

TEST REPORT

Reference No..... : WTH21X09097137W-1
FCC ID : XOMRWOSU9847
Applicant : SHENZHEN QIYUE OPTRONICS COMPANY LIMITED
Address..... : Flat3,Tower 3, Excellence Meilin Center Plaza, Zhongkang Road 128,
Shangmeilin, Futian District, Shenzhen , China
Product Name : 98" SMART 4K UHD TV
Test Model. : RWOSU9847
Standards : FCC Part 15.407
Date of Receipt sample : Sept. 13, 2021
Date of Test..... : Sept. 13, 2021 to Sept. 22, 2021
Date of Issue : Sept. 22, 2021
Test Result..... : **Pass**

Remarks:

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

Prepared By:

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Report version

Version No.	Date of issue	Description
Rev.00	Sept. 22, 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:	98" SMART 4K UHD TV
Trade Name:	RCA, PROSCAN, RCA SCENIUM, TECHNICOLOR, SYLVANIA, RCASMA TVIRTUOSO
Model No.:	RWOSU9847
Adding Model(s):	D98S8-U-A-I,XXXXXXXXXX98XXXXXXXXXXXXX (Where "X" can be any alphanumeric of A-Z or 0-9 or blank or -, indicates different client)
Rated Voltage:	AC120V/60Hz
Battery Capacity:	/
Power Adapter:	/
<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 RWOSU9847, 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-VHT80
Frequency Range:	5150-5250MHz, 5725-5850MHz
RF Output Power:	5150-5250MHz ANT 0:14.94dBm (Conducted) ANT 1:14.89dBm (Conducted) 5725-5850MHz ANT 0:14.83dBm (Conducted) ANT 1:14.84dBm (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, Subpart.

KDB662911 D01 Multiple Transmitter Output v02r01: Emissions Testing of Transmitters with Multiple Outputs in the Same Band.

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. Test use the customer default power level, with a duty cycle equal to 100%, and to measure its highest possible emissions level, more detailed description as follows:

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	1.6	Unshielded	Without Ferrite

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

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

1.8 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. And the signals at the antennas are completely uncorrelated.

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 5.15-5.25GHz.

(iv) For mobile and portable client devices in the 5.15-5.25GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250mW provided the maximum antenna gain does not exceed 6dBi. In addition, the maximum power spectral density shall not exceed 11dBm 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 6dBi.

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

(3) For the band 5.725-5.85GHz, 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 30dBm in any 500kHz band. If transmitting antennas of directional gain greater than 6dBi 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 6dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6dBi 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 5.15-5.25GHz, 5.25-5.35GHz, and 5.47-5.725GHz, the above procedures make use of 1MHz RBW to satisfy directly the 1MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85GHz, the rules specify a measurement bandwidth of 500kHz. Many spectrum analyzers do not have 500kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1MHz, or 500kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1MHz, or 500kHz). If

measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500kHz) 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 ≥ 3 RBW.
- c) If measurement bandwidth of Maximum PSD is specified in 500kHz, add $10\log(500\text{kHz}/\text{RBW})$ to the measured result, whereas RBW (< 500kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1MHz, add $10\log(1\text{MHz}/\text{RBW})$ to the measured result, whereas RBW (< 1MHz) 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 100kHz for the sections 5.c) and 5.d) above, since RBW=100kHz 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 5.15-5.25GHz.

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

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

(3) For the band 5.725-5.85GHz, 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 30dBm in any 500kHz band. If transmitting antennas of directional gain greater than 6dBi 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 6dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6dBi 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 5.725-5.85GHz band, the minimum 6dB bandwidth of U-NII devices shall be at least 500kHz.

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 26dB 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 5.725-5.85GHz

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

- a) Set RBW = 100kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 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 5.15-5.25GHz.

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

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

(3) For the band 5.725-5.85GHz, 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 30dBm in any 500kHz band. If transmitting antennas of directional gain greater than 6dBi 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 6dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6dBi 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 = 1MHz.
- (iii) Set VBW \geq 3MHz.
- (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.)

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[Http://www.waltek.com.cn](http://www.waltek.com.cn)

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

According to §15.407(b)(6), Unwanted emissions below 1GHz 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.

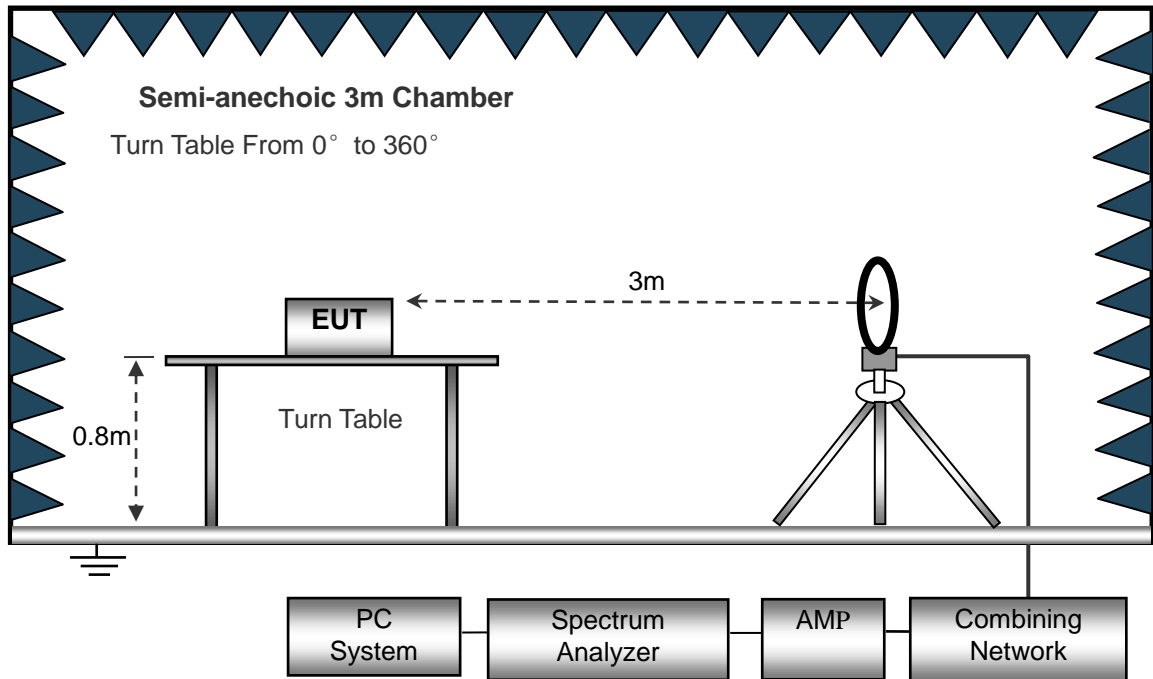
8.2 Test Procedure

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..

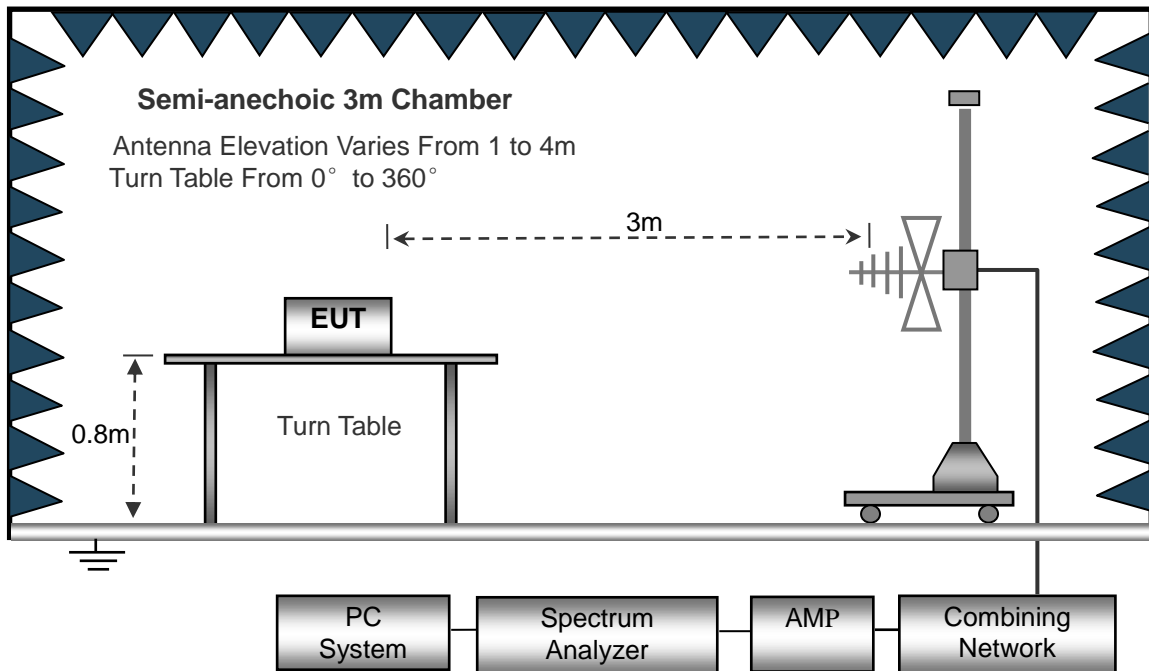
The external I/O cables were draped along the test table and formed a bundle 30 to 40cm long in the middle.

The spacing between the peripherals was 10cm.

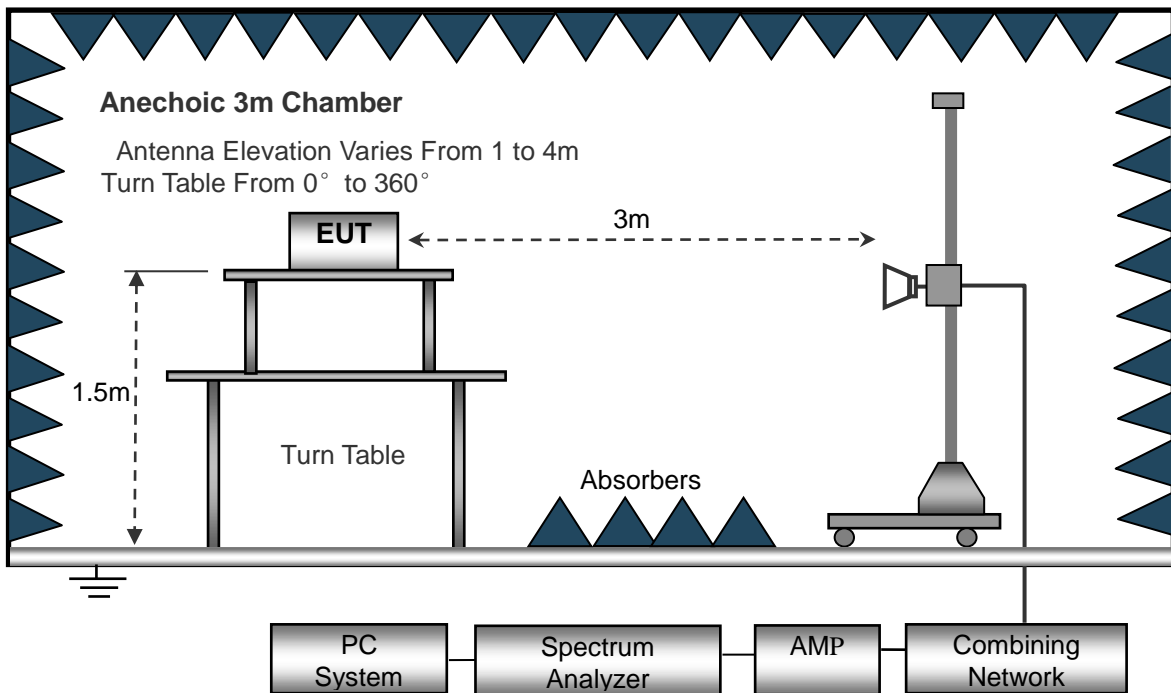
The test setup for emission measurement below 30MHz.



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



The test setup for emission measurement above 1GHz.



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:

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

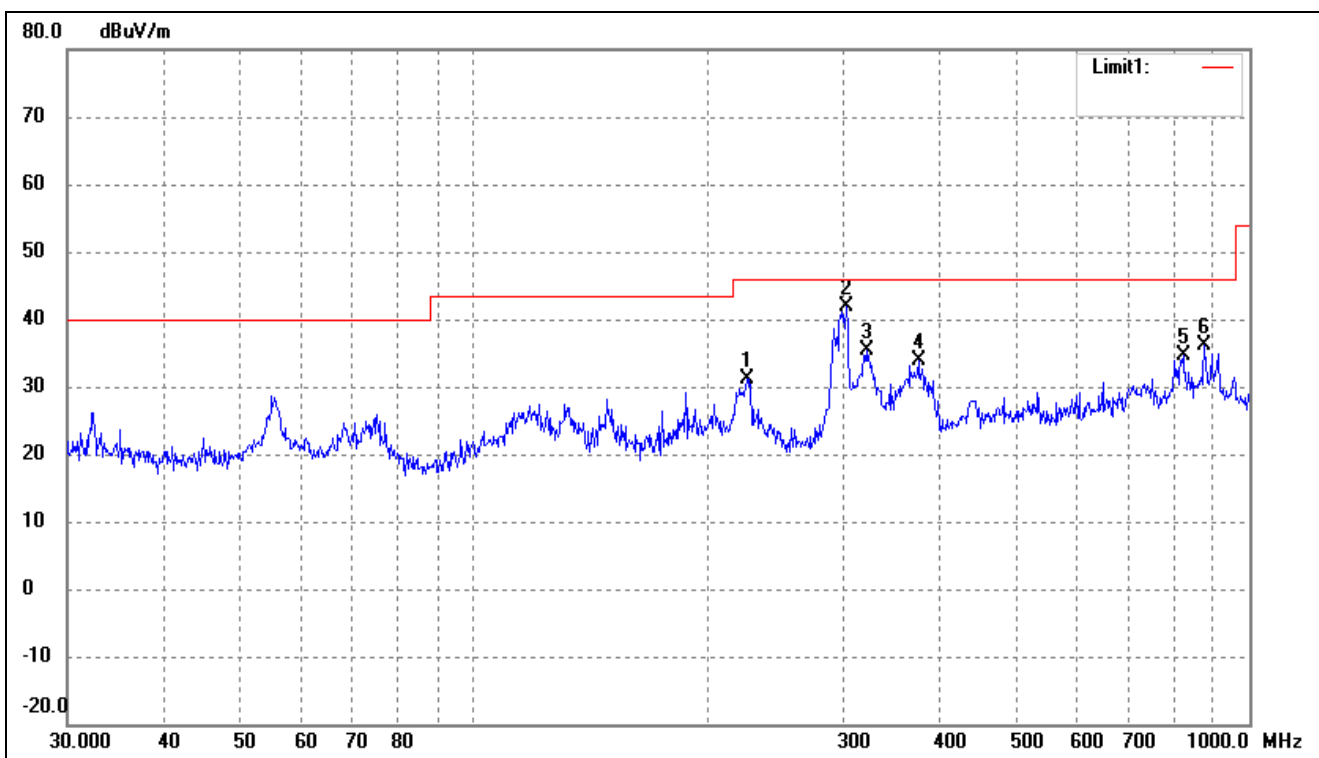
8.5 Summary of Test Results/Plots

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

- Spurious Emission From 30MHz to 1GHz
- Antenna 0(Worst case)
- 5150-5250MHz

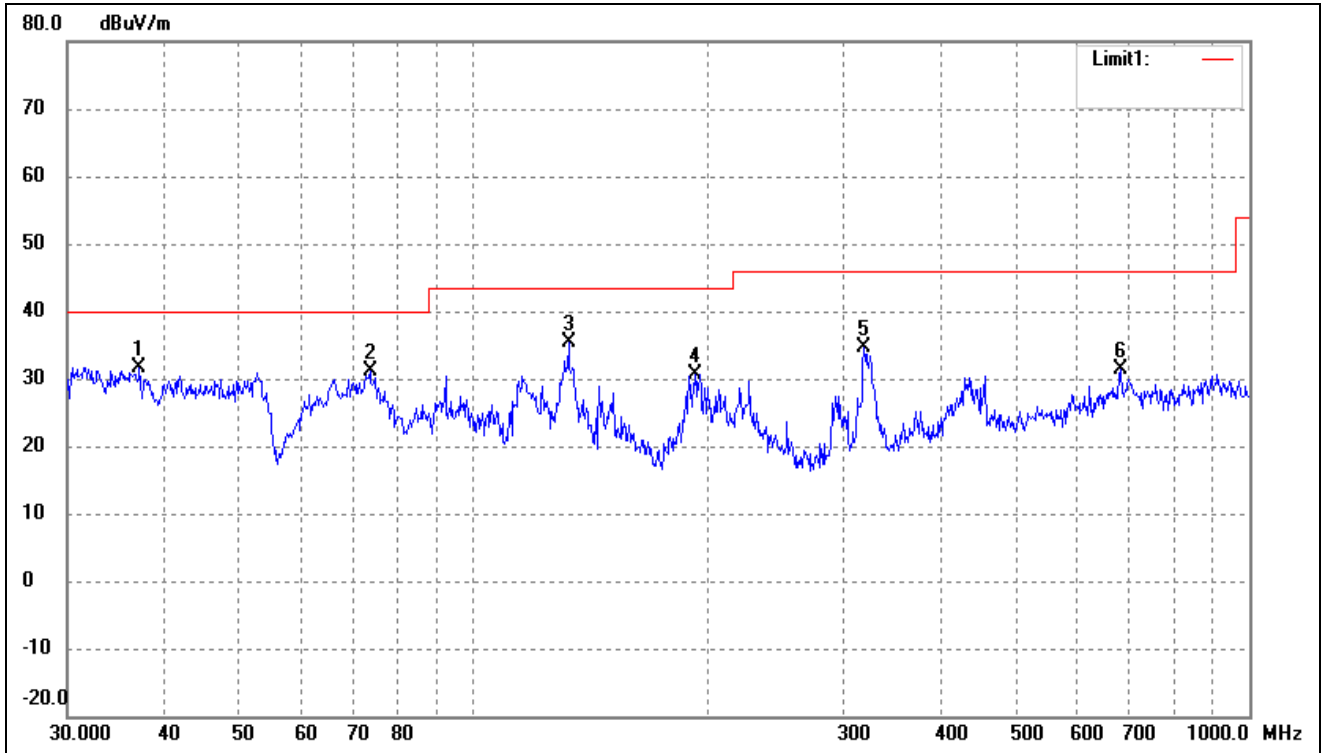
802.11a(Worst case)

Test Channel	5180MHz	Polarity:	Horizontal
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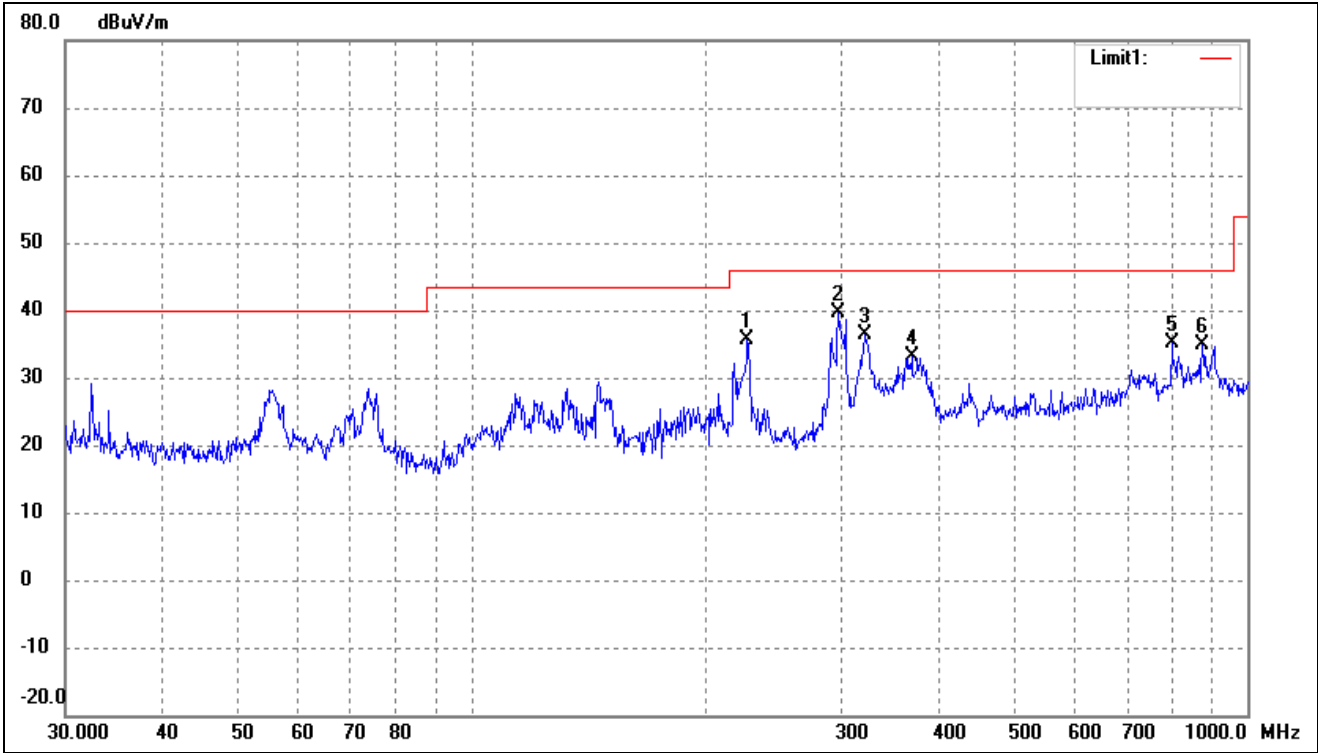
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	225.3079	40.18	-9.00	31.18	46.00	-14.82	-	-	peak
2	302.4812	48.88	-6.89	41.99	46.00	-4.01	-	-	peak
3	321.0607	41.56	-6.30	35.26	46.00	-10.74	-	-	peak
4	374.6225	38.47	-4.66	33.81	46.00	-12.19	-	-	peak
5	821.7104	32.31	2.22	34.53	46.00	-11.47	-	-	peak
6	875.2469	33.53	2.57	36.10	46.00	-9.90	-	-	peak

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



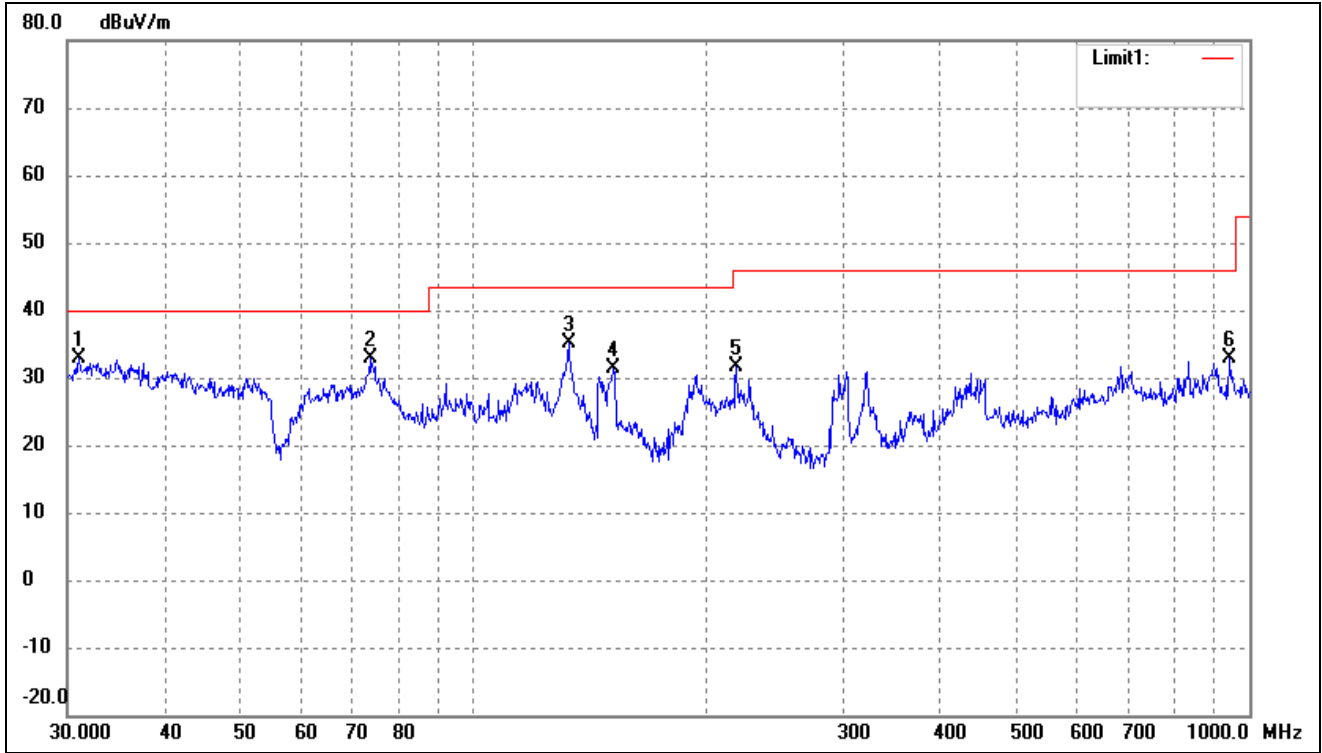
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	37.1550	39.42	-7.70	31.72	40.00	-8.28	-	-	peak
2	73.6170	41.55	-10.38	31.17	40.00	-8.83	-	-	peak
3	132.6850	46.93	-11.66	35.27	43.50	-8.23	-	-	peak
4	193.0945	40.51	-9.93	30.58	43.50	-12.92	-	-	peak
5	318.8170	40.92	-6.37	34.55	46.00	-11.45	-	-	peak
6	682.3484	30.20	1.25	31.45	46.00	-14.55	-	-	peak

