

**Spectrum Analyzer - View 4**

Center Freq 5.405000000 GHz

190. Fast 10 dB

Trig Free Run

8 Attenu: 10 dB

Avg Type: Log-Pwr

42.0M-50.0M Hz May 25, 2013

Trace 0: Freq

Type: Freq

Set: Freq

Frequency

Auto Tune

Center Freq 5.405000000 GHz

Start Freq 5.360000000 GHz

Stop Freq 5.480000000 GHz

CF Step 11.000000 MHz

Man

Freq Offset 0 Hz

10 dB/div

Ref 0.00 dBm

Mkr1 5.350 00 GHz

-55.29 dBm

Start 5.31000 GHz

Res BW 1.0 MHz

#BW 100 Hz

Stop 5.48000 GHz

Sweep 898 ms (1001 pts)

Marker	Freq	Amplitude	Function	Function Value	Function Value
1	5.350 00 GHz	-55.29 dBm			
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

Marker 1: 5.350 00 GHz, -55.29 dBm

Marker 2: 5.350 00 GHz, -55.29 dBm

Marker 3: 5.350 00 GHz, -55.29 dBm

Marker 4: 5.350 00 GHz, -55.29 dBm

Marker 5: 5.350 00 GHz, -55.29 dBm

Marker 6: 5.350 00 GHz, -55.29 dBm

Marker 7: 5.350 00 GHz, -55.29 dBm

Marker 8: 5.350 00 GHz, -55.29 dBm

Marker 9: 5.350 00 GHz, -55.29 dBm

Marker 10: 5.350 00 GHz, -55.29 dBm

Marker 11: 5.350 00 GHz, -55.29 dBm

Marker 12: 5.350 00 GHz, -55.29 dBm

**Center Freq 5.405000000 GHz**

**Mkr1 5.350 00 GHz**  
**-1.97 dBm**

**Start 5.350000 GHz**  
**Stop 5.460000 GHz**

**Res BW 1.0 MHz**  
**#VBW 100 Hz**  
**Sweep 858 ms (1001 pts)**

**Auto Tune**

**Center Freq**  
5.40500000 GHz

**Start Freq**  
5.350000000 GHz

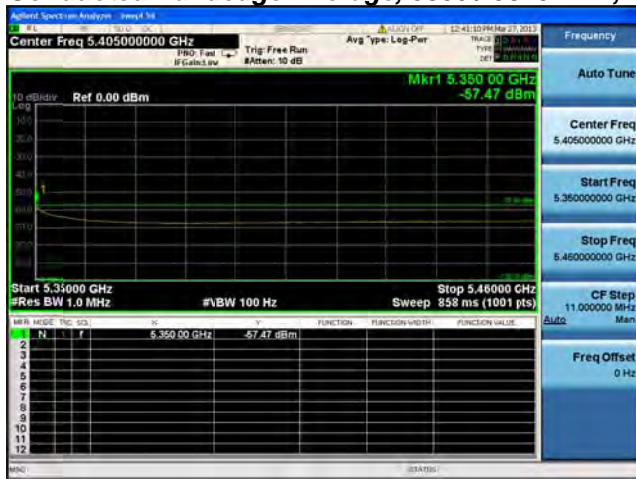
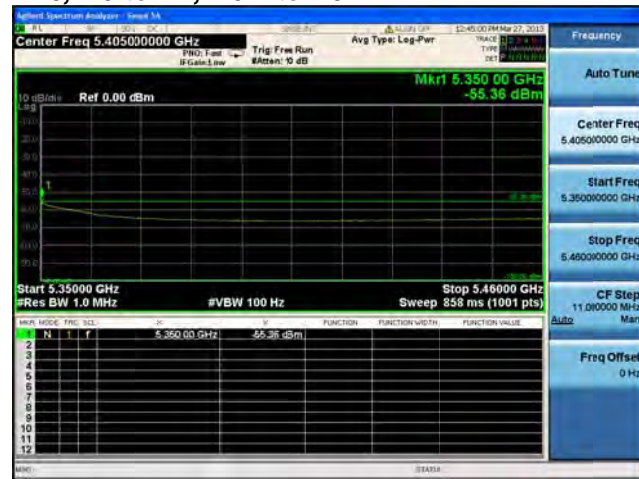
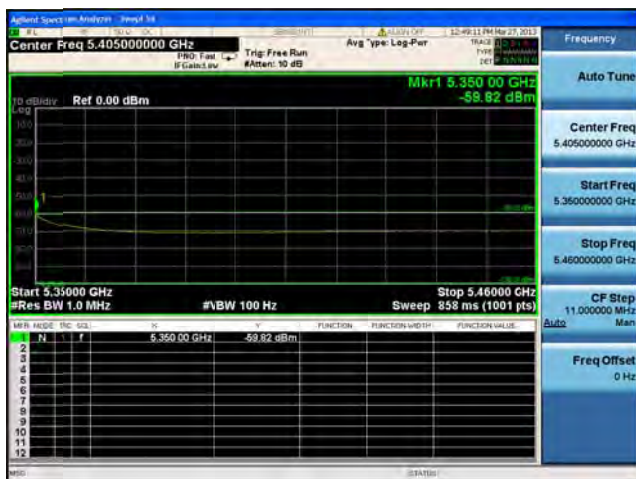
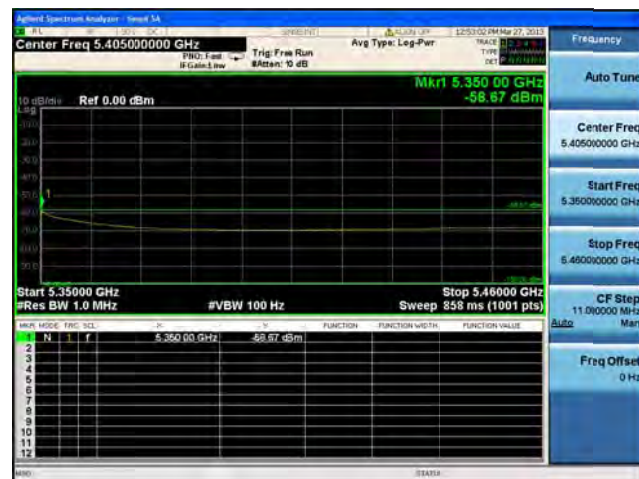
**Stop Freq**  
5.46000000 GHz

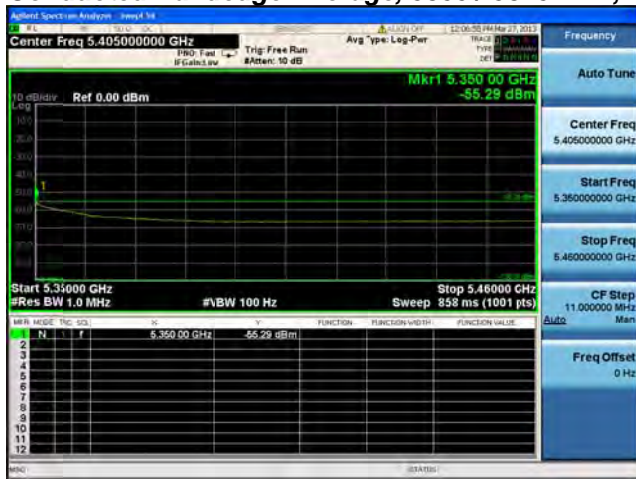
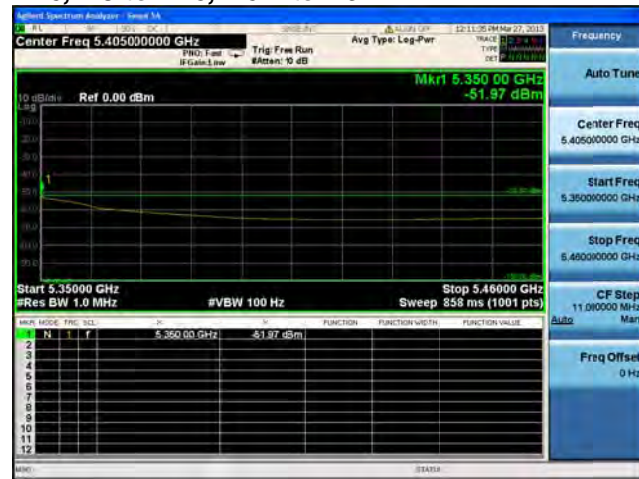
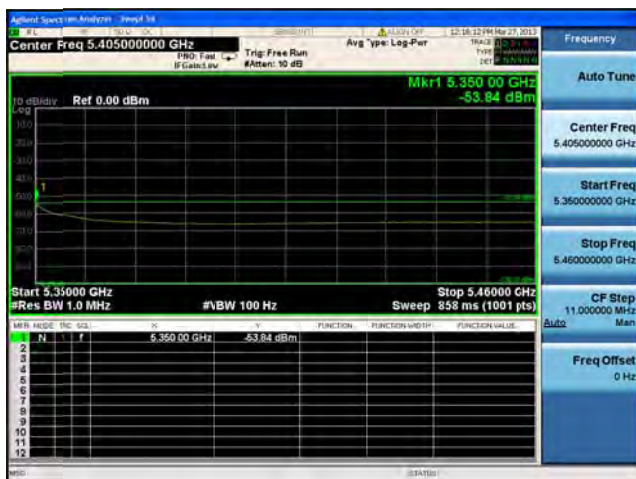
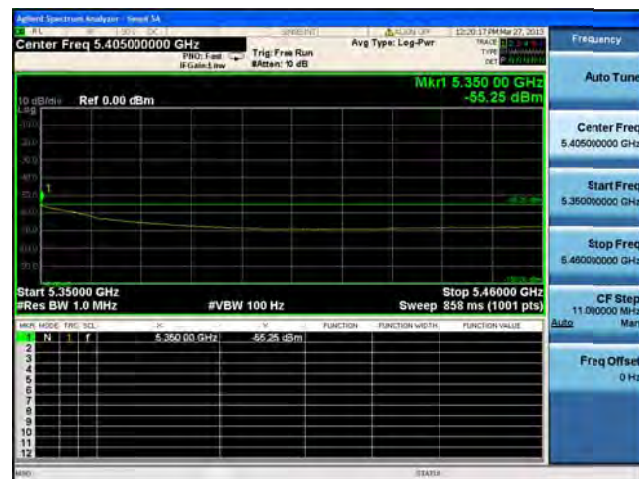
**CF Step**  
11.000000 MHz

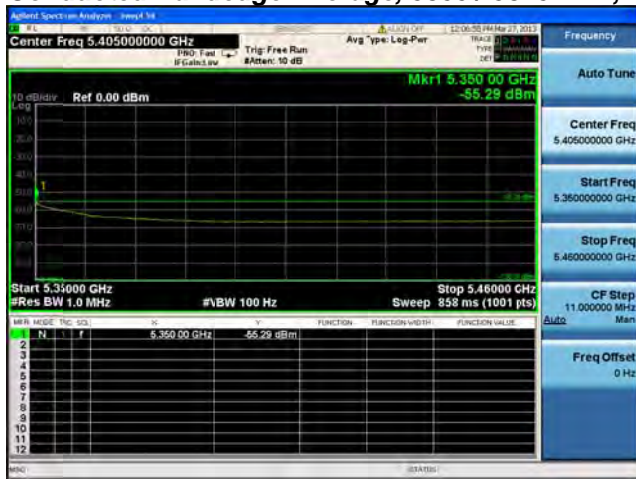
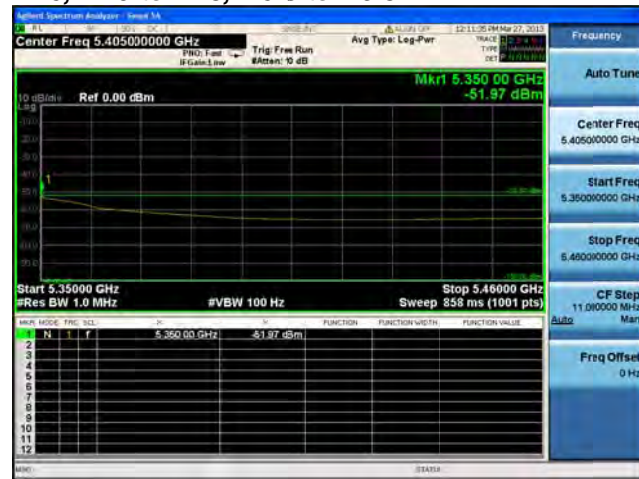
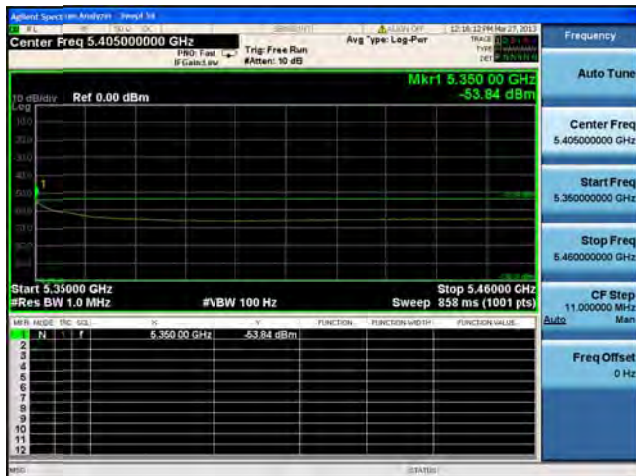
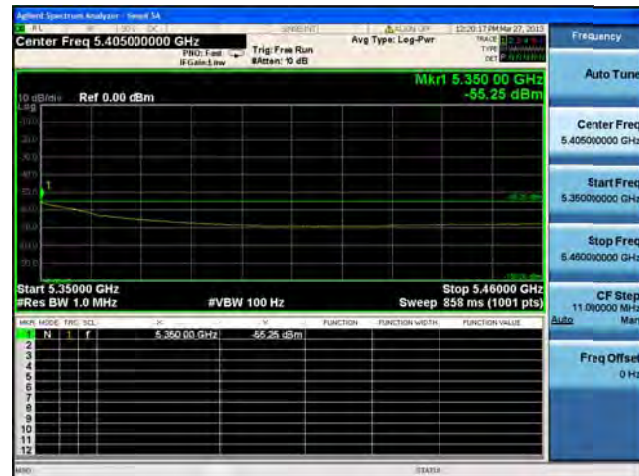
**Freq Offset**  
0 Hz

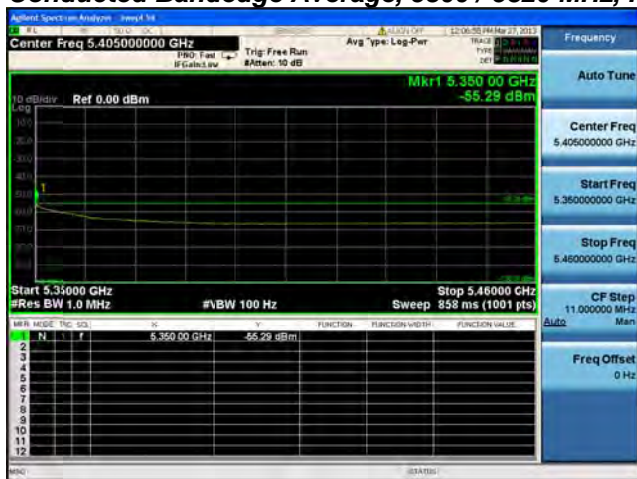
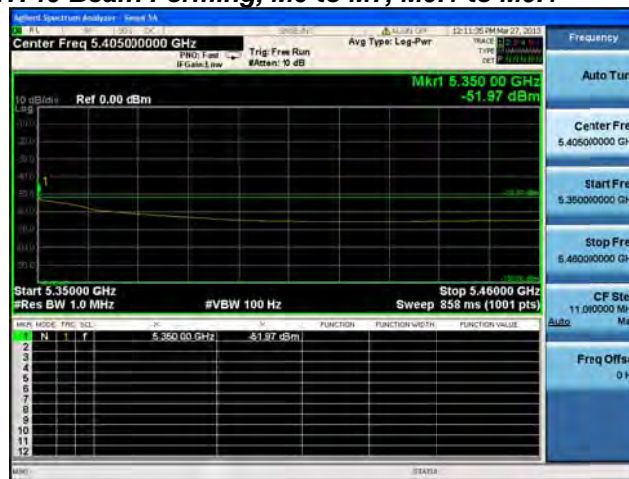
[illegible]

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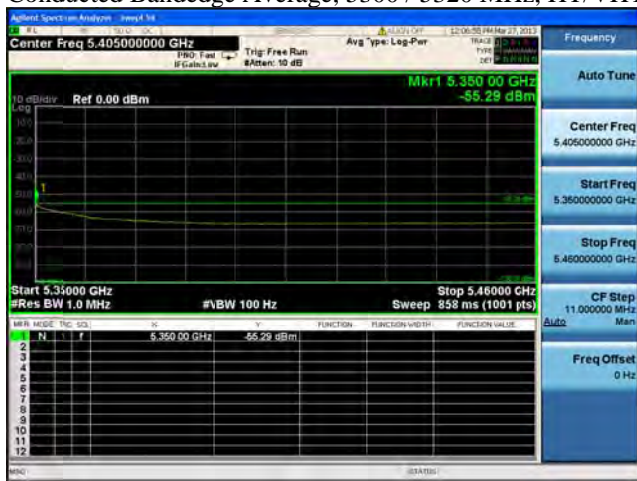
**Conducted Bandedge Average, 5300 / 5320 MHz, HT/VHT40, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C****Antenna D**

**Conducted Bandedge Average, 5300 / 5320 MHz, HT/VHT40, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B****Antenna C****Antenna D**

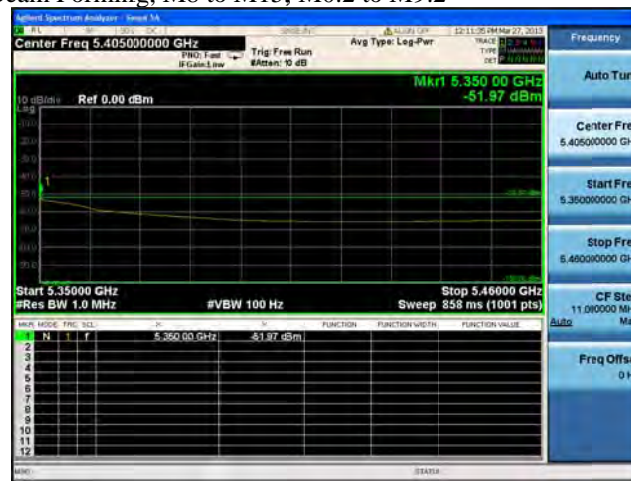
**Conducted Bandedge Average, 5300 / 5320 MHz, HT/VHT40, M16 to M23, M0.3 to M9.3****Antenna A****Antenna B****Antenna C****Antenna D**

**Conducted Bandedge Average, 5300 / 5320 MHz, HT/VHT40 Beam Forming, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B**

Conducted Bandedge Average, 5300 / 5320 MHz, HT/VHT40 Beam Forming, M8 to M15, M0.2 to M9.2

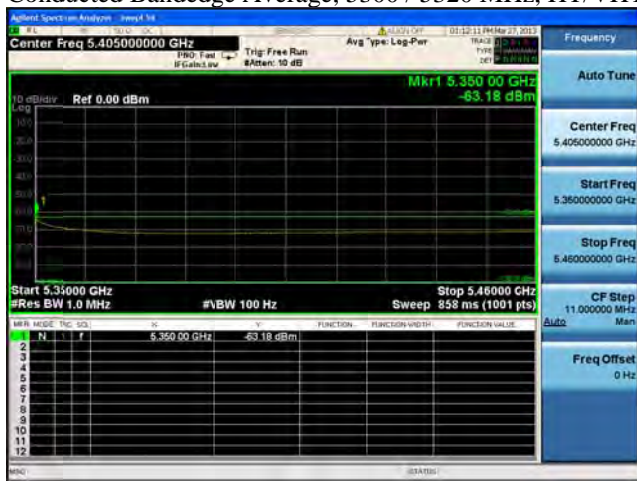
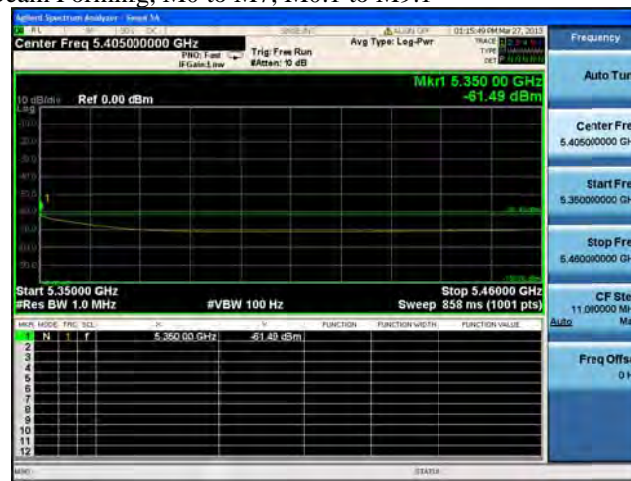
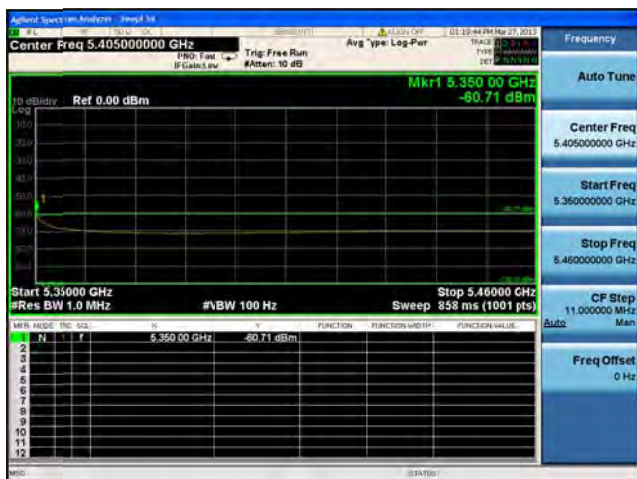


Antenna A



Antenna B

Conducted Bandedge Average, 5300 / 5320 MHz, HT/VHT40 Beam Forming, M0 to M7, M0.1 to M9.1

**Antenna A****Antenna B****Antenna C**

**Spectrum Analyzer - View 1**

Center Freq 5.405000000 GHz

190. Fast 10 dB

Trig Free Run

8Attenu: 10 dB

Avg Type: Log-Pwr

12:24:52 PM Mar 25, 2013

Trace 0: Freq

Type: Freq

Set: Freq

Frequency

Auto Tune

Center Freq 5.405000000 GHz

Start Freq 5.360000000 GHz

Stop Freq 5.480000000 GHz

CF Step 11.000000 MHz

Freq Offset 0 Hz

Start 5.31000 GHz

Stop 5.48000 GHz

Res BW 1.0 MHz

Span 100 Hz

Sweep 898 ms (1001 pts)

Ref 0.00 dBm

Mkr1 5.35000 GHz -56.65 dBm

Marker	Freq	Amplitude	Function	Function Value	Function Value
1	5.35000 GHz	-56.65 dBm			

The screenshot displays a Vector Signal Analyzer (VSA) interface. The main window shows a frequency spectrum plot with a green trace. The plot has a logarithmic y-axis labeled '10 dBm/Hz' and a linear x-axis. The center frequency is 5.405000000 GHz. A marker 'Mkr1' is placed at 5.35000 GHz, showing a value of -53.78 dBm. The plot also shows a reference level at 0.00 dBm. The plot is titled 'Center Freq 5.405000000 GHz'.

Below the plot, there is a table with the following data:

Start	Stop	Res BW	#VBW	Sweep
5.350000 GHz	5.460000 GHz	1.0 MHz	100 Hz	858 ms (1001 pts)

On the right side of the interface, there is a 'Frequency' panel with the following settings:

- Auto Tune
- Center Freq: 5.405000000 GHz
- Start Freq: 5.350000000 GHz
- Stop Freq: 5.460000000 GHz
- CF Step: 11.000000 MHz
- Freq Offset: 0 Hz

At the bottom of the interface, there is a 'Table' panel with the following data:

Row	Mode	Freq	Val	Function	Function Width	Function Value
1	N	5.35000 GHz	-53.78 dBm			
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						

Agilent Spectrum Analyzer - Page 3 of 4

Frequency: 5.350000 GHz

Center Freq 5.405000000 GHz

PRO: Fast 1000000000 Hz

Trig: Free Run

Avg: Type: Log-Pwr

Trace: 1

Peak: 5.350000 GHz

Level: -58.76 dBm

Mkr1 5.350000 GHz -58.76 dBm

Start 5.300000 GHz

Stop 5.400000 GHz

Res BW 1.0 MHz

Sweep 858 ms (1001 pts)

RBW 100 Hz

Function: FUNCTION WIDTH: FUNCTION VALUE:

Mkr	Freq	Level	Function	Function Width	Function Value
1	5.350000 GHz	-58.76 dBm			

Frequency: 5.350000 GHz

Auto Tune

Center Freq 5.405000000 GHz

Start Freq 5.350000000 GHz

Stop Freq 5.460000000 GHz

CF Step 11.000000 MHz

Auto

Freq Offset 0 Hz

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**Spectrum Analyzer** *File Edit View Windows Help*

Center Freq 5.405000000 GHz Span 100 MHz

100 dB/div Ref 0.00 dBm

100 80 60 40 20 0 0 20 40 60 80 100

5.350 5.400 5.450 5.500 5.550 5.600 5.650 5.700 5.750 5.800 5.850 5.900 5.950 6.000

Start 5.31000 GHz Stop 5.48000 GHz

Res BW 1.0 MHz #BW 100 Hz Sweep 898 ms (1001 pts)

MEAS	NAME	UNIT	VAL	FUNCTION	FUNCTION VALUE	FUNCTION VALUE
1	N	dBm	-56.22	dBm		
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						

MEAS1: Freq

MEAS2: Span

MEAS3: Res BW

MEAS4: #BW

MEAS5: Sweep

MEAS6: Stop Freq

MEAS7: CF Step

MEAS8: Freq Offset

MEAS9: Auto

MEAS10: Man

MEAS11: 0 Hz

The screenshot displays a Vector Signal Analyzer (VSA) interface. The main plot shows a spectrum with a peak at 5.350000 GHz. The plot is titled "Center Freq 5.405000000 GHz" and "Avg Type: Log-Pwr". The plot shows a peak at 5.350000 GHz with a magnitude of -1.97 dBm. The plot also shows a sweep range from 5.350000 GHz to 5.460000 GHz with a resolution bandwidth (Res BW) of 1.0 MHz and a sweep time of 858 ms (1001 pts).

Below the plot, there is a table with the following data:

TRIP	MODE	FREQ	VEL	dB	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	5.350000 GHz	-1.97 dBm				
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							

On the right side of the interface, there are several tabs and buttons, including "Auto Tune", "Center Freq", "Start Freq", "Stop Freq", "CF Step", "Auto", and "Freq Offset".

Agilent Spectrum Analyzer - Page 2

Center Freq 5.405000000 GHz

PRO: Fast 10 dB

Trig: Free Run

Avg 'Type: Log-Pwr

12:18:22 PM Mar 21, 2013

Trace 1: 5.3500 GHz

Type: 5.3500 GHz

Level: -33.84 dBm

Frequency

Auto Tune

Center Freq 5.405000000 GHz

Start Freq 5.350000000 GHz

Stop Freq 5.460000000 GHz

CF Step 11.000000 MHz

Auto

Freq Offset 0 Hz

Start 5.3000 GHz

Res BW 1.0 MHz

RBW 100 Hz

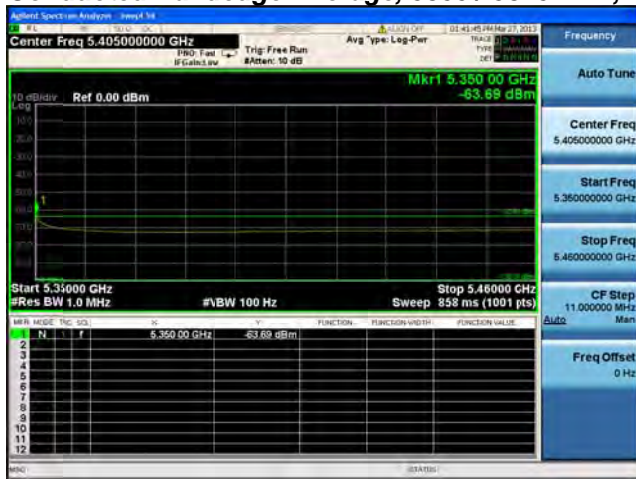
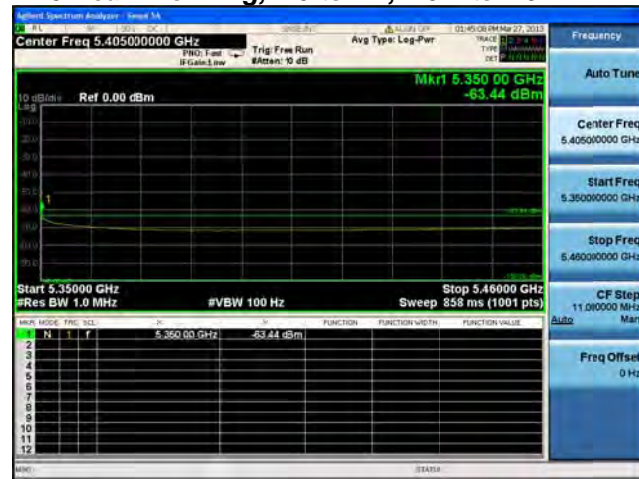
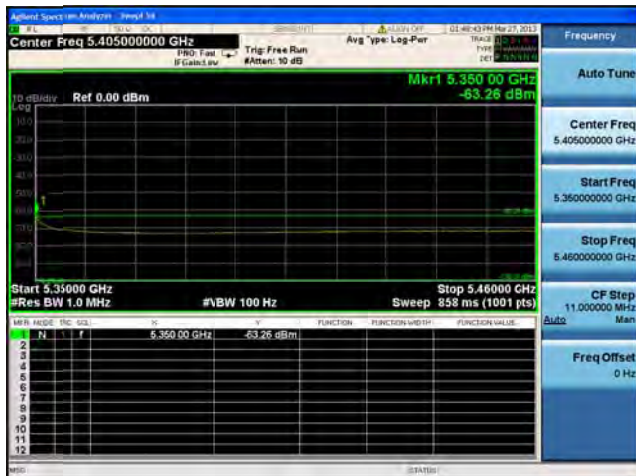
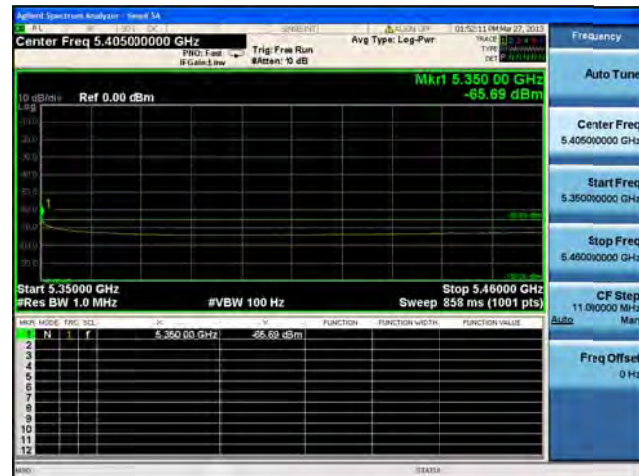
Sweep 858 ms (1001 pts)

