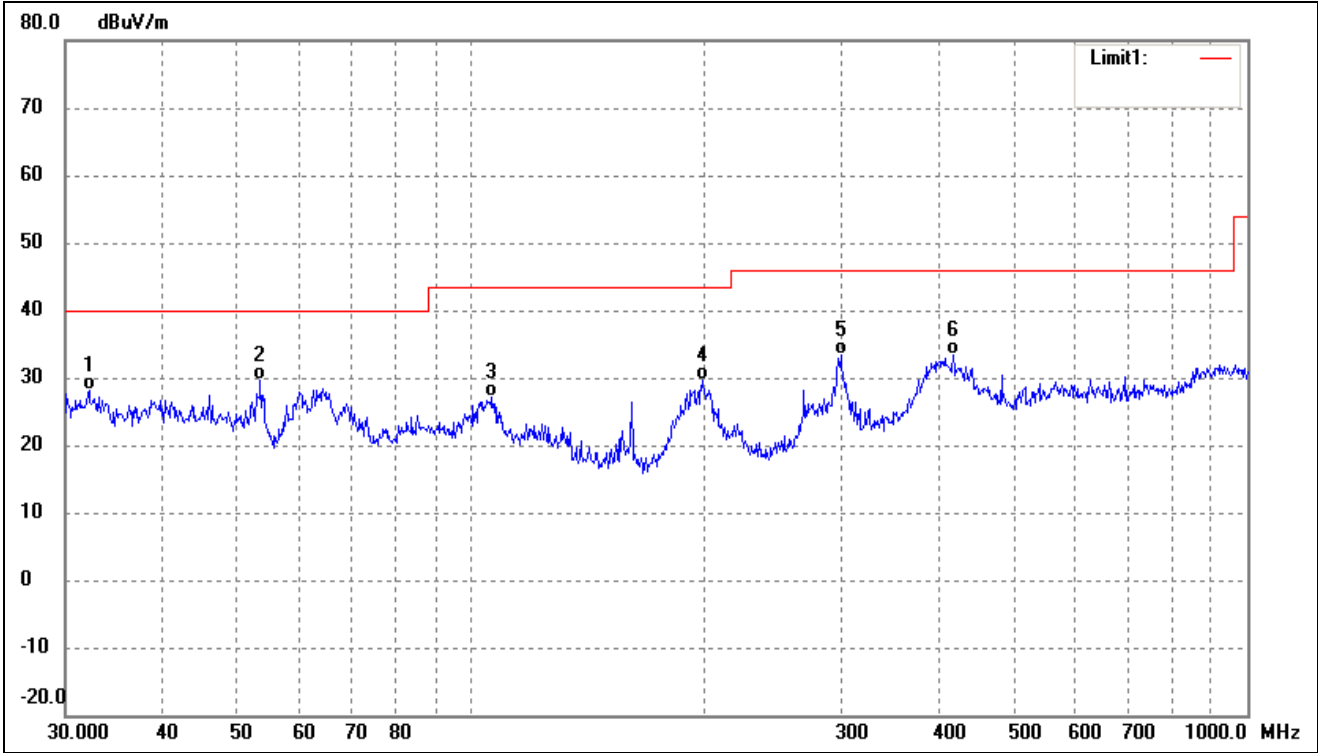
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	63.7588	42.52	-13.69	28.83	40.00	-11.17	-	-	QP
2	107.1337	41.23	-13.31	27.92	43.50	-15.58	-	-	QP
3	199.2855	42.10	-12.46	29.64	43.50	-13.86	-	-	QP
4	297.2241	40.04	-9.13	30.91	46.00	-15.09	-	-	QP
5	403.2500	39.60	-6.39	33.21	46.00	-12.79	-	-	QP
6	912.8620	30.69	1.71	32.40	46.00	-13.60	-	-	QP

802.11a(Worst case)			
Test Channel	5785MHz	Polarity:	Horizontal



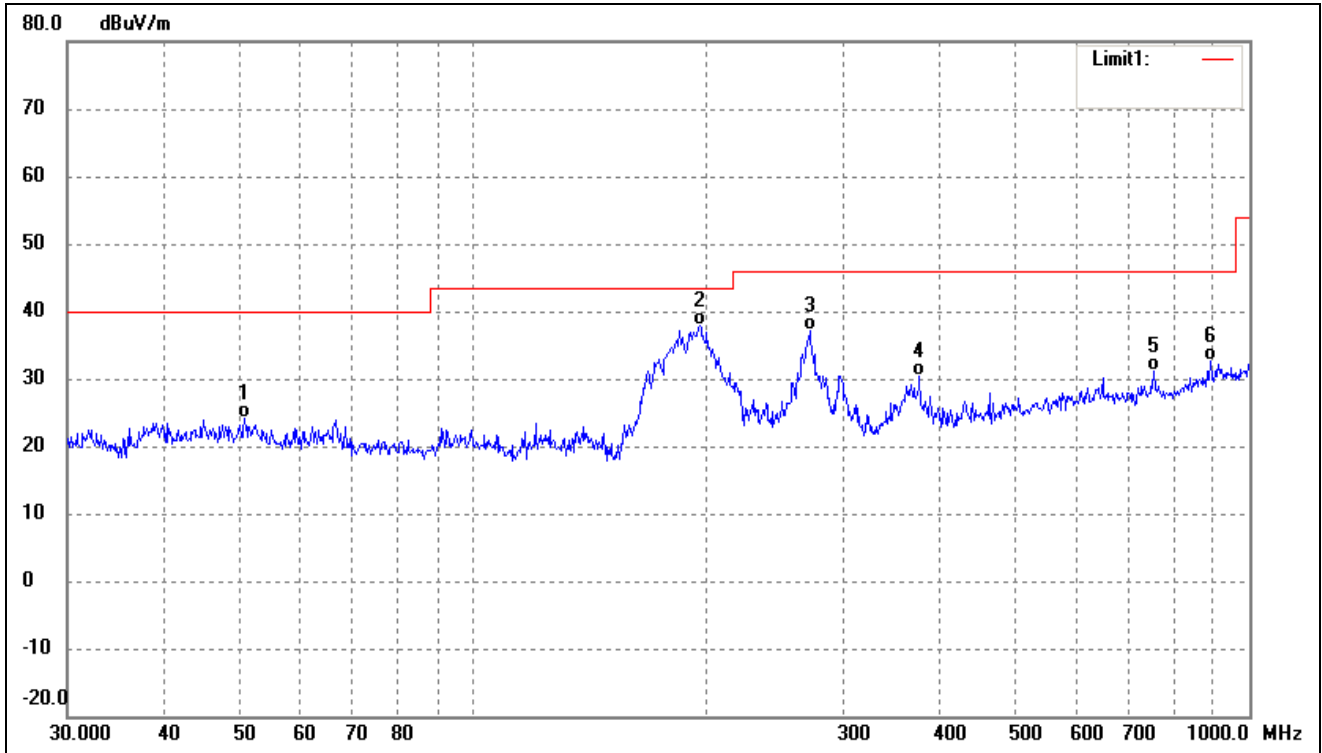
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	46.1780	35.66	-11.73	23.93	40.00	-16.07	-	-	QP
2	102.7192	36.23	-13.32	22.91	43.50	-20.59	-	-	QP
3	192.4186	51.11	-12.94	38.17	43.50	-5.33	-	-	QP
4	272.2776	47.03	-10.77	36.26	46.00	-9.74	-	-	QP
5	375.9385	39.81	-7.16	32.65	46.00	-13.35	-	-	QP
6	668.1423	31.65	-2.01	29.64	46.00	-16.36	-	-	QP

802.11a(Worst case)			
Test Channel	5785MHz	Polarity:	Vertical



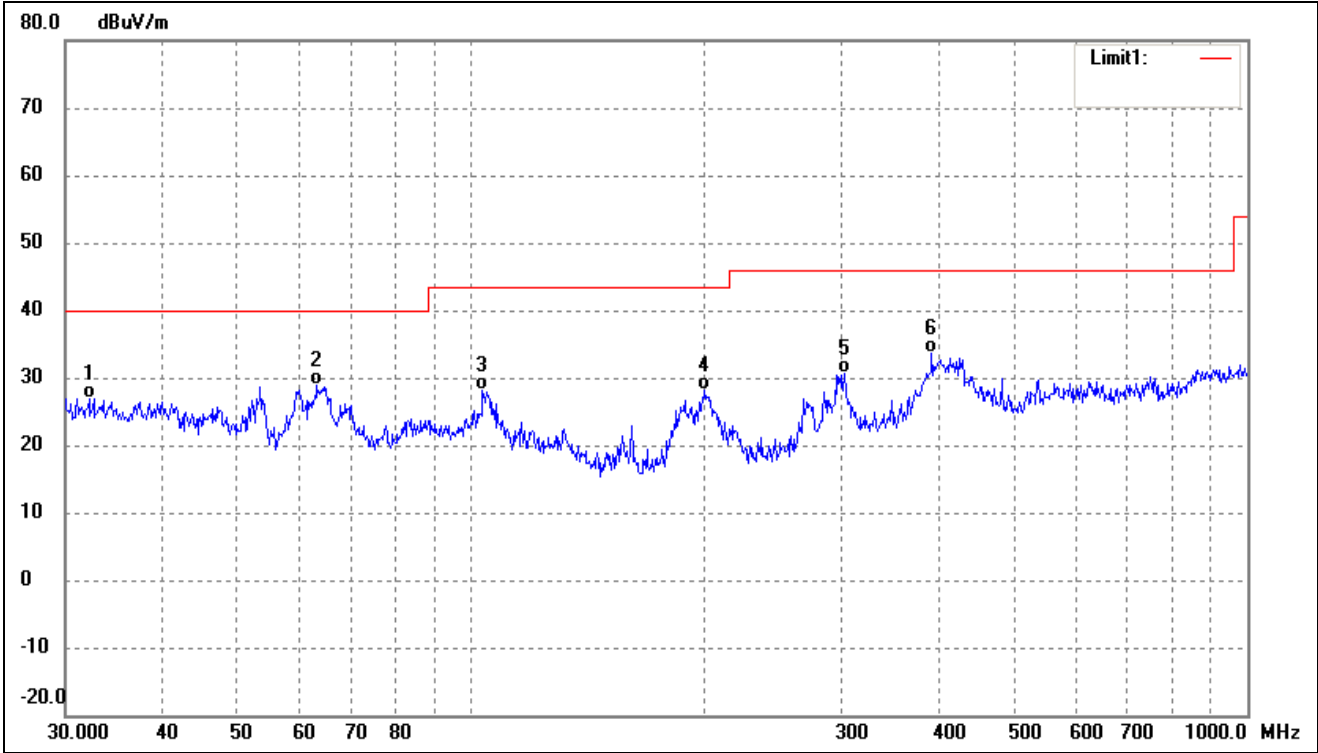
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	32.1795	42.14	-14.03	28.11	40.00	-11.89	-	-	QP
2	53.5052	42.15	-12.52	29.63	40.00	-10.37	-	-	QP
3	106.3850	40.38	-13.31	27.07	43.50	-16.43	-	-	QP
4	198.5880	42.24	-12.51	29.73	43.50	-13.77	-	-	QP
5	299.3158	42.22	-8.96	33.26	46.00	-12.74	-	-	QP
6	417.6411	39.40	-6.05	33.35	46.00	-12.65	-	-	QP

802.11a(Worst case)			
Test Channel	5852MHz	Polarity:	Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	50.7637	35.89	-11.75	24.14	40.00	-15.86	-	-	QP
2	195.8220	50.71	-12.71	38.00	43.50	-5.50	-	-	QP
3	271.3246	48.01	-10.79	37.22	46.00	-8.78	-	-	QP
4	375.9385	37.64	-7.16	30.48	46.00	-15.52	-	-	QP
5	752.7432	32.42	-1.27	31.15	46.00	-14.85	-	-	QP
6	890.7278	31.47	1.18	32.65	46.00	-13.35	-	-	QP

802.11a(Worst case)			
Test Channel	5825MHz	Polarity:	Vertical

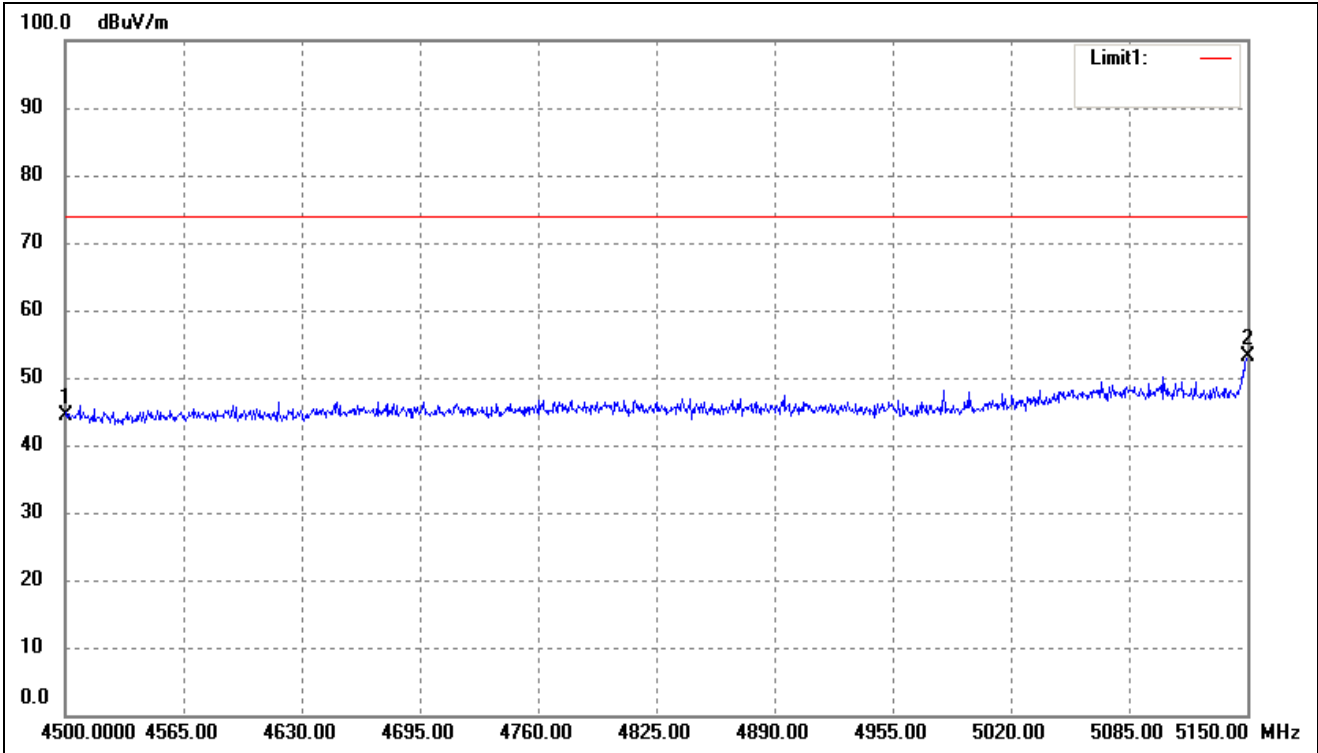


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	32.1795	40.99	-14.03	26.96	40.00	-13.04	-	-	QP
2	63.3132	42.43	-13.62	28.81	40.00	-11.19	-	-	QP
3	103.4421	41.47	-13.31	28.16	43.50	-15.34	-	-	QP
4	199.9856	40.62	-12.42	28.20	43.50	-15.30	-	-	QP
5	302.4812	39.45	-8.93	30.52	46.00	-15.48	-	-	QP
6	392.0951	40.24	-6.69	33.55	46.00	-12.45	-	-	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.

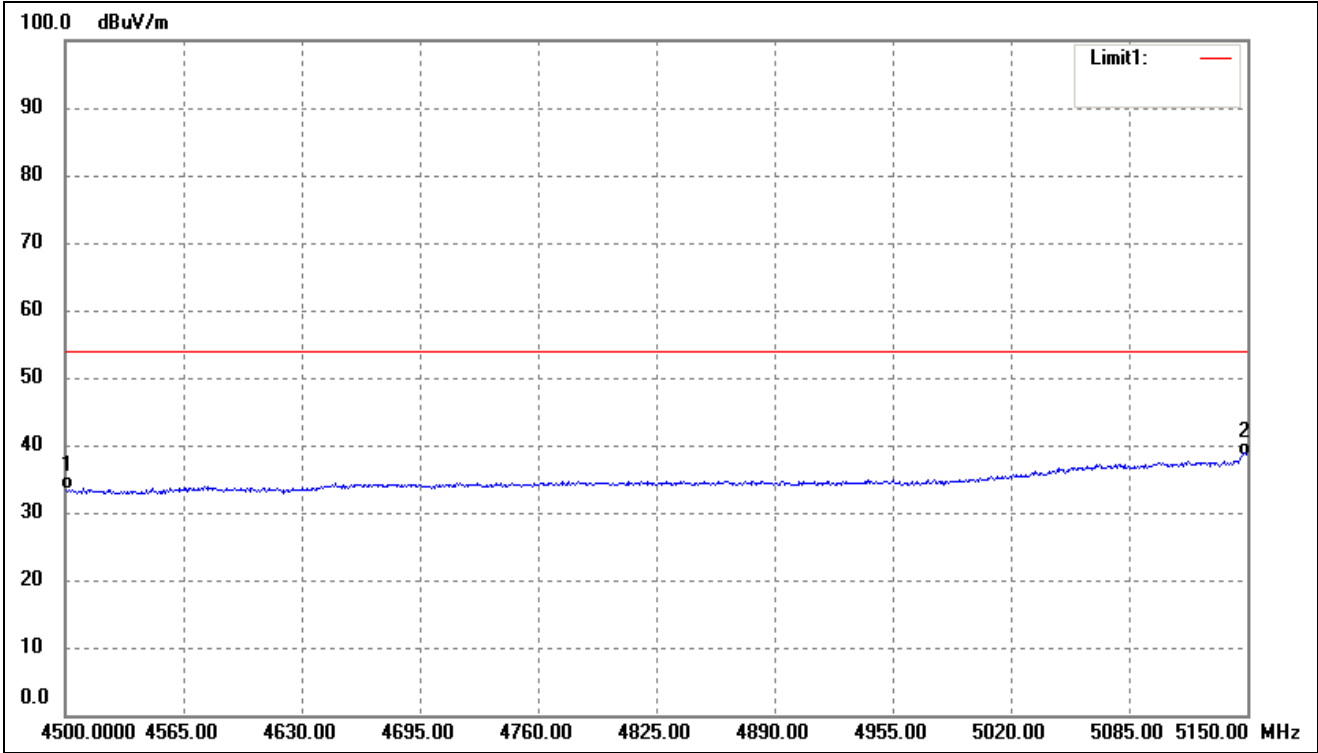
- Spurious Emission above 1GHz
- Antenna 1(worst case)

802.11a- Restricted Bandedge (worst case)			
Test Channel	band 4.50-5.15GHz	Polarity:	Vertical(worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	49.03	-4.71	44.32	74.00	-29.68	-	-	peak
2	5150.000	57.53	-4.32	53.21	74.00	-20.79	-	-	peak

802.11a- Restricted Bandedge (worst case)			
Test Channel	band 4.50-5.15GHz	Polarity:	Vertical(worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	38.19	-4.71	33.48	54.00	-20.52	-	-	AVG
2	5150.000	42.70	-4.32	38.38	54.00	-15.62	-	-	AVG

Note: The Restricted Bandedge was tested in Horizontal /Vertical and the worst case position data was reported.

