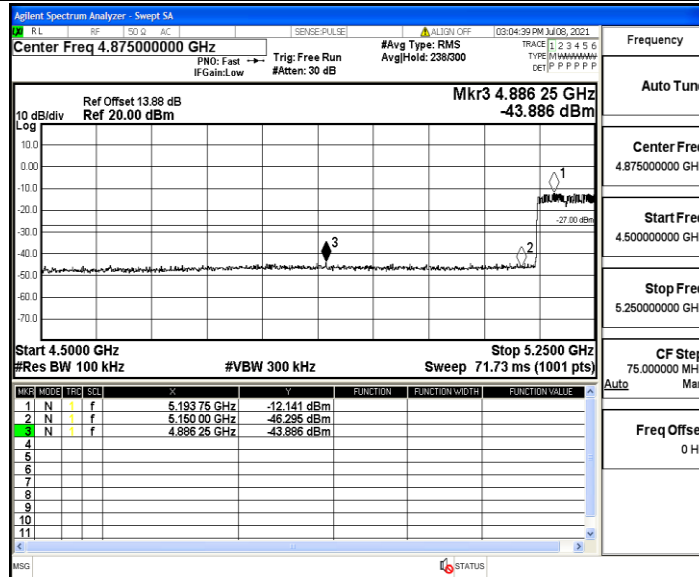
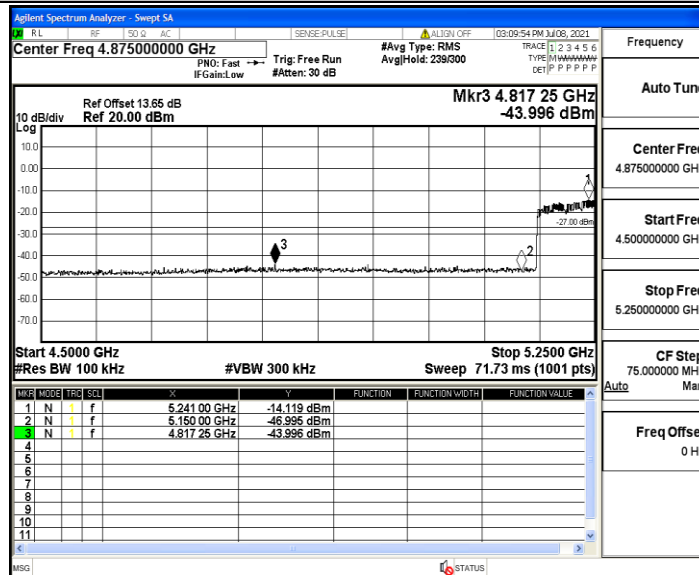
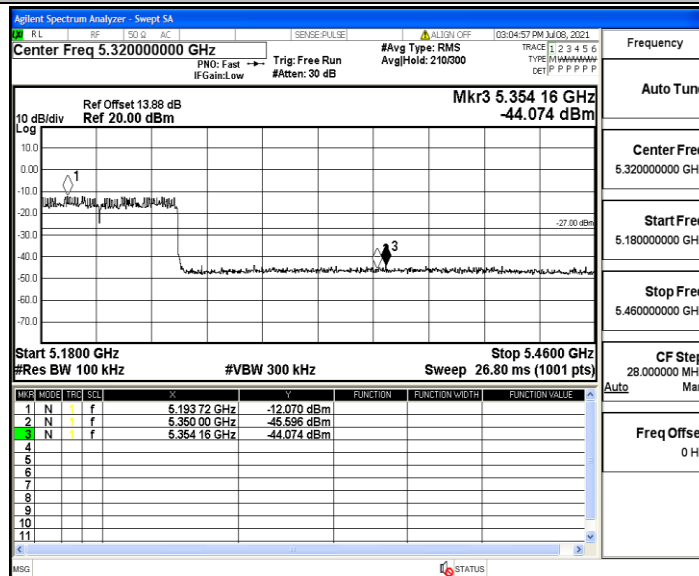




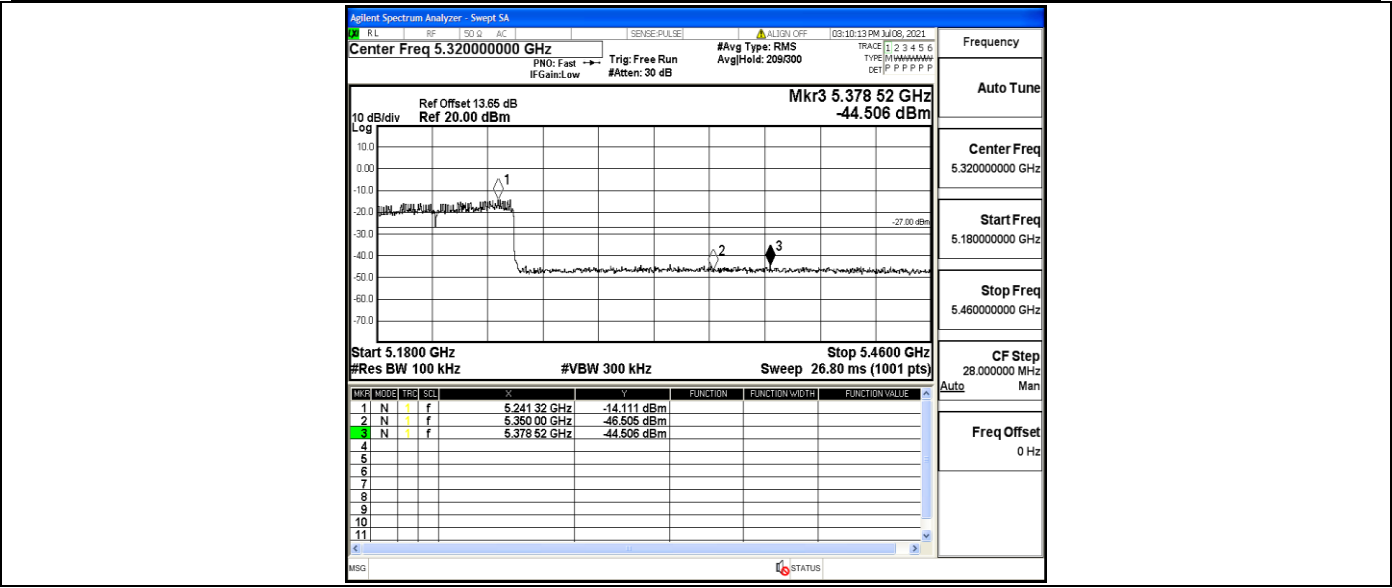
11AX80MIMO_Ant2_Low_5210



11AX80MIMO_Ant1_High_5210



11AX80MIMO_Ant2_High_5210



Appendix E: Frequency Stability

Test Result

Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5180	20	132	5179.935335	5150 – 5250	PASS
5180	20	108	5179.928508	5150 – 5250	PASS
5180	50	120	5179.951935	5150 – 5250	PASS
5180	40	120	5179.958904	5150 – 5250	PASS
5180	30	120	5179.935541	5150 – 5250	PASS
5180	20	120	5180.072770	5150 – 5250	PASS
5180	10	120	5180.078785	5150 – 5250	PASS
5180	0	120	5179.966570	5150 – 5250	PASS
5180	-10	120	5180.087253	5150 – 5250	PASS
5180	-20	120	5179.992227	5150 – 5250	PASS
5180	-30	120	5180.093854	5150 – 5250	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5180	20	132	5180.047322	5150 – 5250	PASS
5180	20	108	5180.094931	5150 – 5250	PASS
5180	50	120	5179.906354	5150 – 5250	PASS
5180	40	120	5179.951097	5150 – 5250	PASS
5180	30	120	5179.903991	5150 – 5250	PASS
5180	20	120	5180.077790	5150 – 5250	PASS
5180	10	120	5180.057122	5150 – 5250	PASS
5180	0	120	5180.091986	5150 – 5250	PASS
5180	-10	120	5180.056491	5150 – 5250	PASS
5180	-20	120	5179.995342	5150 – 5250	PASS
5180	-30	120	5180.047997	5150 – 5250	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5200	20	132	5200.020358	5150 – 5250	PASS
5200	20	108	5200.046777	5150 – 5250	PASS
5200	50	120	5199.965188	5150 – 5250	PASS
5200	40	120	5199.969360	5150 – 5250	PASS
5200	30	120	5199.913125	5150 – 5250	PASS
5200	20	120	5199.981381	5150 – 5250	PASS
5200	10	120	5199.902605	5150 – 5250	PASS
5200	0	120	5200.010776	5150 – 5250	PASS
5200	-10	120	5199.974420	5150 – 5250	PASS
5200	-20	120	5200.030493	5150 – 5250	PASS
5200	-30	120	5199.935352	5150 – 5250	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5200	20	132	5200.057792	5150 – 5250	PASS
5200	20	108	5199.927902	5150 – 5250	PASS
5200	50	120	5200.048528	5150 – 5250	PASS
5200	40	120	5199.904655	5150 – 5250	PASS
5200	30	120	5199.921671	5150 – 5250	PASS
5200	20	120	5199.990922	5150 – 5250	PASS
5200	10	120	5199.995913	5150 – 5250	PASS
5200	0	120	5199.903379	5150 – 5250	PASS
5200	-10	120	5199.967884	5150 – 5250	PASS
5200	-20	120	5199.979330	5150 – 5250	PASS
5200	-30	120	5200.035658	5150 – 5250	PASS

Ant1

Frequency (MHz)	Environment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5240	20	132	5240.027514	5150 – 5250	PASS
5240	20	108	5240.015294	5150 – 5250	PASS
5240	50	120	5240.050250	5150 – 5250	PASS
5240	40	120	5239.914610	5150 – 5250	PASS
5240	30	120	5240.044502	5150 – 5250	PASS
5240	20	120	5240.037043	5150 – 5250	PASS
5240	10	120	5239.984909	5150 – 5250	PASS
5240	0	120	5240.014205	5150 – 5250	PASS
5240	-10	120	5239.919277	5150 – 5250	PASS
5240	-20	120	5240.084050	5150 – 5250	PASS
5240	-30	120	5239.946224	5150 – 5250	PASS

