

FCC PART 15E TEST REPORT FOR CERTIFICATION  
On Behalf of

Anhui Grizzly Vision Technology Co.,Ltd

65INCH SMART 4K UHD WEBOS TV

Model Number: RWOSU6547-B

Additional Model: RWOSBU6548, RWOSU6549, RWOSQU6550

FCC ID: 2AXAQ-RCA-HX-65

Prepared for:	Anhui Grizzly Vision Technology Co.,Ltd
	High-tech industrial park,high-tech zone, Huainan, Anhui 232000 China
Prepared By:	EST Technology Co., Ltd.
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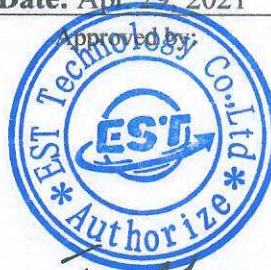
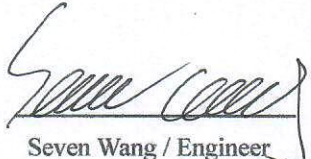

Report Number:	ESTE-R2104232
Date of Test:	Mar. 15~Apr. 28, 2021
Date of Report:	Apr. 29, 2021

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### EST Technology Co., Ltd.

<b>Applicant:</b>	Anhui Grizzly Vision Technology Co.,Ltd		
<b>Address:</b>	High-tech industrial park,high-tech zone, Huainan, Anhui 232000 China		
<b>Manufacturer:</b>	Anhui Grizzly Vision Technology Co.,Ltd		
<b>Address:</b>	High-tech industrial park,high-tech zone, Huainan, Anhui 232000 China		
<b>E.U.T:</b>	65INCH SMART 4K UHD WEBOS TV		
<b>Model Number:</b>	RWOSU6547-B		
<b>Additional Model:</b>	RWOSBU6548, RWOSU6549, RWOSQU6550 (They are identical except model name)		
<b>Power Supply:</b>	AC 120V, 50/60Hz		
<b>Trade Name:</b>	ICONE GOLD	<b>Serial No.:</b>	-----
<b>Date of Receipt:</b>	Mar. 15, 2021	<b>Date of Test:</b>	Mar. 15~Apr. 28, 2021
<b>Test Specification:</b>	FCC Part 15 Subpart E 15.407 ANSI C63.10:2013 FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01 FCC KDB 662911 D01 Multiple Transmitter Output v02r01		
<b>Test Result:</b>	The device described above is tested by EST Technology Co., Ltd. The measurement results were contained in this test report and EST Technology Co., Ltd. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the FCC Rules and Regulations Part 15 Subpart E requirements.  This report applies to above tested sample only and shall not be reproduced in part without written approval of EST Technology Co., Ltd. <p style="text-align: right;"><b>Date: Apr. 29, 2021</b></p>		
<b>Prepared by:</b>	<b>Reviewed by:</b>		
 Ring Yang / Assistant	 Seven Wang / Engineer	 Iceman Hu / Manager	
<b>Other Aspects:</b>	None.		
Abbreviations: OK/P=passed    fail/F=failed    n.a/N=not applicable    E.U.T=equipment under tested			
This test report is based on a single evaluation of one sample of above mentioned products ,It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd.			

# 1. GENERAL INFORMATION

## 1.1. Description of Device (EUT)

FCC ID	:	2AXAQ-RCA-HX-65
Product Name	:	65INCH SMART 4K UHD WEBOS TV
Model Number	:	RWOSU6547-B
Software Version	:	V 1.0
Hardware Version	:	V 1.0
Operation frequency	:	U-NII-1: 5150 MHz~5250 MHz U-NII-3: 5725 MHz~5850 MHz
Number of channel	:	U-NII-1: IEEE 802.11a / n HT20 / ac VHT20: 4 Channels; IEEE 802.11n HT40 / ac VHT40: 2 Channels; IEEE 802.11ac VHT80: 1 Channel. U-NII-3: IEEE 802.11a / n HT20 / ac VHT20: 5 Channels; IEEE 802.11n HT40 / ac VHT40: 2 Channels; IEEE 802.11ac VHT80: 1 Channel.
Modulation	:	OFDM(QPSK, BPSK, 16-QAM, 64-QAM,256-QAM)
Transmit Data Rate	:	IEEE 802.11a: 54, 48, 36, 24, 18, 12, 9, 6Mbps; IEEE 802.11n: up to 300Mbps; IEEE 802.11ac: up to 866.6Mbps;
Channels Spacing	:	IEEE 802.11a: 20MHz; IEEE 802.11n HT20: 20MHz; IEEE 802.11n HT40: 40MHz; IEEE 802.11ac VHT20: 20MHz; IEEE 802.11ac VHT40: 40MHz; IEEE 802.11ac VHT80: 80MHz;

Transmit Power	:	U-NII-1	IEEE 802.11a: 9.72dBm IEEE 802.11n HT20: 12.60dBm IEEE 802.11n HT40: 12.97dBm IEEE 802.11ac VHT20: 12.69dBm IEEE 802.11ac VHT40: 12.48dBm IEEE 802.11ac VHT80: 11.85dBm
		U-NII-3	IEEE 802.11a: 9.25dBm IEEE 802.11n HT20: 13.20dBm IEEE 802.11n HT40: 13.28dBm IEEE 802.11ac VHT20: 13.30dBm IEEE 802.11ac VHT40: 12.83dBm IEEE 802.11ac VHT80: 12.38dBm
Sample Type	:	Prototype production	

**Note:**

For a more detailed features description, please refer to the manufacturer’s specifications or the user's manual.



1.2. The antenna information for EUT

Ant No.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	-	-	Internal	-	2
2	-	-	Internal	-	2

Remark:

- (1) The EUT can work as CDD mode in IEEE 802.11n and IEEE 802.11ac, and can operate with one spatial stream.

According to KDB 662911 F 2) f) (i):

$$\text{Directional gain} = 2\text{dBi} + 10 \times \log(2/1)\text{dB} = 5.01\text{dBi} < 6\text{dBi}$$

So, the output power limit and power spectral density do not need to be reduced.

- (2) The EUT can work as CDD mode in IEEE 802.11n and IEEE 802.11ac, and can operate with one spatial stream.

According to KDB 662911 F 2) f) (ii):

$$\text{Directional gain} = 10 \times \log[(10^{4/20} + 10^{5/20})^2 / 2] = 7.52\text{dBi} > 6\text{dBi}$$

So, the output power limit and power spectral density should be reduced.

For output Power:

U-NII-1 Limit is  $24\text{dBm} - (7.52\text{dBi} - 6\text{dBi}) = 22.48\text{dBm}$

U-NII-2A&U-NII-2C Limit is  $24\text{dBm} - (7.52\text{dBi} - 6\text{dBi}) = 22.48\text{dBm}$

U-NII-3 Limit is  $30\text{dBm} - (7.52\text{dBi} - 6\text{dBi}) = 28.48\text{dBm}$

For power spectral density:

U-NII-1 Limit is  $11\text{dBm/MHz} - (7.52\text{dBi} - 6\text{dBi}) = 9.48\text{dBm/MHz}$

U-NII-2A&U-NII-2C Limit is  $11\text{dBm/MHz} - (7.52\text{dBi} - 6\text{dBi}) = 9.48\text{dBm/MHz}$

U-NII-3 Limit is  $30\text{dBm}/500\text{KHz} - (7.52\text{dBi} - 6\text{dBi}) = 28.48\text{dBm}/500\text{KHz}$

- (3) After pre-test all antenna configurations, the worst case configuration is listed below.

TX Mode \ ANT No.	SISO Configuration	MIMO Configuration
IEEE 802.11a	ANT 1 and ANT2	/
IEEE 802.11n HT20	/	ANT1+ANT2
IEEE 802.11n HT40	/	ANT1+ANT2
IEEE 802.11ac VHT20	/	ANT1+ANT2
IEEE 802.11ac VHT40	/	ANT1+ANT2
IEEE 802.11ac VHT80	/	ANT1+ANT2

## 2. SUMMARY OF TEST

### 2.1. Summary of test result

Report Section	Description of Test Item	FCC Standard Section	Results
3	6dB Bandwidth & 26dB Bandwidth & 99% Occupied Bandwidth	15.407(a) 15.407(e)	PASS
4	Maximum Conducted Output Power	15.407(a)	PASS
5	Peak Power Spectral Density	15.407(a)	PASS
6	Unwanted Emissions and Band Edge	15.205 15.209 15.407(b)	PASS
7	Frequency Stability	15.407(g)	PASS
8	AC Power Line Conducted Emissions	15.207 15.407(b)(6)	PASS
9	Antenna Requirement	15.203	PASS

Note:

(1) "N/A" denotes test is not applicable in this test report

## 2.2. Test Facilities

EMC Lab : Certificated by CNAS, CHINA  
Registration No.: L5288  
This Certificate is valid until: November 12, 2023

Certificated by FCC, USA  
Designation Number: CN1215  
This Certificate is valid until: January 31, 2022

Certificated by A2LA, USA  
Registration No.: 4366.01  
This Certificate is valid until: January 31, 2022

Certificated by Industry Canada  
CAB identifier No.: CN0035  
This Certificate is valid until: January 31, 2022

Certificated by VCCI, Japan  
Registration No.:C-14103; T-20073; R-13663;  
R-20103; G-20097  
Date of registration: Apr. 20, 2020  
This Certificate is valid until: Apr. 19, 2023

Certificated by TUV Rheinland, Germany  
Registration No.: UA 50413872 0001  
Date of registration: July 31, 2018

Certificated by Intertek  
Registration No.: 2011-RTL-L2-64  
Date of registration: November 08, 2018

Name of Firm : EST Technology Co., Ltd.

Site Location : Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China



### 2.3. Measurement uncertainty for EST Technology Co., Ltd.

Test Item	Uncertainty
Uncertainty for Conduction emission test	2.54dB
Uncertainty for Radiation Emission test (30MHz-1GHz)	3.62
Uncertainty for Radiation Emission test (1GHz to 18GHz)	4.86
Uncertainty for spurious emissions test (18GHz to 40GHz)	4.67
Uncertainty for radio frequency	7×10-8
Uncertainty for conducted RF Power	1.08dB
Uncertainty for Power density test	0.26dB
Temperature	±0.6°C
Humidity	±4.0 %
Volatage DC	±1.0%
Volatage (AC, <10KHz)	±1.5%

Note:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

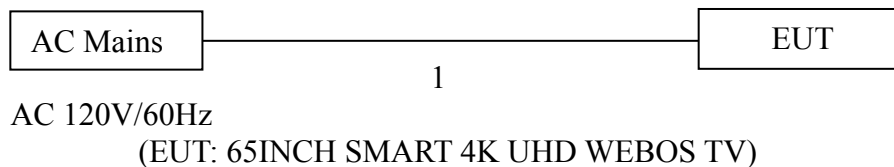
### 2.4. Assistant equipment used for test

Item	Equipment	Brand	Model Name/Type No.	FCC ID	Series No.
-	-	-	-	-	-

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	1.5m	AC Cable

### 2.5. Block Diagram

For radiated emissions test: EUT was placed on a turn table, which is 0.8 (or 1.5) meter high above ground.



## 2.6. Test Mode

Pre-scan has been combined all possible modulations and data rates to determine the worst case test mode, the worst case test mode was selected for the final test as listed below.

Test Item	Test Mode	Channel	Modulation	Data rate
6dB Bandwidth	IEEE 802.11a	149/157/165	OFDM	6Mbps
	IEEE 802.11n HT20	149/157/165	OFDM	MCS0
	IEEE 802.11n HT40	151/159	OFDM	MCS0
	IEEE 802.11ac VHT20	149/157/165	OFDM	MCS0
	IEEE 802.11ac VHT40	151/159	OFDM	MCS0
	IEEE 802.11ac VHT80	155	OFDM	MCS0
26dB Bandwidth	IEEE 802.11a	36/40/48/52/60/64/100/116/140	OFDM	6Mbps
	IEEE 802.11n HT20	36/40/48/52/60/64/100/116/140	OFDM	MCS0
	IEEE 802.11n HT40	38/46/54/62/102/114/134	OFDM	MCS0
	IEEE 802.11ac VHT20	36/40/48/52/60/64/100/116/140	OFDM	MCS0
	IEEE 802.11ac VHT40	38/46/54/62/102/114/134	OFDM	MCS0
	IEEE 802.11ac VHT80	42/58/106/122	OFDM	MCS0
99% Occupied Bandwidth	IEEE 802.11a	36/40/48/52/60/64/100/116/140/ 149/157/165	OFDM	6Mbps
	IEEE 802.11n HT20	36/40/48/52/60/64/100/116/140/ 149/157/165	OFDM	MCS0
	IEEE 802.11n HT40	38/46/54/62/102/114/134/151/159	OFDM	MCS0
	IEEE 802.11ac VHT20	36/40/48/52/60/64/100/116/140/ 149/157/165	OFDM	MCS0
	IEEE 802.11ac VHT40	38/46/54/62/102/114/134/151/159	OFDM	MCS0
	IEEE 802.11ac VHT80	42/58/106/122/155	OFDM	MCS0
Maximum Conducted Output Power	IEEE 802.11a	36/40/48/52/60/64/100/116/140/ 149/157/165	OFDM	6Mbps
	IEEE 802.11n HT20	36/40/48/52/60/64/100/116/140/ 149/157/165	OFDM	MCS0
	IEEE 802.11n HT40	38/46/54/62/102/114/134/151/159	OFDM	MCS0
	IEEE 802.11ac VHT20	36/40/48/52/60/64/100/116/140/ 149/157/165	OFDM	MCS0
	IEEE 802.11ac VHT40	38/46/54/62/102/114/134/151/ 159	OFDM	MCS0
	IEEE 802.11ac VHT80	42/58/106/122/155	OFDM	MCS0

Peak Power Spectral Density	IEEE 802.11a	36/40/48/52/60/64/100/116/140/149/157/165	OFDM	6Mbps
	IEEE 802.11n HT20	36/40/48/52/60/64/100/116/140/149/157/165	OFDM	MCS0
	IEEE 802.11n HT40	38/46/54/62/102/114/134/151/159	OFDM	MCS0
	IEEE 802.11ac VHT20	36/40/48/52/60/64/100/116/140/149/157/165	OFDM	MCS0
	IEEE 802.11ac VHT40	38/46/54/62/102/114/134/151/159	OFDM	MCS0
	IEEE 802.11ac VHT80	42/58/106/122/155	OFDM	MCS0
Unwanted Emissions and Band Edge(Above 1GHz)	IEEE 802.11a	36/40/48/52/60/64/100/116/140/149/157/165	OFDM	6Mbps
	IEEE 802.11n HT20	36/40/48/52/60/64/100/116/140/149/157/165	OFDM	MCS0
	IEEE 802.11n HT40	38/46/54/62/102/114/134/151/159	OFDM	MCS0
	IEEE 802.11ac VHT20	36/40/48/52/60/64/100/116/140/149/157/165	OFDM	MCS0
	IEEE 802.11ac VHT40	38/46/54/62/102/114/134/151/159	OFDM	MCS0
	IEEE 802.11ac VHT80	42/58/106/122/155	OFDM	MCS0
Unwanted Emissions Below 1GHz	IEEE 802.11a	100	OFDM	6Mbps
Frequency Stability	Unmodulation	36/64/100/149	N/A	N/A
AC Power Line Conducted Emissions	IEEE 802.11a	100	OFDM	6Mbps

Note:

1. In radiated measurement, the EUT had been pre-scan on the positioned of each 3 axis(X,Y,Z), the worst case was found when positioned on **X-plane**.

2.7. Channel List

Band	Mode	Channel	Frequency (MHz)
U-NII-1	IEEE 802.11a & n HT20 & ac VHT20	36	5180
		40	5200
		44	5220
		48	5240
	IEEE 802.11n HT40 & ac VHT40	38	5190
		46	5230
	IEEE 802.11ac VHT80	42	5210
U-NII-3	IEEE 802.11a & n HT20 & ac VHT20	149	5745
		153	5765
		157	5785
		161	5805
		165	5825
	IEEE 802.11n HT40 & ac VHT40	151	5755
		159	5795
	IEEE 802.11ac VHT80	155	5775

### 2.8. Power Setting of Test Software

Software Name	QATool_Dbg		
U-NII-1			
Frequency(MHz)	5180	5200	5240
IEEE 802.11a Setting	12	12	12
IEEE 802.11n HT20 Setting	12	12	12
IEEE 802.11ac VHT20 Setting	12	12	12
Frequency(MHz)	5190	5230	
IEEE 802.11n HT40 Setting	12	12	
IEEE 802.11ac VHT40 Setting	12	12	
Frequency(MHz)	5210		
IEEE 802.11ac VHT80 Setting	12		
U-NII-3			
Frequency(MHz)	5745	5785	5825
IEEE 802.11a Setting	18	18	18
IEEE 802.11n HT20 Setting	18	18	18
IEEE 802.11ac VHT20 Setting	18	18	18
Frequency(MHz)	5755	5795	
IEEE 802.11n HT40 Setting	18	18	
IEEE 802.11ac VHT40 Setting	18	18	
Frequency(MHz)	5775		
IEEE 802.11ac VHT80 Setting	18		

## 2.9. Duty Cycle of Test Signal

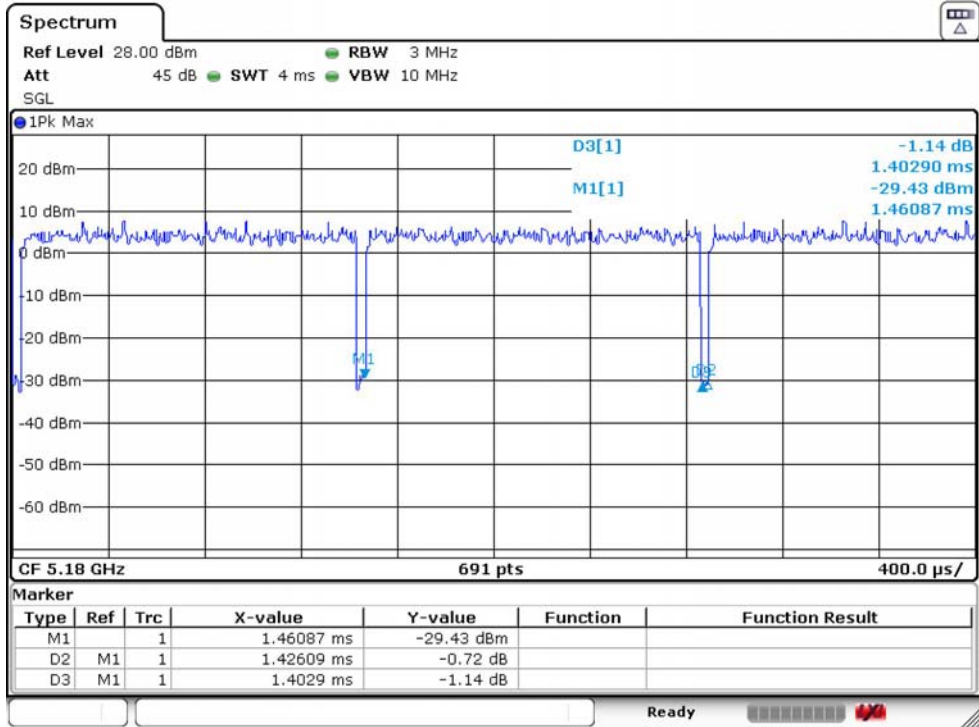
Temperature	26.5°C	Relative Humidity		48%	Test Voltage		AC 120V/60Hz
Mode	Frequency (MHz)	On time (ms)	Total Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T (Hz)	VBW Setting (dB)
IEEE 802.11a	5180	1.40290	1.42609	98.37	0.00	10	1952
IEEE 802.11n HT20	5180	1.31594	1.33913	98.27	0.00	10	1952
IEEE 802.11ac VHT20	5190	0.68986	0.71884	95.97	0.18	1450	1952
IEEE 802.11n HT40	5180	0.66087	0.68406	96.61	0.15	1513	1952
IEEE 802.11ac VHT40	5190	0.36522	0.38841	94.03	0.27	2738	1952
IEEE 802.11ac VHT80	5210	0.19130	0.22319	85.71	0.67	5227	1952

