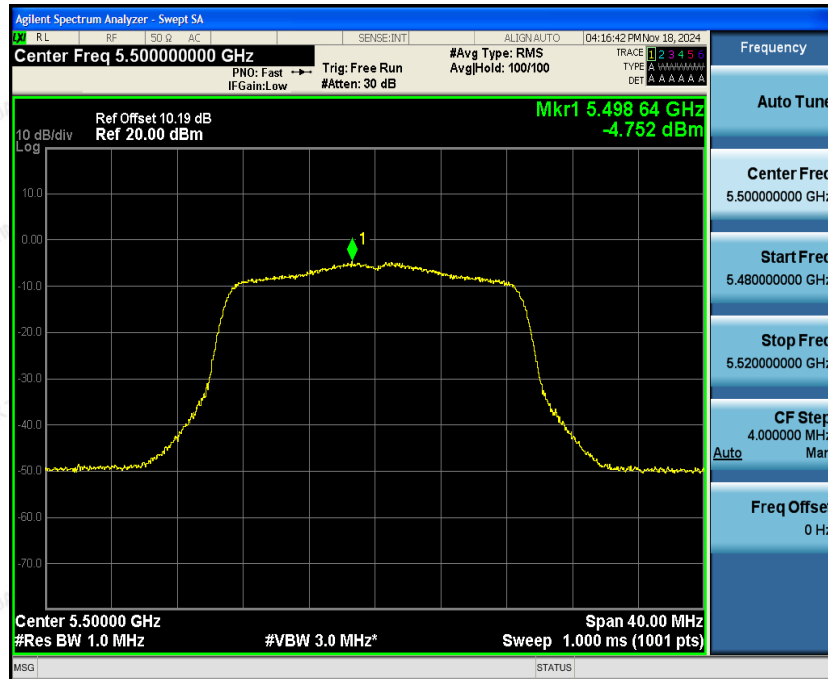


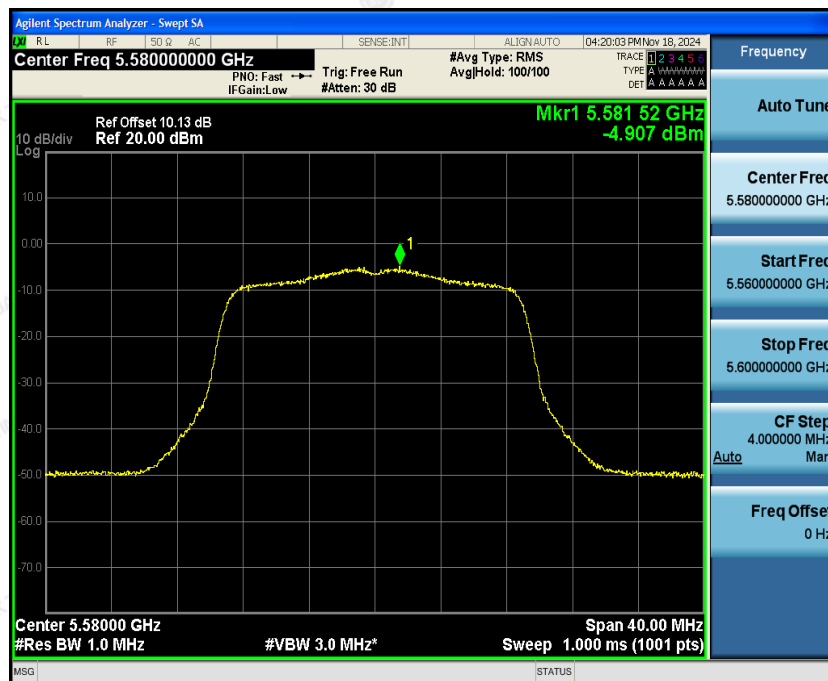


5470~5725MHz

Low Channel

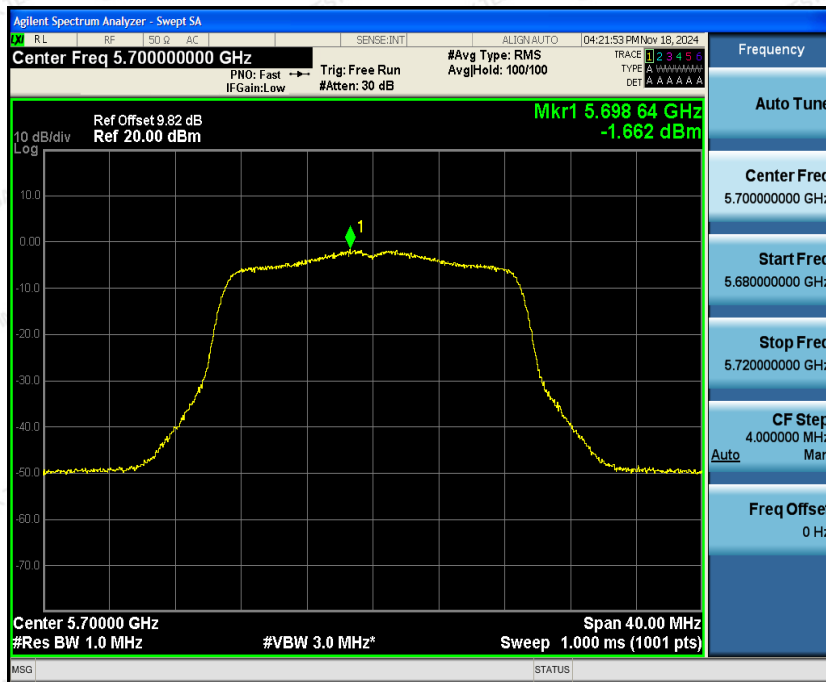


Mid Channel





High Channel



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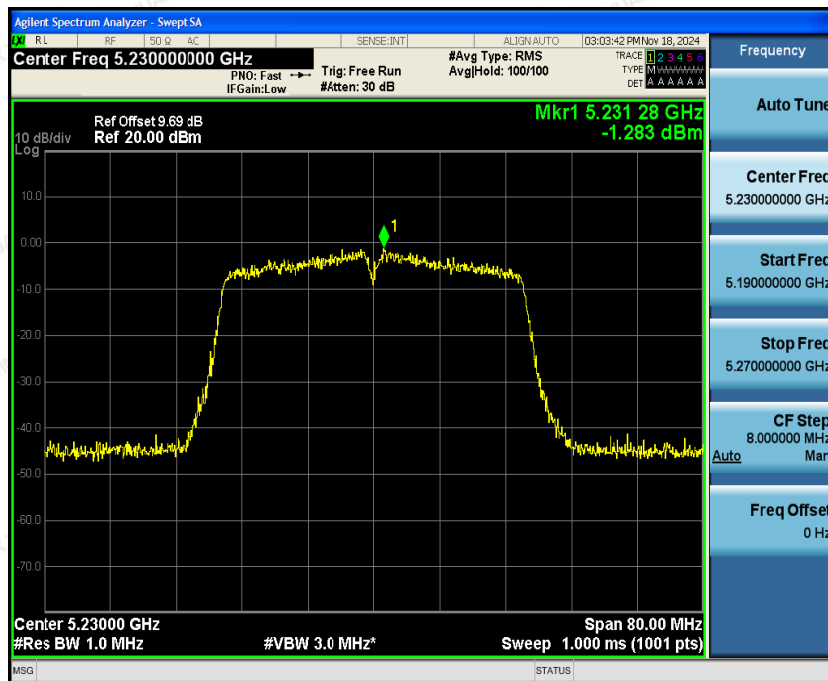
IEEE802.11n HT40 mode

5150~5250MHz

Low Channel

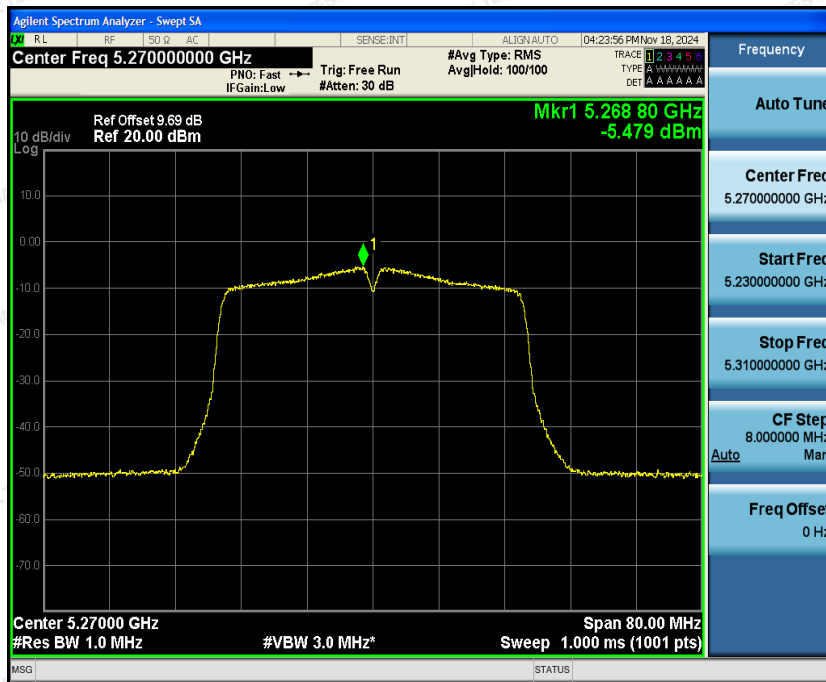


High Channel

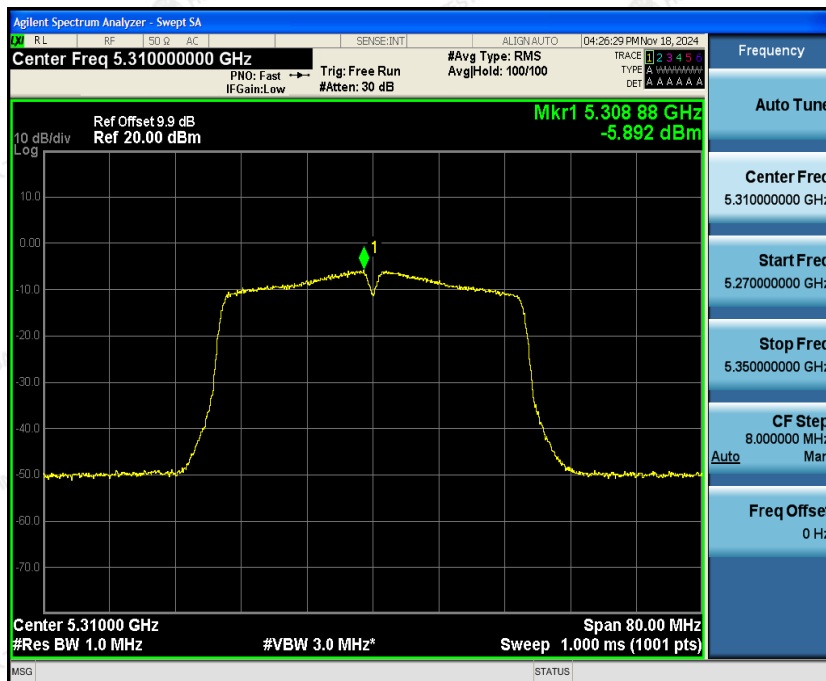




Low Channel



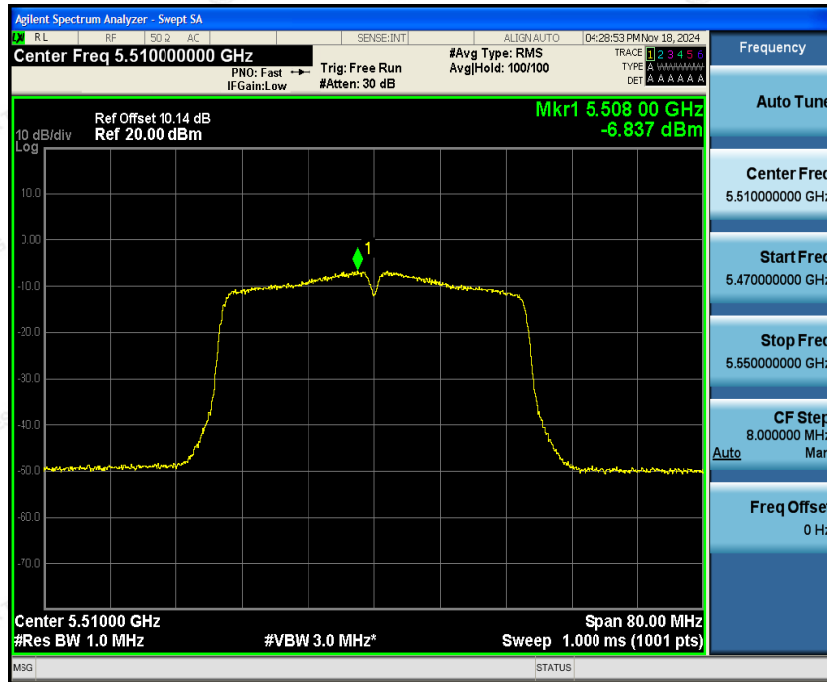
High Channel



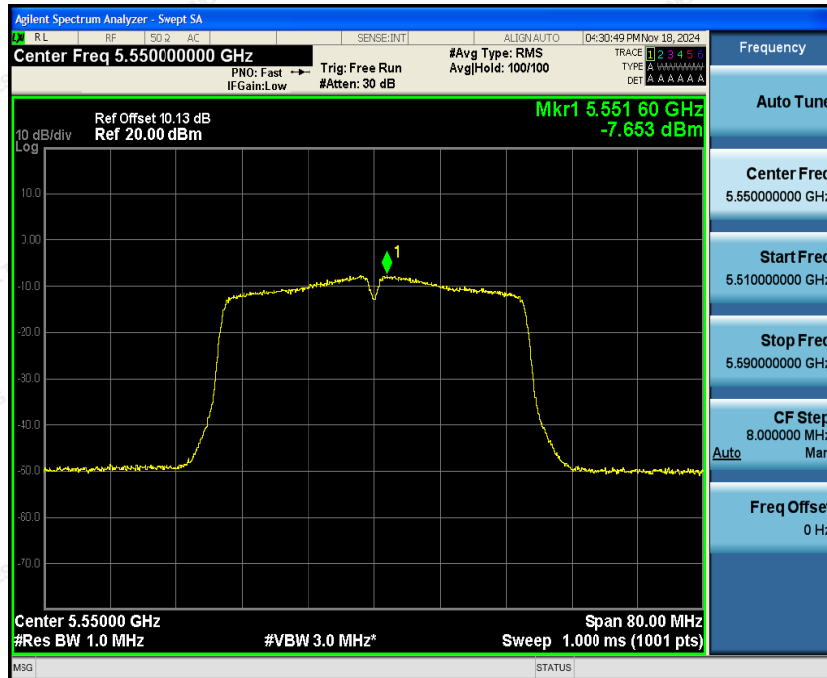


5470~5725MHz

Low Channel



Mid Channel





High Channel

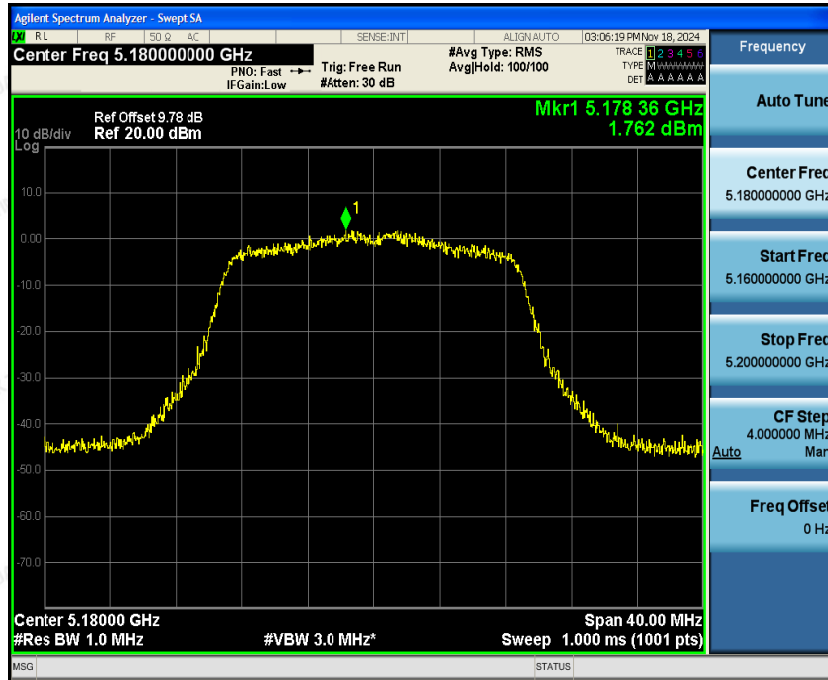




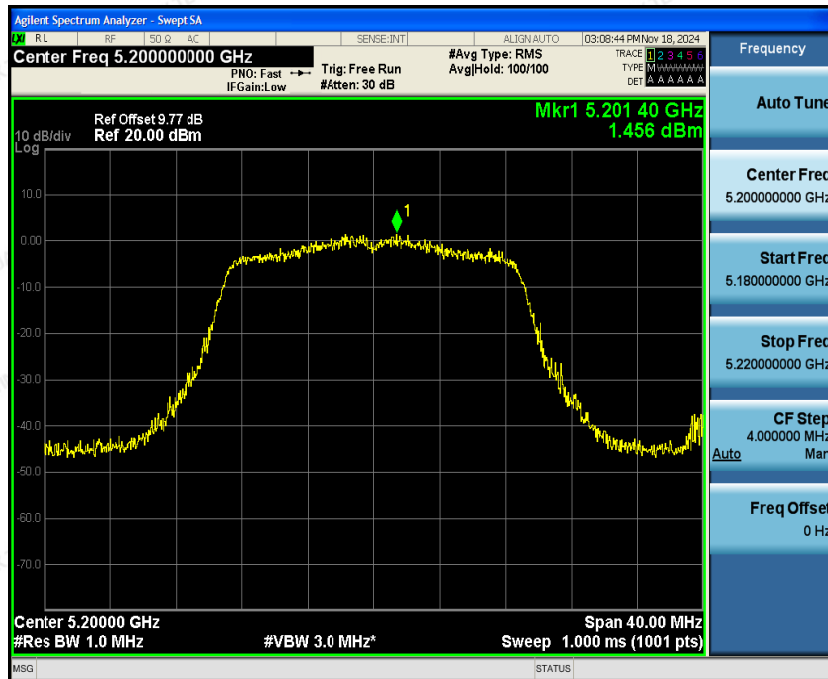
IEEE802.11ac HT20 mode

5150~5250MHz

Low Channel



Mid Channel





High Channel



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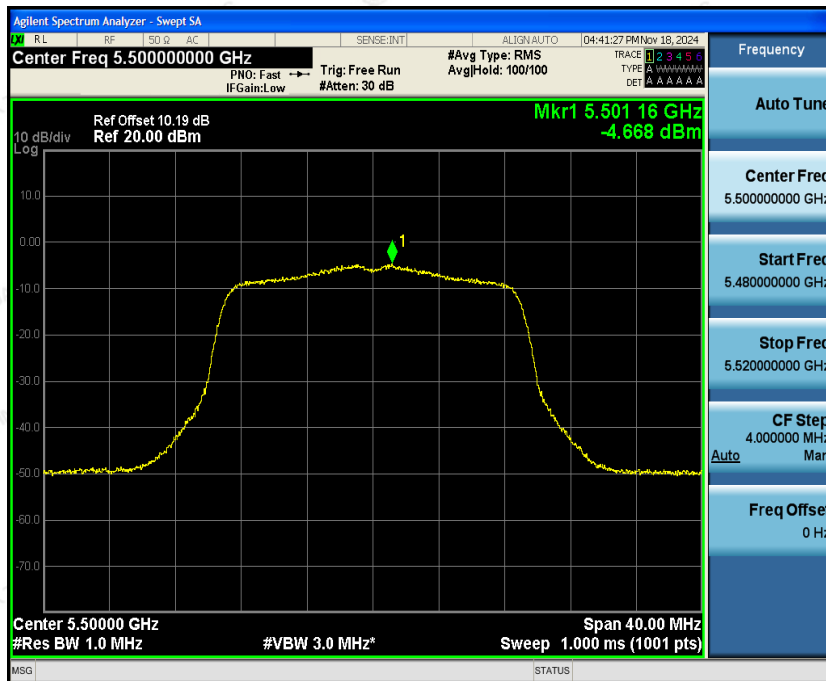