Ant2

Frequency (MHz)	Environment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5240	20	132	5240.032454	5150 – 5250	PASS
5240	20	108	5240.078096	5150 – 5250	PASS
5240	50	120	5240.048863	5150 – 5250	PASS
5240	40	120	5240.075434	5150 – 5250	PASS
5240	30	120	5239.950940	5150 – 5250	PASS
5240	20	120	5239.941611	5150 – 5250	PASS
5240	10	120	5240.074474	5150 – 5250	PASS
5240	0	120	5240.073053	5150 – 5250	PASS
5240	-10	120	5239.990367	5150 – 5250	PASS
5240	-20	120	5239.904687	5150 – 5250	PASS
5240	-30	120	5240.021138	5150 – 5250	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5190	20	132	5190.091376	5150 – 5250	PASS
5190	20	108	5189.923244	5150 – 5250	PASS
5190	50	120	5190.032917	5150 – 5250	PASS
5190	40	120	5190.020896	5150 – 5250	PASS
5190	30	120	5189.968116	5150 – 5250	PASS
5190	20	120	5189.900418	5150 – 5250	PASS
5190	10	120	5189.970108	5150 – 5250	PASS
5190	0	120	5189.989895	5150 – 5250	PASS
5190	-10	120	5189.994600	5150 – 5250	PASS
5190	-20	120	5190.031171	5150 – 5250	PASS
5190	-30	120	5189.919802	5150 – 5250	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5190	20	132	5189.984602	5150 – 5250	PASS
5190	20	108	5190.057403	5150 – 5250	PASS
5190	50	120	5189.965884	5150 – 5250	PASS
5190	40	120	5189.937116	5150 – 5250	PASS
5190	30	120	5190.083156	5150 – 5250	PASS
5190	20	120	5189.919738	5150 – 5250	PASS
5190	10	120	5190.032205	5150 – 5250	PASS
5190	0	120	5190.089864	5150 – 5250	PASS
5190	-10	120	5189.996113	5150 – 5250	PASS
5190	-20	120	5190.080541	5150 – 5250	PASS
5190	-30	120	5189.969993	5150 – 5250	PASS

Ant1

Frequency (MHz)	Environment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5230	20	132	5230.009402	5150 – 5250	PASS
5230	20	108	5229.924740	5150 – 5250	PASS
5230	50	120	5229.941306	5150 – 5250	PASS
5230	40	120	5230.070186	5150 – 5250	PASS
5230	30	120	5230.015207	5150 – 5250	PASS
5230	20	120	5230.089897	5150 – 5250	PASS
5230	10	120	5230.036141	5150 – 5250	PASS
5230	0	120	5230.080476	5150 – 5250	PASS
5230	-10	120	5230.077600	5150 – 5250	PASS
5230	-20	120	5230.053953	5150 – 5250	PASS
5230	-30	120	5229.986602	5150 – 5250	PASS

Ant2

Frequency (MHz)	Environment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5230	20	132	5230.076854	5150 – 5250	PASS
5230	20	108	5230.075173	5150 – 5250	PASS
5230	50	120	5229.921919	5150 – 5250	PASS
5230	40	120	5230.064161	5150 – 5250	PASS
5230	30	120	5229.973835	5150 – 5250	PASS
5230	20	120	5229.911414	5150 – 5250	PASS
5230	10	120	5230.060175	5150 – 5250	PASS
5230	0	120	5229.914753	5150 – 5250	PASS
5230	-10	120	5229.908467	5150 – 5250	PASS
5230	-20	120	5230.079399	5150 – 5250	PASS
5230	-30	120	5230.052859	5150 – 5250	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5210	20	132	5210.010155	5150 – 5250	PASS
5210	20	108	5209.907281	5150 – 5250	PASS
5210	50	120	5209.906567	5150 – 5250	PASS
5210	40	120	5210.062058	5150 – 5250	PASS
5210	30	120	5210.088509	5150 – 5250	PASS
5210	20	120	5210.041194	5150 – 5250	PASS
5210	10	120	5210.026266	5150 – 5250	PASS
5210	0	120	5209.962181	5150 – 5250	PASS
5210	-10	120	5209.945537	5150 – 5250	PASS
5210	-20	120	5210.078993	5150 – 5250	PASS
5210	-30	120	5210.070058	5150 – 5250	PASS

Ant2

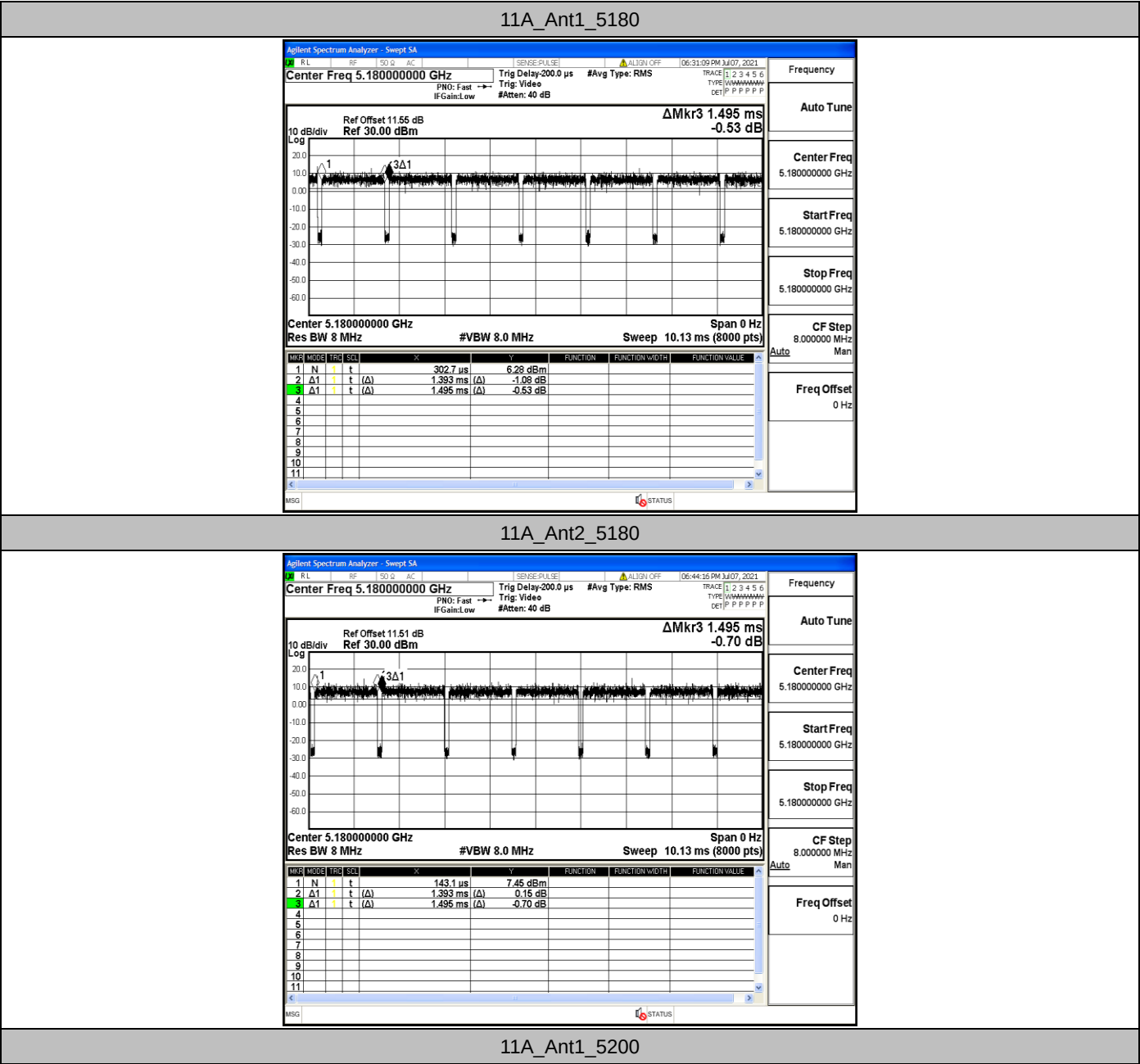
Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5210	20	132	5209.971755	5150 – 5250	PASS
5210	20	108	5209.957459	5150 – 5250	PASS
5210	50	120	5209.963286	5150 – 5250	PASS
5210	40	120	5209.963903	5150 – 5250	PASS
5210	30	120	5209.919626	5150 – 5250	PASS
5210	20	120	5210.006227	5150 – 5250	PASS
5210	10	120	5210.047821	5150 – 5250	PASS
5210	0	120	5210.062693	5150 – 5250	PASS
5210	-10	120	5209.945798	5150 – 5250	PASS
5210	-20	120	5210.060337	5150 – 5250	PASS
5210	-30	120	5210.059618	5150 – 5250	PASS

Appendix F: Duty Cycle

Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11A	Ant1	5180	1.39	1.49	93.29
	Ant2	5180	1.39	1.49	93.29
	Ant1	5200	1.39	1.49	93.29
	Ant2	5200	1.39	1.49	93.29
	Ant1	5240	1.39	1.49	93.29
	Ant2	5240	1.39	1.49	93.29
11N20MIMO	Ant1	5180	0.16	0.26	61.54
	Ant2	5180	0.16	0.26	61.54
	Ant1	5200	0.16	0.26	61.54
	Ant2	5200	0.16	0.26	61.54
	Ant1	5240	0.16	0.26	61.54
	Ant2	5240	0.16	0.26	61.54
11N40MIMO	Ant1	5190	0.10	0.20	50.00
	Ant2	5190	0.10	0.20	50.00
	Ant1	5230	0.09	0.20	45.00
	Ant2	5230	0.10	0.20	50.00
11AC20MIMO	Ant1	5180	0.35	0.46	76.09
	Ant2	5180	0.36	0.46	78.26
	Ant1	5200	0.35	0.46	76.09
	Ant2	5200	0.36	0.46	78.26
	Ant1	5240	0.35	0.46	76.09
	Ant2	5240	0.35	0.46	76.09
11AC40MIMO	Ant1	5190	0.08	0.19	42.11
	Ant2	5190	0.08	0.19	42.11
	Ant1	5230	0.08	0.18	44.44
	Ant2	5230	0.08	0.18	44.44
11AC80MIMO	Ant1	5210	0.06	0.16	37.50
	Ant2	5210	0.06	0.16	37.50
11AX20MIMO	Ant1	5180	0.11	0.22	50.00
	Ant2	5180	0.12	0.22	54.55
	Ant1	5200	0.11	0.22	50.00
	Ant2	5200	0.12	0.22	54.55
	Ant1	5240	0.11	0.22	50.00
	Ant2	5240	0.11	0.22	50.00
11AX40MIMO	Ant1	5190	0.08	0.19	42.11
	Ant2	5190	0.08	0.19	42.11
	Ant1	5230	0.08	0.19	42.11
	Ant2	5230	0.08	0.18	44.44
11AX80MIMO	Ant1	5210	0.07	0.18	38.89
	Ant2	5210	0.07	0.18	38.89

