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Appendix B: 802.11ax Test Plot

FCC ID
A3LSMG990U

REVISION HISTORY

The revision history for this document is shown in table.

Revision No.	Date of Issue	Description
0	May 26, 2021	Initial Release

Note:

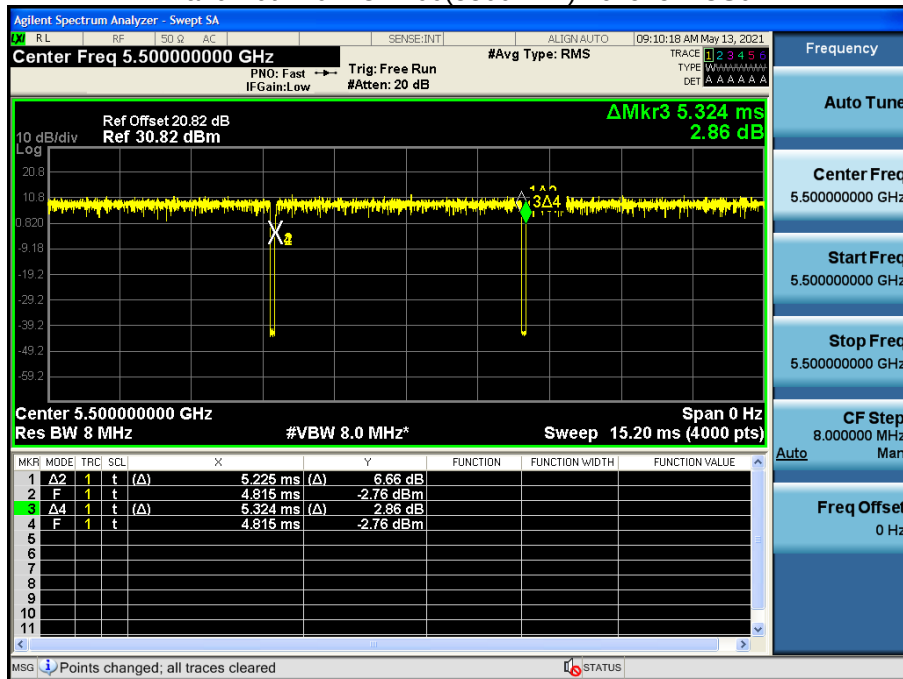
In order to simplify the report, attached plots were only the most lowest data rate.

1. Duty Cycle

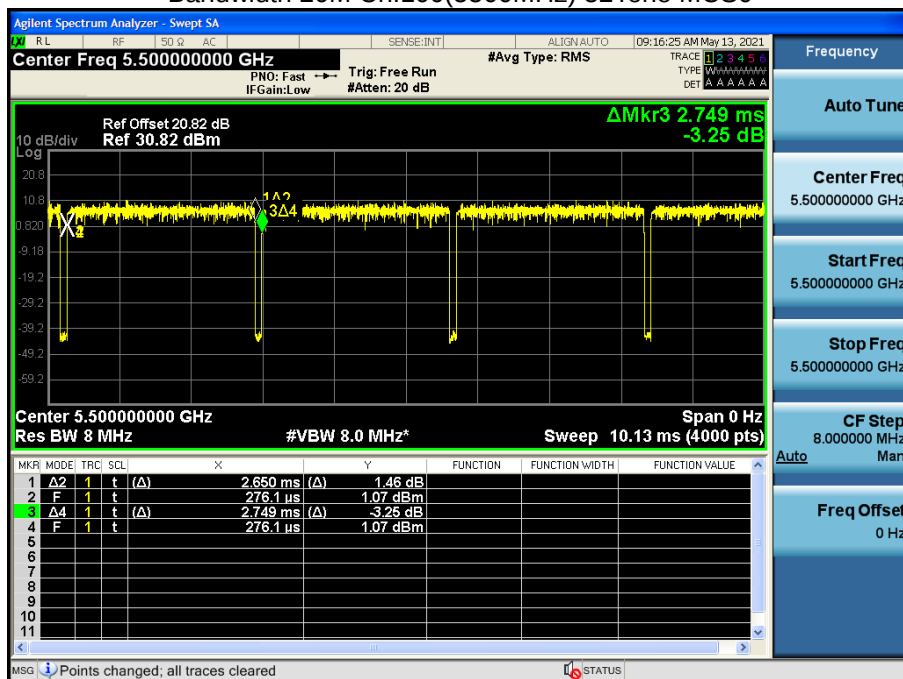
Note:

In order to simplify the report, attached plots were only the most lowest datarate.

