

# TEST REPORT

Reference No..... : WTH21X08079217W-1  
FCC ID ..... : XOMD385GA064K-A-I  
Applicant ..... : SHENZHEN QIYUE OPTRONICS COMPANY LIMITED  
Address..... : Flat3,Tower 3, Excellence Meilin Center Plaza, Zhongkang Road 128,  
Shangmeilin, Futian District, Shenzhen , China  
Product Name ..... : 39" SMART HDTV  
Test Model. .... : D385GA064K-A-I  
Standards ..... : FCC Part 15.407  
Date of Receipt sample .... : Aug. 04, 2021  
Date of Test..... : Aug. 04, 2021 to Aug. 16, 2021  
Date of Issue ..... : Aug. 16, 2021  
Test Result..... : **Pass**

Remarks:

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

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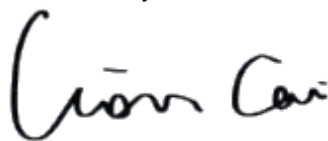
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**Report version**

Version No.	Date of issue	Description
Rev.00	Aug. 16, 2021	Original
/	/	/

## 1. GENERAL INFORMATION

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### 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:	39" SMART HDTV
Trade Name:	RCA, PROSCAN, RCA SCENIUM, TECHNICOLOR, SYLVANIA, RCASMARTVIRTUOSO
Model No.:	D385GA064K-A-I
Adding Model(s):	RWOSH3950, XXXXXXXXXXX39XXXXXXXXXXXXX (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:	/
<p><i>Note: The test data is gathered from a production sample, provided by the manufacturer. The appearance of others models listed in the report is different from main-test model D385GA064K-A-I, but the circuit and the electronic construction do not change, declared by the manufacturer.</i></p>	

<b>Technical Characteristics of EUT</b>	
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 0:14.93dBm (Conducted) ANT 1: 15.57dBm (Conducted) 5725-5850MHz: ANT 0:14.74dBm (Conducted) ANT 1: 15.38dBm (Conducted)
Type of Modulation:	BPSK, QPSK, 16QAM, 64QAM, 256QAM
Type of Antenna:	Integral Antenna
Antenna Gain:	2dBi

## 1.2 Test Standards

The tests were performed according to following standards:

**FCC Rules Part 15.407**: General technical requirements.

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

**KDB789033 D02 v02r01**: Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-Nii) Devices Part 15, Subparte.

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

## 1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, KDB789033 D02 v02r01. The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the Operating Instructions.

## 1.4 Table for parameters of Test Software setting

Enter “QATool\_Dbg.exe” into the calculator to enter the engineer mode, you can start to test. During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Mode	Ant.	Test Frequency (MHz)												
		NCB: 20MHz												
		5180	520	524	5260	530	532	550	558	570	572	574	578	5825
802.11a 6Mbps	ANT 0	1F	1F	1F	/	/	/	/	/	/	/	22	22	22
	ANT 1	24	24	24	/	/	/	/	/	/	/	22	22	22
802.11n-HT20 MCS0	ANT 0	1F	1F	1F	/	/	/	/	/	/	/	21	22	22
	ANT 1	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 0	1F	1F	/	/	/	/	/	/	/	/	22	22	
	ANT 1	23	23	/	/	/	/	/	/	/	/	22	22	
Mode	Ant.	NCB: 80MHz												
		5210	5290	5530	5610	5690	5775							
802.11ac-VH80 MCS0/Nss2	ANT 0	1E	/	/	/	/	21							
	ANT 1	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: All test modes (different data rate and different modulation) are performed, but only the worst case is recorded in this report.

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

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

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

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	/	/	/

<b>Software List</b>			
<b>Description</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Version</b>
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

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<b>FCC Rules</b>	<b>Description of Test Item</b>	<b>Result</b>
§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**

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#### **3.1 Standard Applicable**

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

#### **3.2 Evaluation Information**

This product has two integral antennas, fulfill the requirement of this section.

## **4. Automatically Discontinue Transmission**

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### **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

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### 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  $< 500$ kHz) and integrated over 1 MHz, or 500kHz bandwidth, the following adjustments to the procedures apply:

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

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

### **5.3 Summary of Test Results/Plots**

**Please refer to Appendix A**

## 6. Emission Bandwidth and Occupied Bandwidth

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### 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

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### 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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- (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

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### 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  $-27\text{dBm/MHz}$ .
- (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  $-27\text{dBm/MHz}$ .
- (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  $-27\text{dBm/MHz}$ .
- (4) For transmitters operating in the 5.725-5.85GHz band:
  - (i) All emissions shall be limited to a level of  $-27\text{dBm/MHz}$  at 75 MHz or more above or below the band edge increasing linearly to  $10\text{dBm/MHz}$  at 25MHz above or below the band edge, and from 25MHz above or below the band edge increasing linearly to a level of  $15.6\text{dBm/MHz}$  at 5MHz above or below the band edge, and from 5MHz above or below the band edge increasing linearly to a level of  $27\text{dBm/MHz}$  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.

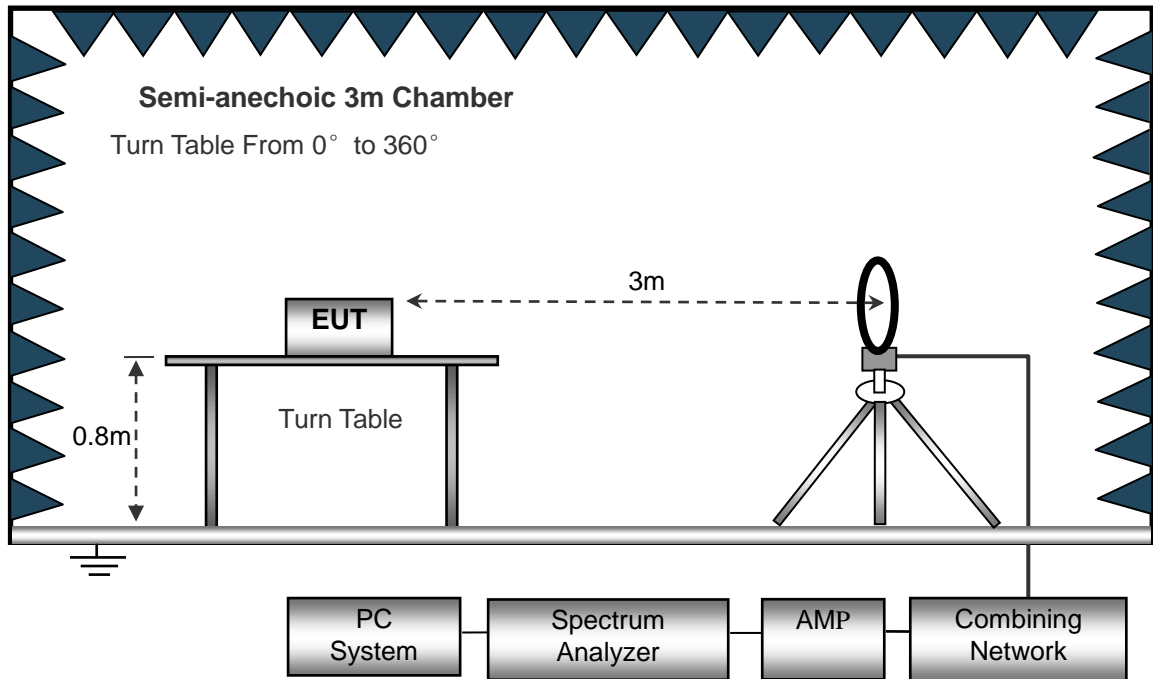
### 8.2 Test Procedure

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..

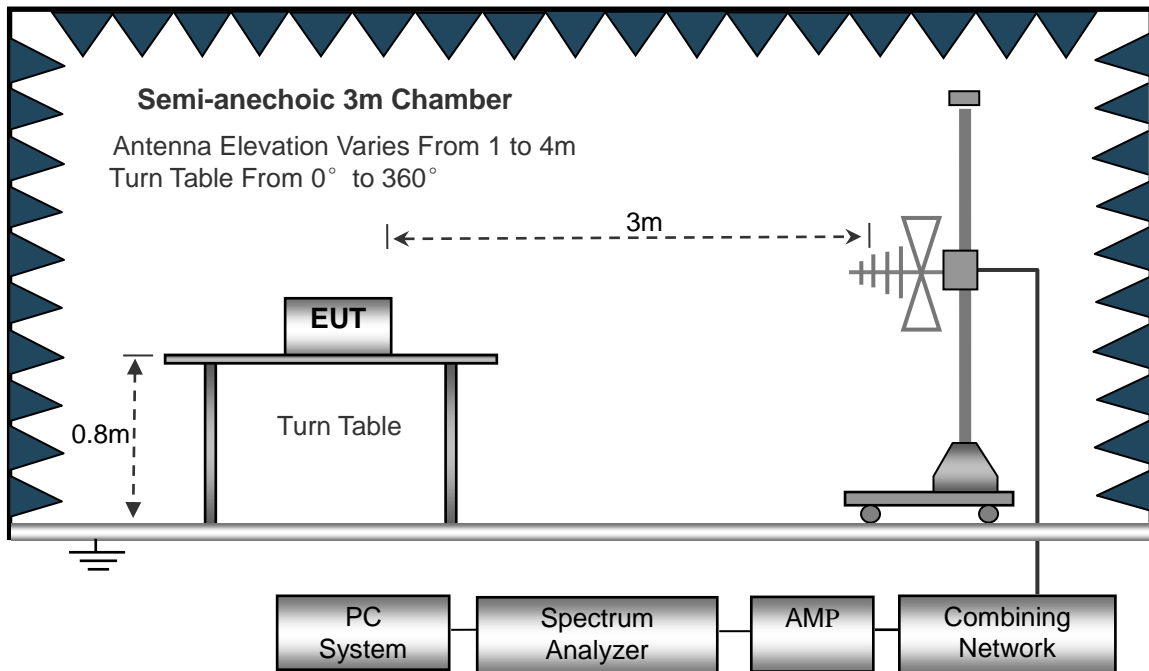
The external I/O cables were draped along the test table and formed a bundle 30 to 40cm long in the middle.

The spacing between the peripherals was 10cm.

The test setup for emission measurement below 30MHz.

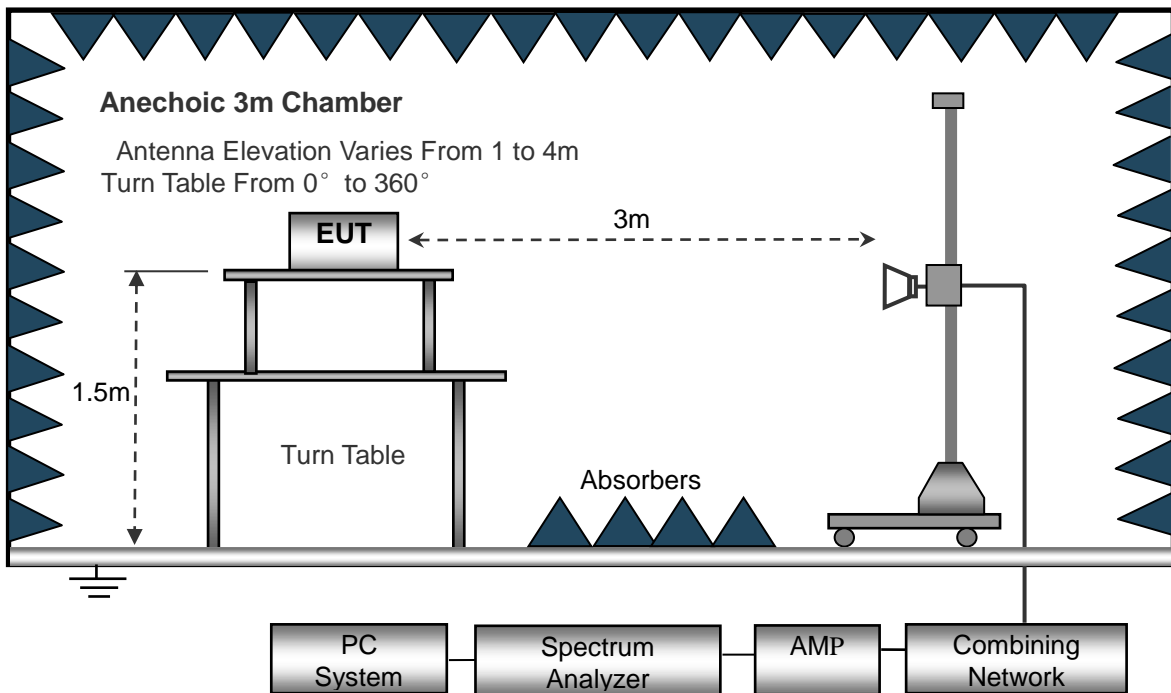


The test setup for emission measurement from 30 MHz to 1 GHz.





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 $\mu$ V means the emission is 6dB $\mu$ 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.*

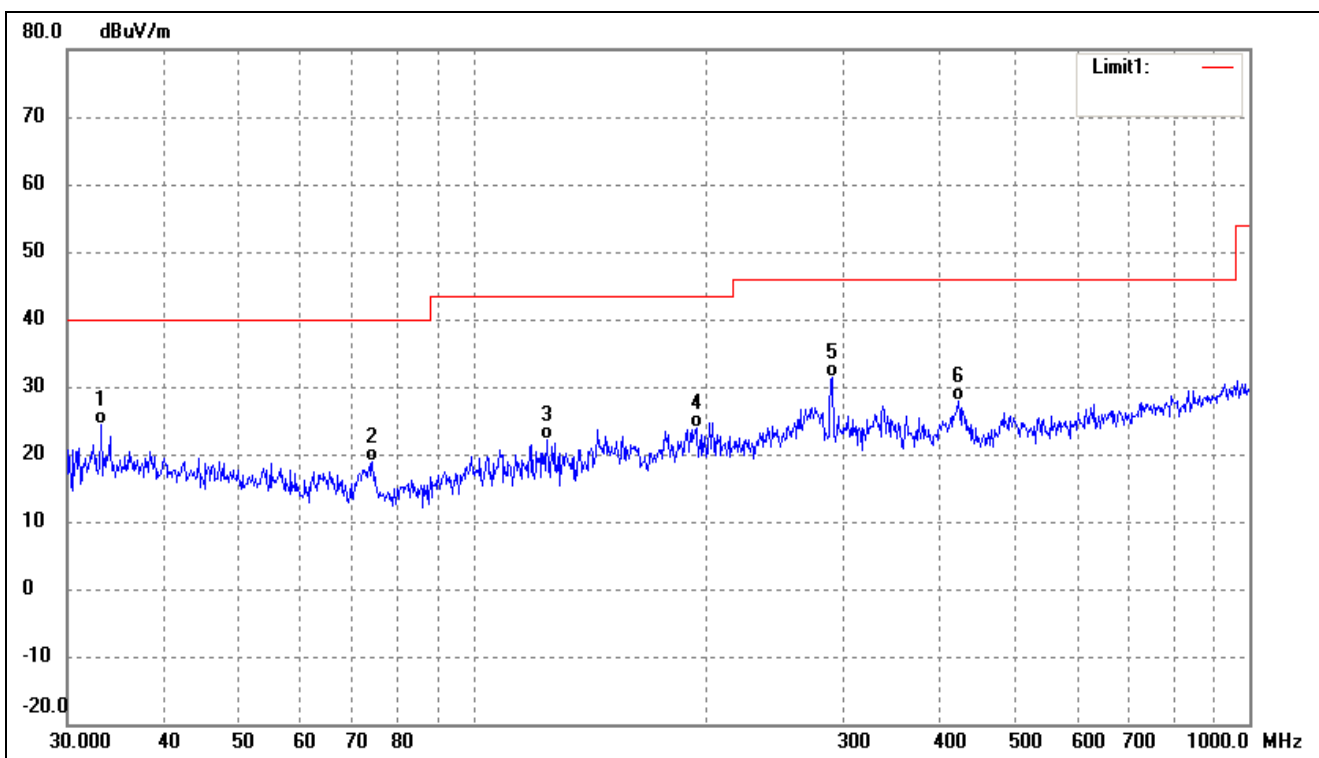
➤ Spurious Emission From 30MHz to 1GHz

➤ Antenna 0(worst case)

➤ 5150-5250MHz

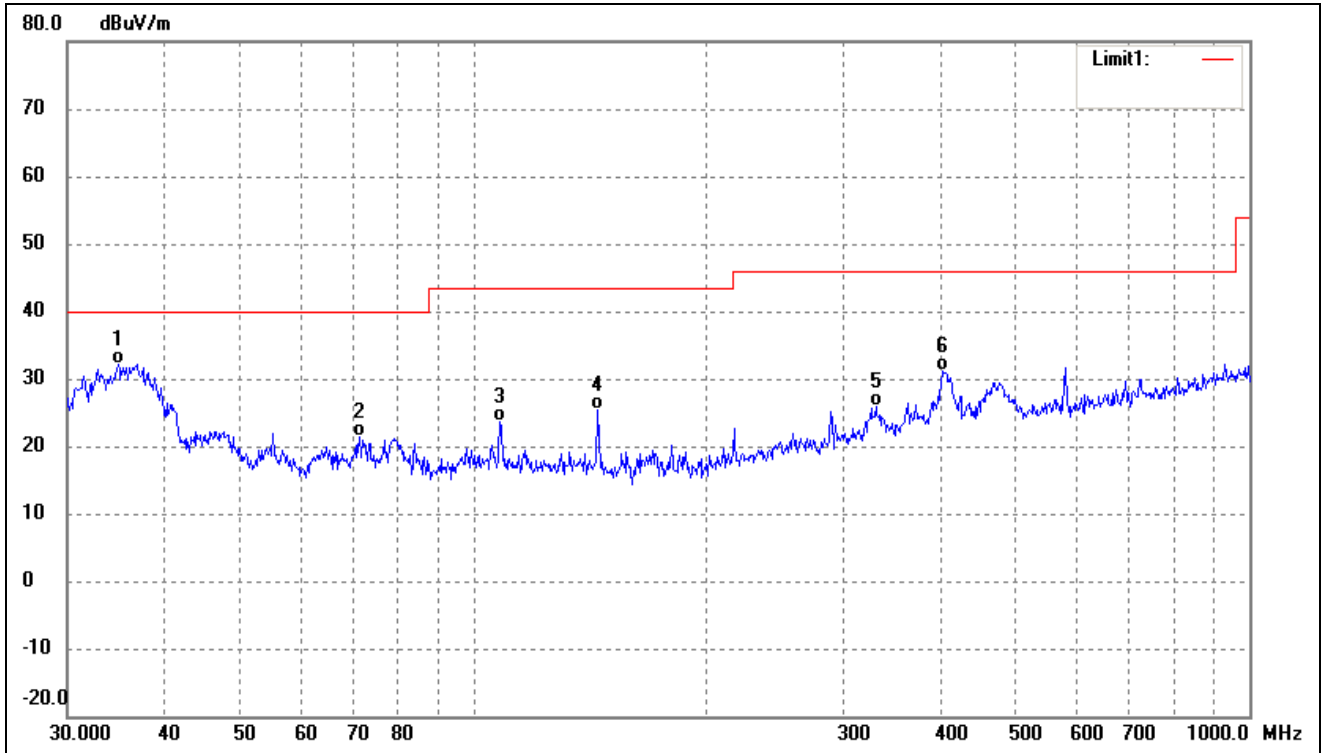
802.11a(Worst case)

Test Channel	5180MHz	Polarity:	Horizontal
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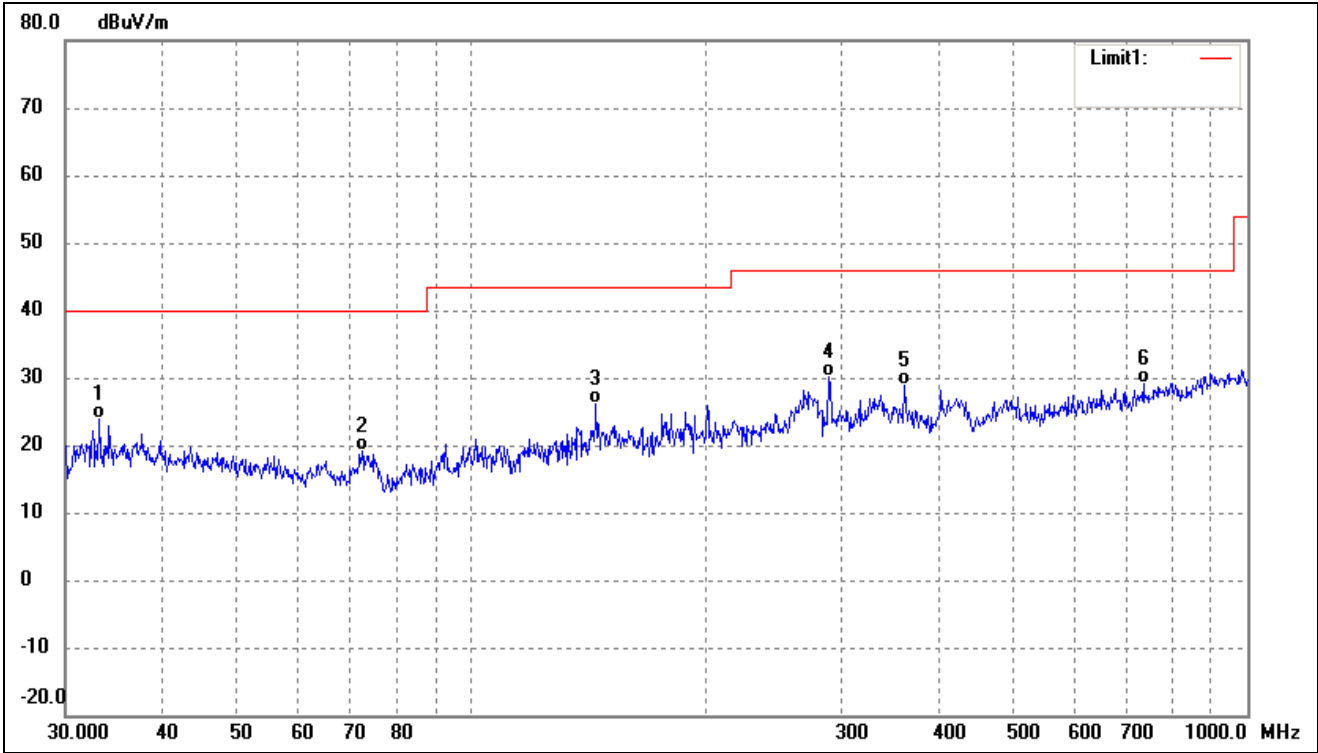
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	33.2112	33.77	-9.40	24.37	40.00	-15.63	-	-	QP
2	74.1351	30.71	-11.93	18.78	40.00	-21.22	-	-	QP
3	124.5690	32.34	-10.17	22.17	43.50	-21.33	-	-	QP
4	193.7728	33.10	-9.14	23.96	43.50	-19.54	-	-	QP
5	290.0172	37.27	-5.83	31.44	46.00	-14.56	-	-	QP
6	422.0577	32.04	-4.28	27.76	46.00	-18.24	-	-	QP

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



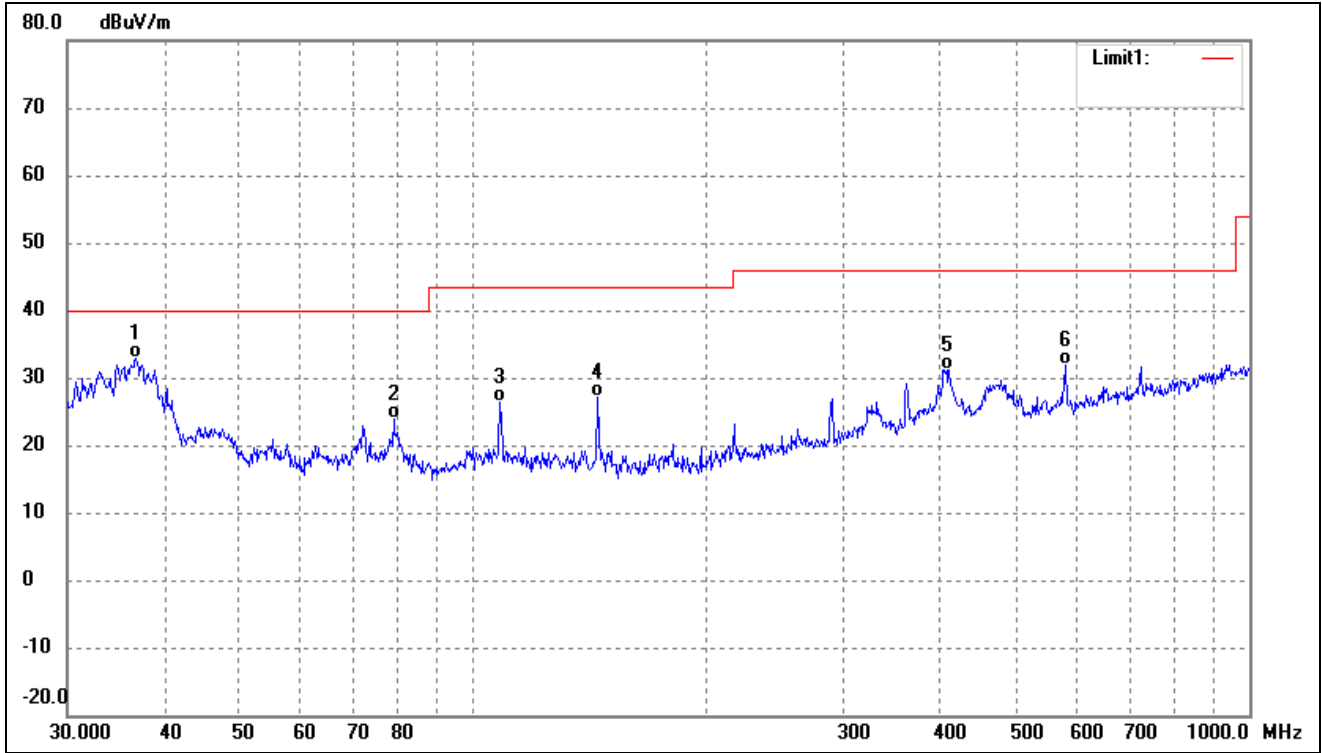
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	34.8823	41.25	-9.02	32.23	40.00	-7.77	-	-	QP
2	71.3300	33.05	-11.73	21.32	40.00	-18.68	-	-	QP
3	108.2667	32.42	-8.69	23.73	43.50	-19.77	-	-	QP
4	144.8418	37.42	-12.03	25.39	43.50	-18.11	-	-	QP
5	330.1949	30.94	-5.09	25.85	46.00	-20.15	-	-	QP
6	403.2500	35.04	-3.94	31.10	46.00	-14.90	-	-	QP

