

TEST REPORT

Reference No...... : WTH22X06110361W001
FCC ID : 2A7HYDG-625V11
Applicant : Dragonglass Technology (SHENZHEN) Co., Ltd.
Address : Floor 4, No. 128, Potou Du West Road, Longxi community, Longgang street,
Longgang District, Shenzhen, Guangdong
Manufacturer : The same as Applicant
Address : The same as Applicant
Product Name : Repeater
Model No...... : DG-625V11
Standards : FCC Part 15.407
Date of Receipt sample : 2022-06-01
Date of Test..... : 2022-06-01 to 2022-06-25
Date of Issue : 2022-06-25
Test Report Form No. : WTX_Part 15_407W
Test Result..... : **Pass**

Remarks:

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

Prepared By:

Waltek Testing Group (Shenzhen) Co., Ltd.

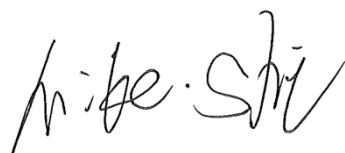
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Report version

Version No.	Date of issue	Description
Rev.00	2022-06-25	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	Repeater
Trade Name:	SUPALILOG
Model No.:	DG-625V11
Adding Model(s):	/
Rated Voltage:	AC120V/60Hz
Battery Capacity:	/
Power Adapter:	/
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Support Standards:	802.11a, 802.11n(HT20) , 802.11n-HT40, 802.11ac-VHT80
Frequency Range:	5150-5250MHz, 5725-5850MHz
RF Output Power:	5150-5250MHz: Antenna 0:14.21dBm (Conducted) Antenna 1:15.49dBm (Conducted) 5725-5850MHz: Antenna 0:14.67dBm (Conducted) Antenna 1:15.29dBm (Conducted)
Type of Modulation:	QPSK, 16QAM, 64QAM, 256QAM
Type of Antenna:	External Undetached Antenna
Antenna Gain:	2dBi
<i>Note: The Antenna Gain is provided by the customer and can affect the validity of results.</i>	

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.

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

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

1.3 Test Methodology

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

1.4 Table for parameters of Test Software setting

Enter “3646631+=” into the calculator to enter the engineer mode, you can start to test. During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Mode ANT 0	Test Frequency (MHz)												
	NCB: 20MHz												
	5180	5200	5240	5260	5300	5320	5500	5580	5700	5720	5745	5785	5825
802.11a 6Mbps	19	19	19	/	/	/	/	/	/	/	19	19	19
802.11n-HT20 MCS0	19	19	19	/	/	/	/	/	/	/	19	19	19
Mode ANT 0	NCB: 40MHz												
	5190	5230	5270	5310	5510	5550	5670	5710	5755	5795			
802.11n-HT40 MCS0	19	19	/	/	/	/	/	/	19	19			
Mode ANT 0	NCB: 80MHz												
	5210		5290		5530		5610		5690		5775		
802.11ac-VH80 MCS0/Nss2	19		/		/		/		/		19		

Mode ANT 1	Test Frequency (MHz)												
	NCB: 20MHz												
	5180	5200	5240	5260	5300	5320	5500	5580	5700	5720	5745	5785	5825
802.11a 6Mbps	19	19	19	/	/	/	/	/	/	/	19	19	19
802.11n-HT20 MCS0	19	19	19	/	/	/	/	/	/	/	19	19	19
Mode ANT 1	NCB: 40MHz												
	5190	5230	5270	5310	5510	5550	5670	5710	5755	5795			
802.11n-HT40 MCS0	19	19	/	/	/	/	/	/	19	19			
Mode ANT 1	NCB: 80MHz												
	5210		5290		5530		5610		5690		5775		
802.11ac-VH80 MCS0/Nss2	19		/		/		/		/		19		

1.5 EUT Operating during test

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

1.6 Test Facility

Address of the test laboratory

Laboratory: Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C. (518101)

FCC – Registration No.: 125990

Waltek Testing Group (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. The Designation Number is CN5010, and Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Waltek Testing Group (Shenzhen) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

1.7 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, with a duty cycle equal to 100%, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	802.11a	5180MHz,5200MHz,5240MHz, 5745MHz, 5785MHz,5825MHz
TM2	802.11n-HT20	5180MHz,5200MHz,5240MHz, 5745MHz, 5785MHz,5825MHz
TM3	802.11n-HT40	5190MHz,5230MHz, 5755MHz,5795MHz
TM4	802.11ac-VH80	5210MHz, 5775 MHz
Note : 802.11ac-VHT20, 802.11ac-VHT40 covered by 802.11n-HT20 and 802.11n-HT40.		

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

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

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

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

1.8 Measurement Uncertainty

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

1.9 Test Equipment List and Details

No.	Description	Manufacturer	Model	Serial No.	Cal Date	Due. Date
SEMT-1075	Communication Tester	Rohde & Schwarz	CMW500	148650	2022-03-22	2023-03-21
SEMT-1063	GSM Tester	Rohde & Schwarz	CMU200	114403	2022-03-22	2023-03-21
SEMT-1072	Spectrum Analyzer	Agilent	E4407B	MY41440400	2022-03-25	2023-03-24
SEMT-1079	Spectrum Analyzer	Agilent	N9020A	US47140102	2022-03-22	2023-03-21
SEMT-1080	Signal Generator	Agilent	83752A	3610A01453	2022-03-22	2023-03-21
SEMT-1081	Vector Signal Generator	Agilent	N5182A	MY47070202	2022-03-22	2023-03-21
SEMT-1028	Power Divider	Weinschel	1506A	PM204	2022-03-22	2023-03-21
SEMT-C001	Cable	Zheng DI	LL142-07-07-10M(A)	/	/	/
SEMT-C002	Cable	Zheng DI	ZT40-2.92J-2.92J-6M	/	/	/
SEMT-C003	Cable	Zheng DI	ZT40-2.92J-2.92J-2.5M	/	/	/
SEMT-C004	Cable	Zheng DI	2M0RFC	/	/	/
SEMT-C005	Cable	Zheng DI	1M0RFC	/	/	/
SEMT-C006	Cable	Zheng DI	1M0RFC	/	/	/
☒ Chamber A: Below 1GHz						
SEMT-1031	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2022-03-22	2023-03-21
SEMT-1007	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2022-03-22	2023-03-21
SEMT-1008	Amplifier	Agilent	8447F	3113A06717	2022-01-07	2023-01-06
SEMT-1069	Loop Antenna	Schwarz beck	FMZB 1516	9773	2021-03-20	2023-03-19
SEMT-1068	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2021-03-20	2023-03-19
☒ Chamber A: Above 1GHz						
SEMT-1031	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2022-03-22	2023-03-21
SEMT-1007	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2022-03-22	2023-03-21
SEMT-1043	Amplifier	C&D	PAP-1G18	2002	2022-03-22	2023-03-21
SEMT-1042	Horn Antenna	ETS	3117	00086197	2021-03-19	2023-03-18
SEMT-1121	Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170582	2021-04-27	2023-04-26
SEMT-1216	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2022-03-25	2023-03-24

SEMT-1163	Spectrum Analyzer	Rohde & Schwarz	FSP40	100612	2022-03-22	2023-03-21
☐ Chamber B:Below 1GHz						
SEMT-1068	Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2021-04-09	2023-04-08
SEMT-1067	Amplifier	Agilent	8447D	2944A10179	2022-03-22	2023-03-21
SEMT-1066	EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2022-03-22	2023-03-21
☐ Chamber C:Below 1GHz						
SEMT-1319	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2022-01-07	2023-01-06
SEMT-1343	Trilog Broadband Antenna	Schwarz beck	VULB 9168	1194	2021-05-28	2023-05-27
SEMT-1333	Amplifier	HP	8447F	2944A03869	2022-03-22	2023-03-21
☒ Conducted Room 1#						
SEMT-1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2022-03-21	2023-03-20
SEMT-1002	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2022-03-25	2023-03-24
SEMT-1003	AC LISN	Schwarz beck	NSLK8126	8126-224	2022-03-22	2023-03-21
☐ Conducted Room 2#						
SEMT-1334	EMI Test Receiver	Rohde & Schwarz	ESPI	101259	2022-03-22	2023-03-21
SEMT-1336	LISN	Rohde & Schwarz	ENV 216	100097	2022-03-22	2023-03-21

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)	N/A

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 Undetached Antennas, fulfill the requirement of this section. And the signals at the antennas are completely uncorrelated. The product transmits signals through Spatial Multiplexing MIMO (SM-MIMO) mode.

4. Automatically Discontinue Transmission

4.1 Standard Applicable

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

4.2 Summary of Test Results

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

5. Power Spectral Density

5.1 Standard Applicable

Section 15.407(a) Power limits:

(1) For the band 5.15-5.25GHz.

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

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

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

5.2 Test Procedure

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

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

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

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

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

5.3 Summary of Test Results/Plots

Please refer to Appendix A

6. Emission Bandwidth and Occupied Bandwidth

6.1 Standard Applicable

According to 15.407(a) and (e):

(1) For the band 5.15-5.25GHz.

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

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

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

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

6.2 Test Procedure

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

1. Emission Bandwidth (EBW)

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

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

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

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

- a) Set RBW = 100kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times \text{RBW}$.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 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 $\geq 3 * \text{RBW}$
- 5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
- 6. Use the 99 % power bandwidth function of the instrument (if available).
- 7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

6.3 Summary of Test Results/Plots

Please refer to Appendix B

7. Maximum Conducted Output Power

7.1 Standard Applicable

Section 15.407(a) Power limits:

(1) For the band 5.15-5.25GHz.

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

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

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

7.2 Test Procedure

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

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

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

7.3 Summary of Test Results/Plots

Please refer to Appendix C

8. Radiated Spurious Emissions

8.1 Standard Applicable

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

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

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

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

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

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

where:

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

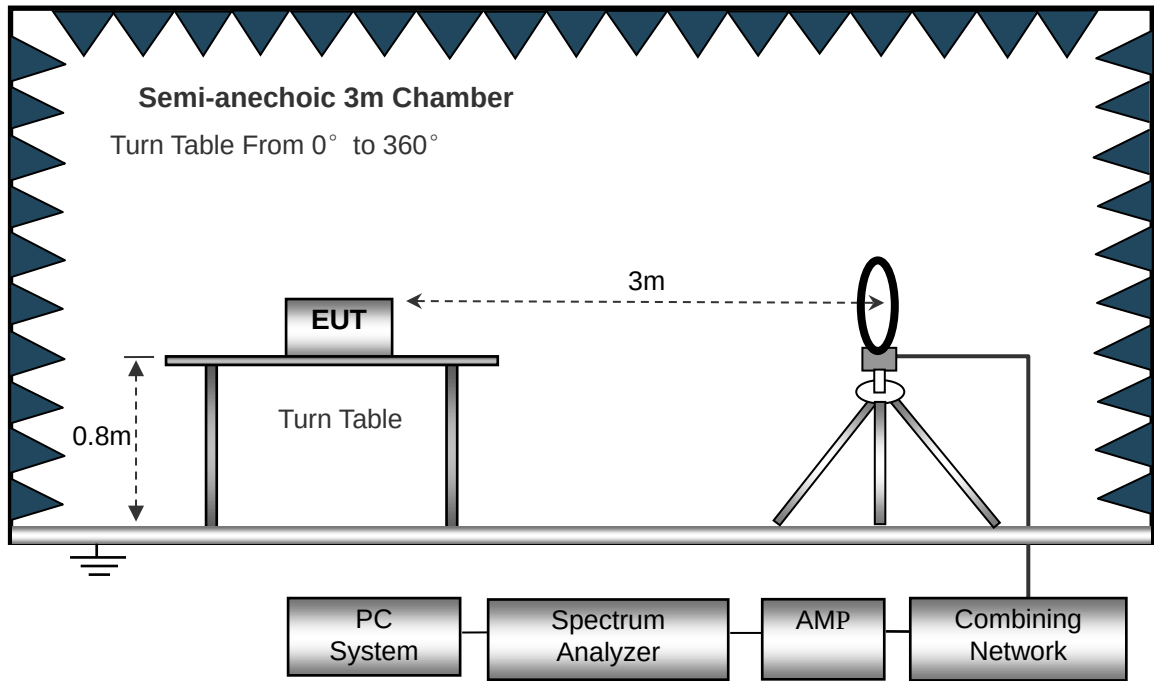
8.2 Test Procedure

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

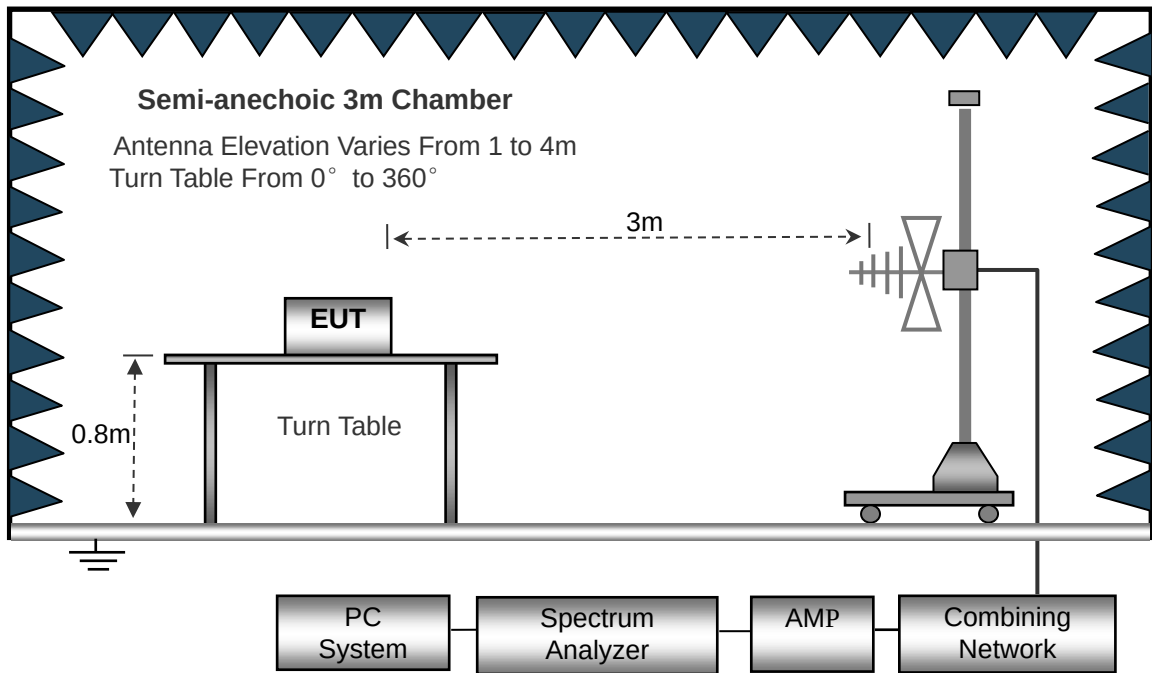
The external I/O cables were draped along the test table and formed a bundle 30 to 40cm long in the middle.

The spacing between the peripherals was 10cm.

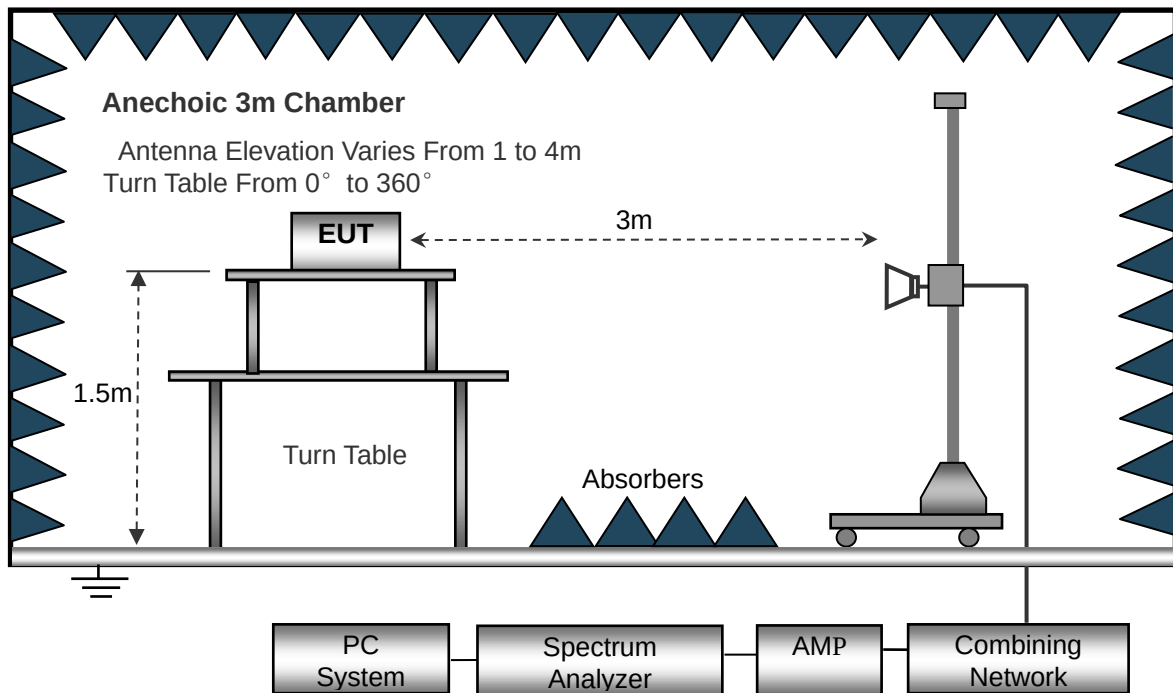
The test setup for emission measurement below 30MHz.



