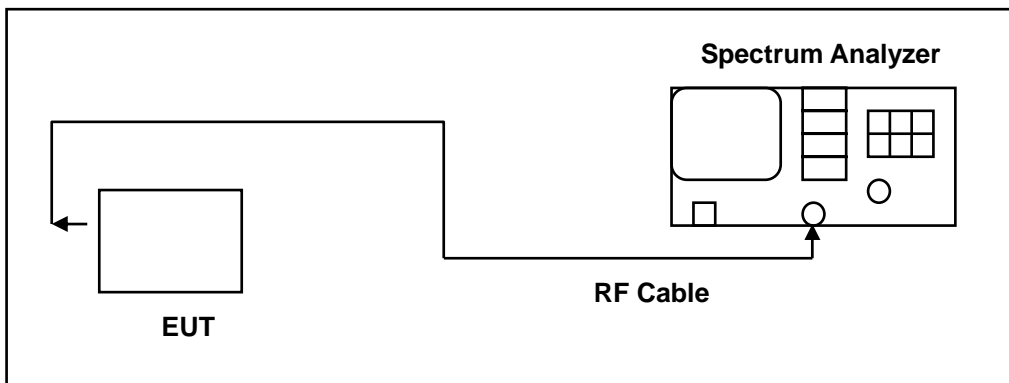


## 9 Out of Band Conducted Emissions Measurement

### 9.1. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

### 9.2. Test Setup



### 9.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/16/2014	(2)
Spectrum Analyzer	Agilent	E4408B	MY45107753	07/24/2014	(1)
Test Site	ATL	TE05	TE05	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years. (3) Calibration period 3 years.

Note: N.C.R. = No Calibration Request.

### 9.4. Test Procedure

In any 100 kHz bandwidth outside the EUT pass band, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 30 dB below that of the maximum in-band 100 kHz emission, antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the pass band.

The test was performed at 3 channels.

**9.5. Test Graphs**

**Reference level**

Mode 2: IEEE 802.11b Link Mode\_ANT-0

<p>2412</p>	
<p>2437</p>	
<p>2462</p>	

Mode 2: IEEE 802.11b Link Mode\_ANT-1

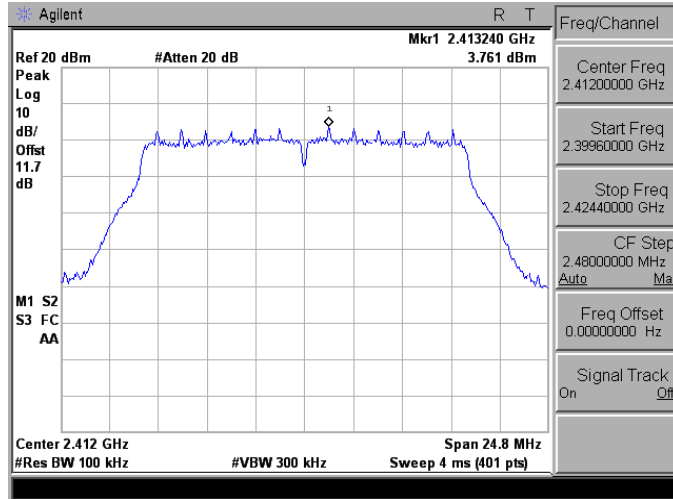
<p>2412</p>	
<p>2437</p>	
<p>2462</p>	

Mode 2: IEEE 802.11b Link Mode\_ANT-2

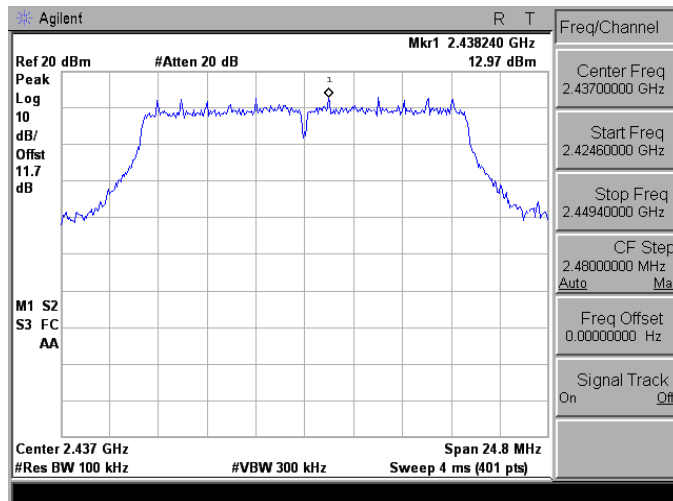
<p>2412</p>	
<p>2437</p>	
<p>2462</p>	

Mode 3: IEEE 802.11g Link Mode\_ANT-0

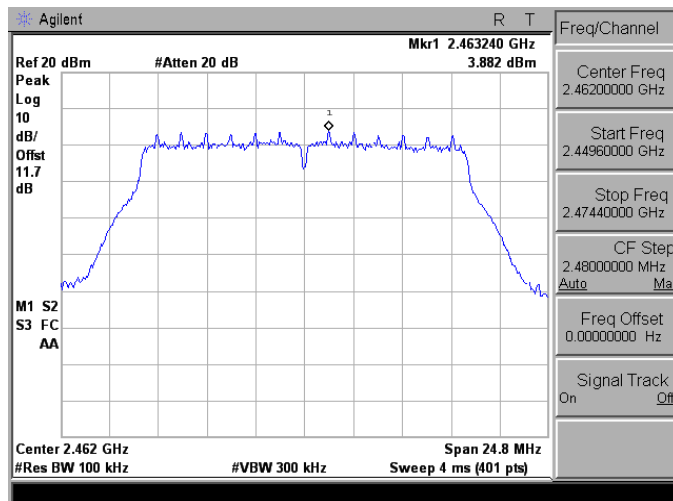
2412



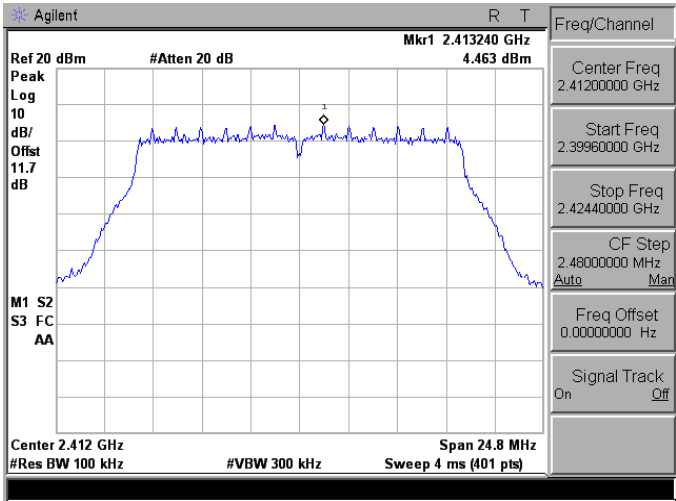
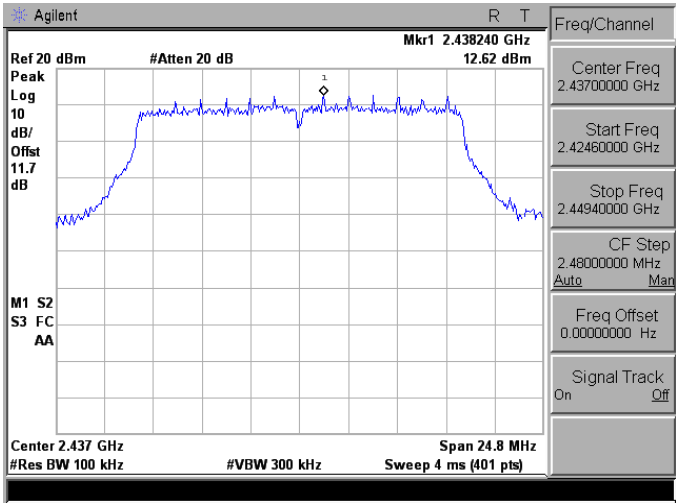
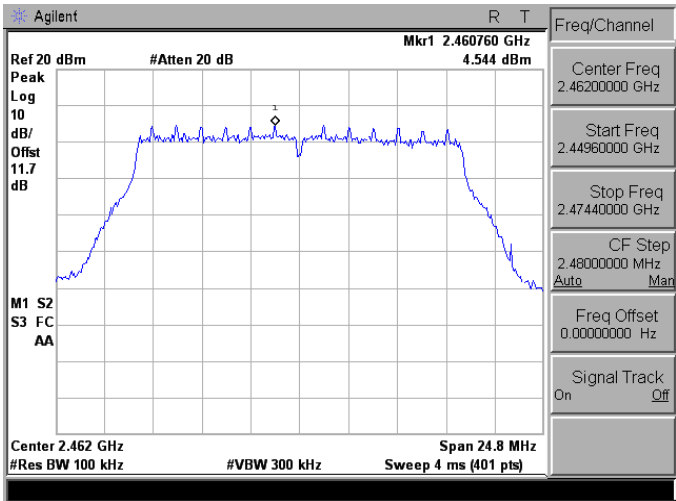
2437



2462



Mode 3: IEEE 802.11g Link Mode\_ANT-1

<p>2412</p>	 <p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.413240 GHz 4.463 dBm</p> <p>Peak Log 10 dB/Offst 11.7 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.412 GHz Span 24.8 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <table border="1"> <thead> <tr> <th colspan="2">Freq/Channel</th> </tr> </thead> <tbody> <tr> <td>Center Freq</td> <td>2.41200000 GHz</td> </tr> <tr> <td>Start Freq</td> <td>2.39960000 GHz</td> </tr> <tr> <td>Stop Freq</td> <td>2.42440000 GHz</td> </tr> <tr> <td>CF Step</td> <td>2.48000000 MHz</td> </tr> <tr> <td>Freq Offset</td> <td>0.00000000 Hz</td> </tr> <tr> <td>Signal Track</td> <td>On</td> </tr> </tbody> </table>	Freq/Channel		Center Freq	2.41200000 GHz	Start Freq	2.39960000 GHz	Stop Freq	2.42440000 GHz	CF Step	2.48000000 MHz	Freq Offset	0.00000000 Hz	Signal Track	On
Freq/Channel															
Center Freq	2.41200000 GHz														
Start Freq	2.39960000 GHz														
Stop Freq	2.42440000 GHz														
CF Step	2.48000000 MHz														
Freq Offset	0.00000000 Hz														
Signal Track	On														
<p>2437</p>	 <p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.438240 GHz 12.62 dBm</p> <p>Peak Log 10 dB/Offst 11.7 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.437 GHz Span 24.8 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <table border="1"> <thead> <tr> <th colspan="2">Freq/Channel</th> </tr> </thead> <tbody> <tr> <td>Center Freq</td> <td>2.43700000 GHz</td> </tr> <tr> <td>Start Freq</td> <td>2.42460000 GHz</td> </tr> <tr> <td>Stop Freq</td> <td>2.44940000 GHz</td> </tr> <tr> <td>CF Step</td> <td>2.48000000 MHz</td> </tr> <tr> <td>Freq Offset</td> <td>0.00000000 Hz</td> </tr> <tr> <td>Signal Track</td> <td>On</td> </tr> </tbody> </table>	Freq/Channel		Center Freq	2.43700000 GHz	Start Freq	2.42460000 GHz	Stop Freq	2.44940000 GHz	CF Step	2.48000000 MHz	Freq Offset	0.00000000 Hz	Signal Track	On
Freq/Channel															
Center Freq	2.43700000 GHz														
Start Freq	2.42460000 GHz														
Stop Freq	2.44940000 GHz														
CF Step	2.48000000 MHz														
Freq Offset	0.00000000 Hz														
Signal Track	On														
<p>2462</p>	 <p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.460760 GHz 4.544 dBm</p> <p>Peak Log 10 dB/Offst 11.7 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.462 GHz Span 24.8 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <table border="1"> <thead> <tr> <th colspan="2">Freq/Channel</th> </tr> </thead> <tbody> <tr> <td>Center Freq</td> <td>2.46200000 GHz</td> </tr> <tr> <td>Start Freq</td> <td>2.44960000 GHz</td> </tr> <tr> <td>Stop Freq</td> <td>2.47440000 GHz</td> </tr> <tr> <td>CF Step</td> <td>2.48000000 MHz</td> </tr> <tr> <td>Freq Offset</td> <td>0.00000000 Hz</td> </tr> <tr> <td>Signal Track</td> <td>On</td> </tr> </tbody> </table>	Freq/Channel		Center Freq	2.46200000 GHz	Start Freq	2.44960000 GHz	Stop Freq	2.47440000 GHz	CF Step	2.48000000 MHz	Freq Offset	0.00000000 Hz	Signal Track	On
Freq/Channel															
Center Freq	2.46200000 GHz														
Start Freq	2.44960000 GHz														
Stop Freq	2.47440000 GHz														
CF Step	2.48000000 MHz														
Freq Offset	0.00000000 Hz														
Signal Track	On														

Mode 3: IEEE 802.11g Link Mode\_ANT-2

<p>2412</p>	
<p>2437</p>	
<p>2462</p>	

Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode \_ ANT0

<p>2412</p>	
<p>2437</p>	
<p>2462</p>	



Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode \_ ANT1

<p>2412</p>	<p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.4107365 GHz</p> <p>Peak 4.621 dBm</p> <p>Log</p> <p>dB/ 10</p> <p>Offset 11.7</p> <p>dB</p> <p>M1 S2</p> <p>S3 FC</p> <p>AA</p> <p>Center 2.412 GHz Span 26.6 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.41200000 GHz</p> <p>Start Freq 2.39870000 GHz</p> <p>Stop Freq 2.42530000 GHz</p> <p>CF Step 2.66000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2437</p>	<p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.4357365 GHz</p> <p>Peak 12.74 dBm</p> <p>Log</p> <p>dB/ 10</p> <p>Offset 11.7</p> <p>dB</p> <p>M1 S2</p> <p>S3 FC</p> <p>AA</p> <p>Center 2.437 GHz Span 26.6 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.42370000 GHz</p> <p>Stop Freq 2.45030000 GHz</p> <p>CF Step 2.66000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2462</p>	<p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.4557490 GHz</p> <p>Peak 4.536 dBm</p> <p>Log</p> <p>dB/ 10</p> <p>Offset 11.7</p> <p>dB</p> <p>M1 S2</p> <p>S3 FC</p> <p>AA</p> <p>Center 2.462 GHz Span 26.6 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.46200000 GHz</p> <p>Start Freq 2.44870000 GHz</p> <p>Stop Freq 2.47530000 GHz</p> <p>CF Step 2.66000000 MHz</p> <p>Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>

Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode \_ ANT2

2412	
2437	
2462	

Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode \_ ANT0

<p>2422</p>	<p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.42569 GHz Peak Log 10 dB/Offset 11.7 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.422 GHz Span 54.6 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.657 ms (401 pts)</p> <table border="1"> <thead> <tr> <th colspan="2">Freq/Channel</th> </tr> </thead> <tbody> <tr> <td>Center Freq</td> <td>2.42200000 GHz</td> </tr> <tr> <td>Start Freq</td> <td>2.39470000 GHz</td> </tr> <tr> <td>Stop Freq</td> <td>2.44930000 GHz</td> </tr> <tr> <td>CF Step</td> <td>5.46000000 MHz Auto Man</td> </tr> <tr> <td>Freq Offset</td> <td>0.00000000 Hz</td> </tr> <tr> <td>Signal Track</td> <td>On Off</td> </tr> </tbody> </table>	Freq/Channel		Center Freq	2.42200000 GHz	Start Freq	2.39470000 GHz	Stop Freq	2.44930000 GHz	CF Step	5.46000000 MHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
Freq/Channel															
Center Freq	2.42200000 GHz														
Start Freq	2.39470000 GHz														
Stop Freq	2.44930000 GHz														
CF Step	5.46000000 MHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														
<p>2437</p>	<p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.44069 GHz Peak Log 10 dB/Offset 11.7 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.437 GHz Span 54.6 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.657 ms (401 pts)</p> <table border="1"> <thead> <tr> <th colspan="2">Freq/Channel</th> </tr> </thead> <tbody> <tr> <td>Center Freq</td> <td>2.43700000 GHz</td> </tr> <tr> <td>Start Freq</td> <td>2.40970000 GHz</td> </tr> <tr> <td>Stop Freq</td> <td>2.46430000 GHz</td> </tr> <tr> <td>CF Step</td> <td>5.46000000 MHz Auto Man</td> </tr> <tr> <td>Freq Offset</td> <td>0.00000000 Hz</td> </tr> <tr> <td>Signal Track</td> <td>On Off</td> </tr> </tbody> </table>	Freq/Channel		Center Freq	2.43700000 GHz	Start Freq	2.40970000 GHz	Stop Freq	2.46430000 GHz	CF Step	5.46000000 MHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
Freq/Channel															
Center Freq	2.43700000 GHz														
Start Freq	2.40970000 GHz														
Stop Freq	2.46430000 GHz														
CF Step	5.46000000 MHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														
<p>2452</p>	<p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.45569 GHz Peak Log 10 dB/Offset 11.7 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.452 GHz Span 54.6 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.657 ms (401 pts)</p> <table border="1"> <thead> <tr> <th colspan="2">Freq/Channel</th> </tr> </thead> <tbody> <tr> <td>Center Freq</td> <td>2.45200000 GHz</td> </tr> <tr> <td>Start Freq</td> <td>2.42470000 GHz</td> </tr> <tr> <td>Stop Freq</td> <td>2.47930000 GHz</td> </tr> <tr> <td>CF Step</td> <td>5.46000000 MHz Auto Man</td> </tr> <tr> <td>Freq Offset</td> <td>0.00000000 Hz</td> </tr> <tr> <td>Signal Track</td> <td>On Off</td> </tr> </tbody> </table>	Freq/Channel		Center Freq	2.45200000 GHz	Start Freq	2.42470000 GHz	Stop Freq	2.47930000 GHz	CF Step	5.46000000 MHz Auto Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
Freq/Channel															
Center Freq	2.45200000 GHz														
Start Freq	2.42470000 GHz														
Stop Freq	2.47930000 GHz														
CF Step	5.46000000 MHz Auto Man														
Freq Offset	0.00000000 Hz														
Signal Track	On Off														




Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode \_ ANT1

<p>2422</p>	<p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.41695 GHz 0.246 dBm</p> <p>Peak Log 10 dB/Offset 11.7 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.422 GHz Span 54.6 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.657 ms (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.42200000 GHz</p> <p>Start Freq 2.39470000 GHz</p> <p>Stop Freq 2.44930000 GHz</p> <p>CF Step 5.46000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2437</p>	<p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.44069 GHz 11.23 dBm</p> <p>Peak Log 10 dB/Offset 11.7 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.437 GHz Span 54.6 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.657 ms (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.40970000 GHz</p> <p>Stop Freq 2.46430000 GHz</p> <p>CF Step 5.46000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2452</p>	<p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.44695 GHz 0.802 dBm</p> <p>Peak Log 10 dB/Offset 11.7 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.452 GHz Span 54.6 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.657 ms (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.45200000 GHz</p> <p>Start Freq 2.42470000 GHz</p> <p>Stop Freq 2.47930000 GHz</p> <p>CF Step 5.46000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>




Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode \_ ANT2

<p>2422</p>	<p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.41695 GHz -1.156 dBm</p> <p>Peak Log 10 dB/Offst 11.7 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.422 GHz Span 54.6 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.657 ms (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.42200000 GHz</p> <p>Start Freq 2.39470000 GHz</p> <p>Stop Freq 2.44930000 GHz</p> <p>CF Step 5.46000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2437</p>	<p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.43195 GHz 11.26 dBm</p> <p>Peak Log 10 dB/Offst 11.7 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.437 GHz Span 54.6 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.657 ms (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.40970000 GHz</p> <p>Stop Freq 2.46430000 GHz</p> <p>CF Step 5.46000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2452</p>	<p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.44695 GHz -0.68 dBm</p> <p>Peak Log 10 dB/Offst 11.7 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.452 GHz Span 54.6 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.657 ms (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.45200000 GHz</p> <p>Start Freq 2.42470000 GHz</p> <p>Stop Freq 2.47930000 GHz</p> <p>CF Step 5.46000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>




Mode 6: IEEE 802.11a U-NII Band III Link Mode\_ANT-0

5745	 <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Ref Offset 13.7 dB Ref 20.00 dBm</p> <p>Mkr1 5.752 475 GHz 12.338 dBm</p> <p>Center 5.74500 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.400 ms (1001 pts)</p> <p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 5.74500000 GHz</p> <p>Start Freq 5.73250000 GHz</p> <p>Stop Freq 5.75750000 GHz</p> <p>CF Step 2.500000 MHz Man</p> <p>Freq Offset 0 Hz</p>
5785	 <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Ref Offset 13.7 dB Ref 20.00 dBm</p> <p>Mkr1 5.783 750 GHz 11.904 dBm</p> <p>Center 5.78500 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.400 ms (1001 pts)</p> <p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 5.78500000 GHz</p> <p>Start Freq 5.77250000 GHz</p> <p>Stop Freq 5.79750000 GHz</p> <p>CF Step 2.500000 MHz Man</p> <p>Freq Offset 0 Hz</p>
5825	 <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Ref Offset 13.7 dB Ref 20.00 dBm</p> <p>Mkr1 5.823 725 GHz 11.584 dBm</p> <p>Center 5.82500 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.400 ms (1001 pts)</p> <p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 5.82500000 GHz</p> <p>Start Freq 5.81250000 GHz</p> <p>Stop Freq 5.83750000 GHz</p> <p>CF Step 2.500000 MHz Man</p> <p>Freq Offset 0 Hz</p>

Mode 6: IEEE 802.11a U-NII Band III Link Mode\_ANT-1

<p>5745</p>	
<p>5785</p>	
<p>5825</p>	

Mode 6: IEEE 802.11a U-NII Band III Link Mode\_ANT-2

<p>5745</p>	
<p>5785</p>	
<p>5825</p>	



Mode 7: IEEE 802.11ac U-NII Band III 20MHz Link Mode \_ ANT0

5745	<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Ref Offset 13.7 dB Ref 20.00 dBm</p> <p>Mkr1 5.747 484 GHz 12.643 dBm</p> <p>Center 5.74500 GHz #Res BW 100 kHz #VBW 300 kHz Span 27.00 MHz Sweep 2.600 ms (1001 pts)</p> <p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 5.74500000 GHz</p> <p>Start Freq 5.73150000 GHz</p> <p>Stop Freq 5.75850000 GHz</p> <p>CF Step 2.700000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>
5785	<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Ref Offset 13.7 dB Ref 20.00 dBm</p> <p>Mkr1 5.777 494 GHz 12.267 dBm</p> <p>Center 5.78500 GHz #Res BW 100 kHz #VBW 300 kHz Span 27.00 MHz Sweep 2.600 ms (1001 pts)</p> <p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 5.78500000 GHz</p> <p>Start Freq 5.77150000 GHz</p> <p>Stop Freq 5.79850000 GHz</p> <p>CF Step 2.700000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>
5825	<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Ref Offset 13.7 dB Ref 20.00 dBm</p> <p>Mkr1 5.826 269 GHz 12.384 dBm</p> <p>Center 5.82500 GHz #Res BW 100 kHz #VBW 300 kHz Span 27.00 MHz Sweep 2.600 ms (1001 pts)</p> <p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 5.82500000 GHz</p> <p>Start Freq 5.81150000 GHz</p> <p>Stop Freq 5.83850000 GHz</p> <p>CF Step 2.700000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>

Mode 7: IEEE 802.11ac U-NII Band III 20MHz Link Mode \_ ANT1

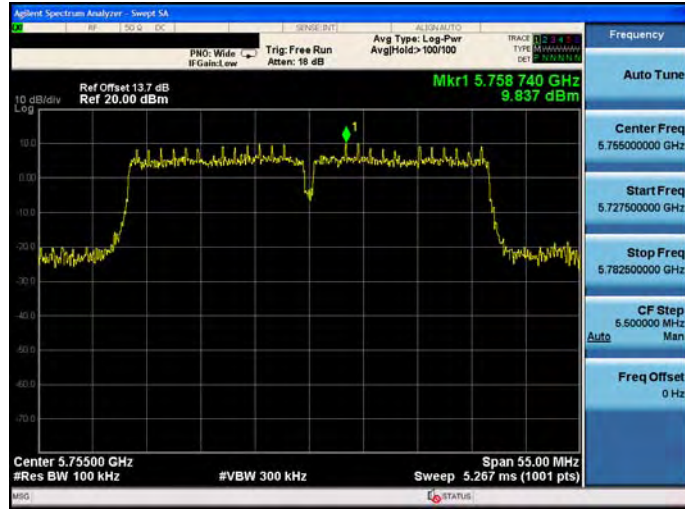
5745	<p>Agilent Spectrum Analyzer - Sweep SA</p> <p>Ref Offset: 13.7 dB Ref 20.00 dBm</p> <p>Mkr1 5.746 215 GHz 12.473 dBm</p> <p>Center 5.74500 GHz #Res BW 100 kHz #VBW 300 kHz Span 27.00 MHz Sweep 2.600 ms (1001 pts)</p> <p>Frequency: Auto Tune Center Freq: 5.74500000 GHz Start Freq: 5.731500000 GHz Stop Freq: 5.758500000 GHz CF Step: 2.700000 MHz Freq Offset: 0 Hz</p>
5785	<p>Agilent Spectrum Analyzer - Sweep SA</p> <p>Ref Offset: 13.7 dB Ref 20.00 dBm</p> <p>Mkr1 5.786 289 GHz 12.785 dBm</p> <p>Center 5.78500 GHz #Res BW 100 kHz #VBW 300 kHz Span 27.00 MHz Sweep 2.600 ms (1001 pts)</p> <p>Frequency: Auto Tune Center Freq: 5.78500000 GHz Start Freq: 5.771500000 GHz Stop Freq: 5.798500000 GHz CF Step: 2.700000 MHz Freq Offset: 0 Hz</p>
5825	<p>Agilent Spectrum Analyzer - Sweep SA</p> <p>Ref Offset: 13.7 dB Ref 20.00 dBm</p> <p>Mkr1 5.826 215 GHz 12.209 dBm</p> <p>Center 5.82500 GHz #Res BW 100 kHz #VBW 300 kHz Span 27.00 MHz Sweep 2.600 ms (1001 pts)</p> <p>Frequency: Auto Tune Center Freq: 5.82500000 GHz Start Freq: 5.811500000 GHz Stop Freq: 5.838500000 GHz CF Step: 2.700000 MHz Freq Offset: 0 Hz</p>