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



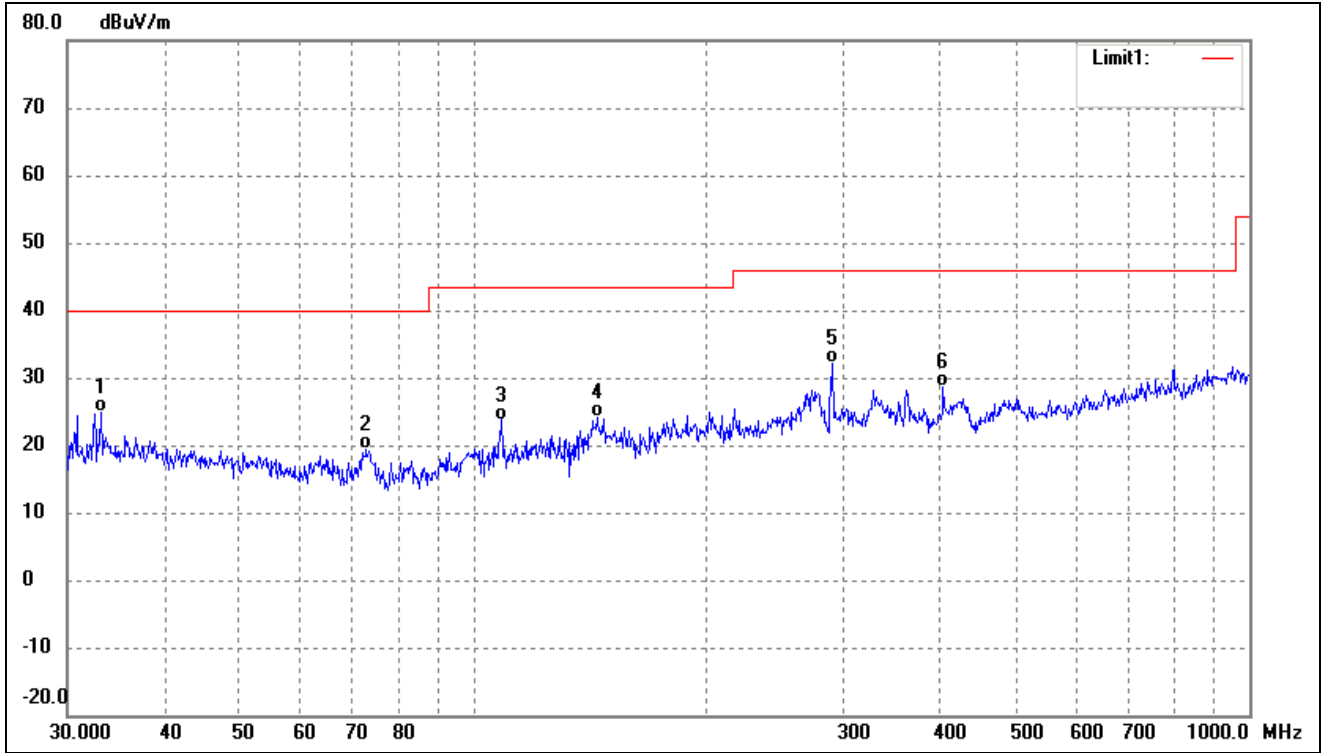
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	33.2112	33.29	-9.40	23.89	40.00	-16.11	-	-	QP
2	72.3376	30.92	-11.79	19.13	40.00	-20.87	-	-	QP
3	144.8418	38.14	-12.03	26.11	43.50	-17.39	-	-	QP
4	289.0021	35.99	-5.84	30.15	46.00	-15.85	-	-	QP
5	361.7139	33.53	-4.53	29.00	46.00	-17.00	-	-	QP
6	734.4913	28.26	0.98	29.24	46.00	-16.76	-	-	QP

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



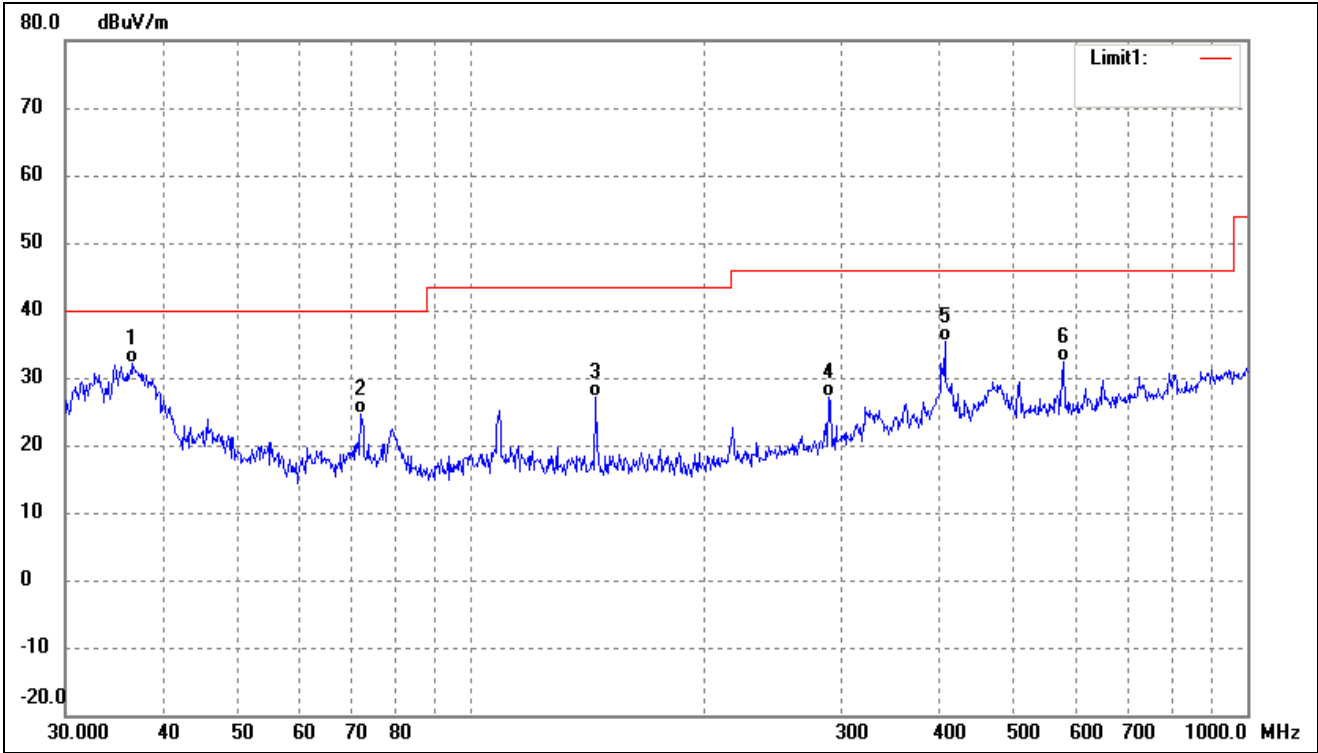
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	36.7662	41.39	-8.60	32.79	40.00	-7.21	-	-	QP
2	78.9652	36.26	-12.30	23.96	40.00	-16.04	-	-	QP
3	108.2667	35.03	-8.69	26.34	43.50	-17.16	-	-	QP
4	144.8418	39.18	-12.03	27.15	43.50	-16.35	-	-	QP
5	407.5145	35.21	-4.02	31.19	46.00	-14.81	-	-	QP
6	580.7026	33.10	-1.22	31.88	46.00	-14.12	-	-	QP

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



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	33.2112	34.22	-9.40	24.82	40.00	-15.18	-	-	QP
2	72.8466	31.26	-11.84	19.42	40.00	-20.58	-	-	QP
3	108.6470	32.43	-8.68	23.75	43.50	-19.75	-	-	QP
4	144.3348	36.10	-12.01	24.09	43.50	-19.41	-	-	QP
5	290.0172	38.05	-5.83	32.22	46.00	-13.78	-	-	QP
6	403.2500	32.49	-3.94	28.55	46.00	-17.45	-	-	QP

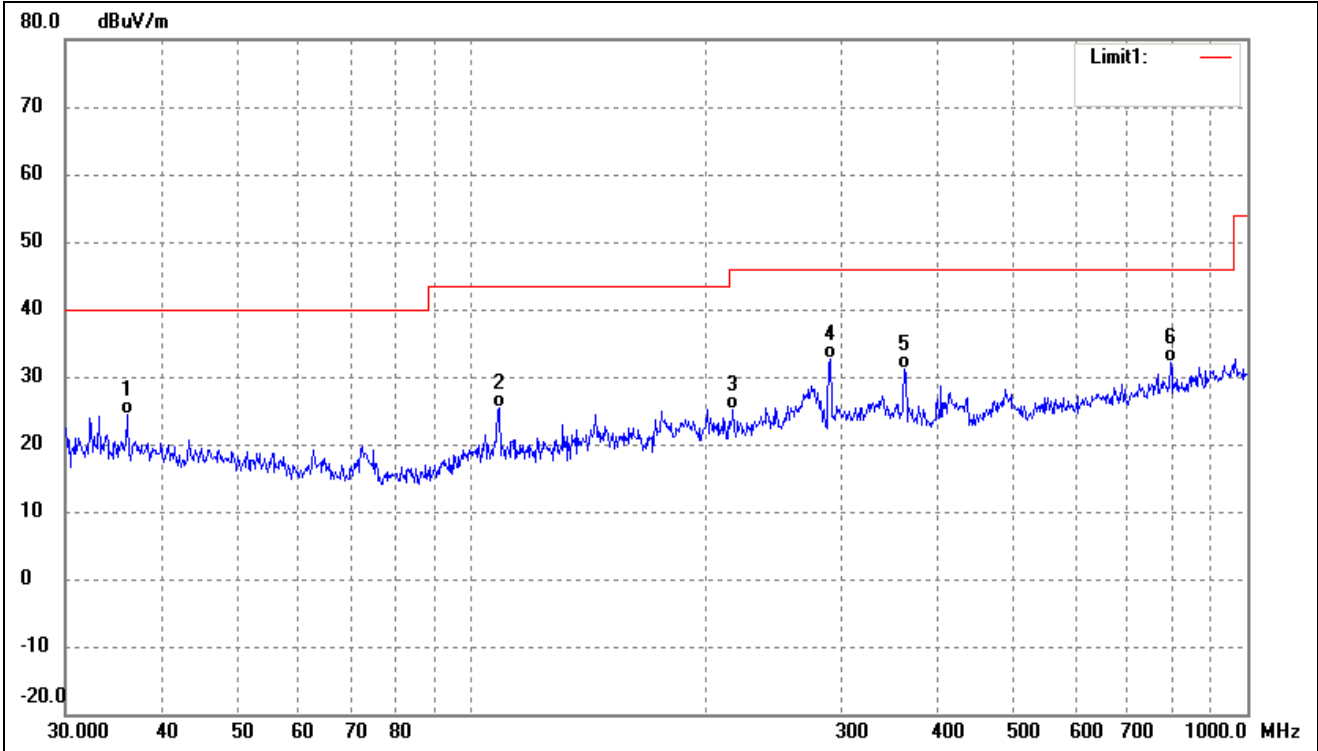
802.11a(Worst case)			
Test Channel	5240MHz	Polarity:	Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	36.6375	40.74	-8.63	32.11	40.00	-7.89	-	-	QP
2	72.0843	36.30	-11.78	24.52	40.00	-15.48	-	-	QP
3	144.3348	39.02	-12.01	27.01	43.50	-16.49	-	-	QP
4	289.0021	33.08	-5.84	27.24	46.00	-18.76	-	-	QP
5	407.5145	39.36	-4.02	35.34	46.00	-10.66	-	-	QP
6	578.6699	33.70	-1.25	32.45	46.00	-13.55	-	-	QP

➤ 5725-5850MHz

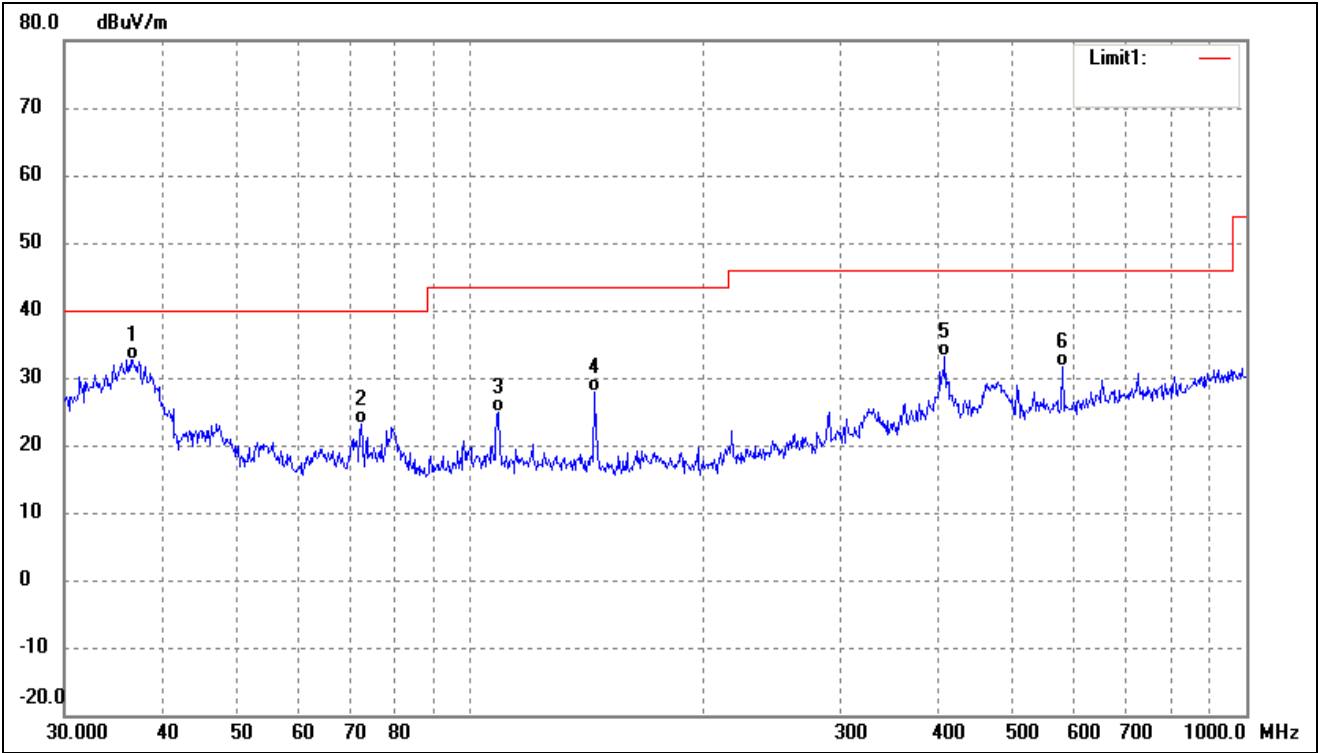
802.11a(Worst case)			
Test Channel	5745MHz	Polarity:	Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	36.0007	33.15	-8.77	24.38	40.00	-15.62	-	-	QP
2	108.6470	33.96	-8.68	25.28	43.50	-18.22	-	-	QP
3	217.5443	33.31	-8.09	25.22	46.00	-20.78	-	-	QP
4	290.0172	38.49	-5.83	32.66	46.00	-13.34	-	-	QP
5	361.7139	35.62	-4.53	31.09	46.00	-14.91	-	-	QP
6	796.1830	30.44	1.65	32.09	46.00	-13.91	-	-	QP

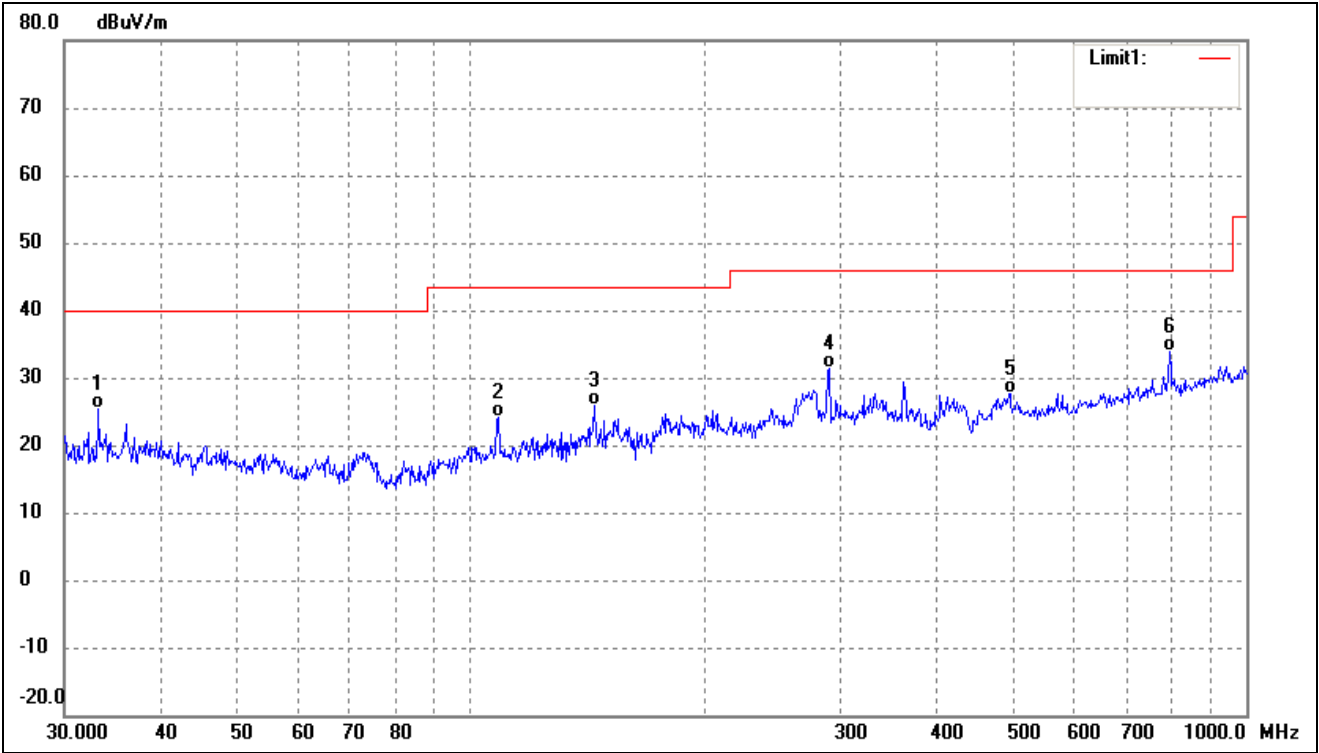


802.11a(Worst case)			
Test Channel	5745MHz	Polarity:	Vertical



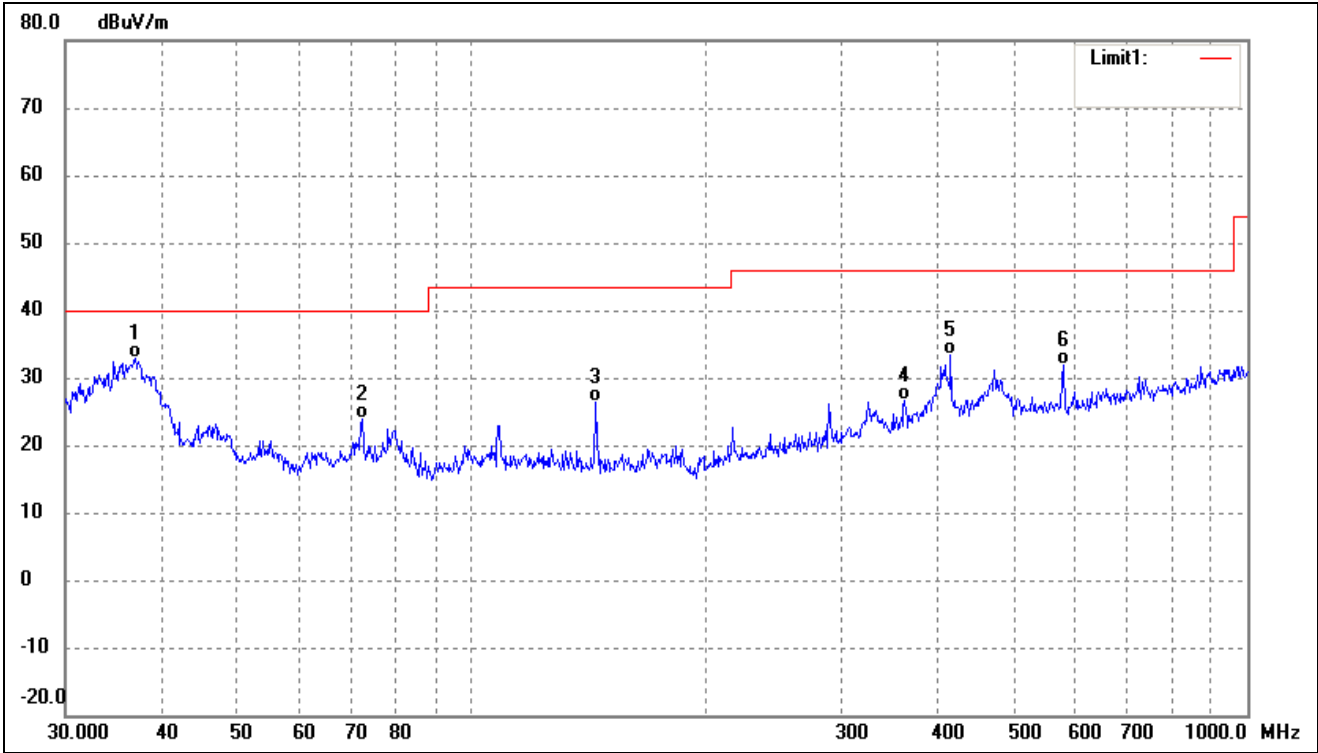
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	36.7662	41.30	-8.60	32.70	40.00	-7.30	-	-	QP
2	72.3376	34.81	-11.79	23.02	40.00	-16.98	-	-	QP
3	108.6470	33.57	-8.68	24.89	43.50	-18.61	-	-	QP
4	144.3348	39.79	-12.01	27.78	43.50	-15.72	-	-	QP
5	408.9460	37.10	-4.05	33.05	46.00	-12.95	-	-	QP
6	578.6699	32.99	-1.25	31.74	46.00	-14.26	-	-	QP

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



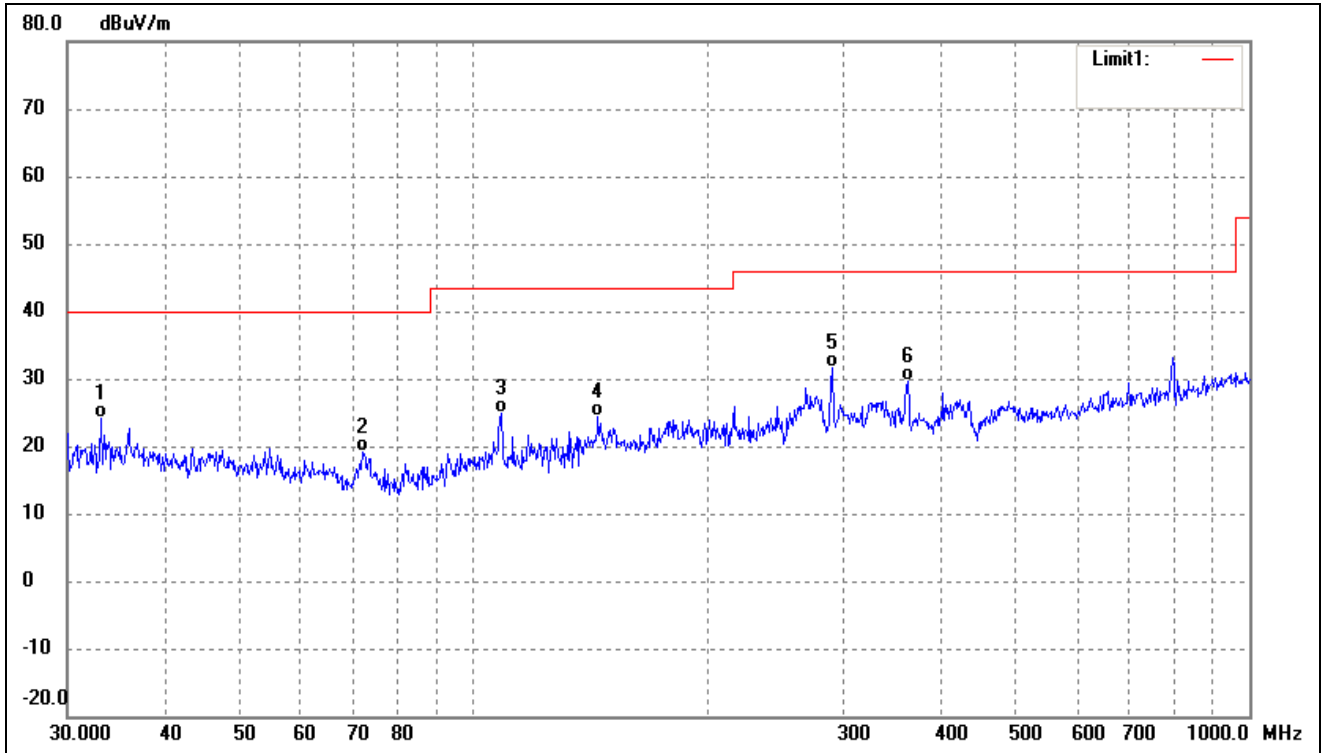
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	33.2112	34.66	-9.40	25.26	40.00	-14.74	-	-	QP
2	108.6470	32.79	-8.68	24.11	43.50	-19.39	-	-	QP
3	144.3348	37.96	-12.01	25.95	43.50	-17.55	-	-	QP
4	290.0172	37.29	-5.83	31.46	46.00	-14.54	-	-	QP
5	495.9344	30.29	-2.72	27.57	46.00	-18.43	-	-	QP
6	796.1830	32.20	1.65	33.85	46.00	-12.15	-	-	QP