Note:

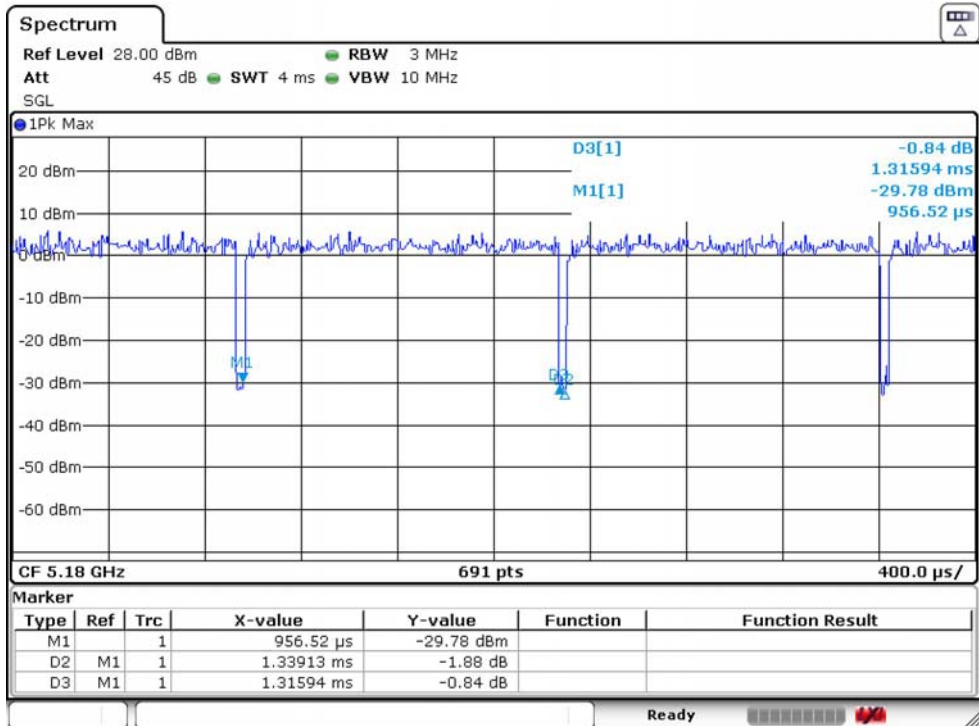
1. Duty Cycle=On Time/Total Time×100%.
2. Duty Factor=10×Log(1/Duty Cycle).
3. If duty cycle <98 %, the conducted average output power and average power spectral density should be add duty factor.
4. If duty cycle ≥98 %,the EUT is consider to be transmitting continuously,the conducted average output power and average power spectral density no need to add duty factor.
5. The on-time time is transmission duration(T).
6. The VBW Setting is use for RMS measurement in unwanted emissions and band edge(Above 1GHz ) test.



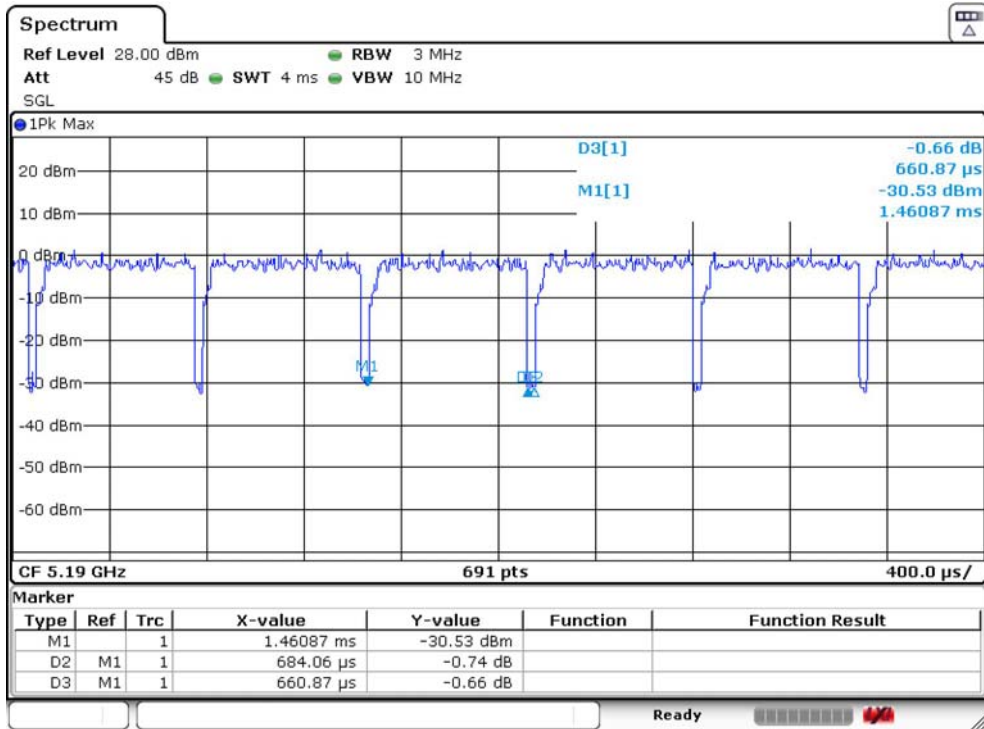
### IEEE 802.11a 5180MHz



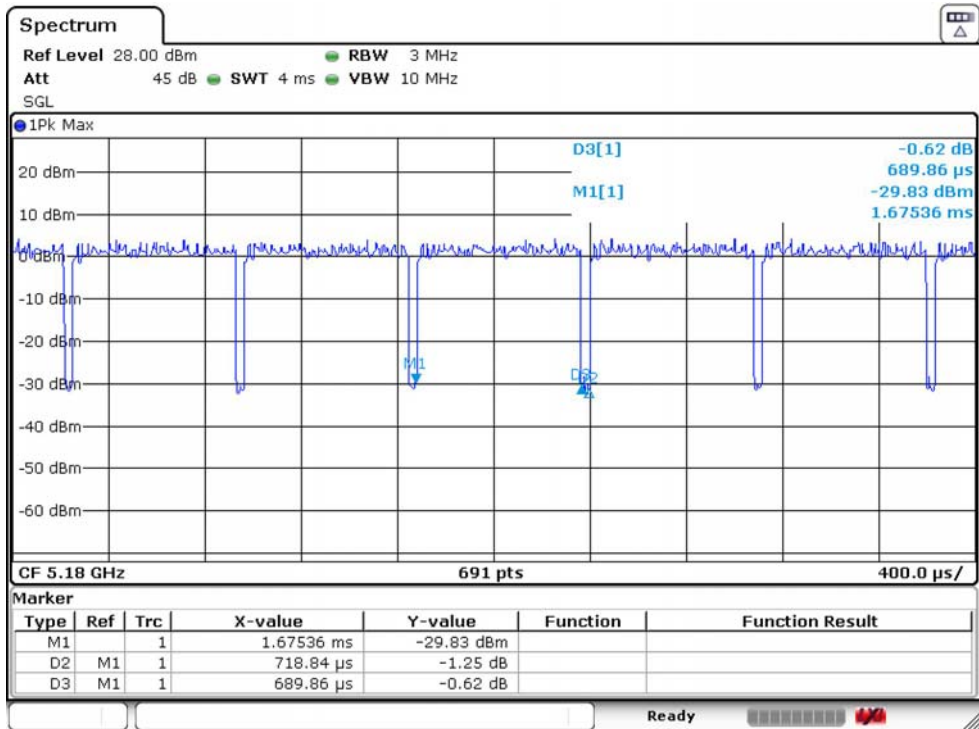
### IEEE 802.11n HT20 5180MHz



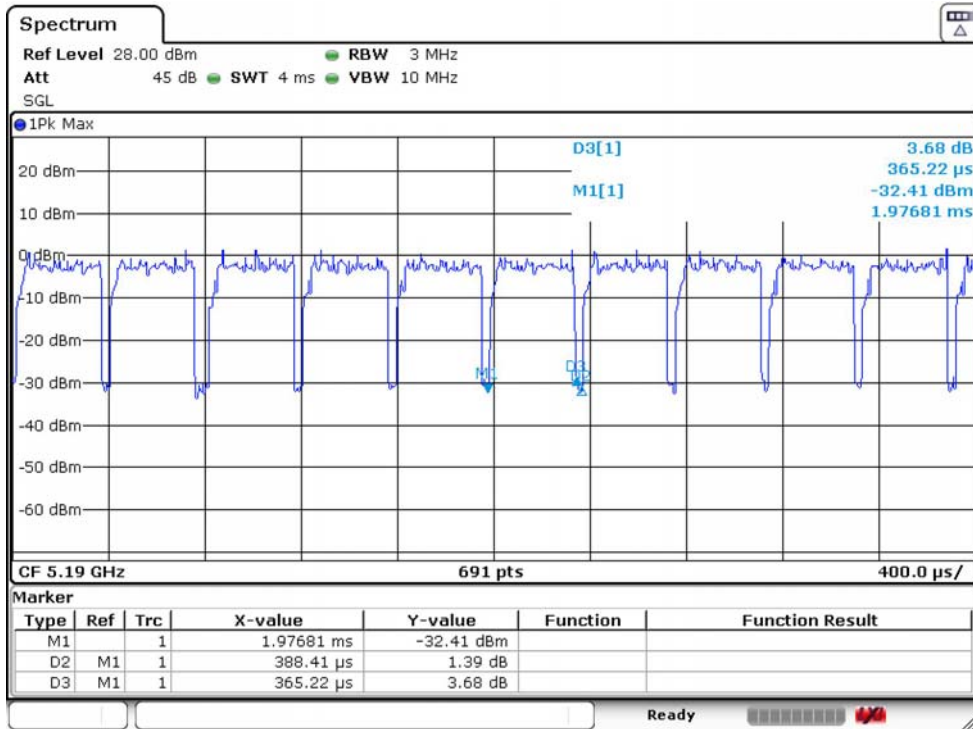
### IEEE 802.11n HT40 5190MHz



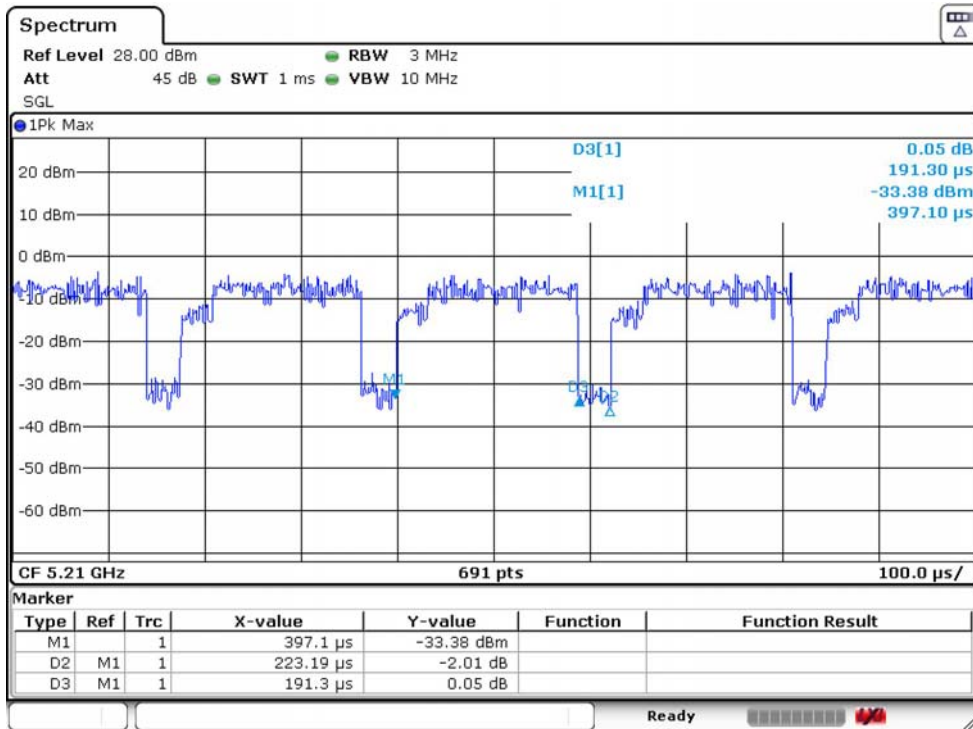
### IEEE 802.11ac VHT20 5180MHz



### IEEE 802.11ac VHT40 5190MHz



### IEEE 802.11ac VHT80 5210MHz



## 2.10. Test Equipment List

For AC power conducted emissions test						
Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESHS30	EST-E001	LISAI	June 13,20	1 Year
Artificial Mains Network	Rohde & Schwarz	ENV216	EST-E002	LISAI	June 13,20	1 Year
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	EST-E078	LISAI	June 13,20	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A

For radiated emissions test(9KHz-30MHz)						
Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESR7	EST-E047	LISAI	June 13,20	1 Year
Active Loop Antenna	SCHWARZECK	FMZB 1519B	EST-E054	LISAI	June 13,20	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A
9kHz-30MHz Cable	N/A	EST-001	N/A	N/A	N/A	N/A

For radiated emissions test(30MHz-1000MHz)						
Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESR7	EST-E047	LISAI	June 13,20	1 Year
Bilog Antenna	Teseq	CBL 6111D	EST-E034	LISAI	June 13,20	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A
30-1000MHz Cable	N/A	EST-002	N/A	N/A	N/A	N/A

For radiated emissions test(Above 1000MHz)						
Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.	Next Cal.
Horn Antenna	SCHWARZECK	BBHA 9120 D	EST-E031	LISAI	June 13,20	1 Year
Signal Amplifier	SCHWARZECK	BBV9718	EST-E032	LISAI	June 13,20	1 Year
Spectrum Analyzer	Rohde & Schwarz	FSV40	EST-E069	LISAI	June 13,20	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A
Above 1GHz Cable	N/A	EST-003	N/A	N/A	N/A	N/A

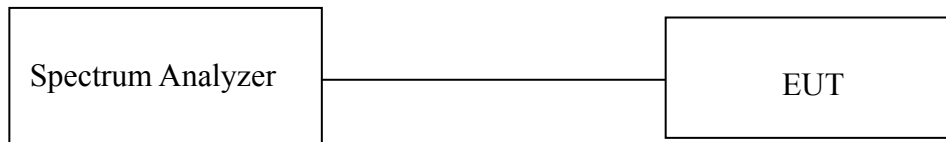
For connect EUT antenna terminal test						
Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.	Next Cal.
TS 8997	Rohde & Schwarz	/	/	/	/	/
Open Switch and Control Unit	Rohde & Schwarz	OSP-B157WB	EST-E036	LISAI	June 13,20	1 Year
Signal and Spectrum Analyzer	Rohde & Schwarz	FSV	EST-E037	LISAI	June 13,20	1 Year
Signal Generator	Rohde & Schwarz	SMB100A	EST-E038	LISAI	June 13,20	1 Year
Vector Signal Generator	Rohde & Schwarz	SMBV100A	EST-E039	LISAI	June 13,20	1 Year
Test Software	Rohde & Schwarz	WMS32	V10.50.00	N/A	N/A	N/A
Temperature controller	Terchy	MHQ	EST-E101	LISAI	June 13,20	1 Year

### 3. 6dB BANDWIDTH & 26dB BANDWIDTH & 99% OCCUPIED BANDWIDTH

#### 3.1. Limit

Band	Frequency (MHz)	Test Item	Limit
U-NII-1	5150-5250	26dB Bandwidth&99% Occupied Bandwidth	N/A
U-NII-2A	5250-5350	26dB Bandwidth&99% Occupied Bandwidth	N/A
U-NII-2C	5470-5725	26dB Bandwidth&99% Occupied Bandwidth	N/A
U-NII-3	5725-5850	6dB Bandwidth&99% Occupied Bandwidth	6dB Bandwidth $\geq$ 500KHz

#### 3.2. Test Setup



#### 3.3. Spectrum Analyzer Setting

6dB Bandwidth	
Spectrum Parameters	Setting
RBW	100KHz
VBW	300KHz
Span	40MHz(20MHz Bandwidth mode) 60MHz(40MHz Bandwidth mode) 120MHz(80MHz Bandwidth mode)
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

26dB Bandwidth	
Spectrum Parameters	Setting
RBW	approximately 1% of the emission bandwidth
VBW	>RBW
Span	40MHz(20MHz Bandwidth mode) 60MHz(40MHz Bandwidth mode) 120MHz(80MHz Bandwidth mode)
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold



99% Occupied Bandwidth	
Spectrum Parameters	Setting
RBW	1% to 5% of the OBW
VBW	approximately three times the RBW
Span	between 1.5 times and 5.0 times the OBW
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

### 3.4. Test Procedure

#### **For 26dB Bandwidth Measurement :**

- a. Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- b. Spectrum analyzer setting parameters in accordance with section 3.3.
- c. Set the EUT transmit continuously with maximum output power.
- d. Allow trace to stabilize, measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the instrument. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
- e. Repeat above procedures until all modes and channels were measured.
- f. Record the results in the test report.

#### **For 6dB Bandwidth Measurement :**

- a. Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- b. Spectrum analyzer setting parameters in accordance with section 3.3.
- c. Set the EUT transmit continuously with maximum output power.
- d. Allow trace to stabilize, 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.
- e. Repeat above procedures until all modes and channels were measured.
- f. Record the results in the test report.

#### **For 99% Occupied Bandwidth Measurement :**

- a. Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- b. Spectrum analyzer setting parameters in accordance with section 3.3.
- c. Set the EUT transmit continuously with maximum output power.
- d. Allow trace to stabilize, use the 99% power bandwidth function to measure bandwidth.
- e. Repeat above procedures until all modes and channels were measured.
- f. Record the results in the test report.