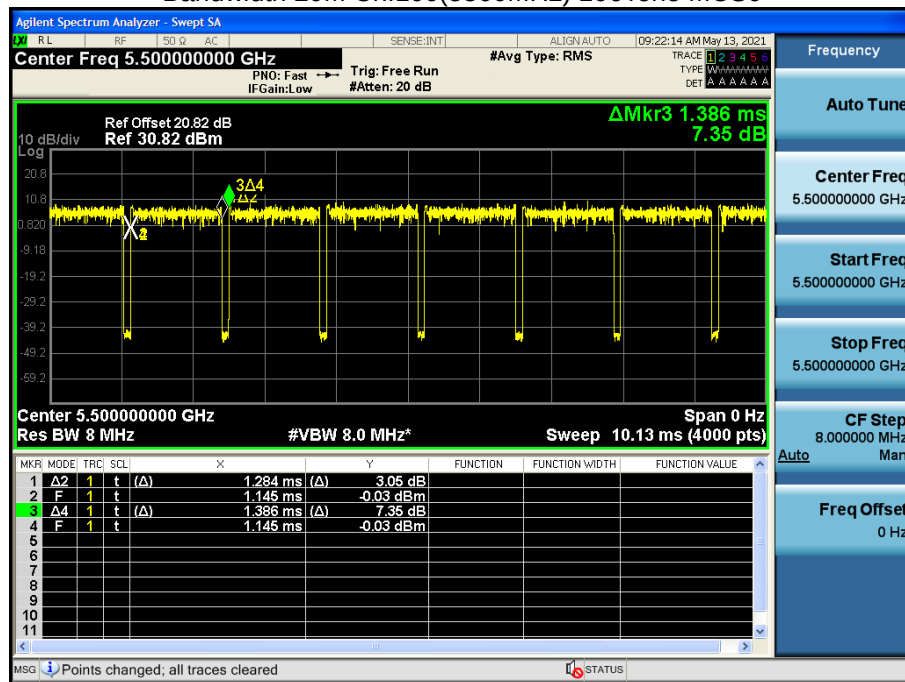
Bandwidth 20M Ch.100(5500MHz) 26Tone MCS0



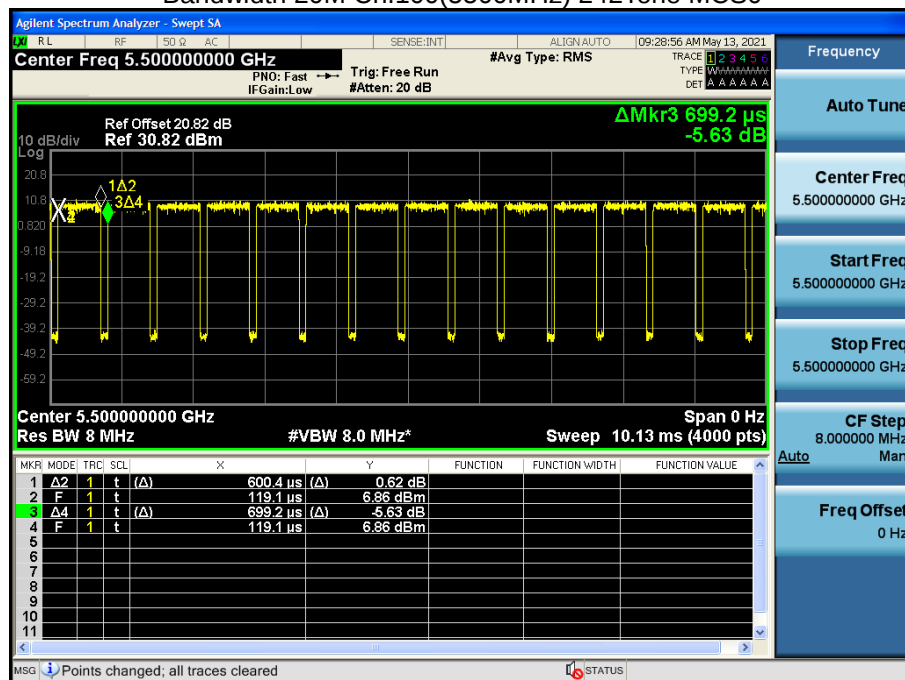
Bandwidth 20M Ch.100(5500MHz) 52Tone MCS0