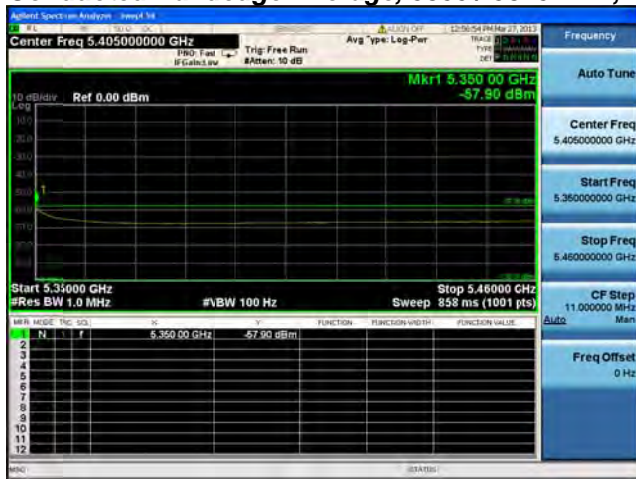
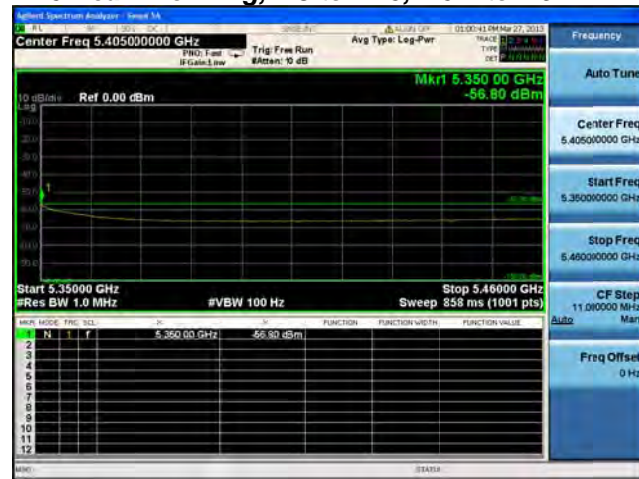
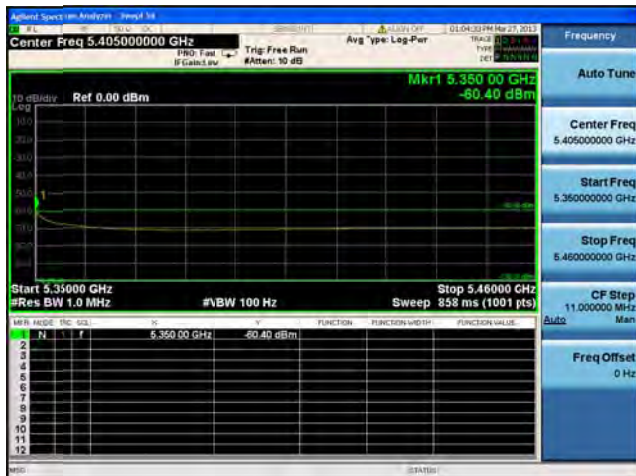
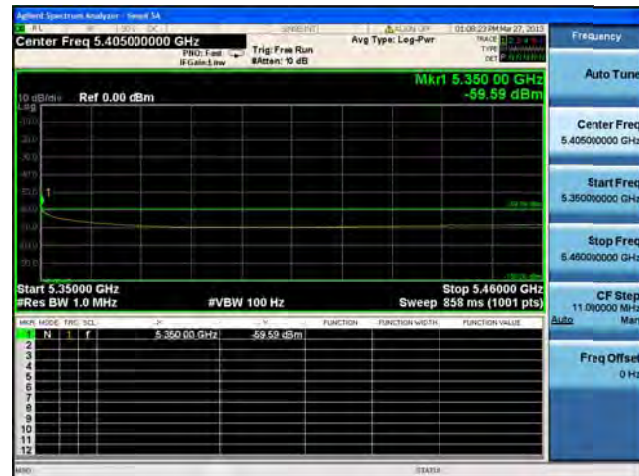
Stop 5.4000 GHz

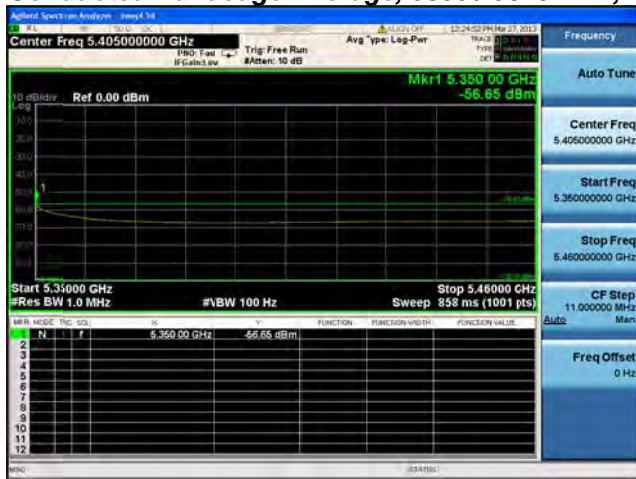
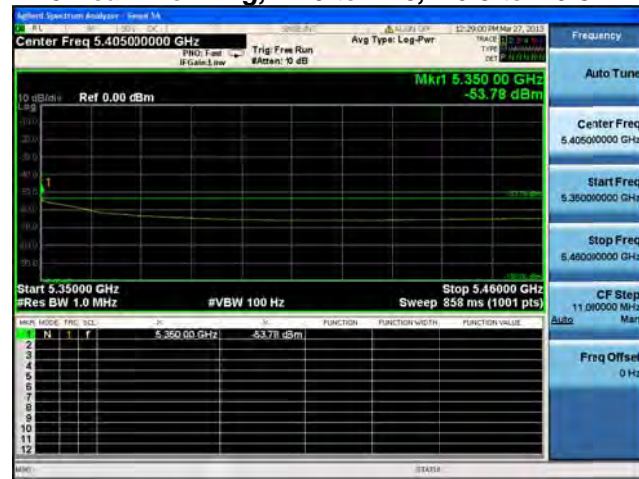
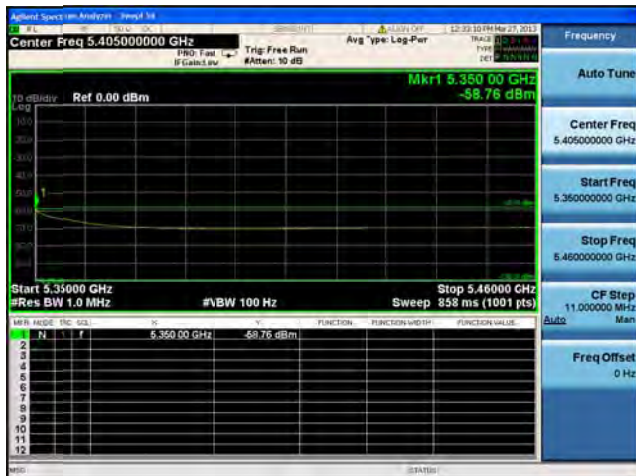
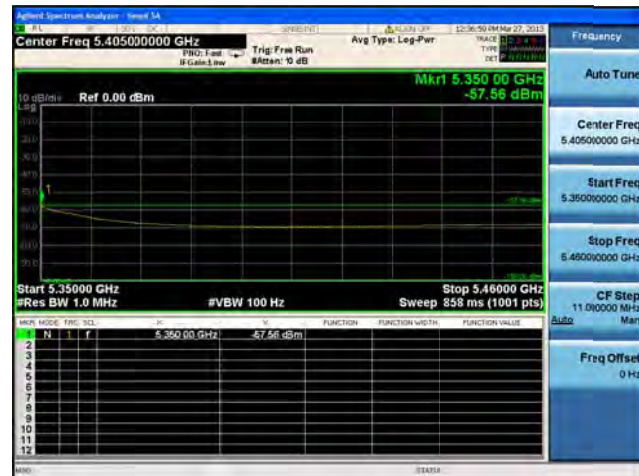
Mkr1 5.3500 GHz -33.84 dBm

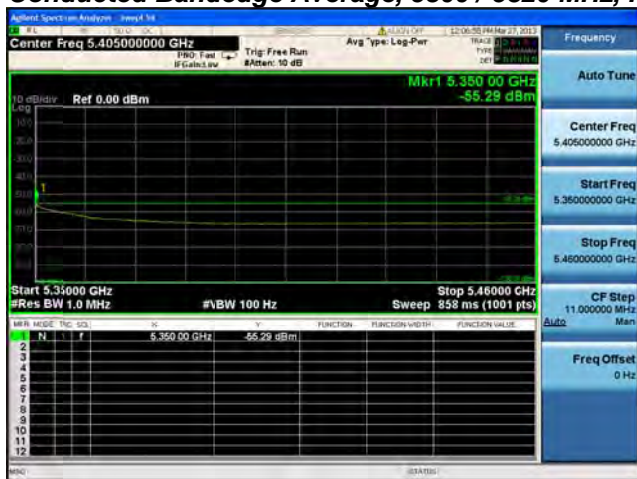
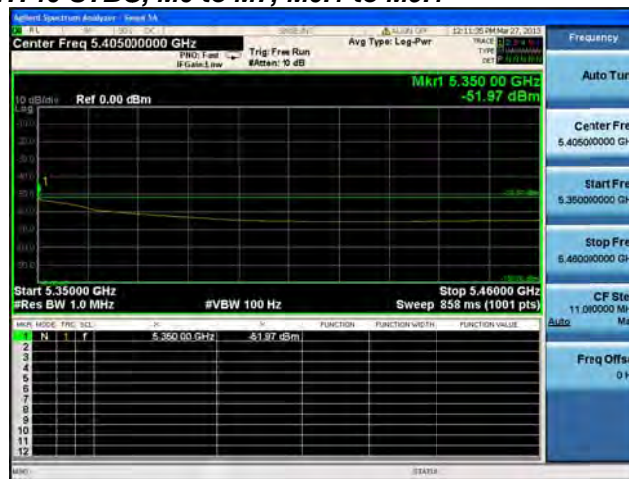
F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

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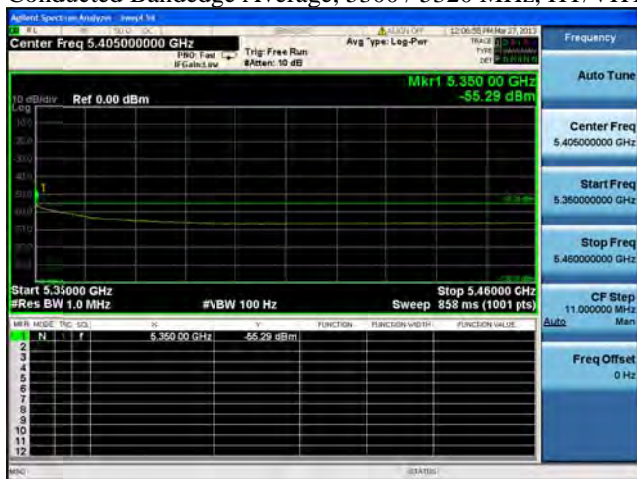
**Conducted Bandedge Average, 5300 / 5320 MHz, HT/VHT40 Beam Forming, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C****Antenna D**

**Conducted Bandedge Average, 5300 / 5320 MHz, HT/VHT40 Beam Forming, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B****Antenna C****Antenna D**

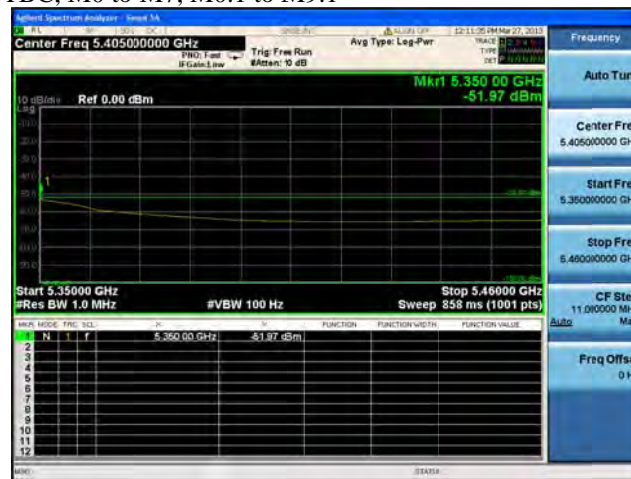
**Conducted Bandedge Average, 5300 / 5320 MHz, HT/VHT40 Beam Forming, M16 to M23, M0.3 to M9.3****Antenna A****Antenna B****Antenna C****Antenna D**

**Conducted Bandedge Average, 5300 / 5320 MHz, HT/VHT40 STBC, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B**

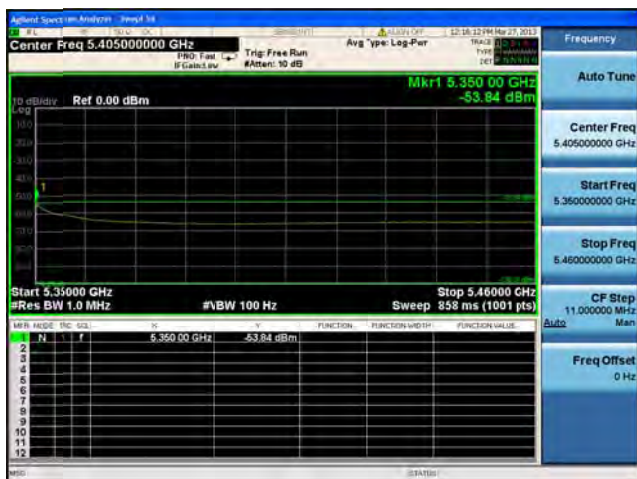
Conducted Bandedge Average, 5300 / 5320 MHz, HT/VHT40 STBC, M0 to M7, M0.1 to M9.1



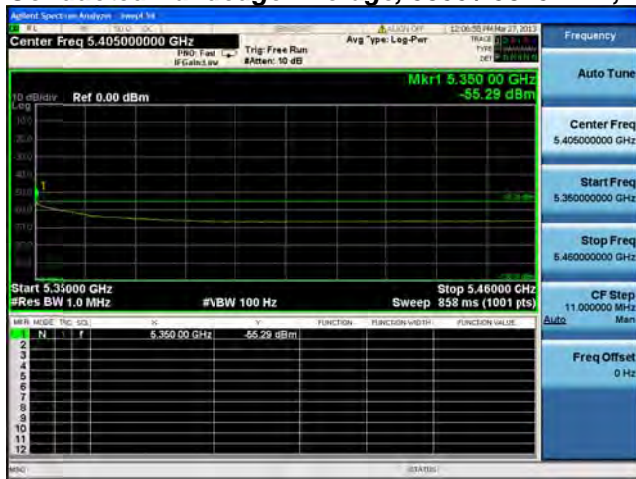
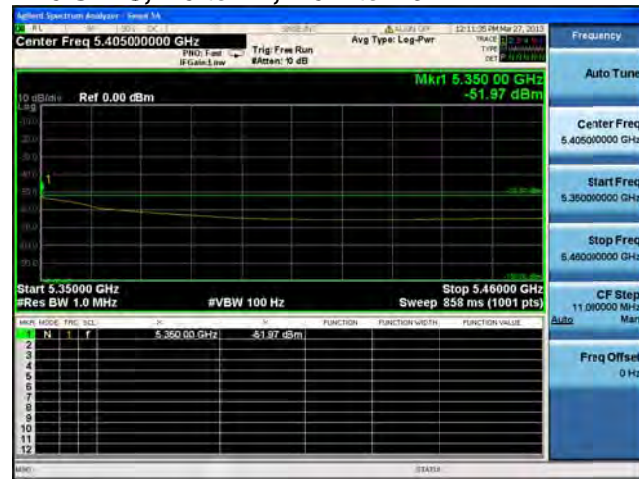
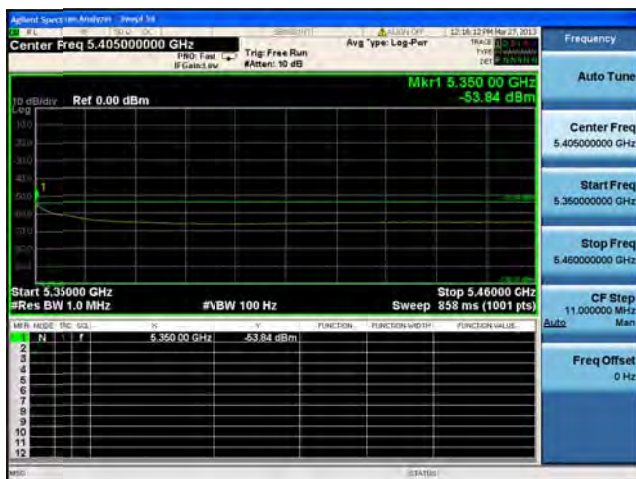
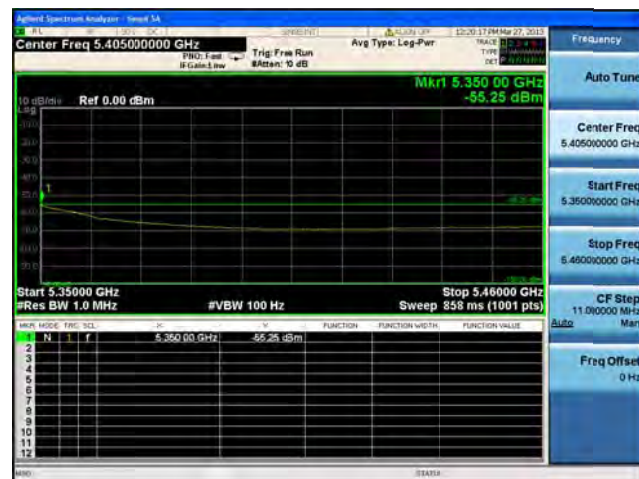
Antenna A

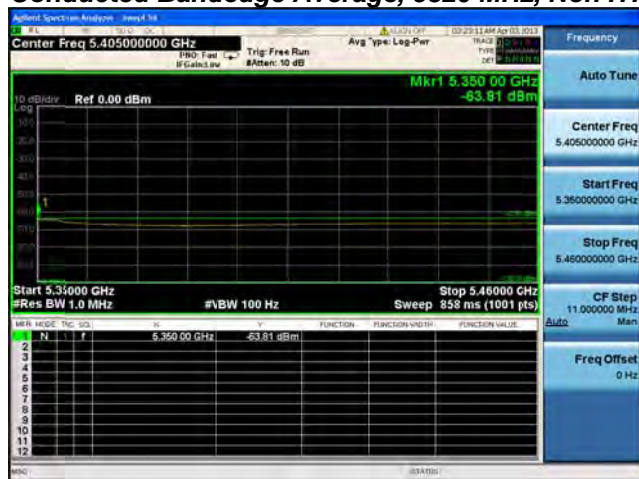


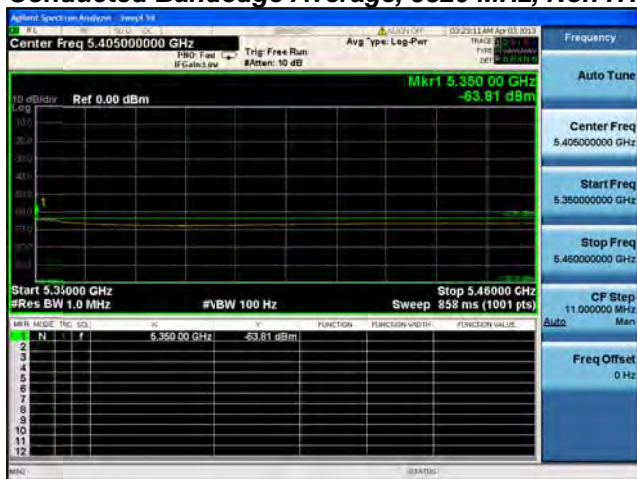
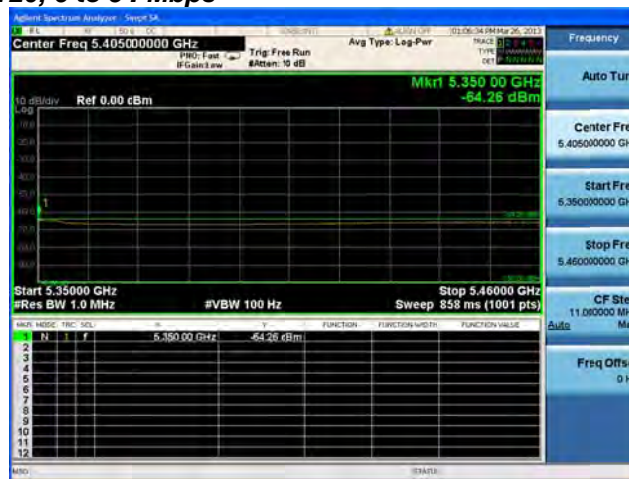
Antenna B



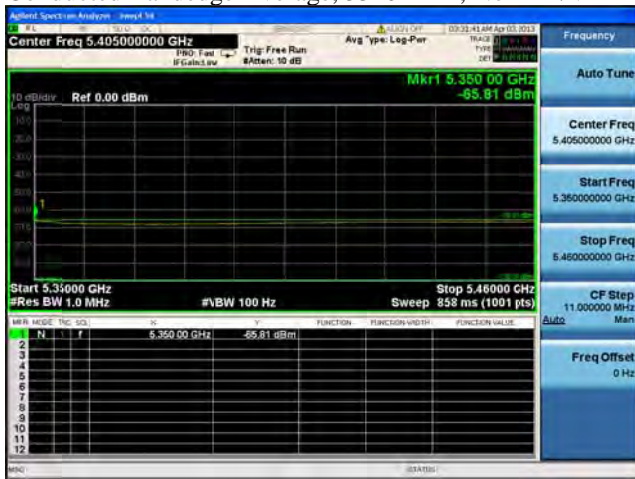
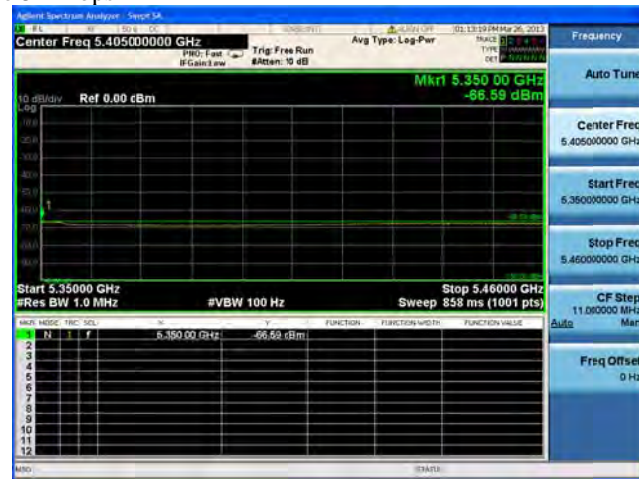
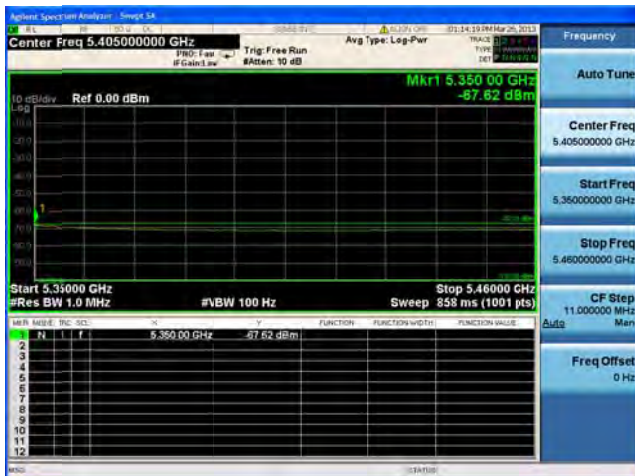
Antenna C

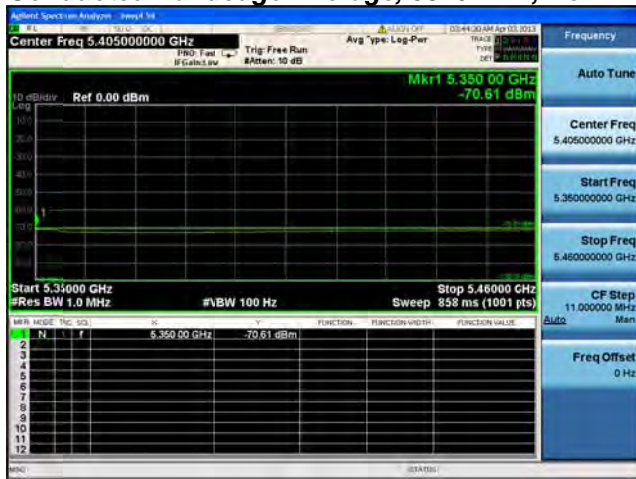
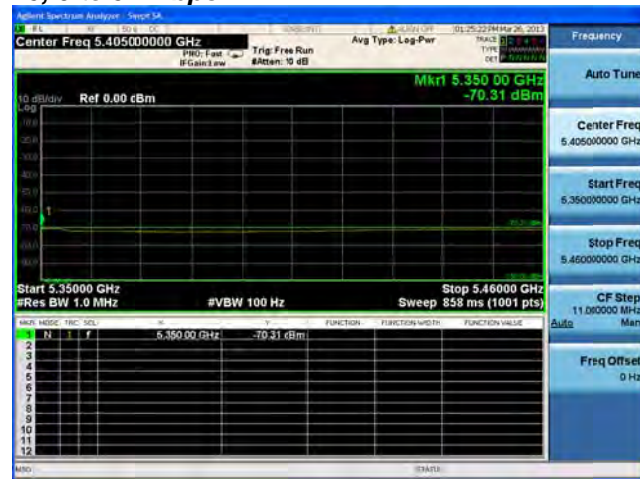
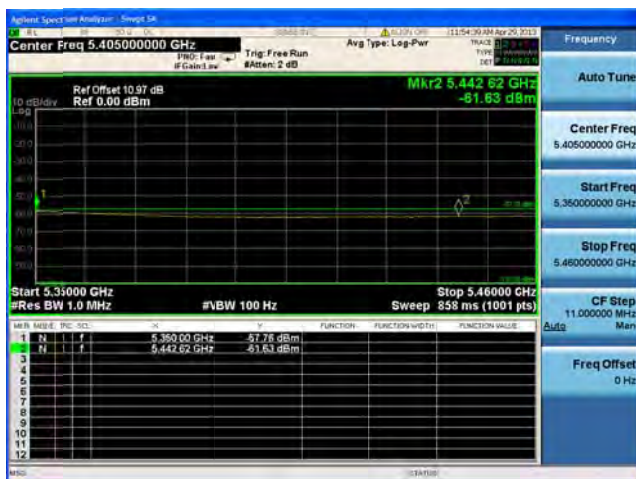
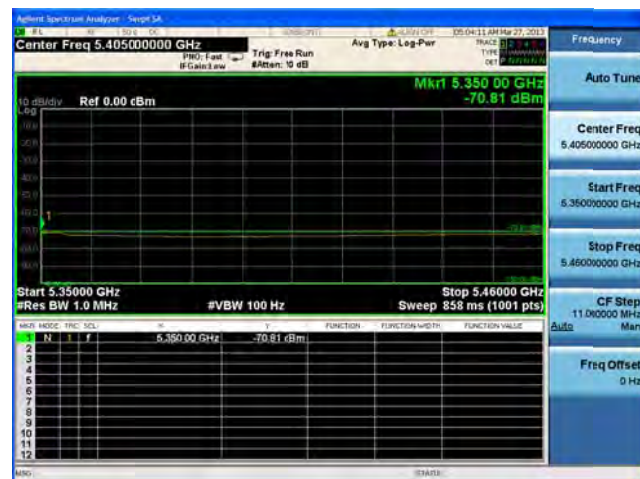
**Conducted Bandedge Average, 5300 / 5320 MHz, HT/VHT40 STBC, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C****Antenna D**

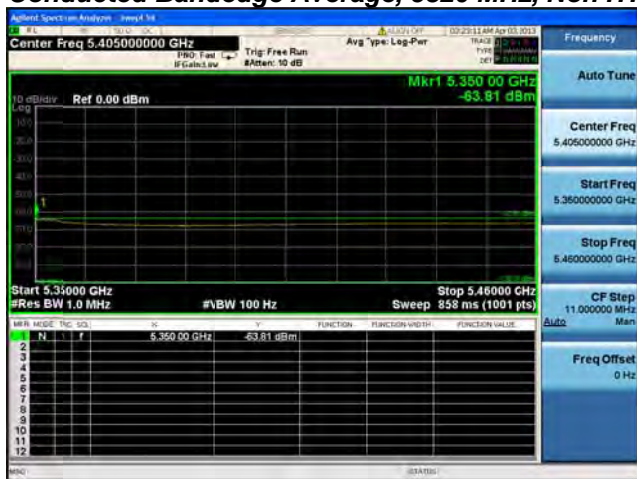
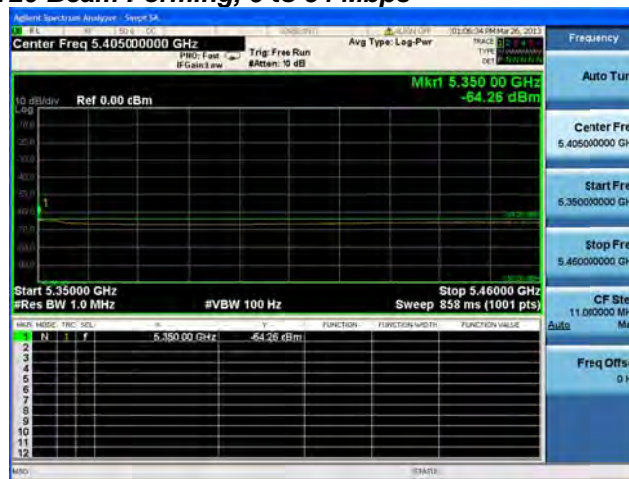
**Conducted Bandedge Average, 5320 MHz, Non HT/VHT20, 6 to 54 Mbps****Antenna A**

**Conducted Bandedge Average, 5320 MHz, Non HT/VHT20, 6 to 54 Mbps****Antenna A****Antenna B**

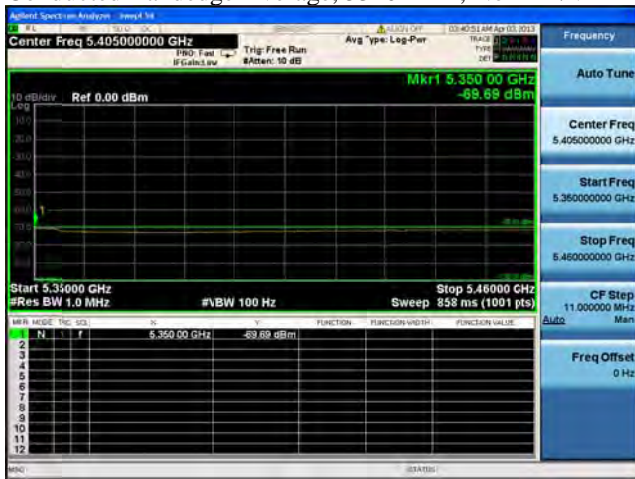
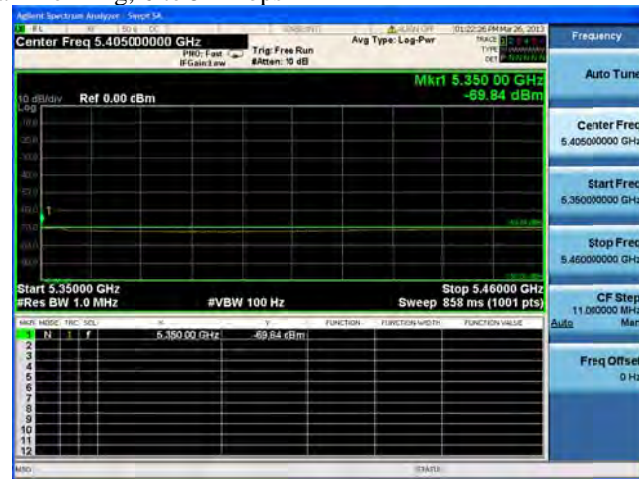
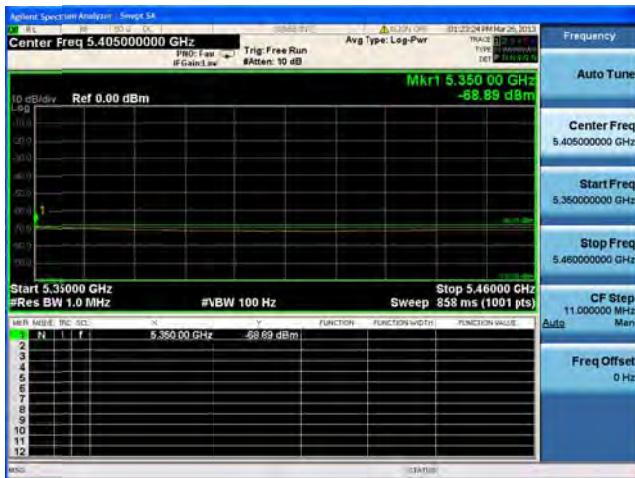
Conducted Bandedge Average, 5320 MHz, Non HT/VHT20, 6 to 54 Mbps

