

TEST REPORT

Reference No..... : WTH20X10077097W-1
FCC ID : XOMRWOSU5847
Applicant : SHENZHEN QIYUE OPTRONICS COMPANY LIMITED
Address..... : Flat3,Tower 3, Excellence Meilin Center Plaza, Zhongkang Road 128,
Shangmeilin, Futian District, Shenzhen , China
Product Name : 58" SMART 4K UHD TV
Test Model. : RWOSU5847
Standards : FCC Part 15.407
Date of Receipt sample : Oct.22, 2020
Date of Test..... : Oct.22, 2020 to Nov.20, 2020
Date of Issue : Nov.20, 2020
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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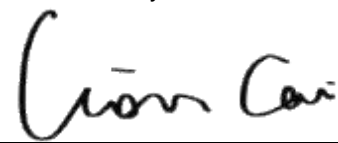
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Report version

Version No.	Date of issue	Description
Rev.00	Nov.20, 2020	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

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

Manufacturer: SHENZHEN QIYUE OPTRONICS COMPANY LIMITED
 BRANCH

Address of manufacturer: SEIYU INDUSTRIAL PARK,DA SAN VILLAGE,DA SHUI KENG,GUANLAN TOWN,LONGHUA NEW DISTRICT, SHENZHEN,P.R.C

General Description of EUT	
Product Name:	58" SMART 4K UHD TV
Trade Name:	RCA, PROSCAN, RCA SCENIUM, TECHNICALOR, SYLVANIA, RCASMA TVIRTUOSO
Model No.:	RWOSU5847
Adding Model(s):	D58A112-U-A-I, XXXXXXXXXXXX58XXXXXXXXXXXXXXXXX (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:	/
Software Version:	/
Hardware Version:	/

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 RWOSU5847, but the circuit and the electronic construction do not change, declared by the manufacturer.

Technical Characteristics of EUT	
Support Standards:	802.11a, 802.11n(HT20) , 802.11n-HT40, 802.11ac-VHT80
Frequency Range:	5150-5250MHz, 5725-5850MHz
RF Output Power:	5150-5250MHz: 16.69dBm (Conducted) 5725-5850MHz: 16.07dBm (Conducted)
Type of Modulation:	BPSK, QPSK,16QAM,64QAM, 256QAM
Data Rate:	6-54Mbps, up to 200Mbps
Type of Antenna:	External 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

Mode	Ant.	Test Frequency (MHz)												
		NCB: 20MHz												
		5180	5200	5240	5260	5300	5320	5500	5580	5700	5720	5740	5780	5825
802.11a 6Mbps	ANT 1	1E	1E	1E	/	/	/	/	/	/	/	21	21	21
	ANT 2	21	21	21	/	/	/	/	/	/	/	24	24	24
802.11n-HT20 MCS0	ANT 1	1E	1E	1E	/	/	/	/	/	/	/	21	21	21
	ANT 2	21	21	21	/	/	/	/	/	/	/	24	24	24
Mode	Ant.	NCB: 40MHz												
		5190	5230	5270	5310	5510	5550	5670	5710	5755	5795			
802.11n-HT40 MCS0	ANT 1	1E	1E	/	/	/	/	/	/	/	/	21	21	
	ANT 2	21	21	/	/	/	/	/	/	/	/	24	24	
Mode	Ant.	NCB: 80MHz												
		5210	5290	5530	5610	5690	5775							
802.11ac-VH80 MCS0/Nss2	ANT 1	1C	/	/	/	/	1F							
	ANT 2	20	/	/	/	/	24							

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:	40~55 %.
ATM Pressure:	1019 mbar

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

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

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

1.8 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
RF Output Power	Conducted	$\pm 0.42\text{dB}$
Occupied Bandwidth	Conducted	$\pm 1.5\%$
Power Spectral Density	Conducted	$\pm 1.8\text{dB}$
Conducted Spurious Emission	Conducted	$\pm 2.17\text{dB}$
Conducted Emissions	Conducted	9-150kHz $\pm 3.74\text{dB}$
		0.15-30MHz $\pm 3.34\text{dB}$
Transmitter Spurious Emissions	Radiated	30-200MHz $\pm 4.52\text{dB}$
		0.2-1GHz $\pm 5.56\text{dB}$
		1-6GHz $\pm 3.84\text{dB}$
		6-18GHz $\pm 3.92\text{dB}$

1.9 Test Equipment List and Details

No.	Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
SEMT-1072	Spectrum Analyzer	Agilent	E4407B	MY41440400	2020-04-28	2021-04-27
SEMT-1031	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2020-04-28	2021-04-27
SEMT-1007	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2020-04-28	2021-04-27
SEMT-1008	Amplifier	Agilent	8447F	3113A06717	2020-04-28	2021-04-27
SEMT-1043	Amplifier	C&D	PAP-1G18	2002	2020-04-28	2021-04-27
SEMT-1011	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2019-05-05	2021-05-04
SEMT-1042	Horn Antenna	ETS	3117	00086197	2019-05-05	2021-05-04
SEMT-1121	Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170582	2019-05-05	2021-05-04
SEMT-1069	Loop Antenna	Schwarz beck	FMZB 1516	9773	2019-05-05	2021-05-04
SEMT-1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2020-04-28	2021-04-27
SEMT-1003	L.I.S.N	Schwarz beck	NSLK8126	8126-224	2020-04-28	2021-04-27
SEMT-1002	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2020-04-28	2021-04-27
SEMT-1168	Pre-amplifier	Direction Systems Inc.	PAP-0126	14141-12838	2020-04-28	2021-04-27
SEMT-1169	Pre-amplifier	Direction Systems Inc.	PAP-2640	14145-14153	2020-04-28	2021-04-27
SEMT-1163	Spectrum Analyzer	Rohde & Schwarz	FSP40	100612	2020-04-28	2021-04-27
SEMT-1170	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2019-05-05	2021-05-04
SEMT-1166	Power Limiter	Agilent	N9356B	MY45450376	2020-04-28	2021-04-27
SEMT-1048	RF Limiter	ATTEN	AT-BSF-2400~2500	/	2020-04-28	2021-04-27
SEMT-1076	RF Switcher	Top Precision	RCS03-A2	/	2020-04-28	2021-04-27
SEMT-C001	Cable	Zheng DI	LL142-07-07-10M(A)	/	2020-03-17	2021-03-16
SEMT-C002	Cable	Zheng DI	ZT40-2.92J-2.92J-6M	/	2020-03-17	2021-03-16
SEMT-C003	Cable	Zheng DI	ZT40-2.92J-2.92J-2.5M	/	2020-03-17	2021-03-16
SEMT-C004	Cable	Zheng DI	2M0RFC	/	2020-03-17	2021-03-16
SEMT-C005	Cable	Zheng DI	1M0RFC	/	2020-03-17	2021-03-16
SEMT-C006	Cable	Zheng DI	1M0RFC	/	2020-03-17	2021-03-16

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

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

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§15.203; §15.405	Antenna Requirement	Compliant
15.407 (c)	Automatically Discontinue Transmission	Compliant
§15.207; §15.407(b)(6)	Conducted Emission	Compliant
§15.407(a)(1),(2)	Power Spectral Density	Compliant
§15.407(e)	Emission Bandwidth and Occupied Bandwidth	Compliant
§15.407(a)(1),(2)	Maximum Conducted Output Power	Compliant
§15.407(b)(1),(2),(3),(4)	Undesirable emission	Compliant
§15.205; §15.407(b)(1),(2),(3)	Radiated Emission	Compliant
§15.407(g)	Frequency Stability	Compliant
§15.407(h)	Dynamic Frequency Selection (DFS)	Compliant

N/A: Not applicable

3. Antenna Requirement

3.1 Standard Applicable

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

3.2 Evaluation Information

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

4. Automatically Discontinue Transmission

4.1 Standard Applicable

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

4.2 Summary of Test Results

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

5. Power Spectral Density

5.1 Standard Applicable

Section 15.407(a) Power limits:

(1) For the band 5.15-5.25 GHz.

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

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

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

5.2 Test Procedure

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

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

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

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

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

5.3 Summary of Test Results/Plots

Please refer to Appendix A

6. Emission Bandwidth and Occupied Bandwidth

6.1 Standard Applicable

According to 15.407(a) and (e):

(1) For the band 5.15-5.25 GHz.

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

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

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

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

6.2 Test Procedure

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

1. Emission Bandwidth (EBW)

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

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

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

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

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

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

D. 99 Percent Occupied Bandwidth

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

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

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

6.3 Summary of Test Results/Plots

Please refer to Appendix B

7. Maximum Conducted Output Power

7.1 Standard Applicable

Section 15.407(a) Power limits:

(1) For the band 5.15-5.25 GHz.

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

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

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

7.2 Test Procedure

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

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

- (v) Sweep time = auto.
- (vi) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- (vii) If transmit duty cycle < 98 percent, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle \geq 98 percent, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run”.
- (viii) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
- (ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument’s band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

7.3 Summary of Test Results/Plots

Please refer to Appendix C

8. Radiated Spurious Emissions

8.1 Standard Applicable

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

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

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

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

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

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

where:

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

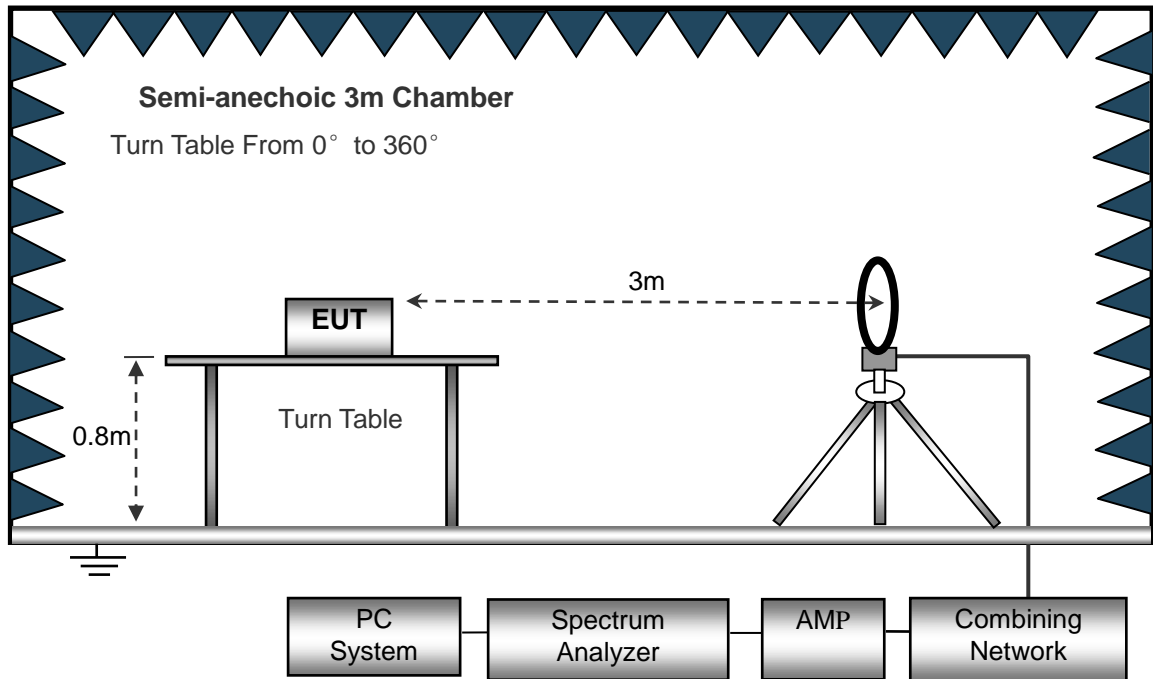
8.2 Test Procedure

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

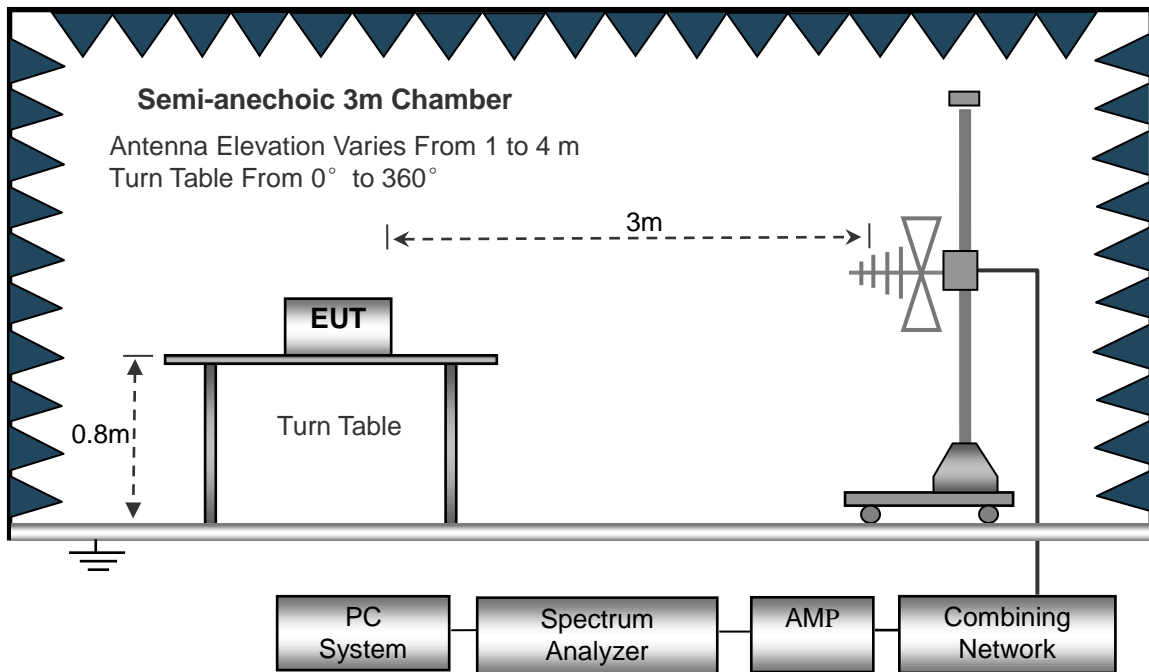
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

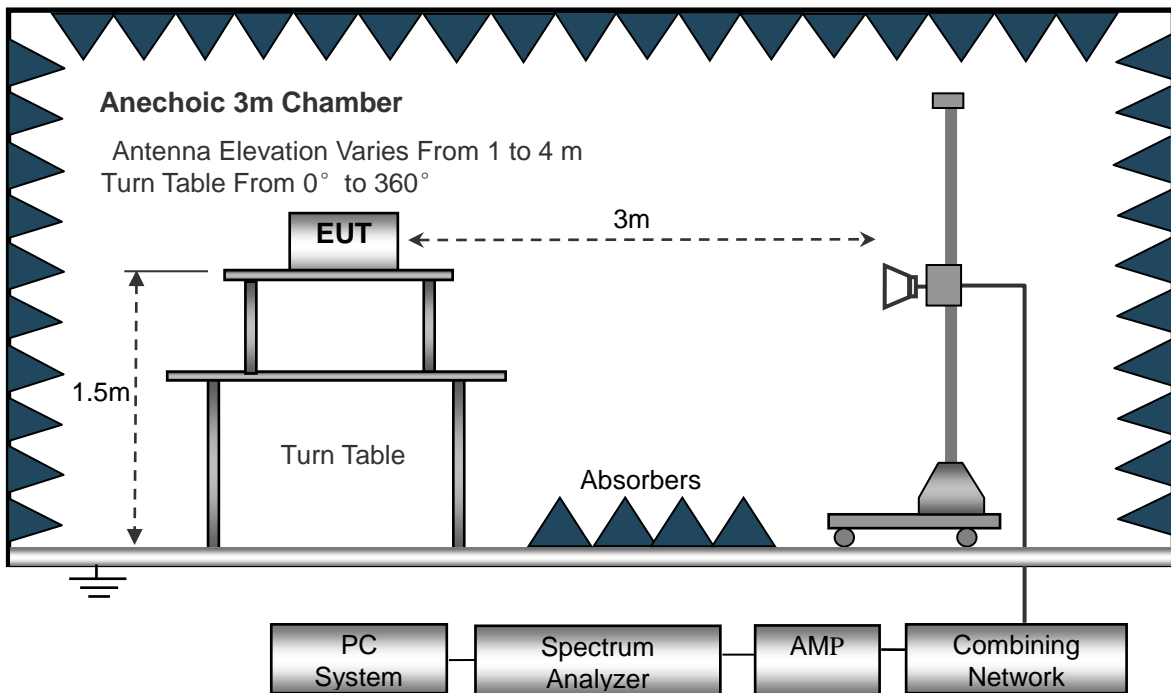
The test setup for emission measurement below 30MHz..



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



The test setup for emission measurement above 1 GHz..



8.3 Test Receiver Setup

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

For peak detector:

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

For average detector:

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

8.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Ant. Factor} + \text{Cable Loss} - \text{Ampl. Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB μ V means the emission is 6dB μ V below the maximum limit for Class B. The equation for margin calculation is as follows:

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

8.5 Summary of Test Results/Plots

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

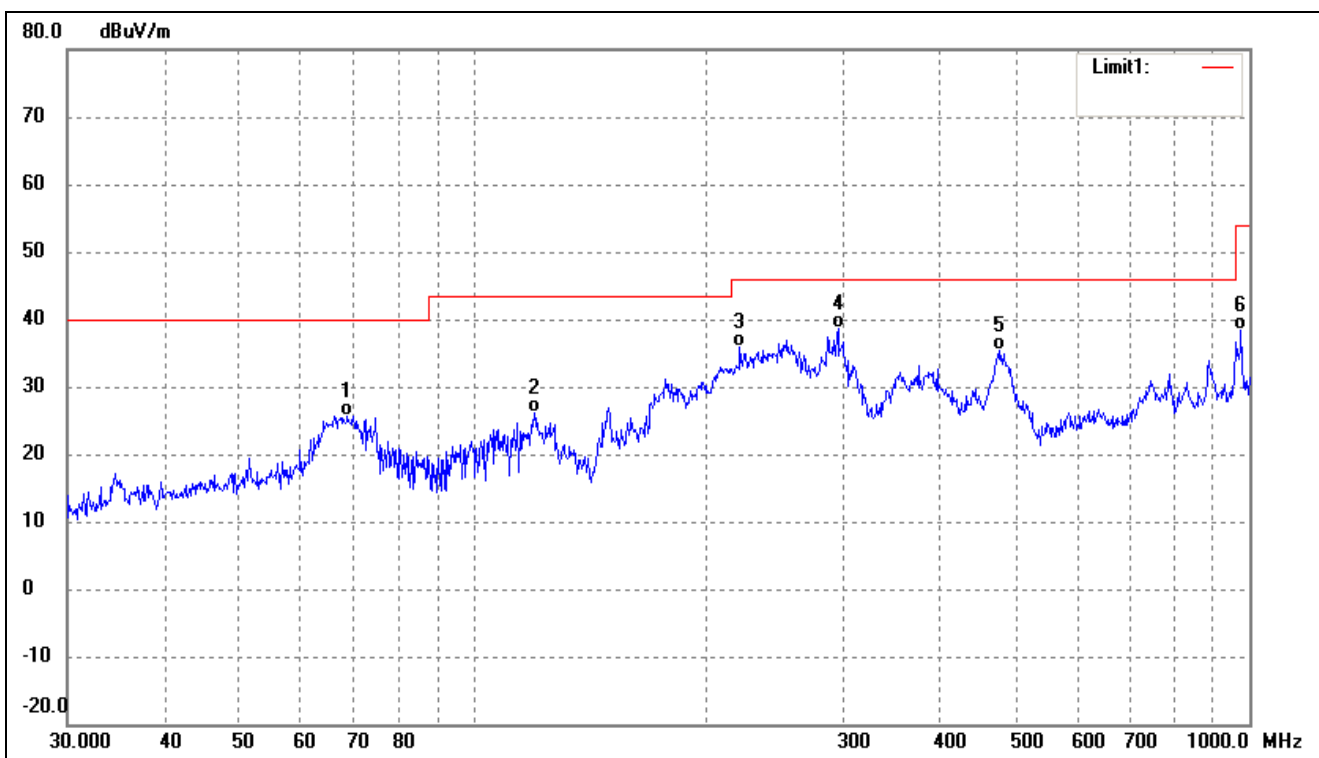
➤ Spurious Emission From 30 MHz to 1 GHz

➤ Antenna 1(worst case)

➤ 5150-5250MHz

802.11a(worst case)

Test Channel	5180MHz	Polarity:	Horizontal
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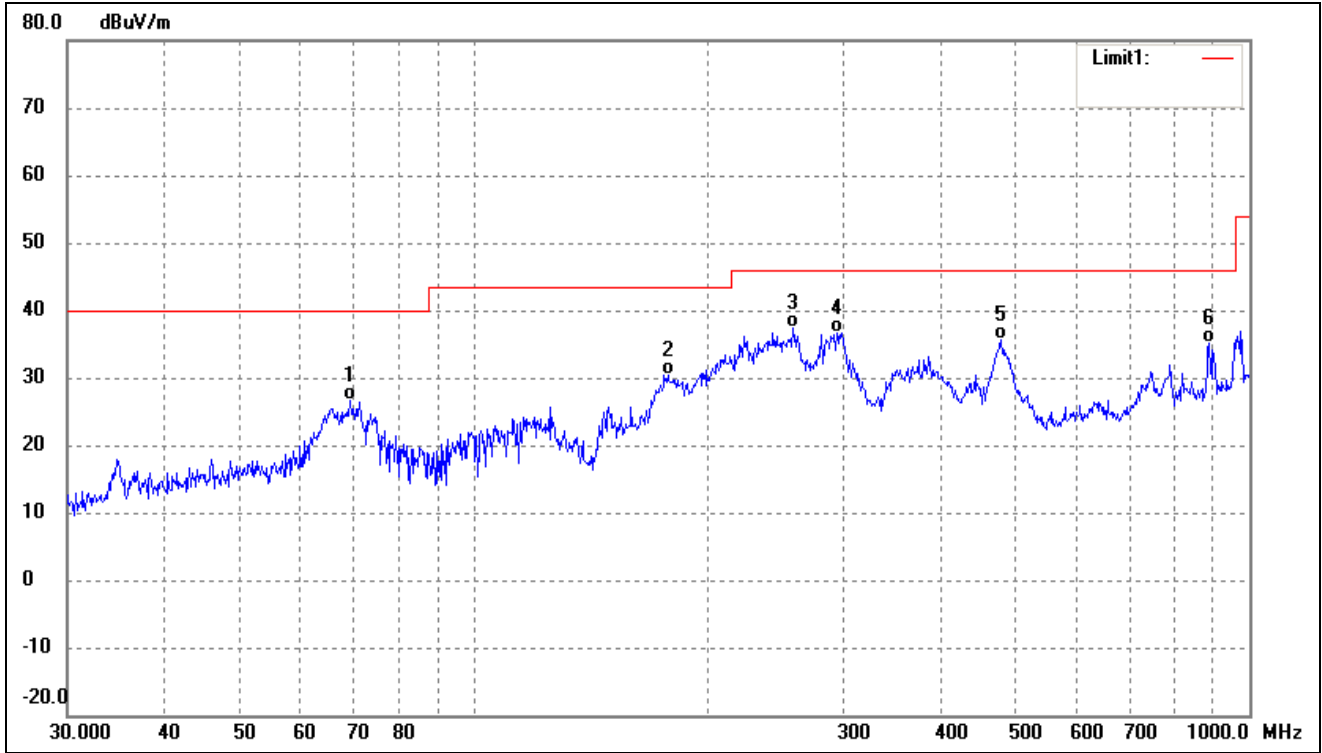
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	68.8721	39.57	-13.83	25.74	40.00	-14.26	-	-	QP
2	119.8556	39.29	-13.21	26.08	43.50	-17.42	-	-	QP
3	220.6171	46.84	-10.86	35.98	46.00	-10.02	-	-	QP
4	295.1469	46.21	-7.51	38.70	46.00	-7.30	-	-	QP
5	477.1694	40.22	-4.81	35.41	46.00	-10.59	-	-	QP
6	975.7529	35.75	2.73	38.48	54.00	-15.52	-	-	QP