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



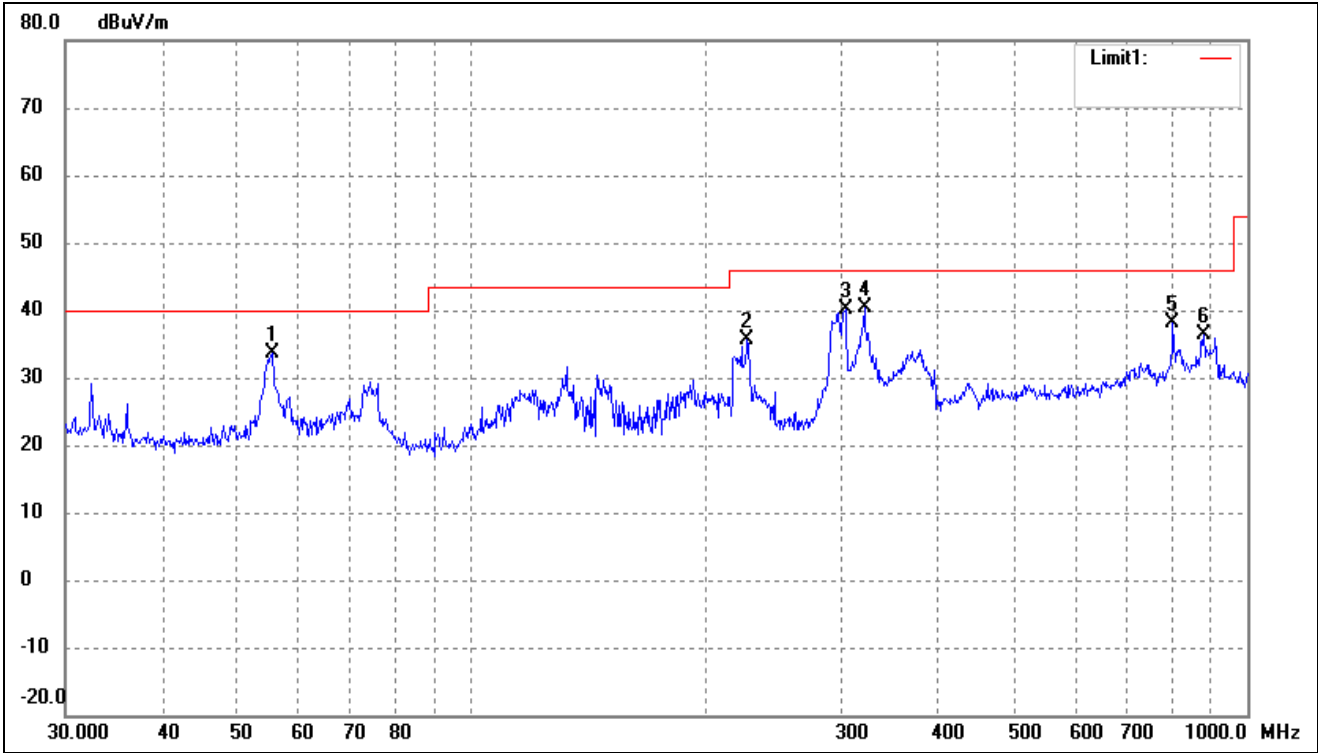
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	226.8935	44.61	-8.96	35.65	46.00	-10.35	-	-	peak
2	297.2241	46.60	-7.03	39.57	46.00	-6.43	-	-	peak
3	322.1886	42.75	-6.27	36.48	46.00	-9.52	-	-	peak
4	369.4046	37.83	-4.81	33.02	46.00	-12.98	-	-	peak
5	798.9796	33.09	2.09	35.18	46.00	-10.82	-	-	peak
6	875.2469	32.29	2.57	34.86	46.00	-11.14	-	-	peak

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



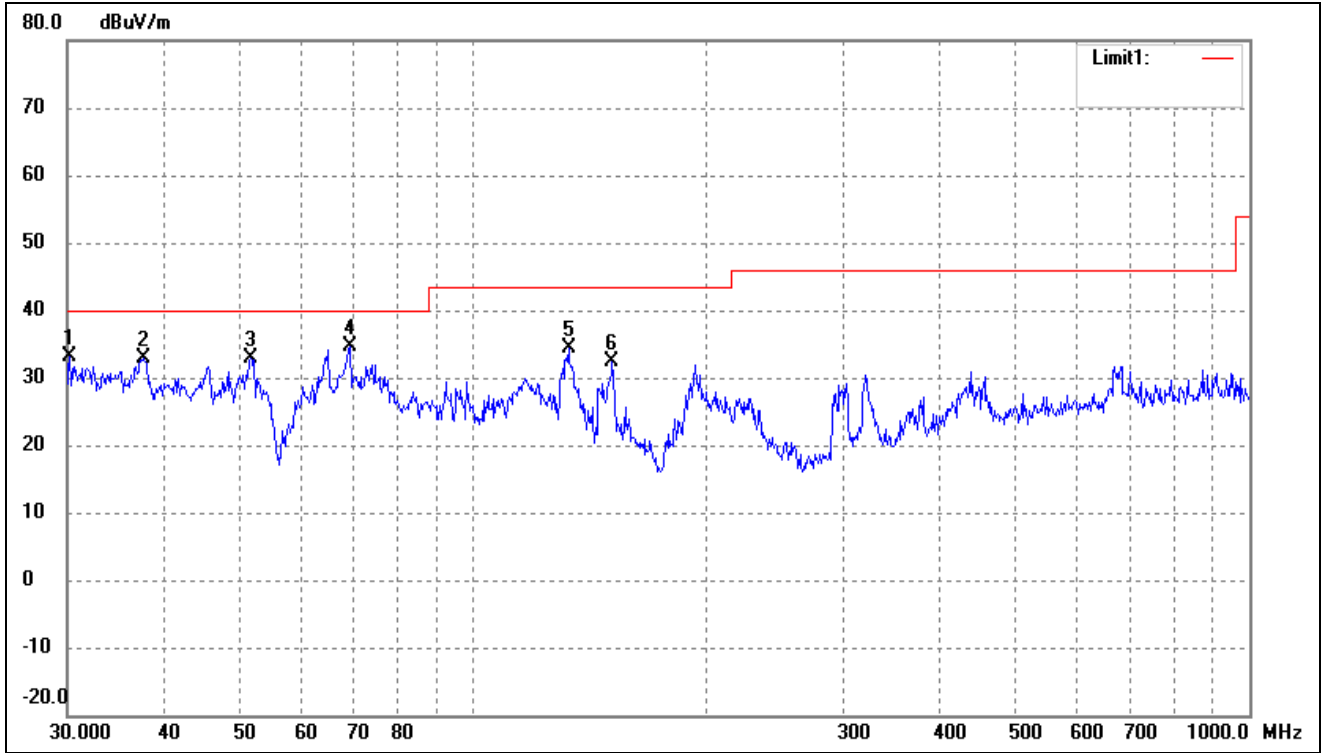
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	31.0705	42.17	-9.19	32.98	40.00	-7.02	-	-	peak
2	73.6170	43.34	-10.38	32.96	40.00	-7.04	-	-	peak
3	132.6850	46.70	-11.66	35.04	43.50	-8.46	-	-	peak
4	151.5971	44.04	-12.54	31.50	43.50	-12.00	-	-	peak
5	218.3085	40.76	-9.20	31.56	46.00	-14.44	-	-	peak
6	942.1304	30.15	2.61	32.76	46.00	-13.24	-	-	peak

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	55.4147	41.42	-7.75	33.67	40.00	-6.33	-	-	peak
2	226.8935	44.61	-8.96	35.65	46.00	-10.35	-	-	peak
3	303.5437	47.10	-6.85	40.25	46.00	-5.75	-	-	peak
4	321.0607	46.56	-6.30	40.26	46.00	-5.74	-	-	peak
5	801.7862	35.98	2.10	38.08	46.00	-7.92	-	-	peak
6	878.3214	33.70	2.59	36.29	46.00	-9.71	-	-	peak

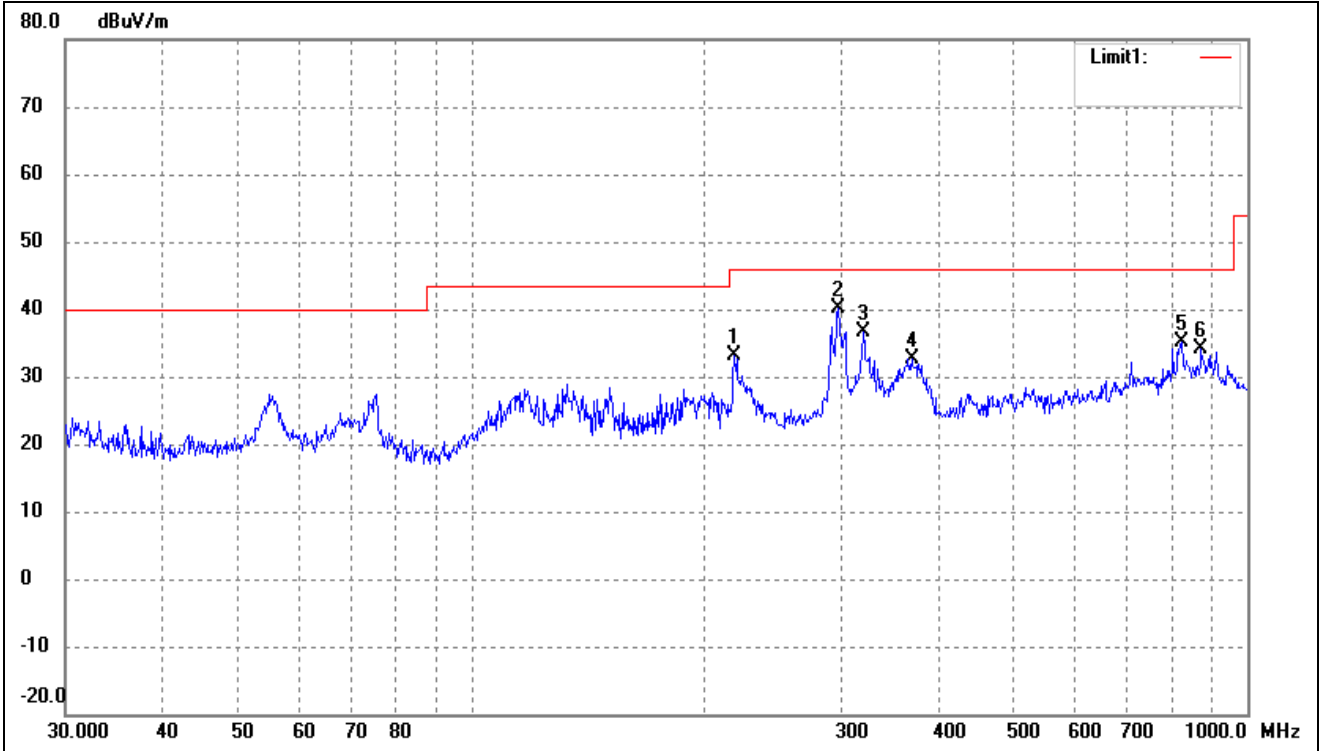
802.11a(Worst case)			
Test Channel	5240MHz	Polarity:	Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	30.2110	42.42	-9.41	33.01	40.00	-6.99	-	-	peak
2	37.5478	40.47	-7.60	32.87	40.00	-7.13	-	-	peak
3	51.6615	40.13	-7.20	32.93	40.00	-7.07	-	-	peak
4	69.3568	44.59	-10.07	34.52	40.00	-5.48	-	-	peak
5	132.6850	46.06	-11.66	34.40	43.50	-9.10	-	-	peak
6	151.0665	44.86	-12.56	32.30	43.50	-11.20	-	-	peak

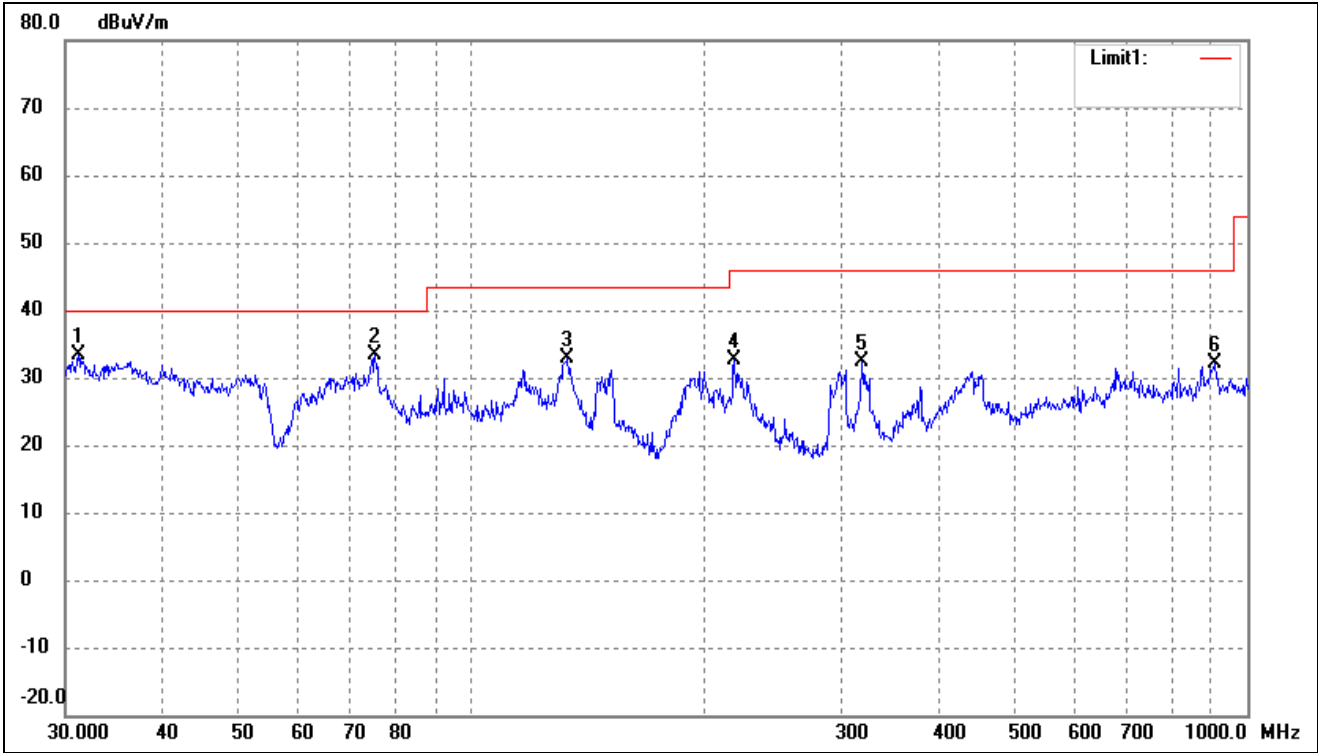
➤ 5725-5850MHz

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	218.3085	42.40	-9.20	33.20	46.00	-12.80	-	-	peak
2	297.2241	47.26	-7.03	40.23	46.00	-5.77	-	-	peak
3	319.9370	42.86	-6.34	36.52	46.00	-9.48	-	-	peak
4	369.4046	37.41	-4.81	32.60	46.00	-13.40	-	-	peak
5	824.5968	32.83	2.23	35.06	46.00	-10.94	-	-	peak
6	872.1832	31.47	2.55	34.02	46.00	-11.98	-	-	peak

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



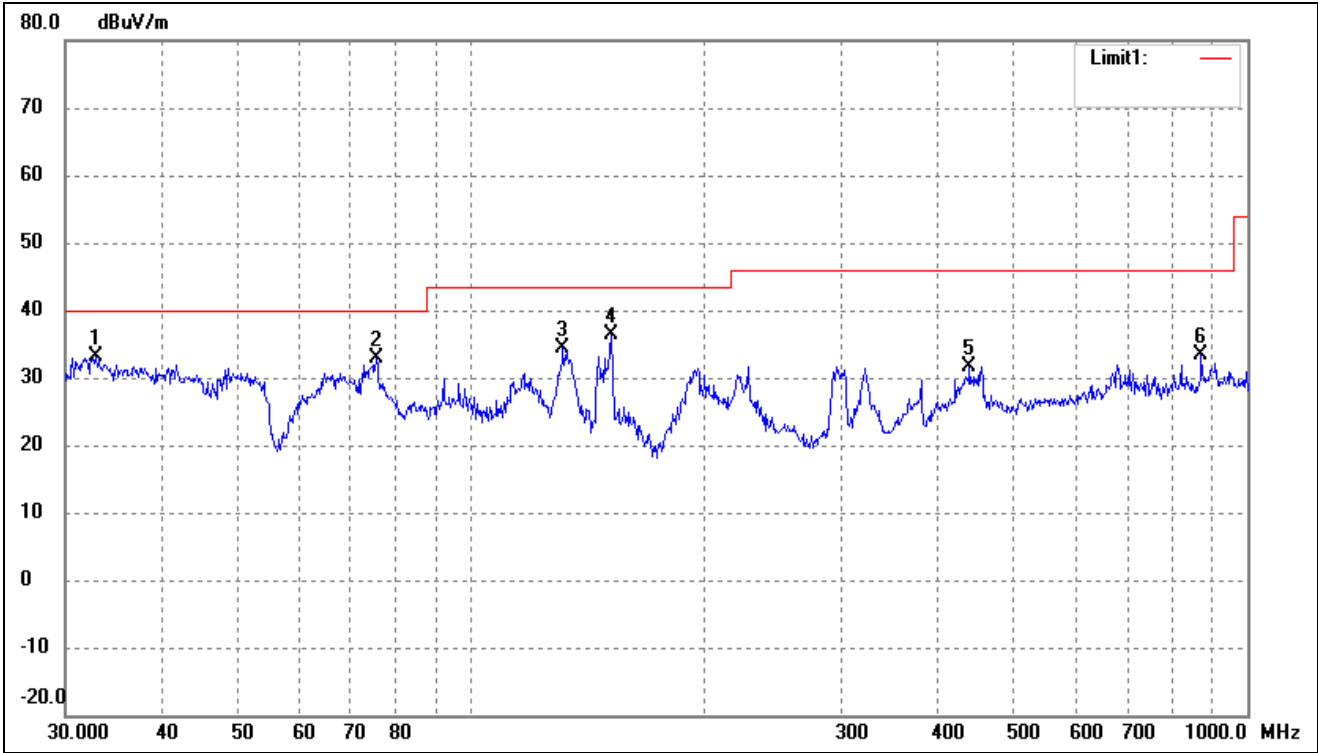
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	31.1798	42.48	-9.16	33.32	40.00	-6.68	-	-	peak
2	75.1822	43.73	-10.46	33.27	40.00	-6.73	-	-	peak
3	133.1511	44.46	-11.69	32.77	43.50	-10.73	-	-	peak
4	218.3085	41.73	-9.20	32.53	46.00	-13.47	-	-	peak
5	318.8170	38.77	-6.37	32.40	46.00	-13.60	-	-	peak
6	909.6666	29.50	2.72	32.22	46.00	-13.78	-	-	peak

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



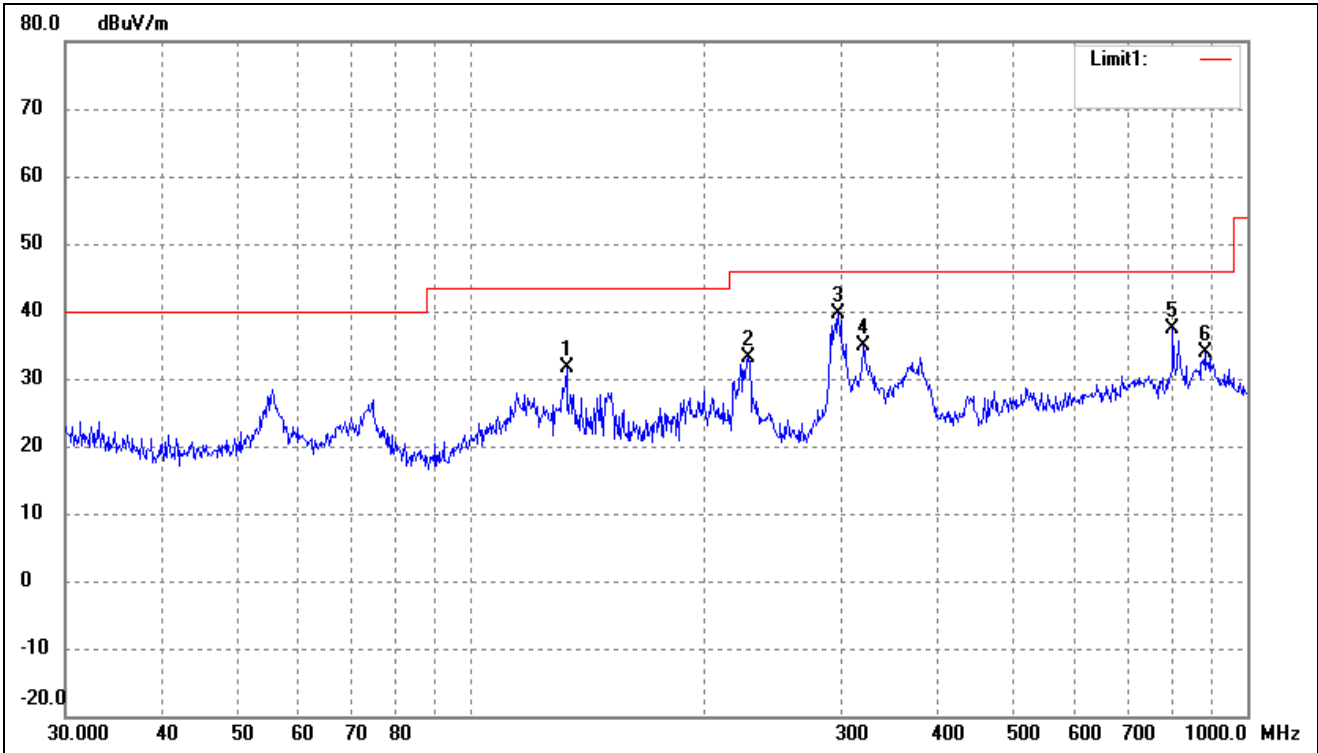
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	217.5442	41.86	-9.21	32.65	46.00	-13.35	-	-	peak
2	294.1136	46.13	-7.12	39.01	46.00	-6.99	-	-	peak
3	321.0607	41.41	-6.30	35.11	46.00	-10.89	-	-	peak
4	377.2590	37.63	-4.58	33.05	46.00	-12.95	-	-	peak
5	801.7862	33.26	2.10	35.36	46.00	-10.64	-	-	peak
6	875.2469	30.69	2.57	33.26	46.00	-12.74	-	-	peak

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



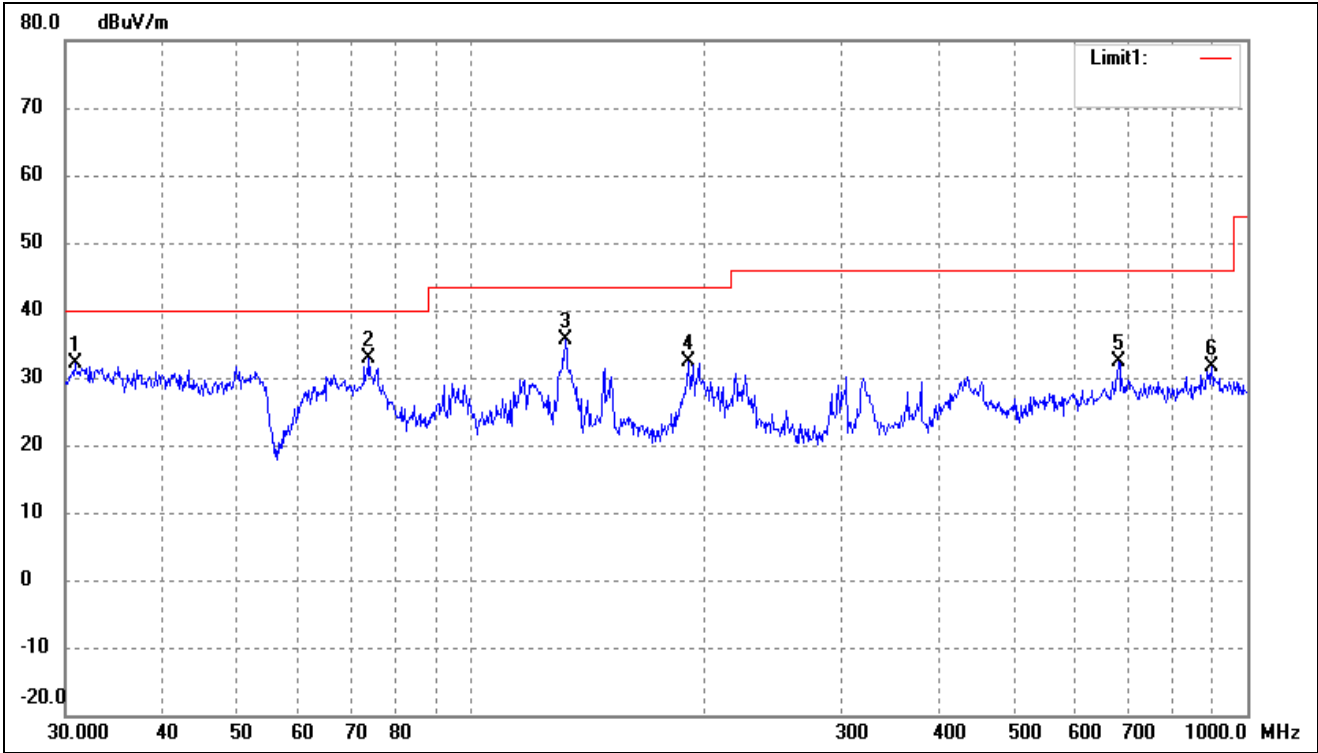
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	32.8637	41.83	-8.75	33.08	40.00	-6.92	-	-	peak
2	75.4463	43.26	-10.48	32.78	40.00	-7.22	-	-	peak
3	131.2965	45.82	-11.55	34.27	43.50	-9.23	-	-	peak
4	151.5971	48.91	-12.54	36.37	43.50	-7.13	-	-	peak
5	438.6553	34.50	-2.86	31.64	46.00	-14.36	-	-	peak
6	872.1832	30.72	2.55	33.27	46.00	-12.73	-	-	peak