Mode 7: IEEE 802.11ac U-NII Band III 20MHz Link Mode \_ ANT2

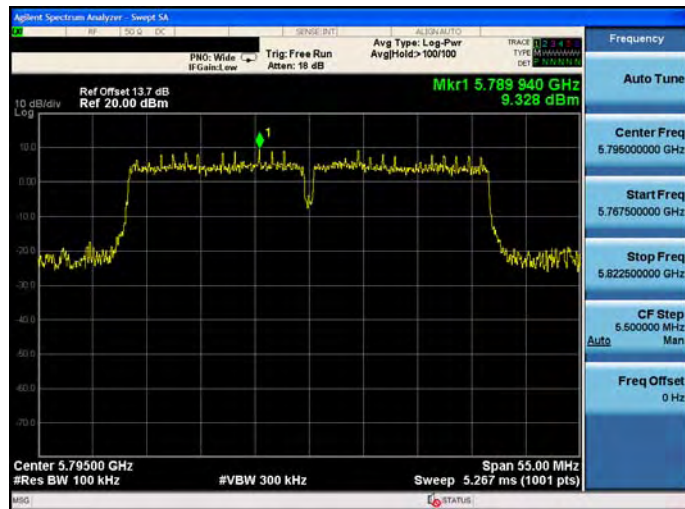
<p>5745</p>	
<p>5785</p>	
<p>5825</p>	

Mode 8: IEEE 802.11ac U-NII Band III 40MHz Link Mode \_ ANT0

5755

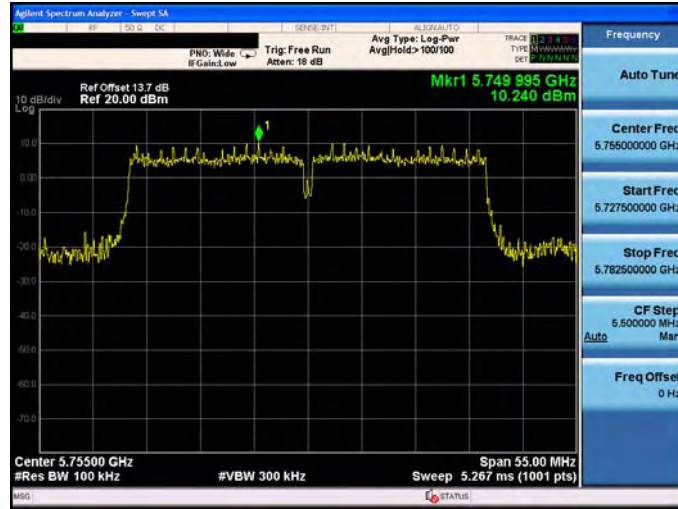


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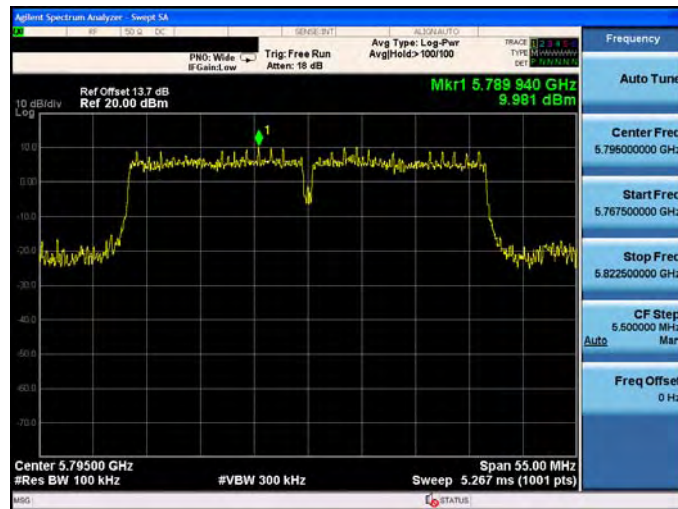


Mode 8: IEEE 802.11ac U-NII Band III 40MHz Link Mode \_ ANT1

5755



5795



Mode 8: IEEE 802.11ac U-NII Band III 40MHz Link Mode \_ ANT2

5755	<p>Agilent Spectrum Analyzer - Sweep SA</p> <p>Ref Offset: 13.7 dB Ref: 20.00 dBm</p> <p>Mkr1 5.758 740 GHz 10.192 dBm</p> <p>Center 5.75500 GHz #Res BW 100 kHz #VBW 300 kHz Span 55.00 MHz Sweep 5.267 ms (1001 pts)</p> <table border="1"> <tr><td>Auto Tune</td></tr> <tr><td>Center Freq 5.755000000 GHz</td></tr> <tr><td>Start Freq 5.727500000 GHz</td></tr> <tr><td>Stop Freq 5.782500000 GHz</td></tr> <tr><td>CF Step 5.600000 MHz Auto Man</td></tr> <tr><td>Freq Offset 0 Hz</td></tr> </table>	Auto Tune	Center Freq 5.755000000 GHz	Start Freq 5.727500000 GHz	Stop Freq 5.782500000 GHz	CF Step 5.600000 MHz Auto Man	Freq Offset 0 Hz
Auto Tune							
Center Freq 5.755000000 GHz							
Start Freq 5.727500000 GHz							
Stop Freq 5.782500000 GHz							
CF Step 5.600000 MHz Auto Man							
Freq Offset 0 Hz							
5795	<p>Agilent Spectrum Analyzer - Sweep SA</p> <p>Ref Offset: 13.7 dB Ref: 20.00 dBm</p> <p>Mkr1 5.789 995 GHz 10.458 dBm</p> <p>Center 5.79500 GHz #Res BW 100 kHz #VBW 300 kHz Span 55.00 MHz Sweep 5.267 ms (1001 pts)</p> <table border="1"> <tr><td>Auto Tune</td></tr> <tr><td>Center Freq 5.795000000 GHz</td></tr> <tr><td>Start Freq 5.767500000 GHz</td></tr> <tr><td>Stop Freq 5.822500000 GHz</td></tr> <tr><td>CF Step 5.600000 MHz Auto Man</td></tr> <tr><td>Freq Offset 0 Hz</td></tr> </table>	Auto Tune	Center Freq 5.795000000 GHz	Start Freq 5.767500000 GHz	Stop Freq 5.822500000 GHz	CF Step 5.600000 MHz Auto Man	Freq Offset 0 Hz
Auto Tune							
Center Freq 5.795000000 GHz							
Start Freq 5.767500000 GHz							
Stop Freq 5.822500000 GHz							
CF Step 5.600000 MHz Auto Man							
Freq Offset 0 Hz							

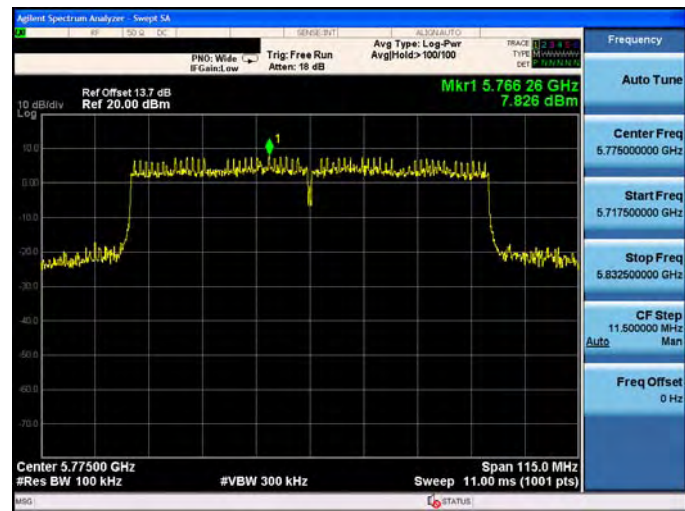
Mode 9: IEEE 802.11ac U-NII Band III 80MHz Link Mode \_ ANT0

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Mode 9: IEEE 802.11ac U-NII Band III 80MHz Link Mode \_ ANT1

5775



Mode 9: IEEE 802.11ac U-NII Band III 80MHz Link Mode \_ ANT2




5775



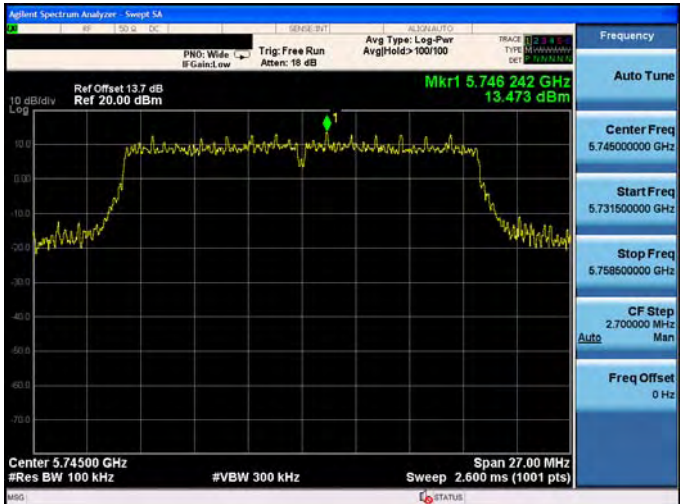




**Beamforming on**

Mode 7: IEEE 802.11ac U-NII Band III 20MHz Link Mode \_ ANT0

<p>5745</p>	
<p>5785</p>	
<p>5825</p>	

Mode 7: IEEE 802.11ac U-NII Band III 20MHz Link Mode \_ ANT1

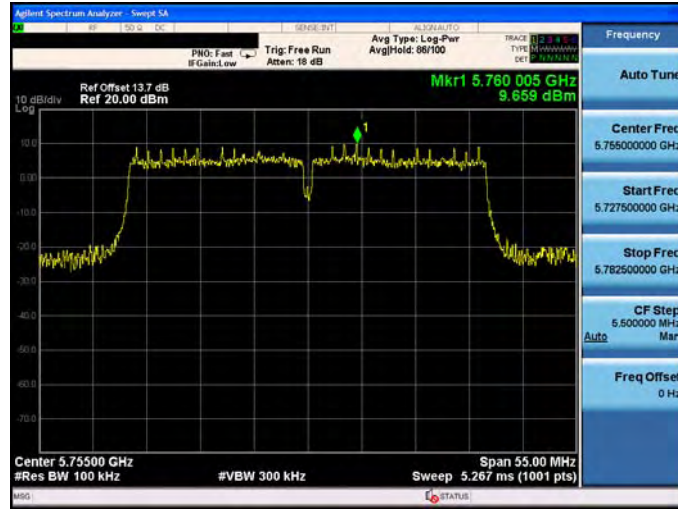
<p>5745</p>	
<p>5785</p>	
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Mode 7: IEEE 802.11ac U-NII Band III 20MHz Link Mode \_ ANT2

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Mode 8: IEEE 802.11ac U-NII Band III 40MHz Link Mode \_ ANT0

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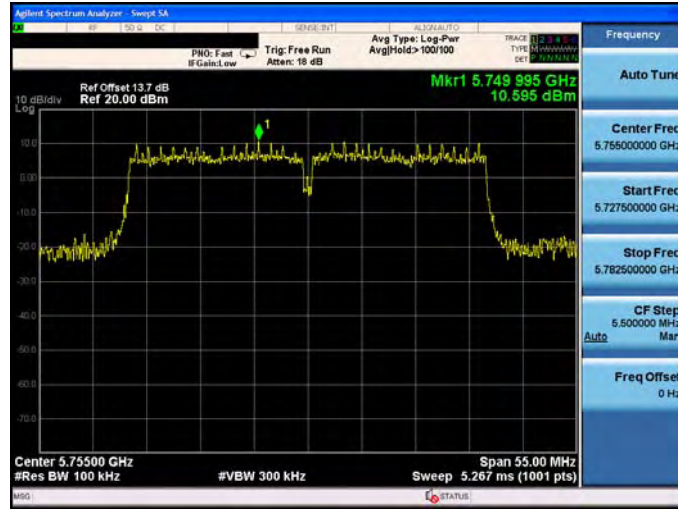


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Mode 8: IEEE 802.11ac U-NII Band III 40MHz Link Mode \_ ANT1

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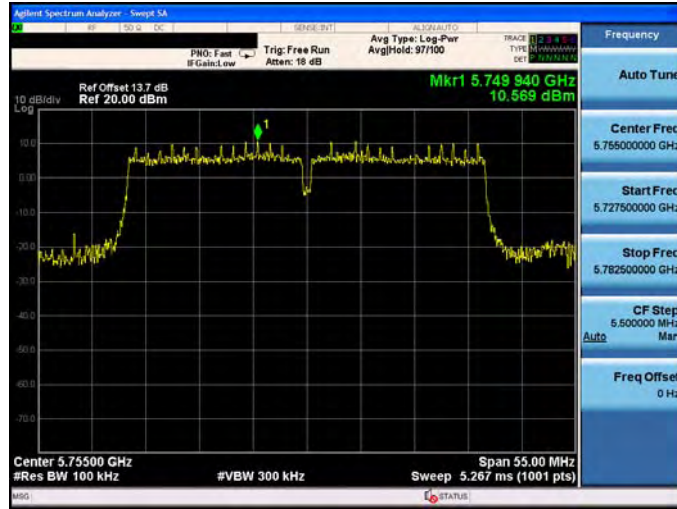


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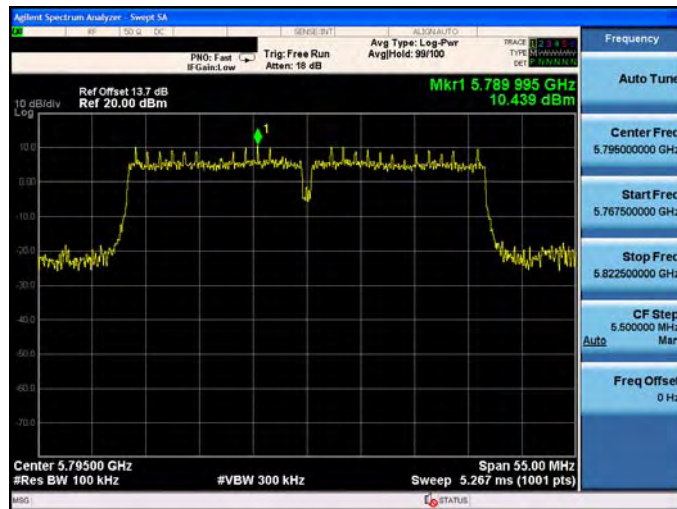


Mode 8: IEEE 802.11ac U-NII Band III 40MHz Link Mode \_ ANT2

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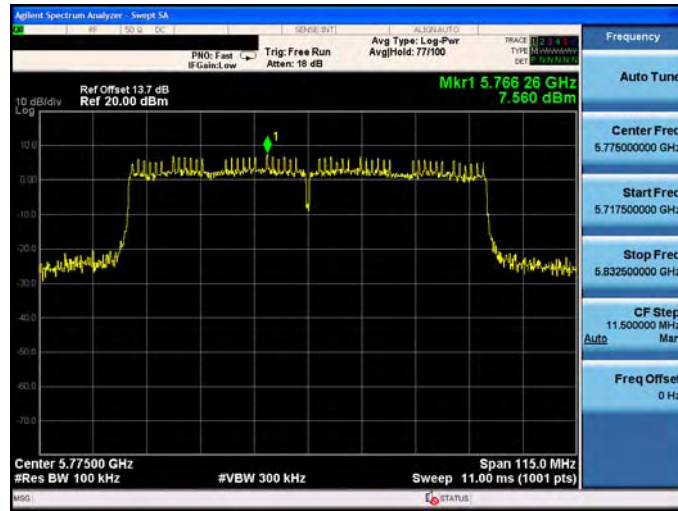


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Mode 9: IEEE 802.11ac U-NII Band III 80MHz Link Mode \_ ANT0

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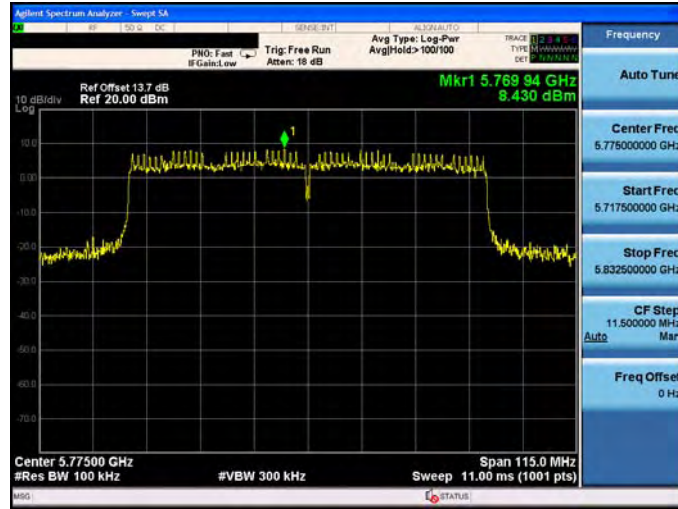
Mode 9: IEEE 802.11ac U-NII Band III 80MHz Link Mode \_ ANT1

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Mode 9: IEEE 802.11ac U-NII Band III 80MHz Link Mode \_ ANT2

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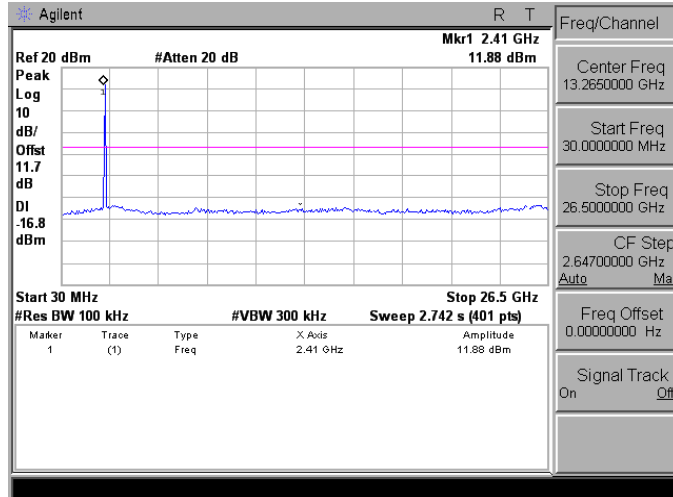
**Out of Band Conducted Emissions**

Mode 2: IEEE 802.11b Link Mode\_ANT-0

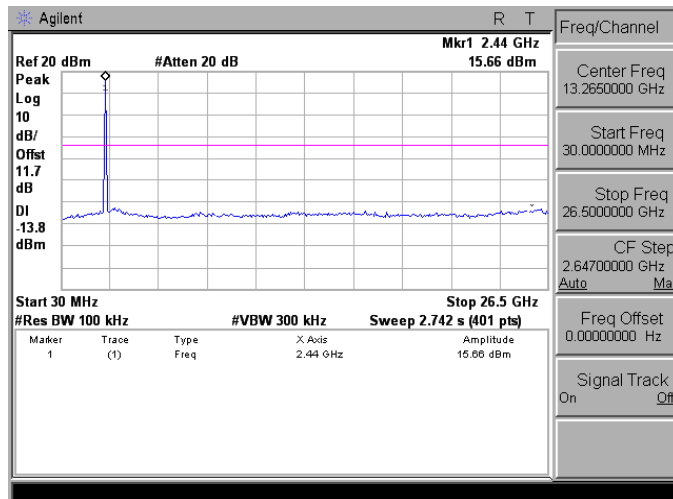
<p>2412</p>	<p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.41 GHz 11.64 dBm</p> <p>Peak Log 10 dB/Offst 11.7 dB DI -16.2 dBm</p> <p>Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.5 GHz Sweep 2.742 s (401 pts)</p> <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.41 GHz</td> <td>11.64 dBm</td> </tr> </tbody> </table> <p>Freq/Channel: Center Freq 13.2650000 GHz, Start Freq 30.0000000 MHz, Stop Freq 26.5000000 GHz, CF Step 2.64700000 GHz, Freq Offset 0.0000000 Hz, Signal Track On Off</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.41 GHz	11.64 dBm
Marker	Trace	Type	X Axis	Amplitude							
1	(1)	Freq	2.41 GHz	11.64 dBm							
<p>2437</p>	<p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.44 GHz 15.08 dBm</p> <p>Peak Log 10 dB/Offst 11.7 dB DI -13.9 dBm</p> <p>Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.5 GHz Sweep 2.742 s (401 pts)</p> <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.44 GHz</td> <td>15.08 dBm</td> </tr> </tbody> </table> <p>Freq/Channel: Center Freq 13.2650000 GHz, Start Freq 30.0000000 MHz, Stop Freq 26.5000000 GHz, CF Step 2.64700000 GHz, Freq Offset 0.0000000 Hz, Signal Track On Off</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.44 GHz	15.08 dBm
Marker	Trace	Type	X Axis	Amplitude							
1	(1)	Freq	2.44 GHz	15.08 dBm							
<p>2462</p>	<p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.46 GHz 14.32 dBm</p> <p>Peak Log 10 dB/Offst 11.7 dB DI -15.7 dBm</p> <p>Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.5 GHz Sweep 2.742 s (401 pts)</p> <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.46 GHz</td> <td>14.32 dBm</td> </tr> </tbody> </table> <p>Freq/Channel: Center Freq 13.2650000 GHz, Start Freq 30.0000000 MHz, Stop Freq 26.5000000 GHz, CF Step 2.64700000 GHz, Freq Offset 0.0000000 Hz, Signal Track On Off</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.46 GHz	14.32 dBm
Marker	Trace	Type	X Axis	Amplitude							
1	(1)	Freq	2.46 GHz	14.32 dBm							

Mode 2: IEEE 802.11b Link Mode\_ANT-1

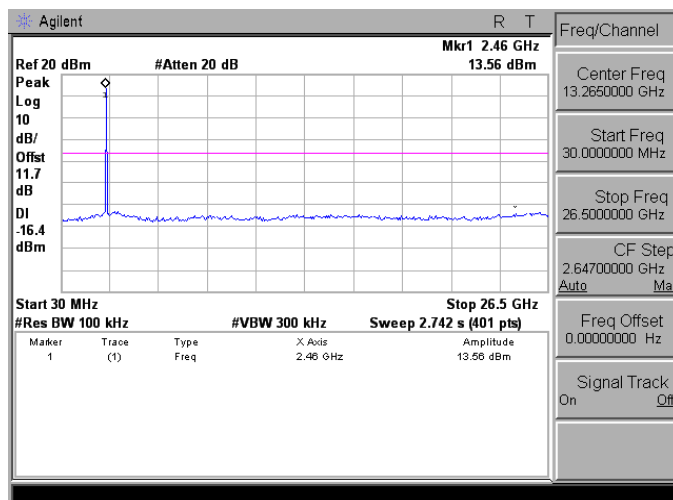
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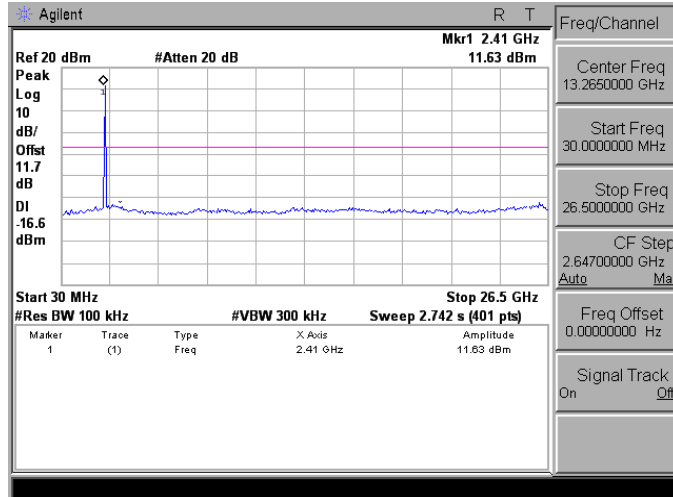


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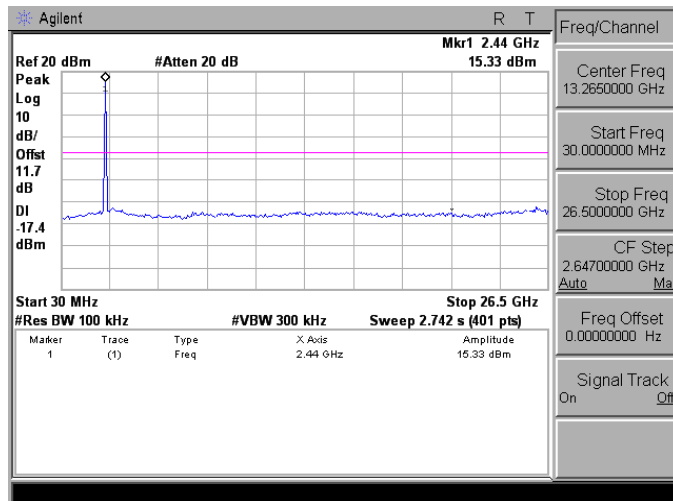