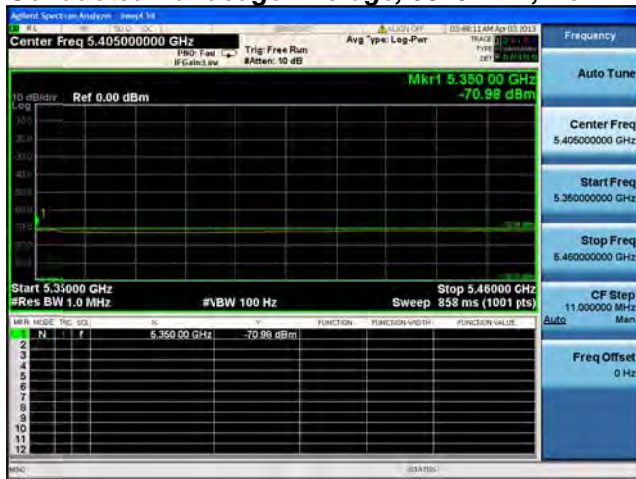
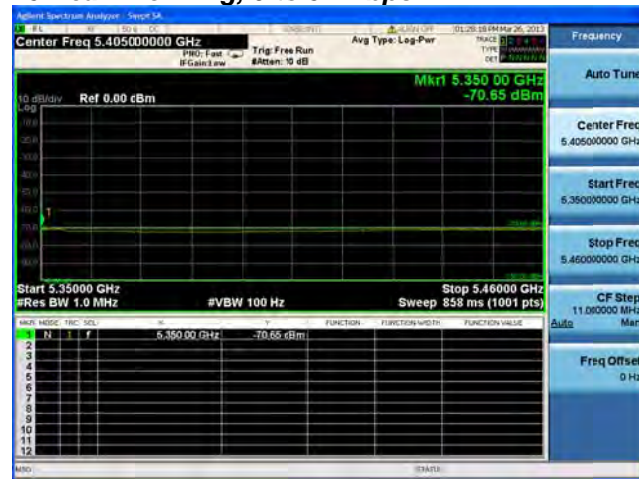
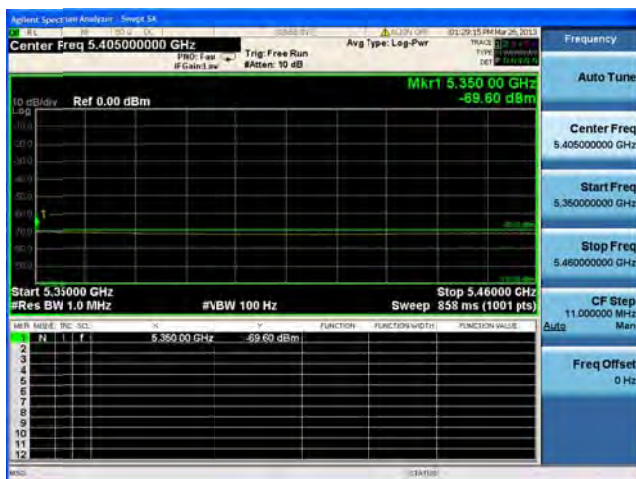
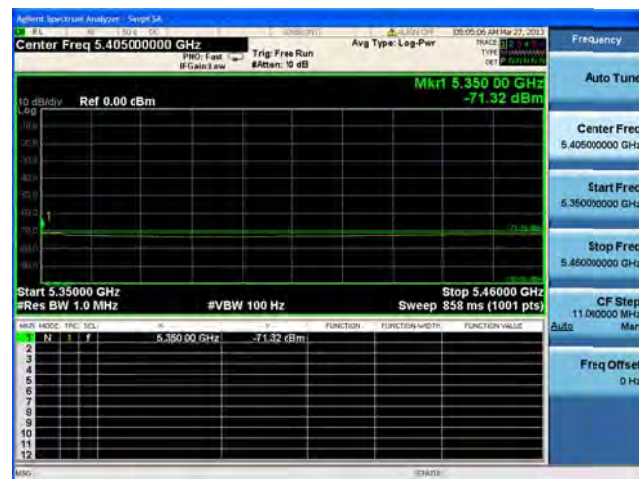
**Antenna A****Antenna B****Antenna C**

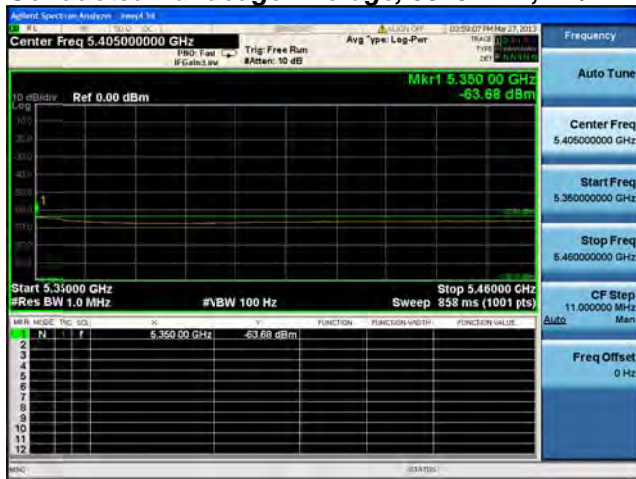
**Conducted Bandedge Average, 5320 MHz, Non HT/VHT20, 6 to 54 Mbps****Antenna A****Antenna B****Antenna C****Antenna D**

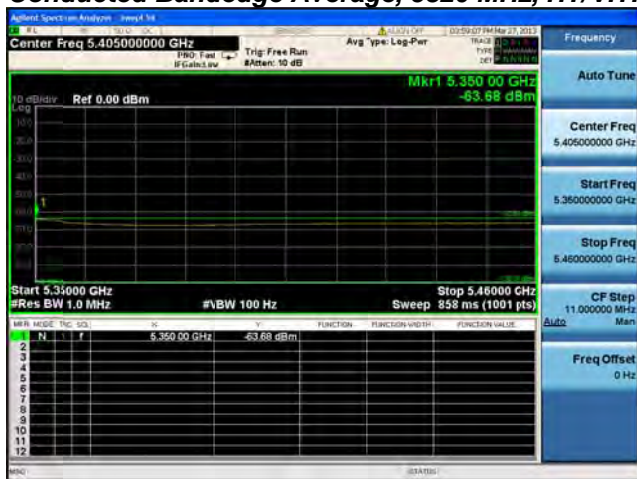
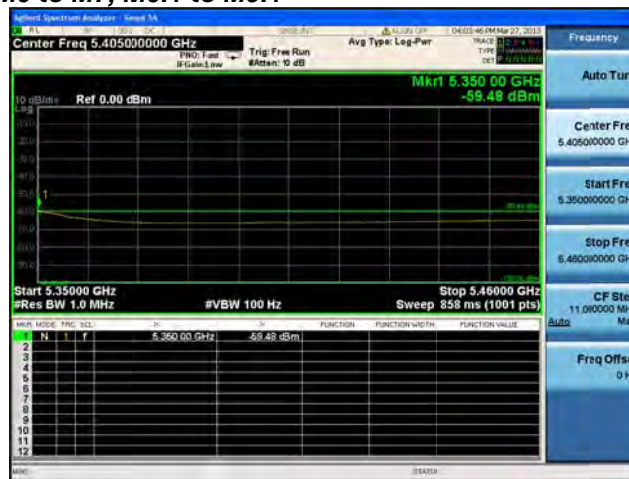
**Conducted Bandedge Average, 5320 MHz, Non HT/VHT20 Beam Forming, 6 to 54 Mbps****Antenna A****Antenna B**

## Conducted Bandedge Average, 5320 MHz, Non HT/VHT20 Beam Forming, 6 to 54 Mbps

**Antenna A****Antenna B****Antenna C**

**Conducted Bandedge Average, 5320 MHz, Non HT/VHT20 Beam Forming, 6 to 54 Mbps****Antenna A****Antenna B****Antenna C****Antenna D**

**Conducted Bandedge Average, 5320 MHz, HT/VHT20, M0 to M7, M0.1 to M9.1****Antenna A**

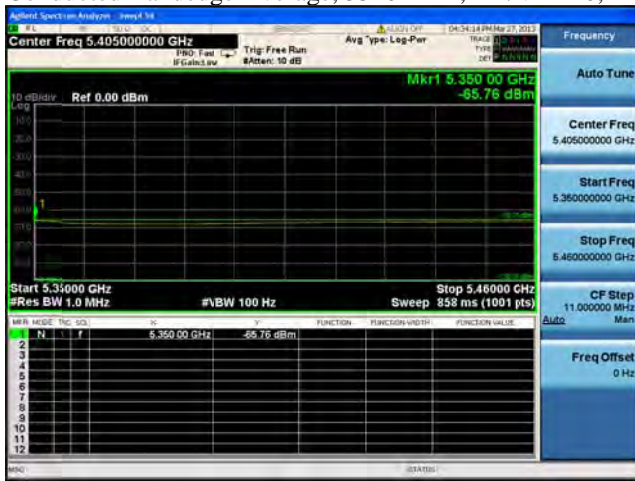
**Conducted Bandedge Average, 5320 MHz, HT/VHT20, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B**

Conducted Bandwidth Analyzer  
 Center Freq 5.405000000 GHz  
 PBD Test  
 Trig: Free Run  
 #Attenu: 10 dB  
 Avg Type: Log-Pwr  
 05/29/2014 Mon May 28 10:13  
 TRACE 1  
 FREQ 5.350000000 GHz  
 PWR -63.68 dBm  
 Auto Tune  
 Center Freq 5.405000000 GHz  
 Start Freq 5.350000000 GHz  
 Stop Freq 5.460000000 GHz  
 CF Step 11.000000 MHz  
 Auto Man  
 Freq Offset 0 Hz  
 Start 5.34000 GHz  
 #Res BW 1.0 MHz  
 #VBW 100 Hz  
 Stop 5.46000 GHz  
 Sweep 858 ms (1001 pts)  
 Ref 0.00 dBm  
 Mkr1 5.350 00 GHz  
 -63.68 dBm  
 W R MODE Trg: SQL  
 N 5.350 00 GHz -63.68 dBm  
 FUNCTION FUNCTION WIDTH FUNCTION VALUE  
 1 N 5.350 00 GHz -63.68 dBm  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 MWI (DATA)

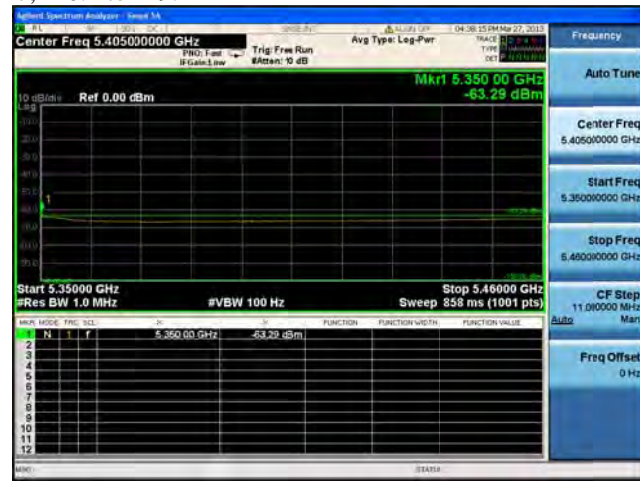
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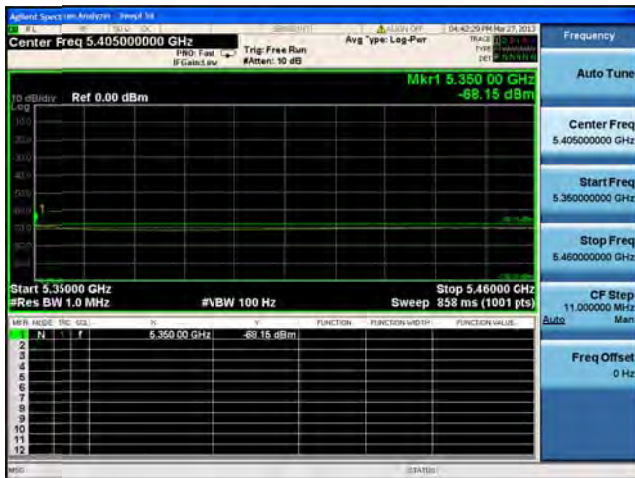
Conducted Bandedge Average, 5320 MHz, HT/VHT20, M0 to M7, M0.1 to M9.1



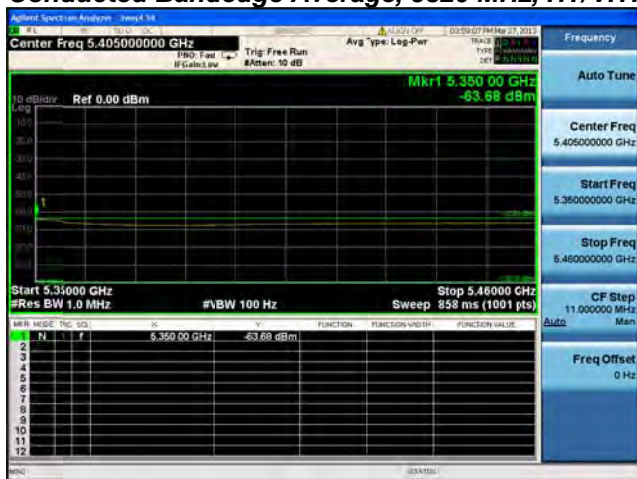
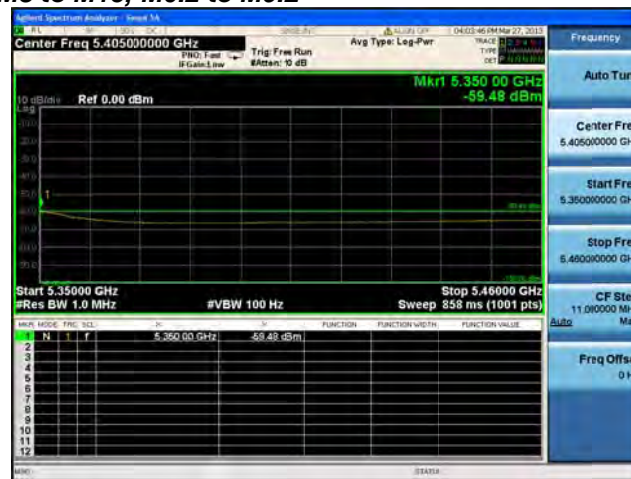
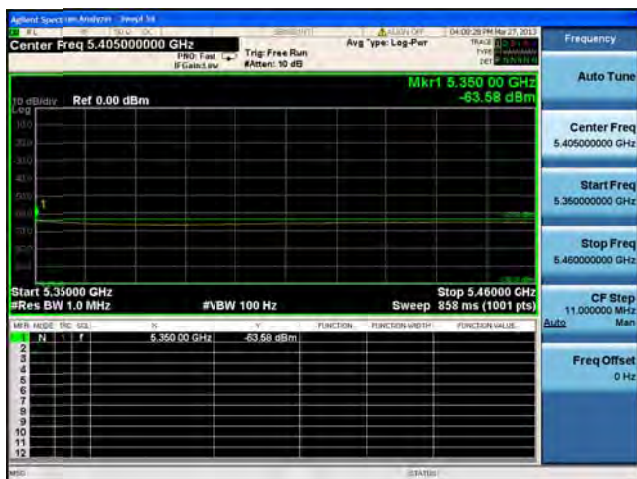
Antenna A

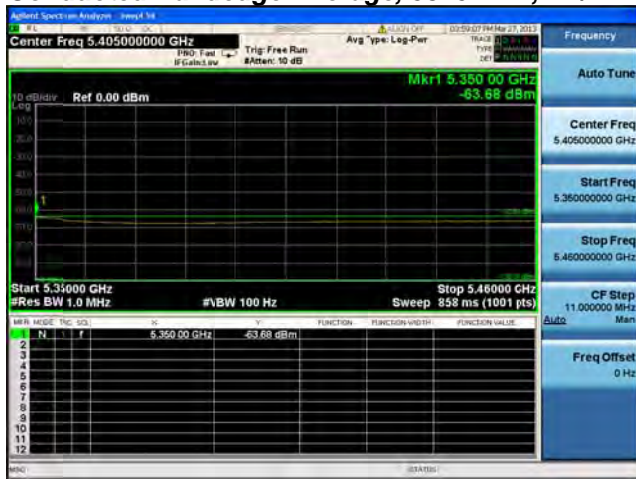
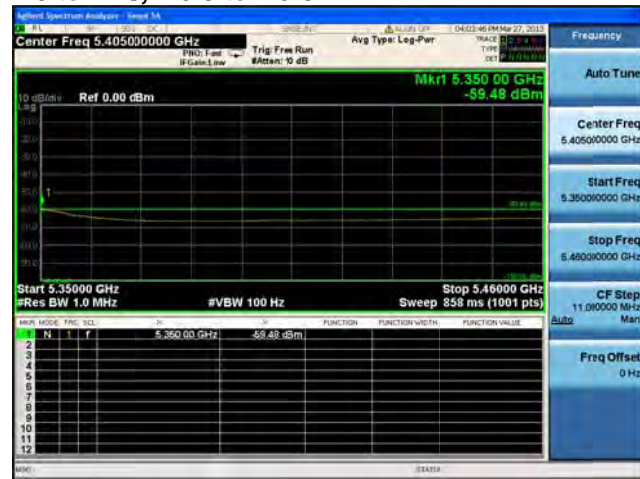
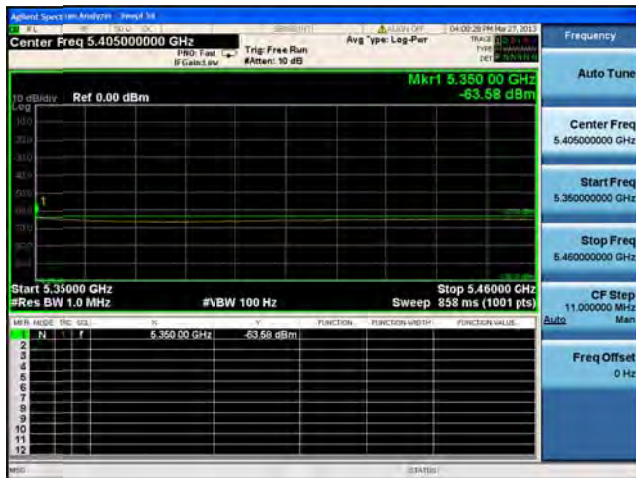


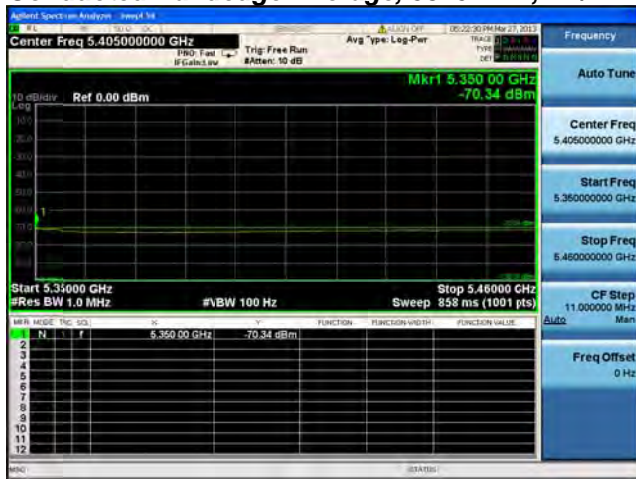
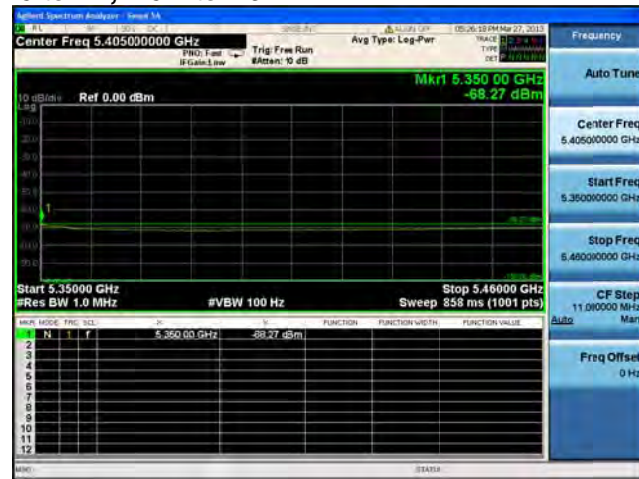
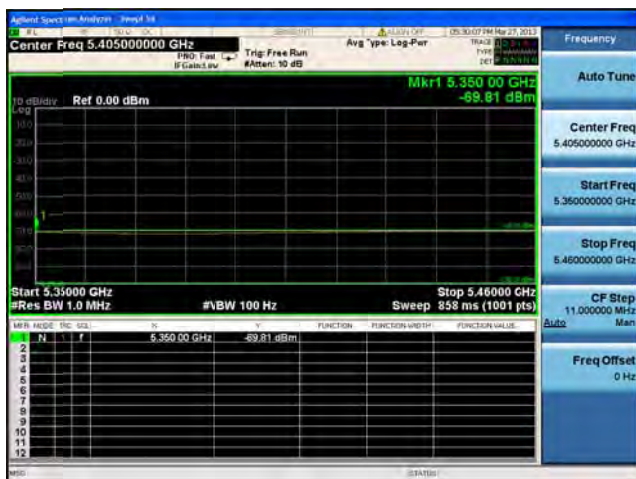
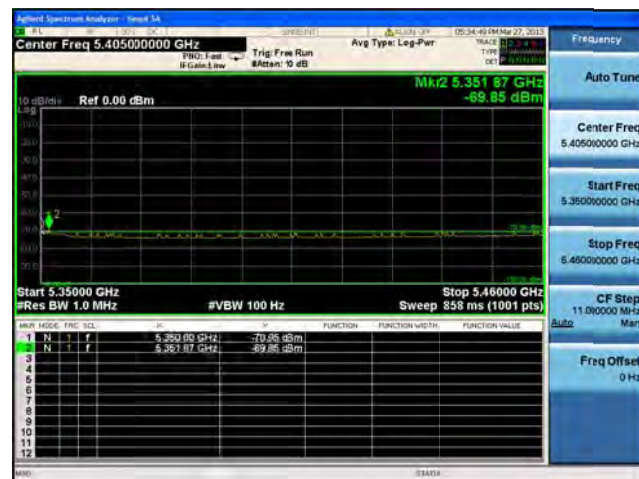
Antenna B

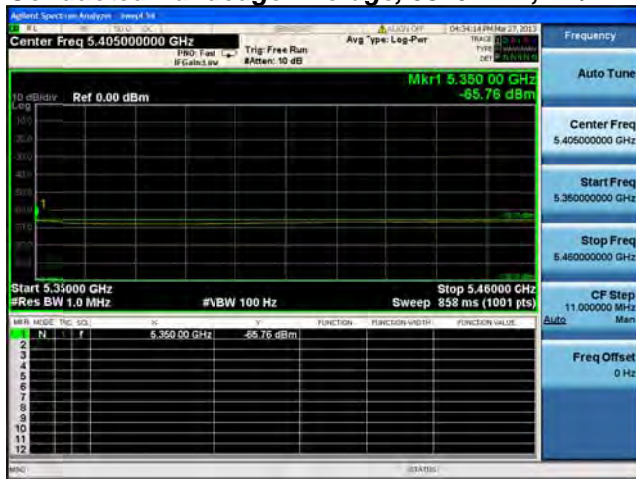
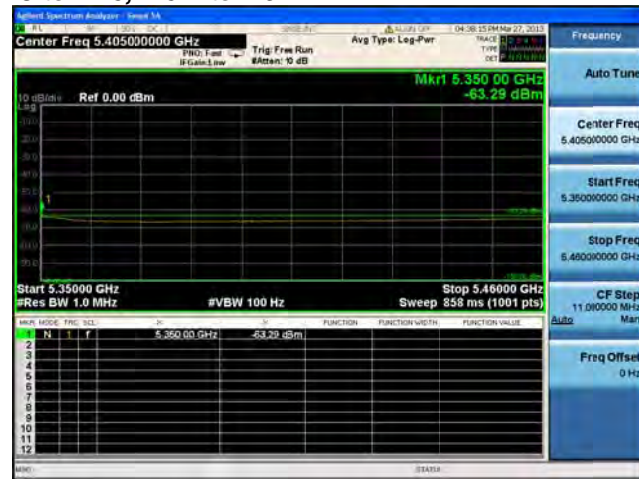
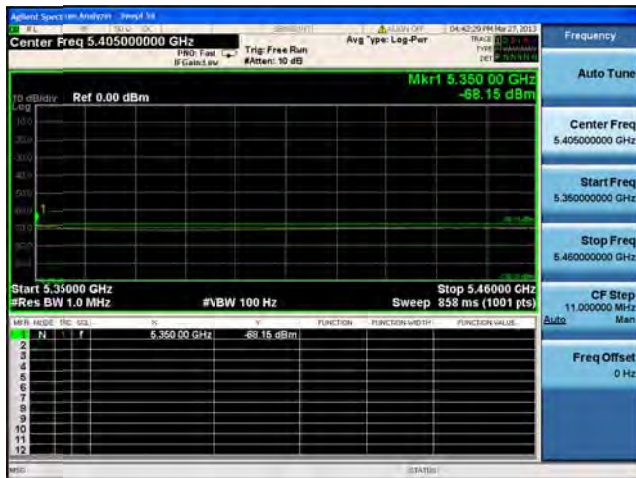
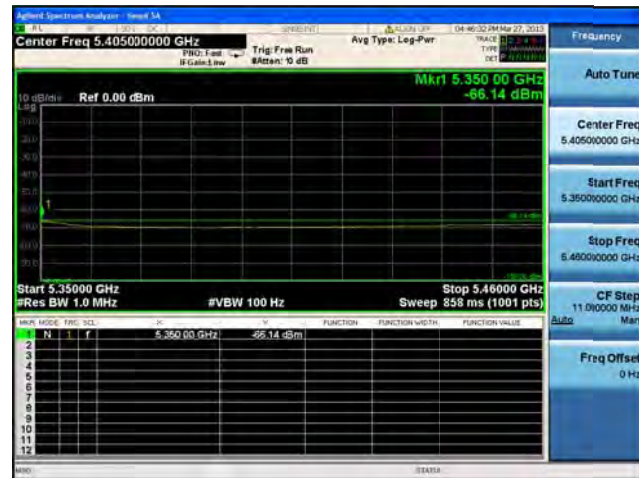


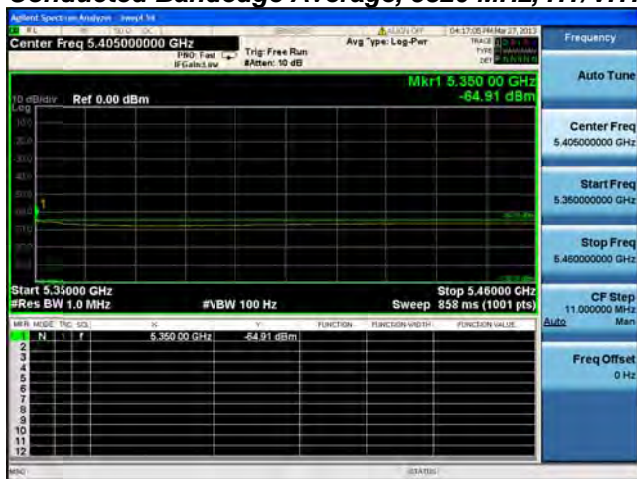
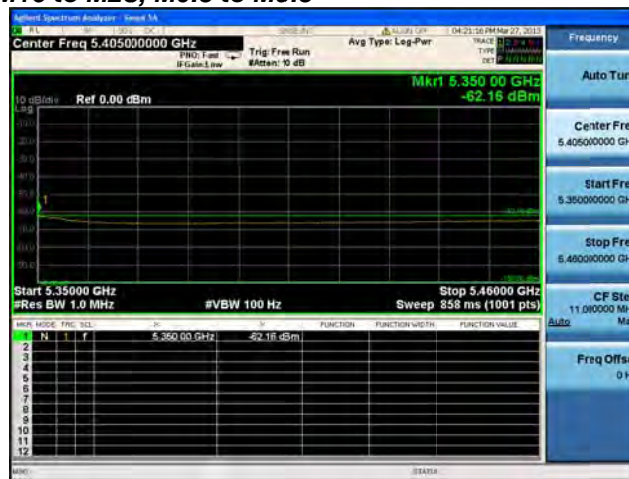
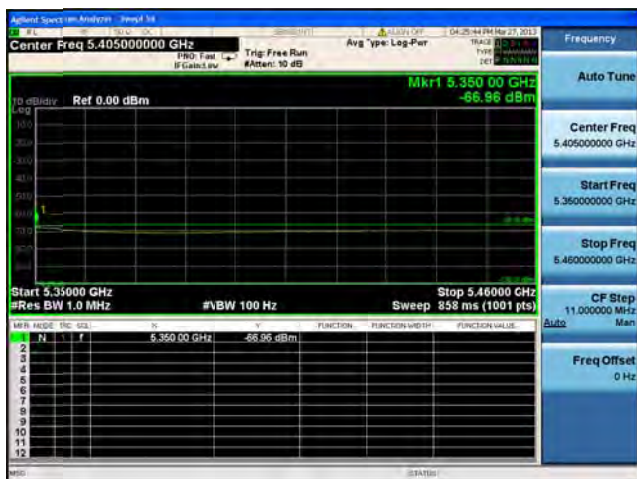
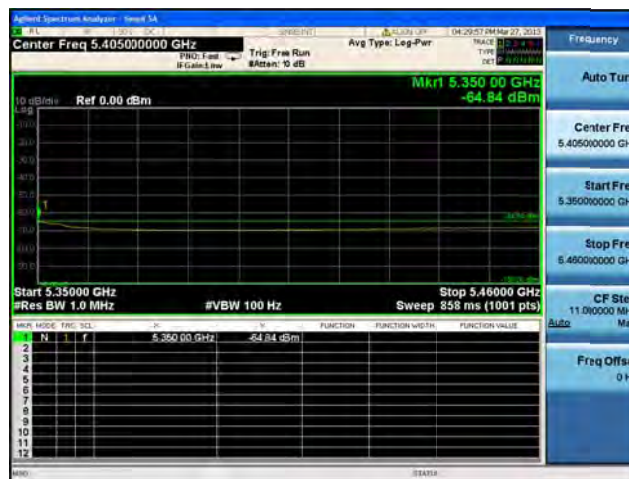
Antenna C

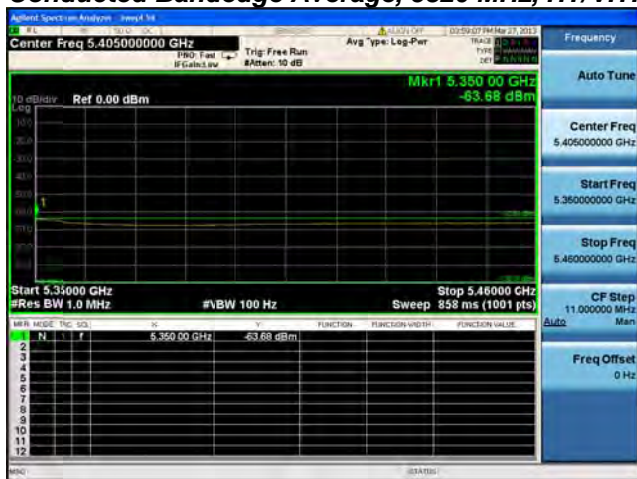
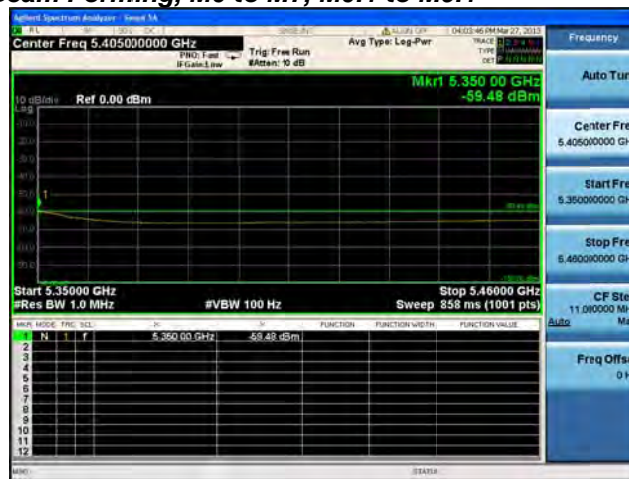
**Conducted Bandedge Average, 5320 MHz, HT/VHT20, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B****Antenna C**

**Conducted Bandedge Average, 5320 MHz, HT/VHT20, M16 to M23, M0.3 to M9.3****Antenna A****Antenna B****Antenna C**

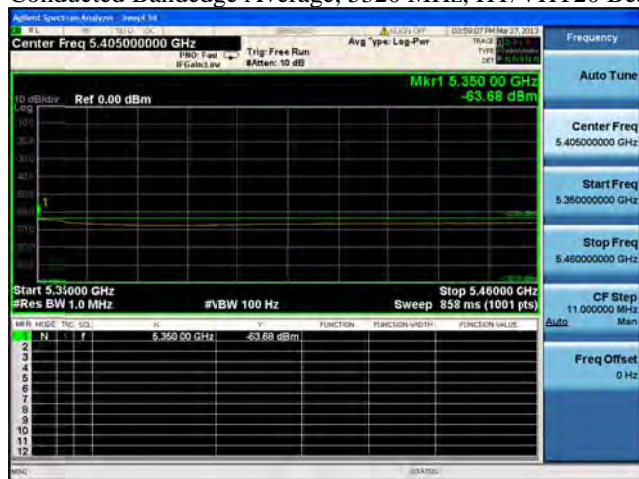
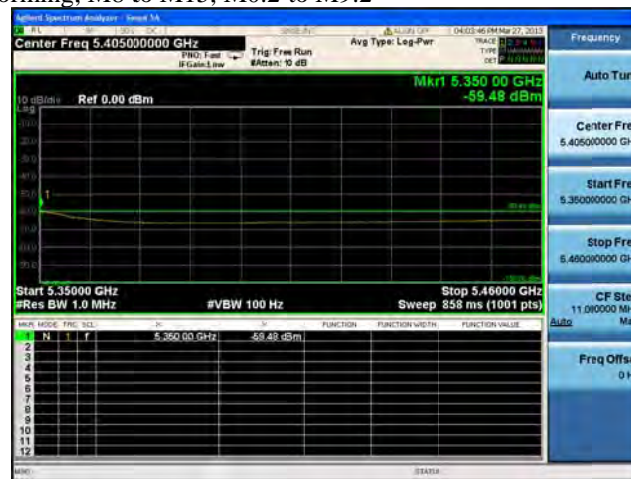
**Conducted Bandedge Average, 5320 MHz, HT/VHT20, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C****Antenna D**