802.11a(worst case)			
Test Channel	5825MHz	Polarity:	Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	132.6850	43.32	-11.66	31.66	43.50	-11.84	-	-	peak
2	227.6905	42.12	-8.94	33.18	46.00	-12.82	-	-	peak
3	297.2241	46.74	-7.03	39.71	46.00	-6.29	-	-	peak
4	319.9370	41.21	-6.34	34.87	46.00	-11.13	-	-	peak
5	801.7862	35.19	2.10	37.29	46.00	-8.71	-	-	peak
6	881.4067	31.14	2.62	33.76	46.00	-12.24	-	-	peak

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

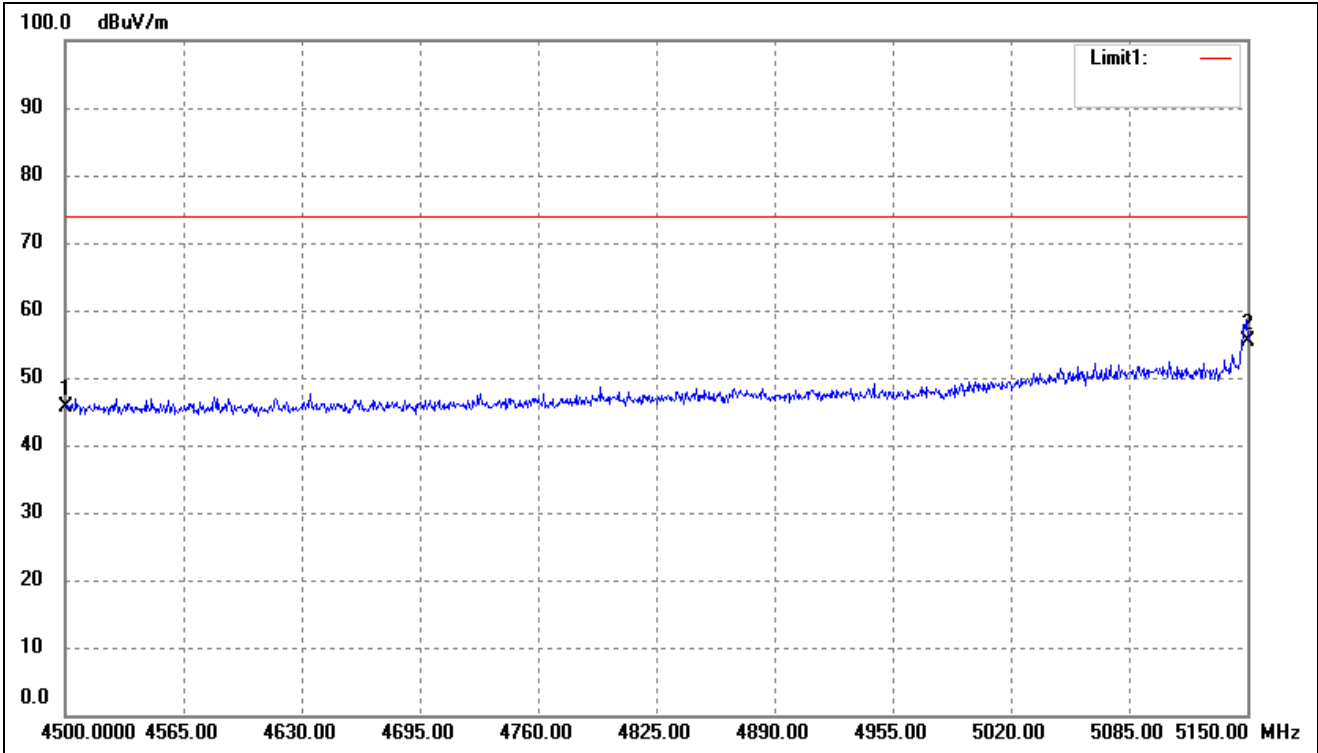


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	30.8535	41.30	-9.24	32.06	40.00	-7.94	-	-	peak
2	73.8756	43.15	-10.39	32.76	40.00	-7.24	-	-	peak
3	132.2205	47.22	-11.62	35.60	43.50	-7.90	-	-	peak
4	190.4050	42.47	-10.03	32.44	43.50	-11.06	-	-	peak
5	682.3484	31.24	1.25	32.49	46.00	-13.51	-	-	peak
6	900.1473	29.00	2.75	31.75	46.00	-14.25	-	-	peak

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

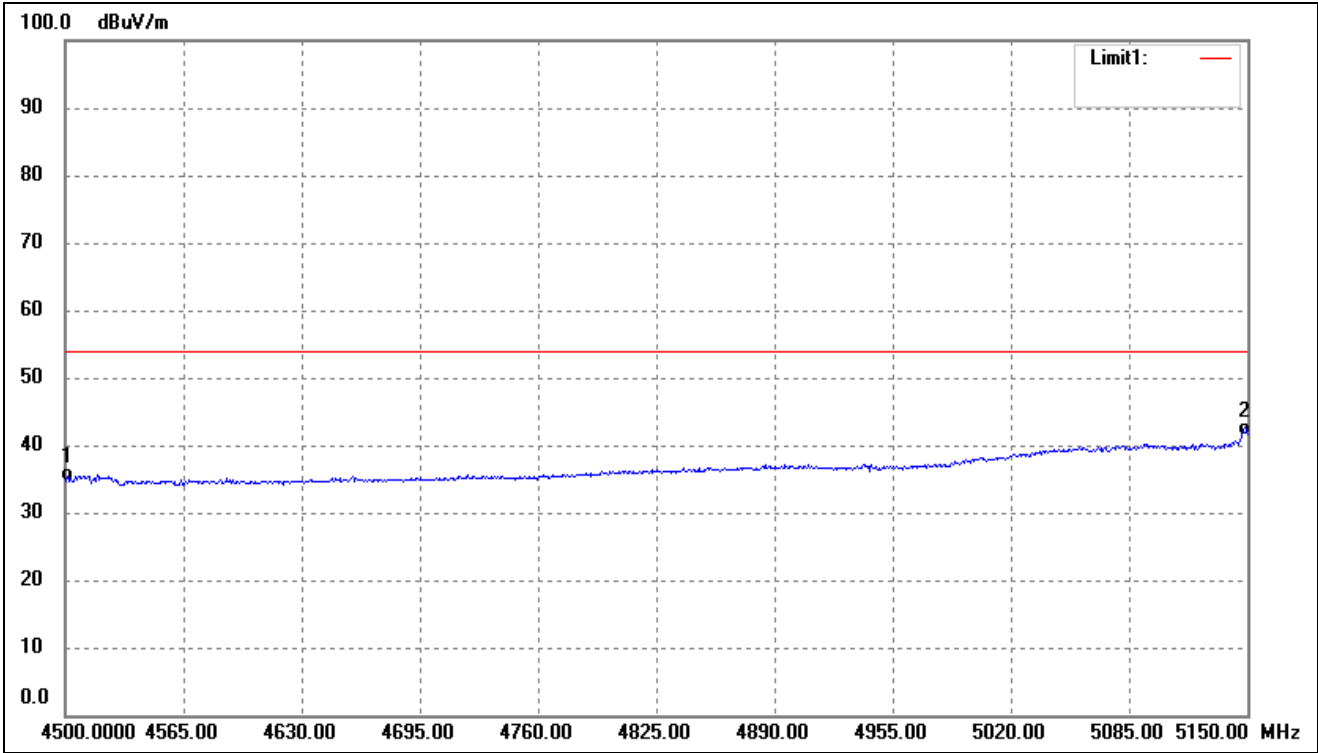
- Spurious Emission above 1GHz
- Antenna 0(worst case)

802.11a- Restricted Bandedge (worst case)			
Test Channel	band 4.50-5.15GHz	Polarity:	Horizontal (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	52.65	-6.92	45.73	74.00	-28.27	-	-	peak
2	5150.000	60.77	-5.33	55.44	74.00	-18.56	-	-	peak

802.11a- Restricted Bandedge (worst case)			
Test Channel	band 4.50-5.15GHz	Polarity:	Horizontal (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	41.51	-6.92	34.59	54.00	-19.41	-	-	AVG
2	5150.000	46.80	-5.33	41.47	54.00	-12.53	-	-	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.

- For the frequency band 5.15-5.25GHz, 5.725-5.850GHz (802.11a)
- Antenna 0
- 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	57.84	7.11	64.95	74.00	-9.05	H	PK
15540	38.32	8.22	46.54	54.00	-7.46	H	AV
10360	58.65	7.11	65.76	74.00	-8.24	V	PK
15540	36.55	8.22	44.77	54.00	-9.23	V	AV
Middle Channel (5200MHz)							
10400	54.98	7.22	62.20	74.00	-11.80	H	PK
15600	35.03	8.67	43.70	54.00	-10.30	H	AV
10400	52.22	7.22	59.44	74.00	-14.56	V	PK
15600	37.57	8.67	46.24	54.00	-7.76	V	AV
High Channel (5240MHz)							
10480	57.47	7.69	65.16	74.00	-8.84	H	PK
15720	38.46	8.93	47.39	54.00	-6.61	H	AV
10480	56.54	7.22	63.76	74.00	-10.24	V	PK
15720	38.15	8.67	46.82	54.00	-7.18	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	54.57	9.45	64.02	74.00	-9.98	H	PK
17235	33.52	10.36	43.88	54.00	-10.12	H	AV
11490	59.40	9.45	68.85	74.00	-5.15	V	PK
17235	37.31	10.36	47.67	54.00	-6.33	V	AV
Middle Channel (5785MHz)							
11570	56.60	9.62	66.22	74.00	-7.78	H	PK
17355	37.04	10.67	47.71	54.00	-6.29	H	AV
11570	56.65	9.62	66.27	74.00	-7.73	V	PK
17355	31.84	10.67	42.51	54.00	-11.49	V	AV
High Channel (5825MHz)							
11650	55.14	9.84	64.98	74.00	-9.02	H	PK
17475	35.82	10.95	46.77	54.00	-7.23	H	AV
11650	52.51	9.84	62.35	74.00	-11.65	V	PK
17475	33.63	10.95	44.58	54.00	-9.42	V	AV

➤ Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-35.10	-27
Highest	Above 5350	-39.83	-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	-39.48	-27
	5715 to 5725	-41.72	-17
Highest	5850 to 5860	-38.59	-17
	Above 5860	-46.80	-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	58.53	7.11	65.64	74.00	-8.36	H	PK
15540	38.56	8.22	46.78	54.00	-7.22	H	AV
10360	59.84	7.11	66.95	74.00	-7.05	V	PK
15540	35.91	8.22	44.13	54.00	-9.87	V	AV
Middle Channel (5200MHz)							
10400	57.68	7.22	64.90	74.00	-9.10	H	PK
15600	36.59	8.67	45.26	54.00	-8.74	H	AV
10400	57.28	7.22	64.50	74.00	-9.50	V	PK
15600	38.55	8.67	47.22	54.00	-6.78	V	AV
High Channel (5240MHz)							
10480	55.08	7.69	62.77	74.00	-11.23	H	PK
15720	32.45	8.93	41.38	54.00	-12.62	H	AV
10480	58.92	7.69	66.61	74.00	-7.39	V	PK
15720	38.34	8.93	47.27	54.00	-6.73	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	57.05	9.45	66.50	74.00	-7.50	H	PK
17235	35.80	10.36	46.16	54.00	-7.84	H	AV
11490	58.14	9.45	67.59	74.00	-6.41	V	PK
17235	34.93	10.36	45.29	54.00	-8.71	V	AV
Middle Channel (5785MHz)							
11570	60.46	9.62	70.08	74.00	-3.92	H	PK
17355	32.96	10.67	43.63	54.00	-10.37	H	AV
11570	56.81	9.62	66.43	74.00	-7.57	V	PK
17355	36.95	10.67	47.62	54.00	-6.38	V	AV
High Channel (5825MHz)							
11650	54.53	9.84	64.37	74.00	-9.63	H	PK
17475	31.85	10.95	42.80	54.00	-11.20	H	AV
11650	55.08	9.84	64.92	74.00	-9.08	V	PK
17475	37.10	10.95	48.05	54.00	-5.95	V	AV

➤ Out of Band edge 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-34.71	-27
Highest	Above 5350	-39.88	-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	-42.06	-27
	5715 to 5725	-32.72	-17
Highest	5850 to 5860	-38.69	-17
	Above 5860	-39.61	-27

Note: the data just list the worst cases.

Note: this EUT was tested in the low, high channel and the worst case position data was reported.

- 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	58.81	7.25	66.06	74.00	-7.94	H	PK
15570	35.83	8.33	44.16	54.00	-9.84	H	AV
10380	60.05	7.25	67.30	74.00	-6.70	V	PK
15570	35.78	8.33	44.11	54.00	-9.89	V	AV
High Channel (5230MHz)							
10460	56.71	7.54	64.25	74.00	-9.75	H	PK
15690	34.50	8.86	43.36	54.00	-10.64	H	AV
10460	59.58	7.54	67.12	74.00	-6.88	V	PK
15690	36.21	8.86	45.07	54.00	-8.93	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	57.51	9.65	67.16	74.00	-6.84	H	PK
17265	36.25	10.87	47.12	54.00	-6.88	H	AV
11510	53.85	9.65	63.50	74.00	-10.50	V	PK
17265	35.63	10.87	46.50	54.00	-7.50	V	AV
High Channel (5795MHz)							
11590	55.04	9.81	64.85	74.00	-9.15	H	PK
17385	34.43	10.89	45.32	54.00	-8.68	H	AV
11590	56.87	9.81	66.68	74.00	-7.32	V	PK
17385	34.99	10.89	45.88	54.00	-8.12	V	AV

➤ Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-34.15	-27
Highest	Above 5350	-43.15	-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	-39.85	-27
	5715 to 5725	-39.71	-17
Highest	5850 to 5860	-42.26	-17
	Above 5860	-45.36	-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	60.47	7.33	67.80	74.00	-6.20	H	PK
15630	35.63	8.75	44.38	54.00	-9.62	H	AV
10420	54.82	7.33	62.15	74.00	-11.85	V	PK
15630	34.61	8.75	43.36	54.00	-10.64	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
5775MHz							
11550	55.17	9.54	64.71	74.00	-9.29	H	PK
17325	37.74	10.59	48.33	54.00	-5.67	H	AV
11550	55.70	9.54	65.24	74.00	-8.76	V	PK
17325	32.74	10.59	43.33	54.00	-10.67	V	AV

- Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-33.80	-27
Highest	Above 5350	-36.46	-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	-47.45	-27
	5715 to 5725	-30.35	-17
Highest	5850 to 5860	-27.25	-17
	Above 5860	-37.69	-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

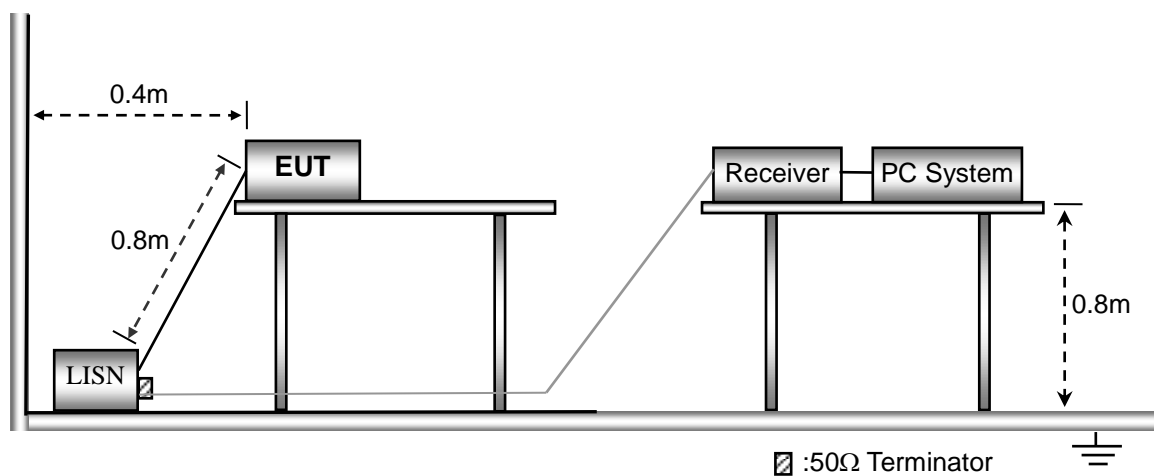
10.1 Test Procedure

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 40cm long in the middle.

The spacing between the peripherals was 10cm.

10.2 Basic Test Setup Block Diagram



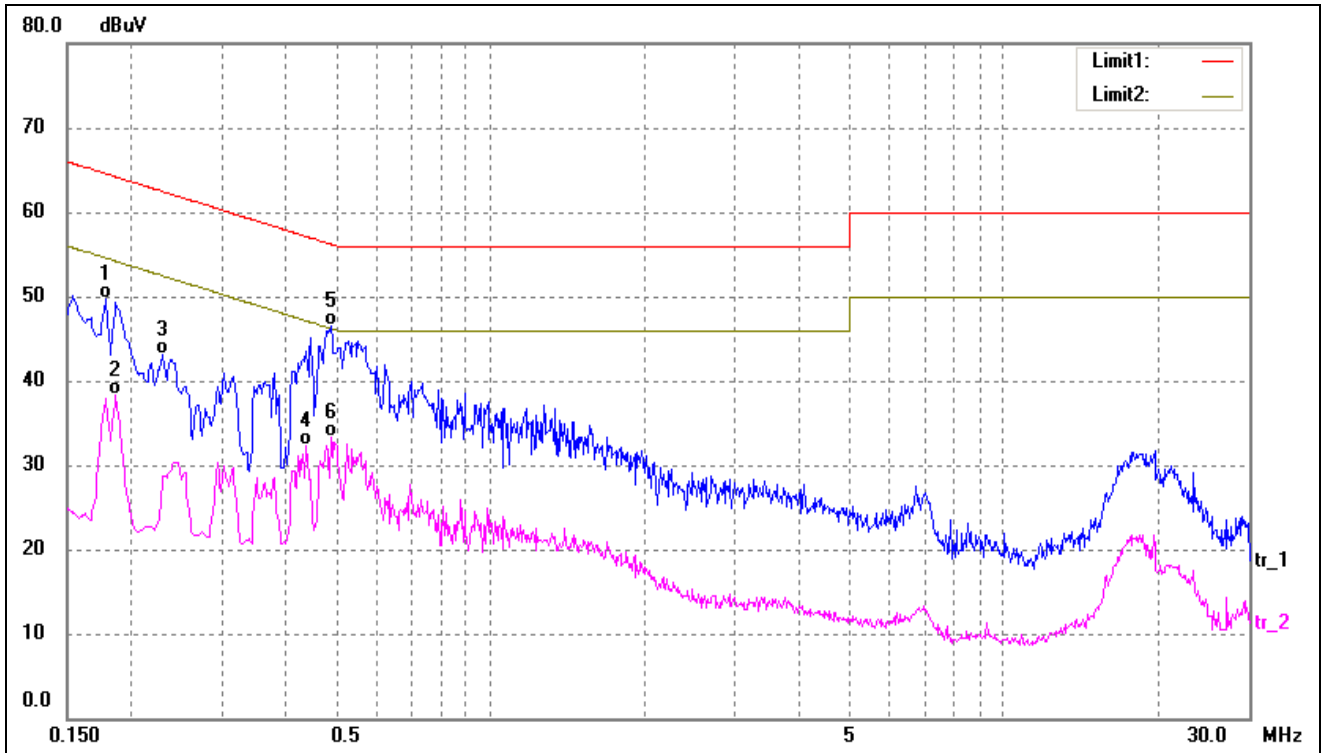
10.3 Test Receiver Setup

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

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

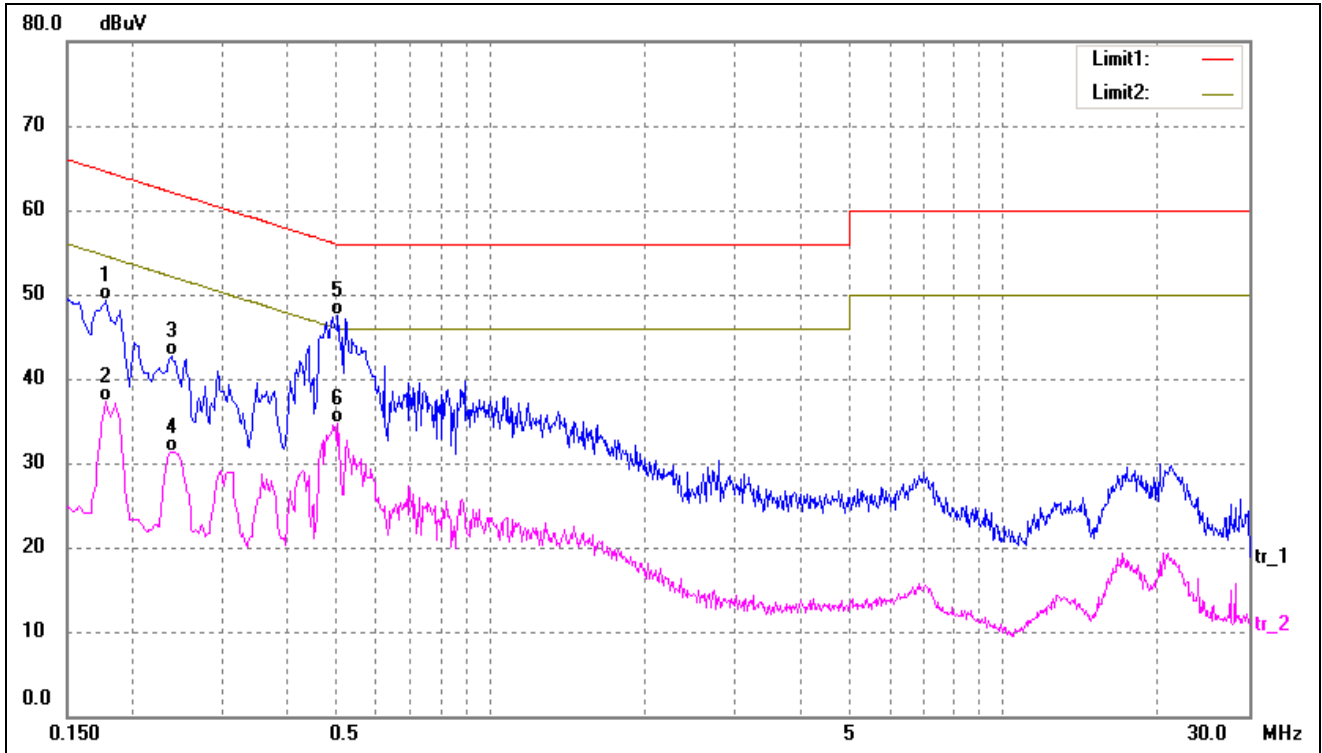
10.4 Summary of Test Results/Plots

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	0.1780	39.43	10.26	49.69	64.57	-14.88	QP
2	0.1860	27.96	10.26	38.22	54.21	-15.99	AVG
3	0.2300	32.76	10.26	43.02	62.45	-19.43	QP
4	0.4380	22.12	10.22	32.34	47.10	-14.76	AVG
5*	0.4900	36.22	10.22	46.44	56.17	-9.73	QP
6	0.4900	23.08	10.22	33.30	46.17	-12.87	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	0.1780	38.95	10.26	49.21	64.57	-15.36	QP
2	0.1780	27.03	10.26	37.29	54.57	-17.28	AVG
3	0.2380	32.40	10.26	42.66	62.16	-19.50	QP
4	0.2380	21.08	10.26	31.34	52.16	-20.82	AVG
5*	0.5060	37.36	10.22	47.58	56.00	-8.42	QP
6	0.5060	24.45	10.22	34.67	46.00	-11.33	AVG

APPENDIX SUMMARY

Project No.	WTH21X09097137W	Test Engineer	Dashan
Start date	2021/9/14	Finish date	2021/9/16
Temperature	24°C	Humidity	47%
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 0 dBm/MHz	ANT 1 dBm/MHz	Total dBm/MHz	Limit (dBm/MHz)
802.11a	5180	5.455	5.365	/	11
	5200	5.687	5.555	/	11
	5240	5.749	5.558	/	11
802.11n-HT20	5180	5.202	4.615	7.93	11
	5200	5.235	4.153	7.74	11
	5240	5.236	4.838	8.05	11
802.11n-HT40	5190	0.898	-0.055	3.46	11
	5230	1.026	-0.207	3.46	11
802.11ac-HT80	5210	-4.127	-5.273	-1.65	11

Power Spectral Density							
U-NII-3: 5725-5850MHz							
Operating mode	Test Channel	ANT 0 dBm/300kHz	ANT 1 dBm/300kHz	Factor	ANT 0 dBm/500kHz*	ANT 1 dBm/500kHz*	Limit dBm/500kHz
802.11a	5745	0.752	0.407	2.22	2.972	2.627	30
	5785	0.971	0.947	2.22	3.191	3.167	30
	5825	0.821	3.322	2.22	3.041	5.542	30