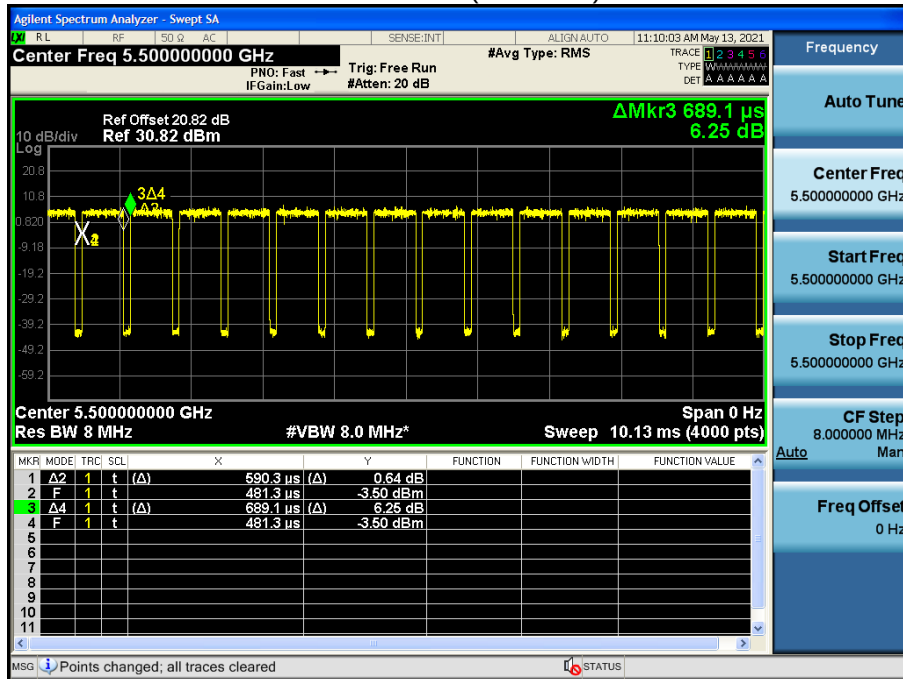
Bandwidth 20M Ch.100(5500MHz) 106Tone MCS0



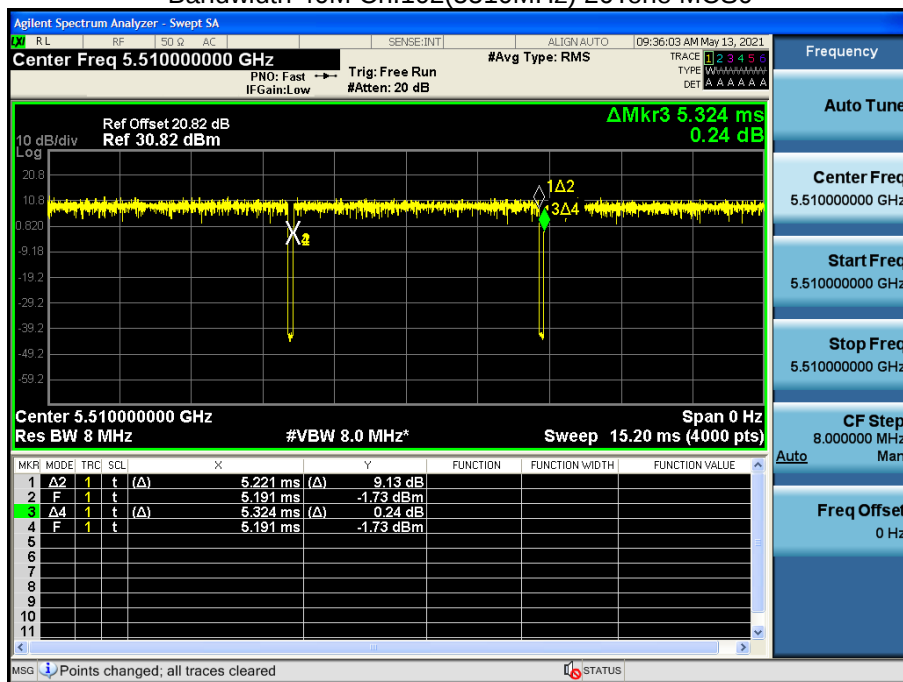
Bandwidth 20M Ch.100(5500MHz) 242Tone MCS0