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



The test setup for emission measurement above 1GHz.



8.3 Test Receiver Setup

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

For peak detector:

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

For average detector:

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

8.4 Corrected Amplitude & Margin Calculation

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

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

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

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

8.5 Summary of Test Results/Plots

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

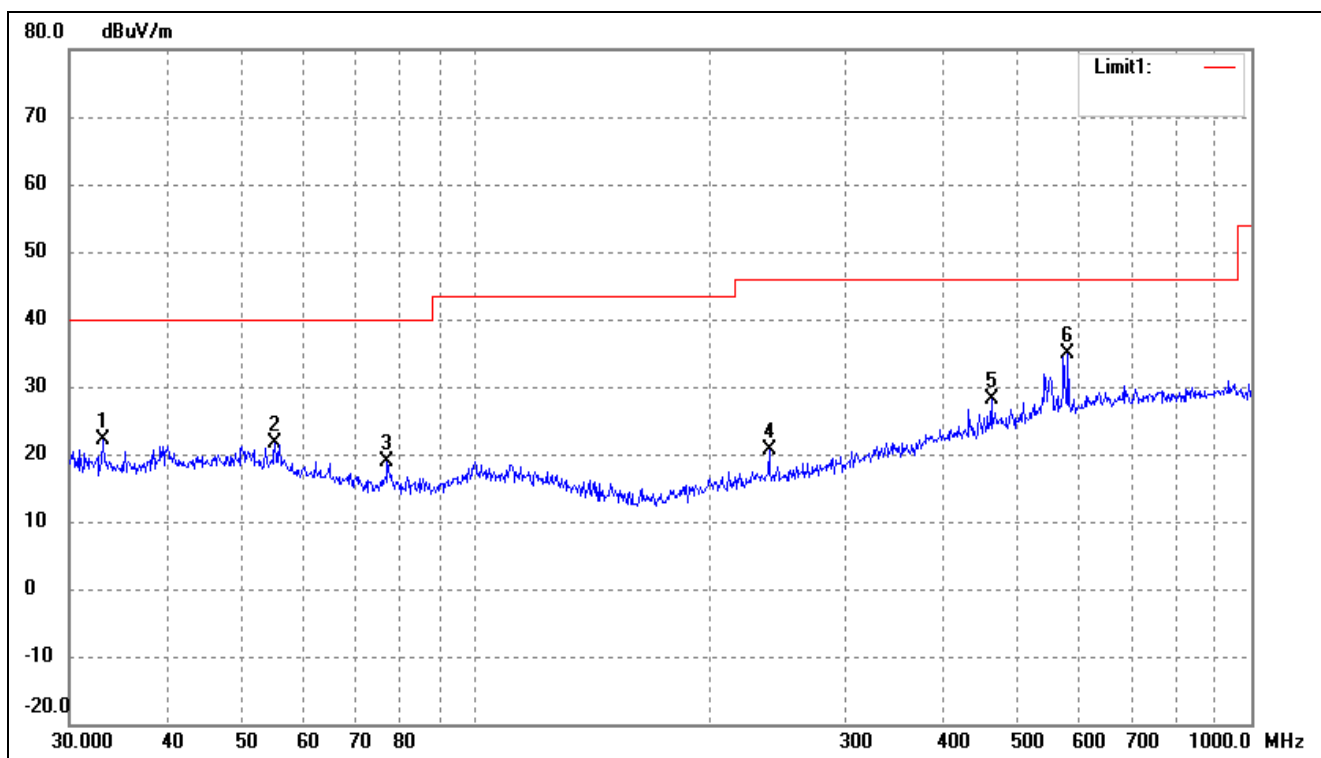
➤ Spurious Emission From 30MHz to 1GHz

➤ Antenna 0(Worst case)

➤ 5150-5250MHz

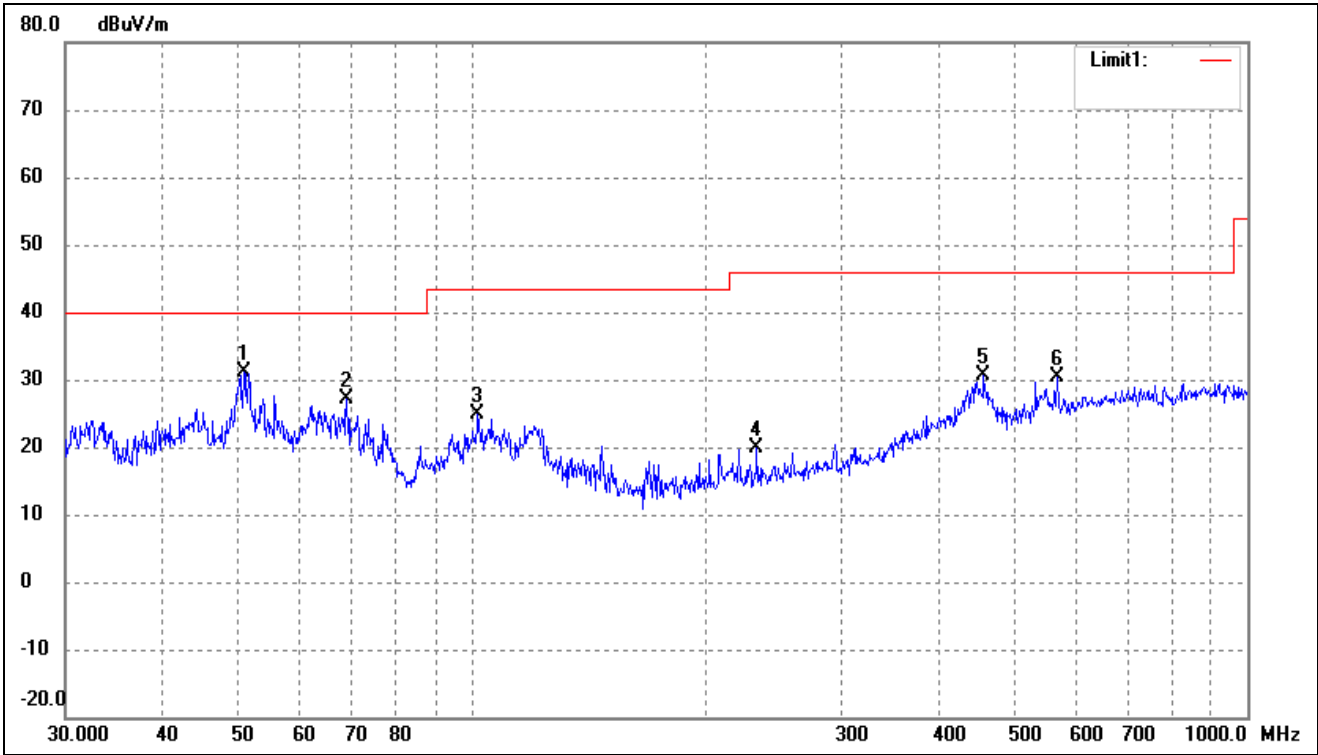
802.11a(Worst case)

Test Channel	5180MHz	Polarity:	Horizontal
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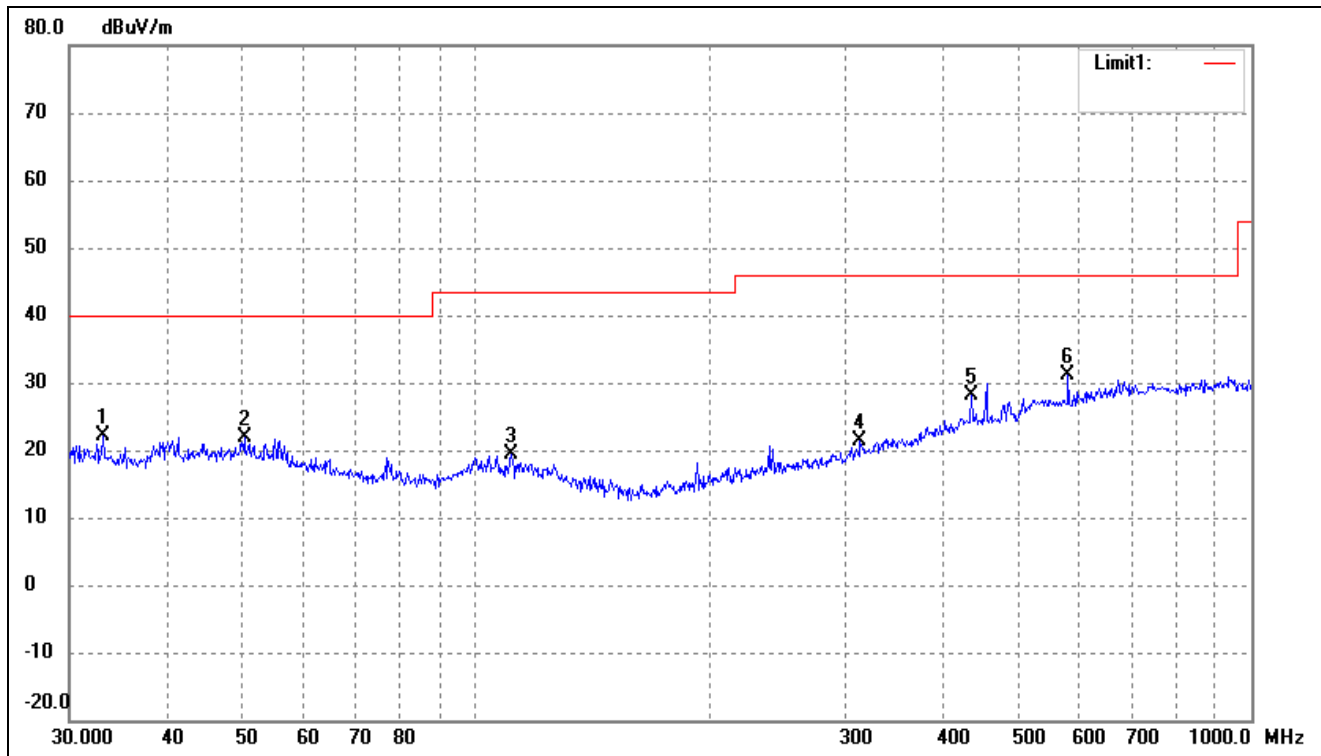
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	33.0950	30.76	-8.69	22.07	40.00	-17.93	-	-	peak
2	55.2207	29.29	-7.73	21.56	40.00	-18.44	-	-	peak
3	77.0505	29.48	-10.56	18.92	40.00	-21.08	-	-	peak
4	239.1473	29.14	-8.62	20.52	46.00	-25.48	-	-	peak
5	462.3455	30.31	-2.25	28.06	46.00	-17.94	-	-	peak
6	580.7026	34.87	0.05	34.92	46.00	-11.08	-	-	peak

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



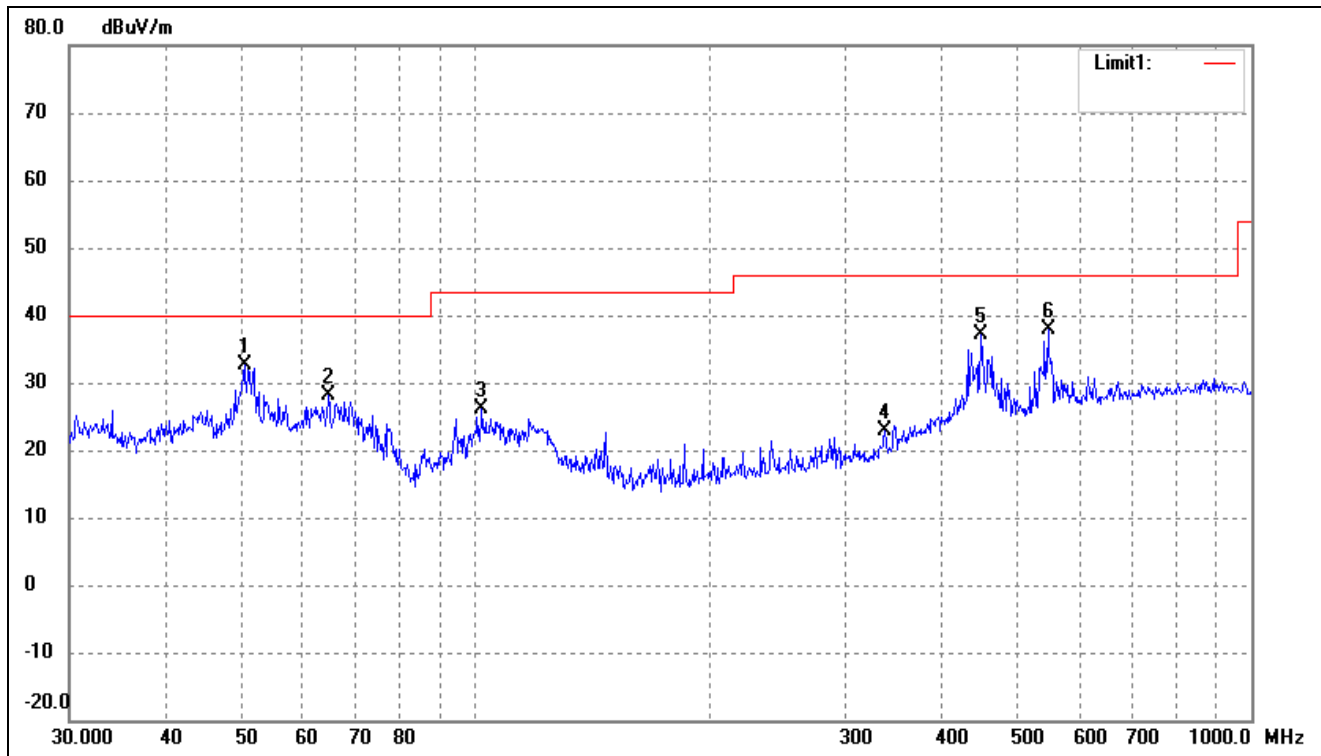
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	50.9420	38.12	-7.10	31.02	40.00	-8.98	-	-	peak
2	69.1141	37.03	-10.01	27.02	40.00	-12.98	-	-	peak
3	102.0014	33.62	-8.76	24.86	43.50	-18.64	-	-	peak
4	233.3487	28.71	-8.78	19.93	46.00	-26.07	-	-	peak
5	457.5073	33.09	-2.37	30.72	46.00	-15.28	-	-	peak
6	568.6127	30.58	-0.15	30.43	46.00	-15.57	-	-	peak

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



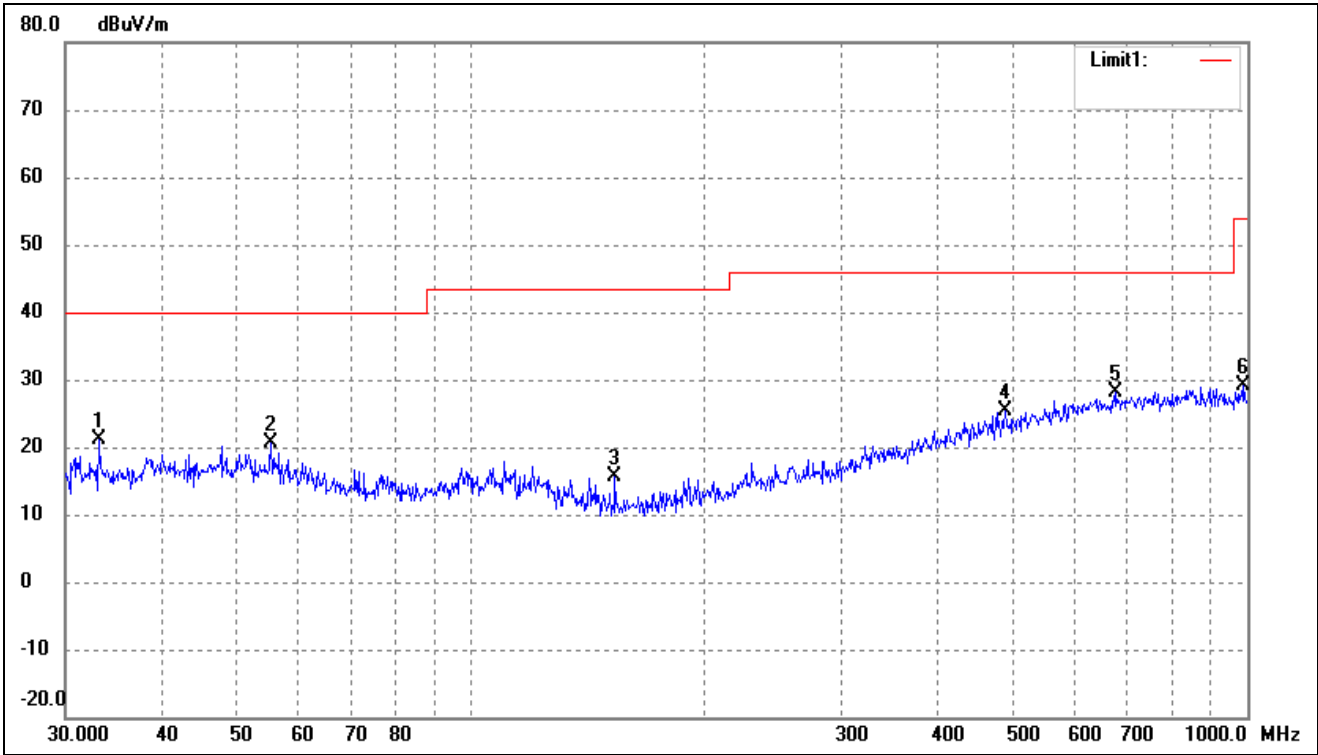
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	33.0950	30.76	-8.69	22.07	40.00	-17.93	-	-	peak
2	50.4089	28.97	-7.02	21.95	40.00	-18.05	-	-	peak
3	111.3468	28.42	-8.97	19.45	43.50	-24.05	-	-	peak
4	313.2760	27.95	-6.54	21.41	46.00	-24.59	-	-	peak
5	435.5898	31.01	-2.95	28.06	46.00	-17.94	-	-	peak
6	580.7026	31.07	0.05	31.12	46.00	-14.88	-	-	peak