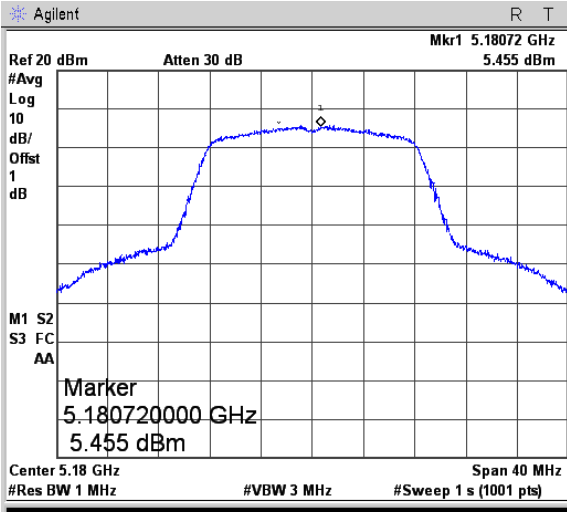
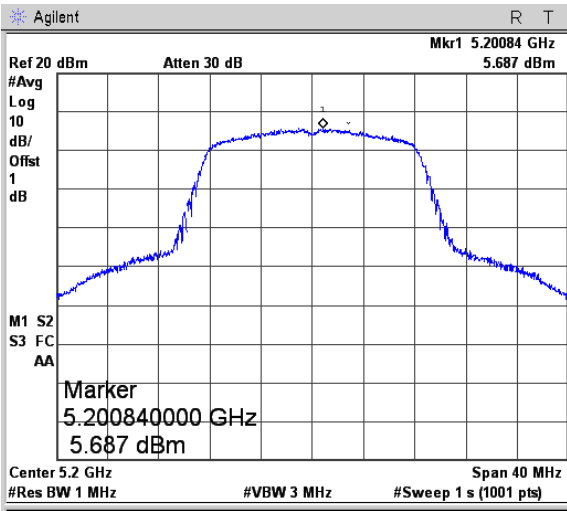
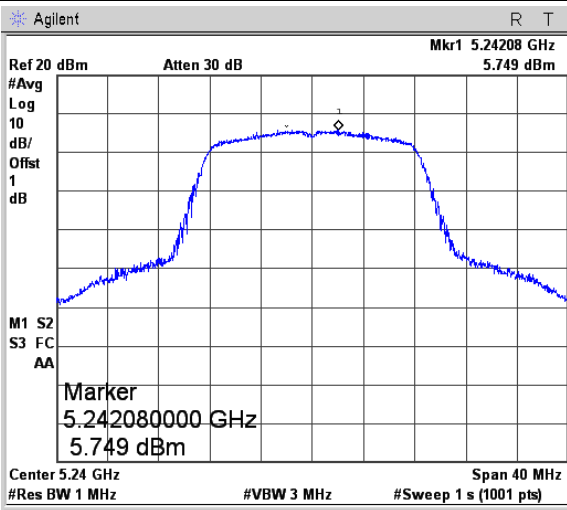
*Note: Maximum PSD=PSD(dBm/300kHz)+10log(500kHz/300kHz)=2.22

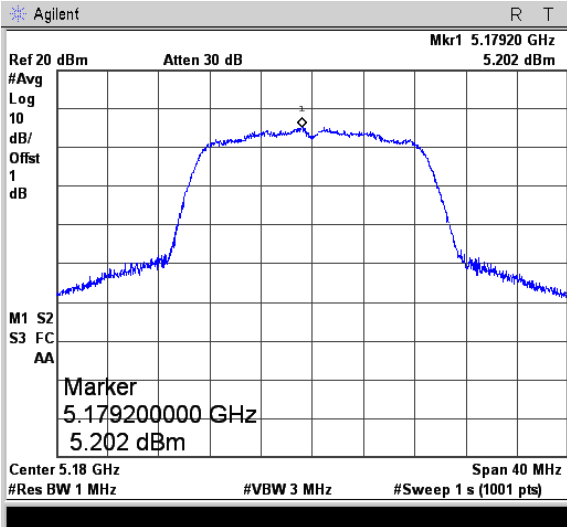
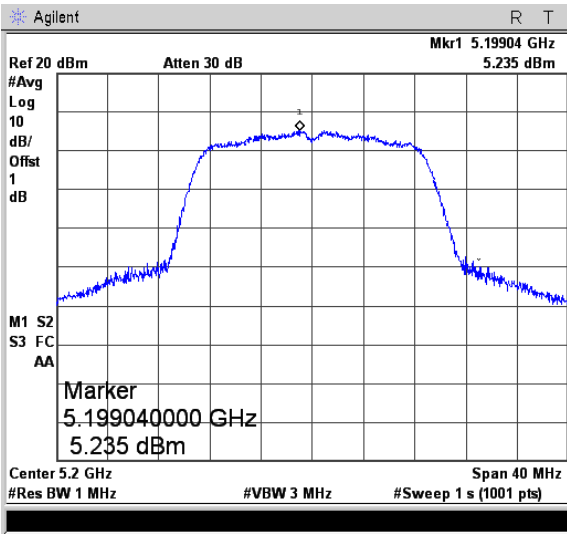
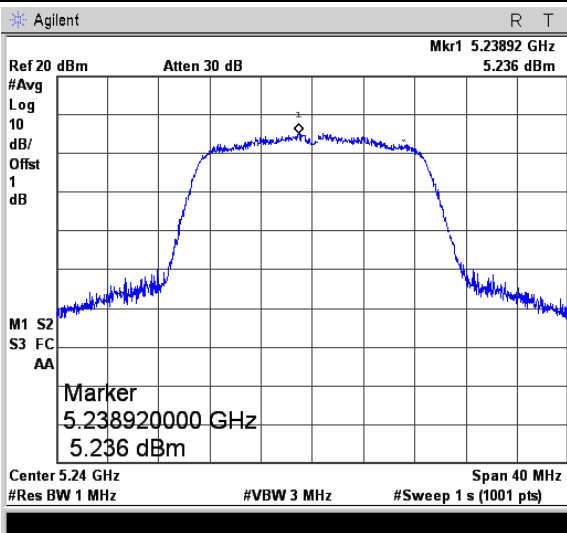
Power Spectral Density							
U-NII-3: 5725-5850MHz							
Operating mode	Test Channel	ANT 0 dBm/300kHz	ANT 1 dBm/300kHz	Factor	Total dBm/500kHz*	Limit dBm/500kHz	
802.11n-HT20	5745	0.263	-0.530	2.22	5.11	30	
	5785	0.694	0.540	2.22	5.85	30	
	5825	0.048	0.289	2.22	5.40	30	
802.11n HT40	5755	-4.782	-4.235	2.22	0.73	30	
	5795	-4.670	-4.859	2.22	0.47	30	
802.11ac VH80	5775	-8.205	-8.733	2.22	-3.23	30	

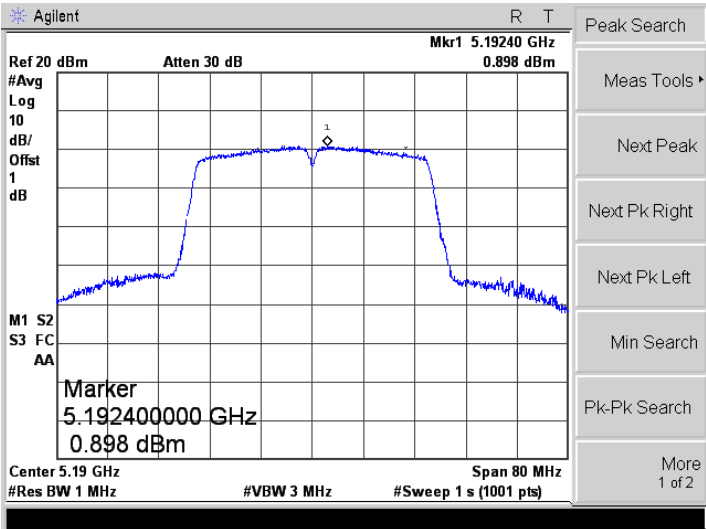
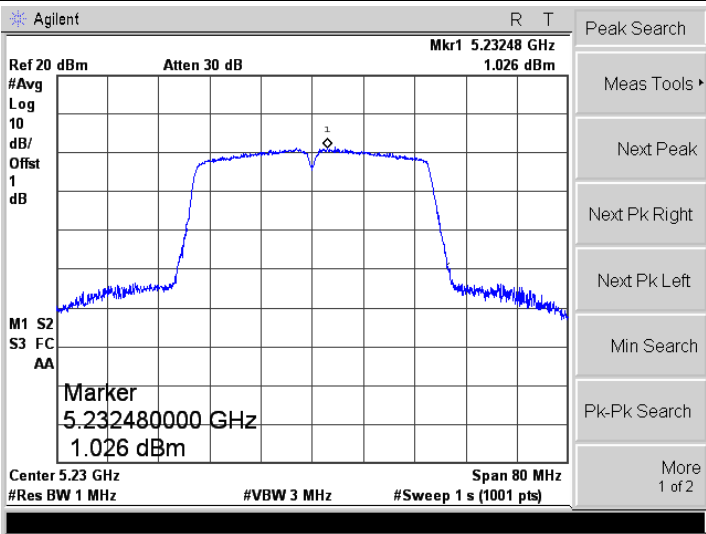
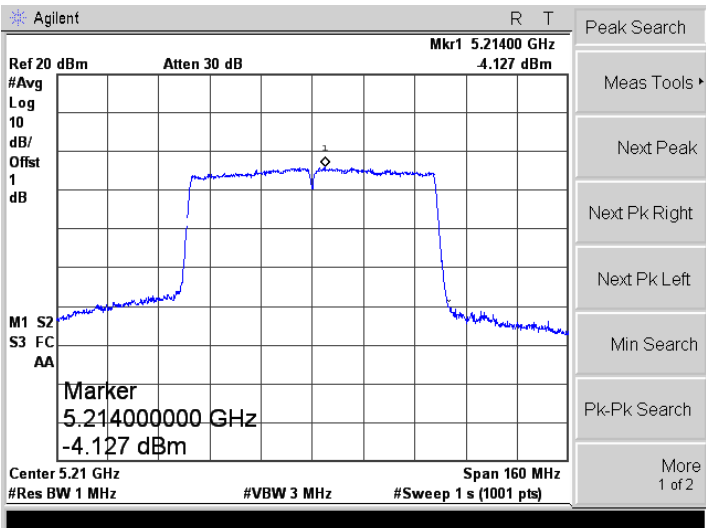
*Note: Maximum PSD=PSD(dBm/300kHz)+10log(500kHz/300kHz)=2.22

ANT 0

5150-5250MHz

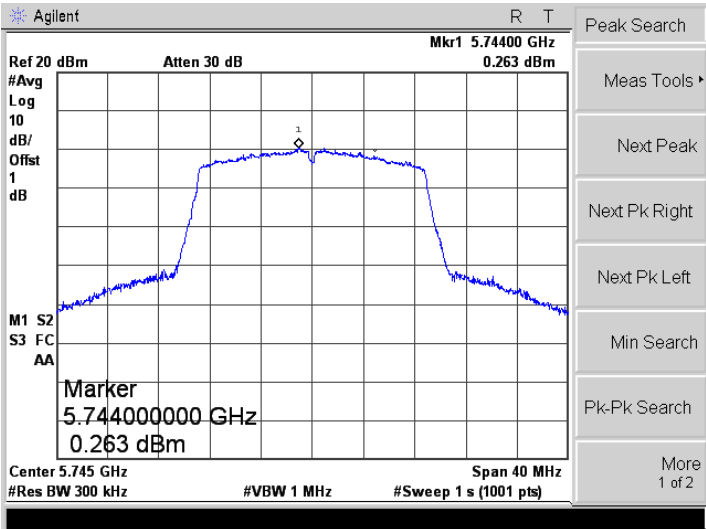
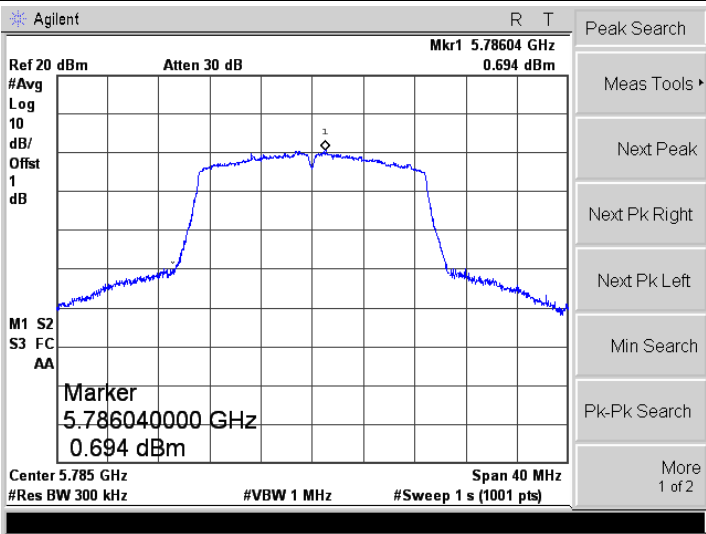
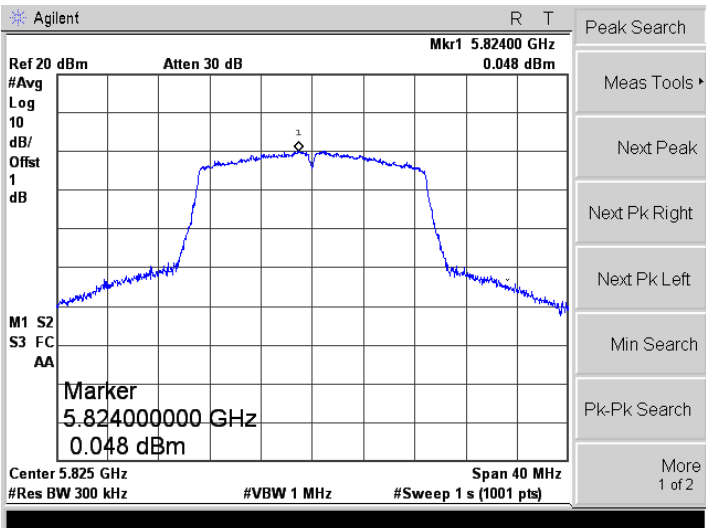
<p>802.11a-Low</p>	 <p>Agilent R T</p> <p>Ref 20 dBm Atten 30 dB Mkr1 5.18072 GHz 5.455 dBm</p> <p>#Avg 10 Log dB/Offst 1 dB</p> <p>M1 S2 S3 FC AA</p> <p>Marker 5.180720000 GHz 5.455 dBm</p> <p>Center 5.18 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts)</p> <p>Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2</p>
<p>802.11a-Middle</p>	 <p>Agilent R T</p> <p>Ref 20 dBm Atten 30 dB Mkr1 5.20084 GHz 5.687 dBm</p> <p>#Avg 10 Log dB/Offst 1 dB</p> <p>M1 S2 S3 FC AA</p> <p>Marker 5.200840000 GHz 5.687 dBm</p> <p>Center 5.2 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 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>802.11a-High</p>	 <p>Agilent R T</p> <p>Ref 20 dBm Atten 30 dB Mkr1 5.24208 GHz 5.749 dBm</p> <p>#Avg 10 Log dB/Offst 1 dB</p> <p>M1 S2 S3 FC AA</p> <p>Marker 5.242080000 GHz 5.749 dBm</p> <p>Center 5.24 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 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>

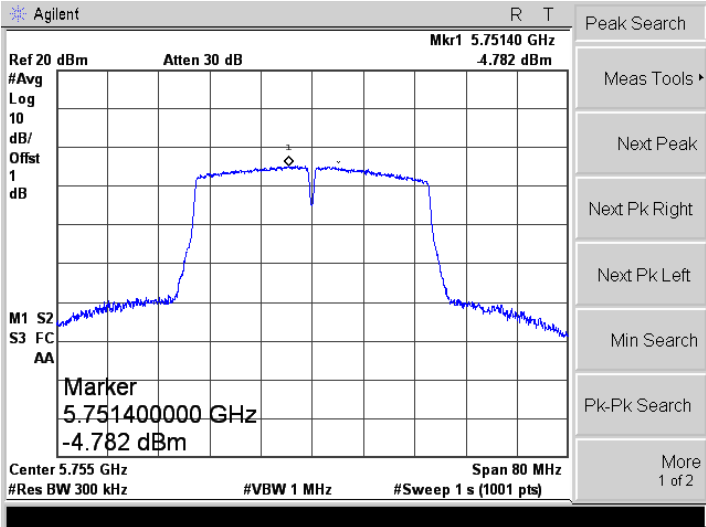
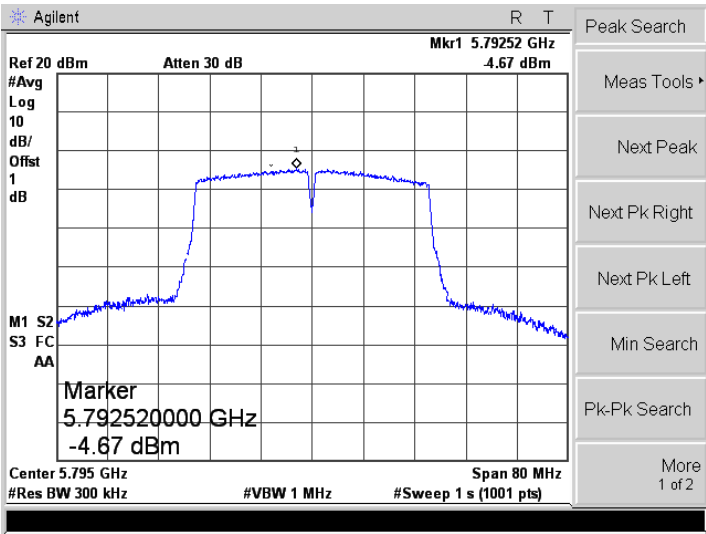
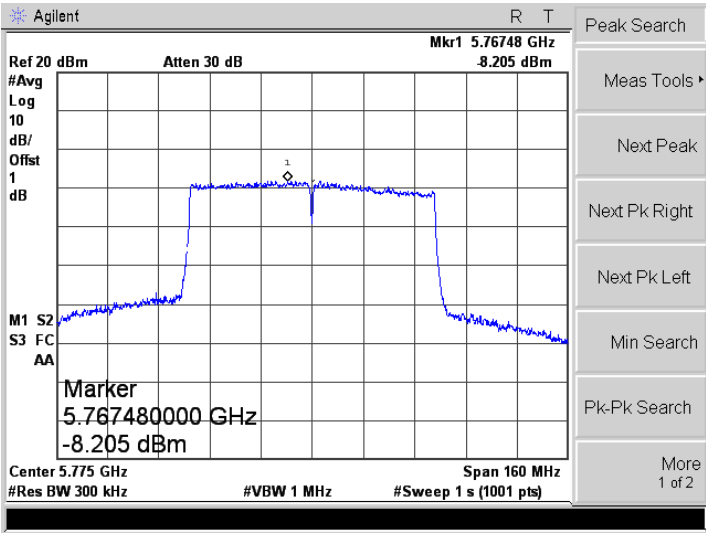
<p>802.11n-HT20-Low</p>	 <p>Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.17920 GHz #Avg 10 Log dB/Offst 1 dB M1 S2 S3 FC AA Marker 5.17920000 GHz 5.202 dBm Center 5.18 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts)</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.19904 GHz #Avg 10 Log dB/Offst 1 dB M1 S2 S3 FC AA Marker 5.19904000 GHz 5.235 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 5.23892 GHz #Avg 10 Log dB/Offst 1 dB M1 S2 S3 FC AA Marker 5.23892000 GHz 5.236 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>802.11a-Middle</p>	
<p>802.11a-High</p>	

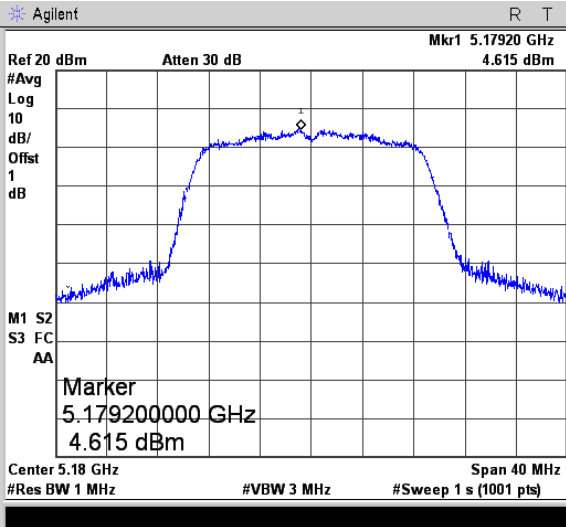
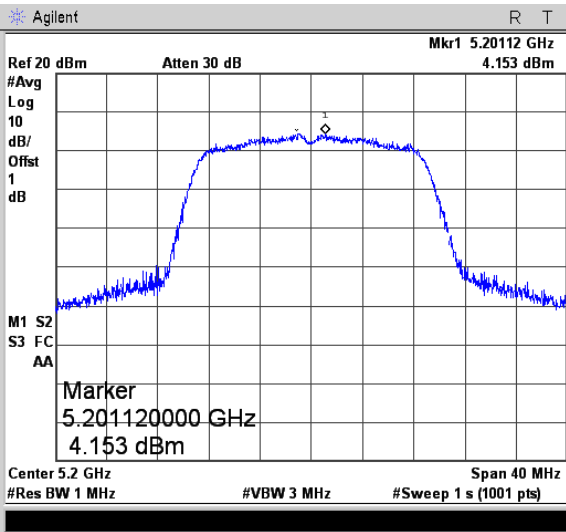
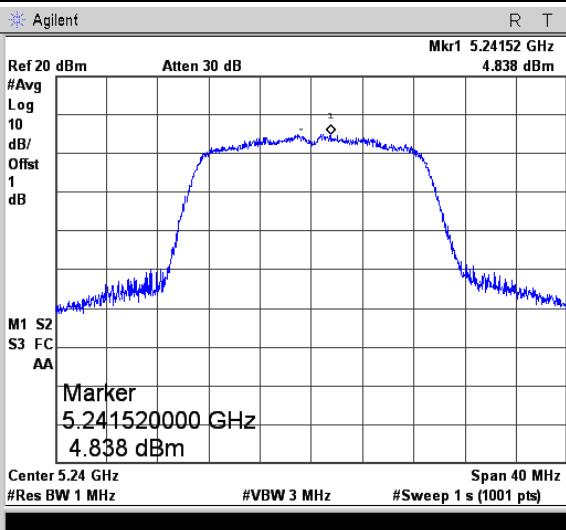
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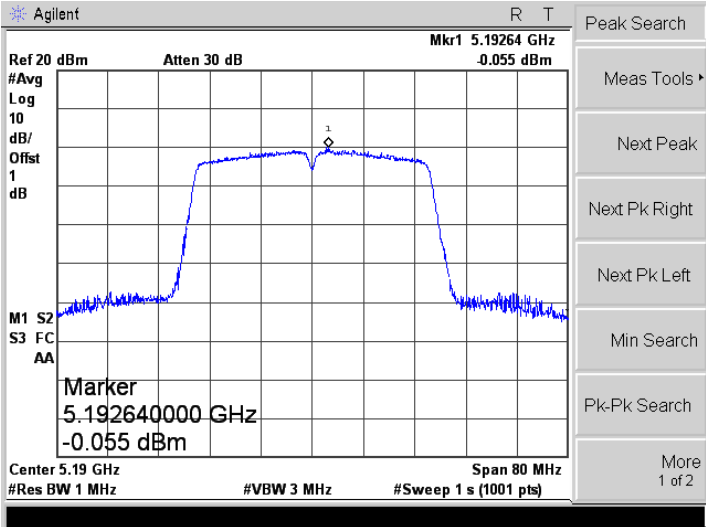
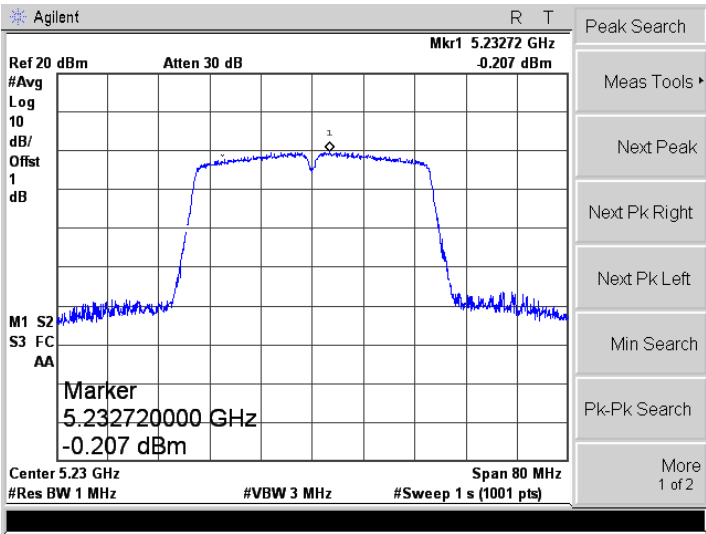
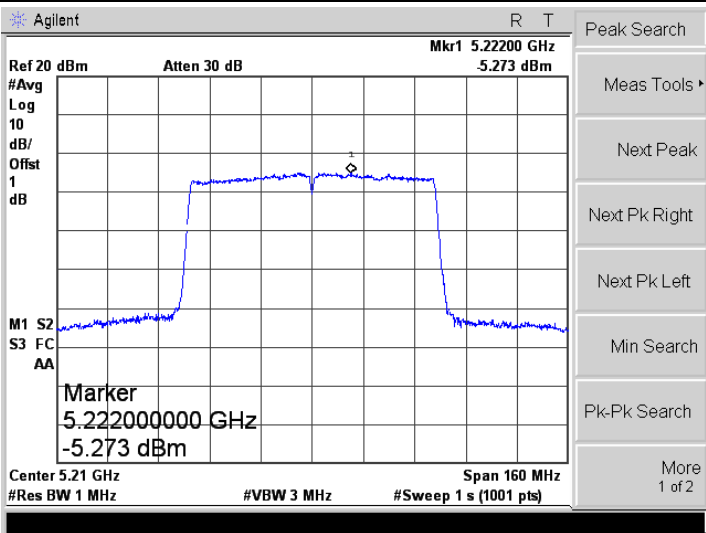
<p>802.11n-HT40-Low</p>	 <p>Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.75140 GHz -4.782 dBm #Avg 10 Log dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.75140000 GHz -4.782 dBm Center 5.755 GHz Span 80 MHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts)</p>
<p>802.11n-HT40-High</p>	 <p>Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.79252 GHz -4.67 dBm #Avg 10 Log dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.792520000 GHz -4.67 dBm Center 5.795 GHz Span 80 MHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts)</p>
<p>802.11ac-HT80</p>	 <p>Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.76748 GHz -8.205 dBm #Avg 10 Log dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.767480000 GHz -8.205 dBm Center 5.775 GHz Span 160 MHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts)</p>