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



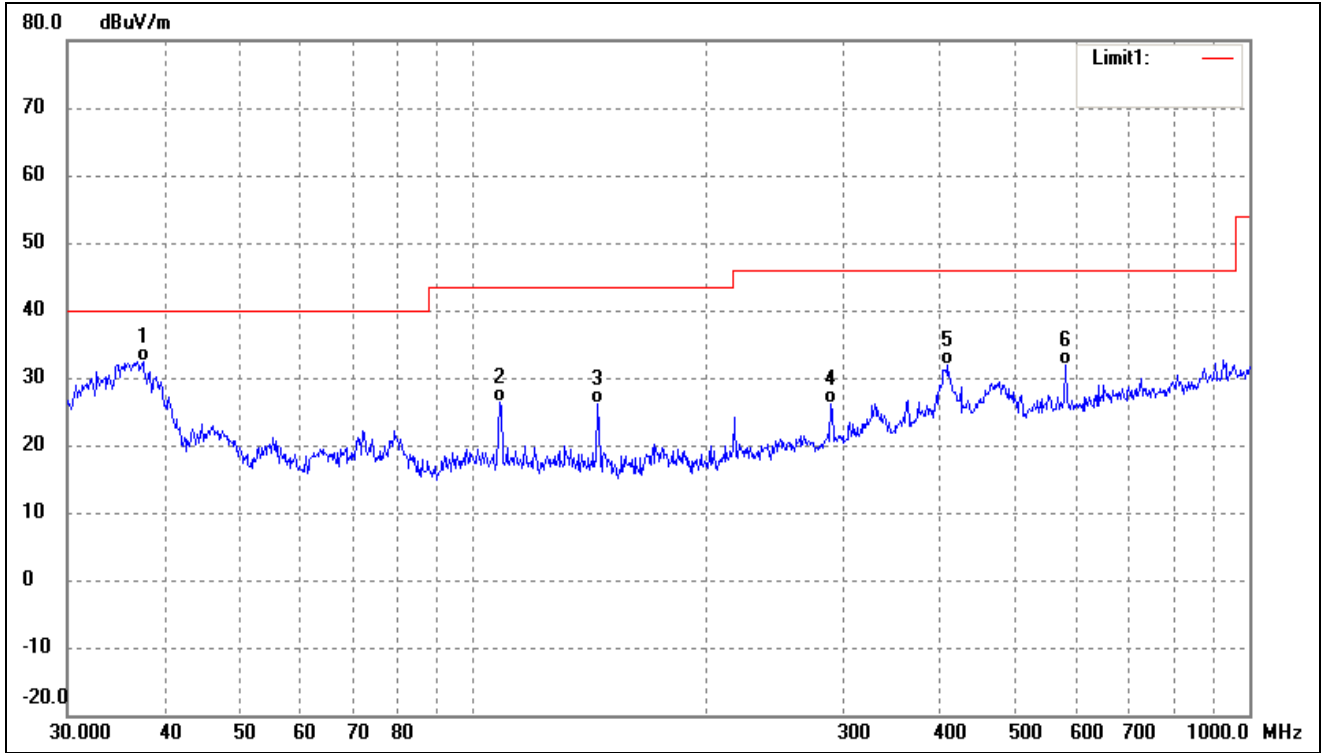
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	36.8953	41.39	-8.57	32.82	40.00	-7.18	-	-	QP
2	72.3376	35.56	-11.79	23.77	40.00	-16.23	-	-	QP
3	144.8418	38.51	-12.03	26.48	43.50	-17.02	-	-	QP
4	361.7139	31.22	-4.53	26.69	46.00	-19.31	-	-	QP
5	414.7223	37.53	-4.15	33.38	46.00	-12.62	-	-	QP
6	578.6699	33.06	-1.25	31.81	46.00	-14.19	-	-	QP

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	33.0950	33.58	-9.42	24.16	40.00	-15.84	-	-	QP
2	72.0843	30.86	-11.78	19.08	40.00	-20.92	-	-	QP
3	108.6470	33.55	-8.68	24.87	43.50	-18.63	-	-	QP
4	144.8418	36.34	-12.03	24.31	43.50	-19.19	-	-	QP
5	290.0172	37.46	-5.83	31.63	46.00	-14.37	-	-	QP
6	362.9845	34.05	-4.51	29.54	46.00	-16.46	-	-	QP

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

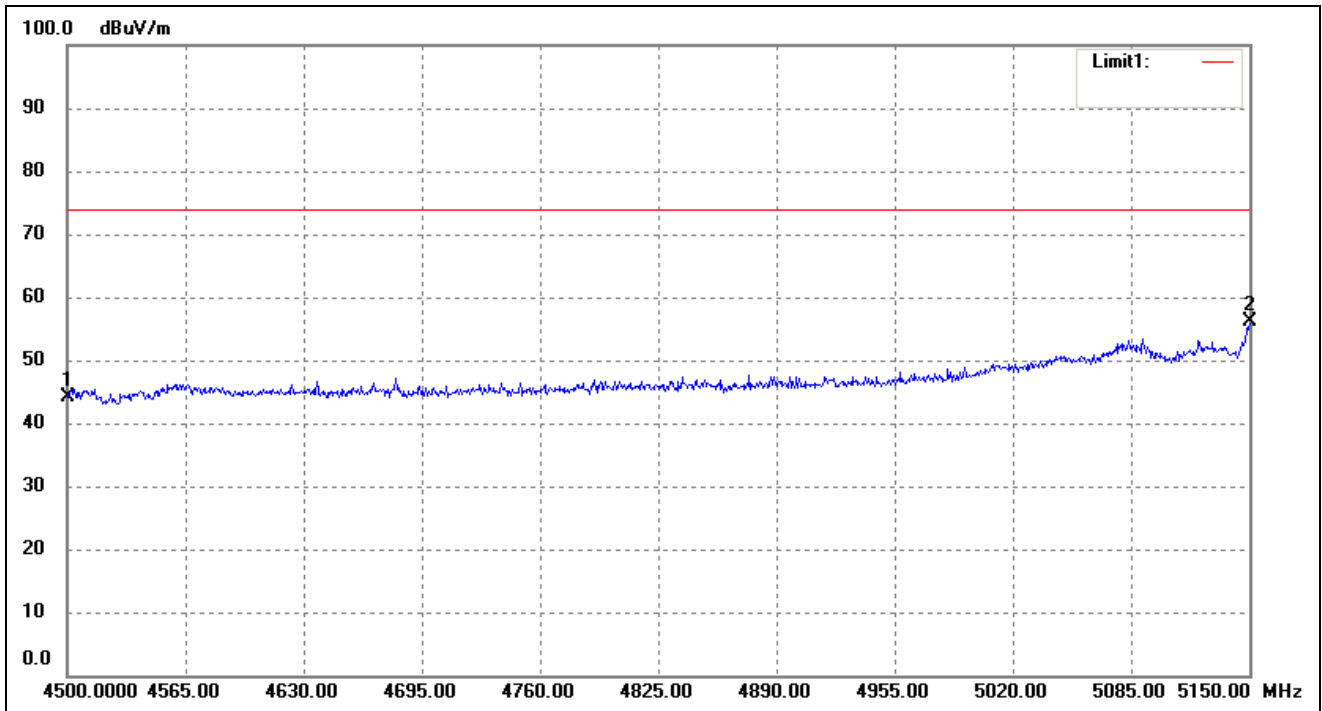


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	37.5479	40.75	-8.41	32.34	40.00	-7.66	-	-	QP
2	108.2667	35.10	-8.69	26.41	43.50	-17.09	-	-	QP
3	144.3348	38.12	-12.01	26.11	43.50	-17.39	-	-	QP
4	289.0021	31.93	-5.84	26.09	46.00	-19.91	-	-	QP
5	408.9460	35.90	-4.05	31.85	46.00	-14.15	-	-	QP
6	578.6699	33.22	-1.25	31.97	46.00	-14.03	-	-	QP

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

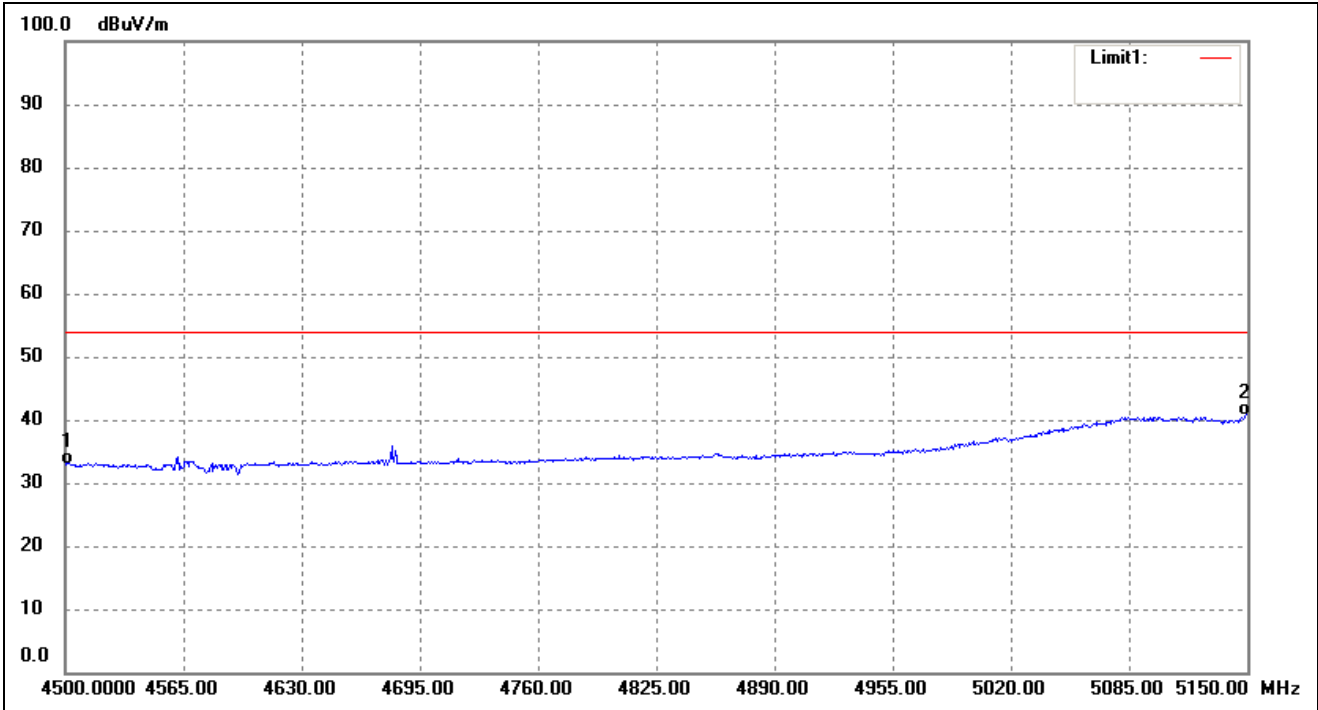
- Spurious Emission above 1GHz
- Antenna 0

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



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	4500.000	51.09	-6.92	44.17	74.00	-29.83	-	-	peak
2	5150.000	61.54	-5.33	56.21	74.00	-17.79	-	-	peak

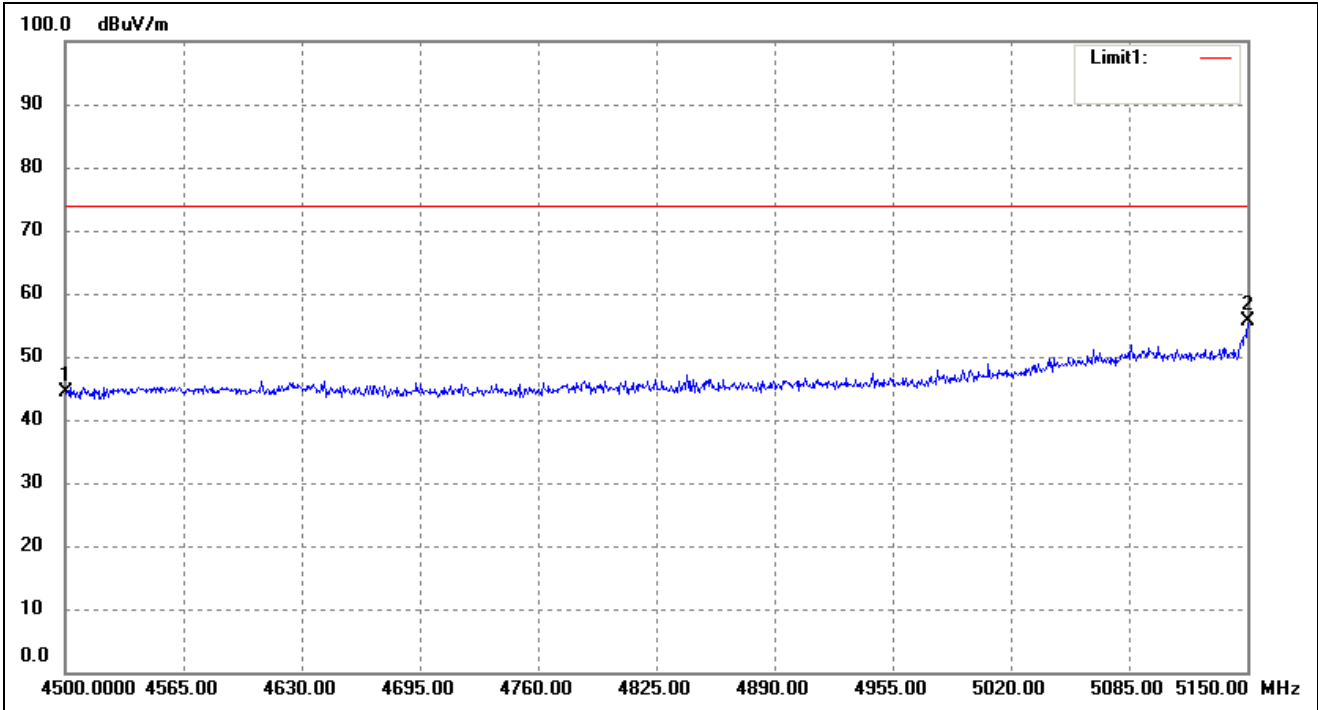
802.11a- Restricted Bandedge (worst case)			
Test Channel	band 4.50-5.15GHz	Polarity:	Vertical(worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	4500.000	39.92	-6.92	33.00	54.00	-21.00	-	-	AVG
2	5150.000	46.01	-5.33	40.68	54.00	-13.32	-	-	AVG

➤ Antenna 1

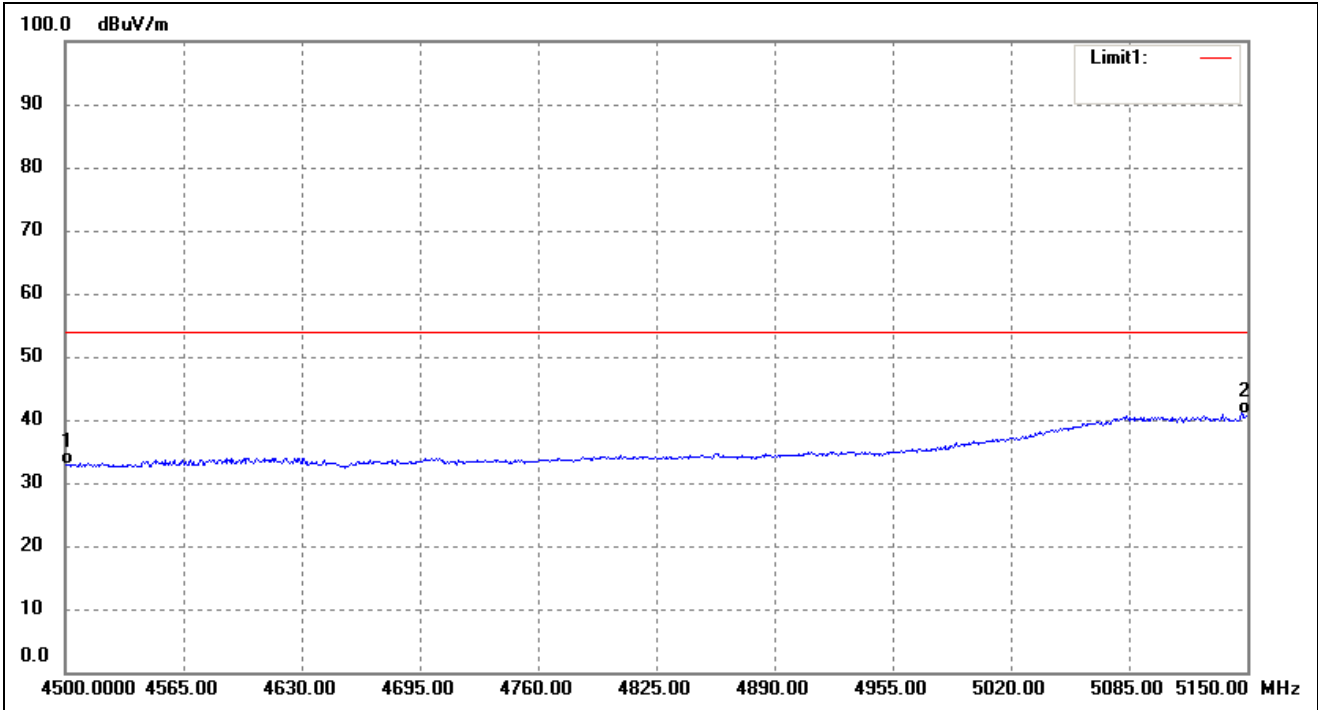
802.11a- Restricted Bandedge (worst case)			
Test Channel	band 4.50-5.15GHz	Polarity:	Vertical(worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	4500.000	51.42	-6.92	44.50	74.00	-29.50	-	-	peak
2	5150.000	60.93	-5.33	55.60	74.00	-18.40	-	-	peak



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



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	4500.000	39.91	-6.92	32.99	54.00	-21.01	-	-	AVG
2	5150.000	46.13	-5.33	40.80	54.00	-13.20	-	-	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(worst case)
- 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	57.49	7.11	64.60	74	-9.40	H	PK
15540	37.61	8.22	45.83	54	-8.17	H	AV
10360	59.00	7.11	66.11	74	-7.89	V	PK
15540	40.51	8.22	48.73	54	-5.27	V	AV
Middle Channel (5200MHz)							
10400	56.59	7.22	63.81	74	-10.19	H	PK
15600	37.00	8.67	45.67	54	-8.33	H	AV
10400	54.02	7.22	61.24	74	-12.76	V	PK
15600	38.11	8.67	46.78	54	-7.22	V	AV
High Channel (5240MHz)							
10480	56.78	7.69	64.47	74	-9.53	H	PK
15720	36.22	8.93	45.15	54	-8.85	H	AV
10480	54.23	7.22	61.45	74	-12.55	V	PK
15720	39.36	8.67	48.03	54	-5.97	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	54.28	9.45	63.73	74	-10.27	H	PK
17235	32.73	10.36	43.09	54	-10.91	H	AV
11490	57.70	9.45	67.15	74	-6.85	V	PK
17235	38.49	10.36	48.85	54	-5.15	V	AV
Middle Channel (5785MHz)							
11570	56.43	9.62	66.05	74	-7.95	H	PK
17355	35.94	10.67	46.61	54	-7.39	H	AV
11570	55.55	9.62	65.17	74	-8.83	V	PK
17355	32.55	10.67	43.22	54	-10.78	V	AV
High Channel (5825MHz)							
11650	55.65	9.84	65.49	74	-8.51	H	PK
17475	34.96	10.95	45.91	54	-8.09	H	AV
11650	53.75	9.84	63.59	74	-10.41	V	PK
17475	35.93	10.95	46.88	54	-7.12	V	AV

## ➤ Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-38.47	-27
Highest	Above 5350	-40.99	-27

Note: the data just list the worst cases

## ➤ Out of Band edge for 5725-5850MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5715	-37.87	-27
	5715 to 5725	-41.01	-17
Highest	5850 to 5860	-38.64	-17
	Above 5860	-46.57	-27

Note: the data just list the worst cases

- For the frequency band 5.15-5.25GHz, 5.725-5.850GHz (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	57.77	7.11	64.88	74	-9.12	H	PK
15540	36.92	8.22	45.14	54	-8.86	H	AV
10360	61.58	7.11	68.69	74	-5.31	V	PK
15540	35.45	8.22	43.67	54	-10.33	V	AV
Middle Channel (5200MHz)							
10400	58.28	7.22	65.50	74	-8.50	H	PK
15600	36.97	8.67	45.64	54	-8.36	H	AV
10400	57.17	7.22	64.39	74	-9.61	V	PK
15600	37.03	8.67	45.70	54	-8.30	V	AV
High Channel (5240MHz)							
10480	54.65	7.69	62.34	74	-11.66	H	PK
15720	34.45	8.93	43.38	54	-10.62	H	AV
10480	59.08	7.69	66.77	74	-7.23	V	PK
15720	38.95	8.93	47.88	54	-6.12	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	56.96	9.45	66.41	74	-7.59	H	PK
17235	35.34	10.36	45.70	54	-8.30	H	AV
11490	56.79	9.45	66.24	74	-7.76	V	PK
17235	36.14	10.36	46.50	54	-7.50	V	AV
Middle Channel (5785MHz)							
11570	58.82	9.62	68.44	74	-5.56	H	PK
17355	32.75	10.67	43.42	54	-10.58	H	AV
11570	57.89	9.62	67.51	74	-6.49	V	PK
17355	35.47	10.67	46.14	54	-7.86	V	AV
High Channel (5825MHz)							
11650	52.39	9.84	62.23	74	-11.77	H	PK
17475	34.40	10.95	45.35	54	-8.65	H	AV
11650	55.44	9.84	65.28	74	-8.72	V	PK
17475	36.81	10.95	47.76	54	-6.24	V	AV

## ➤ Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-32.72	-27
Highest	Above 5350	-39.03	-27
Note: the data just list the worst cases			

## ➤ Out of Band edge for 5725-5850MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5715	-45.05	-27
	5715 to 5725	-33.12	-17
Highest	5850 to 5860	-38.15	-17
	Above 5860	-41.24	-27
Note: the data just list the worst cases.			

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

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5190MHz)							
10380	56.87	7.25	64.12	74	-9.88	H	PK
15570	35.95	8.33	44.28	54	-9.72	H	AV
10380	60.35	7.25	67.60	74	-6.40	V	PK
15570	37.45	8.33	45.78	54	-8.22	V	AV
High Channel (5230MHz)							
10460	56.98	7.54	64.52	74	-9.48	H	PK
15690	36.51	8.86	45.37	54	-8.63	H	AV
10460	59.97	7.54	67.51	74	-6.49	V	PK
15690	36.86	8.86	45.72	54	-8.28	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	57.18	9.65	66.83	74	-7.17	H	PK
17265	36.08	10.87	46.95	54	-7.05	H	AV
11510	55.18	9.65	64.83	74	-9.17	V	PK
17265	37.22	10.87	48.09	54	-5.91	V	AV
High Channel (5795MHz)							
11590	54.45	9.81	64.26	74	-9.74	H	PK
17385	32.07	10.89	42.96	54	-11.04	H	AV
11590	56.76	9.81	66.57	74	-7.43	V	PK
17385	34.63	10.89	45.52	54	-8.48	V	AV

## ➤ Out of Band edge 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-33.53	-27
Highest	Above 5350	-41.81	-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	-40.92	-27
	5715 to 5725	-41.12	-17
Highest	5850 to 5860	-42.56	-17
	Above 5860	-44.11	-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 (802.11ac 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	60.12	7.33	67.45	74	-6.55	H	PK
15630	36.59	8.75	45.34	54	-8.66	H	AV
10420	55.94	7.33	63.27	74	-10.73	V	PK
15630	35.07	8.75	43.82	54	-10.18	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
5775MHz							
11550	54.14	9.54	63.68	74	-10.32	H	PK
17325	37.45	10.59	48.04	54	-5.96	H	AV
11550	54.55	9.54	64.09	74	-9.91	V	PK
17325	32.20	10.59	42.79	54	-11.21	V	AV

- Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-34.87	-27
Highest	Above 5350	-32.10	-27

Note: the data just list the worst cases

- Out of Band edge for 5725-5850MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5715	-45.46	-27
	5715 to 5725	-31.00	-17
Highest	5850 to 5860	-27.11	-17
	Above 5860	-38.86	-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**

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### **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