Test Graphs



11A_Ant2_5180

Agilent Spectrum Analyzer - Sweep SA

Center Freq 5.180000000 GHz

Ref Offset 11.51 dB

Ref 30.00 dBm

10 dB/div

Log

20.0

10.0

0.00

-10.0

-20.0

-30.0

-40.0

-50.0

-60.0

Center 5.180000000 GHz

Res BW 8 MHz

#VBW 8.0 MHz

Sweep 10.13 ms (8000 pts)

Span 0 Hz

1

2

3

4

5

6

7

8

9

10

11

MSG

STATUS

Frequency

Auto Tune

Center Freq
5.180000000 GHz

Start Freq
5.180000000 GHz

Stop Freq
5.180000000 GHz

CF Step
8.0000000 MHz

Freq Offset
0 Hz

Trig Delay: 200.0 μ s

#Avg Type: RMS

Trig: Video

#Atten: 40 dB

PN0: Fast

IF Gain: Low

Ref Offset 11.51 dB

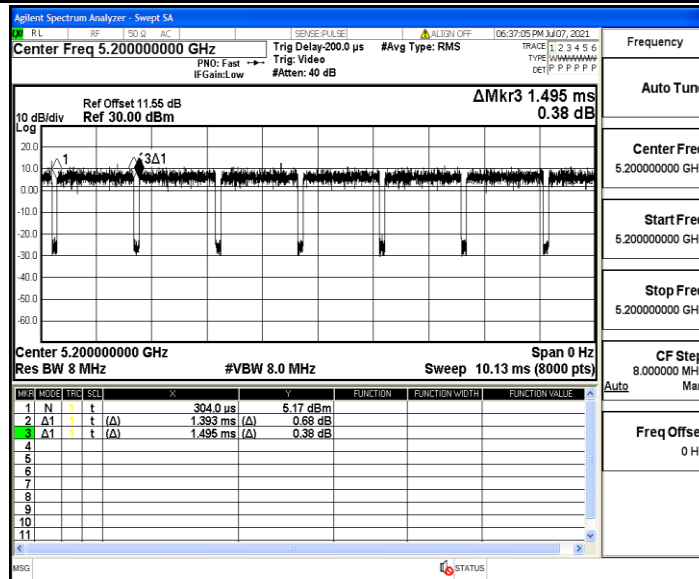
Ref 30.00 dBm

Δ Mkr3 1.495 ms

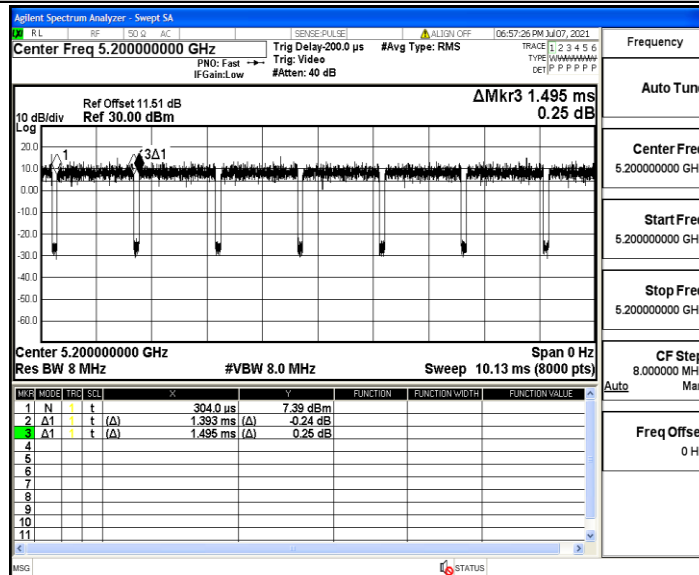
-0.70 dB

NR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	t		143.1 μ s	7.45 dBm			
2	Δ 1	t	(Δ)	1.393 ms	0.15 dB			
3	Δ 1	t	(Δ)	1.495 ms	-0.70 dB			
4								
5								
6								
7								
8								
9								
10								
11								

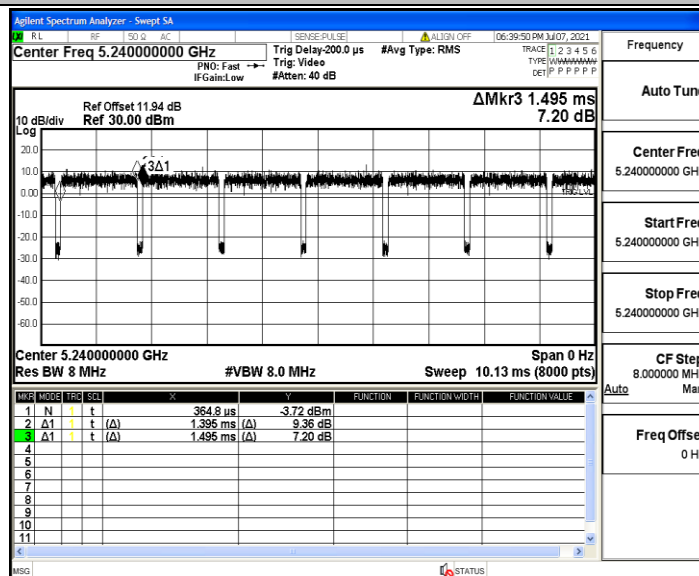
11A_Ant1_5200



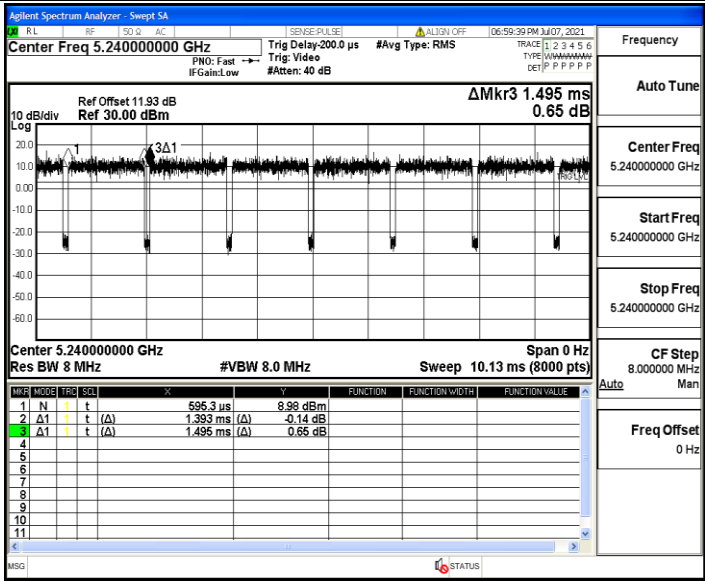
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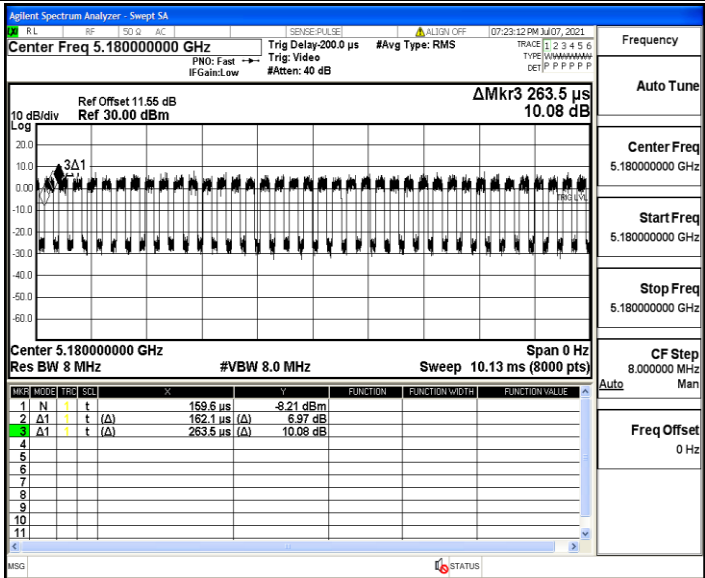
11A_Ant1_5240