ANT 1

5150-5250MHz

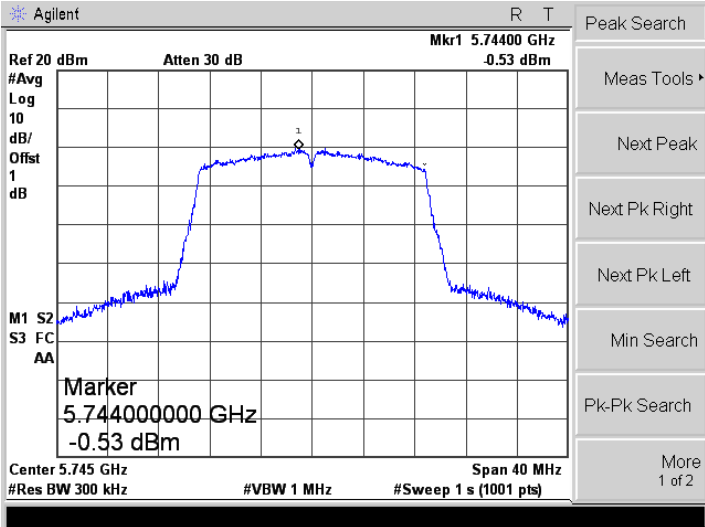
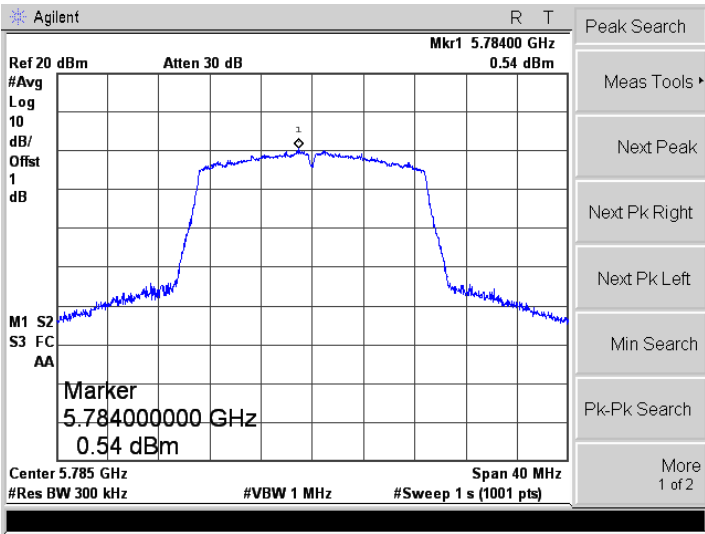
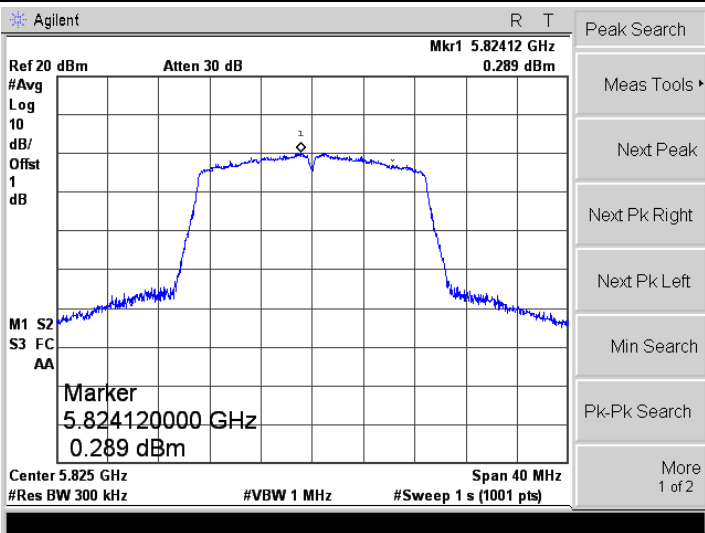
<p>802.11a-Low</p>	<p>Agilent R T</p> <p>Ref 20 dBm Atten 30 dB Mkr1 5.17920 GHz 5.365 dBm</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>M1 S2 S3 FC AA</p> <p>Marker 5.17920000 GHz 5.365 dBm</p> <p>Center 5.18 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts)</p> <p>Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2</p>
<p>802.11a-Middle</p>	<p>Agilent R T</p> <p>Ref 20 dBm Atten 30 dB Mkr1 5.19760 GHz 5.555 dBm</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>M1 S2 S3 FC AA</p> <p>Marker 5.19760000 GHz 5.555 dBm</p> <p>Center 5.2 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 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>802.11a-High</p>	<p>Agilent R T</p> <p>Ref 20 dBm Atten 30 dB Mkr1 5.23940 GHz 5.558 dBm</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>M1 S2 S3 FC AA</p> <p>Marker 5.23940000 GHz 5.558 dBm</p> <p>Center 5.24 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 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>

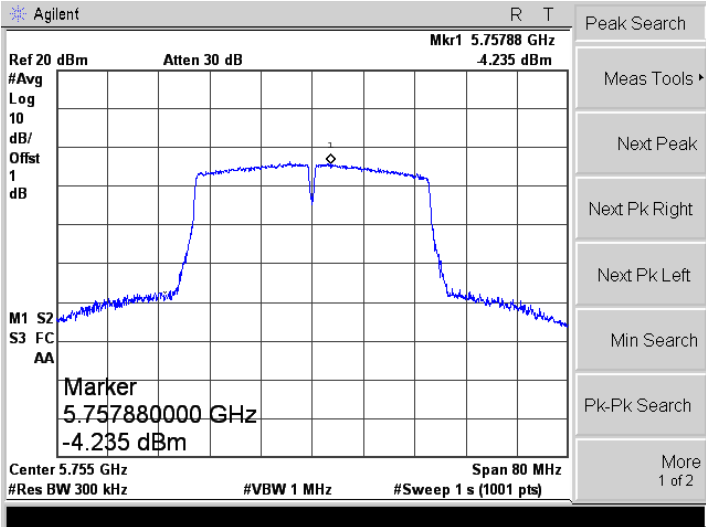
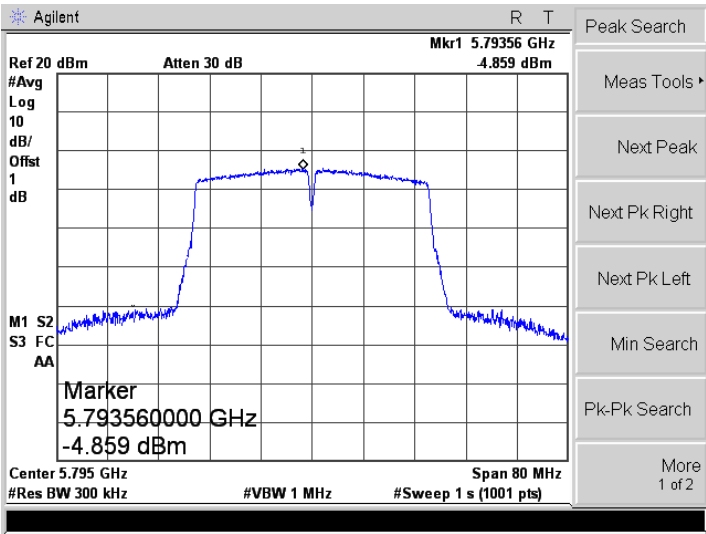
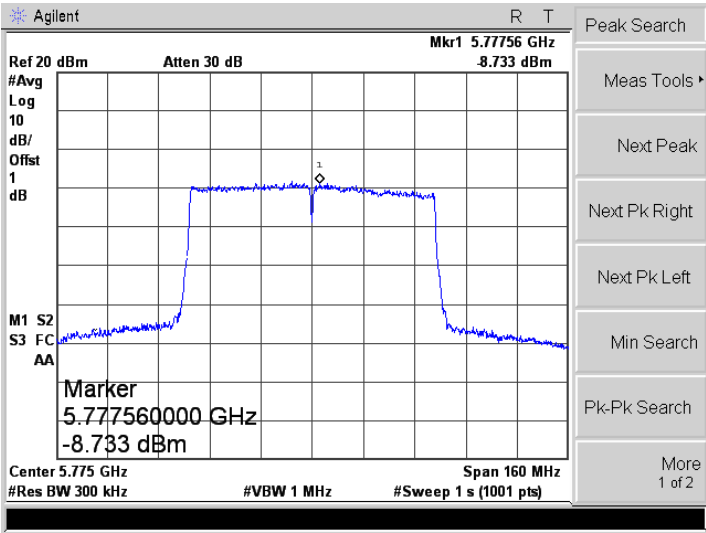
<p>802.11n-HT20-Low</p>	 <p>Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.17920 GHz #Avg 10 Log dB/Offst 1 dB M1 S2 S3 FC AA Marker 5.179200000 GHz 4.615 dBm Center 5.18 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts)</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.20112 GHz #Avg 10 Log dB/Offst 1 dB M1 S2 S3 FC AA Marker 5.201120000 GHz 4.153 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 5.24152 GHz #Avg 10 Log dB/Offst 1 dB M1 S2 S3 FC AA Marker 5.241520000 GHz 4.838 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</p> <p>Ref 20 dBm Atten 30 dB Mkr1 5.74416 GHz 0.407 dBm</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>M1 S2 S3 FC AA</p> <p>Marker 5.744160000 GHz 0.407 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>802.11a-Middle</p>	<p>Agilent R T</p> <p>Ref 20 dBm Atten 30 dB Mkr1 5.78448 GHz 0.947 dBm</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>M1 S2 S3 FC AA</p> <p>Marker 5.784480000 GHz 0.947 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>802.11a-High</p>	<p>Agilent R T</p> <p>Ref 20 dBm Atten 30 dB Mkr1 5.82496 GHz 3.322 dBm</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>M1 S2 S3 FC AA</p> <p>Marker 5.824960000 GHz 3.322 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-HT20-Low</p>	
<p>802.11n-HT20-Middle</p>	
<p>802.11n-HT20-High</p>	

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

APPENDIX B**Emission Bandwidth and Occupied Bandwidth**

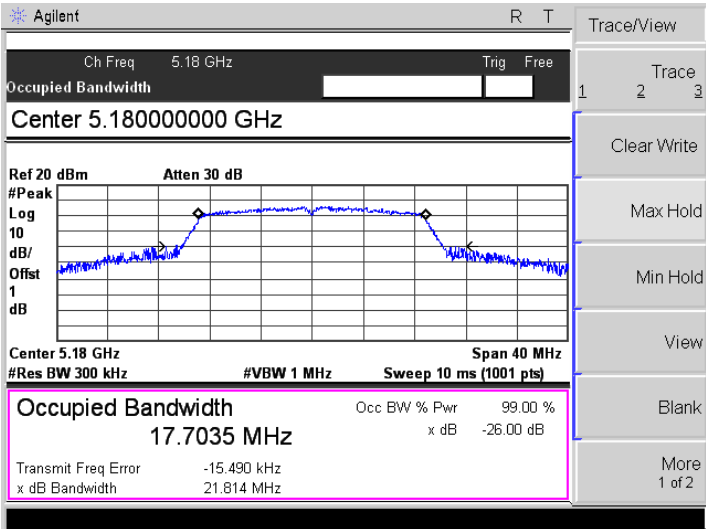
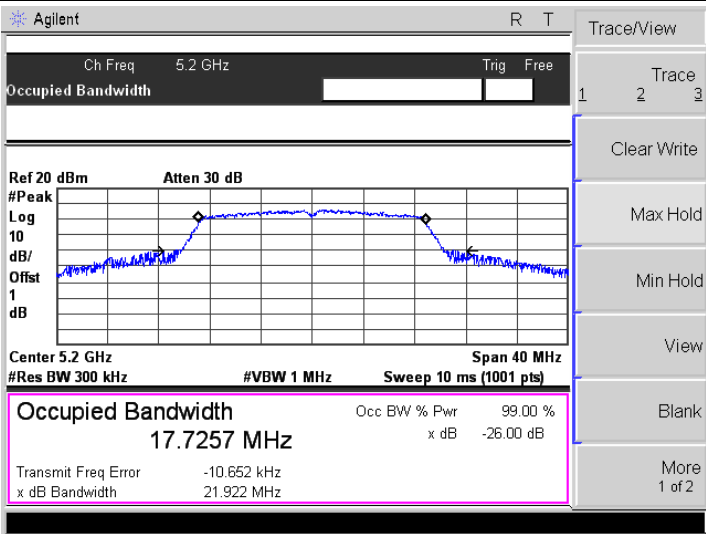
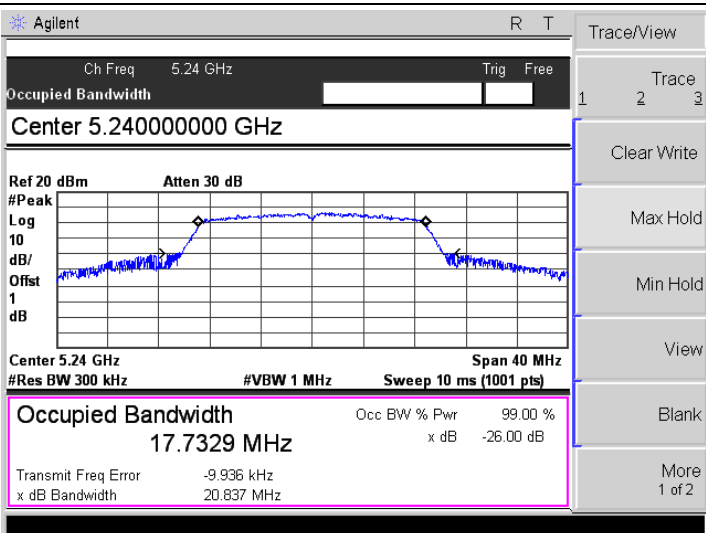
U-NII-1:5150-5250MHz						
Test Mode	Test Channel MHz	ANT 0		ANT 1		Result
		26 dB Bandwidth MHz	99% Bandwidth MHz	26 dB Bandwidth MHz	99% Bandwidth MHz	
802.11a	5180	24.640	16.895	24.896	16.946	Pass
	5200	24.588	16.837	24.667	16.908	Pass
	5240	24.594	16.817	24.609	16.833	Pass
802.11n-HT20	5180	21.814	17.704	21.926	17.750	Pass
	5200	21.922	17.726	22.015	17.713	Pass
	5240	20.837	17.733	21.933	17.725	Pass
802.11n-HT40	5190	40.669	36.145	40.048	36.104	Pass
	5230	40.762	36.115	40.137	36.093	Pass
802.11ac-HT80	5210	82.153	75.918	82.122	75.898	Pass

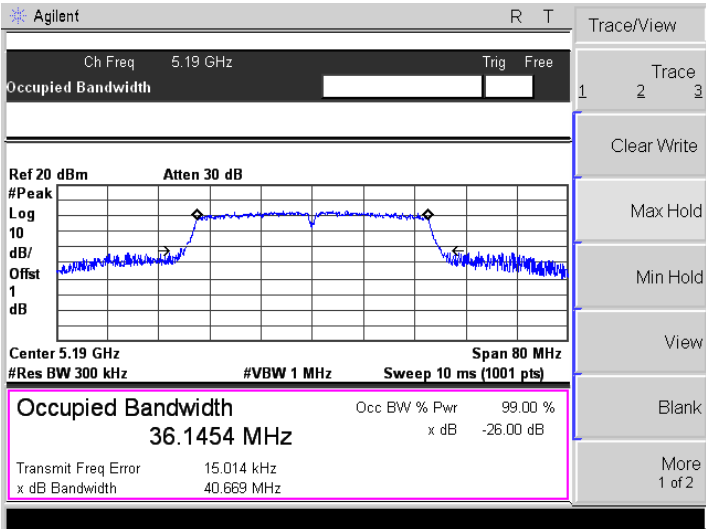
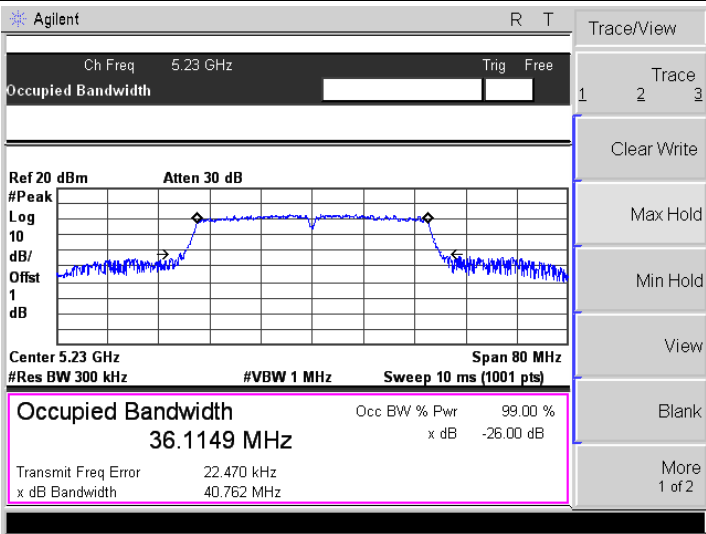
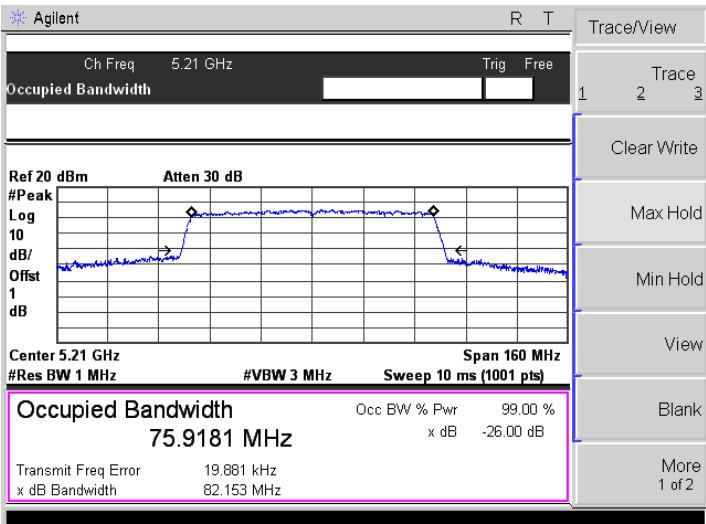
U-NII-3: 5725-5850MHz						
Test Mode	Test Channel MHz	ANT 0		ANT 1		Limit kHz
		6 dB Bandwidth MHz	99% Bandwidth MHz	6 dB Bandwidth MHz	99% Bandwidth MHz	
802.11a	5745	16.305	16.784	15.486	16.772	≥500
	5785	15.128	16.945	15.005	16.769	≥500
	5825	15.163	16.924	15.086	16.814	≥500
802.11n-HT20	5745	15.152	17.788	15.471	17.756	≥500
	5785	15.114	17.807	15.102	17.752	≥500
	5825	15.110	17.755	15.236	17.745	≥500
802.11n-HT40	5755	35.211	36.144	35.218	36.058	≥500
	5795	35.011	36.165	35.172	36.095	≥500
802.11ac-HT80	5775	75.922	75.934	76.089	75.855	≥500

ANT 0

5150-5250MHz

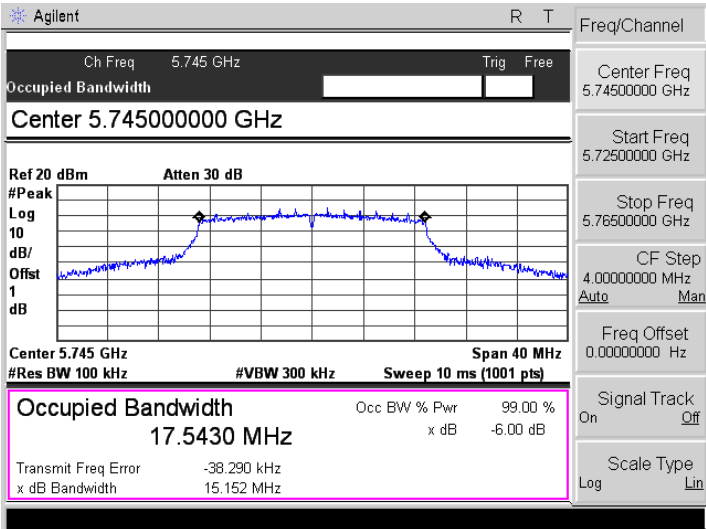
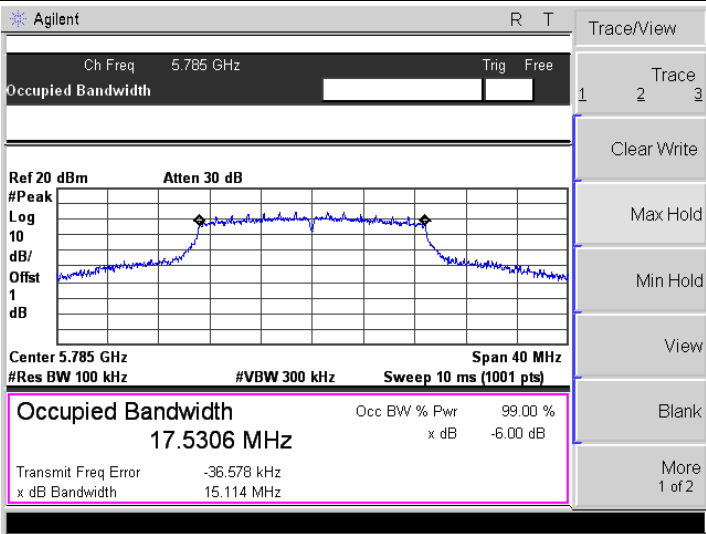
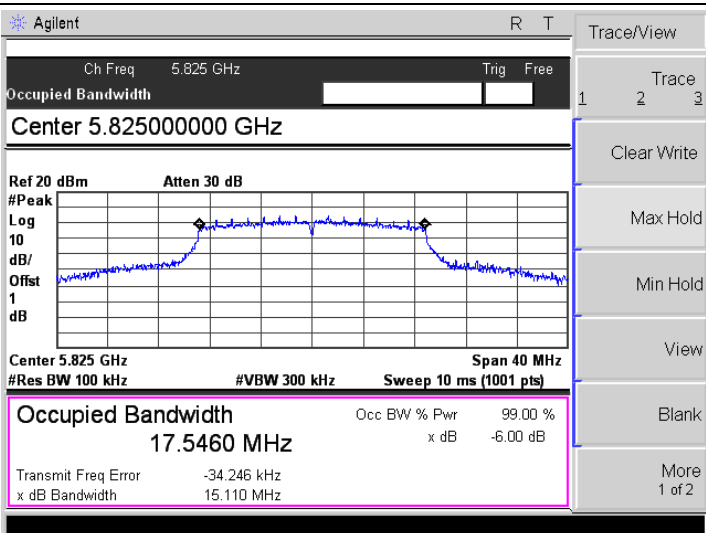
<p>802.11a-Low</p>	<p>Agilent R T Trace/View</p> <p>Ch Freq 5.18 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offset 1 dB</p> <p>Center 5.18 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.8946 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -18.026 kHz x dB Bandwidth 24.640 MHz</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 16.8366 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -32.172 kHz x dB Bandwidth 24.588 MHz</p>
<p>802.11a-High</p>	<p>Agilent R T Trace/View</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 16.8172 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -21.720 kHz x dB Bandwidth 24.594 MHz</p>

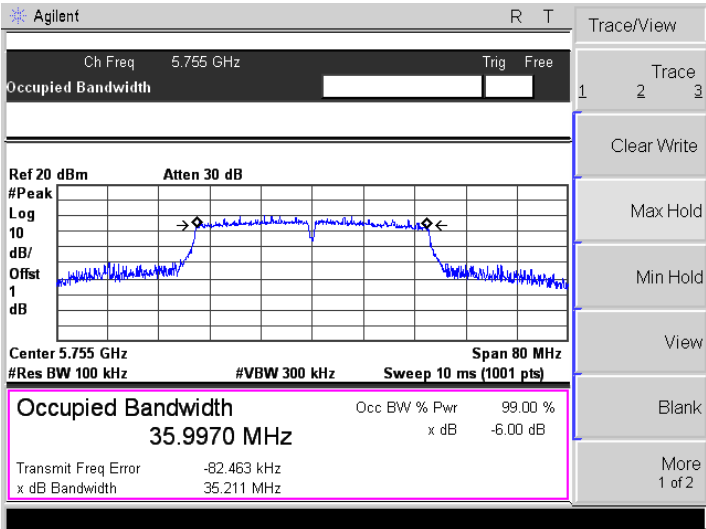
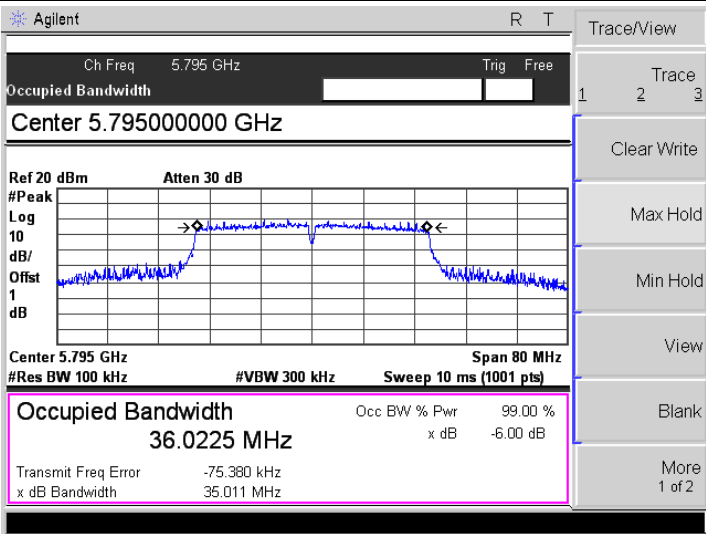
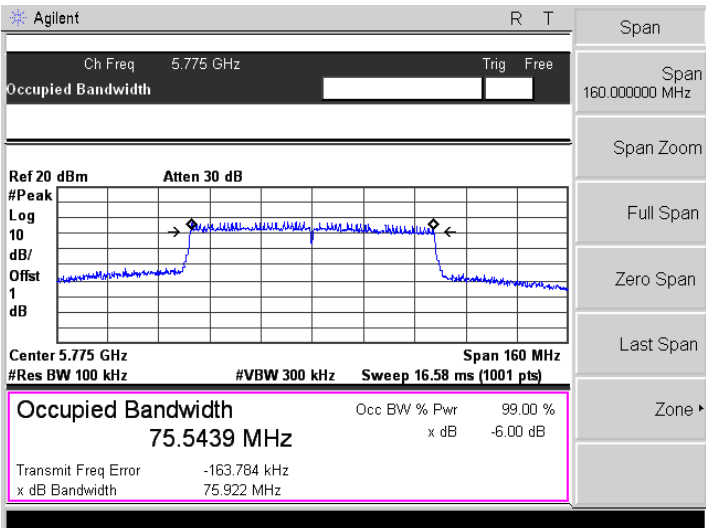
<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.18 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.18000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>10 dB/</p> <p>Offst</p> <p>1 dB</p> <p>Center 5.18 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7035 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -15.490 kHz</p> <p>x dB Bandwidth 21.814 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-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 5.2 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.2 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 5.2 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7257 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -10.652 kHz</p> <p>x dB Bandwidth 21.922 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-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</p> <p>Log</p> <p>10 dB/</p> <p>Offst</p> <p>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 17.7329 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -9.936 kHz</p> <p>x dB Bandwidth 20.837 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-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</p> <p>Log</p> <p>10 dB/</p> <p>Offst</p> <p>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 Occ BW % Pwr 99.00 %</p> <p>36.1454 MHz x dB -26.00 dB</p> <p>Transmit Freq Error 15.014 kHz</p> <p>x dB Bandwidth 40.669 MHz</p> <p>Trace/View</p> <p>1 Trace 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-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</p> <p>Log</p> <p>10 dB/</p> <p>Offst</p> <p>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 Occ BW % Pwr 99.00 %</p> <p>36.1149 MHz x dB -26.00 dB</p> <p>Transmit Freq Error 22.470 kHz</p> <p>x dB Bandwidth 40.762 MHz</p> <p>Trace/View</p> <p>1 Trace 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11ac-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</p> <p>Log</p> <p>10 dB/</p> <p>Offst</p> <p>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 Occ BW % Pwr 99.00 %</p> <p>75.9181 MHz x dB -26.00 dB</p> <p>Transmit Freq Error 19.881 kHz</p> <p>x dB Bandwidth 82.153 MHz</p> <p>Trace/View</p> <p>1 Trace 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