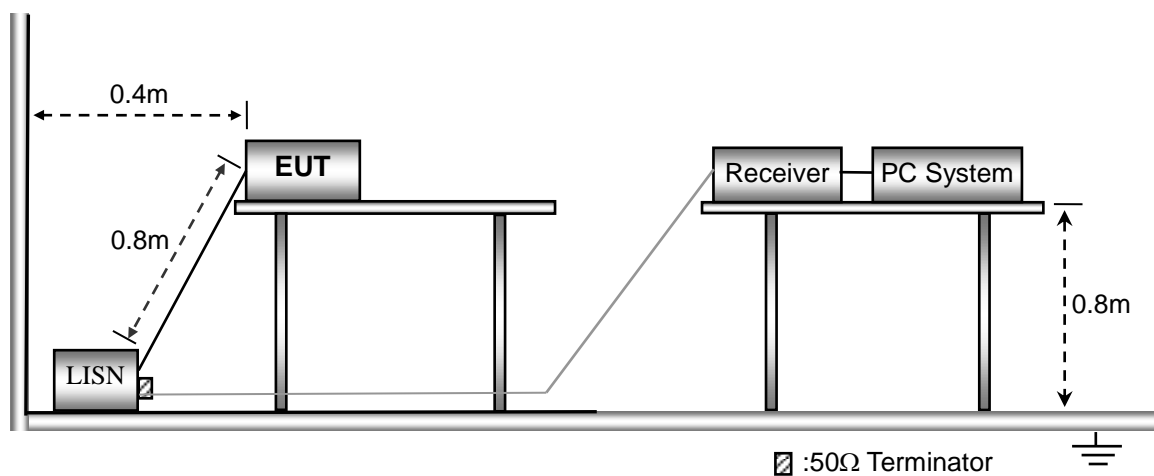
### 10.1 Test Procedure

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



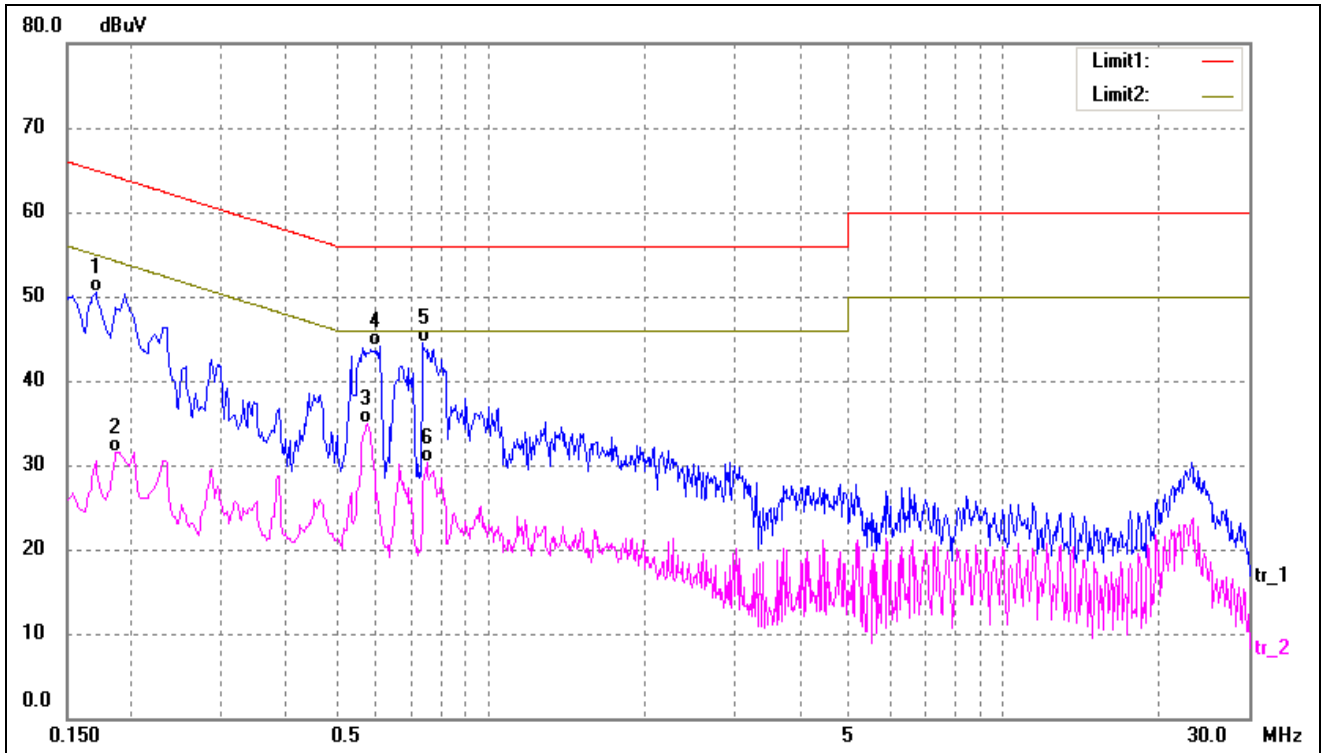
### 10.3 Test Receiver Setup

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

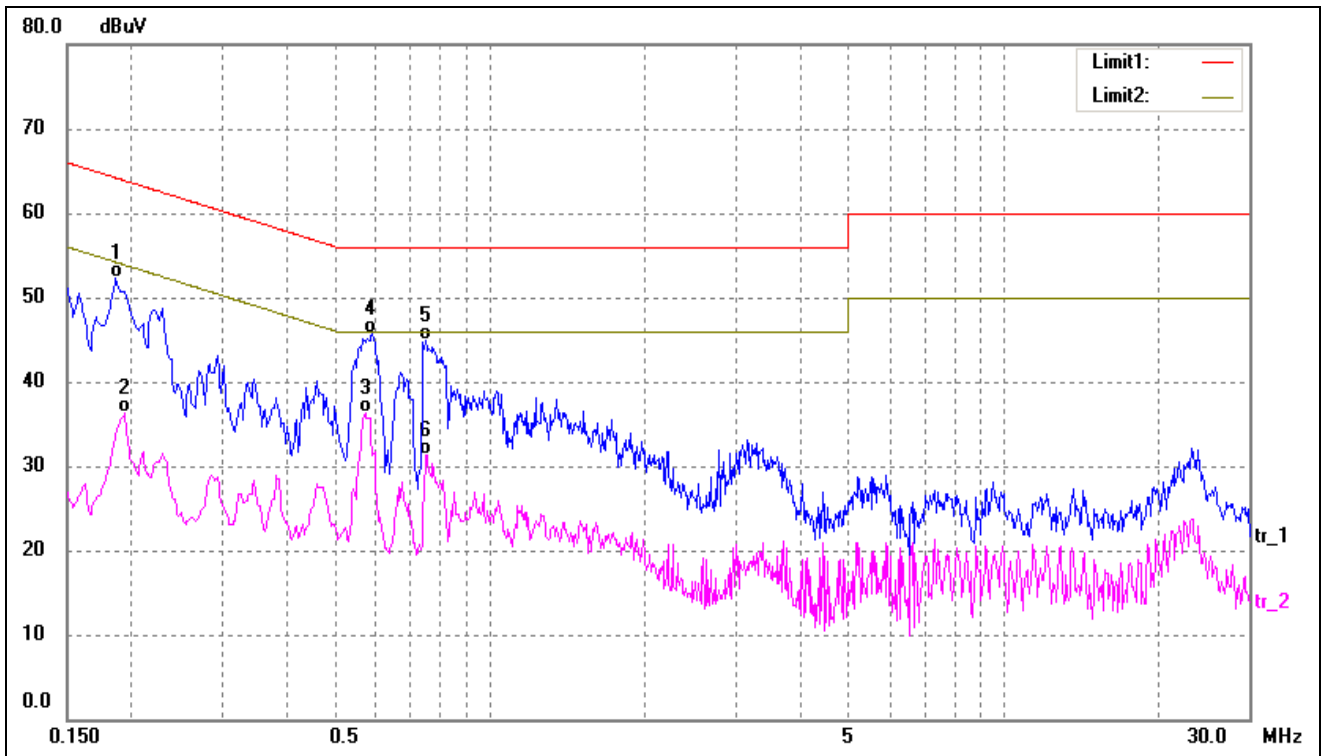
### 10.4 Summary of Test Results/Plots

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	0.1700	40.21	10.25	50.46	64.96	-14.50	QP
2	0.1860	21.26	10.26	31.52	54.21	-22.69	AVG
3*	0.5780	24.60	10.21	34.81	46.00	-11.19	AVG
4	0.6100	33.82	10.20	44.02	56.00	-11.98	QP
5	0.7420	34.33	10.18	44.51	56.00	-11.49	QP
6	0.7540	20.20	10.17	30.37	46.00	-15.63	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	0.1860	41.98	10.26	52.24	64.21	-11.97	QP
2	0.1940	25.98	10.27	36.25	53.86	-17.61	AVG
3*	0.5700	26.06	10.21	36.27	46.00	-9.73	AVG
4	0.5900	35.41	10.21	45.62	56.00	-10.38	QP
5	0.7500	34.82	10.18	45.00	56.00	-11.00	QP
6	0.7540	21.21	10.17	31.38	46.00	-14.62	AVG

**APPENDIX SUMMARY**

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Project No.	WTH21X08079217W	Test Engineer	Gala
Start date	2021/8/10	Finish date	2021/8/10
Temperature	25°C	Humidity	45%
RF specifications	U-NII		

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

**APPENDIX A**

<b>Power Spectral Density</b>					
<b>U-NII-1:5150-5250MHz</b>					
Operating mode	Test Channel	ANT 0 dBm/MHz	ANT 1 dBm/MHz	Total dBm/MHz	Limit (dBm/MHz)
802.11a	5180	5.355	6.450	/	11
	5200	5.472	5.963	/	11
	5240	4.667	5.821	/	11
802.11n-HT20	5180	5.103	5.000	8.06	11
	5200	5.309	5.195	8.26	11
	5240	5.245	5.026	8.15	11
802.11n-HT40	5190	1.064	0.794	3.94	11
	5230	1.057	1.013	4.05	11
802.11ac-HT80	5210	-5.431	-3.902	-1.59	11

<b>Power Spectral Density</b>							
<b>U-NII-3: 5725-5850MHz</b>							
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	0.761	1.305	2.22	2.981	3.525	30
	5785	1.011	1.388	2.22	3.231	3.608	30
	5825	-0.946	1.320	2.22	1.274	3.540	30

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

<b>Power Spectral Density</b>							
<b>U-NII-3: 5725-5850MHz</b>							
Operating mode	Test Channel	ANT 0 dBm/300kHz	ANT 1 dBm/300kHz	Factor	Total dBm/500kHz*	Limit dBm/500kHz	
802.11n-HT20	5745	-0.330	1.001	2.22	4.85	30	
	5785	-0.588	-0.371	2.22	5.23	30	
	5825	-3.275	-0.703	2.22	5.37	30	
802.11n HT40	5755	-4.363	-4.316	2.22	0.74	30	
	5795	-4.426	-4.194	2.22	0.74	30	
802.11ac VH80	5775	-8.679	-8.069	2.22	-3.51	30	

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

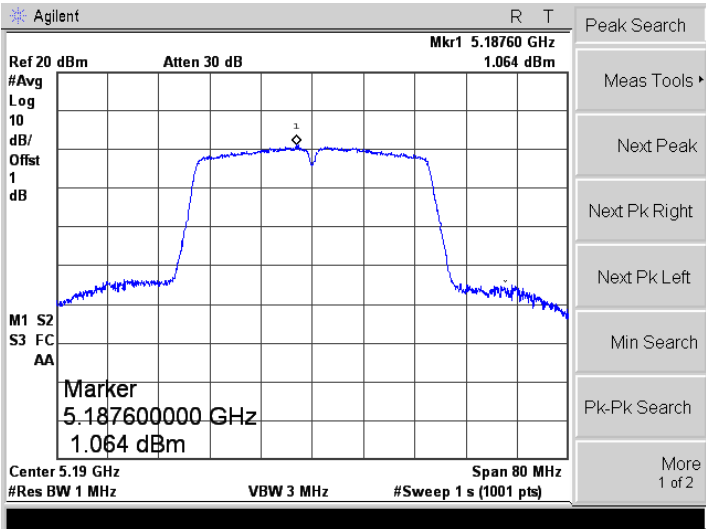
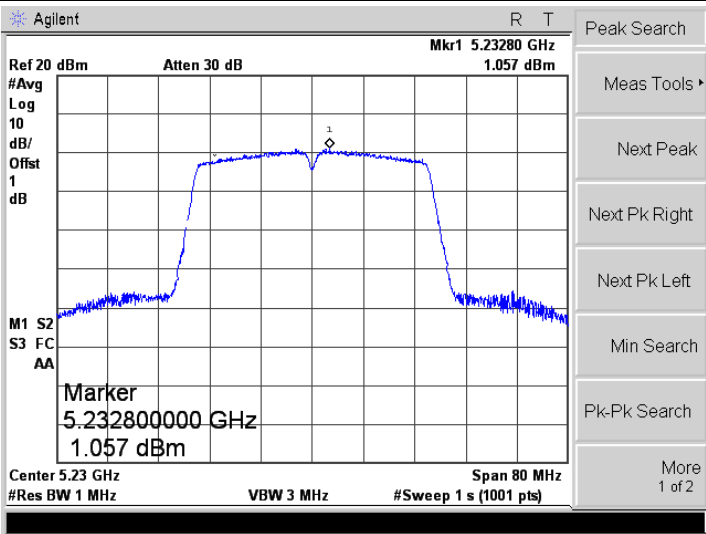
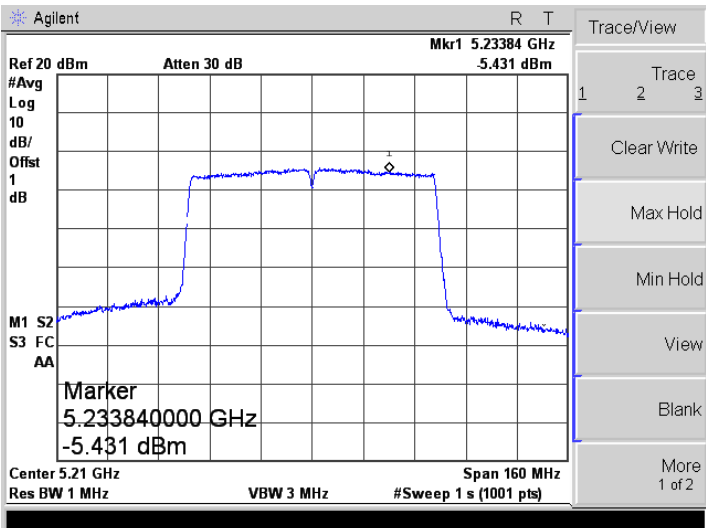
ANT 0

5150-5250MHz

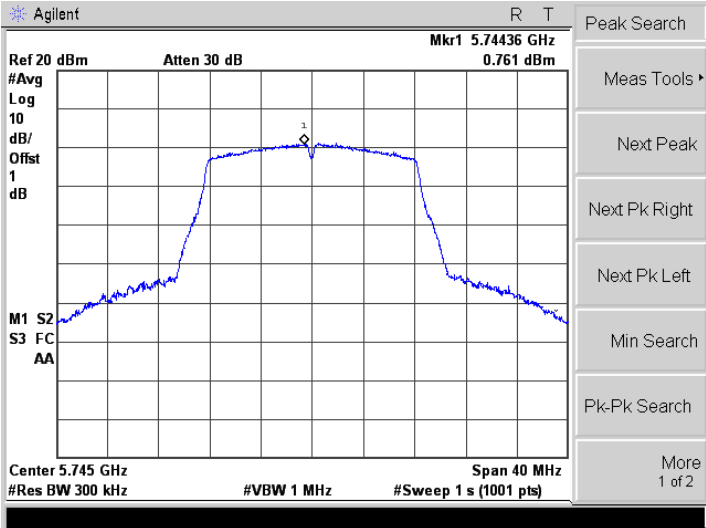
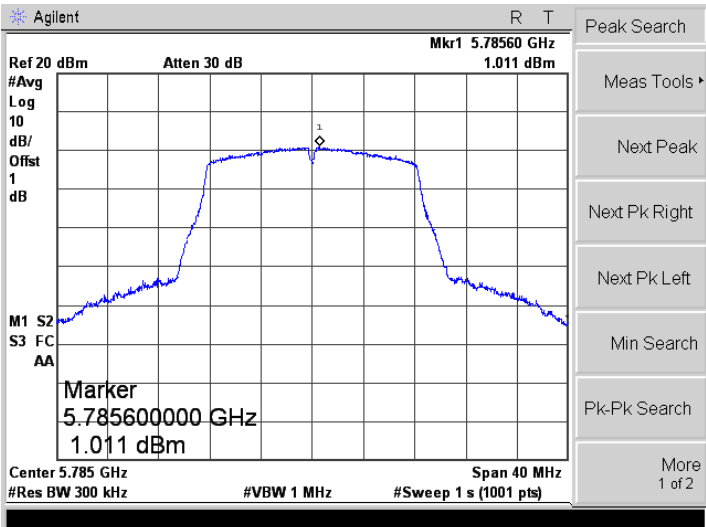
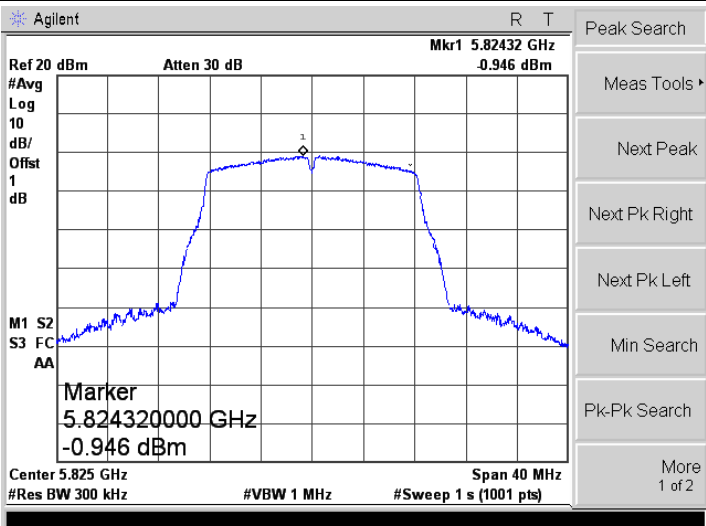
<p>802.11a-Low</p>	
<p>802.11a-Middle</p>	
<p>802.11a-High</p>	

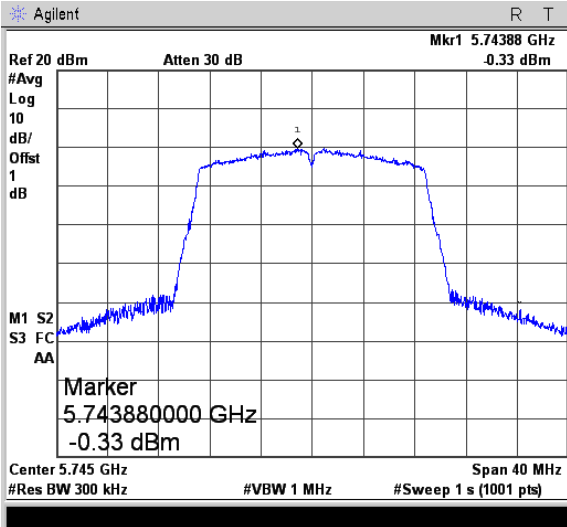
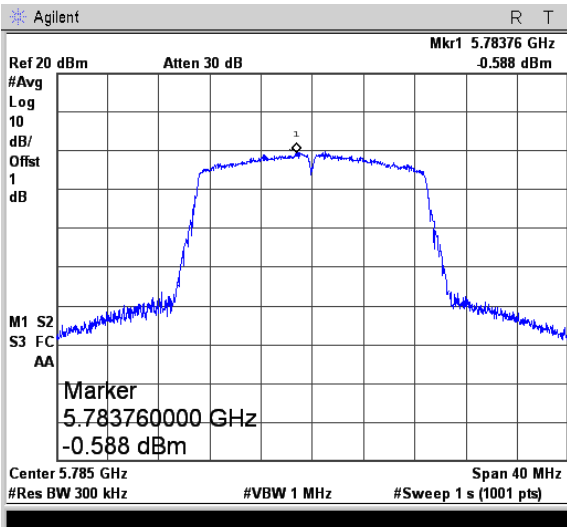
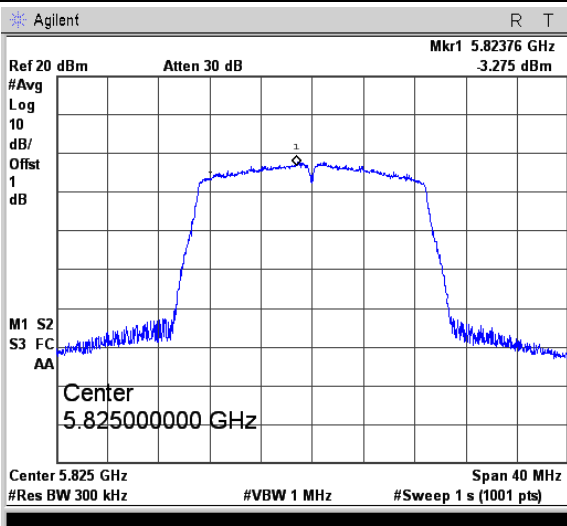
<p>802.11n-HT20-Low</p>	<p>Agilent R T          Ref 20 dBm Atten 30 dB Mkr1 5.17920 GHz 5.103 dBm          #Avg 10 Log dB/ Offst 1 dB          M1 S2 S3 FC AA          Marker 5.17920000 GHz 5.103 dBm          Center 5.18 GHz Span 40 MHz          #Res BW 1 MHz VBW 3 MHz #Sweep 1 s (1001 pts)</p>
<p>802.11n-HT20-Middle</p>	<p>Agilent R T          Ref 20 dBm Atten 30 dB Mkr1 5.19912 GHz 5.309 dBm          #Avg 10 Log dB/ Offst 1 dB          M1 S2 S3 FC AA          Marker 5.199120000 GHz 5.309 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 5.23896 GHz 5.245 dBm          #Avg 10 Log dB/ Offst 1 dB          M1 S2 S3 FC AA          Marker 5.238960000 GHz 5.245 dBm          Center 5.24 GHz Span 40 MHz          #Res BW 1 MHz VBW 3 MHz #Sweep 1 s (1001 pts)</p>

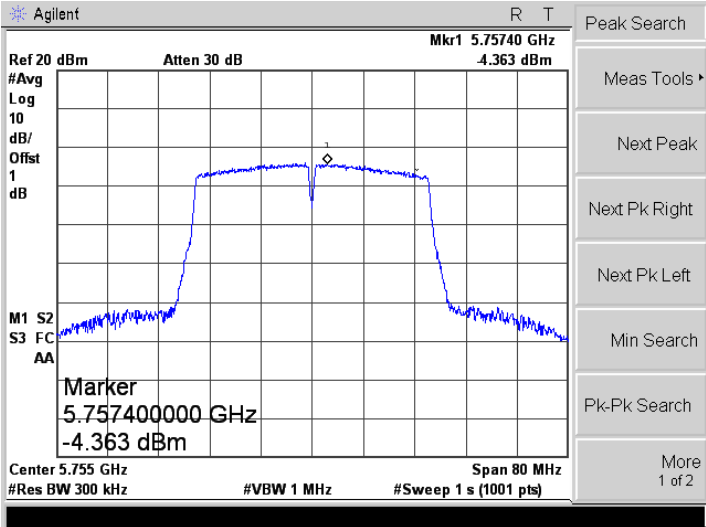
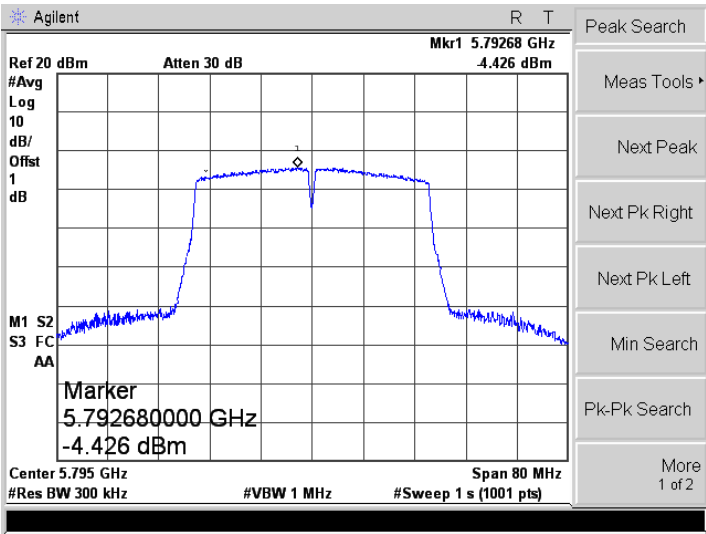
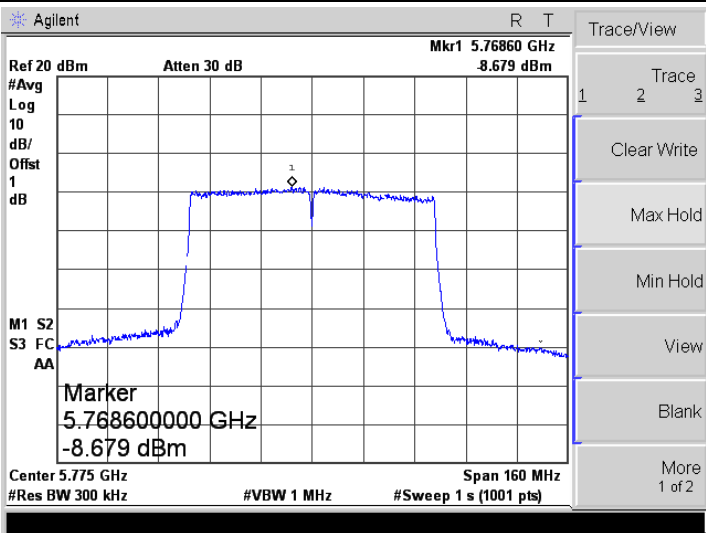


<p>802.11n-HT40-Low</p>	 <p>Agilent R T          Ref 20 dBm Atten 30 dB Mkr1 5.18760 GHz 1.064 dBm          #Avg 10 Log dB/ Offst 1 dB          M1 S2 S3 FC AA          Marker 5.18760000 GHz 1.064 dBm          Center 5.19 GHz Span 80 MHz          #Res BW 1 MHz VBW 3 MHz #Sweep 1 s (1001 pts)</p>
<p>802.11n-HT40-High</p>	 <p>Agilent R T          Ref 20 dBm Atten 30 dB Mkr1 5.23280 GHz 1.057 dBm          #Avg 10 Log dB/ Offst 1 dB          M1 S2 S3 FC AA          Marker 5.23280000 GHz 1.057 dBm          Center 5.23 GHz Span 80 MHz          #Res BW 1 MHz VBW 3 MHz #Sweep 1 s (1001 pts)</p>
<p>802.11ac-HT80</p>	 <p>Agilent R T          Ref 20 dBm Atten 30 dB Mkr1 5.23384 GHz -5.431 dBm          #Avg 10 Log dB/ Offst 1 dB          M1 S2 S3 FC AA          Marker 5.233840000 GHz -5.431 dBm          Center 5.21 GHz Span 160 MHz          Res BW 1 MHz VBW 3 MHz #Sweep 1 s (1001 pts)</p>