High Channel



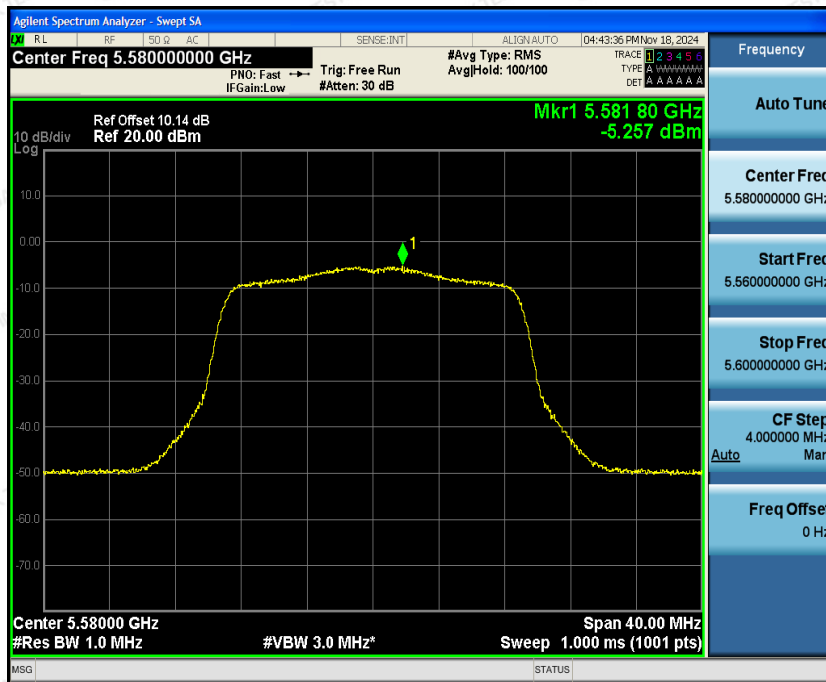
5470~5725MHz

Low Channel

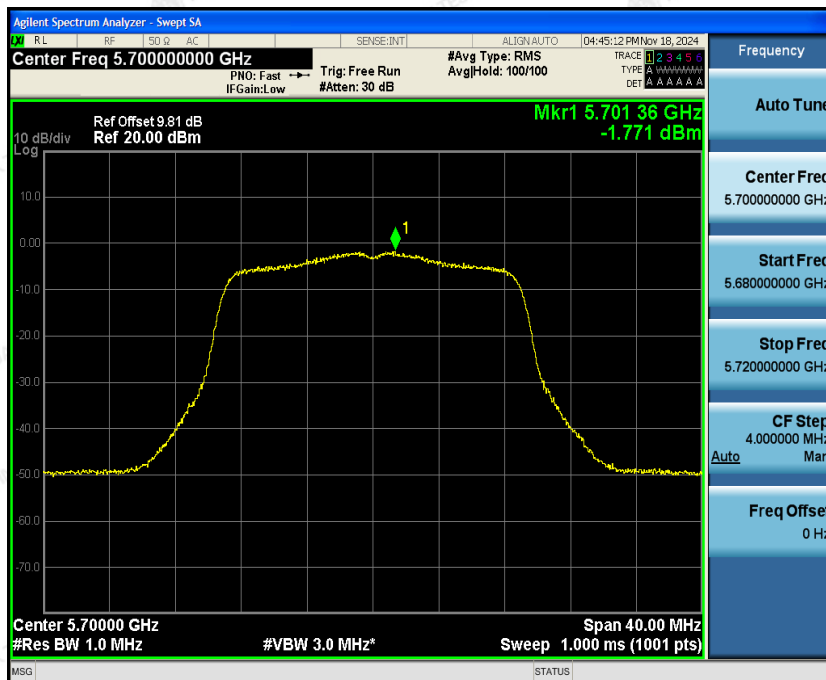




Mid Channel



High Channel

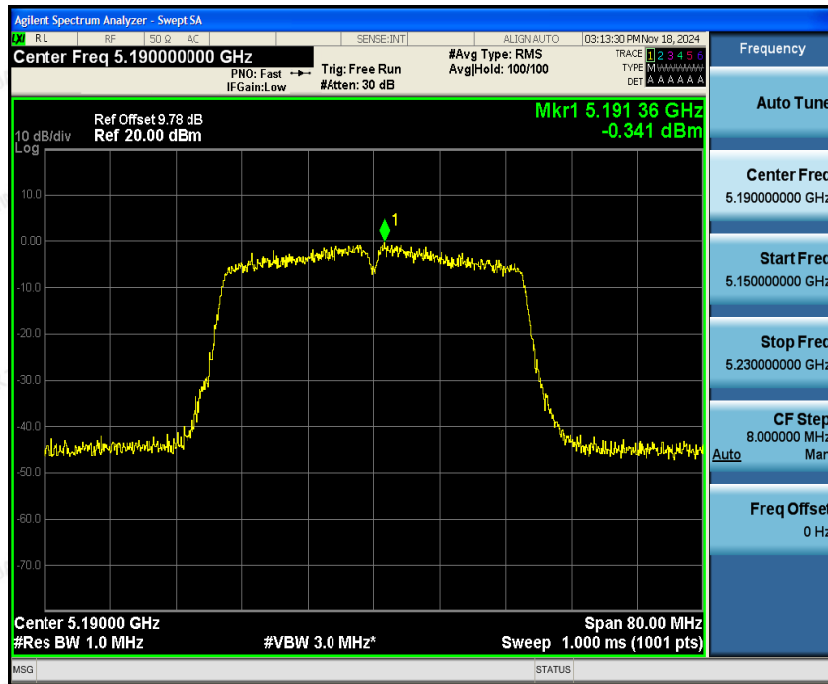




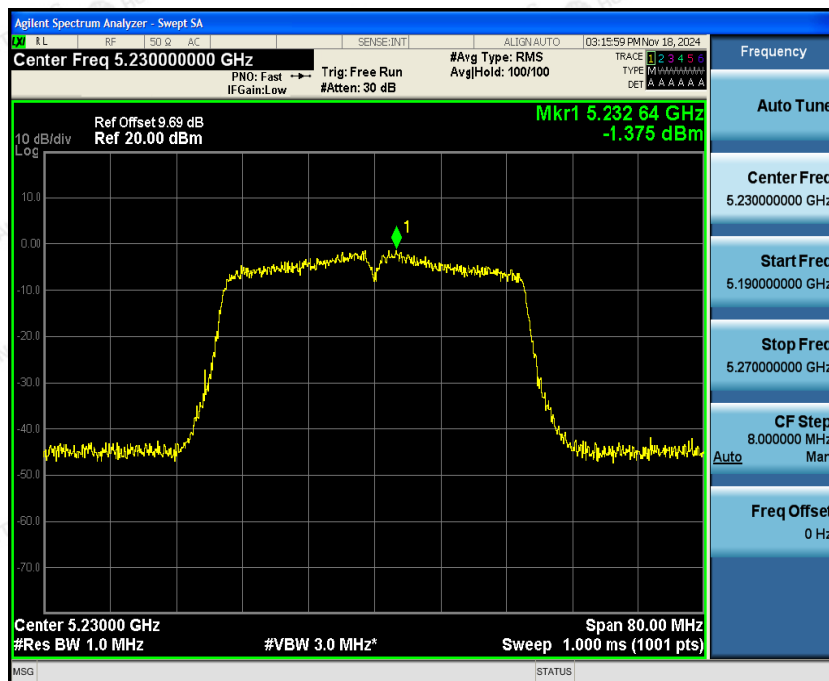
IEEE802.11ac HT40 mode

5150~5250MHz

Low Channel



High Channel





5250~5350MHz

Low Channel

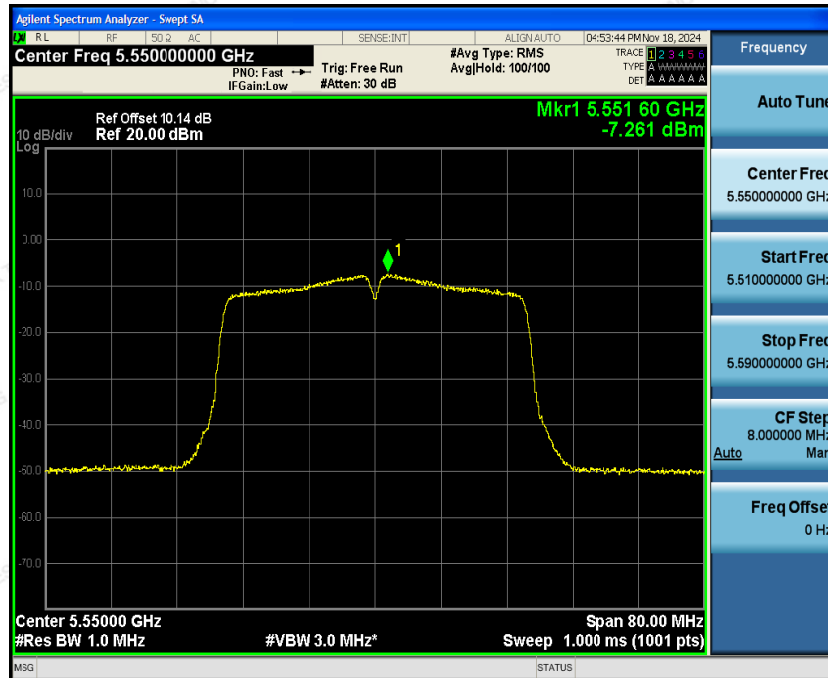


High Channel





Low Channel



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High Channel



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IEEE802.11ac HT80 mode

5150~5250MHz



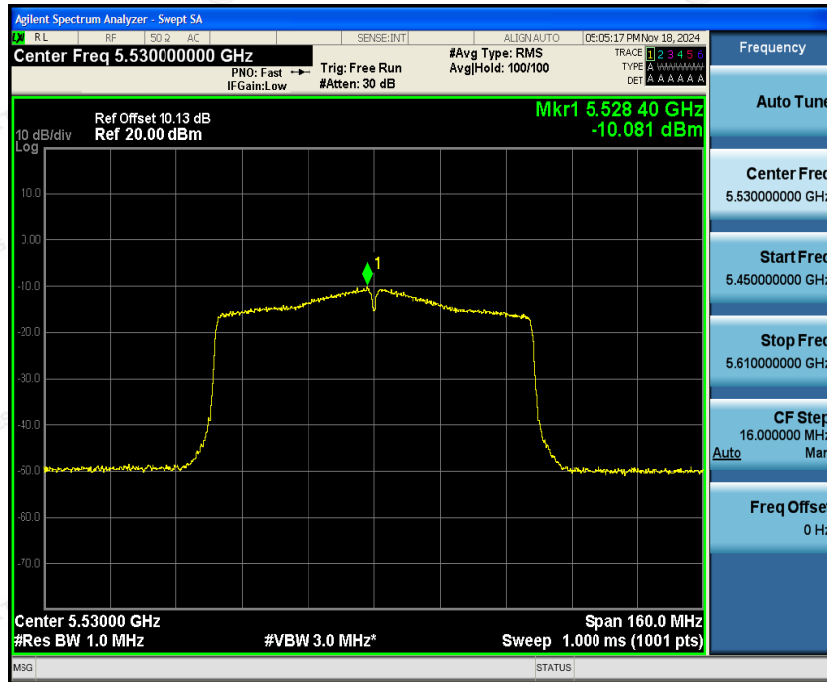
5250~5350MHz



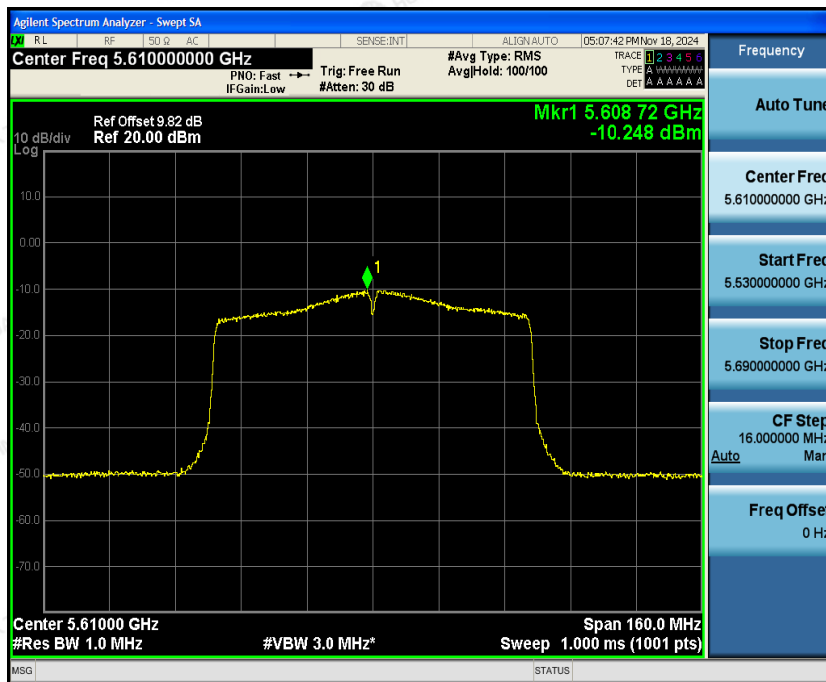


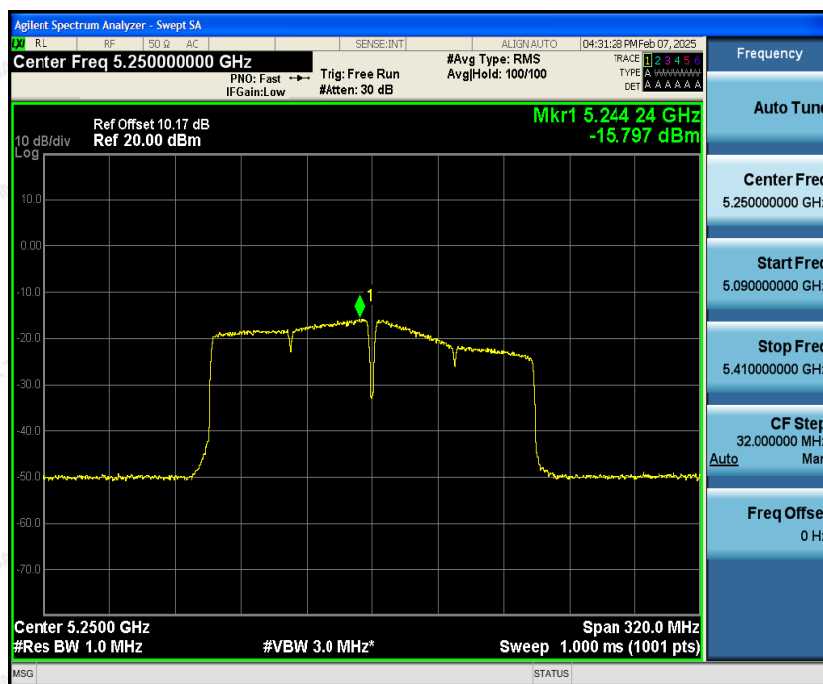
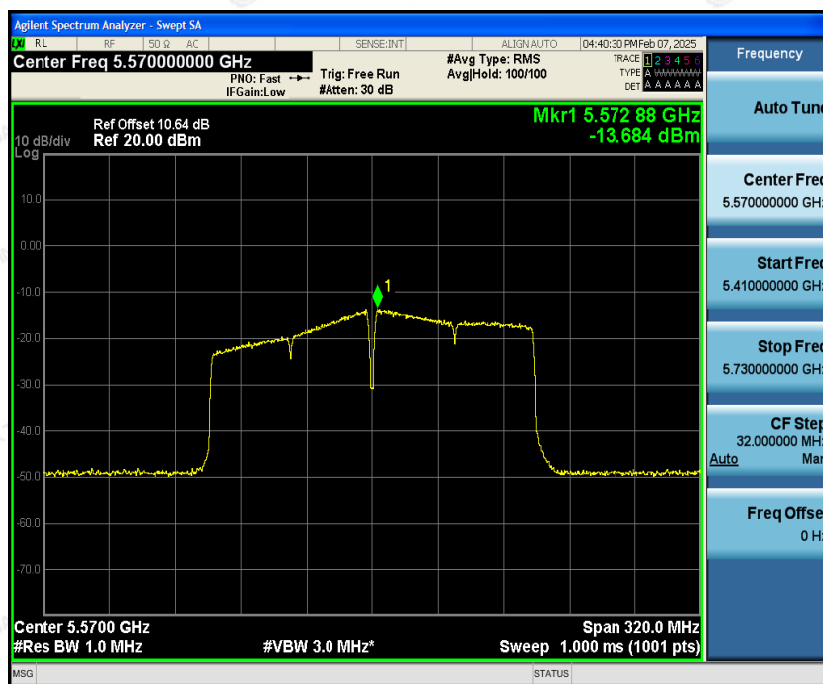
5470~5725MHz

Low Channel



High Channel



**IEEE802.11ac HT160 mode****5150~5350MHz****5470~5725MHz**

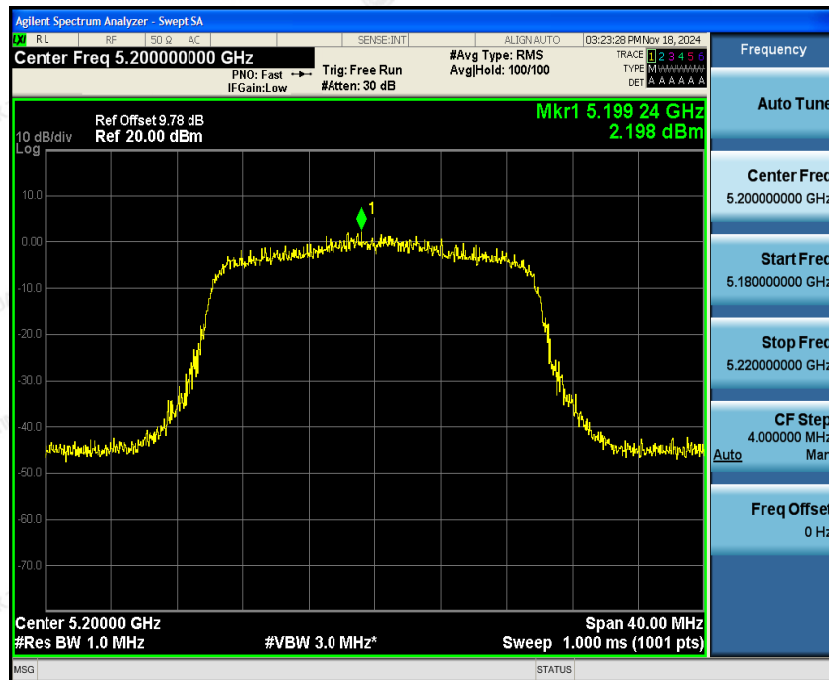


5150~5250MHz

Low Channel

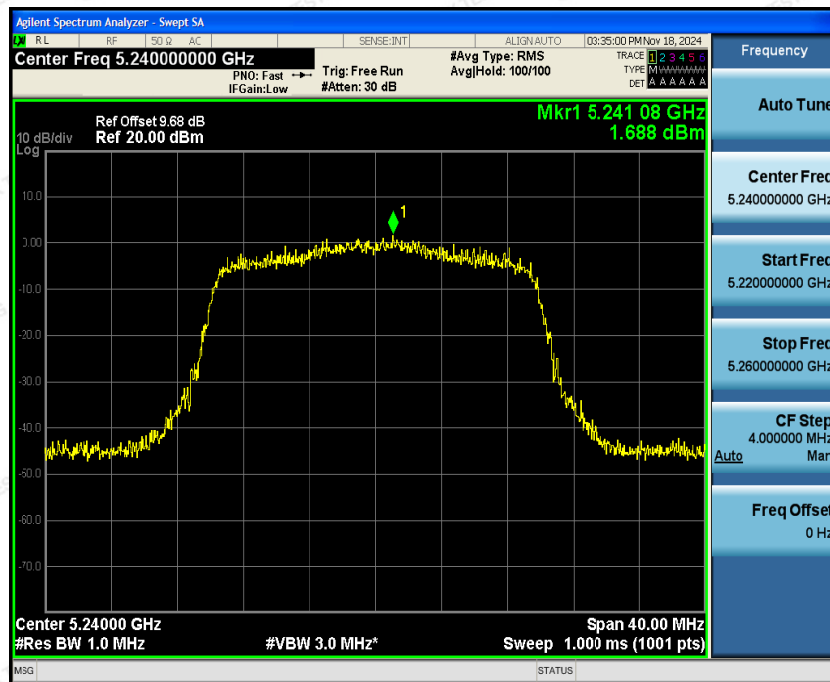


Mid Channel





High Channel



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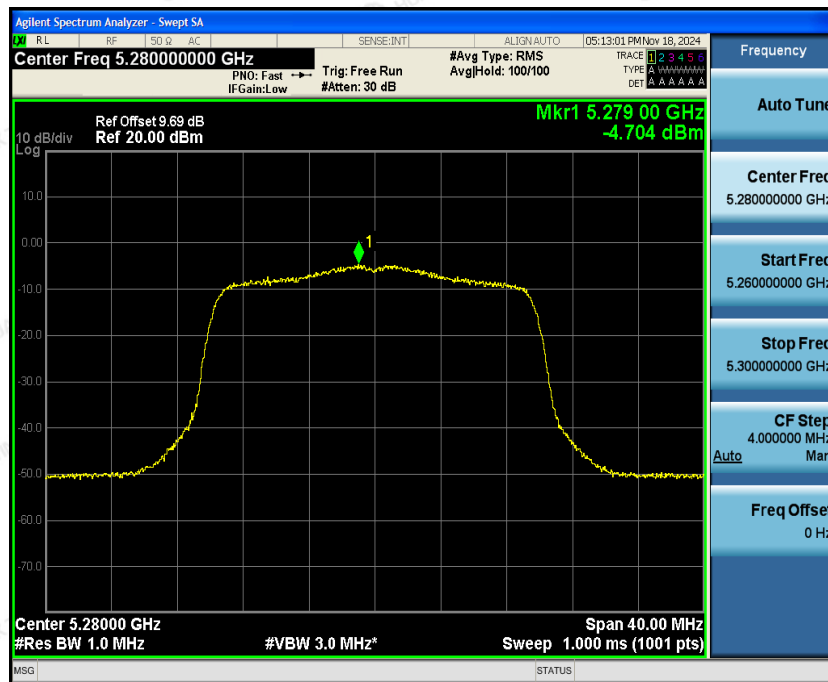


5250~5350MHz

Low Channel

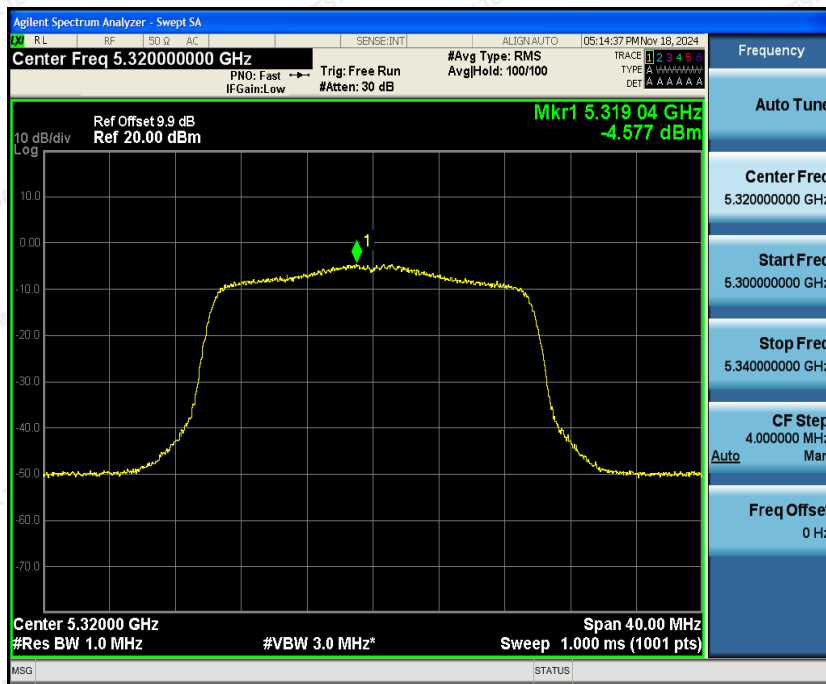


Mid Channel



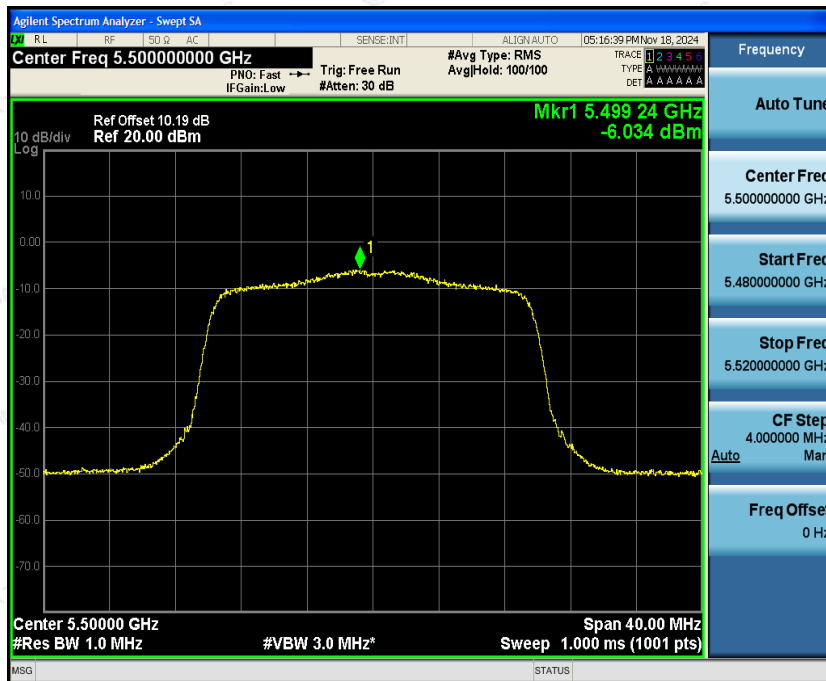


High Channel



5470~5725MHz

Low Channel





Agilent Spectrum Analyzer - Swept SA

IM RL RF 50 Q AC SENSE:INT ALIGN:AUTO 05:18:36 PM Nov 18, 2024

Center Freq 5.58000000 GHz

PNO: Fast → Trg: Free Run #Avg Type: RMS
IF Gain: Low #Atten: 30 dB Avg Hold: 100/100