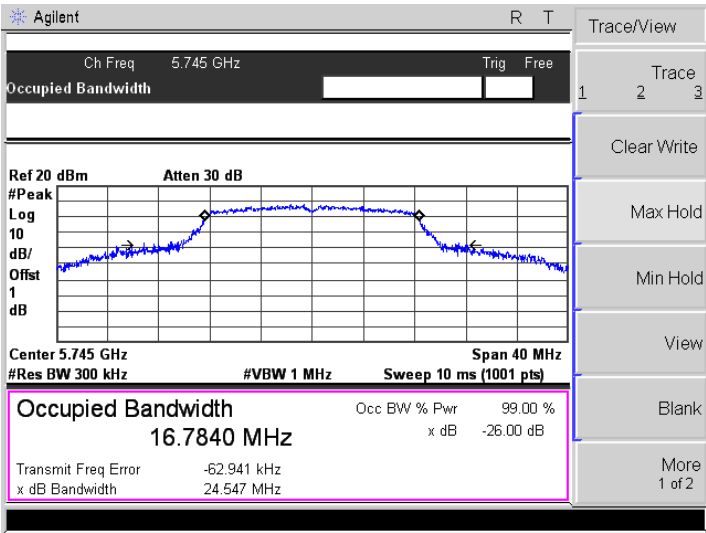
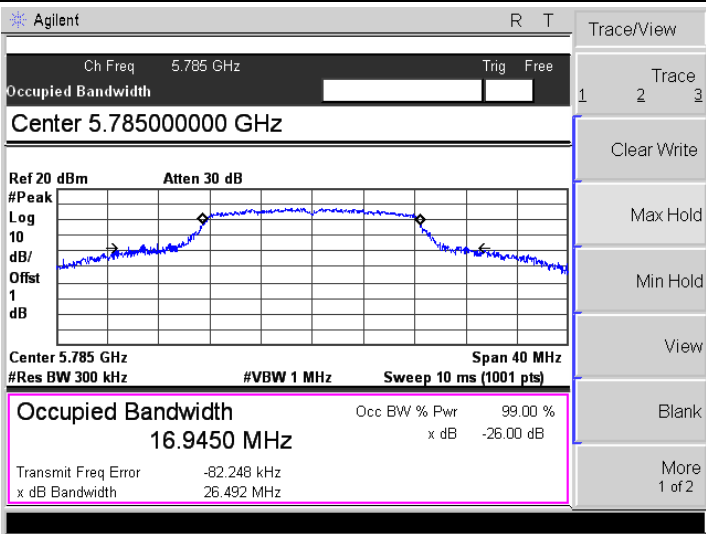
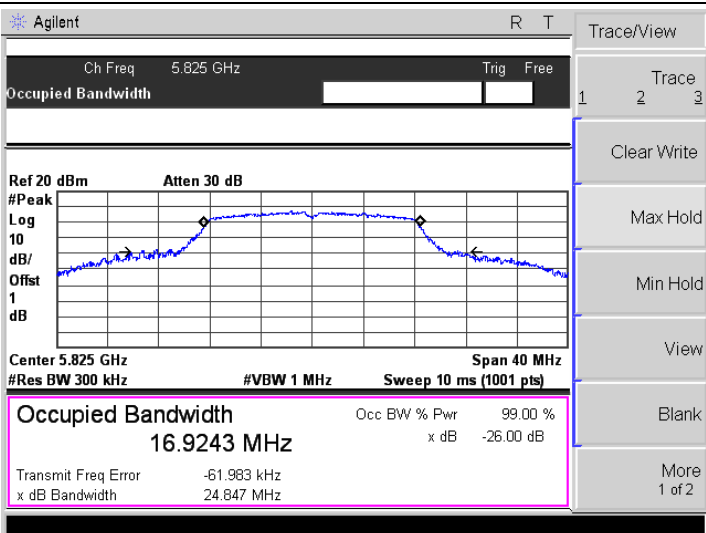
5725-5850MHz
6dB

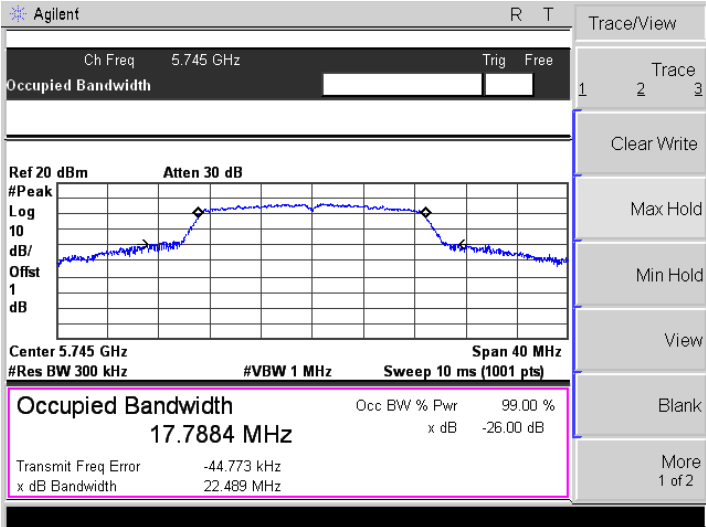
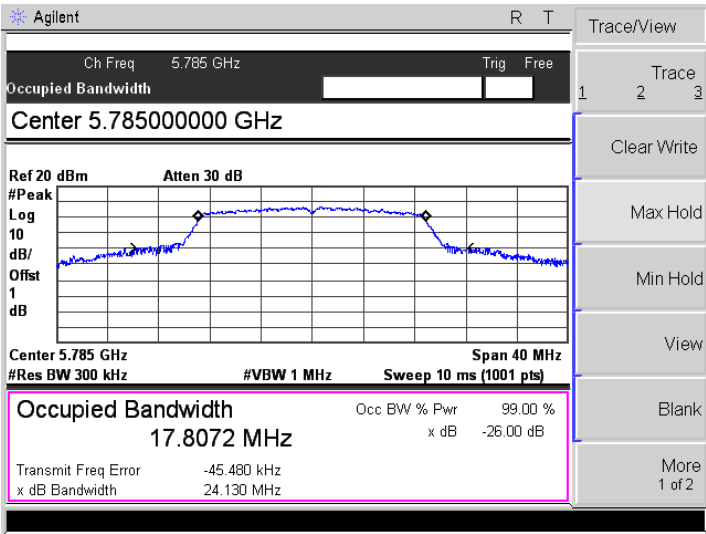
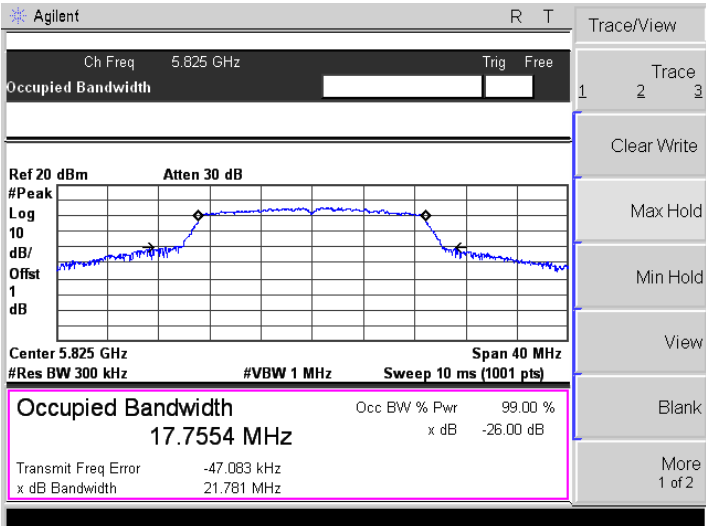
<p>802.11a-Low</p>	<p>Agilent R T Trace/View</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offset 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.4233 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -30.473 kHz x dB Bandwidth 16.305 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 5.785 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 5.785 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.4662 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -47.945 kHz x dB Bandwidth 15.128 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 Trace/View</p> <p>Ch Freq 5.825 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 5.825 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.3930 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -45.355 kHz x dB Bandwidth 15.163 MHz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

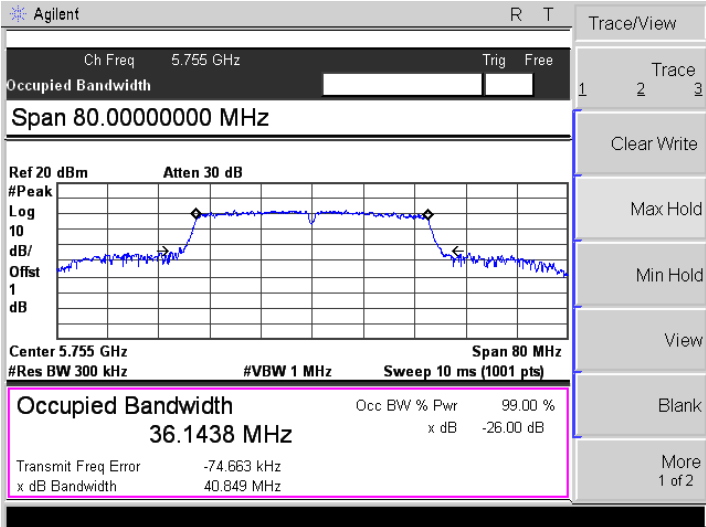
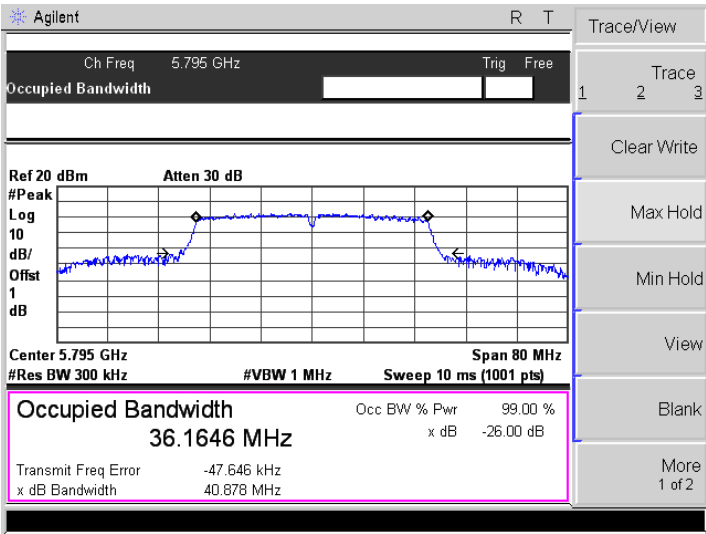
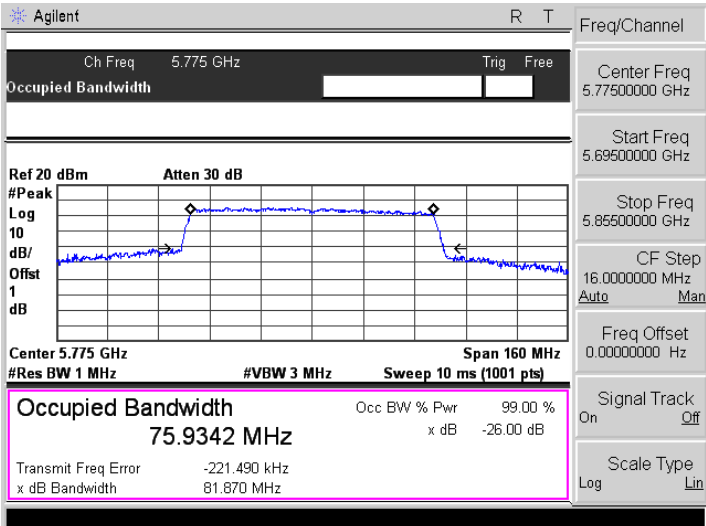
<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.74500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/</p> <p>Offst 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.5430 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -38.290 kHz x dB Bandwidth 15.152 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 5.785 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/</p> <p>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 17.5306 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -36.578 kHz x dB Bandwidth 15.114 MHz</p> <p>Trace/View</p> <p>1 2 3</p> <p>Trace</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-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 10 dB/</p> <p>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 17.5460 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -34.246 kHz x dB Bandwidth 15.110 MHz</p> <p>Trace/View</p> <p>1 2 3</p> <p>Trace</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

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

99%

<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 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.7840 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -62.941 kHz</p> <p>x dB Bandwidth 24.547 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/Offset 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 16.9450 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -82.248 kHz</p> <p>x dB Bandwidth 26.492 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>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 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.9243 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -61.983 kHz</p> <p>x dB Bandwidth 24.847 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>

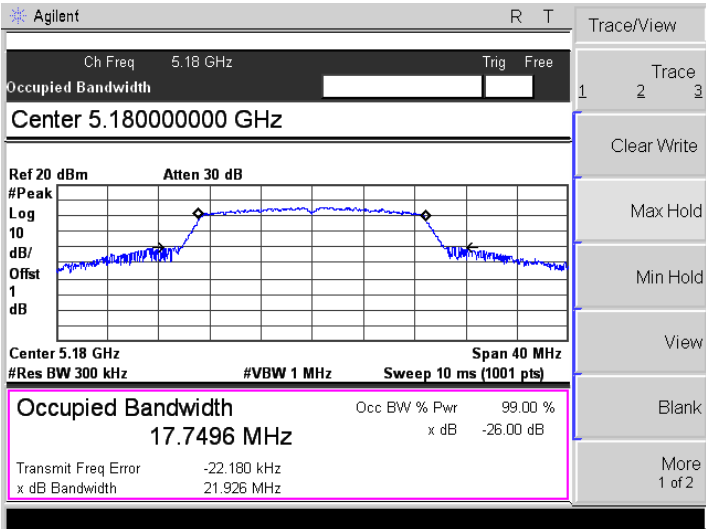
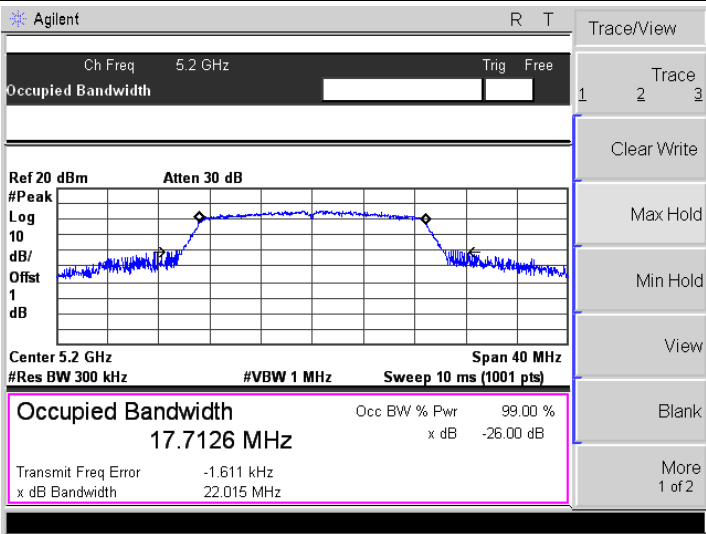
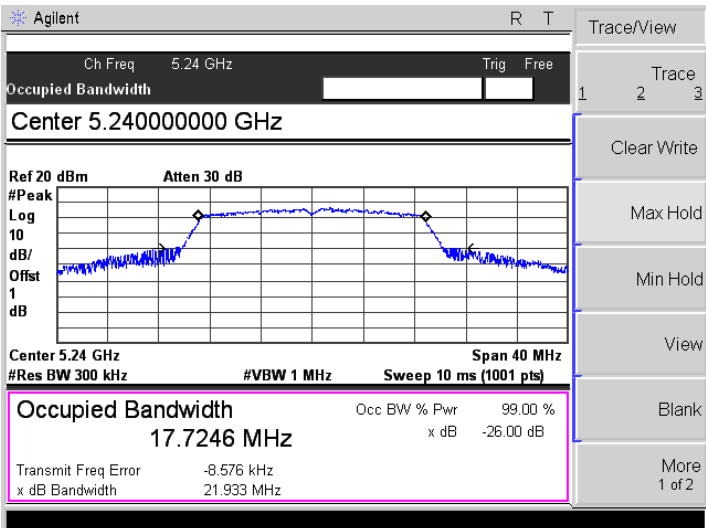
<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7884 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -44.773 kHz x dB Bandwidth 22.489 MHz</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 17.8072 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -45.480 kHz x dB Bandwidth 24.130 MHz</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>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 17.7554 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -47.083 kHz x dB Bandwidth 21.781 MHz</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>Span 80.00000000 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/Offst 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 36.1438 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -74.663 kHz x dB Bandwidth 40.849 MHz</p> <p>Trace/View</p> <p>1 Trace 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-HT40-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.795 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Span 80 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/Offst 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 36.1646 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -47.646 kHz x dB Bandwidth 40.878 MHz</p> <p>Trace/View</p> <p>1 Trace 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11ac-HT80</p>	 <p>Agilent R T</p> <p>Ch Freq 5.775 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Span 160 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/Offst 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 75.9342 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -221.490 kHz x dB Bandwidth 81.870 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>

ANT 1

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 16.9462 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -12.734 kHz x dB Bandwidth 24.896 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 16.9076 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -9.730 kHz x dB Bandwidth 24.667 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 Trace/View</p> <p>Ch Freq 5.24 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 5.24 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.8332 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -18.492 kHz x dB Bandwidth 24.609 MHz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

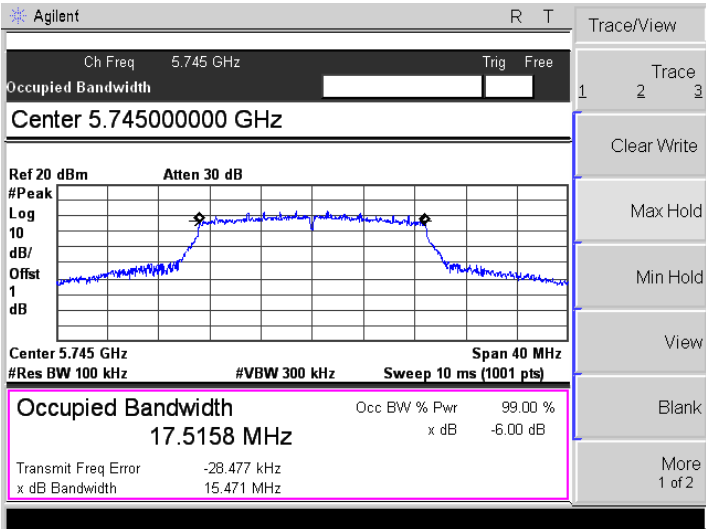
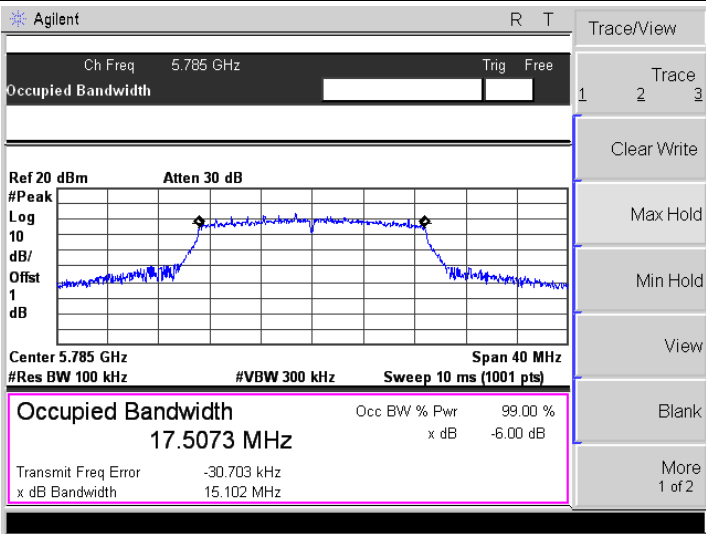
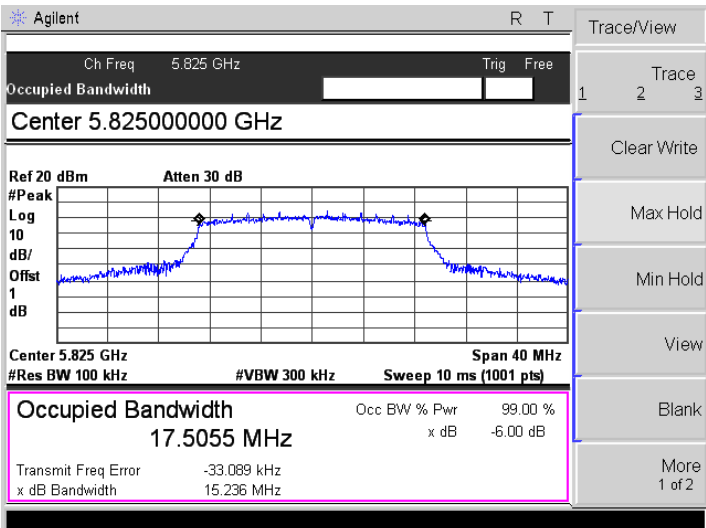
<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.18 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.18000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>10 dB/</p> <p>Offst</p> <p>1 dB</p> <p>Center 5.18 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7496 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -22.180 kHz</p> <p>x dB Bandwidth 21.926 MHz</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</p> <p>Log</p> <p>10 dB/</p> <p>Offst</p> <p>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 17.7126 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -1.611 kHz</p> <p>x dB Bandwidth 22.015 MHz</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</p> <p>Log</p> <p>10 dB/</p> <p>Offst</p> <p>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 17.7246 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -8.576 kHz</p> <p>x dB Bandwidth 21.933 MHz</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/ Offst 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 36.1043 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -8.239 kHz x dB Bandwidth 40.048 MHz</p> <p>Trace/View: 1 Trace 2 3, Clear Write, Max Hold, Min Hold, View, Blank, More 1 of 2</p>
<p>802.11n-HT40-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.23 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.23000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 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 36.0931 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 19.221 kHz x dB Bandwidth 40.137 MHz</p> <p>Trace/View: 1 Trace 2 3, Clear Write, Max Hold, Min Hold, View, Blank, 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/ Offst 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 75.8981 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 38.822 kHz x dB Bandwidth 82.122 MHz</p> <p>Freq/Channel: Center Freq 5.21000000 GHz, Start Freq 5.13000000 GHz, Stop Freq 5.29000000 GHz, CF Step 16.00000000 MHz, Freq Offset 0.00000000 Hz, Signal Track On, Scale Type Log</p>