5725-5850MHz

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

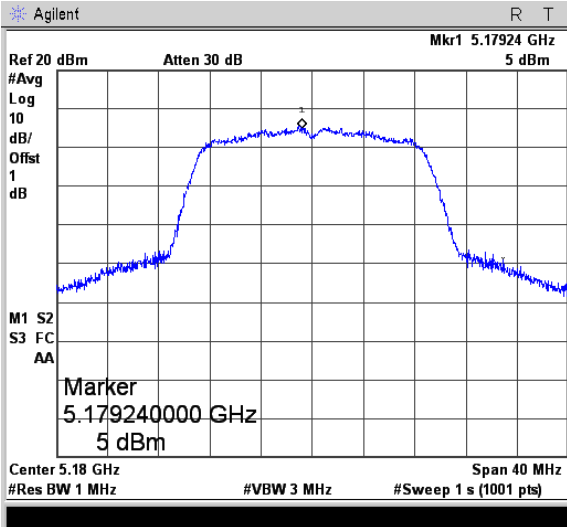
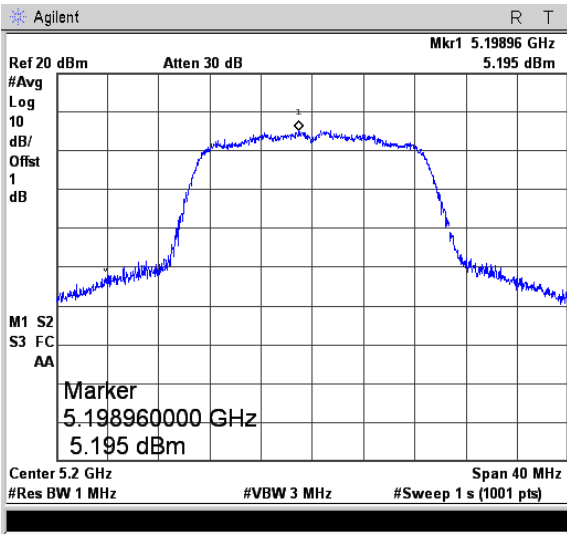
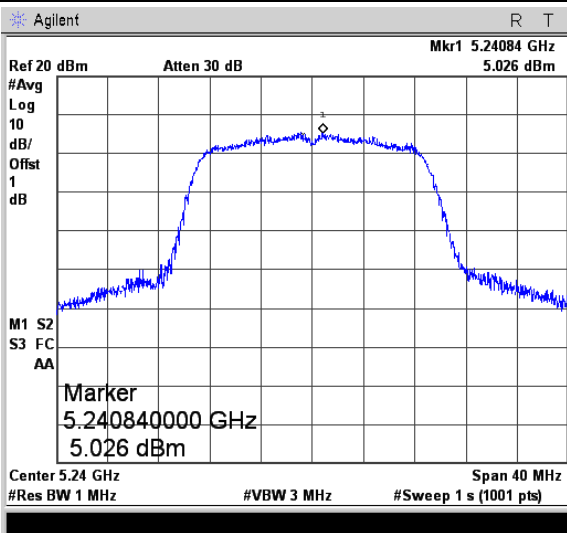
<p>802.11n-HT20-Low</p>	 <p>Agilent R T          Ref 20 dBm Atten 30 dB Mkr1 5.74388 GHz -0.33 dBm          #Avg 10 Log dB/ Offst 1 dB          M1 S2 S3 FC AA          Marker 5.743880000 GHz -0.33 dBm          Center 5.745 GHz Span 40 MHz          #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts)</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent R T          Ref 20 dBm Atten 30 dB Mkr1 5.78376 GHz -0.588 dBm          #Avg 10 Log dB/ Offst 1 dB          M1 S2 S3 FC AA          Marker 5.783760000 GHz -0.588 dBm          Center 5.785 GHz Span 40 MHz          #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts)</p>
<p>802.11n-HT20-High</p>	 <p>Agilent R T          Ref 20 dBm Atten 30 dB Mkr1 5.82376 GHz -3.275 dBm          #Avg 10 Log dB/ Offst 1 dB          M1 S2 S3 FC AA          Center 5.825000000 GHz          Center 5.825 GHz Span 40 MHz          #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts)</p>

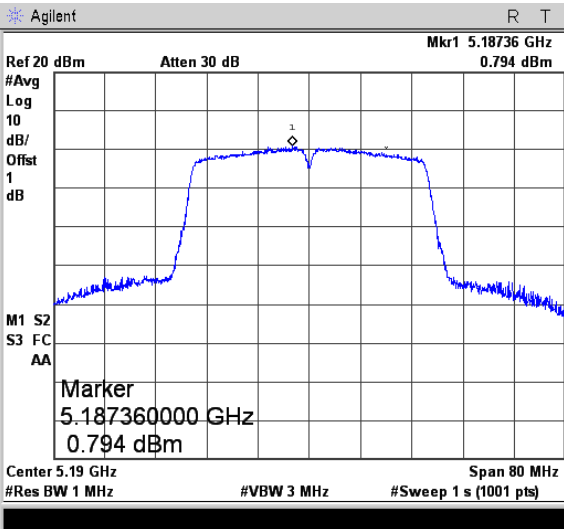
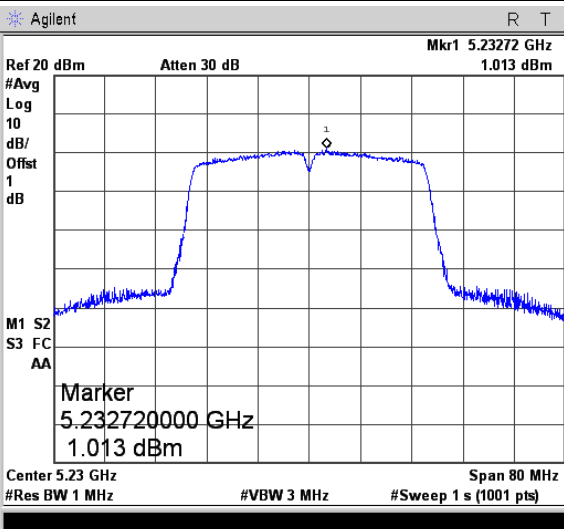
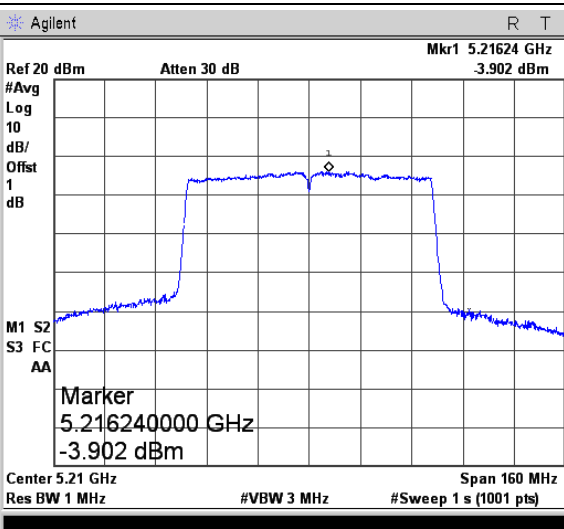
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<p>802.11n-HT40-High</p>	
<p>802.11ac-HT80</p>	

ANT 1

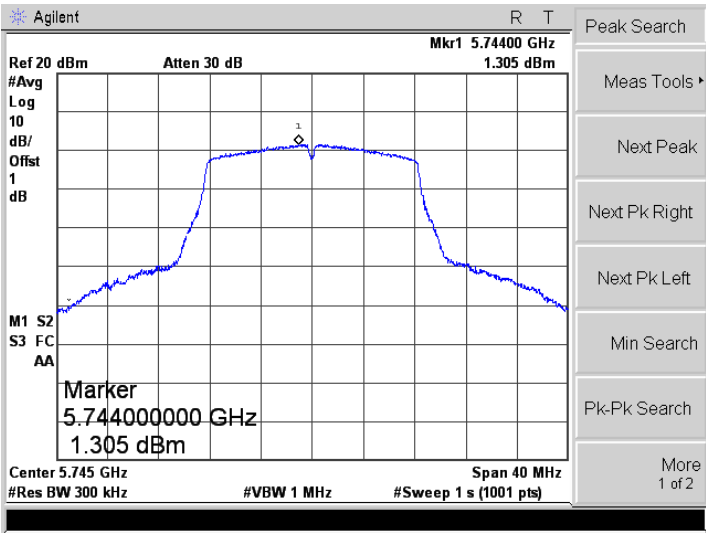
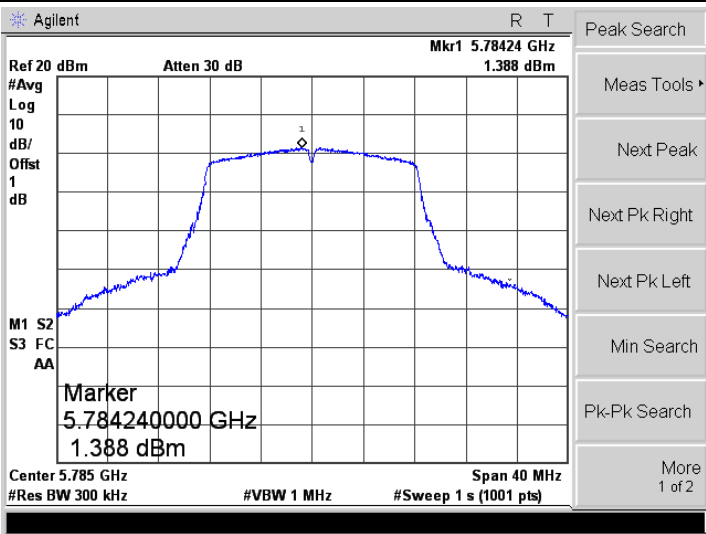
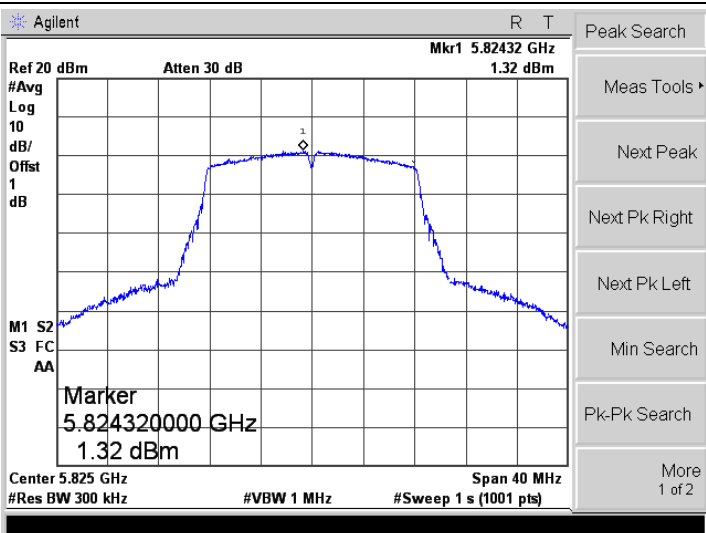
5150-5250MHz

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

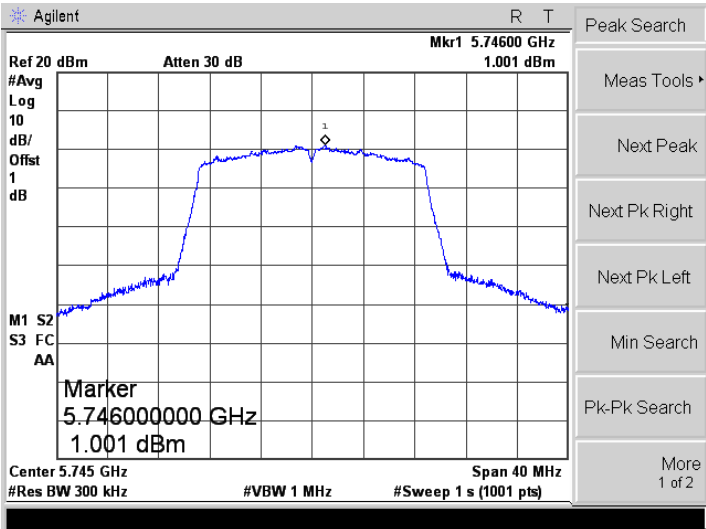
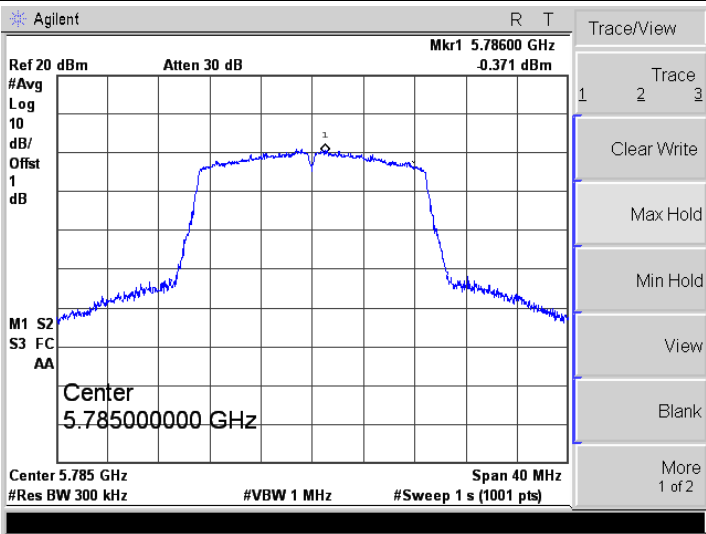
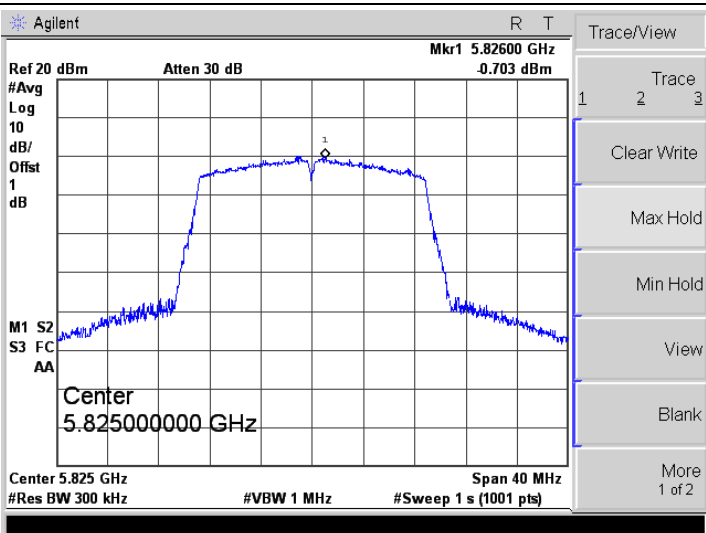
<p>802.11n-HT20-Low</p>	 <p>Agilent R T          Ref 20 dBm Atten 30 dB Mkr1 5.17924 GHz 5 dBm          #Avg 10 Log dB/ Offst 1 dB          M1 S2 S3 FC AA          Marker 5.179240000 GHz 5 dBm          Center 5.18 GHz Span 40 MHz          #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts)</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent R T          Ref 20 dBm Atten 30 dB Mkr1 5.19896 GHz 5.195 dBm          #Avg 10 Log dB/ Offst 1 dB          M1 S2 S3 FC AA          Marker 5.198960000 GHz 5.195 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 5.24084 GHz 5.026 dBm          #Avg 10 Log dB/ Offst 1 dB          M1 S2 S3 FC AA          Marker 5.240840000 GHz 5.026 dBm          Center 5.24 GHz Span 40 MHz          #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts)</p>

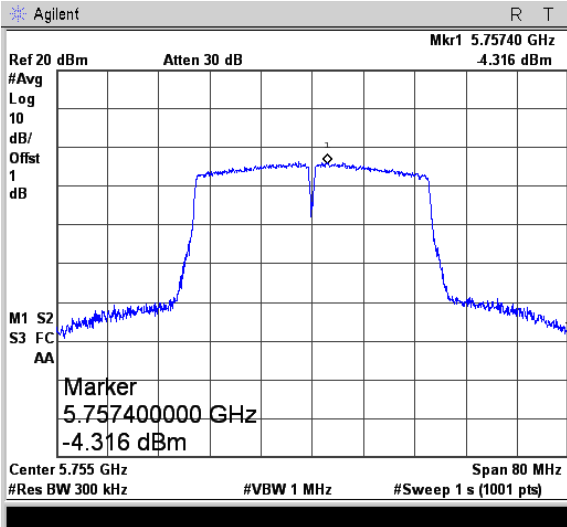
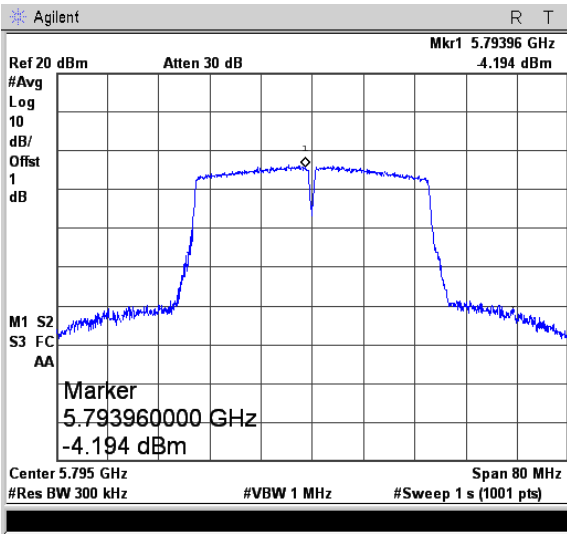
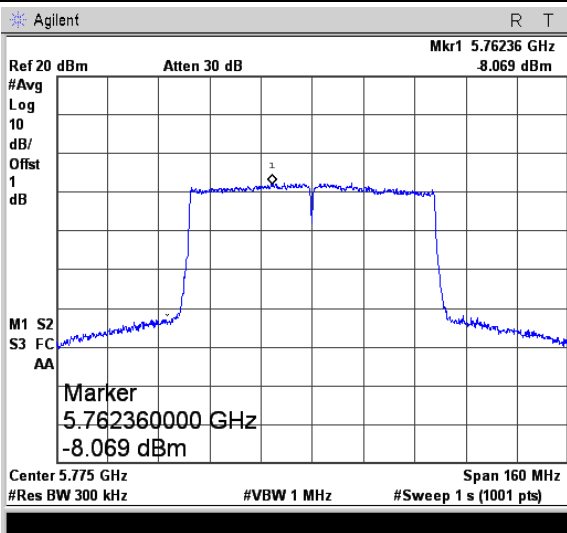
<p>802.11n-HT40-Low</p>	 <p>Agilent R T          Ref 20 dBm Atten 30 dB Mkr1 5.18736 GHz 0.794 dBm          #Avg 10 Log dB/ Offst 1 dB          M1 S2 S3 FC AA          Marker 5.187360000 GHz 0.794 dBm          Center 5.19 GHz Span 80 MHz          #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts)</p>
<p>802.11n-HT40-High</p>	 <p>Agilent R T          Ref 20 dBm Atten 30 dB Mkr1 5.23272 GHz 1.013 dBm          #Avg 10 Log dB/ Offst 1 dB          M1 S2 S3 FC AA          Marker 5.232720000 GHz 1.013 dBm          Center 5.23 GHz Span 80 MHz          #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts)</p>
<p>802.11ac-HT80</p>	 <p>Agilent R T          Ref 20 dBm Atten 30 dB Mkr1 5.21624 GHz -3.902 dBm          #Avg 10 Log dB/ Offst 1 dB          M1 S2 S3 FC AA          Marker 5.216240000 GHz -3.902 dBm          Center 5.21 GHz Span 160 MHz          Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts)</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          Ref 20 dBm Atten 30 dB Mkr1 5.74600 GHz 1.001 dBm          #Avg Log          10 dB/ Offst 1 dB          M1 S2          S3 FC          AA          Marker          5.74600000 GHz          1.001 dBm          Center 5.745 GHz Span 40 MHz          #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts)</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent R T          Ref 20 dBm Atten 30 dB Mkr1 5.78600 GHz -0.371 dBm          #Avg Log          10 dB/ Offst 1 dB          M1 S2          S3 FC          AA          Center          5.78500000 GHz          Center 5.785 GHz Span 40 MHz          #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts)</p>
<p>802.11n-HT20-High</p>	 <p>Agilent R T          Ref 20 dBm Atten 30 dB Mkr1 5.82600 GHz -0.703 dBm          #Avg Log          10 dB/ Offst 1 dB          M1 S2          S3 FC          AA          Center          5.82500000 GHz          Center 5.825 GHz Span 40 MHz          #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts)</p>

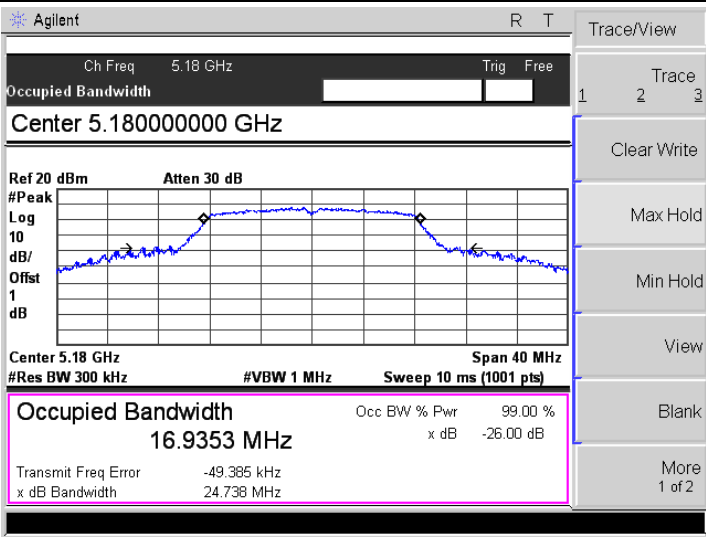
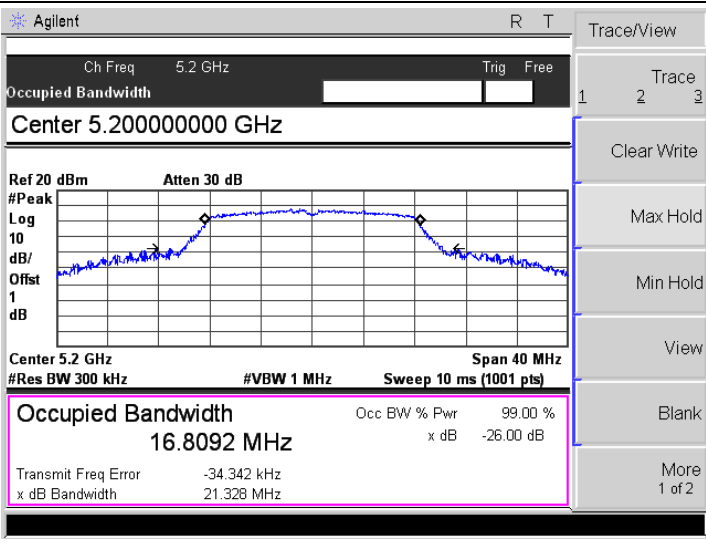
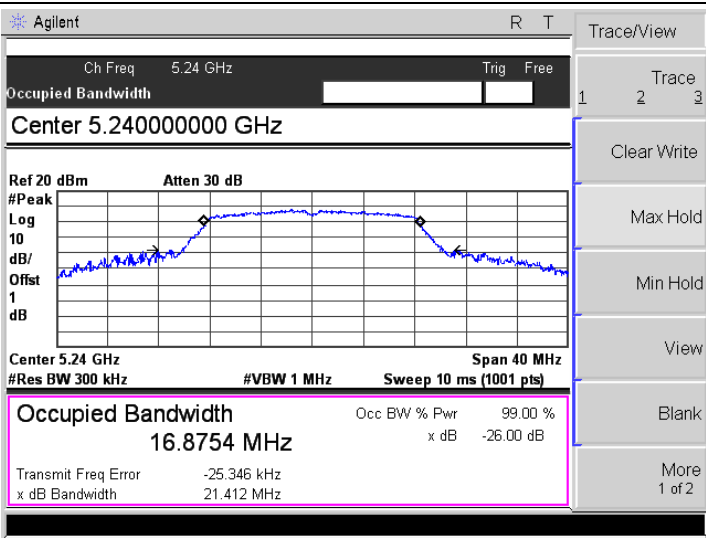
<p>802.11n-HT40-Low</p>	 <p>Agilent R T          Ref 20 dBm Atten 30 dB Mkr1 5.75740 GHz          -4.316 dBm          #Avg 10 Log dB/ Offst 1 dB          M1 S2 S3 FC AA          Marker 5.75740000 GHz          -4.316 dBm          Center 5.755 GHz Span 80 MHz          #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts)</p>
<p>802.11n-HT40-High</p>	 <p>Agilent R T          Ref 20 dBm Atten 30 dB Mkr1 5.79396 GHz          -4.194 dBm          #Avg 10 Log dB/ Offst 1 dB          M1 S2 S3 FC AA          Marker 5.79396000 GHz          -4.194 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 5.76236 GHz          -8.069 dBm          #Avg 10 Log dB/ Offst 1 dB          M1 S2 S3 FC AA          Marker 5.76236000 GHz          -8.069 dBm          Center 5.775 GHz Span 160 MHz          #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts)</p>