TRACE 1 2 3 4 5 6
TYPE A WWWWWWWW
DET AAAAAA

Ref Offset 10.13 dB
Ref 20.00 dBm

Mkr1 5.579 44 GHz
-5.414 dBm

Center 5.58000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Span 40.00 MHz
Sweep 1.000 ms (1001 pts)

MSG STATUS

Agilent Spectrum Analyzer - Swept SA

Center Freq 5.700000000 GHz

PNO: Fast → Trig: Free Run

IFGain: Low #Att: 30 dB

#Avg Type: RMS

Avg/Hold: 100/100

TRACE 1 2 3 4 5

TYPE A WAAAAA

DET A A A A A

Frequency

Auto Tune

Center Freq 5.70000000 GHz

Start Freq 5.68000000 GHz

Stop Freq 5.72000000 GHz

CF Step 4.000000 MHz

Auto Man

Freq Offset 0 Hz

Ref Offset 9.82 dB

Ref 20.00 dBm

Mkr1 5.701 20 GHz

-2.674 dBm

Center 5.700000 GHz

#Res BW 1.0 MHz

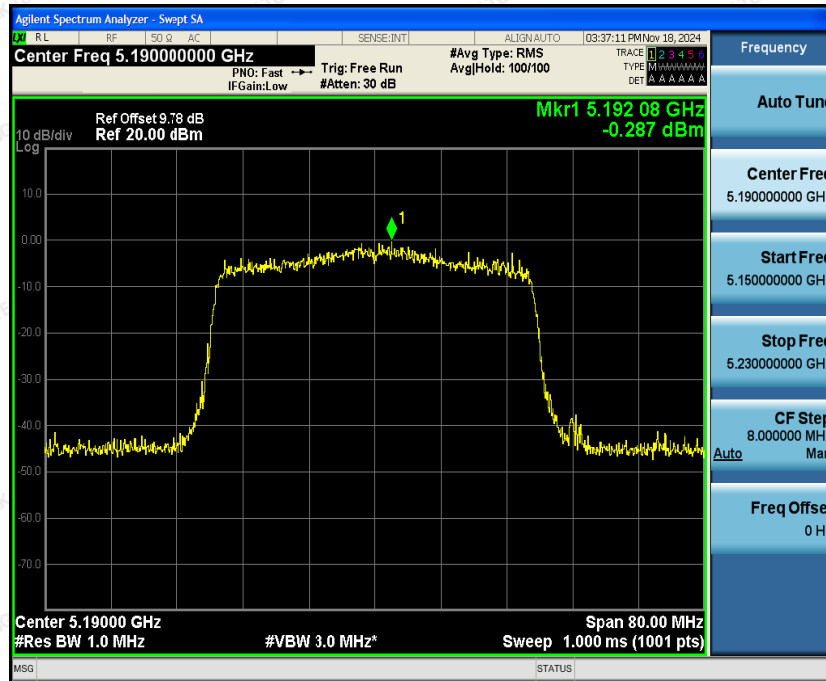
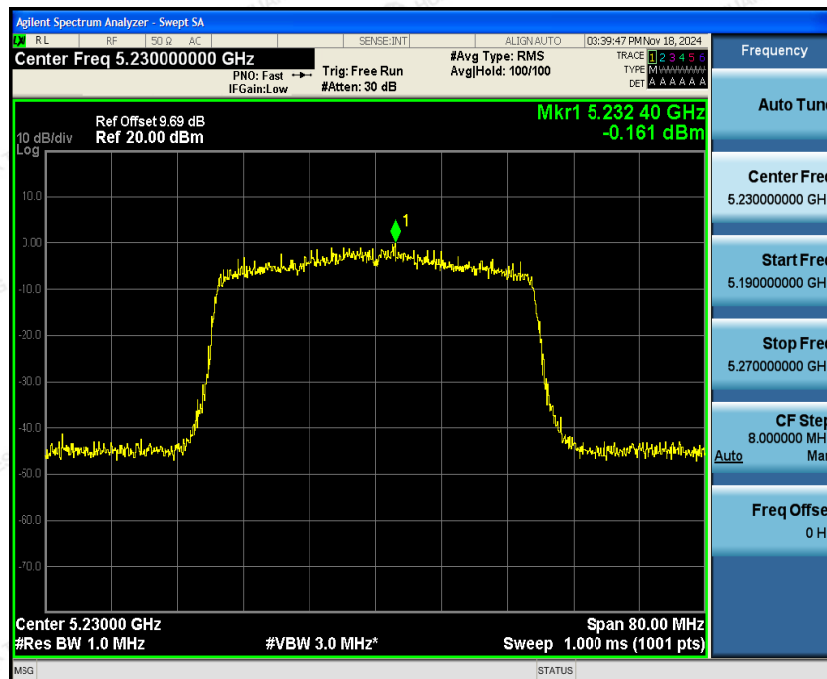
#VBW 3.0 MHz*

Span 40.00 MHz

Sweep 1.000 ms (1001 pts)

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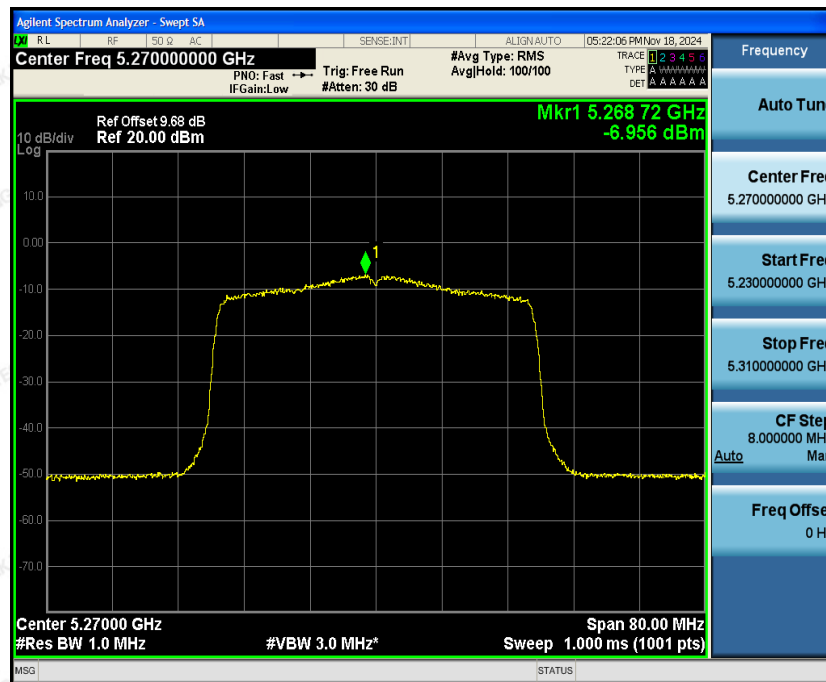
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

**IEEE802.11ax HE40 mode****5150~5250MHz****Low Channel****High Channel**

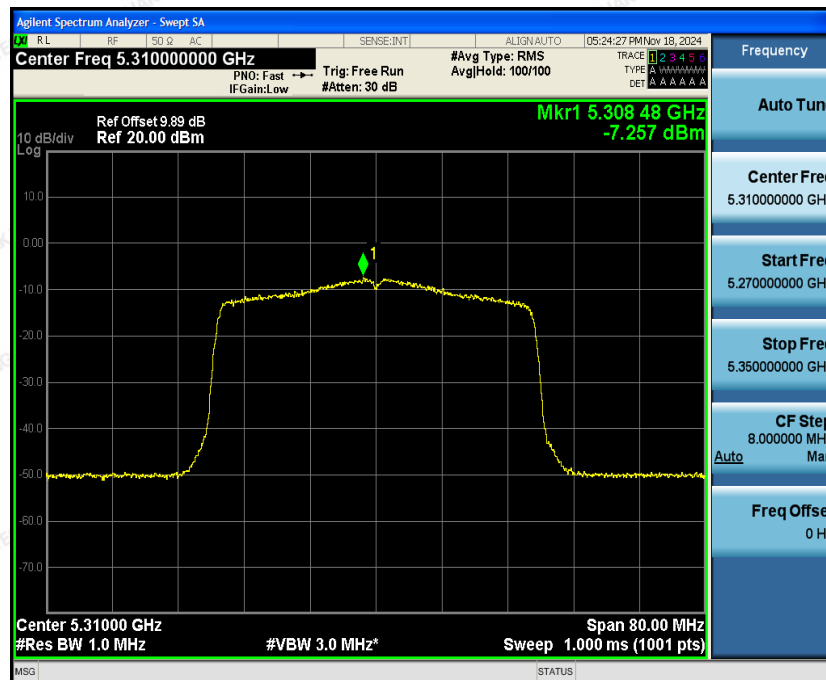


5250~5350MHz

Low Channel



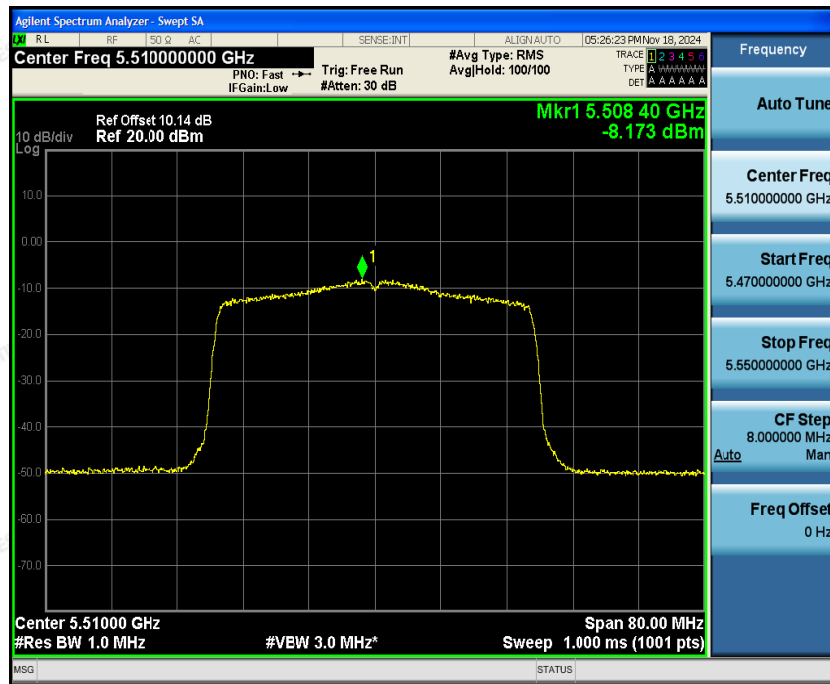
High Channel



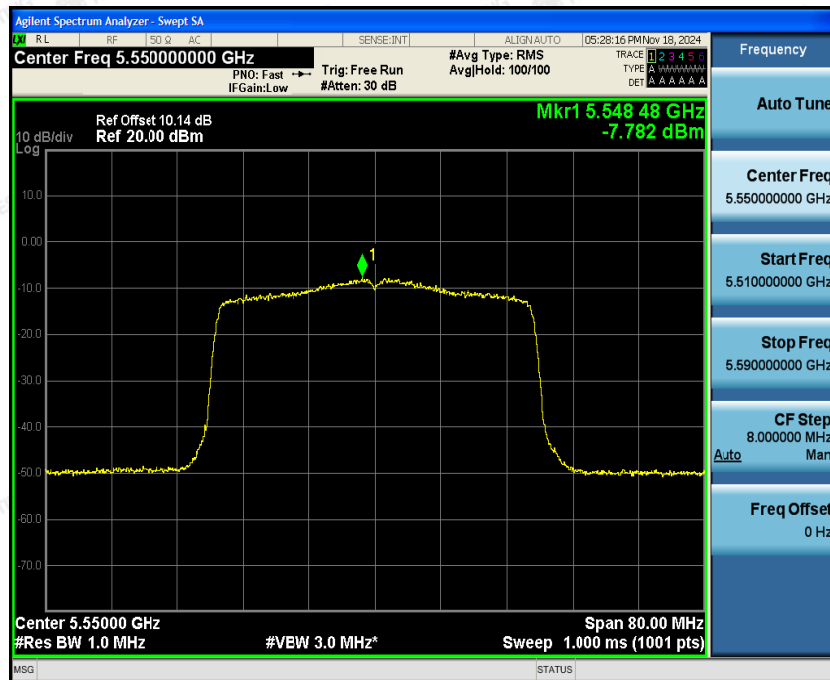


5470~5725MHz

Low Channel

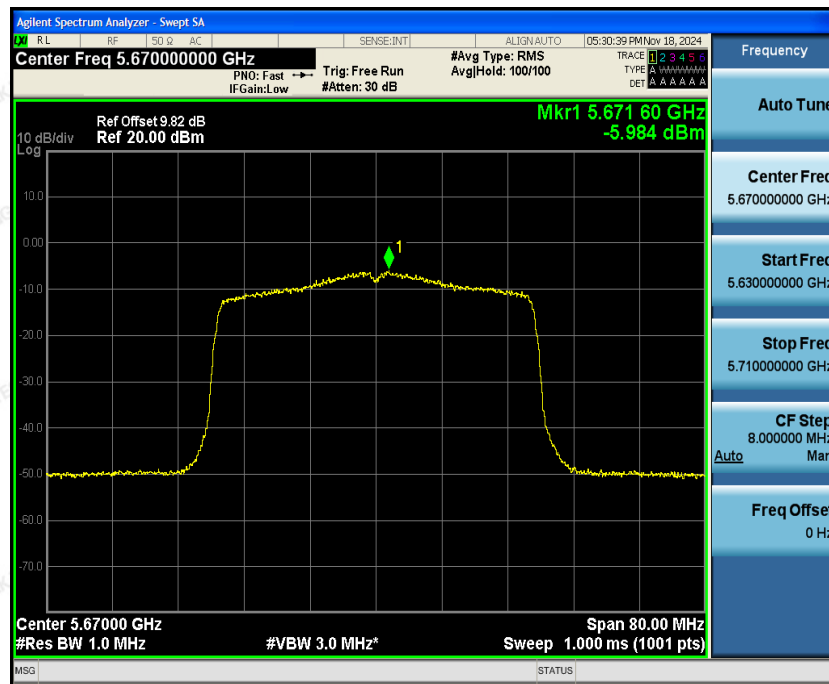


Mid Channel





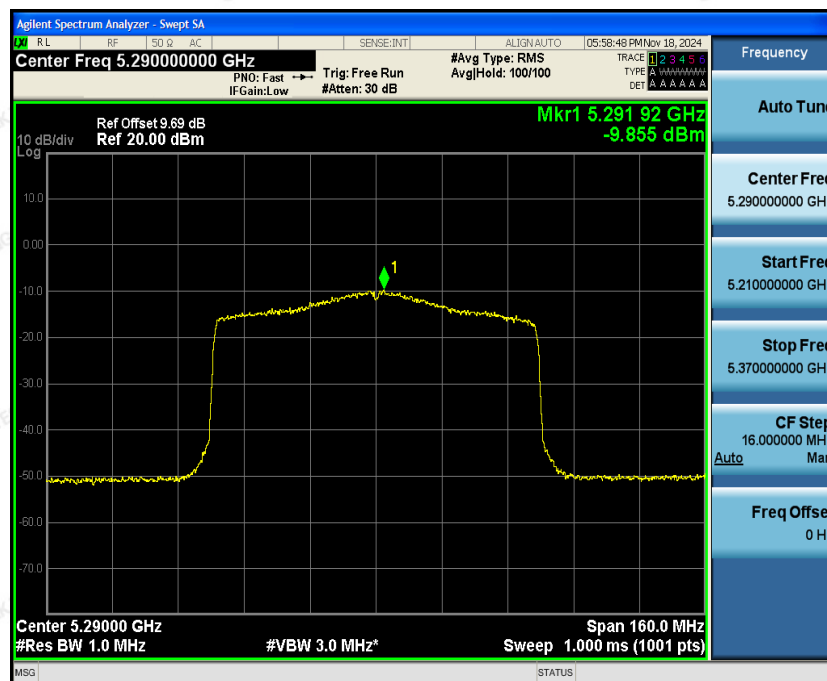
High Channel



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**IEEE802.11ax HE80 mode****5150~5250MHz****5250~5350MHz**

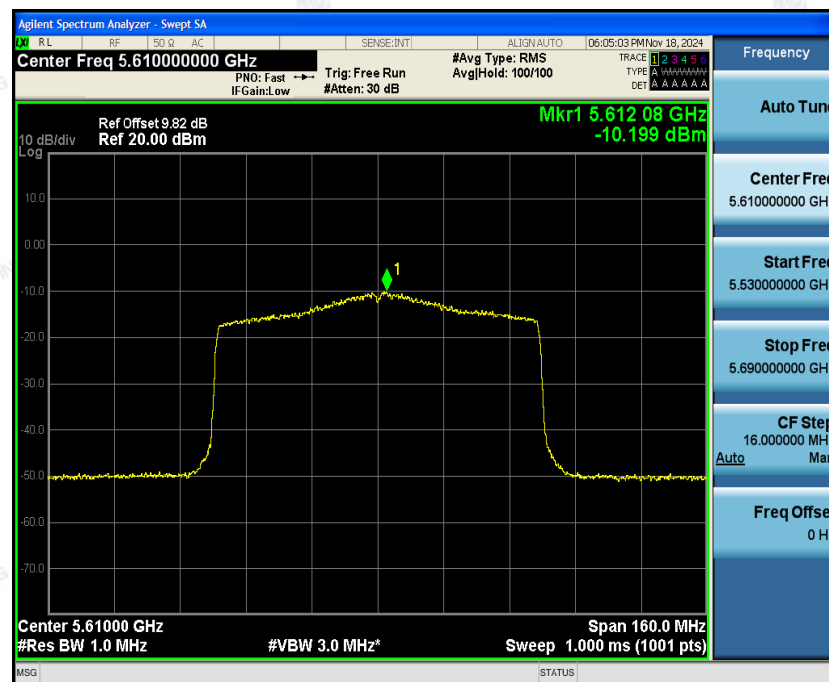
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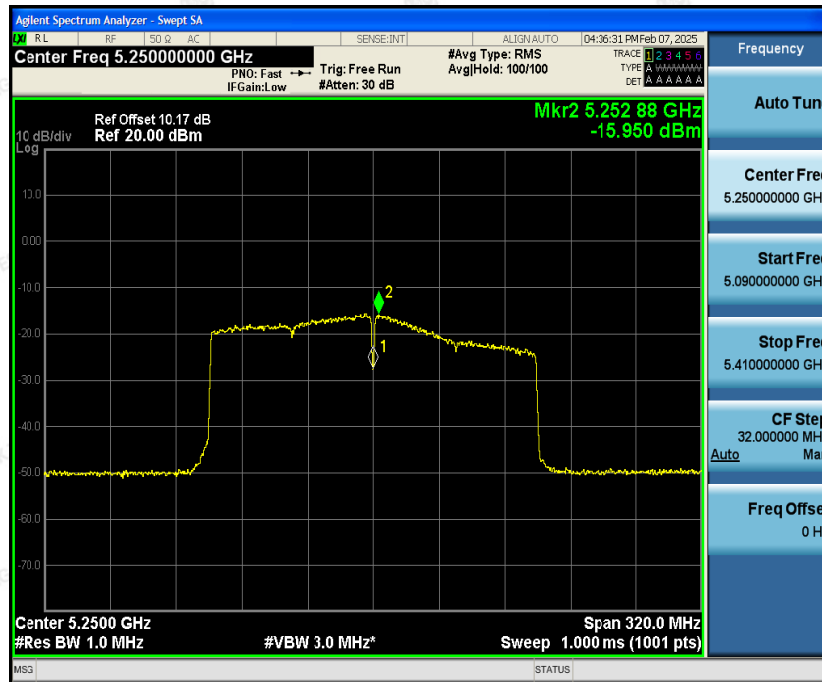
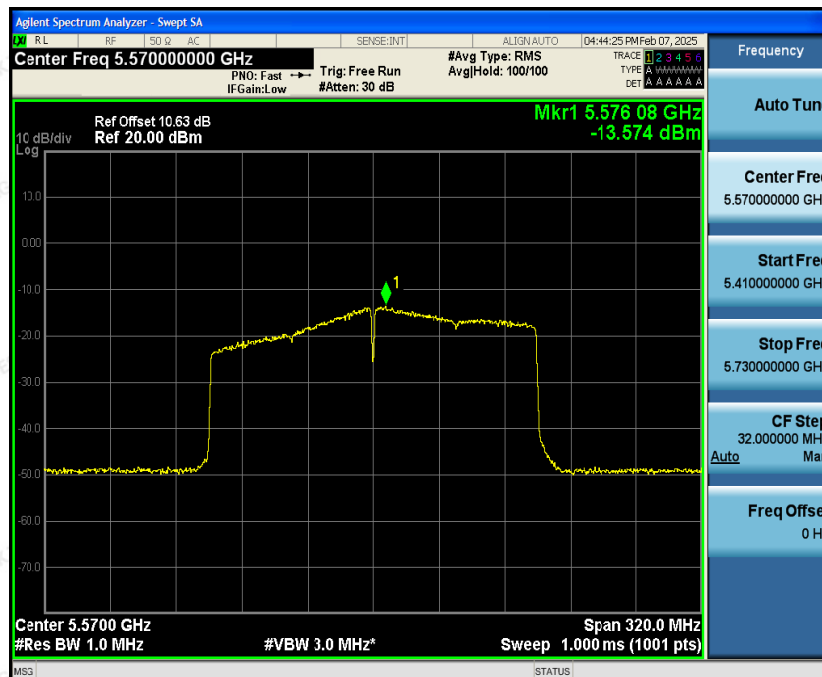
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