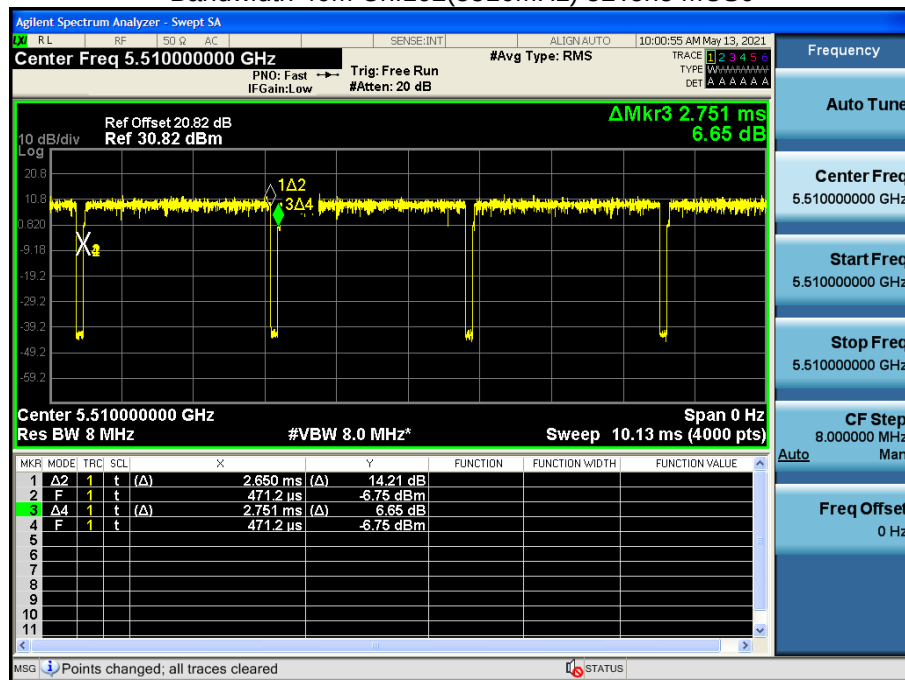
Bandwidth 20M Ch.100(5500MHz) SU MCSO



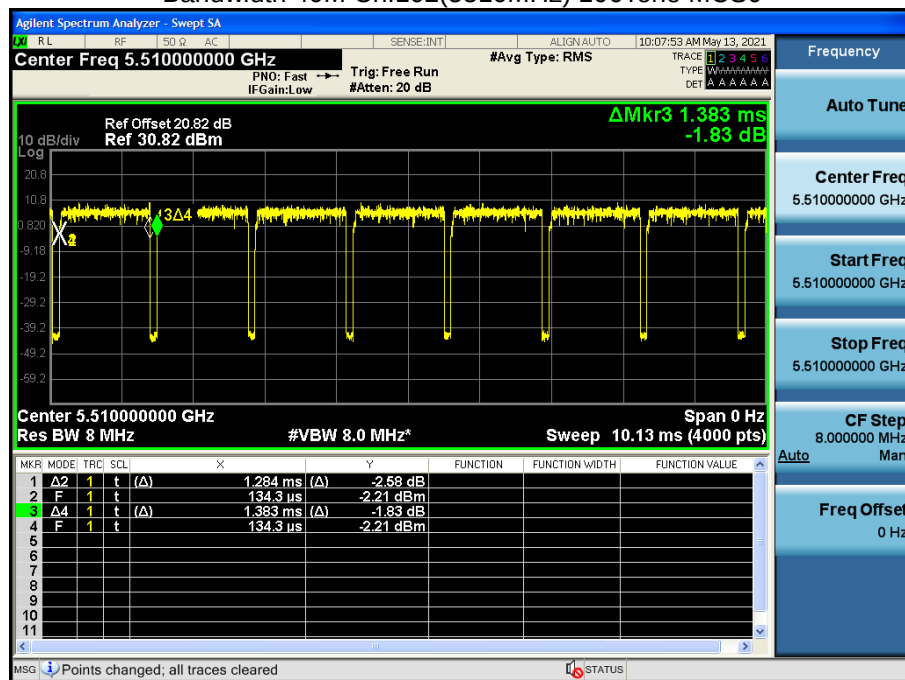
Bandwidth 40M Ch.102(5510MHz) 26Tone MCSO



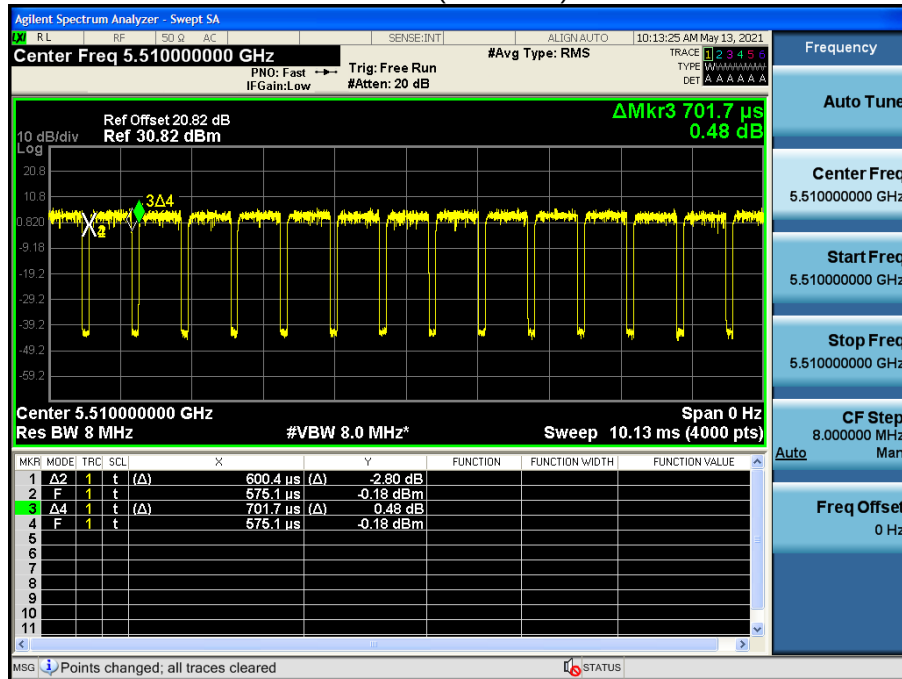
Bandwidth 40M Ch.102(5510MHz) 52Tone MCS0