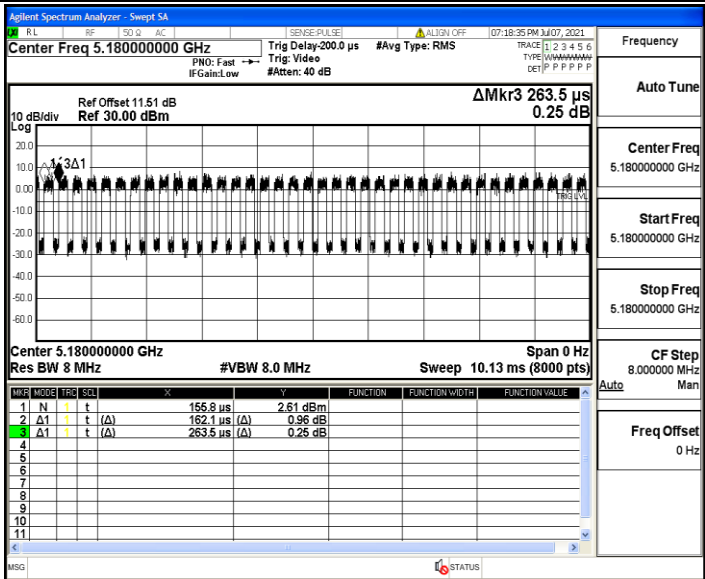
11A_Ant2_5240



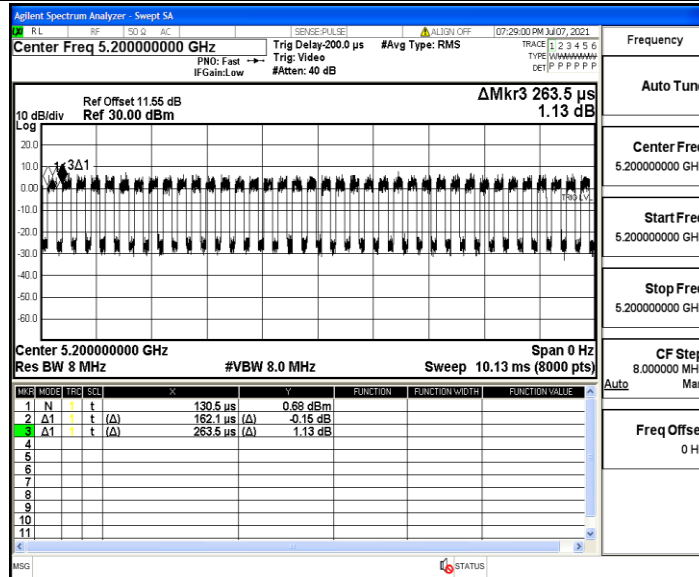
11N20MIMO_Ant1_5180



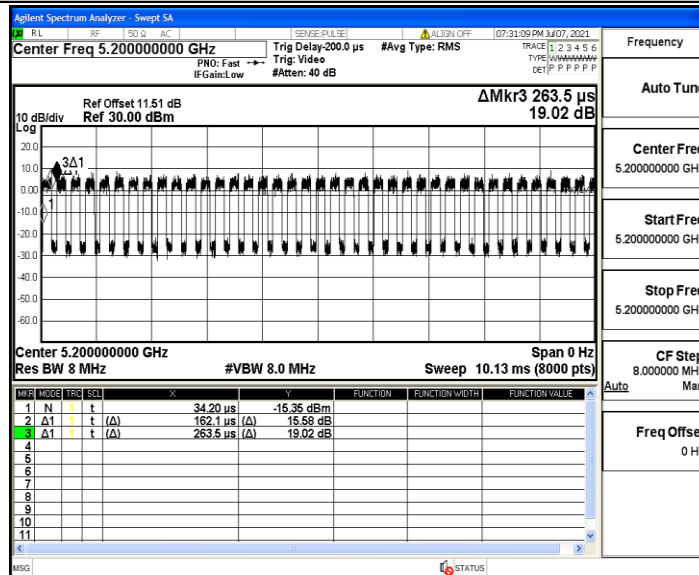
11N20MIMO_Ant2_5180



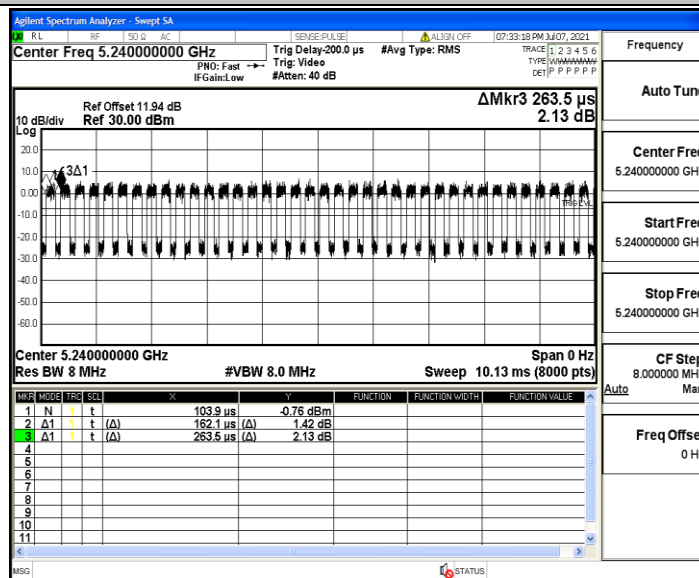
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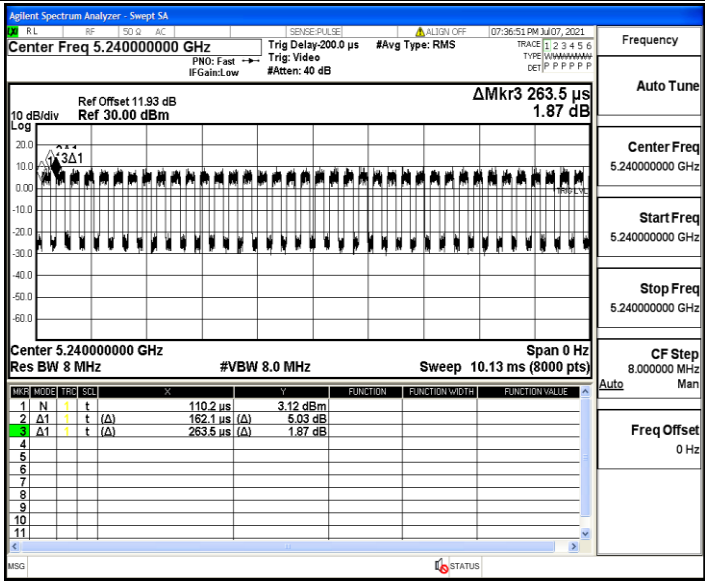
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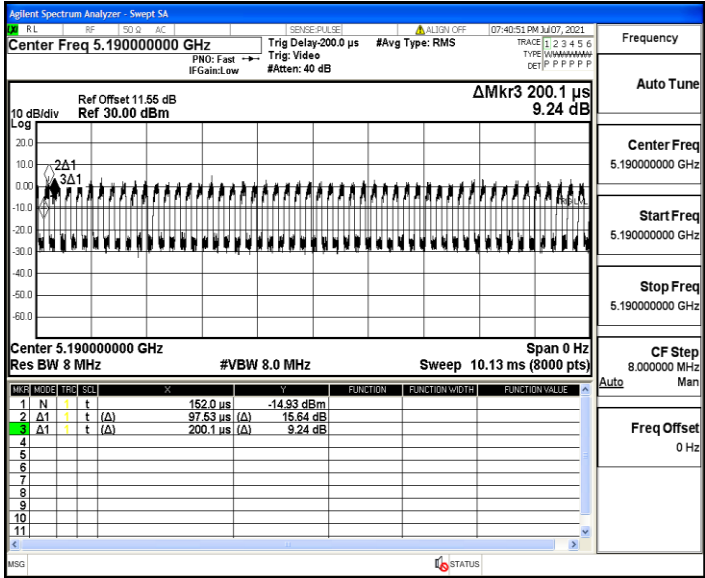
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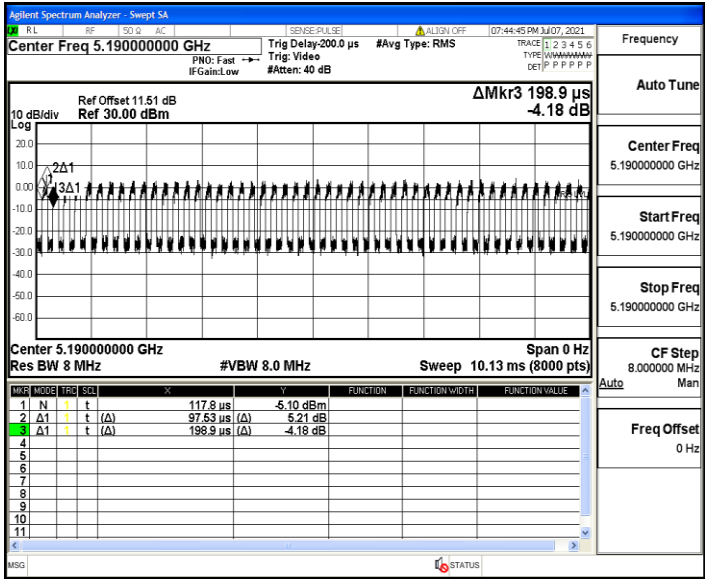
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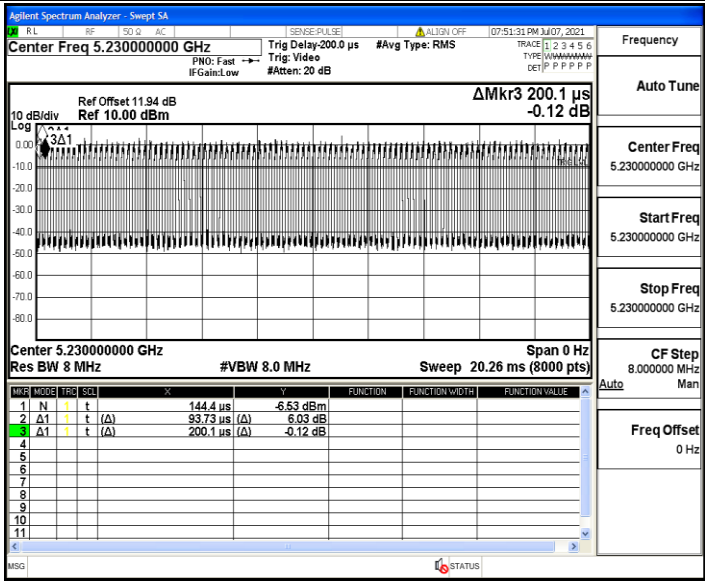