**Conducted Bandedge Average, 5320 MHz, HT/VHT20, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B****Antenna C****Antenna D**

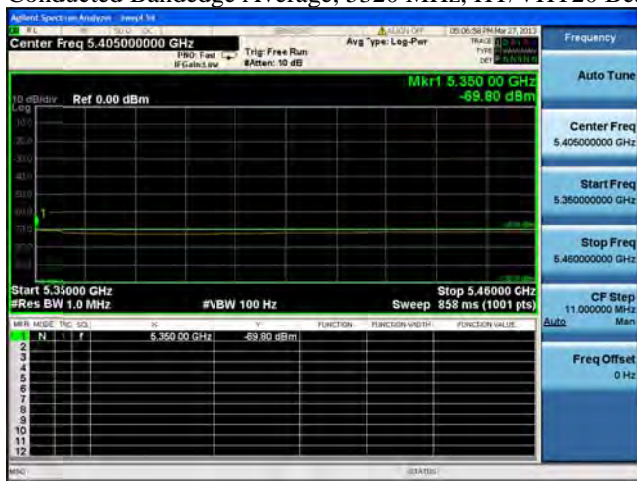
**Conducted Bandedge Average, 5320 MHz, HT/VHT20, M16 to M23, M0.3 to M9.3****Antenna A****Antenna B****Antenna C****Antenna D**

**Conducted Bandedge Average, 5320 MHz, HT/VHT20 Beam Forming, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B**

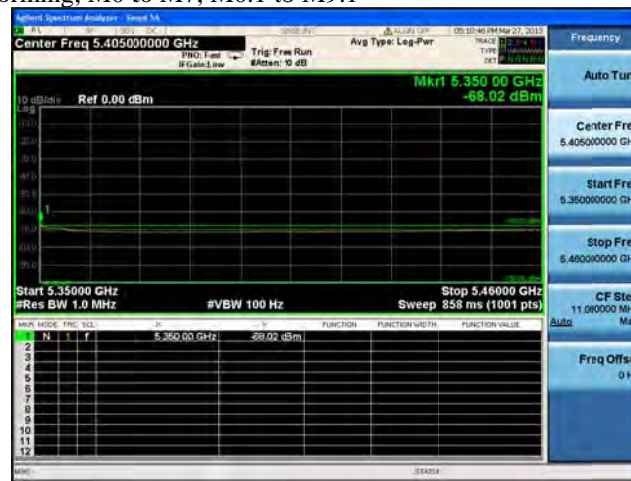
Conducted Bandedge Average, 5320 MHz, HT/VHT20 Beam Forming, M8 to M15, M0.2 to M9.2

**Antenna A****Antenna B**

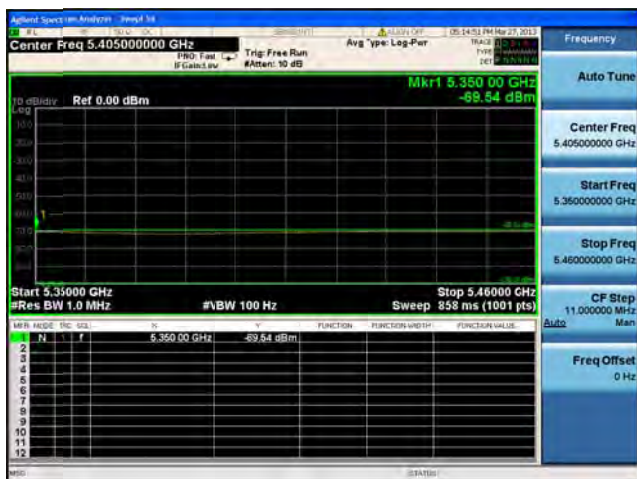
## Conducted Bandedge Average, 5320 MHz, HT/VHT20 Beam Forming, M0 to M7, M0.1 to M9.1



Antenna A



Antenna B



Antenna C

Keysight Spectrum Analyzer - Page 34

04:17:00 PM Mar 25, 2013

Center Freq 5.405000000 GHz

Trace 1: Freq

TYPE: Power

UNIT: dBm/Hz

Trig: Free Run

Avg Type: Log-Pwr

190. Fast

8 Attenu: 10 dB

Ref 0.00 dBm

Mkr1 5.380 00 GHz

-84.91 dBm

Start 5.35000 GHz

Stop 5.48000 GHz

Res BW 1.0 MHz

Sweep 898 ms (1001 pts)

Marker	Freq	Power	Function	Function Value	Function Value
1	5.3500 GHz	-84.91 dBm			

The screenshot displays a Vector Signal Analyzer (VSA) interface. The main window shows a spectrum plot with a green trace. The plot has a logarithmic frequency axis ranging from 5.35000 GHz to 5.46000 GHz and a linear power axis from -90 dBm to 0 dBm. A green trace shows a signal level around -72 dBm. The plot is titled "Center Freq 5.405000000 GHz".

Below the plot, the following parameters are displayed:

- Start 5.35000 GHz
- Stop 5.46000 GHz
- Res BW 1.0 MHz
- VBW 100 Hz
- Sweep 858 ms (1001 pts)

On the right side, there is a "Frequency" panel with the following settings:

- Auto Tune
- Center Freq 5.405000000 GHz
- Start Freq 5.350000000 GHz
- Stop Freq 5.460000000 GHz
- CF Step 11.000000 MHz
- Freq Offset 0 Hz

At the bottom, there is a table with the following columns: "MODE", "FREQ", "BW", "FUNCTION", "FUNCTION WIDTH", and "FUNCTION VALUE". The table has 12 rows, numbered 1 to 12. The first row (1) shows "N", "F", "5.35000 GHz", "-72.11 dBm", and empty cells for the other columns. The remaining rows (2-12) are empty.

MODE	FREQ	BW	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	F	5.35000 GHz	-72.11 dBm	
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

Yellow Spectra.com Analyzer - Setup 3a

0 100% 100.000 MHz

Center Freq 5.405000000 GHz

PRB: Fast 1s

IF Gain: 10 dB

Trigger: Free Run

Avg Type: Log-Pwr

04-20-44 PM Mar 27, 2013

Trace 01

File

Print

Auto Tune

Frequency

Auto Tune

Center Freq  
5.405000000 GHz

Start Freq  
5.360000000 GHz

Stop Freq  
5.480000000 GHz

CF Step  
11.000000 MHz

Freq Offset  
0 Hz

Start 5.35000 GHz

Stop 5.48000 GHz

Res BW 1.0 MHz

#BW 100 Hz

Sweep 898 ms (1001 pts)

Ref 0.00 dBm

Mkr1 5.350 00 GHz  
-66.56 dBm

Wrt	Hz	dBc	dB	Y	FUNCTION	FUNCTION WRT	FUNCTION VALUE
1	N						
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							

5.350 00 GHz

-66.56 dBm

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**Spectrum Analyzer** *Page 34*

**Center Freq** 5.405000000 GHz **Trig** Free Run **Avg Type** Log-Pwr **Trace** B1 (RF) **Unit** dBm **Frequency**

**Span** 100.0000000 MHz **IF BW** Fast **Attenu** 10 dB **Type** P **Power** 1.0000000 W **Auto Tune**

**Ref** 0.00 dBm **Mkr1** 5.350000 GHz **-63.68 dBm**

**Start** 5.349999999 GHz **Stop** 5.400000001 GHz **CF Step** 11.000000 MHz **Man**

**Res BW** 100 Hz **Sweep** 898 ms (1001 pts) **Freq Offset** 0 Hz

Marker	Freq	Power	Function	Function Value	Function Value
1	5.350000 GHz	-63.68 dBm			

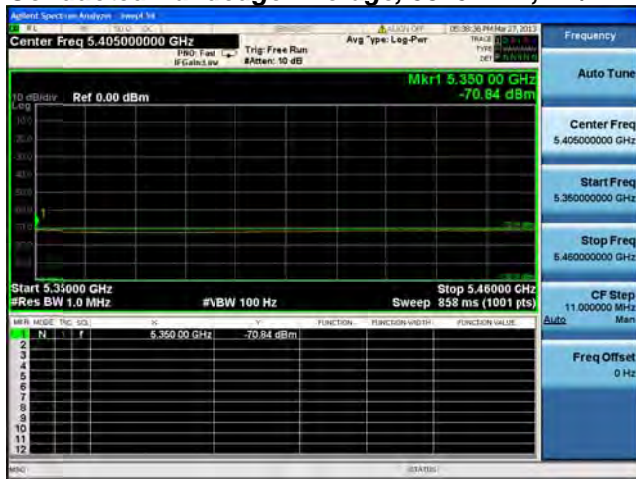
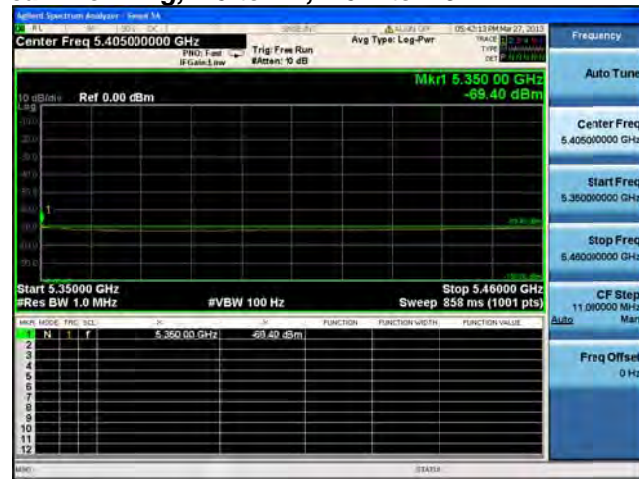
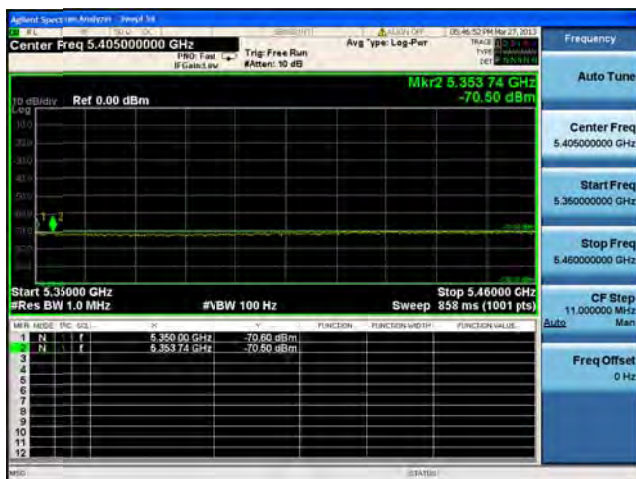
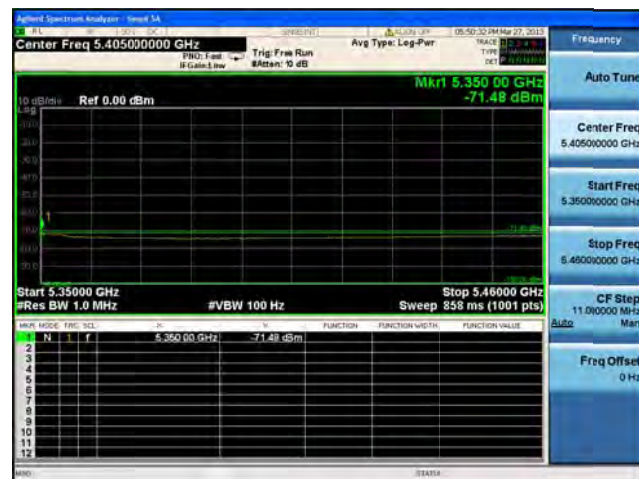
**Center Freq** 5.405000000 GHz  
**Start** 5.350000 GHz  
**Stop** 5.460000 GHz  
**Res BW** 1.0 MHz  
**VBW** 100 Hz  
**Sweep** 858 ms (1001 pts)

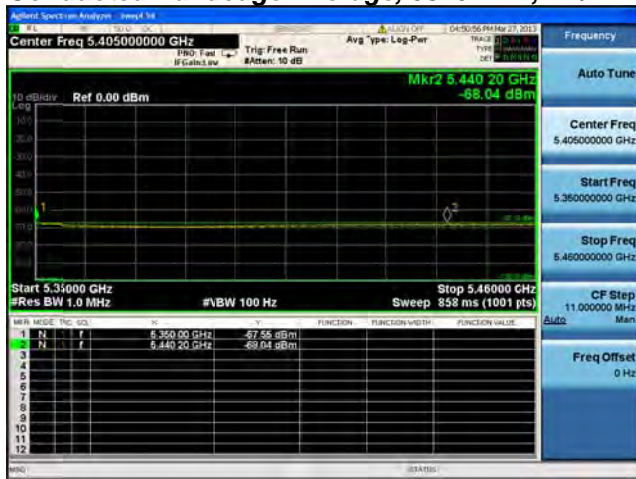
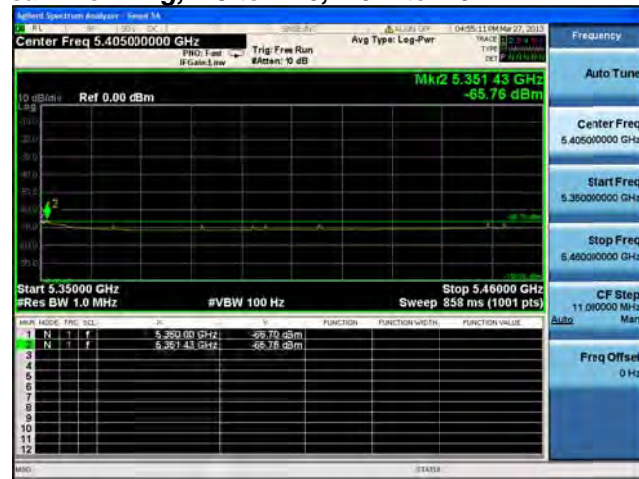
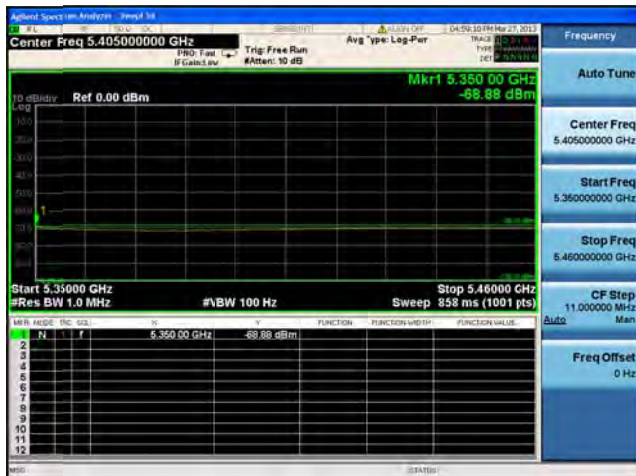
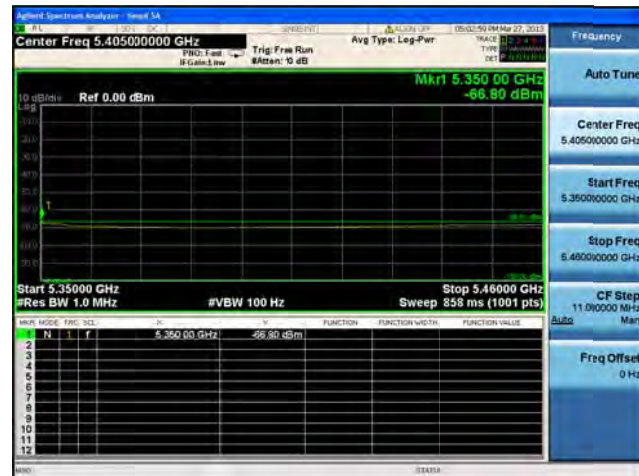
**Trace 1**  
 Type: Log-Pwr  
 Level: -59.48 dBm

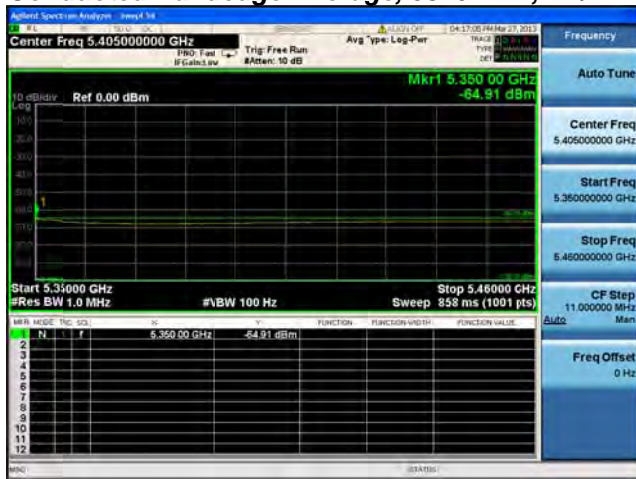
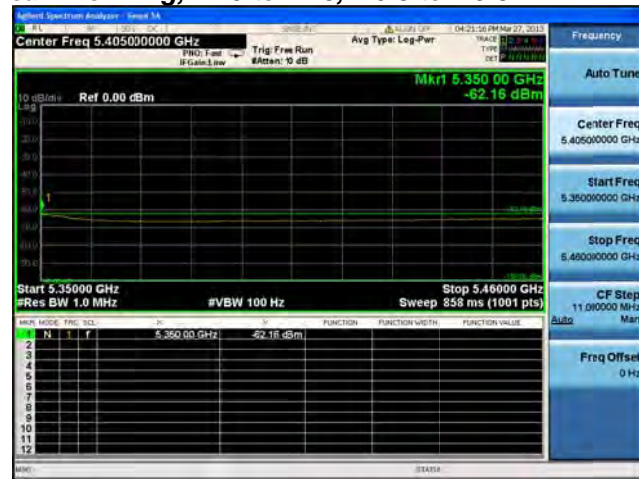
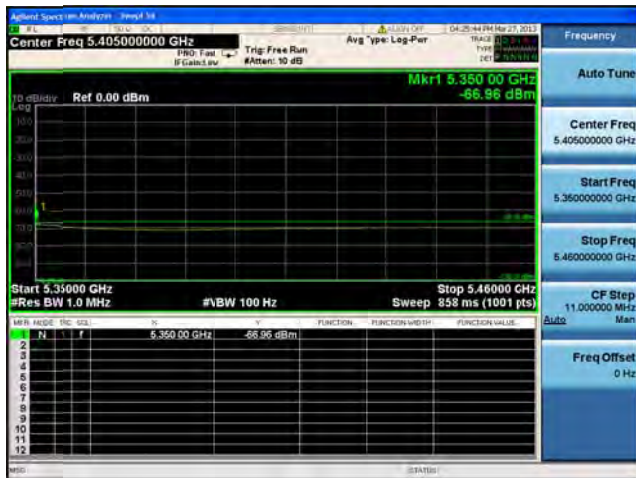
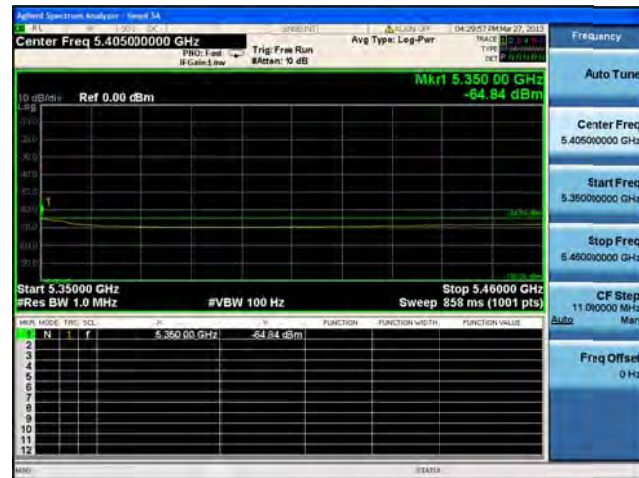
**Marker 1**  
 Frequency: 5.350000 GHz  
 Level: -59.48 dBm

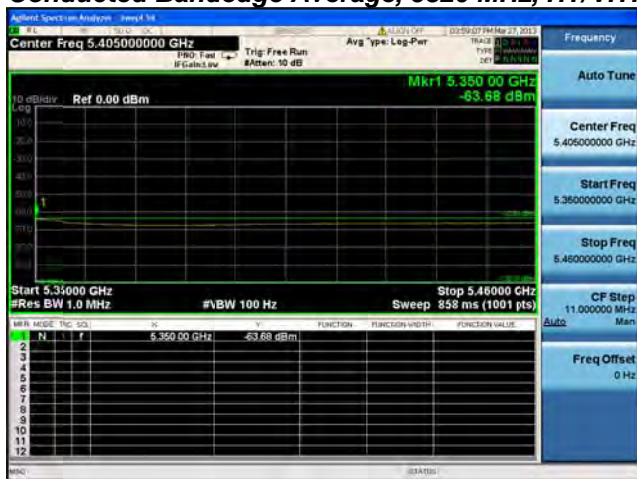
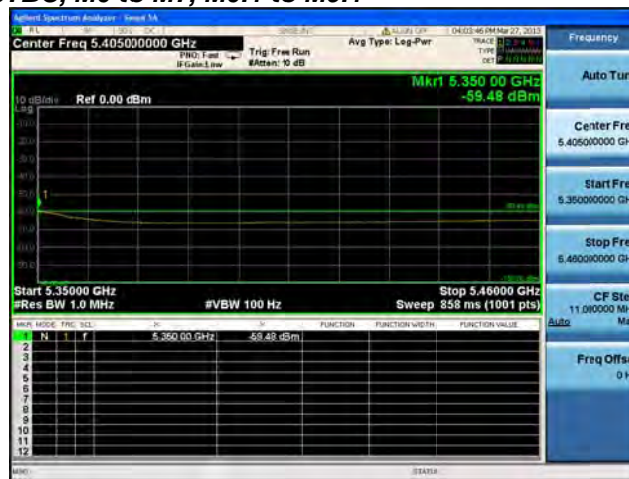
[illegible]

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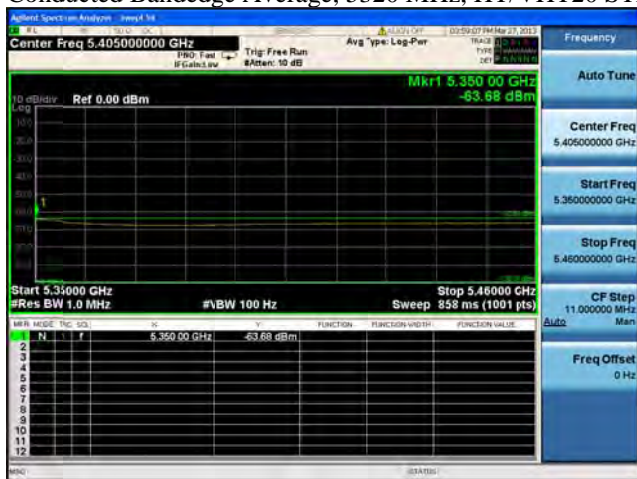
**Conducted Bandedge Average, 5320 MHz, HT/VHT20 Beam Forming, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C****Antenna D**

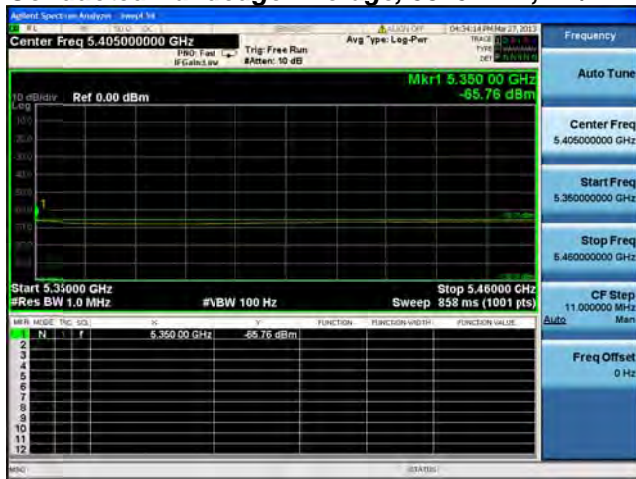
**Conducted Bandedge Average, 5320 MHz, HT/VHT20 Beam Forming, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B****Antenna C****Antenna D**

**Conducted Bandedge Average, 5320 MHz, HT/VHT20 Beam Forming, M16 to M23, M0.3 to M9.3****Antenna A****Antenna B****Antenna C****Antenna D**

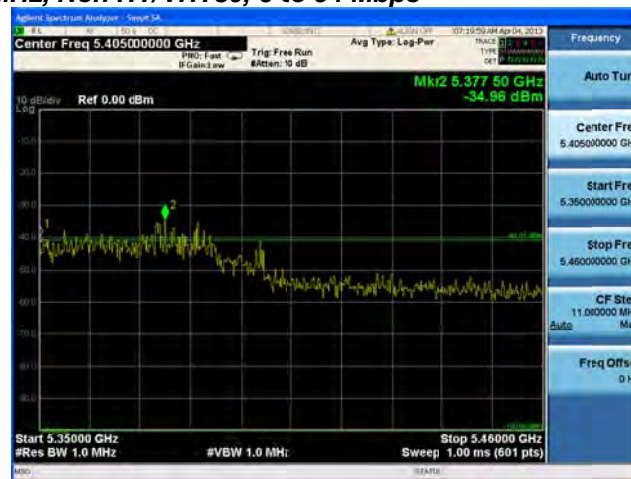
**Conducted Bandedge Average, 5320 MHz, HT/VHT20 STBC, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B**

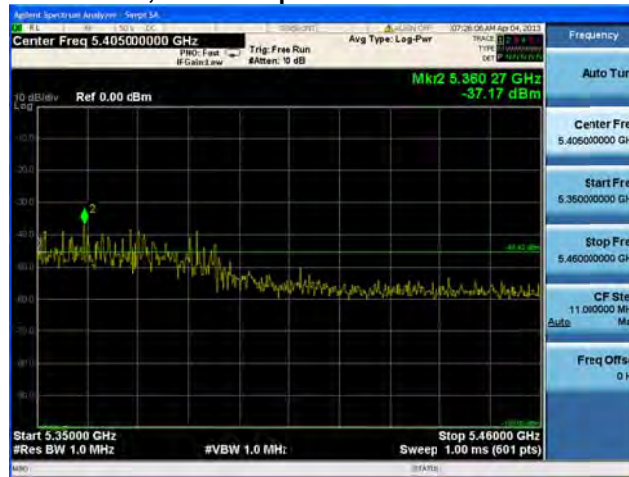
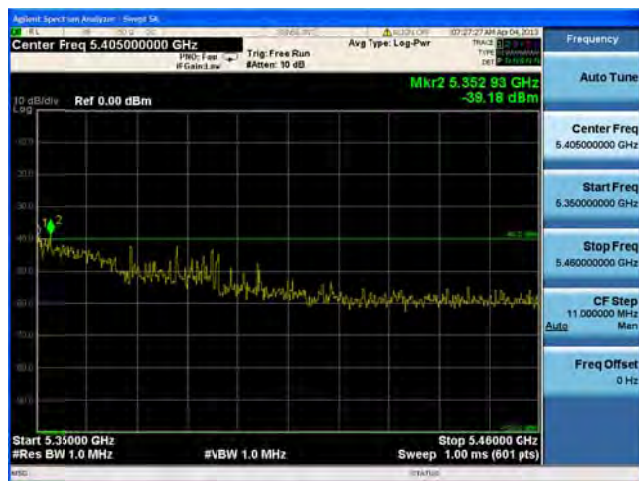
Conducted Bandedge Average, 5320 MHz, HT/VHT20 STBC, M0 to M7, M0.1 to M9.1

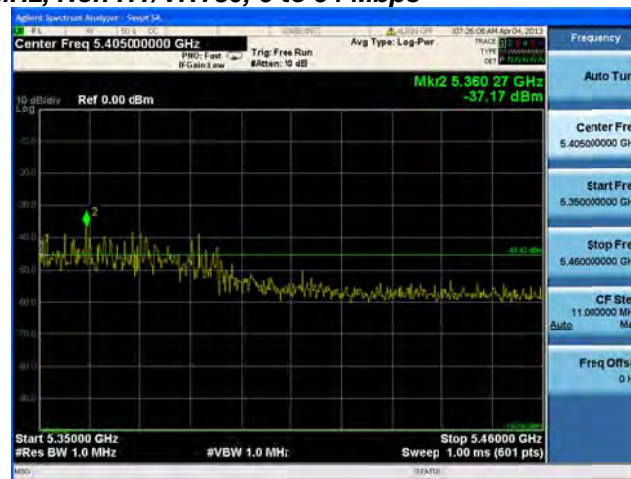
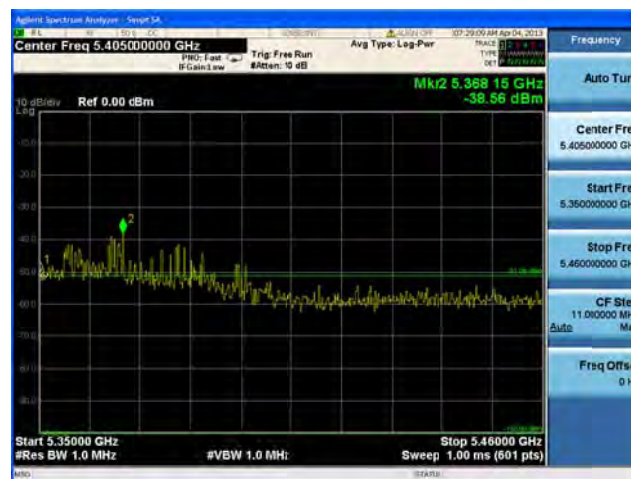


**Conducted Bandedge Average, 5320 MHz, HT/VHT20, M0 to M7, M0.1 to M9.1****Antenna A**

**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, Non HT/VHT80, 6 to 54 Mbps****Antenna A**

**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, Non HT/VHT80, 6 to 54 Mbps****Antenna A****Antenna B**

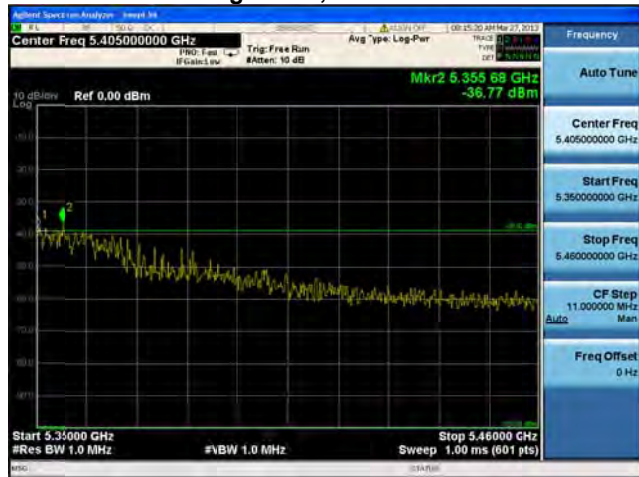
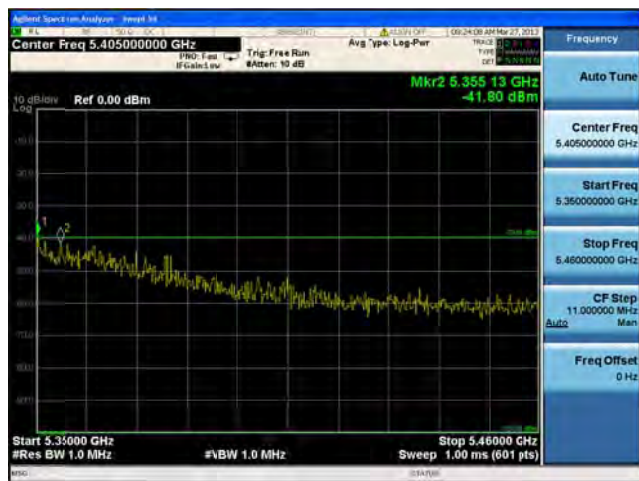
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, Non HT/VHT80, 6 to 54 Mbps****Antenna A****Antenna B****Antenna C**