5725-5850MHz

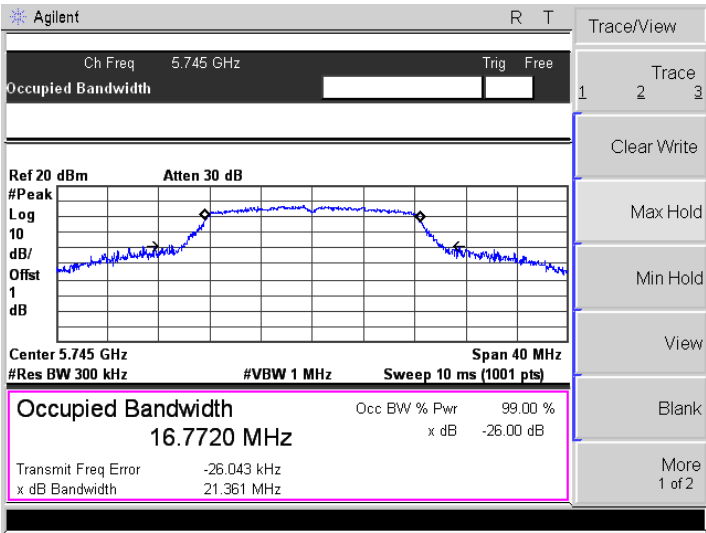
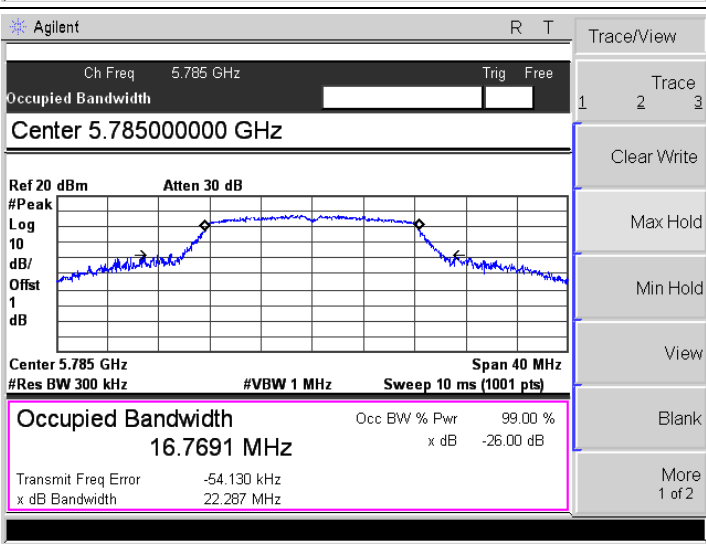
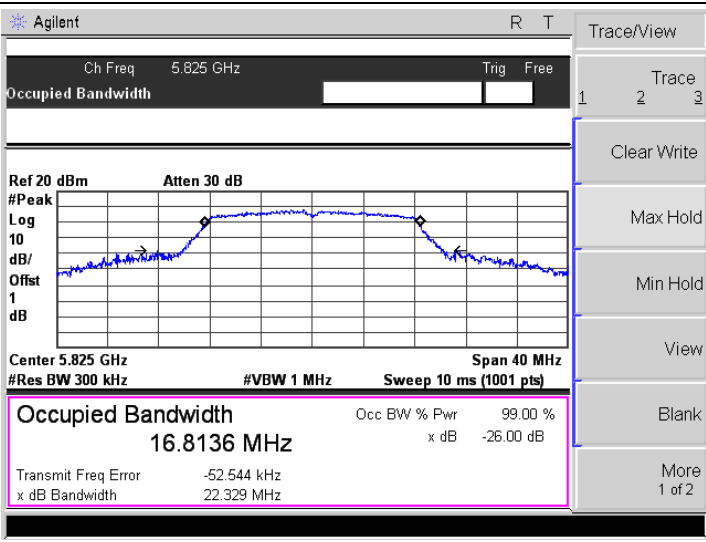
6dB

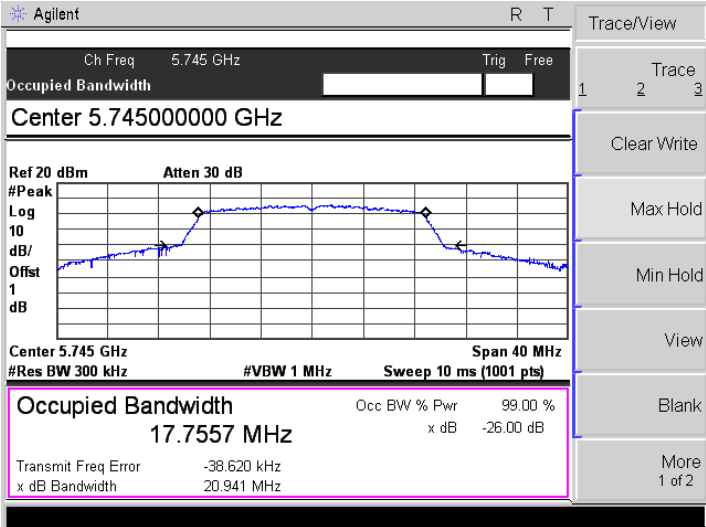
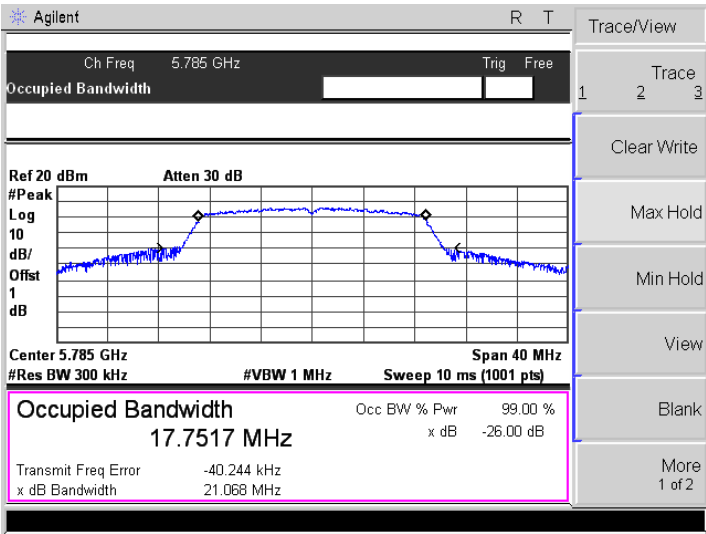
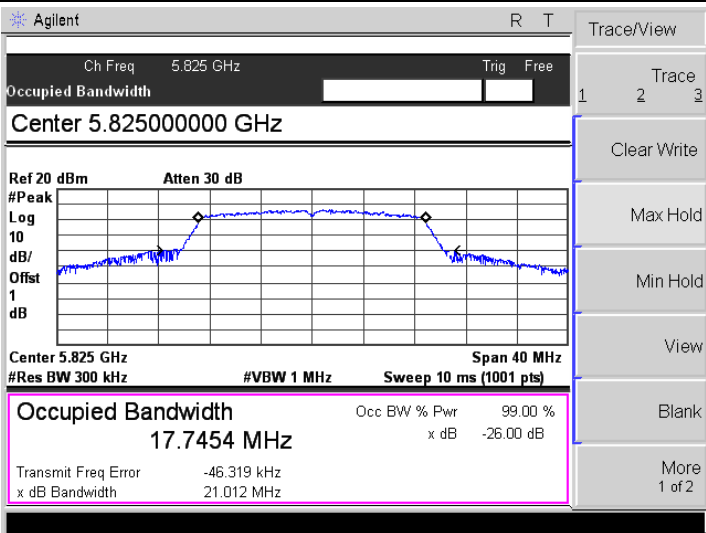
<p>802.11a-Low</p>	<p>Agilent R T Trace/View</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offset 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 %</p> <p>16.3663 MHz x dB -6.00 dB</p> <p>Transmit Freq Error -33.391 kHz</p> <p>x dB Bandwidth 15.486 MHz</p>
<p>802.11a-Middle</p>	<p>Agilent R T Trace/View</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 Occ BW % Pwr 99.00 %</p> <p>16.3683 MHz x dB -6.00 dB</p> <p>Transmit Freq Error -39.510 kHz</p> <p>x dB Bandwidth 15.005 MHz</p>
<p>802.11a-High</p>	<p>Agilent R T Trace/View</p> <p>Ch Freq 5.825 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 5.825 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 %</p> <p>16.3727 MHz x dB -6.00 dB</p> <p>Transmit Freq Error -38.953 kHz</p> <p>x dB Bandwidth 15.086 MHz</p>

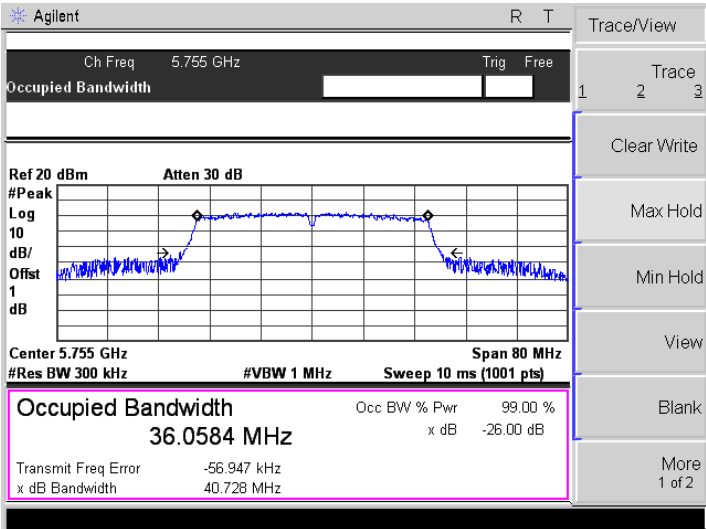
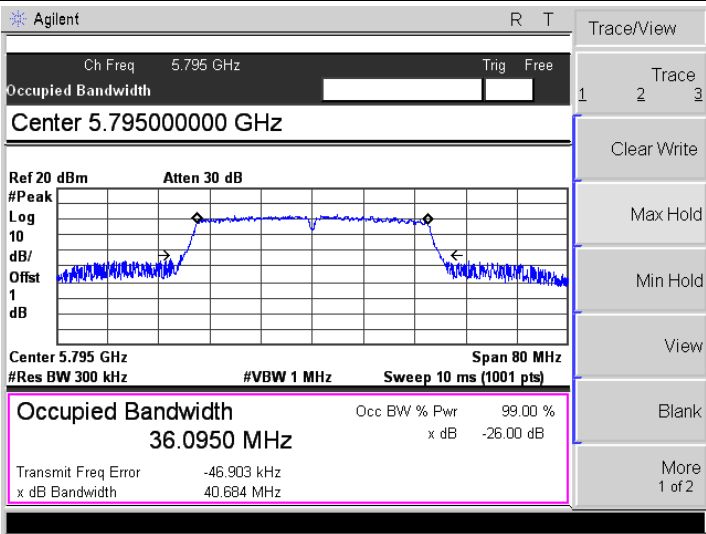
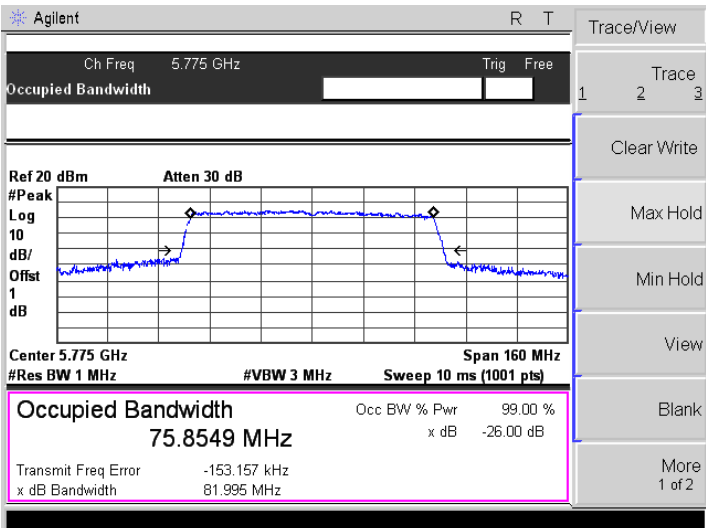
<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.74500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/</p> <p>Offst 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.5158 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -28.477 kHz</p> <p>x dB Bandwidth 15.471 MHz</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 10 dB/</p> <p>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 17.5073 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -30.703 kHz</p> <p>x dB Bandwidth 15.102 MHz</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 10 dB/</p> <p>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 17.5055 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -33.089 kHz</p> <p>x dB Bandwidth 15.236 MHz</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</p> <p>Log 10 dB/</p> <p>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> <table border="1"> <tr> <td colspan="2">Occupied Bandwidth</td> <td>Occ BW % Pwr</td> <td>99.00 %</td> </tr> <tr> <td colspan="2">35.9626 MHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> <tr> <td>Transmit Freq Error</td> <td colspan="3">-64.028 kHz</td> </tr> <tr> <td>x dB Bandwidth</td> <td colspan="3">35.218 MHz</td> </tr> </table> <p>Trace/View</p> <p>1 Trace 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>	Occupied Bandwidth		Occ BW % Pwr	99.00 %	35.9626 MHz		x dB	-6.00 dB	Transmit Freq Error	-64.028 kHz			x dB Bandwidth	35.218 MHz		
Occupied Bandwidth		Occ BW % Pwr	99.00 %														
35.9626 MHz		x dB	-6.00 dB														
Transmit Freq Error	-64.028 kHz																
x dB Bandwidth	35.218 MHz																
<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</p> <p>Log 10 dB/</p> <p>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> <table border="1"> <tr> <td colspan="2">Occupied Bandwidth</td> <td>Occ BW % Pwr</td> <td>99.00 %</td> </tr> <tr> <td colspan="2">35.9591 MHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> <tr> <td>Transmit Freq Error</td> <td colspan="3">-41.193 kHz</td> </tr> <tr> <td>x dB Bandwidth</td> <td colspan="3">35.172 MHz</td> </tr> </table> <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</p> <p>Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>	Occupied Bandwidth		Occ BW % Pwr	99.00 %	35.9591 MHz		x dB	-6.00 dB	Transmit Freq Error	-41.193 kHz			x dB Bandwidth	35.172 MHz		
Occupied Bandwidth		Occ BW % Pwr	99.00 %														
35.9591 MHz		x dB	-6.00 dB														
Transmit Freq Error	-41.193 kHz																
x dB Bandwidth	35.172 MHz																
<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</p> <p>Log 10 dB/</p> <p>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> <table border="1"> <tr> <td colspan="2">Occupied Bandwidth</td> <td>Occ BW % Pwr</td> <td>99.00 %</td> </tr> <tr> <td colspan="2">75.5918 MHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> <tr> <td>Transmit Freq Error</td> <td colspan="3">-69.731 kHz</td> </tr> <tr> <td>x dB Bandwidth</td> <td colspan="3">76.089 MHz</td> </tr> </table> <p>Trace/View</p> <p>1 Trace 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>	Occupied Bandwidth		Occ BW % Pwr	99.00 %	75.5918 MHz		x dB	-6.00 dB	Transmit Freq Error	-69.731 kHz			x dB Bandwidth	76.089 MHz		
Occupied Bandwidth		Occ BW % Pwr	99.00 %														
75.5918 MHz		x dB	-6.00 dB														
Transmit Freq Error	-69.731 kHz																
x dB Bandwidth	76.089 MHz																

99%

<p>802.11a-Low</p>	 <p>Agilent R T Trace/View</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 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 %</p> <p>16.7720 MHz x dB -26.00 dB</p> <p>Transmit Freq Error -26.043 kHz</p> <p>x dB Bandwidth 21.361 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 5.785 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 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 %</p> <p>16.7691 MHz x dB -26.00 dB</p> <p>Transmit Freq Error -54.130 kHz</p> <p>x dB Bandwidth 22.267 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 Trace/View</p> <p>Ch Freq 5.825 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 5.825 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 %</p> <p>16.8136 MHz x dB -26.00 dB</p> <p>Transmit Freq Error -52.544 kHz</p> <p>x dB Bandwidth 22.329 MHz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 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</p> <p>dB/</p> <p>Offst</p> <p>1</p> <p>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 17.7557 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -38.620 kHz</p> <p>x dB Bandwidth 20.941 MHz</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 5.785 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>10</p> <p>dB/</p> <p>Offst</p> <p>1</p> <p>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 17.7517 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -40.244 kHz</p> <p>x dB Bandwidth 21.068 MHz</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</p> <p>dB/</p> <p>Offst</p> <p>1</p> <p>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 17.7454 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -46.319 kHz</p> <p>x dB Bandwidth 21.012 MHz</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</p> <p>Log</p> <p>10 dB/</p> <p>Offst</p> <p>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 36.0584 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -56.947 kHz</p> <p>x dB Bandwidth 40.728 MHz</p> <p>Trace/View</p> <p>1 Trace 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-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</p> <p>Log</p> <p>10 dB/</p> <p>Offst</p> <p>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 36.0950 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -46.903 kHz</p> <p>x dB Bandwidth 40.684 MHz</p> <p>Trace/View</p> <p>1 Trace 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11ac-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</p> <p>Log</p> <p>10 dB/</p> <p>Offst</p> <p>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 75.8549 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -153.157 kHz</p> <p>x dB Bandwidth 81.995 MHz</p> <p>Trace/View</p> <p>1 Trace 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

APPENDIX C

Maximum Conducted Output Power

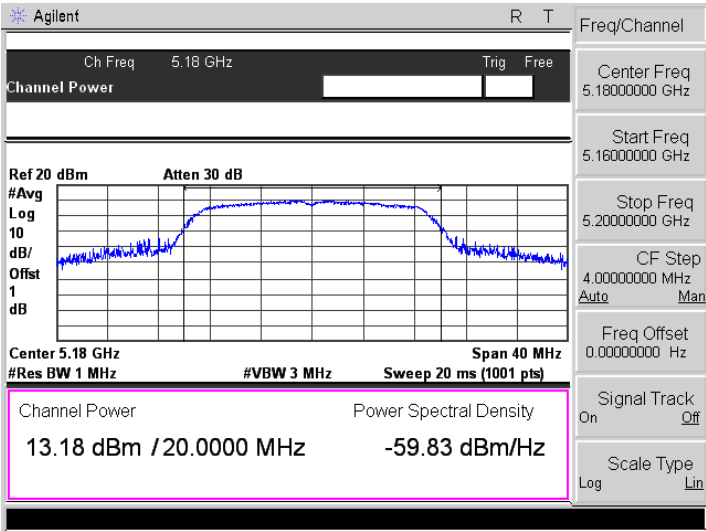
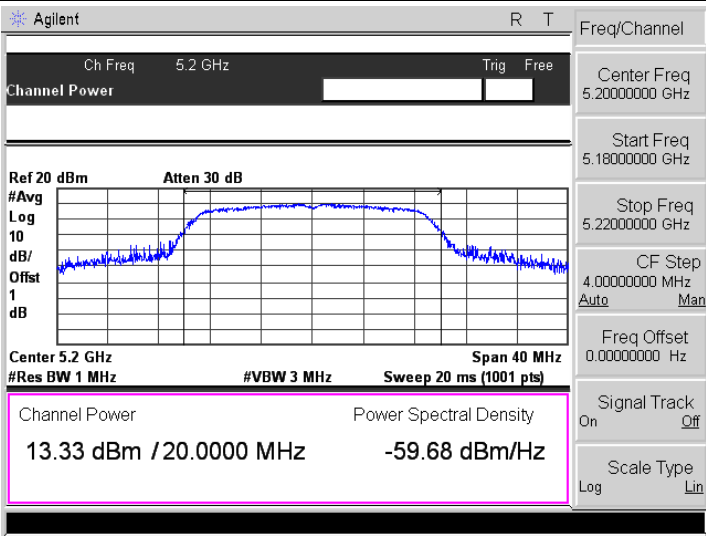
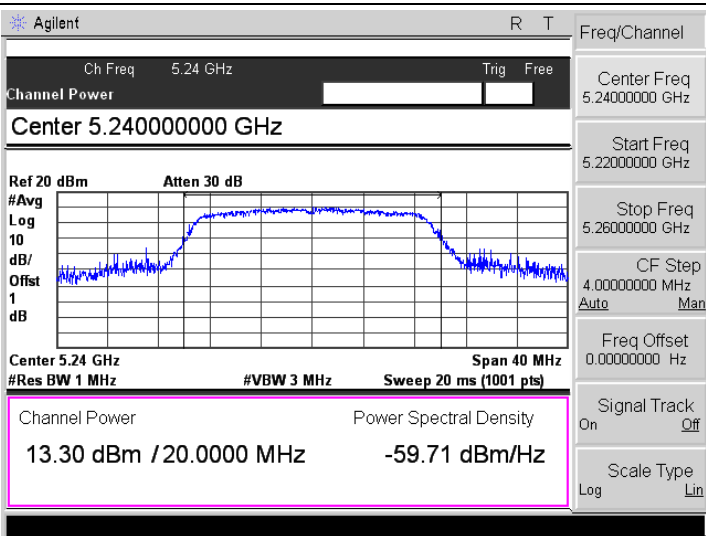
U-NII-1:5150-5250MHz					
Test mode	Frequency MHz	Output Power dBm		Total dBm	Limit dBm
		ANT 0	ANT 1		
802.11a	5180	14.63	14.16	/	23.98
	5200	14.84	14.42	/	23.98
	5240	14.94	14.89	/	23.98
802.11n-HT20	5180	13.18	12.73	15.97	23.98
	5200	13.33	13.01	16.18	23.98
	5240	13.30	13.02	16.17	23.98
802.11n-HT40	5190	13.41	12.16	15.84	23.98
	5230	13.52	12.04	15.85	23.98
802.11ac VH80	5210	12.07	11.12	14.63	23.98

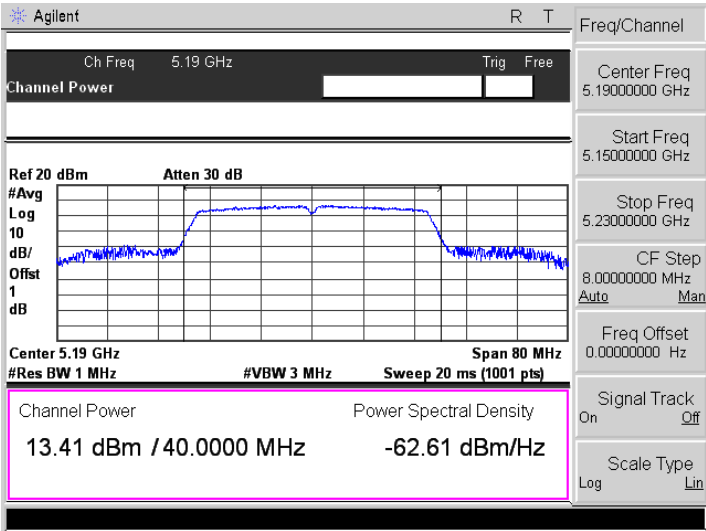
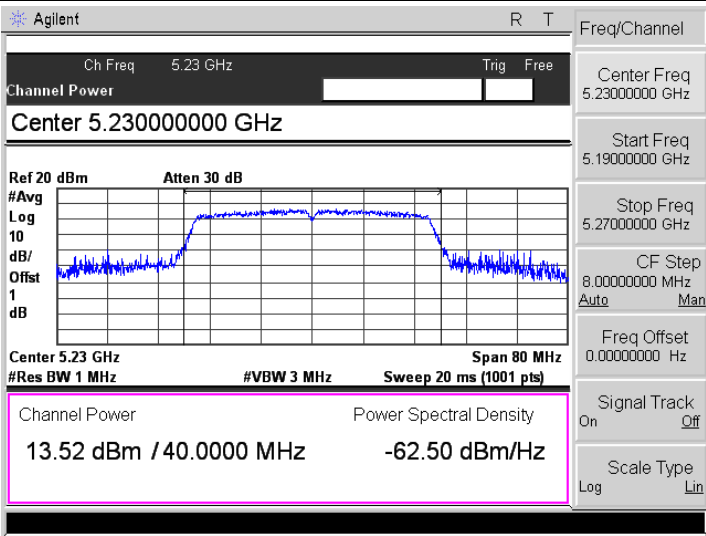
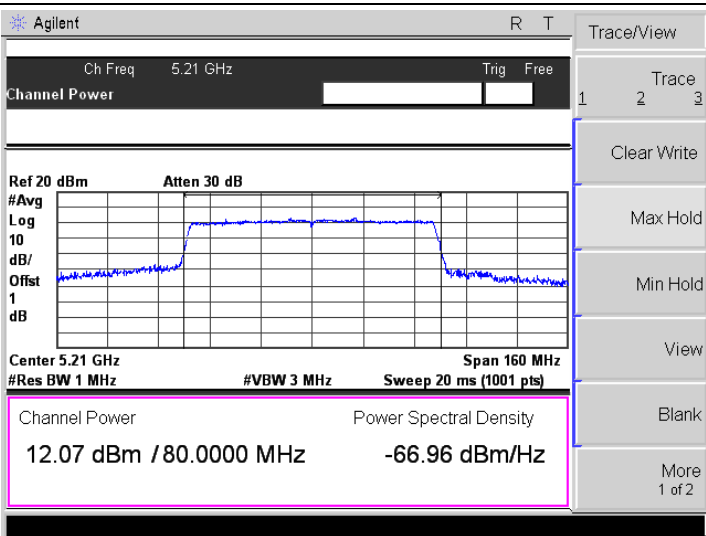
U-NII-3: 5725-5850MHz					
Test mode	Frequency MHz	Output Power dBm		Total dBm	Limit dBm
		ANT 0	ANT 1		
802.11a	5745	14.70	14.41	/	5745
	5785	14.83	14.92	/	5785
	5825	14.57	14.84	/	5825
802.11n-HT20	5745	13.80	13.47	16.65	5745
	5785	13.89	13.62	16.77	5785
	5825	13.28	13.54	16.42	5825
802.11n-HT40	5755	12.38	12.72	15.56	5755
	5795	12.57	12.93	15.76	5795
802.11ac VH80	5775	11.65	11.73	14.70	5775