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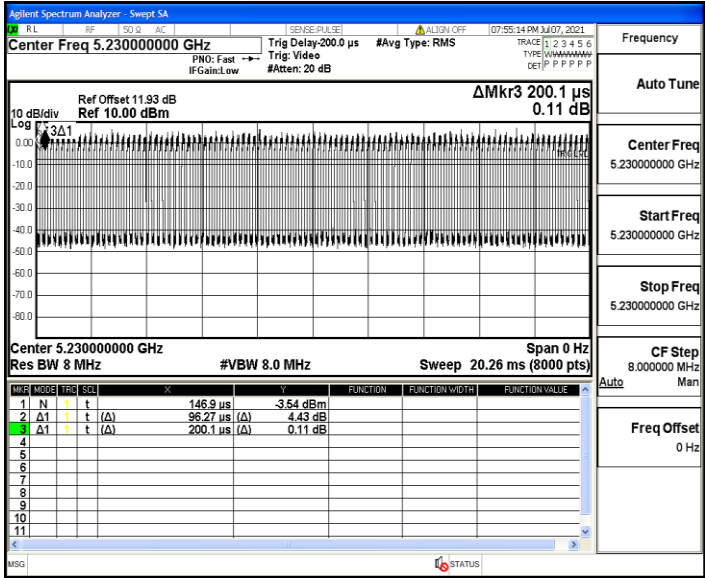
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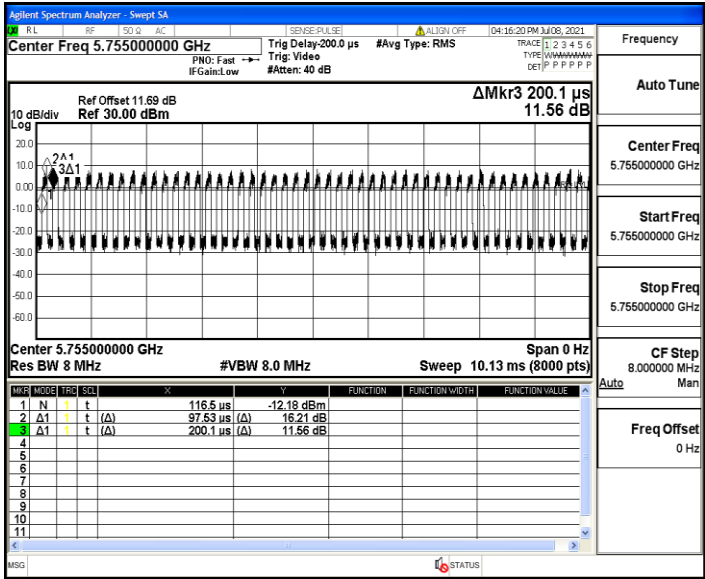
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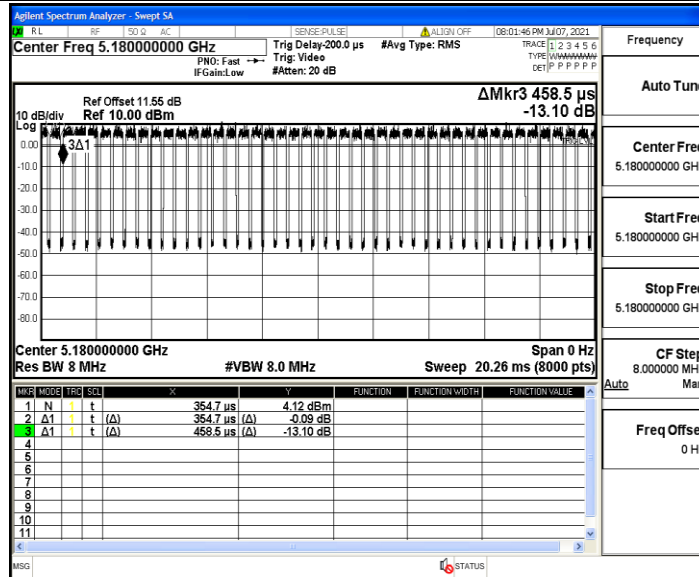
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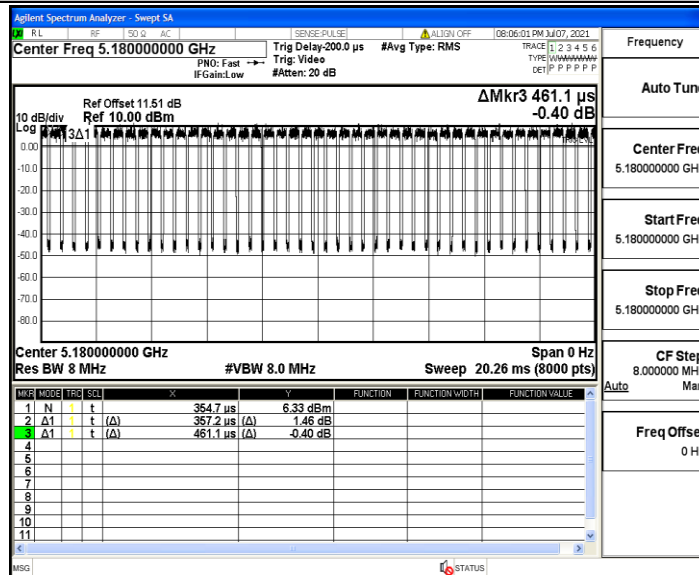
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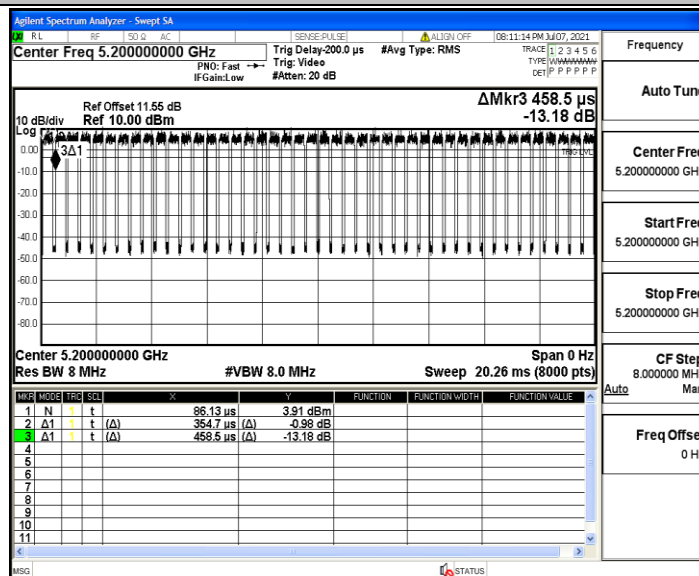
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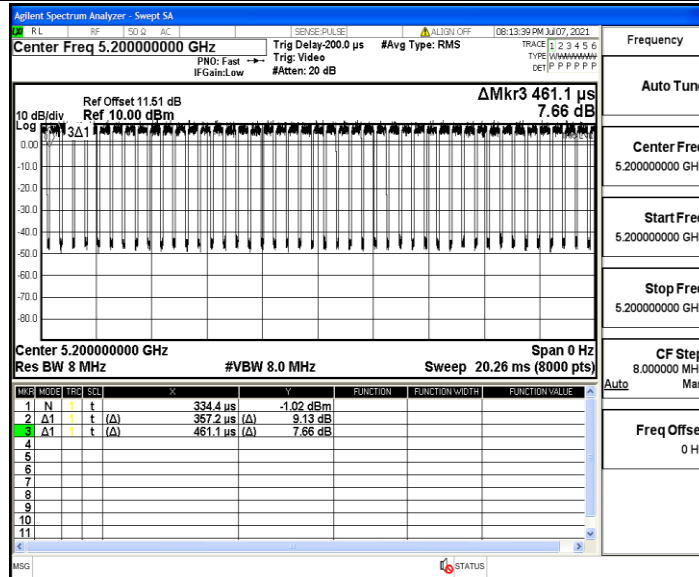
11AC20MIMO_Ant2_5180