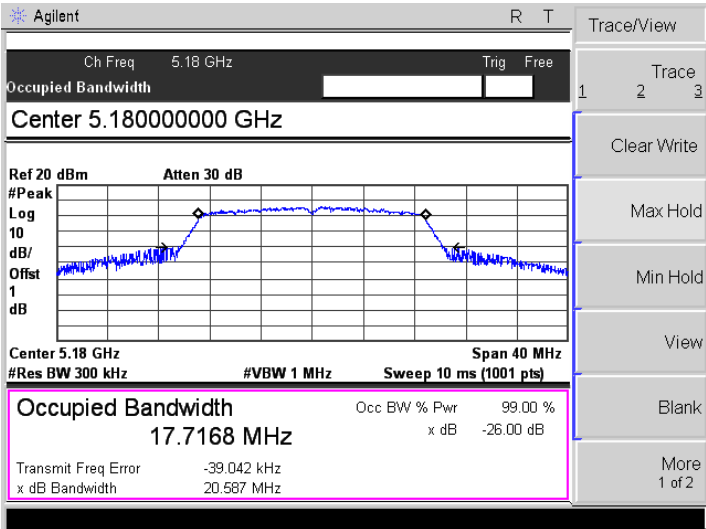
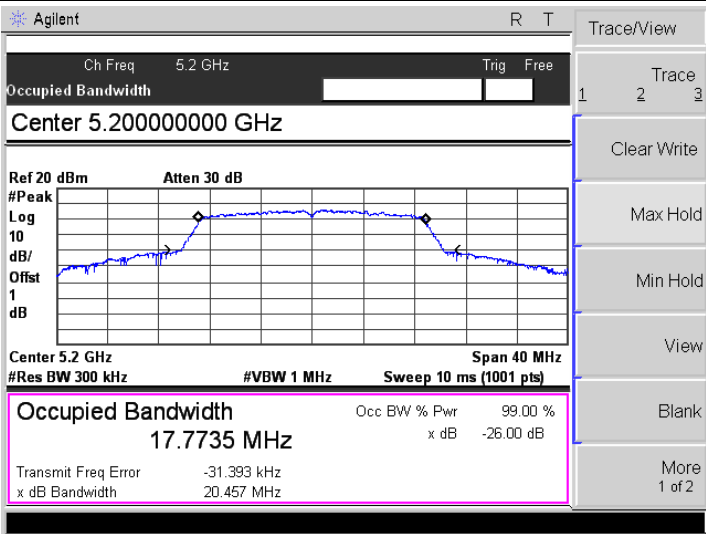
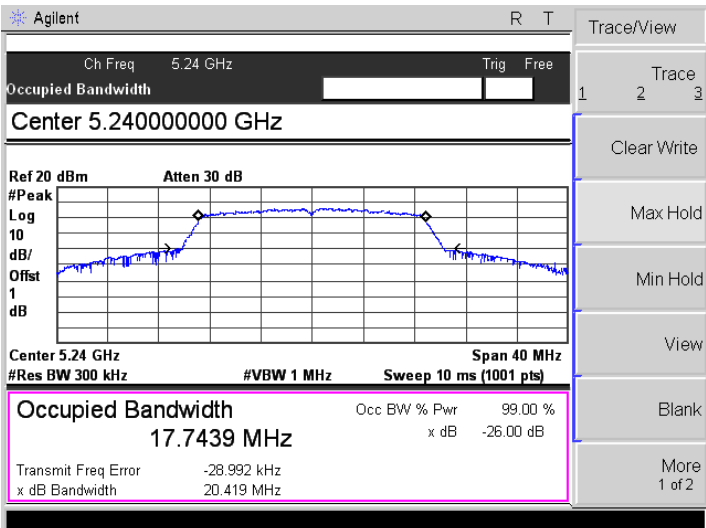
**APPENDIX B****Emission Bandwidth and Occupied Bandwidth**

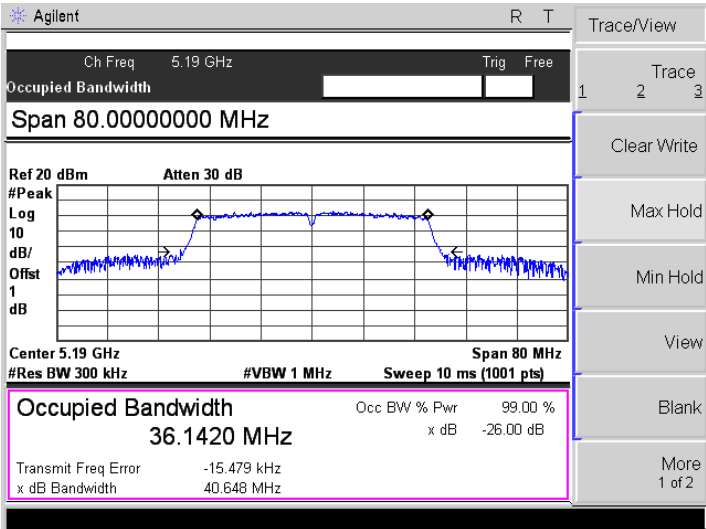
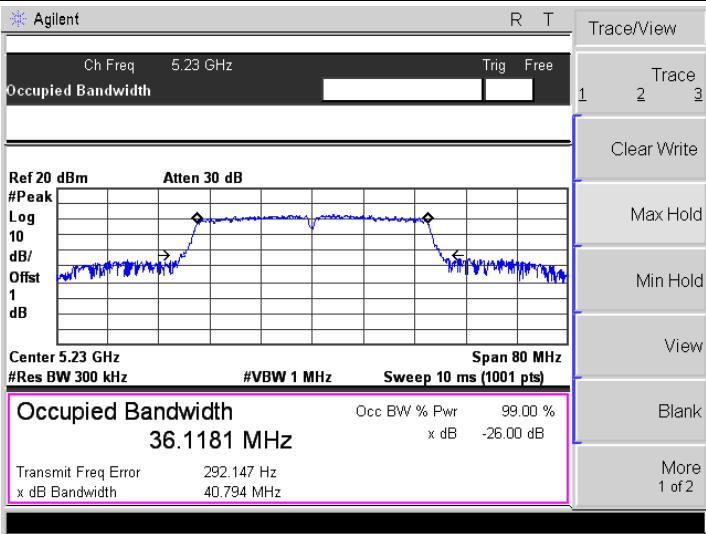
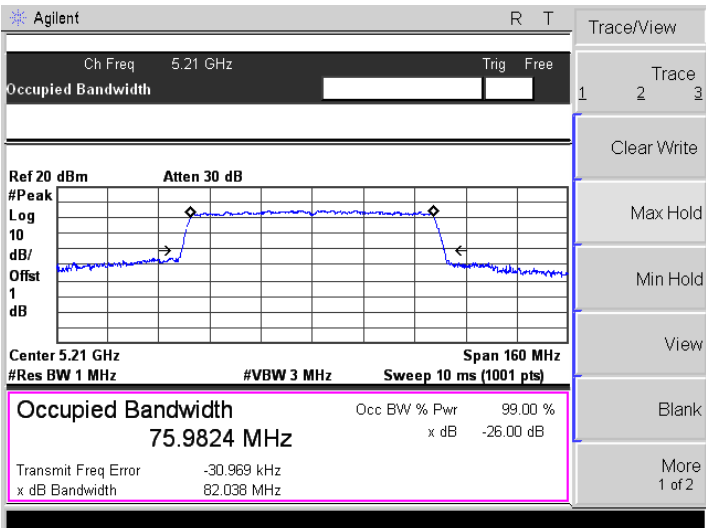
<b>U-NII-1:5150-5250MHz</b>						
<b>Test Mode</b>	<b>Test Channel MHz</b>	<b>ANT 0</b>		<b>ANT 1</b>		<b>Result</b>
		<b>26 dB Bandwidth MHz</b>	<b>99% Bandwidth MHz</b>	<b>26 dB Bandwidth MHz</b>	<b>99% Bandwidth MHz</b>	
802.11a	5180	24.738	16.94	25.633	16.925	Pass
	5200	21.328	16.80	26.047	17.011	Pass
	5240	21.412	16.88	26.854	16.905	Pass
802.11n-HT20	5180	20.587	17.72	22.845	17.802	Pass
	5200	20.457	17.78	22.052	17.753	Pass
	5240	20.419	17.74	22.124	17.749	Pass
802.11n-HT40	5190	40.648	36.14	40.839	36.157	Pass
	5230	40.794	36.12	40.809	16.160	Pass
802.11ac-HT80	5210	82.038	75.98	83.678	76.014	Pass

<b>U-NII-3: 5725-5850MHz</b>						
<b>Test Mode</b>	<b>Test Channel MHz</b>	<b>ANT 0</b>		<b>ANT 1</b>		<b>Limit kHz</b>
		<b>6 dB Bandwidth MHz</b>	<b>99% Bandwidth MHz</b>	<b>6 dB Bandwidth MHz</b>	<b>99% Bandwidth MHz</b>	
802.11a	5745	15.052	16.984	15.144	16.857	≥500
	5785	15.167	16.875	13.822	16.927	≥500
	5825	15.341	16.881	15.543	16.790	≥500
802.11n-HT20	5745	15.106	17.756	15.077	17.749	≥500
	5785	15.151	17.788	15.075	17.775	≥500
	5825	15.138	17.775	15.129	17.707	≥500
802.11n-HT40	5755	35.178	36.105	35.165	36.616	≥500
	5795	35.235	36.164	35.231	36.130	≥500
802.11ac-HT80	5775	76.176	75.945	76.229	75.922	≥500

**ANT 0**  
**5150-5250MHz**  
**-26dB Bandwidth**

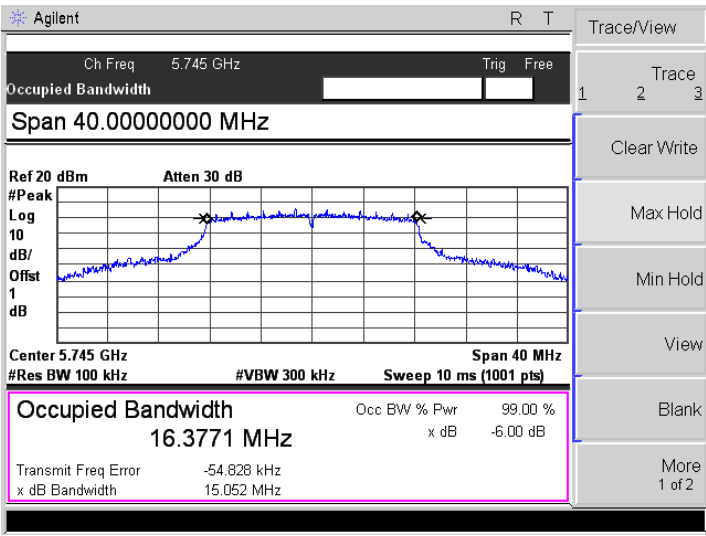
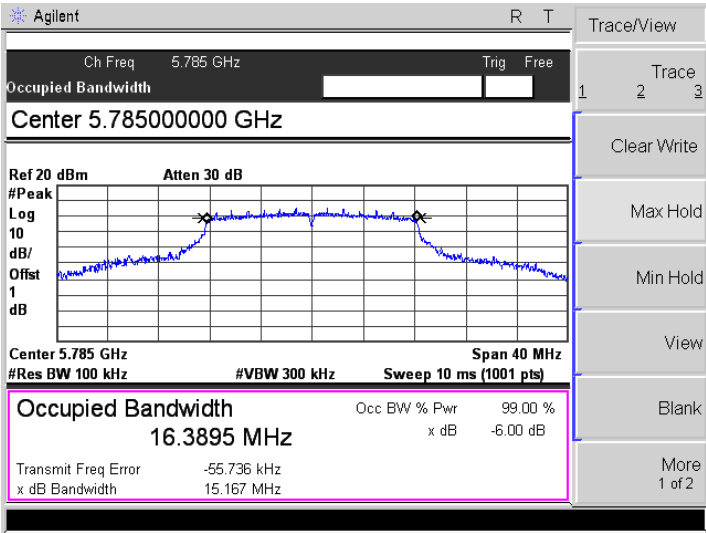
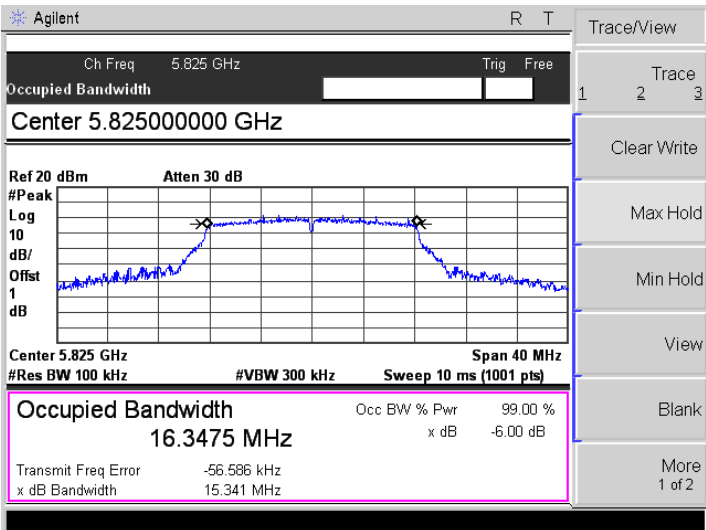
<p>802.11a-Low</p>	 <p>Agilent R T Trace/View</p> <p>Ch Freq 5.18 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.18000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/</p> <p>Offset 1 dB</p> <p>Center 5.18 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.9353 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -49.385 kHz</p> <p>x dB Bandwidth 24.738 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</p> <p>Log 10 dB/</p> <p>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 16.8092 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -34.342 kHz</p> <p>x dB Bandwidth 21.328 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>Center 5.24000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/</p> <p>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 16.8754 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -25.346 kHz</p> <p>x dB Bandwidth 21.412 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>Offset</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 17.7168 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -39.042 kHz</p> <p>x dB Bandwidth 20.587 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>Offset</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 17.7735 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -31.393 kHz</p> <p>x dB Bandwidth 20.457 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>Offset</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 17.7439 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -28.992 kHz</p> <p>x dB Bandwidth 20.419 MHz</p>

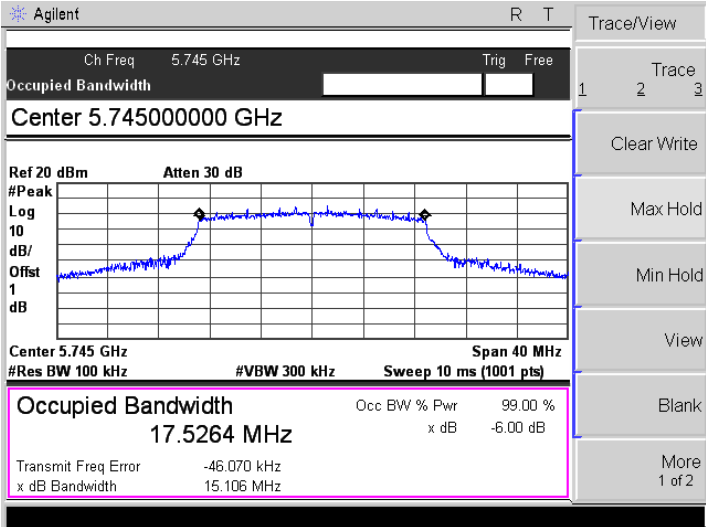
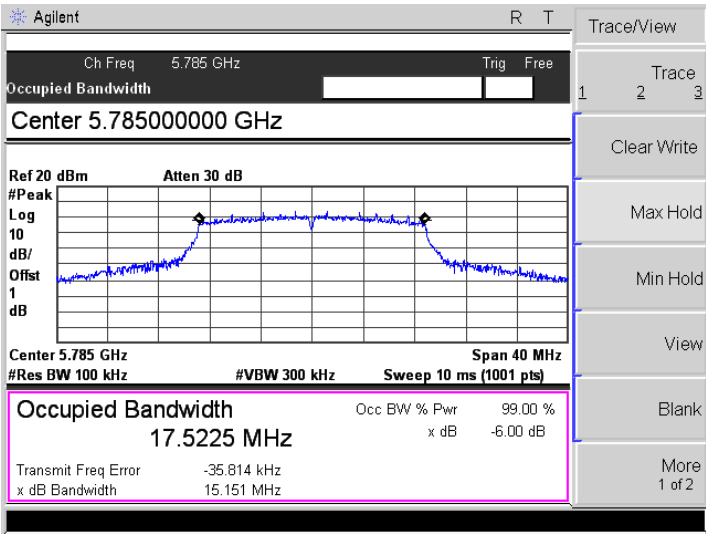
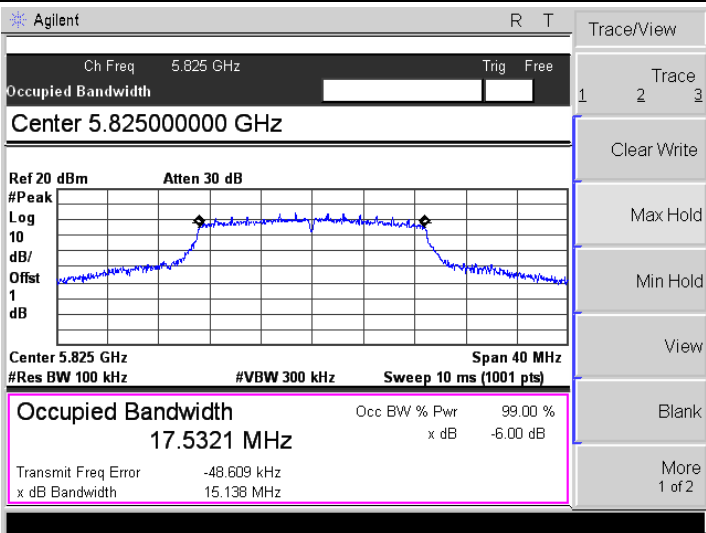
<p>802.11n-HT40-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.19 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Span 80.00000000 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>10 dB/</p> <p>Offst</p> <p>1 dB</p> <p>Center 5.19 GHz Span 80 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 36.1420 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -15.479 kHz</p> <p>x dB Bandwidth 40.648 MHz</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>Span 80 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>10 dB/</p> <p>Offst</p> <p>1 dB</p> <p>Center 5.23 GHz Span 80 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 36.1181 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 292.147 Hz</p> <p>x dB Bandwidth 40.794 MHz</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>Span 160 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>10 dB/</p> <p>Offst</p> <p>1 dB</p> <p>Center 5.21 GHz Span 160 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 75.9824 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -30.969 kHz</p> <p>x dB Bandwidth 82.038 MHz</p>

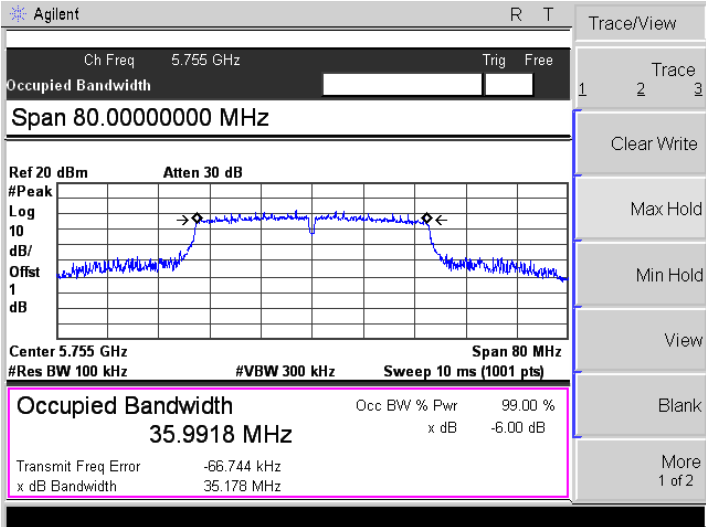
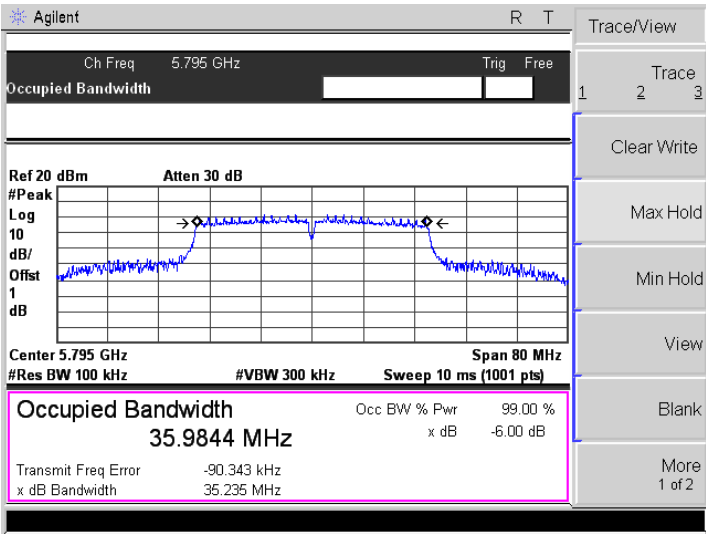
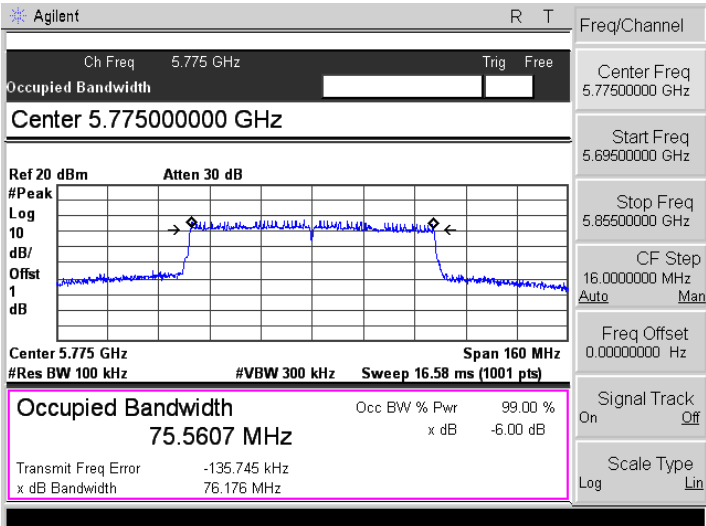
5725-5850MHz

6dB Bandwidth

<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>Span 40.00000000 MHz</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 16.3771 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -54.828 kHz</p> <p>x dB Bandwidth 15.052 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</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 16.3895 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -55.736 kHz</p> <p>x dB Bandwidth 15.167 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>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 16.3475 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -56.586 kHz</p> <p>x dB Bandwidth 15.341 MHz</p>

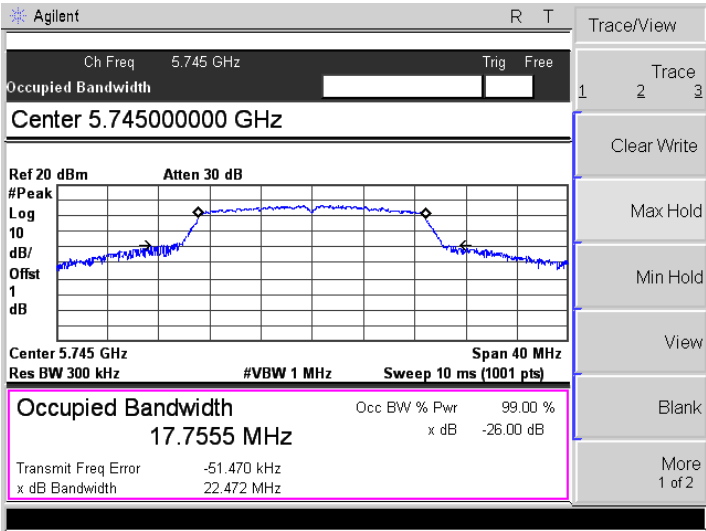
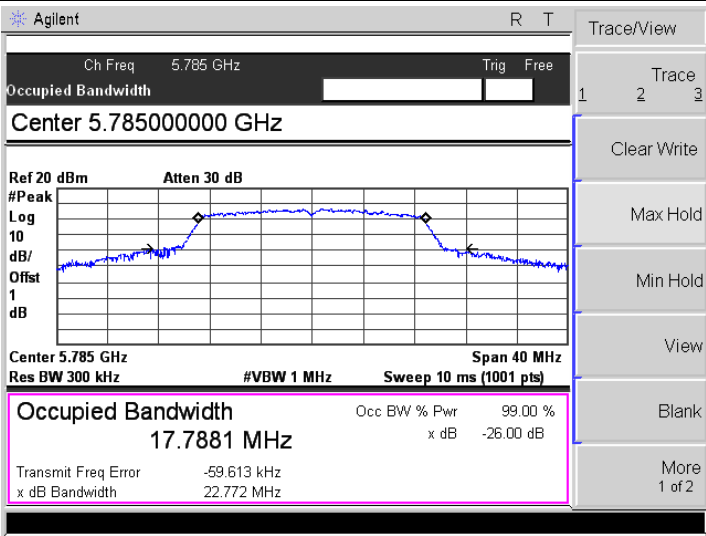
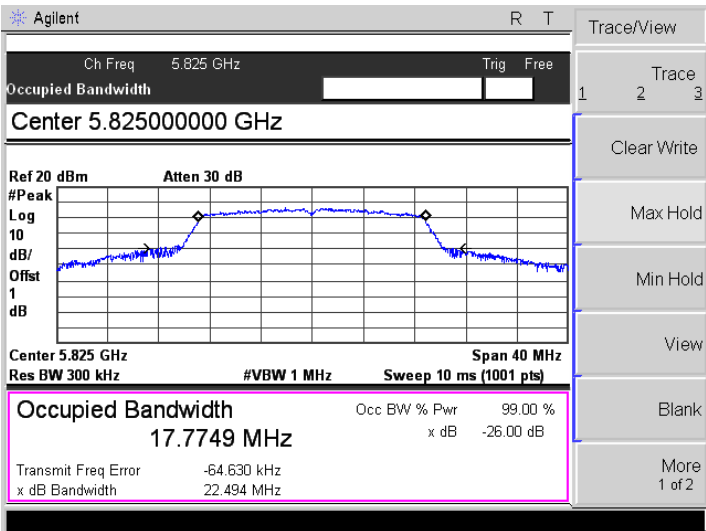


<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.74500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/</p> <p>Offst 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.5264 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -46.070 kHz</p> <p>x dB Bandwidth 15.106 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 17.5225 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -35.814 kHz</p> <p>x dB Bandwidth 15.151 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 17.5321 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -48.609 kHz</p> <p>x dB Bandwidth 15.138 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</p> <p>dB/</p> <p>Offst 1</p> <p>dB</p> <p>Center 5.755 GHz Span 80 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 35.9918 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -66.744 kHz</p> <p>x dB Bandwidth 35.178 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</p> <p>dB/</p> <p>Offst 1</p> <p>dB</p> <p>Center 5.795 GHz Span 80 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 35.9844 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -90.343 kHz</p> <p>x dB Bandwidth 35.235 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>Center 5.77500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10</p> <p>dB/</p> <p>Offst 1</p> <p>dB</p> <p>Center 5.775 GHz Span 160 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 16.58 ms (1001 pts)</p> <p>Occupied Bandwidth 75.5607 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -135.745 kHz</p> <p>x dB Bandwidth 76.176 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 16.0000000 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**  
**99%OBW**