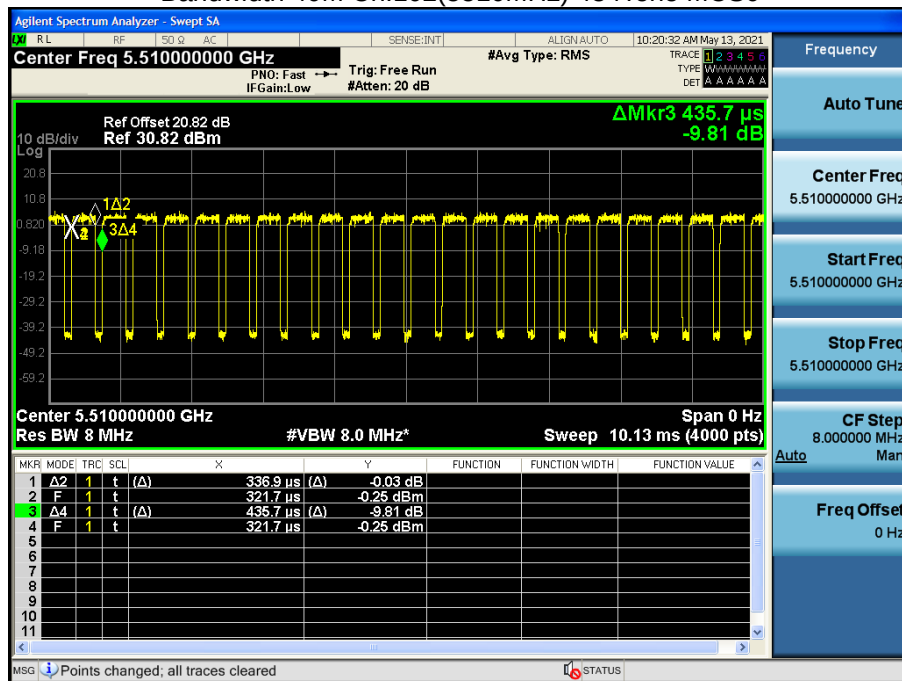
Bandwidth 40M Ch.102(5510MHz) 106Tone MCS0



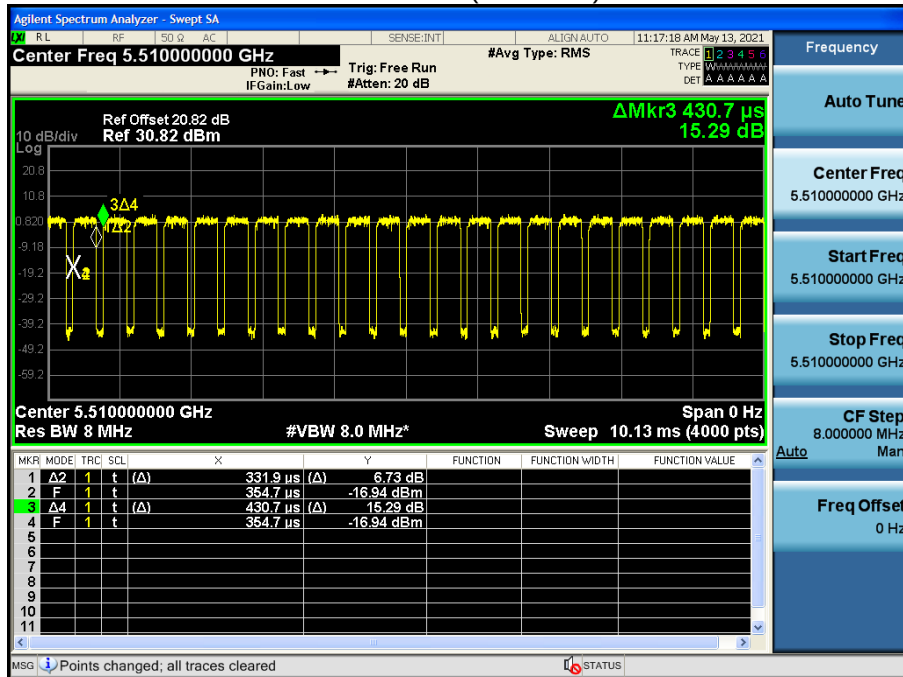
Bandwidth 40M Ch.102(5510MHz) 242Tone MCS0