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



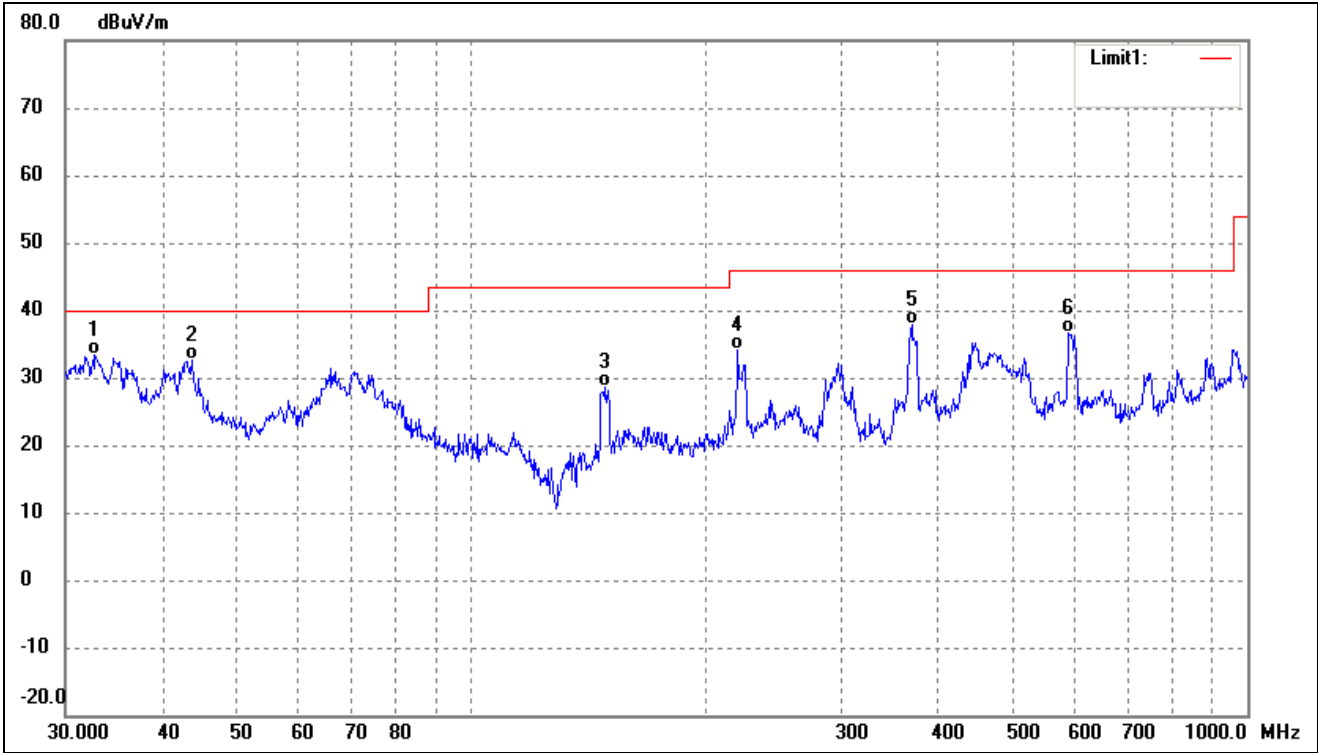
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	32.1795	47.31	-13.33	33.98	40.00	-6.02	-	-	QP
2	73.8756	44.92	-13.96	30.96	40.00	-9.04	-	-	QP
3	150.0108	44.14	-14.84	29.30	43.50	-14.20	-	-	QP
4	224.5193	43.83	-10.77	33.06	46.00	-12.94	-	-	QP
5	368.1116	42.87	-5.82	37.05	46.00	-8.95	-	-	QP
6	590.9737	40.92	-2.38	38.54	46.00	-7.46	-	-	QP

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



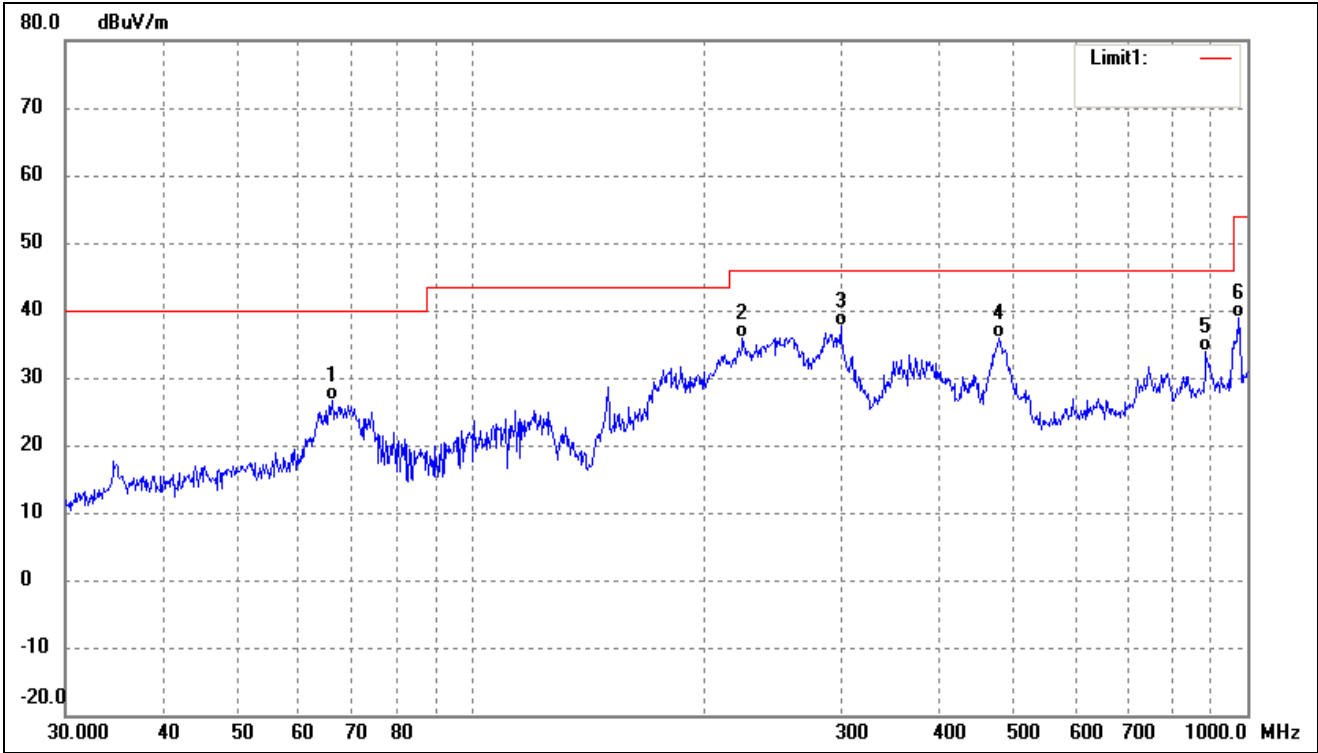
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	69.3568	40.54	-13.93	26.61	40.00	-13.39	-	-	QP
2	178.1327	43.88	-13.39	30.49	43.50	-13.01	-	-	QP
3	258.3264	46.52	-9.10	37.42	46.00	-8.58	-	-	QP
4	294.1137	44.30	-7.58	36.72	46.00	-9.28	-	-	QP
5	478.8456	40.34	-4.76	35.58	46.00	-10.42	-	-	QP
6	887.6099	33.68	1.33	35.01	46.00	-10.99	-	-	QP

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



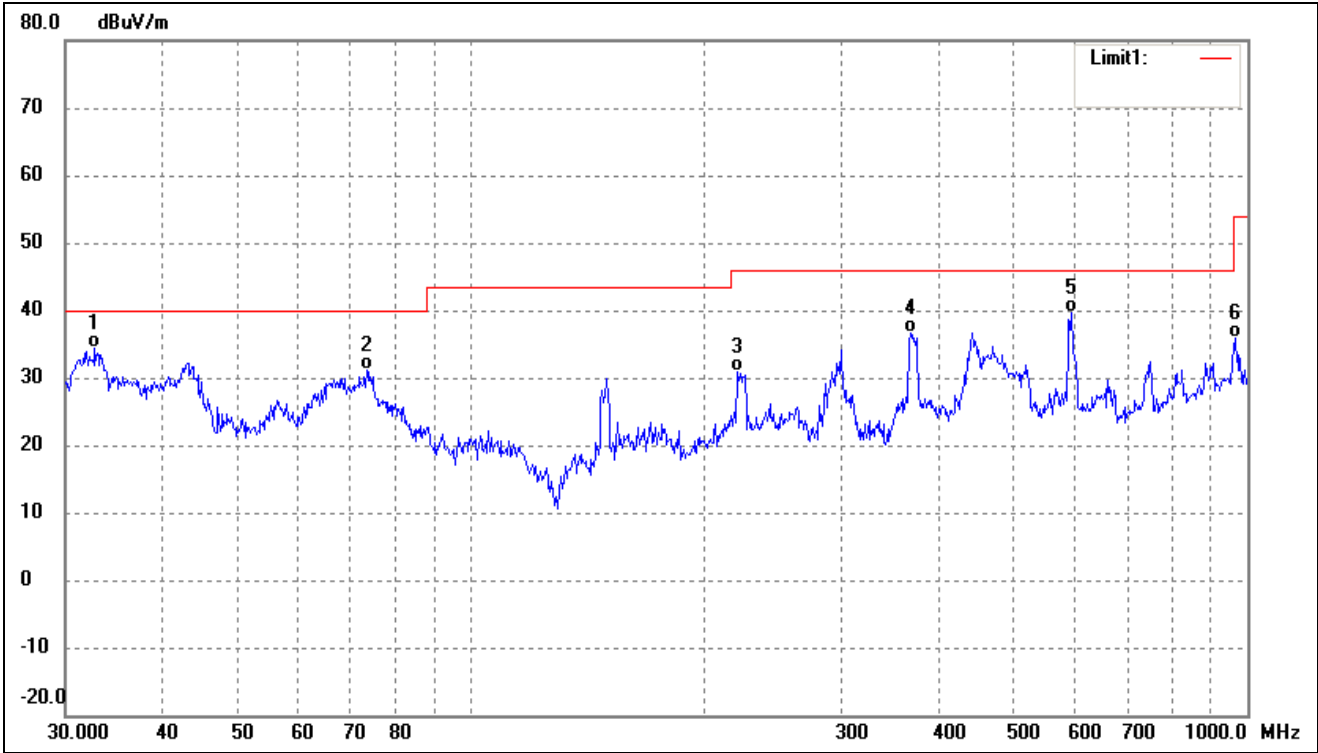
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	32.7486	46.68	-13.19	33.49	40.00	-6.51	-	-	QP
2	43.6585	43.56	-10.90	32.66	40.00	-7.34	-	-	QP
3	148.9625	43.54	-14.81	28.73	43.50	-14.77	-	-	QP
4	220.6171	44.87	-10.86	34.01	46.00	-11.99	-	-	QP
5	369.4047	43.57	-5.79	37.78	46.00	-8.22	-	-	QP
6	586.8437	38.94	-2.43	36.51	46.00	-9.49	-	-	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	66.2662	40.02	-13.29	26.73	40.00	-13.27	-	-	QP
2	223.7334	46.59	-10.79	35.80	46.00	-10.20	-	-	QP
3	299.3158	44.78	-7.27	37.51	46.00	-8.49	-	-	QP
4	478.8456	40.71	-4.76	35.95	46.00	-10.05	-	-	QP
5	884.5029	32.50	1.26	33.76	46.00	-12.24	-	-	QP
6	972.3374	36.19	2.68	38.87	54.00	-15.13	-	-	QP

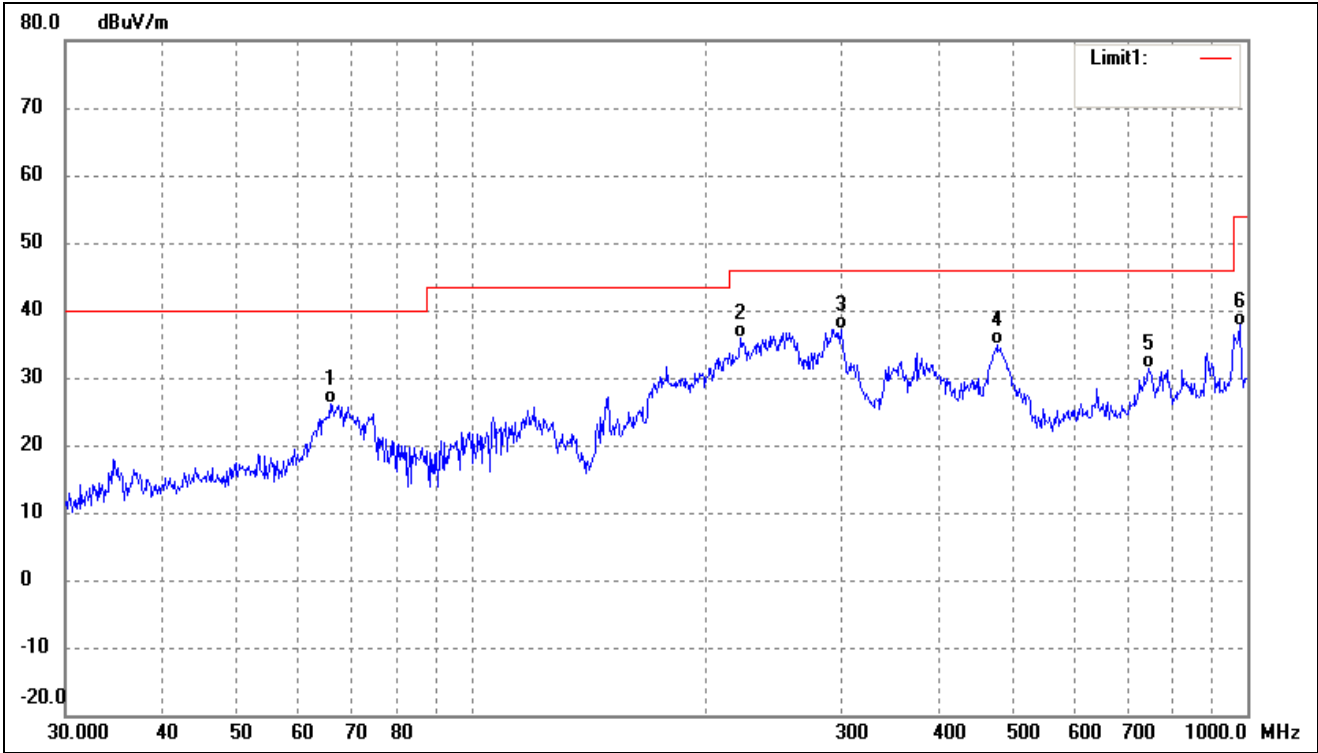
802.11a(worst case)			
Test Channel	5240MHz	Polarity:	Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	32.7486	47.64	-13.19	34.45	40.00	-5.55	-	-	QP
2	73.3593	45.12	-13.97	31.15	40.00	-8.85	-	-	QP
3	220.6171	41.70	-10.86	30.84	46.00	-15.16	-	-	QP
4	368.1116	42.50	-5.82	36.68	46.00	-9.32	-	-	QP
5	593.0497	41.94	-2.35	39.59	46.00	-6.41	-	-	QP
6	965.5421	33.17	2.60	35.77	54.00	-18.23	-	-	QP

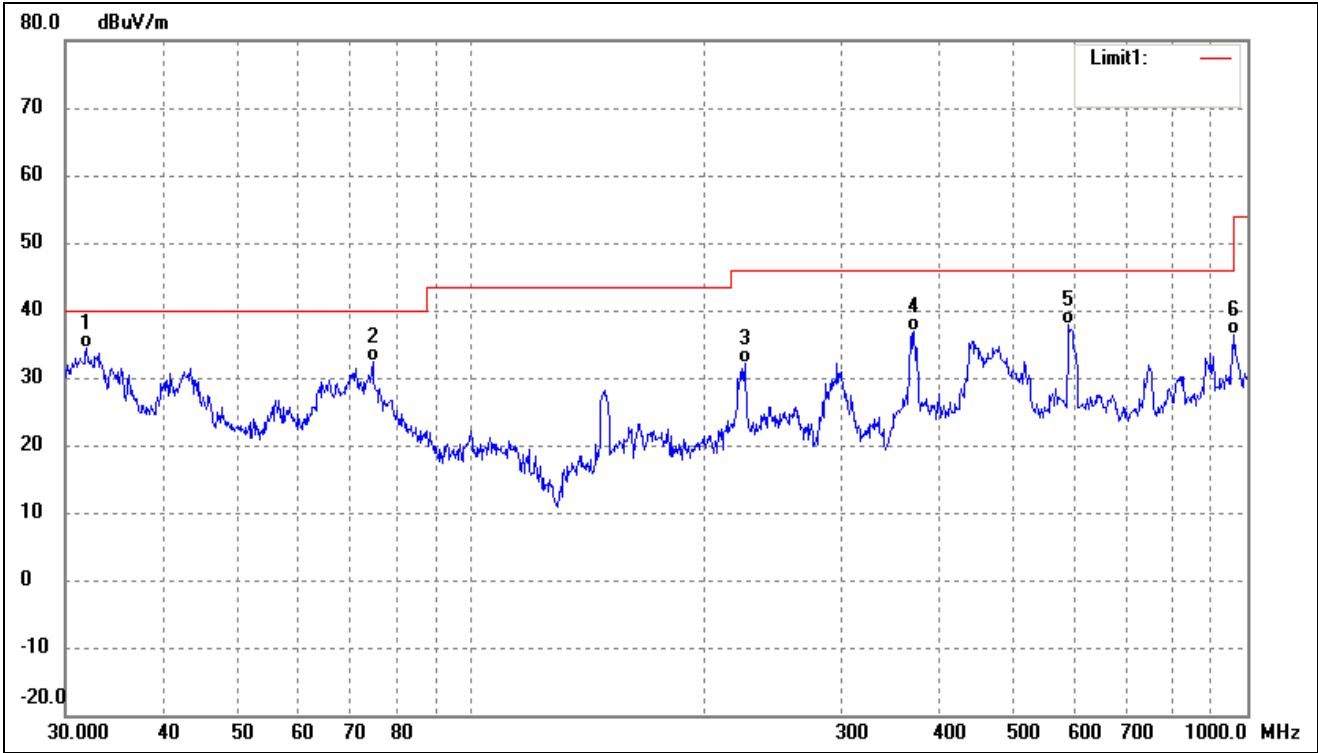
- Antenna 1 (worst case)
- 5725-5850MHz

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



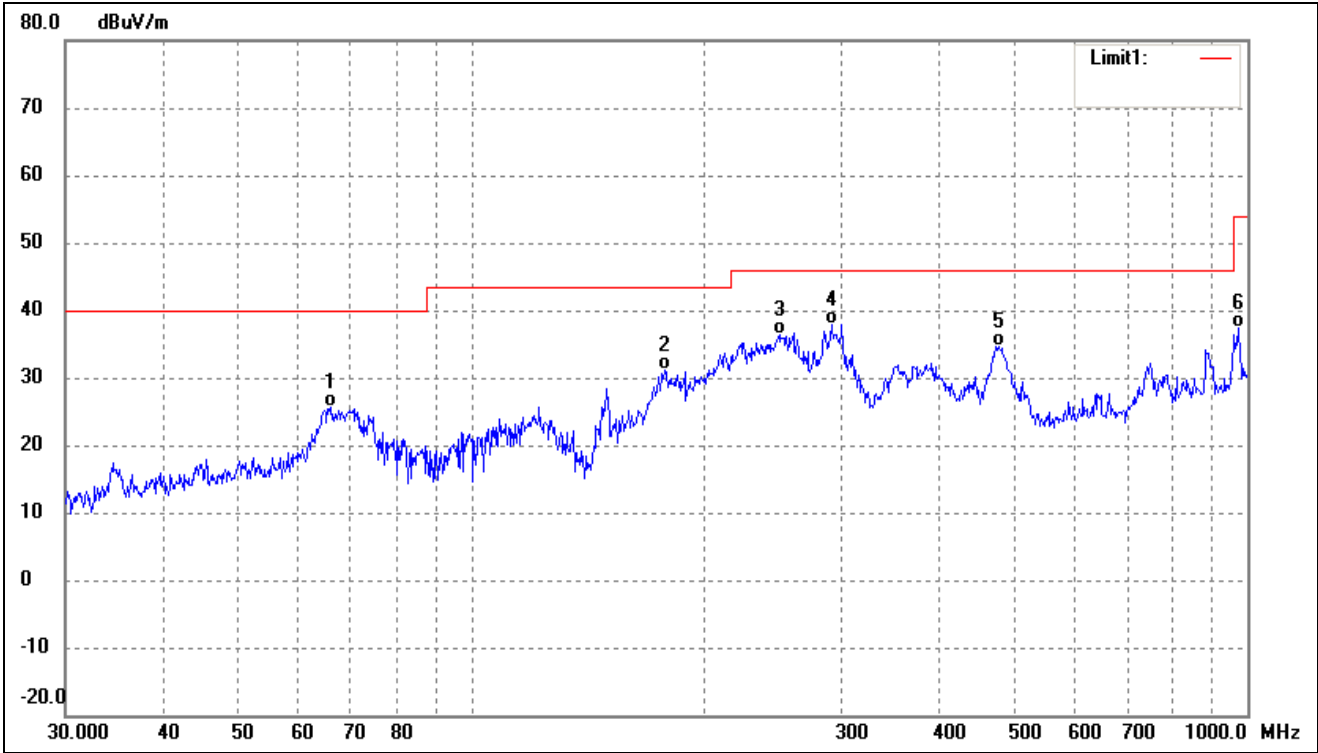
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	65.8031	39.33	-13.18	26.15	40.00	-13.85	-	-	QP
2	222.1698	46.64	-10.82	35.82	46.00	-10.18	-	-	QP
3	300.3673	44.47	-7.23	37.24	46.00	-8.76	-	-	QP
4	475.4991	39.75	-4.85	34.90	46.00	-11.10	-	-	QP
5	744.8661	32.22	-0.94	31.28	46.00	-14.72	-	-	QP
6	979.1804	34.97	2.78	37.75	54.00	-16.25	-	-	QP