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

- Antenna 1(worst case)
- For the frequency band 5.15-5.25GHz, 5.725-5.850GHz (802.11a)
- Harmonics And Spurious Emissions

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5180MHz)							
10360	56.75	7.11	63.86	74	-10.14	H	PK
15540	38.31	8.22	46.53	54	-7.47	H	AV
10360	58.35	7.11	65.46	74	-8.54	V	PK
15540	39.23	8.22	47.45	54	-6.55	V	AV
Middle Channel (5200MHz)							
10400	57.60	7.22	64.82	74	-9.18	H	PK
15600	36.85	8.67	45.52	54	-8.48	H	AV
10400	55.16	7.22	62.38	74	-11.62	V	PK
15600	39.60	8.67	48.27	54	-5.73	V	AV
High Channel (5240MHz)							
10480	57.34	7.69	65.03	74	-8.97	H	PK
15720	37.61	8.93	46.54	54	-7.46	H	AV
10360	55.20	7.22	62.42	74	-11.58	V	PK
15540	39.92	8.67	48.59	54	-5.41	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5745MHz)							
11490	54.95	9.45	64.40	74	-9.60	H	PK
17235	34.22	10.36	44.58	54	-9.42	H	AV
11490	57.54	9.45	66.99	74	-7.01	V	PK
17235	38.43	10.36	48.79	54	-5.21	V	AV
Middle Channel (5785MHz)							
11570	57.29	9.62	66.91	74	-7.09	H	PK
17355	36.58	10.67	47.25	54	-6.75	H	AV
11570	56.78	9.62	66.40	74	-7.60	V	PK
17355	32.64	10.67	43.31	54	-10.69	V	AV
High Channel (5825MHz)							
11650	56.24	9.84	66.08	74	-7.92	H	PK
17475	34.79	10.95	45.74	54	-8.26	H	AV
11650	53.38	9.84	63.22	74	-10.78	V	PK
17475	34.88	10.95	45.83	54	-8.17	V	AV

➤ Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-39.15	-27
Highest	Above 5350	-40.46	-27

Note: the data just list the worst cases

➤ Out of Band edge for 5725-5850MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5715	-37.17	-27
	5715 to 5725	-40.50	-17
Highest	5850 to 5860	-38.04	-17
	Above 5860	-45.23	-27

Note: the data just list the worst cases

- For the frequency band 5.15-5.25GHz5.725-5.850GHz (802.11n HT20)
- Harmonics And Spurious Emissions

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5180MHz)							
10360	56.56	7.11	63.67	74	-10.33	H	PK
15540	35.57	8.22	43.79	54	-10.21	H	AV
10360	61.11	7.11	68.22	74	-5.78	V	PK
15540	35.80	8.22	44.02	54	-9.98	V	AV
Middle Channel (5200MHz)							
10400	57.30	7.22	64.52	74	-9.48	H	PK
15600	35.79	8.67	44.46	54	-9.54	H	AV
10400	57.02	7.22	64.24	74	-9.76	V	PK
15600	36.35	8.67	45.02	54	-8.98	V	AV
High Channel (5240MHz)							
10480	55.95	7.69	63.64	74	-10.36	H	PK
15720	35.87	8.93	44.80	54	-9.20	H	AV
10480	59.82	7.69	67.51	74	-6.49	V	PK
15720	40.03	8.93	48.96	54	-5.04	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5745MHz)							
11490	58.23	9.45	67.68	74	-6.32	H	PK
17235	35.94	10.36	46.30	54	-7.70	H	AV
11490	55.67	9.45	65.12	74	-8.88	V	PK
17235	34.86	10.36	45.22	54	-8.78	V	AV
Middle Channel (5785MHz)							
11570	58.16	9.62	67.78	74	-6.22	H	PK
17355	33.68	10.67	44.35	54	-9.65	H	AV
11570	58.03	9.62	67.65	74	-6.35	V	PK
17355	36.15	10.67	46.82	54	-7.18	V	AV
High Channel (5825MHz)							
11650	53.52	9.84	63.36	74	-10.64	H	PK
17475	34.00	10.95	44.95	54	-9.05	H	AV
11650	58.36	9.84	68.20	74	-5.80	V	PK
17475	35.94	10.95	46.89	54	-7.11	V	AV

➤ Out of Band edge 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-32.83	-27
Highest	Above 5350	-38.77	-27

Note: the data just list the worst cases

➤ Out of Band edge for 5725-5850MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5715	-43.57	-27
	5715 to 5725	-34.24	-17
Highest	5850 to 5860	-38.94	-17
	Above 5860	-41.43	-27

Note: the data just list the worst cases

- For the frequency band 5.15-5.25GHz, 5.725-5.850GHz (802.11n HT40)
- Harmonics And Spurious Emissions

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5190MHz)							
10380	57.54	7.25	64.79	74	-9.21	H	PK
15570	36.01	8.33	44.34	54	-9.66	H	AV
10380	61.02	7.25	68.27	74	-5.73	V	PK
15570	39.89	8.33	48.22	54	-5.78	V	AV
High Channel (5230MHz)							
10460	57.27	7.54	64.81	74	-9.19	H	PK
15690	35.61	8.86	44.47	54	-9.53	H	AV
10460	60.30	7.54	67.84	74	-6.16	V	PK
15690	37.26	8.86	46.12	54	-7.88	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5755MHz)							
11510	56.51	9.65	66.16	74	-7.84	H	PK
17265	37.46	10.87	48.33	54	-5.67	H	AV
11510	56.21	9.65	65.86	74	-8.14	V	PK
17265	36.10	10.87	46.97	54	-7.03	V	AV
High Channel (5795MHz)							
11590	54.45	9.81	64.26	74	-9.74	H	PK
17385	33.56	10.89	44.45	54	-9.55	H	AV
11590	57.51	9.81	67.32	74	-6.68	V	PK
17385	36.01	10.89	46.90	54	-7.10	V	AV

- Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-33.81	-27
Highest	Above 5350	-41.07	-27

Note: the data just list the worst cases

➤ Out of Band edge for 5725-5850MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5715	-42.34	-27
	5715 to 5725	-39.82	-17
Highest	5850 to 5860	-41.88	-17
	Above 5860	-44.19	-27

Note: the data just list the worst cases

- For the frequency band 5.15-5.25GHz, 5.725-5.850GHz (802.11ac VH80)
- Harmonics And Spurious Emissions

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
5210MHz							
10420	59.25	7.33	66.58	74	-7.42	H	PK
15630	37.15	8.75	45.90	54	-8.10	H	AV
10420	56.03	7.33	63.36	74	-10.64	H	PK
15630	35.95	8.75	44.70	54	-9.30	H	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
5775MHz							
11550	55.25	9.54	64.79	74	-9.21	H	PK
17325	37.55	10.59	48.14	54	-5.86	H	AV
11550	59.17	9.54	68.71	74	-5.29	H	PK
17325	33.40	10.59	43.99	54	-10.01	H	AV

- Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-34.01	-27
Highest	Above 5350	-31.29	-27

Note: the data just list the worst cases

- Out of Band edge for 5725-5850MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5715	-45.07	-27
	5715 to 5725	-30.04	-17
Highest	5850 to 5860	-27.33	-17
	Above 5860	-37.56	-27

Note: the data just list the worst cases

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.

9. Frequency Stability

9.1 Standard Applicable

According to §15.407(g), manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

9.2 Test Procedure

According to §2.1055, the following test procedure was performed.

The Frequency Stability is measured directly with a Frequency Domain Analyzer. Frequency Deviation in ppm is calculated from the measured peak to peak value.

The Carrier Frequency Stability over Power Supply Voltage and over Temperature is measured with a Frequency Domain Analyzer in histogram mode.

9.3 Summary of Test Results/Plots

Please refer to Appendix D

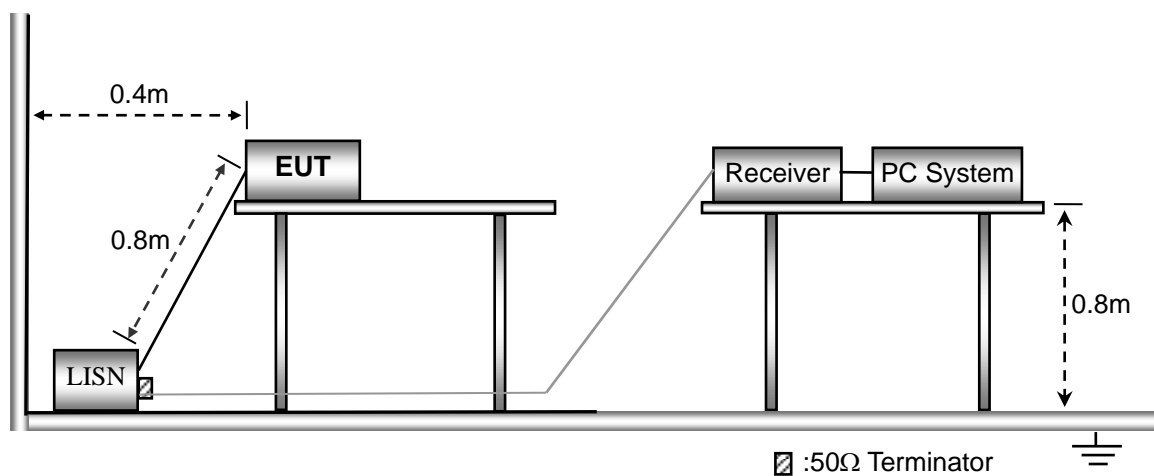
10 Conducted Emissions

10.1 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 40 cm long in the middle. The spacing between the peripherals was 10 cm.

10.2 Basic Test Setup Block Diagram



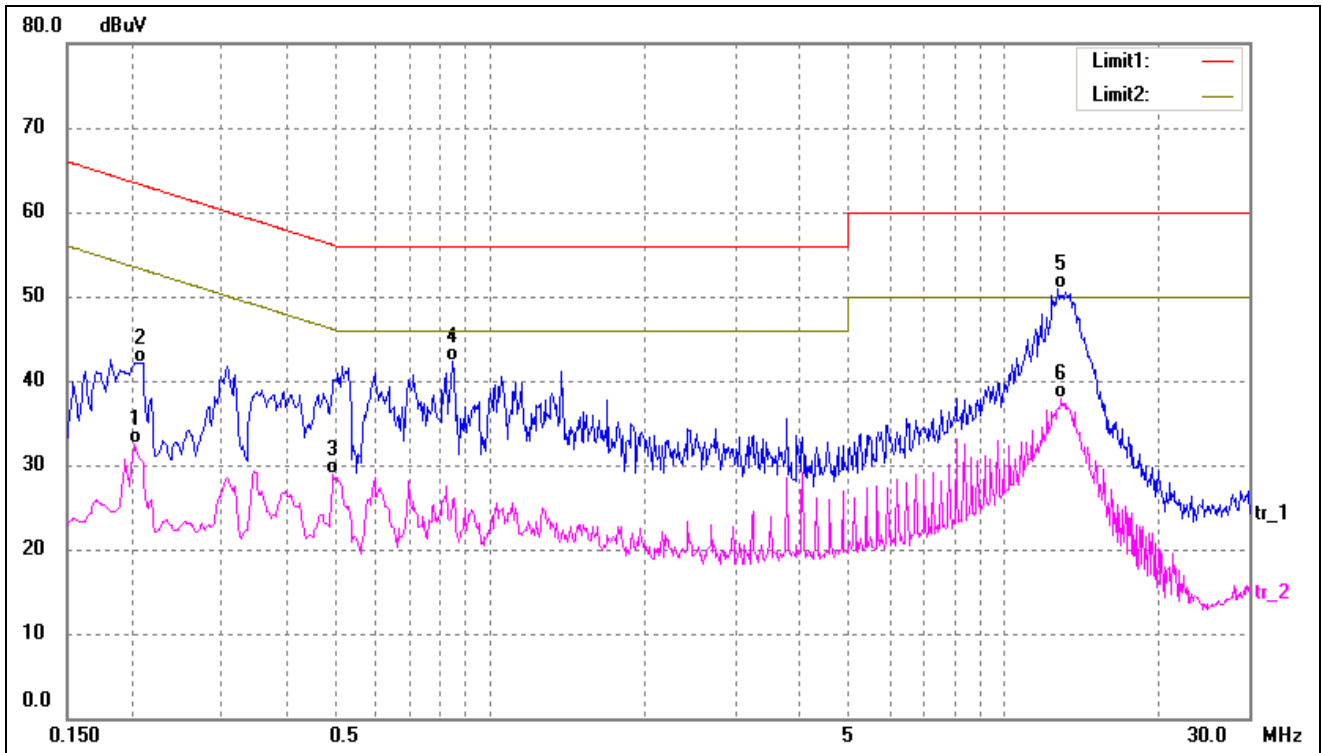
10.3 Test Receiver Setup

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

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

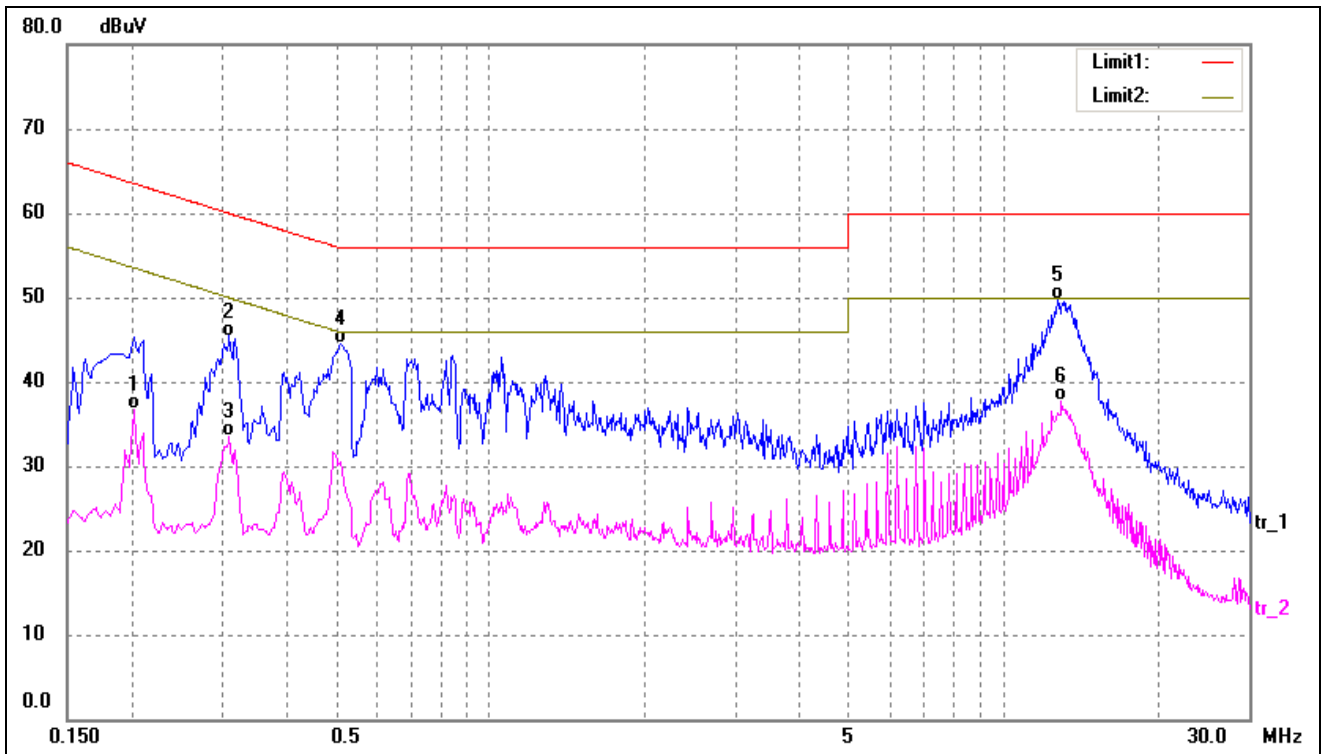
10.4 Summary of Test Results/Plots

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	0.2020	22.26	10.27	32.53	53.53	-21.00	AVG
2	0.2100	31.86	10.27	42.13	63.21	-21.08	QP
3	0.4940	18.71	10.22	28.93	46.10	-17.17	AVG
4	0.8460	32.02	10.20	42.22	56.00	-13.78	QP
5*	12.7180	40.55	10.45	51.00	60.00	-9.00	QP
6	12.9580	27.51	10.46	37.97	50.00	-12.03	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	0.2020	26.48	10.27	36.75	53.53	-16.78	AVG
2	0.3100	35.16	10.24	45.40	59.97	-14.57	QP
3	0.3100	23.21	10.24	33.45	49.97	-16.52	AVG
4	0.5100	34.33	10.22	44.55	56.00	-11.45	QP
5*	12.7380	39.34	10.45	49.79	60.00	-10.21	QP
6	12.9580	27.20	10.46	37.66	50.00	-12.34	AVG

APPENDIX SUMMARY

Project No.	WTH21X04041842W	Test Engineer	Moon
Start date	2021/05/18	Finish date	2021/05/21
Temperature	23.8℃	Humidity	48%
RF specifications	U-NII		

APPENDIX	Description of Test Item	Result
A	Power Spectral Density	Compliant
B	Emission Bandwidth and Occupied Bandwidth	Compliant
C	Maximum Conducted Output Power	Compliant
D	Frequency Stability	Compliant

APPENDIX A

Power Spectral Density					
U-NII-1:5150-5250MHz					
Operating mode	Test Channel	ANT 1 dBm/MHz	ANT 2 dBm/MHz	Total dBm/MHz	Limit (dBm/MHz)
802.11a	5180	4.587	5.267	/	11
	5200	5.212	4.904	/	11
	5240	5.234	5.319	/	11
802.11n-HT20	5180	4.569	4.666	7.628	11
	5200	4.089	4.546	7.334	11
	5240	4.765	4.857	7.822	11
802.11n-HT40	5190	0.024	0.010	3.027	11
	5230	0.161	0.449	3.318	11
802.11ac-HT80	5210	0.753	1.419	4.109	11

Power Spectral Density							
U-NII-3: 5725-5850MHz							
Operating mode	Test Channel	ANT 1 dBm/300kHz	ANT 2 dBm/300kHz	Factor	ANT 1 dBm/500kHz*	ANT 2 dBm/500kHz*	Limit dBm/500kHz
802.11a	5745	0.620	0.474	2.22	2.840	2.694	30
	5785	0.490	0.802	2.22	2.710	3.022	30
	5825	0.423	0.659	2.22	2.643	2.879	30

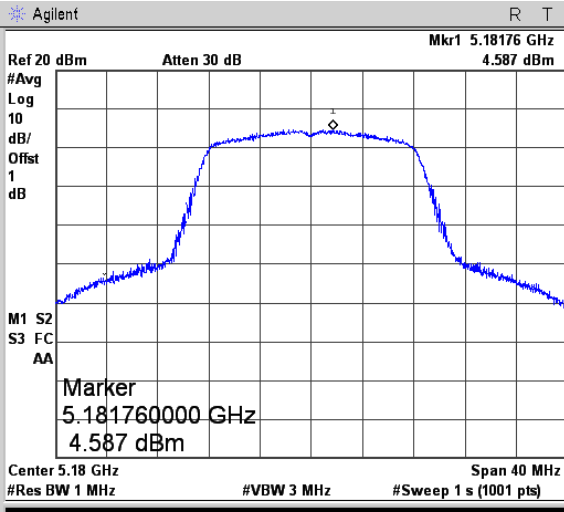
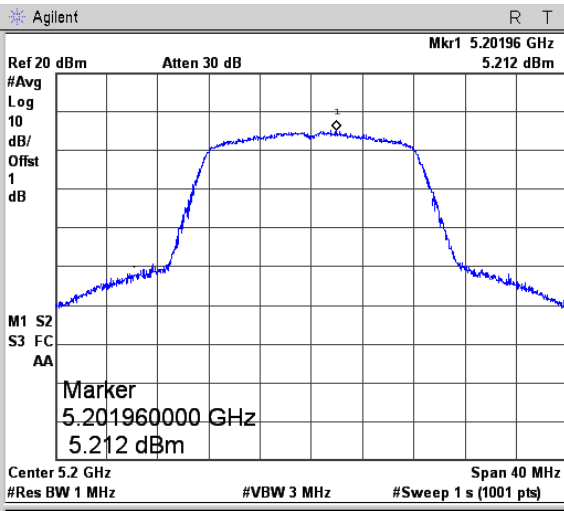
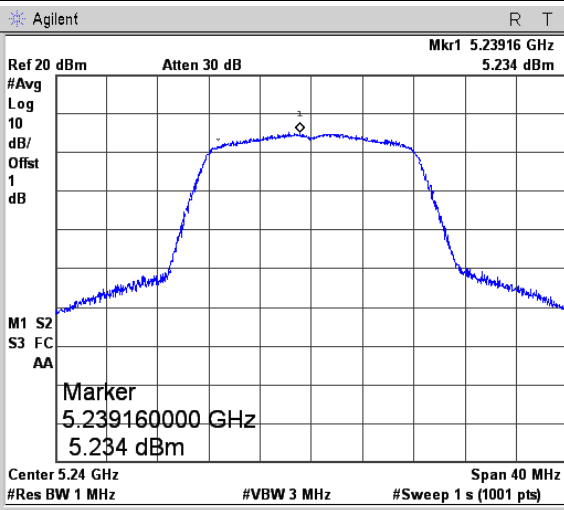
*Note: Maximum PSD=PSD(dBm/300kHz)+10log(500kHz/300kHz)=2.22