Mode 2: IEEE 802.11b Link Mode\_ANT-2

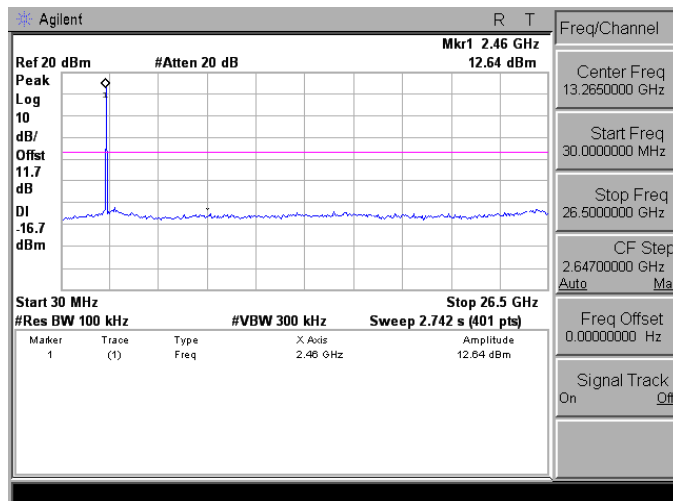
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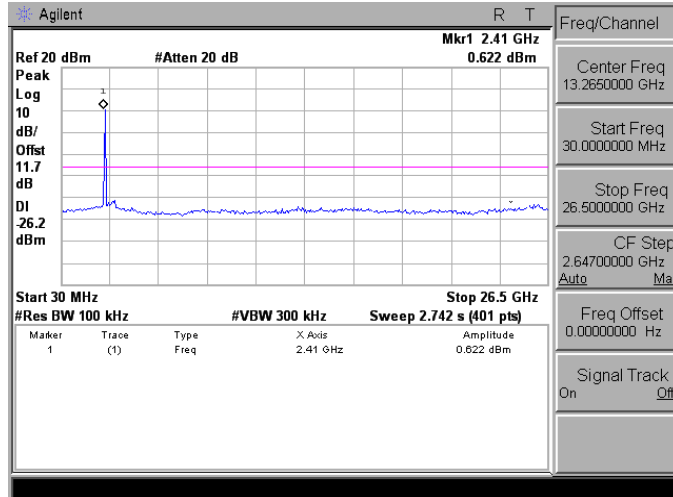


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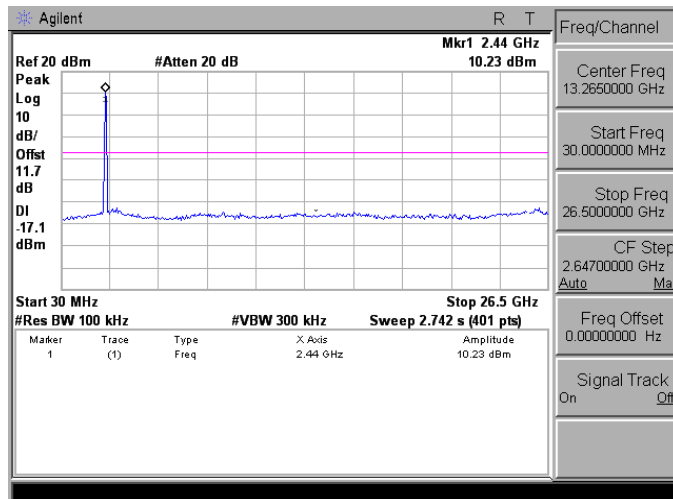


Mode 3: IEEE 802.11g Link Mode\_ANT-0

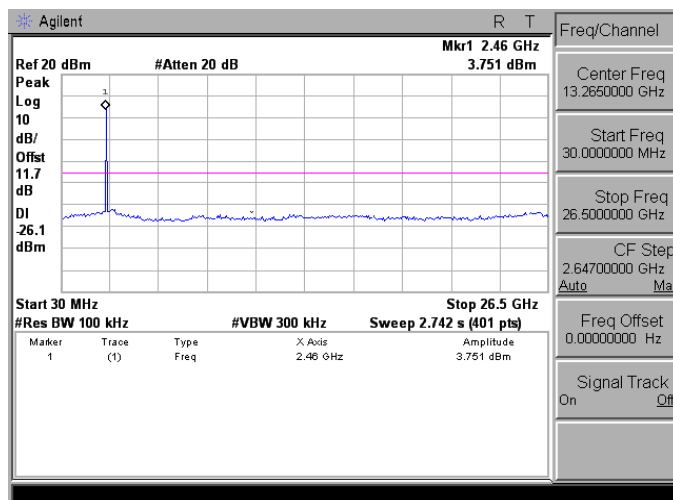
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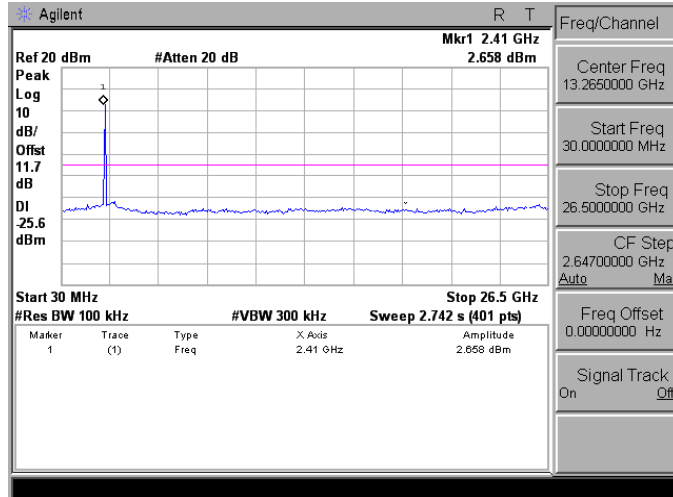


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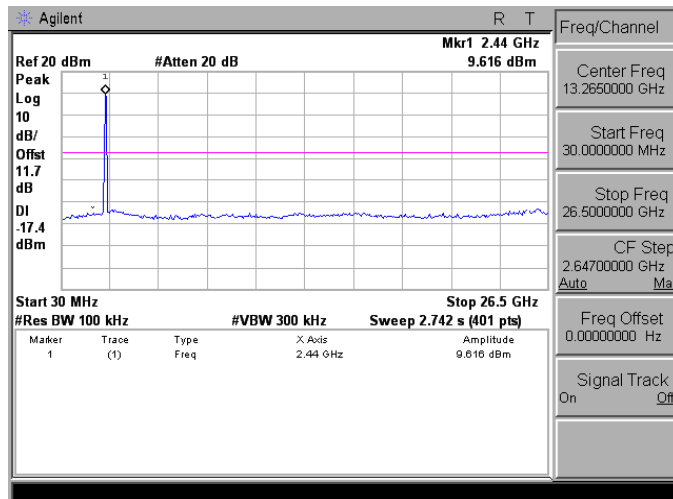


Mode 3: IEEE 802.11g Link Mode\_ANT-1

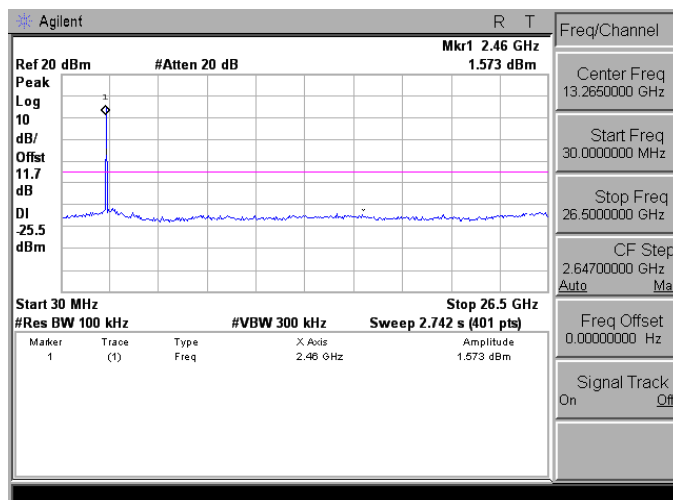
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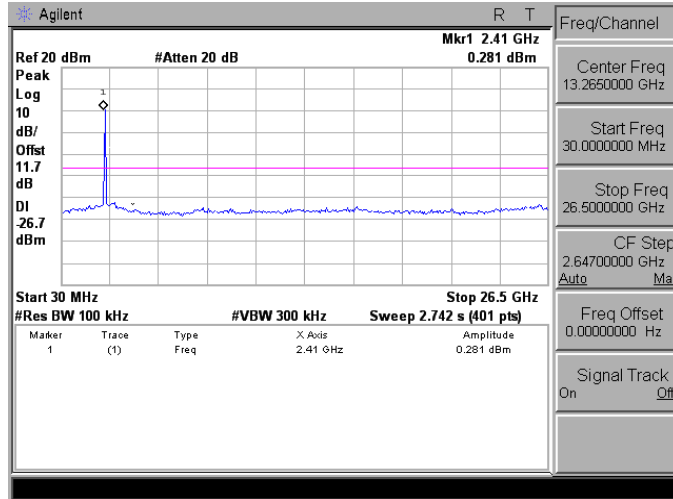


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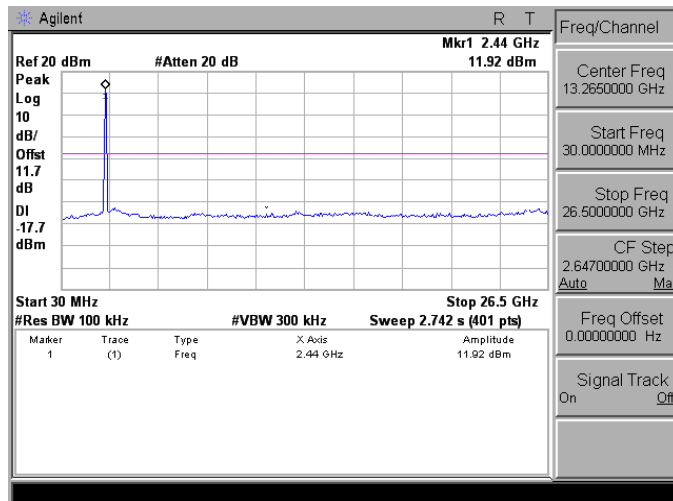


Mode 3: IEEE 802.11g Link Mode\_ANT-2

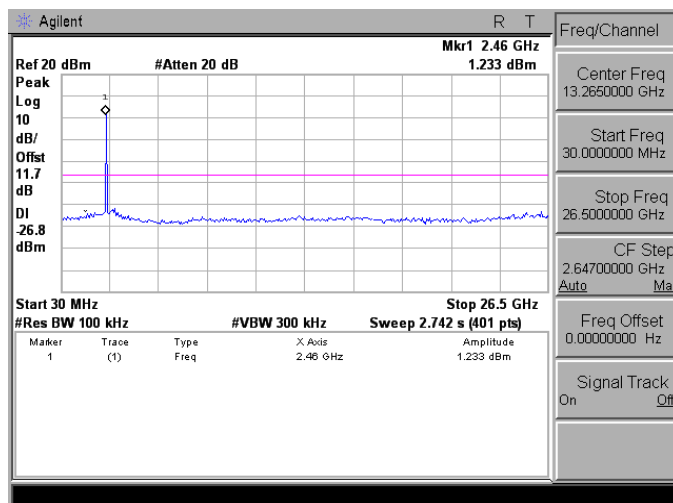
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2462

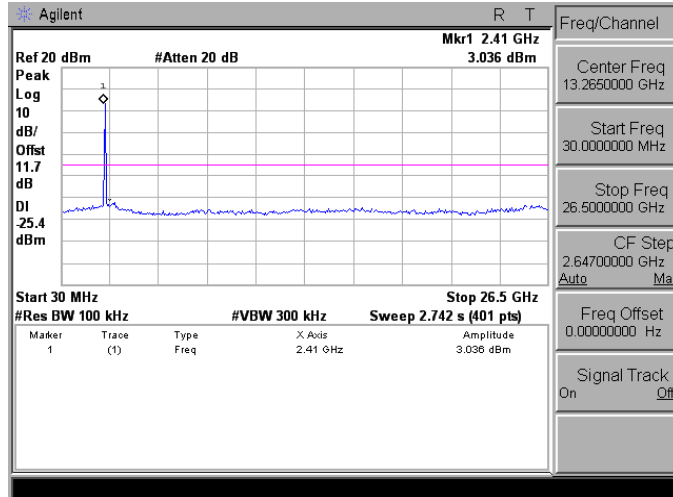


Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode \_ ANT0

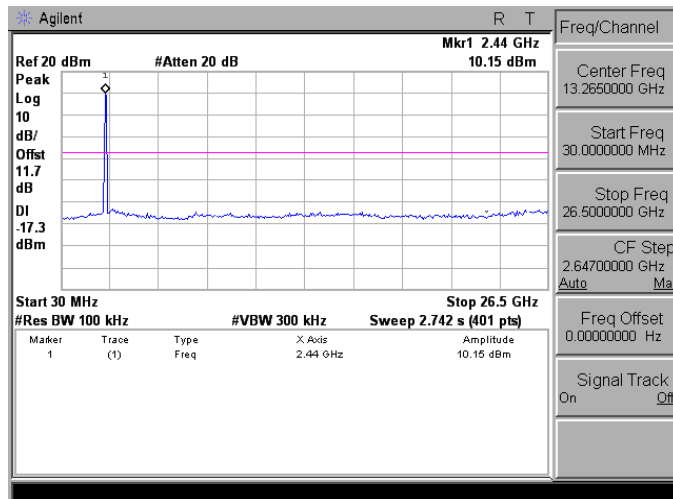
<p>2412</p>	
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Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode \_ ANT1

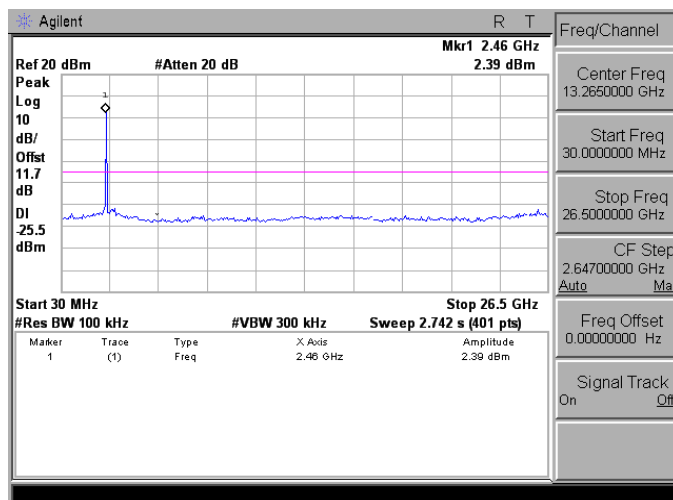
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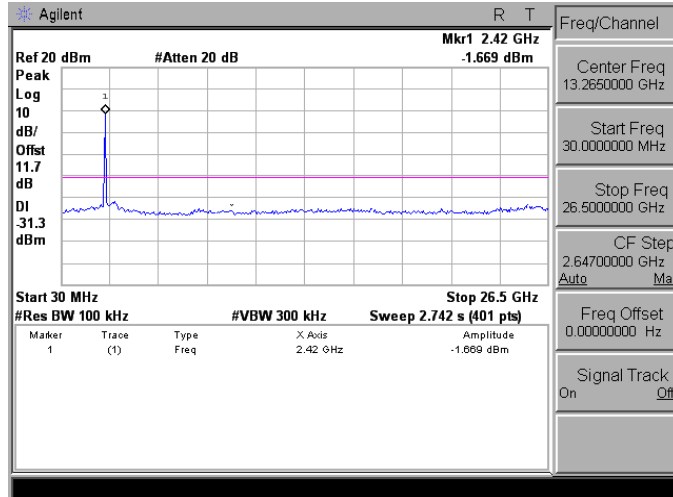


Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode \_ ANT2

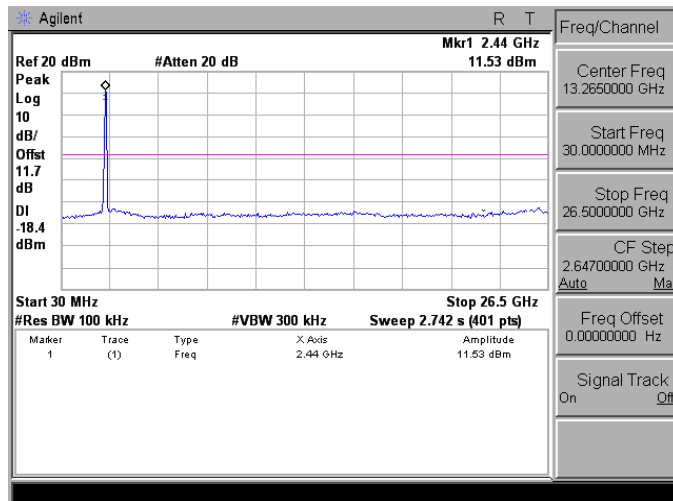
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Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode \_ ANT0

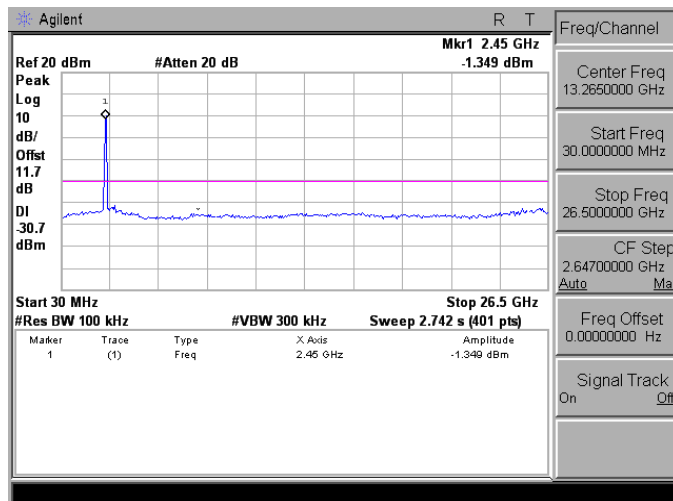
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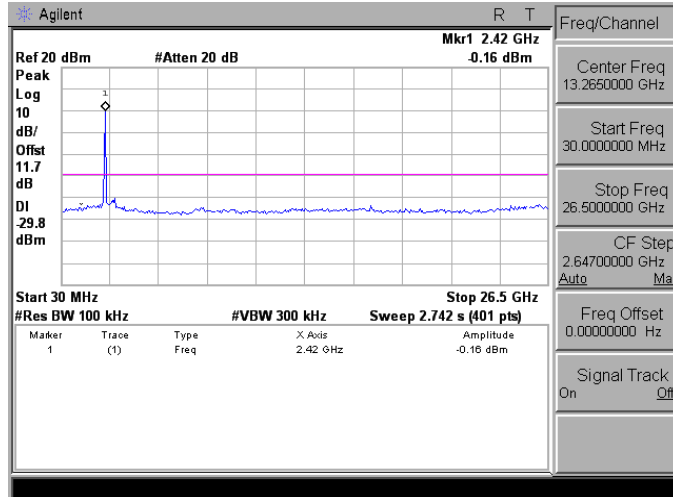


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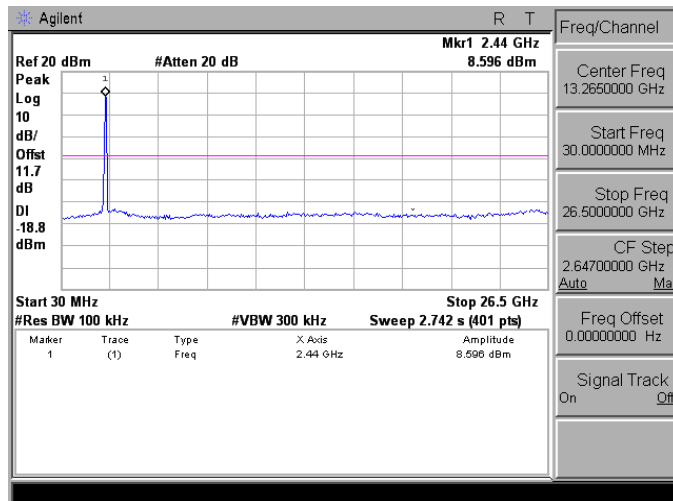


Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode \_ ANT1

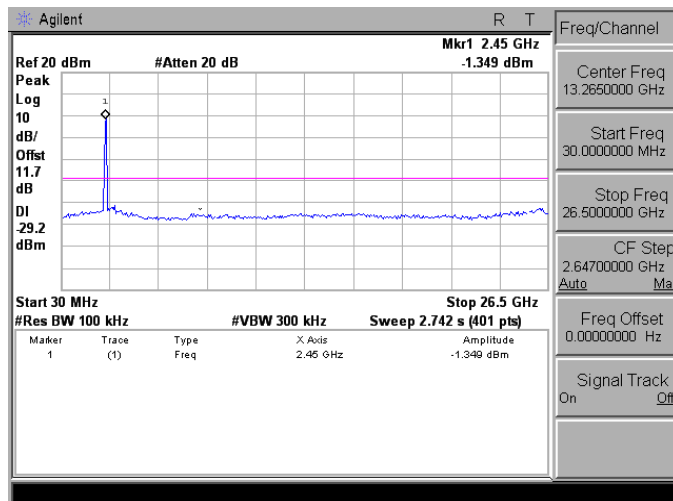
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2437



2452

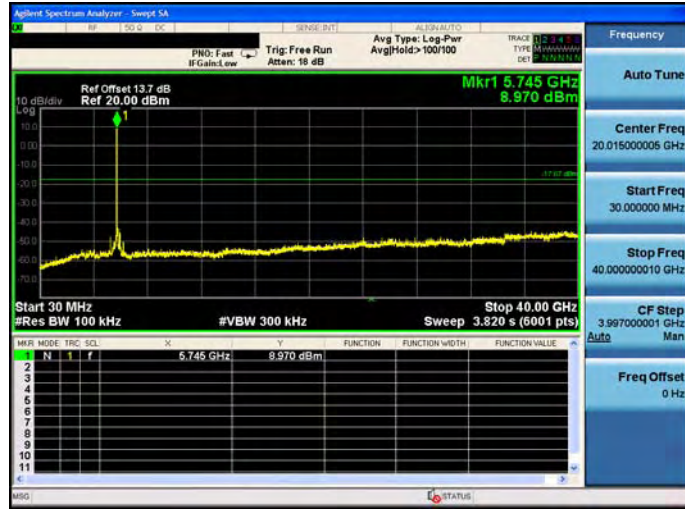


Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode \_ ANT2

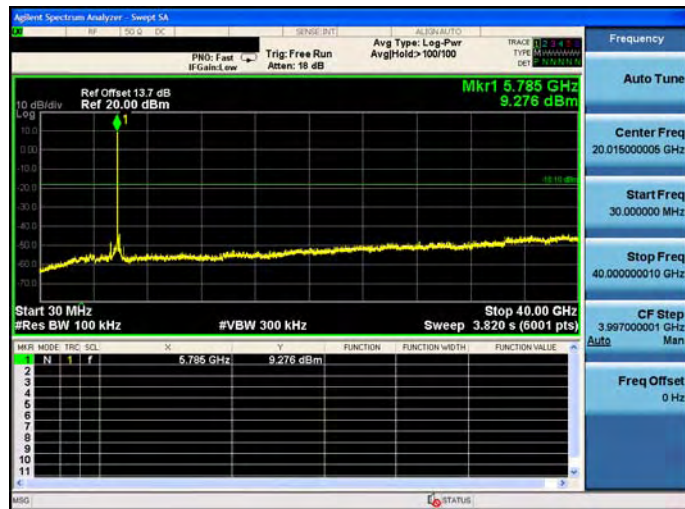
2422	<p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.42 GHz -1.797 dBm</p> <p>Peak Log 10 dB/Offst 11.7 dB DI -31.2 dBm</p> <p>Start 30 MHz Stop 26.5 GHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 2.742 s (401 pts)</p> <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.42 GHz</td> <td>-1.797 dBm</td> </tr> </tbody> </table> <p>Freq/Channel</p> <p>Center Freq 13.2650000 GHz</p> <p>Start Freq 30.0000000 MHz</p> <p>Stop Freq 26.5000000 GHz</p> <p>CF Step 2.64700000 GHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.42 GHz	-1.797 dBm
Marker	Trace	Type	X Axis	Amplitude							
1	(1)	Freq	2.42 GHz	-1.797 dBm							
2437	<p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.44 GHz 10.3 dBm</p> <p>Peak Log 10 dB/Offst 11.7 dB DI -18.8 dBm</p> <p>Start 30 MHz Stop 26.5 GHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 2.742 s (401 pts)</p> <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.44 GHz</td> <td>10.3 dBm</td> </tr> </tbody> </table> <p>Freq/Channel</p> <p>Center Freq 13.2650000 GHz</p> <p>Start Freq 30.0000000 MHz</p> <p>Stop Freq 26.5000000 GHz</p> <p>CF Step 2.64700000 GHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.44 GHz	10.3 dBm
Marker	Trace	Type	X Axis	Amplitude							
1	(1)	Freq	2.44 GHz	10.3 dBm							
2452	<p>Agilent R T</p> <p>Ref 20 dBm #Atten 20 dB Mkr1 2.45 GHz -0.775 dBm</p> <p>Peak Log 10 dB/Offst 11.7 dB DI -30.7 dBm</p> <p>Start 30 MHz Stop 26.5 GHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 2.742 s (401 pts)</p> <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.45 GHz</td> <td>-0.775 dBm</td> </tr> </tbody> </table> <p>Freq/Channel</p> <p>Center Freq 13.2650000 GHz</p> <p>Start Freq 30.0000000 MHz</p> <p>Stop Freq 26.5000000 GHz</p> <p>CF Step 2.64700000 GHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.45 GHz	-0.775 dBm
Marker	Trace	Type	X Axis	Amplitude							
1	(1)	Freq	2.45 GHz	-0.775 dBm							

Mode 6: IEEE 802.11a U-NII Band III Link Mode\_ANT-0

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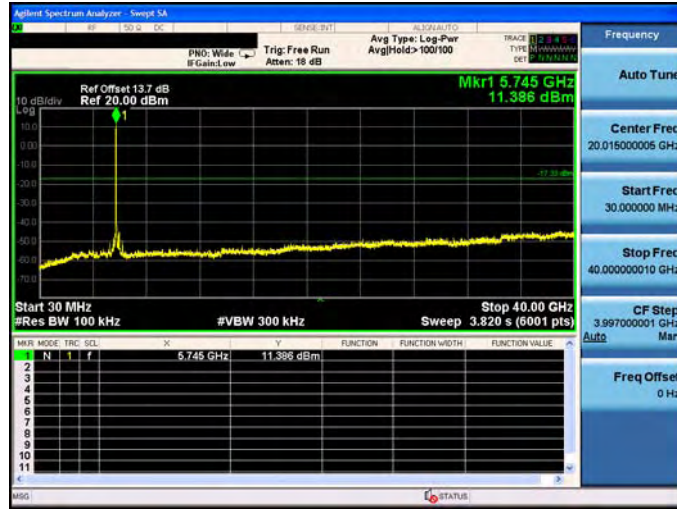