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



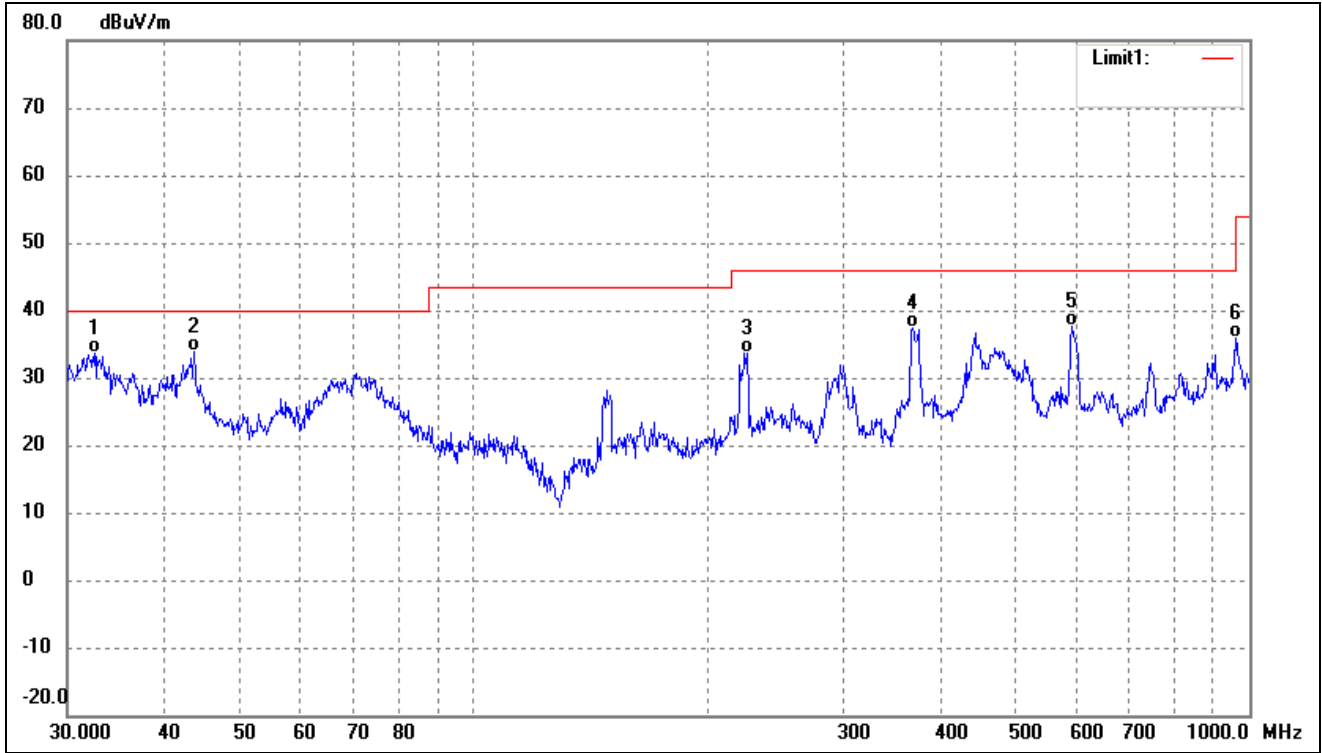
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	31.9546	47.69	-13.38	34.31	40.00	-5.69	-	-	QP
2	74.6569	46.33	-13.94	32.39	40.00	-7.61	-	-	QP
3	225.3080	42.81	-10.74	32.07	46.00	-13.93	-	-	QP
4	372.0045	42.65	-5.74	36.91	46.00	-9.09	-	-	QP
5	588.9051	40.21	-2.40	37.81	46.00	-8.19	-	-	QP
6	962.1623	33.86	2.56	36.42	54.00	-17.58	-	-	QP

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



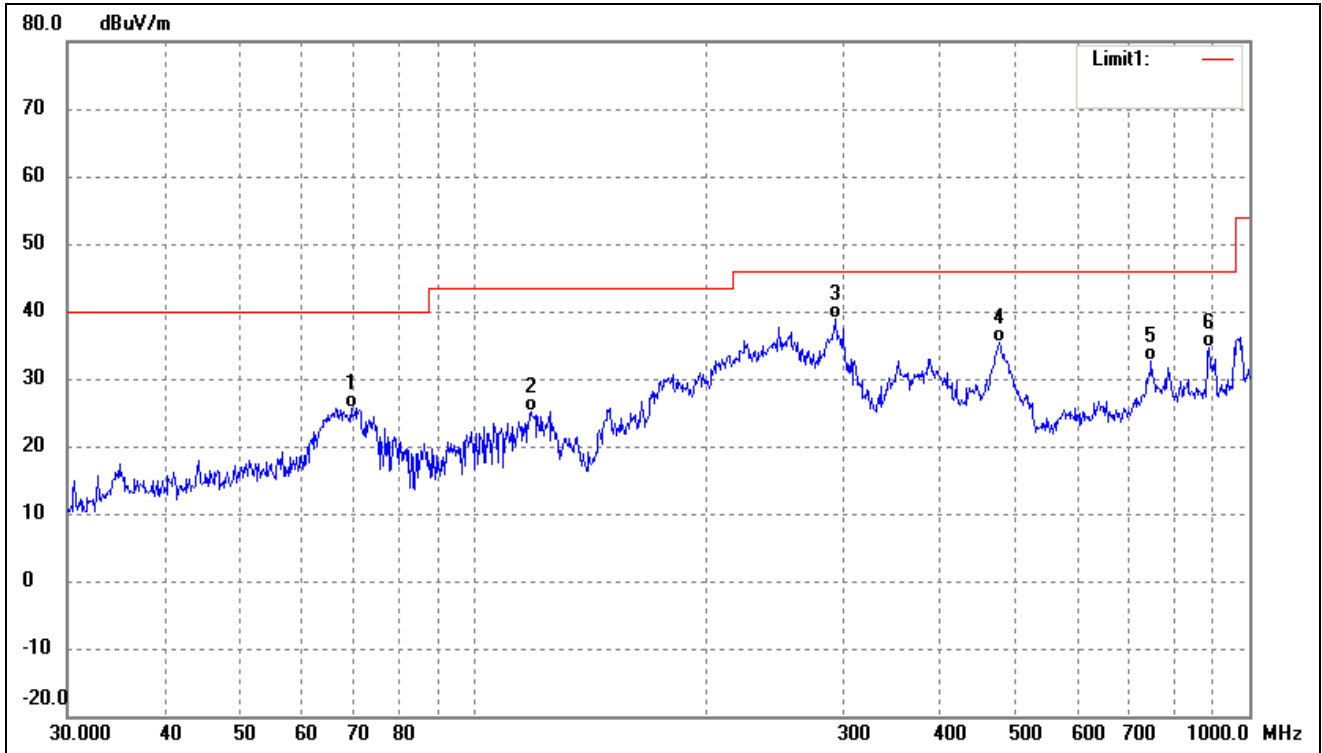
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	66.0342	38.78	-13.24	25.54	40.00	-14.46	-	-	QP
2	177.5092	44.49	-13.40	31.09	43.50	-12.41	-	-	QP
3	249.4250	45.84	-9.34	36.50	46.00	-9.50	-	-	QP
4	291.0360	45.65	-7.75	37.90	46.00	-8.10	-	-	QP
5	478.8456	39.41	-4.76	34.65	46.00	-11.35	-	-	QP
6	972.3374	34.73	2.68	37.41	54.00	-16.59	-	-	QP

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



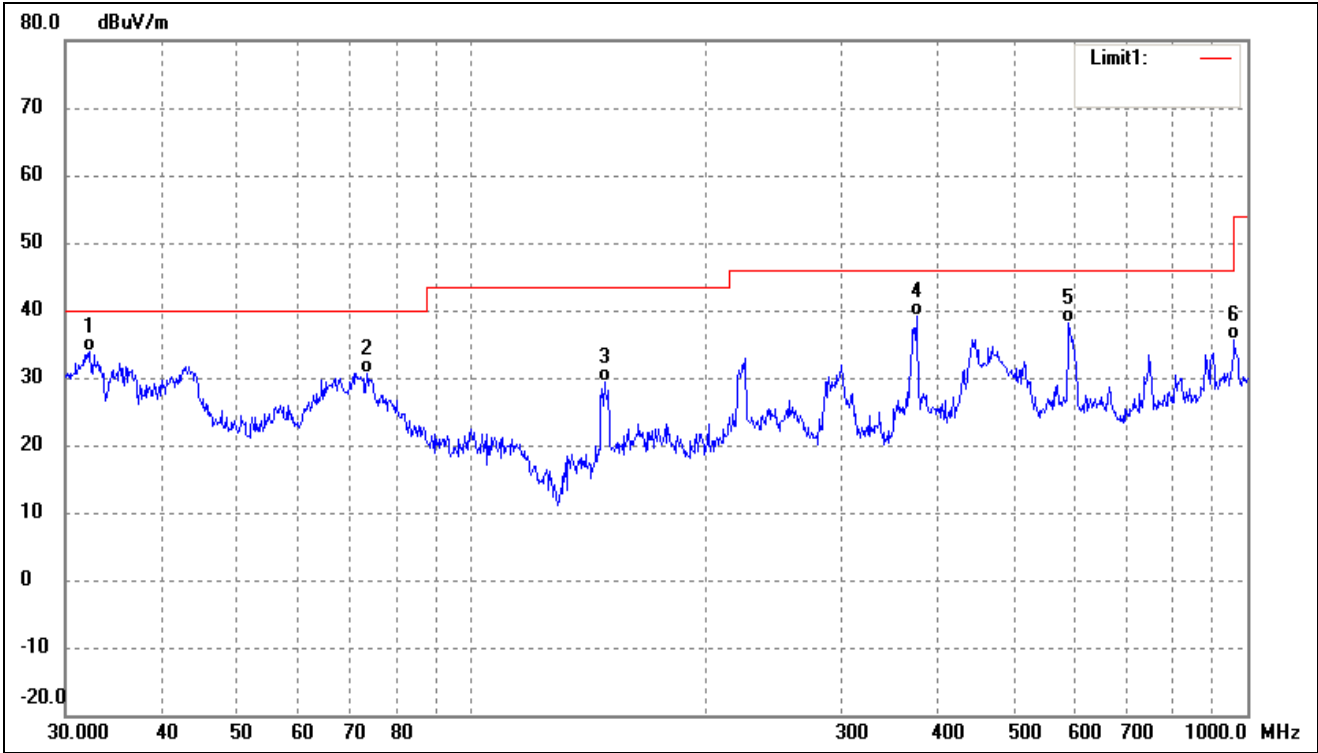
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	32.5198	46.78	-13.25	33.53	40.00	-6.47	-	-	QP
2	43.6585	44.79	-10.90	33.89	40.00	-6.11	-	-	QP
3	225.3080	44.36	-10.74	33.62	46.00	-12.38	-	-	QP
4	368.1116	43.19	-5.82	37.37	46.00	-8.63	-	-	QP
5	590.9737	39.95	-2.38	37.57	46.00	-8.43	-	-	QP
6	962.1623	33.33	2.56	35.89	54.00	-18.11	-	-	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	69.6005	39.72	-13.99	25.73	40.00	-14.27	-	-	QP
2	118.6014	38.29	-13.07	25.22	43.50	-18.28	-	-	QP
3	293.0842	46.41	-7.63	38.78	46.00	-7.22	-	-	QP
4	477.1694	40.29	-4.81	35.48	46.00	-10.52	-	-	QP
5	747.4826	33.49	-0.91	32.58	46.00	-13.42	-	-	QP
6	887.6099	33.31	1.33	34.64	46.00	-11.36	-	-	QP

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

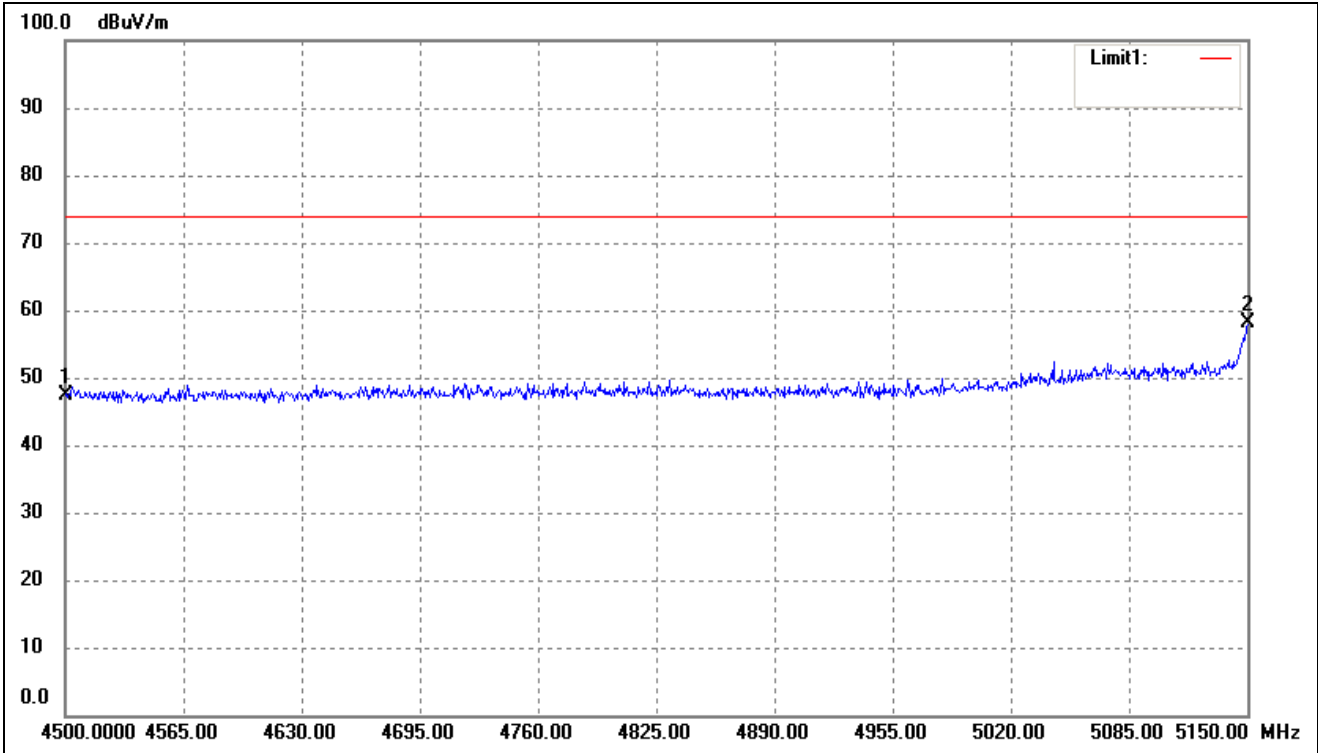


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	32.2925	47.20	-13.30	33.90	40.00	-6.10	-	-	QP
2	73.3593	44.71	-13.97	30.74	40.00	-9.26	-	-	QP
3	148.4410	44.07	-14.78	29.29	43.50	-14.21	-	-	QP
4	374.6226	44.84	-5.69	39.15	46.00	-6.85	-	-	QP
5	588.9051	40.44	-2.40	38.04	46.00	-7.96	-	-	QP
6	962.1623	33.08	2.56	35.64	54.00	-18.36	-	-	QP

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

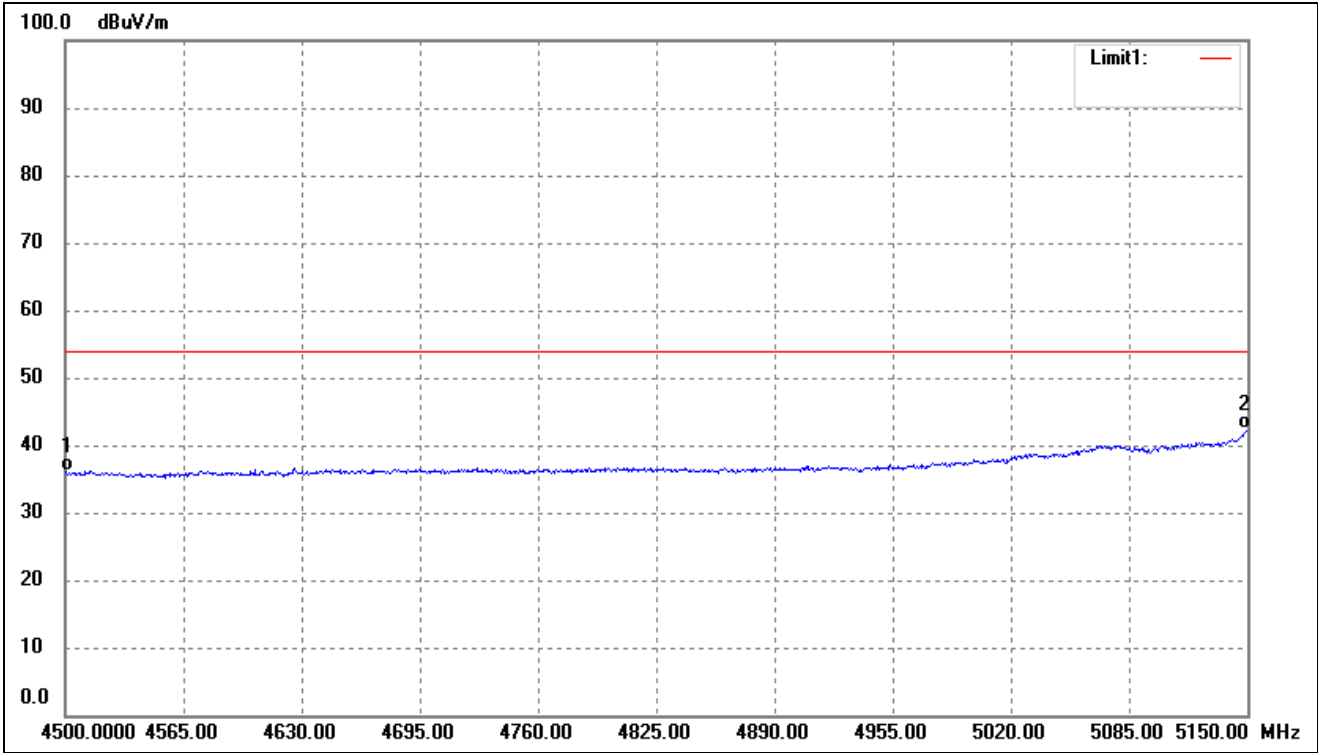
- Spurious Emission above 1GHz
- Antenna 1(worst case)

802.11a- Restricted Bandedge (worst case)			
Test Channel	band 4.5-5.15GHz	Polarity:	Horizontal (worst case)



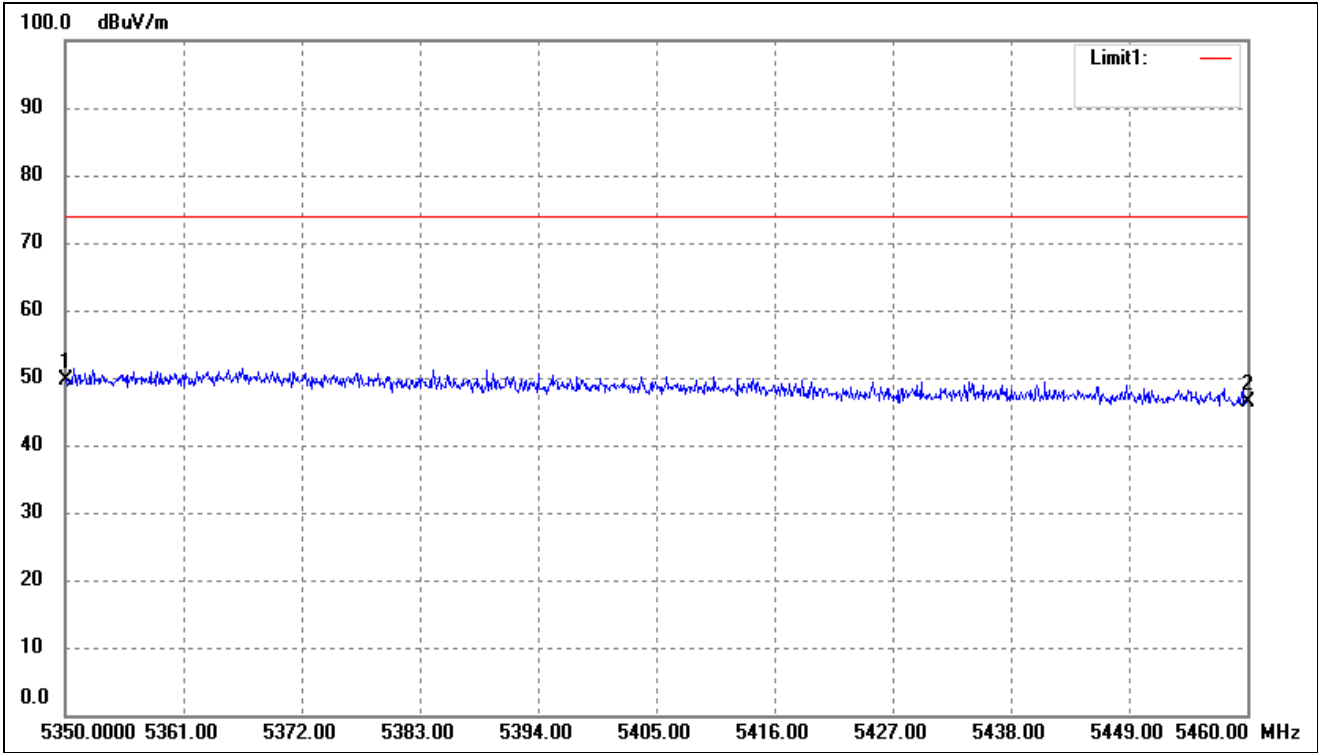
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	52.03	-4.71	47.32	74.00	-26.68	-	-	peak
2	5150.000	62.36	-4.32	58.04	74.00	-15.96	-	-	peak

802.11a- Restricted Bandedge (worst case)			
Test Channel	band 4.5-5.15GHz	Polarity:	Horizontal (worst case)



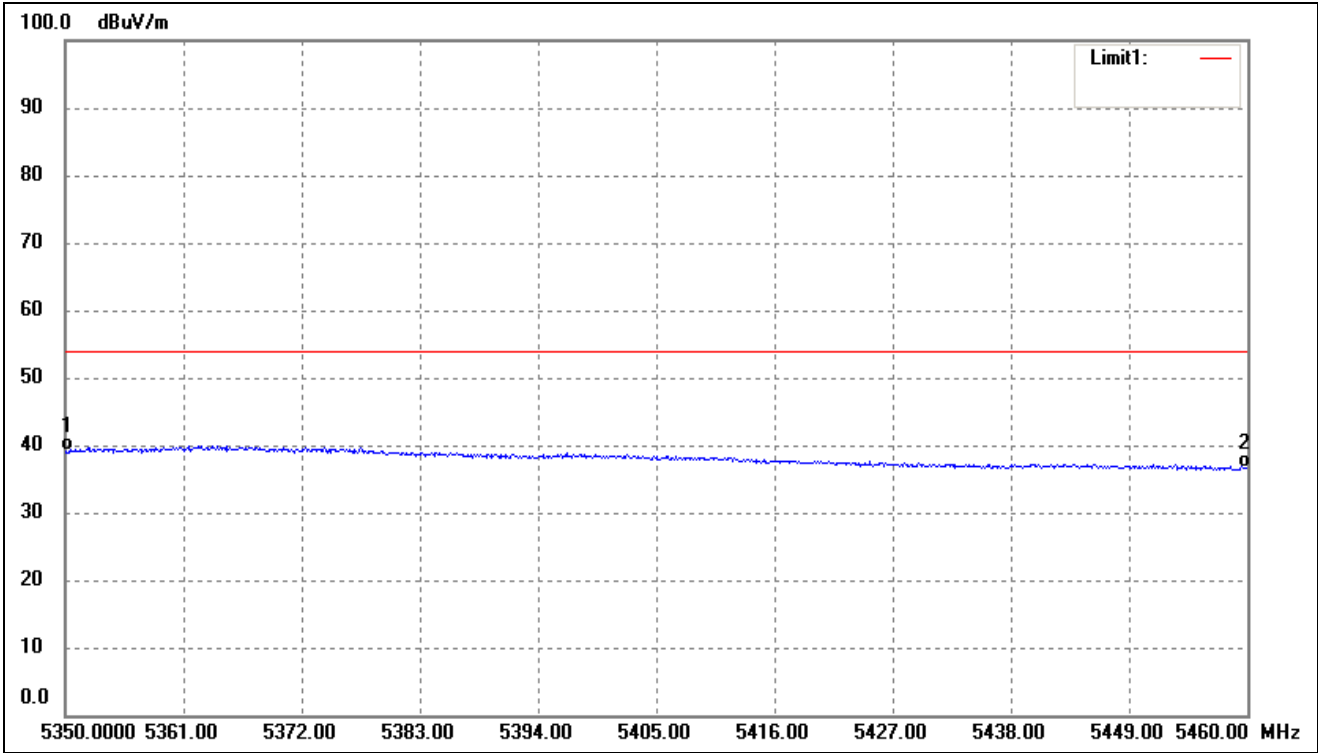
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	40.73	-4.71	36.02	54.00	-17.98	-	-	AVG
2	5150.000	46.75	-4.32	42.43	54.00	-11.57	-	-	AVG