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



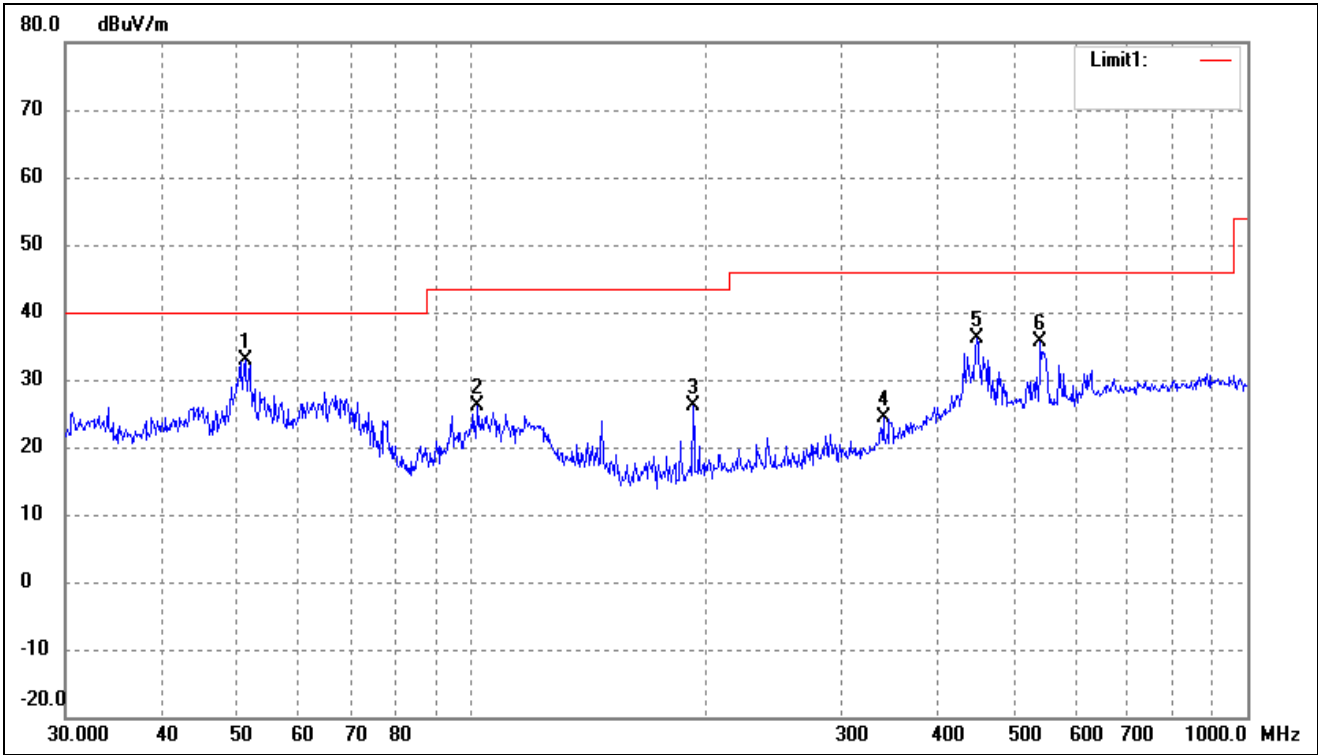
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	50.4089	39.65	-7.02	32.63	40.00	-7.37	-	-	peak
2	64.6594	37.42	-9.24	28.18	40.00	-11.82	-	-	peak
3	102.0014	34.98	-8.76	26.22	43.50	-17.28	-	-	peak
4	337.2155	28.70	-5.81	22.89	46.00	-23.11	-	-	peak
5	447.9822	39.64	-2.61	37.03	46.00	-8.97	-	-	peak
6	547.0977	38.33	-0.52	37.81	46.00	-8.19	-	-	peak

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



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	33.0950	29.83	-8.69	21.14	40.00	-18.86	-	-	peak
2	55.2207	28.34	-7.73	20.61	40.00	-19.39	-	-	peak
3	153.2004	27.98	-12.46	15.52	43.50	-27.98	-	-	peak
4	487.3151	27.01	-1.62	25.39	46.00	-20.61	-	-	peak
5	677.5798	26.94	1.20	28.14	46.00	-17.86	-	-	peak
6	989.5355	26.66	2.45	29.11	54.00	-24.89	-	-	peak

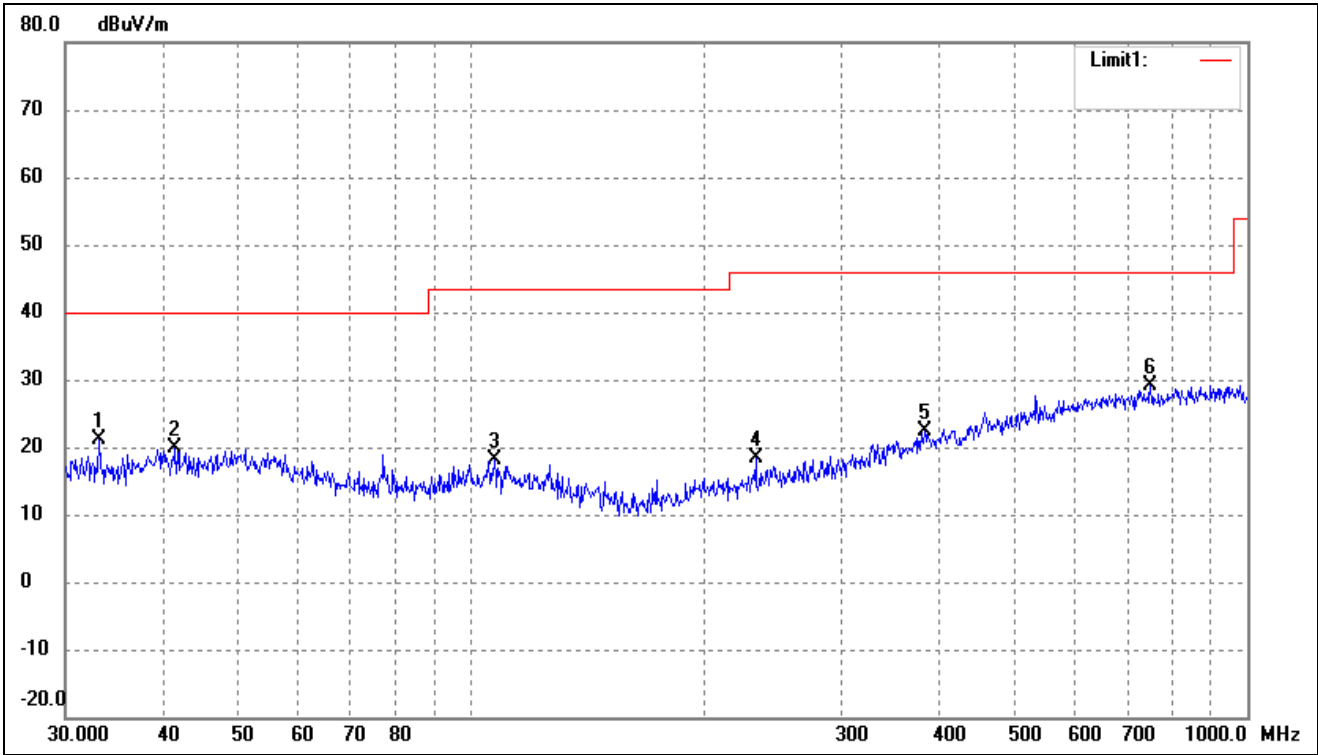
802.11a(Worst case)			
Test Channel	5240MHz	Polarity:	Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	51.1209	39.96	-7.12	32.84	40.00	-7.16	-	-	peak
2	102.0014	34.98	-8.76	26.22	43.50	-17.28	-	-	peak
3	193.0945	35.98	-9.93	26.05	43.50	-17.45	-	-	peak
4	339.5888	30.16	-5.72	24.44	46.00	-21.56	-	-	peak
5	447.9822	38.64	-2.61	36.03	46.00	-9.97	-	-	peak
6	541.3725	36.33	-0.62	35.71	46.00	-10.29	-	-	peak

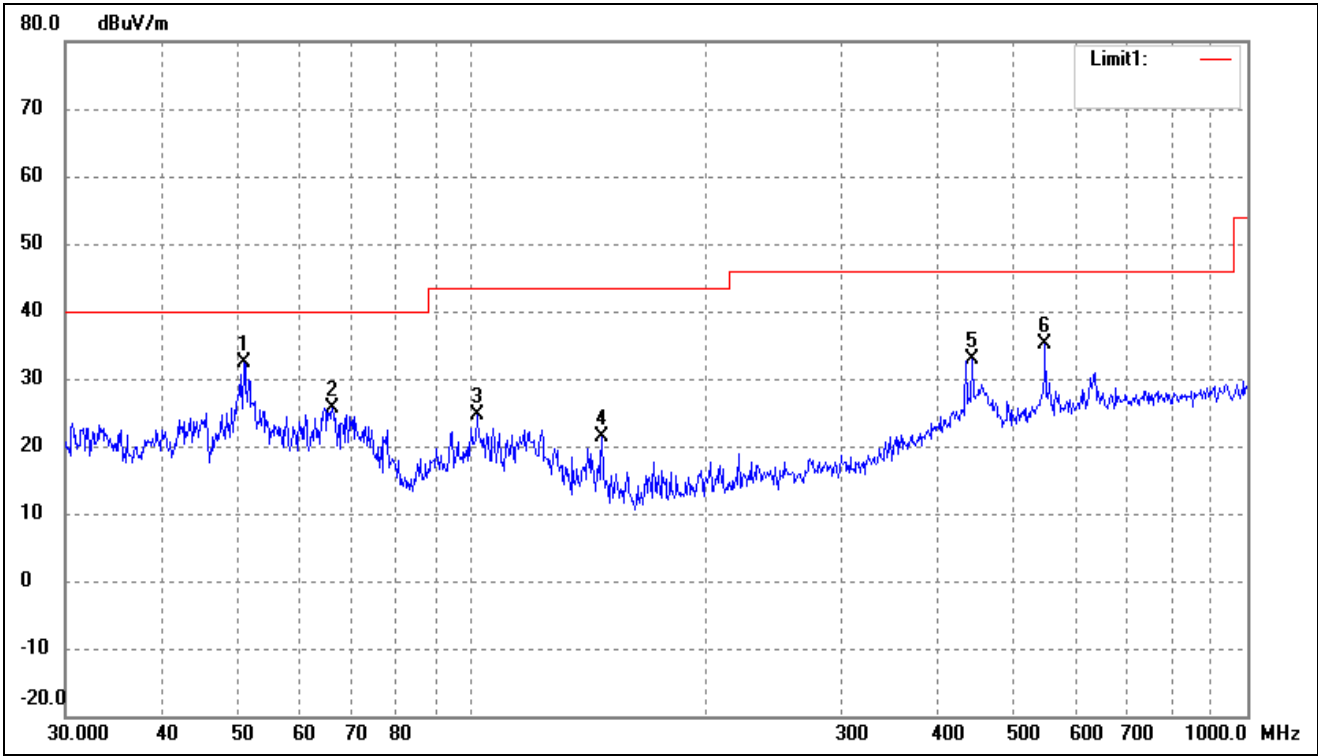
➤ 5725-5850MHz

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



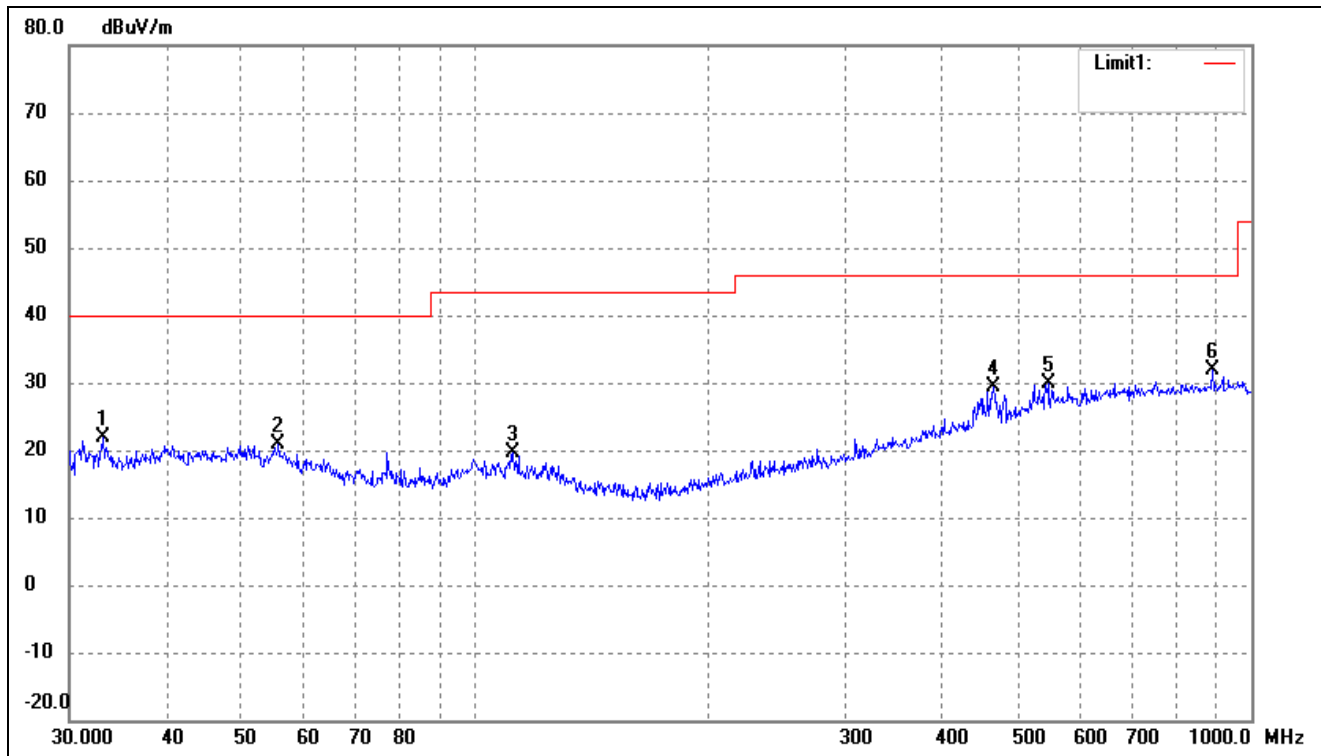
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	33.2112	29.81	-8.67	21.14	40.00	-18.86	-	-	peak
2	41.5670	26.76	-7.00	19.76	40.00	-20.24	-	-	peak
3	107.1337	27.02	-8.83	18.19	43.50	-25.31	-	-	peak
4	232.5318	27.19	-8.80	18.39	46.00	-27.61	-	-	peak
5	383.9318	26.71	-4.38	22.33	46.00	-23.67	-	-	peak
6	750.1083	27.38	1.76	29.14	46.00	-16.86	-	-	peak