Low Channel



Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

**IEEE802.11ax HE160 mode****5150~5350MHz****5470~5725MHz**

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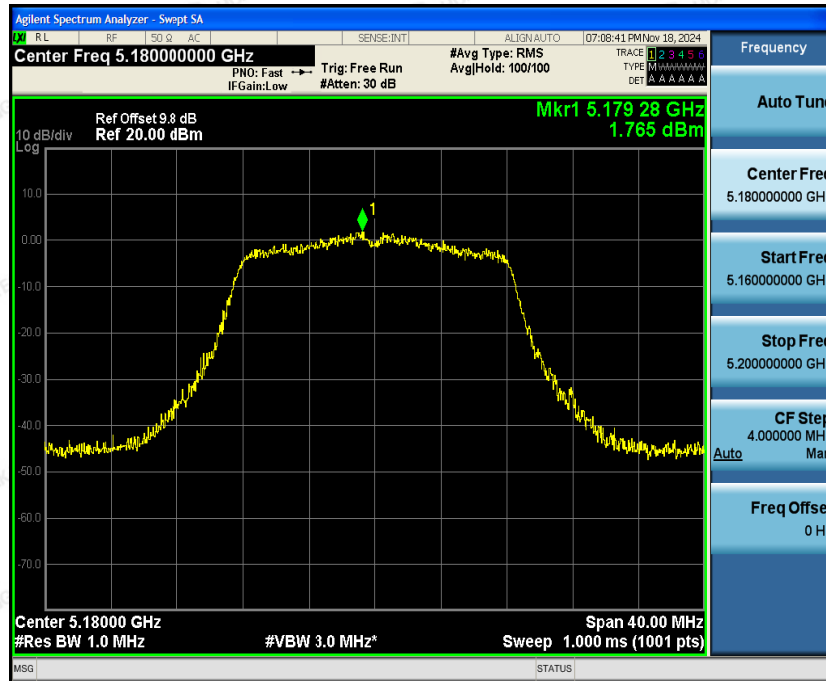
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



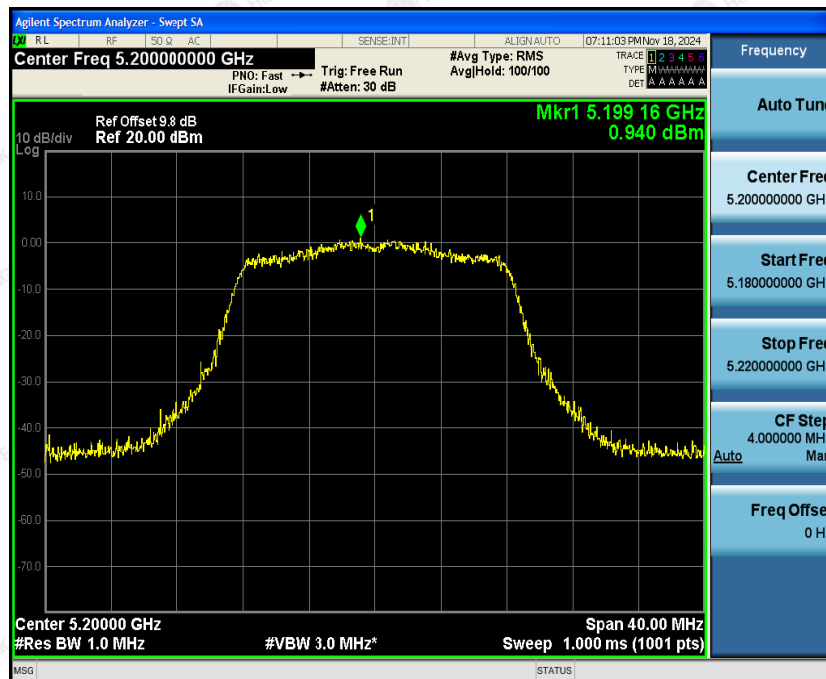
Antenna 2
IEEE802.11a mode:

5150~5250MHz

Low Channel



Mid Channel





High Channel



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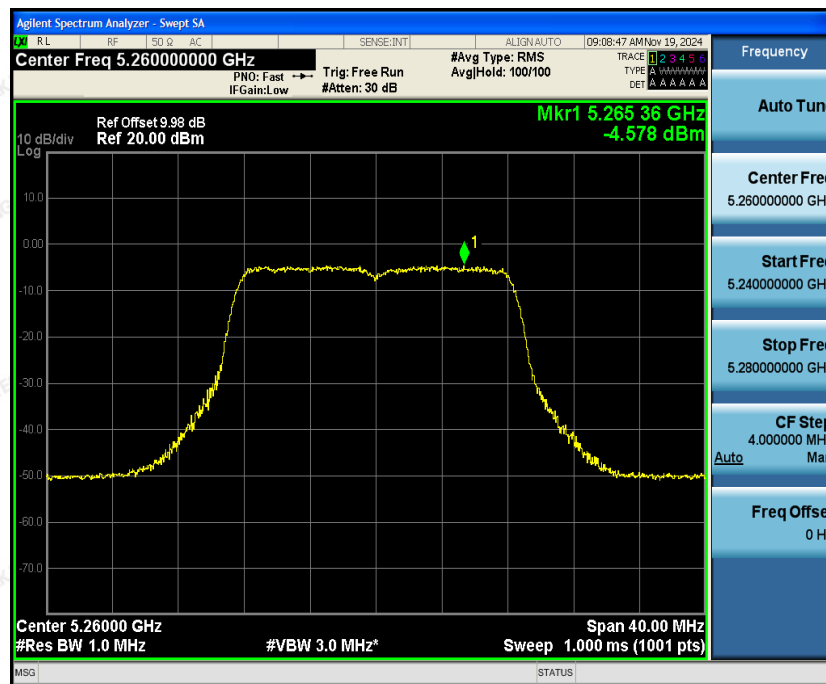
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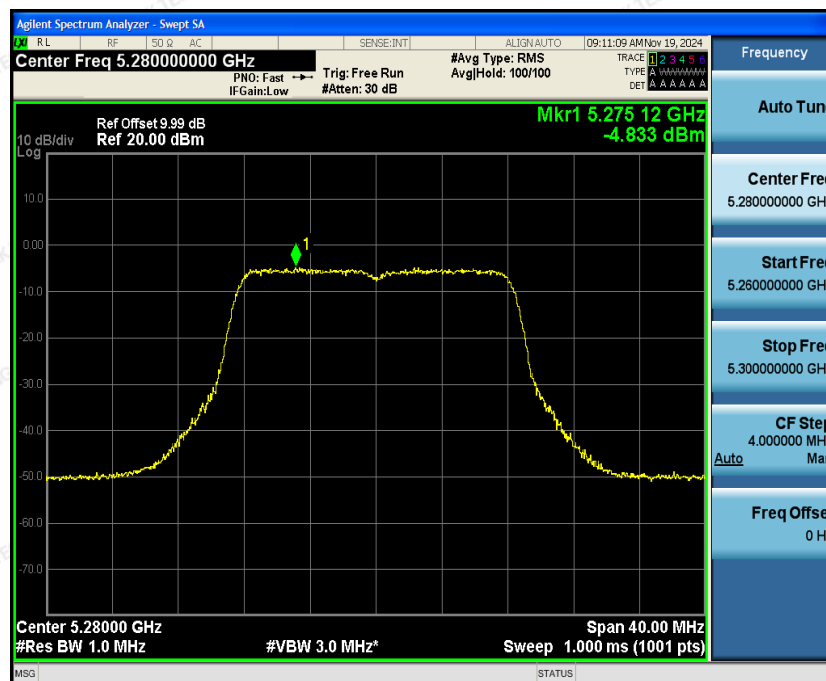


5250~5350MHz

Low Channel

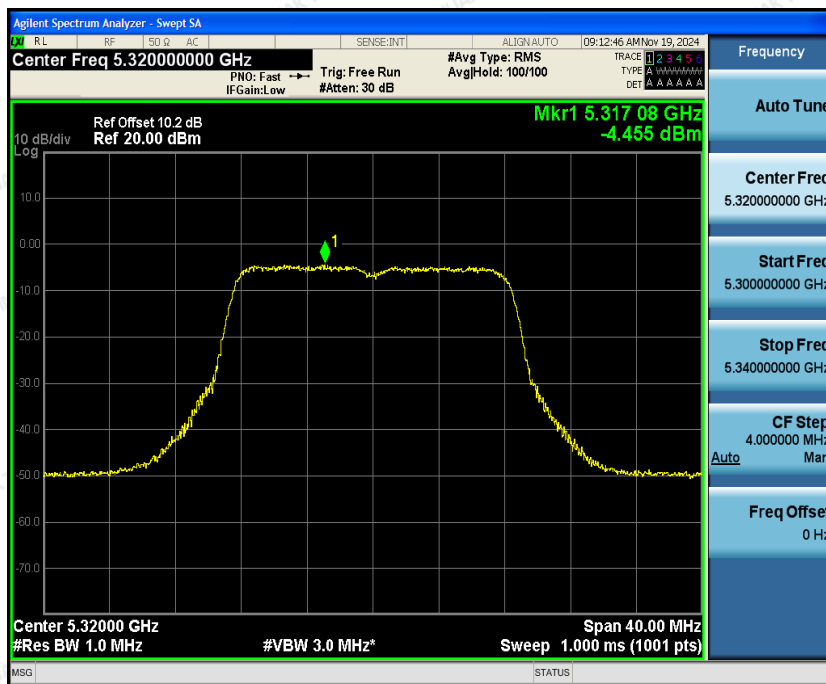


Mid Channel



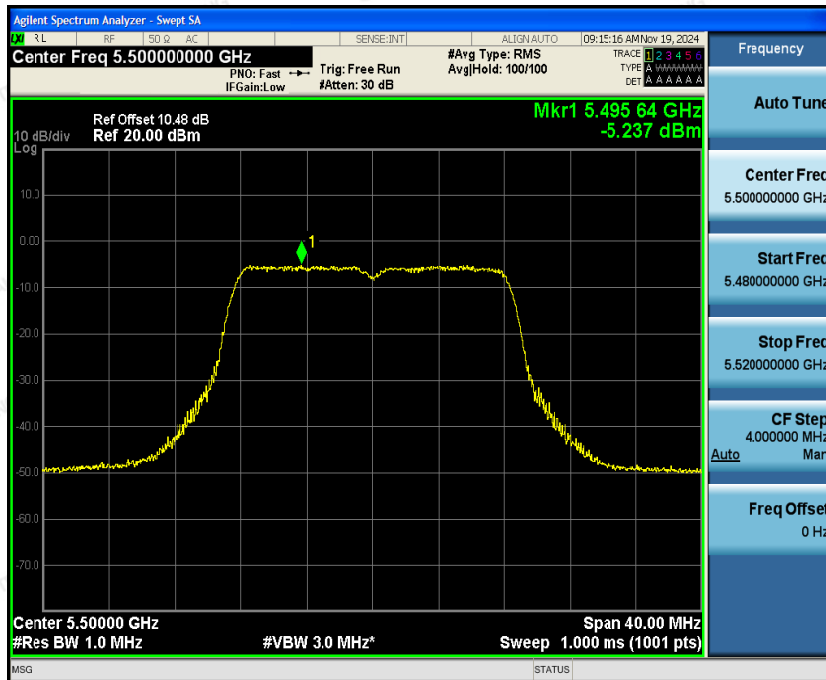


High Channel



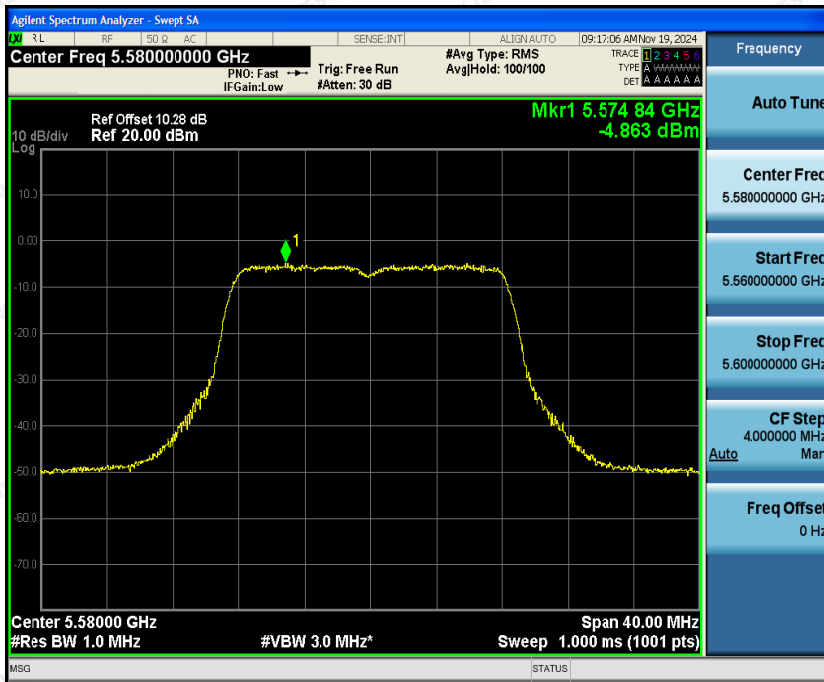
5470~5725MHz

Low Channel

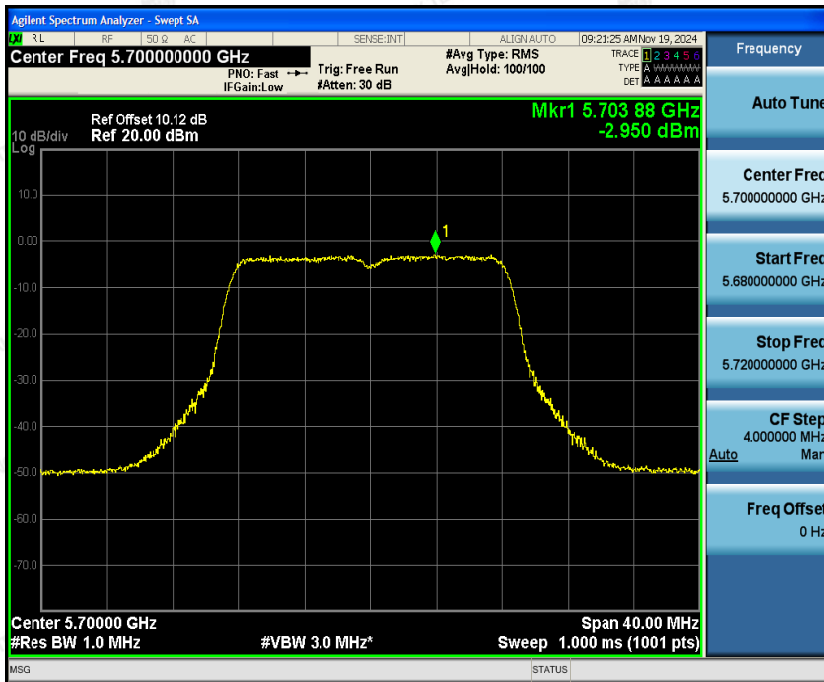




Mid Channel



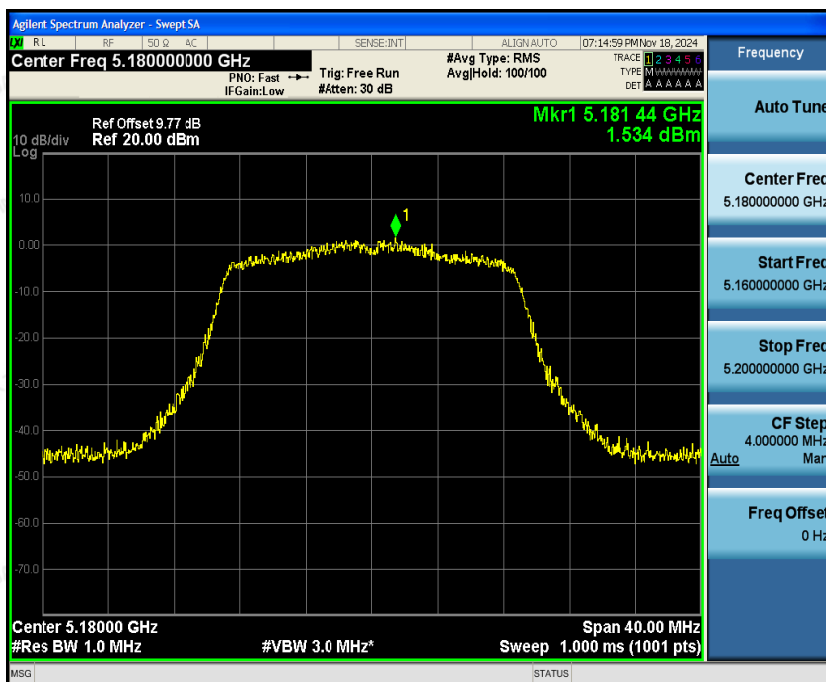
High Channel



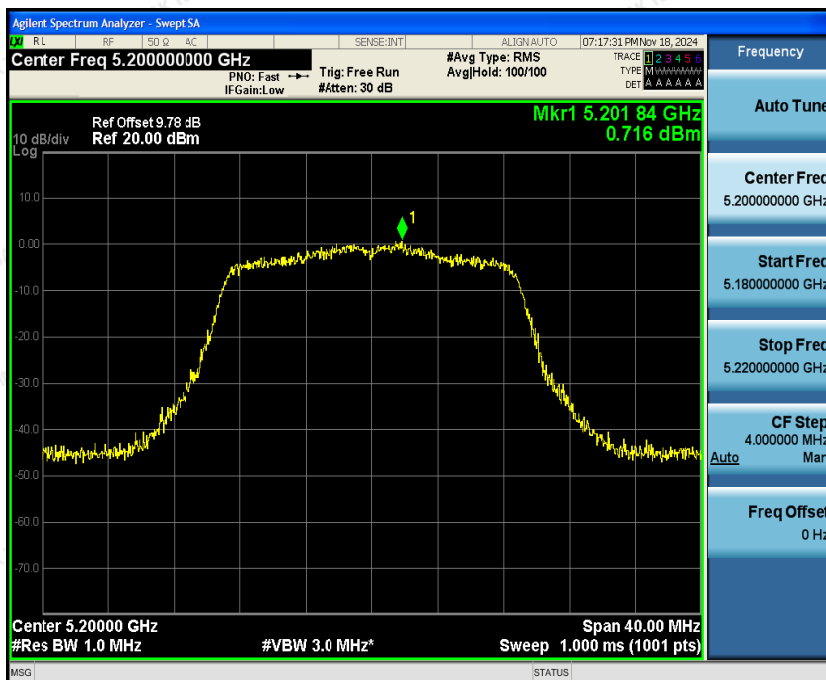
IEEE802.11n HT20 mode

5150~5250MHz

Low Channel



Mid Channel



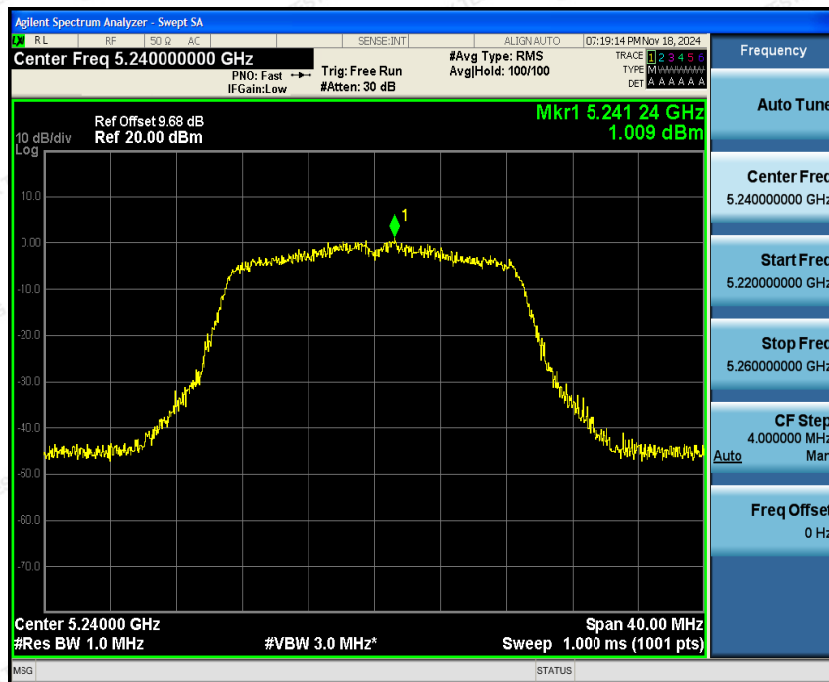
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High Channel