<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><b>VBW 1.00000000 MHz</b></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><b>Occupied Bandwidth 16.9835 MHz</b></p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -86.597 kHz x dB Bandwidth 24.849 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><b>Center 5.78500000 GHz</b></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><b>Occupied Bandwidth 16.8752 MHz</b></p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -71.089 kHz x dB Bandwidth 24.897 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><b>Center 5.82500000 GHz</b></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><b>Occupied Bandwidth 16.8810 MHz</b></p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -81.152 kHz x dB Bandwidth 24.900 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 dB/</p> <p>Offst</p> <p>1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.755 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -51.470 kHz</p> <p>x dB Bandwidth 22.472 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</p> <p>10 dB/</p> <p>Offst</p> <p>1 dB</p> <p>Center 5.785 GHz Span 40 MHz</p> <p>Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7881 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -59.613 kHz</p> <p>x dB Bandwidth 22.772 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 dB/</p> <p>Offst</p> <p>1 dB</p> <p>Center 5.825 GHz Span 40 MHz</p> <p>Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7749 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -64.630 kHz</p> <p>x dB Bandwidth 22.494 MHz</p>

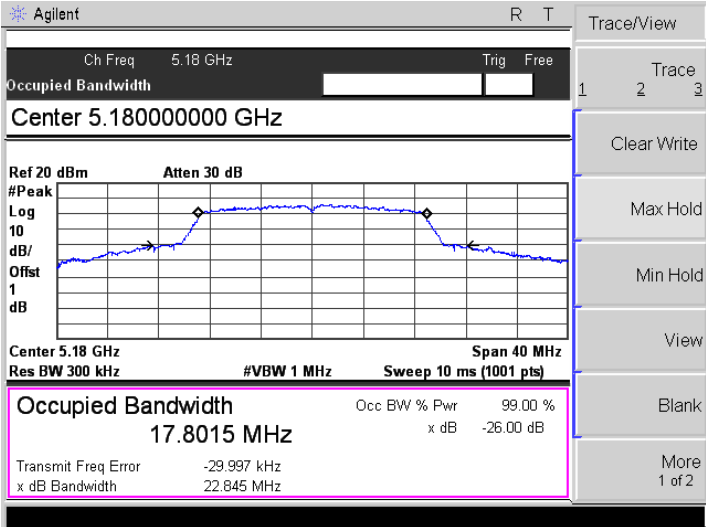
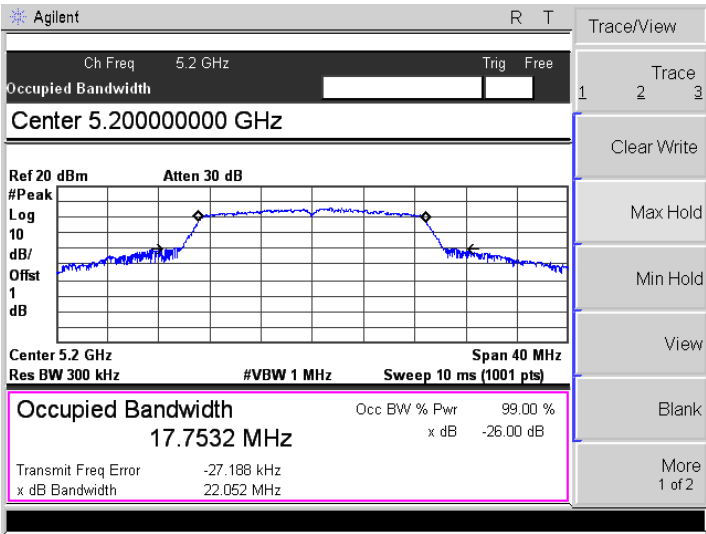
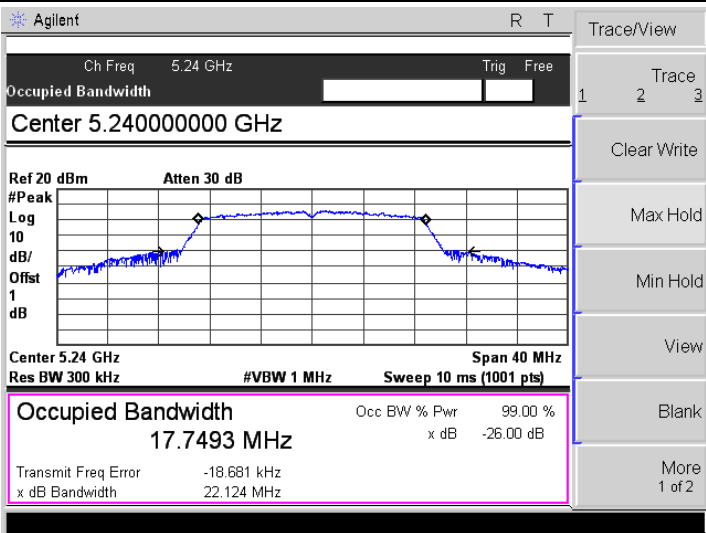
<p>802.11n-HT40-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.755 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p><b>RBW 300.000000 kHz</b></p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>10</p> <p>dB/</p> <p>Offst</p> <p>1</p> <p>dB</p> <p>Center 5.755 GHz Span 80 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p><b>Occupied Bandwidth</b> Occ BW % Pwr 99.00 %</p> <p><b>36.1048 MHz</b> x dB -26.00 dB</p> <p>Transmit Freq Error -66.716 kHz</p> <p>x dB Bandwidth 40.890 MHz</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><b>Center 5.79500000 GHz</b></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 5.795 GHz Span 80 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p><b>Occupied Bandwidth</b> Occ BW % Pwr 99.00 %</p> <p><b>36.1640 MHz</b> x dB -26.00 dB</p> <p>Transmit Freq Error -56.213 kHz</p> <p>x dB Bandwidth 40.853 MHz</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><b>Center 5.77500000 GHz</b></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 5.775 GHz Span 160 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 10 ms (1001 pts)</p> <p><b>Occupied Bandwidth</b> Occ BW % Pwr 99.00 %</p> <p><b>75.9451 MHz</b> x dB -26.00 dB</p> <p>Transmit Freq Error -248.040 kHz</p> <p>x dB Bandwidth 82.181 MHz</p>

ANT 1

5150-5250MHz

-26dB Bandwidth

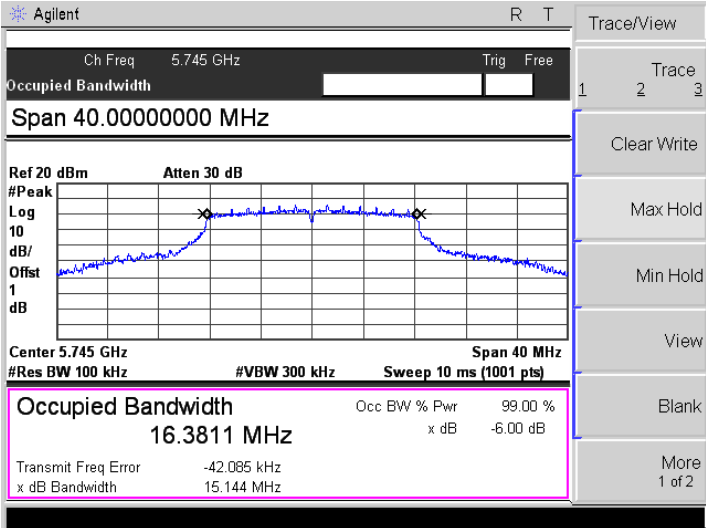
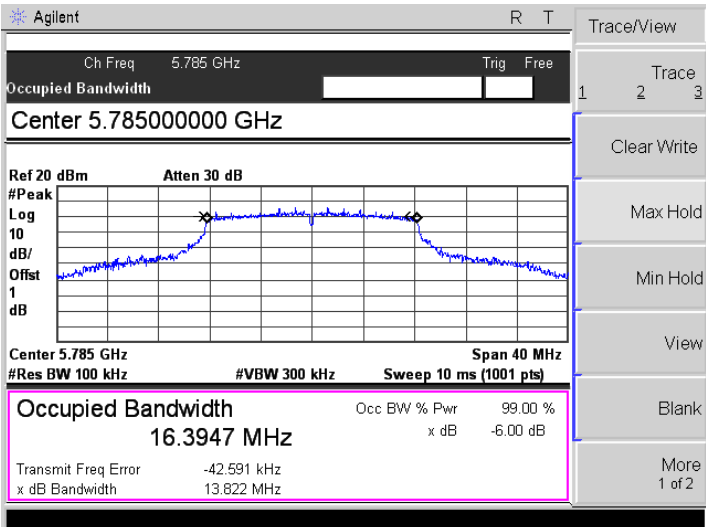
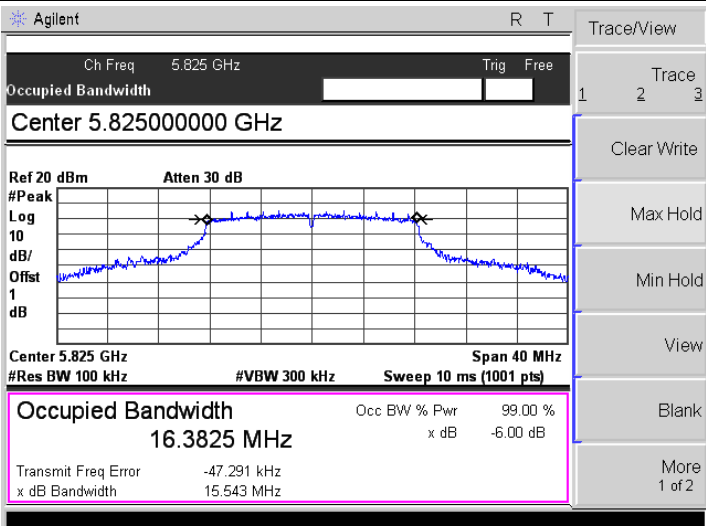
<p>802.11a-Low</p>	<p>Agilent R T Trace/View</p> <p>Ch Freq 5.18 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>VBW 1.00000000 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/</p> <p>Offst 1 dB</p> <p>Center 5.18 GHz Span 40 MHz</p> <p>Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.9247 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -17.323 kHz</p> <p>x dB Bandwidth 25.633 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</p> <p>Log 10 dB/</p> <p>Offst 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 17.0113 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -14.622 kHz</p> <p>x dB Bandwidth 26.047 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</p> <p>Log 10 dB/</p> <p>Offst 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 16.9053 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 9.615 kHz</p> <p>x dB Bandwidth 26.854 MHz</p>

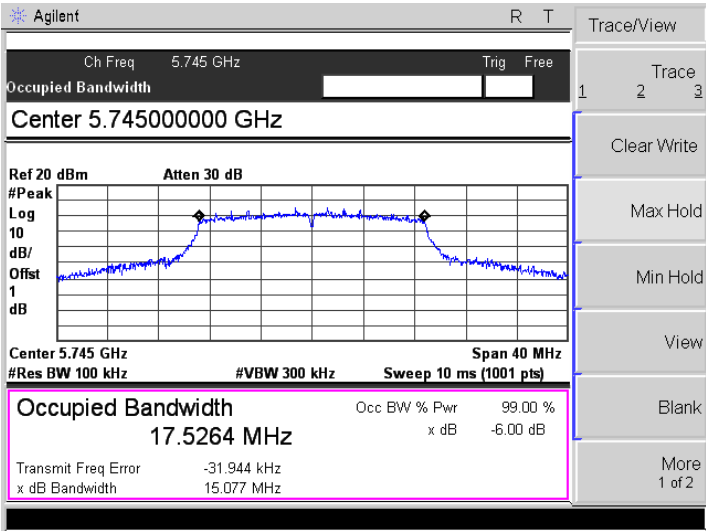
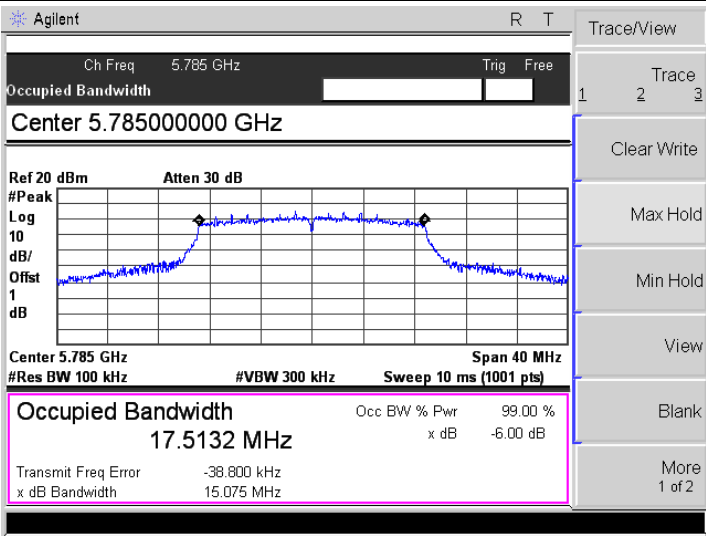
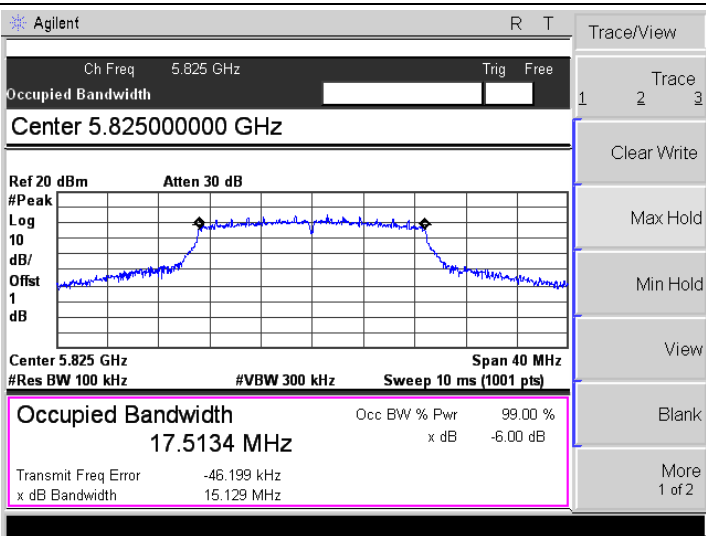
<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.18 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.18000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>10</p> <p>dB/</p> <p>Offset</p> <p>1</p> <p>dB</p> <p>Center 5.18 GHz Span 40 MHz</p> <p>Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.8015 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -29.997 kHz</p> <p>x dB Bandwidth 22.845 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</p> <p>dB/</p> <p>Offset</p> <p>1</p> <p>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 17.7532 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -27.188 kHz</p> <p>x dB Bandwidth 22.052 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</p> <p>dB/</p> <p>Offset</p> <p>1</p> <p>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 17.7493 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -18.681 kHz</p> <p>x dB Bandwidth 22.124 MHz</p>

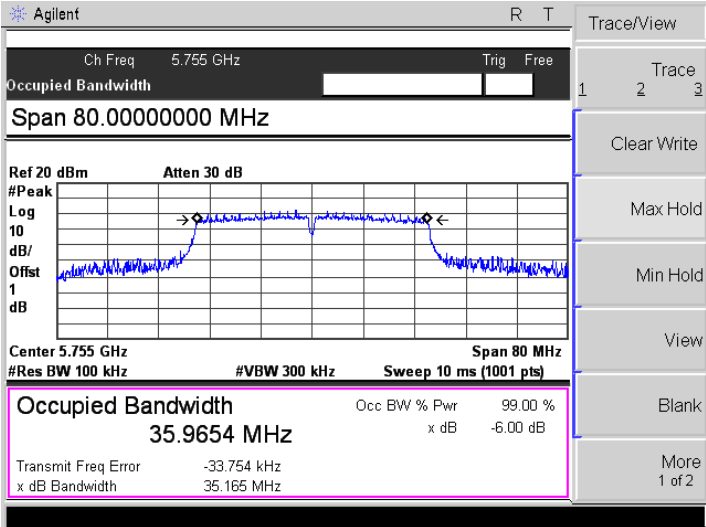
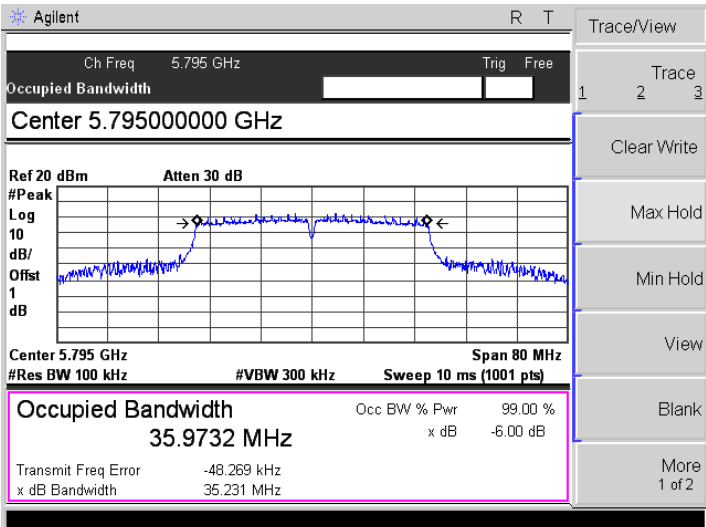
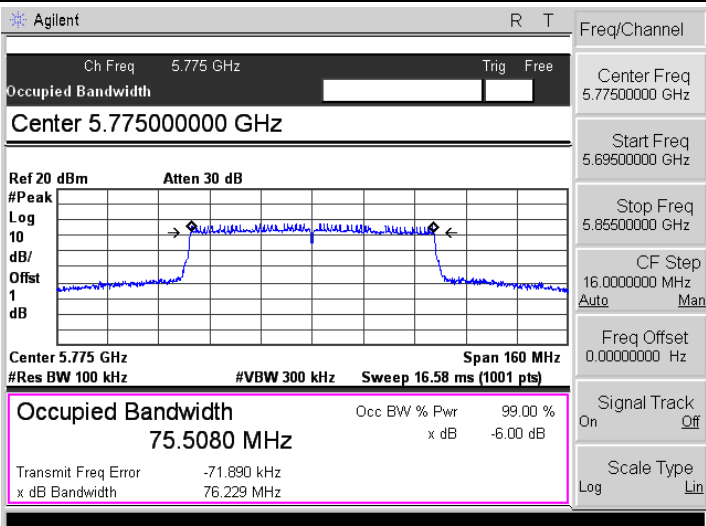
<p>802.11n-HT40-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.19 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/</p> <p>Offst 1 dB</p> <p>Center 5.19 GHz Span 80 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p><b>Occupied Bandwidth</b> 36.1572 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -7.629 kHz</p> <p>x dB Bandwidth 40.839 MHz</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</p> <p>Log 10 dB/</p> <p>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><b>Occupied Bandwidth</b> 36.1604 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 6.745 kHz</p> <p>x dB Bandwidth 40.809 MHz</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>Center 5.21000000 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 5.21 GHz Span 160 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 10 ms (1001 pts)</p> <p><b>Occupied Bandwidth</b> 76.0138 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -28.258 kHz</p> <p>x dB Bandwidth 83.678 MHz</p>



**5725-5850MHz**  
**6dB Bandwidth**

<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>Span 40.00000000 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/</p> <p>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><b>Occupied Bandwidth</b> Occ BW % Pwr 99.00 %</p> <p><b>16.3811 MHz</b> x dB -6.00 dB</p> <p>Transmit Freq Error -42.085 kHz</p> <p>x dB Bandwidth 15.144 MHz</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11a-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</p> <p>Log 10 dB/</p> <p>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><b>Occupied Bandwidth</b> Occ BW % Pwr 99.00 %</p> <p><b>16.3947 MHz</b> x dB -6.00 dB</p> <p>Transmit Freq Error -42.591 kHz</p> <p>x dB Bandwidth 13.822 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>Center 5.82500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/</p> <p>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><b>Occupied Bandwidth</b> Occ BW % Pwr 99.00 %</p> <p><b>16.3825 MHz</b> x dB -6.00 dB</p> <p>Transmit Freq Error -47.291 kHz</p> <p>x dB Bandwidth 15.543 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>

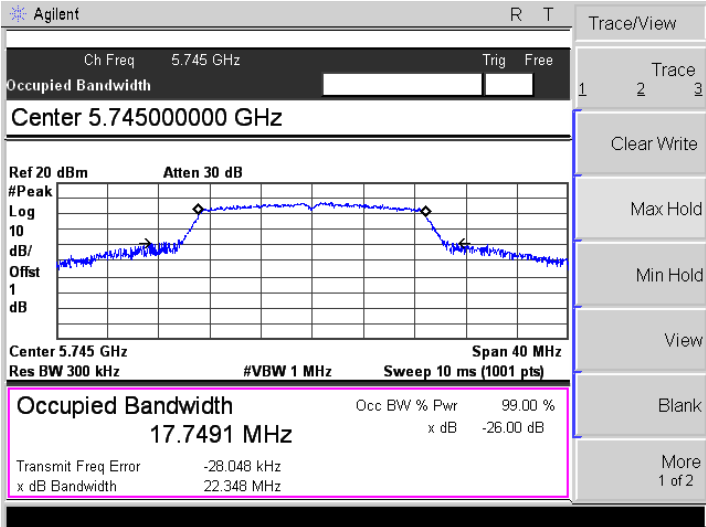
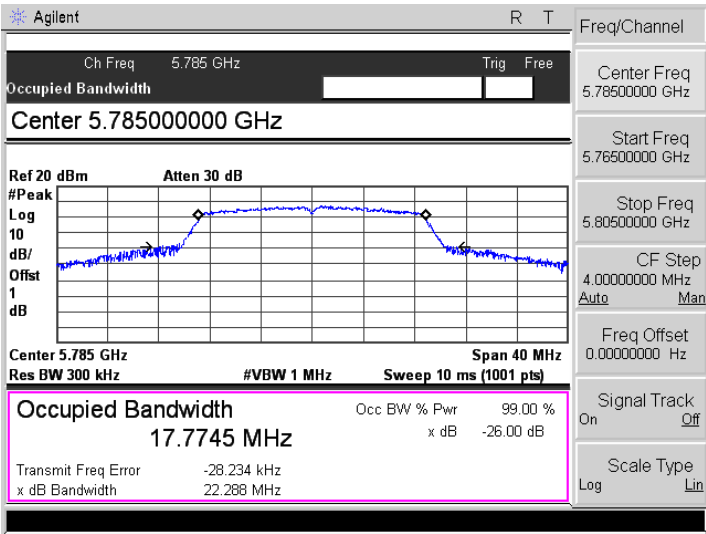
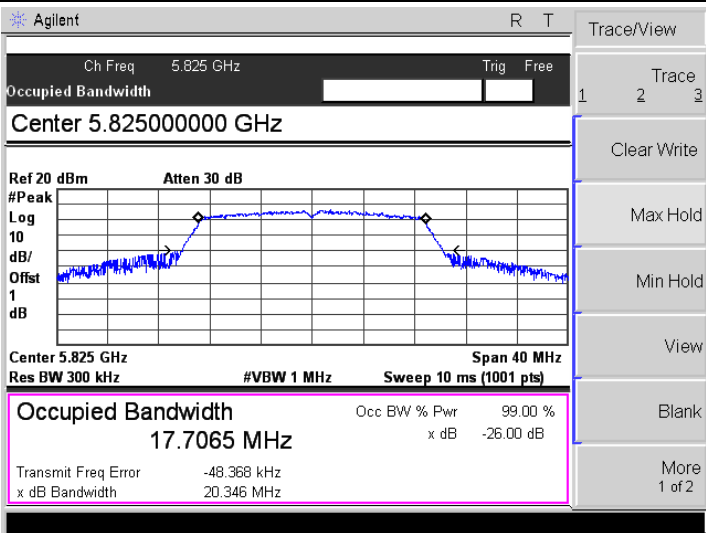
<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.74500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/</p> <p>Offst 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.5264 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -31.944 kHz x dB Bandwidth 15.077 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 17.5132 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -38.800 kHz x dB Bandwidth 15.075 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 17.5134 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -46.199 kHz x dB Bandwidth 15.129 MHz</p>

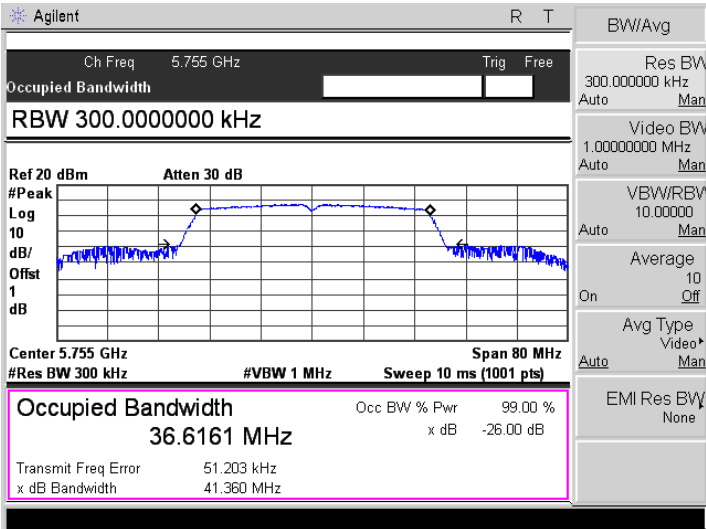
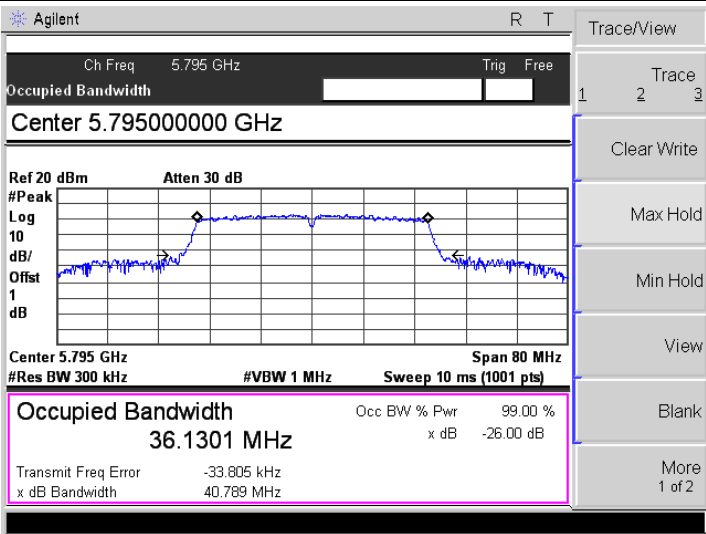
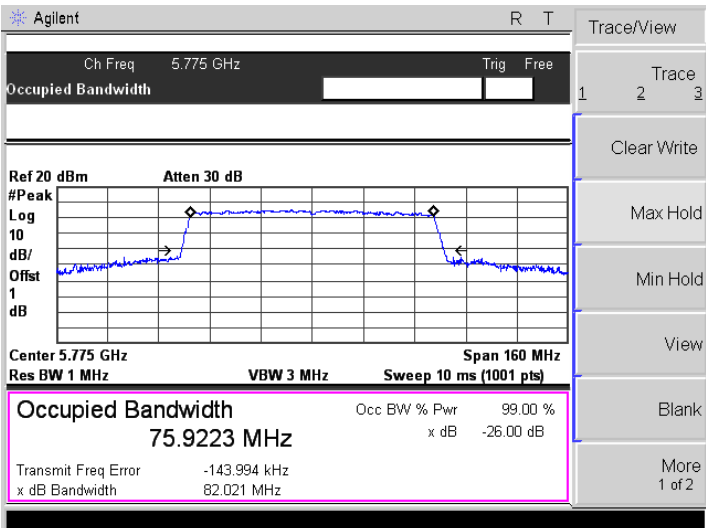
<p>802.11n-HT40-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.755 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Span 80.00000000 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/</p> <p>Offst 1 dB</p> <p>Center 5.755 GHz Span 80 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 35.9654 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -33.754 kHz</p> <p>x dB Bandwidth 35.165 MHz</p> <p>Trace/View</p> <p>1 2 3</p> <p>Trace</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-HT40-High</p>	 <p>Agilent R T</p> <p>Ch Freq 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> <p>Occupied Bandwidth 35.9732 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -48.269 kHz</p> <p>x dB Bandwidth 35.231 MHz</p> <p>Trace/View</p> <p>1 2 3</p> <p>Trace</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11ac-HT80</p>	 <p>Agilent R T</p> <p>Ch Freq 5.775 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.77500000 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 5.775 GHz Span 160 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 16.58 ms (1001 pts)</p> <p>Occupied Bandwidth 75.5080 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -71.890 kHz</p> <p>x dB Bandwidth 76.229 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 16.0000000 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