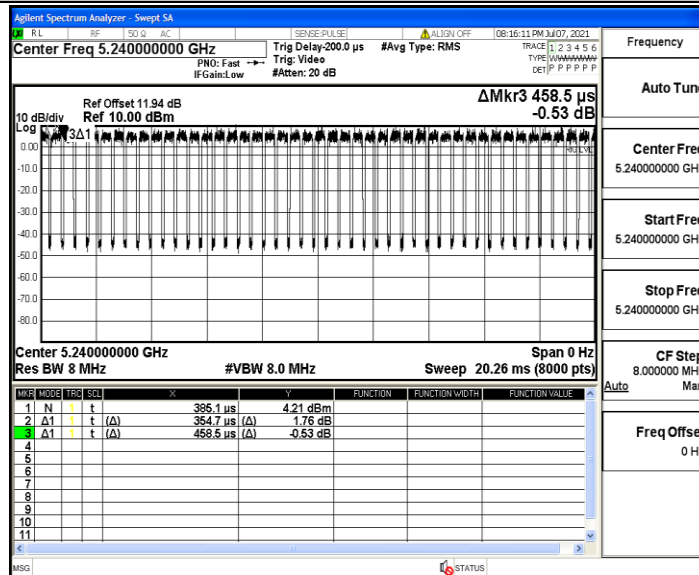
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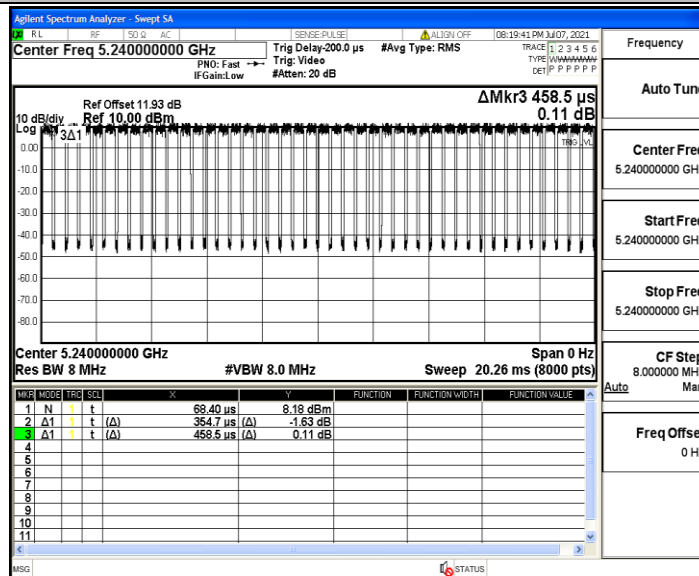
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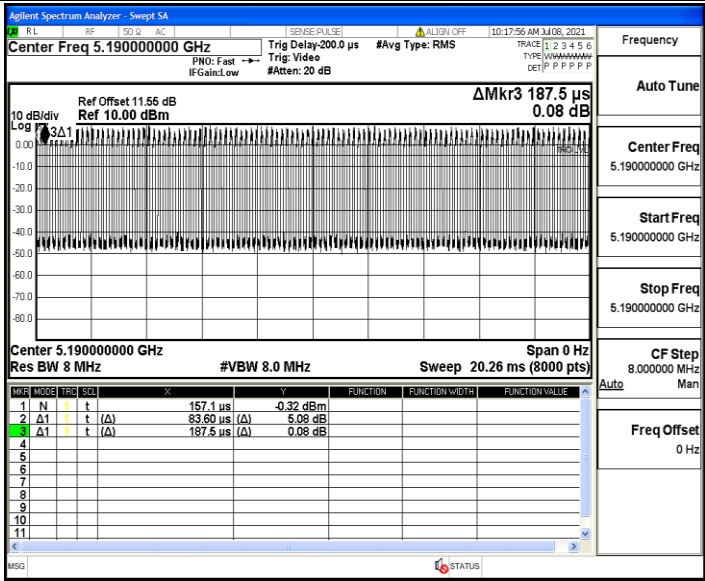
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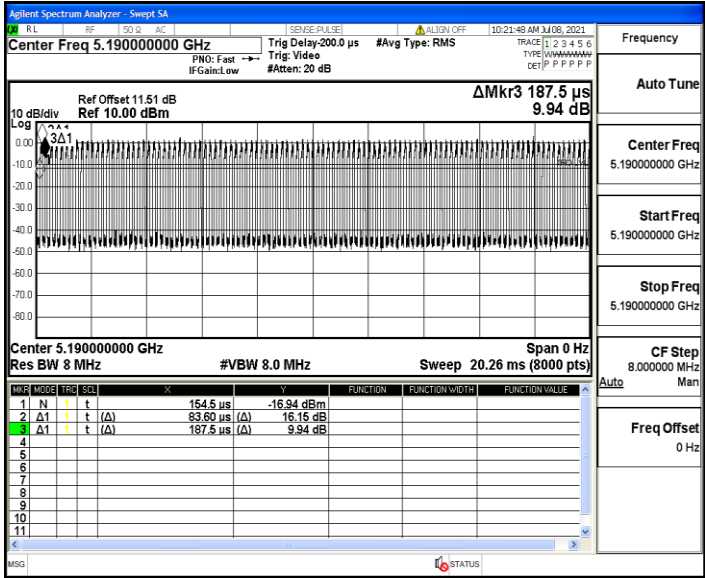
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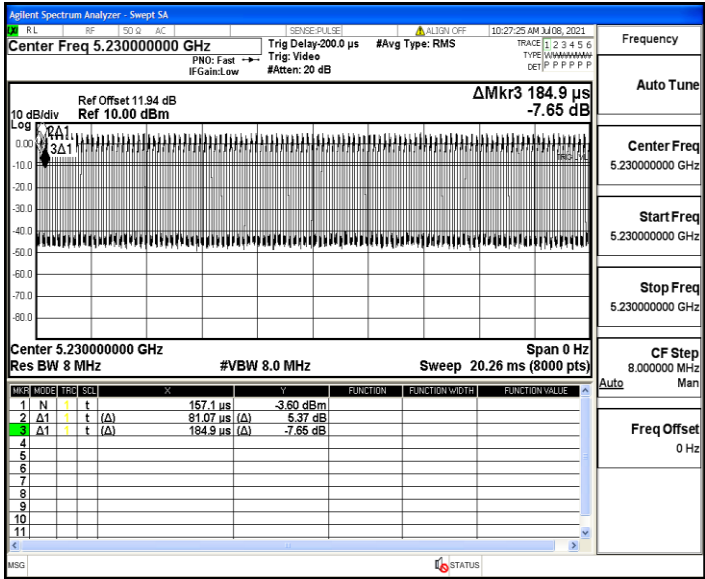
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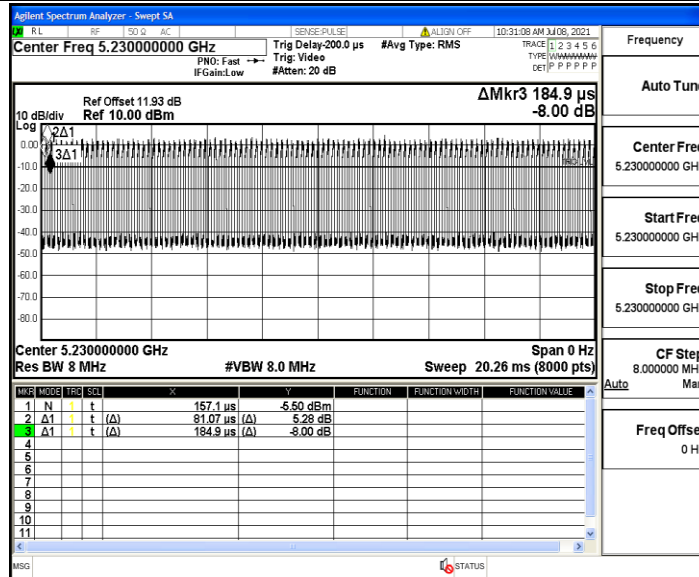
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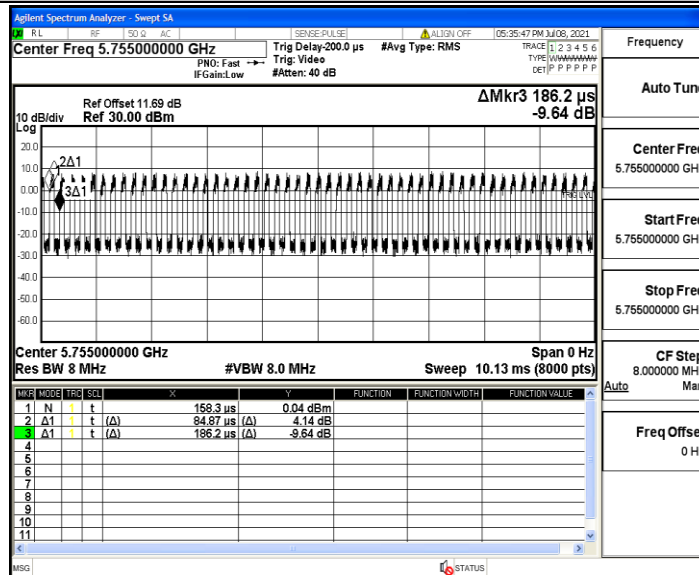
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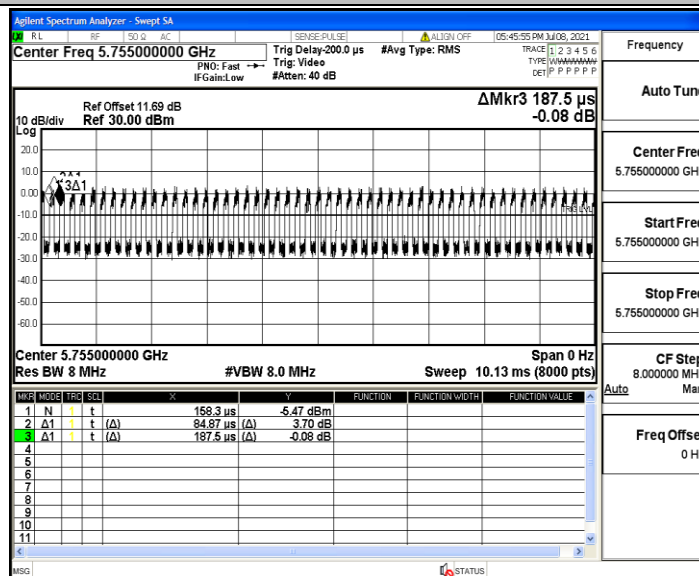
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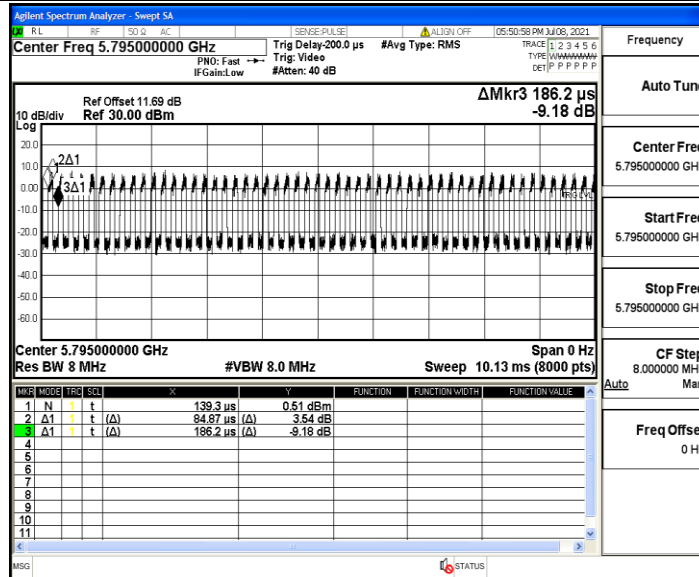