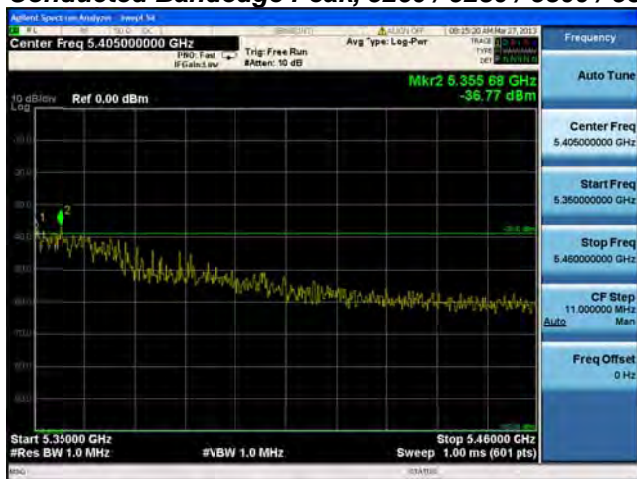
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, Non HT/VHT80, 6 to 54 Mbps****Antenna A****Antenna B****Antenna C****Antenna D**

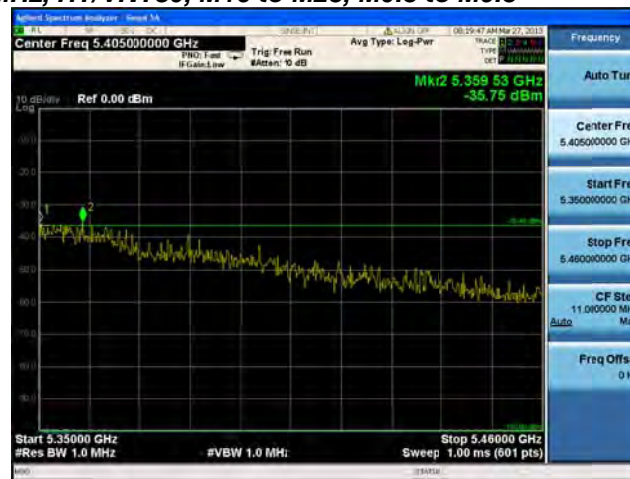
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80, M0 to M7, M0.1 to M9.1****Antenna A**

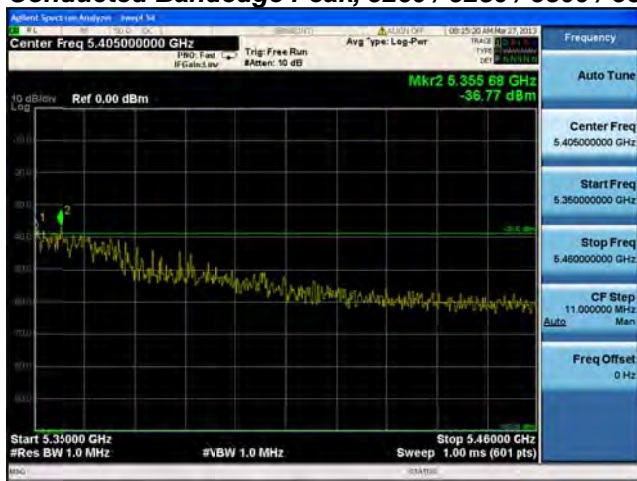
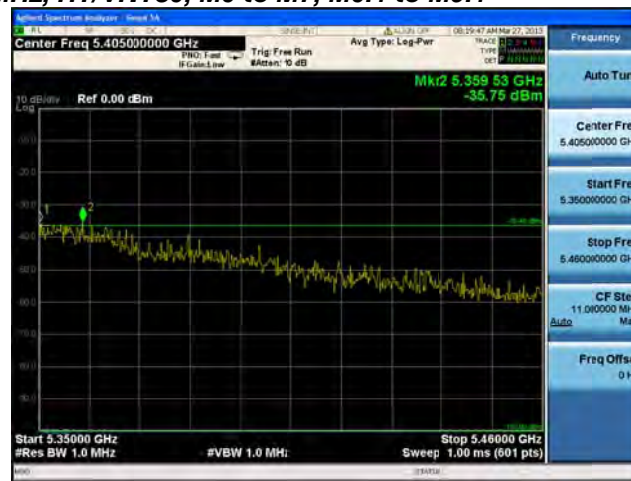
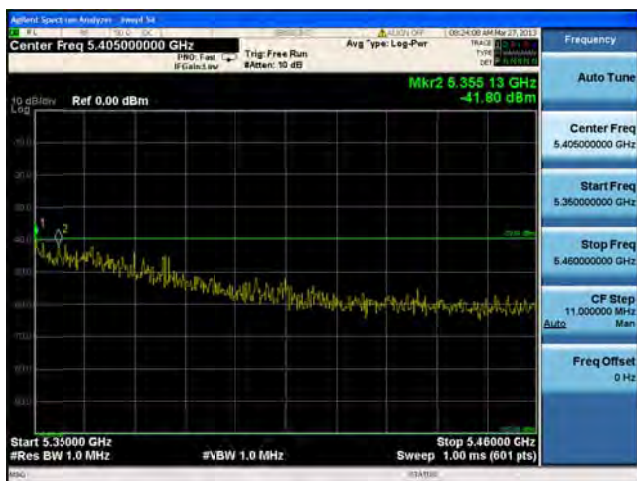
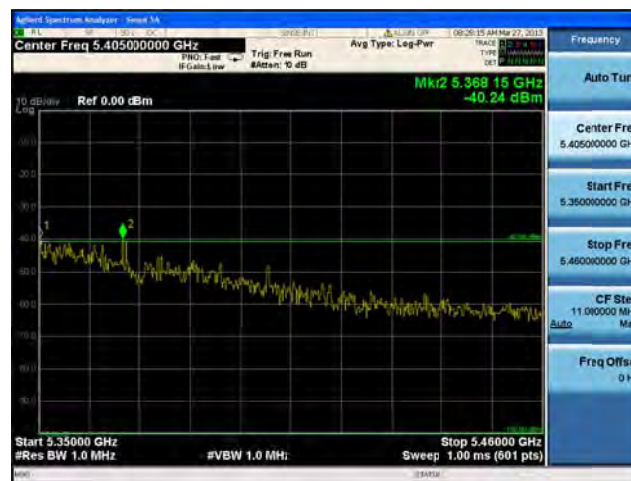
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B**

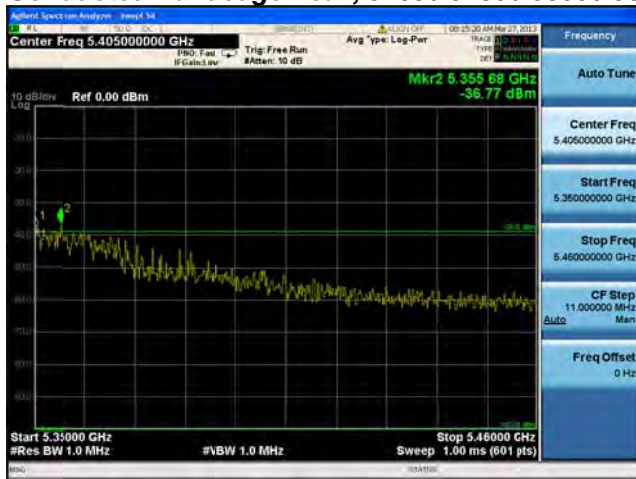
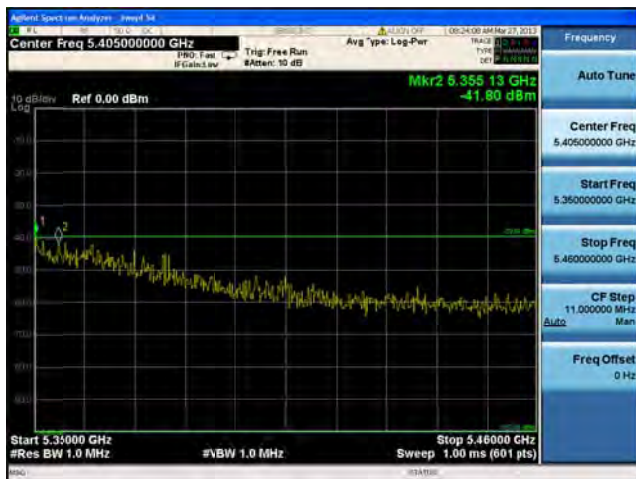
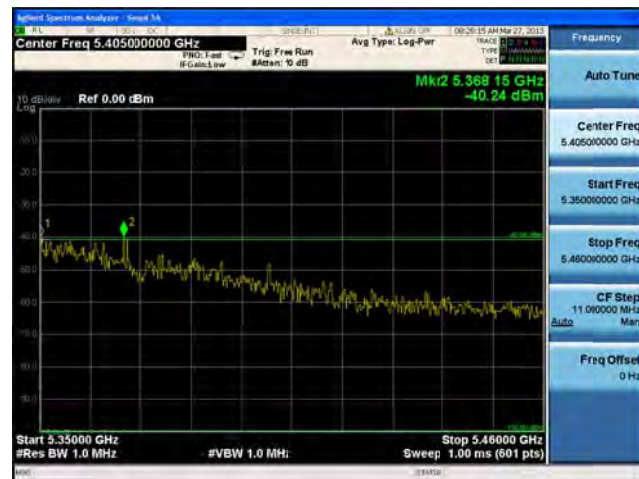
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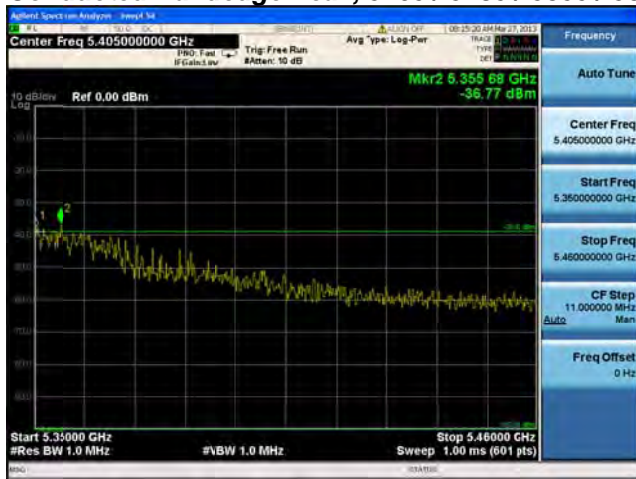
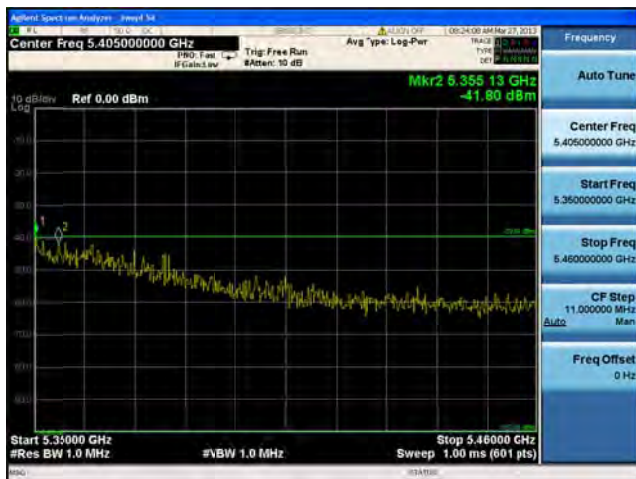
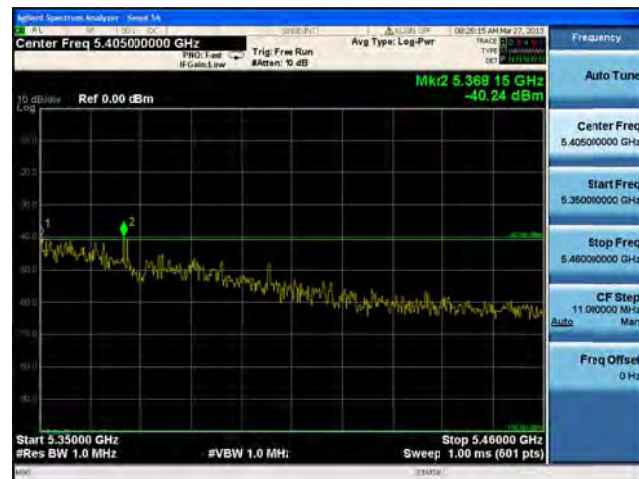
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C**

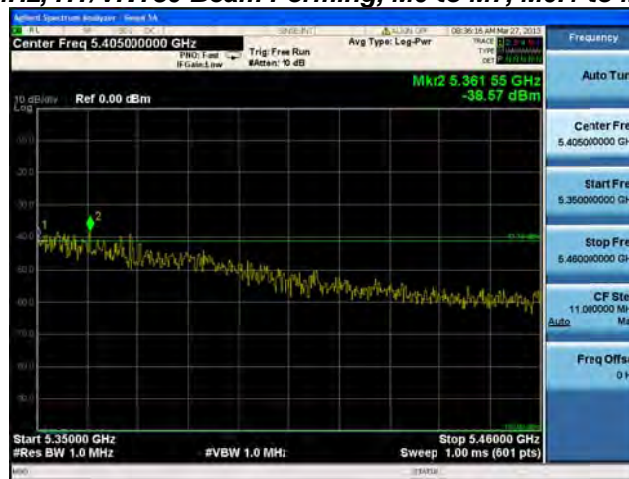
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B****Antenna C**

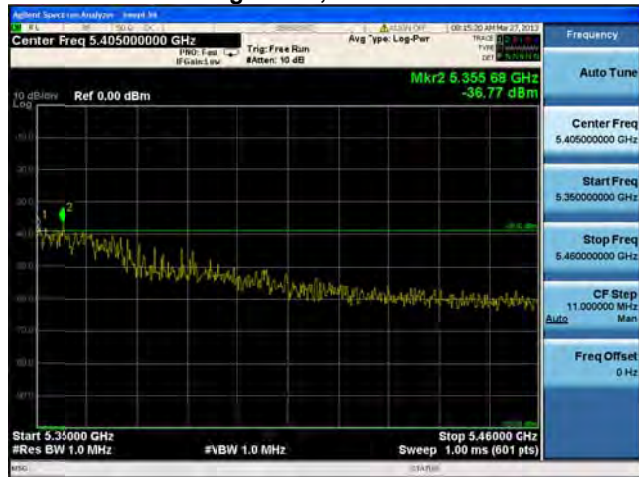
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80, M16 to M23, M0.3 to M9.3****Antenna A****Antenna B****Antenna C**

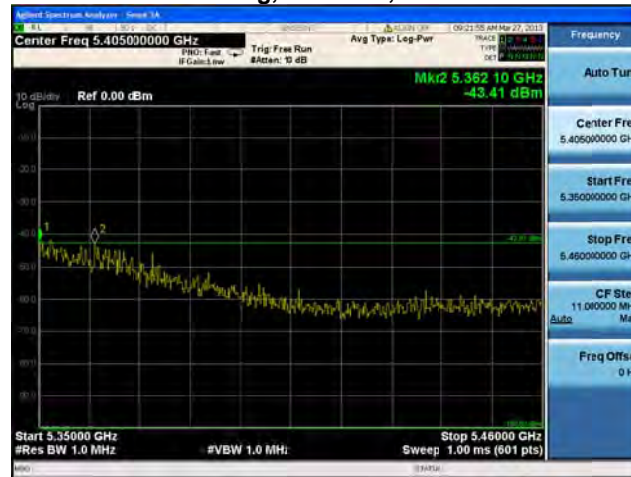
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C****Antenna D**

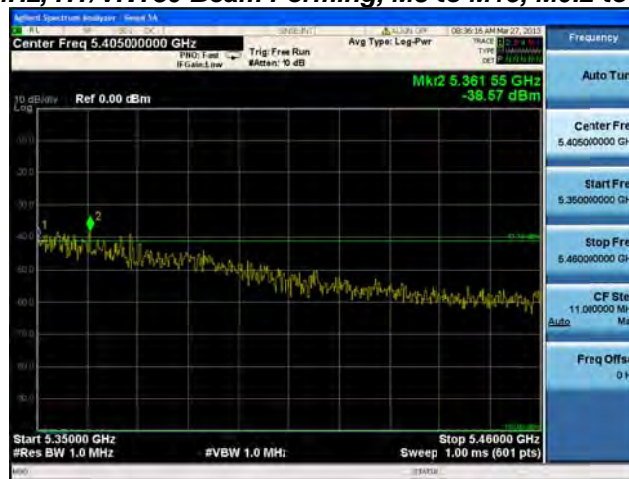
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B****Antenna C****Antenna D**

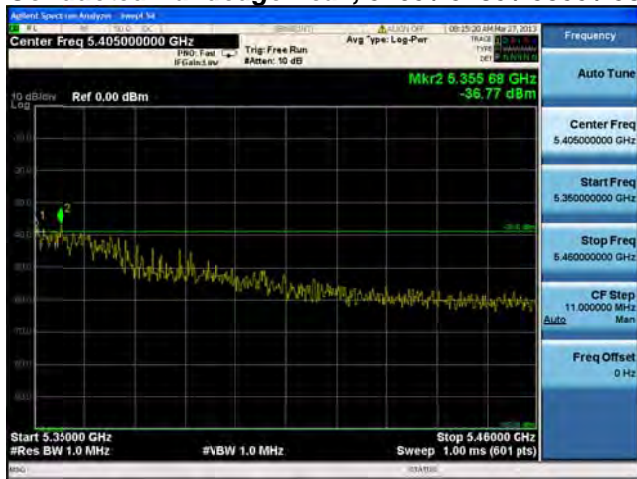
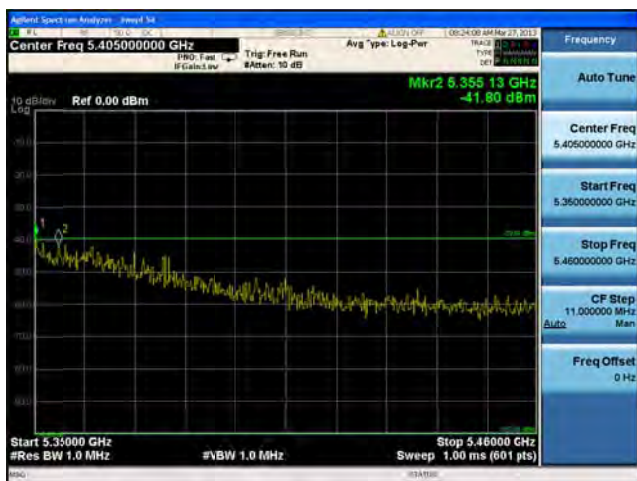
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80, M16 to M23, M0.3 to M9.3****Antenna A****Antenna B****Antenna C****Antenna D**

**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80 Beam Forming, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B**

**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80 Beam Forming, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B**

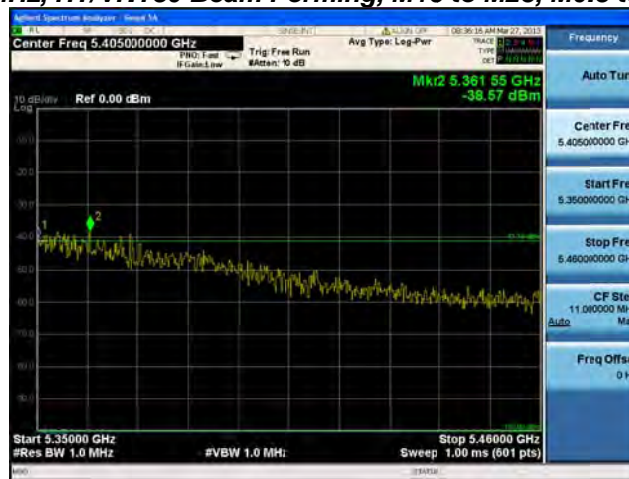
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80 Beam Forming, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C**

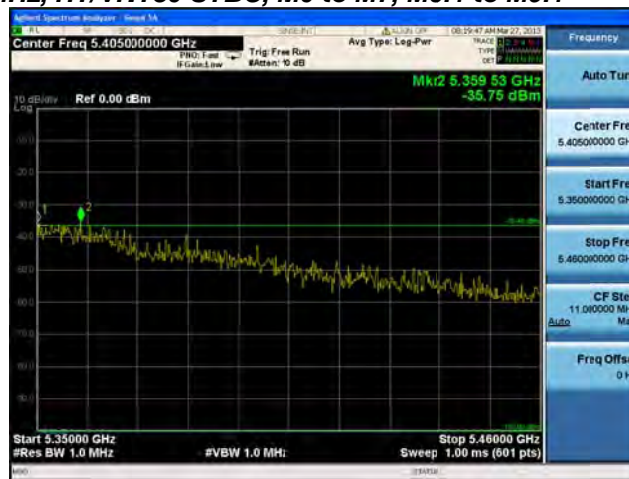
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80 Beam Forming, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B****Antenna C**

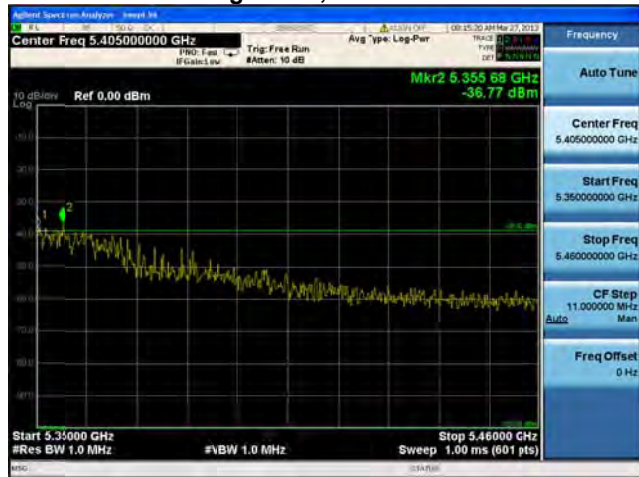
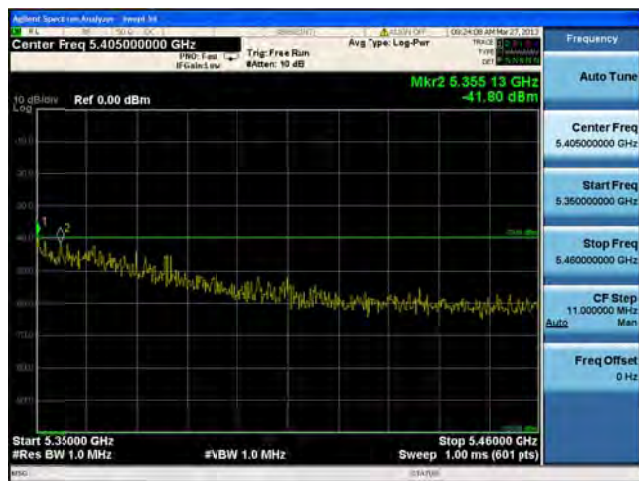
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80 Beam Forming, M16 to M23, M0.3 to M9.3****Antenna A****Antenna B****Antenna C**

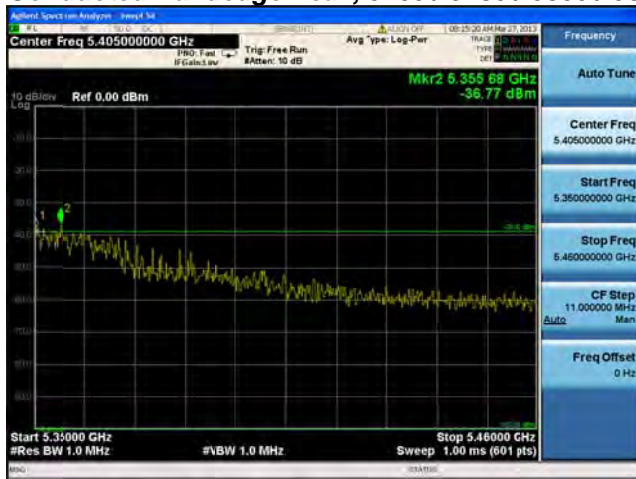
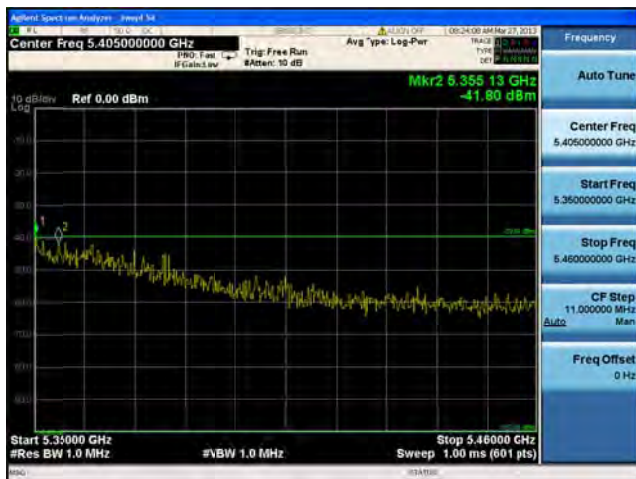
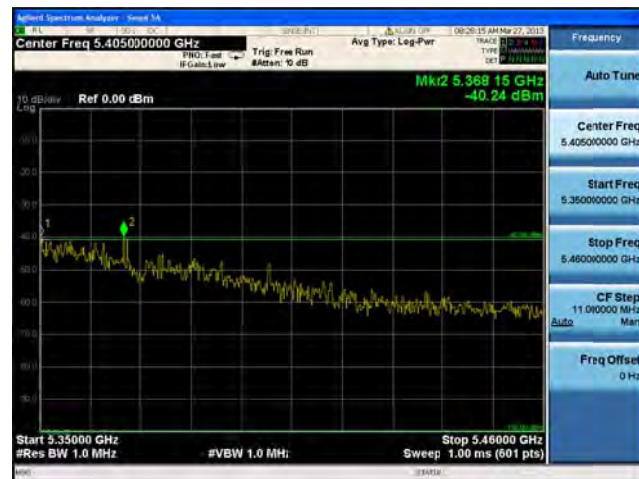
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80 Beam Forming, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C****Antenna D**

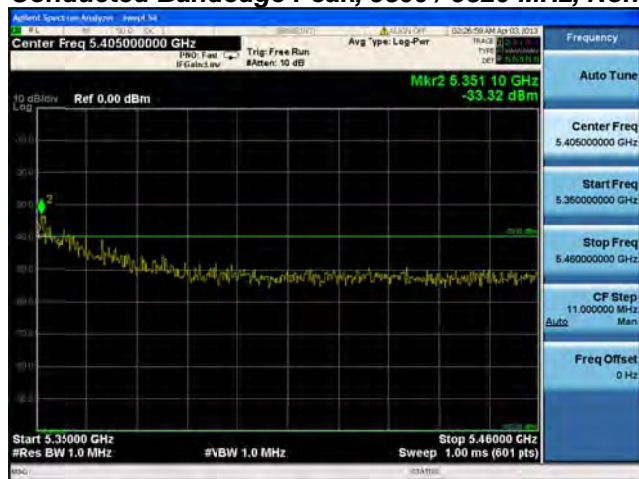
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80 Beam Forming, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B****Antenna C****Antenna D**

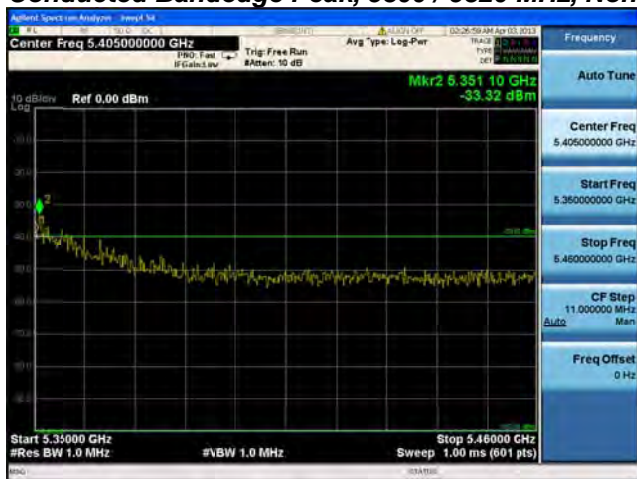
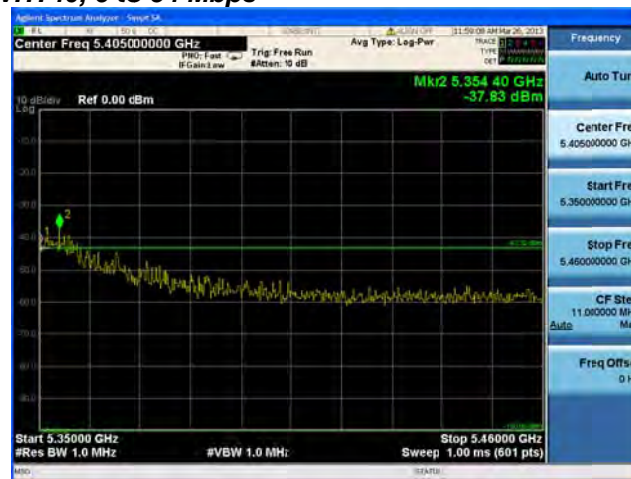
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80 Beam Forming, M16 to M23, M0.3 to M9.3****Antenna A****Antenna B****Antenna C****Antenna D**

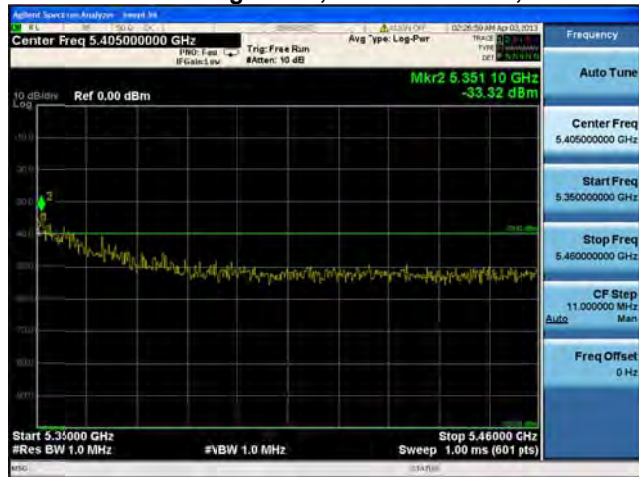
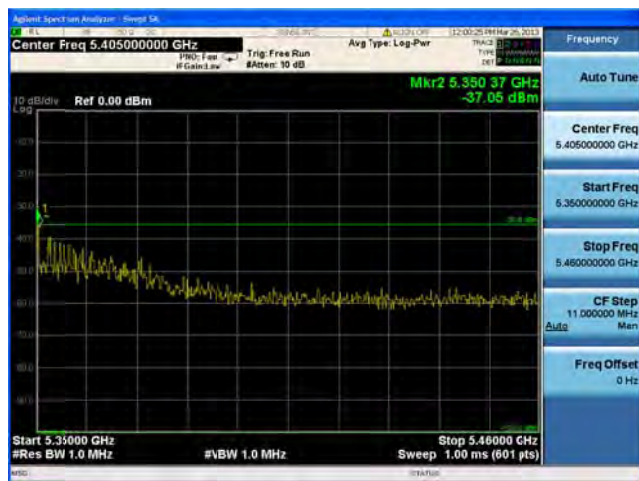
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80 STBC, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B**

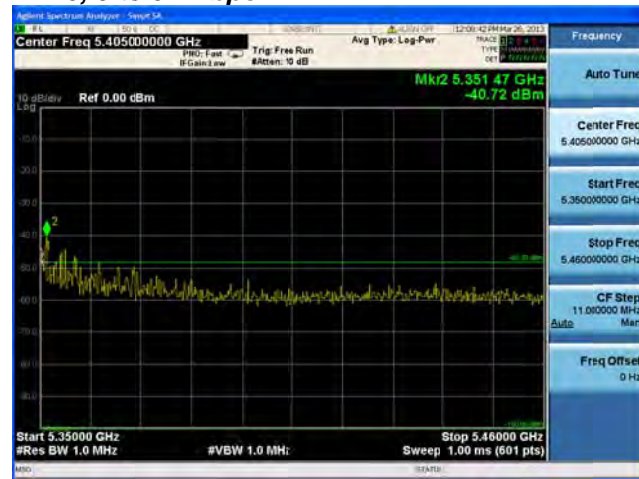
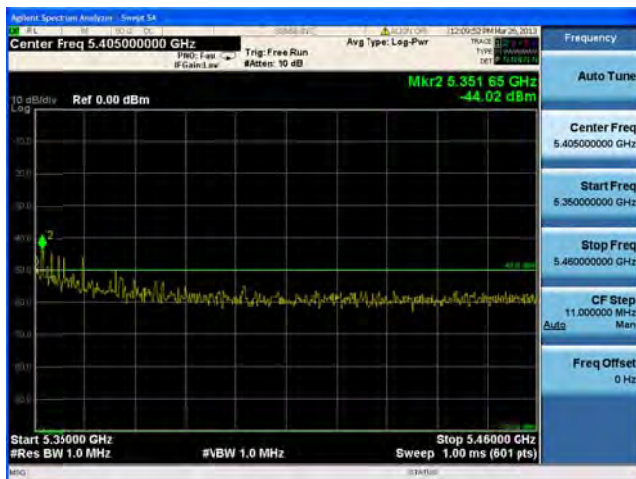
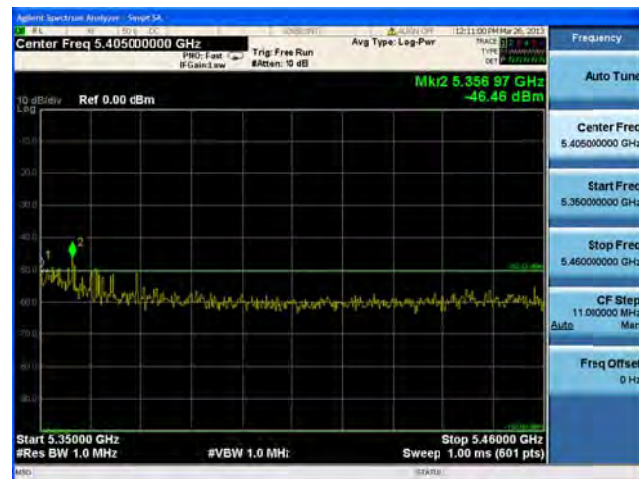
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80 STBC, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C**