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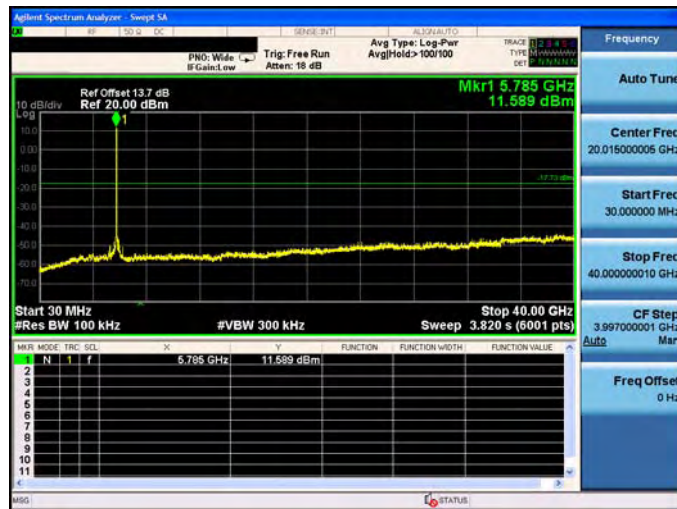


Mode 6: IEEE 802.11a U-NII Band III Link Mode\_ANT-1

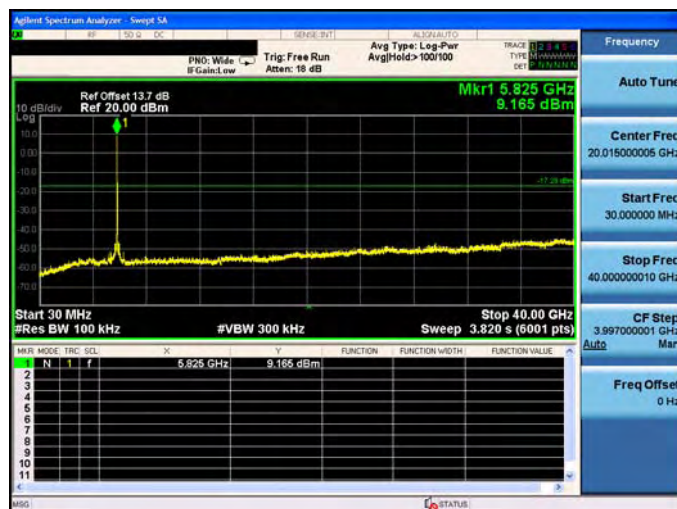
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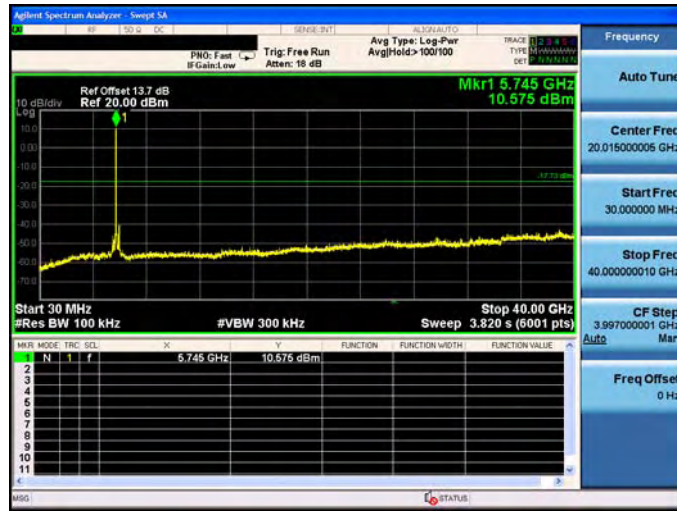


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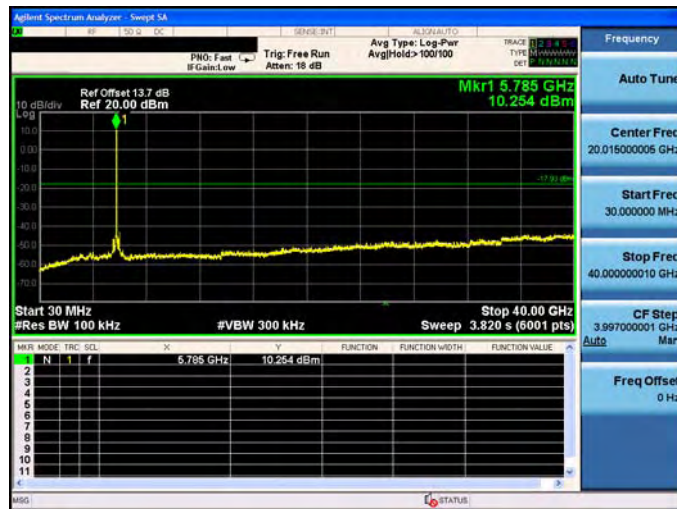


Mode 6: IEEE 802.11a U-NII Band III Link Mode\_ANT-2

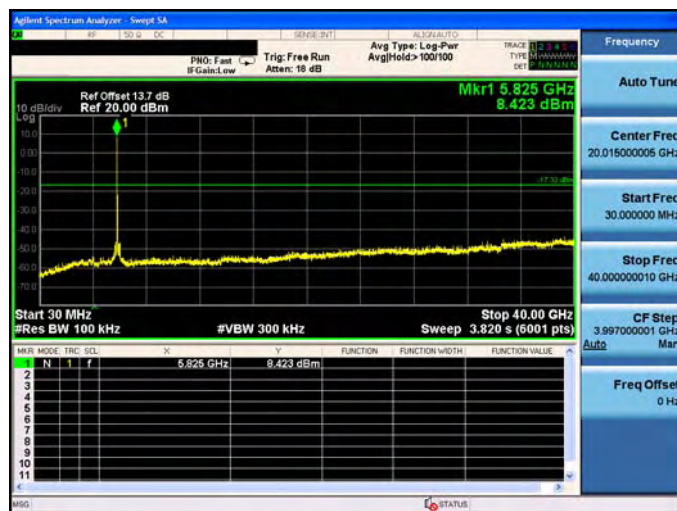
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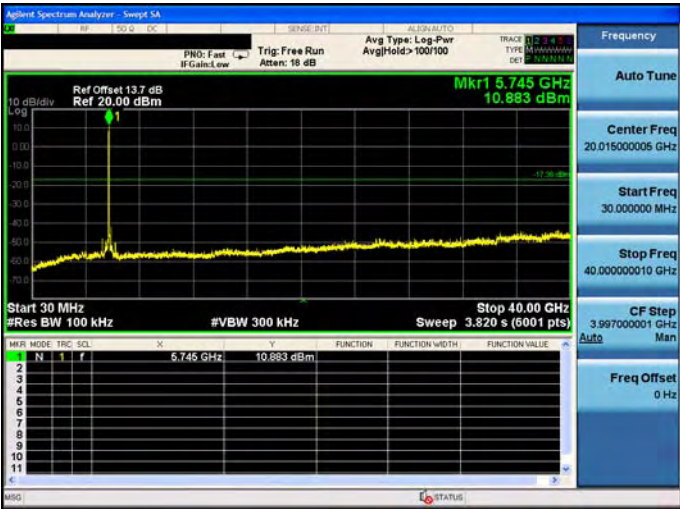
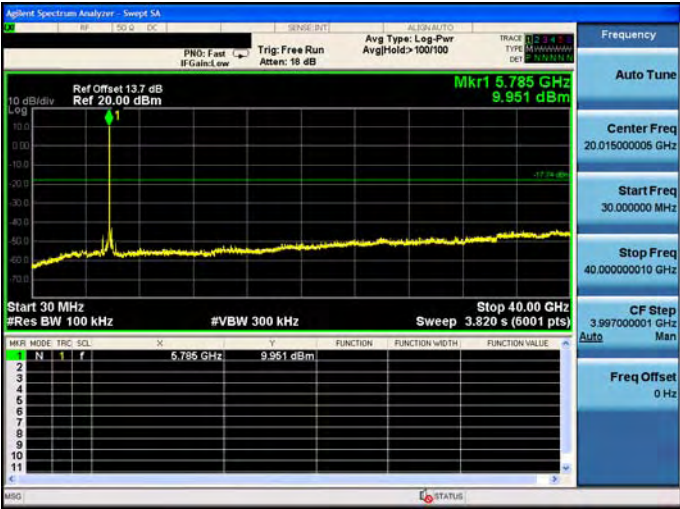
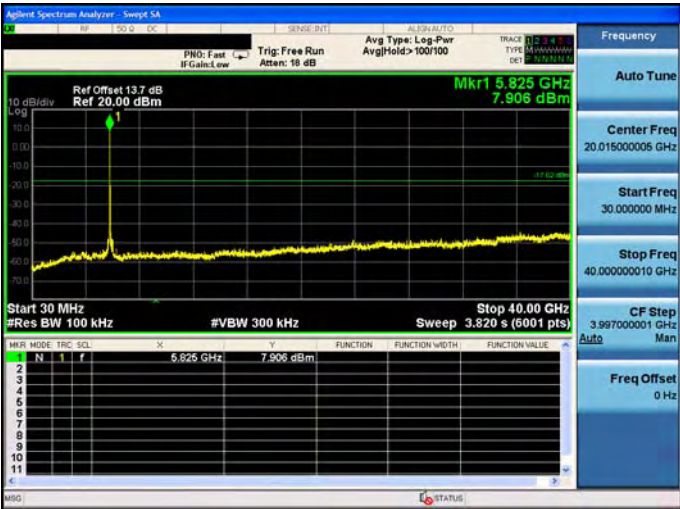
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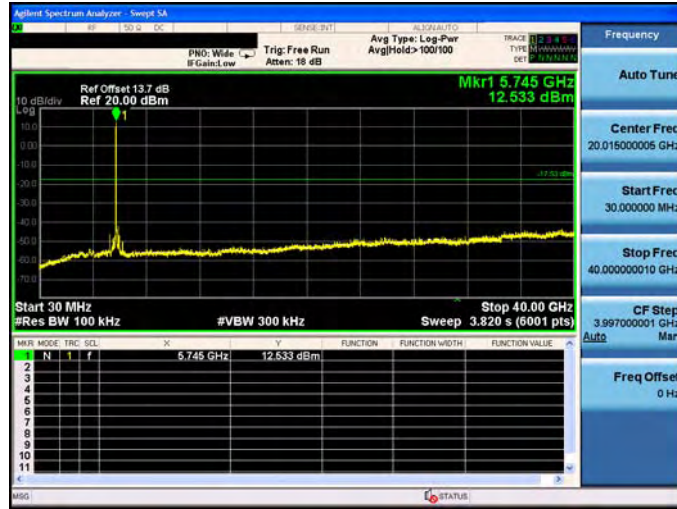
Mode 7: IEEE 802.11ac U-NII Band III 20MHz Link Mode \_ ANT0

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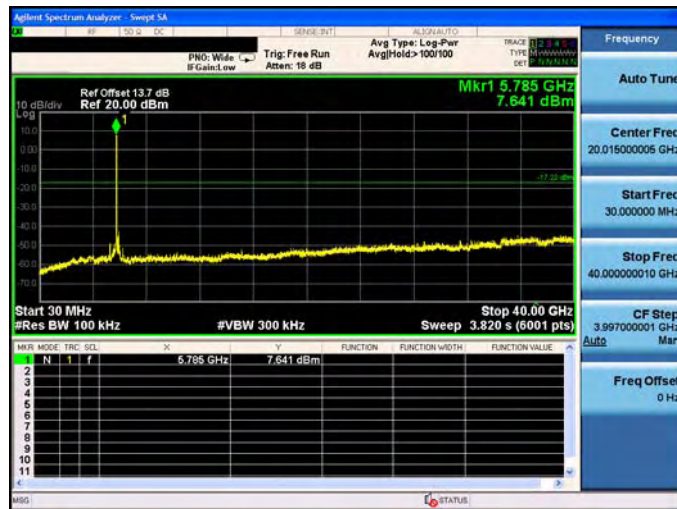


Mode 7: IEEE 802.11ac U-NII Band III 20MHz Link Mode \_ ANT1

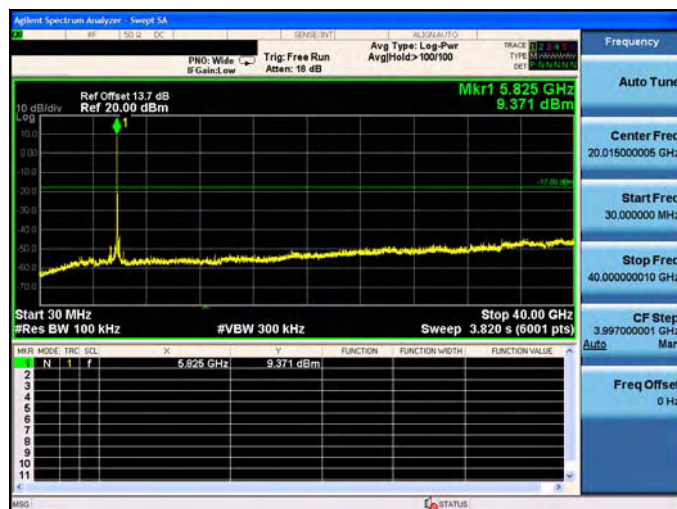
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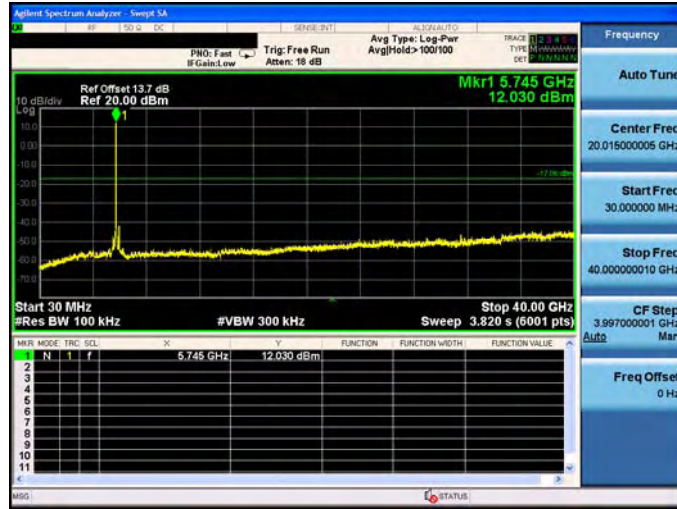


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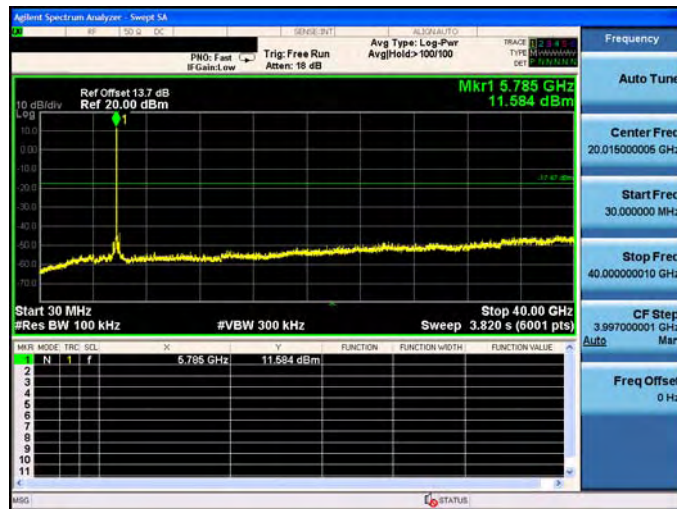


Mode 7: IEEE 802.11ac U-NII Band III 20MHz Link Mode \_ ANT2

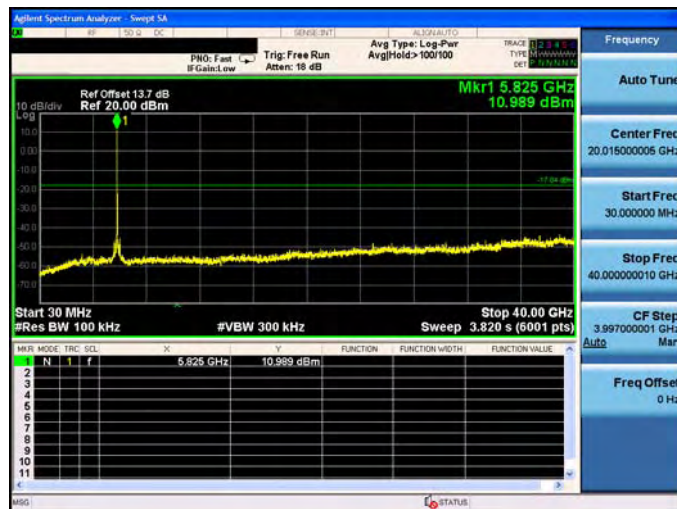
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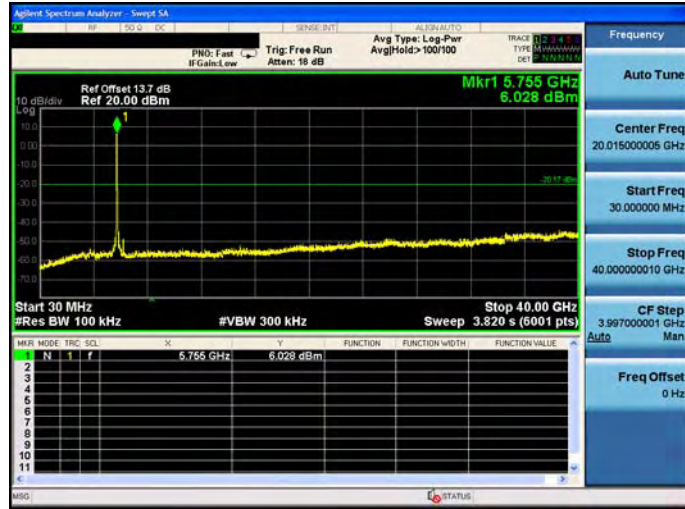


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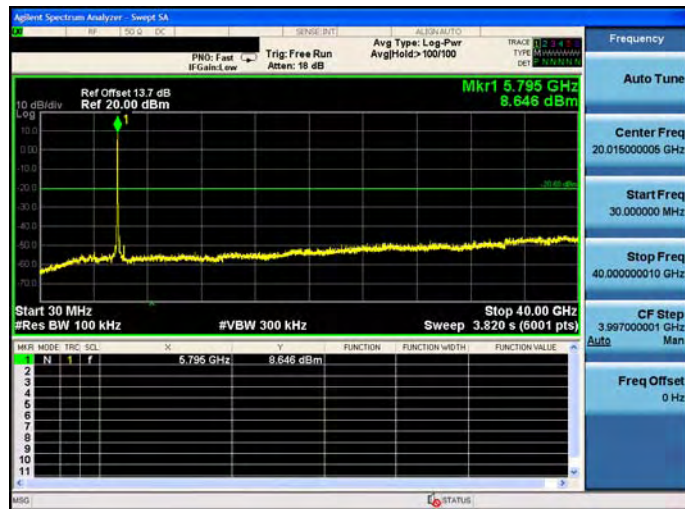


Mode 8: IEEE 802.11ac U-NII Band III 40MHz Link Mode \_ ANT0

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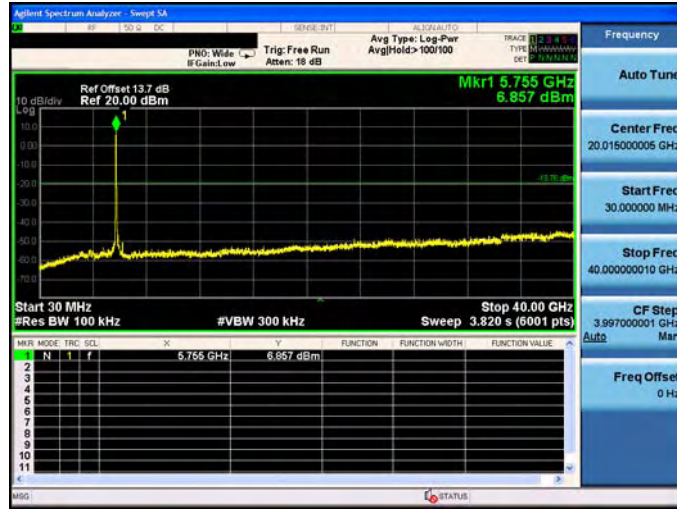


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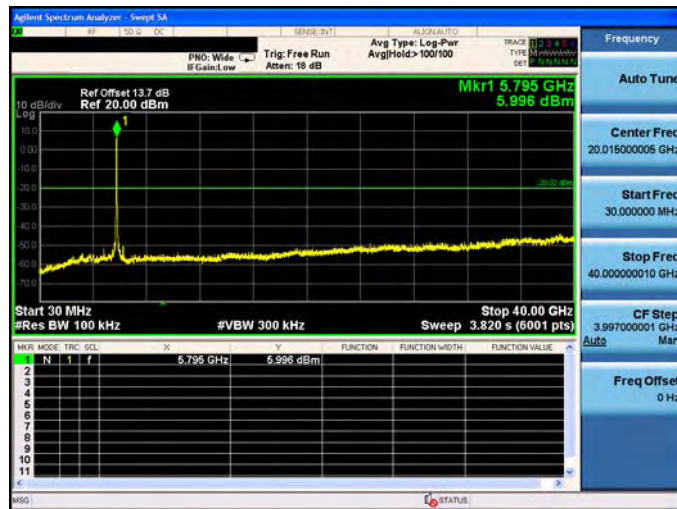


Mode 8: IEEE 802.11ac U-NII Band III 40MHz Link Mode \_ ANT1

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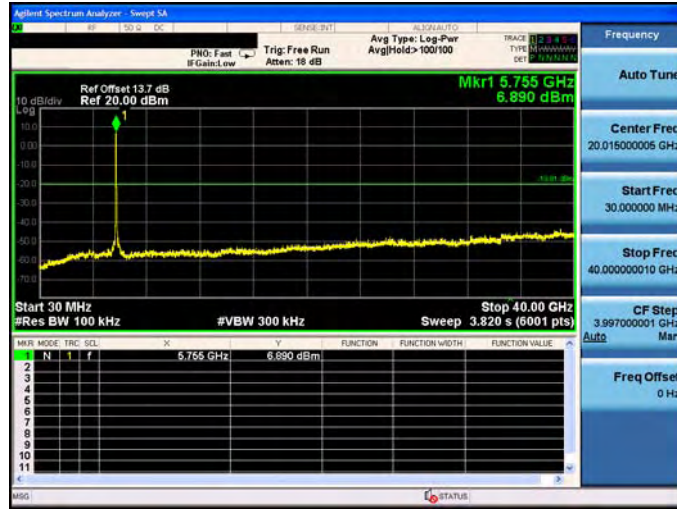


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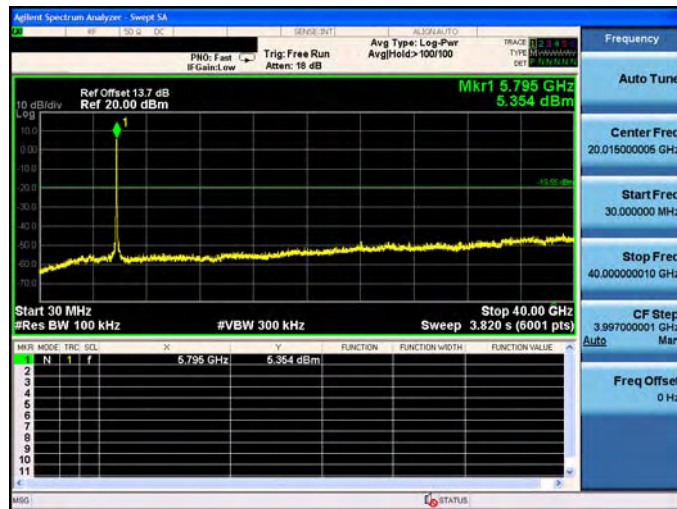


Mode 8: IEEE 802.11ac U-NII Band III 40MHz Link Mode \_ ANT2

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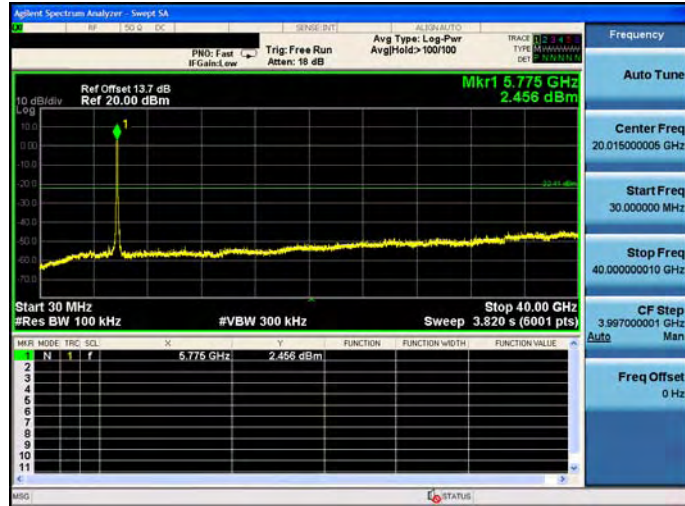


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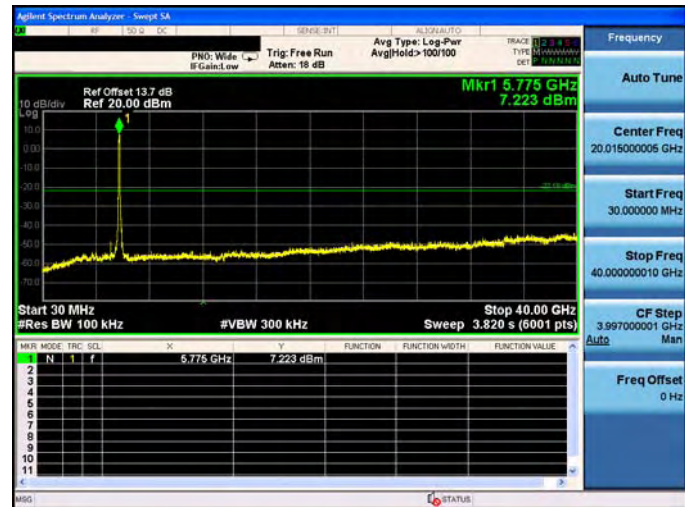
Mode 9: IEEE 802.11ac U-NII Band III 80MHz Link Mode \_ ANT0