## 3.5. Test Result

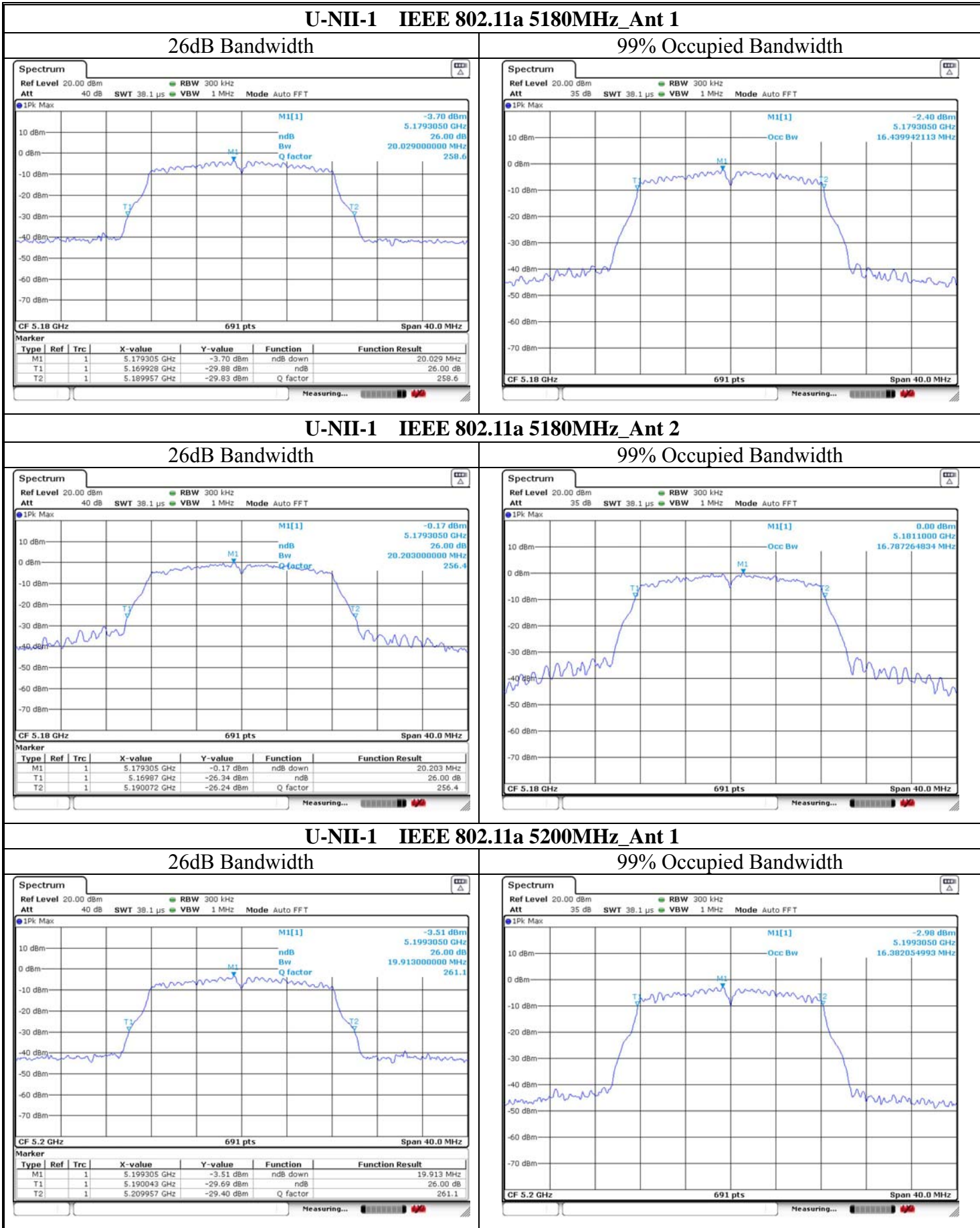
Temperature	26.5°C	Relative Humidity	48%	Test Voltage	AC 120V/60Hz			
26dB Bandwidth&99% Occupied Bandwidth								
AND	Test Mode	Fre (MHz)	26dB Bandwidth (MHz)		99% Occupied Bandwidth (MHz)		Calculate Power Limit (W)	Calculate Power Limit (dBm)
			Ant 1	Ant 2	Ant 1	Ant 2		
U-NII-1	IEEE 802.11a	5180	20.029	20.203	16.440	16.787	0.2500	23.98
		5200	19.913	20.145	16.382	16.729	0.2500	23.98
		5240	19.971	20.145	16.498	16.787	0.2500	23.98
	IEEE 802.11n HT20	5180	19.971	20.376	17.540	17.656	0.2500	23.98
		5200	20.203	20.492	17.482	17.656	0.2500	23.98
		5240	19.971	20.376	17.482	17.713	0.2500	23.98
	IEEE 802.11ac VHT20	5180	20.260	20.260	17.656	17.713	0.2500	23.98
		5200	20.260	20.260	17.656	17.656	0.2500	23.98
		5240	20.203	20.203	17.598	17.598	0.2500	23.98
	IEEE 802.11n HT40	5190	40.724	40.984	36.700	36.816	0.2500	23.98
		5230	40.637	40.810	36.700	36.700	0.2500	23.98
	IEEE 802.11ac VHT40	5190	40.724	40.810	36.585	36.700	0.2500	23.98
		5230	40.550	41.158	36.585	36.816	0.2500	23.98
	IEEE 802.11ac VHT80	5210	81.620	81.620	75.716	75.890	0.2500	23.98

Temperature	26.5℃	Relative Humidity	48%	Test Voltage	AC 120V/60Hz			
6dB Bandwidth&99% Occupied Bandwidth								
BAND	Test Mode	Fre (MHz)	6dB Bandwidth (MHz)		99% Occupied Bandwidth (MHz)		6dB BW Min Limit (MHz)	Result
			Ant 1	Ant 2	Ant 1	Ant 2		
U-NII-3	IEEE 802.11a	5745	15.224	15.282	16.440	16.787	0.5	PASS
		5785	15.282	15.456	16.382	16.845	0.5	PASS
		5825	15.282	15.224	16.440	16.671	0.5	PASS
	IEEE 802.11n HT20	5745	16.671	15.282	17.482	17.713	0.5	PASS
		5785	16.440	15.224	17.540	17.656	0.5	PASS
		5825	16.440	15.224	17.598	17.713	0.5	PASS
	IEEE 802.11ac VHT20	5745	15.224	15.282	17.598	17.656	0.5	PASS
		5785	15.861	15.282	17.598	17.598	0.5	PASS
		5825	16.440	15.224	17.598	17.598	0.5	PASS
	IEEE 802.11n HT40	5755	36.324	35.311	36.700	36.585	0.5	PASS
		5795	35.890	35.311	36.700	36.700	0.5	PASS
	IEEE 802.11ac VHT40	5755	35.311	35.311	36.585	36.585	0.5	PASS
		5795	35.311	35.311	36.585	36.585	0.5	PASS
	IEEE 802.11ac VHT80	5775	76.560	76.410	75.716	75.890	0.5	PASS

Note :

For Band U-NII-2A and U-NII-2C, the maximum conducted output power limit is 250mw or  $11+10 \times \text{Log B}$ , which is lesser, where B is the 26dB Bandwidth in MHz. So in this section, the maximum conducted output power limit can calculate with 26dB Bandwidth.

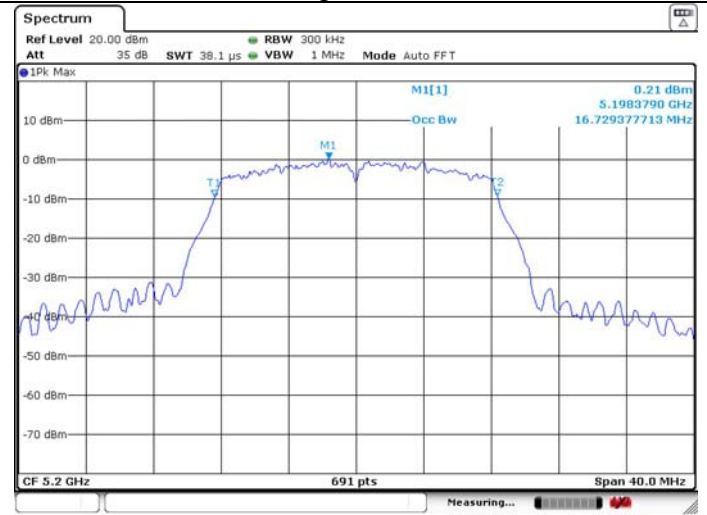
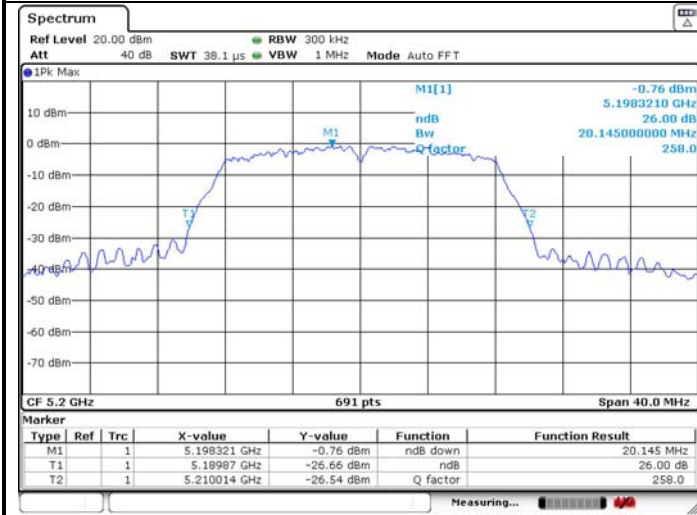
### 3.6. Test Result



**U-NII-1 IEEE 802.11a 5200MHz\_Ant 2**

26dB Bandwidth

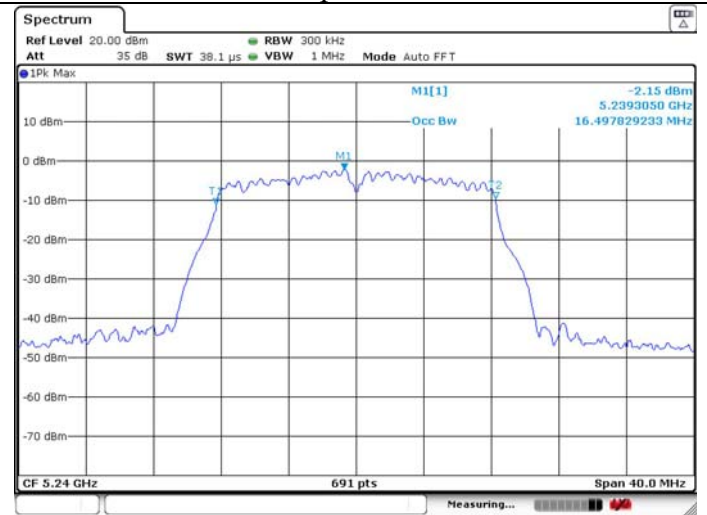
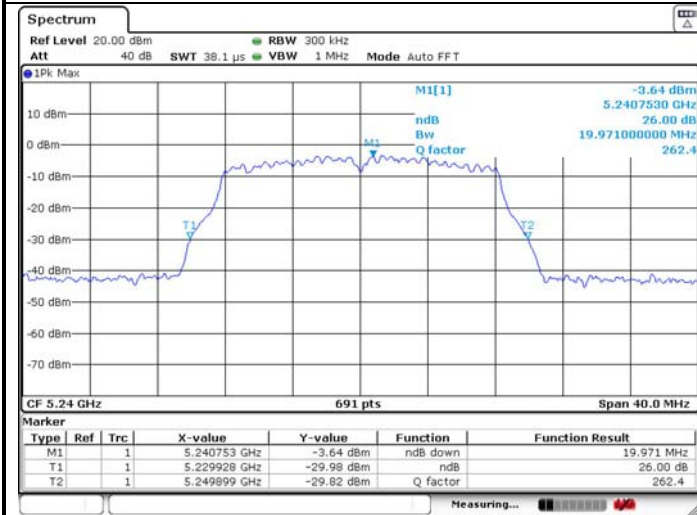
99% Occupied Bandwidth