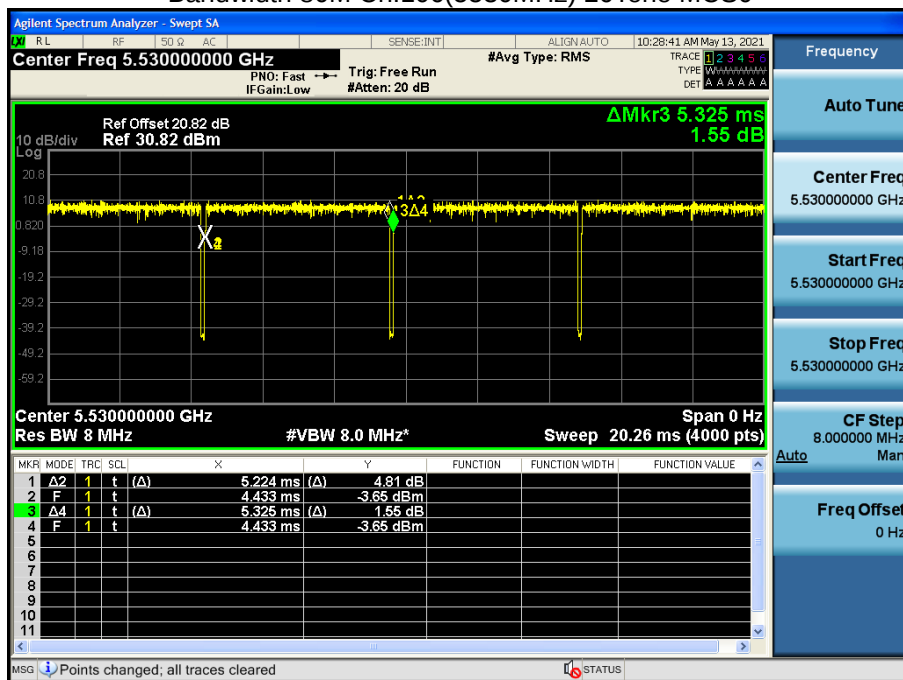
Bandwidth 40M Ch.102(5510MHz) 484Tone MCS0



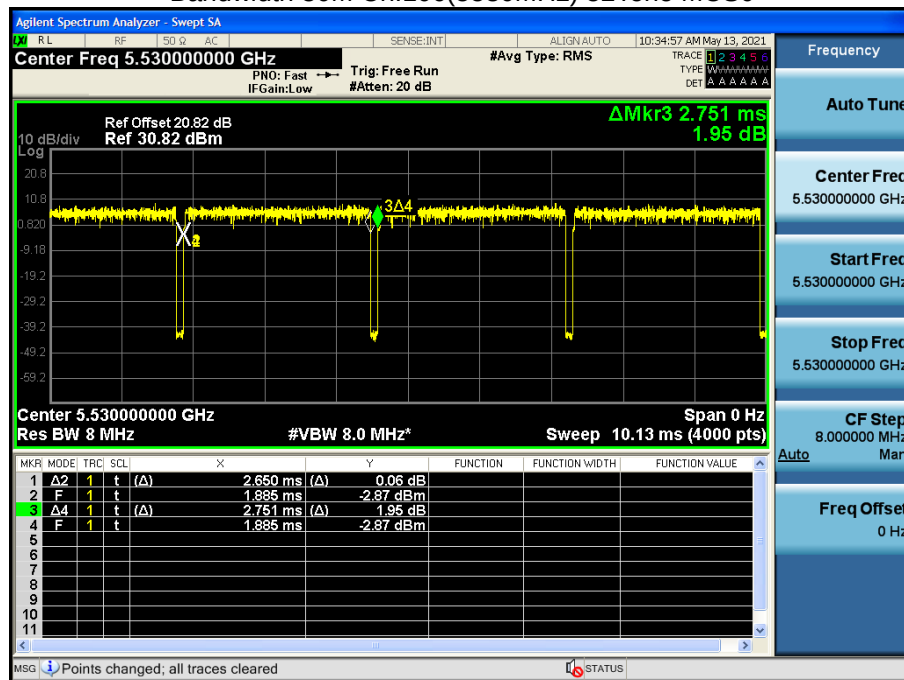
Bandwidth 40M Ch.102(5510MHz) SU MCS0



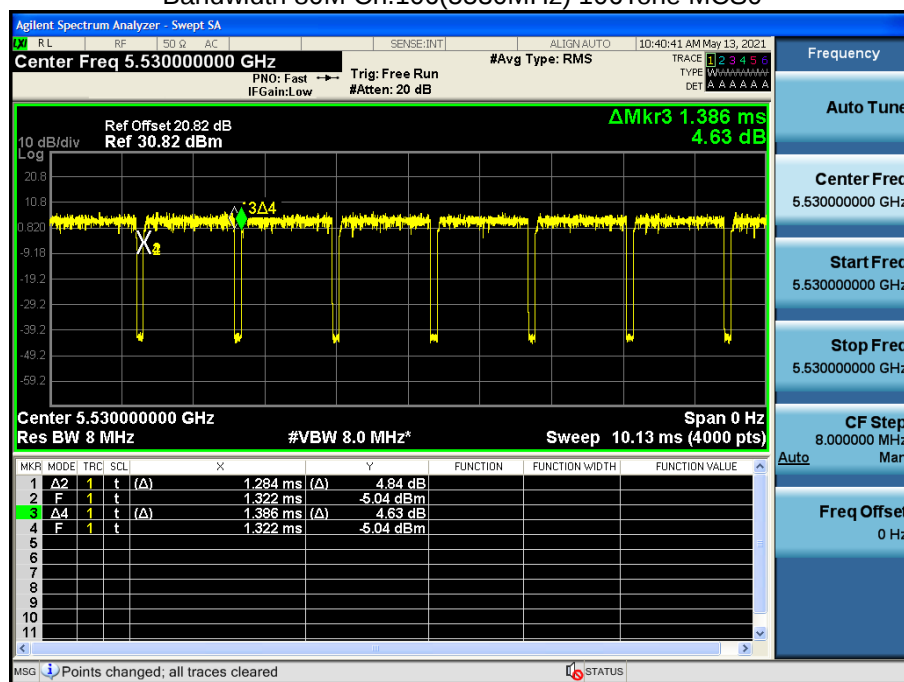
Bandwidth 80M Ch.106(5530MHz) 26Tone MCS0