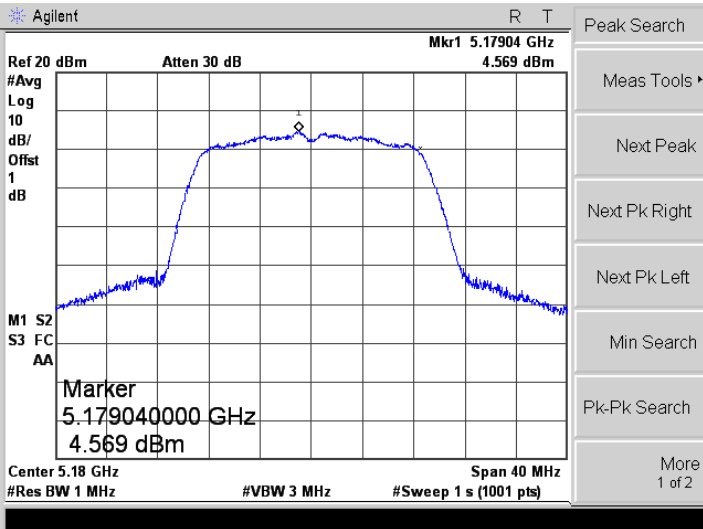
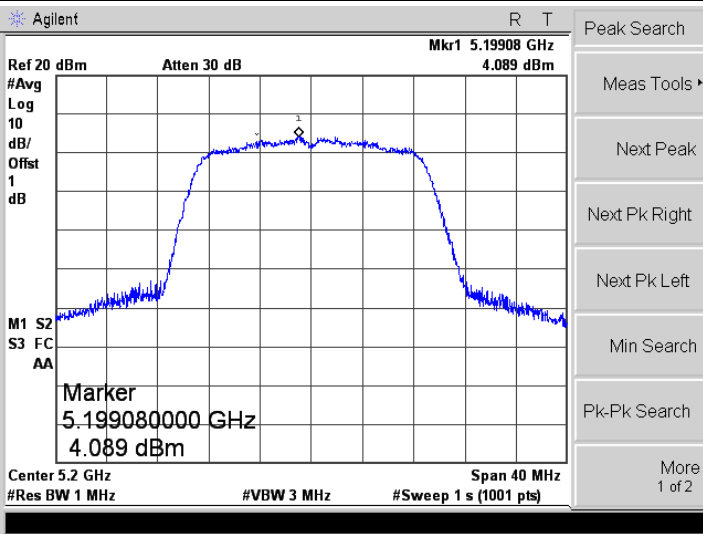
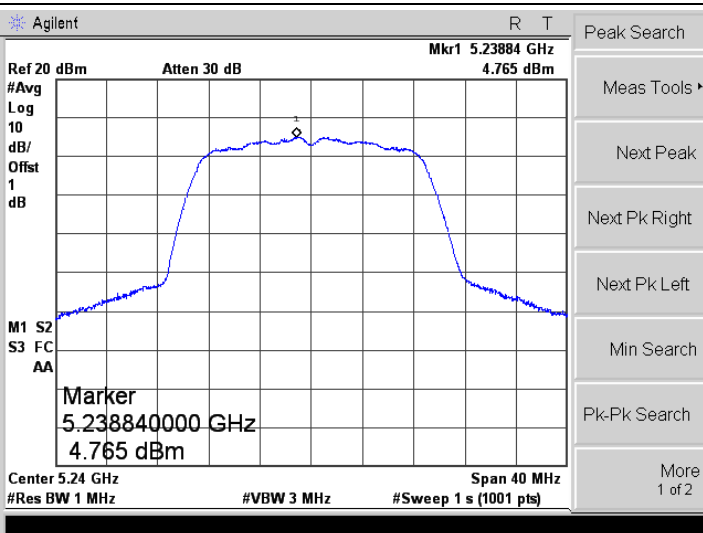
Power Spectral Density							
U-NII-3: 5725-5850MHz							
Operating mode	Test Channel	ANT 1 dBm/300kHz	ANT 2 dBm/300kHz	Factor	Total dBm/500kHz*	Limit dBm/500kHz	
802.11n-HT20	5745	-0.572	-0.724	2.22	4.583	30	
	5785	-0.752	-0.276	2.22	4.723	30	
	5825	-0.416	-0.101	2.22	4.975	30	
802.11n HT40	5755	-4.533	-4.424	2.22	0.752	30	
	5795	-4.294	-4.124	2.22	1.022	30	
802.11ac VH80	5775	-3.436	-3.529	2.22	1.748	30	

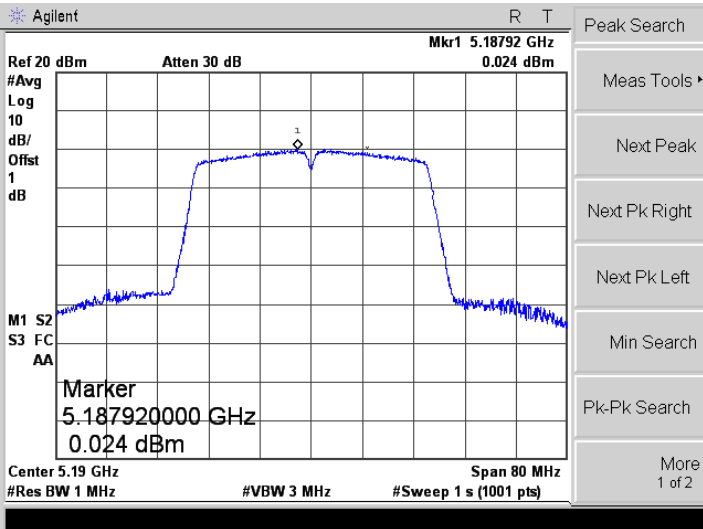
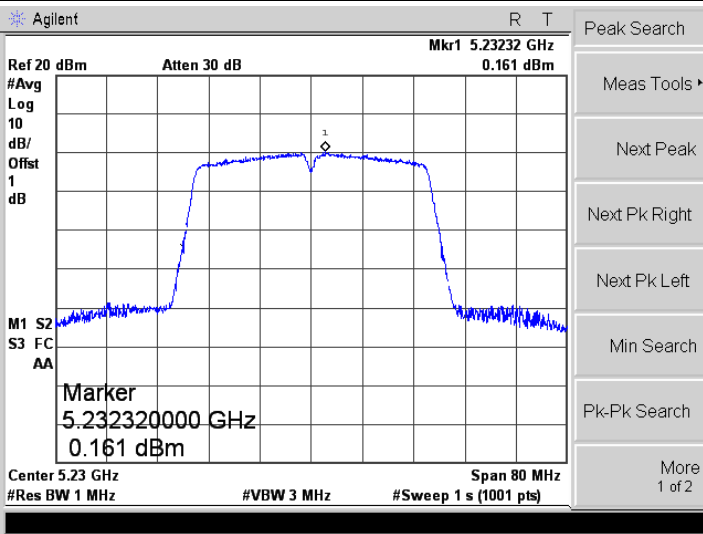
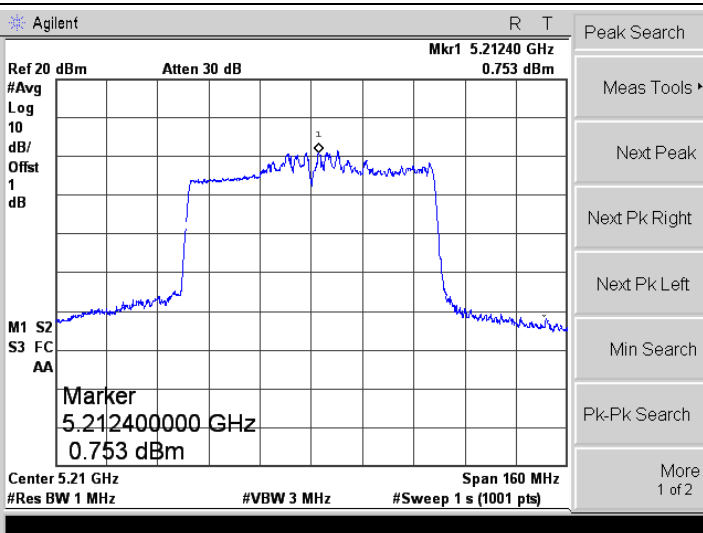
*Note: Maximum PSD=PSD(dBm/300kHz)+10log(500kHz/300kHz)=2.22

ANT 1

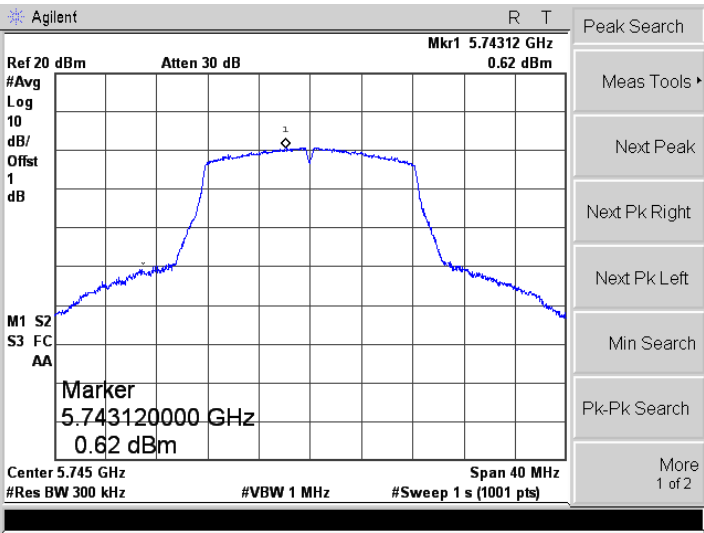
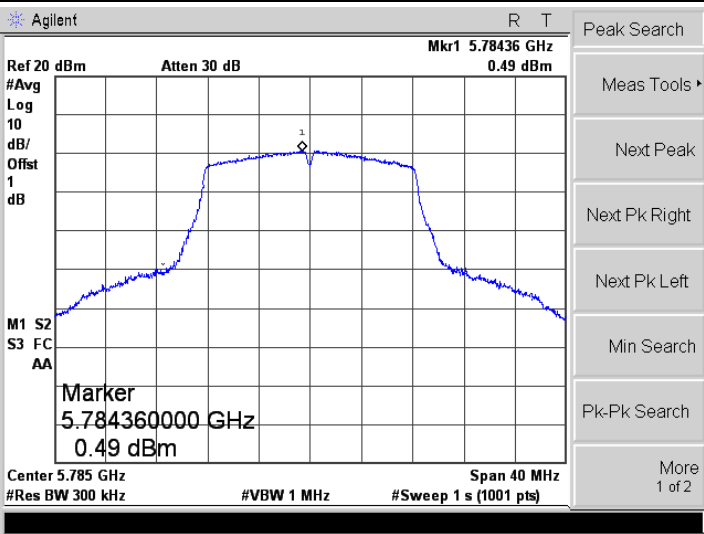
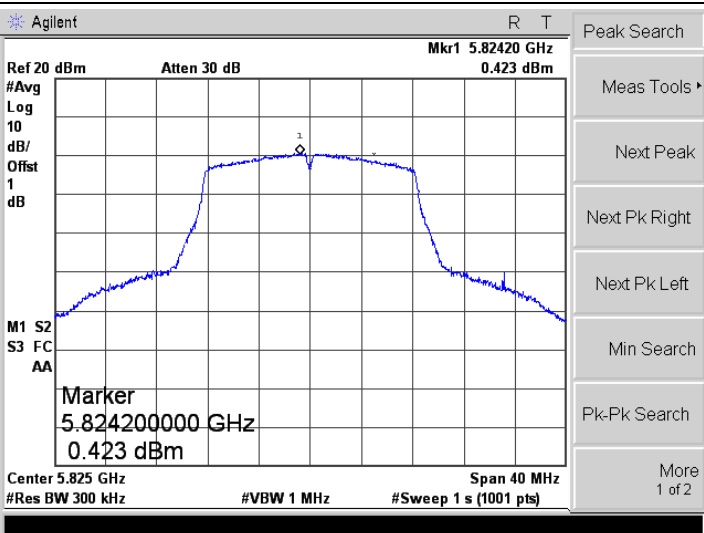
5150-5250MHz

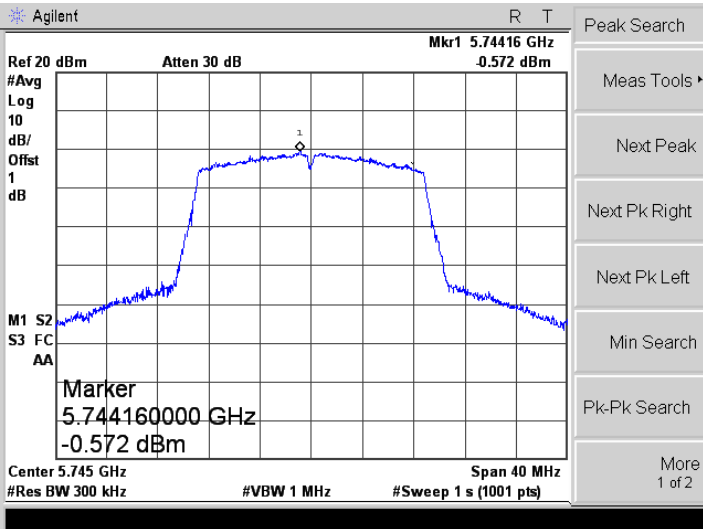
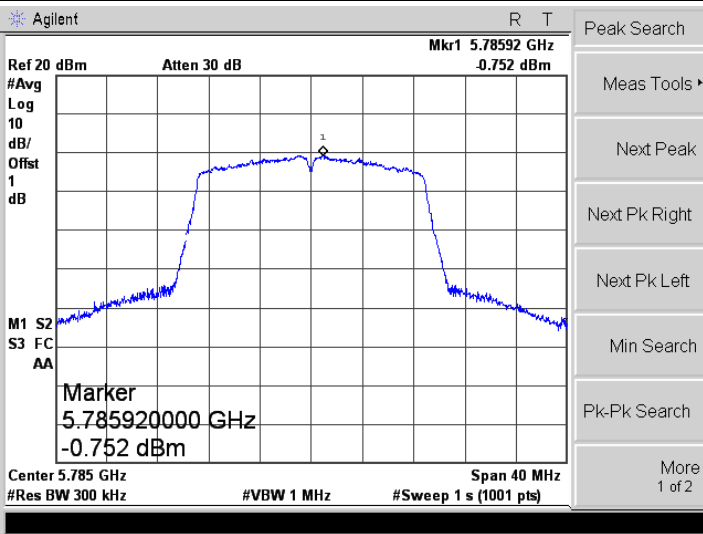
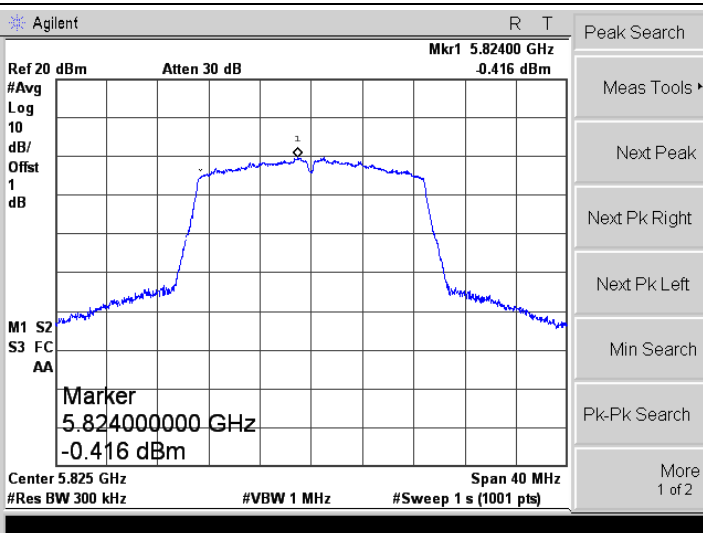
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<p>802.11a-Middle</p>	
<p>802.11a-High</p>	

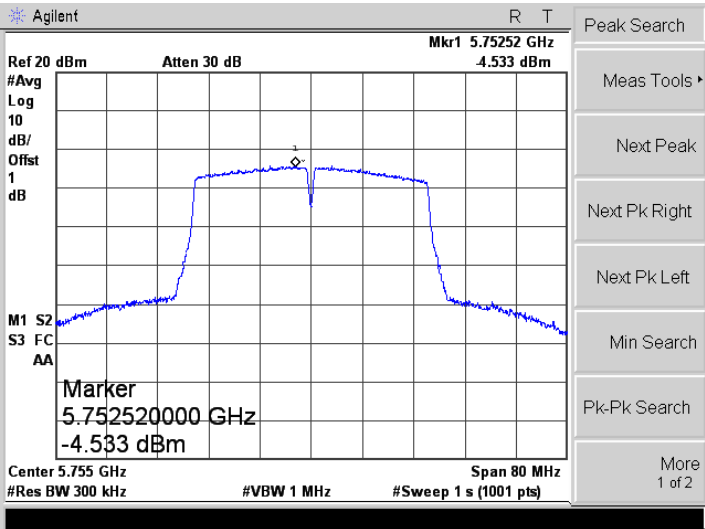
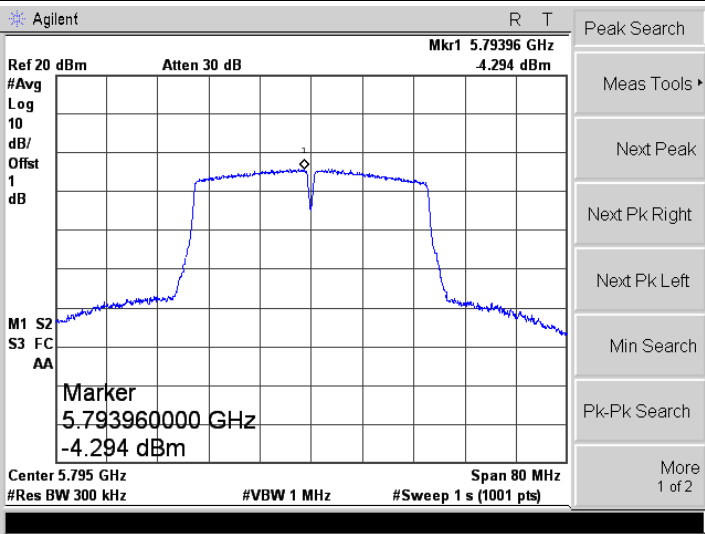
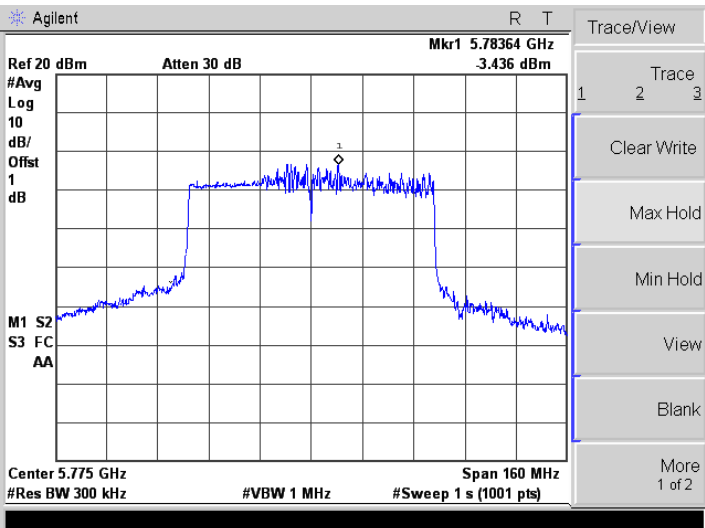
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<p>802.11n-HT20-Middle</p>	
<p>802.11n-HT20-High</p>	