**U-NII-1 IEEE 802.11a 5240MHz\_Ant 1**

26dB Bandwidth

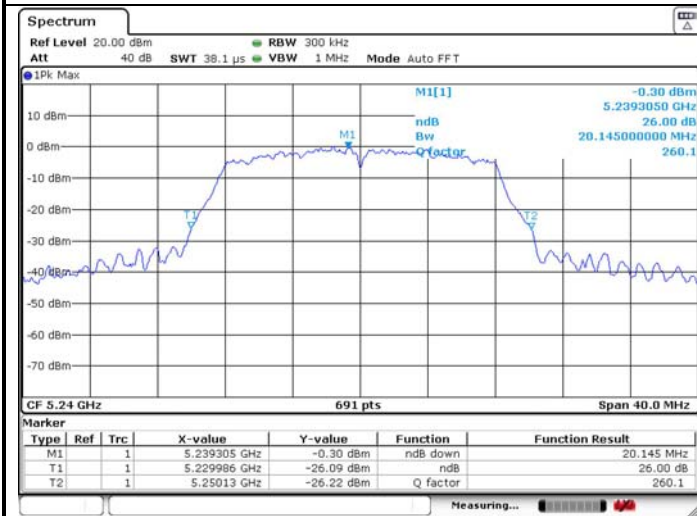
99% Occupied Bandwidth



**U-NII-1 IEEE 802.11a 5240MHz\_Ant 2**

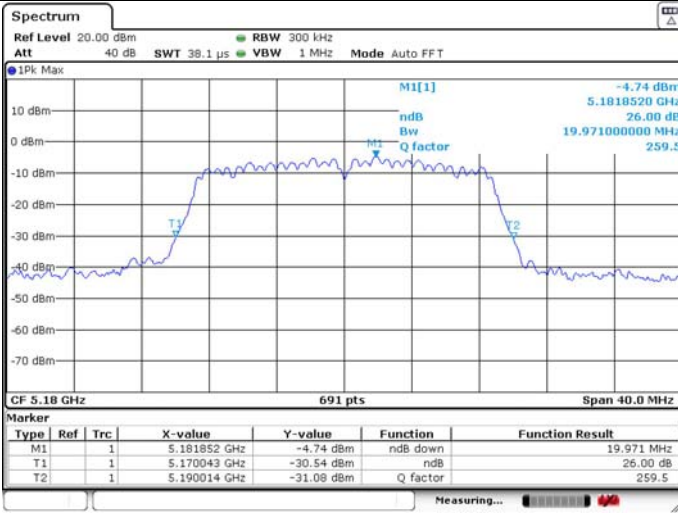
26dB Bandwidth

99% Occupied Bandwidth

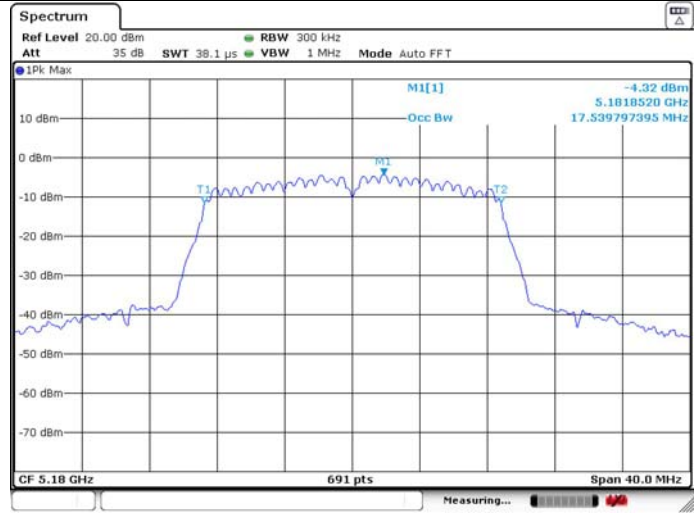


**U-NII-1 IEEE 802.11n HT20 5180MHz Ant 1**

26dB Bandwidth

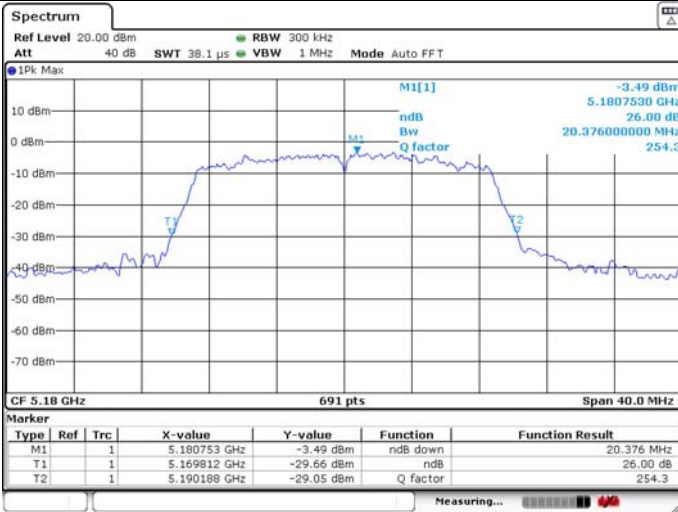


99% Occupied Bandwidth



**U-NII-1 IEEE 802.11n HT20 5180MHz Ant 2**

26dB Bandwidth

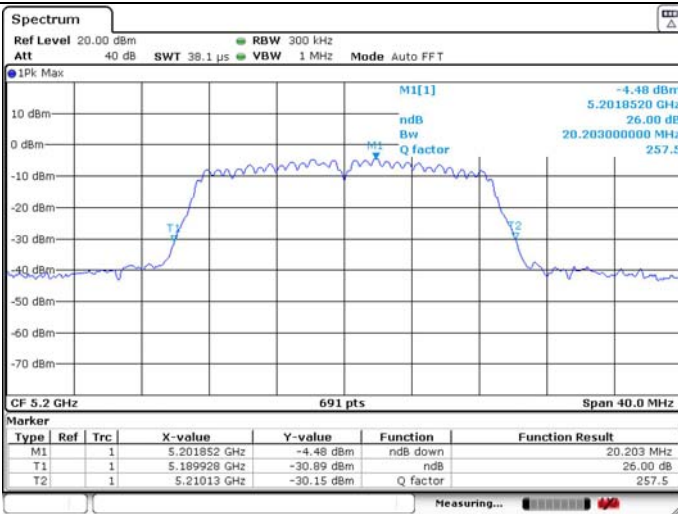


99% Occupied Bandwidth

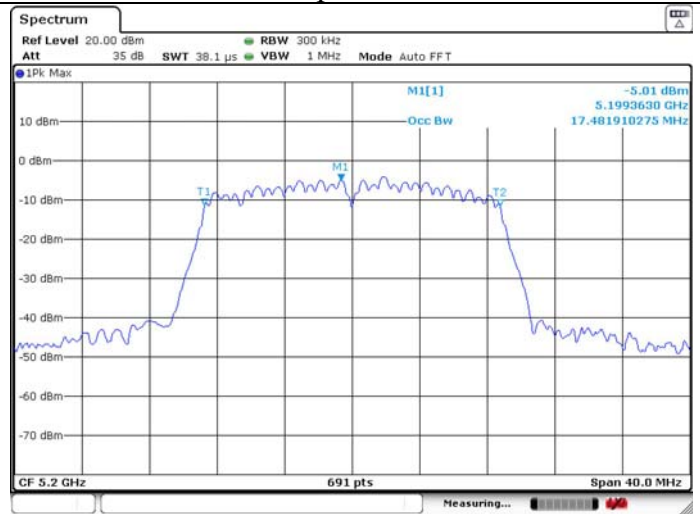


**U-NII-1 IEEE 802.11n HT20 5200MHz Ant 1**

26dB Bandwidth



99% Occupied Bandwidth

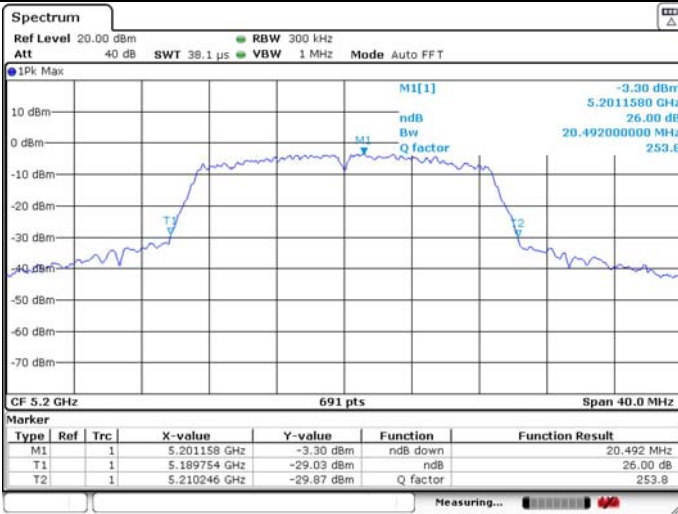




**U-NII-1 IEEE 802.11n HT20 5200MHz Ant 2**

26dB Bandwidth

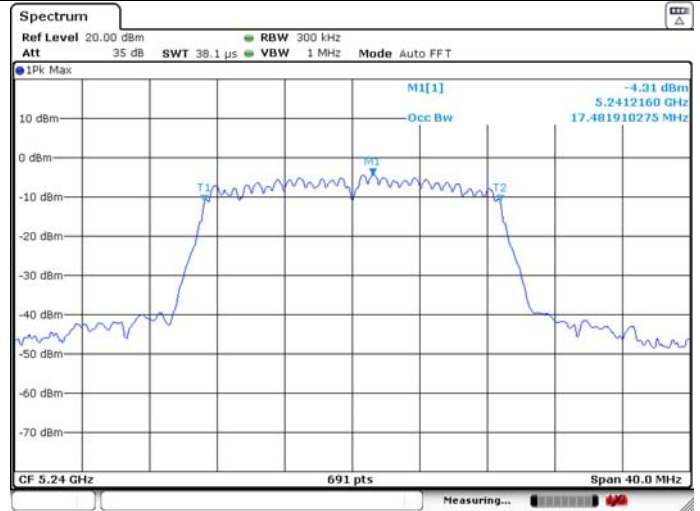
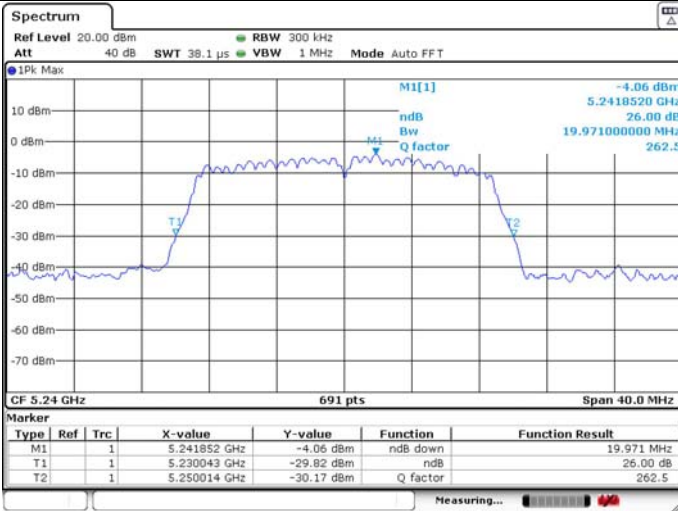
99% Occupied Bandwidth



**U-NII-1 IEEE 802.11n HT20 5240MHz Ant 1**

26dB Bandwidth

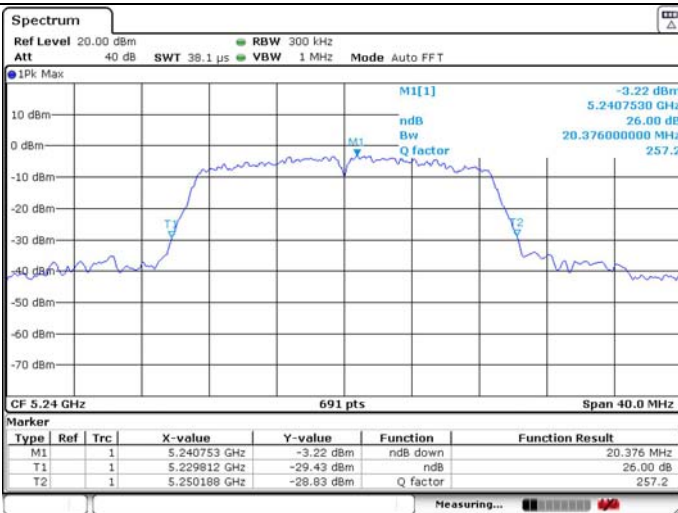
99% Occupied Bandwidth



**U-NII-1 IEEE 802.11n HT20 5240MHz Ant 2**

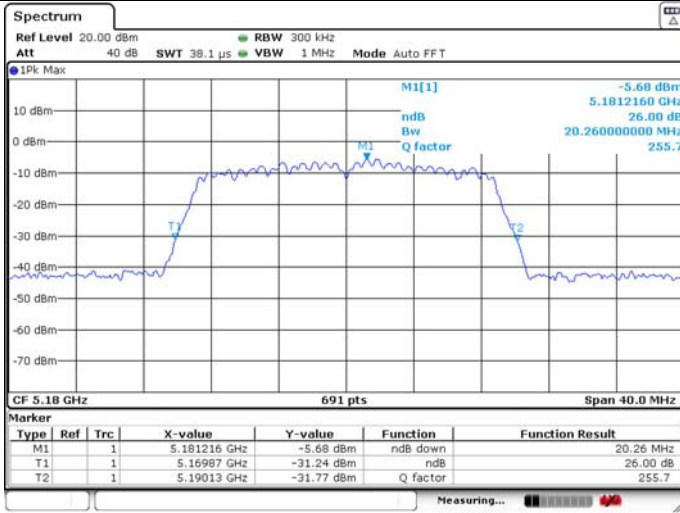
26dB Bandwidth

99% Occupied Bandwidth

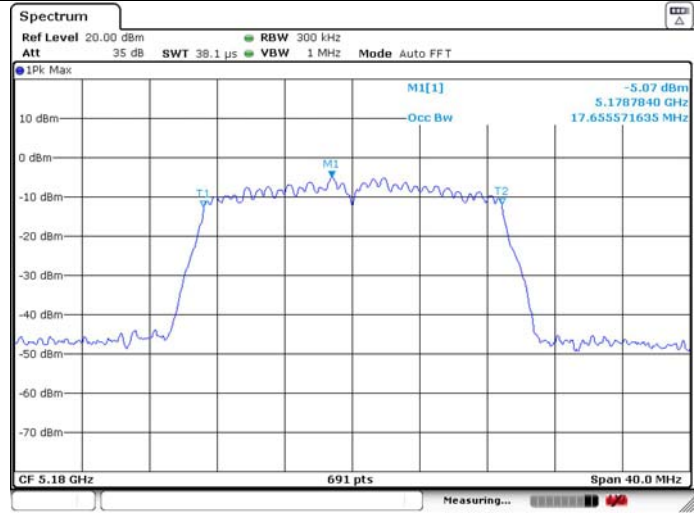


**U-NII-1 IEEE 802.11ac VHT20 5180MHz Ant 1**

26dB Bandwidth

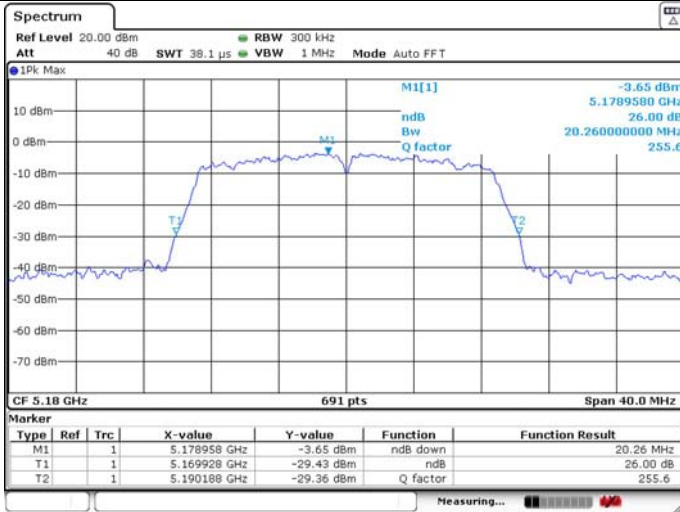


99% Occupied Bandwidth

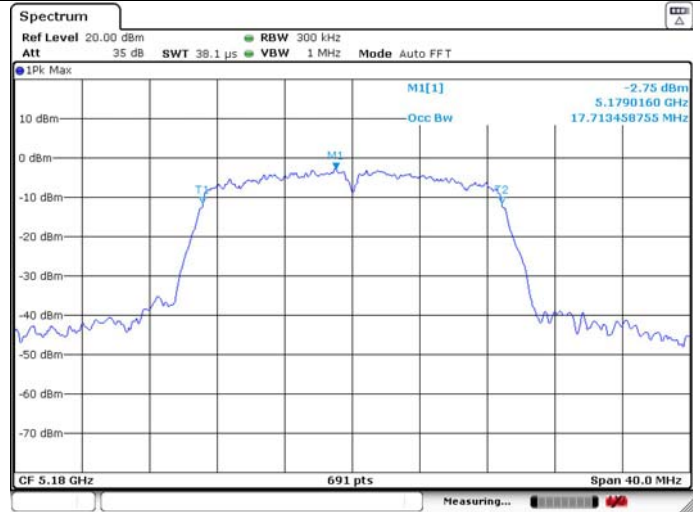


**U-NII-1 IEEE 802.11ac VHT20 5180MHz Ant 2**

26dB Bandwidth

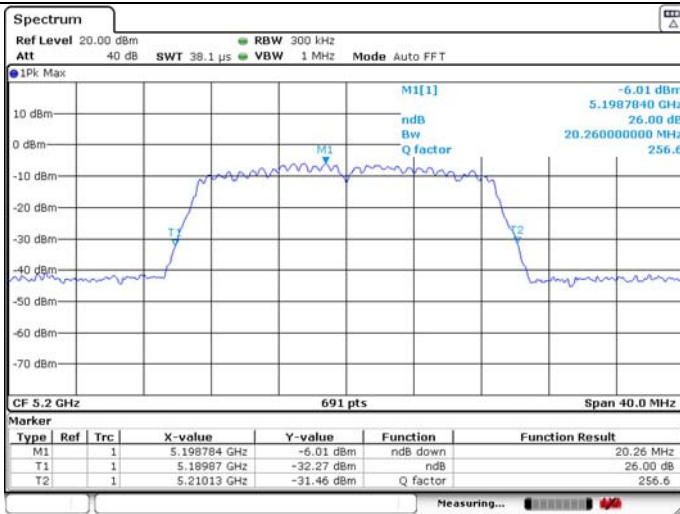


99% Occupied Bandwidth

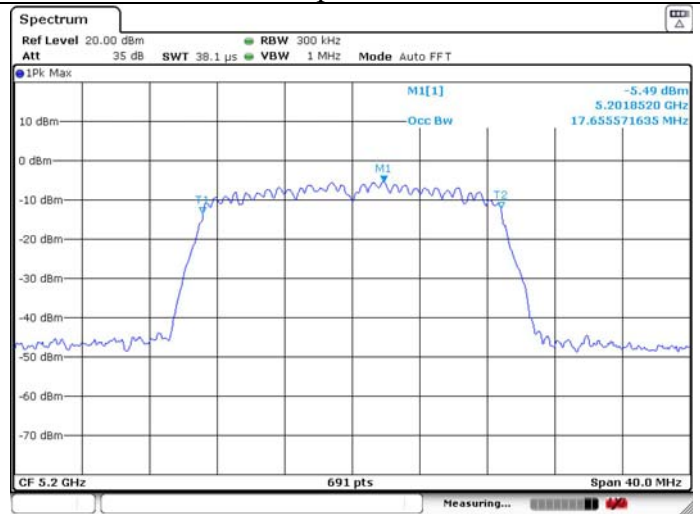


**U-NII-1 IEEE 802.11ac VHT20 5200MHz Ant 1**

26dB Bandwidth



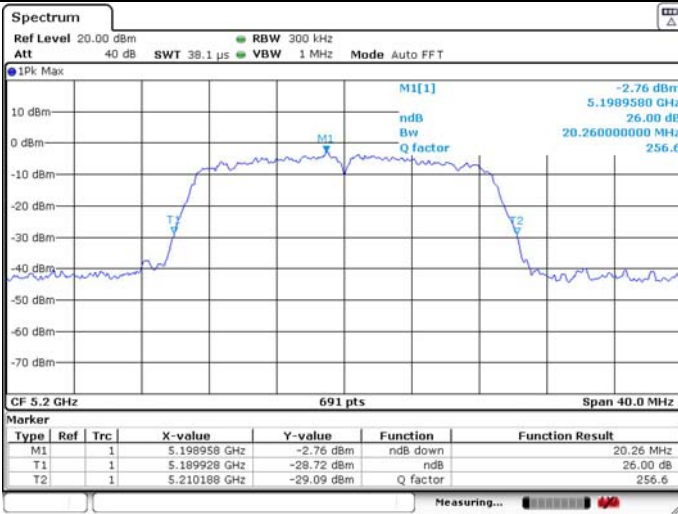
99% Occupied Bandwidth



**U-NII-1 IEEE 802.11ac VHT20 5200MHz\_Ant 2**

26dB Bandwidth

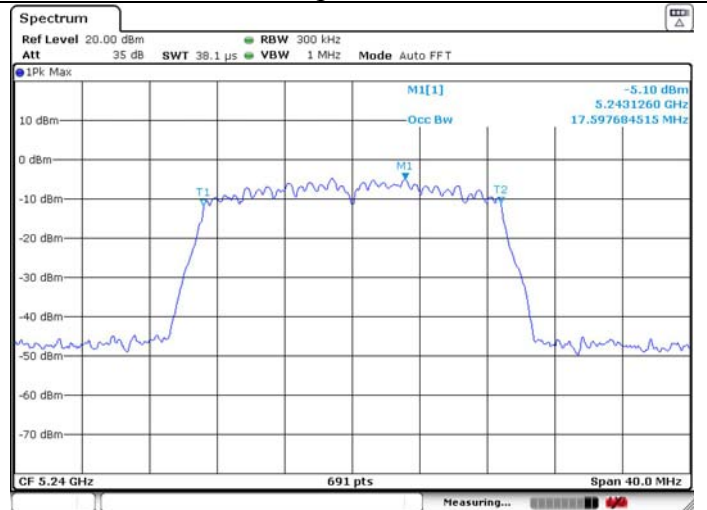
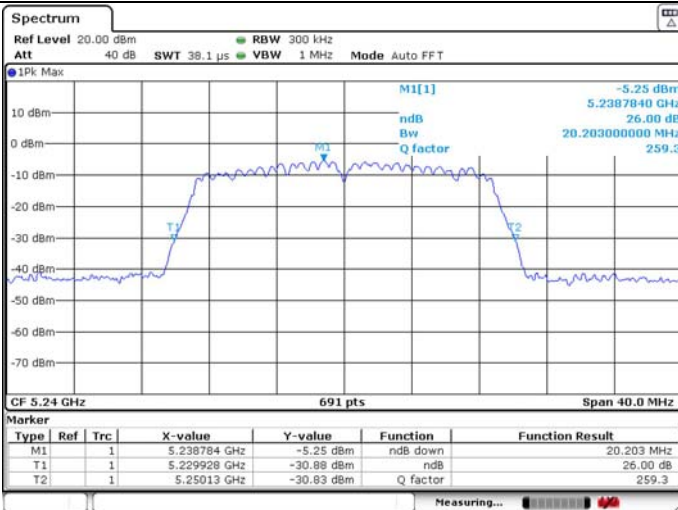
99% Occupied Bandwidth



**U-NII-1 IEEE 802.11ac VHT20 5240MHz\_Ant 1**

26dB Bandwidth

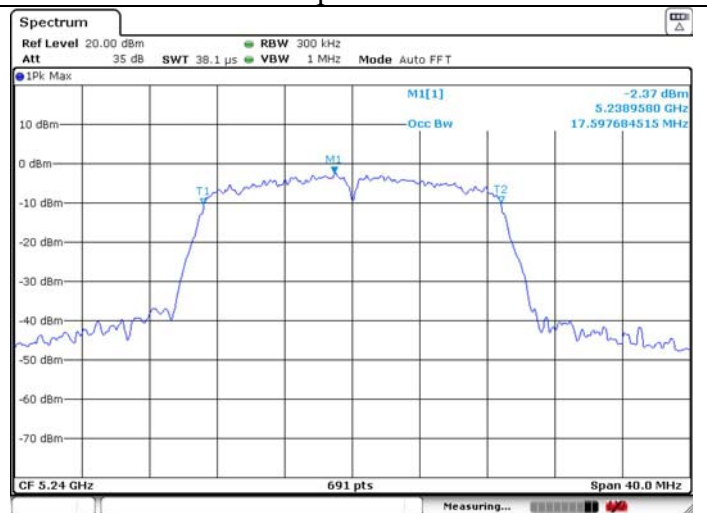
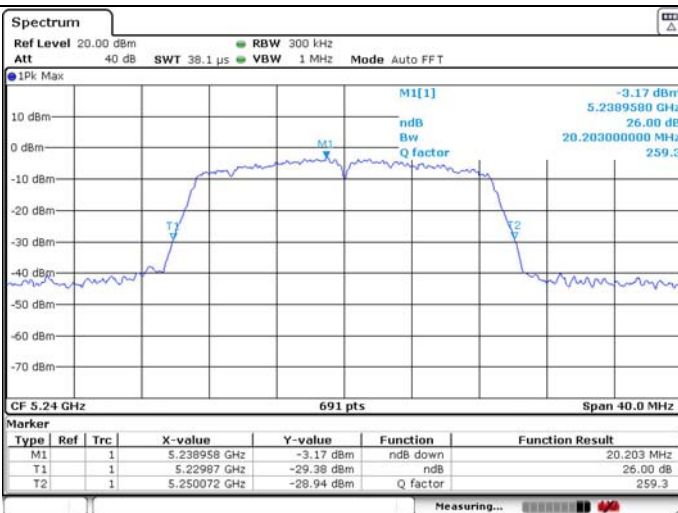
99% Occupied Bandwidth