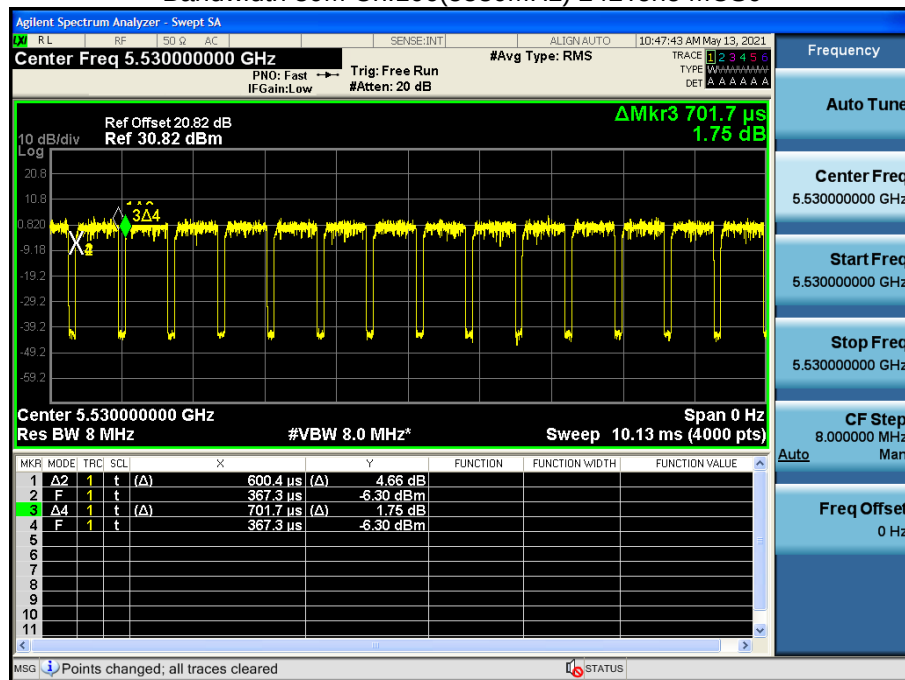
Bandwidth 80M Ch.106(5530MHz) 52Tone MCS0



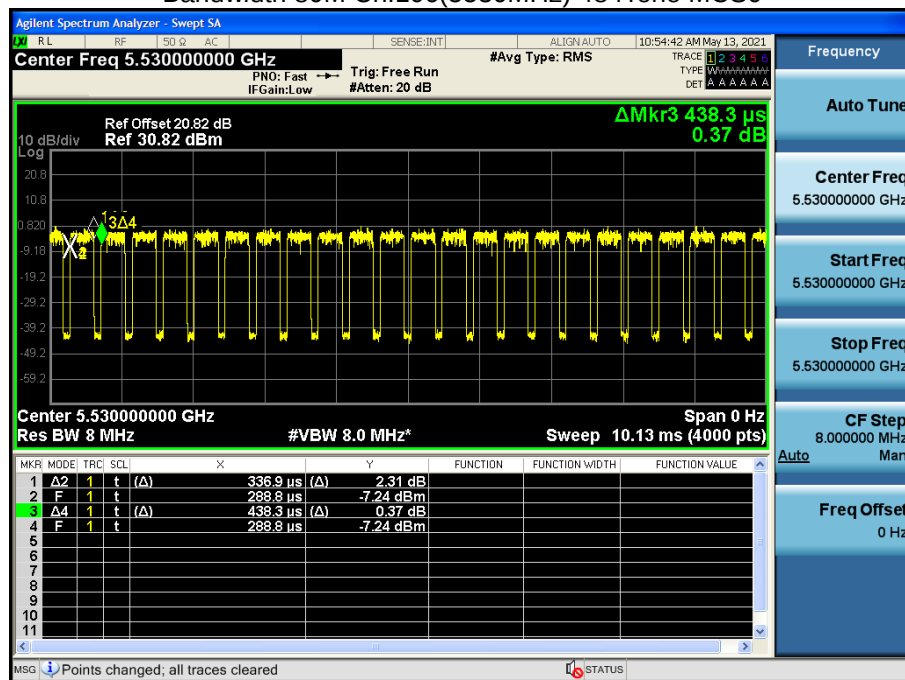
Bandwidth 80M Ch.106(5530MHz) 106Tone MCS0