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



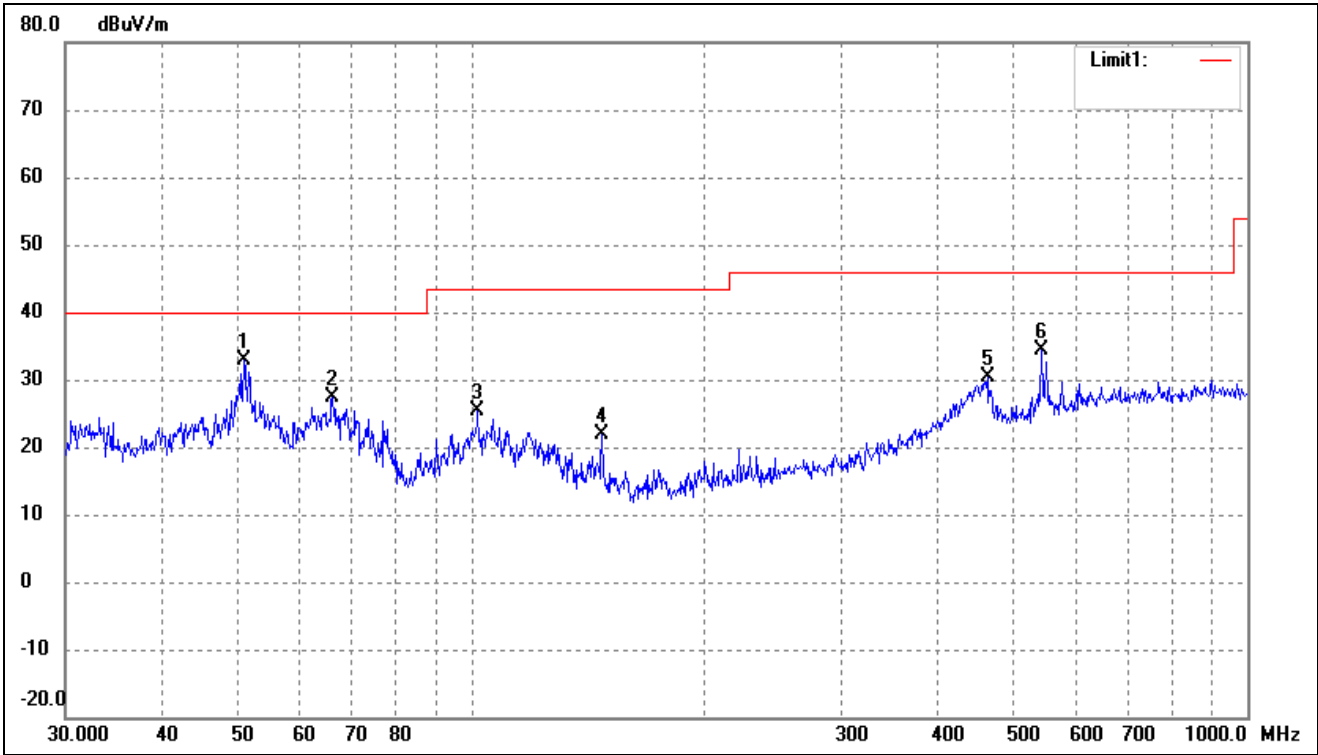
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	50.9420	39.57	-7.10	32.47	40.00	-7.53	-	-	peak
2	66.2662	35.10	-9.52	25.58	40.00	-14.42	-	-	peak
3	101.6443	33.30	-8.75	24.55	43.50	-18.95	-	-	peak
4	147.4036	33.95	-12.52	21.43	43.50	-22.07	-	-	peak
5	441.7426	35.66	-2.78	32.88	46.00	-13.12	-	-	peak
6	549.0195	35.69	-0.49	35.20	46.00	-10.80	-	-	peak

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



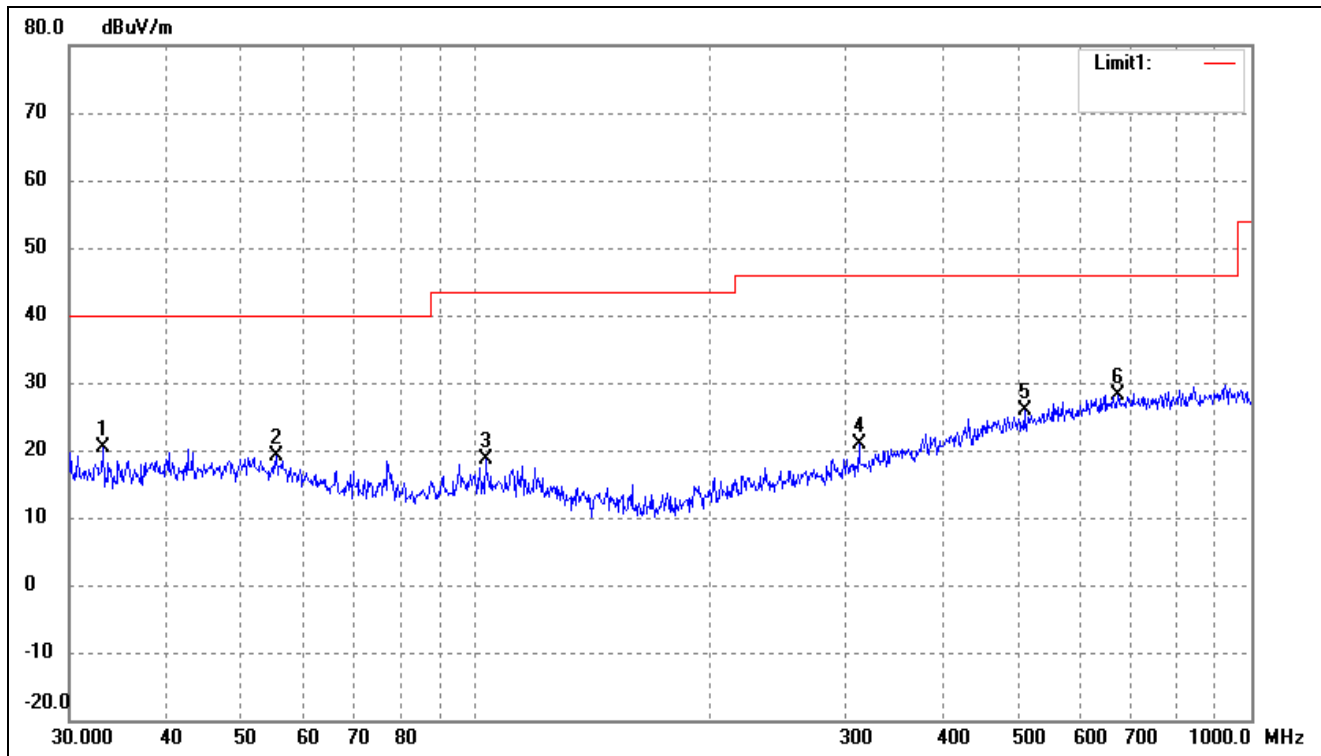
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	33.2112	30.66	-8.67	21.99	40.00	-18.01	-	-	peak
2	55.8047	28.62	-7.80	20.82	40.00	-19.18	-	-	peak
3	111.7380	28.71	-8.99	19.72	43.50	-23.78	-	-	peak
4	465.5994	31.52	-2.17	29.35	46.00	-16.65	-	-	peak
5	547.0977	30.34	-0.52	29.82	46.00	-16.18	-	-	peak
6	890.7278	29.19	2.68	31.87	46.00	-14.13	-	-	peak

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



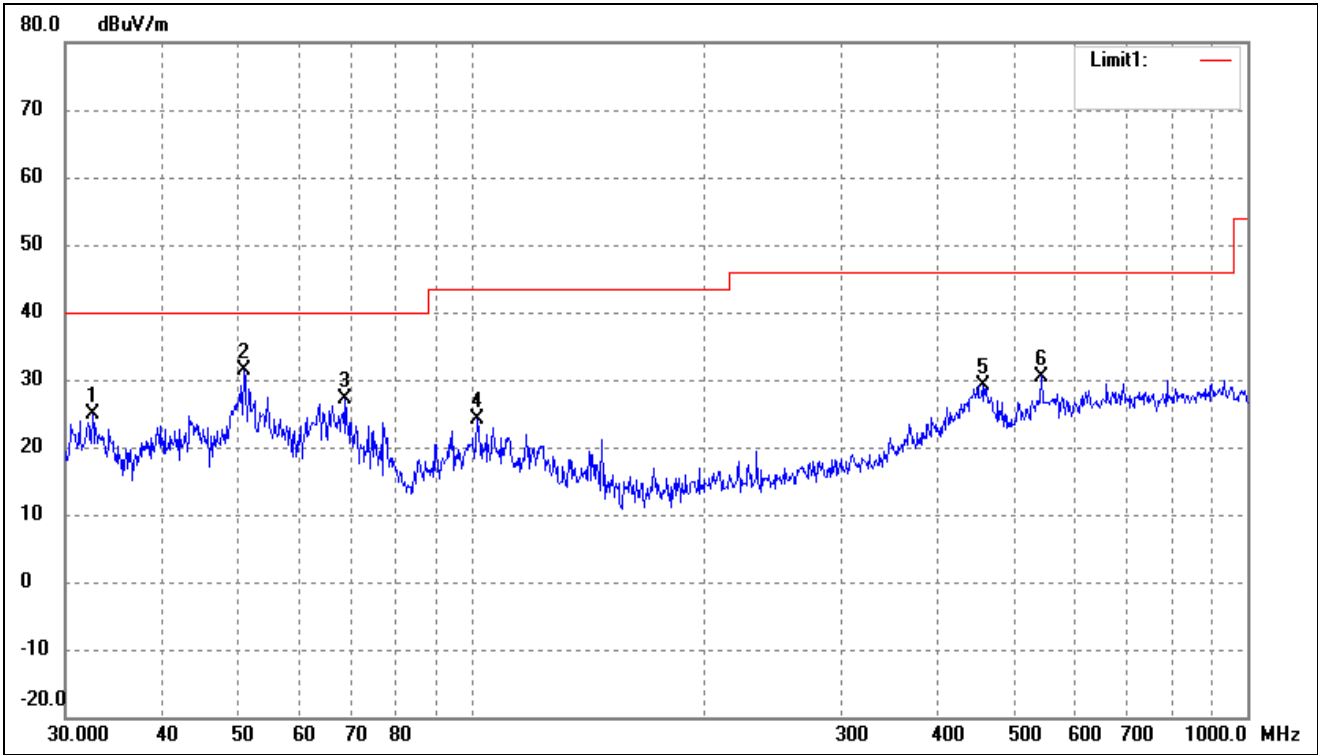
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	50.9420	40.08	-7.10	32.98	40.00	-7.02	-	-	peak
2	66.2662	36.87	-9.52	27.35	40.00	-12.65	-	-	peak
3	102.0014	34.06	-8.76	25.30	43.50	-18.20	-	-	peak
4	147.4036	34.40	-12.52	21.88	43.50	-21.62	-	-	peak
5	462.3455	32.54	-2.25	30.29	46.00	-15.71	-	-	peak
6	543.2742	34.92	-0.57	34.35	46.00	-11.65	-	-	peak

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



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	33.2112	29.14	-8.67	20.47	40.00	-19.53	-	-	peak
2	55.4147	26.79	-7.75	19.04	40.00	-20.96	-	-	peak
3	103.0800	27.32	-8.77	18.55	43.50	-24.95	-	-	peak
4	312.1794	27.47	-6.59	20.88	46.00	-25.12	-	-	peak
5	510.0436	26.91	-1.13	25.78	46.00	-20.22	-	-	peak
6	672.8445	27.02	1.15	28.17	46.00	-17.83	-	-	peak

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

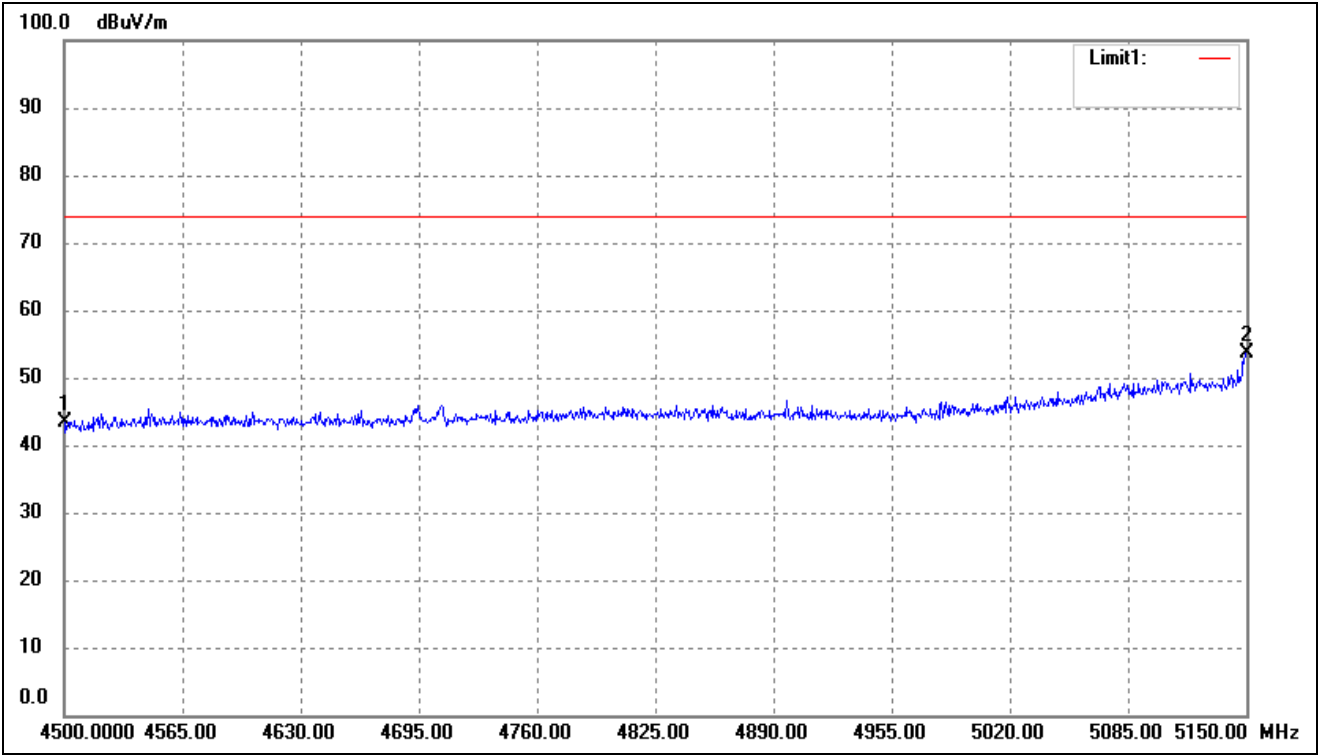


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	32.5198	33.68	-8.83	24.85	40.00	-15.15	-	-	peak
2	50.9420	38.44	-7.10	31.34	40.00	-8.66	-	-	peak
3	68.8721	37.14	-9.97	27.17	40.00	-12.83	-	-	peak
4	102.0014	32.93	-8.76	24.17	43.50	-19.33	-	-	peak
5	455.9058	31.63	-2.41	29.22	46.00	-16.78	-	-	peak
6	543.2742	31.07	-0.57	30.50	46.00	-15.50	-	-	peak

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

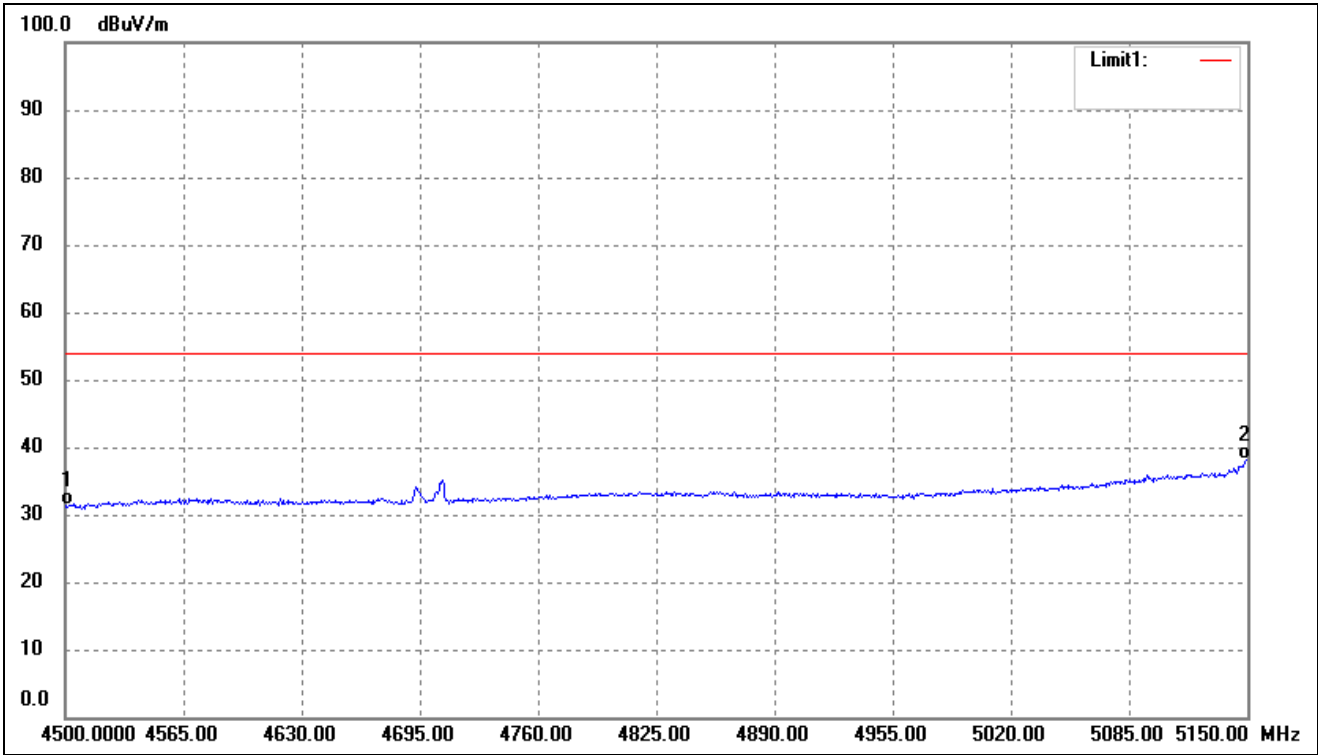
- Spurious Emission above 1GHz
- Antenna 0(worst case)