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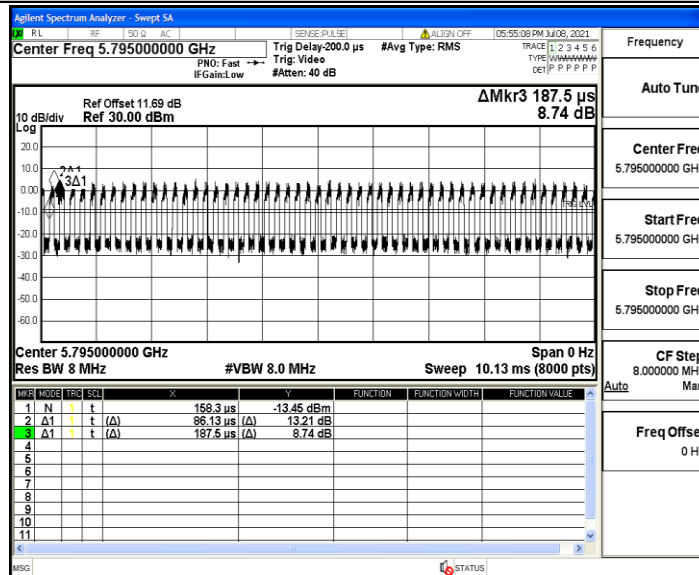
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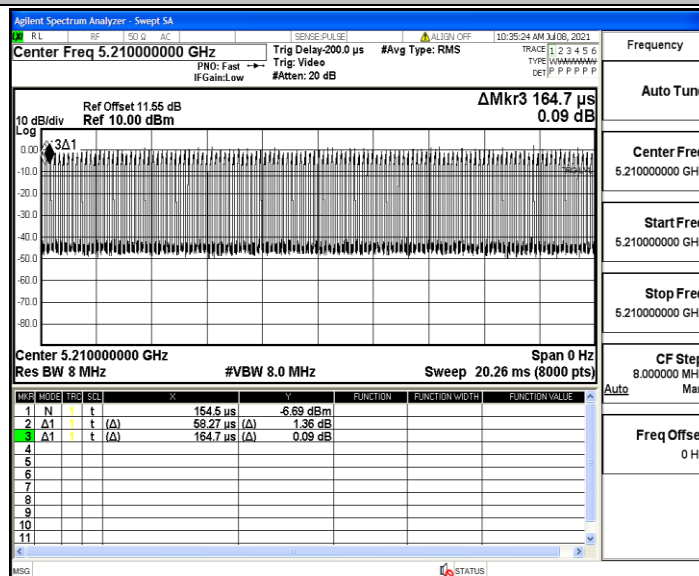
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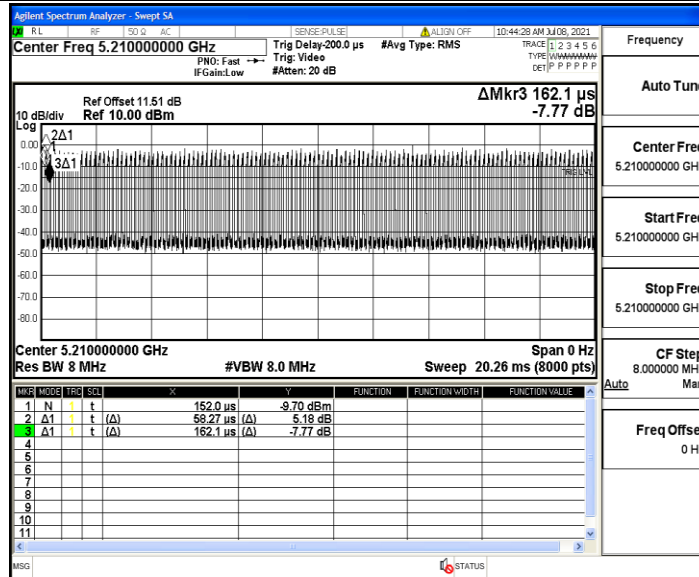
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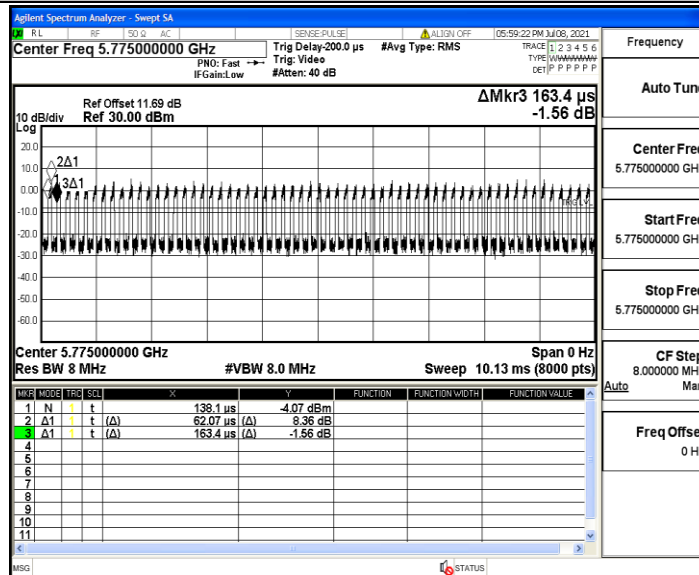
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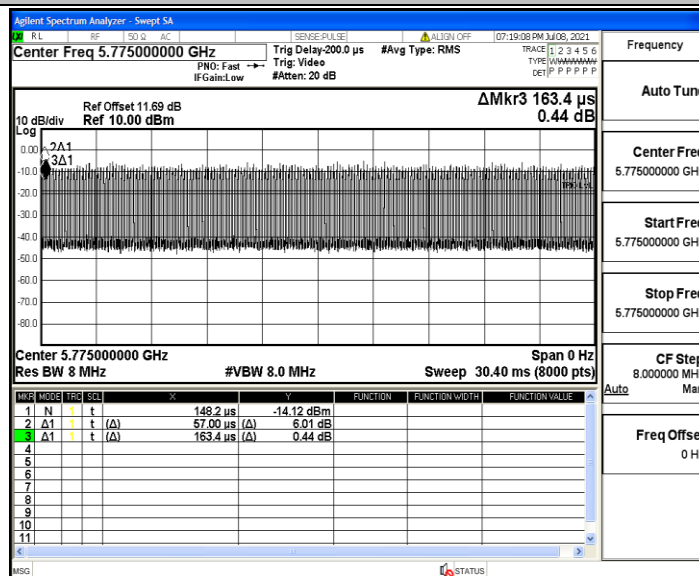
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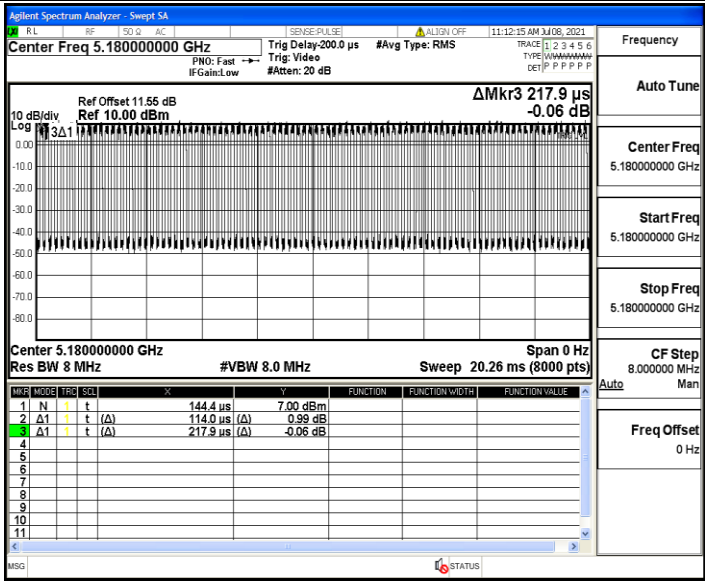
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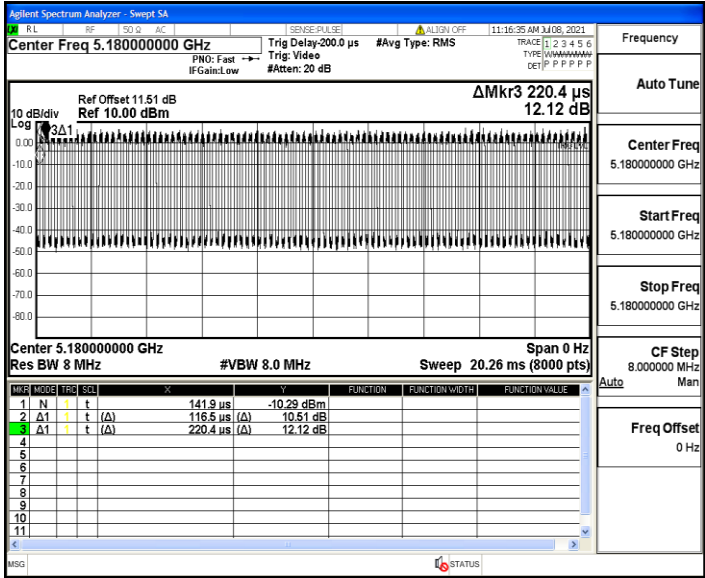
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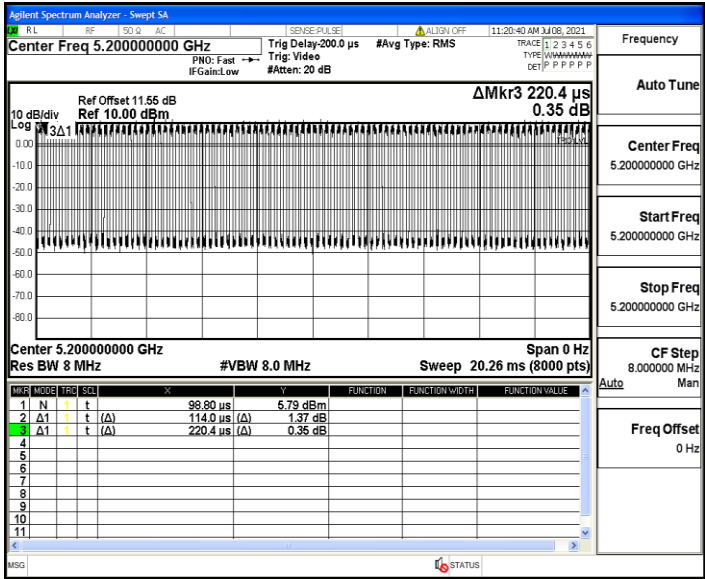
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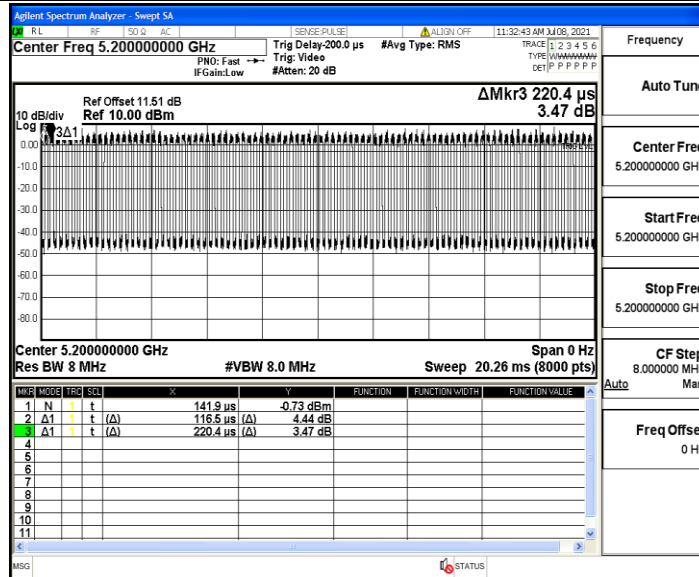