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5250~5350MHz

Low Channel

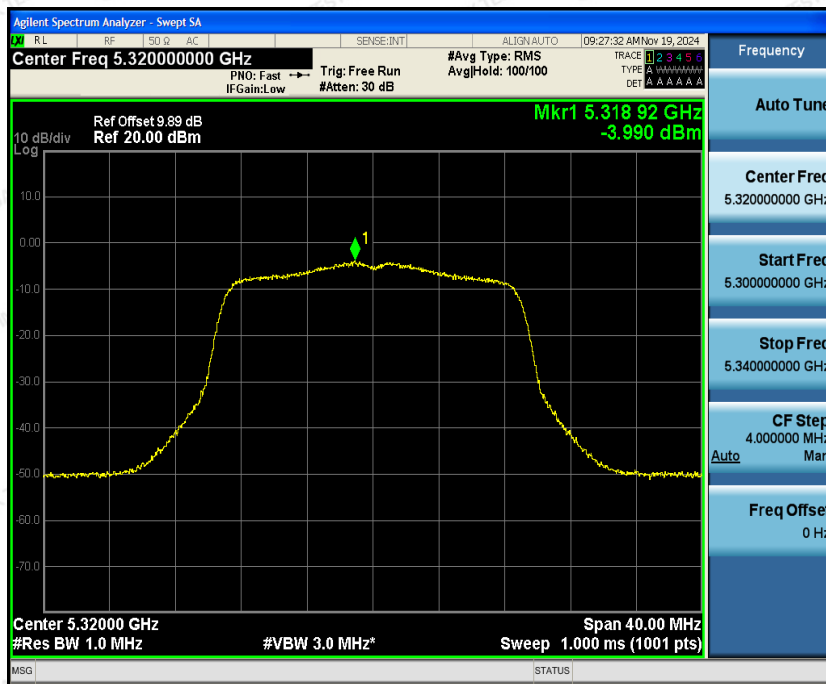


Mid Channel



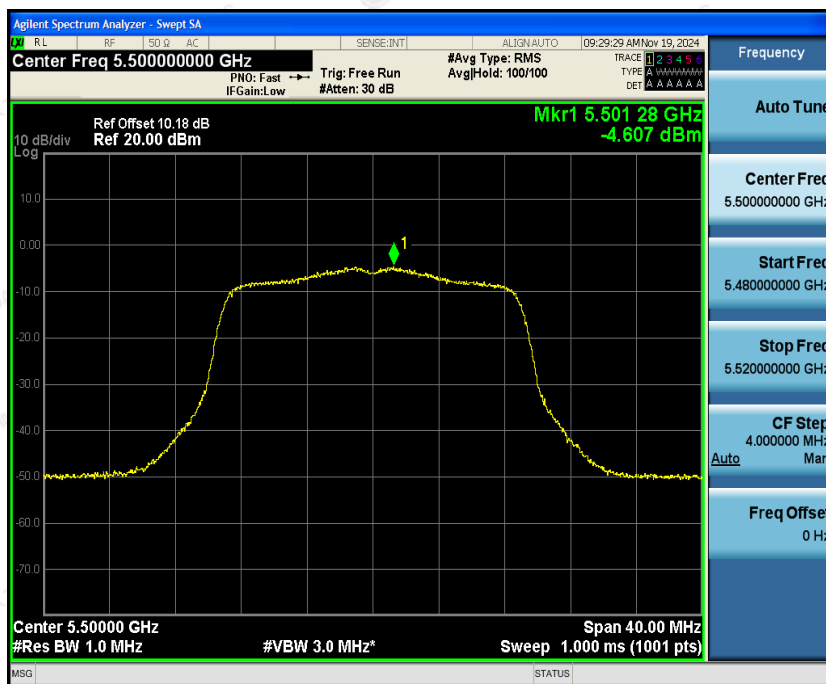


High Channel



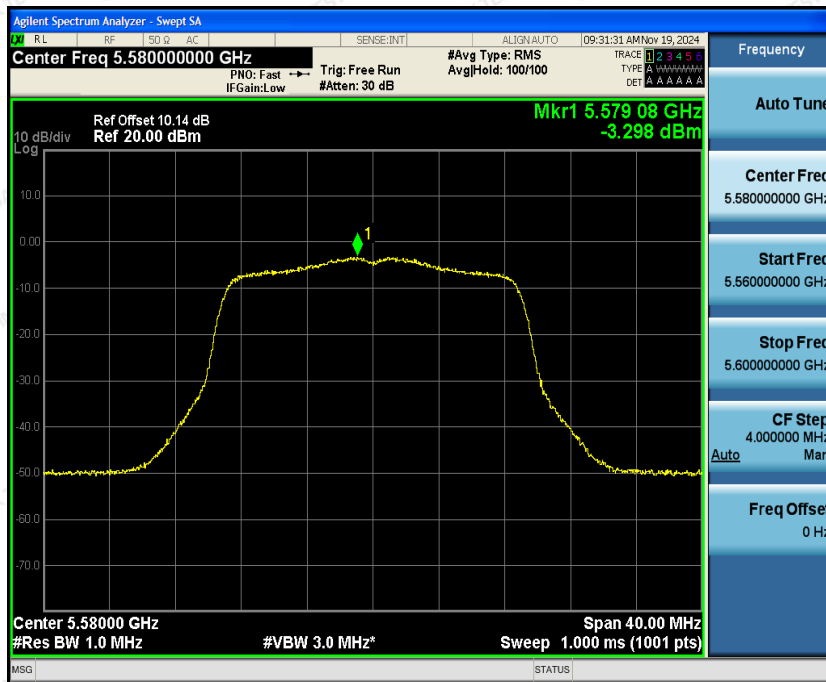
5470~5725MHz

Low Channel

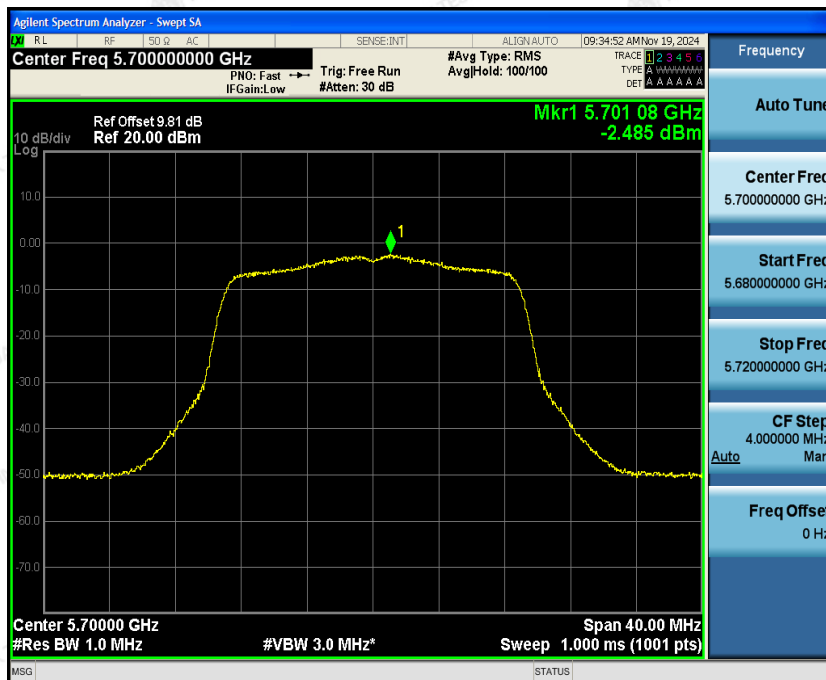




Mid Channel



High Channel



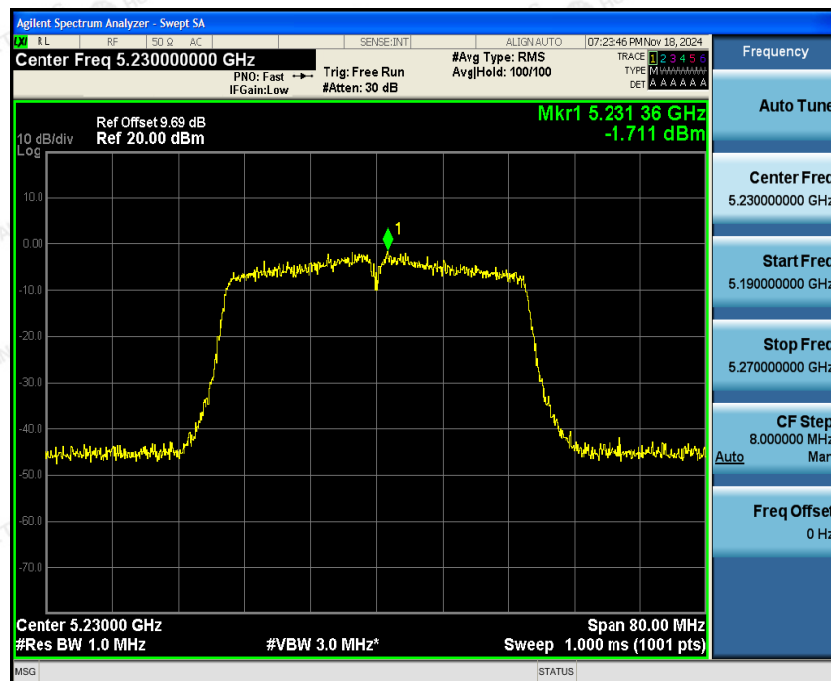
IEEE802.11n HT40 mode

5150~52500MHz

Low Channel



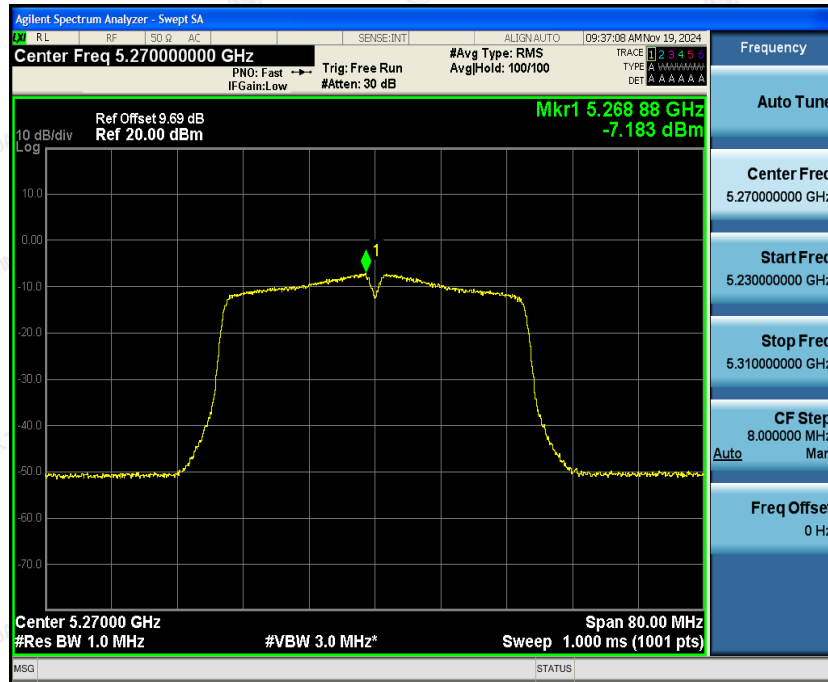
High Channel



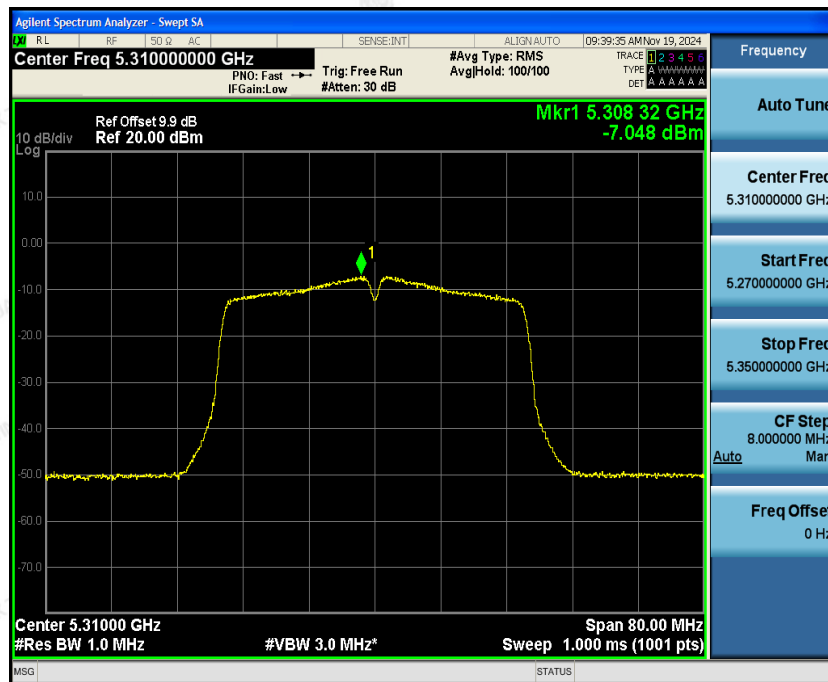


5250~5350MHz

Low Channel

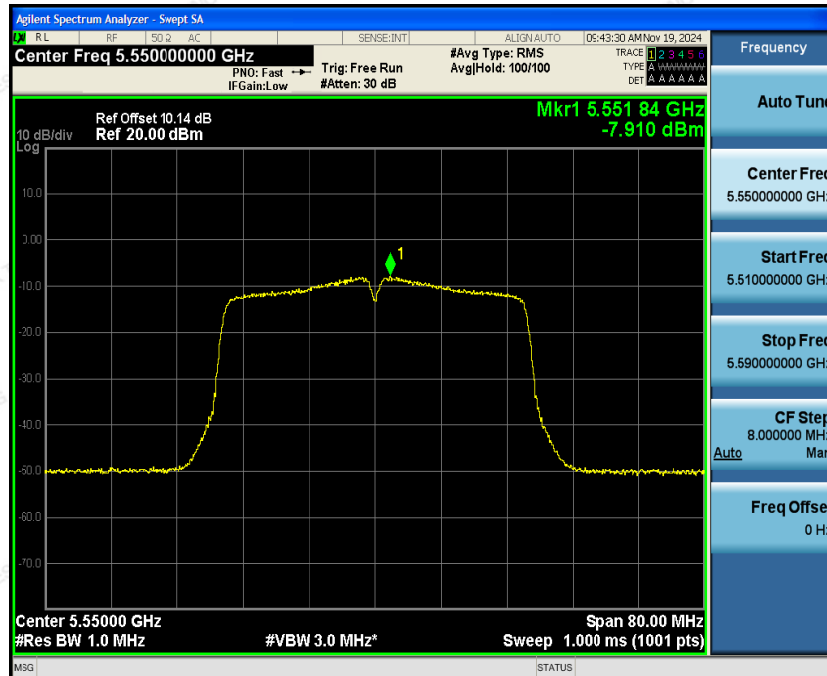


High Channel





Low Channel



Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



High Channel

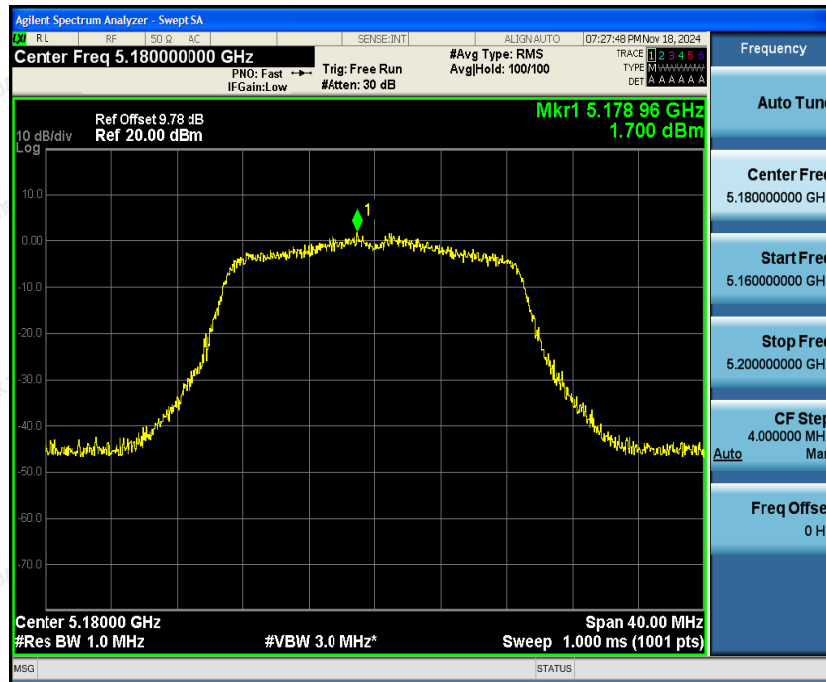




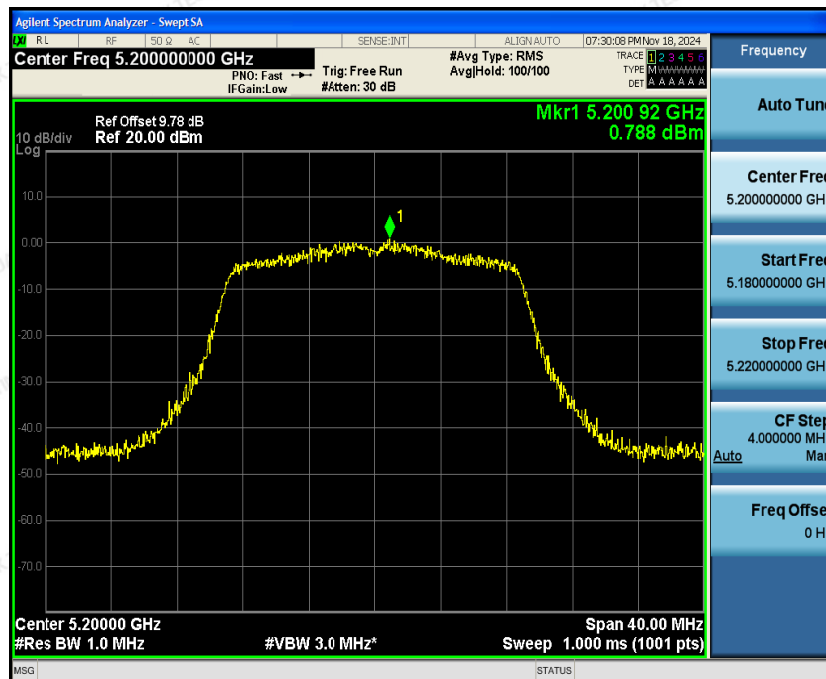
IEEE802.11ac HT20 mode

5150~5250MHz

Low Channel

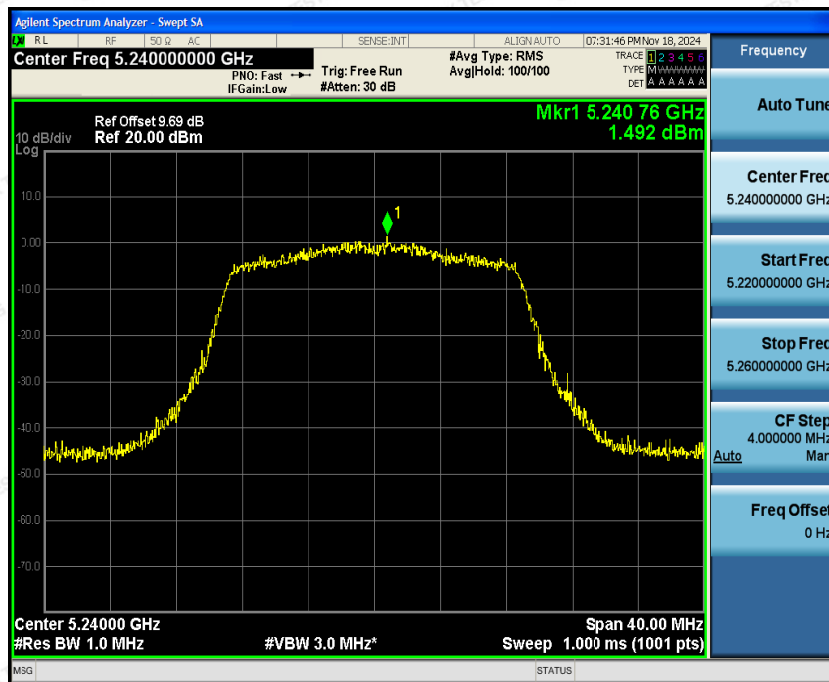


Mid Channel



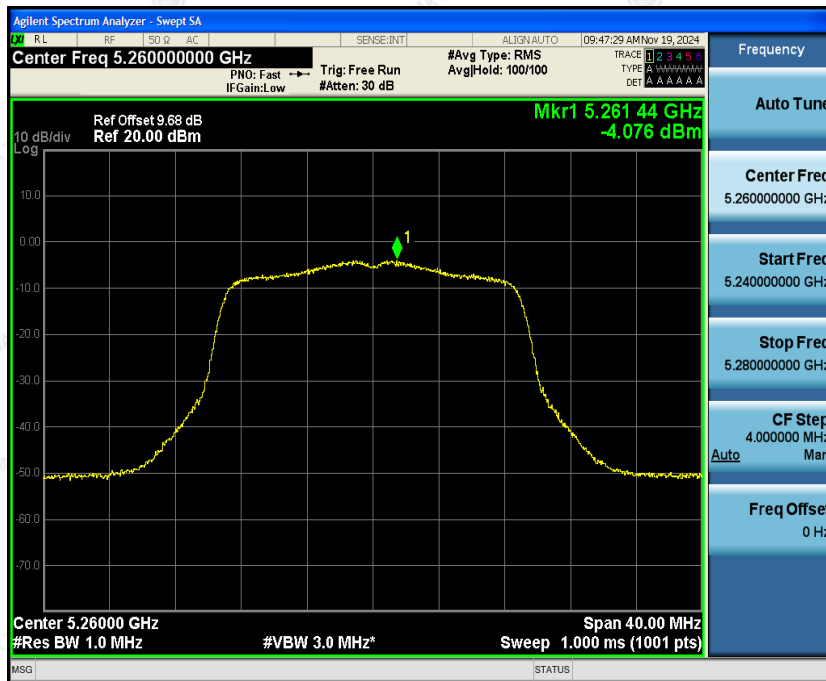


High Channel



5250~5350MHz

Low Channel

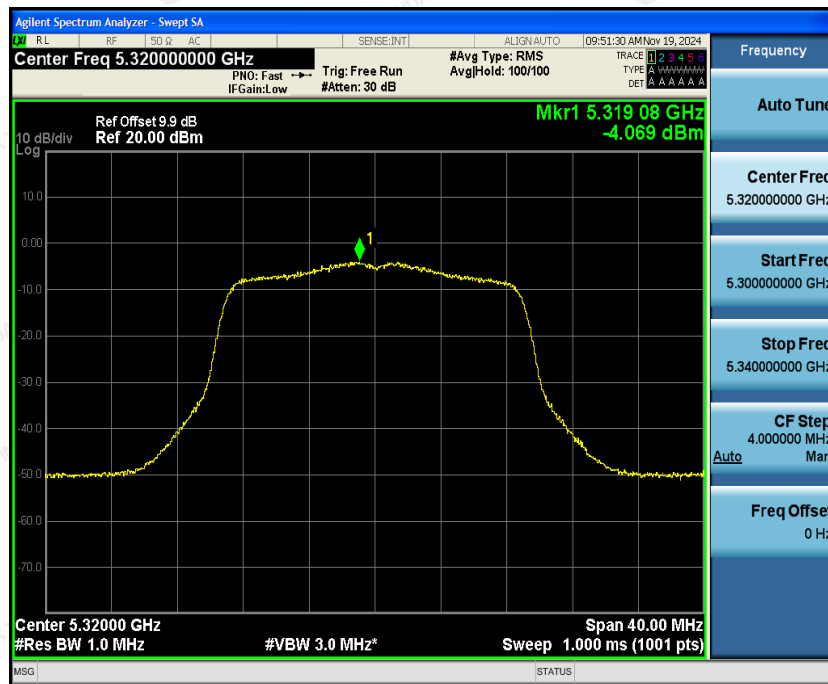




Mid Channel

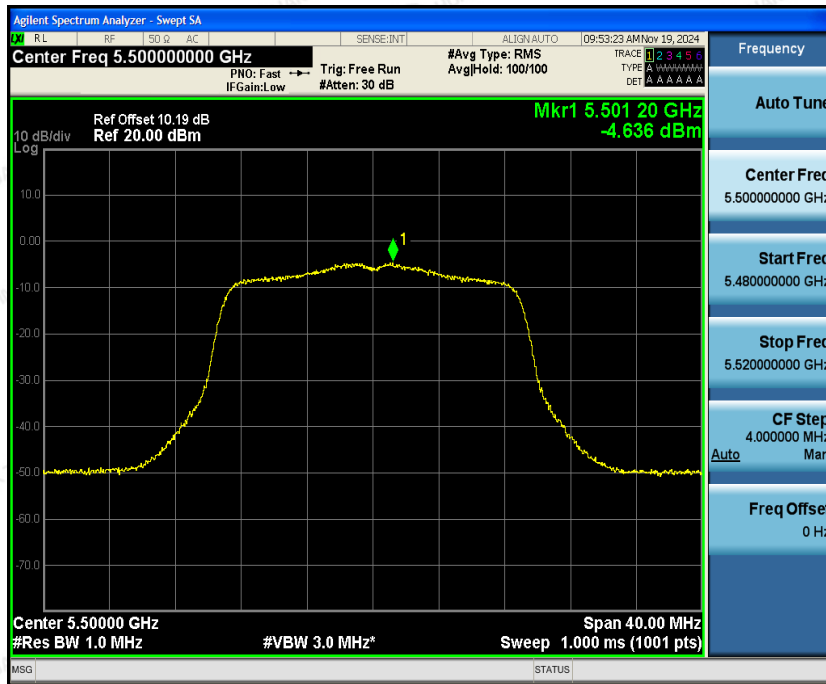


High Channel





Low Channel



Mid Channel





Agilent Spectrum Analyzer - Swept SA

Center Freq 5.700000000 GHz

PNO: Fast → Trig: Free Run #Atten: 30 dB

#Avg Type: RMS Avg/Hold: 100/100

09:56:57 AM Nov 19, 2004

TRACE 1 2 3 4 5 6

TYPE A W W W W W W W W

DET A A A A A A

Frequency

Auto Tune

Center Freq 5.700000000 GHz

Start Freq 5.680000000 GHz

Stop Freq 5.720000000 GHz

CF Step 4.000000 MHz

Man

Auto

Freq Offset 0 Hz

Ref Offset 9.82 dB Ref 20.00 dBm

Mkr1 5.698 72 GHz -2.546 dBm

Center 5.70000 GHz

#Res BW 1.0 MHz

#VBW 3.0 MHz*

Span 40.00 MHz

Sweep 1.000 ms (1001 pts)