99% OBW

<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>VBW 1.00000000 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.8572 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -89.479 kHz x dB Bandwidth 23.769 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/ Offst 1 dB</p> <p>Center 5.785 GHz Span 40 MHz</p> <p>Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.9271 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -63.183 kHz x dB Bandwidth 24.722 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>Center 5.82500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.825 GHz Span 40 MHz</p> <p>Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.7901 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -84.891 kHz x dB Bandwidth 21.285 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 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7491 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -28.048 kHz x dB Bandwidth 22.348 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 5.785 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 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7745 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -28.234 kHz x dB Bandwidth 22.288 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.78500000 GHz</p> <p>Start Freq 5.78500000 GHz</p> <p>Stop Freq 5.80500000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.82500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/</p> <p>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 17.7065 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -48.368 kHz x dB Bandwidth 20.346 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 5.755 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p><b>RBW 300.000000 kHz</b></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><b>Occupied Bandwidth</b> Occ BW % Pwr 99.00 %</p> <p><b>36.6161 MHz</b> x dB -26.00 dB</p> <p>Transmit Freq Error 51.203 kHz</p> <p>x dB Bandwidth 41.360 MHz</p> <p>BW/Avg</p> <p>Res BW 300.000000 kHz Auto Man</p> <p>Video BW 1.0000000 MHz Auto Man</p> <p>VBW/RBW 10.00000 Auto Man</p> <p>Average 10 On Off</p> <p>Avg Type Video Auto Man</p> <p>EMI Res BW None</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><b>Center 5.79500000 GHz</b></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><b>Occupied Bandwidth</b> Occ BW % Pwr 99.00 %</p> <p><b>36.1301 MHz</b> x dB -26.00 dB</p> <p>Transmit Freq Error -33.805 kHz</p> <p>x dB Bandwidth 40.789 MHz</p> <p>Trace/View</p> <p>1 2 3</p> <p>Trace</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11ac-HT80</p>	 <p>Agilent R T</p> <p>Ch Freq 5.775 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p><b>Center 5.775 GHz</b></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><b>Occupied Bandwidth</b> Occ BW % Pwr 99.00 %</p> <p><b>75.9223 MHz</b> x dB -26.00 dB</p> <p>Transmit Freq Error -143.994 kHz</p> <p>x dB Bandwidth 82.021 MHz</p> <p>Trace/View</p> <p>1 2 3</p> <p>Trace</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

## APPENDIX C

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### 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	14.93	15.57	/	23.98
	5200	14.50	15.55	/	23.98
	5240	14.64	15.23	/	23.98
802.11n-HT20	5180	13.07	12.46	15.79	23.98
	5200	12.83	13.64	16.26	23.98
	5240	13.22	13.88	16.57	23.98
802.11n-HT40	5190	13.00	12.61	15.82	23.98
	5230	13.64	12.50	16.12	23.98
802.11ac VH80	5210	12.19	12.59	15.40	23.98

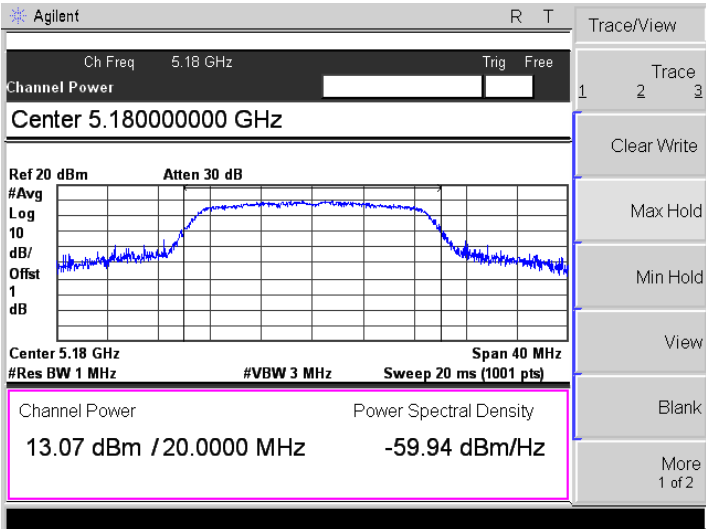
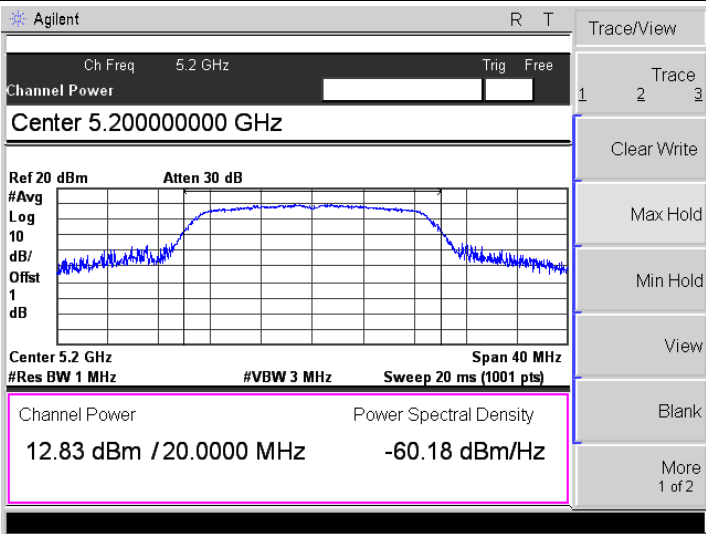
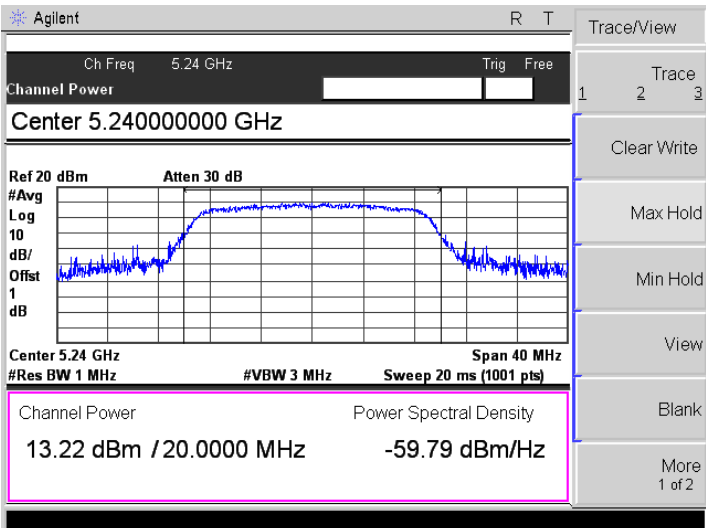
<b>U-NII-3: 5725-5850MHz</b>					
Test mode	Frequency MHz	Output Power dBm		Total dBm	Limit dBm
		ANT 0	ANT 1		
802.11a	5745	15.74	15.38	/	5745
	5785	15.31	15.35	/	5785
	5825	15.76	13.02	/	5825
802.11n-HT20	5745	14.76	14.40	17.59	5745
	5785	14.50	13.81	17.18	5785
	5825	14.38	13.89	17.15	5825
802.11n-HT40	5755	14.40	13.32	16.90	5755
	5795	13.86	13.48	16.68	5795
802.11ac VH80	5775	12.47	12.32	15.41	5775



**ANT 0**

**5150-5250MHz**

<p>802.11a-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.18 GHz Trig Free</p> <p>Channel Power [ ] [ ]</p> <p>VBW 3.00000000 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 5.18 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>14.93 dBm / 20.0000 MHz -58.08 dBm/Hz</p> <p>Trace/View</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11a-Middle</p>	<p>Agilent R T</p> <p>Ch Freq 5.2 GHz Trig Free</p> <p>Channel Power [ ] [ ]</p> <p>Center 5.20000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 5.2 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>14.50 dBm / 20.0000 MHz -58.51 dBm/Hz</p> <p>Trace/View</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11a-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.24 GHz Trig Free</p> <p>Channel Power [ ] [ ]</p> <p>Center 5.24000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 5.24 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>14.64 dBm / 20.0000 MHz -58.37 dBm/Hz</p> <p>Freq/Channel</p> <p>Center Freq 5.24000000 GHz</p> <p>Start Freq 5.22000000 GHz</p> <p>Stop Freq 5.26000000 GHz</p> <p>CF Step 4.00000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

<p>802.11n-HT20-Low</p>	 <p>Agilent Channel Power measurement for 802.11n-HT20-Low. The center frequency is 5.18 GHz. The plot shows a signal with a peak power of 13.07 dBm and a power spectral density of -59.94 dBm/Hz. The span is 40 MHz and the resolution bandwidth is 1 MHz.</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 plot shows a signal with a peak power of 12.83 dBm and a power spectral density of -60.18 dBm/Hz. The span is 40 MHz and the resolution bandwidth is 1 MHz.</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 plot shows a signal with a peak power of 13.22 dBm and a power spectral density of -59.79 dBm/Hz. The span is 40 MHz and the resolution bandwidth is 1 MHz.</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>Ch Freq 5.745 GHz Trig Free</p> <p>Channel Power <input type="text"/> <input type="text"/></p> <p>RBW 1.00000000 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offset 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>15.74 dBm / 20.0000 MHz -57.27 dBm/Hz</p> <p>BW/Avg</p> <p>Res BW 1.0000000 MHz Auto Man</p> <p>Video BW 3.0000000 MHz Auto Man</p> <p>VBW/RBW 10.00000 Auto Man</p> <p>Average 10 On Off</p> <p>Avg Type Pwr (RMS) Auto Man</p> <p>EMI Res BW None</p>
<p>802.11a-Middle</p>	<p>Agilent R T</p> <p>Ch Freq 5.785 GHz Trig Free</p> <p>Channel Power <input type="text"/> <input type="text"/></p> <p>Center 5.78500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offset 1 dB</p> <p>Center 5.785 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>15.31 dBm / 20.0000 MHz -57.70 dBm/Hz</p> <p>Trace/View</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11a-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Channel Power <input type="text"/> <input type="text"/></p> <p>Center 5.82500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offset 1 dB</p> <p>Center 5.825 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>15.76 dBm / 20.0000 MHz -57.25 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-Low</p>	
<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 5.755 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.75500000 GHz</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>14.40 dBm / 40.0000 MHz -61.62 dBm/Hz</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>13.86 dBm / 40.0000 MHz -62.16 dBm/Hz</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>Span 160.000000 MHz</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>12.47 dBm / 80.0000 MHz -66.56 dBm/Hz</p>

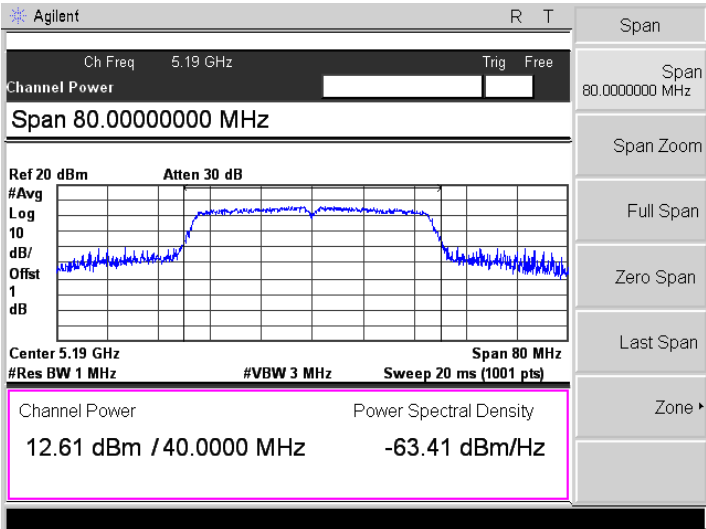
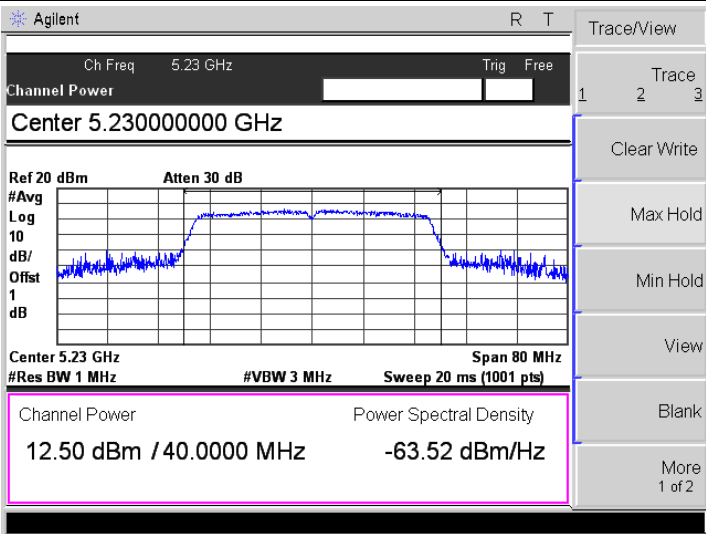
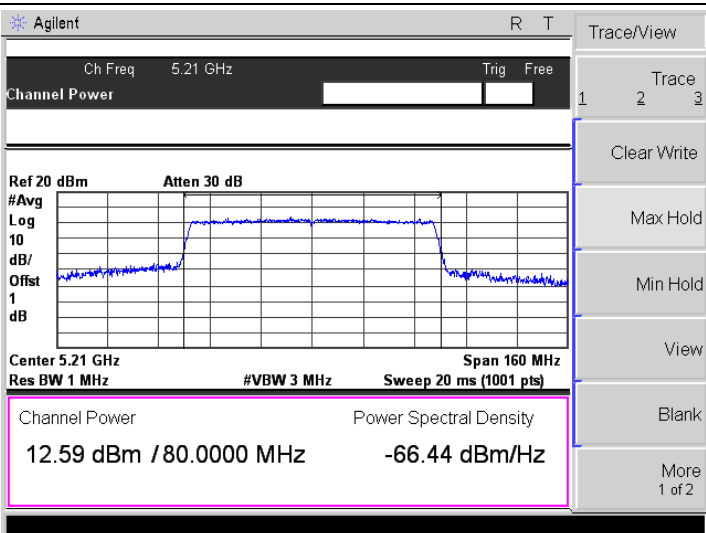
ANT 1

5150-5250MHz

<p>802.11a-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.18 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.18000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 5.18 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>15.57 dBm / 20.0000 MHz -57.45 dBm/Hz</p> <p>Freq/Channel</p> <p>Center Freq 5.18000000 GHz</p> <p>Start Freq 5.16000000 GHz</p> <p>Stop Freq 5.20000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11a-Middle</p>	<p>Agilent R T</p> <p>Ch Freq 5.2 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.20000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 5.2 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>15.55 dBm / 20.0000 MHz -57.46 dBm/Hz</p> <p>Trace/View</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11a-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.24 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.24000000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 5.24 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>15.23 dBm / 20.0000 MHz -57.78 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>

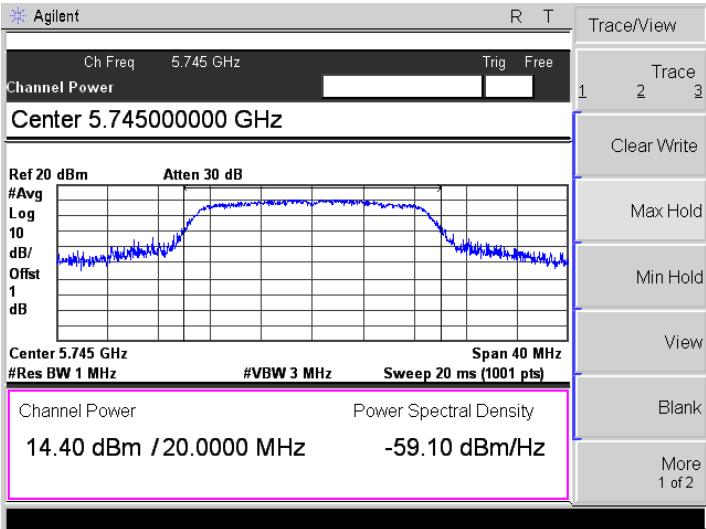
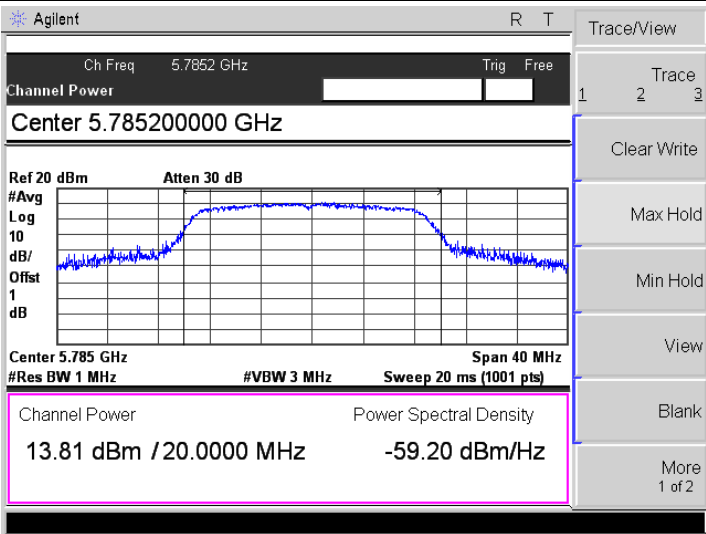
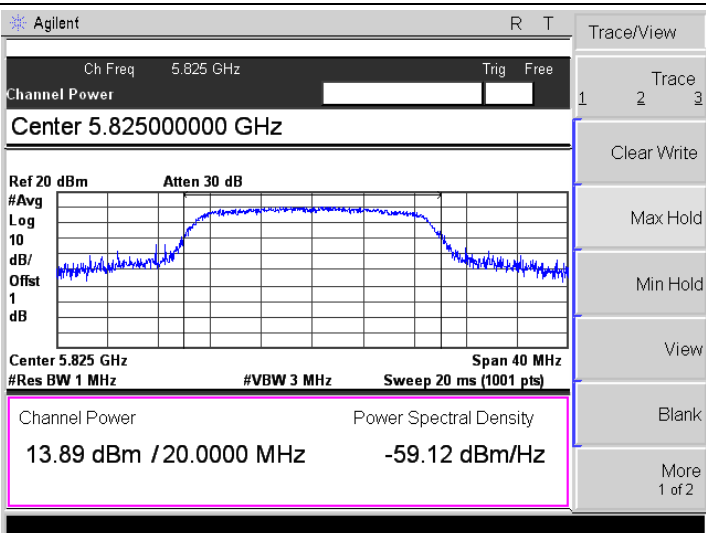
<p>802.11n-HT20-Low</p>	
<p>802.11n-HT20-Middle</p>	
<p>802.11n-HT20-High</p>	



<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>Span 80.00000000 MHz</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> <table border="1"> <tr> <td>Channel Power</td> <td>Power Spectral Density</td> </tr> <tr> <td>12.61 dBm / 40.0000 MHz</td> <td>-63.41 dBm/Hz</td> </tr> </table> <p>Span 80.00000000 MHz</p> <p>Span Zoom</p> <p>Full Span</p> <p>Zero Span</p> <p>Last Span</p> <p>Zone ▶</p>	Channel Power	Power Spectral Density	12.61 dBm / 40.0000 MHz	-63.41 dBm/Hz
Channel Power	Power Spectral Density				
12.61 dBm / 40.0000 MHz	-63.41 dBm/Hz				
<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> <table border="1"> <tr> <td>Channel Power</td> <td>Power Spectral Density</td> </tr> <tr> <td>12.50 dBm / 40.0000 MHz</td> <td>-63.52 dBm/Hz</td> </tr> </table> <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>	Channel Power	Power Spectral Density	12.50 dBm / 40.0000 MHz	-63.52 dBm/Hz
Channel Power	Power Spectral Density				
12.50 dBm / 40.0000 MHz	-63.52 dBm/Hz				
<p>802.11ac-HT80</p>	 <p>Agilent R T</p> <p>Ch Freq 5.21 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.21 GHz Span 160 MHz</p> <p>Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <table border="1"> <tr> <td>Channel Power</td> <td>Power Spectral Density</td> </tr> <tr> <td>12.59 dBm / 80.0000 MHz</td> <td>-66.44 dBm/Hz</td> </tr> </table> <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>	Channel Power	Power Spectral Density	12.59 dBm / 80.0000 MHz	-66.44 dBm/Hz
Channel Power	Power Spectral Density				
12.59 dBm / 80.0000 MHz	-66.44 dBm/Hz				

5725-5850MHz

<p>802.11a-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Channel Power <input type="text"/> <input type="text"/></p> <p>RBW 1.00000000 MHz</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>15.38 dBm / 20.0000 MHz -57.63 dBm/Hz</p> <p>BW/Avg</p> <p>Res BW 1.0000000 MHz Auto Man</p> <p>Video BW 3.0000000 MHz Auto Man</p> <p>VBW/RBW 10.00000 Auto Man</p> <p>Average 10 On Off</p> <p>Avg Type Pwr (RMS) Auto Man</p> <p>EMI Res BW None</p>
<p>802.11a-Middle</p>	<p>Agilent R T</p> <p>Ch Freq 5.785 GHz Trig Free</p> <p>Channel Power <input type="text"/> <input type="text"/></p> <p>Center 5.78500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Avg Log 10 dB/ Offst 1 dB</p> <p>Center 5.785 GHz Span 40 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts)</p> <p>Channel Power Power Spectral Density</p> <p>15.35 dBm / 20.0000 MHz -57.66 dBm/Hz</p> <p>Trace/View</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11a-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Channel Power <input type="text"/> <input type="text"/></p> <p>Center 5.825 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>13.02 dBm / 20.0000 MHz -59.99 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-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>14.40 dBm / 20.0000 MHz -59.10 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 5.7852 GHz Trig Free</p> <p>Channel Power</p> <p>Center 5.78520000 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>13.81 dBm / 20.0000 MHz -59.20 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>13.89 dBm / 20.0000 MHz -59.12 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****ANT 0**

<b>U-NII-1:5150-5250MHz worst case at 802.11a middle channel</b>				
Voltage(%)	Power(VDC)	TEMP( °C)	Freq.Dev(Hz)	Deviation
100%	120	-30	1511	0.2906
100%		-20	1285	0.2471
100%		-10	1454	0.2796
100%		0	1350	0.2596
100%		+10	1224	0.2354
100%		+20	1533	0.2948
100%		+30	1042	0.2004
100%		+40	1570	0.3019
100%		+50	1327	0.2552
Low Battery power		102	+20	1575
High Battery power	138	+20	1502	0.2888

<b>U-NII-3:5725-5850MHz worst case at 802.11a middle channel</b>				
Voltage(%)	Power(VDC)	TEMP( °C)	Freq.Dev(Hz)	Deviation
100%	120	-30	1511	0.2612
100%		-20	1290	0.2230
100%		-10	1452	0.2510
100%		0	1351	0.2335
100%		+10	1218	0.2105
100%		+20	1534	0.2652
100%		+30	1045	0.1806
100%		+40	1567	0.2709
100%		+50	1329	0.2297
Low Battery power		102	+20	1571
High Battery power	138	+20	1504	0.2600

**ANT 1**

<b>U-NII-1:5150-5250MHz worst case at 802.11a middle channel</b>				
Voltage(%)	Power(VDC)	TEMP( °C)	Freq.Dev(Hz)	Deviation
100%	120	-30	1516	0.2915
100%		-20	1291	0.2483
100%		-10	1455	0.2798
100%		0	1355	0.2606
100%		+10	1224	0.2354
100%		+20	1532	0.2946
100%		+30	1043	0.2006
100%		+40	1572	0.3023
100%		+50	1334	0.2565
Low Battery power		102	+20	1576
High Battery power	138	+20	1502	0.2888

<b>U-NII-3:5725-5850MHz worst case at 802.11a middle channel</b>				
Voltage(%)	Power(VDC)	TEMP( °C)	Freq.Dev(Hz)	Deviation
100%	120	-30	1511	0.2612
100%		-20	1290	0.2230
100%		-10	1450	0.2506
100%		0	1353	0.2339
100%		+10	1219	0.2107
100%		+20	1534	0.2652
100%		+30	1045	0.1806
100%		+40	1568	0.2710
100%		+50	1332	0.2303
Low Battery power		102	+20	1574
High Battery power	138	+20	1498	0.2589

## **APPENDIX PHOTOGRAPHS**

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**Please refer to “ANNEX”**

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