802.11a- Restricted Bandedge (worst case)			
Test Channel	band 5.35-5.46GHz	Polarity:	Horizontal (worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5350.000	53.95	-4.21	49.74	74.00	-24.26	-	-	peak
2	5460.000	50.65	-4.16	46.49	74.00	-27.51	-	-	peak

802.11a- Restricted Bandedge (worst case)			
Test Channel	band 5.35-5.46GHz	Polarity:	Horizontal (worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5350.000	43.23	-4.21	39.02	54.00	-14.98	-	-	AVG
2	5460.000	40.78	-4.16	36.62	54.00	-17.38	-	-	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 1 (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	57.03	7.11	64.14	74	-9.86	H	PK
15540	39.13	8.22	47.35	54	-6.65	H	AV
10360	58.31	7.11	65.42	74	-8.58	V	PK
15540	39.21	8.22	47.43	54	-6.57	V	AV
Middle Channel (5200MHz)							
10400	56.68	7.22	63.90	74	-10.10	H	PK
15600	35.87	8.67	44.54	54	-9.46	H	AV
10400	56.09	7.22	63.31	74	-10.69	V	PK
15600	38.81	8.67	47.48	54	-6.52	V	AV
High Channel (5240MHz)							
10480	56.32	7.69	64.01	74	-9.99	H	PK
15720	38.27	8.93	47.20	54	-6.80	H	AV
10480	59.16	7.69	66.85	74	-7.15	V	PK
15720	38.24	8.93	47.17	54	-6.83	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	55.87	9.45	65.32	74	-8.68	H	PK
17235	33.41	10.36	43.77	54	-10.23	H	AV
11490	55.69	9.45	65.14	74	-8.86	V	PK
17235	37.58	10.36	47.94	54	-6.06	V	AV
Middle Channel (5785MHz)							
11570	57.30	9.62	66.92	74	-7.08	H	PK
17355	35.80	10.67	46.47	54	-7.53	H	AV
11570	58.38	9.62	68.00	74	-6.00	V	PK
17355	34.63	10.67	45.30	54	-8.70	V	AV
High Channel (5825MHz)							
11650	57.12	9.84	66.96	74	-7.04	H	PK
17475	33.62	10.95	44.57	54	-9.43	H	AV
11650	54.32	9.84	64.16	74	-9.84	V	PK
17475	35.18	10.95	46.13	54	-7.87	V	AV

➤ Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-37.19	-27
Highest	Above 5350	-43.28	-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	-38.74	-27
	5715 to 5725	-40.68	-17
Highest	5850 to 5860	-40.13	-17
	Above 5860	-42.93	-27

Note: the data just list the worst cases

- For the frequency band 5.15-5.25GHz5.725-5.850GHz (802.11n HT20)
- Antenna 1(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	55.12	7.11	62.23	74	-11.77	H	PK
15540	37.03	8.22	45.25	54	-8.75	H	AV
10360	60.89	7.11	68.00	74	-6.00	V	PK
15540	37.85	8.22	46.07	54	-7.93	V	AV
Middle Channel (5200MHz)							
10400	57.42	7.22	64.64	74	-9.36	H	PK
15600	36.97	8.67	45.64	54	-8.36	H	AV
10400	58.46	7.22	65.68	74	-8.32	V	PK
15600	35.77	8.67	44.44	54	-9.56	V	AV
High Channel (5240MHz)							
10480	55.65	7.69	63.34	74	-10.66	H	PK
15720	35.61	8.93	44.54	54	-9.46	H	AV
10480	59.21	7.69	66.90	74	-7.10	V	PK
15720	38.38	8.93	47.31	54	-6.69	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5745MHz)							
11490	57.42	9.45	66.87	74	-7.13	H	PK
17235	36.10	10.36	46.46	54	-7.54	H	AV
11490	55.97	9.45	65.42	74	-8.58	V	PK
17235	35.58	10.36	45.94	54	-8.06	V	AV
Middle Channel (5785MHz)							
11570	58.40	9.62	68.02	74	-5.98	H	PK
17355	35.72	10.67	46.39	54	-7.61	H	AV
11570	56.36	9.62	65.98	74	-8.02	V	PK
17355	36.92	10.67	47.59	54	-6.41	V	AV
High Channel (5825MHz)							
11650	54.74	9.84	64.58	74	-9.42	H	PK
17475	34.91	10.95	45.86	54	-8.14	H	AV
11650	56.91	9.84	66.75	74	-7.25	V	PK
17475	37.15	10.95	48.10	54	-5.90	V	AV

➤ Out of Band edge 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-31.55	-27
Highest	Above 5350	-37.27	-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	-45.80	-27
	5715 to 5725	-33.41	-17
Highest	5850 to 5860	-37.10	-17
	Above 5860	-42.05	-27
Note: the data just list the worst cases			

- For the frequency band 5.15-5.25GHz, 5.725-5.850GHz (802.11n HT40)
- Antenna 1 (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 (5190MHz)							
10380	57.98	7.25	65.23	74	-8.77	H	PK
15570	36.75	8.33	45.08	54	-8.92	H	AV
10380	58.93	7.25	66.18	74	-7.82	V	PK
15570	39.41	8.33	47.74	54	-6.26	V	AV
High Channel (5230MHz)							
10460	57.47	7.54	65.01	74	-8.99	H	PK
15690	38.04	8.86	46.90	54	-7.10	H	AV
10460	60.14	7.54	67.68	74	-6.32	V	PK
15690	38.93	8.86	47.79	54	-6.21	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5755MHz)							
11510	56.29	9.65	65.94	74	-8.06	H	PK
17265	36.28	10.87	47.15	54	-6.85	H	AV
11510	56.15	9.65	65.80	74	-8.20	V	PK
17265	36.63	10.87	47.50	54	-6.50	V	AV
High Channel (5795MHz)							
11590	55.89	9.81	65.70	74	-8.30	H	PK
17385	35.00	10.89	45.89	54	-8.11	H	AV
11590	57.65	9.81	67.46	74	-6.54	V	PK
17385	36.48	10.89	47.37	54	-6.63	V	AV

➤ Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-35.75	-27
Highest	Above 5350	-41.00	-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	-41.70	-27
	5715 to 5725	-39.20	-17
Highest	5850 to 5860	-42.08	-17
	Above 5860	-41.82	-27
Note: the data just list the worst cases			

- For the frequency band 5.15-5.25GHz, 5.725-5.850GHz (802.11ac VH80)
- Antenna 1(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	
5210MHz							
10420	58.91	7.33	66.24	74	-7.76	H	PK
15630	36.83	8.75	45.58	54	-8.42	H	AV
10420	56.99	7.33	64.32	74	-9.68	V	PK
15630	37.51	8.75	46.26	54	-7.74	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
5775MHz							
11550	55.12	9.54	64.66	74	-9.34	H	PK
17325	37.02	10.59	47.61	54	-6.39	H	AV
11550	57.58	9.54	67.12	74	-6.88	V	PK
17325	33.87	10.59	44.46	54	-9.54	V	AV

➤ Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-33.38	-27
Highest	Above 5350	-32.56	-27
Note: the data just list the worst cases			

➤ Out of Band edge for 5725-5850MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5715	-43.61	-27
	5715 to 5725	-30.46	-17
Highest	5850 to 5860	-29.37	-17
	Above 5860	-40.06	-27
Note: the data just list the worst cases			

Note: 1. This EUT was tested in the low, high channel and the worst case position data was reported.

2. Radiated measurements are performed; field strength is then converted to EIRP as follows:

$$EIRP[dBm] = E[dB\mu V/m] - 95.2$$

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

9. Frequency Stability

9.1 Standard Applicable

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

9.2 Test Procedure

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

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

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

9.3 Summary of Test Results/Plots

Please refer to Appendix D

10 Conducted Emissions

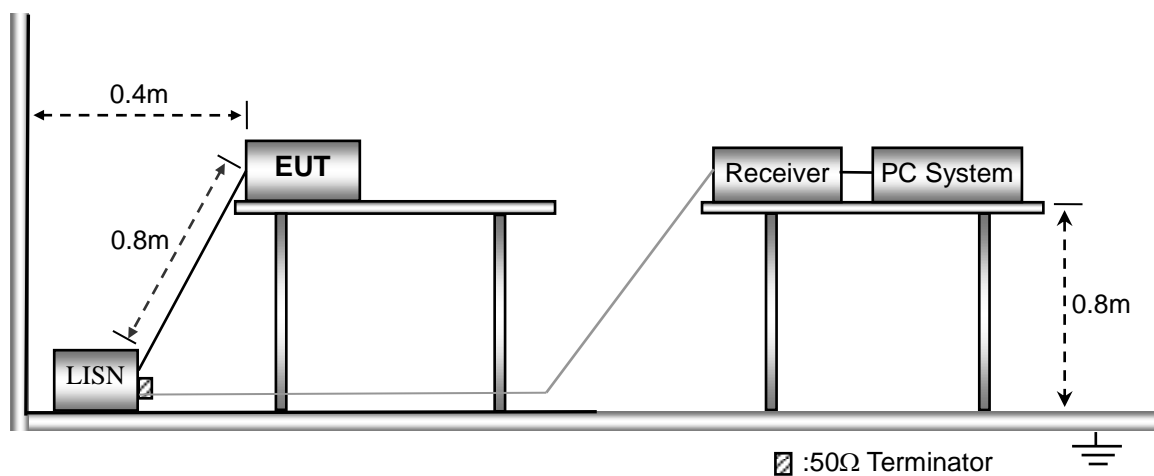
10.1 Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 Limit.

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

The spacing between the peripherals was 10 cm.

10.2 Basic Test Setup Block Diagram



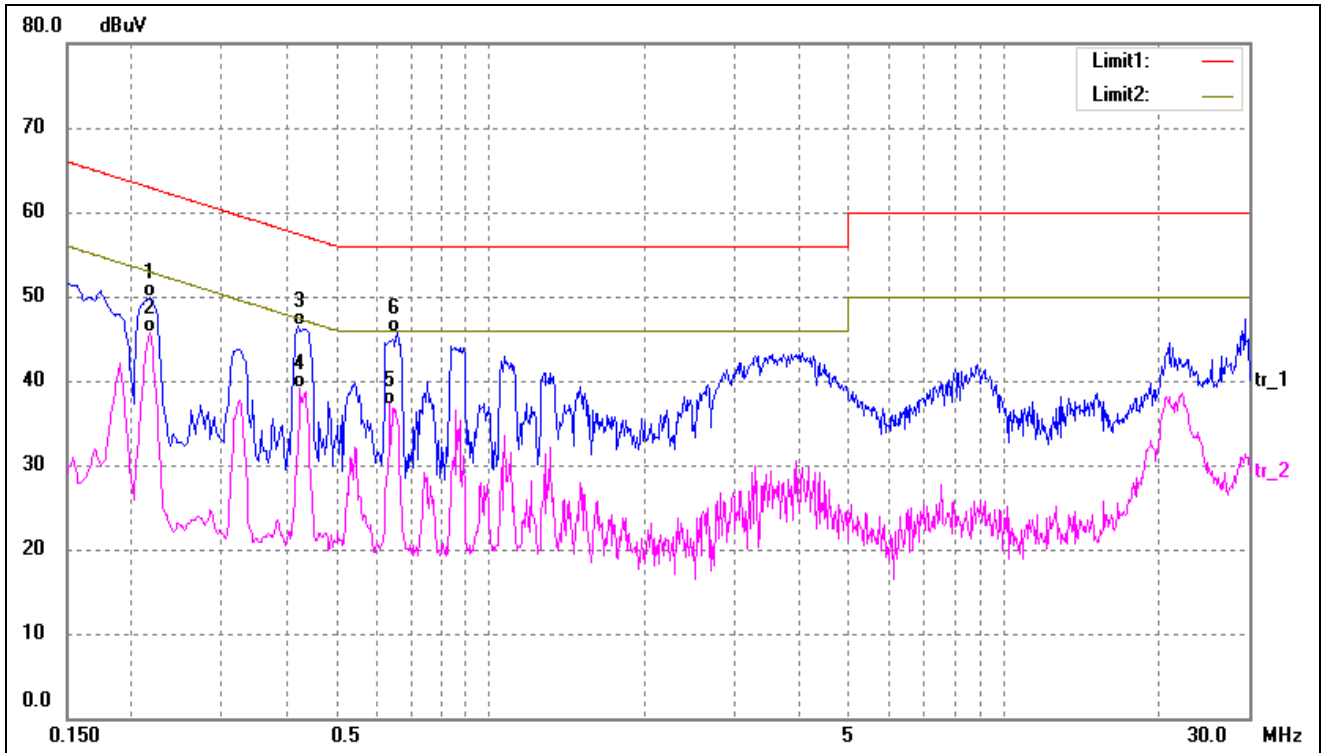
10.3 Test Receiver Setup

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

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

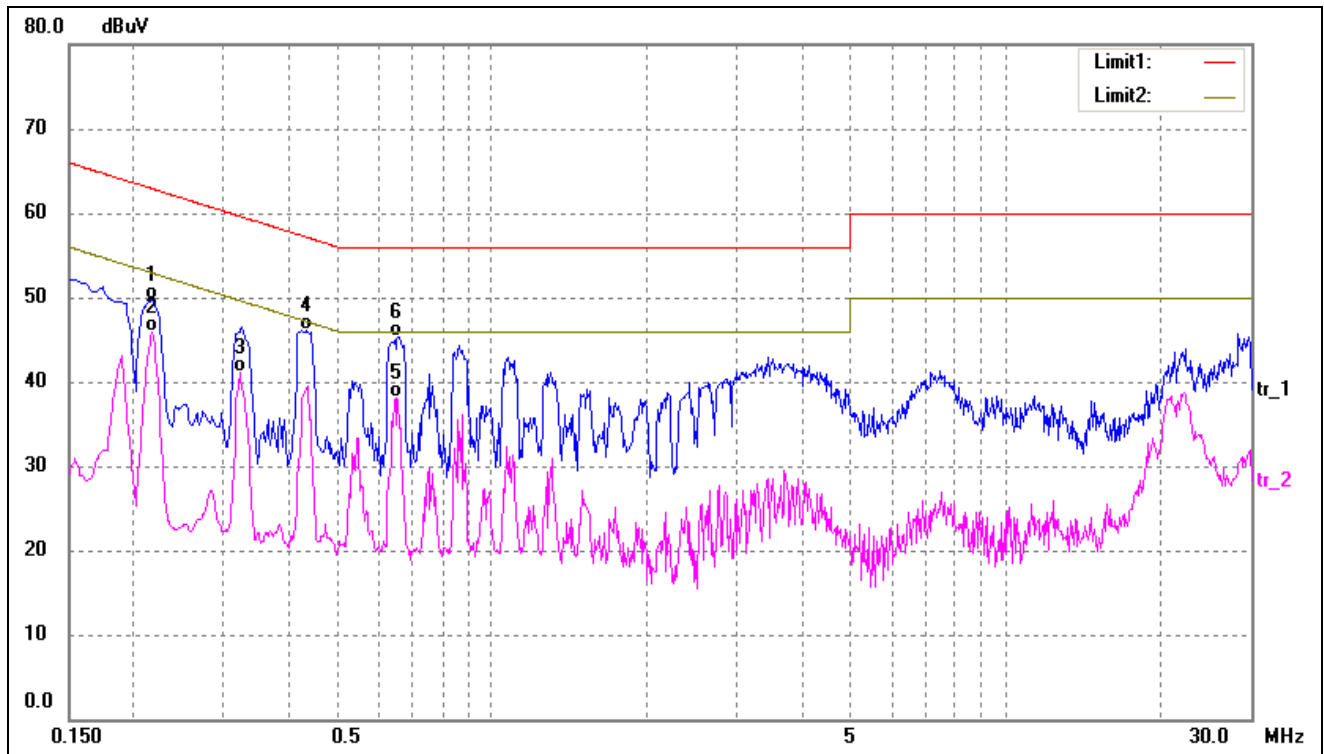
10.4 Summary of Test Results/Plots

Test Mode	Communication	AC120V 60Hz	Polarity:	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2180	39.57	10.26	49.83	62.89	-13.06	QP
2*	0.2180	35.48	10.26	45.74	52.89	-7.15	AVG
3	0.4220	36.22	10.23	46.45	57.41	-10.96	QP
4	0.4260	28.91	10.22	39.13	47.33	-8.20	AVG
5	0.6380	27.01	10.19	37.20	46.00	-8.80	AVG
6	0.6580	35.57	10.19	45.76	56.00	-10.24	QP

Test Mode	Communication	AC120V 60Hz	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2180	39.50	10.26	49.76	62.89	-13.13	QP
2*	0.2180	35.70	10.26	45.96	52.89	-6.93	AVG
3	0.3220	30.93	10.25	41.18	49.66	-8.48	AVG
4	0.4340	35.91	10.22	46.13	57.18	-11.05	QP
5	0.6540	27.90	10.19	38.09	46.00	-7.91	AVG
6	0.6580	35.16	10.19	45.35	56.00	-10.65	QP

APPENDIX SUMMARY

Project No.	WTH20X10077097W	Test Engineer	Shaw
Start date	2020/11/19	Finish date	2020/11/19
Temperature	25°C	Humidity	57%
RF specifications	U-NII		

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

APPENDIX A

Power Spectral Density					
U-NII-1:5150-5250MHz					
Operating mode	Test Channel	ANT 1 dBm/MHz	ANT 2 dBm/MHz	Total dBm/MHz	Limit (dBm/MHz)
802.11a	5180	4.82	4.14	/	11
	5200	4.96	4.50	/	11
	5240	5.25	4.59	/	11
802.11n-HT20	5180	3.88	3.38	6.65	11
	5200	4.01	3.71	6.87	11
	5240	4.41	3.72	7.09	11
802.11n-HT40	5190	0.18	-0.25	2.98	11
	5230	0.87	-0.24	3.36	11
802.11ac-HT80	5210	-2.50	-3.88	-0.13	11

Power Spectral Density							
U-NII-3: 5725-5850MHz							
Operating mode	Test Channel	ANT 1 dBm/300kHz	ANT 2 dBm/300kHz	Factor	ANT 1 dBm/500kHz*	ANT 2 dBm/500kHz*	Limit dBm/500kHz
802.11a	5745	2.30	-0.08	2.22	4.52	2.14	30
	5785	2.10	0.10	2.22	4.32	2.32	30
	5825	0.83	-0.43	2.22	3.05	1.79	30

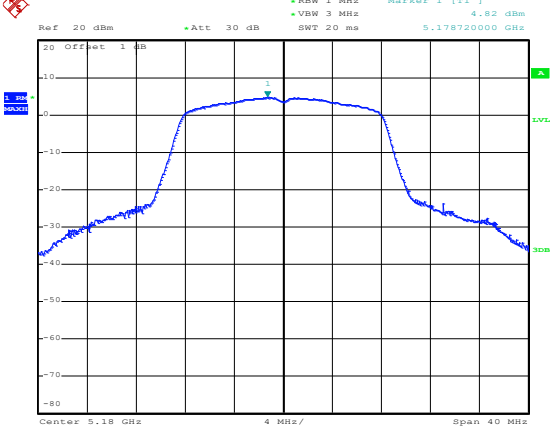
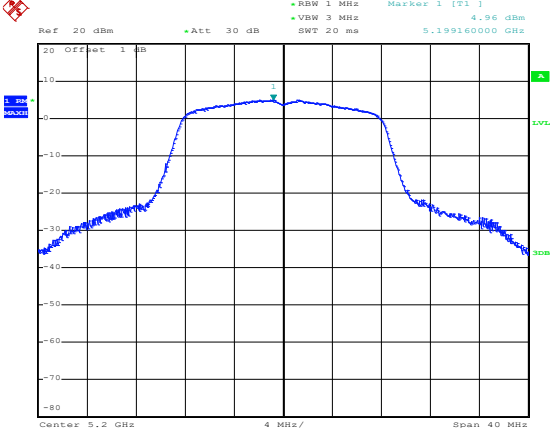
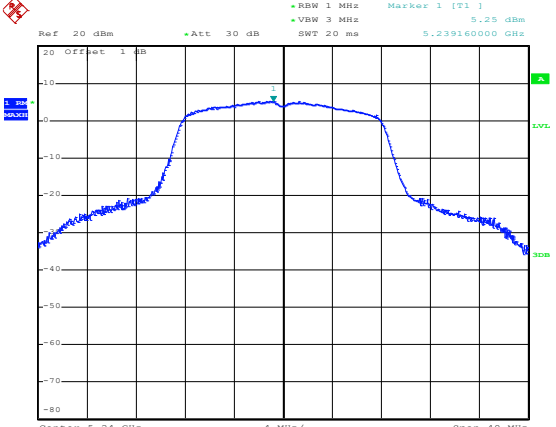
*Note: Maximum PSD=PSD(dBm/300kHz)+10log(500kHz/300kHz)=2.22

Power Spectral Density							
U-NII-3: 5725-5850MHz							
Operating mode	Test Channel	ANT 1 dBm/300kHz	ANT 2 dBm/300kHz	Factor	Total dBm/500kHz*	Limit dBm/500kHz	
802.11n-HT20	5745	0.70	-0.10	2.22	5.55	30	
	5785	0.55	-0.52	2.22	5.28	30	
	5825	0.89	-0.66	2.22	5.41	30	
802.11n HT40	5755	-3.97	-4.65	2.22	0.93	30	
	5795	-2.72	-4.24	2.22	1.82	30	
802.11ac VH80	5775	-7.50	-8.53	2.22	-2.75	30	

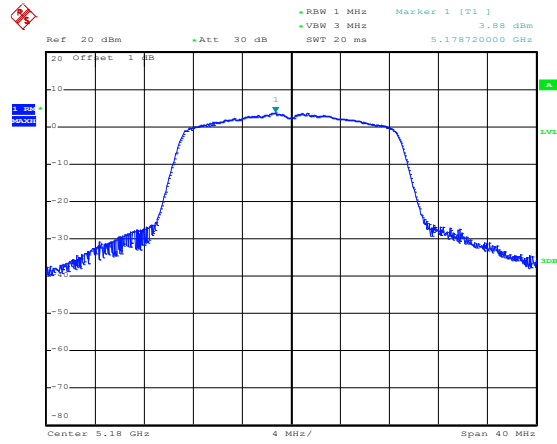
*Note: Maximum PSD=PSD(dBm/300kHz)+10log(500kHz/300kHz)=2.22

ANT 1

5150-5250MHz

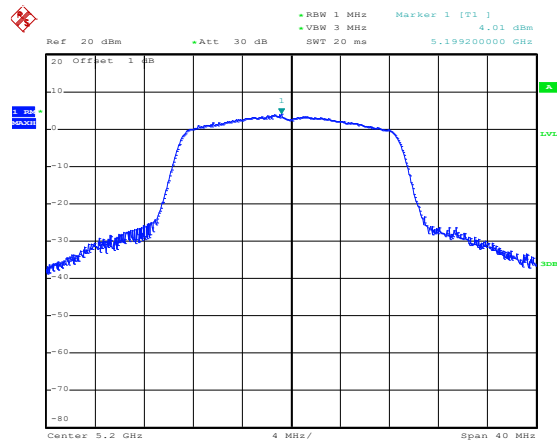
<p>802.11a-Low</p>	 <p>Ref 20 dBm +Att 30 dB RBW 1 MHz Marker 1 [T1] 4.82 dBm VBW 3 MHz SWT 20 ms 5.178720000 GHz</p> <p>20 Offset 1 dB</p> <p>Center 5.18 GHz 4 MHz/ Span 40 MHz</p> <p>Date: 19.NOV.2020 17:46:13</p>
<p>802.11a-Middle</p>	 <p>Ref 20 dBm +Att 30 dB RBW 1 MHz Marker 1 [T1] 4.96 dBm VBW 3 MHz SWT 20 ms 5.199160000 GHz</p> <p>20 Offset 1 dB</p> <p>Center 5.2 GHz 4 MHz/ Span 40 MHz</p> <p>Date: 19.NOV.2020 17:46:43</p>
<p>802.11a-High</p>	 <p>Ref 20 dBm +Att 30 dB RBW 1 MHz Marker 1 [T1] 5.25 dBm VBW 3 MHz SWT 20 ms 5.239160000 GHz</p> <p>20 Offset 1 dB</p> <p>Center 5.24 GHz 4 MHz/ Span 40 MHz</p> <p>Date: 19.NOV.2020 17:47:07</p>