<p>802.11n-HT40-Low</p>	
<p>802.11n-HT40-High</p>	
<p>802.11ac-HT80</p>	

5725-5850MHz

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

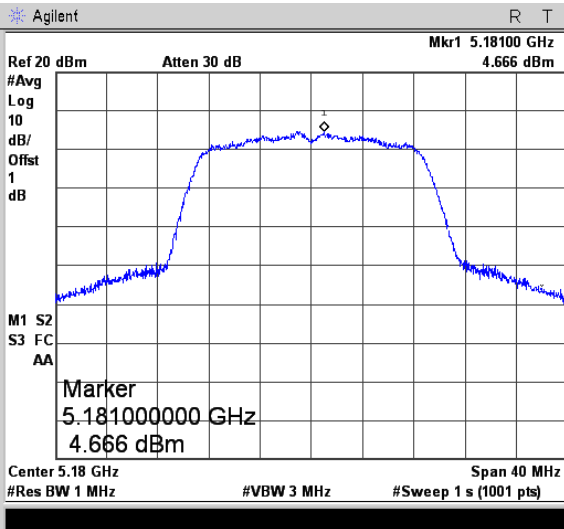
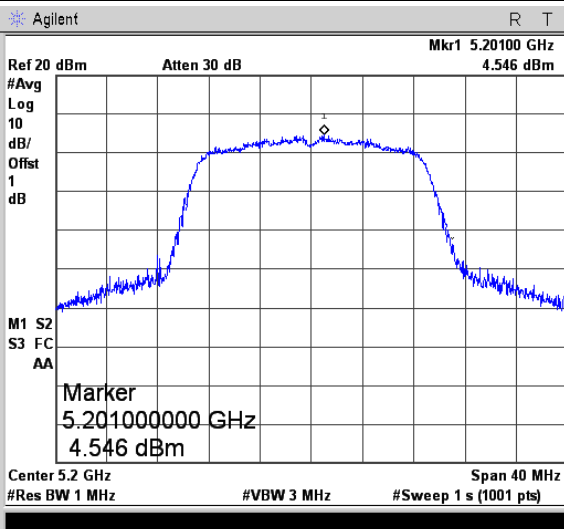
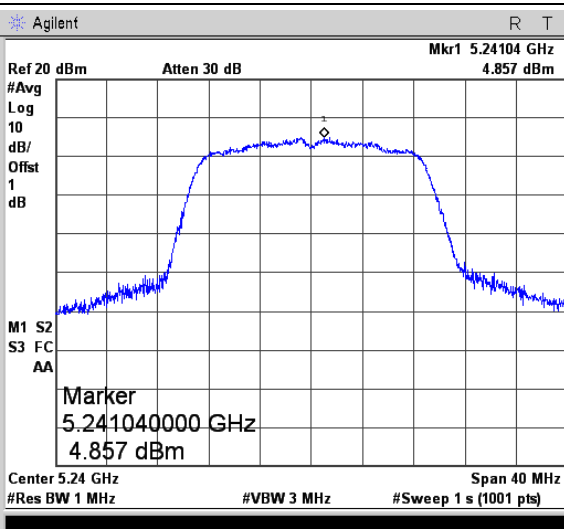
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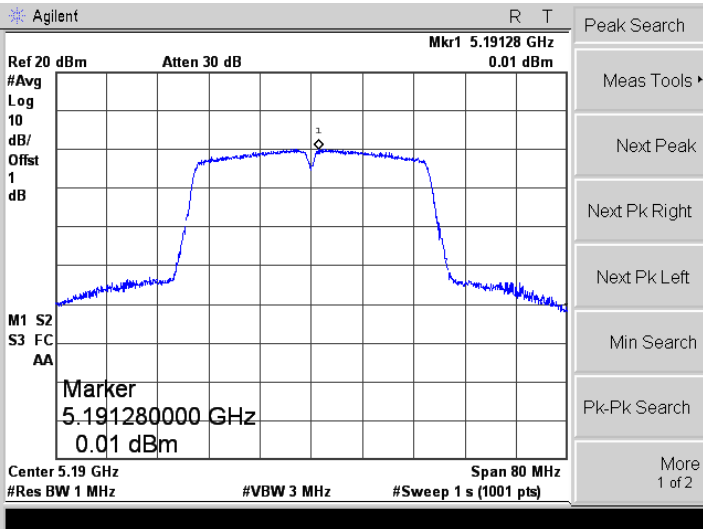
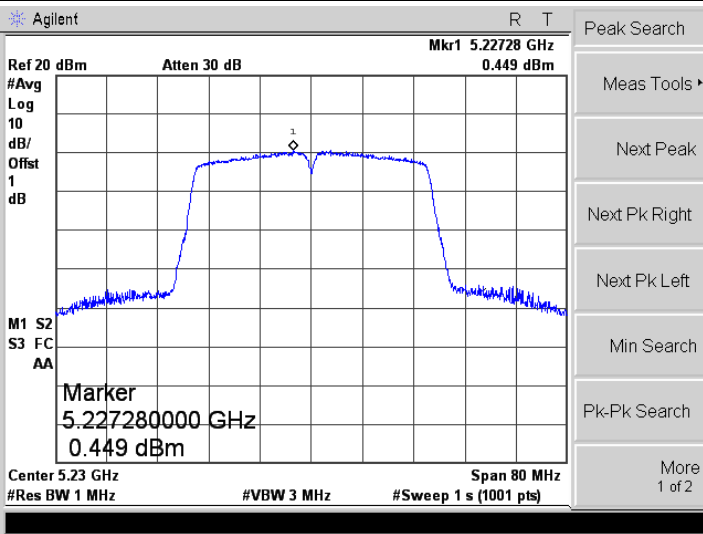
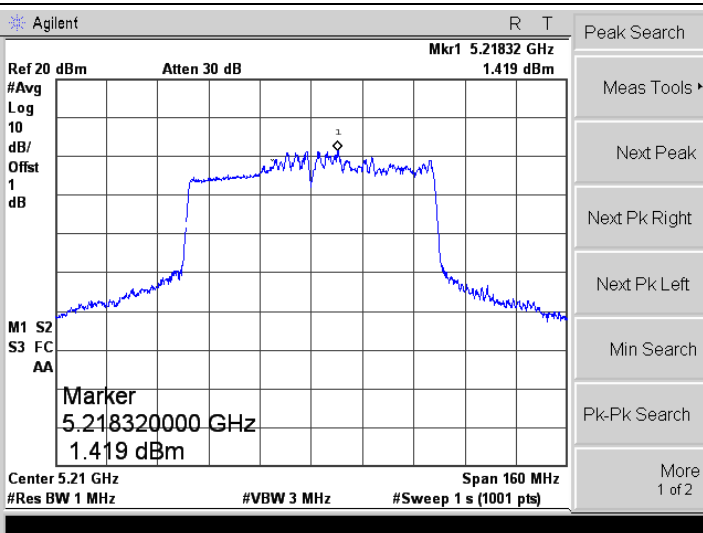
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ANT 2

5150-5250MHz

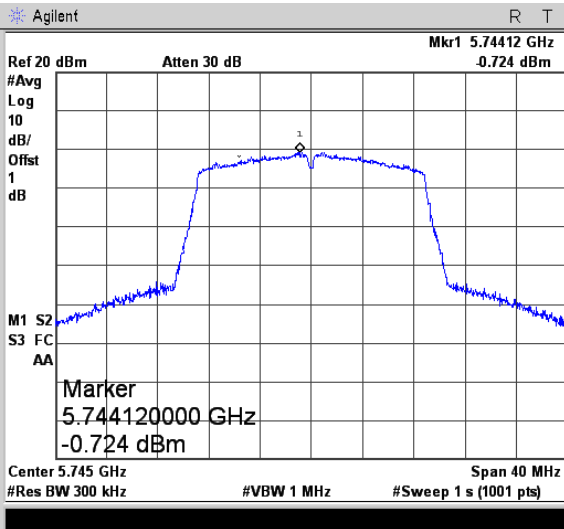
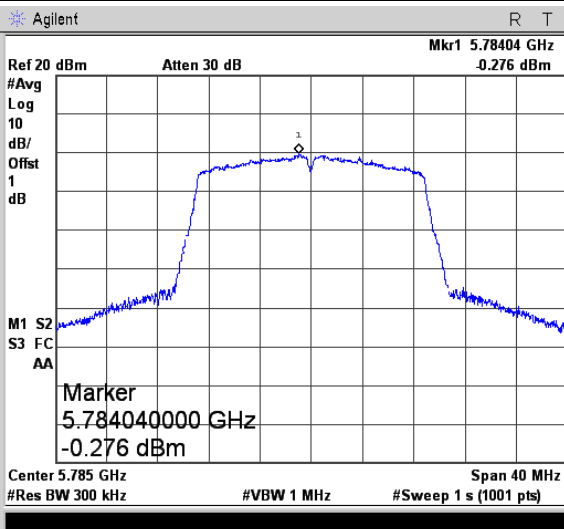
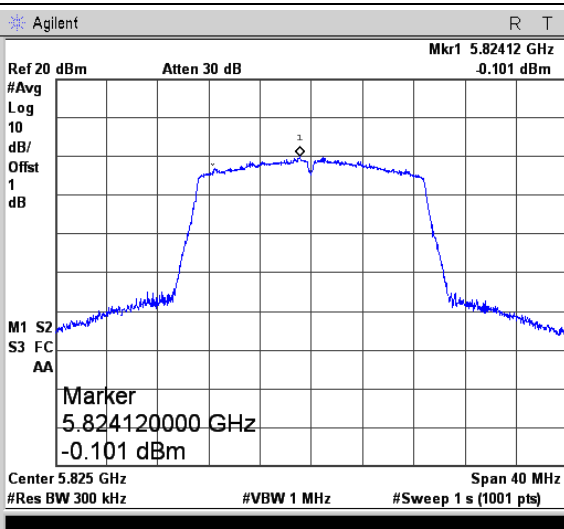
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<p>802.11a-Middle</p>	
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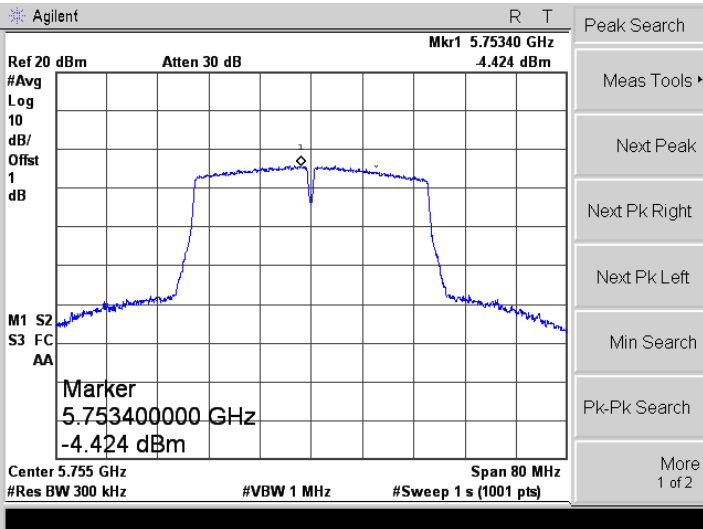
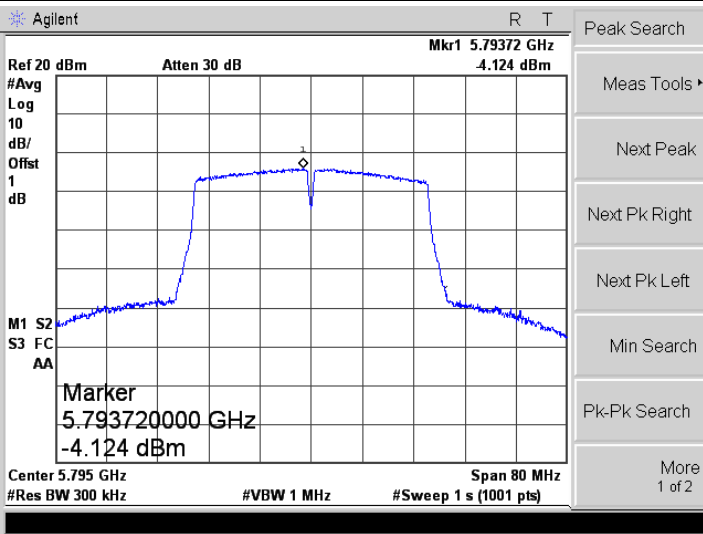
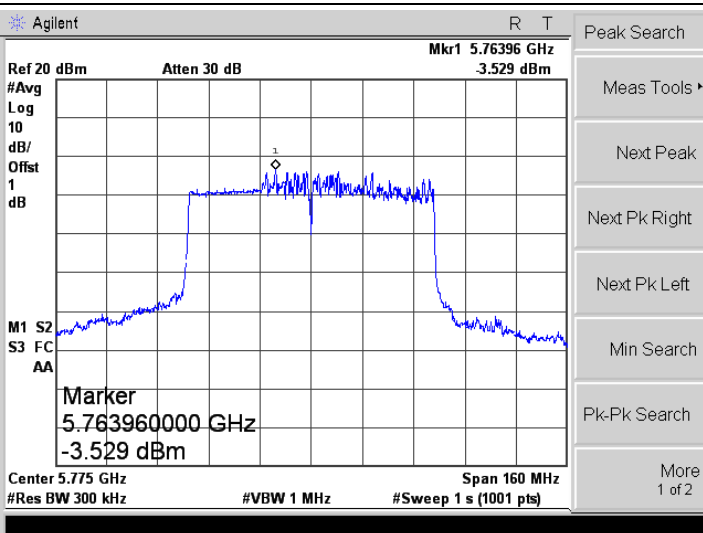
<p>802.11n-HT20-Low</p>	 <p>Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.18100 GHz 4.666 dBm #Avg 10 Log dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.18100000 GHz 4.666 dBm Center 5.18 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts)</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.20100 GHz 4.546 dBm #Avg 10 Log dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.20100000 GHz 4.546 dBm Center 5.2 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts)</p>
<p>802.11n-HT20-High</p>	 <p>Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.24104 GHz 4.857 dBm #Avg 10 Log dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.241040000 GHz 4.857 dBm Center 5.24 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts)</p>

<p>802.11n-HT40-Low</p>	
<p>802.11n-HT40-High</p>	
<p>802.11ac-HT80</p>	

5725-5850MHz

<p>802.11a-Low</p>	<p>Agilent R T Peak Search Ref 20 dBm Atten 30 dB Mkr1 5.7452 GHz 0.474 dBm #Avg Log 10 dB/Offst 1 dB M1 S2 S3 FC AA Marker 5.74520000 GHz 0.474 dBm Center 5.745 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2</p>
<p>802.11a-Middle</p>	<p>Agilent R T Peak Search Ref 20 dBm Atten 30 dB Mkr1 5.78564 GHz 0.802 dBm #Avg Log 10 dB/Offst 1 dB M1 S2 S3 FC AA Marker 5.785640000 GHz 0.802 dBm Center 5.785 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2</p>
<p>802.11a-High</p>	<p>Agilent R T Peak Search Ref 20 dBm Atten 30 dB Mkr1 5.82560 GHz 0.659 dBm #Avg Log 10 dB/Offst 1 dB M1 S2 S3 FC AA Marker 5.825600000 GHz 0.659 dBm Center 5.825 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2</p>

<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ref 20 dBm Atten 30 dB Mkr1 5.74412 GHz -0.724 dBm</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>M1 S2 S3 FC AA</p> <p>Marker 5.744120000 GHz -0.724 dBm</p> <p>Center 5.745 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts)</p> <p>Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent R T</p> <p>Ref 20 dBm Atten 30 dB Mkr1 5.78404 GHz -0.276 dBm</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>M1 S2 S3 FC AA</p> <p>Marker 5.784040000 GHz -0.276 dBm</p> <p>Center 5.785 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts)</p> <p>Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2</p>
<p>802.11n-HT20-High</p>	 <p>Agilent R T</p> <p>Ref 20 dBm Atten 30 dB Mkr1 5.82412 GHz -0.101 dBm</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>M1 S2 S3 FC AA</p> <p>Marker 5.824120000 GHz -0.101 dBm</p> <p>Center 5.825 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts)</p> <p>Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2</p>

<p>802.11n-HT40-Low</p>	
<p>802.11n-HT40-High</p>	
<p>802.11ac-HT80</p>	

APPENDIX B

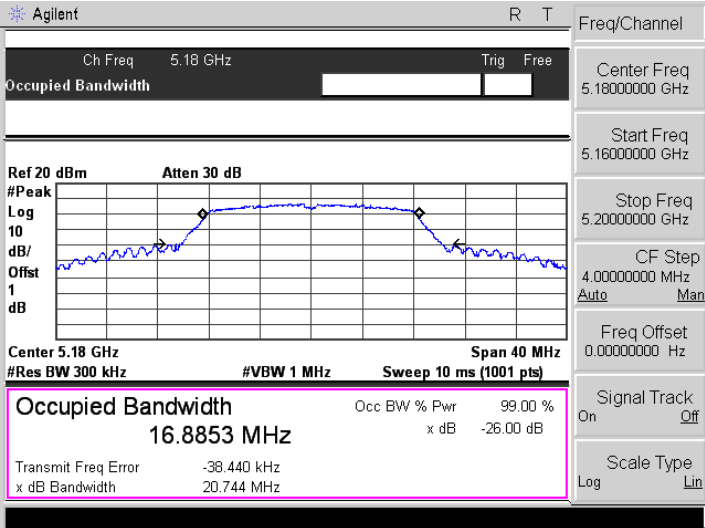
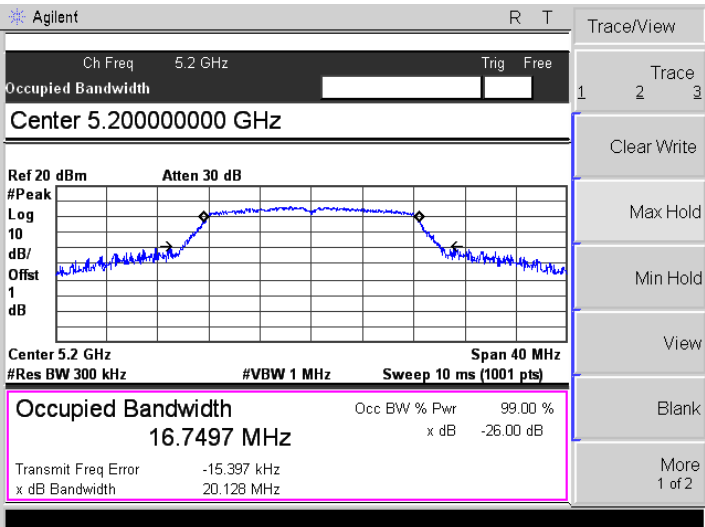
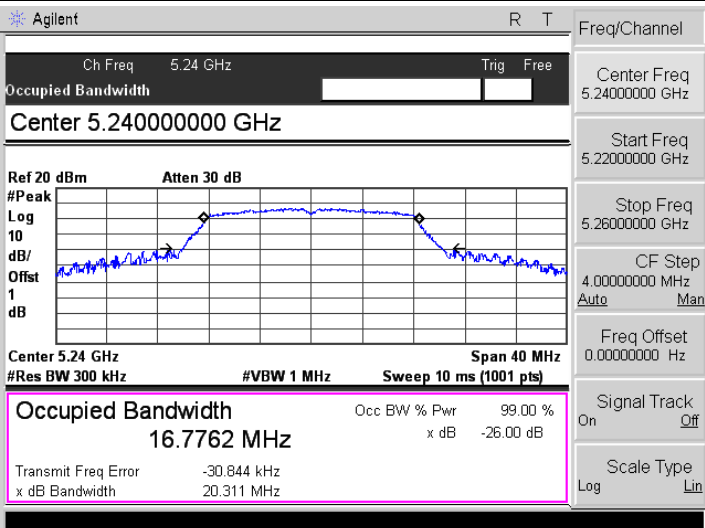
Emission Bandwidth and Occupied Bandwidth

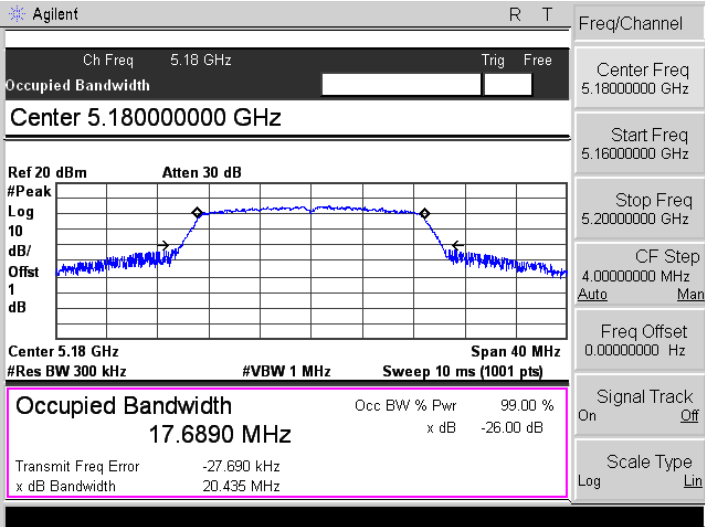
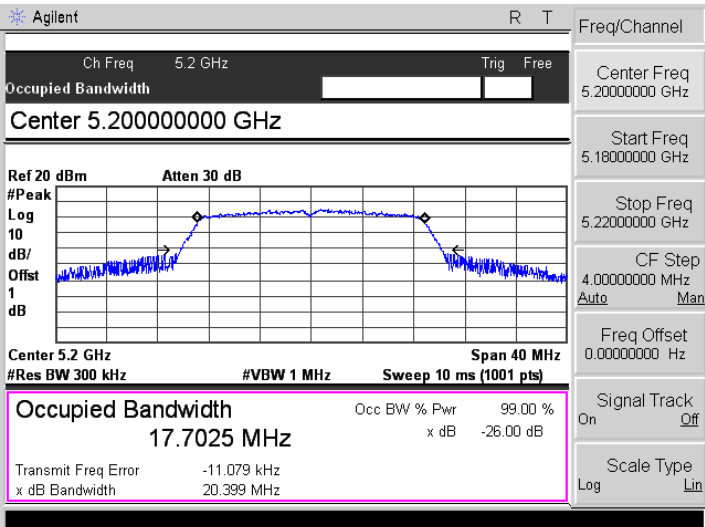
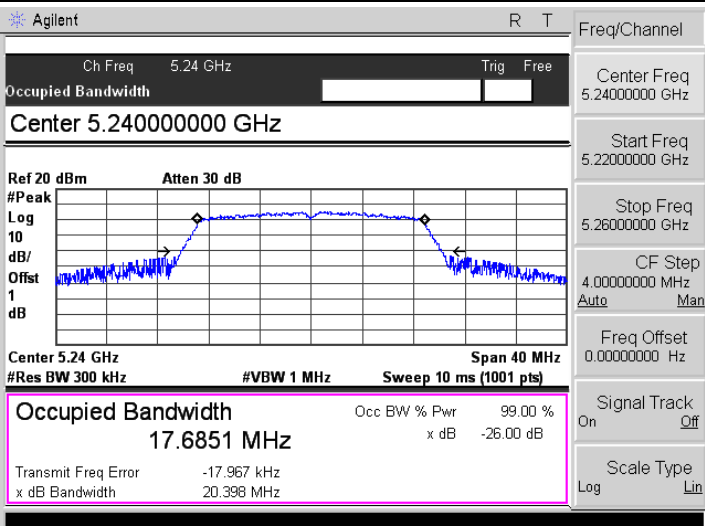
U-NII-1:5150-5250MHz						
Test Mode	Test Channel MHz	ANT 1		ANT 2		Result
		26 dB Bandwidth MHz	99% Bandwidth MHz	26 dB Bandwidth MHz	99% Bandwidth MHz	
802.11a	5180	20.774	16.885	24.883	16.955	Pass
	5200	20.128	16.750	24.744	16.826	Pass
	5240	20.311	16.776	23.799	16.781	Pass
802.11n-HT20	5180	20.435	17.689	21.016	17.717	Pass
	5200	20.399	17.703	21.050	17.714	Pass
	5240	20.398	17.685	20.769	17.719	Pass
802.11n-HT40	5190	40.080	36.116	40.682	36.109	Pass
	5230	40.027	36.108	40.694	36.132	Pass
802.11ac-HT80	5210	92.007	76.534	96.160	76.426	Pass