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



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	50.26	-6.92	43.34	74.00	-30.66	-	-	peak
2	5150.000	58.96	-5.33	53.63	74.00	-20.37	-	-	peak

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



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	38.26	-6.92	31.34	54.00	-22.66	-	-	AVG
2	5150.000	43.44	-5.33	38.11	54.00	-15.89	-	-	AVG

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

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

- For the frequency band 5.15-5.25GHz, 5.725-5.850GHz (802.11a)
- Antenna 0(worst case)
- Harmonics And Spurious Emissions

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5180MHz)							
10360	55.95	7.11	63.06	74	-10.94	H	PK
15540	34.21	8.22	42.43	54	-11.57	H	AV
10360	58.17	7.11	65.28	74	-8.72	V	PK
15540	39.66	8.22	47.88	54	-6.12	V	AV
Middle Channel (5200MHz)							
10400	56.59	7.22	63.81	74	-10.19	H	PK
15600	36.30	8.67	44.97	54	-9.03	H	AV
10400	54.72	7.22	61.94	74	-12.06	V	PK
15600	39.37	8.67	48.04	54	-5.96	V	AV
High Channel (5240MHz)							
10480	56.41	7.69	64.10	74	-9.90	H	PK
15720	38.79	8.93	47.72	54	-6.28	H	AV
10480	58.30	7.69	65.99	74	-8.01	V	PK
15720	36.36	8.93	45.29	54	-8.71	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	55.78	9.45	65.23	74	-8.77	H	PK
17235	33.39	10.36	43.75	54	-10.25	H	AV
11490	54.14	9.45	63.59	74	-10.41	V	PK
17235	36.16	10.36	46.52	54	-7.48	V	AV
Middle Channel (5785MHz)							
11570	57.56	9.62	67.18	74	-6.82	H	PK
17355	34.71	10.67	45.38	54	-8.62	H	AV
11570	57.19	9.62	66.81	74	-7.19	V	PK
17355	34.92	10.67	45.59	54	-8.41	V	AV
High Channel (5825MHz)							
11650	57.40	9.84	67.24	74	-6.76	H	PK
17475	34.43	10.95	45.38	54	-8.62	H	AV
11650	54.25	9.84	64.09	74	-9.91	V	PK
17475	36.69	10.95	47.64	54	-6.36	V	AV

➤ Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-36.08	-27
Highest	Above 5350	-42.39	-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 5650	-36.76	-27
	5650 to 5700	-44.24	-27 to -10
	5700 to 5720	-27.37	-10 to 15.6
	5720 to 5725	-16.79	15.6 to 27
Highest	5850 to 5855	-14.99	27 to 15.6
	5855 to 5875	-26.88	15.6 to -10
	5875 to 5925	-40.65	-10 to -27
	Above 5925	-44.11	-27
Note: the data just list the worst cases			

➤ For the frequency band 5.15-5.25GHz, 5.725-5.850GHz (802.11n HT20)

➤ Harmonics And Spurious Emissions

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5180MHz)							
10360	57.35	7.11	64.46	74	-9.54	H	PK
15540	38.04	8.22	46.26	54	-7.74	H	AV
10360	58.32	7.11	65.43	74	-8.57	H	PK
15540	36.50	8.22	44.72	54	-9.28	H	AV
Middle Channel (5200MHz)							
10400	55.25	7.22	62.47	74	-11.53	H	PK
15600	39.54	8.67	48.21	54	-5.79	H	AV
10400	57.78	7.22	65.00	74	-9.00	V	PK
15600	36.38	8.67	45.05	54	-8.95	V	AV
High Channel (5240MHz)							
10480	55.40	7.69	63.09	74	-10.91	H	PK
15720	35.71	8.93	44.64	54	-9.36	H	AV
10480	60.42	7.69	68.11	74	-5.89	V	PK
15720	36.66	8.93	45.59	54	-8.41	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5745MHz)							
11490	56.12	9.45	65.57	74	-8.43	H	PK
17235	34.86	10.36	45.22	54	-8.78	H	AV
11490	55.60	9.45	65.05	74	-8.95	V	PK
17235	34.85	10.36	45.21	54	-8.79	V	AV
Middle Channel (5785MHz)							
11570	58.51	9.62	68.13	74	-5.87	H	PK
17355	38.03	10.67	48.70	54	-5.30	H	AV
11570	55.80	9.62	65.42	74	-8.58	V	PK
17355	38.23	10.67	48.90	54	-5.10	V	AV
High Channel (5825MHz)							
11650	54.68	9.84	64.52	74	-9.48	H	PK
17475	35.25	10.95	46.20	54	-7.80	H	AV
11650	55.34	9.84	65.18	74	-8.82	V	PK
17475	37.36	10.95	48.31	54	-5.69	V	AV

➤ Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-30.53	-27
Highest	Above 5350	-40.58	-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 5650	-46.28	-27
	5650 to 5700	-36.51	-27 to -10
	5700 to 5720	-26.85	-10 to 15.6
	5720 to 5725	-16.98	15.6 to 27
Highest	5850 to 5855	-15.54	27 to 15.6
	5855 to 5875	-25.96	15.6 to -10
	5875 to 5925	-36.44	-10 to -27
	Above 5925	-39.32	-27
Note: the data just list the worst cases			

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

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5190MHz)							
10380	57.97	7.25	65.22	74	-8.78	H	PK
15570	37.71	8.33	46.04	54	-7.96	H	AV
10380	58.26	7.25	65.51	74	-8.49	V	PK
15570	38.93	8.33	47.26	54	-6.74	V	AV
High Channel (5230MHz)							
10460	56.66	7.54	64.20	74	-9.80	H	PK
15690	38.56	8.86	47.42	54	-6.58	H	AV
10460	59.23	7.54	66.77	74	-7.23	V	PK
15690	38.66	8.86	47.52	54	-6.48	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	56.03	9.65	65.68	74	-8.32	H	PK
17265	36.71	10.87	47.58	54	-6.42	H	AV
11510	58.00	9.65	67.65	74	-6.35	V	PK
17265	37.21	10.87	48.08	54	-5.92	V	AV
High Channel (5795MHz)							
11590	57.19	9.81	67.00	74	-7.00	H	PK
17385	35.62	10.89	46.51	54	-7.49	H	AV
11590	56.37	9.81	66.18	74	-7.82	V	PK
17385	38.93	10.89	49.82	54	-4.18	V	AV

➤ Out of Band edge 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-35.08	-27
Highest	Above 5350	-39.19	-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 5650	-42.93	-27
	5650 to 5700	-37.78	-27 to -10
	5700 to 5720	-27.49	-10 to 15.6
	5720 to 5725	-17.37	15.6 to 27
Highest	5850 to 5855	-16.03	27 to 15.6
	5855 to 5875	-26.91	15.6 to -10
	5875 to 5925	-41.62	-10 to -27
	Above 5925	-41.27	-27
Note: the data just list the worst cases			

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

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
5210MHz							
10420	60.20	7.33	67.53	74	-6.47	H	PK
15630	37.11	8.75	45.86	54	-8.14	H	AV
10420	55.84	7.33	63.17	74	-10.83	V	PK
15630	36.44	8.75	45.19	54	-8.81	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
5775MHz							
11550	55.63	9.54	65.17	74	-8.83	H	PK
17325	38.37	10.59	48.96	54	-5.04	H	AV
11550	57.53	9.54	67.07	74	-6.93	V	PK
17325	34.02	10.59	44.61	54	-9.39	V	AV

➤ Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-38.04	-27
Highest	Above 5350	-31.78	-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 5650	-45.47	-27
	5650 to 5700	-32.43	-27 to -10
	5700 to 5720	-28.34	-10 to 15.6
	5720 to 5725	-18.02	15.6 to 27
Highest	5850 to 5855	-15.99	27 to 15.6
	5855 to 5875	-27.40	15.6 to -10
	5875 to 5925	-36.82	-10 to -27
	Above 5925	-40.79	-27
Note: the data just list the worst cases			

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

9. Frequency Stability

9.1 Standard Applicable

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

9.2 Test Procedure

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

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

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

9.3 Summary of Test Results/Plots

Please refer to Appendix D

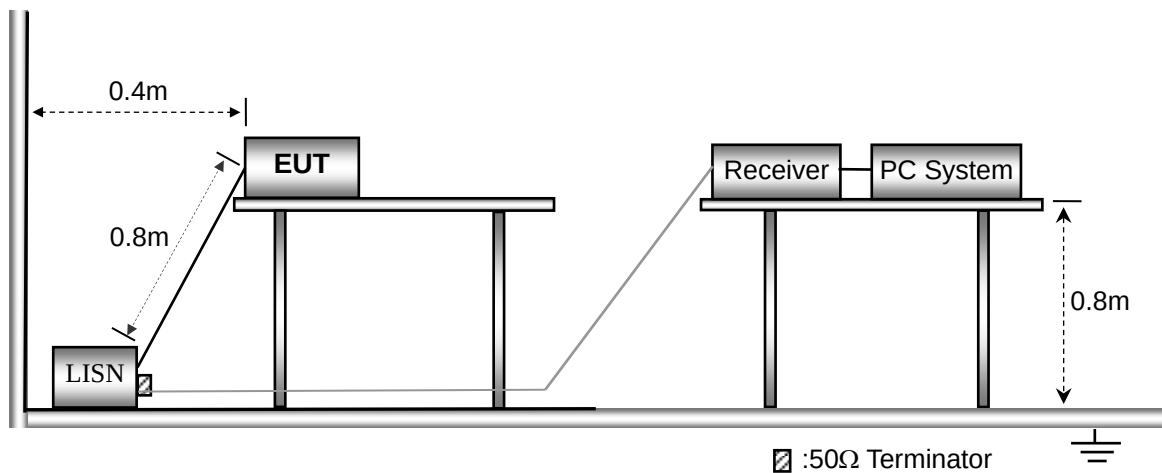
10 Conducted Emissions

10.1 Test Procedure

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

The external I/O cables were draped along the test table and formed a bundle 30 to 40cm long in the middle. The spacing between the peripherals was 10cm.

10.2 Basic Test Setup Block Diagram



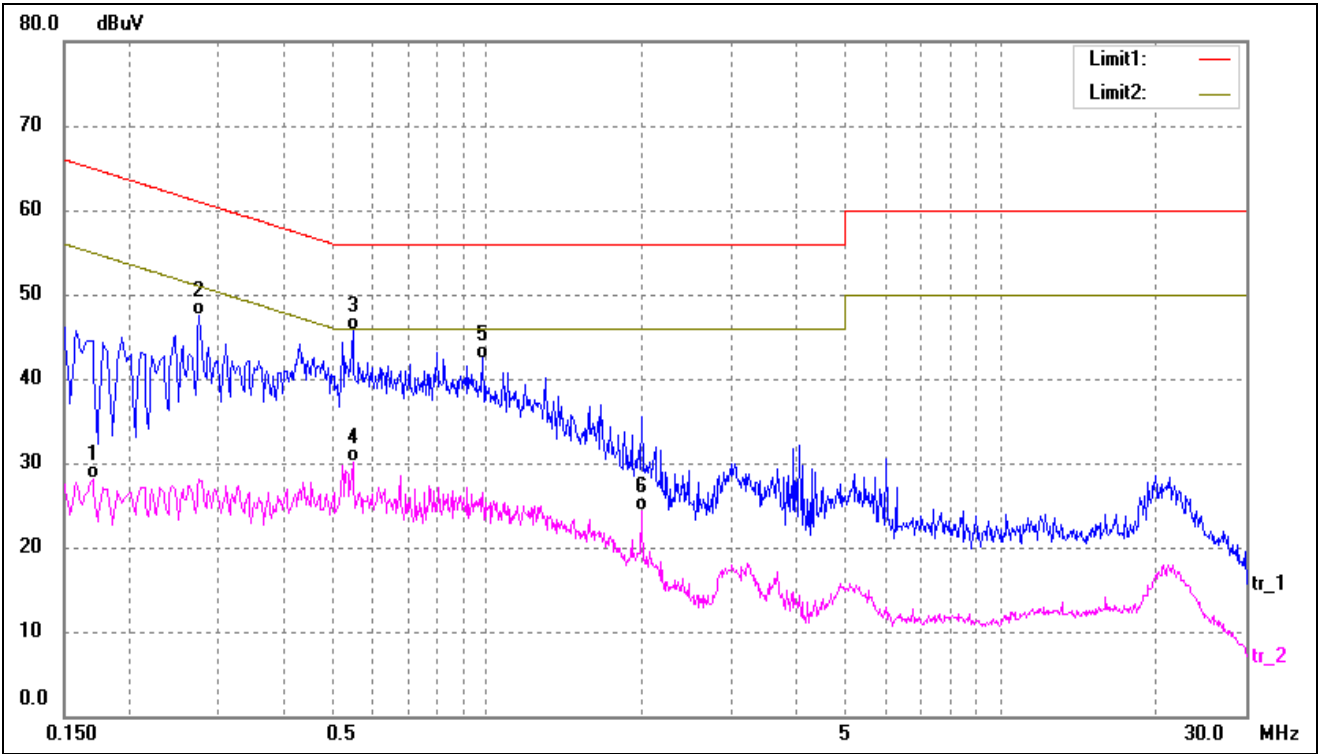
10.3 Test Receiver Setup

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

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

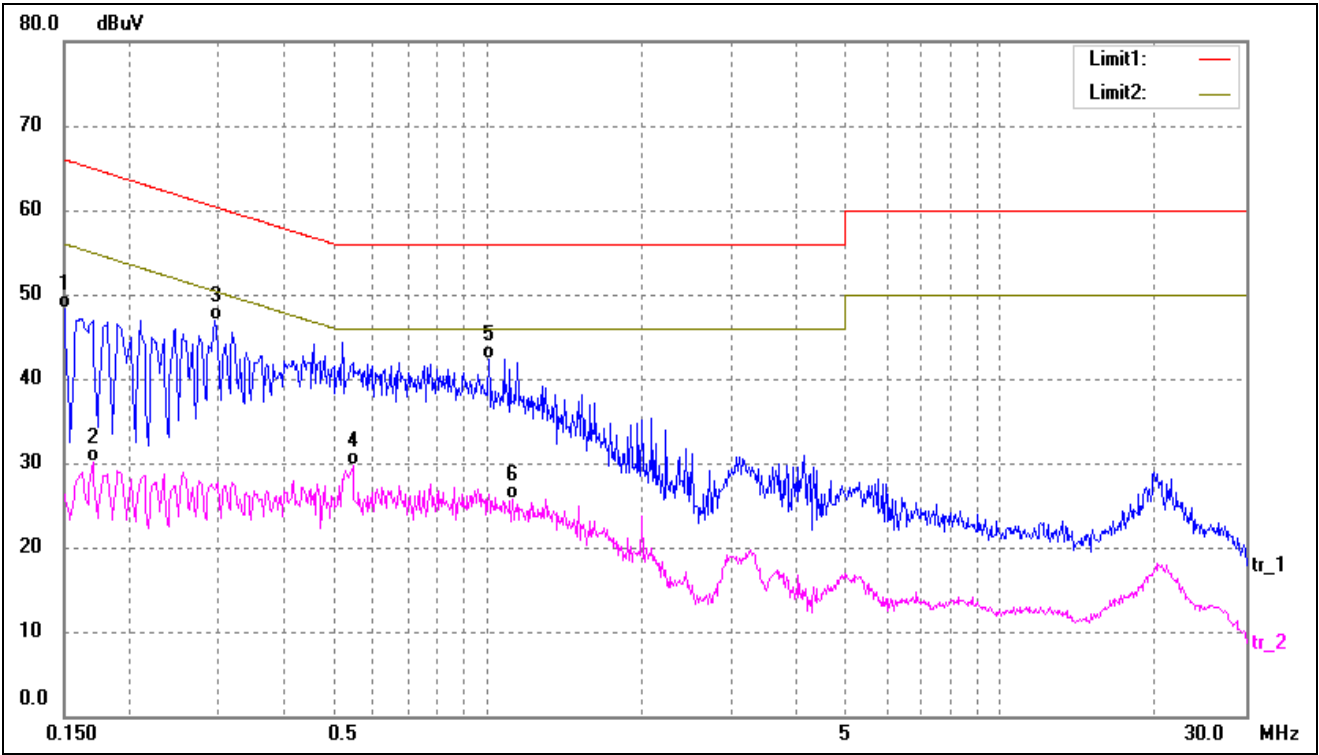
10.4 Summary of Test Results/Plots

Test Mode	Communication	AC120V 60Hz	Polarity:	Neutral
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No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1700	17.80	10.37	28.17	54.96	-26.79	AVG
2	0.2740	37.10	10.35	47.45	61.00	-13.55	QP
3*	0.5460	35.36	10.29	45.65	56.00	-10.35	QP
4	0.5460	19.85	10.29	30.14	46.00	-15.86	AVG
5	0.9820	31.85	10.55	42.40	56.00	-13.60	QP
6	1.9980	14.17	10.13	24.30	46.00	-21.70	AVG