802.11n-HT20-Low



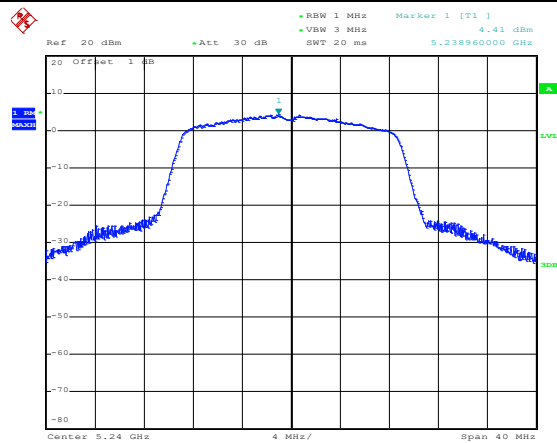
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802.11n-HT20-Middle



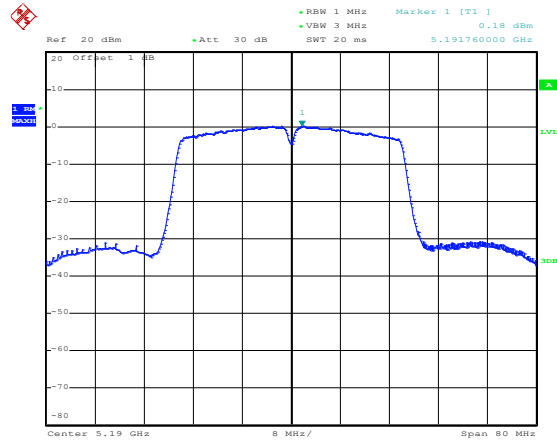
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802.11n-HT20-High



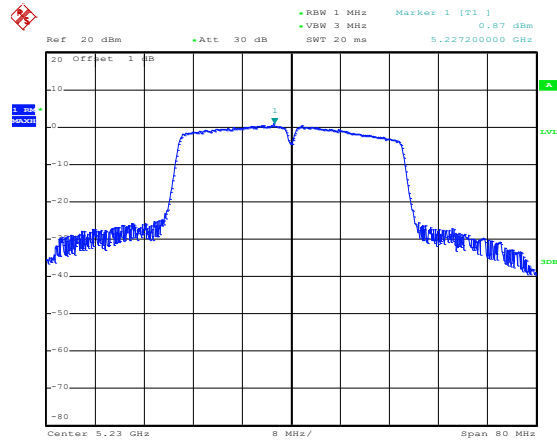
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802.11n-HT40-Low



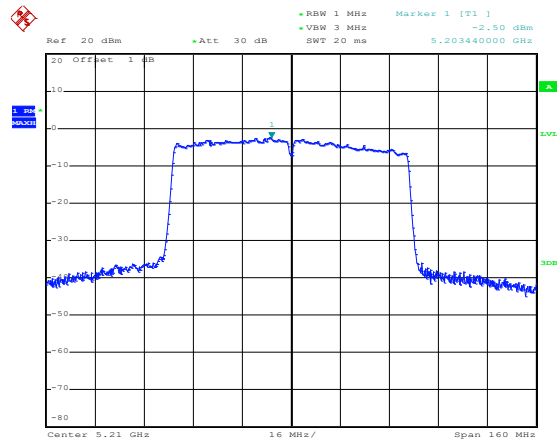
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802.11n-HT40-High



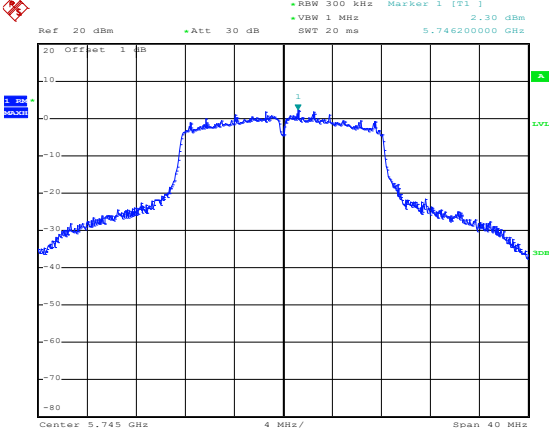
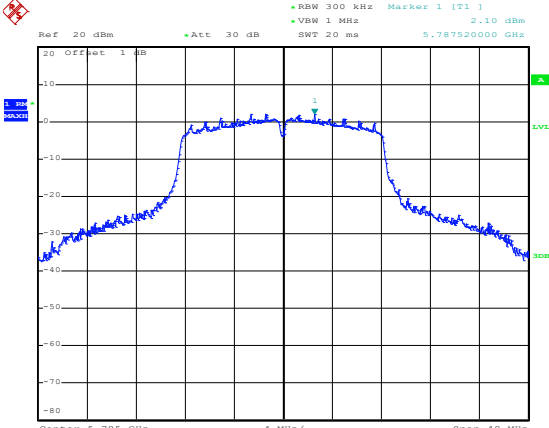
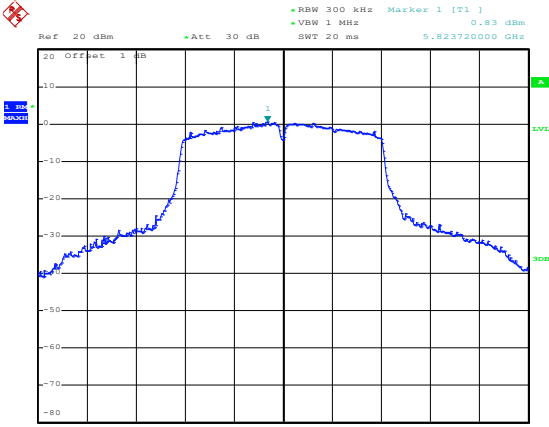
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802.11ac-HT80

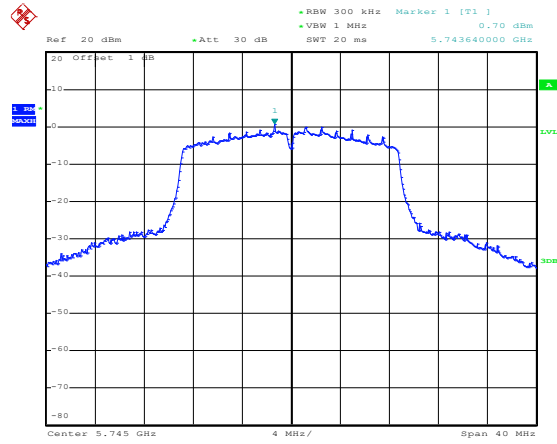


Date: 19.NOV.2020 17:51:35

5725-5850MHz

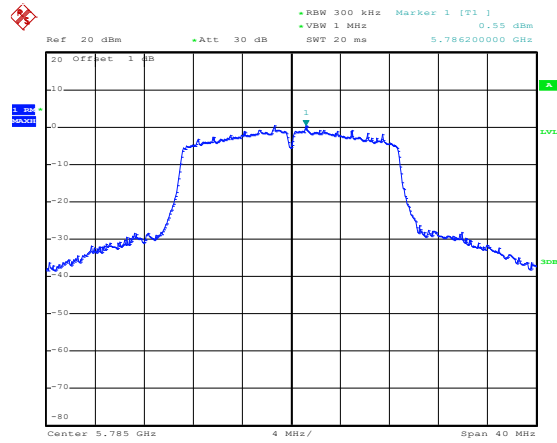
<p>802.11a-Low</p>	 <p>Ref 20 dBm +Att 30 dB RBW 300 kHz Marker 1 [T1] 2.30 dBm VBW 1 MHz SWT 20 ms 5.74620000 GHz</p> <p>20 Offset 1 dB</p> <p>1.00 dBm</p> <p>1</p> <p>30dB</p> <p>LVL</p> <p>Center 5.745 GHz 4 MHz/ Span 40 MHz</p> <p>Date: 19.NOV.2020 17:54:05</p>
<p>802.11a-Middle</p>	 <p>Ref 20 dBm +Att 30 dB RBW 300 kHz Marker 1 [T1] 2.10 dBm VBW 1 MHz SWT 20 ms 5.787520000 GHz</p> <p>20 Offset 1 dB</p> <p>1.00 dBm</p> <p>1</p> <p>30dB</p> <p>LVL</p> <p>Center 5.785 GHz 4 MHz/ Span 40 MHz</p> <p>Date: 19.NOV.2020 17:54:31</p>
<p>802.11a-High</p>	 <p>Ref 20 dBm +Att 30 dB RBW 300 kHz Marker 1 [T1] 0.83 dBm VBW 1 MHz SWT 20 ms 5.823720000 GHz</p> <p>20 Offset 1 dB</p> <p>1.00 dBm</p> <p>1</p> <p>30dB</p> <p>LVL</p> <p>Center 5.825 GHz 4 MHz/ Span 40 MHz</p> <p>Date: 19.NOV.2020 17:56:59</p>

802.11n-HT20-Low



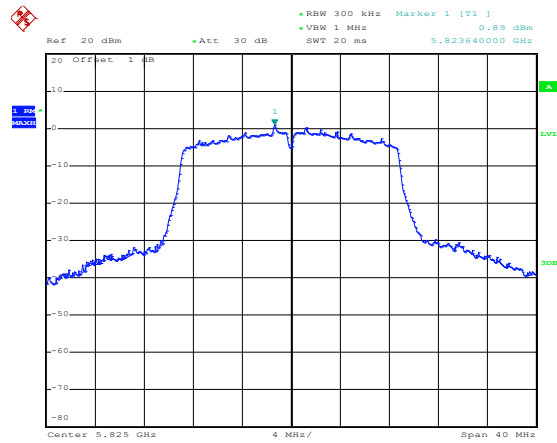
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802.11n-HT20-Middle



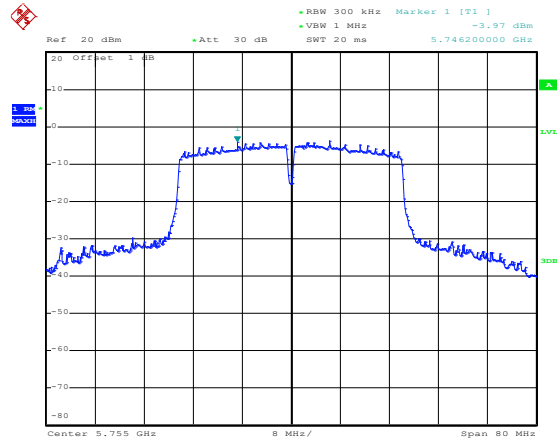
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802.11n-HT20-High



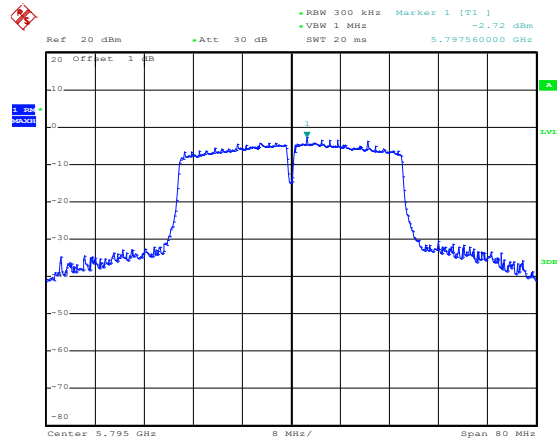
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802.11n-HT40-Low



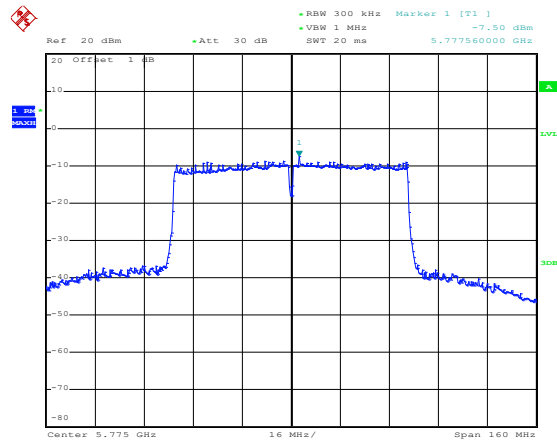
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802.11n-HT40-High



Date: 19.NOV.2020 18:01:04

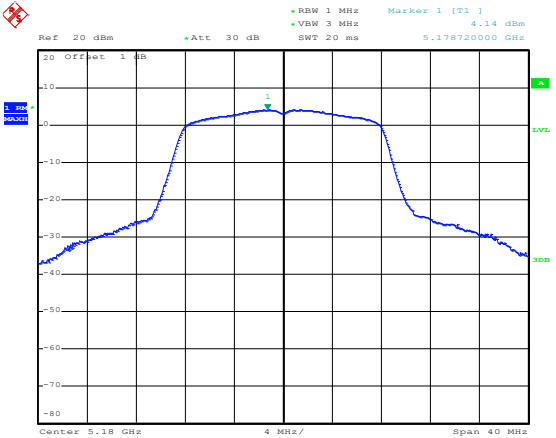
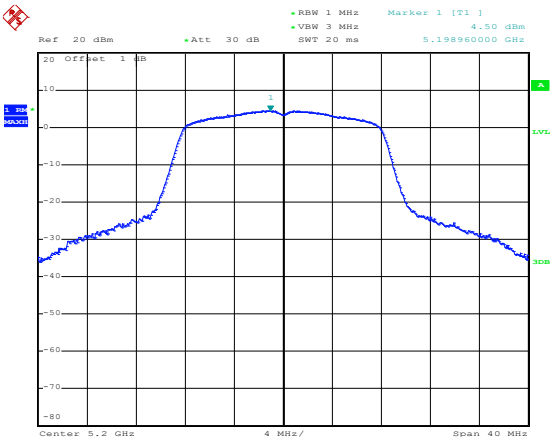
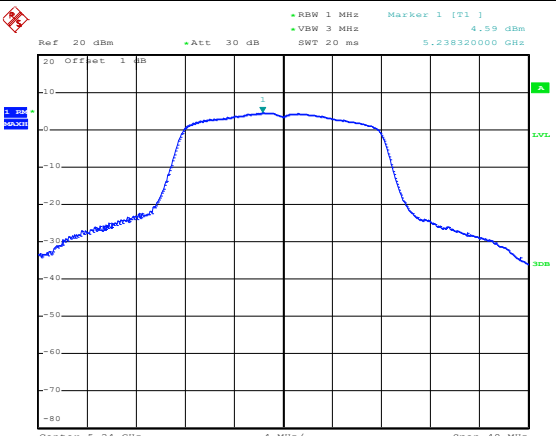
802.11ac-HT80

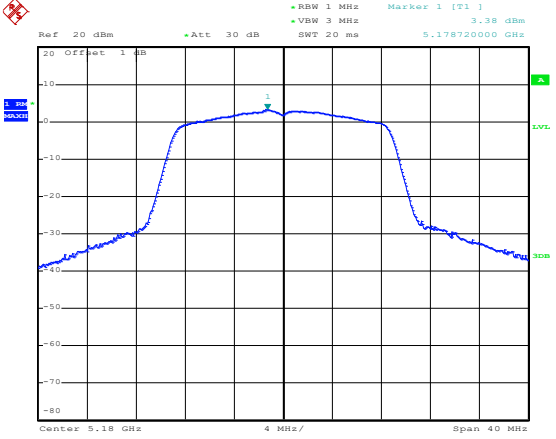
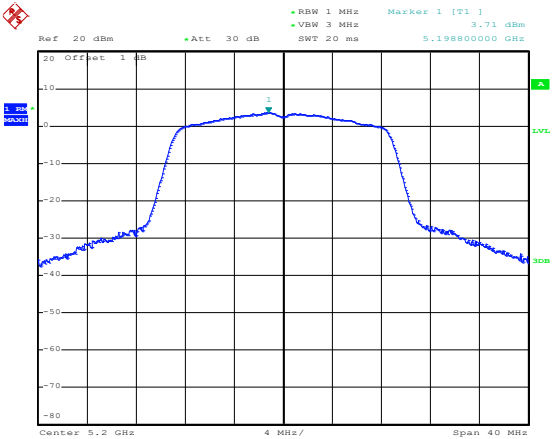
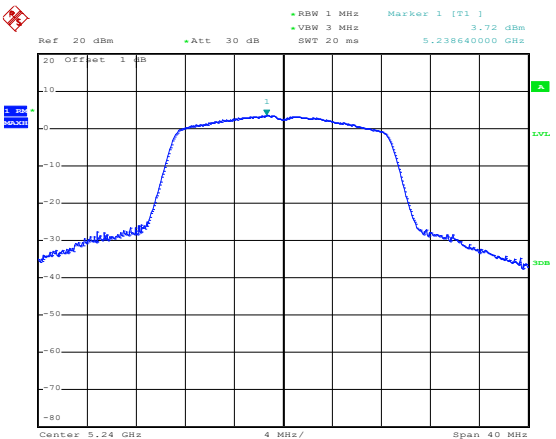


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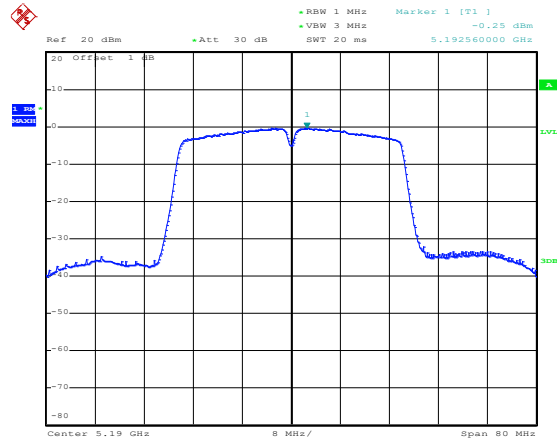
ANT 2

5150-5250MHz

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<p>802.11a-Middle</p>	 <p>Date: 19.NOV.2020 14:26:34</p>
<p>802.11a-High</p>	 <p>Date: 19.NOV.2020 14:27:15</p>

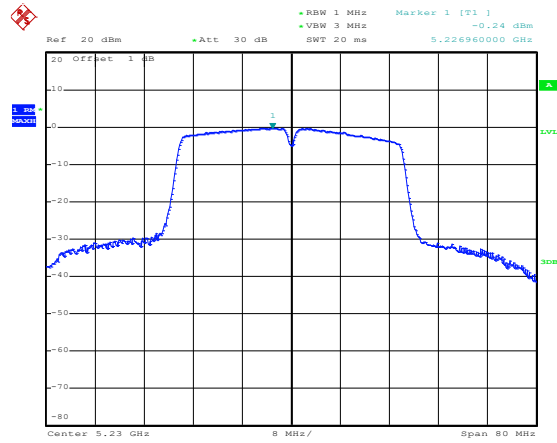
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<p>802.11n-HT20-High</p>	 <p>Date: 19.NOV.2020 14:30:07</p>

802.11n-HT40-Low



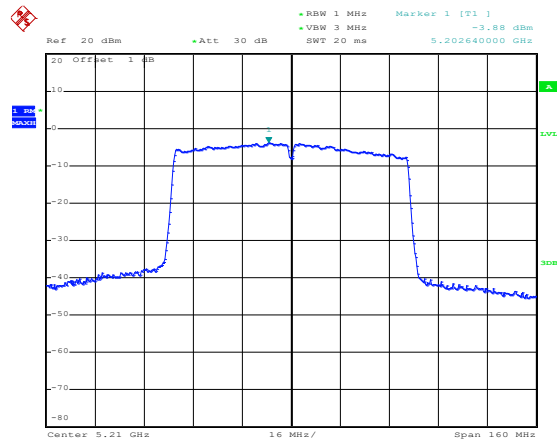
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802.11n-HT40-High



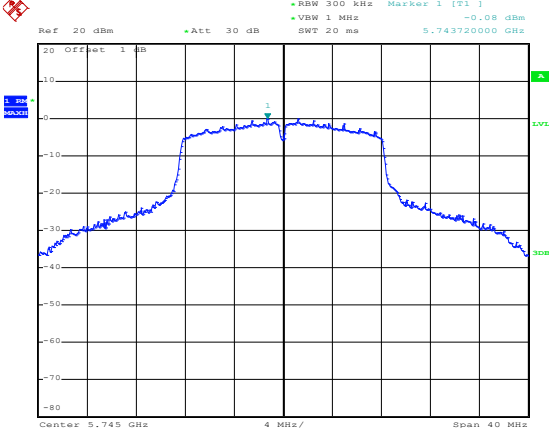
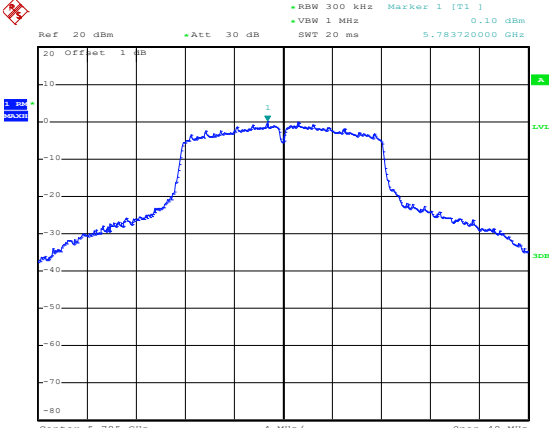
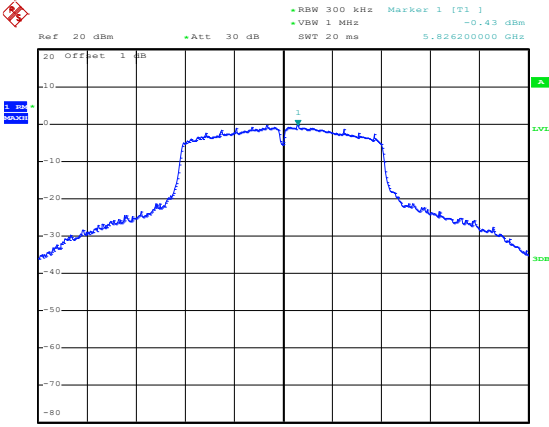
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802.11ac-HT80

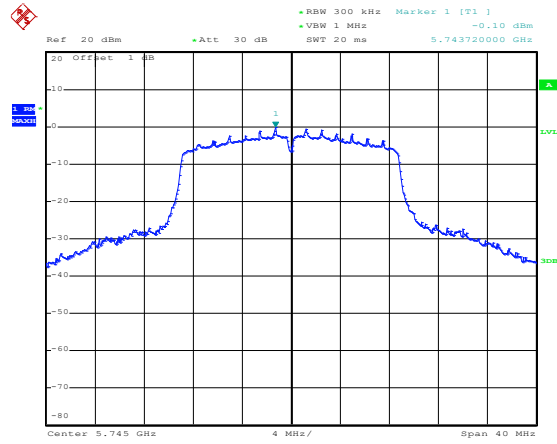


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5725-5850MHz

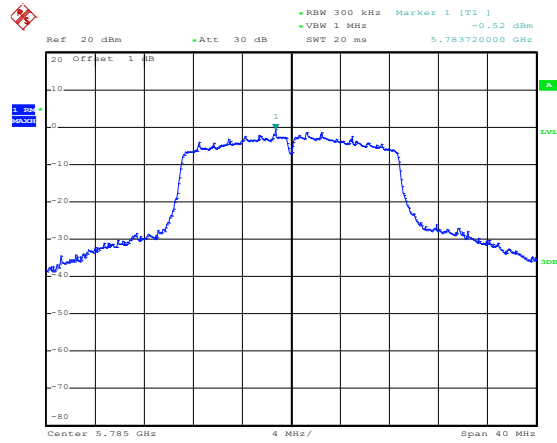
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<p>802.11a-Middle</p>	 <p>Date: 19.NOV.2020 14:40:12</p>
<p>802.11a-High</p>	 <p>Date: 19.NOV.2020 14:40:49</p>