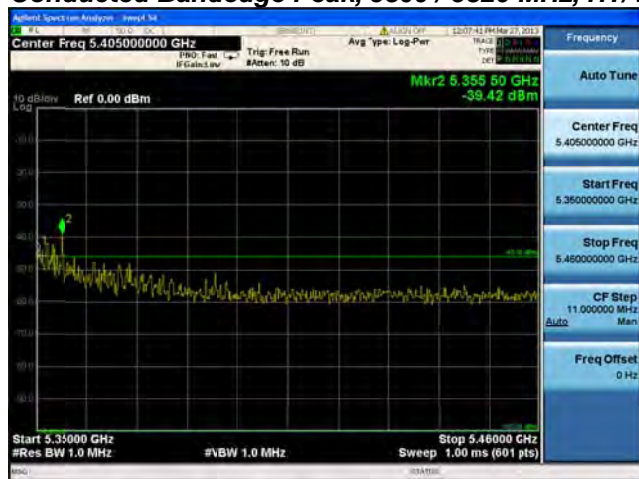
**Conducted Bandedge Peak, 5260 / 5280 / 5300 / 5320 MHz, HT/VHT80 STBC, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C****Antenna D**

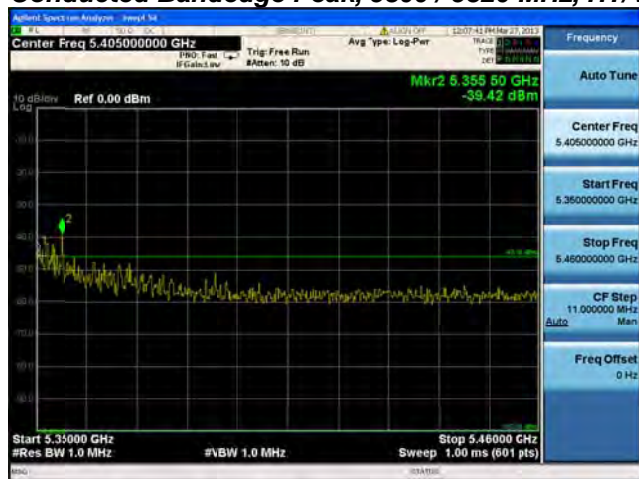
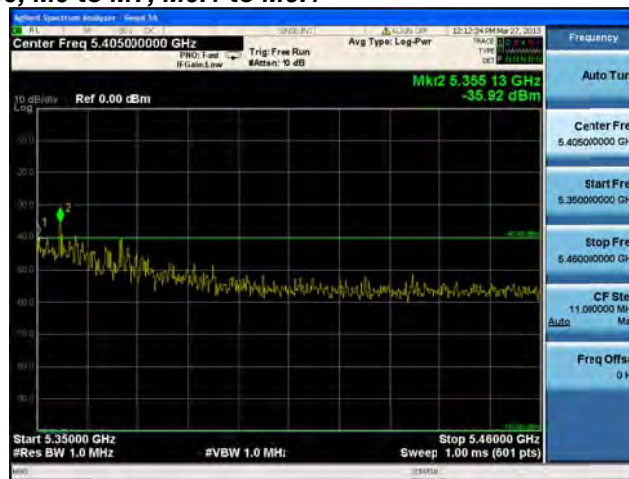
**Conducted Bandedge Peak, 5300 / 5320 MHz, Non HT/VHT40, 6 to 54 Mbps****Antenna A**

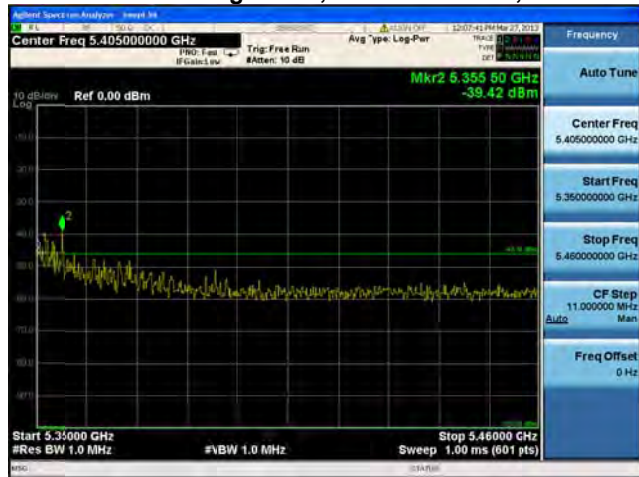
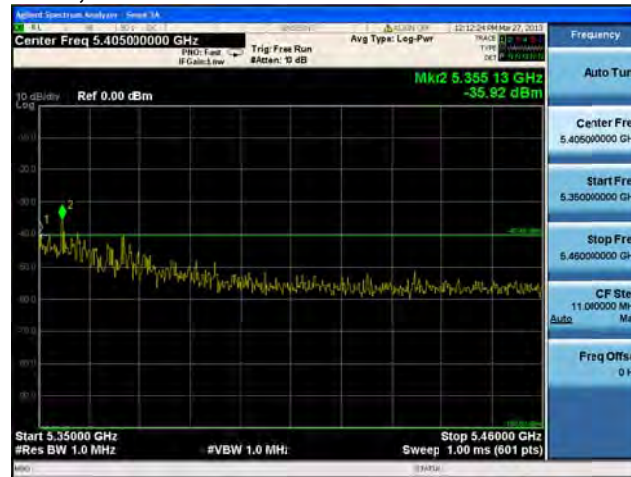
**Conducted Bandedge Peak, 5300 / 5320 MHz, Non HT/VHT40, 6 to 54 Mbps****Antenna A****Antenna B**

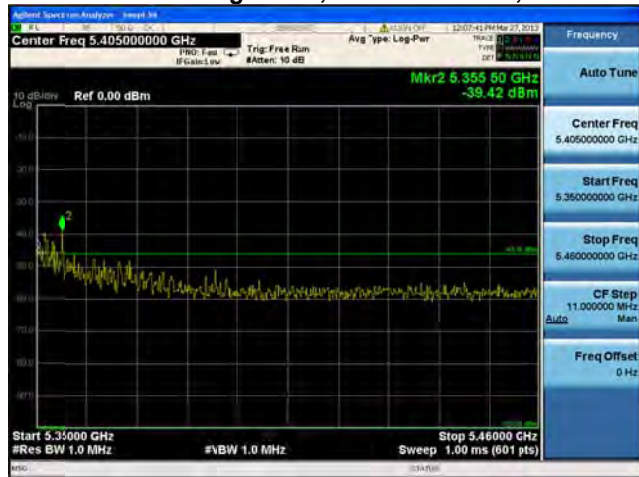
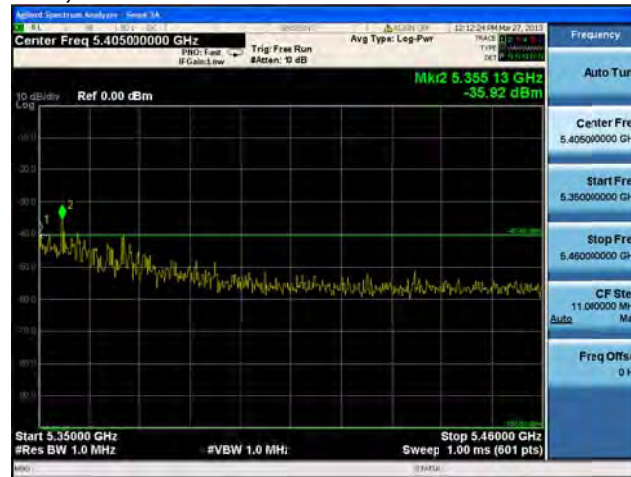
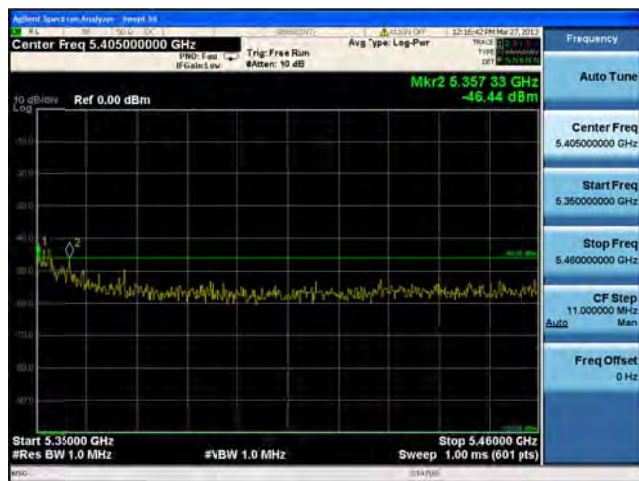
**Conducted Bandedge Peak, 5300 / 5320 MHz, Non HT/VHT40, 6 to 54 Mbps****Antenna A****Antenna B****Antenna C**

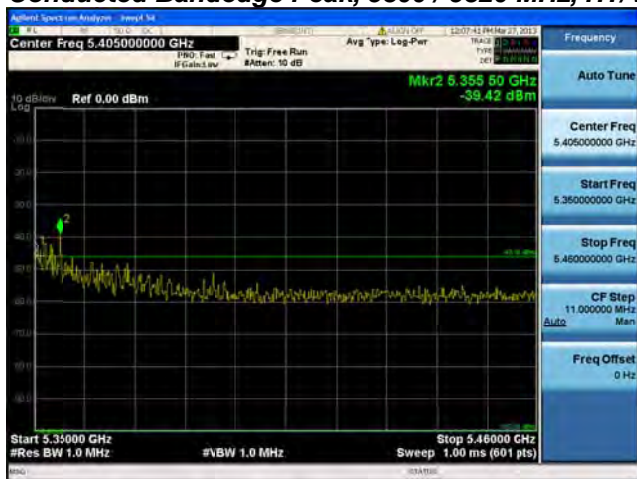
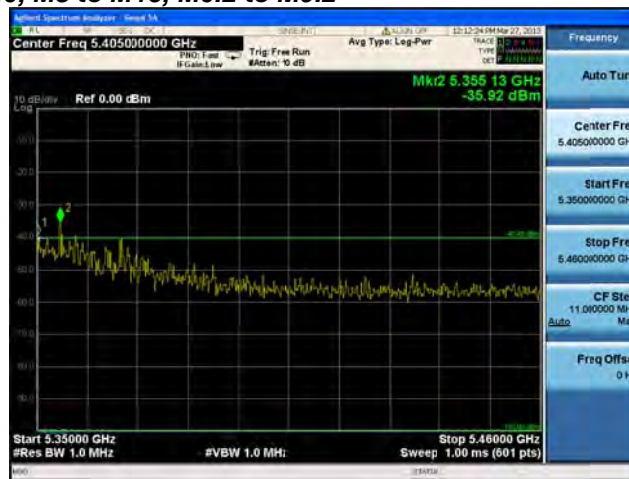
**Conducted Bandedge Peak, 5300 / 5320 MHz, Non HT/VHT40, 6 to 54 Mbps****Antenna A****Antenna B****Antenna C****Antenna D**

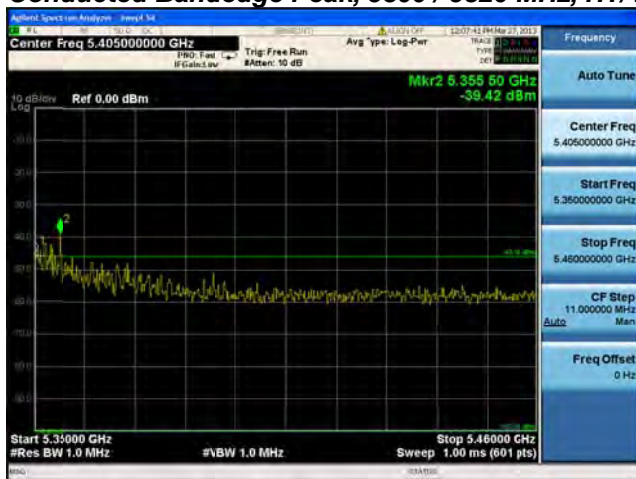
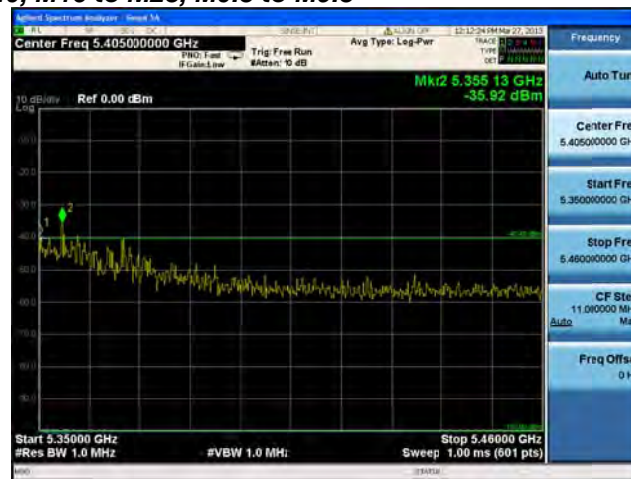
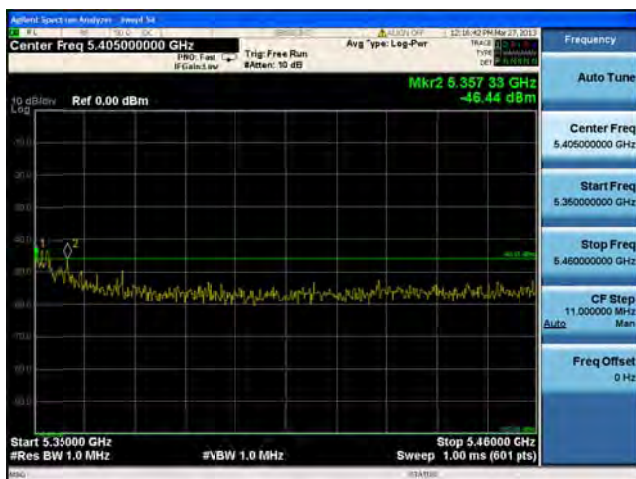
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40, M0 to M7, M0.1 to M9.1****Antenna A**

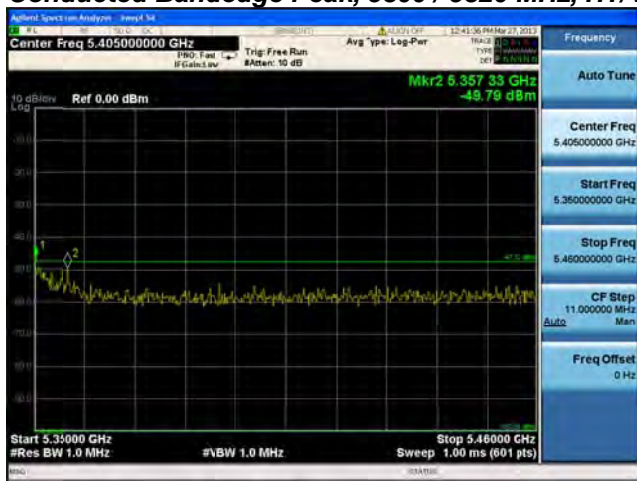
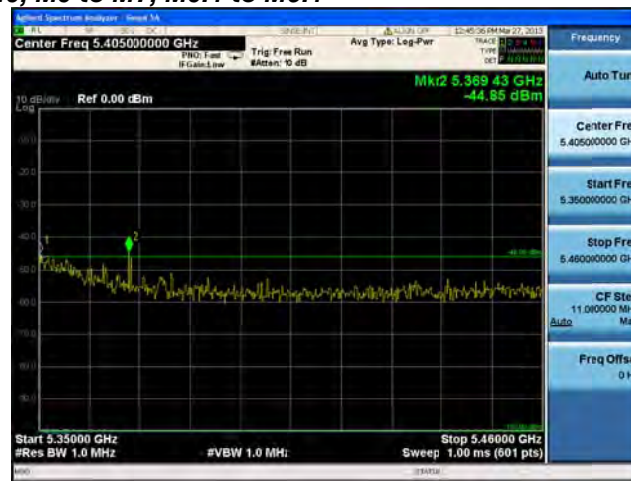
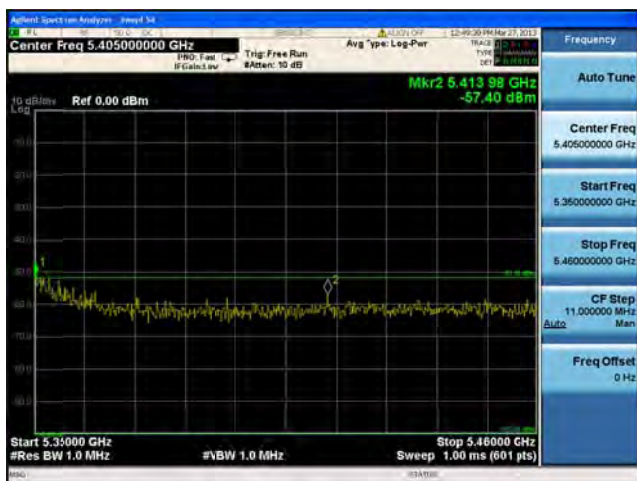
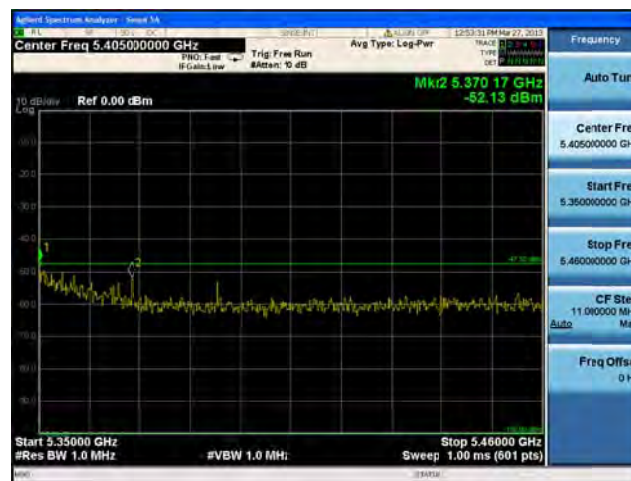
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B**

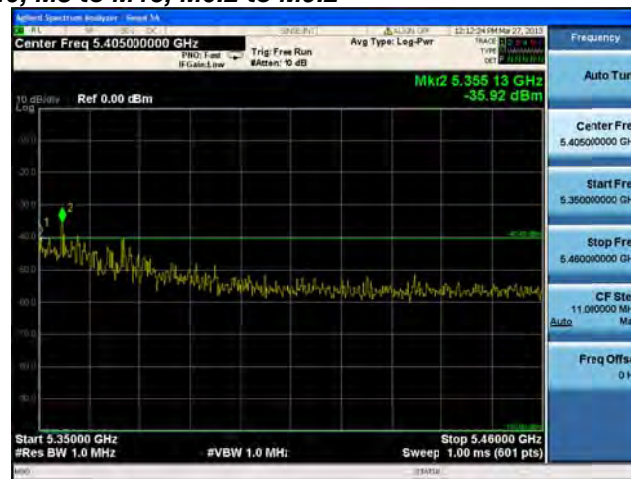
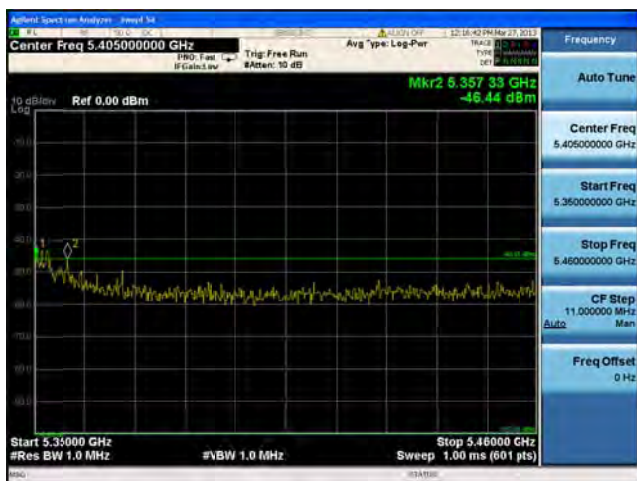
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B**

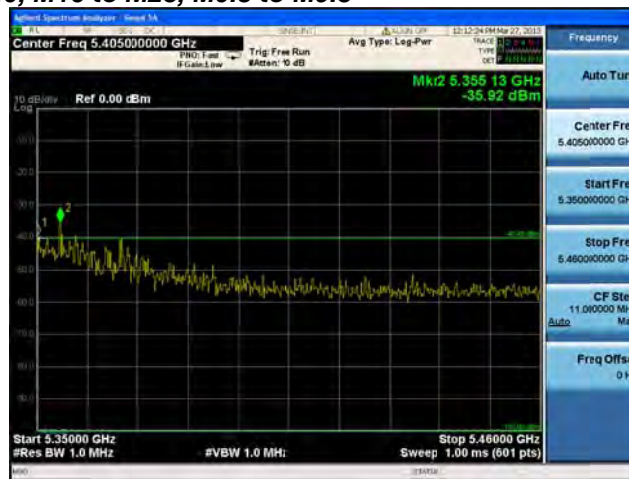
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C**

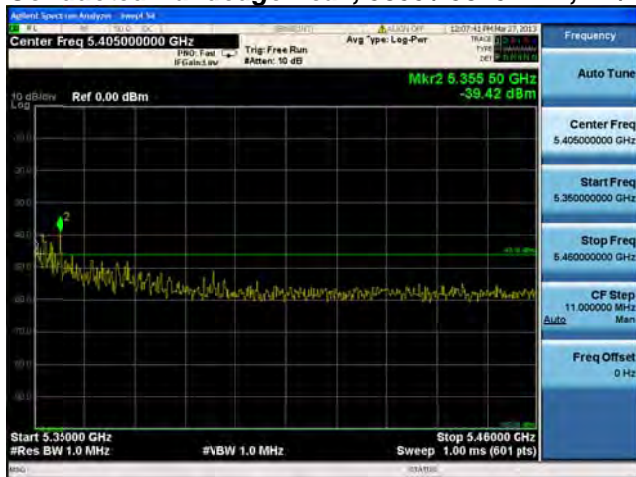
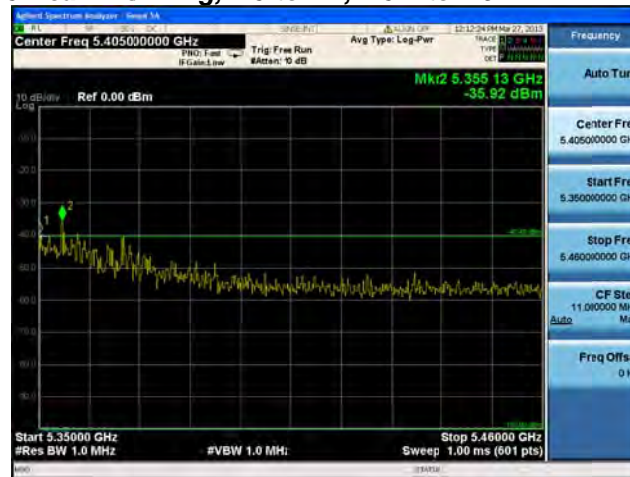
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B****Antenna C**

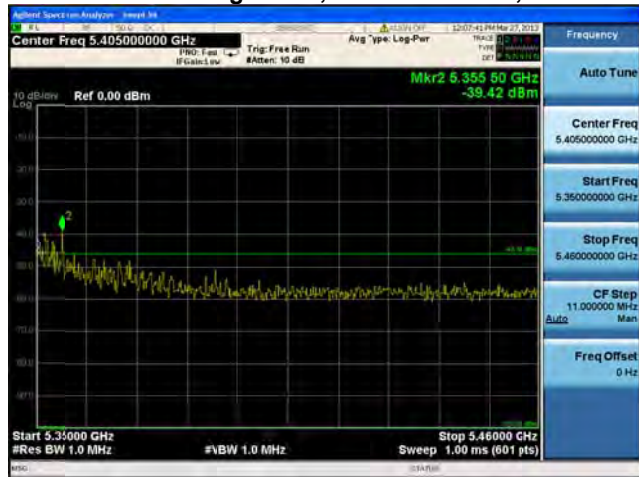
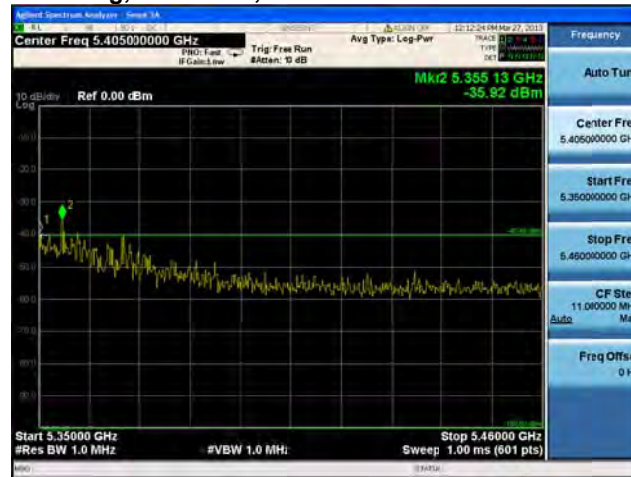
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40, M16 to M23, M0.3 to M9.3****Antenna A****Antenna B****Antenna C**

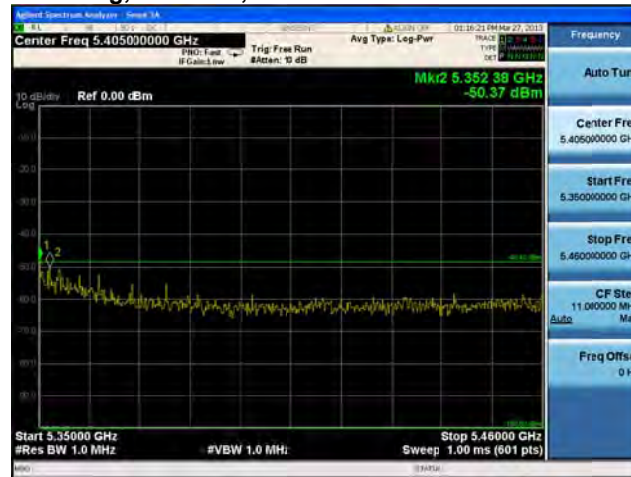
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C****Antenna D**

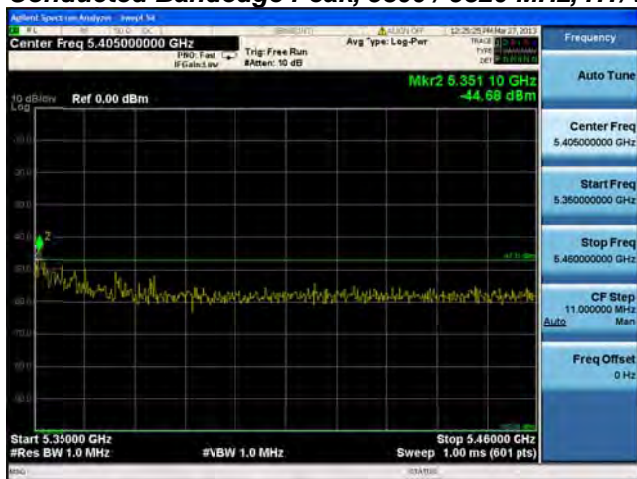
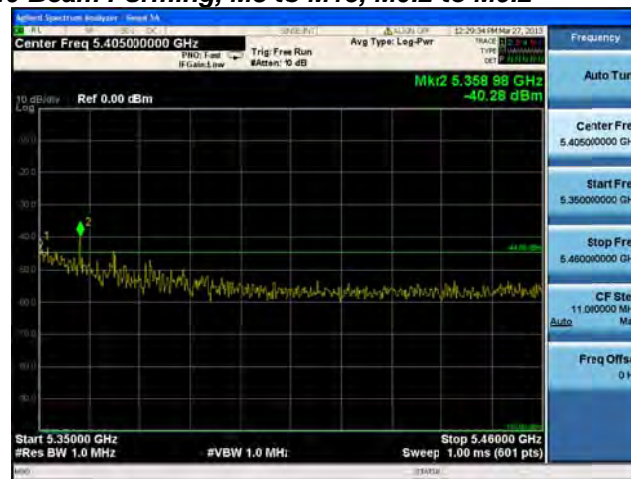
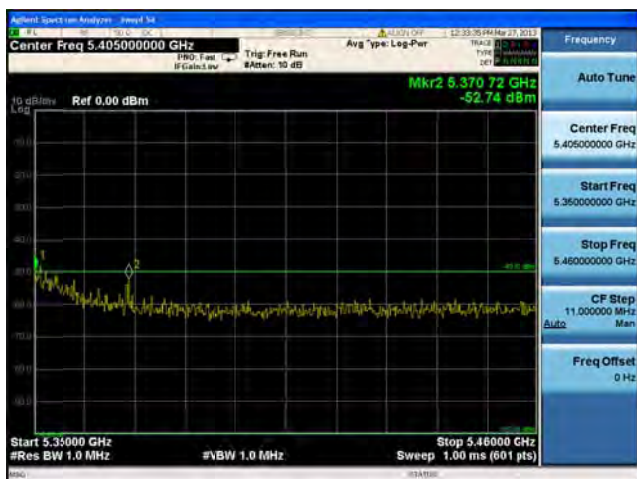
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B****Antenna C****Antenna D**

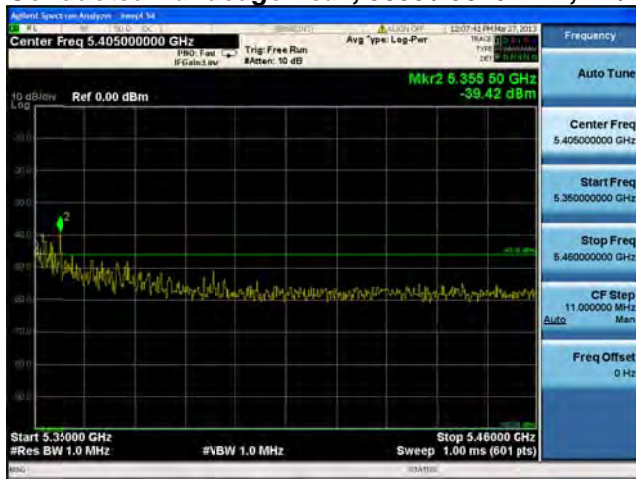
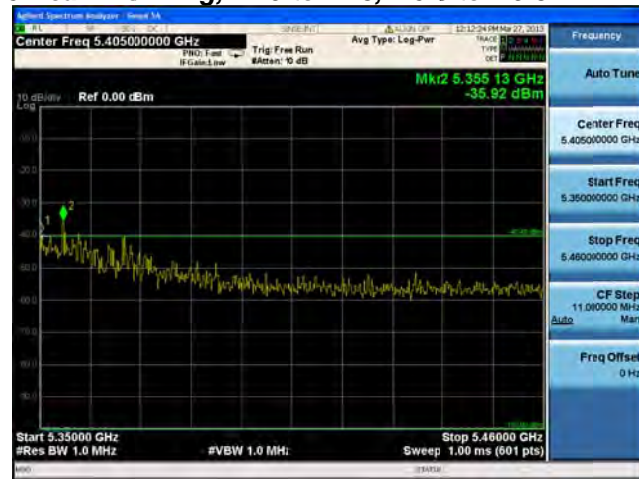
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40, M16 to M23, M0.3 to M9.3****Antenna A****Antenna B****Antenna C****Antenna D**