MSG STATUS

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5150~5250MHz

Agilent Spectrum Analyzer - Swept SA

IM RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 07:33:53 PM Nov 18, 2024

Center Freq 5.190000000 GHz #Avg Type: RMS PNO: Fast → Trig: Free Run Avg|Hold: 100/100

TRACE 1 2 3 4 5 6 TYPE M DET A A A A A A

Frequency

Auto Tun

Center Freq 5.190000000 GHz

Start Freq 5.150000000 GHz

Stop Freq 5.230000000 GHz

CF Step 8.000000 MHz

Auto Mar

Freq Offset 0 Hz

10 dB/div Log

Ref Offset 9.78 dB Ref 20.00 dBm

Mkr1 5.192 16 GHz -1.270 dBm

Center 5.19000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 80.00 MHz Sweep 1.000 ms (1001 pts)

Agilent Spectrum Analyzer - Swept SA

IL RF 50 Q AC SENSE:INT ALIGN:AUTO 07:36:18 PM Nov 18, 2024

Center Freq 5.230000000 GHz PNO: Fast Trig: Free Run #Avg Type: RMS Avg|Hold: 100/100 TRACE 1 2 3 4 5 6 TYPE MAAAAA DET AAAAAA

IFGain:Low #Atten: 30 dB

Ref Offset 9.69 dB Ref 20.00 dB

Mkr1 5.224 48 GHz -1.994 dBm

10 dB/div Log

Center 5.23000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 80.00 MHz Sweep 1.000 ms (1001 pts)

MSG STATUS

Auto Tun

Center Freq 5.230000000 GHz

Start Freq 5.190000000 GHz

Stop Freq 5.270000000 GHz

CF Step 8.000000 MHz

Auto

Freq Offset 0 H

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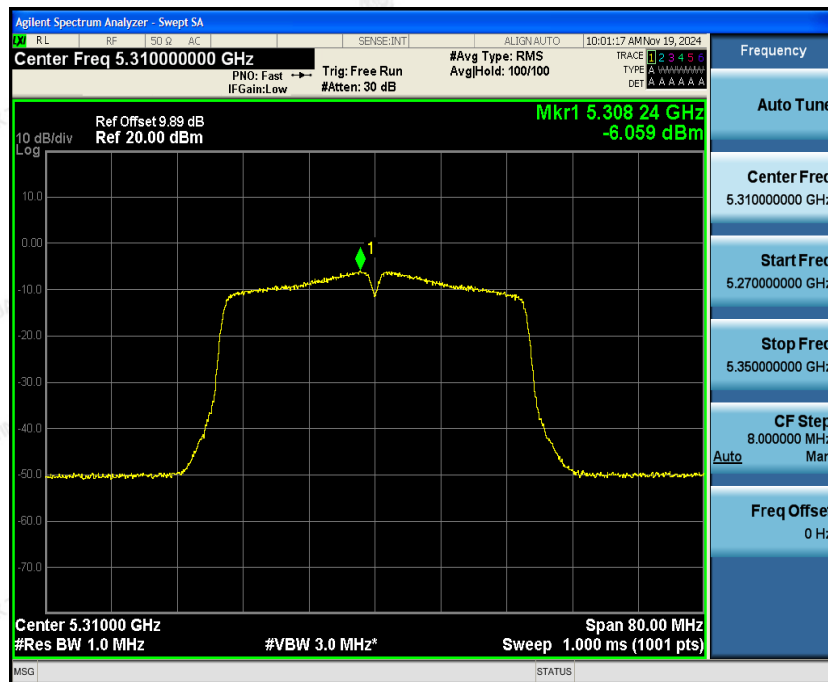


5250~5350MHz

Low Channel

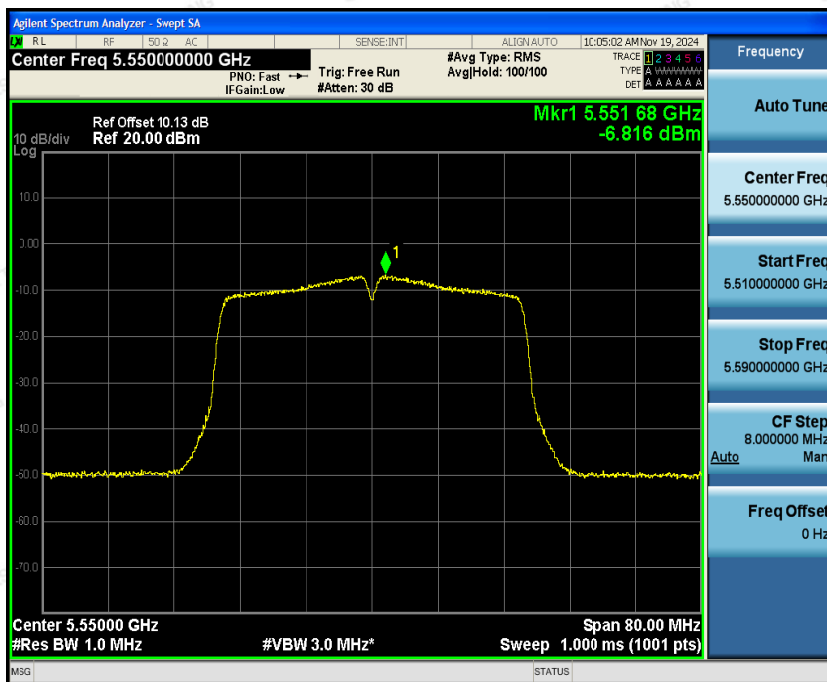


High Channel





Low Channel



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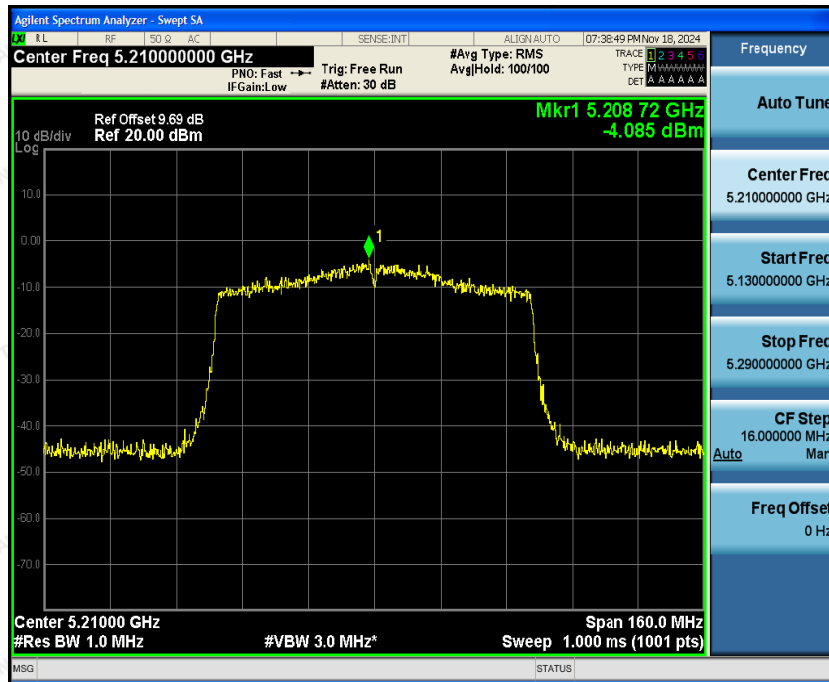
High Channel