U-NII-3: 5725-5850MHz						
Test Mode	Test Channel MHz	ANT 1		ANT 2		Limit kHz
		6 dB Bandwidth MHz	99% Bandwidth MHz	6 dB Bandwidth MHz	99% Bandwidth MHz	
802.11a	5745	15.097	16.903	14.355	16.925	≥ 500
	5785	15.173	16.856	14.253	16.748	≥ 500
	5825	15.057	16.949	15.625	17.250	≥ 500
802.11n-HT20	5745	16.166	17.696	15.308	17.710	≥ 500
	5785	15.250	17.738	15.850	17.687	≥ 500
	5825	13.899	17.710	15.150	17.708	≥ 500
802.11n-HT40	5755	35.227	36.128	35.241	36.141	≥ 500
	5795	36.225	36.166	35.506	36.128	≥ 500
802.11ac-HT80	5775	75.810	76.185	75.143	76.191	≥ 500

ANT 1

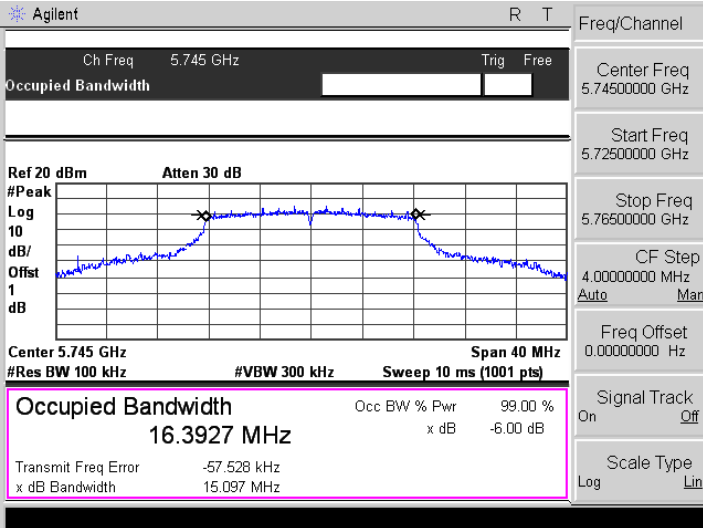
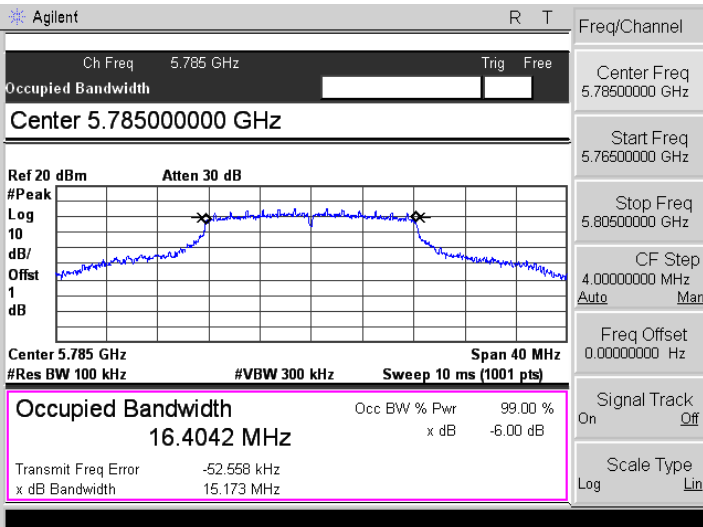
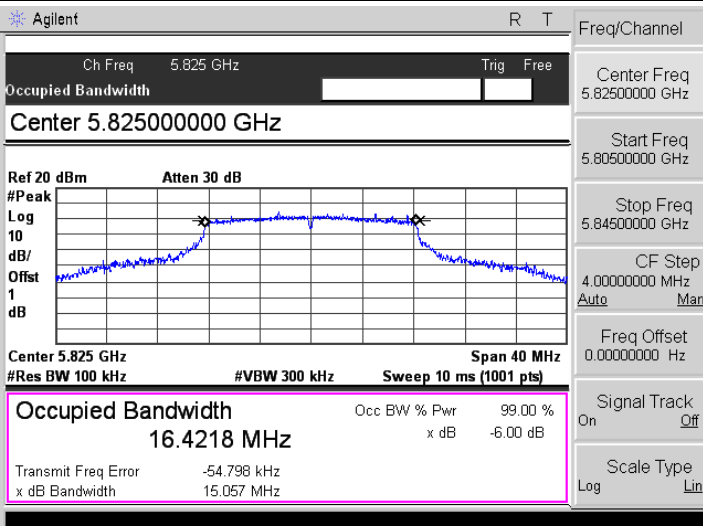
5150-5250MHz

<p>802.11a-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.18 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offset 1 dB</p> <p>Center 5.18 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.8853 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -38.440 kHz x dB Bandwidth 20.744 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.18000000 GHz</p> <p>Start Freq 5.16000000 GHz</p> <p>Stop Freq 5.20000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11a-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 5.2 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.20000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offset 1 dB</p> <p>Center 5.2 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.7497 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -15.397 kHz x dB Bandwidth 20.128 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>802.11a-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.24 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.24000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offset 1 dB</p> <p>Center 5.24 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.7762 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -30.844 kHz x dB Bandwidth 20.311 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.24000000 GHz</p> <p>Start Freq 5.22000000 GHz</p> <p>Stop Freq 5.26000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

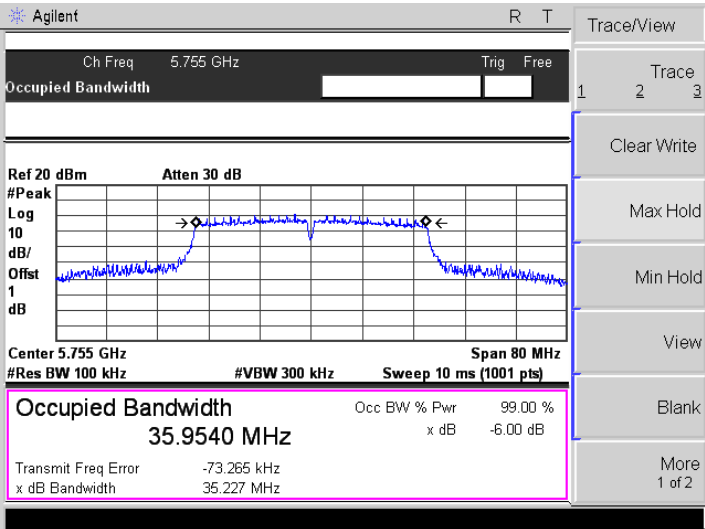
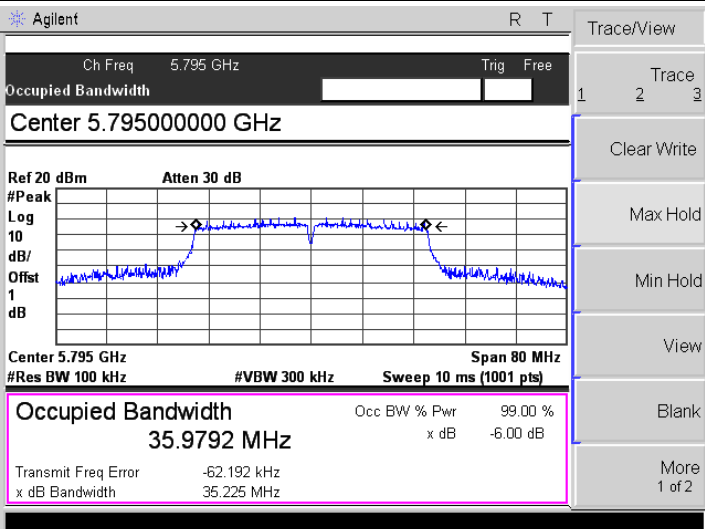
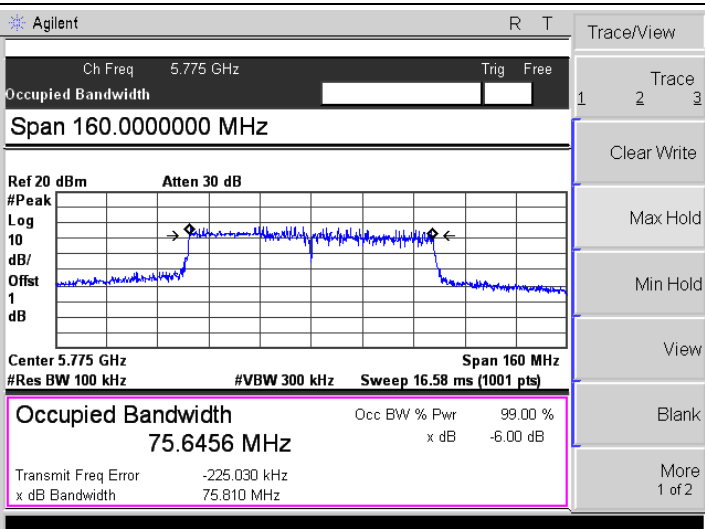
<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.18 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.18000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.18 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.6890 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -27.690 kHz x dB Bandwidth 20.435 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.18000000 GHz</p> <p>Start Freq 5.16000000 GHz</p> <p>Stop Freq 5.20000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 5.2 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.20000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.2 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7025 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -11.079 kHz x dB Bandwidth 20.399 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.20000000 GHz</p> <p>Start Freq 5.18000000 GHz</p> <p>Stop Freq 5.22000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.24 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.24000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.24 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.6851 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -17.967 kHz x dB Bandwidth 20.398 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.24000000 GHz</p> <p>Start Freq 5.22000000 GHz</p> <p>Stop Freq 5.26000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

<p>802.11n-HT40-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.19 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.19 GHz Span 80 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 36.1157 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -225.108 Hz x dB Bandwidth 40.080 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.19000000 GHz</p> <p>Start Freq 5.15000000 GHz</p> <p>Stop Freq 5.23000000 GHz</p> <p>CF Step 8.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT40-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.23 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.23 GHz Span 80 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 36.1082 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 6.127 kHz x dB Bandwidth 40.027 MHz</p> <p>Trace/View</p> <p>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>802.11ac-HT80</p>	<p>Agilent R T</p> <p>Ch Freq 5.21 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.21 GHz Span 160 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 76.5338 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -112.576 kHz x dB Bandwidth 92.007 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.21000000 GHz</p> <p>Start Freq 5.13000000 GHz</p> <p>Stop Freq 5.29000000 GHz</p> <p>CF Step 16.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

5725-5850MHz
6 dB Bandwidth

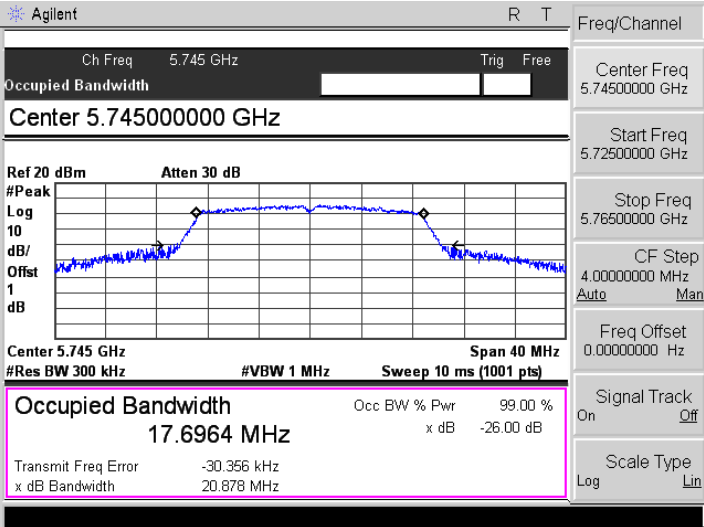
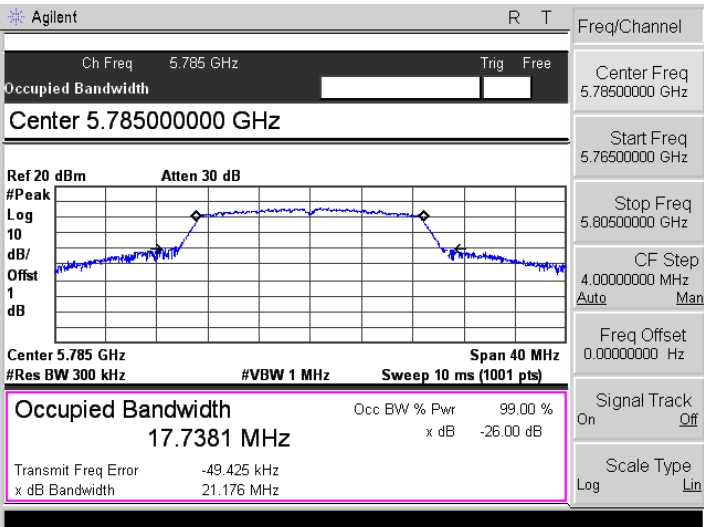
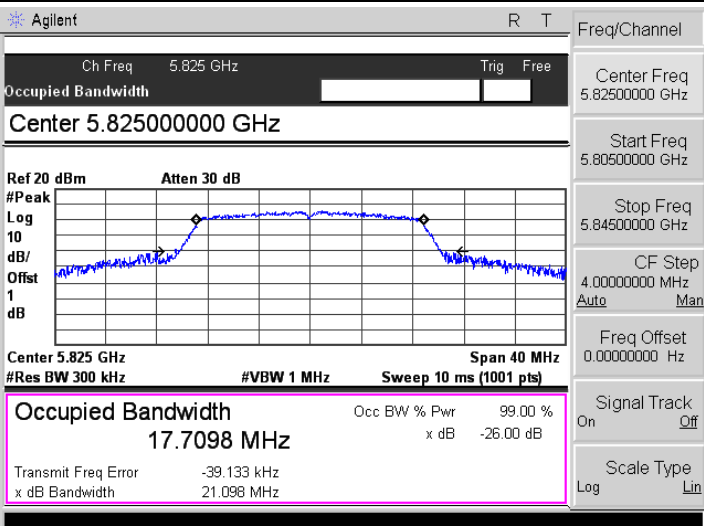
<p>802.11a-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offset 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.3927 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -57.528 kHz</p> <p>x dB Bandwidth 15.097 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.74500000 GHz</p> <p>Start Freq 5.72500000 GHz</p> <p>Stop Freq 5.76500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11a-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 5.785 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.78500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offset 1 dB</p> <p>Center 5.785 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.4042 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -52.558 kHz</p> <p>x dB Bandwidth 15.173 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.78500000 GHz</p> <p>Start Freq 5.76500000 GHz</p> <p>Stop Freq 5.80500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11a-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.82500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offset 1 dB</p> <p>Center 5.825 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.4218 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -54.798 kHz</p> <p>x dB Bandwidth 15.057 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.82500000 GHz</p> <p>Start Freq 5.80500000 GHz</p> <p>Stop Freq 5.84500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

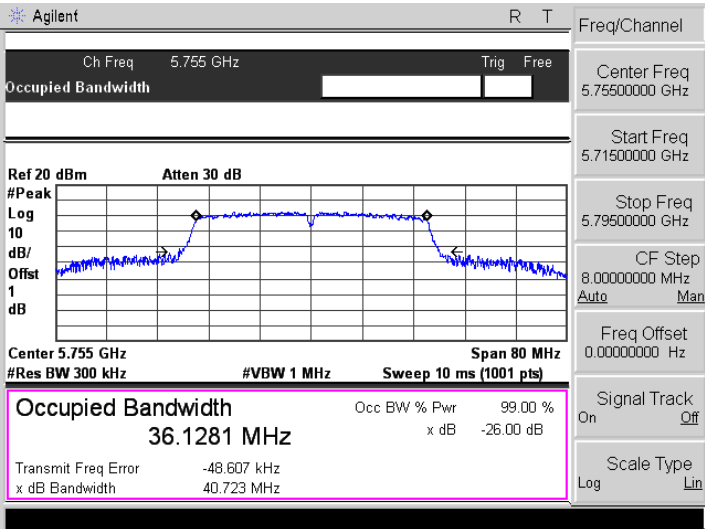
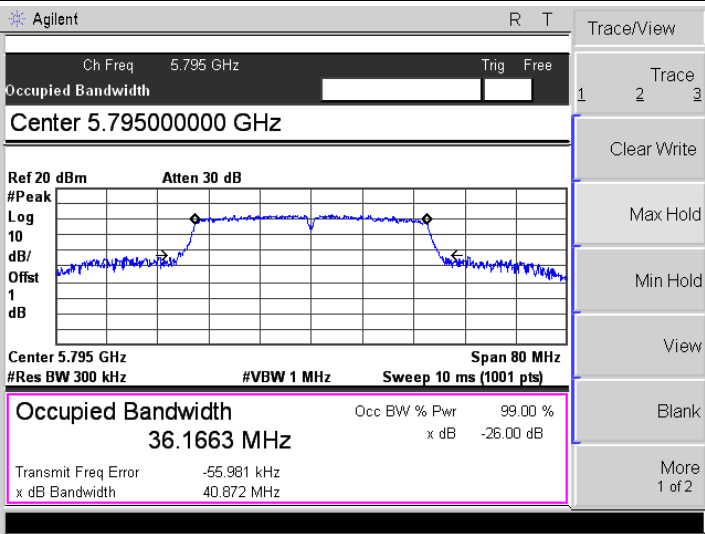
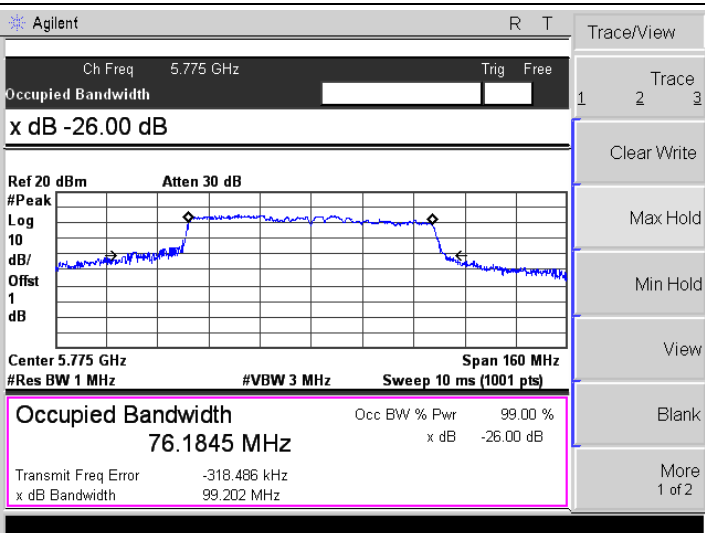
<p>802.11n-HT20-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.74500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offst 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.5158 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -43.007 kHz x dB Bandwidth 16.166 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.74500000 GHz</p> <p>Start Freq 5.72500000 GHz</p> <p>Stop Freq 5.76500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-Middle</p>	<p>Agilent R T</p> <p>Ch Freq 5.785 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.78500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offst 1 dB</p> <p>Center 5.785 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.5194 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -35.621 kHz x dB Bandwidth 15.250 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.78500000 GHz</p> <p>Start Freq 5.76500000 GHz</p> <p>Stop Freq 5.80500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.82500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offst 1 dB</p> <p>Center 5.825 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.5143 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -46.439 kHz x dB Bandwidth 13.899 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.82500000 GHz</p> <p>Start Freq 5.80500000 GHz</p> <p>Stop Freq 5.84500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

<p>802.11n-HT40-Low</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 5.755 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.755 GHz Span 80 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 35.9540 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -73.265 kHz x dB Bandwidth 35.227 MHz</p> <p>Trace/View 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 5.795 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.79500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.795 GHz Span 80 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 35.9792 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -62.192 kHz x dB Bandwidth 35.225 MHz</p> <p>Trace/View 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>802.11ac-HT80</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 5.775 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Span 160.0000000 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.775 GHz Span 160 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 16.58 ms (1001 pts)</p> <p>Occupied Bandwidth 75.6456 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -225.030 kHz x dB Bandwidth 75.810 MHz</p> <p>Trace/View 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>

99% Bandwidth

<p>802.11a-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.9032 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -66.561 kHz x dB Bandwidth 24.908 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>802.11a-Middle</p>	<p>Agilent R T</p> <p>Ch Freq 5.785 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.78500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.785 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.8561 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -68.878 kHz x dB Bandwidth 24.821 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.78500000 GHz</p> <p>Start Freq 5.76500000 GHz</p> <p>Stop Freq 5.80500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11a-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.82500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.825 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.9490 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -57.255 kHz x dB Bandwidth 24.941 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>