802.11n-HT20-Low



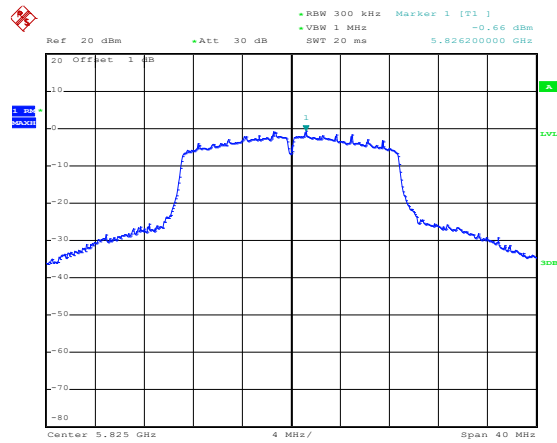
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802.11n-HT20-Middle



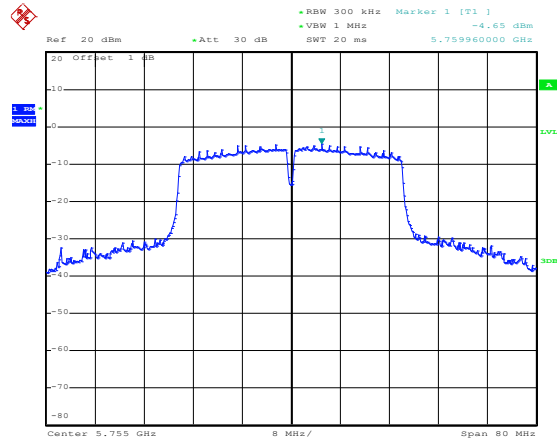
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802.11n-HT20-High



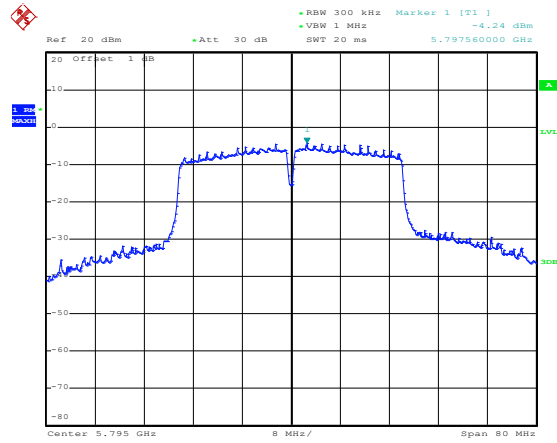
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802.11n-HT40-Low



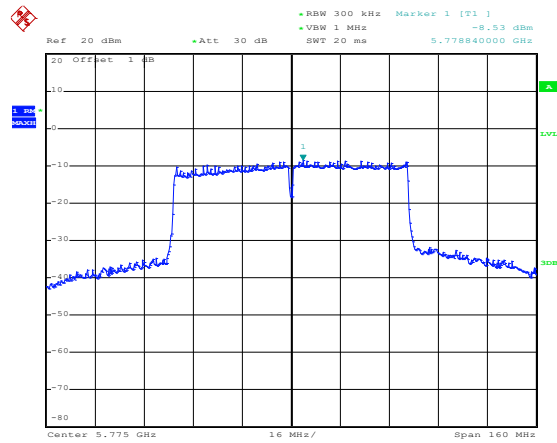
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802.11n-HT40-High



Date: 19.NOV.2020 14:46:00

802.11ac-HT80



Date: 19.NOV.2020 14:46:49

APPENDIX B

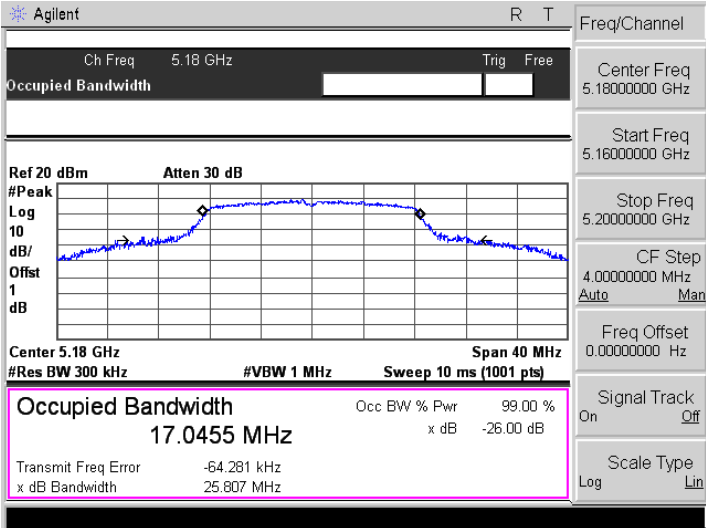
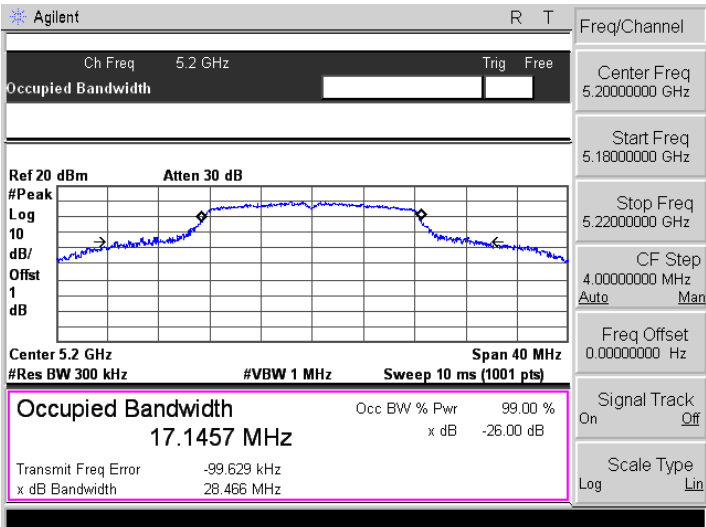
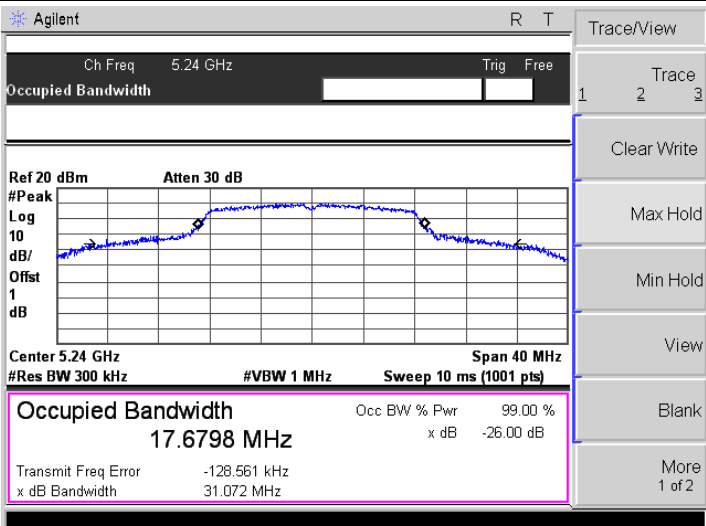
Emission Bandwidth and Occupied Bandwidth

U-NII-1:5150-5250MHz						
Test Mode	Test Channel MHz	ANT 1		ANT 2		Result
		26 dB Bandwidth MHz	99% Bandwidth MHz	26 dB Bandwidth MHz	99% Bandwidth MHz	
802.11a	5180	25.807	17.0455	24.663	16.8509	Pass
	5200	28.466	17.1457	24.900	16.8736	Pass
	5240	31.072	17.6798	25.851	16.8839	Pass
802.11n-HT20	5180	27.173	17.8636	23.130	17.7349	Pass
	5200	29.521	17.9386	23.615	17.7421	Pass
	5240	30.433	18.2051	24.328	17.7857	Pass
802.11n-HT40	5190	61.699	36.1804	40.116	36.0925	Pass
	5230	57.014	36.3202	42.099	36.0846	Pass
802.11ac-HT80	5210	81.484	75.7173	81.184	75.5410	Pass

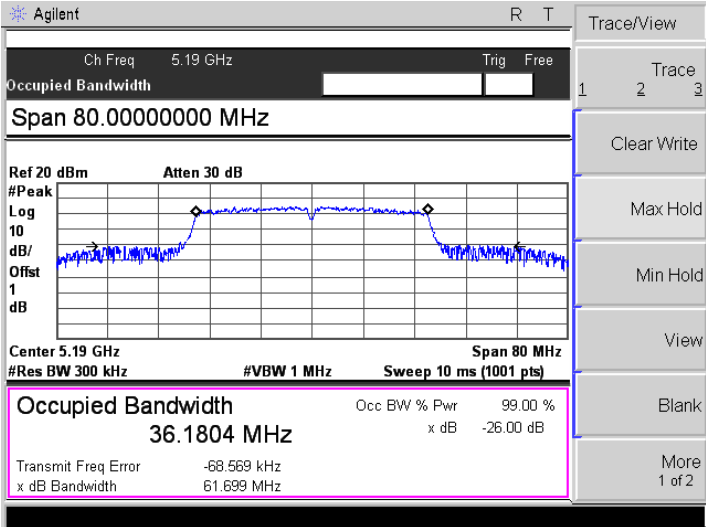
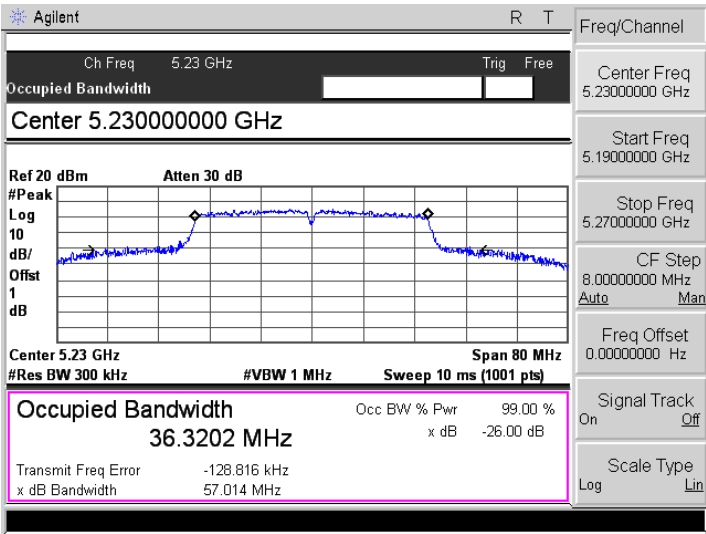
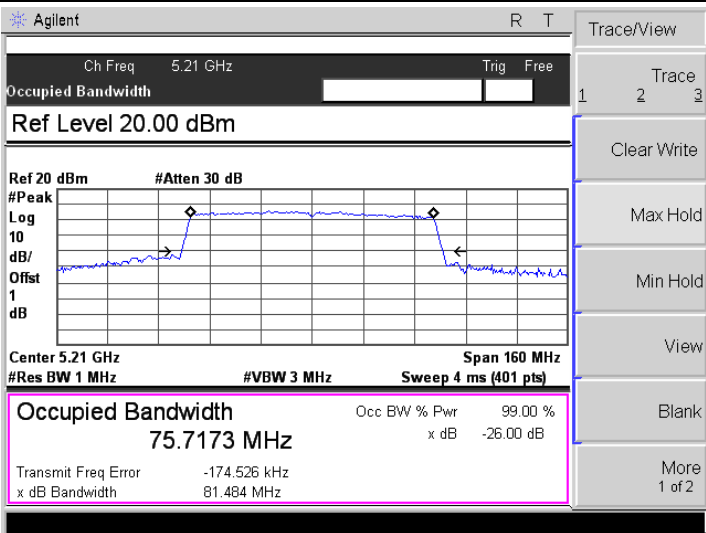
U-NII-3: 5725-5850MHz						
Test Mode	Test Channel MHz	ANT 1		ANT 2		Limit kHz
		6 dB Bandwidth MHz	99% Bandwidth MHz	6 dB Bandwidth MHz	99% Bandwidth MHz	
802.11a	5745	14.255	18.2508	15.142	17.4120	≥500
	5785	13.825	18.1310	15.119	17.3951	≥500
	5825	14.084	16.9301	15.446	17.2495	≥500
802.11n-HT20	5745	14.974	18.4129	15.158	18.0445	≥500
	5785	15.127	18.2471	15.091	18.0027	≥500
	5825	15.105	17.8562	15.035	17.9680	≥500
802.11n-HT40	5755	35.080	37.7141	35.067	36.9756	≥500
	5795	32.728	37.4559	35.164	37.4288	≥500
802.11ac-HT80	5775	76.332	77.4638	75.917	76.3673	≥500

ANT 1

5150-5250MHz

<p>802.11a-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.18 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offset 1 dB</p> <p>Center 5.18 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.0455 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -64.281 kHz x dB Bandwidth 25.807 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.18000000 GHz</p> <p>Start Freq 5.16000000 GHz</p> <p>Stop Freq 5.20000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11a-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 5.2 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offset 1 dB</p> <p>Center 5.2 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.1457 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -99.629 kHz x dB Bandwidth 28.466 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.20000000 GHz</p> <p>Start Freq 5.18000000 GHz</p> <p>Stop Freq 5.22000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11a-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.24 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offset 1 dB</p> <p>Center 5.24 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.6798 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -128.561 kHz x dB Bandwidth 31.072 MHz</p> <p>Trace/View</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

<p>802.11n-HT20-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.18 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.18 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.8636 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -26.104 kHz x dB Bandwidth 27.173 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.18000000 GHz</p> <p>Start Freq 5.16000000 GHz</p> <p>Stop Freq 5.20000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-Middle</p>	<p>Agilent R T</p> <p>Ch Freq 5.2 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ 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 17.9386 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -43.716 kHz x dB Bandwidth 29.521 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.20000000 GHz</p> <p>Start Freq 5.18000000 GHz</p> <p>Stop Freq 5.22000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.24 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ 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 18.2051 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -77.392 kHz x dB Bandwidth 30.433 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.24000000 GHz</p> <p>Start Freq 5.22000000 GHz</p> <p>Stop Freq 5.26000000 GHz</p> <p>CF Step 4.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

<p>802.11n-HT40-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.19 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>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 36.1804 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -68.569 kHz x dB Bandwidth 61.699 MHz</p> <p>Trace/View</p> <p>1 Trace 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-HT40-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.23 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Center 5.23000000 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 5.23 GHz Span 80 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 36.3202 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -128.816 kHz x dB Bandwidth 57.014 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.23000000 GHz</p> <p>Start Freq 5.19000000 GHz</p> <p>Stop Freq 5.27000000 GHz</p> <p>CF Step 8.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11ac-HT80</p>	 <p>Agilent R T</p> <p>Ch Freq 5.21 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref Level 20.00 dBm</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 4 ms (401 pts)</p> <p>Occupied Bandwidth 75.7173 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -174.526 kHz x dB Bandwidth 81.484 MHz</p> <p>Trace/View</p> <p>1 Trace 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

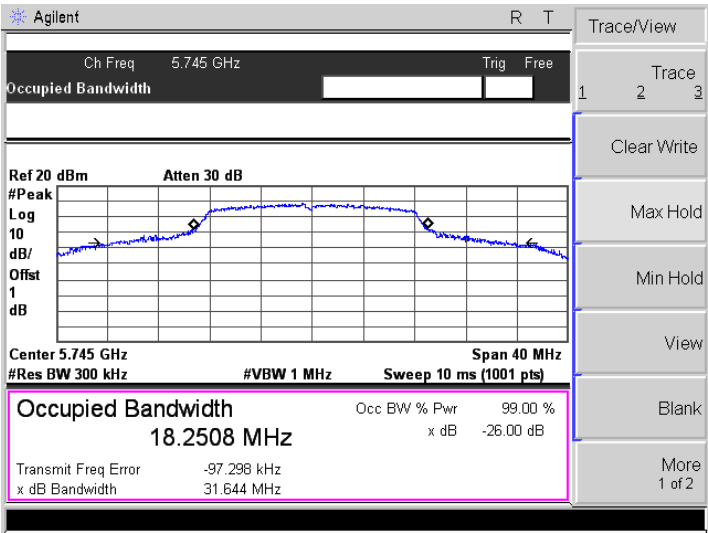
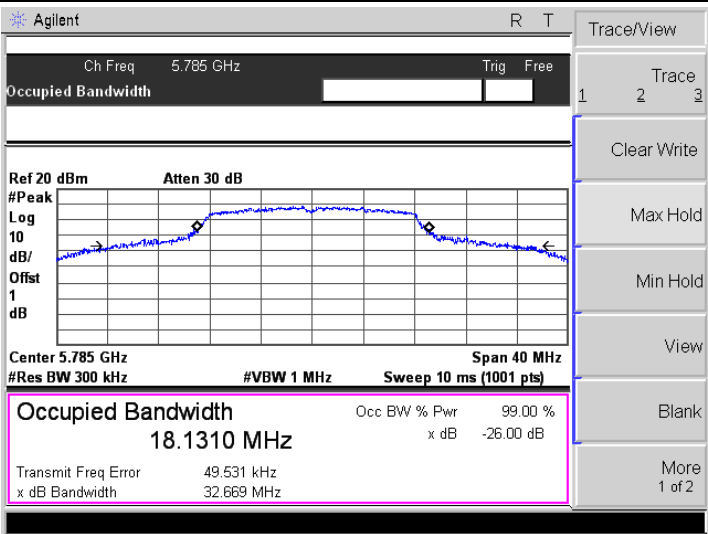
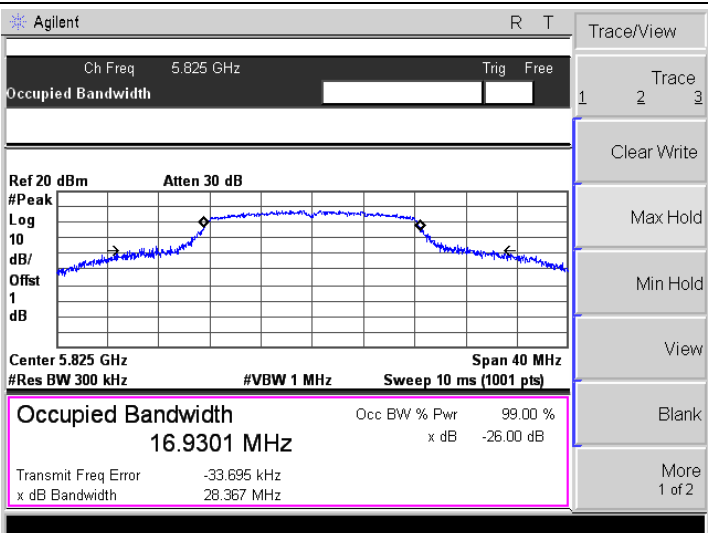
5725-5850MHz
6 dB Bandwidth

<p>802.11a-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ 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 17.8552 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -64.003 kHz x dB Bandwidth 14.225 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.7450000 GHz</p> <p>Start Freq 5.7250000 GHz</p> <p>Stop Freq 5.7650000 GHz</p> <p>CF Step 4.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11a-Middle</p>	<p>Agilent R T</p> <p>Ch Freq 5.785 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ 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 17.6402 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error 168.012 kHz x dB Bandwidth 13.825 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.7850000 GHz</p> <p>Start Freq 5.7650000 GHz</p> <p>Stop Freq 5.8050000 GHz</p> <p>CF Step 4.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11a-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ 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 16.4662 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -60.237 kHz x dB Bandwidth 14.084 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.8250000 GHz</p> <p>Start Freq 5.8050000 GHz</p> <p>Stop Freq 5.8450000 GHz</p> <p>CF Step 4.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

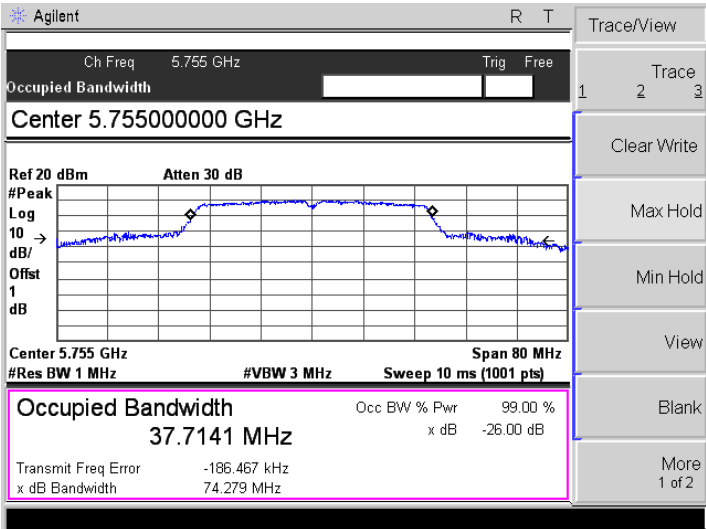
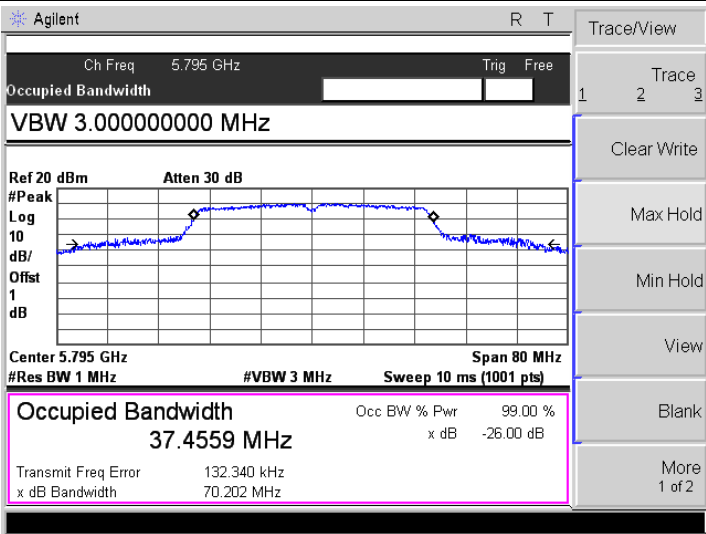
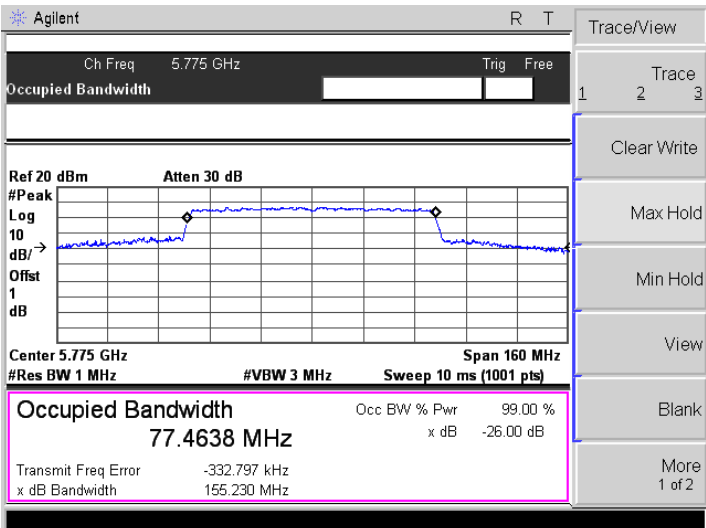
<p>802.11n-HT20-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>10</p> <p>dB/</p> <p>Offst</p> <p>1</p> <p>dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7118 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -6.00 dB</p> <p>Transmit Freq Error -77.272 kHz</p> <p>x dB Bandwidth 14.974 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.7450000 GHz</p> <p>Start Freq 5.7250000 GHz</p> <p>Stop Freq 5.7650000 GHz</p> <p>CF Step 4.0000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-Middle</p>	<p>Agilent R T</p> <p>Ch Freq 5.785 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>10</p> <p>dB/</p> <p>Offst</p> <p>1</p> <p>dB</p> <p>Center 5.785 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7300 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -6.00 dB</p> <p>Transmit Freq Error -59.652 kHz</p> <p>x dB Bandwidth 15.127 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.7850000 GHz</p> <p>Start Freq 5.7650000 GHz</p> <p>Stop Freq 5.8050000 GHz</p> <p>CF Step 4.0000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>10</p> <p>dB/</p> <p>Offst</p> <p>1</p> <p>dB</p> <p>Center 5.825 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.5546 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -6.00 dB</p> <p>Transmit Freq Error -57.659 kHz</p> <p>x dB Bandwidth 15.105 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>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.755 GHz Span 80 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <table border="1"> <tr> <td colspan="2">Occupied Bandwidth</td> <td>Occ BW % Pwr</td> <td>99.00 %</td> </tr> <tr> <td colspan="2">36.3161 MHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> <tr> <td>Transmit Freq Error</td> <td colspan="3">-93.731 kHz</td> </tr> <tr> <td>x dB Bandwidth</td> <td colspan="3">35.080 MHz</td> </tr> </table> <p>Freq/Channel</p> <p>Center Freq 5.7550000 GHz</p> <p>Start Freq 5.7150000 GHz</p> <p>Stop Freq 5.7950000 GHz</p> <p>CF Step 8.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>	Occupied Bandwidth		Occ BW % Pwr	99.00 %	36.3161 MHz		x dB	-6.00 dB	Transmit Freq Error	-93.731 kHz			x dB Bandwidth	35.080 MHz		
Occupied Bandwidth		Occ BW % Pwr	99.00 %														
36.3161 MHz		x dB	-6.00 dB														
Transmit Freq Error	-93.731 kHz																
x dB Bandwidth	35.080 MHz																
<p>802.11n-HT40-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.795 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.795 GHz Span 80 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <table border="1"> <tr> <td colspan="2">Occupied Bandwidth</td> <td>Occ BW % Pwr</td> <td>99.00 %</td> </tr> <tr> <td colspan="2">36.2854 MHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> <tr> <td>Transmit Freq Error</td> <td colspan="3">-47.429 kHz</td> </tr> <tr> <td>x dB Bandwidth</td> <td colspan="3">32.728 MHz</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>	Occupied Bandwidth		Occ BW % Pwr	99.00 %	36.2854 MHz		x dB	-6.00 dB	Transmit Freq Error	-47.429 kHz			x dB Bandwidth	32.728 MHz		
Occupied Bandwidth		Occ BW % Pwr	99.00 %														
36.2854 MHz		x dB	-6.00 dB														
Transmit Freq Error	-47.429 kHz																
x dB Bandwidth	32.728 MHz																
<p>802.11ac-HT80</p>	<p>Agilent R T</p> <p>Ch Freq 5.21 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm #Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.21 GHz Span 160 MHz #Res BW 1 MHz #VBW 3 MHz Sweep 4 ms (401 pts)</p> <table border="1"> <tr> <td colspan="2">Occupied Bandwidth</td> <td>Occ BW % Pwr</td> <td>99.00 %</td> </tr> <tr> <td colspan="2">75.5410 MHz</td> <td>x dB</td> <td>-26.00 dB</td> </tr> <tr> <td>Transmit Freq Error</td> <td colspan="3">-50.514 kHz</td> </tr> <tr> <td>x dB Bandwidth</td> <td colspan="3">81.184 MHz</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>	Occupied Bandwidth		Occ BW % Pwr	99.00 %	75.5410 MHz		x dB	-26.00 dB	Transmit Freq Error	-50.514 kHz			x dB Bandwidth	81.184 MHz		
Occupied Bandwidth		Occ BW % Pwr	99.00 %														
75.5410 MHz		x dB	-26.00 dB														
Transmit Freq Error	-50.514 kHz																
x dB Bandwidth	81.184 MHz																