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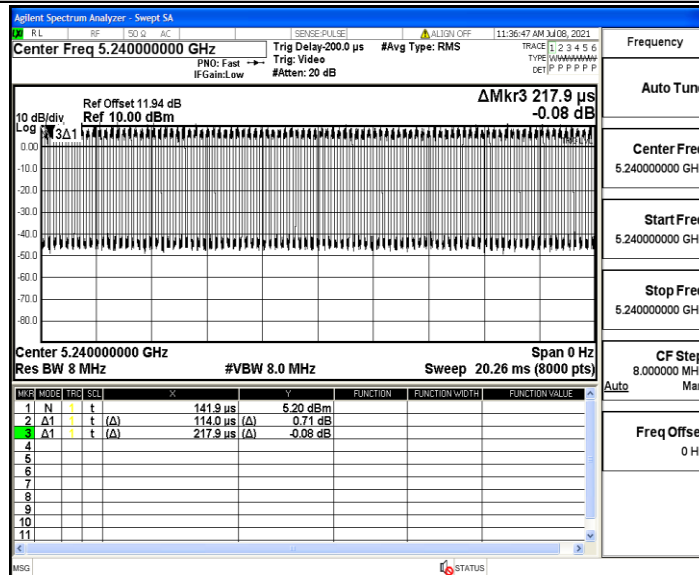
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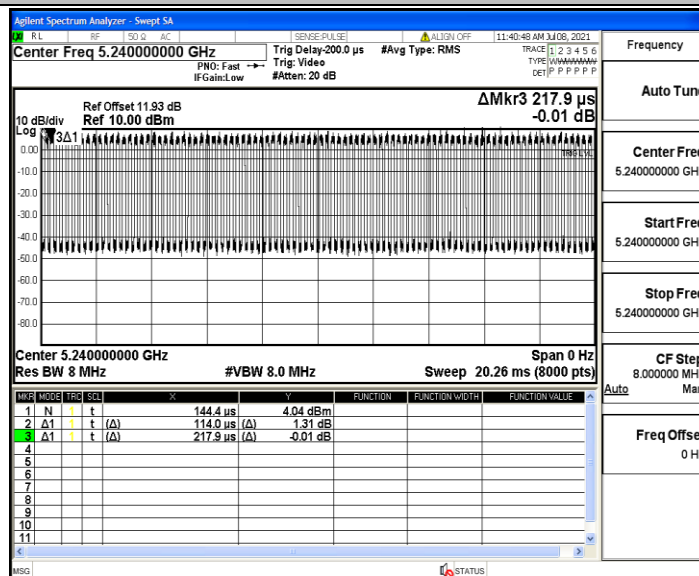
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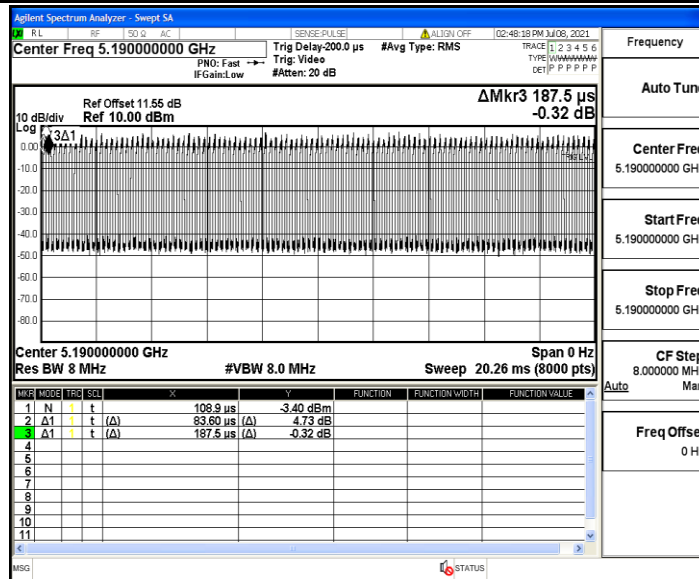
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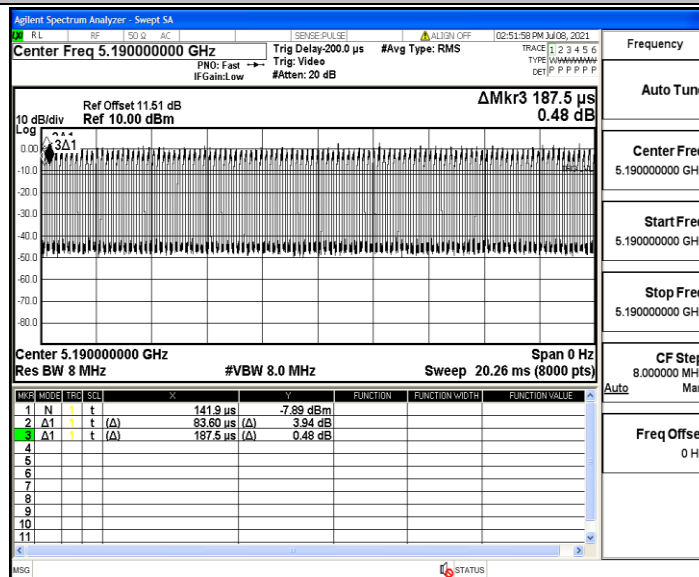
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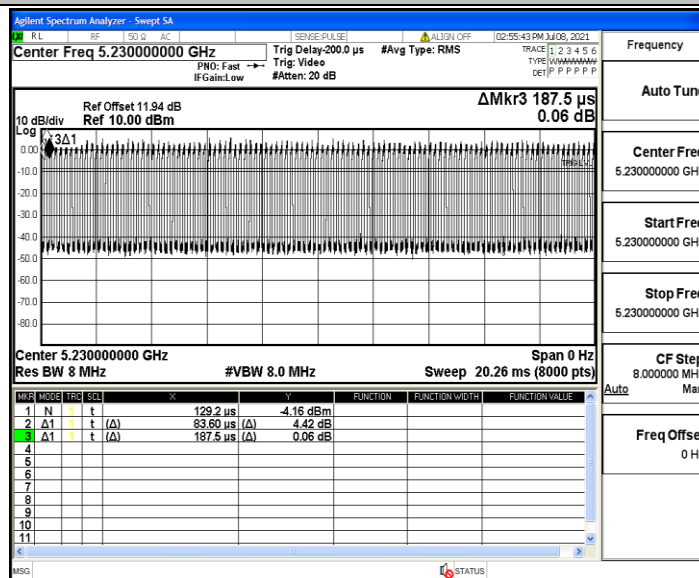
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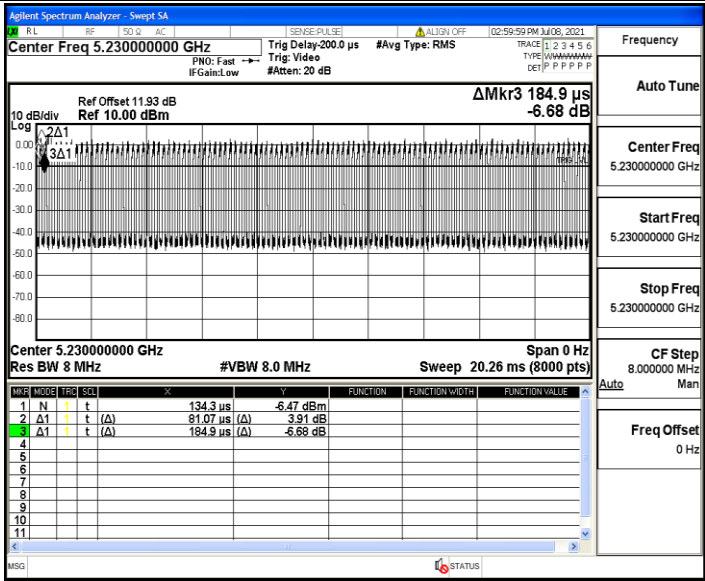
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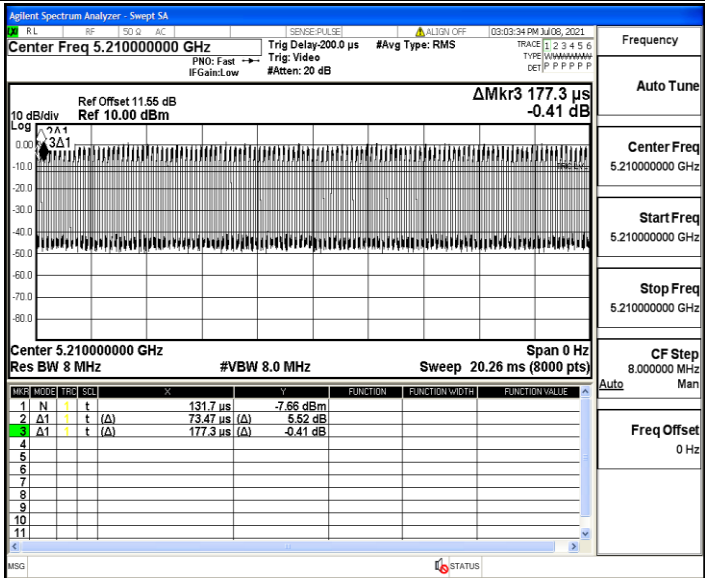
11AX40MIMO_Ant1_5230



11AX40MIMO_Ant2_5230



11AX80MIMO_Ant1_5210



11AX80MIMO_Ant2_5210