**U-NII-1 IEEE 802.11ac VHT20 5240MHz\_Ant 2**

26dB Bandwidth

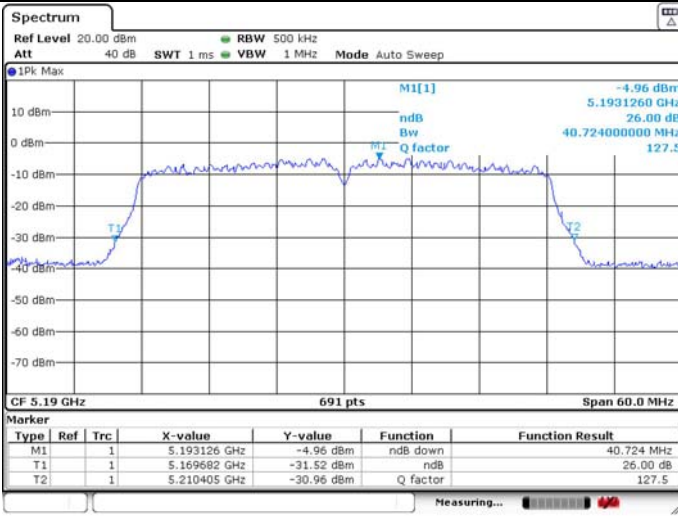
99% Occupied Bandwidth



**U-NII-1 IEEE 802.11n HT40 5190MHz Ant 1**

26dB Bandwidth

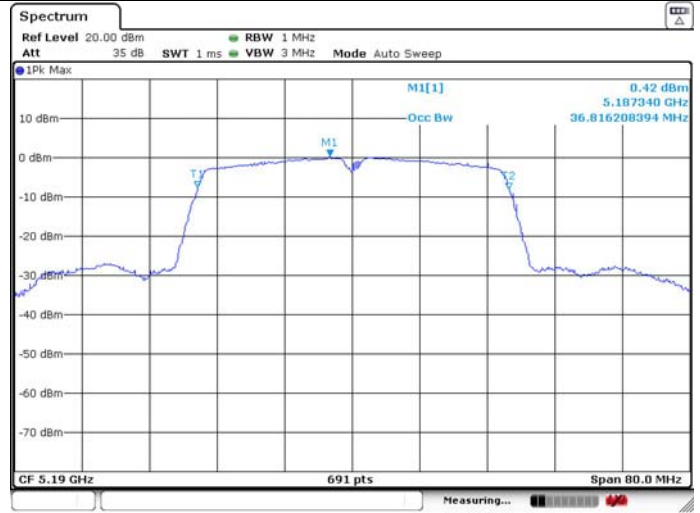
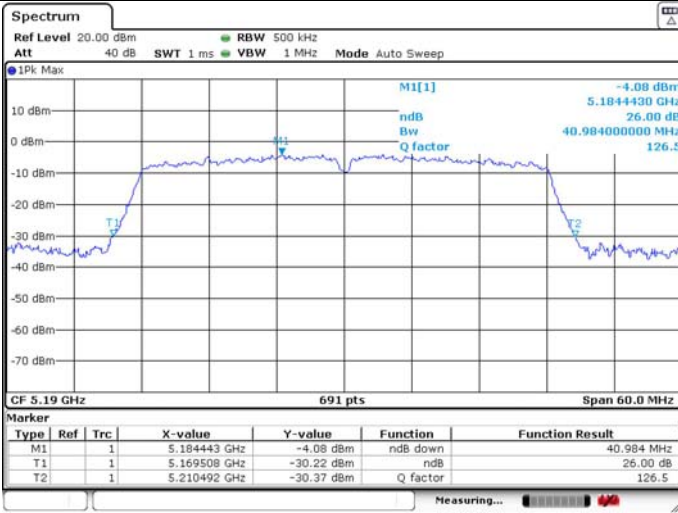
99% Occupied Bandwidth



**U-NII-1 IEEE 802.11n HT40 5190MHz Ant 2**

26dB Bandwidth

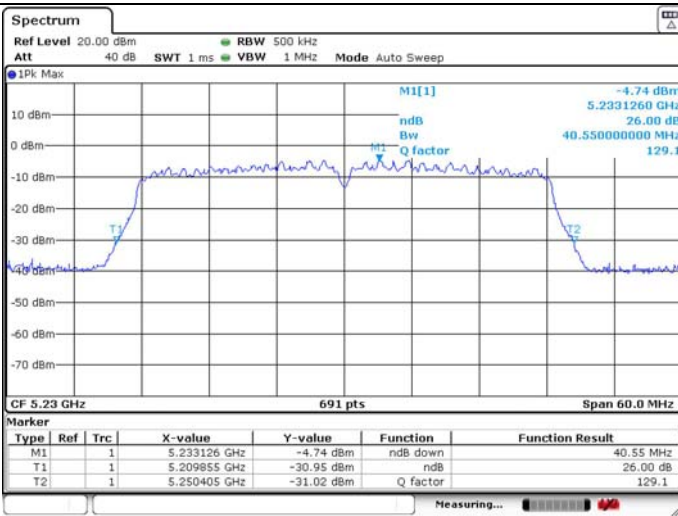
99% Occupied Bandwidth



**U-NII-1 IEEE 802.11n HT40 5230MHz Ant 1**

26dB Bandwidth

99% Occupied Bandwidth

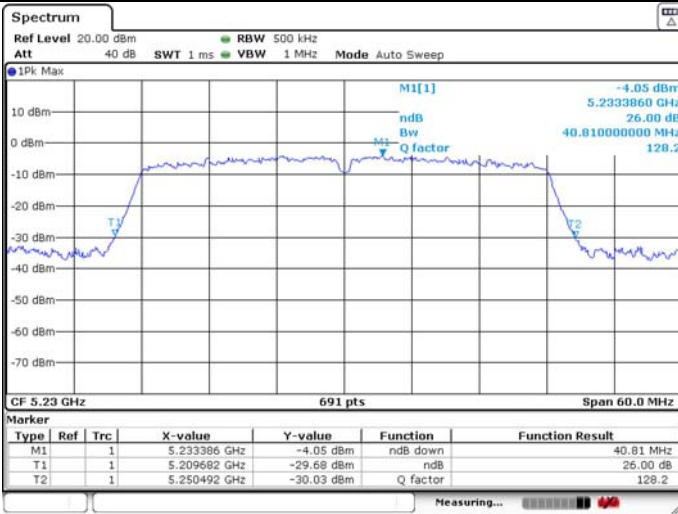




**U-NII-1 IEEE 802.11n HT40 5230MHz Ant 2**

26dB Bandwidth

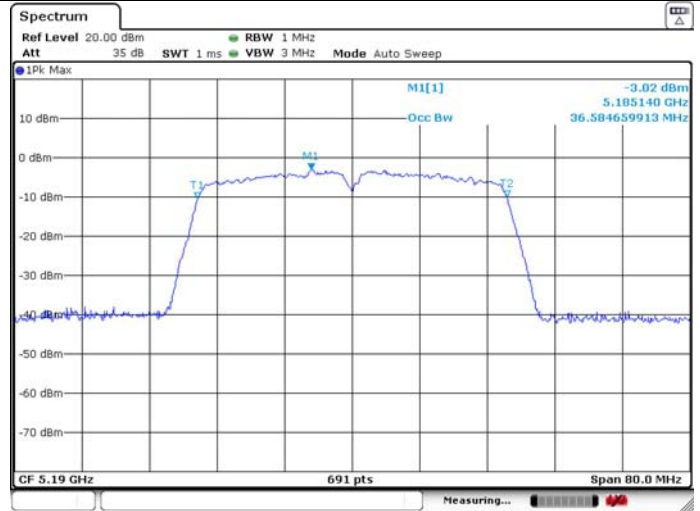
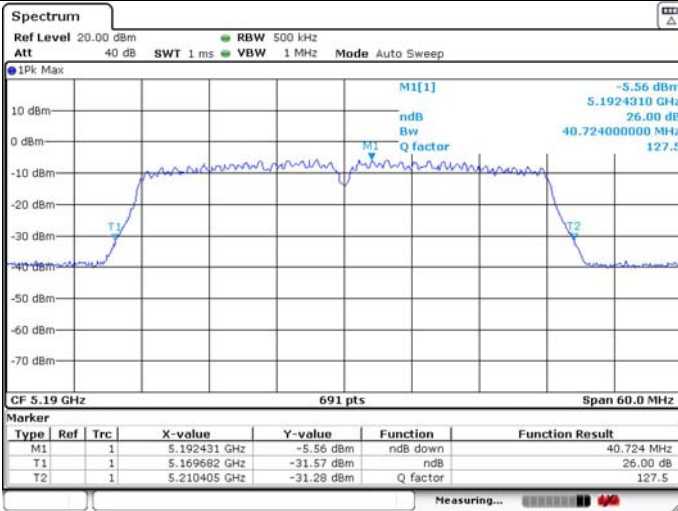
99% Occupied Bandwidth



**U-NII-1 IEEE 802.11ac VHT40 5190MHz Ant 1**

26dB Bandwidth

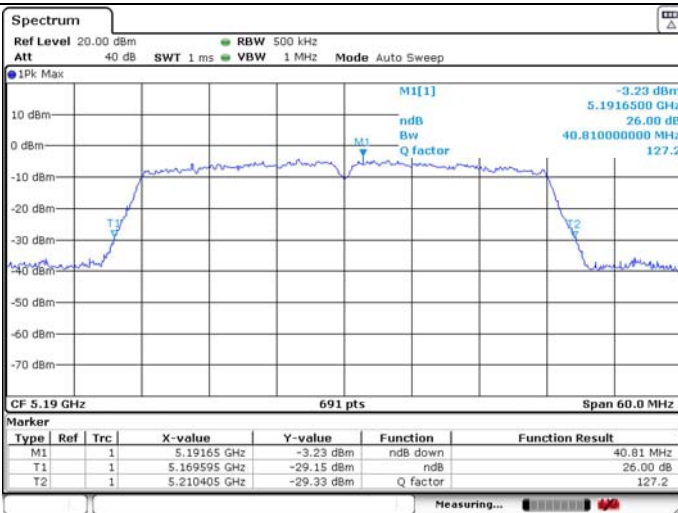
99% Occupied Bandwidth



**U-NII-1 IEEE 802.11ac VHT40 5190MHz Ant 2**

26dB Bandwidth

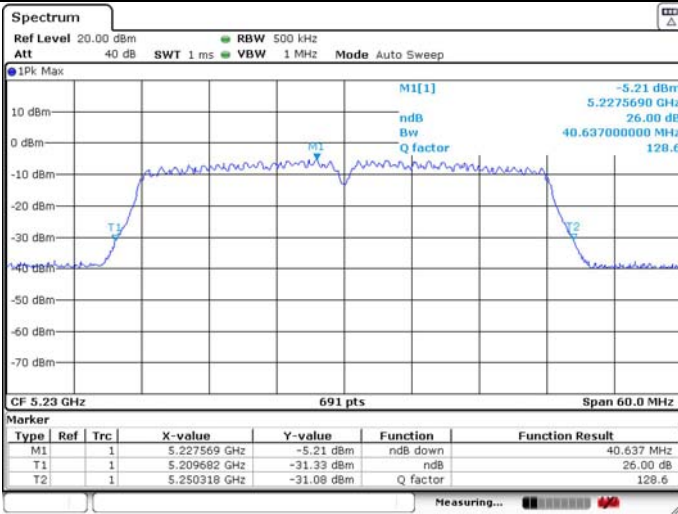
99% Occupied Bandwidth



**U-NII-1 IEEE 802.11ac VHT40 5230MHz\_Ant 1**

26dB Bandwidth

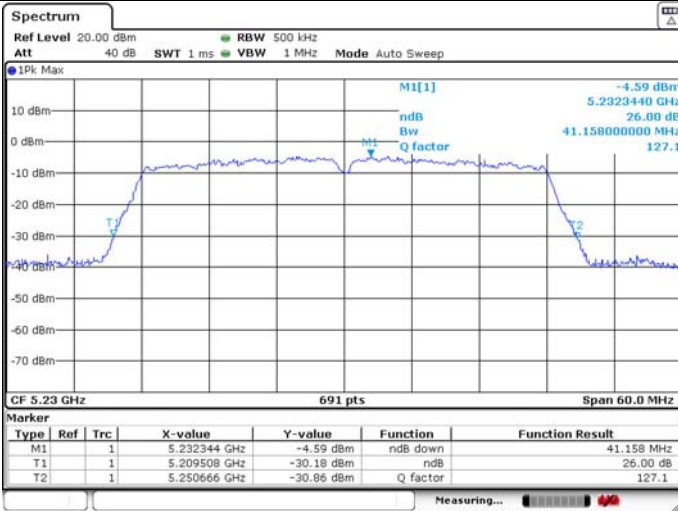
99% Occupied Bandwidth



**U-NII-1 IEEE 802.11ac VHT40 5230MHz\_Ant 2**

26dB Bandwidth

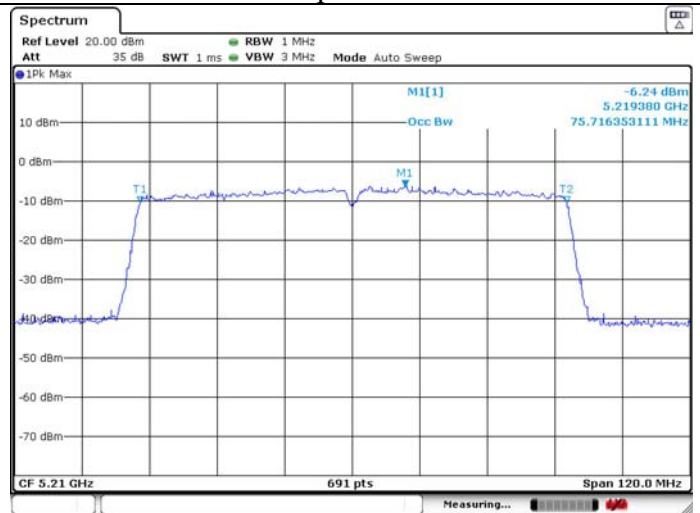
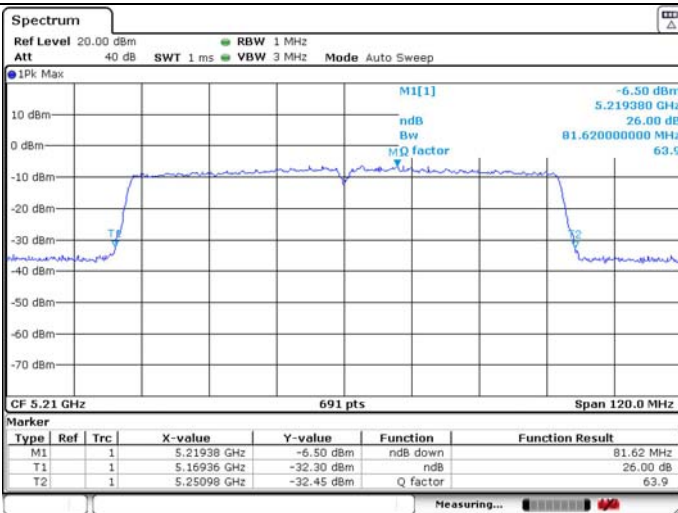
99% Occupied Bandwidth



**U-NII-1 IEEE 802.11ac VHT80 5210MHz\_Ant 1**

26dB Bandwidth

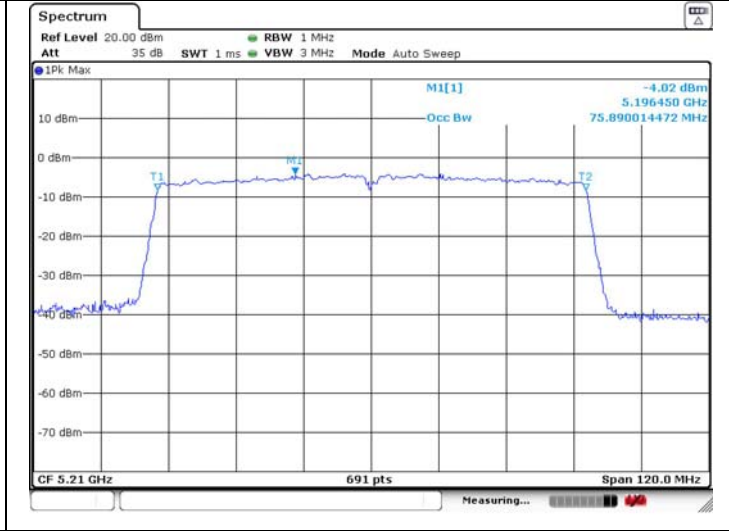
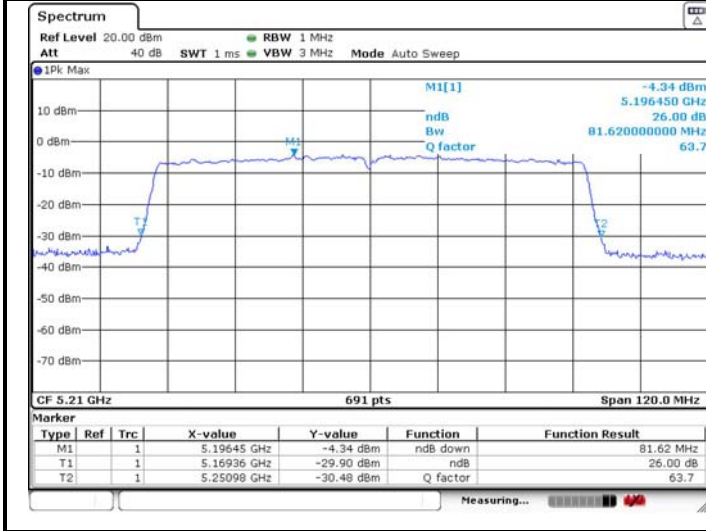
99% Occupied Bandwidth



**U-NII-1 IEEE 802.11ac VHT80 5210MHz Ant 2**

**26dB Bandwidth**

**99% Occupied Bandwidth**

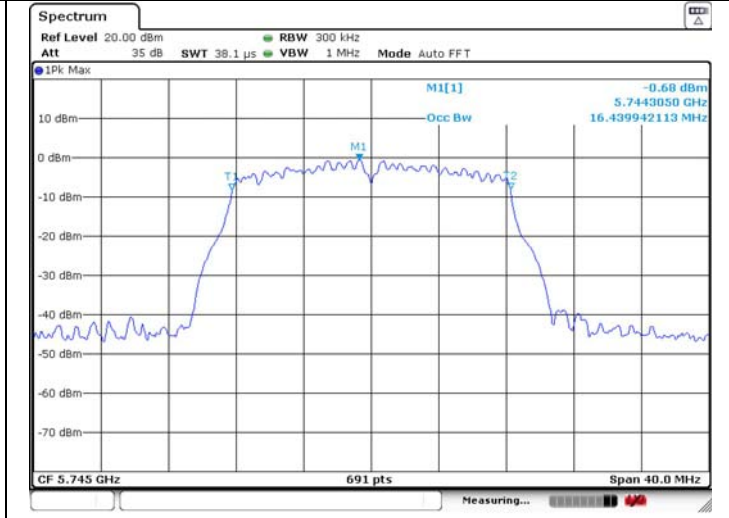
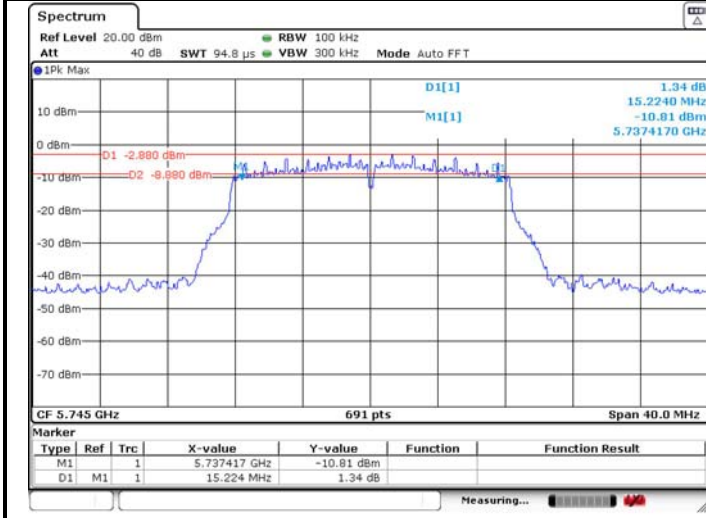