99%Bandwidth

<p>802.11a-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.745 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 18.2508 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -97.298 kHz x dB Bandwidth 31.644 MHz</p> <p>Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2</p>
<p>802.11a-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 5.785 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.785 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 18.1310 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 49.531 kHz x dB Bandwidth 32.669 MHz</p> <p>Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2</p>
<p>802.11a-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.825 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 16.9301 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -33.695 kHz x dB Bandwidth 28.367 MHz</p> <p>Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2</p>

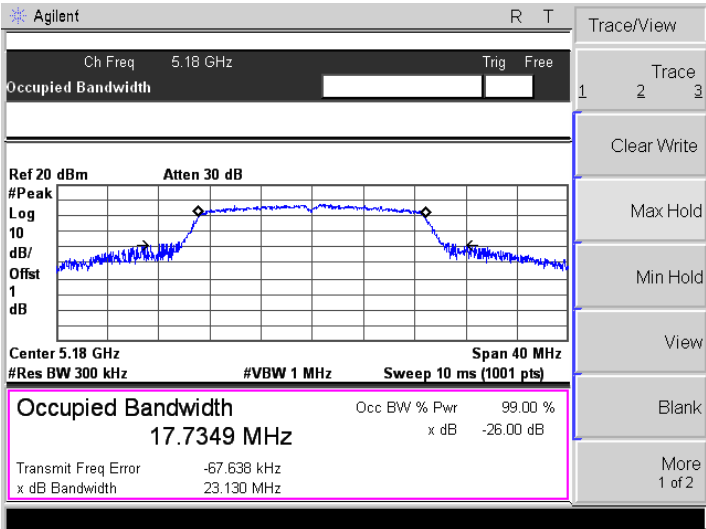
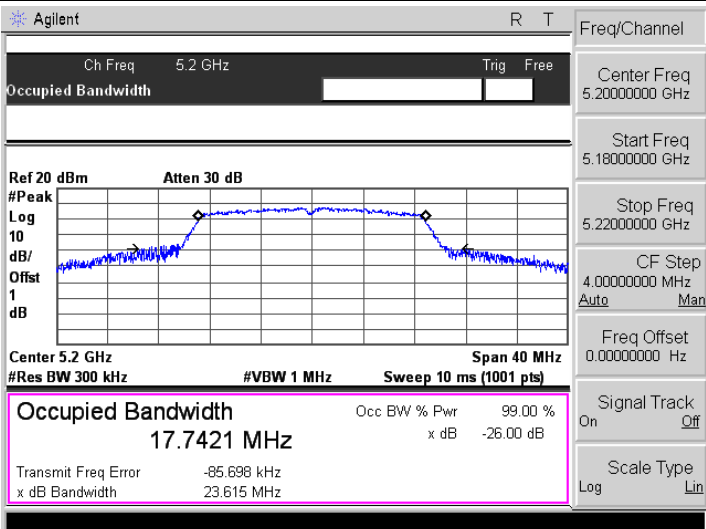
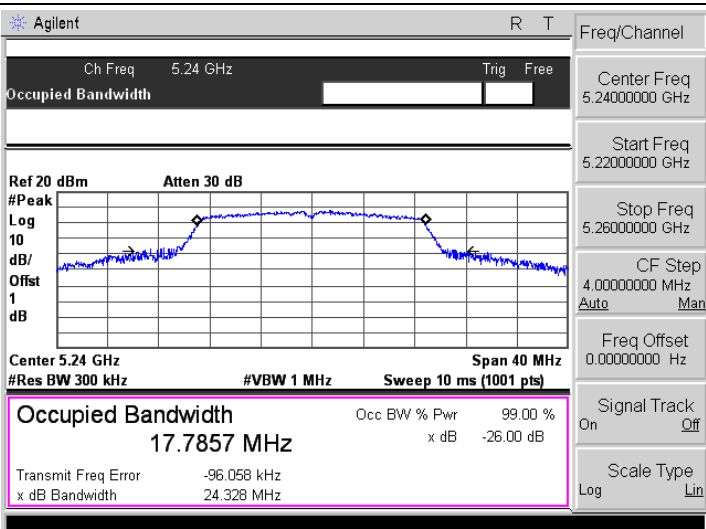
<p>802.11n-HT20-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 18.4129 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -32.381 kHz x dB Bandwidth 32.327 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.7450000 GHz</p> <p>Start Freq 5.7250000 GHz</p> <p>Stop Freq 5.7650000 GHz</p> <p>CF Step 4.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-Middle</p>	<p>Agilent R T</p> <p>Ch Freq 5.785 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ 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 18.2471 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 6.162 kHz x dB Bandwidth 31.810 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.7850000 GHz</p> <p>Start Freq 5.7650000 GHz</p> <p>Stop Freq 5.8050000 GHz</p> <p>CF Step 4.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.825 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.8562 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -36.304 kHz x dB Bandwidth 26.744 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.8250000 GHz</p> <p>Start Freq 5.8050000 GHz</p> <p>Stop Freq 5.8450000 GHz</p> <p>CF Step 4.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

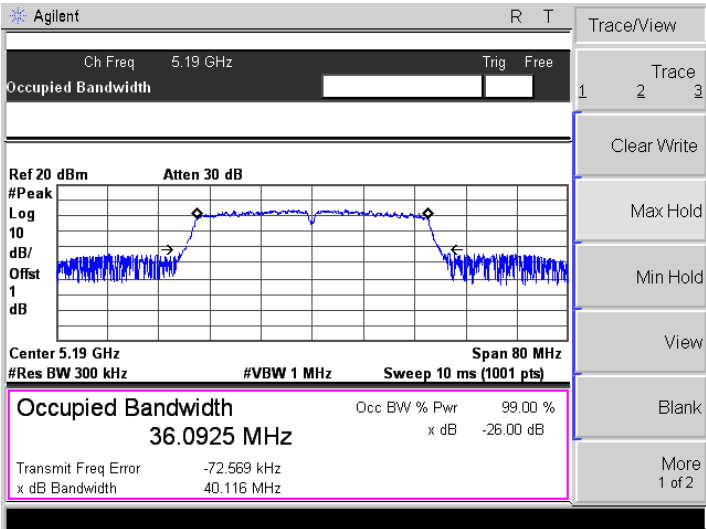
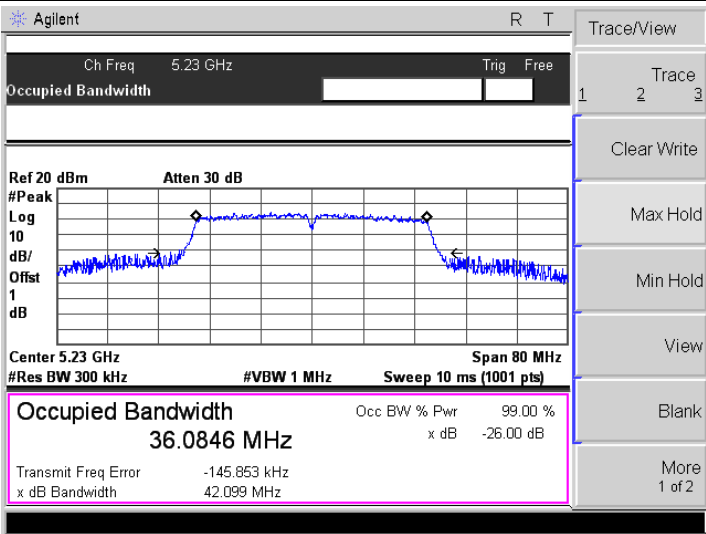
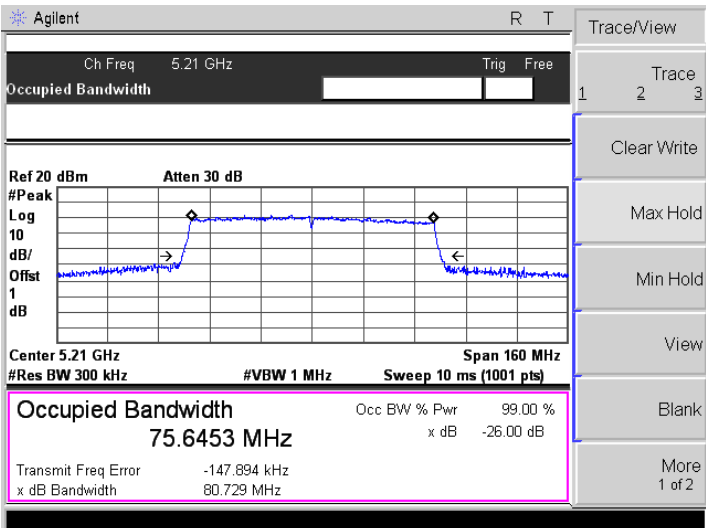
<p>802.11n-HT40-Low</p>	
<p>802.11n-HT40-High</p>	
<p>802.11ac-HT80</p>	

ANT 2

5150-5250MHz

<p>802.11a-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.18 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>dB/Offset</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 16.8509 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -104.904 kHz x dB Bandwidth 24.663 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.1800000 GHz</p> <p>Start Freq 5.1600000 GHz</p> <p>Stop Freq 5.2000000 GHz</p> <p>CF Step 4.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11a-Middle</p>	<p>Agilent R T</p> <p>Ch Freq 5.2 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>dB/Offset</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 16.8736 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -100.953 kHz x dB Bandwidth 24.900 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.2000000 GHz</p> <p>Start Freq 5.1800000 GHz</p> <p>Stop Freq 5.2200000 GHz</p> <p>CF Step 4.0000000 MHz Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11a-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.24 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log</p> <p>dB/Offset</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 16.8839 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -121.389 kHz x dB Bandwidth 25.851 MHz</p> <p>Trace/View</p> <p>Trace 1 2 3</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>

<p>802.11n-HT20-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.18 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 5.18 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7349 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -67.638 kHz</p> <p>x dB Bandwidth 23.130 MHz</p> <p>Trace/View</p> <p>1 2 3</p> <p>Trace</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-HT20-Middle</p>	 <p>Agilent R T</p> <p>Ch Freq 5.2 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 5.2 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7421 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -85.698 kHz</p> <p>x dB Bandwidth 23.615 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.2000000 GHz</p> <p>Start Freq 5.1800000 GHz</p> <p>Stop Freq 5.2200000 GHz</p> <p>CF Step 4.0000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT20-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.24 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 5.24 GHz Span 40 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.7857 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -96.058 kHz</p> <p>x dB Bandwidth 24.328 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.2400000 GHz</p> <p>Start Freq 5.2200000 GHz</p> <p>Stop Freq 5.2600000 GHz</p> <p>CF Step 4.0000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

<p>802.11n-HT40-Low</p>	 <p>Agilent R T</p> <p>Ch Freq 5.19 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offst 1 dB</p> <p>Center 5.19 GHz Span 80 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 36.0925 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -72.569 kHz</p> <p>x dB Bandwidth 40.116 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>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offst 1 dB</p> <p>Center 5.23 GHz Span 80 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 36.0846 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -145.853 kHz</p> <p>x dB Bandwidth 42.099 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>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/Offst 1 dB</p> <p>Center 5.21 GHz Span 160 MHz</p> <p>#Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 75.6453 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -147.894 kHz</p> <p>x dB Bandwidth 80.729 MHz</p>

5725-5850MHz

6 dB Bandwidth

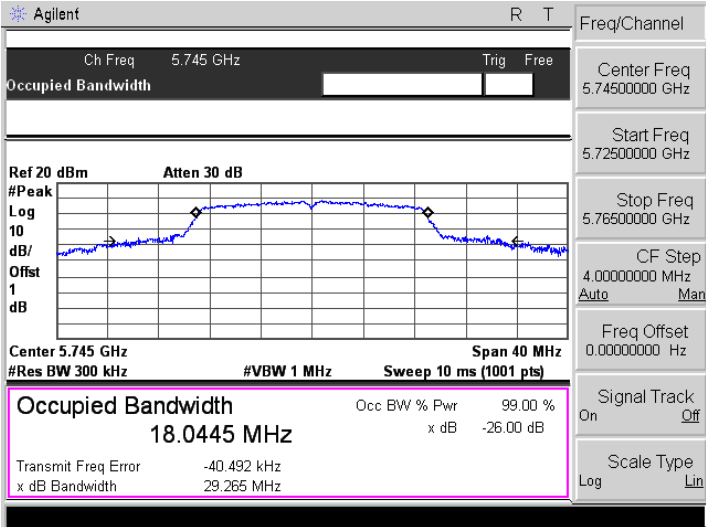
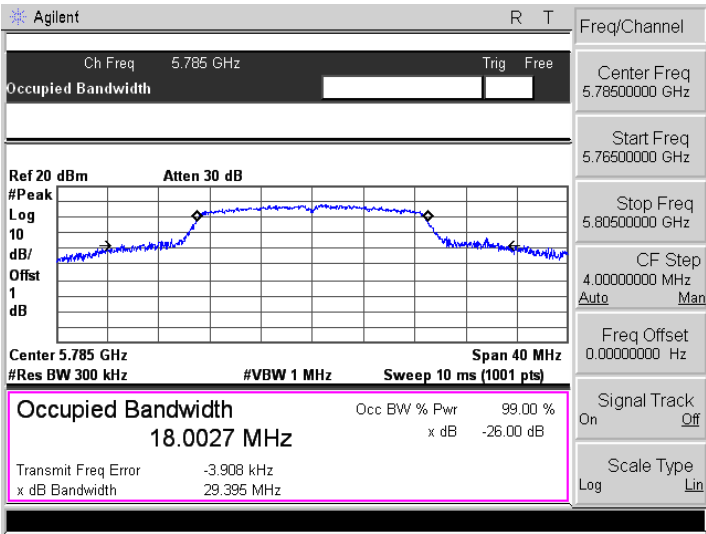
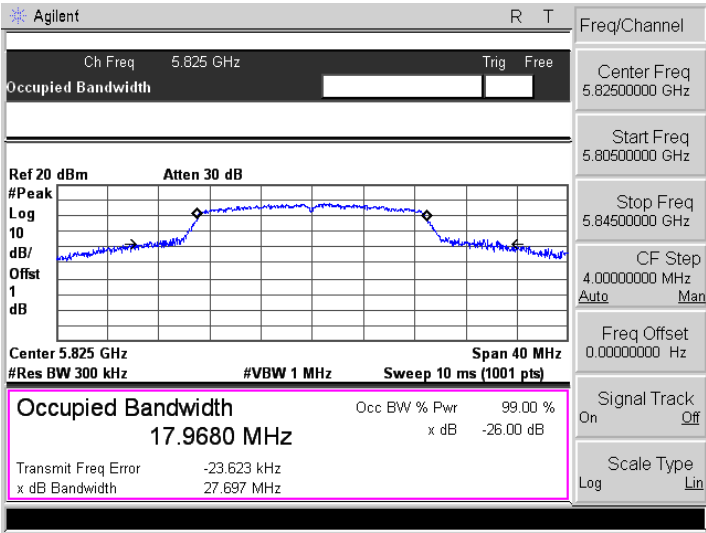
<p>802.11a-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offset 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 %</p> <p>16.6791 MHz x dB -6.00 dB</p> <p>Transmit Freq Error -61.175 kHz</p> <p>x dB Bandwidth 15.142 MHz</p>
<p>802.11a-Middle</p>	<p>Agilent R T</p> <p>Ch Freq 5.785 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offset 1 dB</p> <p>Center 5.785 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 %</p> <p>16.6740 MHz x dB -6.00 dB</p> <p>Transmit Freq Error -15.041 kHz</p> <p>x dB Bandwidth 15.119 MHz</p>
<p>802.11a-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offset 1 dB</p> <p>Center 5.825 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth Occ BW % Pwr 99.00 %</p> <p>16.5581 MHz x dB -6.00 dB</p> <p>Transmit Freq Error -70.667 kHz</p> <p>x dB Bandwidth 15.446 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.8250000 GHz</p> <p>Start Freq 5.8050000 GHz</p> <p>Stop Freq 5.8450000 GHz</p> <p>CF Step 4.0000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

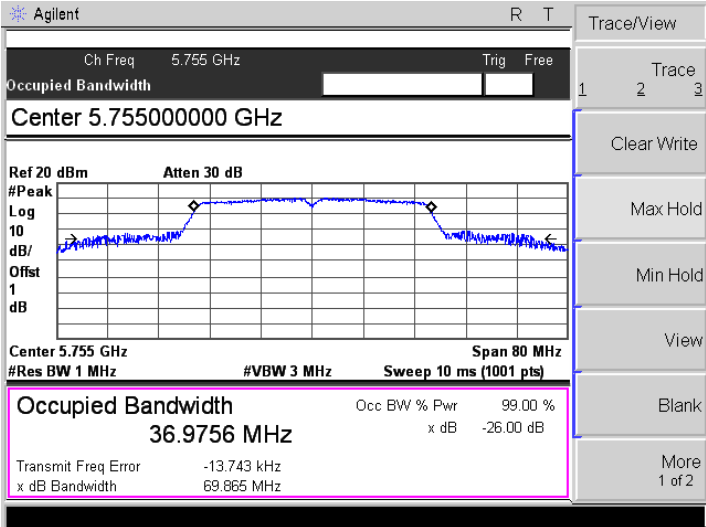
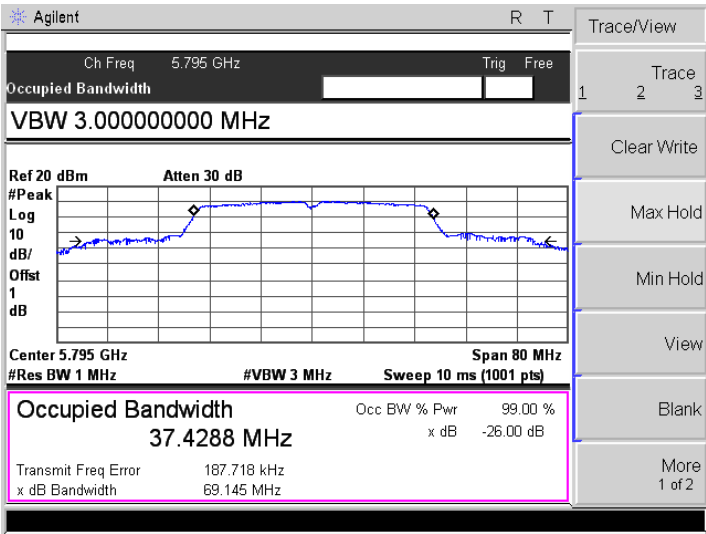
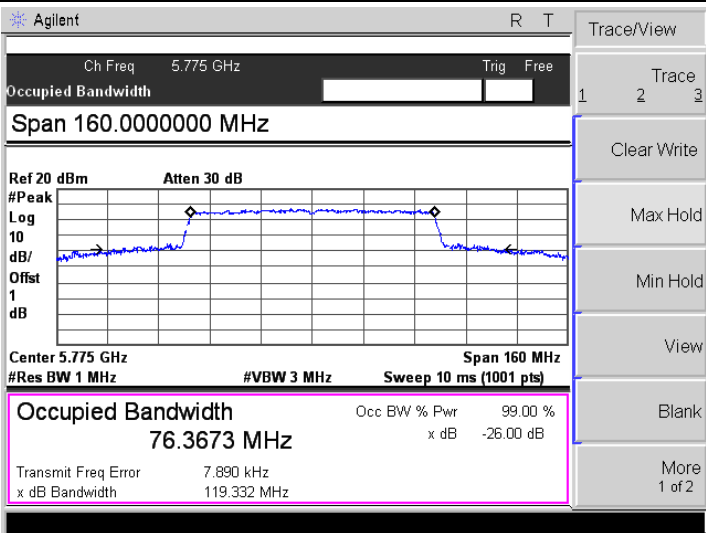
<p>802.11n-HT20-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/</p> <p>Offst 1 dB</p> <p>Center 5.745 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.6040 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -73.769 kHz</p> <p>x dB Bandwidth 15.158 MHz</p> <p>Trace/View</p> <p>1 2 3</p> <p>Trace</p> <p>Clear Write</p> <p>Max Hold</p> <p>Min Hold</p> <p>View</p> <p>Blank</p> <p>More 1 of 2</p>
<p>802.11n-HT20-Middle</p>	<p>Agilent R T</p> <p>Ch Freq 5.785 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 5.785 GHz Span 40 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 17.6252 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -60.597 kHz</p> <p>x dB Bandwidth 15.091 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.78500000 GHz</p> <p>Start Freq 5.76500000 GHz</p> <p>Stop Freq 5.80500000 GHz</p> <p>CF Step 4.00000000 MHz</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-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</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 17.6103 MHz</p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -70.988 kHz</p> <p>x dB Bandwidth 15.035 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.82500000 GHz</p> <p>Start Freq 5.80500000 GHz</p> <p>Stop Freq 5.84500000 GHz</p> <p>CF Step 4.00000000 MHz</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-HT40-Low</p>	<p>Agilent R T</p> <p>Ch Freq 5.755 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10</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 36.1676 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -6.00 dB</p> <p>Transmit Freq Error -86.453 kHz</p> <p>x dB Bandwidth 35.067 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.7550000 GHz</p> <p>Start Freq 5.7150000 GHz</p> <p>Stop Freq 5.7950000 GHz</p> <p>CF Step 8.0000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>
<p>802.11n-HT40-High</p>	<p>Agilent R T</p> <p>Ch Freq 5.795 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Span 80.0000000 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 36.1490 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -6.00 dB</p> <p>Transmit Freq Error -32.510 kHz</p> <p>x dB Bandwidth 35.164 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>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 75.8618 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -6.00 dB</p> <p>Transmit Freq Error -8.320 kHz</p> <p>x dB Bandwidth 75.917 MHz</p> <p>Freq/Channel</p> <p>Center Freq 5.7750000 GHz</p> <p>Start Freq 5.6950000 GHz</p> <p>Stop Freq 5.8550000 GHz</p> <p>CF Step 16.0000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0.0000000 Hz</p> <p>Signal Track On Off</p> <p>Scale Type Log Lin</p>