Test Mode	Communication	AC120V 60Hz	Polarity:	Line
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No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1500	37.94	10.38	48.32	66.00	-17.68	QP
2	0.1700	19.73	10.37	30.10	54.96	-24.86	AVG
3*	0.2940	36.56	10.34	46.90	60.41	-13.51	QP
4	0.5460	19.32	10.29	29.61	46.00	-16.39	AVG
5	1.0100	31.82	10.56	42.38	56.00	-13.62	QP
6	1.1220	15.27	10.51	25.78	46.00	-20.22	AVG

APPENDIX SUMMARY

Project No.	WTH22X06110361W	Test Engineer	Dashan
Start date	2022/06/10	Finish date	2022/06/13
Temperature	24.6℃	Humidity	47%
RF specifications	U-NII		

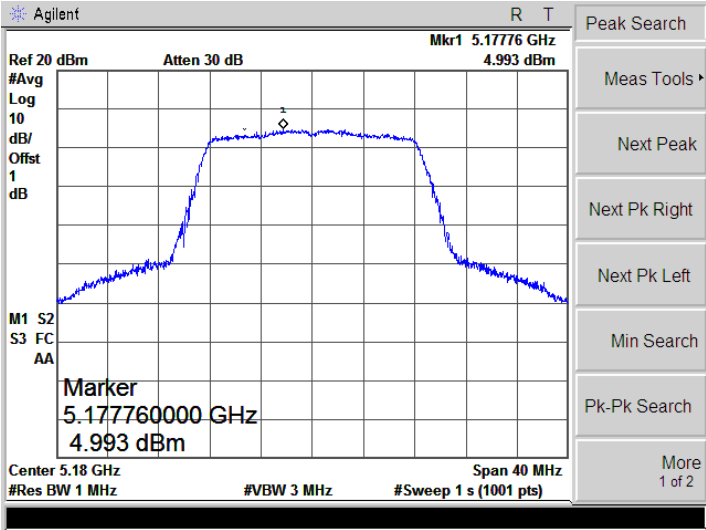
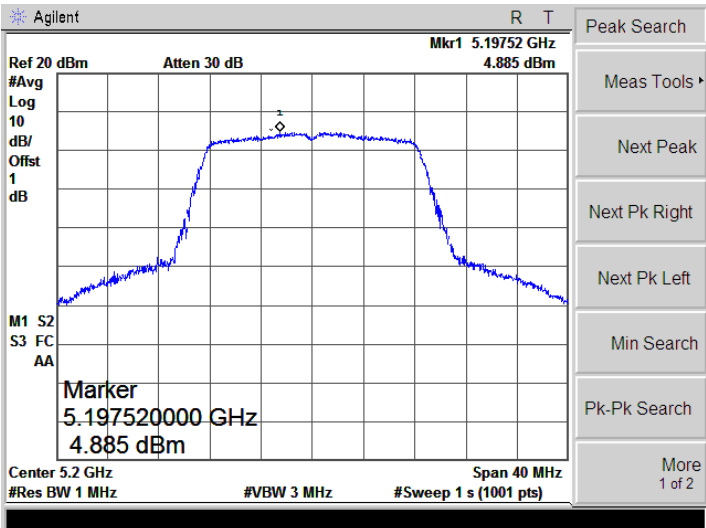
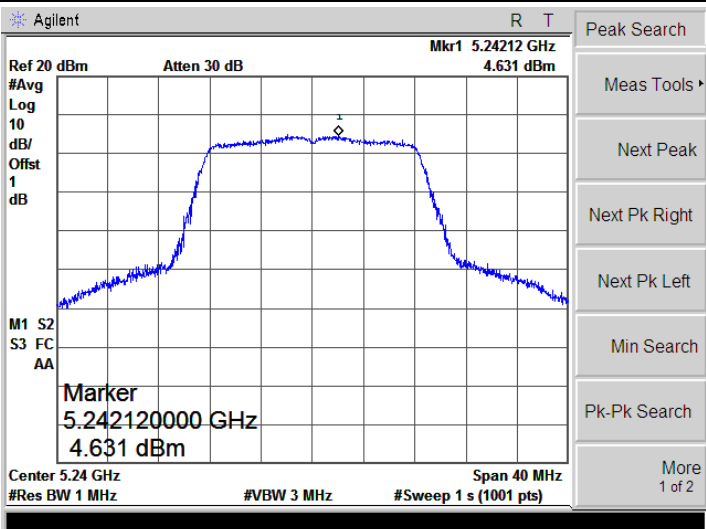
APPENDIX	Description of Test Item	Result
A	Power Spectral Density	Compliant
B	Emission Bandwidth and Occupied Bandwidth	Compliant
C	Maximum Conducted Output Power	Compliant
D	Frequency Stability	Compliant

APPENDIX A

Power Spectral Density					
U-NII-1:5150-5250MHz					
Operating mode	Test Channel	ANT 0 dBm/MHz	ANT 1 dBm/MHz	Total dBm/MHz	Limit (dBm/MHz)
802.11a	5180	4.993	6.292	/	11
	5200	4.885	6.218	/	11
	5240	4.631	6.569	/	11
802.11n-HT20	5180	5.522	5.671	8.61	11
	5200	5.037	6.055	8.59	11
	5240	5.074	6.196	8.68	11
802.11n-HT40	5190	0.795	1.445	4.14	11
	5230	0.985	1.462	4.24	11
802.11ac-HT80	5210	-3.348	-3.457	-0.39	11

Power Spectral Density						
U-NII-3: 5725-5850MHz						
Operating mode	Test Channel	ANT 0 dBm/300kHz	ANT 1 dBm/300kHz	Factor	Total dBm/500kHz*	Limit dBm/500kHz
802.11n-HT20	5745	-0.376	0.649	2.22	5.40	30
	5785	-0.452	0.454	2.22	5.25	30
	5825	-0.575	0.444	2.22	5.19	30
802.11n HT40	5755	-3.619	-3.580	2.22	1.63	30
	5795	-4.324	-3.163	2.22	1.53	30
802.11ac VH80	5775	-8.222	-7.308	2.22	-2.51	30
*Note: Maximum PSD=PSD(dBm/300kHz)+10log(500kHz/300kHz)=2.22						

ANT 0
5150-5250MHz

802.11a-Low	
802.11a-Middle	
802.11a-High	

802.11n-HT20-Low	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.17884 GHz 5.522 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.178840000 GHz 5.522 dBm Center 5.18 GHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts) Span 40 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-Middle	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.20080 GHz 5.037 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.200800000 GHz 5.037 dBm Center 5.2 GHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts) Span 40 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-High	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.23880 GHz 5.074 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.238800000 GHz 5.074 dBm Center 5.24 GHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts) Span 40 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

802.11n-HT40-Low	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.18744 GHz 0.795 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.187440000 GHz 0.795 dBm Center 5.19 GHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts) Span 80 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT40-High	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.23232 GHz 0.985 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.232320000 GHz 0.985 dBm Center 5.23 GHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts) Span 80 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11ac-HT80	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.21256 GHz -3.348 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.212560000 GHz -3.348 dBm Center 5.21 GHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts) Span 160 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

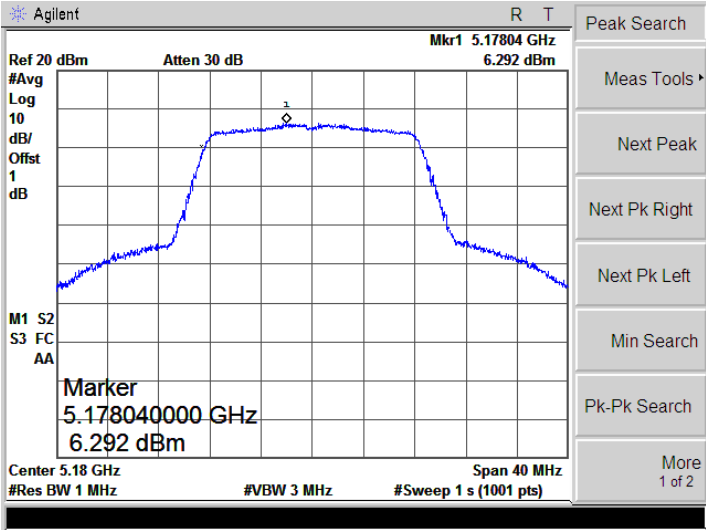
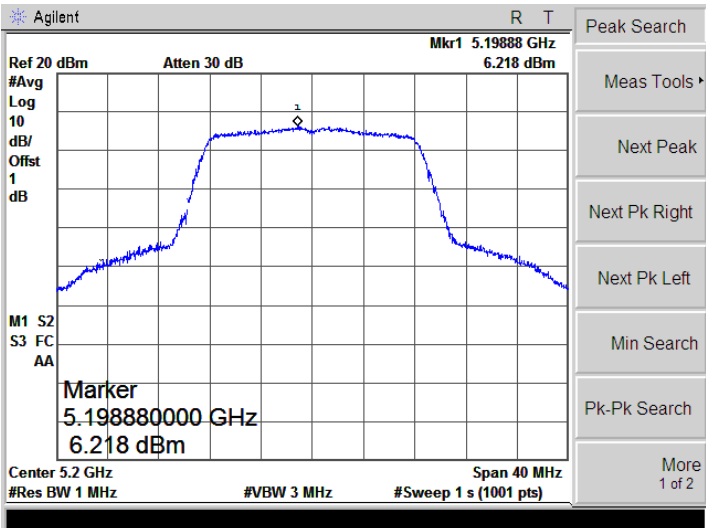
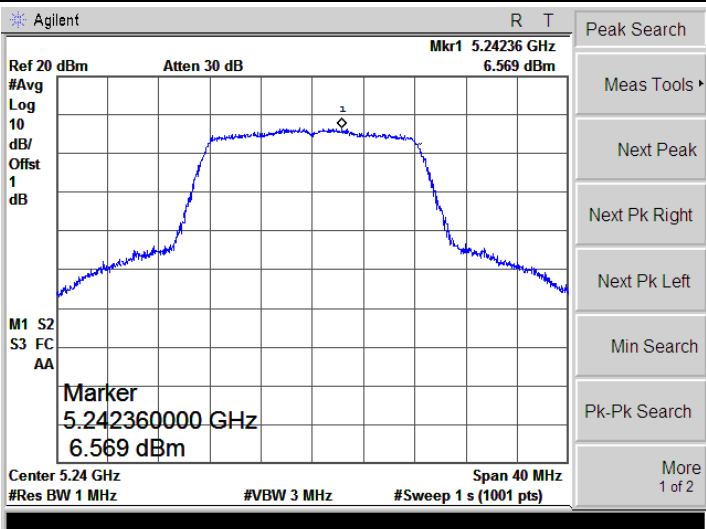
5725-5850MHz

802.11a-Low	Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.74552 GHz 0.827 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.745520000 GHz 0.827 dBm Center 5.745 GHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Span 40 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11a-Middle	Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.78436 GHz 0.359 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.784360000 GHz 0.359 dBm Center 5.785 GHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Span 40 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11a-High	Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.82440 GHz 0.428 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.824400000 GHz 0.428 dBm Center 5.825 GHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Span 40 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

802.11n-HT20-Low	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.74408 GHz -0.376 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.744080000 GHz -0.376 dBm Center 5.745 GHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Span 40 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-Middle	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.78704 GHz -0.452 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.787040000 GHz -0.452 dBm Center 5.785 GHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Span 40 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-High	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.82592 GHz -0.575 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.825920000 GHz -0.575 dBm Center 5.825 GHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Span 40 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

802.11n-HT40-Low	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.75124 GHz -3.619 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.751240000 GHz -3.619 dBm Center 5.755 GHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Span 80 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT40-High	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.79220 GHz -4.324 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.792200000 GHz -4.324 dBm Center 5.795 GHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Span 80 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11ac-HT80	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.77116 GHz -8.222 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.771160000 GHz -8.222 dBm Center 5.775 GHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Span 160 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

ANT 1
5150-5250MHz

802.11a-Low	
802.11a-Middle	
802.11a-High	

802.11n-HT20-Low	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.18076 GHz 5.671 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.180760000 GHz 5.671 dBm Center 5.18 GHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts) Span 40 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-Middle	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.19916 GHz 6.055 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.199160000 GHz 6.055 dBm Center 5.2 GHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts) Span 40 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-High	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.23888 GHz 6.196 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.238880000 GHz 6.196 dBm Center 5.24 GHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts) Span 40 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

802.11n-HT40-Low	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.18520 GHz 1.445 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.18520000 GHz 1.445 dBm Center 5.19 GHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts) Span 80 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT40-High	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.22704 GHz 1.462 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.22704000 GHz 1.462 dBm Center 5.23 GHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts) Span 80 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11ac-HT80	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.20744 GHz -3.457 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.20744000 GHz -3.457 dBm Center 5.21 GHz #Res BW 1 MHz #VBW 3 MHz #Sweep 1 s (1001 pts) Span 160 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

5725-5850MHz

802.11a-Low	Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.74448 GHz 1.408 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.744480000 GHz 1.408 dBm Center 5.745 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11a-Middle	Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.78564 GHz 1.292 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.785640000 GHz 1.292 dBm Center 5.785 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11a-High	Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.82436 GHz 1.107 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.824360000 GHz 1.107 dBm Center 5.825 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

802.11n-HT20-Low	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.74400 GHz 0.649 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.74400000 GHz 0.649 dBm Center 5.745 GHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Span 40 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-Middle	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.78412 GHz 0.454 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.784120000 GHz 0.454 dBm Center 5.785 GHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Span 40 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-High	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.82596 GHz 0.444 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.825960000 GHz 0.444 dBm Center 5.825 GHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Span 40 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

802.11n-HT40-Low	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.75404 GHz -3.58 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.754040000 GHz -3.58 dBm Center 5.755 GHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Span 80 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT40-High	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.79388 GHz -3.163 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.793880000 GHz -3.163 dBm Center 5.795 GHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Span 80 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11ac-HT80	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.77868 GHz -7.308 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.778680000 GHz -7.308 dBm Center 5.775 GHz #Res BW 300 kHz #VBW 1 MHz #Sweep 1 s (1001 pts) Span 160 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

APPENDIX B

Emission Bandwidth and Occupied Bandwidth

U-NII-1:5150-5250MHz						
Test Mode	Test Channel MHz	ANT 0		ANT 1		Result
		26 dB Bandwidth MHz	99% Bandwidth MHz	26 dB Bandwidth MHz	99% Bandwidth MHz	
802.11a	5180	24.364	17.028	25.525	17.045	Pass
	5200	24.882	17.011	25.661	16.975	Pass
	5240	24.677	16.904	25.453	17.039	Pass
802.11n-HT20	5180	20.807	17.734	21.828	17.779	Pass
	5200	20.522	17.735	21.619	17.759	Pass
	5240	20.659	17.734	21.369	17.751	Pass
802.11n-HT40	5190	39.613	36.005	39.893	36.021	Pass
	5230	39.792	36.009	40.512	36.048	Pass
802.11ac-HT80	5210	87.428	75.190	81.625	75.088	Pass

U-NII-3: 5725-5850MHz						
Test Mode	Test Channel MHz	ANT 0		ANT 1		Limit kHz
		6 dB Bandwidth MHz	99% Bandwidth MHz	6 dB Bandwidth MHz	99% Bandwidth MHz	
802.11a	5745	15.868	17.004	16.362	17.060	≥ 500
	5785	16.304	16.891	16.099	17.024	≥ 500
	5825	16.355	16.906	16.307	17.067	≥ 500
802.11n-HT20	5745	17.080	17.756	17.100	17.800	≥ 500
	5785	17.081	17.818	16.828	17.827	≥ 500
	5825	17.115	17.894	17.100	17.815	≥ 500
802.11n-HT40	5755	35.527	36.001	34.863	36.043	≥ 500
	5795	35.455	36.079	35.174	36.033	≥ 500
802.11ac-HT80	5775	75.379	75.128	75.303	75.137	≥ 500

ANT 0
5150-5250MHz

802.11a-Low	Agilent Ch Freq 5.18 GHz Occupied Bandwidth Span 40.00000000 MHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.18 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.0279 MHz Transmit Freq Error -35.277 kHz x dB Bandwidth 24.364 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Trace/View Trace Clear Write Max Hold Min Hold View Blank More
802.11a-Middle	Agilent Ch Freq 5.2 GHz Occupied Bandwidth Span 40 MHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.2 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.0105 MHz Transmit Freq Error -25.705 kHz x dB Bandwidth 24.882 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Trace/View Trace Clear Write Max Hold Min Hold View Blank More
802.11a-High	Agilent Ch Freq 5.24 GHz Occupied Bandwidth Center 5.240000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.24 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.9035 MHz Transmit Freq Error 2.988 kHz x dB Bandwidth 24.677 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Freq/Channel Center Freq 5.24000000 GHz Start Freq 5.22000000 GHz Stop Freq 5.26000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