ANT 0

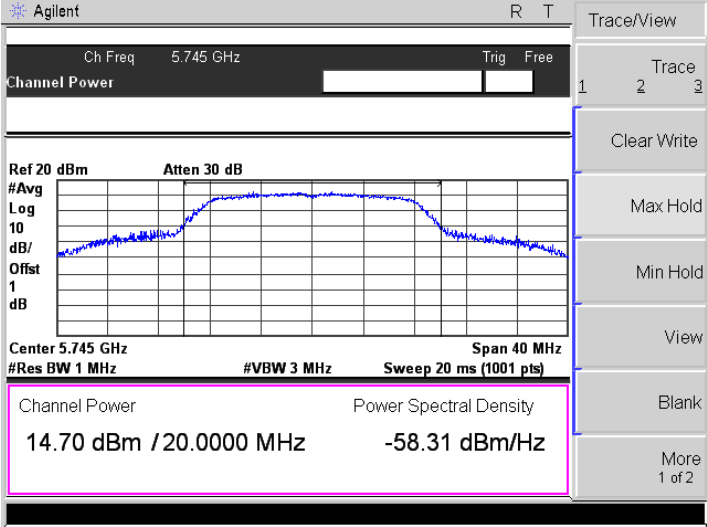
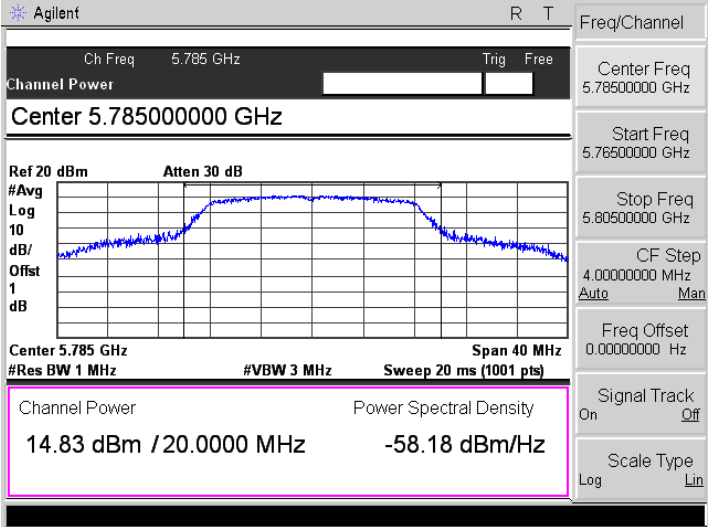
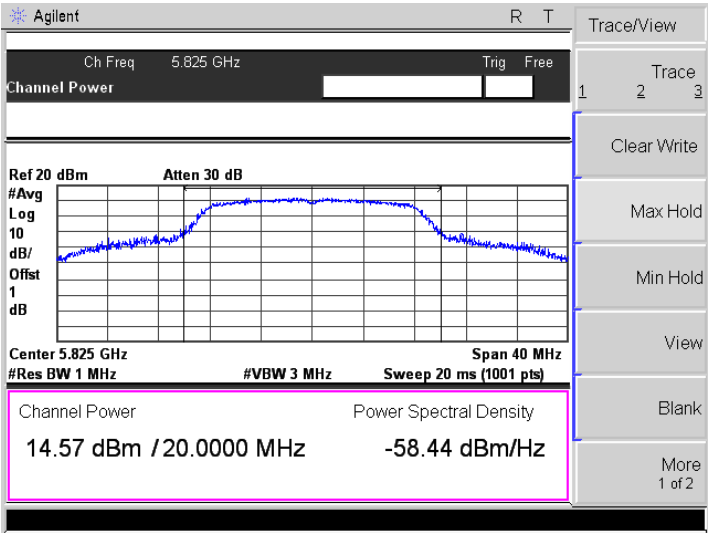
5150-5250MHz

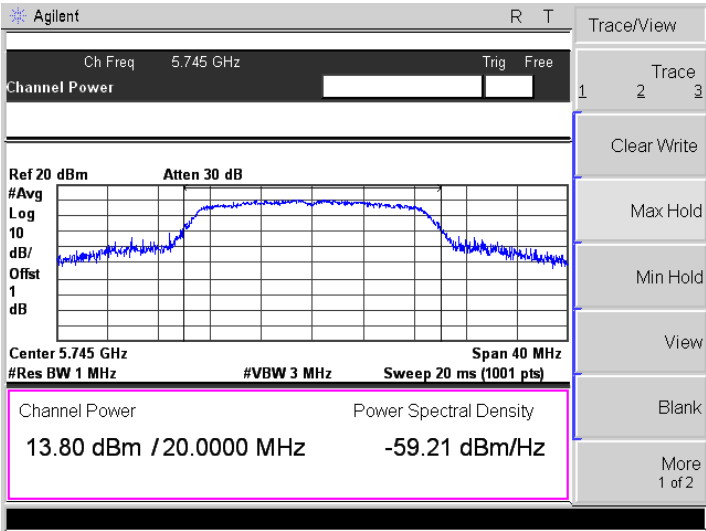
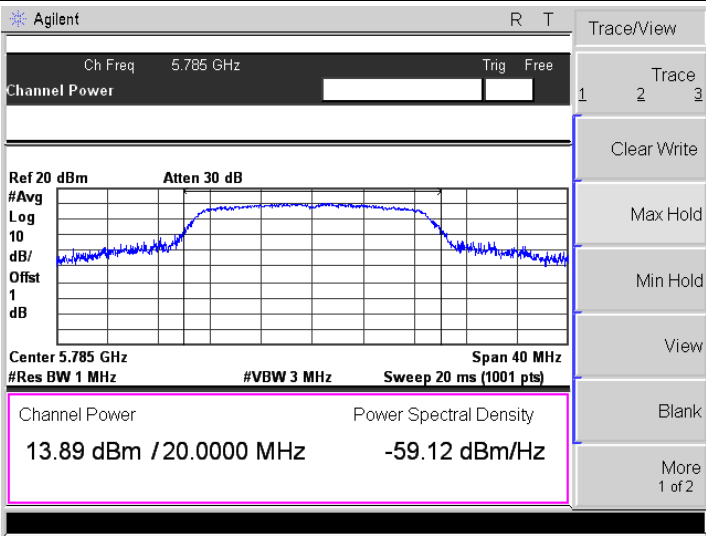
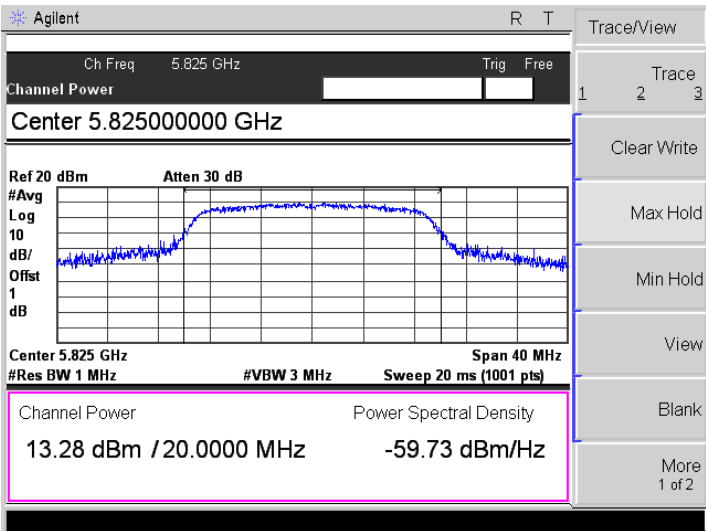
<p>802.11a-Low</p>	
<p>802.11a-Middle</p>	
<p>802.11a-High</p>	

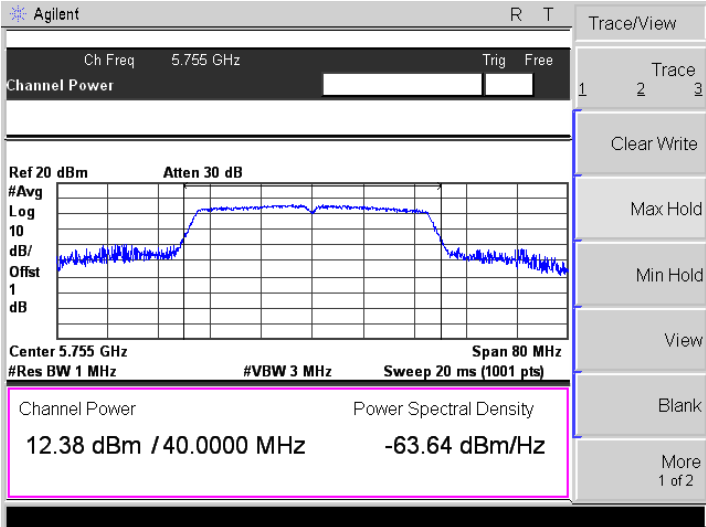
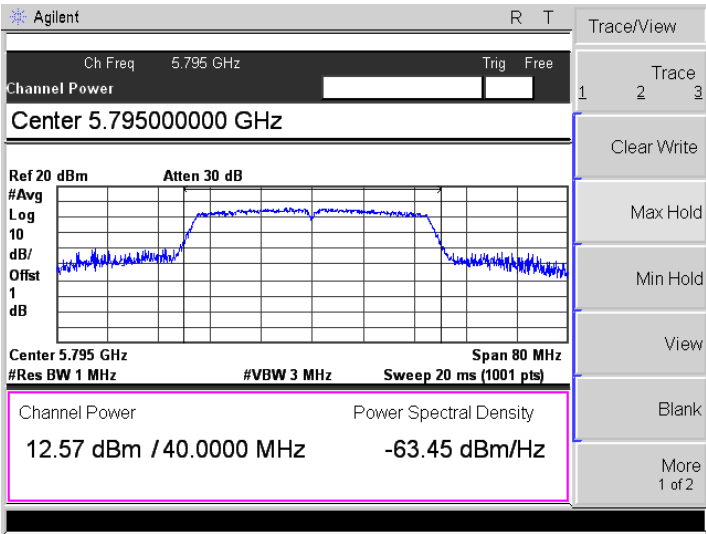
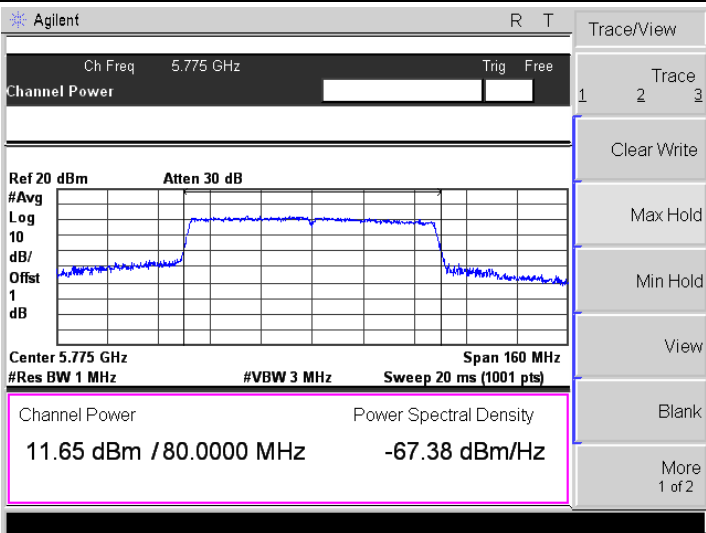
<p>802.11n-HT20-Low</p>	 <p>Agilent Channel Power measurement for 802.11n-HT20-Low. The center frequency is 5.18 GHz. The channel power is 13.18 dBm / 20.0000 MHz and the power spectral density is -59.83 dBm/Hz. The plot shows a signal centered at 5.18 GHz with a 40 MHz span.</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent Channel Power measurement for 802.11n-HT20-Middle. The center frequency is 5.2 GHz. The channel power is 13.33 dBm / 20.0000 MHz and the power spectral density is -59.68 dBm/Hz. The plot shows a signal centered at 5.2 GHz with a 40 MHz span.</p>
<p>802.11n-HT20-High</p>	 <p>Agilent Channel Power measurement for 802.11n-HT20-High. The center frequency is 5.24 GHz. The channel power is 13.30 dBm / 20.0000 MHz and the power spectral density is -59.71 dBm/Hz. The plot shows a signal centered at 5.24 GHz with a 40 MHz span.</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>13.41 dBm / 40.0000 MHz -62.61 dBm/Hz</p> <p>Freq/Channel</p> <p>Center Freq 5.1900000 GHz</p> <p>Start Freq 5.1500000 GHz</p> <p>Stop Freq 5.2300000 GHz</p> <p>CF Step 8.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 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>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>13.52 dBm / 40.0000 MHz -62.50 dBm/Hz</p> <p>Freq/Channel</p> <p>Center Freq 5.2300000 GHz</p> <p>Start Freq 5.1900000 GHz</p> <p>Stop Freq 5.2700000 GHz</p> <p>CF Step 8.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 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>12.07 dBm / 80.0000 MHz -66.96 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>	

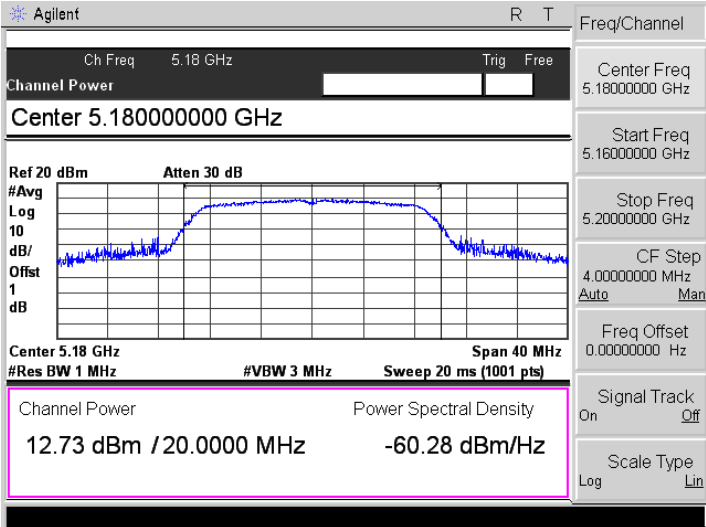
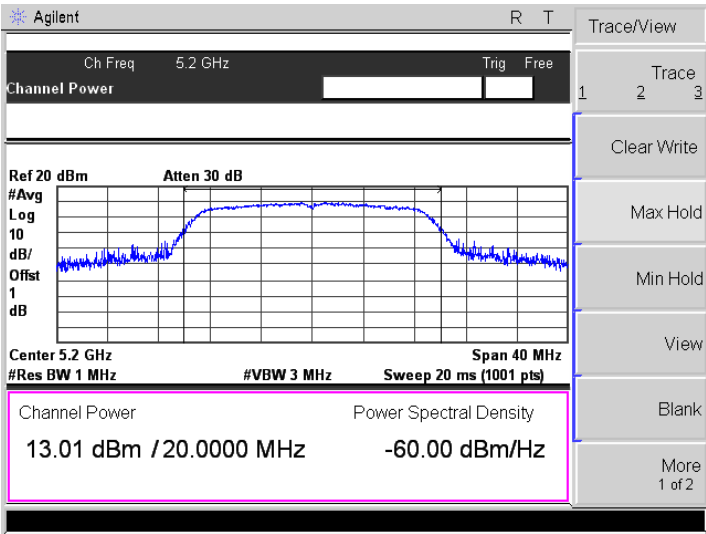
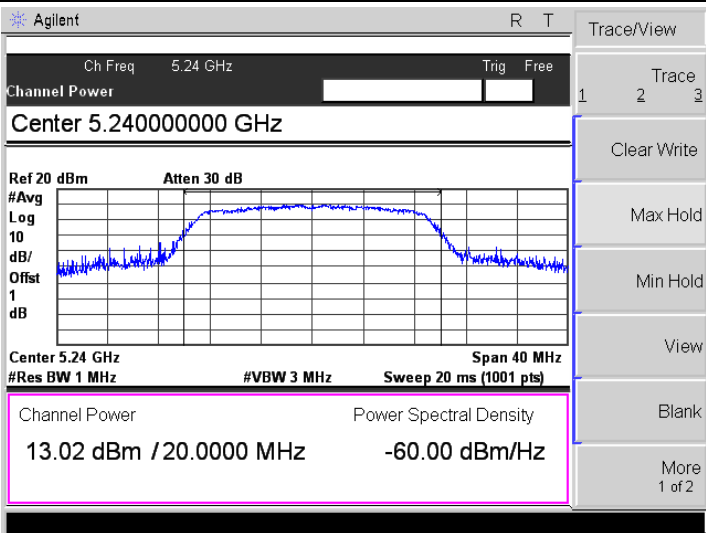
<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Channel Power</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>13.80 dBm / 20.0000 MHz -59.21 dBm/Hz</p> <p>Trace/View</p> <p>1 Trace 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 5.785 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 5.785 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>13.89 dBm / 20.0000 MHz -59.12 dBm/Hz</p> <p>Trace/View</p> <p>1 Trace 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-HT20-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/ 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>13.28 dBm / 20.0000 MHz -59.73 dBm/Hz</p> <p>Trace/View</p> <p>1 Trace 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

<p>802.11n-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/ Offst 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>12.38 dBm / 40.0000 MHz -63.64 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/ Offst 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>12.57 dBm / 40.0000 MHz -63.45 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>802.11ac-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/ Offst 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>11.65 dBm / 80.0000 MHz -67.38 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 1

5150-5250MHz

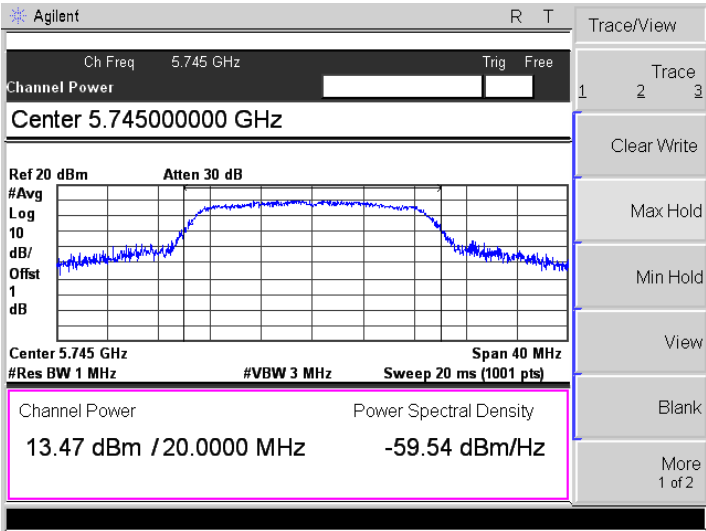
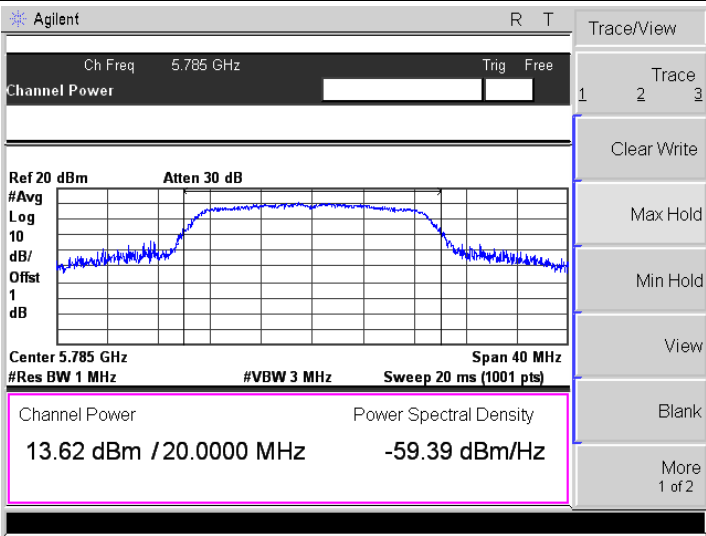
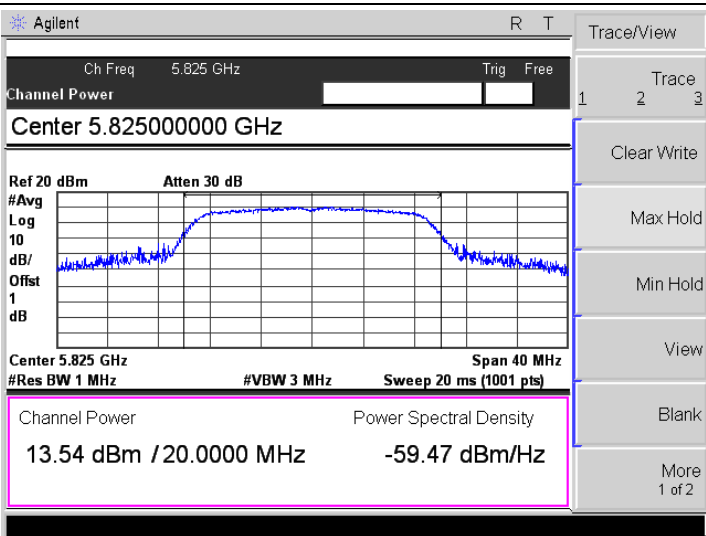
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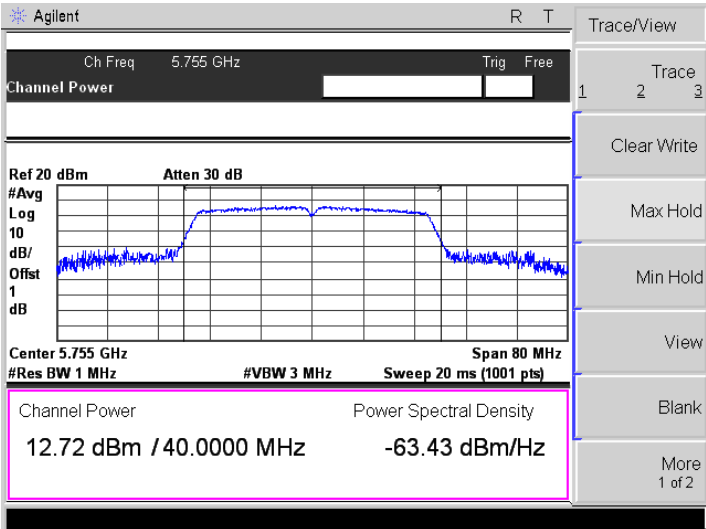
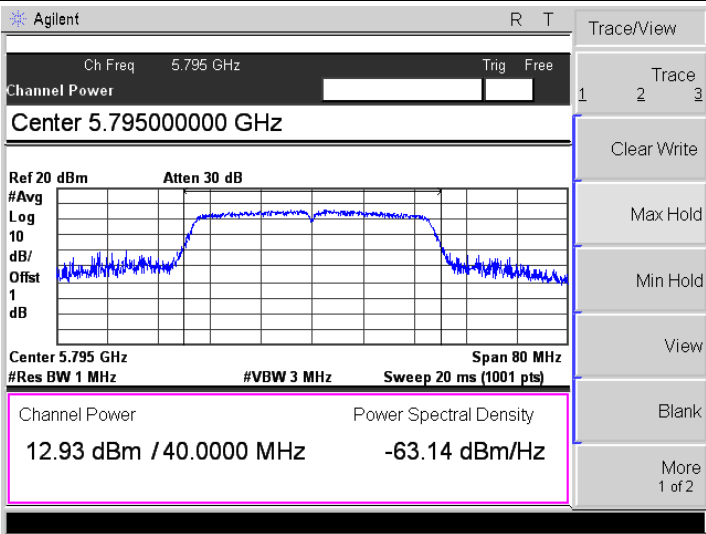
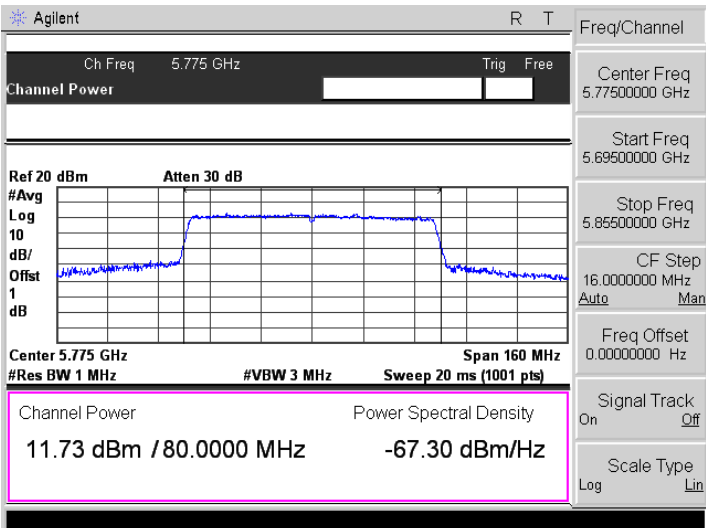
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<p>802.11n-HT20-Middle</p>	
<p>802.11n-HT20-High</p>	

<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 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>12.16 dBm / 40.0000 MHz -64.03 dBm/Hz</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>Channel Power</p> <p>Center 5.23000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 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>12.04 dBm / 40.0000 MHz -63.98 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 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>11.12 dBm / 80.0000 MHz -67.91 dBm/Hz</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

<p>802.11a-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>14.41 dBm / 20.0000 MHz -58.60 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 5.785 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 5.785 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>14.92 dBm / 20.0000 MHz -58.09 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 5.825 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>14.84 dBm / 20.0000 MHz -58.17 dBm/Hz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

<p>802.11n-HT20-Low</p>	 <p>Agilent R T</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/ 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>13.47 dBm / 20.0000 MHz -59.54 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-HT20-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 5.785 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.785 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>13.62 dBm / 20.0000 MHz -59.39 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-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/ 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>13.54 dBm / 20.0000 MHz -59.47 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-Low</p>	
<p>802.11n-HT40-High</p>	
<p>802.11ac-HT80</p>	

APPENDIX D

Frequency Stability

U-NII-1:5150-5250MHz worst case at 802.11a middle channel				
Voltage(%)	Power(V AC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	120	-30	1520	0.2923
100%		-20	1298	0.2496
100%		-10	1472	0.2831
100%		0	1359	0.2613
100%		+10	1238	0.2381
100%		+20	1541	0.2963
100%		+30	1055	0.2029
100%		+40	1582	0.3042
100%		+50	1344	0.2585
Low power		102	+20	1586
High power	138	+20	1517	0.2917

U-NII-1: 5150-5250MHz worst case at 802.11a middle channel				
Voltage(%)	Power(V AC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	120	-30	1520	0.2923
100%		-20	1296	0.2492
100%		-10	1459	0.2806
100%		0	1353	0.2602
100%		+10	1225	0.2356
100%		+20	1535	0.2952
100%		+30	1054	0.2027
100%		+40	1578	0.3035
100%		+50	1342	0.2581
Low power		102	+20	1585
High power	138	+20	1509	0.2902

U-NII-3: 5470-5725MHz worst case at 802.11a middle channel				
Voltage(%)	Power(V AC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	120	-30	1524	0.2634
100%		-20	1297	0.2242
100%		-10	1460	0.2524
100%		0	1366	0.2361
100%		+10	1238	0.2140
100%		+20	1542	0.2666
100%		+30	1051	0.1817
100%		+40	1588	0.2745
100%		+50	1331	0.2301
Low power		102	+20	1583
High power	138	+20	1516	0.2621

U-NII-3:5725-5850MHz worst case at 802.11a middle channel				
Voltage(%)	Power(V AC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	120	-30	1517	0.2622
100%		-20	1294	0.2237
100%		-10	1466	0.2534
100%		0	1364	0.2358
100%		+10	1244	0.2150
100%		+20	1539	0.2660
100%		+30	1051	0.1817
100%		+40	1579	0.2729
100%		+50	1330	0.2299
Low power		102	+20	1584
High power	138	+20	1513	0.2615

APPENDIX PHOTOGRAPHS

Please refer to “ANNEX”

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