99%Bandwidth

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

<p>802.11n-HT20-Low</p>	
<p>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>Occupied Bandwidth</p> <p>Center 5.75500000 GHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.755 GHz Span 80 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 36.9756 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -13.743 kHz x dB Bandwidth 69.865 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-High</p>	 <p>Agilent R T</p> <p>Ch Freq 5.795 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>VBW 3.00000000 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.795 GHz Span 80 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 37.4288 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 187.718 kHz x dB Bandwidth 69.145 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>802.11ac-HT80</p>	 <p>Agilent R T</p> <p>Ch Freq 5.775 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Span 160.000000 MHz</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak Log 10 dB/ Offst 1 dB</p> <p>Center 5.775 GHz Span 160 MHz</p> <p>#Res BW 1 MHz #VBW 3 MHz Sweep 10 ms (1001 pts)</p> <p>Occupied Bandwidth 76.3673 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 7.890 kHz x dB Bandwidth 119.332 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>

APPENDIX C

Maximum Conducted Output Power

U-NII-1:5150-5250MHz					
Test mode	Frequency MHz	Output Power dBm		Total dBm	Limit dBm
		ANT 1	ANT 2		
802.11a	5180	14.50	14.65	/	23.98
	5200	14.62	14.57	/	23.98
	5240	14.56	14.49	/	23.98
802.11n-HT20	5180	13.47	13.35	16.42	23.98
	5200	13.64	13.72	16.69	23.98
	5240	13.48	13.68	16.59	23.98
802.11n-HT40	5190	13.30	13.20	16.26	23.98
	5230	13.71	13.41	16.57	23.98
802.11ac VH80	5210	12.49	12.58	15.55	23.98

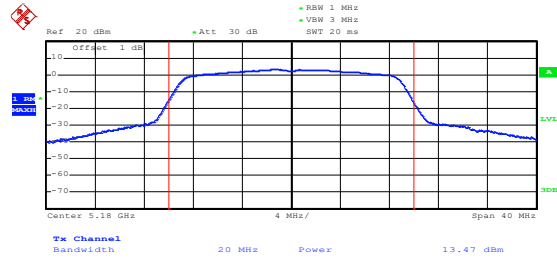
U-NII-3: 5725-5850MHz					
Test mode	Frequency MHz	Output Power dBm		Total dBm	Limit dBm
		ANT 1	ANT 2		
802.11a	5745	14.61	13.25	/	30.00
	5785	14.61	13.17	/	30.00
	5825	14.66	13.48	/	30.00
802.11n-HT20	5745	13.28	12.21	15.79	30.00
	5785	13.78	12.17	16.06	30.00
	5825	13.69	12.30	16.06	30.00
802.11n-HT40	5755	13.34	12.37	15.89	30.00
	5795	13.72	12.29	16.07	30.00
802.11ac VH80	5775	12.42	11.90	15.18	30.00

ANT 1

5150-5250MHz

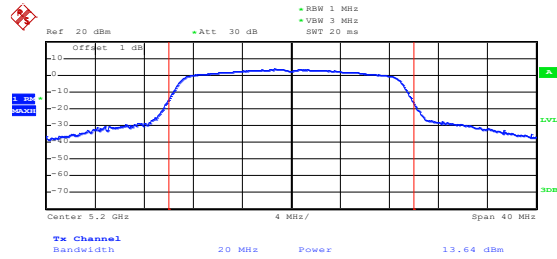
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<p>802.11a-Middle</p>	<p>Date: 19.NOV.2020 17:21:34</p>
<p>802.11a-High</p>	<p>Date: 19.NOV.2020 17:22:17</p>

802.11n-HT20-Low



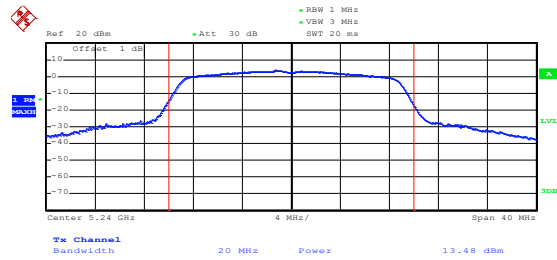
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802.11n-HT20-Middle



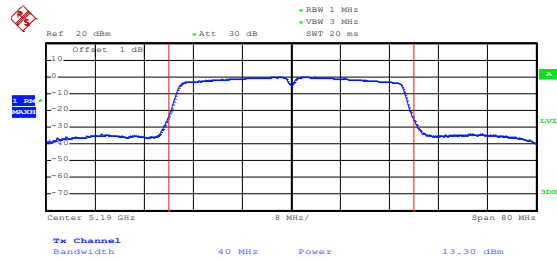
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802.11n-HT20-High



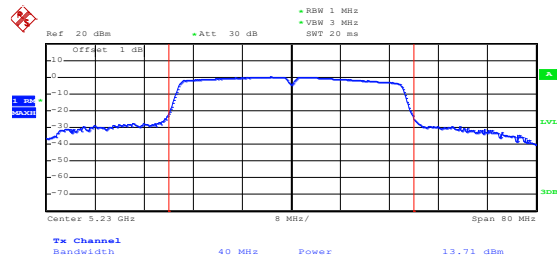
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802.11n-HT40-Low



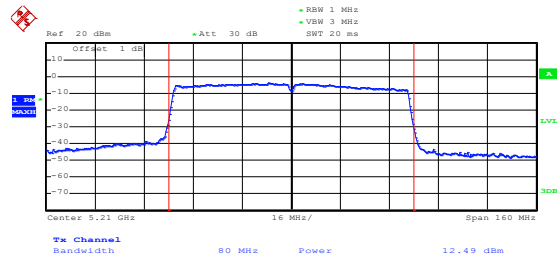
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802.11n-HT40-High



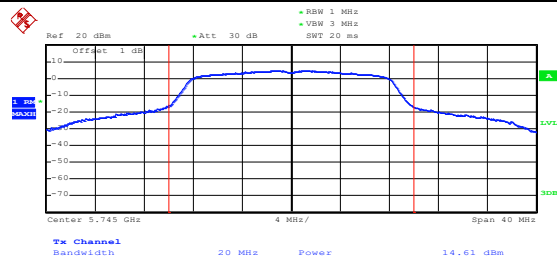
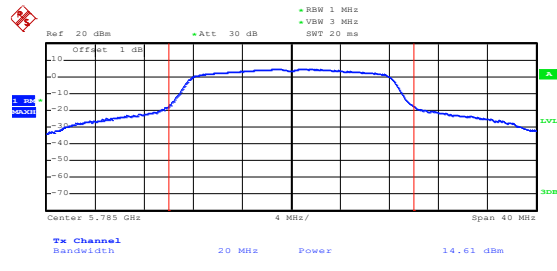
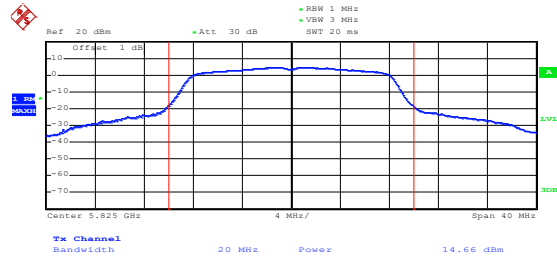
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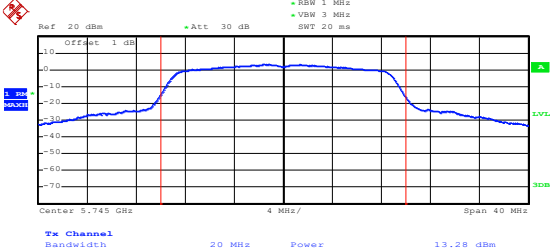
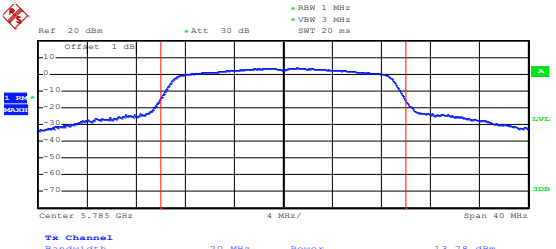
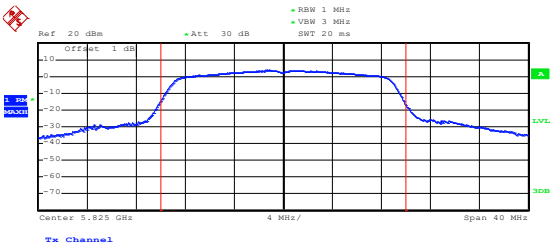
802.11ac-HT80



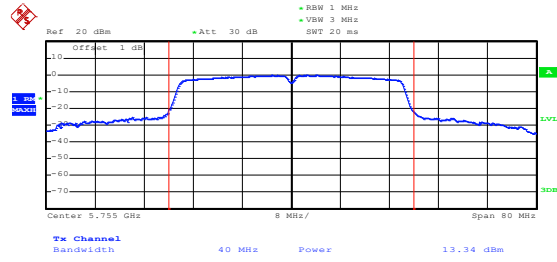
Date: 19.NOV.2020 17:41:26

5725-5850MHz

<p>802.11a-Low</p>	 <p>Date: 19.NOV.2020 17:27:32</p>
<p>802.11a-Middle</p>	 <p>Date: 19.NOV.2020 17:28:01</p>
<p>802.11a-High</p>	 <p>Date: 19.NOV.2020 17:28:36</p>

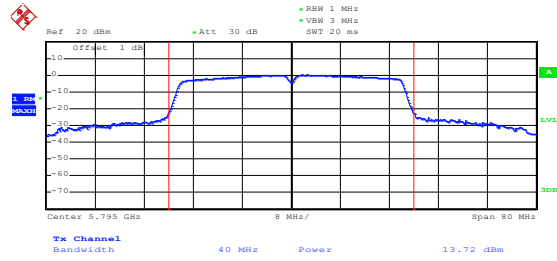
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<p>802.11n-HT20-Middle</p>	 <p>Date: 19.NOV.2020 17:29:37</p>
<p>802.11n-HT20-High</p>	 <p>Date: 19.NOV.2020 17:30:01</p>

802.11n-HT40-Low



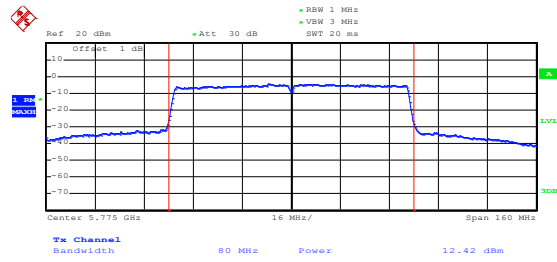
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802.11n-HT40-High



Date: 19.NOV.2020 17:34:53

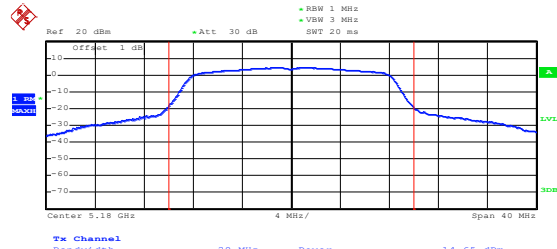
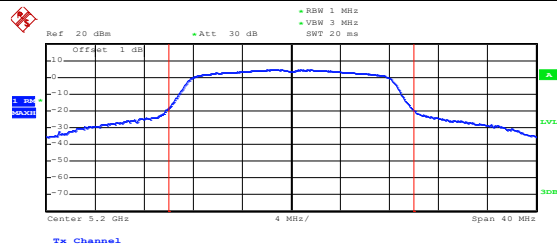
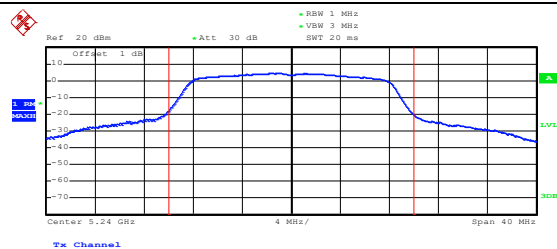
802.11ac-HT80



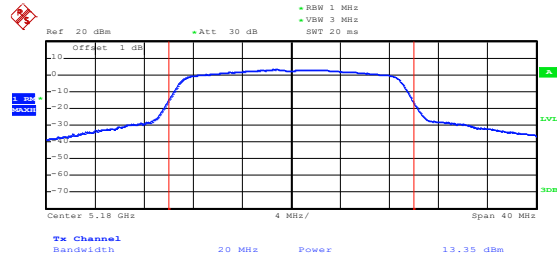
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ANT 2

5150-5250MHz

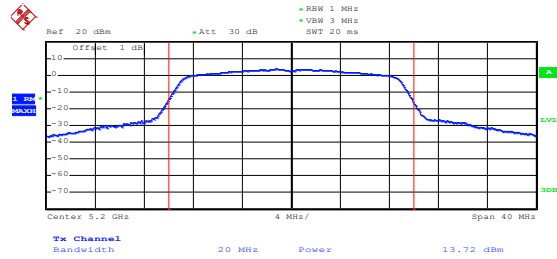
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<p>802.11a-Middle</p>	 <p>Date: 19.NOV.2020 13:46:30</p>
<p>802.11a-High</p>	 <p>Date: 19.NOV.2020 13:46:59</p>

802.11n-HT20-Low



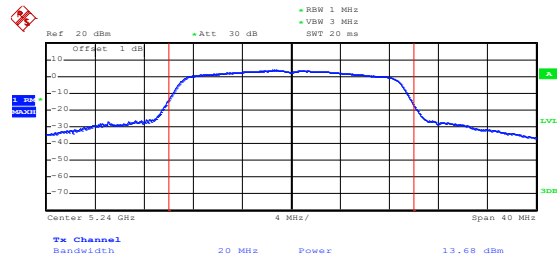
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802.11n-HT20-Middle



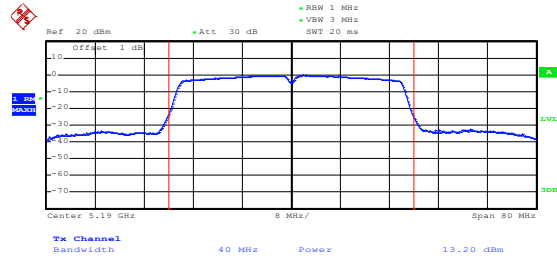
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802.11n-HT20-High



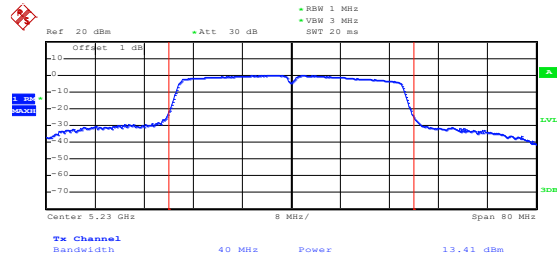
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802.11n-HT40-Low



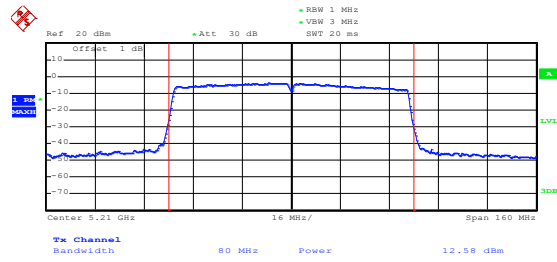
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802.11n-HT40-High



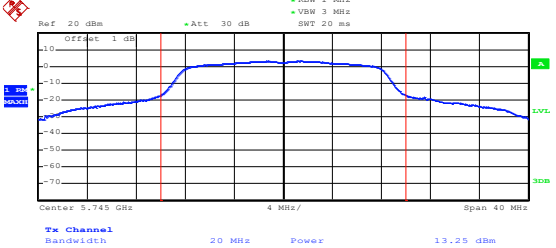
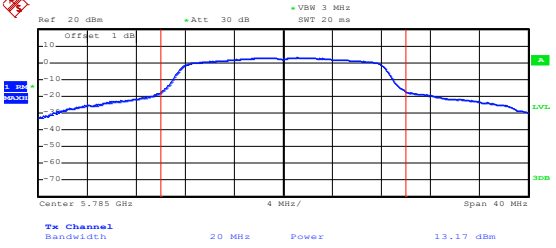
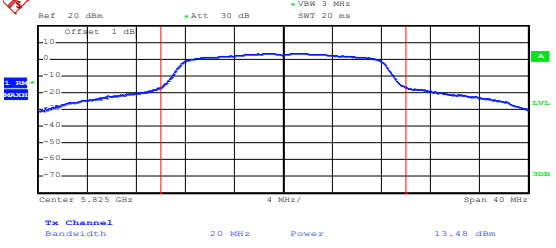
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802.11ac-HT80

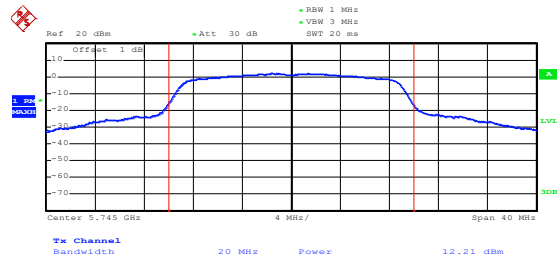


Date: 19.NOV.2020 14:19:06

5725-5850MHz

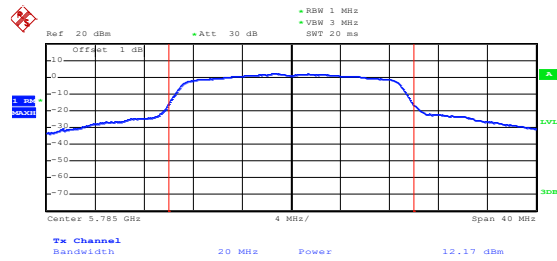
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<p>802.11a-Middle</p>	 <p>Date: 19.NOV.2020 14:06:44</p>
<p>802.11a-High</p>	 <p>Date: 19.NOV.2020 14:08:29</p>

802.11n-HT20-Low



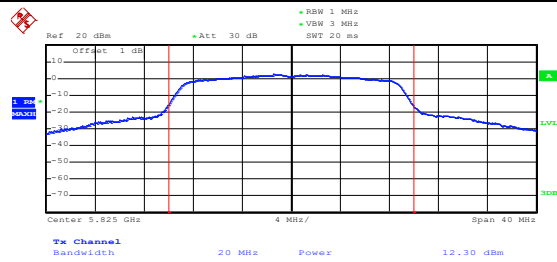
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802.11n-HT20-Middle



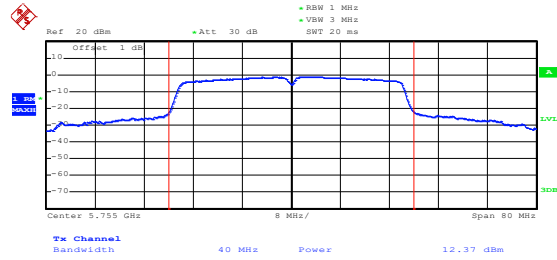
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802.11n-HT20-High



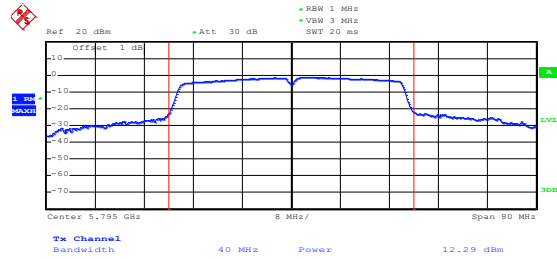
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802.11n-HT40-Low



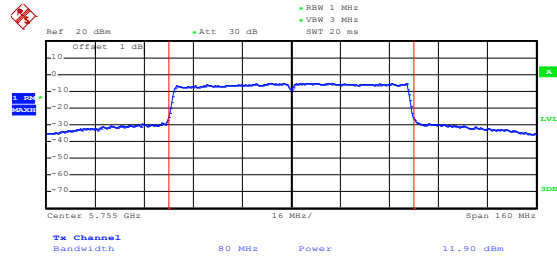
Date: 19.NOV.2020 14:14:25

802.11n-HT40-High



Date: 19.NOV.2020 14:14:52

802.11ac-HT80



Date: 19.NOV.2020 14:20:33

APPENDIX D**Frequency Stability****ANT 1**

U-NII-1:5150-5250MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VAC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	120	-30	1489	0.2864
100%		-20	1271	0.2445
100%		-10	1434	0.2758
100%		0	1334	0.2566
100%		+10	1203	0.2314
100%		+20	1508	0.2899
100%		+30	1023	0.1967
100%		+40	1550	0.2982
100%		+50	1316	0.2531
Low Battery power		102	+20	1556
High Battery power	138	+20	1486	0.2857

U-NII-3:5725-5850MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VAC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	120	-30	1486	0.2568
100%		-20	1275	0.2204
100%		-10	1434	0.2480
100%		0	1334	0.2306
100%		+10	1202	0.2079
100%		+20	1509	0.2608
100%		+30	1022	0.1767
100%		+40	1557	0.2691
100%		+50	1317	0.2277
Low Battery power		102	+20	1557
High Battery power	138	+20	1482	0.2562

ANT 2

U-NII-1:5150-5250MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VAC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	120	-30	1487	0.2860
100%		-20	1275	0.2451
100%		-10	1430	0.2751
100%		0	1331	0.2559
100%		+10	1206	0.2319
100%		+20	1500	0.2885
100%		+30	1025	0.1971
100%		+40	1558	0.2996
100%		+50	1317	0.2533
Low Battery power		102	+20	1559
High Battery power	138	+20	1483	0.2851

U-NII-3:5725-5850MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VAC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	120	-30	1486	0.2570
100%		-20	1275	0.2204
100%		-10	1439	0.2487
100%		0	1338	0.2312
100%		+10	1210	0.2091
100%		+20	1502	0.2596
100%		+30	1022	0.1766
100%		+40	1558	0.2692
100%		+50	1315	0.2273
Low Battery power		102	+20	1554
High Battery power	138	+20	1489	0.2574

APPENDIX PHOTOGRAPHS

Please refer to “ANNEX”

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