802.11n-HT20-Low	Agilent Ch Freq 5.18 GHz Occupied Bandwidth Center 5.180000000 GHz Ref 20 dBm #Peak Log 10 dB/ Offset 1 dB Center 5.18 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.7338 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -15.259 kHz x dB Bandwidth 20.807 MHz Freq/Channel Center Freq 5.18000000 GHz Start Freq 5.16000000 GHz Stop Freq 5.20000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-Middle	Agilent Ch Freq 5.2 GHz Occupied Bandwidth Center 5.200000000 GHz Ref 20 dBm #Peak Log 10 dB/ Offset 1 dB Center 5.2 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.7347 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -10.248 kHz x dB Bandwidth 20.522 MHz Freq/Channel Center Freq 5.20000000 GHz Start Freq 5.18000000 GHz Stop Freq 5.22000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-High	Agilent Ch Freq 5.24 GHz Occupied Bandwidth Center 5.240000000 GHz Ref 20 dBm #Peak Log 10 dB/ Offset 1 dB Center 5.24 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.7341 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -5.820 kHz x dB Bandwidth 20.659 MHz Freq/Channel Center Freq 5.24000000 GHz Start Freq 5.22000000 GHz Stop Freq 5.26000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

802.11n-HT40-Low	Agilent R T Ch Freq 5.19 GHz Trig Free Occupied Bandwidth Span 80.00000000 MHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.19 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 36.0049 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 11.083 kHz x dB Bandwidth 39.613 MHz Trace/View 1 2 3 Trace Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT40-High	Agilent R T Ch Freq 5.23 GHz Trig Free Occupied Bandwidth Center 5.230000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.23 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 36.0088 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 20.335 kHz x dB Bandwidth 39.792 MHz Freq/Channel Center Freq 5.23000000 GHz Start Freq 5.19000000 GHz Stop Freq 5.27000000 GHz CF Step 8.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11ac-HT80	Agilent R T Ch Freq 5.21 GHz Trig Free Occupied Bandwidth Center 5.210000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.21 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 10 ms (1001 pts) Span 180 MHz Occupied Bandwidth 75.1902 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -9.751 kHz x dB Bandwidth 87.428 MHz Freq/Channel Center Freq 5.21000000 GHz Start Freq 5.12000000 GHz Stop Freq 5.30000000 GHz CF Step 18.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

5725-5850MHz
6dB Bandwidth

802.11a-Low	Agilent Ch Freq 5.745 GHz Occupied Bandwidth Center 5.745000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.745 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Occupied Bandwidth 16.4728 MHz Transmit Freq Error -27.059 kHz x dB Bandwidth 15.868 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Freq/Channel Center Freq 5.74500000 GHz Start Freq 5.72500000 GHz Stop Freq 5.76500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11a-Middle	Agilent Ch Freq 5.785 GHz Occupied Bandwidth Center 5.785000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.785 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Occupied Bandwidth 16.4944 MHz Transmit Freq Error -12.398 kHz x dB Bandwidth 16.304 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11a-High	Agilent Ch Freq 5.825 GHz Occupied Bandwidth Center 5.825000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.825 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Occupied Bandwidth 16.6063 MHz Transmit Freq Error 3.506 kHz x dB Bandwidth 16.355 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Freq/Channel Center Freq 5.82500000 GHz Start Freq 5.80500000 GHz Stop Freq 5.84500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

802.11n-HT20-Low	Agilent Ch Freq5.745 GHz TrigFree Occupied Bandwidth Center 5.74500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.745 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.5578 MHz Occ BW % Pwr99.00 % x dB-6.00 dB Transmit Freq Error-20.027 kHz x dB Bandwidth17.080 MHz Freq/Channel Center Freq5.74500000 GHz Start Freq5.72500000 GHz Stop Freq5.76500000 GHz CF Step4.00000000 MHz AutoMan Freq Offset0.00000000 Hz Signal TrackOnOff Scale TypeLogLin
802.11n-HT20-Middle	Agilent Ch Freq5.785 GHz TrigFree Occupied Bandwidth Center 5.785 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.785 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.5809 MHz Occ BW % Pwr99.00 % x dB-6.00 dB Transmit Freq Error-12.143 kHz x dB Bandwidth17.081 MHz Trace/View 1Trace23 Clear Write Max Hold Min Hold View Blank More1 of 2
802.11n-HT20-High	Agilent Ch Freq5.825 GHz TrigFree Occupied Bandwidth Center 5.82500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.825 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.6202 MHz Occ BW % Pwr99.00 % x dB-6.00 dB Transmit Freq Error-5.657 kHz x dB Bandwidth17.115 MHz Freq/Channel Center Freq5.82500000 GHz Start Freq5.80500000 GHz Stop Freq5.84500000 GHz CF Step4.00000000 MHz AutoMan Freq Offset0.00000000 Hz Signal TrackOnOff Scale TypeLogLin

802.11n-HT40-Low	Agilent Ch Freq5.756 GHz TrigFree Occupied Bandwidth Center 5.75000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.755 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 35.9070 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -1.518 kHz x dB Bandwidth 35.527 MHz Freq/Channel Center Freq5.75500000 GHz Start Freq5.71500000 GHz Stop Freq5.79500000 GHz CF Step8.00000000 MHz AutoMan Freq Offset0.00000000 Hz Signal TrackOnOff Scale TypeLogLin
802.11n-HT40-High	Agilent Ch Freq5.796 GHz TrigFree Occupied Bandwidth Center 5.79500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.795 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 35.9295 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 21.411 kHz x dB Bandwidth 35.455 MHz Freq/Channel Center Freq5.79500000 GHz Start Freq5.75500000 GHz Stop Freq5.83500000 GHz CF Step8.00000000 MHz AutoMan Freq Offset0.00000000 Hz Signal TrackOnOff Scale TypeLogLin
802.11ac-HT80	Agilent Ch Freq5.776 GHz TrigFree Occupied Bandwidth Center 5.77500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.775 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 16.58 ms (1001 pts) Span 160 MHz Occupied Bandwidth 75.0594 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 20.223 kHz x dB Bandwidth 75.379 MHz Freq/Channel Center Freq5.77500000 GHz Start Freq5.69500000 GHz Stop Freq5.85500000 GHz CF Step16.00000000 MHz AutoMan Freq Offset0.00000000 Hz Signal TrackOnOff Scale TypeLogLin

99% Bandwidth

802.11a-Low	Agilent R T Ch Freq 5.745 GHz Trig Free Occupied Bandwidth Center 5.74500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.745 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.0041 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -23.512 kHz x dB Bandwidth 21.434 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11a-Middle	Agilent R T Ch Freq 5.785 GHz Trig Free Occupied Bandwidth Center 5.78500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.785 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.8912 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 46.864 Hz x dB Bandwidth 20.099 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11a-High	Agilent R T Ch Freq 5.825 GHz Trig Free Occupied Bandwidth Center 5.82500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.825 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.9064 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -1.109 kHz x dB Bandwidth 20.100 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT20-Low	Agilent Ch Freq 5.745 GHz Occupied Bandwidth Center 5.74500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.745 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.7564 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -16.637 kHz x dB Bandwidth 20.397 MHz Freq/Channel Center Freq 5.74500000 GHz Start Freq 5.72500000 GHz Stop Freq 5.76500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-Middle	Agilent Ch Freq 5.785 GHz Occupied Bandwidth Center 5.78500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.785 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.8180 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -3.062 kHz x dB Bandwidth 24.815 MHz Freq/Channel Center Freq 5.78500000 GHz Start Freq 5.76500000 GHz Stop Freq 5.80500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-High	Agilent Ch Freq 5.825 GHz Occupied Bandwidth Center 5.82500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.825 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.8941 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 43.596 kHz x dB Bandwidth 28.348 MHz Freq/Channel Center Freq 5.82500000 GHz Start Freq 5.80500000 GHz Stop Freq 5.84500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

802.11n-HT40-Low	Agilent R T Ch Freq 5.755 GHz Trig Free Occupied Bandwidth Span 80.00000000 MHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.755 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 36.0011 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 15.684 kHz x dB Bandwidth 39.907 MHz Span Span 80.00000000 MHz Span Zoom Full Span Zero Span Last Span Zone ▶
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ANT 1
5150-5250MHz

802.11a-Low	Agilent Ch Freq 5.18 GHz Occupied Bandwidth Center 5.18000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.18 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.0451 MHz Transmit Freq Error -30.574 kHz x dB Bandwidth 25.525 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Trace/View Trace Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11a-Middle	Agilent Ch Freq 5.2 GHz Occupied Bandwidth Center 5.20000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.2 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.9754 MHz Transmit Freq Error -30.406 kHz x dB Bandwidth 25.661 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Freq/Channel Center Freq 5.20000000 GHz Start Freq 5.18000000 GHz Stop Freq 5.22000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11a-High	Agilent Ch Freq 5.24 GHz Occupied Bandwidth Center 5.24000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.24 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.0389 MHz Transmit Freq Error -39.614 kHz x dB Bandwidth 25.453 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Freq/Channel Center Freq 5.24000000 GHz Start Freq 5.22000000 GHz Stop Freq 5.26000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

802.11n-HT20-Low	Agilent Ch Freq 5.18 GHz Occupied Bandwidth Center 5.180000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.18 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.7788 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -11.594 kHz x dB Bandwidth 21.828 MHz Freq/Channel Center Freq 5.18000000 GHz Start Freq 5.16000000 GHz Stop Freq 5.20000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-Middle	Agilent Ch Freq 5.2 GHz Occupied Bandwidth Center 5.200000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.2 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.7593 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -8.055 kHz x dB Bandwidth 21.619 MHz Freq/Channel Center Freq 5.20000000 GHz Start Freq 5.18000000 GHz Stop Freq 5.22000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-High	Agilent Ch Freq 5.24 GHz Occupied Bandwidth Center 5.240000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.24 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.7507 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -15.947 kHz x dB Bandwidth 21.369 MHz Freq/Channel Center Freq 5.24000000 GHz Start Freq 5.22000000 GHz Stop Freq 5.26000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

802.11n-HT40-Low	Agilent Ch Freq 5.19 GHz Trig Free Occupied Bandwidth Center 5.190000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.19 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 36.0207 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 4.834 kHz x dB Bandwidth 39.893 MHz Freq/Channel Center Freq 5.19000000 GHz Start Freq 5.15000000 GHz Stop Freq 5.23000000 GHz CF Step 8.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT40-High	Agilent Ch Freq 5.23 GHz Trig Free Occupied Bandwidth Center 5.230000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.23 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 36.0479 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -2.167 kHz x dB Bandwidth 40.512 MHz Trace/View 1 2 3 Trace Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11ac-HT80	Agilent Ch Freq 5.21 GHz Trig Free Occupied Bandwidth Center 5.210000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.21 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 10 ms (1001 pts) Span 160 MHz Occupied Bandwidth 75.0884 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 24.851 kHz x dB Bandwidth 81.625 MHz Freq/Channel Center Freq 5.21000000 GHz Start Freq 5.13000000 GHz Stop Freq 5.29000000 GHz CF Step 16.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

5725-5850MHz
6dB Bandwidth

802.11a-Low	Agilent Ch Freq 5.745 GHz Occupied Bandwidth Center 5.74500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.745 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.5182 MHz Transmit Freq Error -34.971 kHz x dB Bandwidth 16.362 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Trace/View Trace Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11a-Middle	Agilent Ch Freq 5.785 GHz Occupied Bandwidth Center 5.785 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.785 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.5197 MHz Transmit Freq Error -27.061 kHz x dB Bandwidth 16.099 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Trace/View Trace Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11a-High	Agilent Ch Freq 5.825 GHz Occupied Bandwidth Center 5.825 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.825 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.5382 MHz Transmit Freq Error -41.447 kHz x dB Bandwidth 16.307 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Trace/View Trace Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT20-Low	Agilent Ch Freq 5.745 GHz Trig Free Occupied Bandwidth Center 5.74500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.745 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.5891 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -24.369 kHz x dB Bandwidth 17.100 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT20-Middle	Agilent Ch Freq 5.785 GHz Trig Free Occupied Bandwidth Center 5.78500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.785 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.5717 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -21.392 kHz x dB Bandwidth 16.828 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT20-High	Agilent Ch Freq 5.825 GHz Trig Free Occupied Bandwidth Center 5.82500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.825 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.5907 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -24.650 kHz x dB Bandwidth 17.100 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT40-Low	Agilent Ch Freq 5.755 GHz Trig Free Occupied Bandwidth Center 5.75500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.755 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 35.9224 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -27.451 kHz x dB Bandwidth 34.863 MHz Freq/Channel Center Freq 5.75500000 GHz Start Freq 5.71500000 GHz Stop Freq 5.79500000 GHz CF Step 8.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT40-High	Agilent Ch Freq 5.795 GHz Trig Free Occupied Bandwidth Center 5.79500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.795 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 35.9917 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -44.353 kHz x dB Bandwidth 35.174 MHz Trace/View 1 Trace 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11ac-HT80	Agilent Ch Freq 5.775 GHz Trig Free Occupied Bandwidth x dB -6.00 dB Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.775 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 16.58 ms (1001 pts) Span 160 MHz Occupied Bandwidth 74.9791 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -54.839 kHz x dB Bandwidth 75.303 MHz Trace/View 1 Trace 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

99% Bandwidth

802.11a-Low	Agilent R T Ch Freq 5.745 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.745 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Occupied Bandwidth 17.0598 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -31.818 kHz x dB Bandwidth 27.700 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11a-Middle	Agilent R T Ch Freq 5.785 GHz Trig Free Occupied Bandwidth Center 5.785000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.785 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Occupied Bandwidth 17.0236 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -48.124 kHz x dB Bandwidth 25.789 MHz Freq/Channel Center Freq 5.78500000 GHz Start Freq 5.76500000 GHz Stop Freq 5.80500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11a-High	Agilent R T Ch Freq 5.825 GHz Trig Free Occupied Bandwidth Center 5.825000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.825 GHz Span 40 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Occupied Bandwidth 17.0668 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -48.110 kHz x dB Bandwidth 27.689 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT20-Low	Agilent Ch Freq 5.745 GHz Occupied Bandwidth Center 5.74500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.745 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.7997 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -9.300 kHz x dB Bandwidth 26.298 MHz Freq/Channel Center Freq 5.74500000 GHz Start Freq 5.72500000 GHz Stop Freq 5.76500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-Middle	Agilent Ch Freq 5.785 GHz Occupied Bandwidth Center 5.78500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.785 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.8274 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -13.090 kHz x dB Bandwidth 25.490 MHz Trace/View 1 2 3 Trace Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT20-High	Agilent Ch Freq 5.825 GHz Occupied Bandwidth Center 5.82500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.825 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.8154 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -23.106 kHz x dB Bandwidth 26.938 MHz Freq/Channel Center Freq 5.82500000 GHz Start Freq 5.80500000 GHz Stop Freq 5.84500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

802.11n-HT40-Low	Agilent Ch Freq 5.755 GHz Occupied Bandwidth Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.755 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 36.0434 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -38.480 kHz x dB Bandwidth 42.112 MHz Freq/Channel Center Freq 5.75500000 GHz Start Freq 5.71500000 GHz Stop Freq 5.79500000 GHz CF Step 8.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT40-High	Agilent Ch Freq 5.795 GHz Occupied Bandwidth Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.795 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 36.0332 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -24.072 kHz x dB Bandwidth 42.299 MHz Trace/View 1 2 3 Trace Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11ac-HT80	Agilent Ch Freq 5.775 GHz Occupied Bandwidth Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offst 1 dB Center 5.775 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 10 ms (1001 pts) Span 160 MHz Occupied Bandwidth 75.1367 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -84.395 kHz x dB Bandwidth 83.400 MHz Freq/Channel Center Freq 5.77500000 GHz Start Freq 5.69500000 GHz Stop Freq 5.85500000 GHz CF Step 16.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