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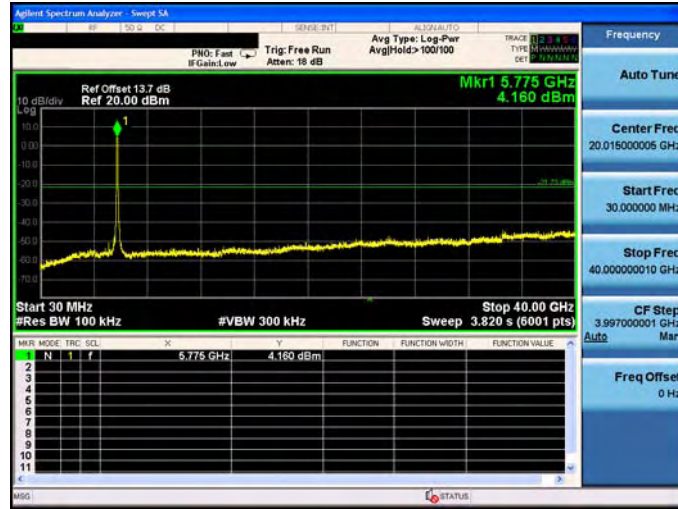
Mode 9: IEEE 802.11ac U-NII Band III 80MHz Link Mode \_ ANT1

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Mode 9: IEEE 802.11ac U-NII Band III 80MHz Link Mode \_ ANT2

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**Beamforming on**

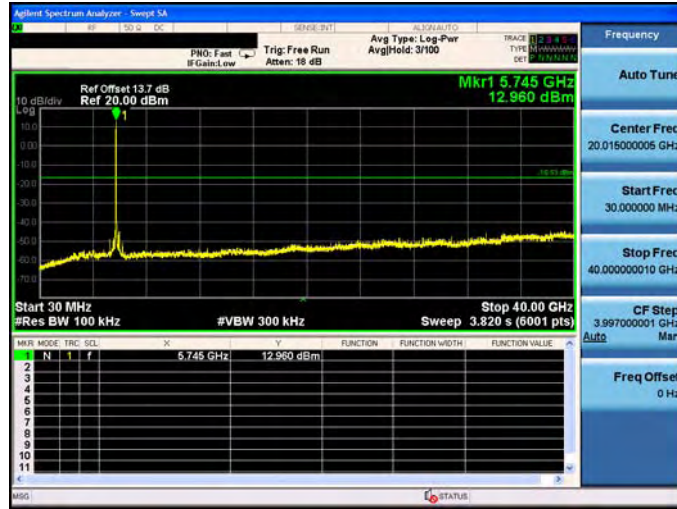
Mode 7: IEEE 802.11ac U-NII Band III 20MHz Link Mode \_ ANT0

<p>5745</p>	<p>Agilent Spectrum Analyzer - Sweep SA</p> <p>Ref Offset 13.7 dB Ref 20.00 dBm</p> <p>Mkr1 5.745 GHz 11.396 dBm</p> <p>Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 40.00 GHz Sweep 3.820 s (6001 pts)</p> <table border="1"> <thead> <tr> <th>MIR MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>f</td> <td>5.745 GHz</td> <td>11.396 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MIR MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	f	5.745 GHz	11.396 dBm			
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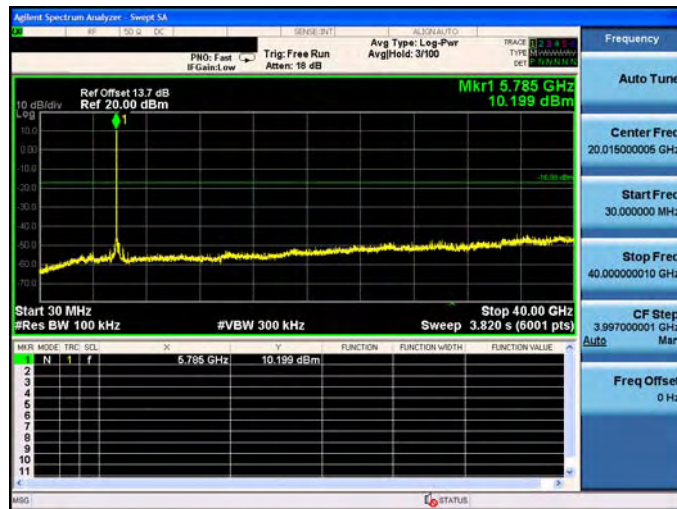


Mode 7: IEEE 802.11ac U-NII Band III 20MHz Link Mode \_ ANT1

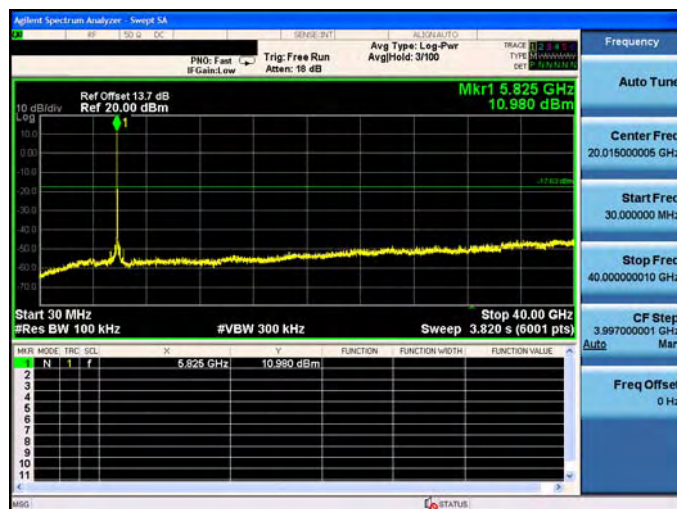
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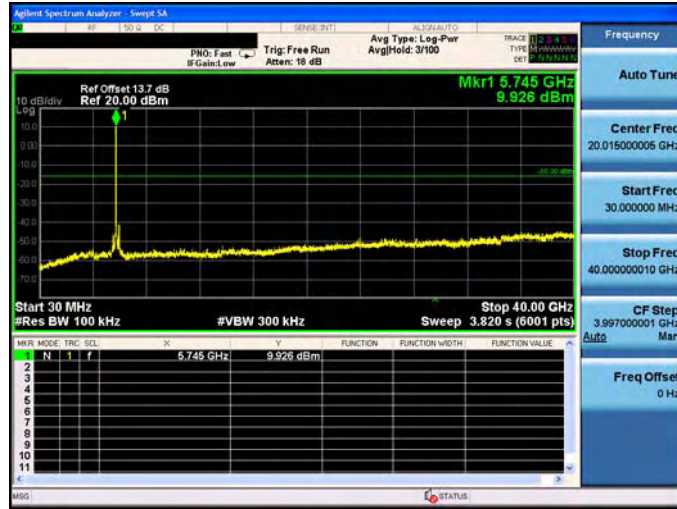


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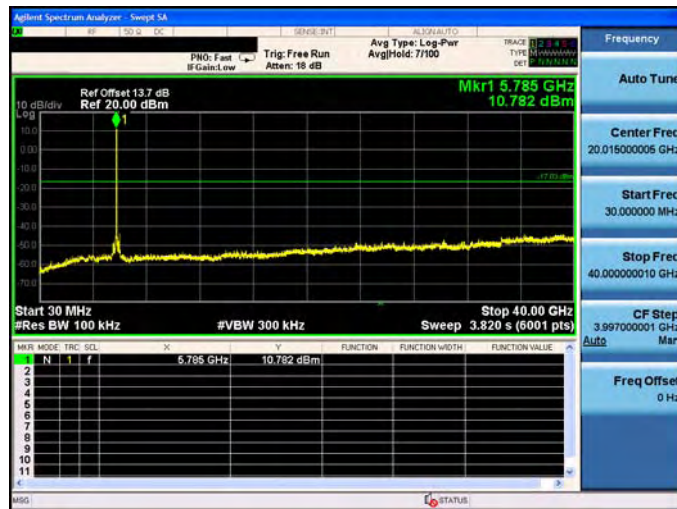


Mode 7: IEEE 802.11ac U-NII Band III 20MHz Link Mode \_ ANT2

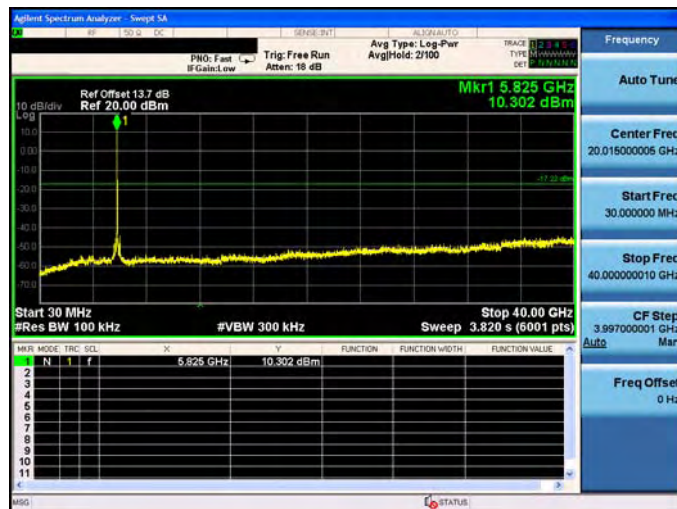
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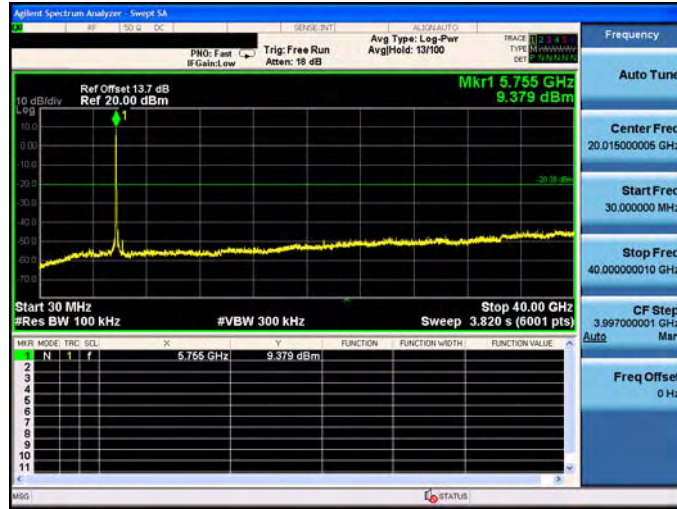


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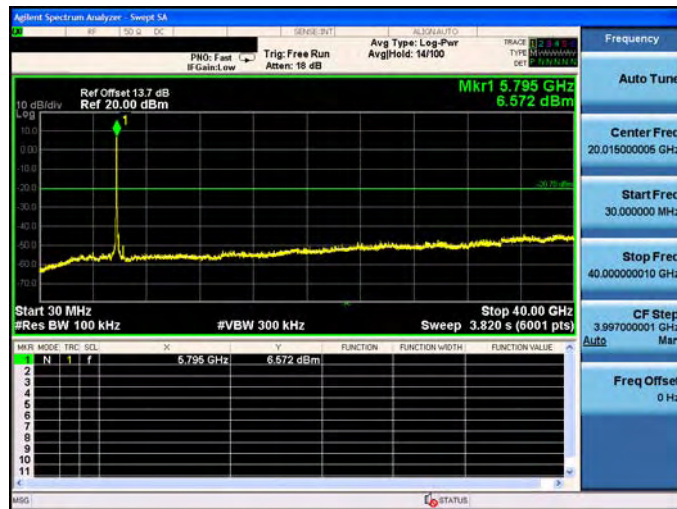


Mode 8: IEEE 802.11ac U-NII Band III 40MHz Link Mode \_ ANT0

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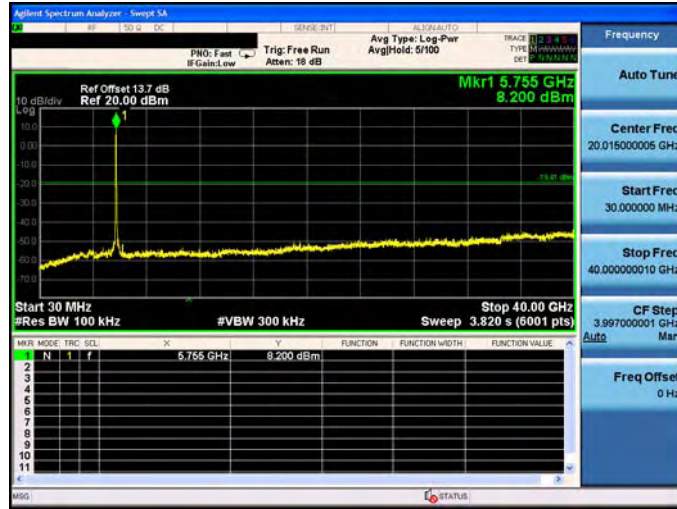


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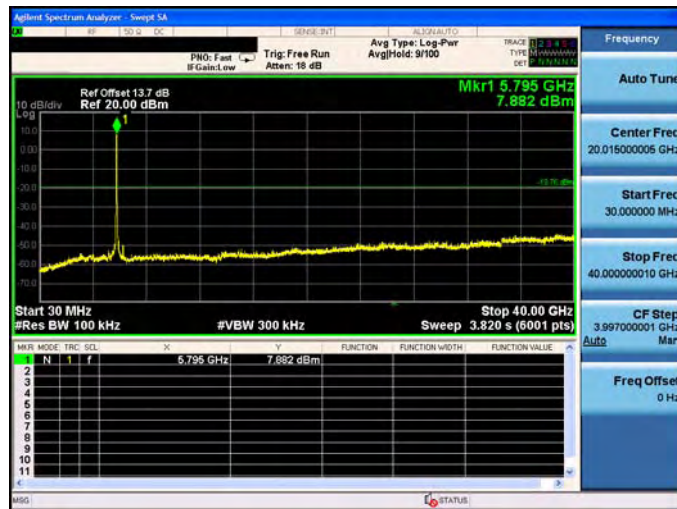


Mode 8: IEEE 802.11ac U-NII Band III 40MHz Link Mode \_ ANT1

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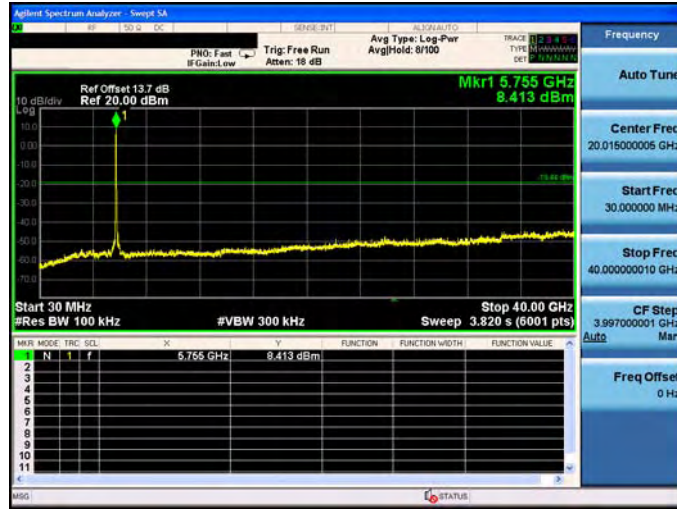


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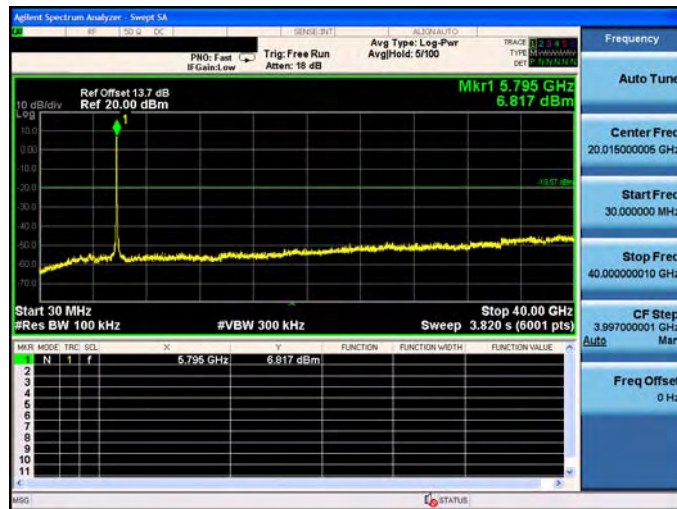


Mode 8: IEEE 802.11ac U-NII Band III 40MHz Link Mode \_ ANT2

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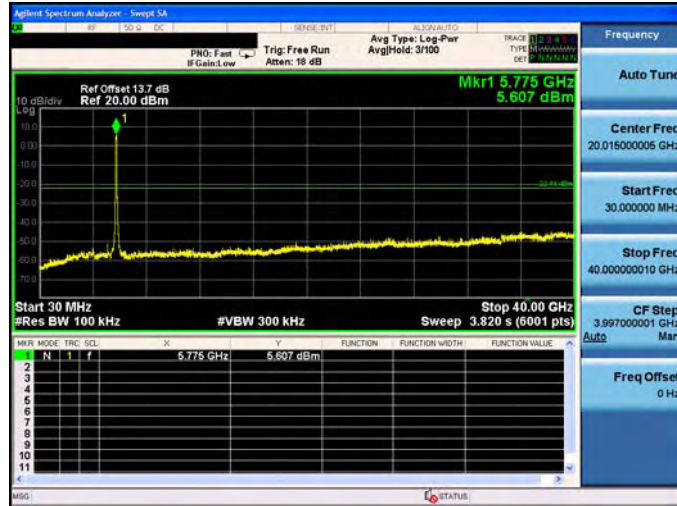


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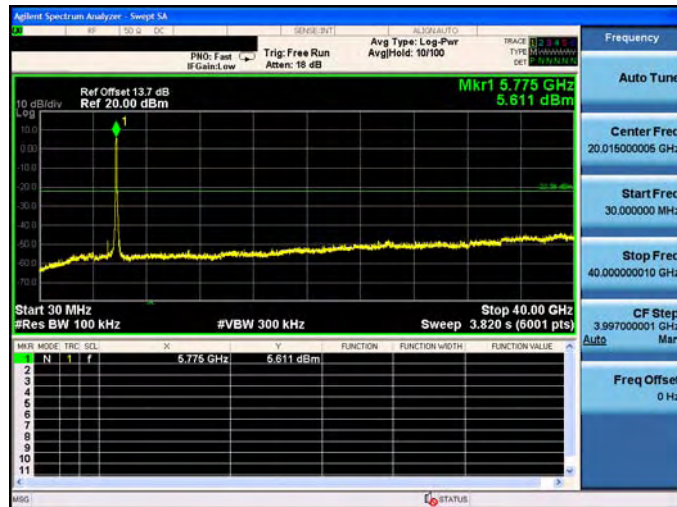
Mode 9: IEEE 802.11ac U-NII Band III 80MHz Link Mode \_ ANT0

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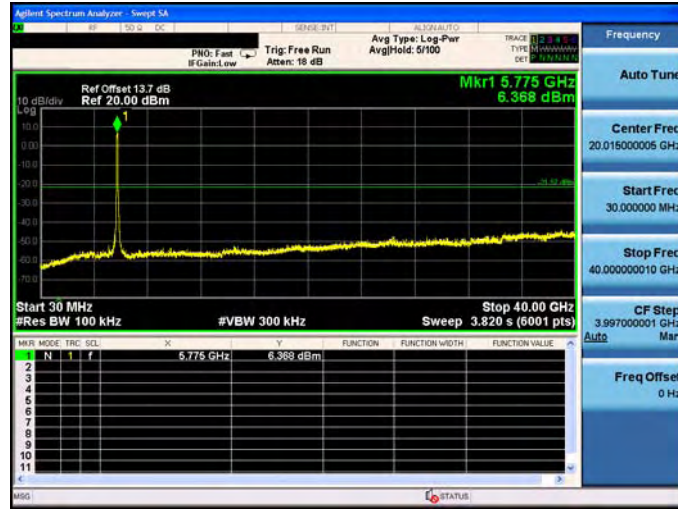
Mode 9: IEEE 802.11ac U-NII Band III 80MHz Link Mode \_ ANT1

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Mode 9: IEEE 802.11ac U-NII Band III 80MHz Link Mode \_ ANT2

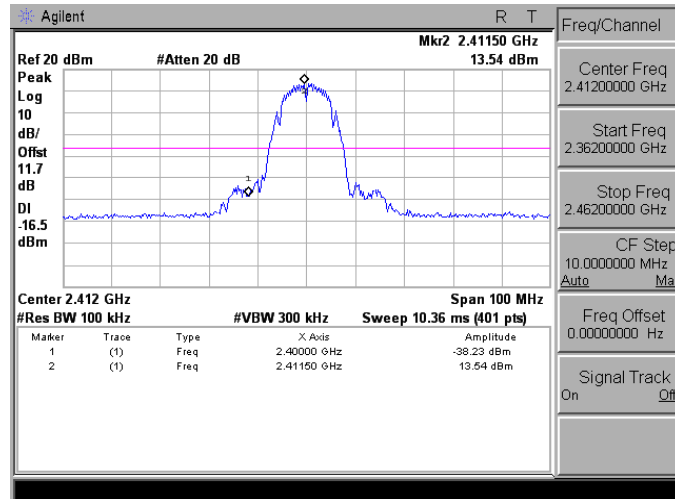
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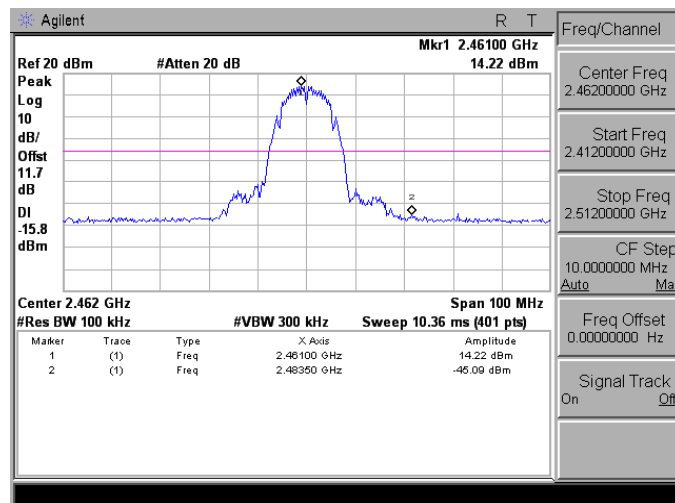
**Conducted Band Edge**

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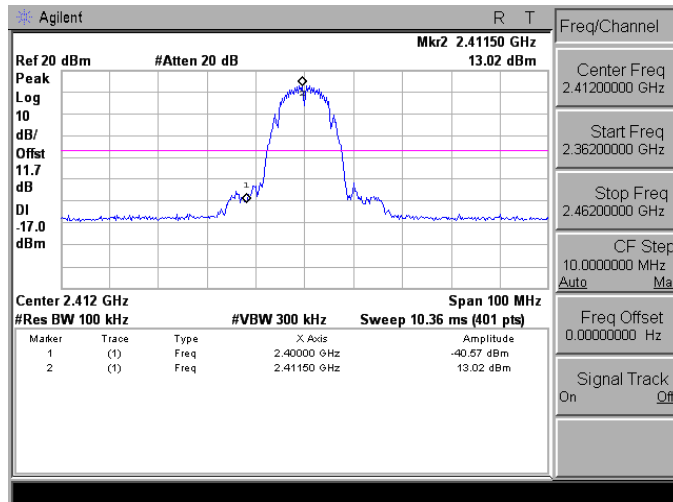
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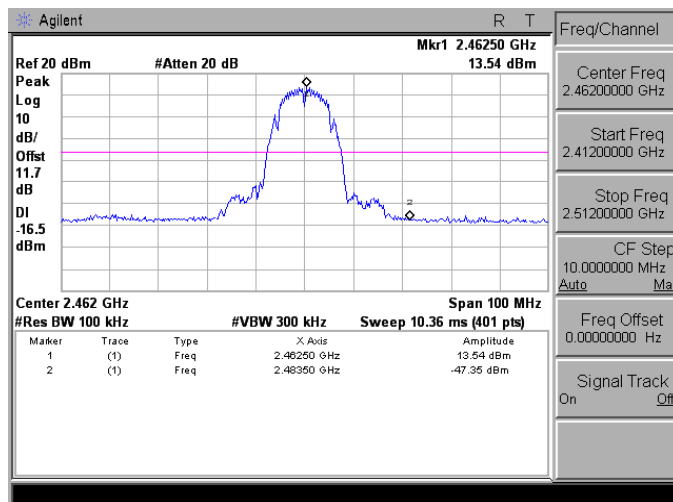


Mode 2: IEEE 802.11b Link Mode\_ANT-1

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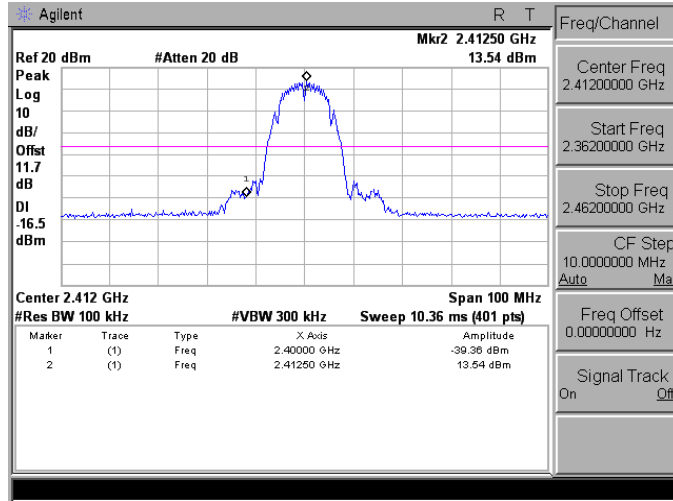