### U-NII-3 IEEE 802.11a 5745MHz\_Ant 1

6dB Bandwidth

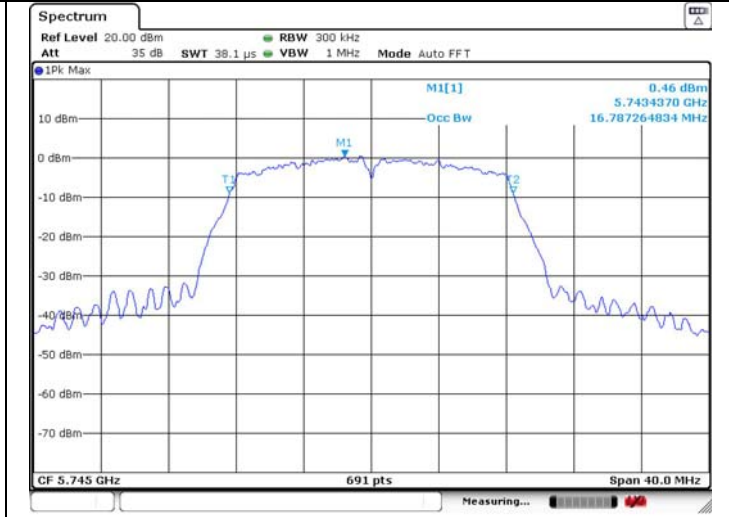
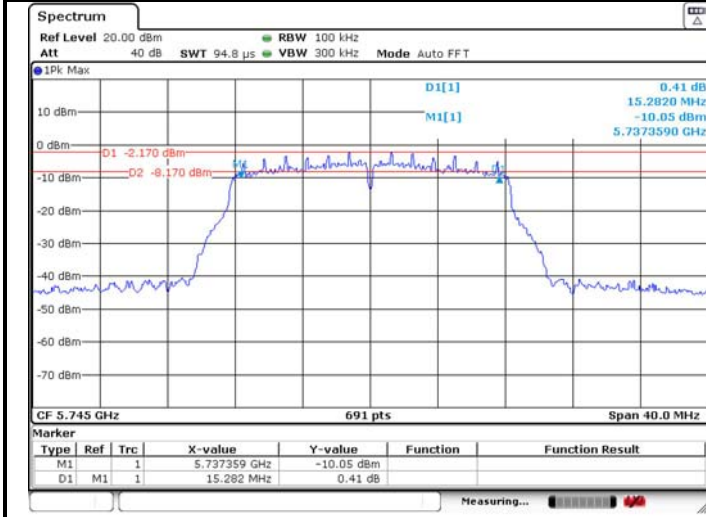
99% Occupied Bandwidth



### U-NII-3 IEEE 802.11a 5745MHz\_Ant 2

6dB Bandwidth

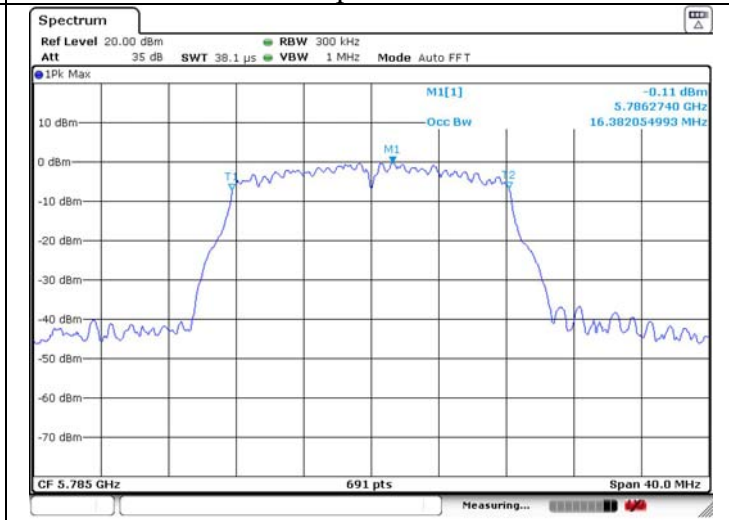
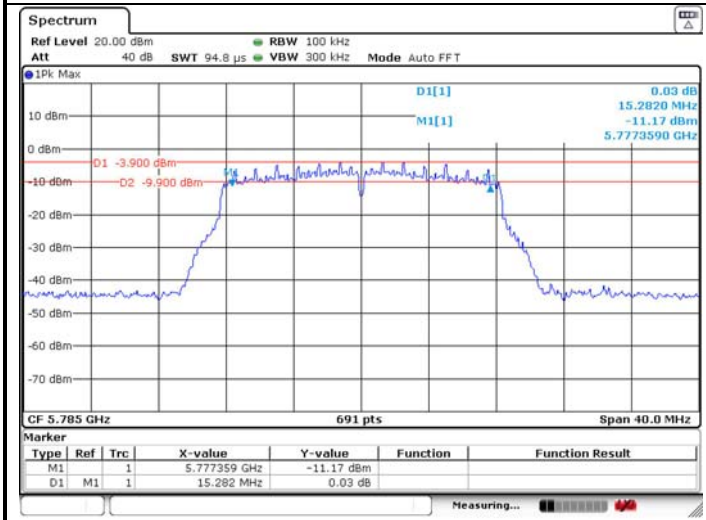
99% Occupied Bandwidth



### U-NII-3 IEEE 802.11a 5785MHz\_Ant 1

6dB Bandwidth

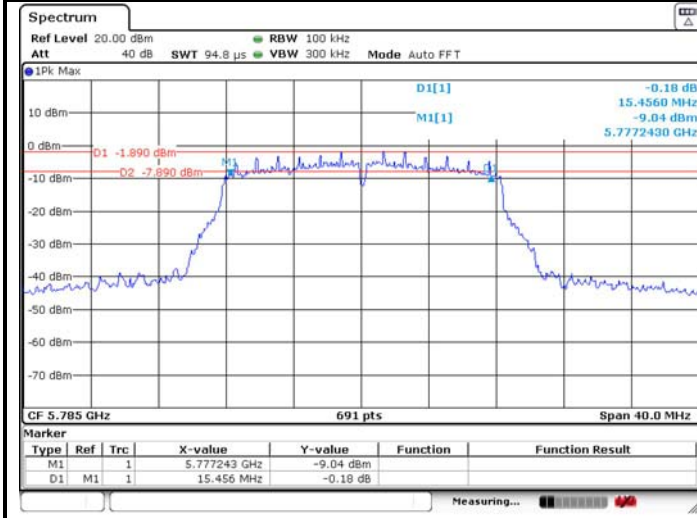
99% Occupied Bandwidth



### U-NII-3 IEEE 802.11a 5785MHz\_Ant 2

6dB Bandwidth

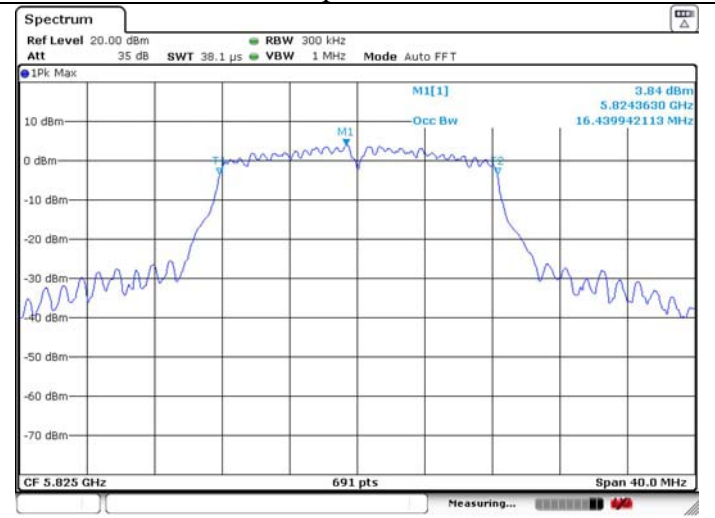
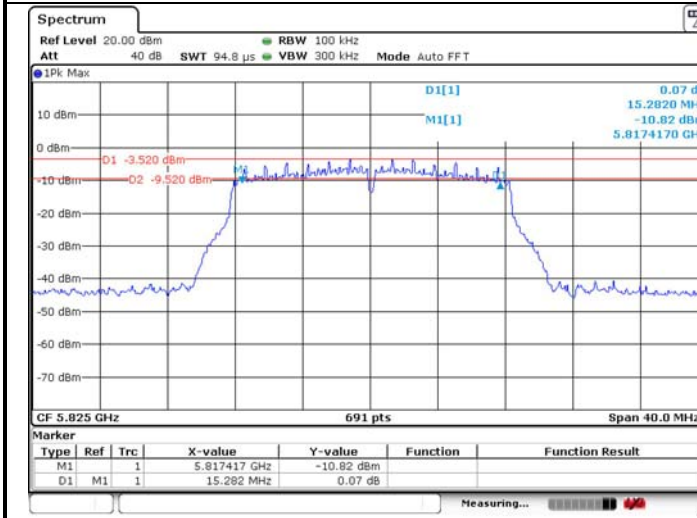
99% Occupied Bandwidth