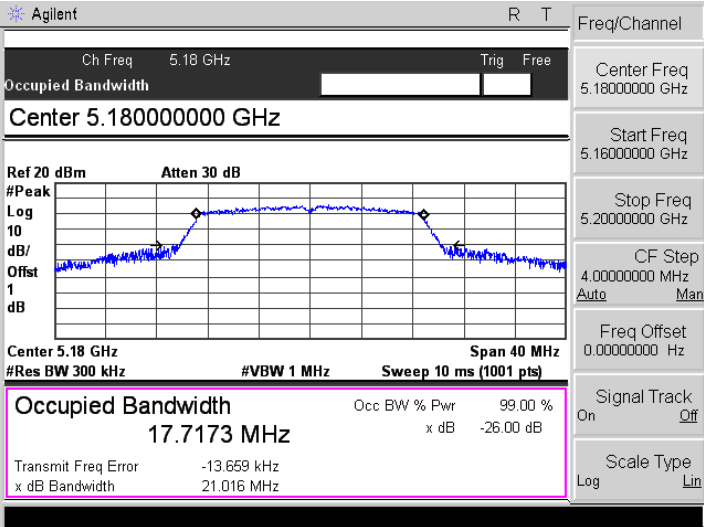
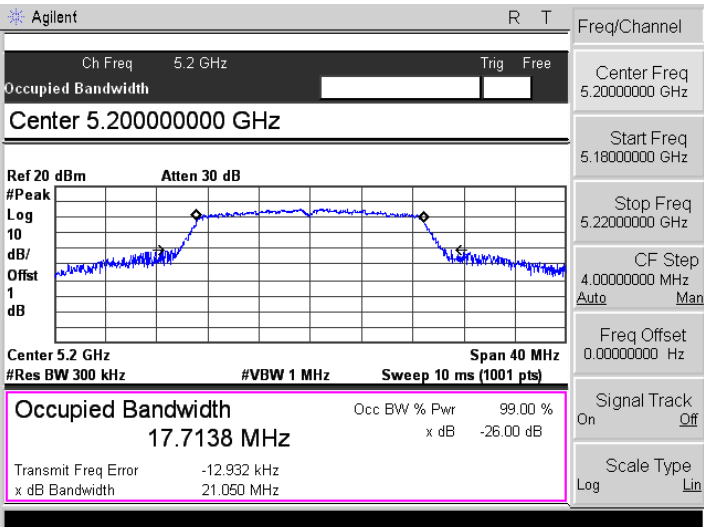
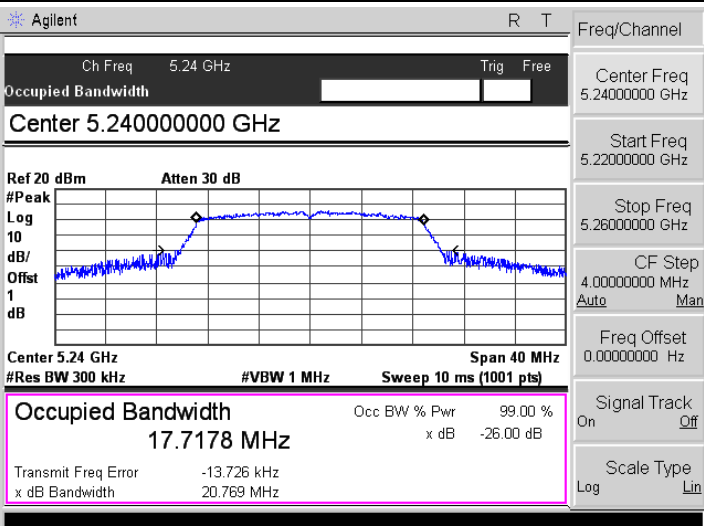
<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.74500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offst 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.6964 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -30.356 kHz x dB Bandwidth 20.878 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.74500000 GHz</p> <p>Start Freq 5.72500000 GHz</p> <p>Stop Freq 5.76500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 5.785 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.78500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offst 1 dB</p> <p>Center 5.785 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7381 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -49.425 kHz x dB Bandwidth 21.176 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.78500000 GHz</p> <p>Start Freq 5.76500000 GHz</p> <p>Stop Freq 5.80500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.82500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offst 1 dB</p> <p>Center 5.825 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7098 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -39.133 kHz x dB Bandwidth 21.098 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.82500000 GHz</p> <p>Start Freq 5.80500000 GHz</p> <p>Stop Freq 5.84500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

<p>802.11n-HT40-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.755 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.755 GHz Span 80 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 36.1281 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -48.607 kHz x dB Bandwidth 40.723 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.75500000 GHz</p> <p>Start Freq 5.71500000 GHz</p> <p>Stop Freq 5.79500000 GHz</p> <p>CF Step 8.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT40-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.795 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.79500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.795 GHz Span 80 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 36.1663 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -55.981 kHz x dB Bandwidth 40.872 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>802.11ac-HT80</p>	 <p>Agilent R T</p> <p>Ch Freq 5.775 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>x dB -26.00 dB</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.775 GHz Span 160 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 76.1845 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -318.486 kHz x dB Bandwidth 99.202 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>

ANT 2

5150-5250MHz

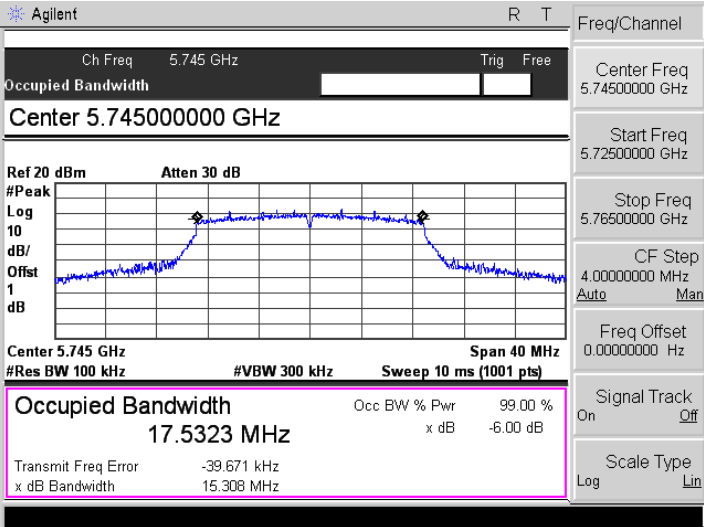
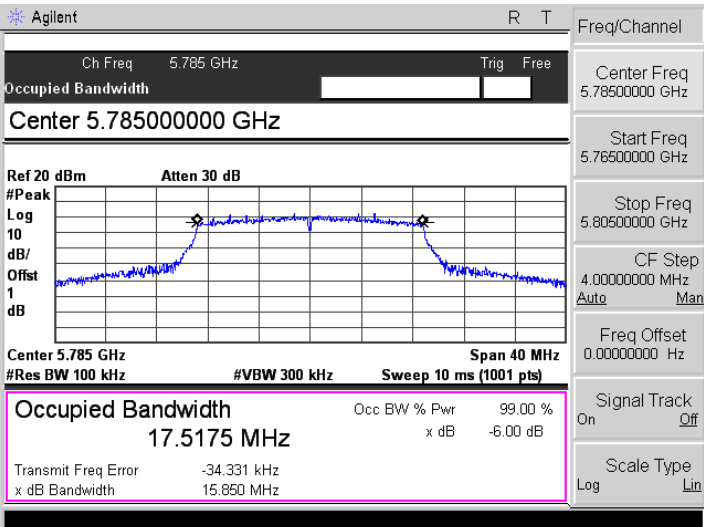
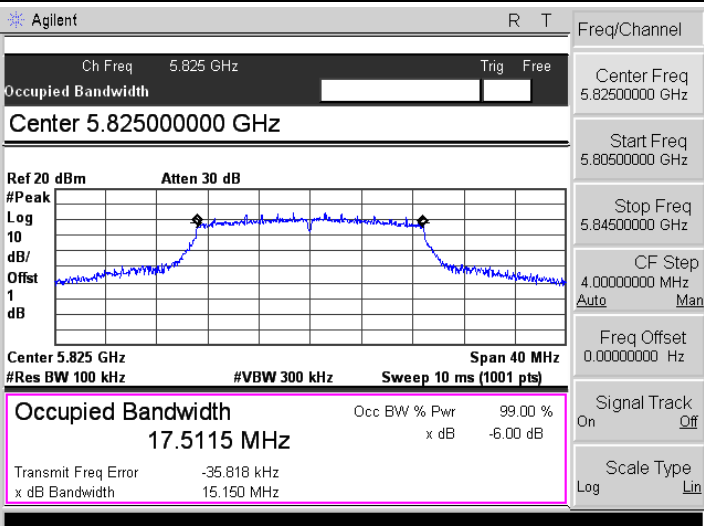
<p>802.11a-Low</p>	<p>Agilent R T Trace/View</p> <p>Ch Freq 5.18 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offset 1 dB</p> <p>Center 5.18 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.953 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -20.243 kHz x dB Bandwidth 24.880 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>802.11a-Middle</p>	<p>Agilent R T Trace/View</p> <p>Ch Freq 5.2 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.20000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offset 1 dB</p> <p>Center 5.2 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.8261 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 19.846 kHz x dB Bandwidth 24.744 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>802.11a-High</p>	<p>Agilent R T Freq/Channel</p> <p>Ch Freq 5.24 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.24000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offset 1 dB</p> <p>Center 5.24 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.7808 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -4.056 kHz x dB Bandwidth 23.799 MHz</p> <p>Center Freq 5.24000000 GHz</p> <p>Start Freq 5.22000000 GHz</p> <p>Stop Freq 5.26000000 GHz</p> <p>CF Step 4.00000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.18 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.18000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.18 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7173 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -13.659 kHz x dB Bandwidth 21.016 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.18000000 GHz</p> <p>Start Freq 5.16000000 GHz</p> <p>Stop Freq 5.20000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 5.2 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.20000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.2 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7138 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -12.932 kHz x dB Bandwidth 21.050 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.20000000 GHz</p> <p>Start Freq 5.18000000 GHz</p> <p>Stop Freq 5.22000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.24 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.24000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.24 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7178 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -13.726 kHz x dB Bandwidth 20.769 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.24000000 GHz</p> <p>Start Freq 5.22000000 GHz</p> <p>Stop Freq 5.26000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

<p>802.11n-HT40-Low</p>	
<p>802.11n-HT40-High</p>	
<p>802.11ac-HT80</p>	

5725-5850MHz
6 dB Bandwidth

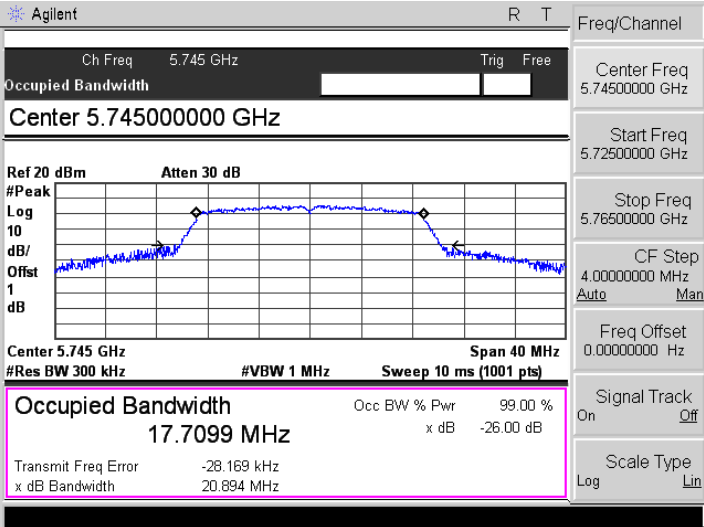
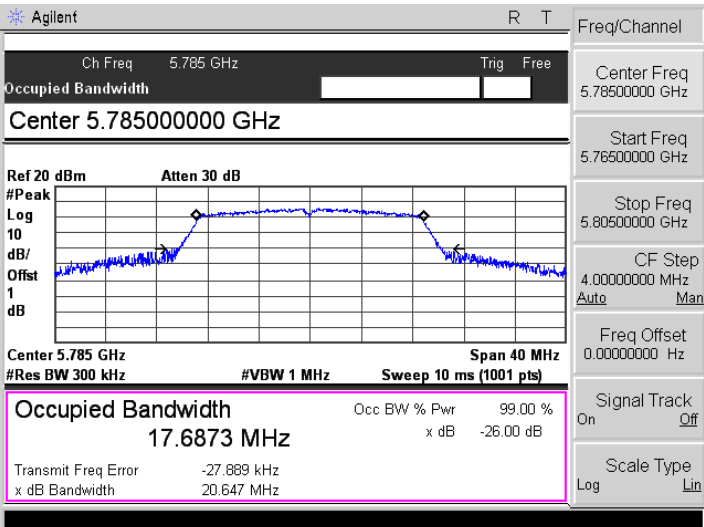
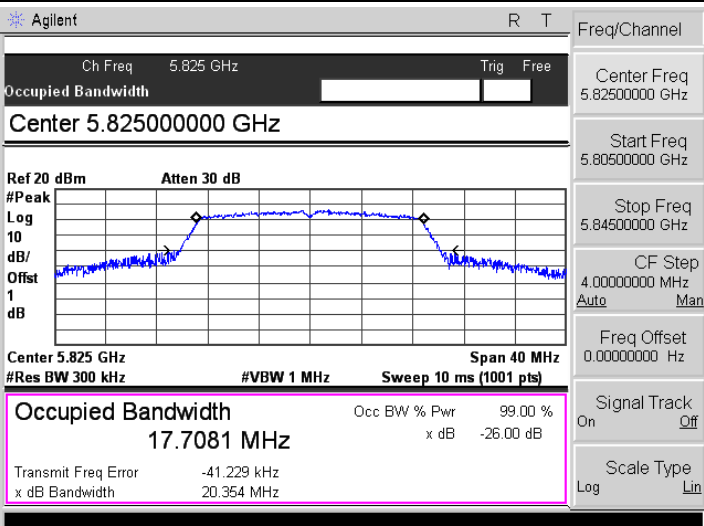
<p>802.11a-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offset 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.3871 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -45.160 kHz</p> <p>x dB Bandwidth 14.355 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.74500000 GHz</p> <p>Start Freq 5.72500000 GHz</p> <p>Stop Freq 5.76500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11a-Middle</p>	<p>Agilent R T</p> <p>Ch Freq 5.785 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.78500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offset 1 dB</p> <p>Center 5.785 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.3728 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -37.371 kHz</p> <p>x dB Bandwidth 14.253 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>802.11a-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.82500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offset 1 dB</p> <p>Center 5.825 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.3389 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -35.852 kHz</p> <p>x dB Bandwidth 15.625 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.82500000 GHz</p> <p>Start Freq 5.80500000 GHz</p> <p>Stop Freq 5.84500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

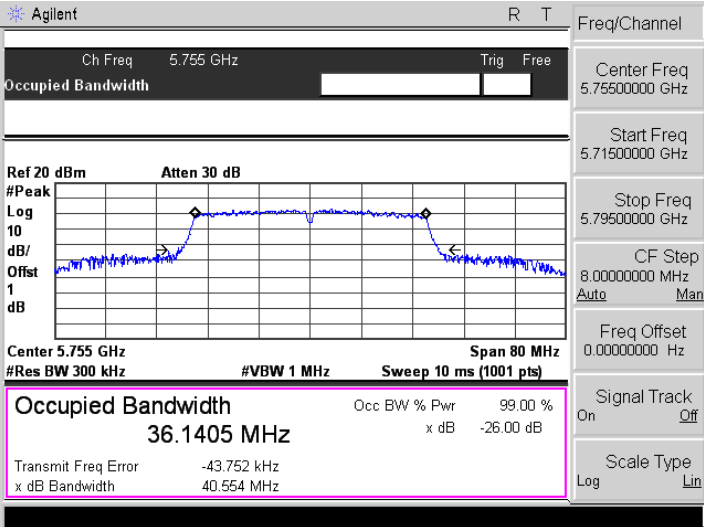
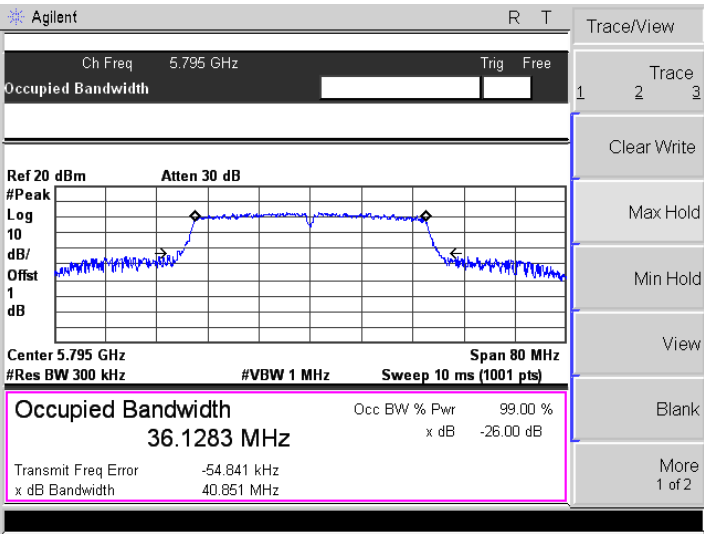
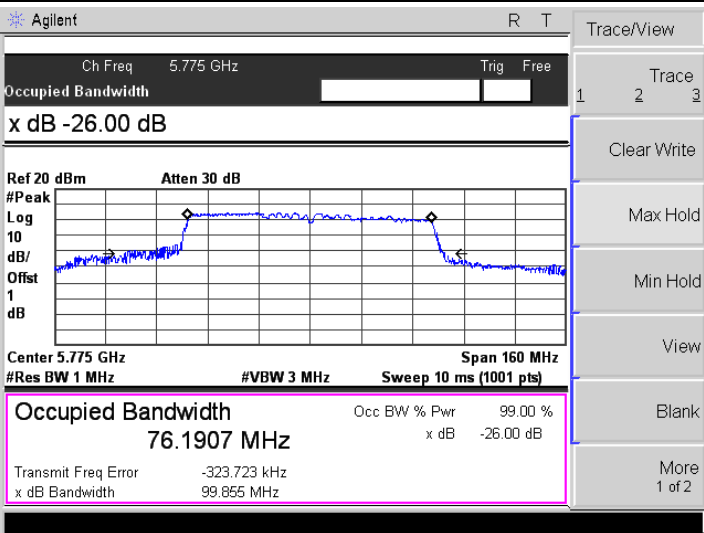
<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.74500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.5323 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -39.671 kHz x dB Bandwidth 15.308 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.74500000 GHz</p> <p>Start Freq 5.72500000 GHz</p> <p>Stop Freq 5.76500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 5.785 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.78500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.785 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.5175 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -34.331 kHz x dB Bandwidth 15.850 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.78500000 GHz</p> <p>Start Freq 5.76500000 GHz</p> <p>Stop Freq 5.80500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.82500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.825 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.5115 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -35.818 kHz x dB Bandwidth 15.150 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.82500000 GHz</p> <p>Start Freq 5.80500000 GHz</p> <p>Stop Freq 5.84500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

<p>802.11n-HT40-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.755 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.755 GHz Span 80 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 35.9613 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -65.661 kHz x dB Bandwidth 35.241 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.75500000 GHz</p> <p>Start Freq 5.71500000 GHz</p> <p>Stop Freq 5.79500000 GHz</p> <p>CF Step 8.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT40-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.795 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.79500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.795 GHz Span 80 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 36.0183 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -52.440 kHz x dB Bandwidth 35.506 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.79500000 GHz</p> <p>Start Freq 5.75500000 GHz</p> <p>Stop Freq 5.83500000 GHz</p> <p>CF Step 8.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11ac-HT80</p>	<p>Agilent R T</p> <p>Ch Freq 5.775 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.775 GHz Span 160 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 16.58 ms (1001 pts)</p> <p>Occupied Bandwidth 75.7340 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -187.862 kHz x dB Bandwidth 75.143 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.77500000 GHz</p> <p>Start Freq 5.69500000 GHz</p> <p>Stop Freq 5.85500000 GHz</p> <p>CF Step 16.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

99% Bandwidth

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

<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.74500000 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 5.745 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7099 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -28.169 kHz</p> <p>x dB Bandwidth 20.894 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.74500000 GHz</p> <p>Start Freq 5.72500000 GHz</p> <p>Stop Freq 5.76500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 5.785 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.78500000 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 5.785 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.6873 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -27.889 kHz</p> <p>x dB Bandwidth 20.647 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.78500000 GHz</p> <p>Start Freq 5.76500000 GHz</p> <p>Stop Freq 5.80500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.82500000 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 5.825 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7081 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -41.229 kHz</p> <p>x dB Bandwidth 20.354 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.82500000 GHz</p> <p>Start Freq 5.80500000 GHz</p> <p>Stop Freq 5.84500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

<p>802.11n-HT40-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.755 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.755 GHz Span 80 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 36.1405 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -43.752 kHz x dB Bandwidth 40.554 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.75500000 GHz</p> <p>Start Freq 5.71500000 GHz</p> <p>Stop Freq 5.79500000 GHz</p> <p>CF Step 8.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT40-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.795 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.795 GHz Span 80 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 36.1283 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -54.841 kHz x dB Bandwidth 40.851 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>802.11ac-HT80</p>	 <p>Agilent R T</p> <p>Ch Freq 5.775 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>x dB -26.00 dB</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Ofst 1 dB</p> <p>Center 5.775 GHz Span 160 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 76.1907 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -323.723 kHz x dB Bandwidth 99.855 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