IEEE802.11ac HT80 mode

5150~5250MHz



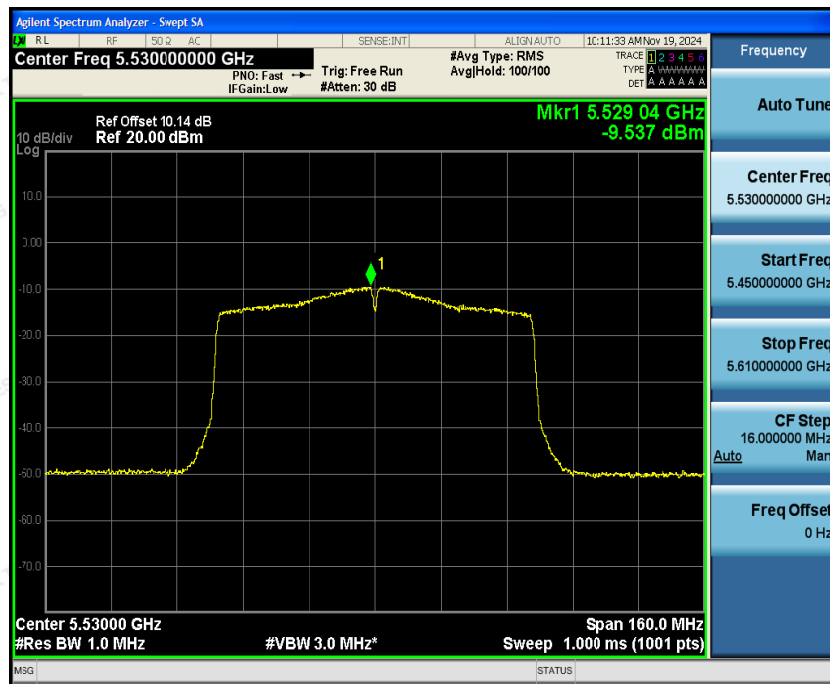
5250~5350MHz





5470~5725MHz

Low Channel



High Channel



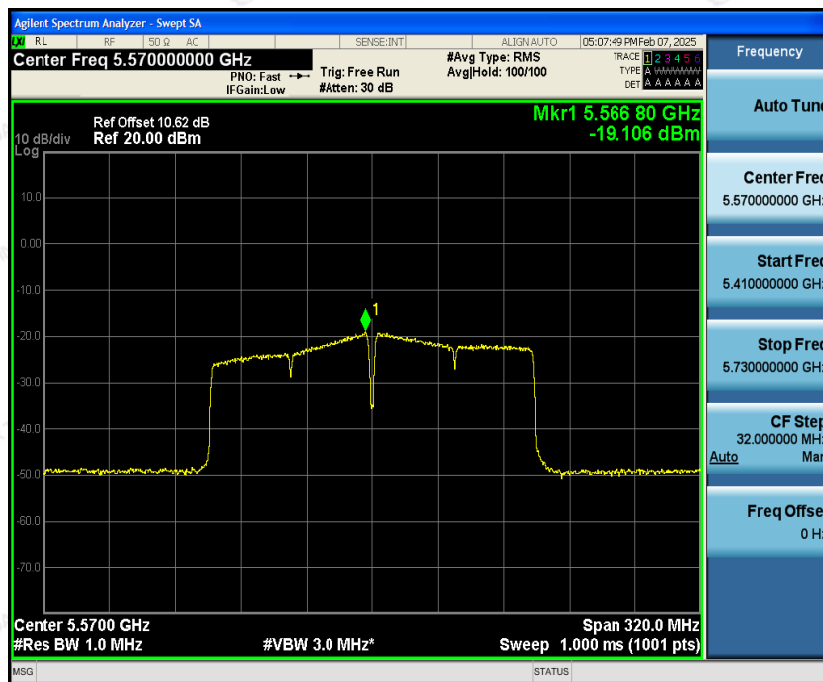


IEEE802.11ac HT160 mode

5150~5350MHz



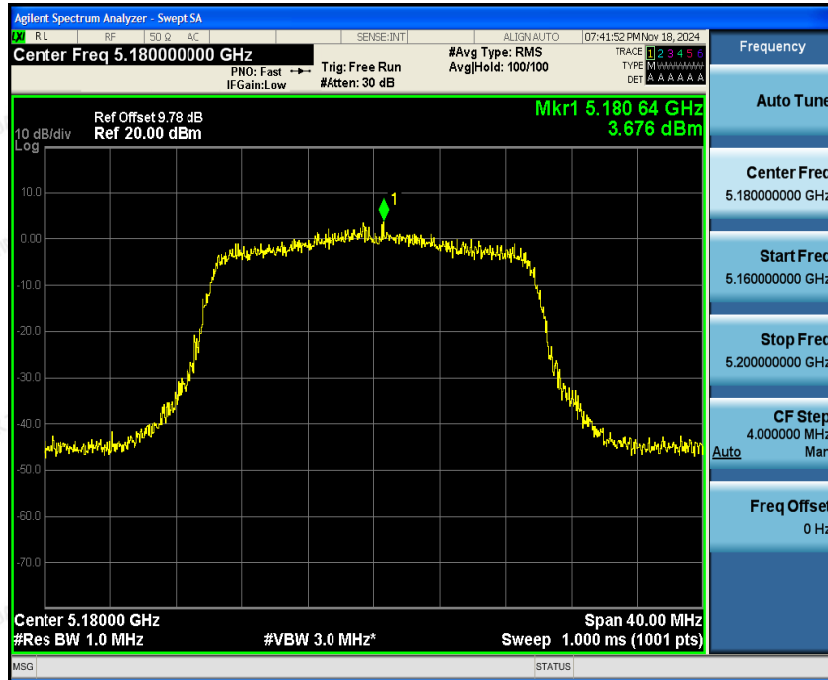
5470~5725MHz



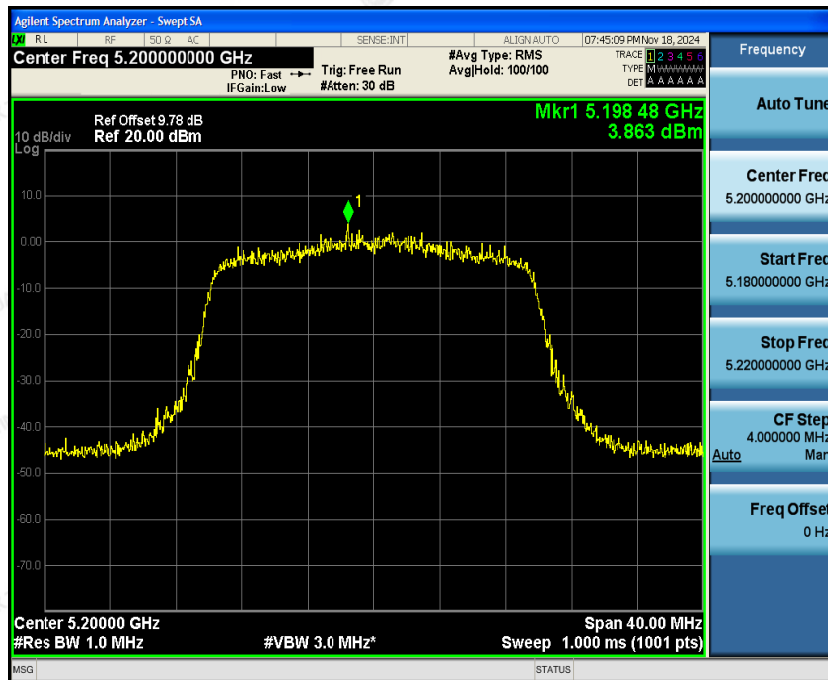


5150~5250MHz

Low Channel



Mid Channel





High Channel



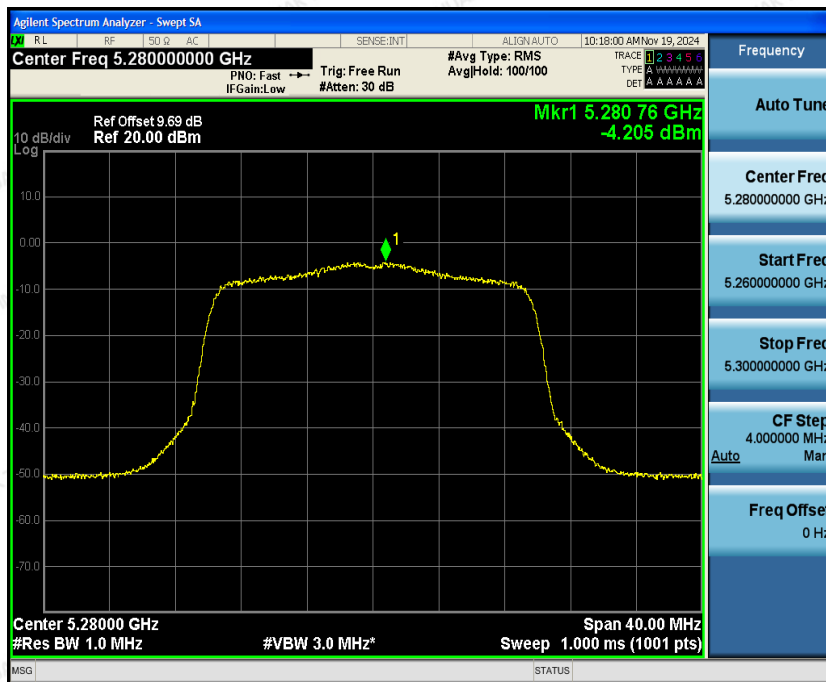
5250~5350MHz

Low Channel

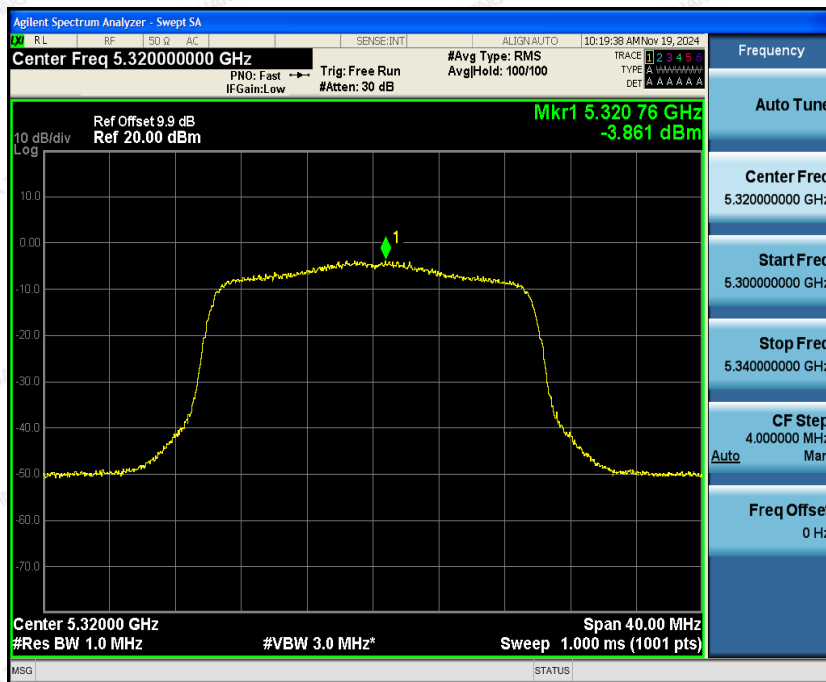




Mid Channel

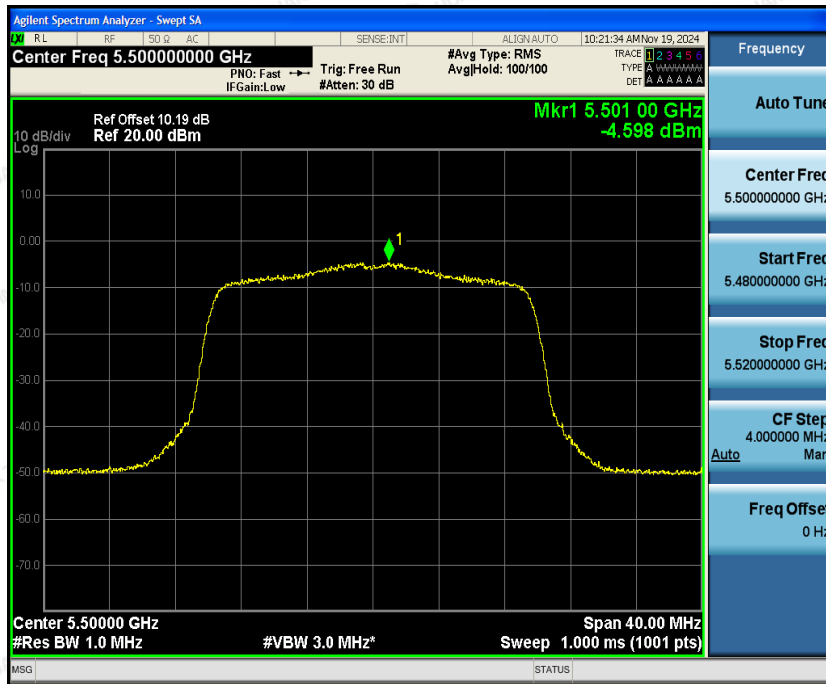


High Channel

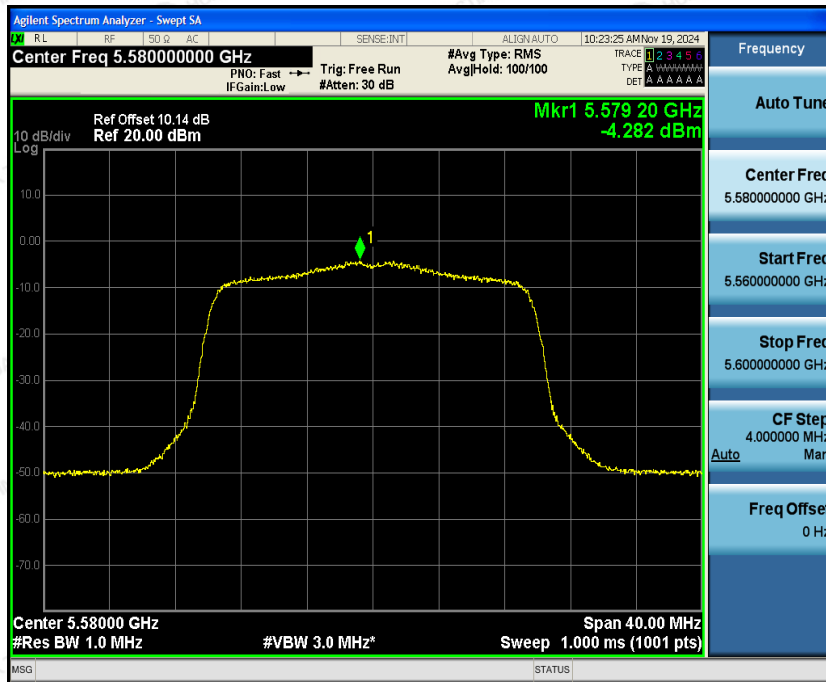


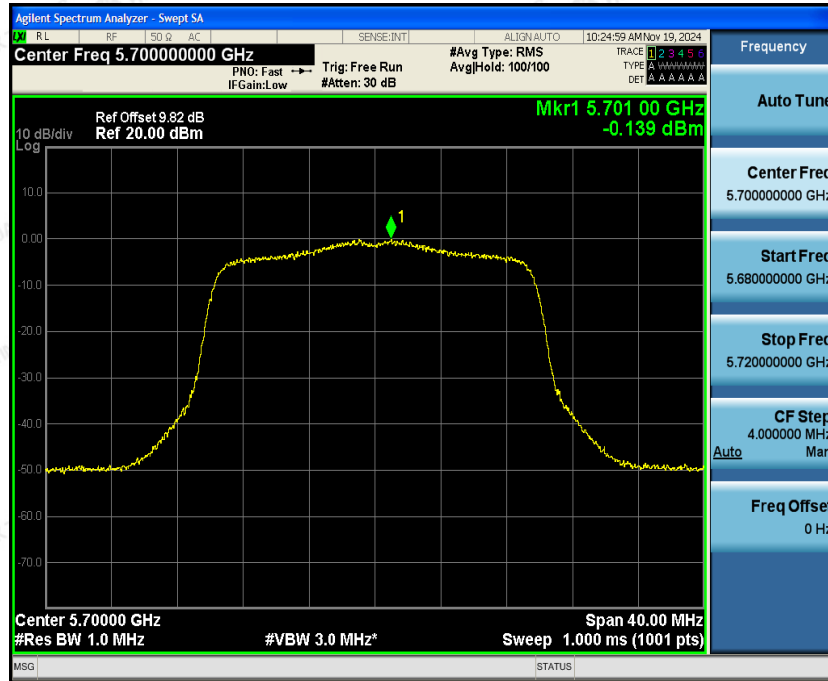


Low Channel



Mid Channel



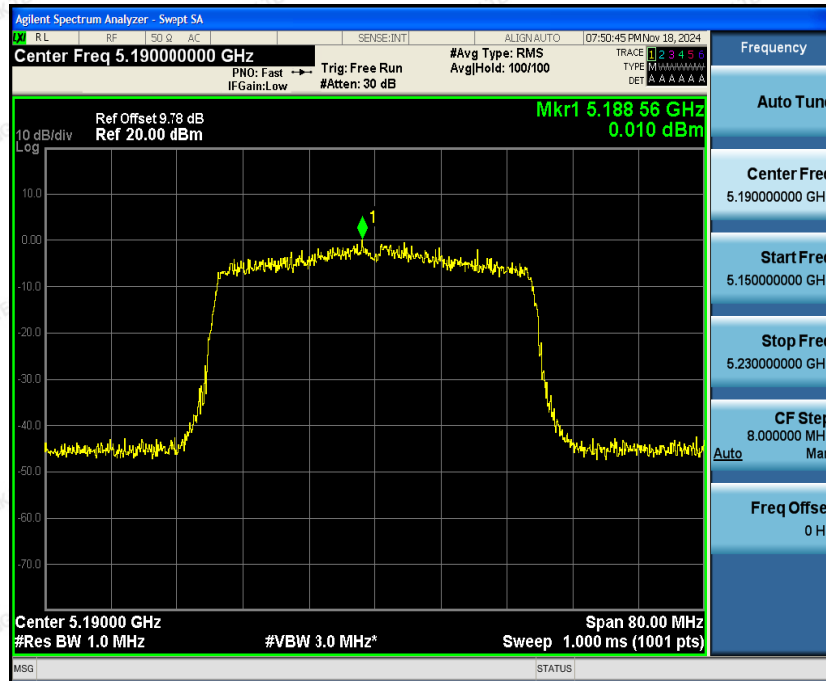




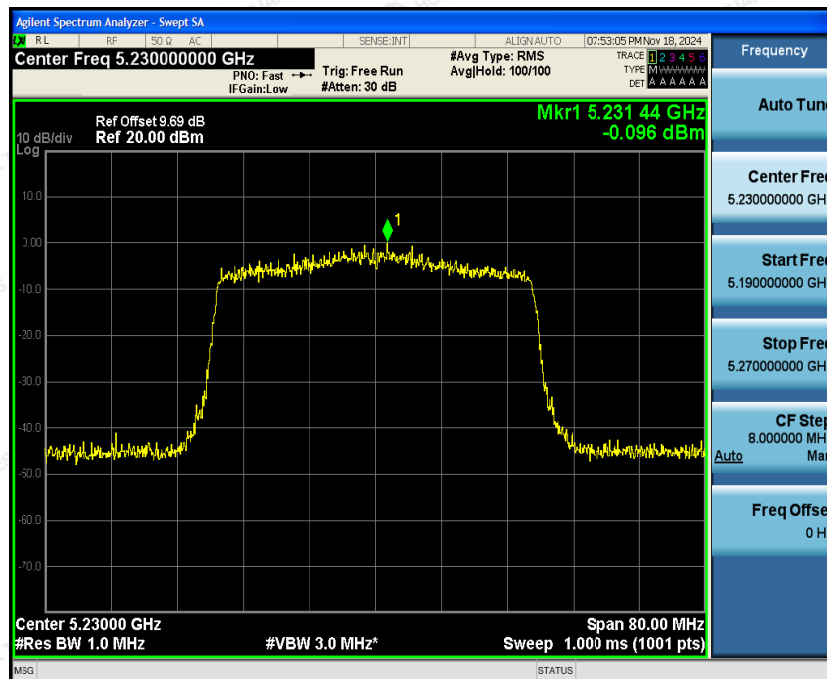
IEEE802.11ax HE40 mode

5150~5250MHz

Low Channel



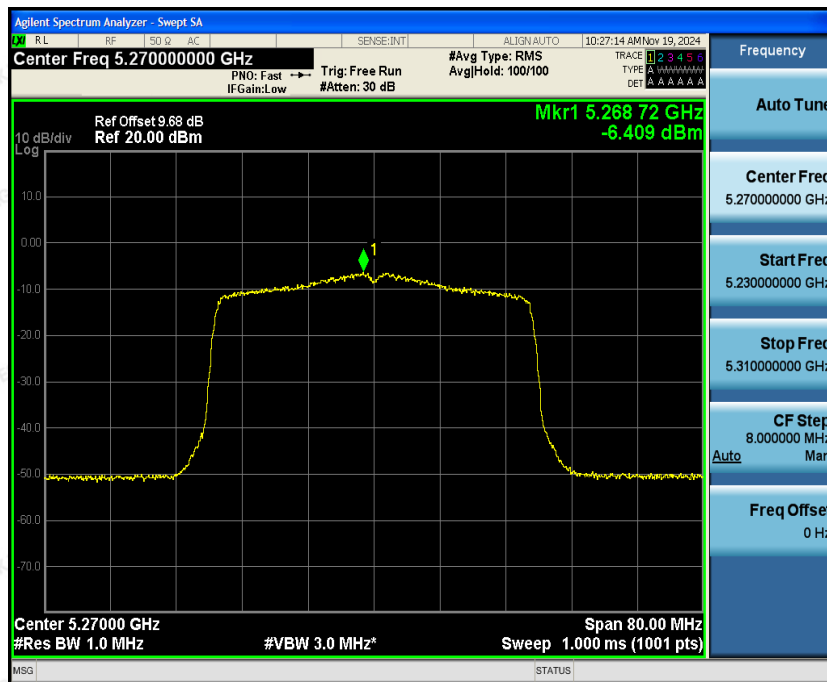
High Channel





5250~5350MHz

Low Channel



High Channel



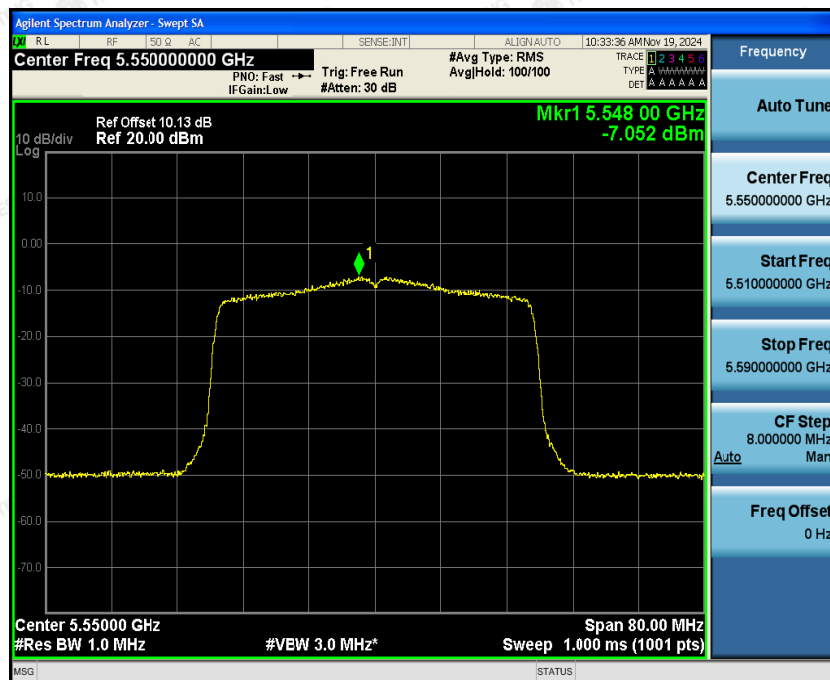


5470~5725MHz

Low Channel

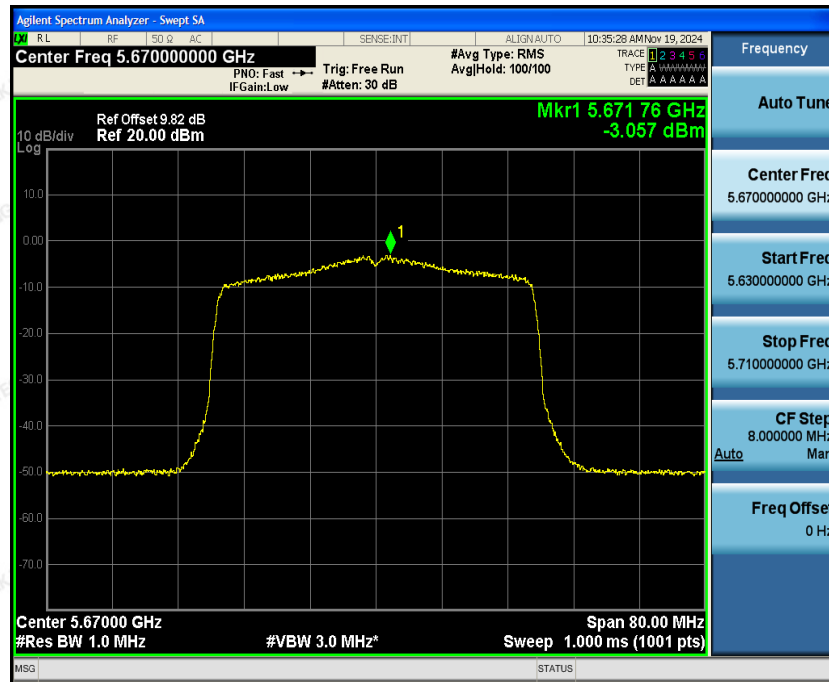


Mid Channel





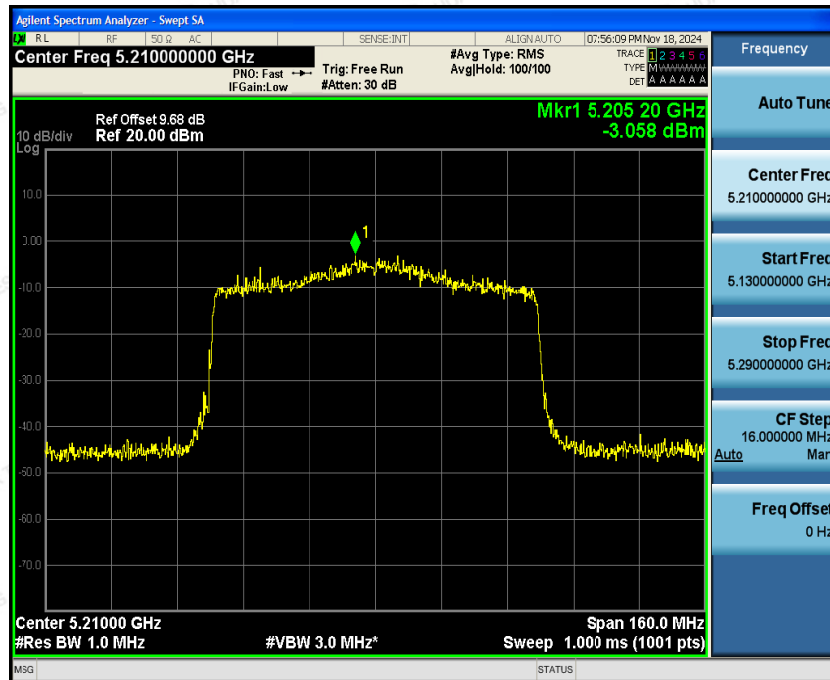
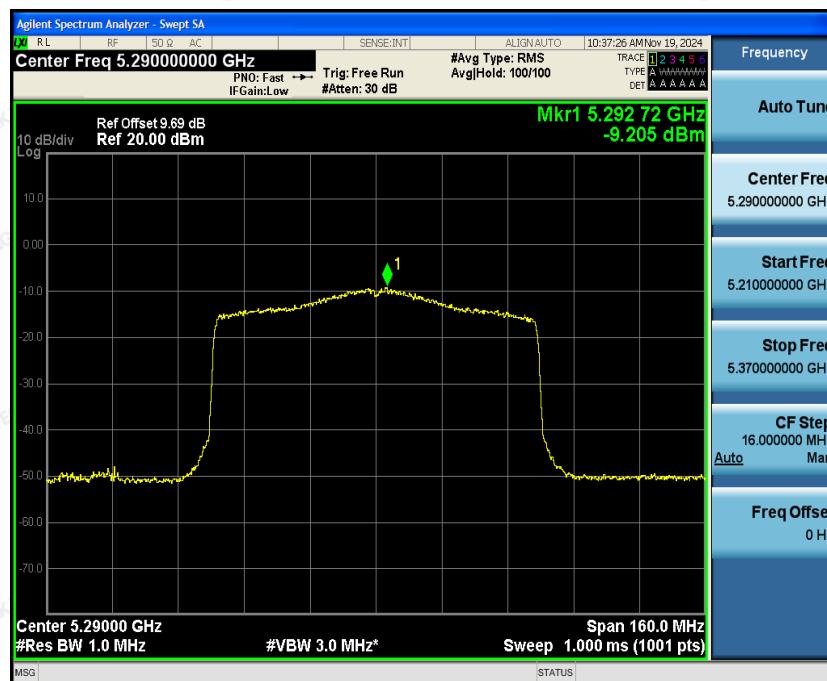
High Channel



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**IEEE802.11ax HE80 mode****5150~5250MHz****5250~5350MHz**



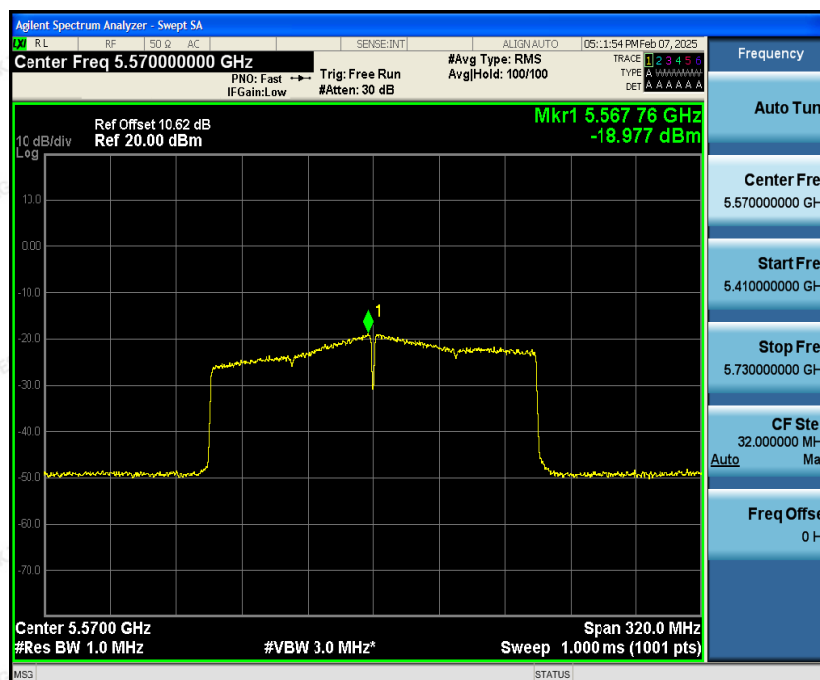
5470~5725MHz

Low Channel



High Channel



**IEEE802.11ax HE160 mode****5150~5350MHz****5470~5725MHz**

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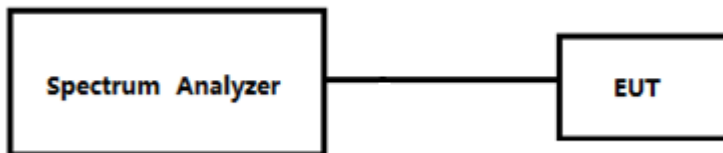
6.5 Duty Cycle

LIMIT

All measurements are to be performed with the EUT transmitting at 100% duty cycle at its maximum power control level; however, if 100% duty cycle cannot be achieved, measurements of duty cycle, x , and maximum-power transmission duration, T , are required for each tested mode of operation.

- T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
- Duty cycle (x), as used in this document, refers to the fraction of time over which the transmitter is on and is transmitting at its maximum power control level.
- The term “maximum power control level” is intended to distinguish between operating power levels of the EUT and differences in power levels of individual symbols that occur with some modulation types such as quadrature amplitude modulation (QAM). During testing, the EUT is not required to transmit continuously its highest possible *symbol* power level. Rather, it shall transmit all of the symbols and shall do so at the highest power control level (i.e., highest operating power level) of the EUT.

TEST CONFIGURATION



TEST METHOD

Measurements of duty cycle and transmission duration shall be performed using one of the following techniques:

- A diode detector and an oscilloscope that together have sufficiently short response time to permit accurate measurements of the on and off times of the transmitted signal.
789033 D02 General UNII Test Procedures New Rules v02r01 Page 3 .
- The zero-span mode on a spectrum analyzer or EMI receiver, if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set $RBW \geq EBW$ if possible; otherwise, set RBW to the largest available value. Set $VBW \geq RBW$. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are $> 50/T$, where T is defined in II.B.1.a), and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if $T \leq 16.7$ microseconds.)