### U-NII-3 IEEE 802.11a 5825MHz\_Ant 1

6dB Bandwidth

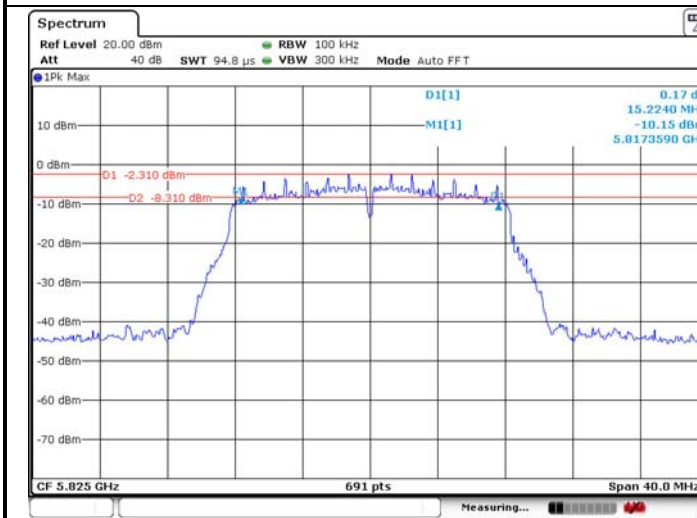
99% Occupied Bandwidth



### U-NII-3 IEEE 802.11a 5825MHz\_Ant 2

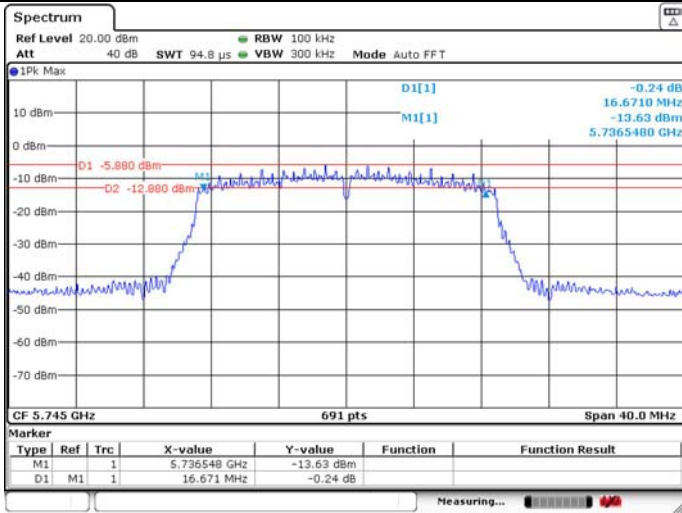
6dB Bandwidth

99% Occupied Bandwidth

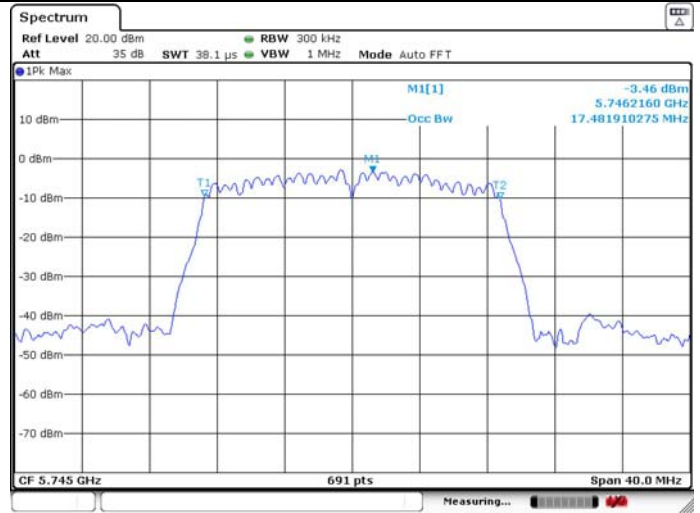


### U-NII-3 IEEE 802.11n HT20 5745MHz\_Ant 1

6dB Bandwidth

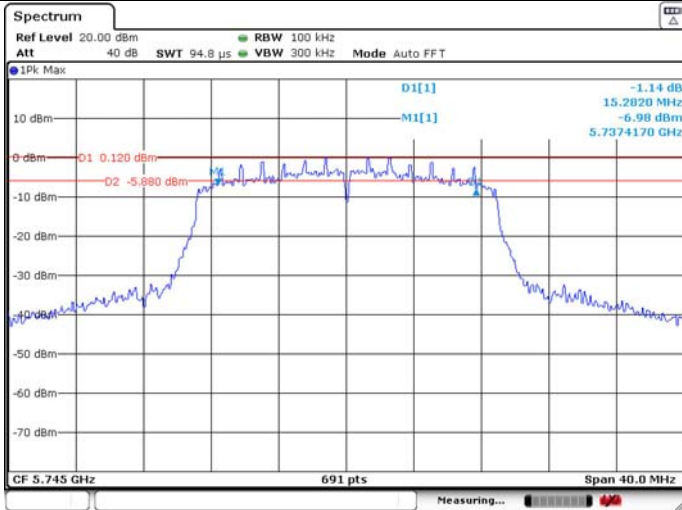


99% Occupied Bandwidth



### U-NII-3 IEEE 802.11n HT20 5745MHz\_Ant 2

6dB Bandwidth

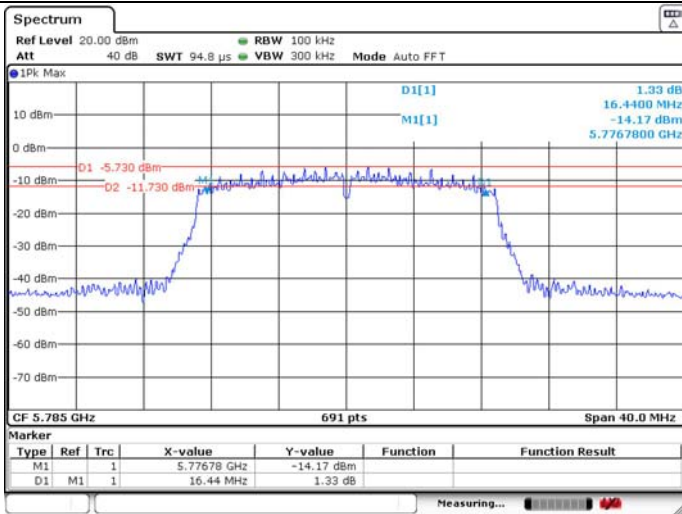


99% Occupied Bandwidth

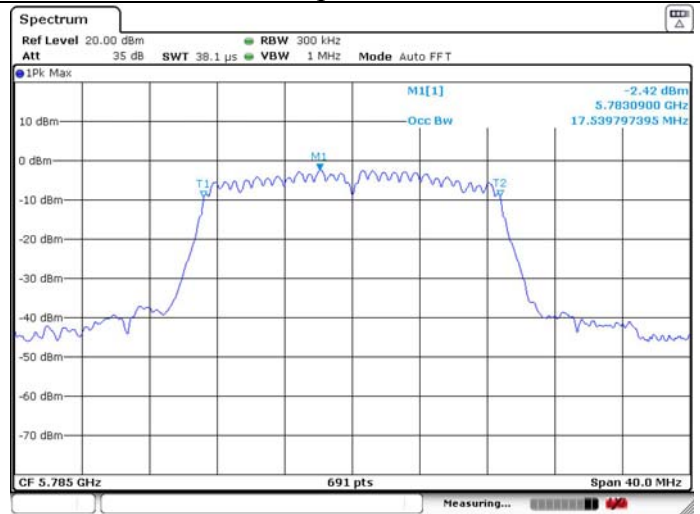


### U-NII-3 IEEE 802.11n HT20 5785MHz\_Ant 1

6dB Bandwidth

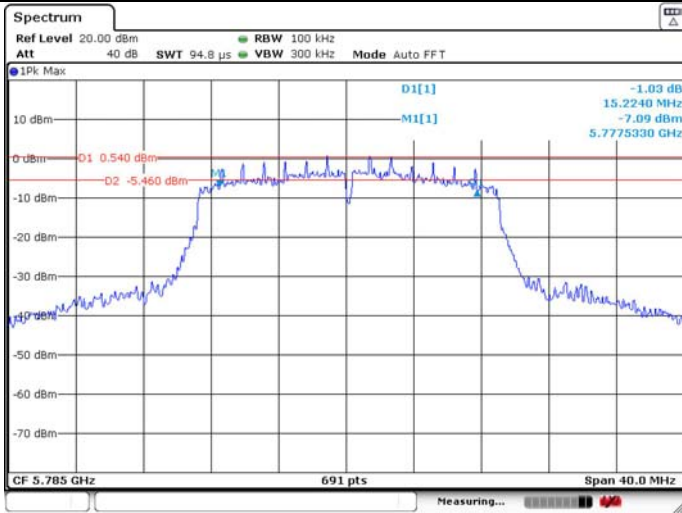


99% Occupied Bandwidth



**U-NII-3 IEEE 802.11n HT20 5785MHz\_Ant 2**

6dB Bandwidth

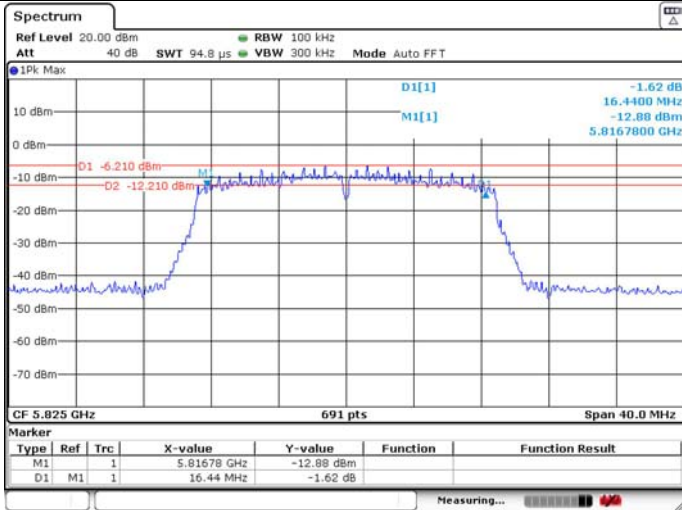


99% Occupied Bandwidth



**U-NII-3 IEEE 802.11n HT20 5825MHz\_Ant 1**

6dB Bandwidth

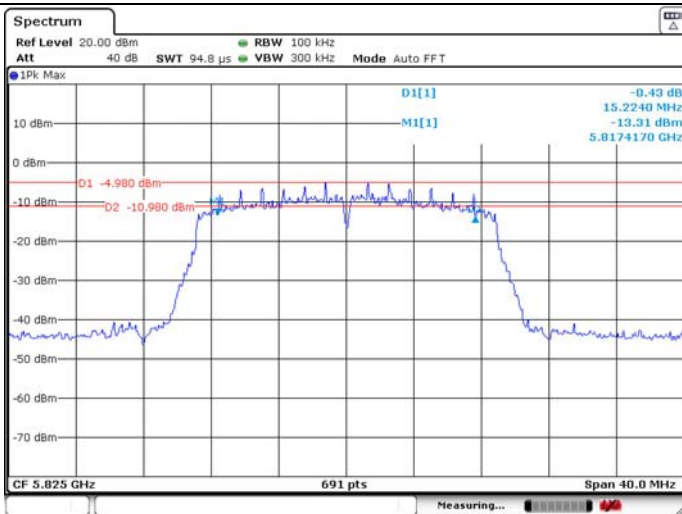


99% Occupied Bandwidth



**U-NII-3 IEEE 802.11n HT20 5825MHz\_Ant 2**

6dB Bandwidth



99% Occupied Bandwidth



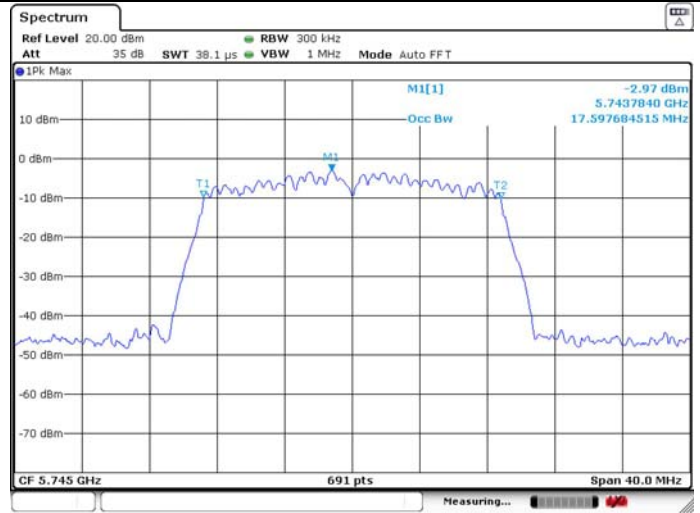


### U-NII-3 IEEE 802.11ac VHT20 5745MHz\_Ant 1

6dB Bandwidth

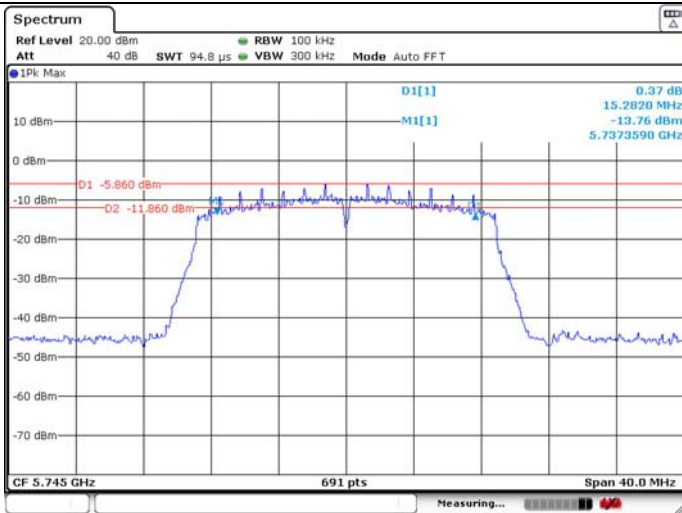


99% Occupied Bandwidth

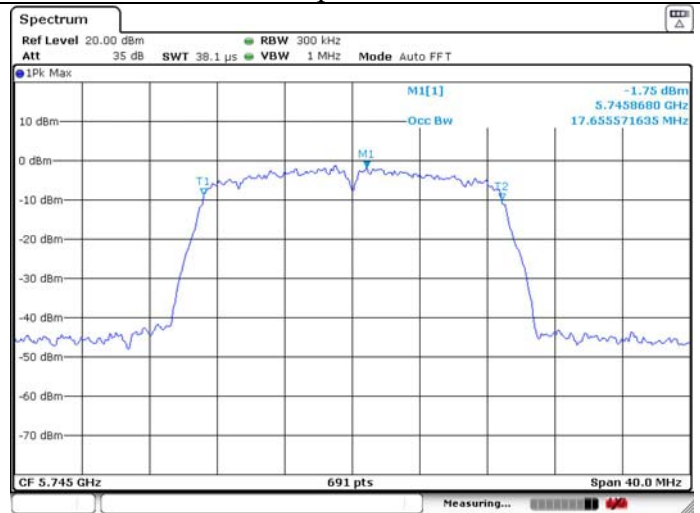


### U-NII-3 IEEE 802.11ac VHT20 5745MHz\_Ant 2

6dB Bandwidth

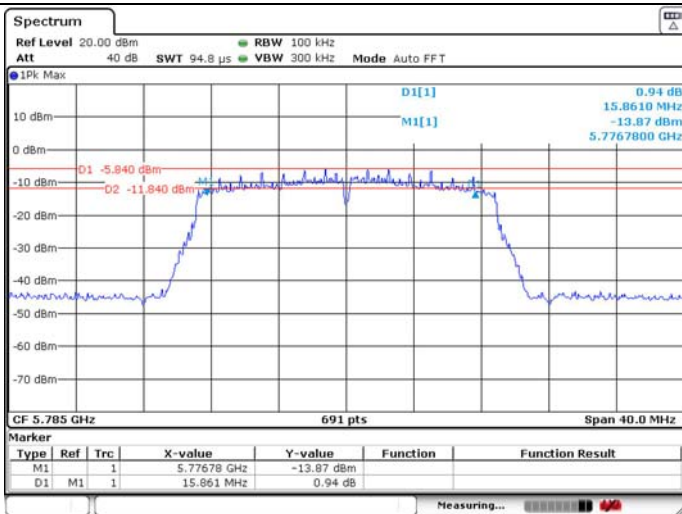


99% Occupied Bandwidth

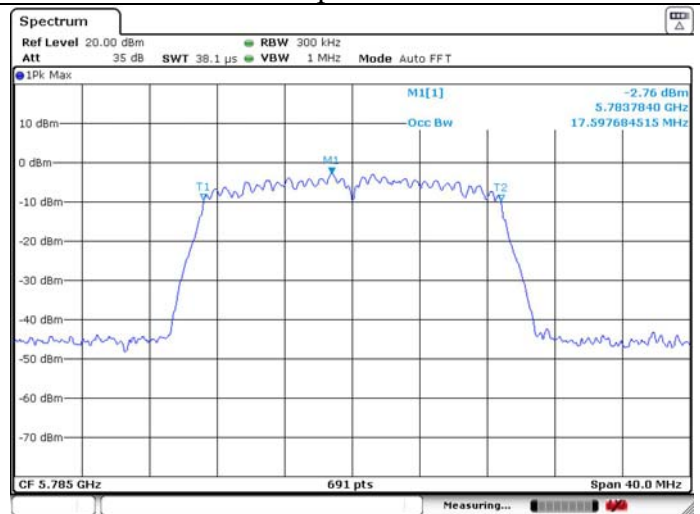


### U-NII-3 IEEE 802.11ac VHT20 5785MHz\_Ant 1

6dB Bandwidth

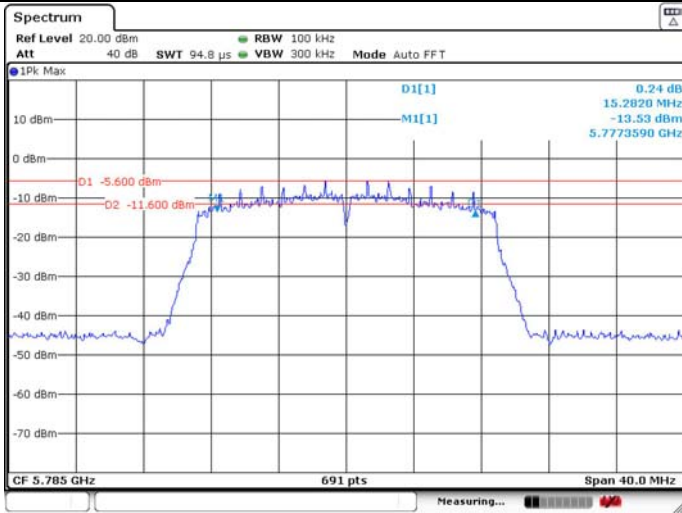


99% Occupied Bandwidth



**U-NII-3 IEEE 802.11ac VHT20 5785MHz\_Ant 2**

6dB Bandwidth

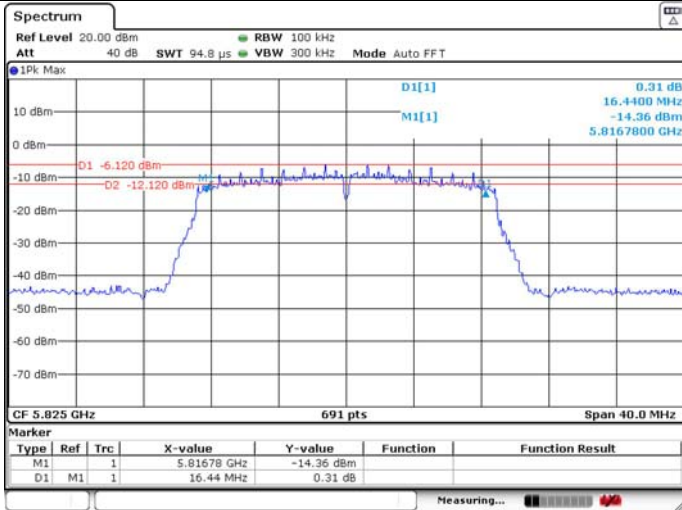


99% Occupied Bandwidth

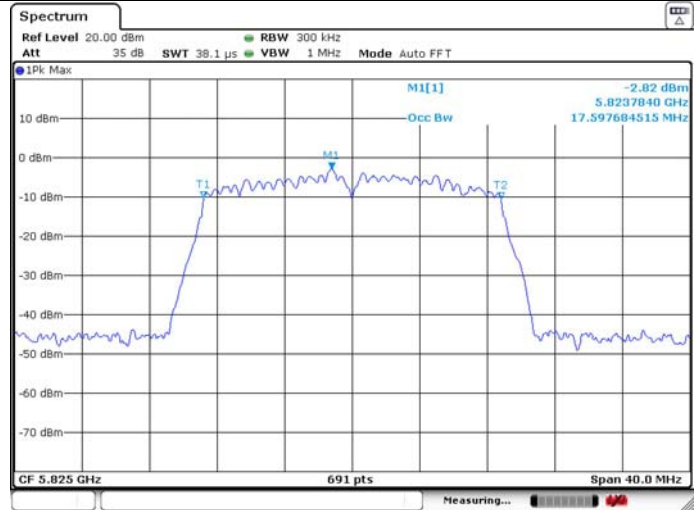


**U-NII-3 IEEE 802.11ac VHT20 5825MHz\_Ant 1**

6dB Bandwidth

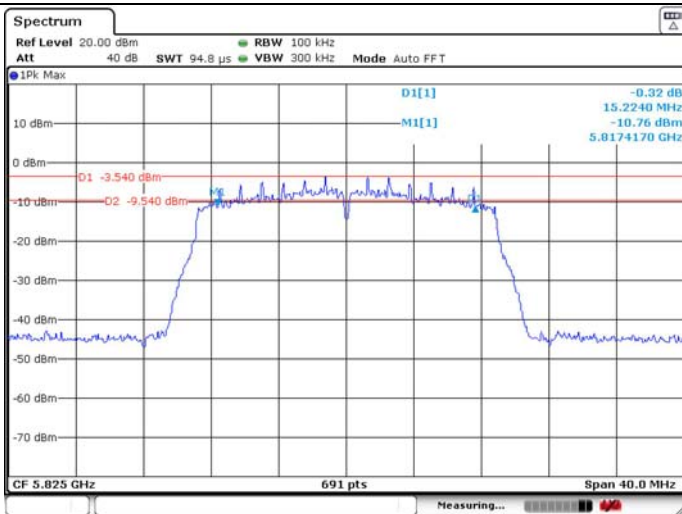


99% Occupied Bandwidth

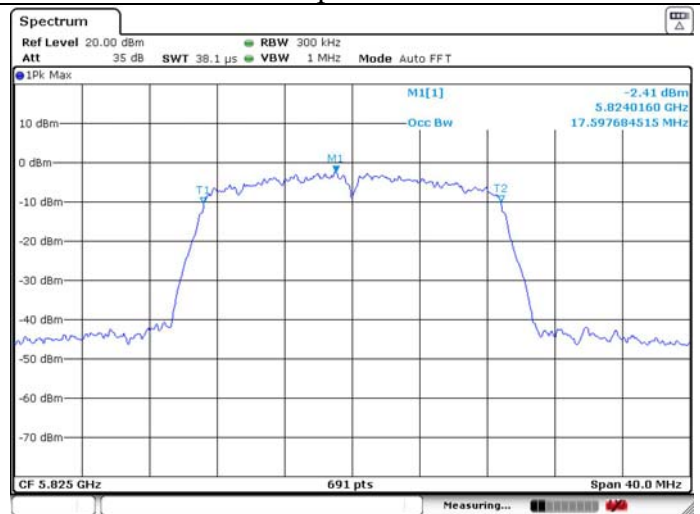


**U-NII-3 IEEE 802.11ac VHT20 5825MHz\_Ant 2**

6dB Bandwidth

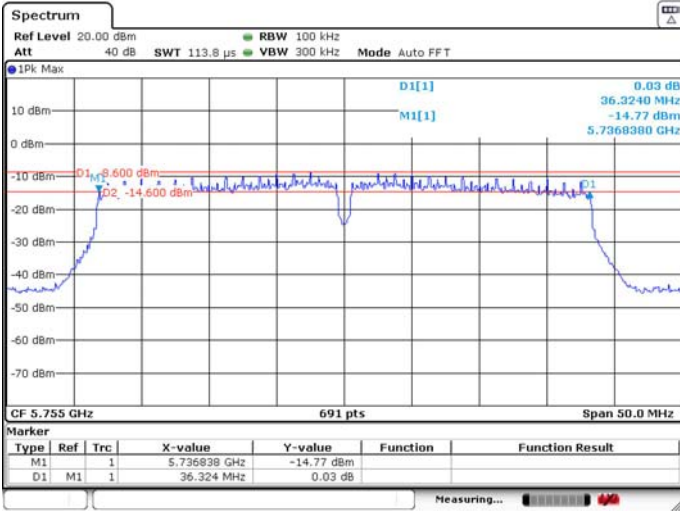


99% Occupied Bandwidth



**U-NII-3 IEEE 802.11n HT40 5755MHz\_Ant 1**

6dB Bandwidth

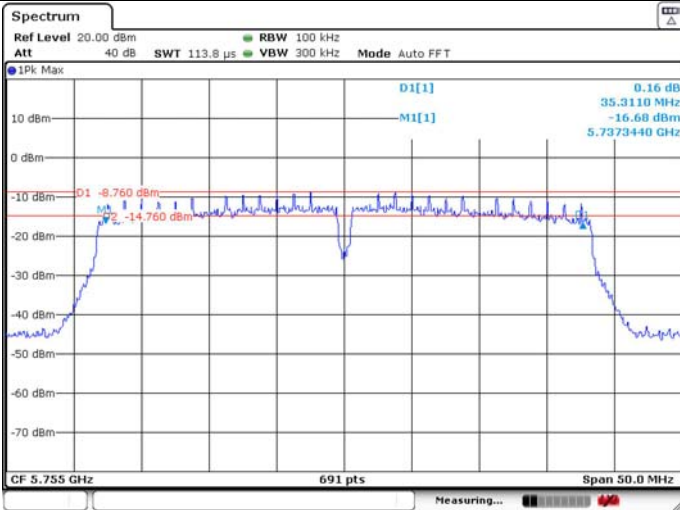


99% Occupied Bandwidth

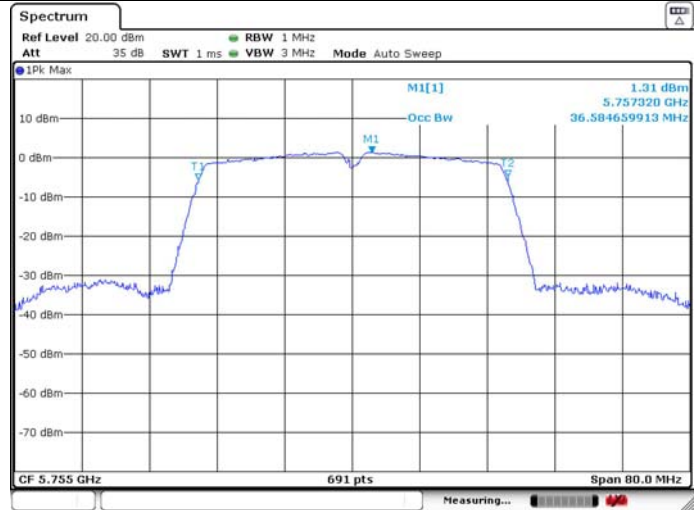


**U-NII-3 IEEE 802.11n HT40 5755MHz\_Ant 2**

6dB Bandwidth

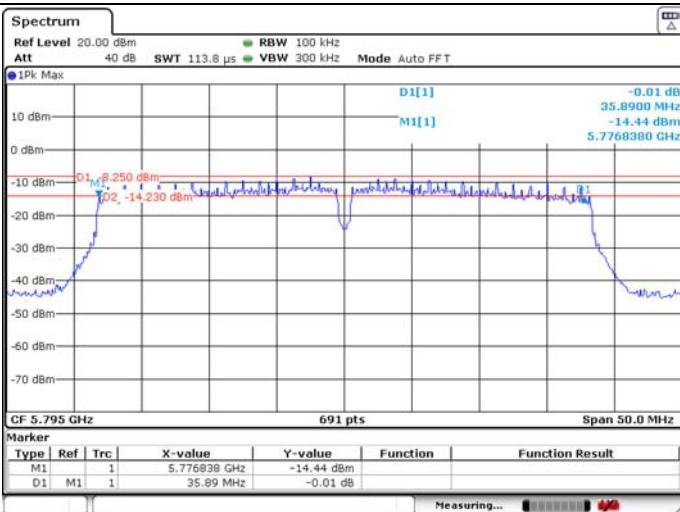


99% Occupied Bandwidth



**U-NII-3 IEEE 802.11n HT40 5795MHz\_Ant 1**

6dB Bandwidth



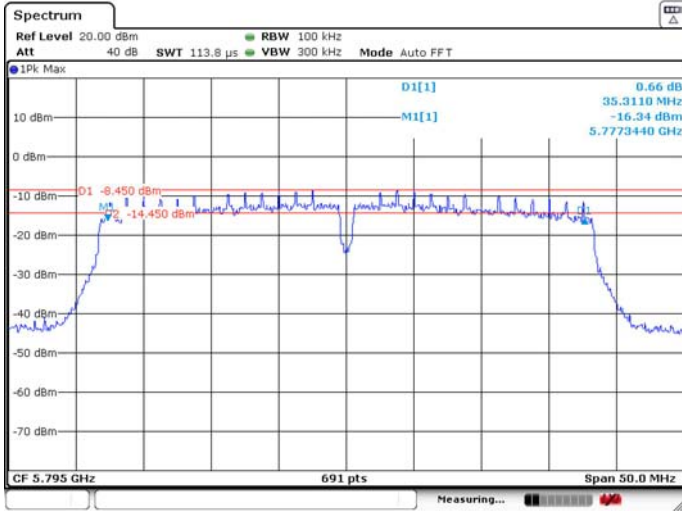
99% Occupied Bandwidth





**U-NII-3 IEEE 802.11n HT40 5795MHz\_Ant 2**

6dB Bandwidth

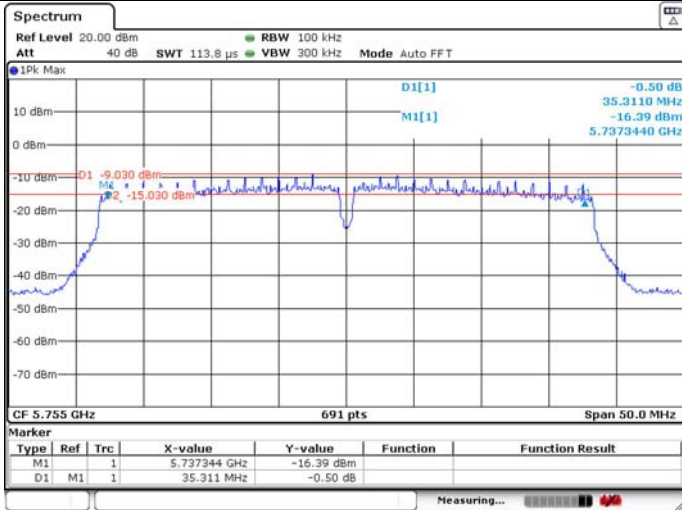


99% Occupied Bandwidth

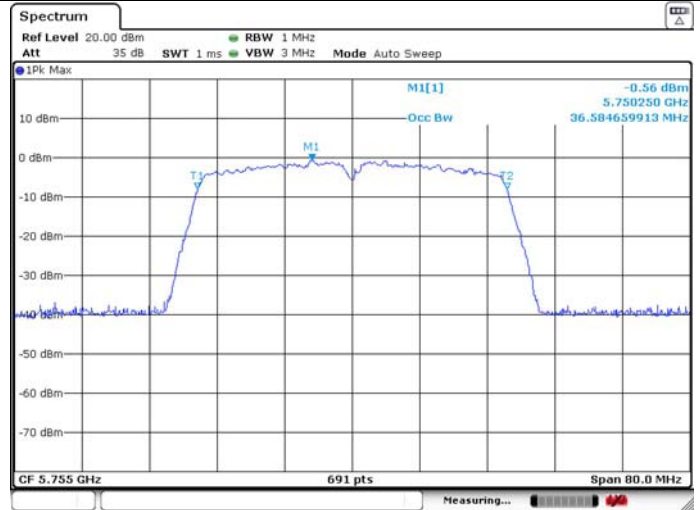


**U-NII-3 IEEE 802.11ac VHT40 5755MHz\_Ant 1**

6dB Bandwidth

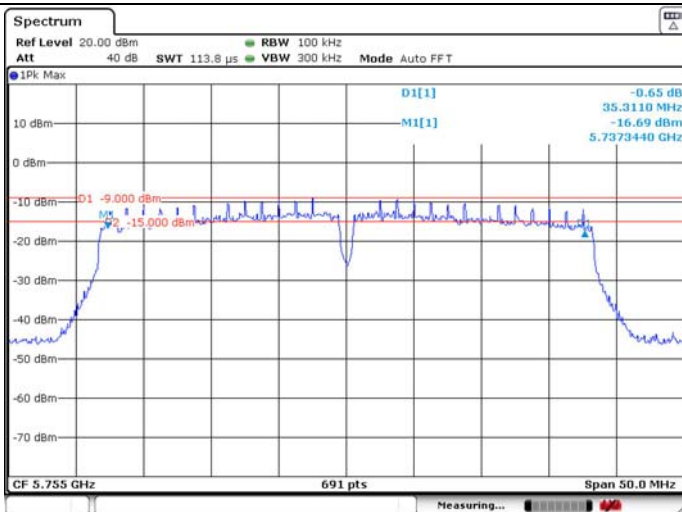