Maximum Conducted Output Power

U-NII-1:5150-5250MHz					
Test mode	Frequency MHz	Output Power dBm		Total dBm	Limit dBm
		ANT 1	ANT 2		
802.11a	5180	14.26	14.30	/	23.98
	5200	14.19	14.57	/	23.98
	5240	14.21	14.17	/	23.98
802.11n-HT20	5180	13.12	12.36	15.77	23.98
	5200	13.16	12.62	15.91	23.98
	5240	13.23	12.78	16.02	23.98
802.11n-HT40	5190	13.01	12.93	15.98	23.98
	5230	13.32	13.07	16.21	23.98
802.11ac VH80	5210	12.80	12.03	15.44	23.98

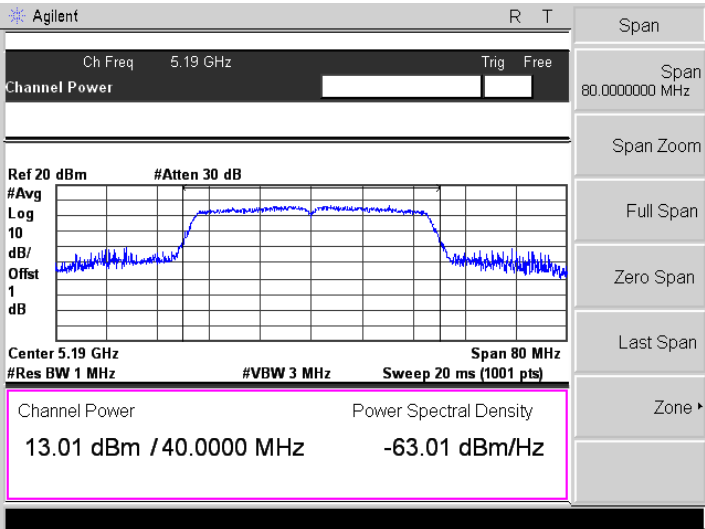
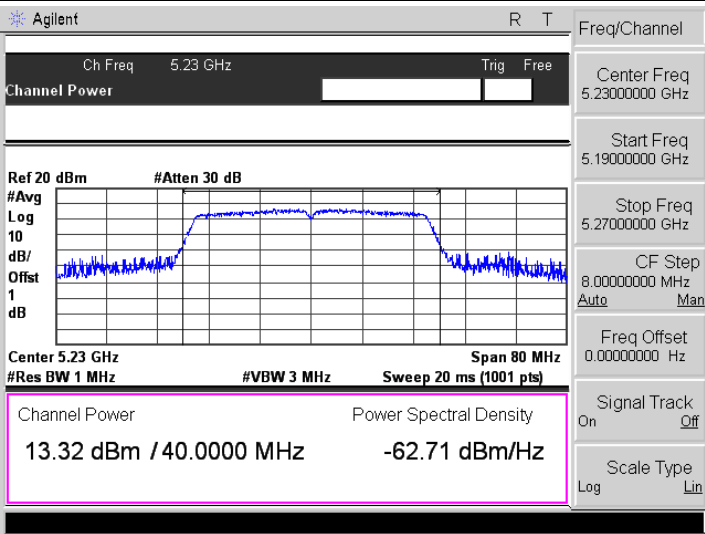
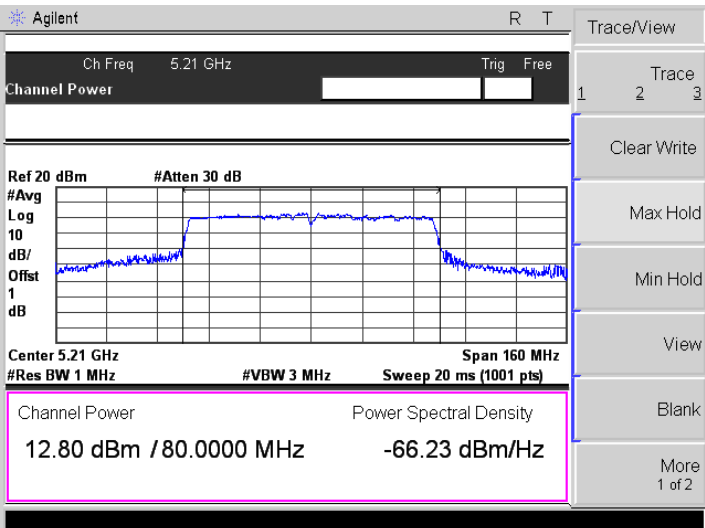
U-NII-3: 5725-5850MHz					
Test mode	Frequency MHz	Output Power dBm		Total dBm	Limit dBm
		ANT 1	ANT 2		
802.11a	5745	14.36	14.11	/	5745
	5785	14.19	14.56	/	5785
	5825	14.36	14.62	/	5825
802.11n-HT20	5745	13.04	13.34	16.20	5745
	5785	13.29	13.26	16.29	5785
	5825	12.73	13.26	16.01	5825
802.11n-HT40	5755	12.55	12.81	15.69	5755
	5795	12.31	13.08	15.72	5795
802.11ac VH80	5775	12.21	13.62	15.98	5775

ANT 1

5150-5250MHz

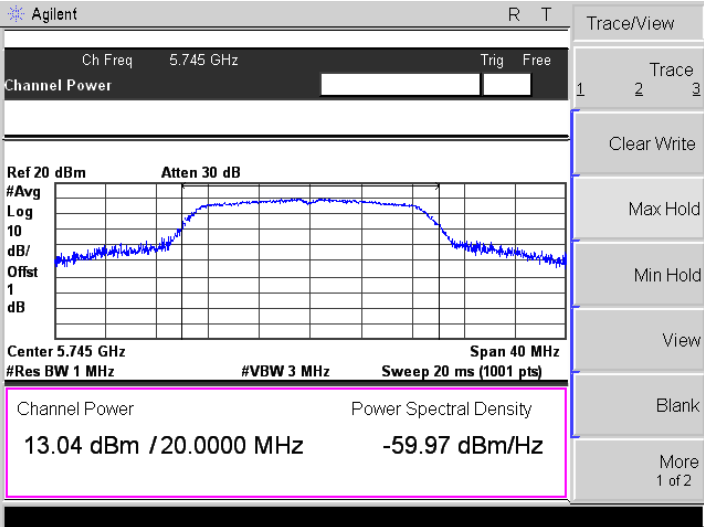
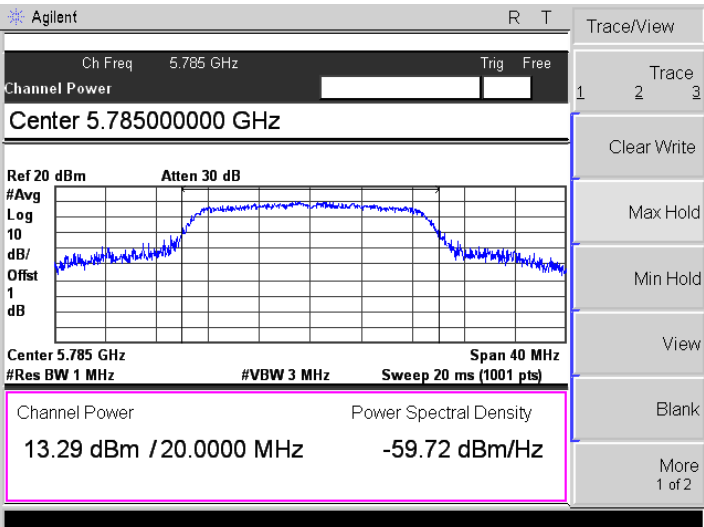
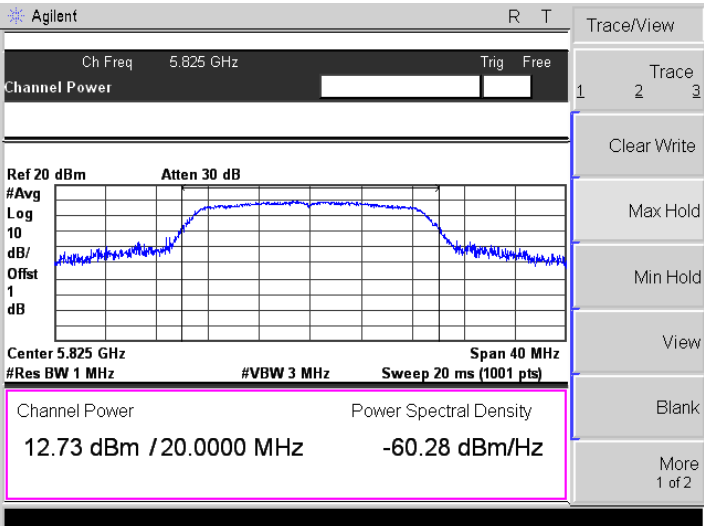
<p>802.11a-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.18 GHz Trig Free</p> <p>Channel Power</p> <p>Ref 20 dBm #Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 5.18 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>14.26 dBm / 20.0000 MHz -58.75 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>802.11a-Middle</p>	<p>Agilent R T</p> <p>Ch Freq 5.2 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 5.2 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>14.19 dBm / 20.0000 MHz -58.95 dBm/Hz</p> <p>Freq/Channel</p> <p>Center Freq 5.20000000 GHz</p> <p>Start Freq 5.18000000 GHz</p> <p>Stop Freq 5.22000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11a-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.24 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.24000000 GHz</p> <p>Ref 20 dBm #Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 5.24 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>14.21 dBm / 20.0000 MHz -58.80 dBm/Hz</p> <p>Freq/Channel</p> <p>Center Freq 5.24000000 GHz</p> <p>Start Freq 5.22000000 GHz</p> <p>Stop Freq 5.26000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

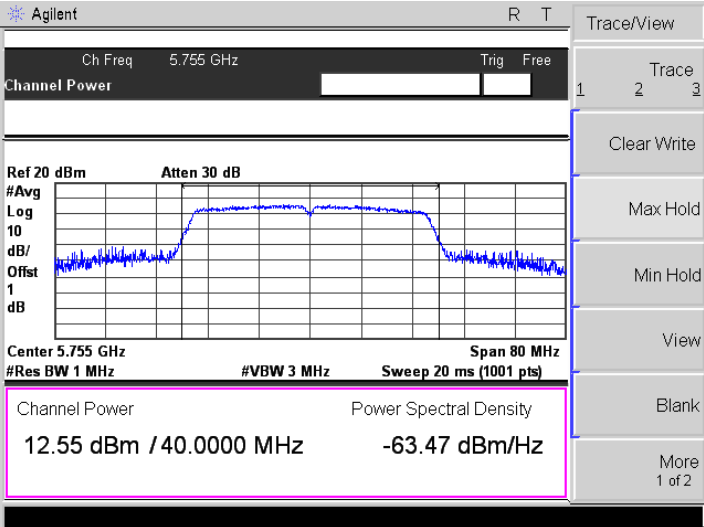
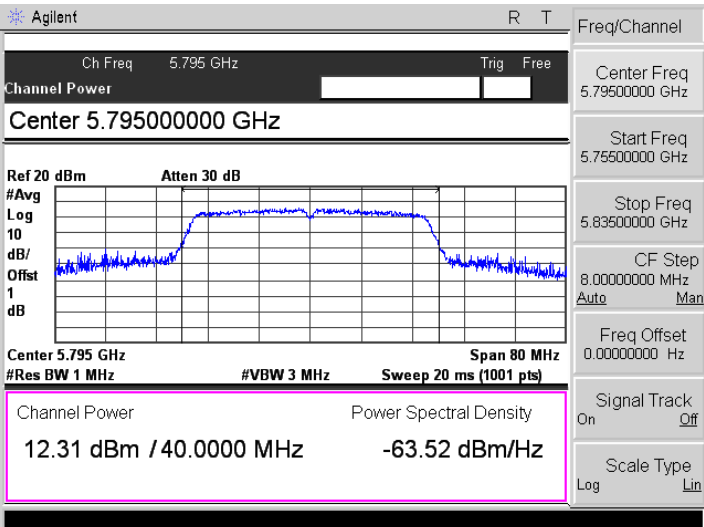
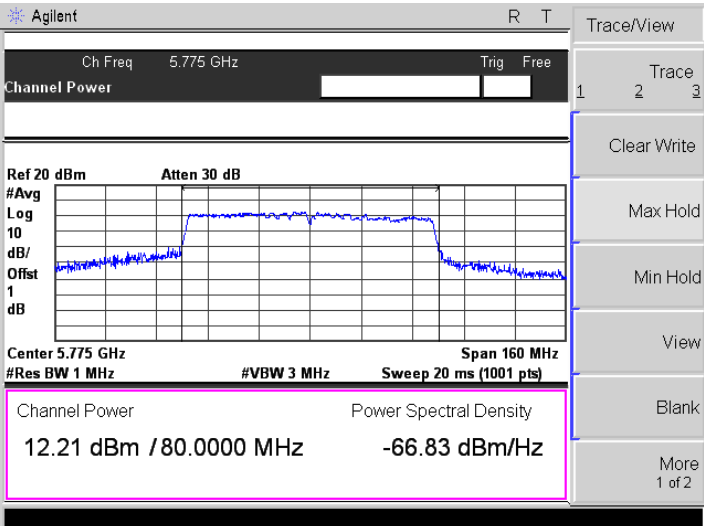
<p>802.11n-HT20-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.18 GHz Trig Free</p> <p>Channel Power</p> <p>Ref 20 dBm #Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 5.18 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>13.12 dBm / 20.0000 MHz -59.89 dBm/Hz</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-HT20-Middle</p>	<p>Agilent R T</p> <p>Ch Freq 5.2 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.20000000 GHz</p> <p>Ref 20 dBm #Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 5.2 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>13.16 dBm / 20.0000 MHz -59.85 dBm/Hz</p> <p>Freq/Channel</p> <p>Center Freq 5.20000000 GHz</p> <p>Start Freq 5.18000000 GHz</p> <p>Stop Freq 5.22000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.24 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.24000000 GHz</p> <p>Ref 20 dBm #Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 5.24 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>13.23 dBm / 20.0000 MHz -59.78 dBm/Hz</p> <p>Freq/Channel</p> <p>Center Freq 5.24000000 GHz</p> <p>Start Freq 5.22000000 GHz</p> <p>Stop Freq 5.26000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

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<p>802.11n-HT40-High</p>	
<p>802.11ac-HT80</p>	

5725-5850MHz

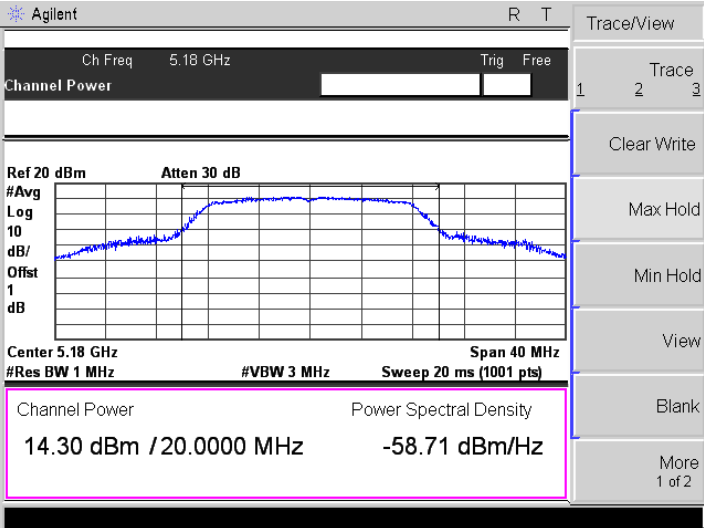
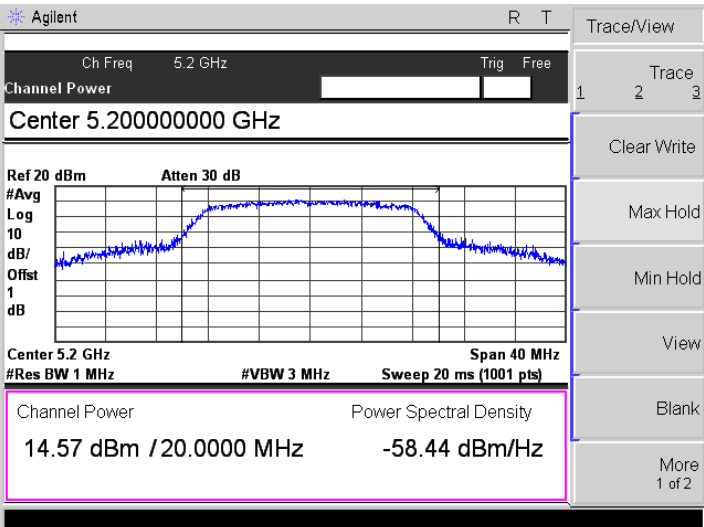
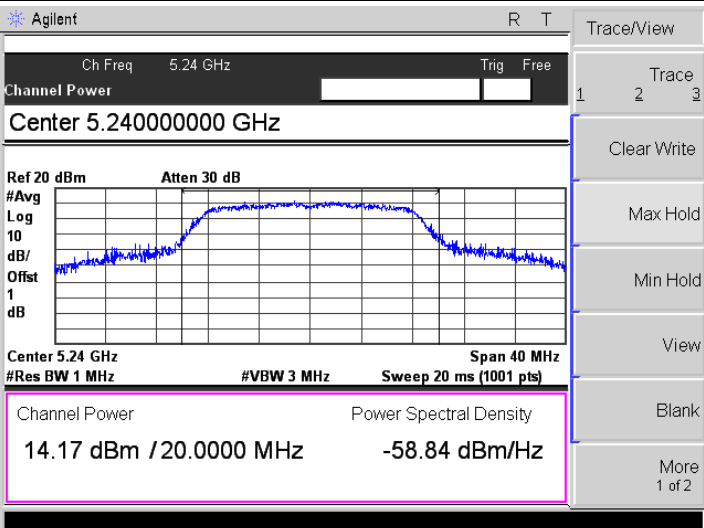
<p>802.11a-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Channel Power</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>14.36 dBm / 20.0000 MHz -58.65 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>802.11a-Middle</p>	<p>Agilent R T</p> <p>Ch Freq 5.785 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.78500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 5.785 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>14.19 dBm / 20.0000 MHz -58.82 dBm/Hz</p> <p>Freq/Channel</p> <p>Center Freq 5.78500000 GHz</p> <p>Start Freq 5.76500000 GHz</p> <p>Stop Freq 5.80500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11a-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.82500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 5.825 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>14.36 dBm / 20.0000 MHz -58.65 dBm/Hz</p> <p>Freq/Channel</p> <p>Center Freq 5.82500000 GHz</p> <p>Start Freq 5.80500000 GHz</p> <p>Stop Freq 5.84500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

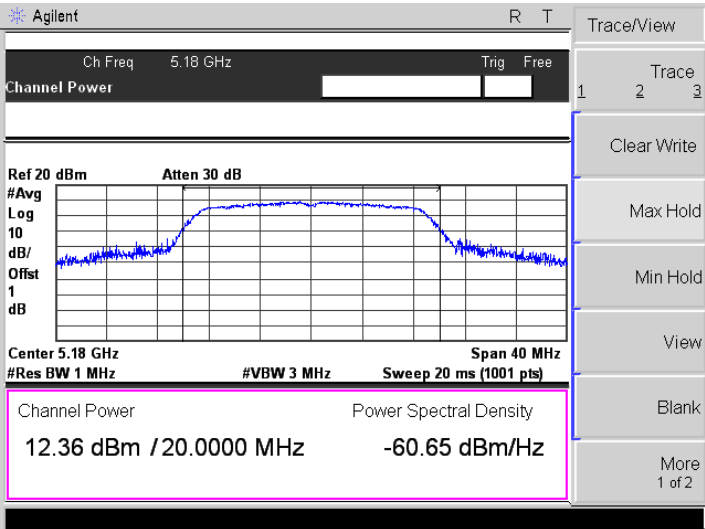
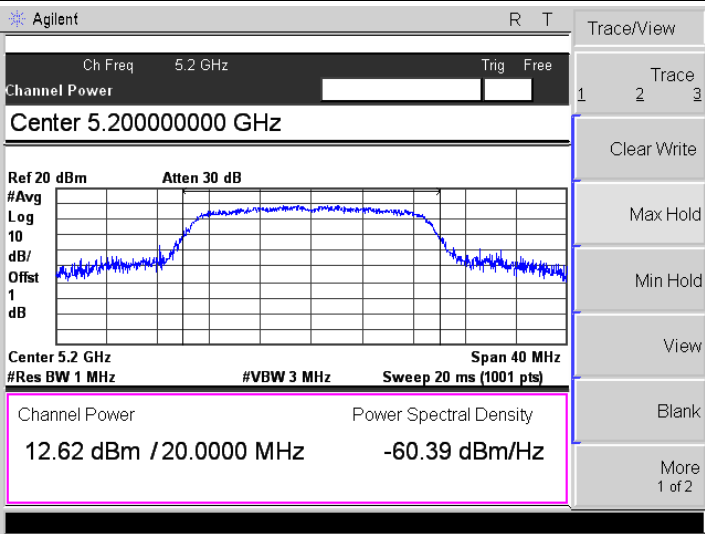
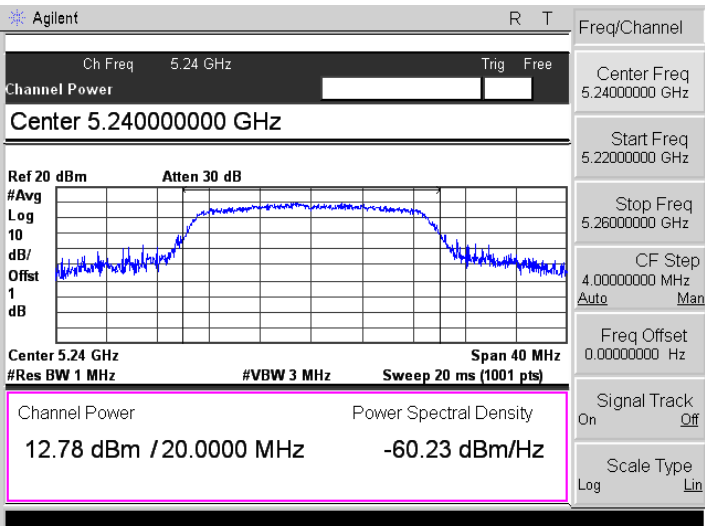
<p>802.11n-HT20-Low</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Channel Power</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>13.04 dBm / 20.0000 MHz -59.97 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 5.785 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.78500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 5.785 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>13.29 dBm / 20.0000 MHz -59.72 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 5.825 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 5.825 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>12.73 dBm / 20.0000 MHz -60.28 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>