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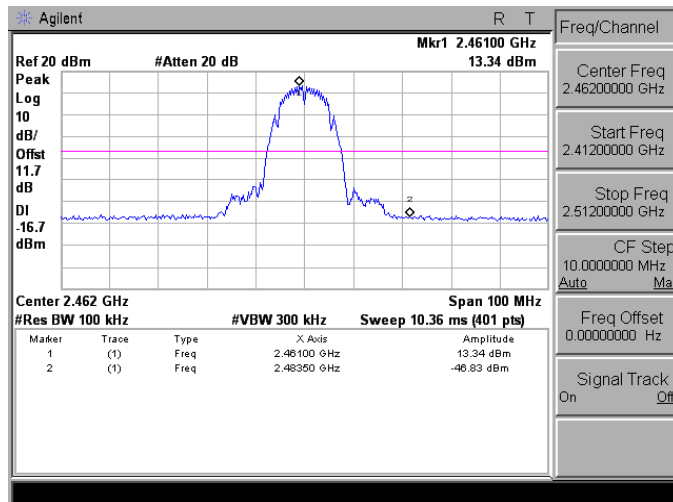


Mode 2: IEEE 802.11b Link Mode\_ANT-2

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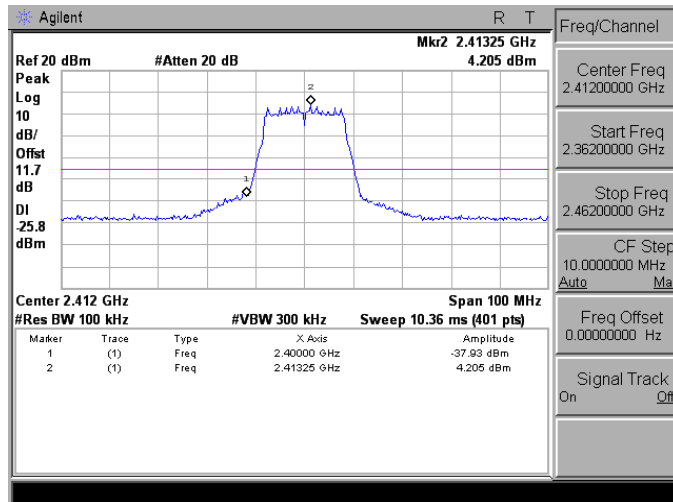


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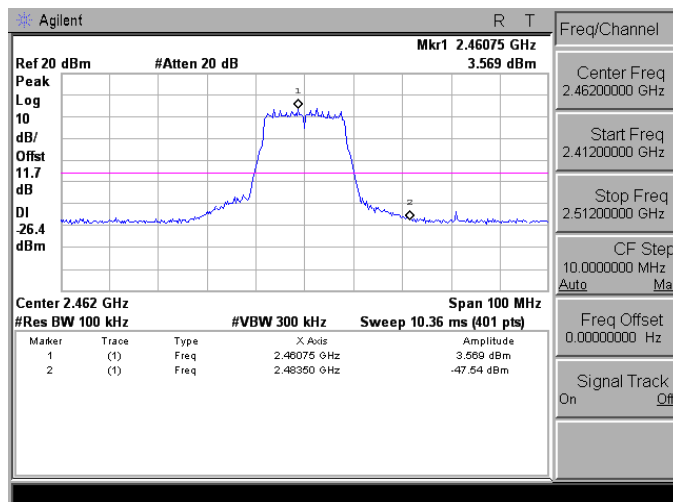


Mode 3: IEEE 802.11g Link Mode\_ANT-0

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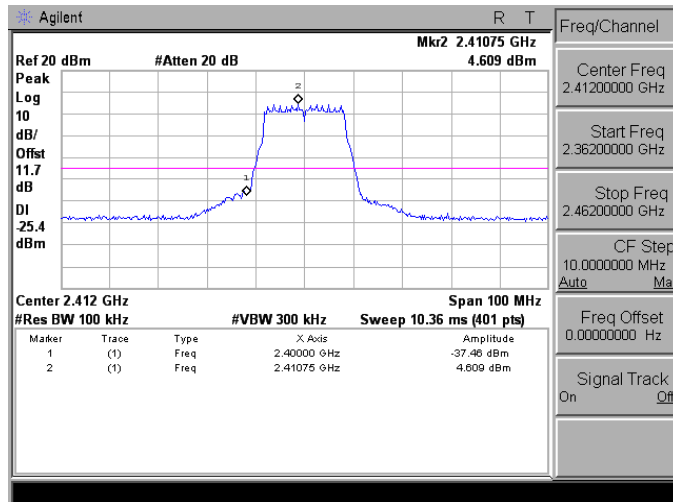


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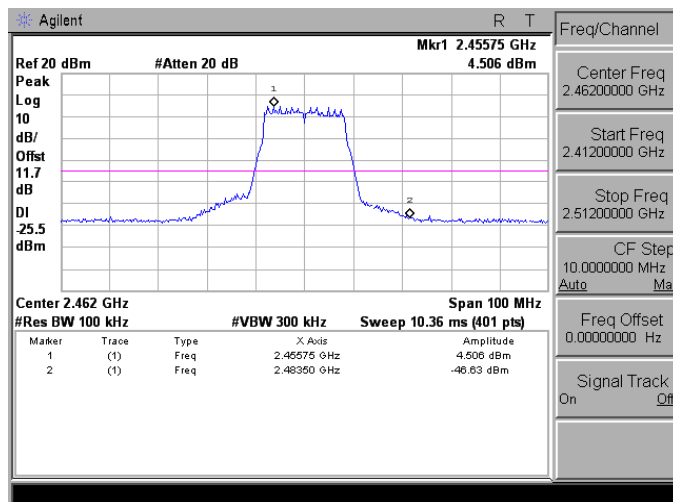


Mode 3: IEEE 802.11g Link Mode\_ANT-1

2412

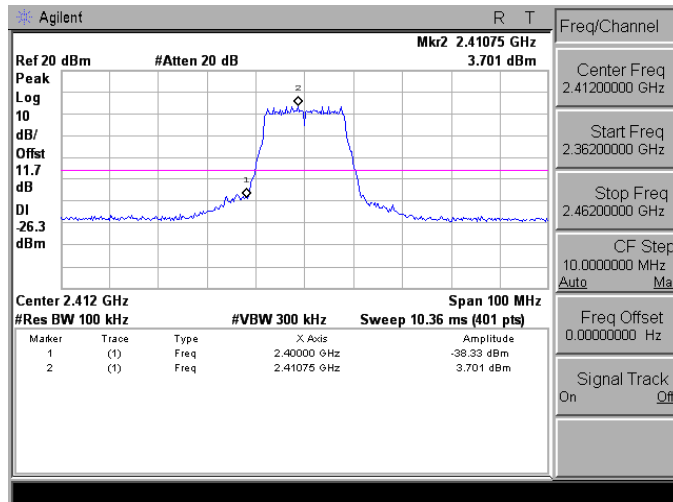


2462

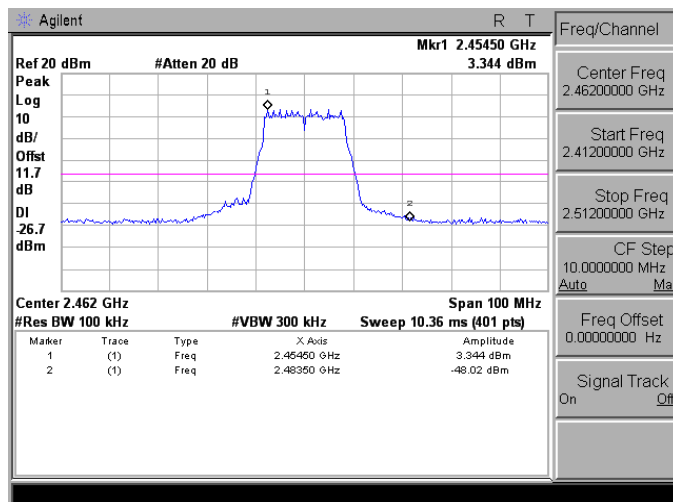


Mode 3: IEEE 802.11g Link Mode\_ANT-2

2412

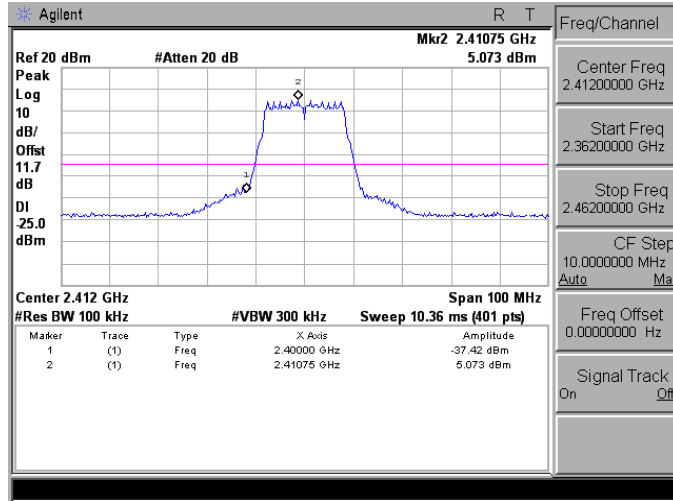


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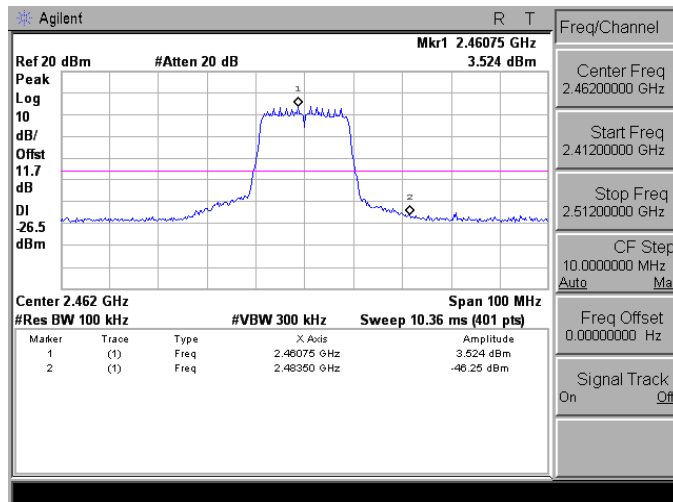


Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode \_ ANT0

2412

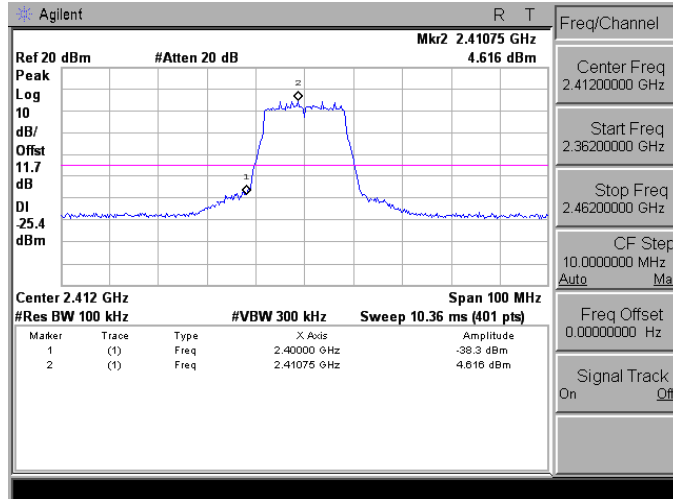


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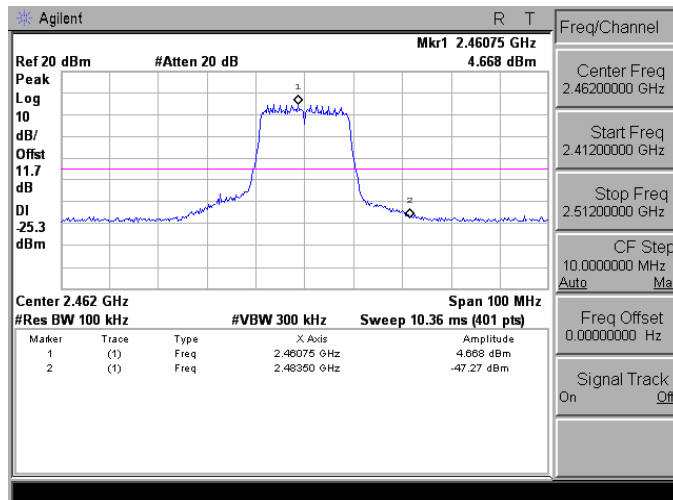


Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode \_ ANT1

2412

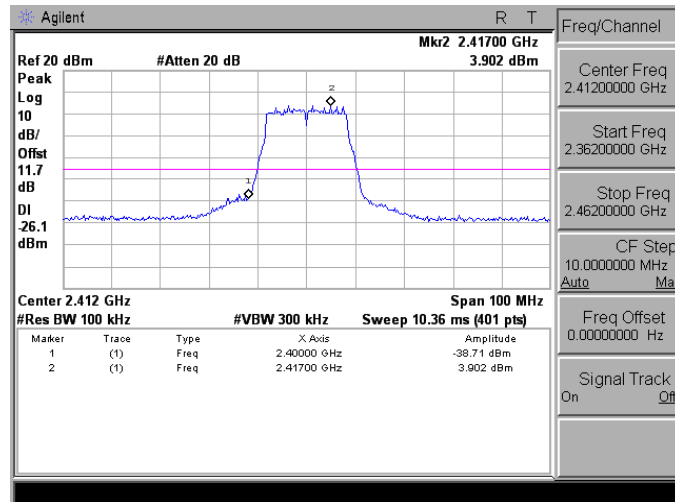


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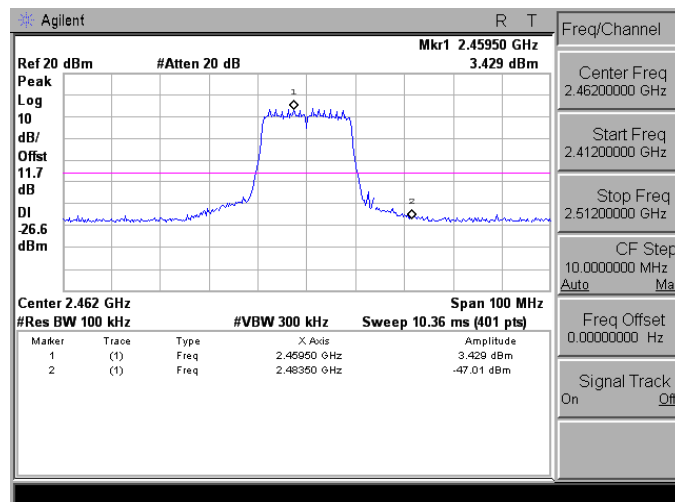


Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode \_ ANT2

2412



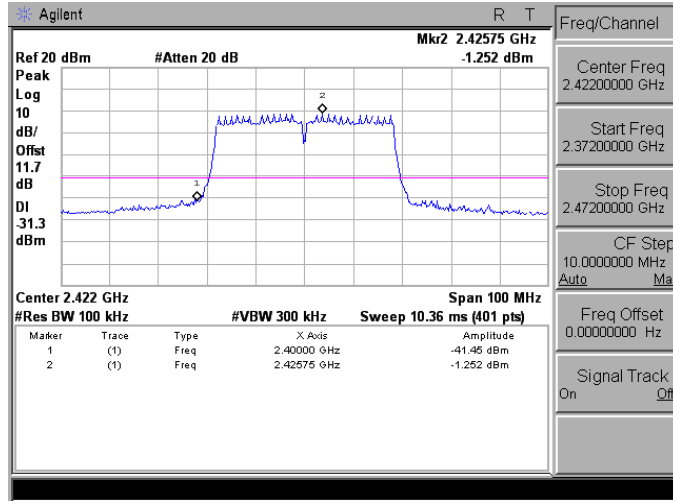
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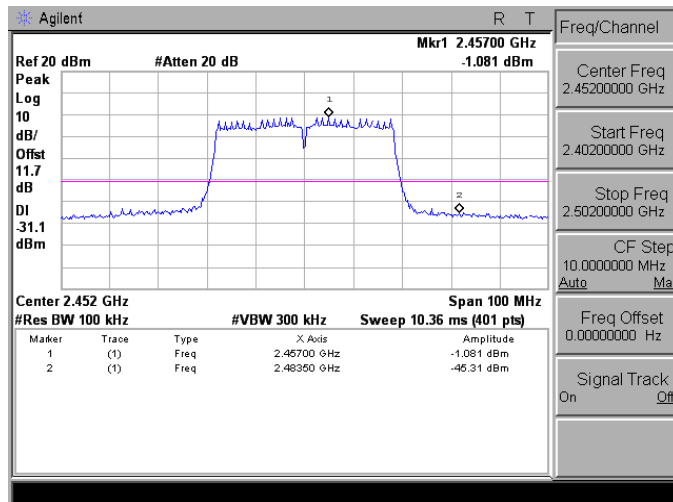


Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode \_ ANT0

2422

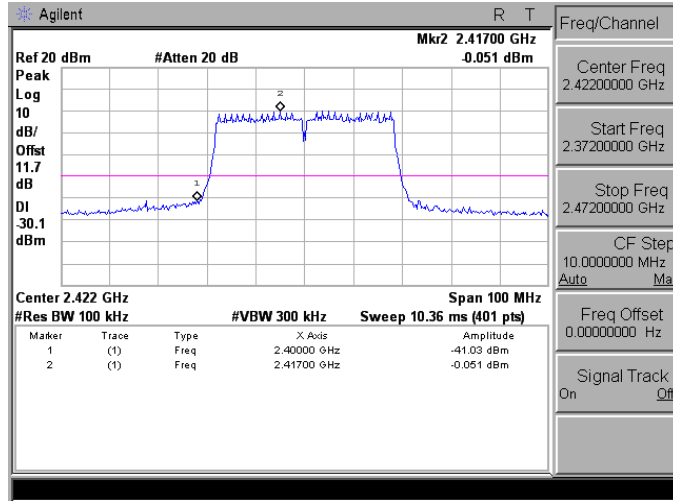


2452

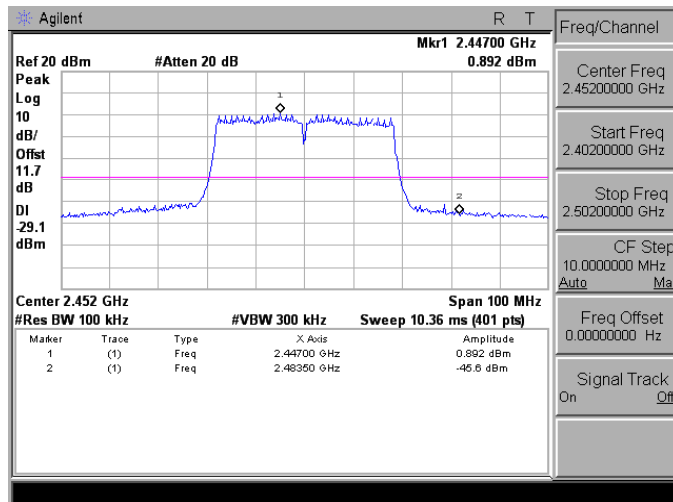


Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode \_ ANT1

2422

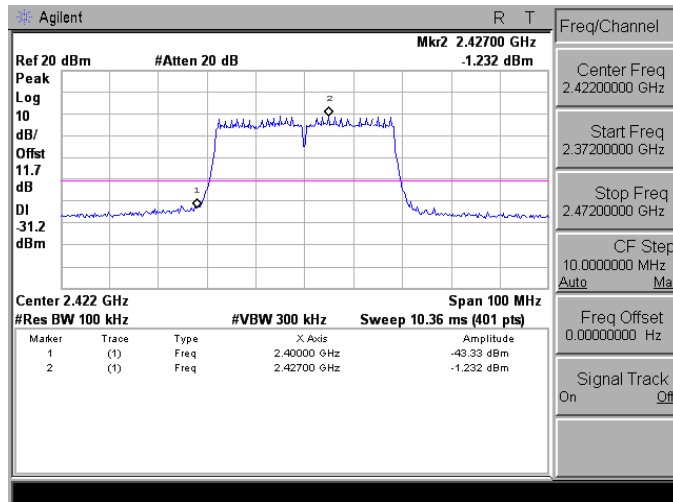


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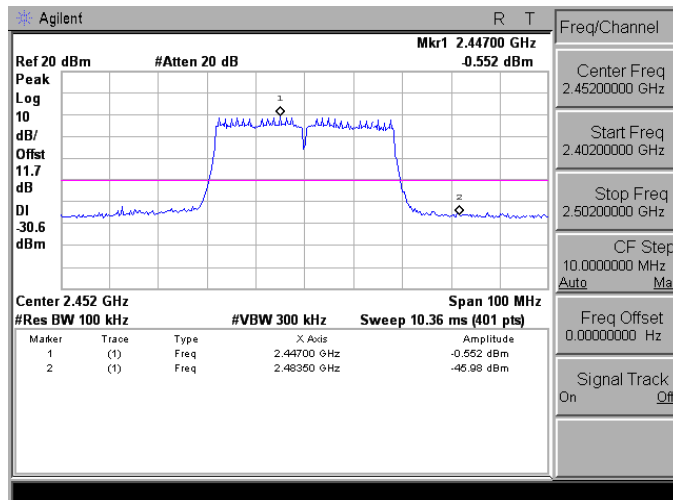


Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode \_ ANT2

2422

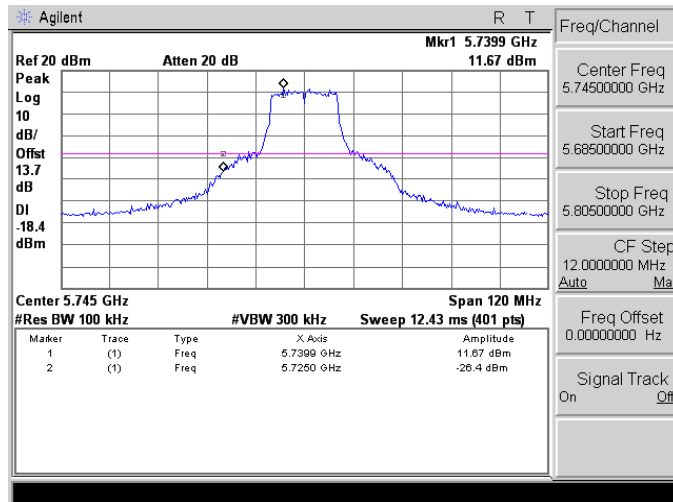


2452

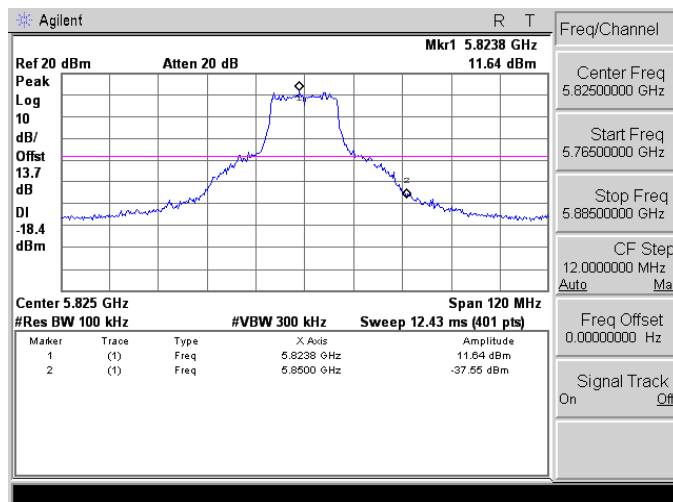


Mode 6: IEEE 802.11a U-NII Band III Link Mode\_ANT-0

5745

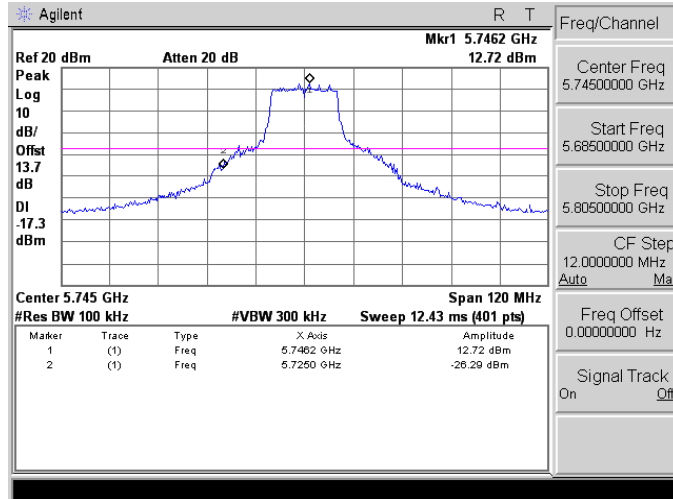


5825

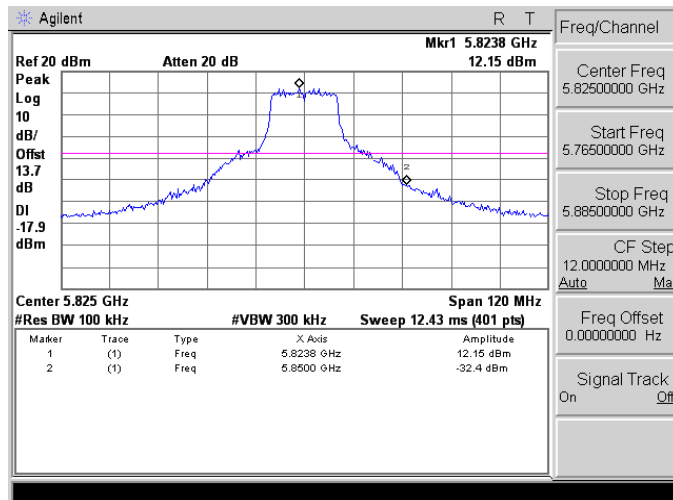


Mode 6: IEEE 802.11a U-NII Band III Link Mode\_ANT-1

5745

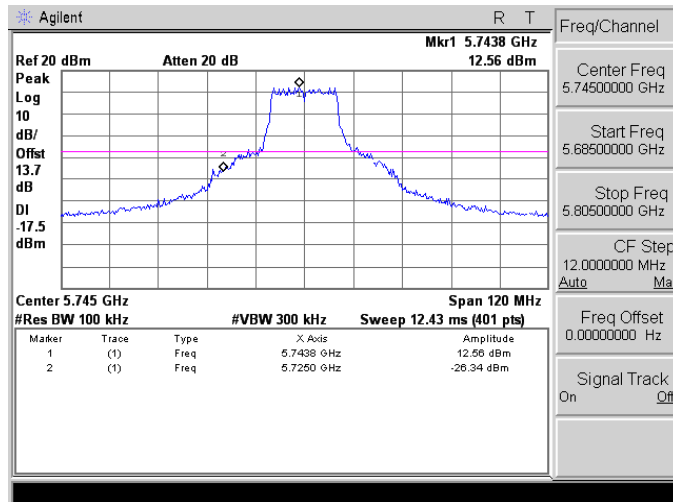


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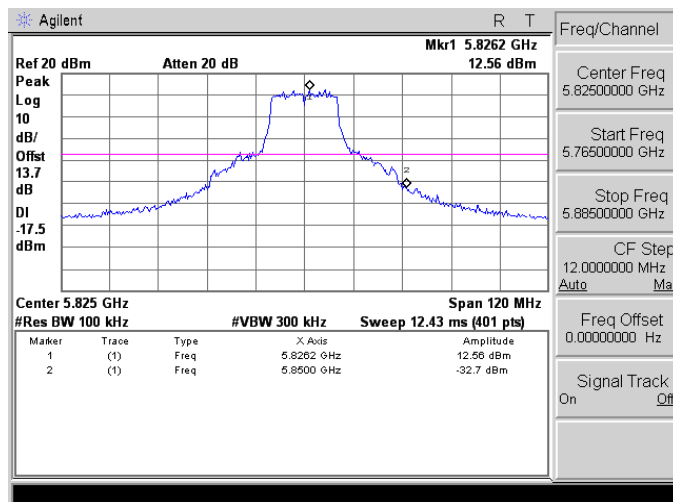