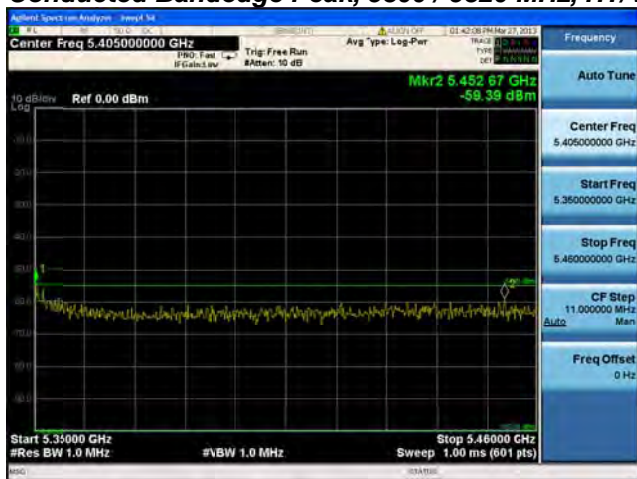
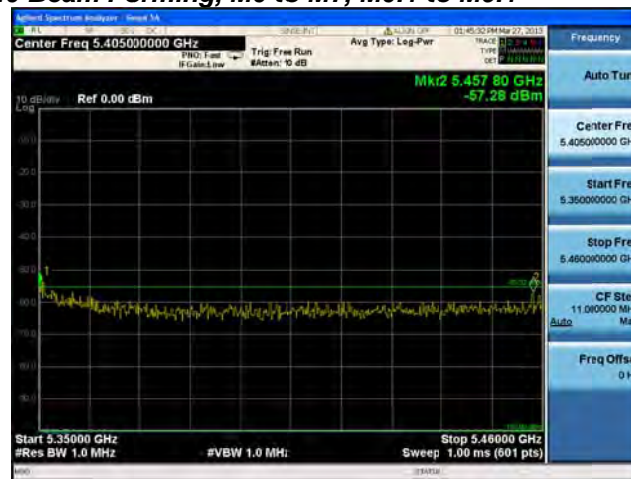
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40 Beam Forming, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B**

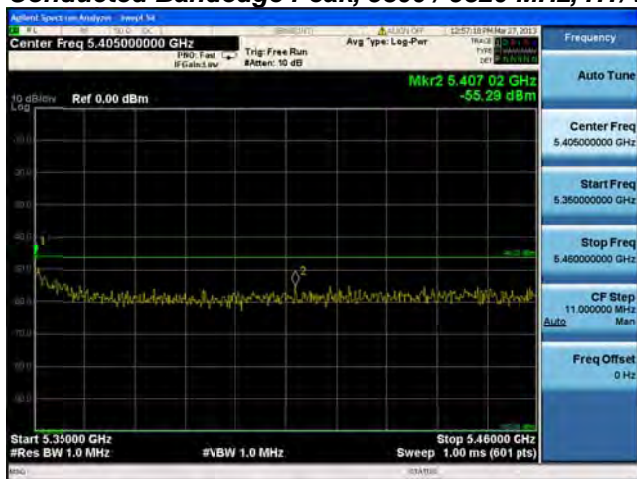
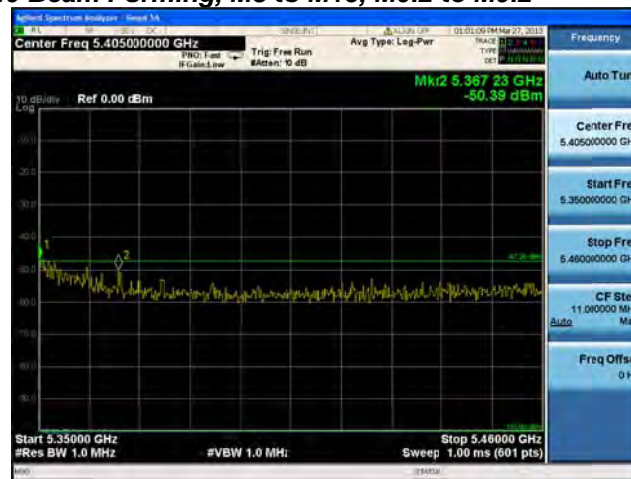
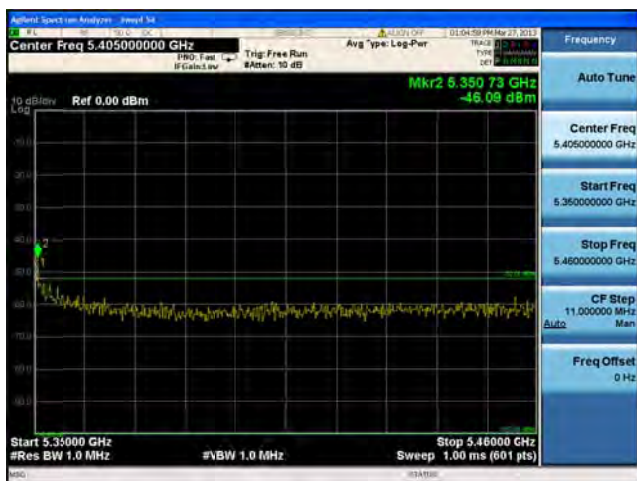
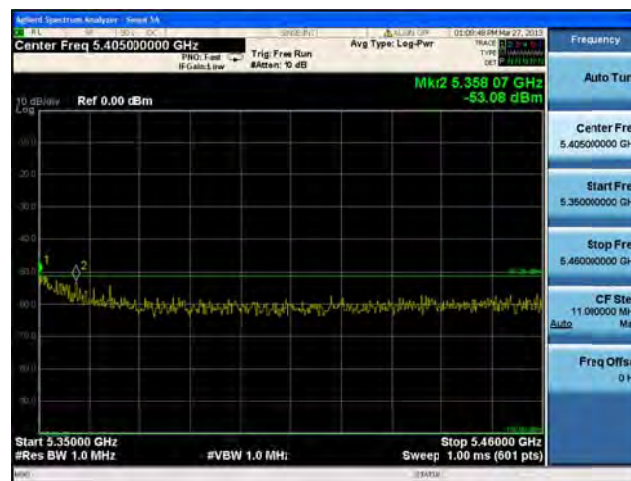
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40 Beam Forming, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B**

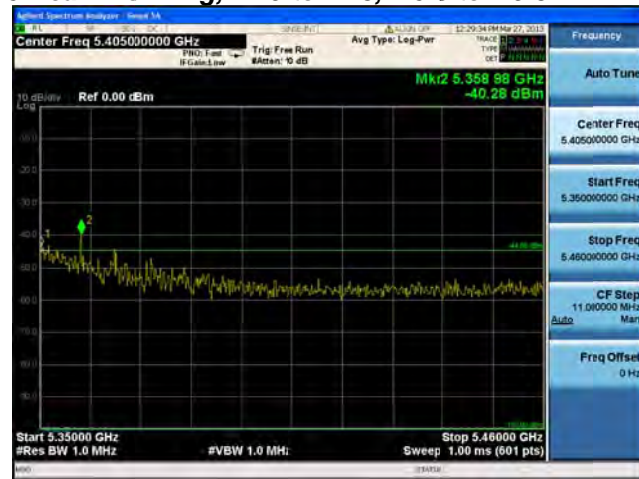
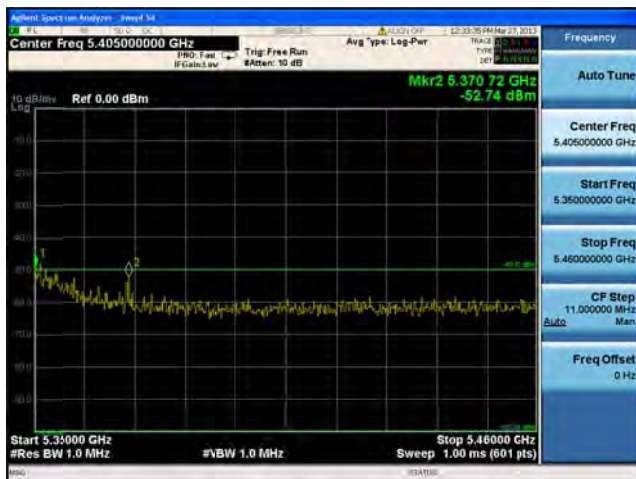
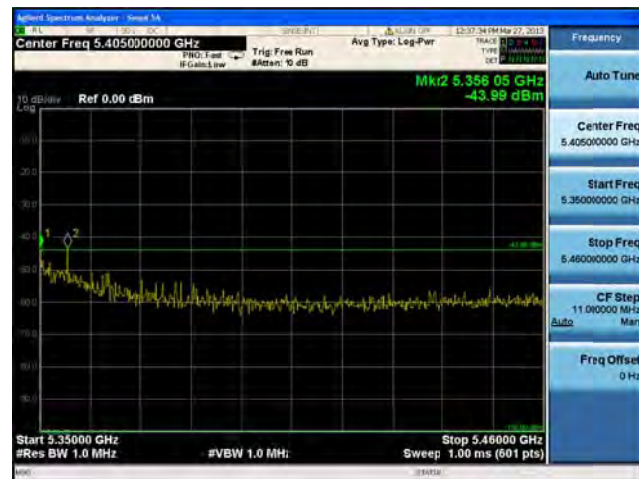
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40 Beam Forming, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C**

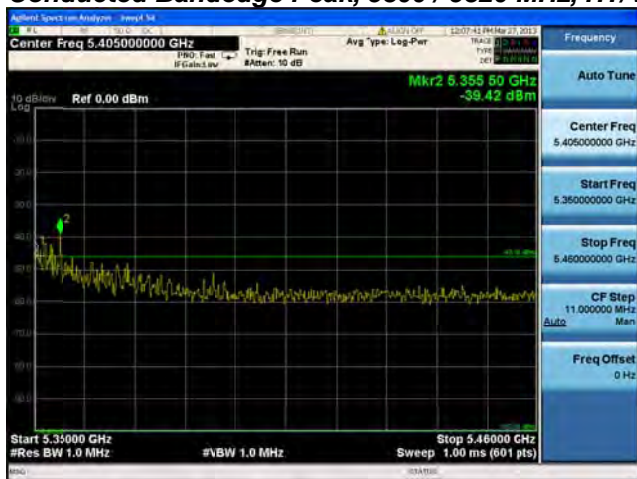
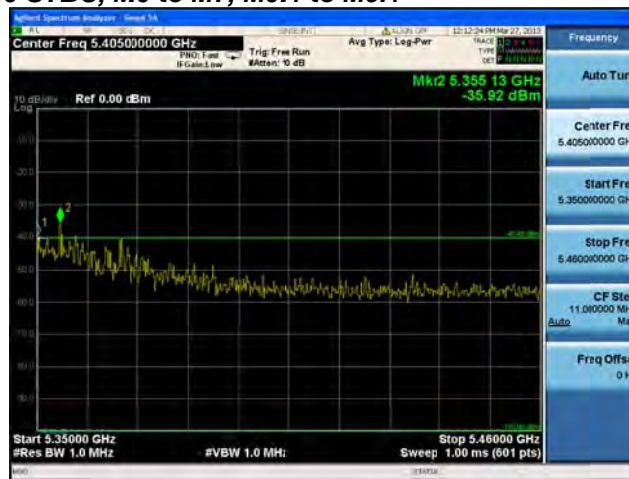
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40 Beam Forming, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B****Antenna C**

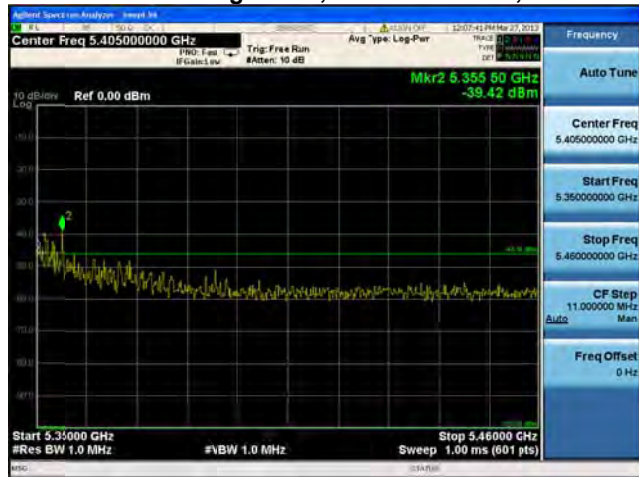
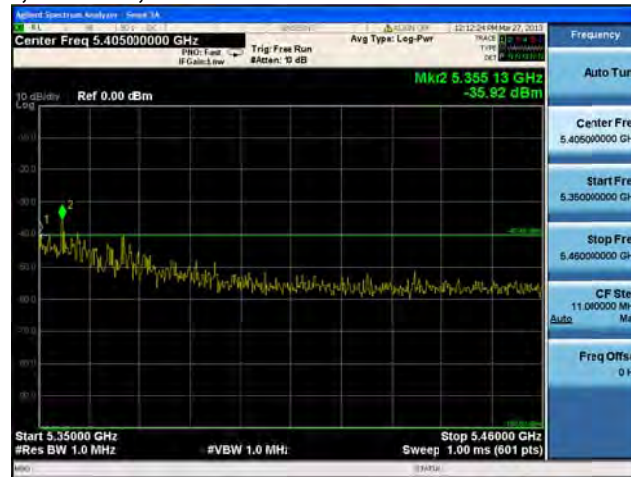
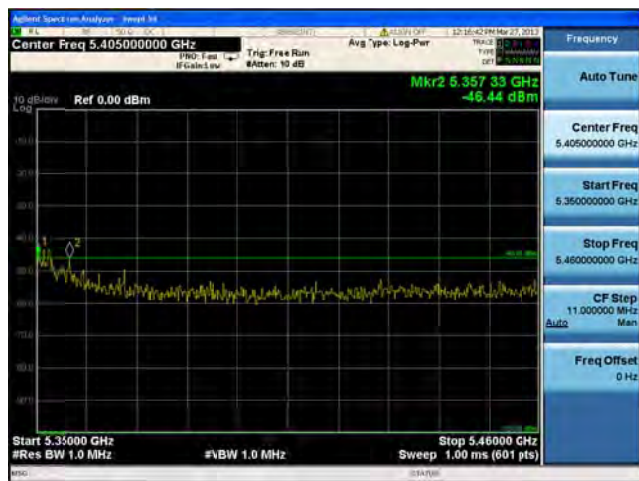
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40 Beam Forming, M16 to M23, M0.3 to M9.3****Antenna A****Antenna B****Antenna C**

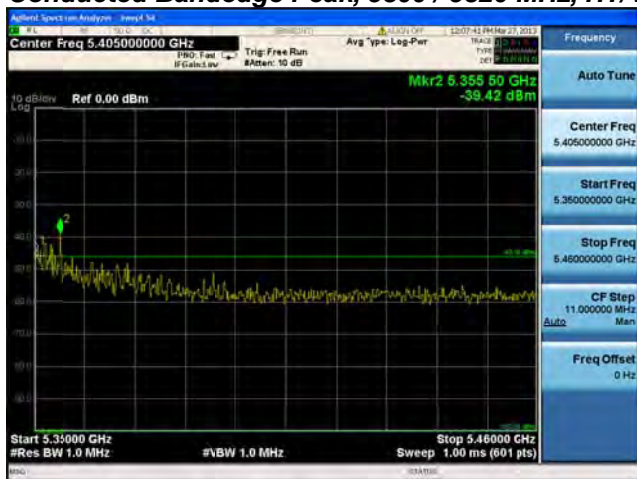
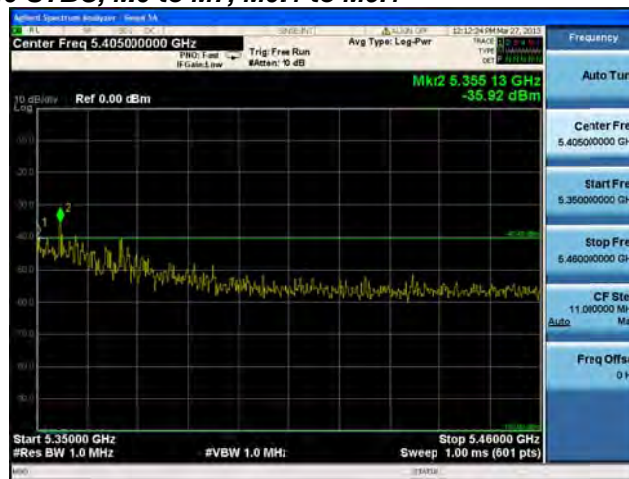
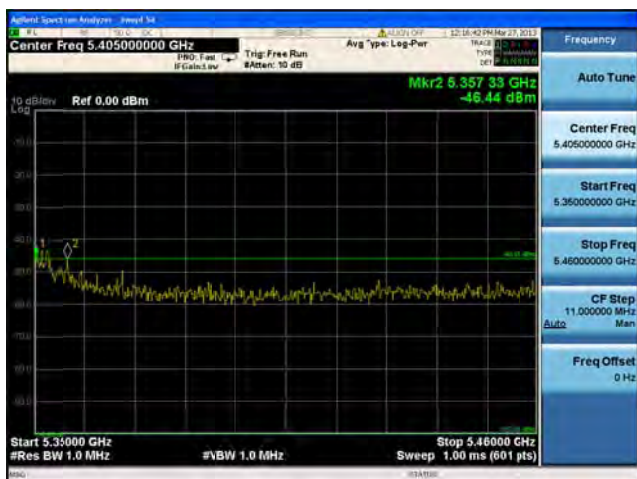
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40 Beam Forming, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C****Antenna D**

**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40 Beam Forming, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B****Antenna C****Antenna D**

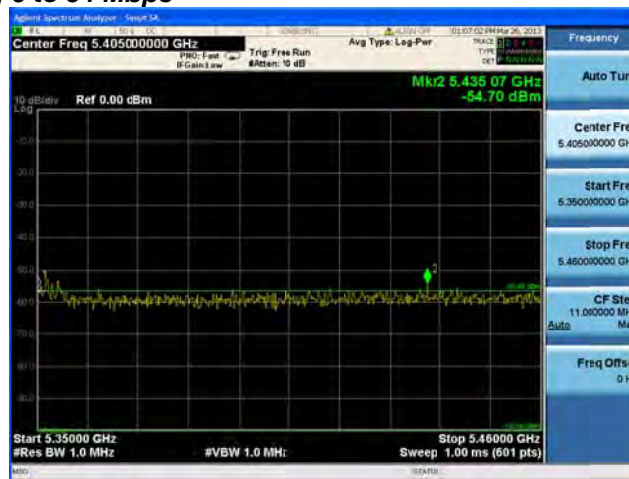
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40 Beam Forming, M16 to M23, M0.3 to M9.3****Antenna A****Antenna B****Antenna C****Antenna D**

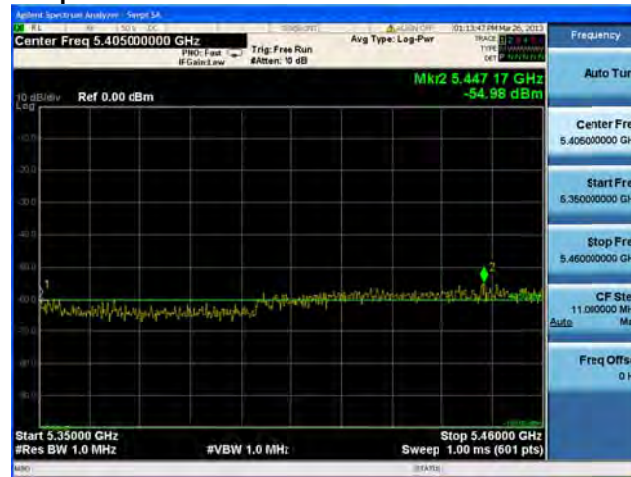
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40 STBC, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B**

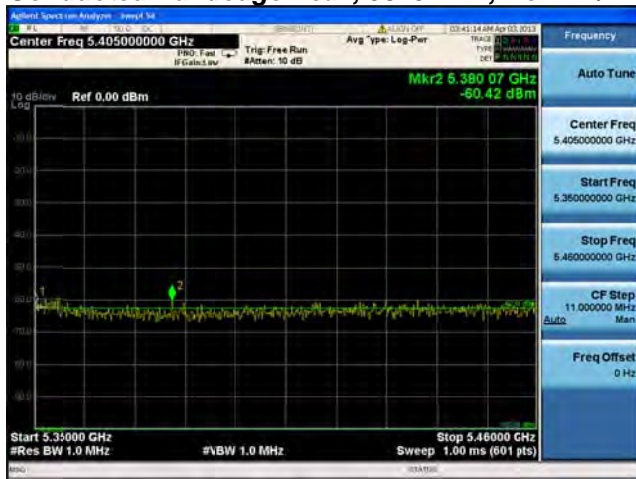
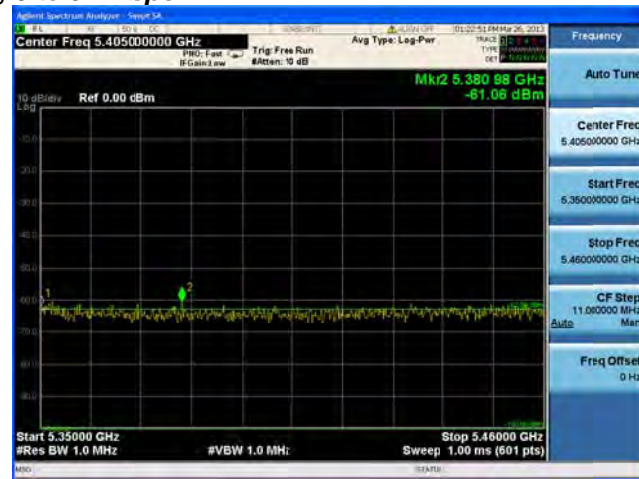
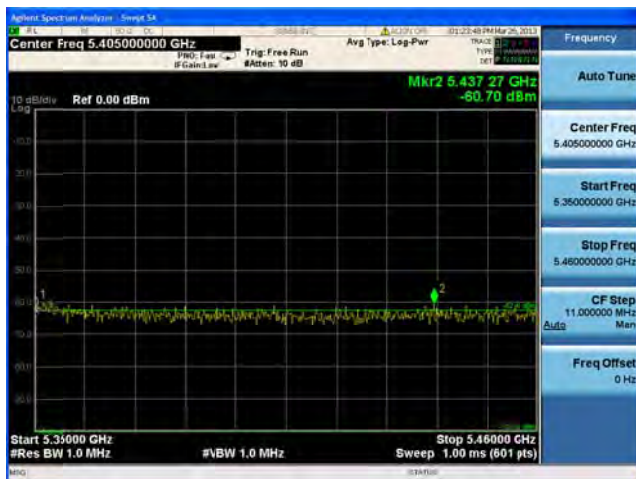
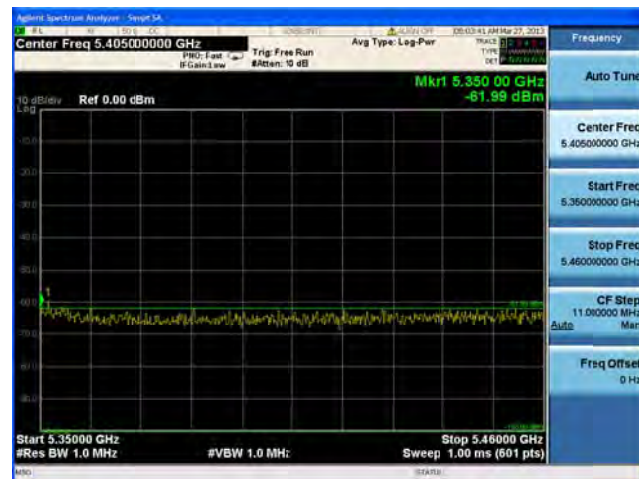
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40 STBC, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C**

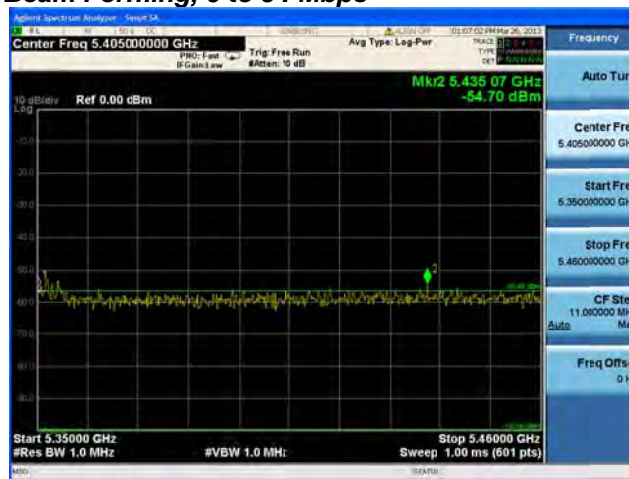
**Conducted Bandedge Peak, 5300 / 5320 MHz, HT/VHT40 STBC, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C****Antenna D**

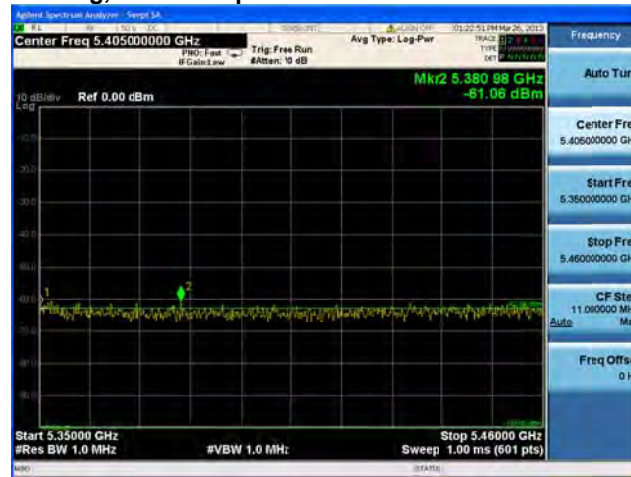
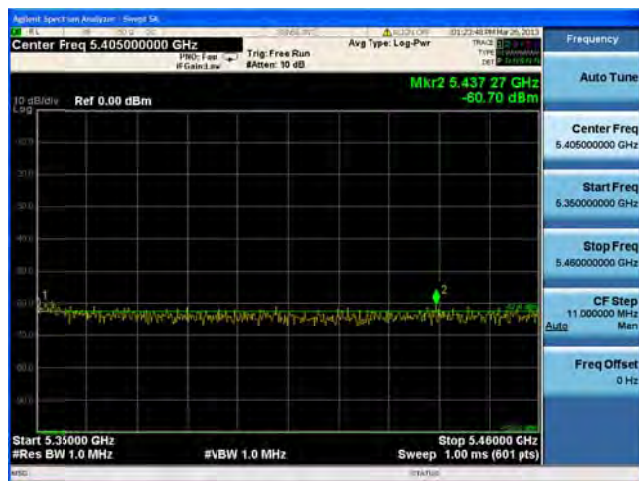
**Conducted Bandedge Peak, 5320 MHz, Non HT/VHT20, 6 to 54 Mbps****Antenna A**

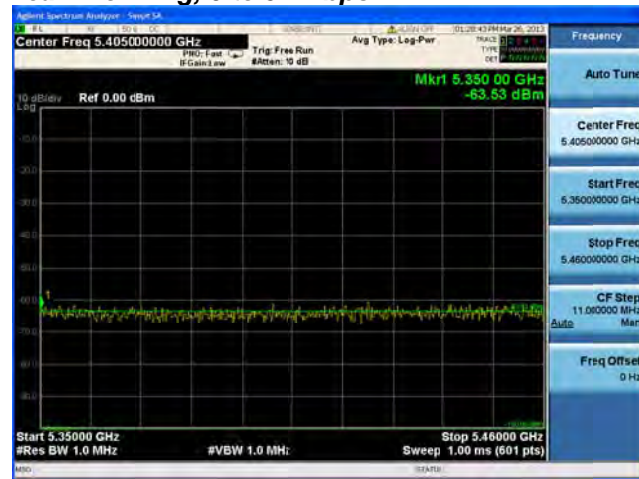
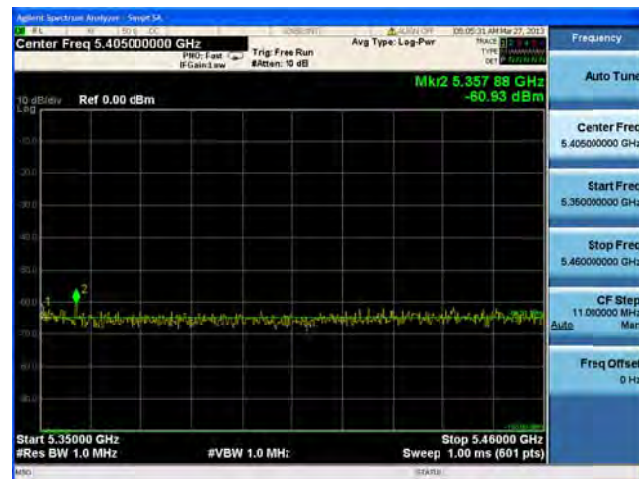
**Conducted Bandedge Peak, 5320 MHz, Non HT/VHT20, 6 to 54 Mbps****Antenna A****Antenna B**

**Conducted Bandedge Peak, 5320 MHz, Non HT/VHT20, 6 to 54 Mbps****Antenna A****Antenna B****Antenna C**

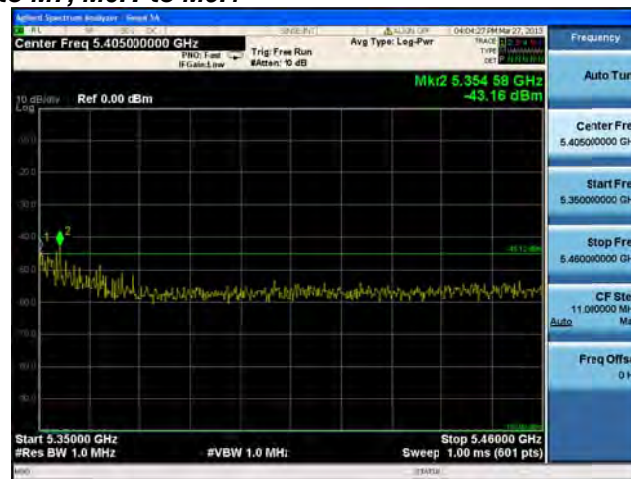
**Conducted Bandedge Peak, 5320 MHz, Non HT/VHT20, 6 to 54 Mbps****Antenna A****Antenna B****Antenna C****Antenna D**

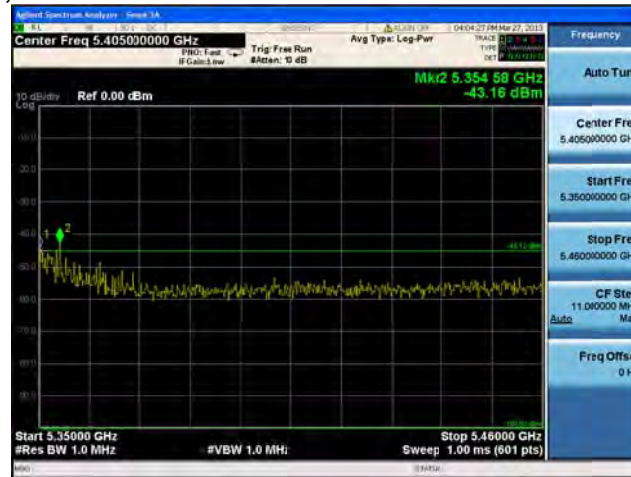
**Conducted Bandedge Peak, 5320 MHz, Non HT/VHT20 Beam Forming, 6 to 54 Mbps****Antenna A****Antenna B**

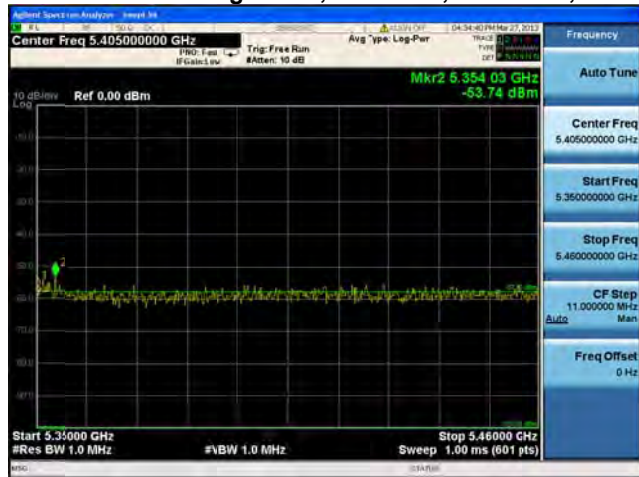
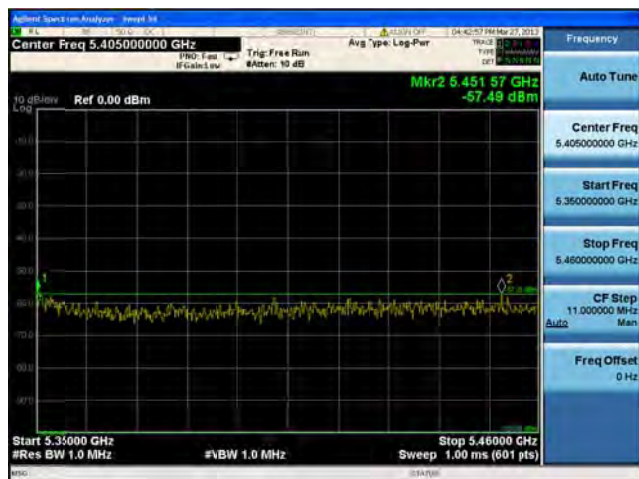
**Conducted Bandedge Peak, 5320 MHz, Non HT/VHT20 Beam Forming, 6 to 54 Mbps****Antenna A****Antenna B****Antenna C**