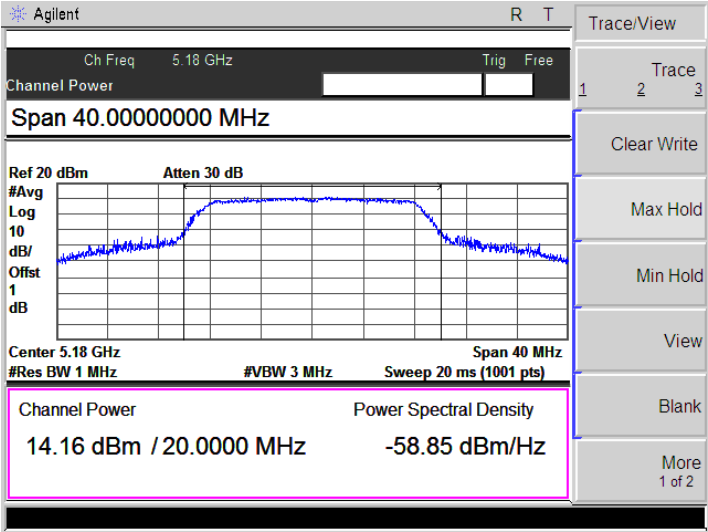
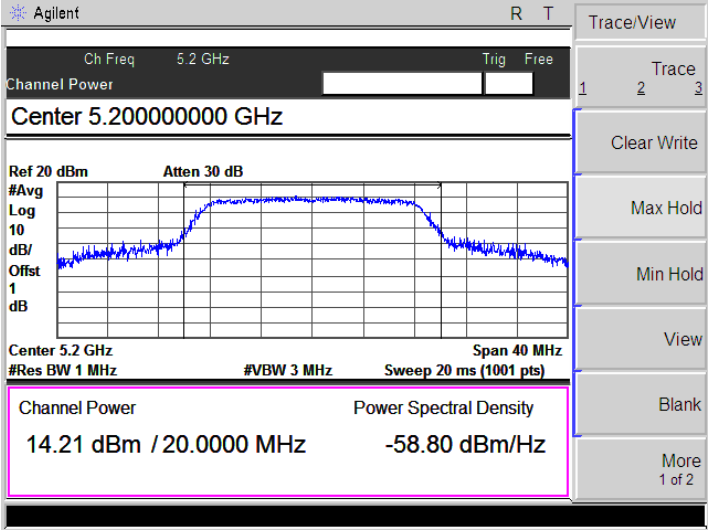
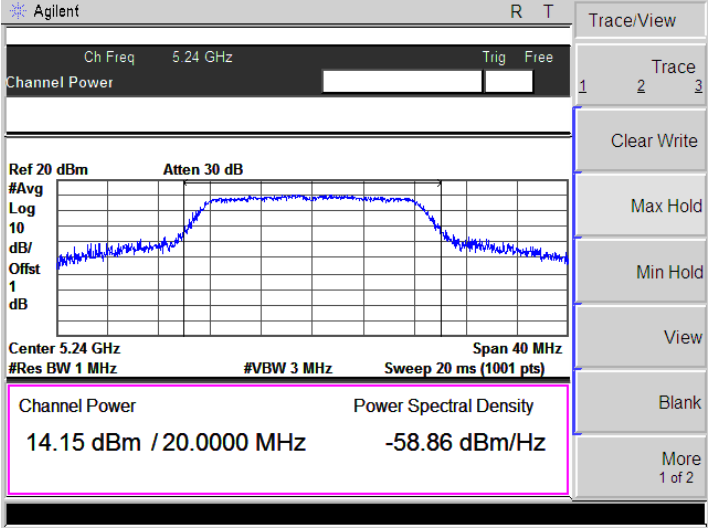
APPENDIX C

Maximum Conducted Output Power

U-NII-1:5150-5250MHz					
Test mode	Frequency MHz	Output Power dBm		Total dBm	Limit dBm
		ANT 0	ANT 1		
802.11a	5180	14.16	15.49	/	23.98
	5200	14.21	15.44	/	23.98
	5240	14.15	15.27	/	23.98
802.11n-HT20	5180	13.57	14.31	16.97	23.98
	5200	13.27	14.51	16.94	23.98
	5240	13.20	14.89	17.14	23.98
802.11n-HT40	5190	13.04	13.68	16.38	23.98
	5230	13.17	13.85	16.53	23.98
802.11ac VH80	5210	12.73	12.30	15.53	23.98

U-NII-3: 5725-5850MHz					
Test mode	Frequency MHz	Output Power dBm		Total dBm	Limit dBm
		ANT 0	ANT 1		
802.11a	5745	14.67	15.17	/	30
	5785	14.16	14.99	/	30
	5825	14.25	15.29	/	30
802.11n-HT20	5745	12.56	14.00	16.35	30
	5785	13.02	14.58	16.88	30
	5825	13.11	14.46	16.85	30
802.11n-HT40	5755	13.09	13.11	16.11	30
	5795	12.97	13.55	16.28	30
802.11ac VH80	5775	12.25	12.06	15.17	30

ANT 0
5150-5250MHz

802.11a-Low	
802.11a-Middle	
802.11a-High	

802.11n-HT20-Low	Agilent Ch Freq 5.18 GHz Channel Power Trig Free Ref 20 dBm #Avg Log 10 dB/Offst 1 dB Atten 30 dB Center 5.18 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power 13.57 dBm / 20.0000 MHz Power Spectral Density -59.72 dBm/Hz Freq/Channel Center Freq 5.18000000 GHz Start Freq 5.16000000 GHz Stop Freq 5.20000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-Middle	Agilent Ch Freq 5.2 GHz Channel Power Trig Free Center 5.20000000 GHz Ref 20 dBm #Avg Log 10 dB/Offst 1 dB Atten 30 dB Center 5.2 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power 13.27 dBm / 20.0000 MHz Power Spectral Density -59.74 dBm/Hz Trace/View 1 2 3 Trace Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT20-High	Agilent Ch Freq 5.24 GHz Channel Power Trig Free Ref 20 dBm #Avg Log 10 dB/Offst 1 dB Atten 30 dB Center 5.24 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power 13.20 dBm / 20.0000 MHz Power Spectral Density -59.81 dBm/Hz Trace/View 1 2 3 Trace Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT40-Low	Agilent Ch Freq 5.19 GHz Channel Power Trig Free Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.19 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Channel Power Power Spectral Density 13.04 dBm / 40.0000 MHz -62.98 dBm/Hz Freq/Channel Center Freq 5.19000000 GHz Start Freq 5.15000000 GHz Stop Freq 5.23000000 GHz CF Step 8.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT40-High	Agilent Ch Freq 5.23 GHz Channel Power Trig Free Center 5.230000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.23 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Channel Power Power Spectral Density 13.17 dBm / 40.0000 MHz -62.85 dBm/Hz Trace/View 1 2 3 Trace Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11ac-HT80	Agilent Ch Freq 5.21 GHz Channel Power Trig Free Center 5.210000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.21 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 160 MHz Channel Power Power Spectral Density 12.73 dBm / 80.0000 MHz -66.31 dBm/Hz Freq/Channel Center Freq 5.21000000 GHz Start Freq 5.13000000 GHz Stop Freq 5.29000000 GHz CF Step 16.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

5725-5850MHz

802.11a-Low	Agilent R T Ch Freq 5.745 GHz Trig Free Channel Power Center 5.74500000 GHz Ref 20 dBm Atten 30 dB #Avg Log dB/ Offst dB Center 5.745 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power Power Spectral Density 14.67 dBm / 20.0000 MHz -58.35 dBm/Hz Freq/Channel Center Freq 5.74500000 GHz Start Freq 5.72500000 GHz Stop Freq 5.76500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11a-Middle	Agilent R T Ch Freq 5.785 GHz Trig Free Channel Power Center 5.78500000 GHz Ref 20 dBm Atten 30 dB #Avg Log dB/ Offst dB Center 5.785 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power Power Spectral Density 14.16 dBm / 20.0000 MHz -58.85 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11a-High	Agilent R T Ch Freq 5.825 GHz Trig Free Channel Power Center 5.825 GHz Ref 20 dBm Atten 30 dB #Avg Log dB/ Offst dB Center 5.825 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power Power Spectral Density 14.25 dBm / 20.0000 MHz -58.76 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT20-Low	Agilent Ch Freq 5.745 GHz Channel Power Center 5.745000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offst 1 dB Center 5.745 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power Power Spectral Density 12.56 dBm / 20.0000 MHz -60.46 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT20-Middle	Agilent Ch Freq 5.785 GHz Channel Power Center 5.785000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offst 1 dB Center 5.785 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power Power Spectral Density 13.02 dBm / 20.0000 MHz -60.54 dBm/Hz Freq/Channel Center Freq 5.78500000 GHz Start Freq 5.76500000 GHz Stop Freq 5.80500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-High	Agilent Ch Freq 5.825 GHz Channel Power Center 5.825000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offst 1 dB Center 5.825 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power Power Spectral Density 13.11 dBm / 20.0000 MHz -59.90 dBm/Hz Freq/Channel Center Freq 5.82500000 GHz Start Freq 5.80500000 GHz Stop Freq 5.84500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

802.11n-HT40-Low	Agilent Ch Freq 5.756 GHz Channel Power Center 5.75000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offst 1 dB Center 5.755 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Channel Power Power Spectral Density 13.09 dBm / 40.0000 MHz -62.93 dBm/Hz Trace/View 1 2 3 Trace Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT40-High	Agilent Ch Freq 5.795 GHz Channel Power Center 5.79500000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offst 1 dB Center 5.795 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Channel Power Power Spectral Density 12.97 dBm / 40.0000 MHz -63.05 dBm/Hz Trace/View 1 2 3 Trace Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11ac-HT80	Agilent Ch Freq 5.775 GHz Channel Power Center 5.77500000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offst 1 dB Center 5.775 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 160 MHz Channel Power Power Spectral Density 12.25 dBm / 80.0000 MHz -66.78 dBm/Hz Freq/Channel Center Freq 5.77500000 GHz Start Freq 5.69500000 GHz Stop Freq 5.85500000 GHz CF Step 16.0000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

ANT 1
5150-5250MHz

802.11a-Low	Agilent Ch Freq 5.18 GHz Channel Power Trig Free Ref 20 dBm Atten 30 dB #Avg 10 Log dB/ Offst 1 dB Center 5.18 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power 15.49 dBm / 20.0000 MHz Power Spectral Density -57.53 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11a-Middle	Agilent Ch Freq 5.2 GHz Channel Power Trig Free Center 5.200000000 GHz Ref 20 dBm Atten 30 dB #Avg 10 Log dB/ Offst 1 dB Center 5.2 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power 15.44 dBm / 20.0000 MHz Power Spectral Density -57.58 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11a-High	Agilent Ch Freq 5.24 GHz Channel Power Trig Free Center 5.240000000 GHz Ref 20 dBm Atten 30 dB #Avg 10 Log dB/ Offst 1 dB Center 5.24 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power 15.27 dBm / 20.0000 MHz Power Spectral Density -57.74 dBm/Hz Freq/Channel Center Freq 5.24000000 GHz Start Freq 5.22000000 GHz Stop Freq 5.26000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

802.11n-HT20-Low	Agilent Ch Freq 5.18 GHz Channel Power Trig Free Ref 20 dBm Atten 30 dB #Avg 10 Log dB/ Offst 1 dB Center 5.18 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power Power Spectral Density 14.31 dBm / 20.0000 MHz -58.70 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT20-Middle	Agilent Ch Freq 5.2 GHz Channel Power Trig Free Center 5.20000000 GHz Ref 20 dBm Atten 30 dB #Avg 10 Log dB/ Offst 1 dB Center 5.2 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power Power Spectral Density 14.51 dBm / 20.0000 MHz -58.51 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT20-High	Agilent Ch Freq 5.24 GHz Channel Power Trig Free Center 5.24000000 GHz Ref 20 dBm Atten 30 dB #Avg 10 Log dB/ Offst 1 dB Center 5.24 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power Power Spectral Density 14.89 dBm / 20.0000 MHz -59.18 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT40-Low	Agilent Ch Freq 5.19 GHz Trig Free Channel Power Center 5.190000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offst 1 dB Center 5.19 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Channel Power Power Spectral Density 13.68 dBm / 40.0000 MHz -62.34 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT40-High	Agilent Ch Freq 5.23 GHz Trig Free Channel Power Center 5.230000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offst 1 dB Center 5.23 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Channel Power Power Spectral Density 13.85 dBm / 40.0000 MHz -62.17 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11ac-HT80	Agilent Ch Freq 5.21 GHz Trig Free Channel Power Center 5.210000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offst 1 dB Center 5.21 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 160 MHz Channel Power Power Spectral Density 12.30 dBm / 80.0000 MHz -66.73 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

5725-5850MHz

802.11a-Low	Agilent R T Ch Freq 5.745 GHz Channel Power Center 5.74500000 GHz Ref 20 dBm Atten 30 dB #Avg 10 Log dB/ Offst 1 dB Center 5.745 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power Power Spectral Density 15.17 dBm / 20.0000 MHz -57.84 dBm/Hz Freq/Channel Center Freq 5.74500000 GHz Start Freq 5.72500000 GHz Stop Freq 5.76500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11a-Middle	Agilent R T Ch Freq 5.785 GHz Channel Power Center 5.78500000 GHz Ref 20 dBm Atten 30 dB #Avg 10 Log dB/ Offst 1 dB Center 5.785 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power Power Spectral Density 14.99 dBm / 20.0000 MHz -58.02 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11a-High	Agilent R T Ch Freq 5.825 GHz Channel Power Center 5.825 GHz Ref 20 dBm Atten 30 dB #Avg 10 Log dB/ Offst 1 dB Center 5.825 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power Power Spectral Density 15.29 dBm / 20.0000 MHz -57.72 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT20-Low	Agilent Ch Freq 5.745 GHz Channel Power Center 5.745000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offst 1 dB Center 5.745 GHz #Res BW 1 MHz #VBW 3 MHz Span 40 MHz Sweep 20 ms (1001 pts) Channel Power Power Spectral Density 14.00 dBm / 20.0000 MHz -59.01 dBm/Hz Freq/Channel Center Freq 5.74500000 GHz Start Freq 5.72500000 GHz Stop Freq 5.76500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-Middle	Agilent Ch Freq 5.785 GHz Channel Power Center 5.785000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offst 1 dB Center 5.785 GHz #Res BW 1 MHz #VBW 3 MHz Span 40 MHz Sweep 20 ms (1001 pts) Channel Power Power Spectral Density 14.58 dBm / 20.0000 MHz -58.43 dBm/Hz Trace/View 1 Trace 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT20-High	Agilent Ch Freq 5.825 GHz Channel Power Center 5.825000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offst 1 dB Center 5.825 GHz #Res BW 1 MHz #VBW 3 MHz Span 40 MHz Sweep 20 ms (1001 pts) Channel Power Power Spectral Density 14.46 dBm / 20.0000 MHz -58.55 dBm/Hz Trace/View 1 Trace 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT40-Low	Agilent Ch Freq5.756 GHz TrigFree Channel Power Center 5.755000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.755 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Channel Power Power Spectral Density 13.11 dBm / 40.0000 MHz -62.91 dBm/Hz Freq/Channel Center Freq5.75500000 GHz Start Freq5.71500000 GHz Stop Freq5.79500000 GHz CF Step8.00000000 MHz AutoMan Freq Offset0.00000000 Hz Signal TrackOnOff Scale TypeLogLin
802.11n-HT40-High	Agilent Ch Freq5.795 GHz TrigFree Channel Power Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.795 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Channel Power Power Spectral Density 13.55 dBm / 40.0000 MHz -62.47 dBm/Hz Freq/Channel Center Freq5.79500000 GHz Start Freq5.75500000 GHz Stop Freq5.83500000 GHz CF Step8.00000000 MHz AutoMan Freq Offset0.00000000 Hz Signal TrackOnOff Scale TypeLogLin
802.11ac-HT80	Agilent Ch Freq5.775 GHz TrigFree Channel Power Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.775 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 160 MHz Channel Power Power Spectral Density 12.06 dBm / 80.0000 MHz -66.97 dBm/Hz Trace/View Trace123 Clear Write Max Hold Min Hold View Blank More1 of 2

APPENDIX D

Frequency Stability

ANT 0

U-NII-1:5150-5250MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VDC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	120	-30	3018	0.5803
100%		-20	3011	0.5791
100%		-10	3016	0.5799
100%		0	3017	0.5803
100%		+10	3010	0.5788
100%		+20	3007	0.5782
100%		+30	3015	0.5798
100%		+40	3011	0.5790
100%		+50	3008	0.5785
Low Battery power	132	+20	3017	0.5803
High Battery power	108	+20	3009	0.5787

U-NII-1:5725-5850MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VDC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	120	-30	3017	0.5224
100%		-20	3014	0.5220
100%		-10	3009	0.5211
100%		0	3016	0.5222
100%		+10	3016	0.5222
100%		+20	3012	0.5216
100%		+30	3014	0.5219
100%		+40	3012	0.5215
100%		+50	3008	0.5208
Low Battery power	132	+20	3010	0.5213
High Battery power	108	+20	3008	0.5209

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U-NII-1:5150-5250MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VDC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	120	-30	3010	0.5788
100%		-20	3014	0.5796
100%		-10	3012	0.5791
100%		0	3011	0.5791
100%		+10	3014	0.5796
100%		+20	3012	0.5792
100%		+30	3008	0.5784
100%		+40	3007	0.5783
100%		+50	3006	0.5782
Low Battery power	132	+20	3015	0.5799
High Battery power	108	+20	3005	0.5779

U-NII-1:5725-5850MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VDC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	120	-30	3017	0.5225
100%		-20	3015	0.5220
100%		-10	3015	0.5221
100%		0	3013	0.5217
100%		+10	3008	0.5209
100%		+20	3006	0.5206
100%		+30	3009	0.5210
100%		+40	3010	0.5212
100%		+50	3004	0.5202
Low Battery power	132	+20	3012	0.5215
High Battery power	108	+20	3005	0.5203

APPENDIX PHOTOGRAPHS

Please refer to “ANNEX”

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