99% Occupied Bandwidth

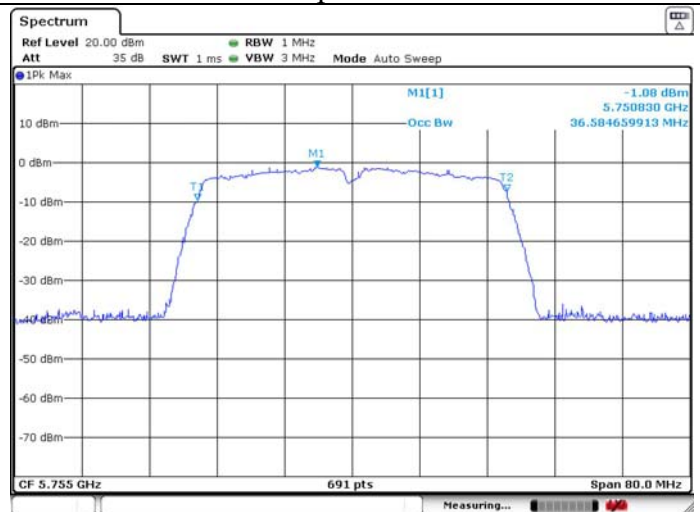


**U-NII-3 IEEE 802.11ac VHT40 5755MHz\_Ant 2**

6dB Bandwidth

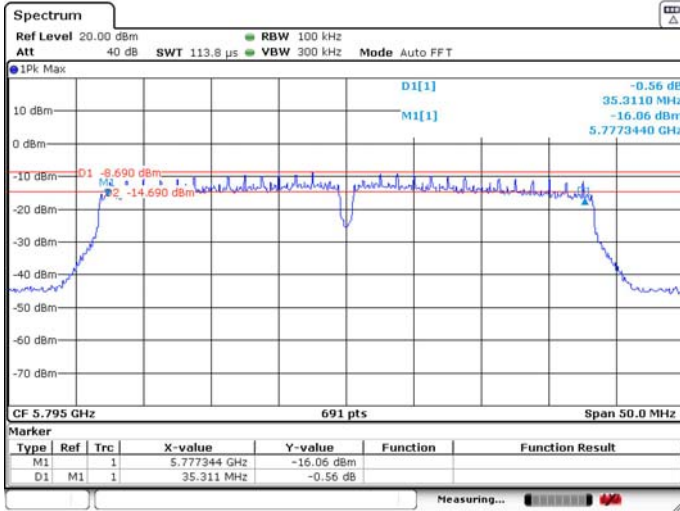


99% Occupied Bandwidth



**U-NII-3 IEEE 802.11ac VHT40 5795MHz\_Ant 1**

6dB Bandwidth

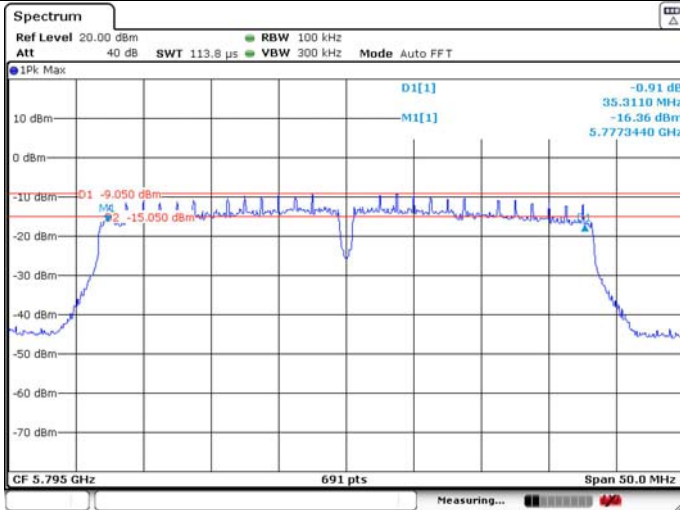


99% Occupied Bandwidth



**U-NII-3 IEEE 802.11ac VHT40 5795MHz\_Ant 2**

6dB Bandwidth

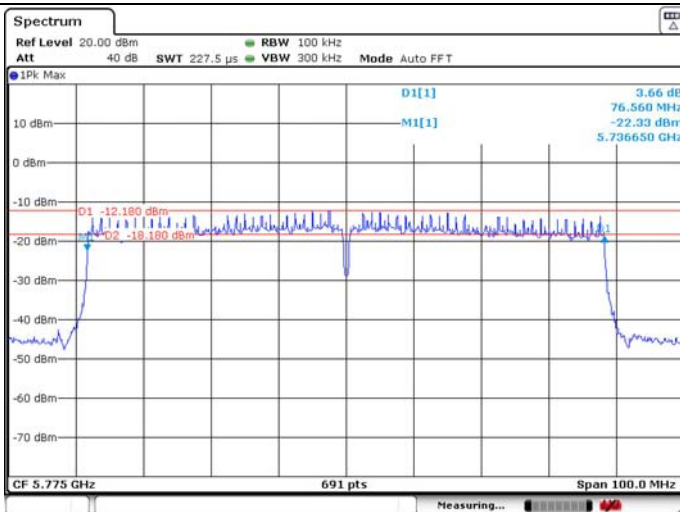


99% Occupied Bandwidth

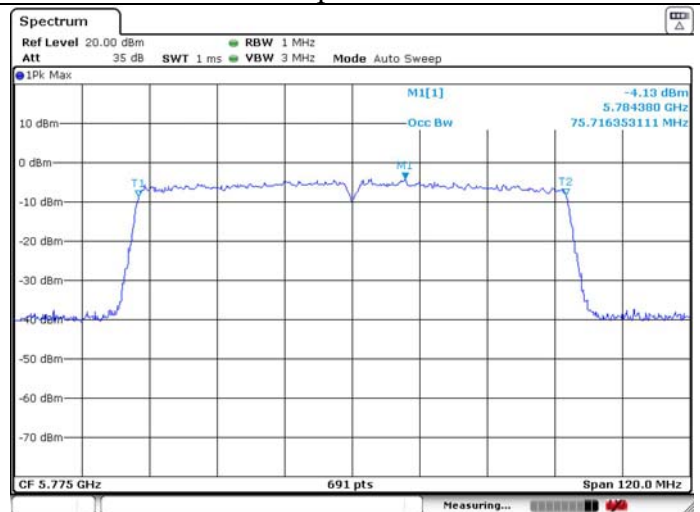


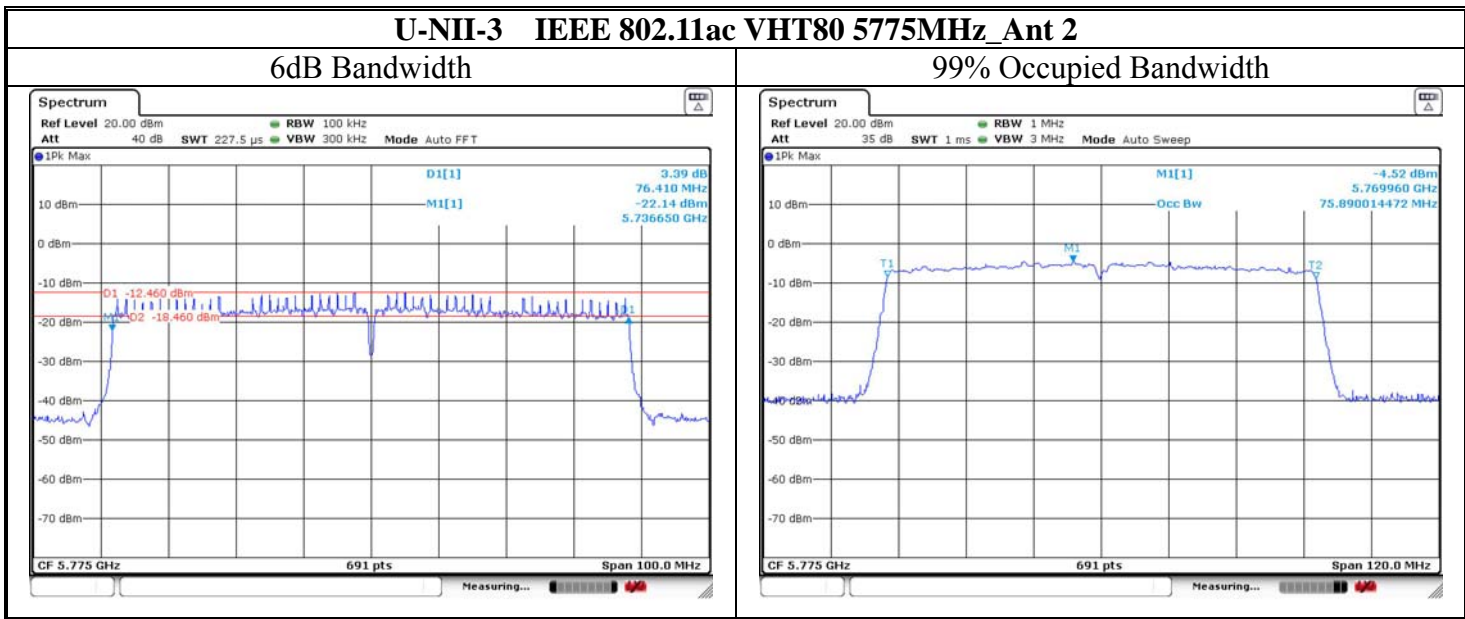
**U-NII-3 IEEE 802.11ac VHT80 5775MHz\_Ant 1**

6dB Bandwidth



99% Occupied Bandwidth





## 4. MAXIMUM CONDUCTED OUTPUT POWER

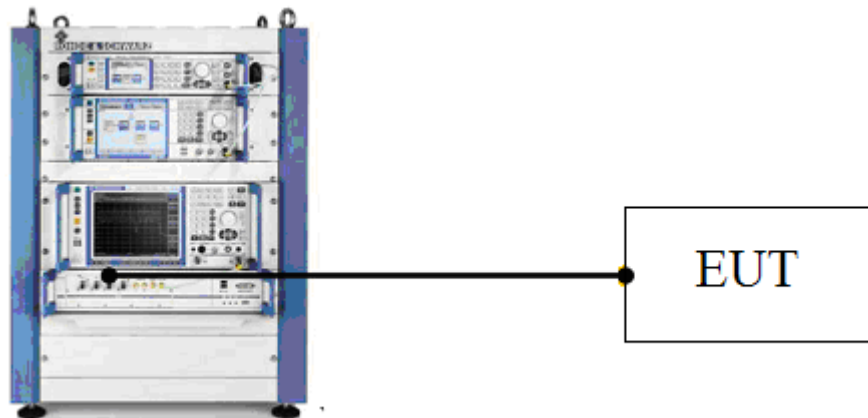
### 4.1. Limit

Band	EUT Type	Limit
U-NII-1	Outdoor Access Point	1W(30dBm) (Max. e.i.r.p $\leq$ 125mW at any elevation angle above 30 degrees as measured from the horizon)
	Indoor Access Point	1W(30dBm)
	Fixed point-to-point Access Point	1W(30dBm)
	Mobile and Portable Client Device	250mW(23.98dBm)
U-NII-2A	All Device	250mW(23.98dBm) or 11dBm+10 log B, Which is lesser. (B is 26dB Bandwidth in MHz)
U-NII-2C	All Device	250mW(23.98dBm) or 11dBm+10 log B, Which is lesser. (B is 26dB Bandwidth in MHz)
U-NII-3	All Device	1W(30dBm)

Note:

For the Band U-NII-2A and U-NII-2C, the maximum conducted output power limit calculate result refer to section 3.5.

### 4.2. Test Setup



### 4.3. Test Procedure

- a. Connect EUT antenna terminal to the OSP-B157WB with RF cable.
- b. Set the EUT transmit continuously with maximum output power.
- c. Through the test software in TS8897 to control a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Because the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.
- d. Repeat above procedures until all modes and channels were measured.
- e. Record the results in the test report.

## 4.4. Test Result

Temperature	26.5°C	Relative Humidity			48%	Test Voltage	AC 120V/60Hz	
BAND	Test Mode	Fre (MHz)	Conducted AVG Output Power (dBm)		Total Conducted Output Power (W)	Total Conducted Output Power (dBm)	Limit (dBm)	Result
			Ant 1	Ant 2				
U-NII-1	IEEE 802.11a	5180	6.12	9.72	0.0094	9.72	23.98	PASS
		5200	6.49	9.59	0.0091	9.59	23.98	PASS
		5240	5.09	8.88	0.0077	8.88	23.98	PASS
	IEEE 802.11n HT20	5180	8.01	10.22	0.01685	12.27	23.98	PASS
		5200	8.36	10.54	0.01819	12.60	23.98	PASS
		5240	6.75	9.95	0.01461	11.65	23.98	PASS
	IEEE 802.11ac VHT20	5180	7.43	10.68	0.01722	12.36	23.98	PASS
		5200	7.93	10.92	0.01856	12.69	23.98	PASS
		5240	6.52	10.14	0.01481	11.70	23.98	PASS
	IEEE 802.11n HT40	5190	8.32	11.14	0.01980	12.97	23.98	PASS
		5230	7.38	10.55	0.01681	12.26	23.98	PASS
	IEEE 802.11ac VHT40	5190	10.65	7.85	0.01769	12.48	23.98	PASS
		5230	9.98	6.77	0.01471	11.68	23.98	PASS
	IEEE 802.11ac VHT80	5210	7.09	10.08	0.01530	11.85	23.98	PASS