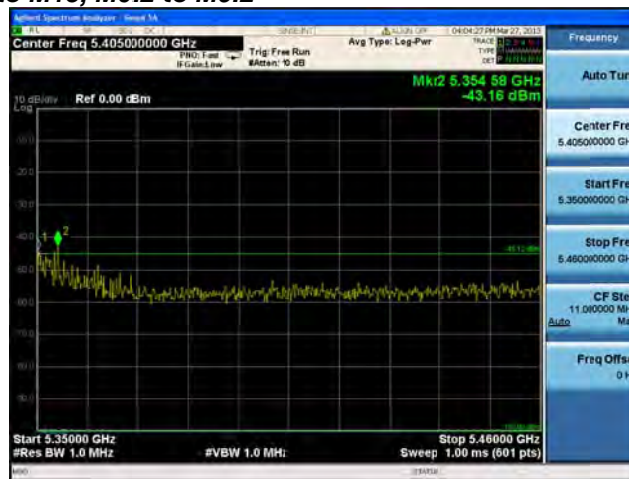
**Conducted Bandedge Peak, 5320 MHz, Non HT/VHT20 Beam Forming, 6 to 54 Mbps****Antenna A****Antenna B****Antenna C****Antenna D**

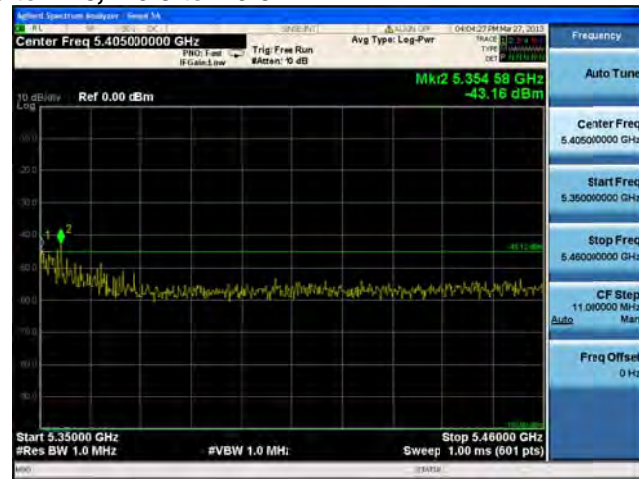
**Conducted Bandedge Peak, 5320 MHz, HT/VHT20, M0 to M7, M0.1 to M9.1****Antenna A**

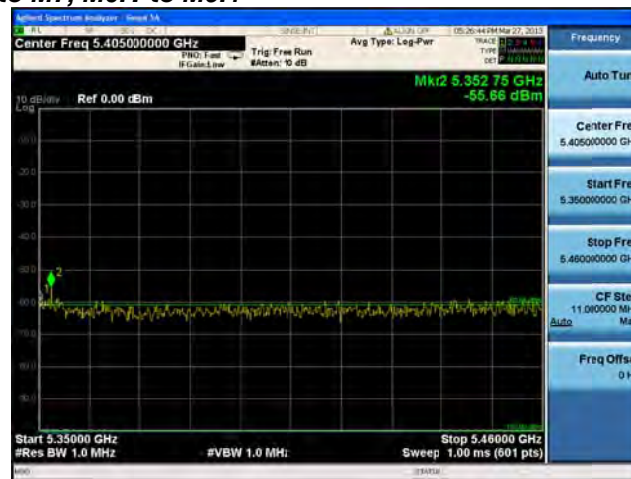
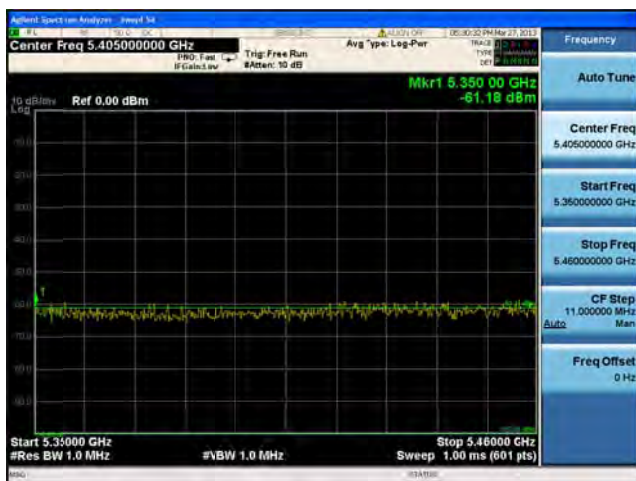
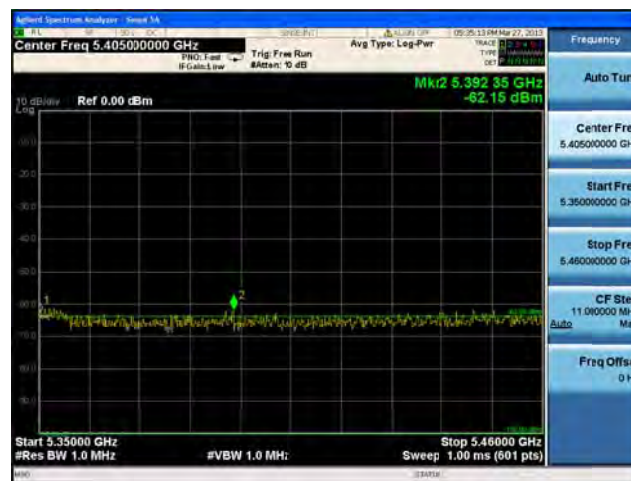
**Conducted Bandedge Peak, 5320 MHz, HT/VHT20, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B**

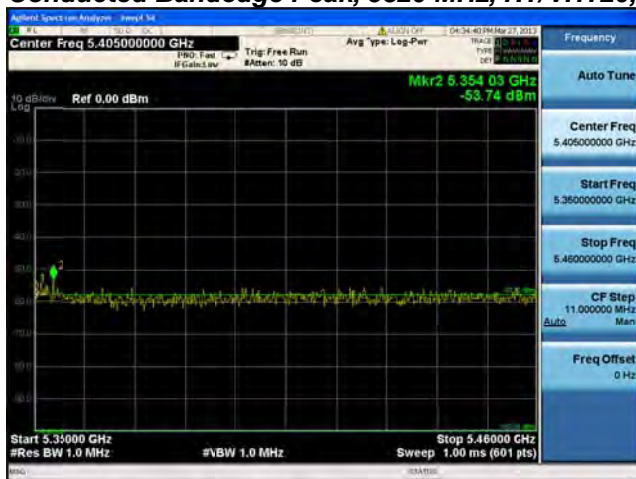
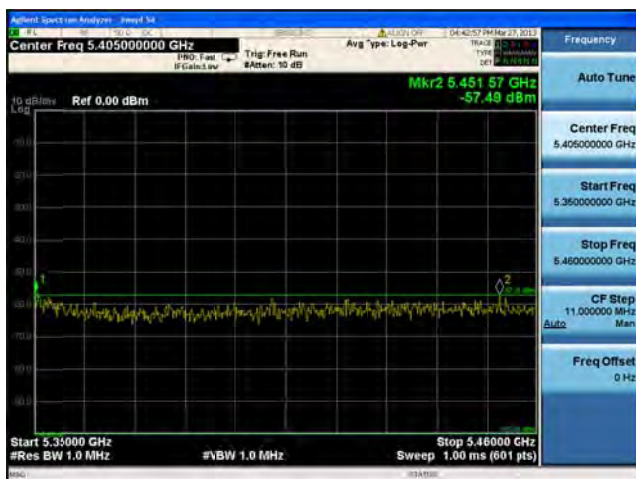
**Conducted Bandedge Peak, 5320 MHz, HT/VHT20, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B**

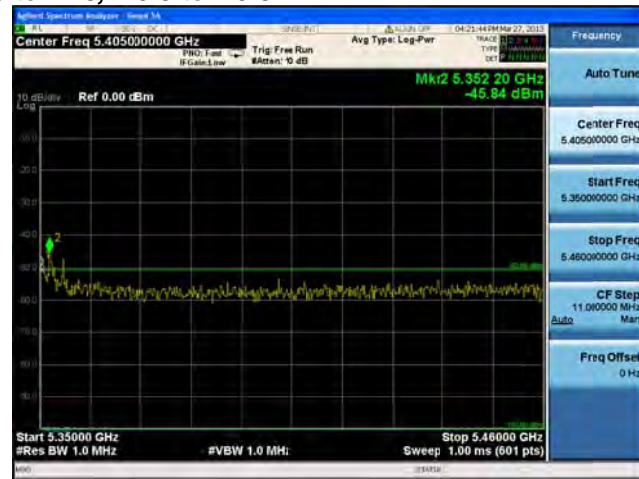
**Conducted Bandedge Peak, 5320 MHz, HT/VHT20, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C**

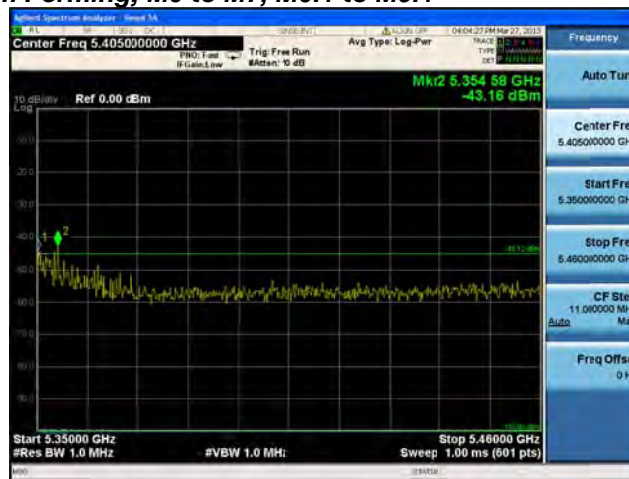
**Conducted Bandedge Peak, 5320 MHz, HT/VHT20, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B****Antenna C**

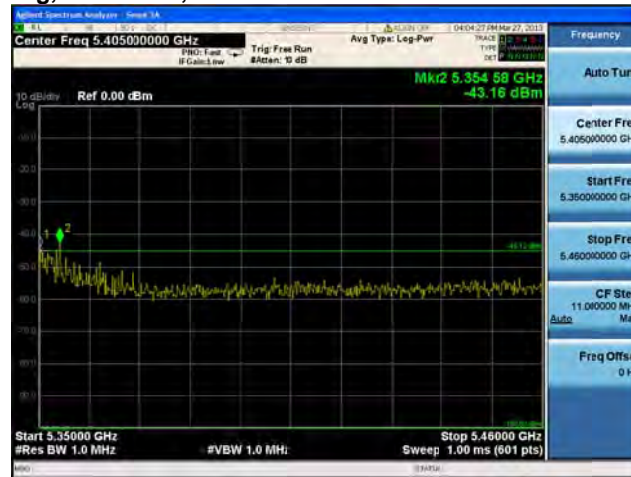
**Conducted Bandedge Peak, 5320 MHz, HT/VHT20, M16 to M23, M0.3 to M9.3****Antenna A****Antenna B****Antenna C**

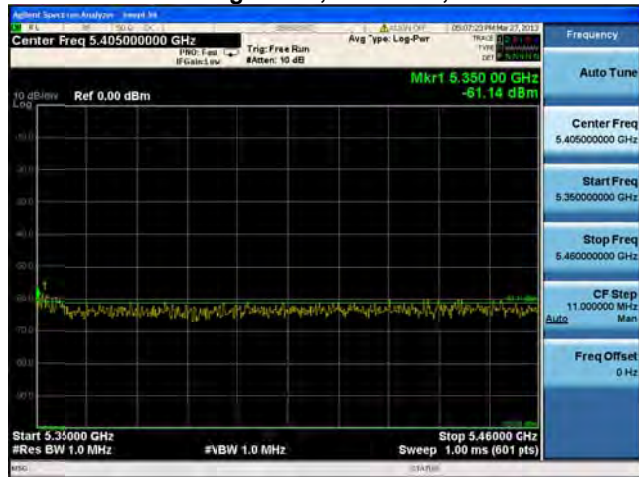
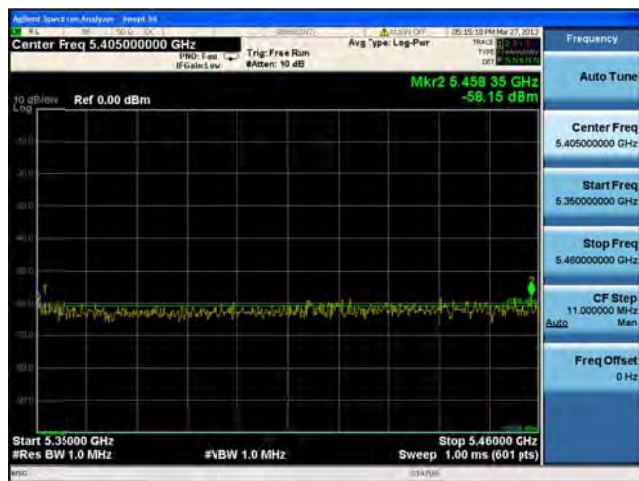
**Conducted Bandedge Peak, 5320 MHz, HT/VHT20, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C****Antenna D**

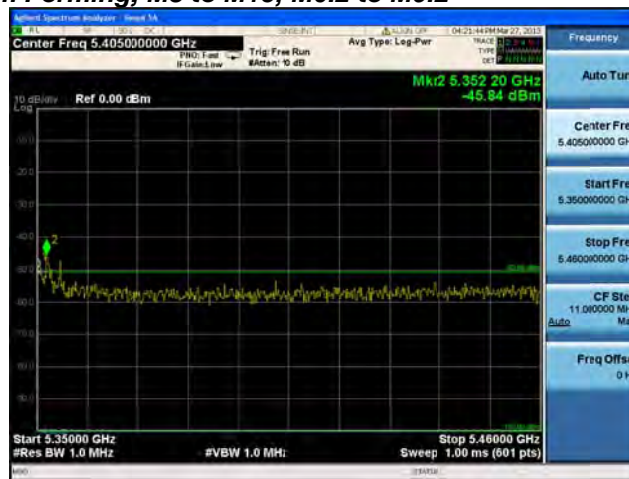
**Conducted Bandedge Peak, 5320 MHz, HT/VHT20, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B****Antenna C****Antenna D**

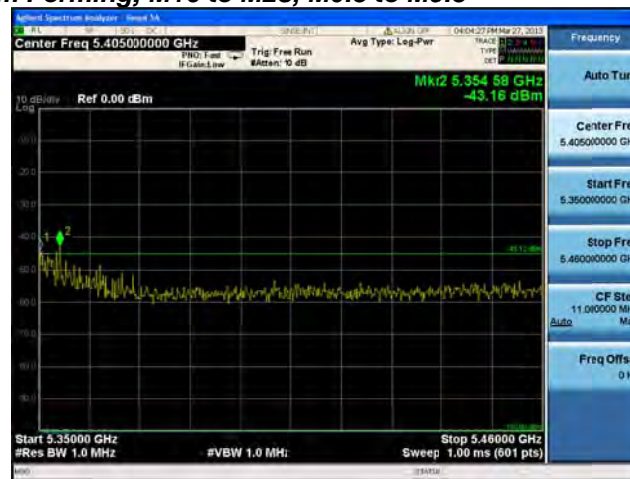
**Conducted Bandedge Peak, 5320 MHz, HT/VHT20, M16 to M23, M0.3 to M9.3****Antenna A****Antenna B****Antenna C****Antenna D**

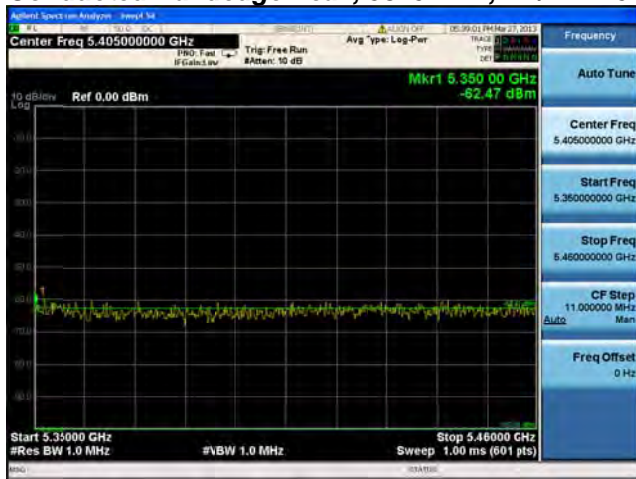
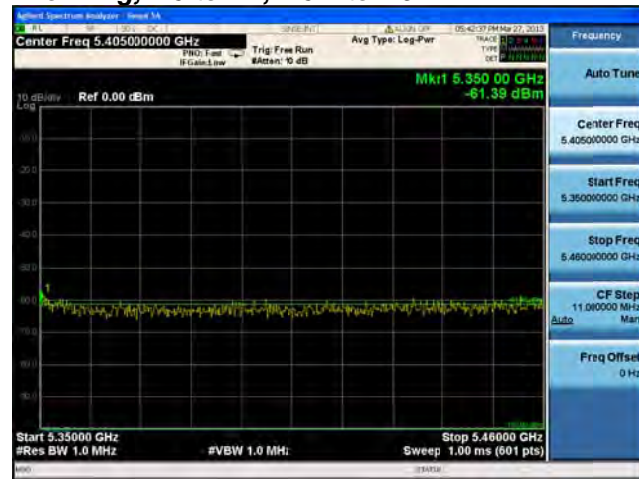
**Conducted Bandedge Peak, 5320 MHz, HT/VHT20 Beam Forming, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B**

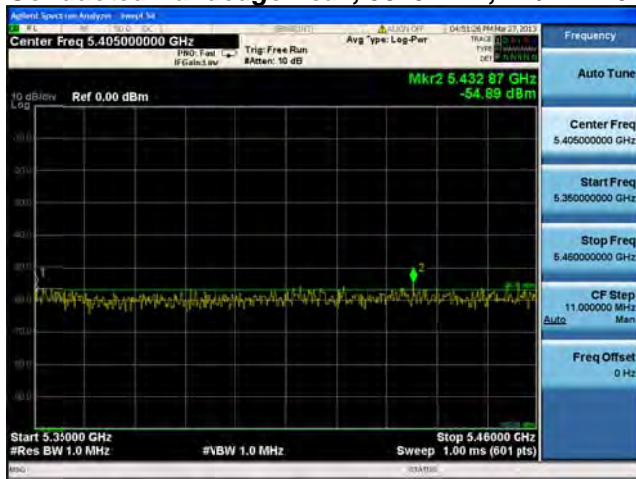
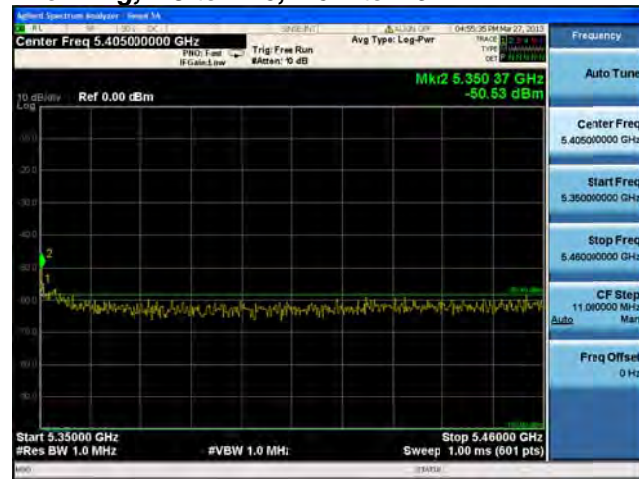
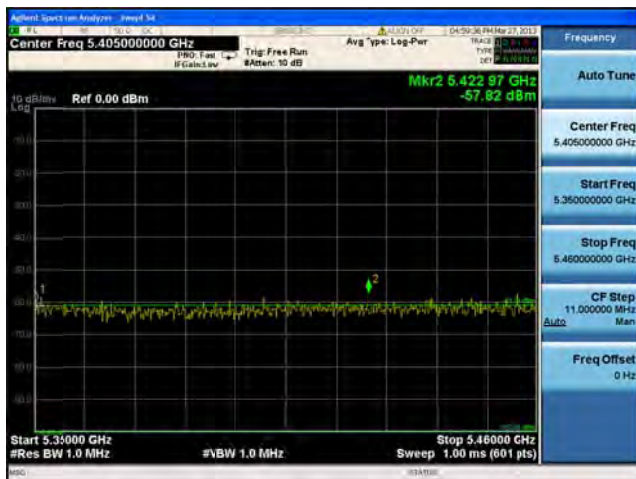
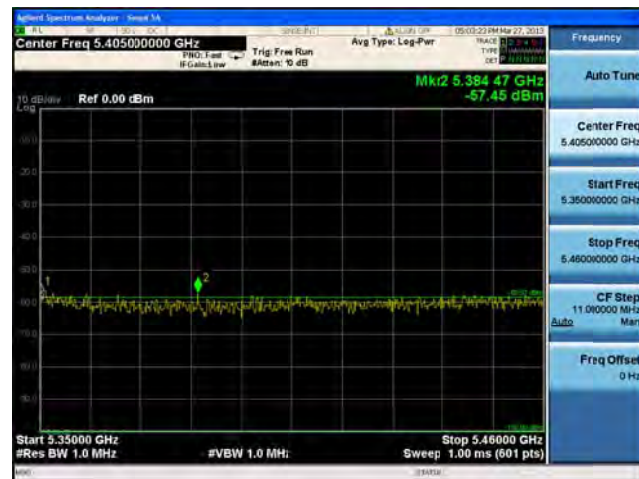
**Conducted Bandedge Peak, 5320 MHz, HT/VHT20 Beam Forming, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B**

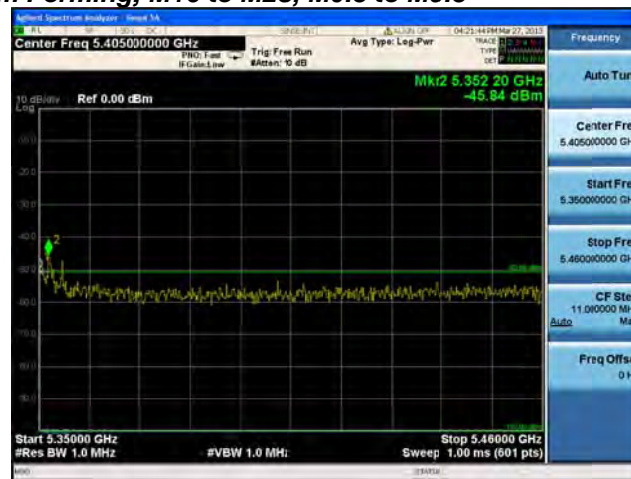
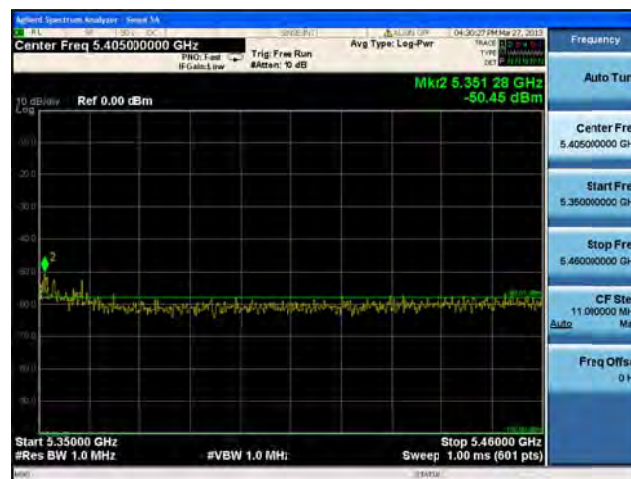
**Conducted Bandedge Peak, 5320 MHz, HT/VHT20 Beam Forming, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C**

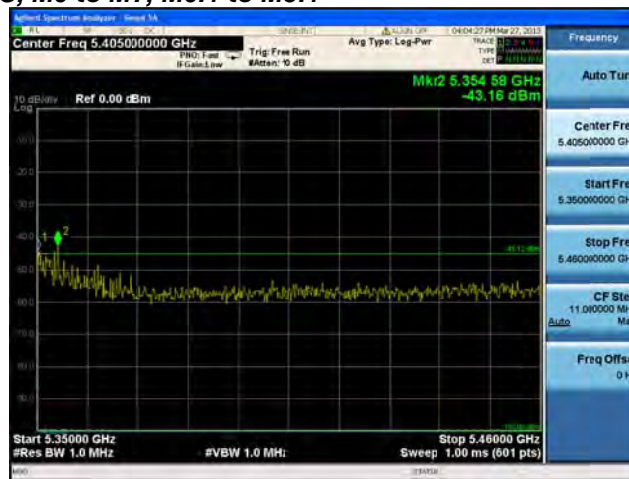
**Conducted Bandedge Peak, 5320 MHz, HT/VHT20 Beam Forming, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B****Antenna C**

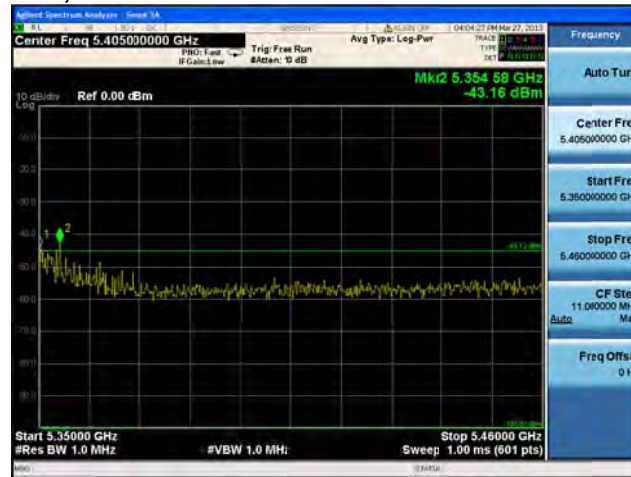
**Conducted Bandedge Peak, 5320 MHz, HT/VHT20 Beam Forming, M16 to M23, M0.3 to M9.3****Antenna A****Antenna B****Antenna C**

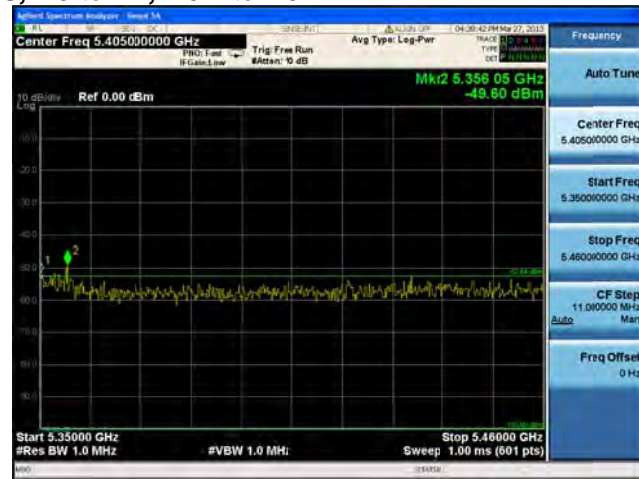
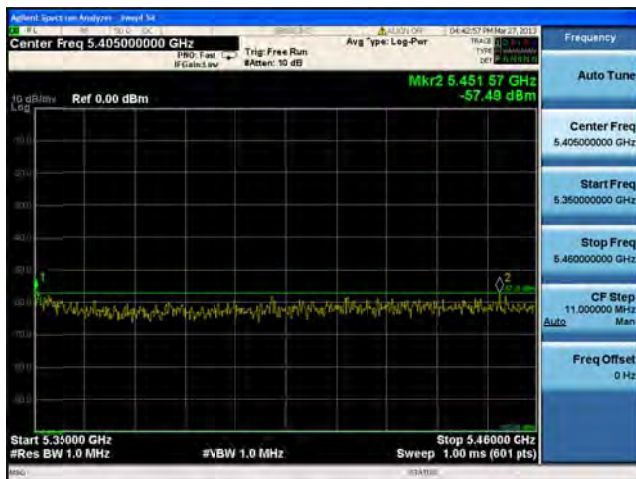
**Conducted Bandedge Peak, 5320 MHz, HT/VHT20 Beam Forming, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C****Antenna D**

**Conducted Bandedge Peak, 5320 MHz, HT/VHT20 Beam Forming, M8 to M15, M0.2 to M9.2****Antenna A****Antenna B****Antenna C****Antenna D**

**Conducted Bandedge Peak, 5320 MHz, HT/VHT20 Beam Forming, M16 to M23, M0.3 to M9.3****Antenna A****Antenna B****Antenna C****Antenna D**

**Conducted Bandedge Peak, 5320 MHz, HT/VHT20 STBC, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B**

**Conducted Bandedge Peak, 5320 MHz, HT/VHT20 STBC, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C**

**Conducted Bandedge Peak, 5320 MHz, HT/VHT20 STBC, M0 to M7, M0.1 to M9.1****Antenna A****Antenna B****Antenna C****Antenna D**

## Maximum Permissible Exposure (MPE) Calculations

15.407: U-NII devices are subject to the radio frequency radiation exposure requirements specified in Sec. 1.1307(b), Sec. 2.1091 and Sec. 2.1093 of this chapter, as appropriate. All equipment shall be considered to operate in a "general population/uncontrolled" environment. Applications for equipment authorization of devices operating under this section must contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for this statement must be submitted to the Commission upon request.

Given

$$E = \sqrt{(30 \cdot P \cdot G)/d} \quad \text{and} \quad S = E^2/3770$$

where

E=Field Strength in Volts/meter

P=Power in Watts

G=Numeric Antenna Gain

d=Distance in meters

S=Power Density in mW/cm<sup>2</sup>

Combine equations and rearrange the terms to express the distance as a function of the remaining variables:

$$d = \sqrt{((30 \cdot P \cdot G)/(3770 \cdot S))}$$

Changing to units of power in mW and distance in cm, using:

$$P(\text{mW}) = P(\text{W})/1000 \quad d(\text{cm}) = 100 \cdot d(\text{m})$$

yields

$$d = 100 \cdot \sqrt{((30 \cdot (P/1000) \cdot G)/(3770 \cdot S))}$$

$$d = 0.282 \cdot \sqrt{(P \cdot G/S)}$$

where

d=Distance in cm

P=Power in mW

G=Numerica Antenna Gain

S=Power Density in mW/cm<sup>2</sup>

Substituting the logarithmic form of power and gain using:

$$P(\text{mW}) = 10^{(P(\text{dBm})/10)} \quad G(\text{numeric}) = 10^{(G(\text{dBi})/10)}$$

yields

$$d = 0.282 \cdot 10^{((P+G)/20)} / \sqrt{S} \quad \text{Equation (1)}$$

and

$$s = ((0.282 \cdot 10^{((P+G)/20)})/d)^2 \quad \text{Equation (2)}$$

where

d=MPE distance in cm

P=Power in dBm

G=Antenna Gain in dBi

S=Power Density in mW/cm<sup>2</sup>



Equation (1) and the measured peak power are used to calculate the MPE distance. Note that for mobile or fixed location transmitters such as an access point, the minimum separation distance is 20 cm even if the calculations indicate that the MPE distance may be less.

$S=1\text{mW/cm}^2$  maximum. The highest supported antenna gain is 4 dBi Using the peak power levels recorded in the test report along with Equation 1 above, the MPE distances are calculated as follows.

Frequency (MHz)	Bit Rate (Mbps)	Power Density (mW/cm <sup>2</sup> )	Peak Transmit Power (dBm)	Antenna Gain (dBi)	MPE Distance (cm)	Limit (cm)	Margin (cm)
5260/5280	M8	1	23.3	4	<b>6.54</b>	20	13.46

#### MPE Calculations

To maintain compliance, installations will assure a separation distance of at least 20cm.

Using Equation 2, the MPE levels (s) at 20 cm are calculated as follows:

Frequency (MHz)	Bit Rate (Mbps)	MPE Distance (cm)	Peak Transmit Power (dBm)	Antenna Gain (dBi)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Margin (mW/cm <sup>2</sup> )
5260/5280	M8	20	23.3	4	<b>0.11</b>	1	0.89



**Appendix C: Test Equipment/Software Used to perform the test**

Equip #	Manufacturer	Model	Description	Last Cal	Next Due
CIS049381	Agilent	N9030A	Spectrum Analyzer	28-Aug-12	28-Aug-13