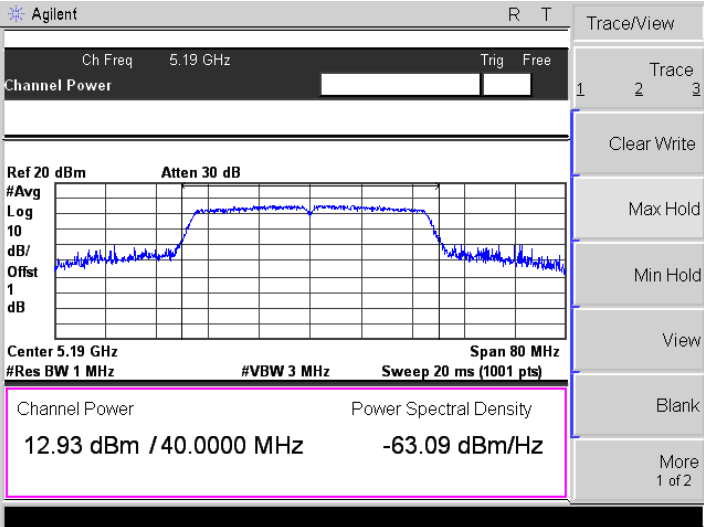
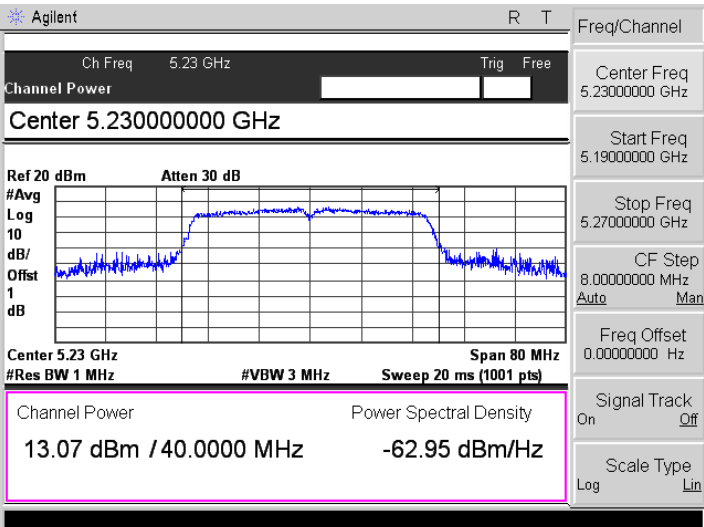
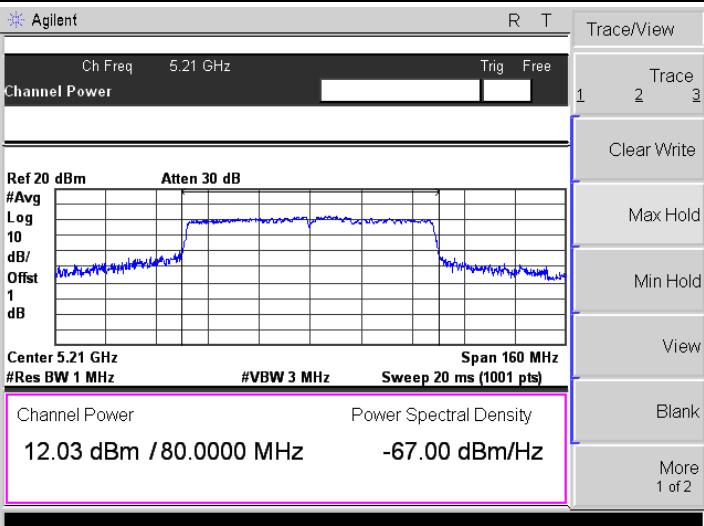
<p>802.11n-HT40-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.755 GHz Trig Free</p> <p>Channel Power</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 5.755 GHz Span 80 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>12.55 dBm / 40.0000 MHz -63.47 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>802.11n-HT40-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.795 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.79500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 5.795 GHz Span 80 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>12.31 dBm / 40.0000 MHz -63.52 dBm/Hz</p> <p>Freq/Channel</p> <p>Center Freq 5.79500000 GHz</p> <p>Start Freq 5.75500000 GHz</p> <p>Stop Freq 5.83500000 GHz</p> <p>CF Step 8.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11ac-HT80</p>	 <p>Agilent R T</p> <p>Ch Freq 5.775 GHz Trig Free</p> <p>Channel Power</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 5.775 GHz Span 160 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>12.21 dBm / 80.0000 MHz -66.83 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>

ANT 2

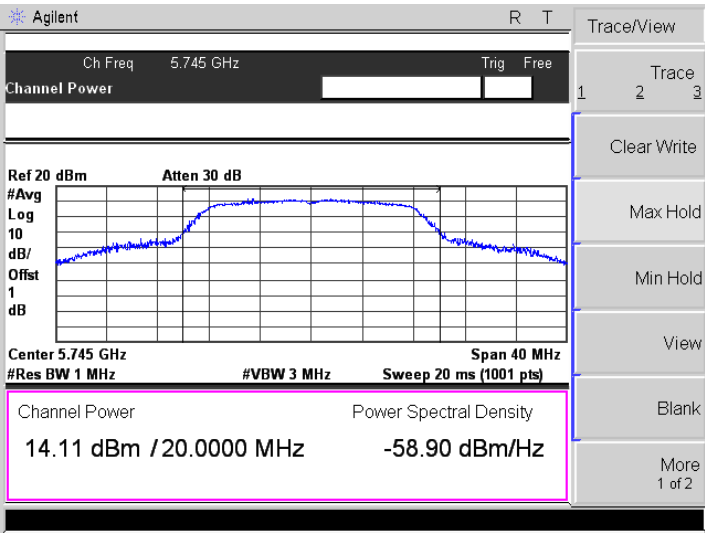
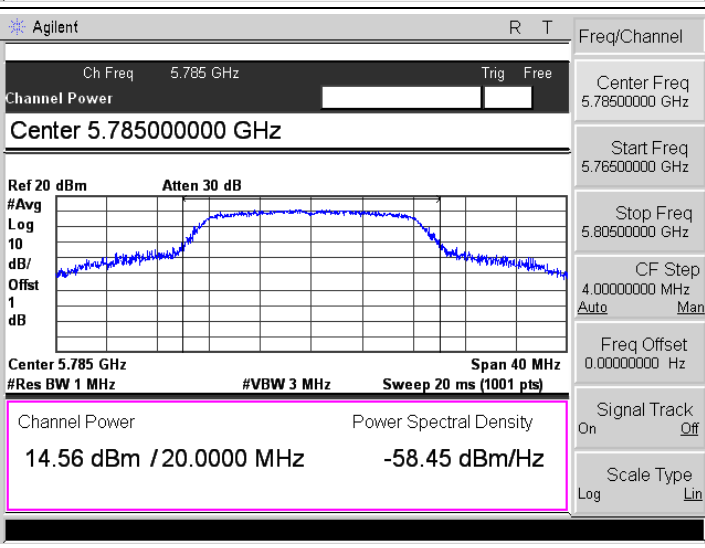
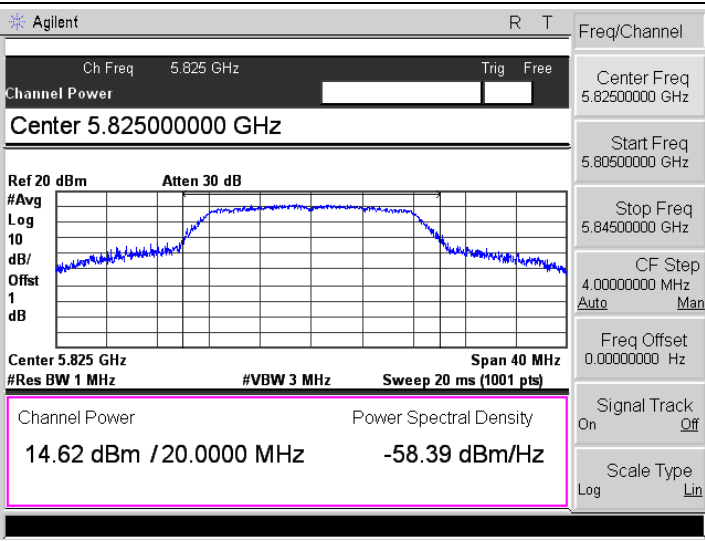
5150-5250MHz

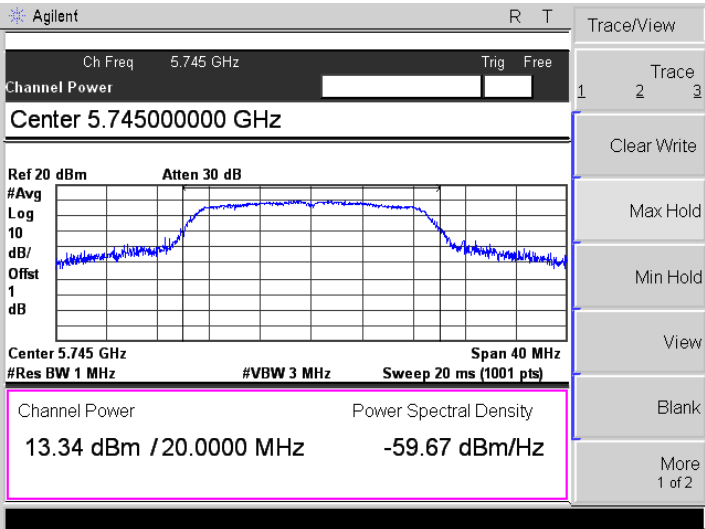
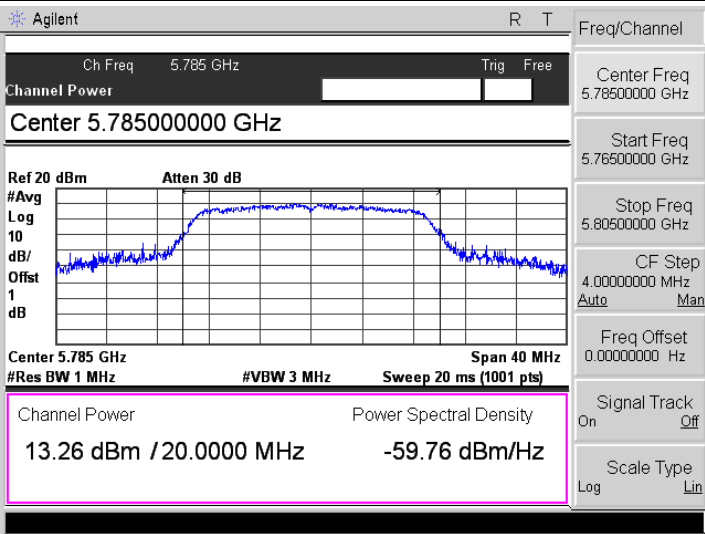
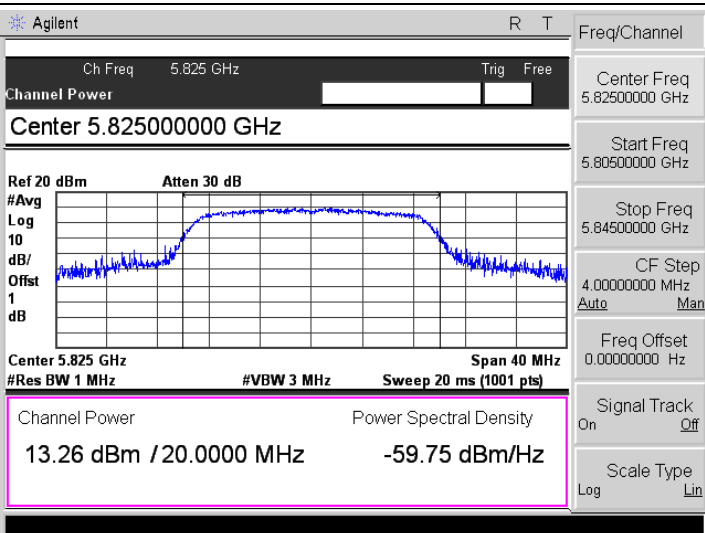
<p>802.11a-Low</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 5.18 GHz Trig Free</p> <p>Channel Power</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 5.18 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>14.30 dBm / 20.0000 MHz -58.71 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>802.11a-Middle</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 5.2 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.20000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 5.2 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>14.57 dBm / 20.0000 MHz -58.44 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>802.11a-High</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 5.24 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.24000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 5.24 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>14.17 dBm / 20.0000 MHz -58.84 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>

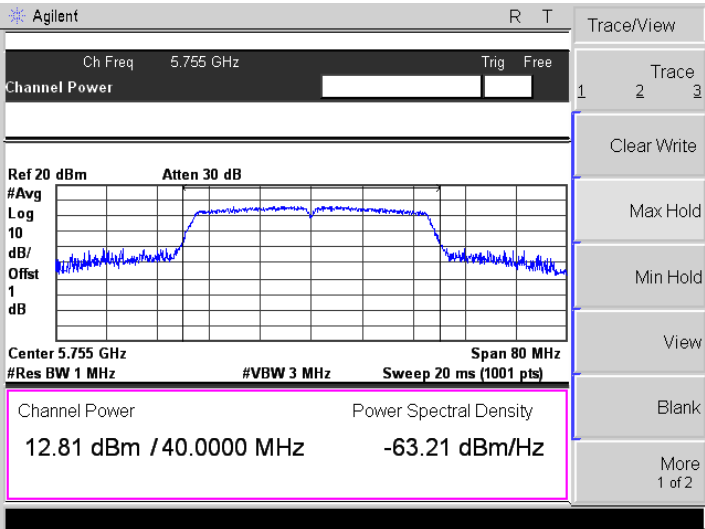
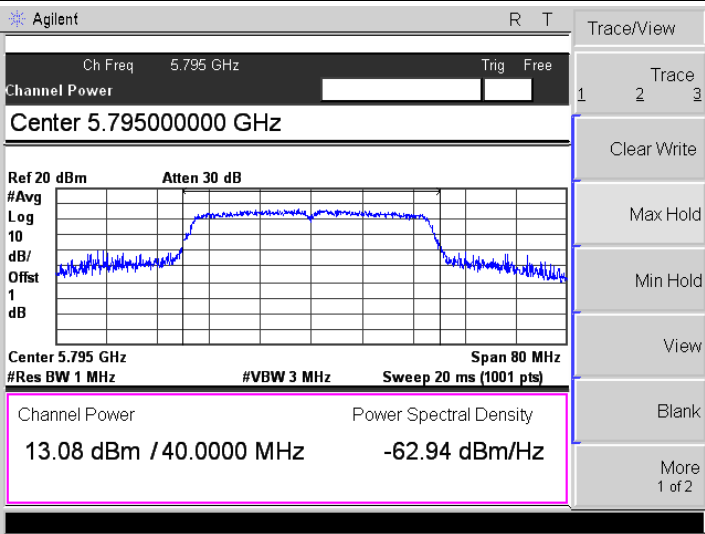
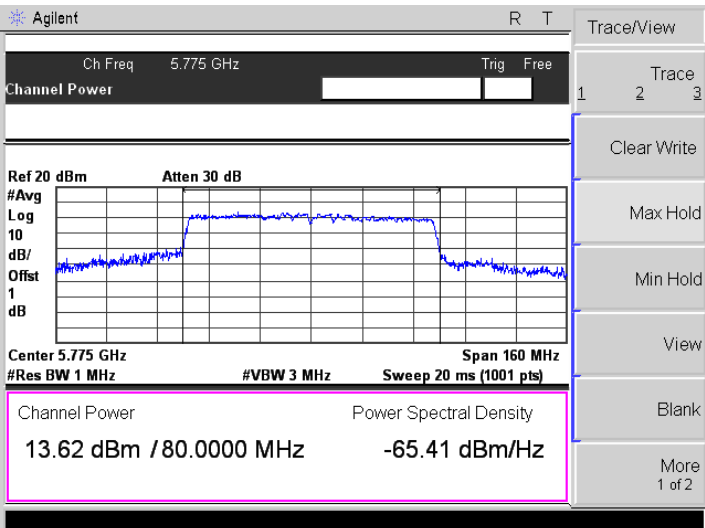
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<p>802.11n-HT20-Middle</p>	
<p>802.11n-HT20-High</p>	

<p>802.11n-HT40-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.19 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 5.19 GHz Span 80 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>12.93 dBm / 40.0000 MHz -63.09 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>802.11n-HT40-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.23 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.23000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 5.23 GHz Span 80 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>13.07 dBm / 40.0000 MHz -62.95 dBm/Hz</p> <p>Freq/Channel</p> <p>Center Freq 5.23000000 GHz</p> <p>Start Freq 5.19000000 GHz</p> <p>Stop Freq 5.27000000 GHz</p> <p>CF Step 8.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11ac-HT80</p>	 <p>Agilent R T</p> <p>Ch Freq 5.21 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 5.21 GHz Span 160 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>12.03 dBm / 80.0000 MHz -67.00 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>

5725-5850MHz

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

<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.74500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>13.34 dBm / 20.0000 MHz -59.67 dBm/Hz</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-HT20-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 5.785 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.78500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 5.785 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>13.26 dBm / 20.0000 MHz -59.76 dBm/Hz</p> <p>Freq/Channel</p> <p>Center Freq 5.78500000 GHz</p> <p>Start Freq 5.76500000 GHz</p> <p>Stop Freq 5.80500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.82500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 5.825 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>13.26 dBm / 20.0000 MHz -59.75 dBm/Hz</p> <p>Freq/Channel</p> <p>Center Freq 5.82500000 GHz</p> <p>Start Freq 5.80500000 GHz</p> <p>Stop Freq 5.84500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

<p>802.11n-HT40-Low</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 5.755 GHz Trig Free</p> <p>Channel Power</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 5.755 GHz Span 80 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>12.81 dBm / 40.0000 MHz -63.21 dBm/Hz</p> <p>Trace/View 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 5.795 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.79500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 5.795 GHz Span 80 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>13.08 dBm / 40.0000 MHz -62.94 dBm/Hz</p> <p>Trace/View 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>802.11ac-HT80</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 5.775 GHz Trig Free</p> <p>Channel Power</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/Offset 1 dB</p> <p>Center 5.775 GHz Span 160 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>13.62 dBm / 80.0000 MHz -65.41 dBm/Hz</p> <p>Trace/View 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

Frequency Stability

ANT 1

U-NII-1:5150-5250MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VDC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	120	-30	1489	0.2864
100%		-20	1273	0.2448
100%		-10	1439	0.2767
100%		0	1335	0.2567
100%		+10	1210	0.2327
100%		+20	1514	0.2912
100%		+30	1030	0.1980
100%		+40	1556	0.2992
100%		+50	1316	0.2532
Low Battery power		102	+20	1561
High Battery power	138	+20	1488	0.2862

U-NII-3:5725-5850MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VDC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	120	-30	1496	0.2586
100%		-20	1277	0.2207
100%		-10	1436	0.2483
100%		0	1335	0.2308
100%		+10	1204	0.2082
100%		+20	1512	0.2613
100%		+30	1027	0.1776
100%		+40	1559	0.2695
100%		+50	1321	0.2283
Low Battery power		102	+20	1560
High Battery power	138	+20	1487	0.2570

ANT 2

U-NII-1:5150-5250MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VDC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	120	-30	1496	0.2876
100%		-20	1271	0.2445
100%		-10	1435	0.2760
100%		0	1340	0.2577
100%		+10	1204	0.2316
100%		+20	1511	0.2906
100%		+30	1029	0.1979
100%		+40	1552	0.2985
100%		+50	1322	0.2542
Low Battery power		102	+20	1557
High Battery power	138	+20	1492	0.2869

U-NII-3:5725-5850MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VDC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	120	-30	1490	0.2576
100%		-20	1278	0.2210
100%		-10	1443	0.2494
100%		0	1342	0.2320
100%		+10	1211	0.2094
100%		+20	1508	0.2607
100%		+30	1030	0.1781
100%		+40	1557	0.2692
100%		+50	1323	0.2287
Low Battery power		102	+20	1558
High Battery power	138	+20	1493	0.2580

APPENDIX PHOTOGRAPHS

Please refer to “ANNEX”

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