TEST RESULTS

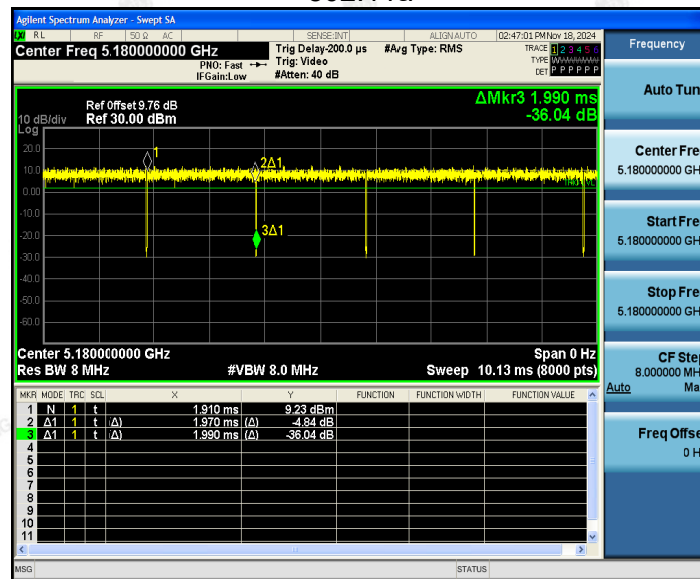
PASS

Antenna 1:

Mode Test Duty Cycle: 5150-5250MHz

Mode	Duty Cycle	Duty Cycle Factor (dB)
802.11a	0.99	-0.04
802.11n(HT20)	0.99	-0.04
802.11n(HT40)	0.99	-0.04
802.11ac(HT20)	0.99	-0.04
802.11ac(HT40)	0.99	-0.04
802.11ac(HT80)	0.99	-0.04
802.11ax(HE20)	0.99	-0.04
802.11ax(HE40)	0.99	-0.04
802.11ax(HE80)	0.99	-0.04

802.11a



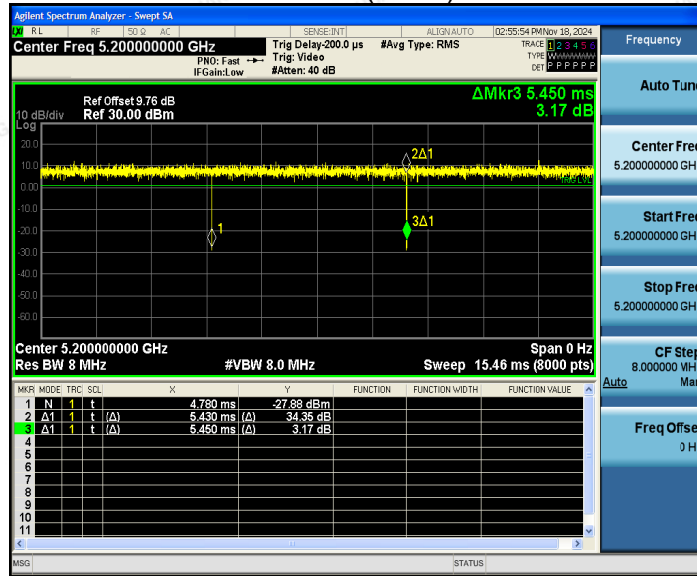
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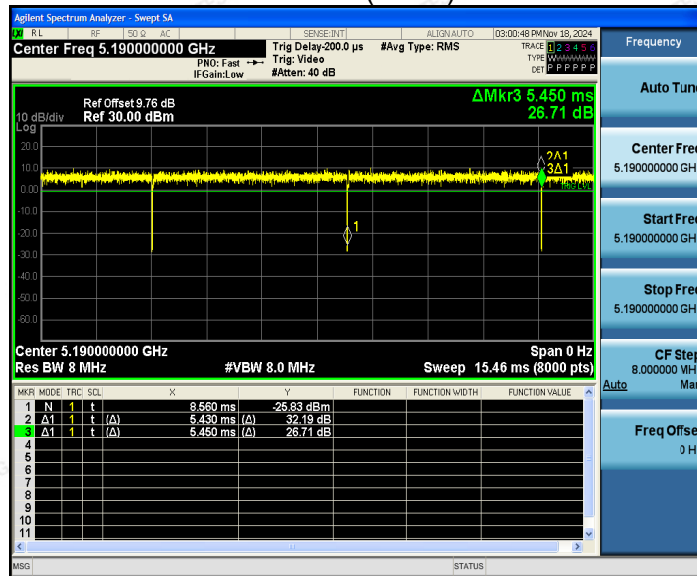
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802.11n(HT20)

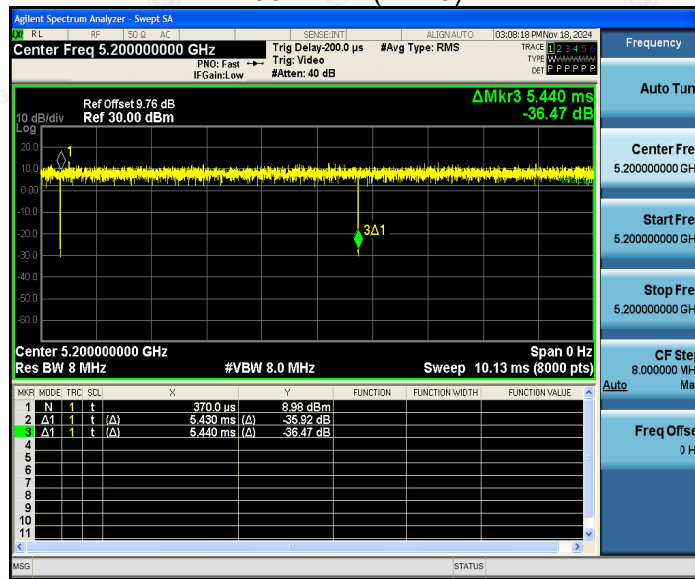


802.11n(HT40)

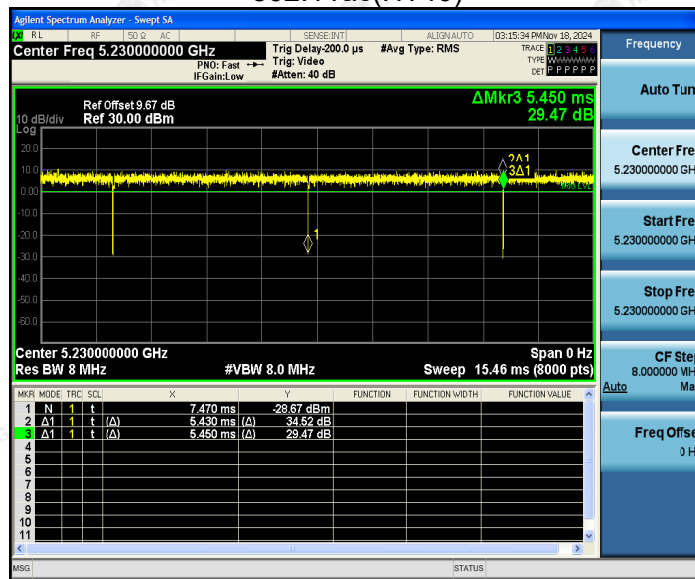




802.11ac(HT20)

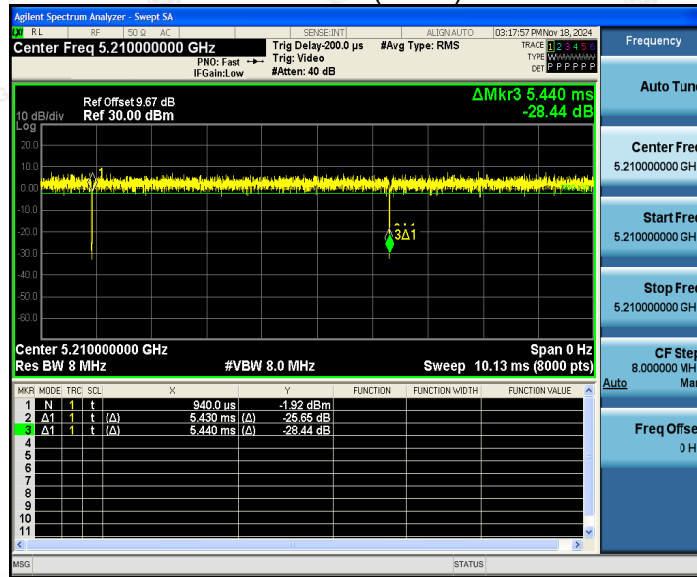


802.11ac(HT40)

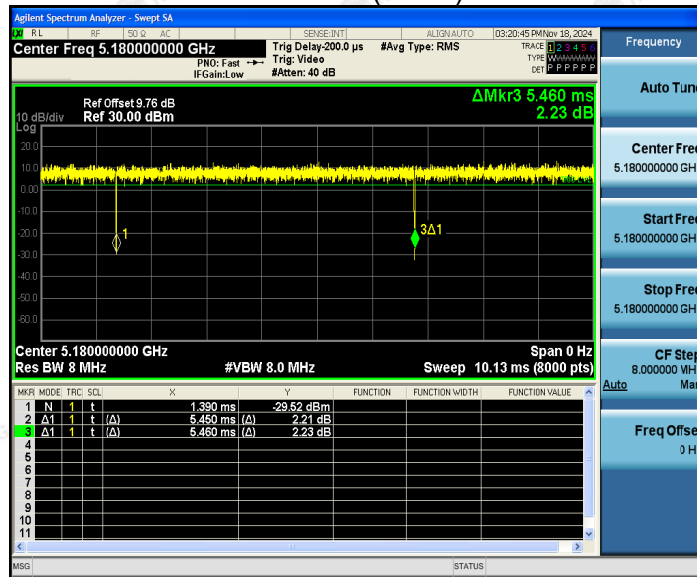




802.11ac(HT80)

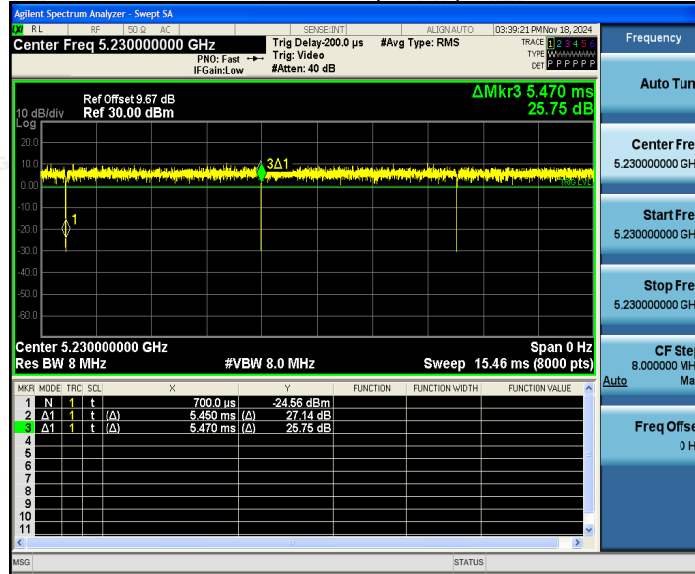


802.11ax(HE20)

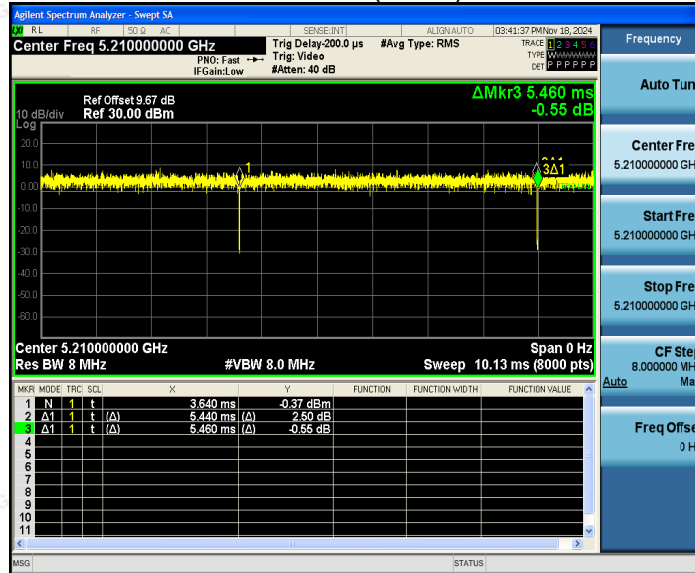




802.11ax(HE40)



802.11ax(HE80)

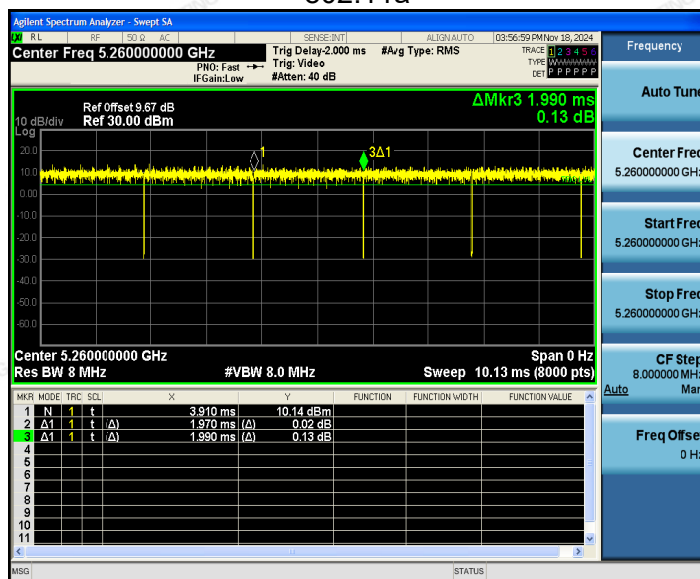




Mode Test Duty Cycle: 5260-5320MHz

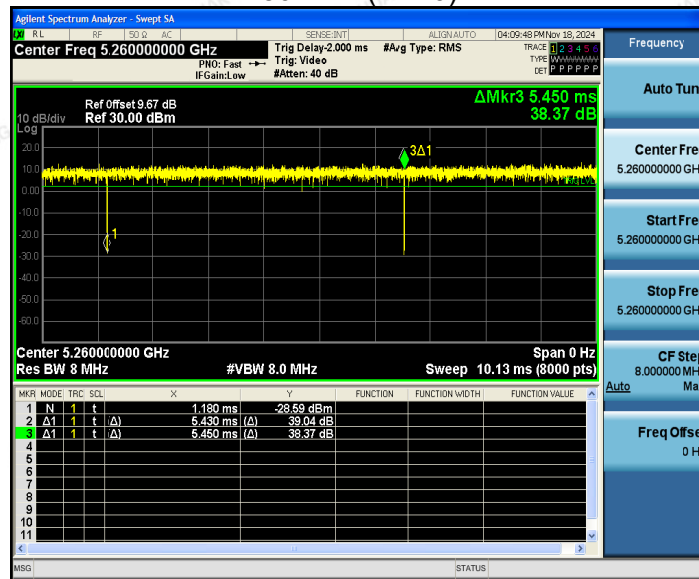
Mode	Duty Cycle	Duty Cycle Factor (dB)
802.11a	0.99	-0.04
802.11n(HT20)	0.99	-0.04
802.11n(HT40)	0.99	-0.04
802.11ac(HT20)	0.99	-0.04
802.11ac(HT40)	0.99	-0.04
802.11ac(HT80)	0.99	-0.04
802.11ac(HT160)	0.99	-0.04
802.11ax(HE20)	0.99	-0.04
802.11ax(HE40)	0.99	-0.04
802.11ax(HE80)	0.99	-0.04
802.11ax(HE160)	0.99	-0.04

802.11a

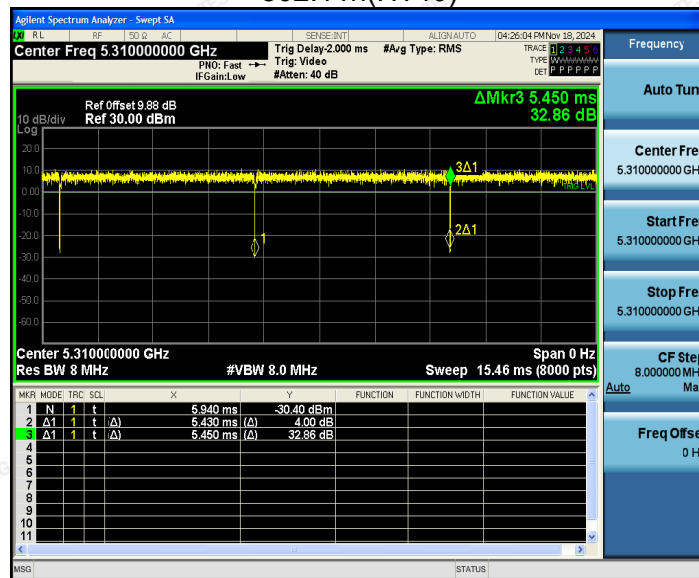




802.11n(HT20)

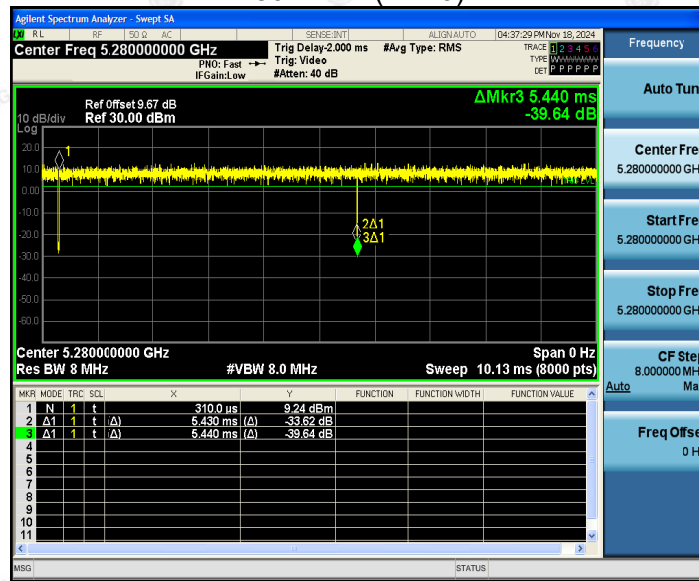


802.11n(HT40)

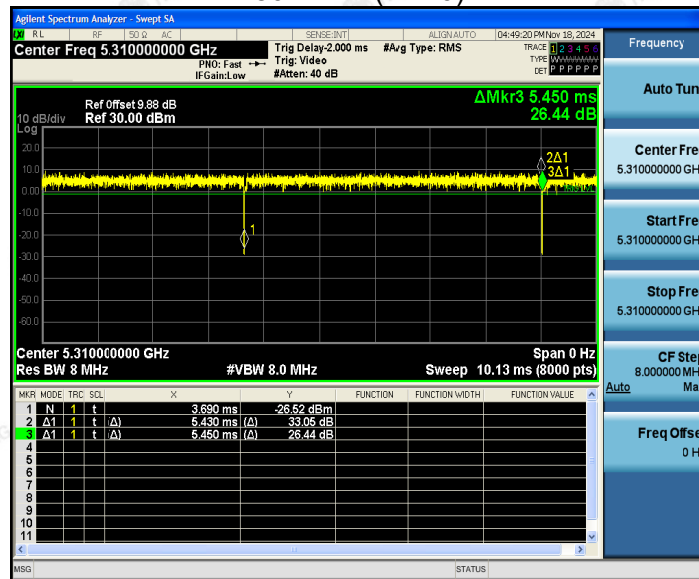




802.11ac(HT20)

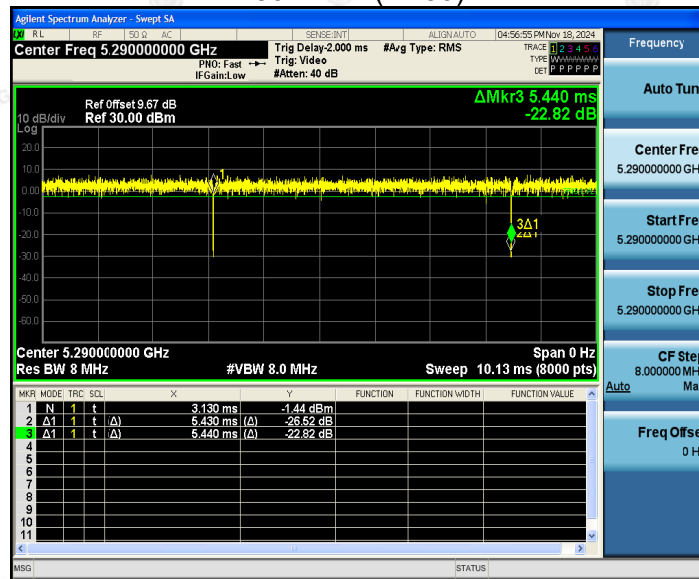


802.11ac(HT40)

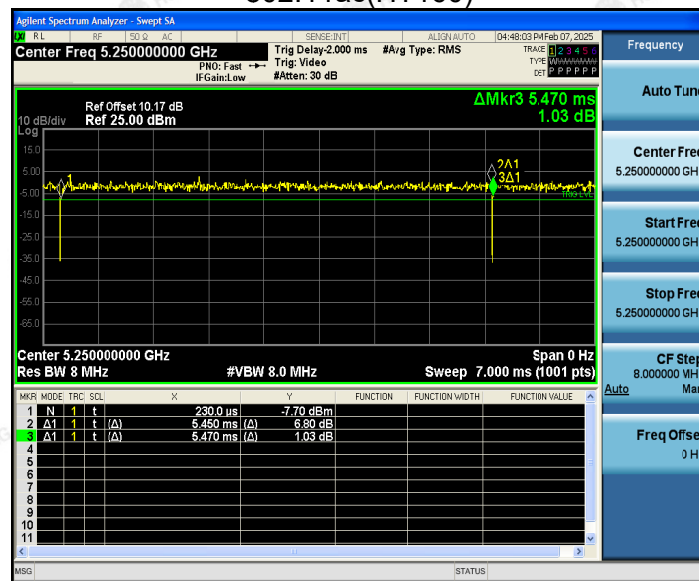




802.11ac(HT80)

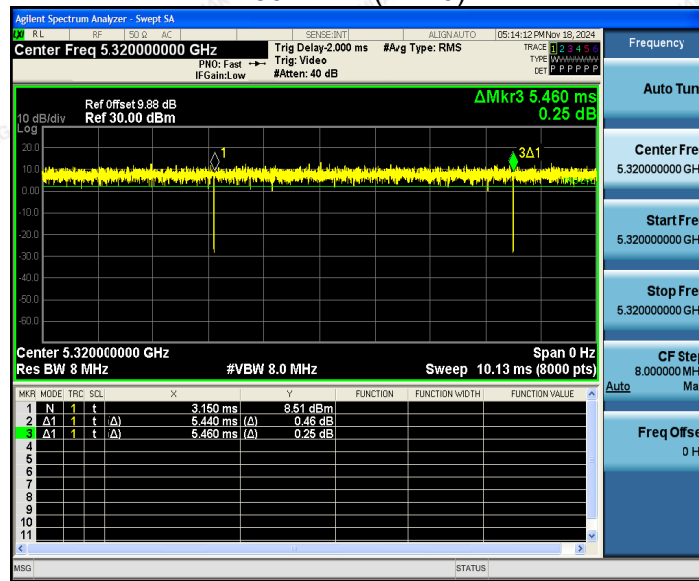


802.11ac(HT160)

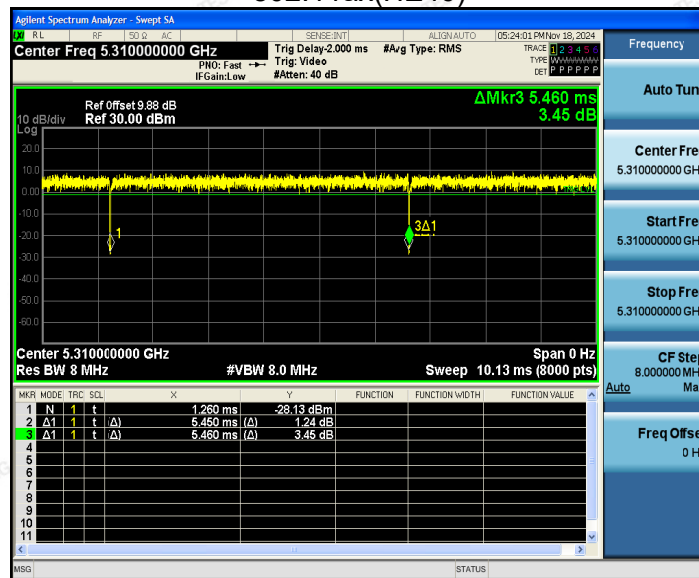




802.11ax(HE20)

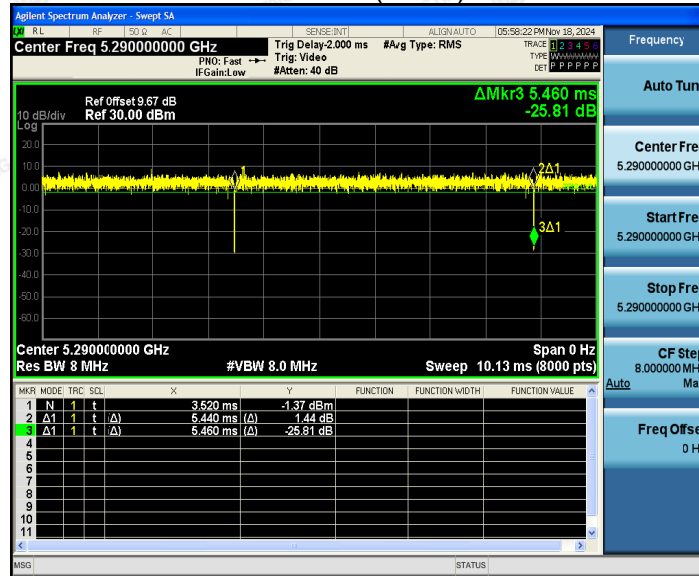


802.11ax(HE40)





802.11ax(HE80)



802.11ax(HE160)