Mode 6: IEEE 802.11a U-NII Band III Link Mode\_ANT-2

5745

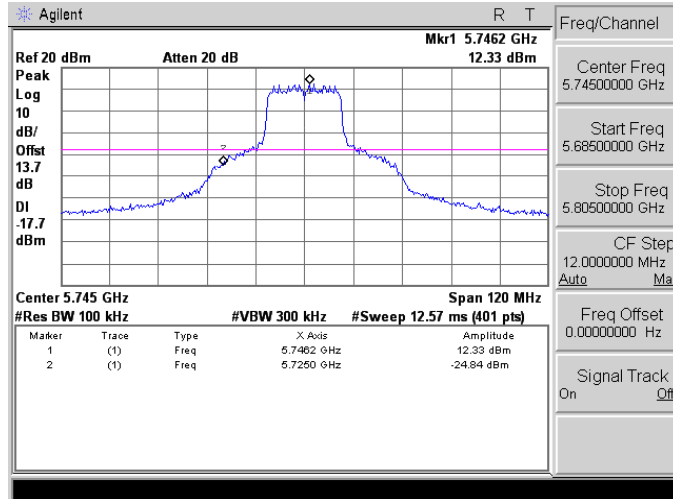


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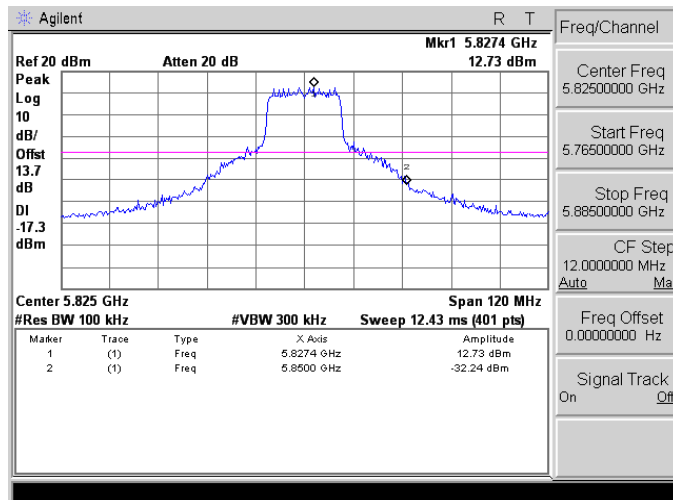


Mode 7: IEEE 802.11ac U-NII Band III 20MHz Link Mode \_ ANT0

5745

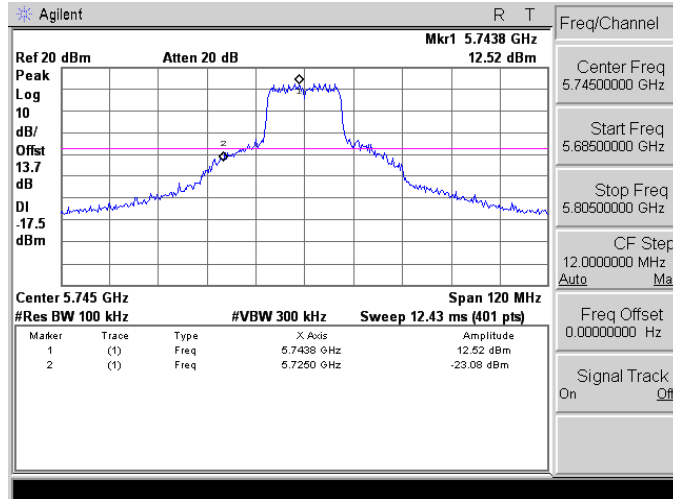


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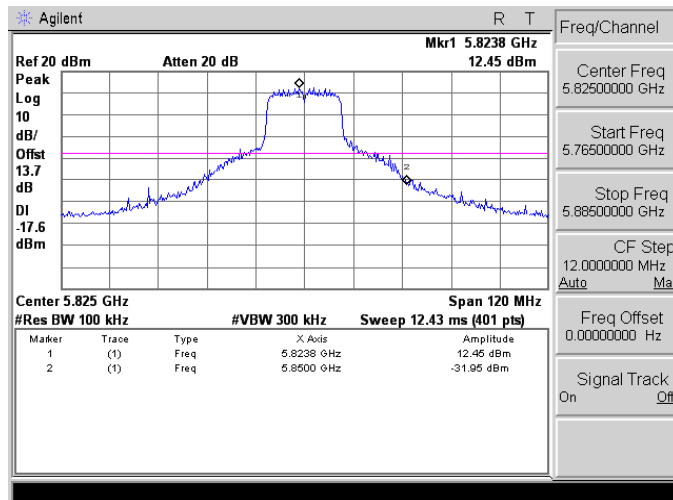


Mode 7: IEEE 802.11ac U-NII Band III 20MHz Link Mode \_ ANT1

5745



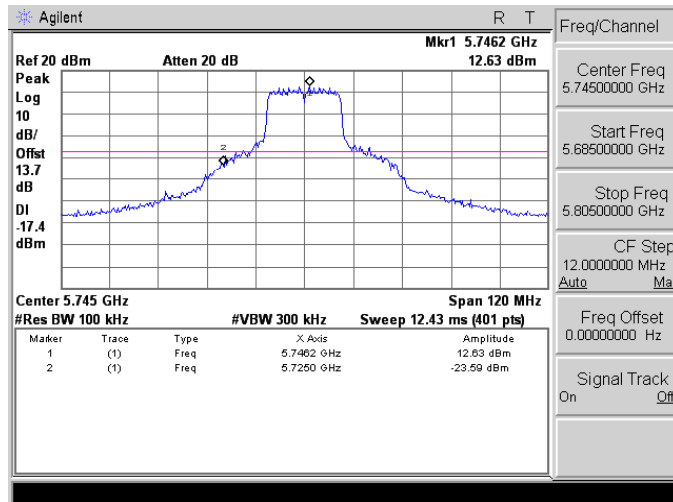
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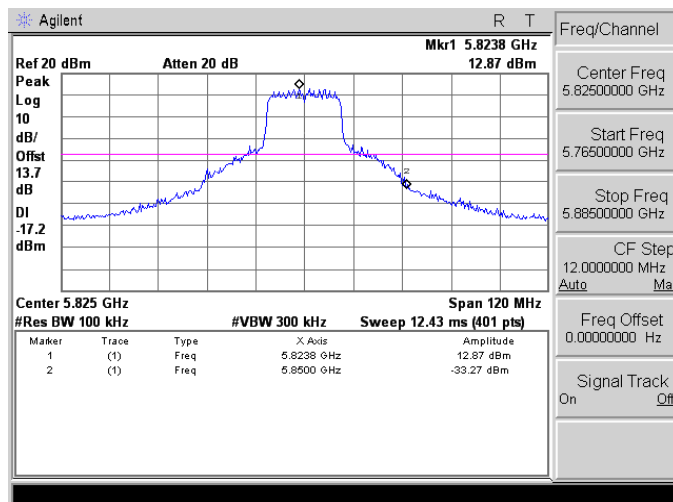


Mode 7: IEEE 802.11ac U-NII Band III 20MHz Link Mode \_ ANT2

5745

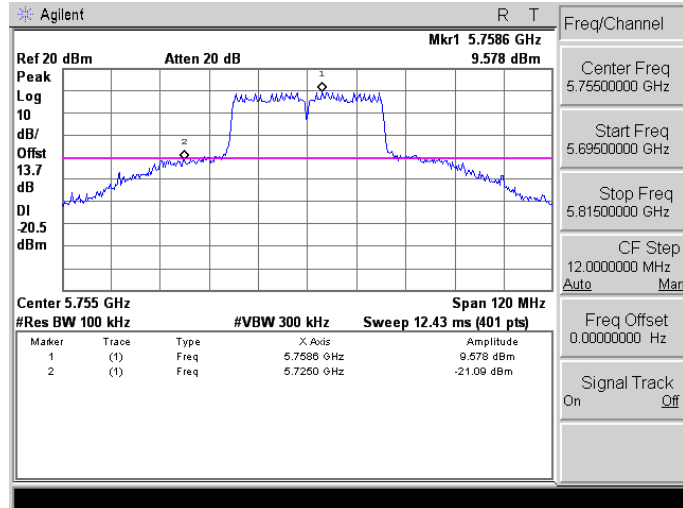


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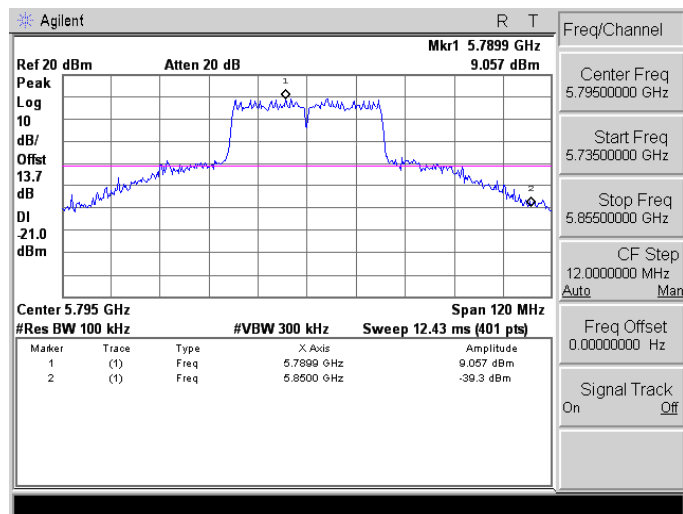


Mode 8: IEEE 802.11ac U-NII Band III 40MHz Link Mode \_ ANTO

5755

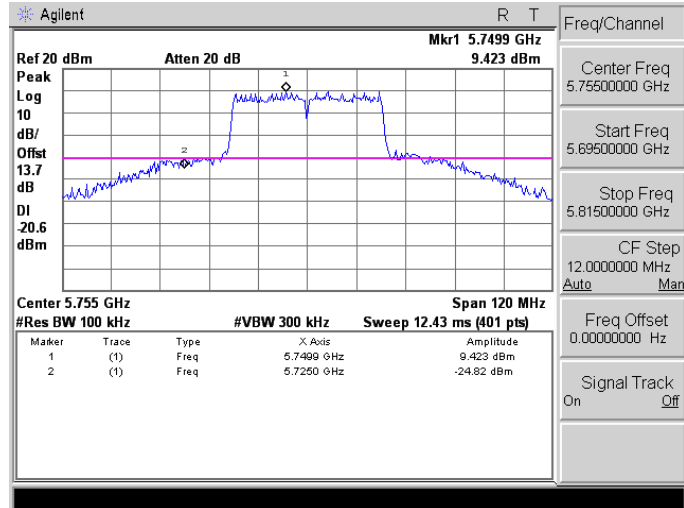


5795

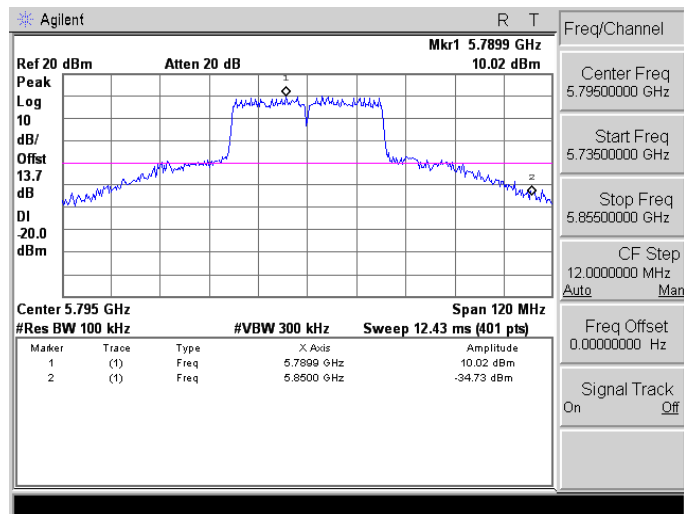


Mode 8: IEEE 802.11ac U-NII Band III 40MHz Link Mode \_ ANT1

5755

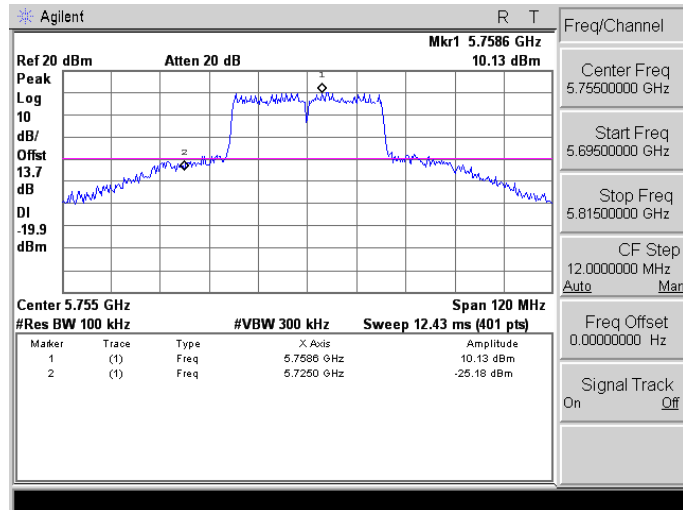


5795

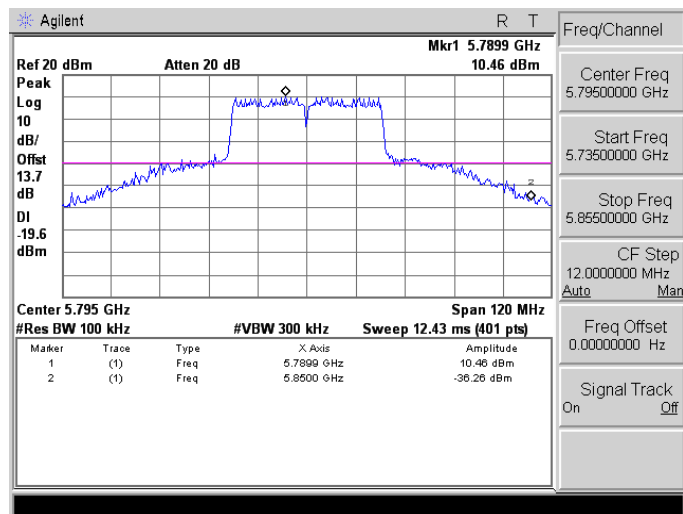


Mode 8: IEEE 802.11ac U-NII Band III 40MHz Link Mode \_ ANT2

5755

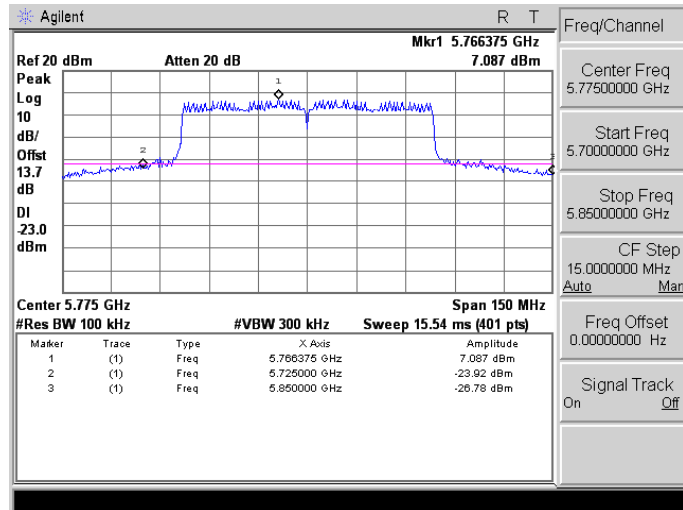


5795



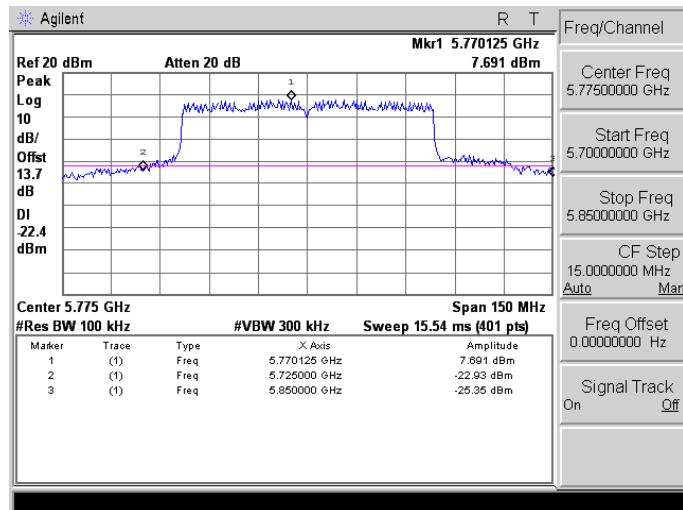
Mode 9: IEEE 802.11ac U-NII Band III 80MHz Link Mode \_ ANT0

5775



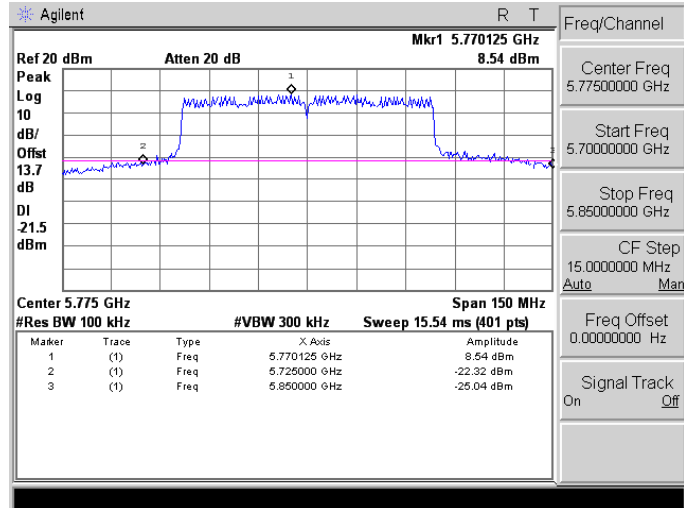
Mode 9: IEEE 802.11ac U-NII Band III 80MHz Link Mode \_ ANT1

5775



Mode 9: IEEE 802.11ac U-NII Band III 80MHz Link Mode \_ ANT2

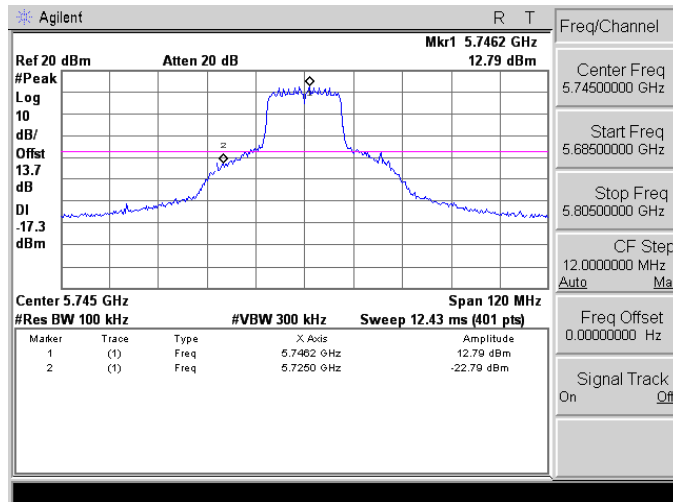
5775



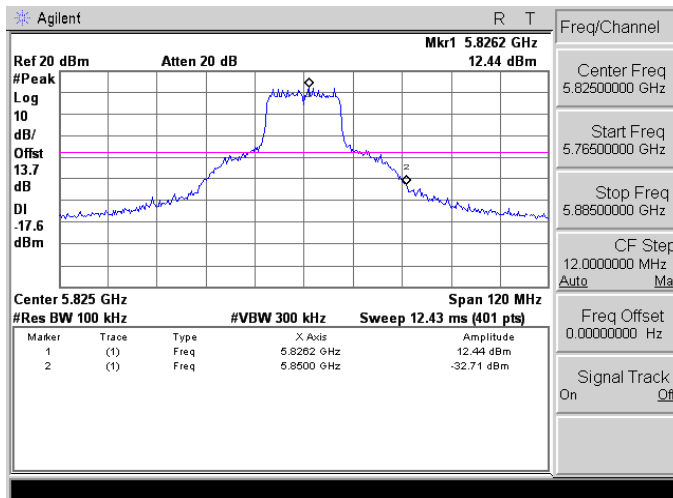
**Beamforming on**

Mode 7: IEEE 802.11ac U-NII Band III 20MHz Link Mode \_ ANT0

5745

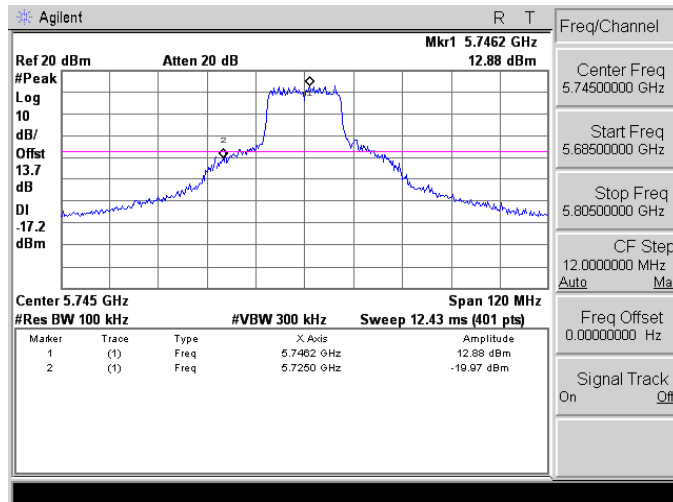


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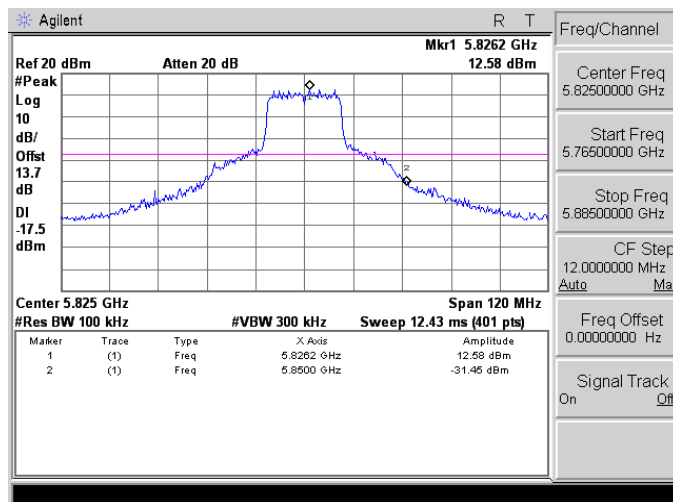


Mode 7: IEEE 802.11ac U-NII Band III 20MHz Link Mode \_ ANT1

5745



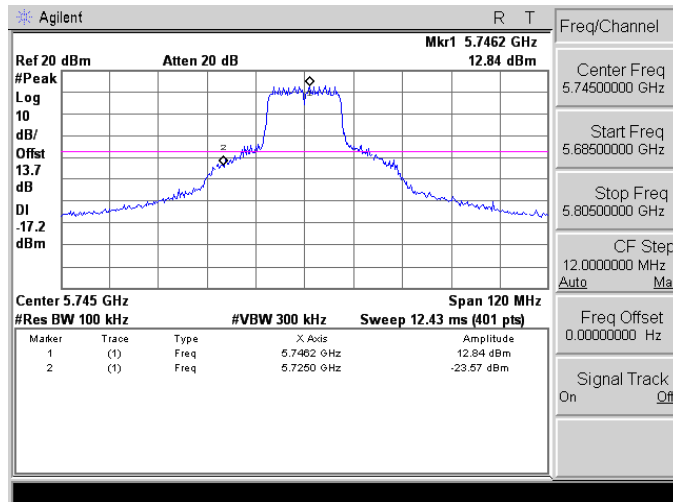
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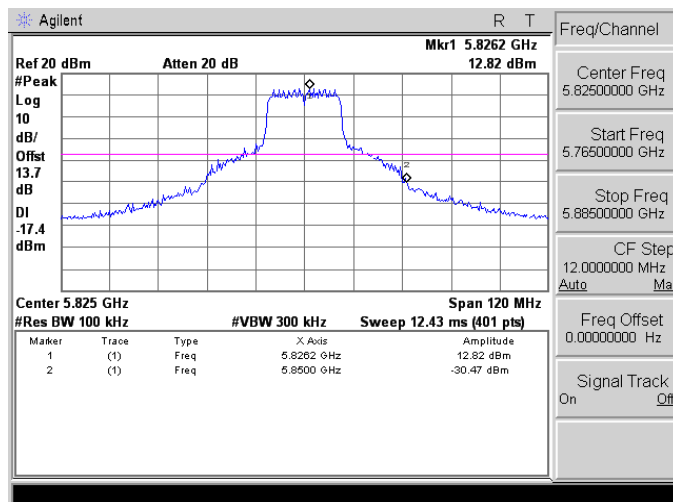


Mode 7: IEEE 802.11ac U-NII Band III 20MHz Link Mode \_ ANT2

5745

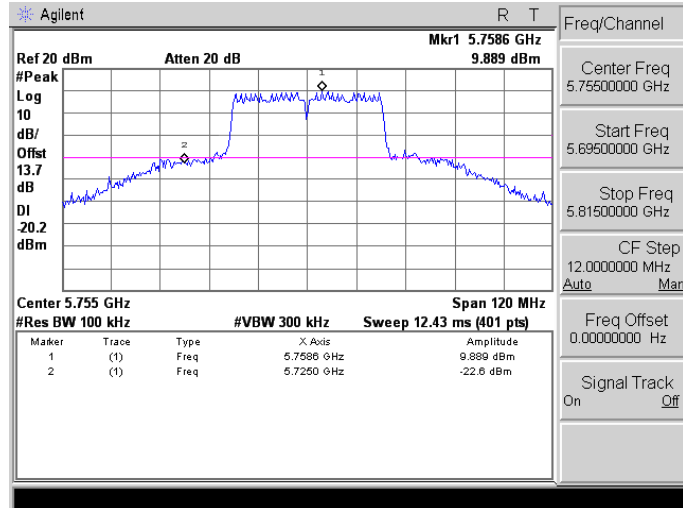


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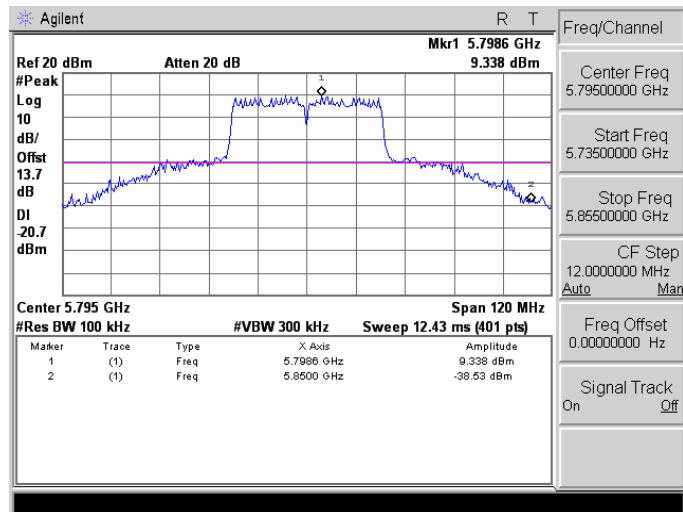


Mode 8: IEEE 802.11ac U-NII Band III 40MHz Link Mode \_ ANTO

5755

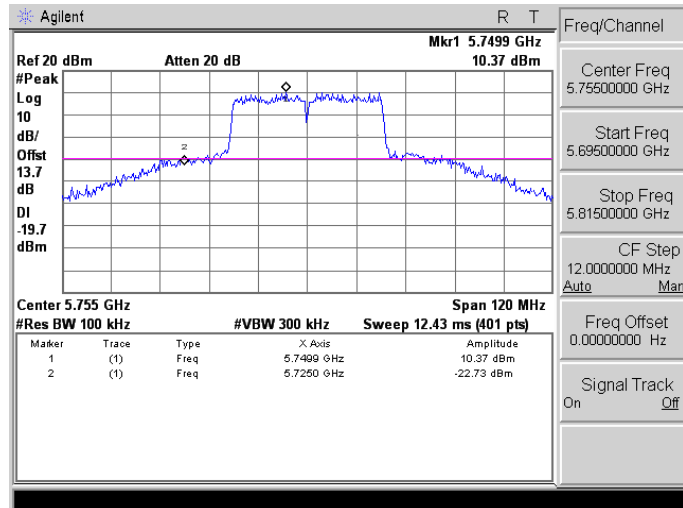


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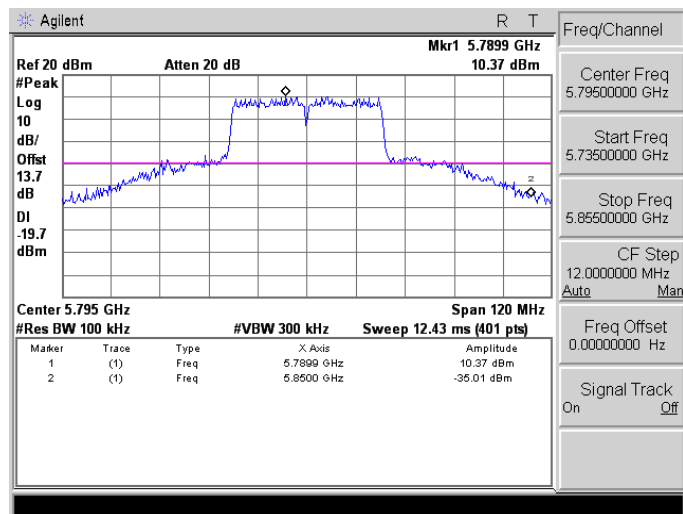


Mode 8: IEEE 802.11ac U-NII Band III 40MHz Link Mode \_ ANT1

5755

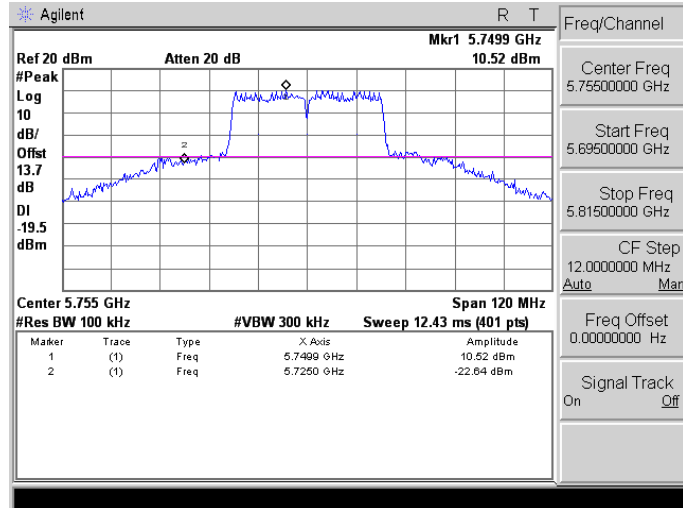


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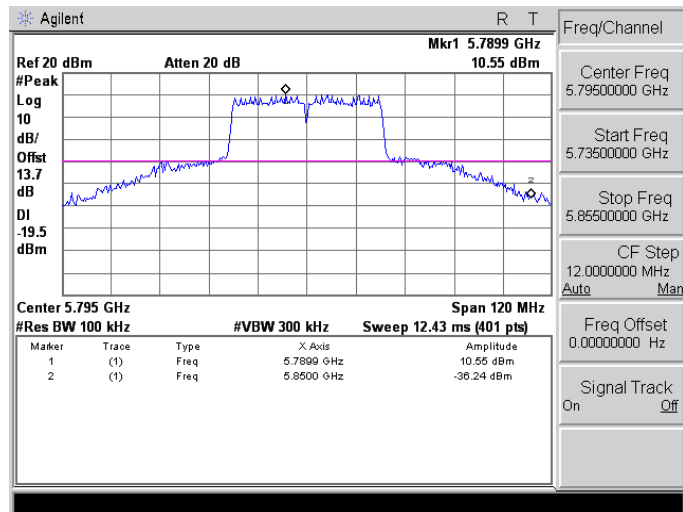


Mode 8: IEEE 802.11ac U-NII Band III 40MHz Link Mode \_ ANT2

5755

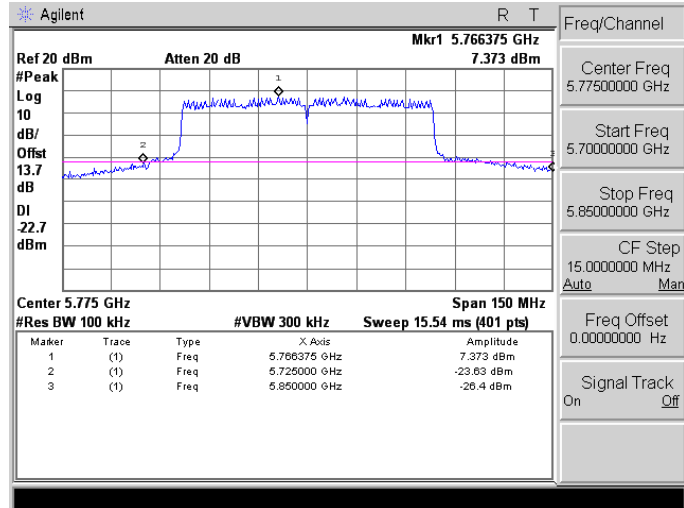


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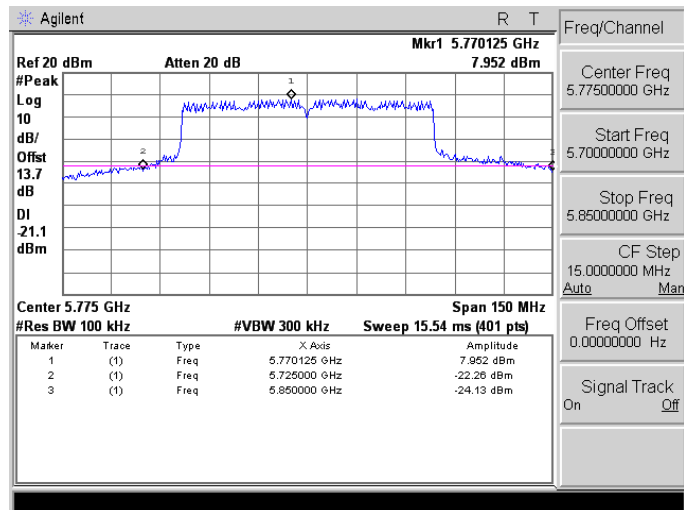
Mode 9: IEEE 802.11ac U-NII Band III 80MHz Link Mode \_ ANT0

5775



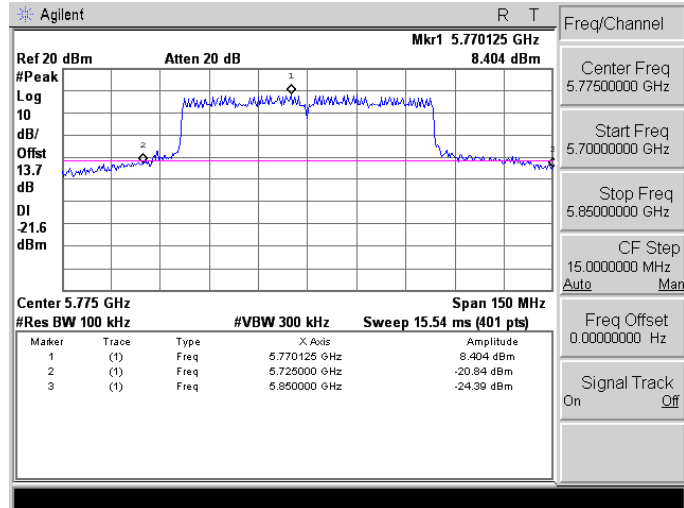
Mode 9: IEEE 802.11ac U-NII Band III 80MHz Link Mode \_ ANT1

5775



Mode 9: IEEE 802.11ac U-NII Band III 80MHz Link Mode \_ ANT2

5775

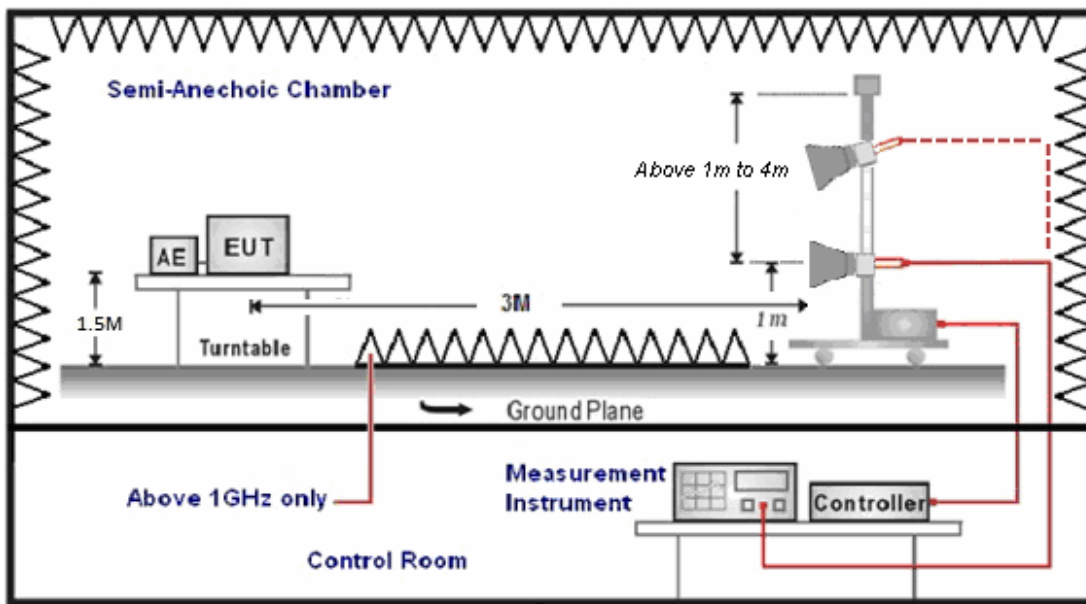


## 10 Band Edges Measurement

### 10.1.Limit

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 30 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

### 10.2.Test Setup



### 10.3.Test Instruments

3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/06/2015	(1)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/06/2015	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/24/2015	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/24/2015	(1)
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/12/2015	(1)
Microwave Cable	EMCI	EMC-104-SM-S M-14000	140202	02/24/2015	(1)
Microwave Cable	EMCI	EMC104-SM-S M-600	140301	02/24/2015	(1)
Bore-sight Antenna Tower	MF	MFA-520BSN	1308243	N.C.R.	-----
Test Site	ATL	TE01	888001	08/28/2014	(1)

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years. (3) Calibration period 3 years.

Note: N.C.R. = No Calibration Request.

## 10.4. Test Procedure

The EUT tested to DTS test procedure of KDB 558074 D01 v03r03 for compliance to FCC 47CFR 15.247 requirements.

The emissions on the harmonics frequencies, the limits, and the margin of compliance are presented. These tests were made when the transmitter was in full radiated power. The additional test was performed to show compliance with the requirement at the band-edge frequency 2483.5 MHz and up to 2500 MHz and at 2390.0 MHz.

The transmitter was configured with the worst case antenna and setup to transmit at the highest channel. Then the field strength was measured at 2483.5 MHz.

The transmitter was then configured with the worst case antenna and setup to transmit at the lowest channel. Then the field strength was measured at 2390.0 MHz. These tests were performed at 4 different bit rates.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements when Duty cycle  $>0.98 / 1/T$  for average measurements when Duty cycle  $<0.98$ .



**10.5. Test Result**

Standard:	FCC Part 15C	Test Distance:	3m				
Test item:	Radiated Emission	Power:	AC 120V/60Hz				
Model Number:	RE590T	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Mode:	2	Date:	07/01/2015				
Frequency:	2412 MHz	Test By:	Eric Ou Yang				
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2387.220	57.17	4.37	61.54	74.00	-12.46	peak	H
2387.220	44.70	4.37	49.07	54.00	-4.93	AVG	H
2390.000	55.79	4.38	60.17	74.00	-13.83	peak	H
2390.000	45.17	4.38	49.55	54.00	-4.45	AVG	H
2389.310	59.62	4.38	64.00	74.00	-10.00	peak	V
2389.310	47.41	4.38	51.79	54.00	-2.21	AVG	V
2390.000	57.15	4.38	61.53	74.00	-12.47	peak	V
2390.000	47.57	4.38	51.95	54.00	-2.05	AVG	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RE590T	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	2	Date:	07/09/2015
Frequency:	2437 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2387.330	57.48	4.37	61.85	74.00	-12.15	peak	H
2387.330	45.75	4.37	50.12	54.00	-3.88	AVG	H
2390.000	56.40	4.38	60.78	74.00	-13.22	peak	H
2390.000	46.09	4.38	50.47	54.00	-3.53	AVG	H
2483.500	56.17	4.75	60.92	74.00	-13.08	peak	H
2483.500	46.27	4.75	51.02	54.00	-2.98	AVG	H
2484.420	57.60	4.75	62.35	74.00	-11.65	peak	H
2484.420	46.40	4.75	51.15	54.00	-2.85	AVG	H
2380.490	60.11	4.34	64.45	74.00	-9.55	peak	V
2380.490	48.67	4.34	53.01	54.00	-0.99	AVG	V
2390.000	58.30	4.38	62.68	74.00	-11.32	peak	V
2390.000	49.09	4.38	53.47	54.00	-0.53	AVG	V
2483.500	58.47	4.75	63.22	74.00	-10.78	peak	V
2483.500	48.92	4.75	53.67	54.00	-0.33	AVG	V
2489.550	59.12	4.77	63.89	74.00	-10.11	peak	V
2489.550	48.85	4.77	53.62	54.00	-0.38	AVG	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	RE590T			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	2			Date:	07/01/2015		
Frequency:	2462 MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2483.500	54.80	4.75	59.55	74.00	-14.45	peak	H
2483.500	45.27	4.75	50.02	54.00	-3.98	AVG	H
2483.720	57.68	4.75	62.43	74.00	-11.57	peak	H
2483.720	45.20	4.75	49.95	54.00	-4.05	AVG	H
2483.500	58.15	4.75	62.90	74.00	-11.10	peak	V
2483.500	47.14	4.75	51.89	54.00	-2.11	AVG	V
2485.800	59.54	4.75	64.29	74.00	-9.71	peak	V
2485.800	46.35	4.75	51.10	54.00	-2.90	AVG	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	RE590T			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	3			Date:	07/01/2015		
Frequency:	2412 MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2389.530	57.07	4.38	61.45	74.00	-12.55	peak	H
2389.530	45.04	4.38	49.42	54.00	-4.58	AVG	H
2390.000	56.63	4.38	61.01	74.00	-12.99	peak	H
2390.000	45.21	4.38	49.59	54.00	-4.41	AVG	H
2389.530	63.36	4.38	67.74	74.00	-6.26	peak	V
2389.530	47.54	4.38	51.92	54.00	-2.08	AVG	V
2390.000	65.58	4.38	69.96	74.00	-4.04	peak	V
2390.000	48.02	4.38	52.40	54.00	-1.60	AVG	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RE590T	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	3	Date:	07/01/2015
Frequency:	2437 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2377.830	57.21	4.33	61.54	74.00	-12.46	peak	H
2377.830	45.19	4.33	49.52	54.00	-4.48	AVG	H
2390.000	56.10	4.38	60.48	74.00	-13.52	peak	H
2390.000	45.43	4.38	49.81	54.00	-4.19	AVG	H
2483.500	55.95	4.75	60.70	74.00	-13.30	peak	H
2483.500	46.00	4.75	50.75	54.00	-3.25	AVG	H
2485.560	57.35	4.75	62.10	74.00	-11.90	peak	H
2485.560	45.75	4.75	50.50	54.00	-3.50	AVG	H
2388.470	65.56	4.38	69.94	74.00	-4.06	peak	V
2388.470	48.61	4.38	52.99	54.00	-1.01	AVG	V
2390.000	63.21	4.38	67.59	74.00	-6.41	peak	V
2390.000	48.69	4.38	53.07	54.00	-0.93	AVG	V
2483.500	61.02	4.75	65.77	74.00	-8.23	peak	V
2483.500	48.59	4.75	53.34	54.00	-0.66	AVG	V
2484.420	63.11	4.75	67.86	74.00	-6.14	peak	V
2484.420	48.49	4.75	53.24	54.00	-0.76	AVG	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	RE590T			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	3			Date:	07/01/2015		
Frequency:	2462 MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2483.500	56.51	4.75	61.26	74.00	-12.74	peak	H
2483.500	45.85	4.75	50.60	54.00	-3.40	AVG	H
2483.800	58.92	4.75	63.67	74.00	-10.33	peak	H
2483.800	45.62	4.75	50.37	54.00	-3.63	AVG	H
2483.500	62.17	4.75	66.92	74.00	-7.08	peak	V
2483.500	48.08	4.75	52.83	54.00	-1.17	AVG	V
2484.040	61.93	4.75	66.68	74.00	-7.32	peak	V
2484.040	47.43	4.75	52.18	54.00	-1.82	AVG	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	RE590T			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	4			Date:	07/01/2015		
Frequency:	2412 MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2388.760	57.11	4.38	61.49	74.00	-12.51	peak	H
2388.760	45.60	4.38	49.98	54.00	-4.02	AVG	H
2390.000	57.60	4.38	61.98	74.00	-12.02	peak	H
2390.000	45.94	4.38	50.32	54.00	-3.68	AVG	H
2388.980	64.06	4.38	68.44	74.00	-5.56	peak	V
2388.980	47.04	4.38	51.42	54.00	-2.58	AVG	V
2390.000	60.85	4.38	65.23	74.00	-8.77	peak	V
2390.000	47.76	4.38	52.14	54.00	-1.86	AVG	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RE590T	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	4	Date:	07/09/2015
Frequency:	2437 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2386.570	57.41	4.36	61.77	74.00	-12.23	peak	H
2386.570	45.57	4.36	49.93	54.00	-4.07	AVG	H
2390.000	56.27	4.38	60.65	74.00	-13.35	peak	H
2390.000	45.97	4.38	50.35	54.00	-3.65	AVG	H
2483.500	56.26	4.75	61.01	74.00	-12.99	peak	H
2483.500	46.07	4.75	50.82	54.00	-3.18	AVG	H
2495.820	57.96	4.79	62.75	74.00	-11.25	peak	H
2495.820	45.72	4.79	50.51	54.00	-3.49	AVG	H
2381.630	59.70	4.34	64.04	74.00	-9.96	peak	V
2381.630	48.06	4.34	52.40	54.00	-1.60	AVG	V
2390.000	58.89	4.38	63.27	74.00	-10.73	peak	V
2390.000	49.18	4.38	53.56	54.00	-0.44	AVG	V
2483.500	57.66	4.75	62.41	74.00	-11.59	peak	V
2483.500	48.50	4.75	53.25	54.00	-0.75	AVG	V
2486.510	59.19	4.75	63.94	74.00	-10.06	peak	V
2486.510	48.19	4.75	52.94	54.00	-1.06	AVG	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	RE590T			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	4			Date:	07/01/2015		
Frequency:	2462 MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2483.500	56.13	4.75	60.88	74.00	-13.12	peak	H
2483.500	46.10	4.75	50.85	54.00	-3.15	AVG	H
2484.200	57.44	4.75	62.19	74.00	-11.81	peak	H
2484.200	45.78	4.75	50.53	54.00	-3.47	AVG	H
2483.500	61.10	4.75	65.85	74.00	-8.15	peak	V
2483.500	47.87	4.75	52.62	54.00	-1.38	AVG	V
2484.160	61.86	4.75	66.61	74.00	-7.39	peak	V
2484.160	47.24	4.75	51.99	54.00	-2.01	AVG	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	RE590T			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	5			Date:	07/01/2015		
Frequency:	2422 MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2387.880	57.85	4.38	62.23	74.00	-11.77	peak	H
2387.880	45.29	4.38	49.67	54.00	-4.33	AVG	H
2390.000	55.76	4.38	60.14	74.00	-13.86	peak	H
2390.000	45.86	4.38	50.24	54.00	-3.76	AVG	H
2389.560	67.46	4.38	71.84	74.00	-2.16	peak	V
2389.560	47.39	4.38	51.77	54.00	-2.23	AVG	V
2390.000	64.03	4.38	68.41	74.00	-5.59	peak	V
2390.000	47.77	4.38	52.15	54.00	-1.85	AVG	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	RE590T	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	5	Date:	07/16/2015
Frequency:	2437 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2388.850	59.81	4.38	64.19	74.00	-9.81	peak	H
2388.850	46.34	4.38	50.72	54.00	-3.28	AVG	H
2390.000	59.34	4.38	63.72	74.00	-10.28	peak	H
2390.000	46.19	4.38	50.57	54.00	-3.43	AVG	H
2483.500	57.77	4.75	62.52	74.00	-11.48	peak	H
2483.500	45.63	4.75	50.38	54.00	-3.62	AVG	H
2488.980	57.79	4.77	62.56	74.00	-11.44	peak	H
2488.980	45.19	4.77	49.96	54.00	-4.04	AVG	H
2382.580	65.79	4.35	70.14	74.00	-3.86	peak	V
2382.580	48.43	4.35	52.78	54.00	-1.22	AVG	V
2390.000	66.77	4.38	71.15	74.00	-2.85	peak	V
2390.000	49.21	4.38	53.59	54.00	-0.41	AVG	V
2483.500	64.85	4.75	69.60	74.00	-4.40	peak	V
2483.500	48.42	4.75	53.17	54.00	-0.83	AVG	V
2485.370	65.75	4.75	70.50	74.00	-3.50	peak	V
2485.370	48.30	4.75	53.05	54.00	-0.95	AVG	V



Standard:	FCC Part 15C	Test Distance:	3m				
Test item:	Radiated Emission	Power:	AC 120V/60Hz				
Model Number:	RE590T	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Mode:	5	Date:	07/01/2015				
Frequency:	2452 MHz	Test By:	Eric Ou Yang				
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2483.500	56.53	4.75	61.28	74.00	-12.72	peak	H
2483.500	46.08	4.75	50.83	54.00	-3.17	AVG	H
2484.250	59.82	4.75	64.57	74.00	-9.43	peak	H
2484.250	45.89	4.75	50.64	54.00	-3.36	AVG	H
2483.500	57.93	4.75	62.68	74.00	-11.32	peak	V
2483.500	47.74	4.75	52.49	54.00	-1.51	AVG	V
2487.650	61.69	4.76	66.45	74.00	-7.55	peak	V
2487.650	47.34	4.76	52.10	54.00	-1.90	AVG	V

## **11 Antenna Measurement**

### **11.1.Limit**

For intentional device, according to 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.

And According to 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### **11.2.Antenna Connector Construction**

The antenna used in this product is Omni Directional Antenna . And the maximum Gain of this antenna is only 2.0 dBi.