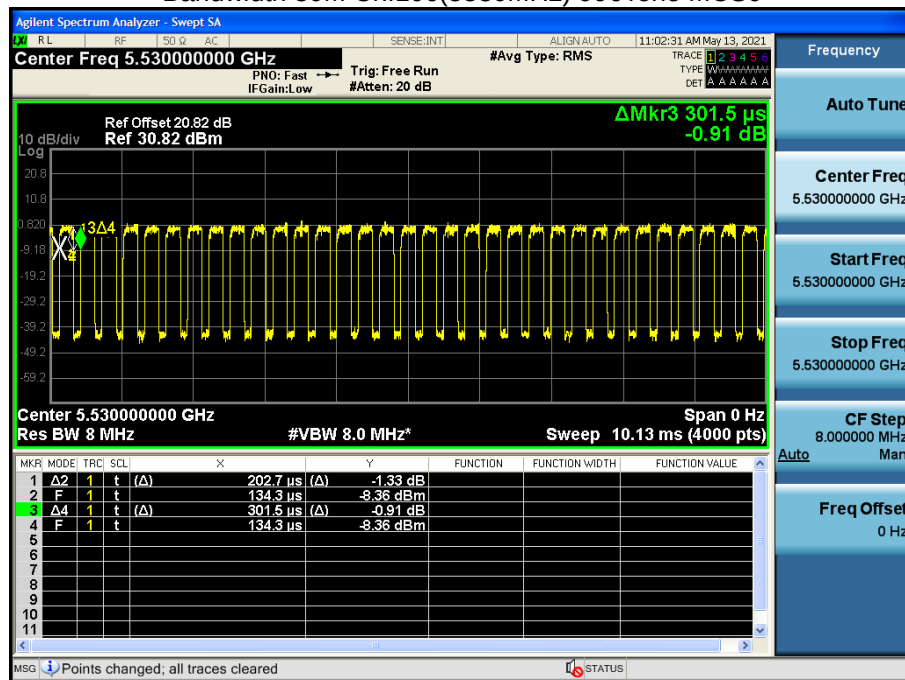
Bandwidth 80M Ch.106(5530MHz) 242Tone MCS0



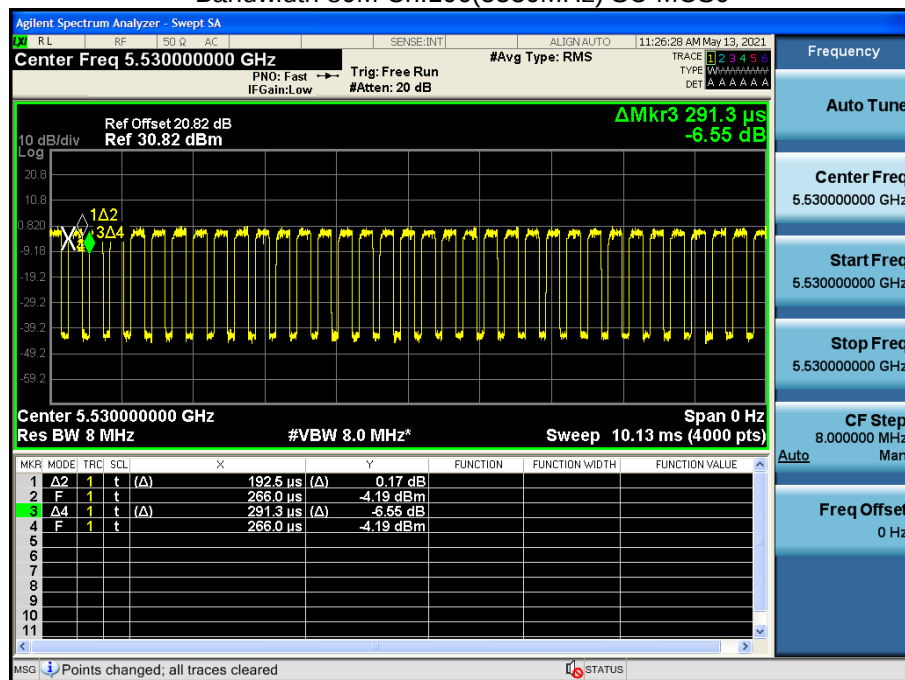
Bandwidth 80M Ch.106(5530MHz) 484Tone MCS0



Bandwidth 80M Ch.106(5530MHz) 996Tone MCS0



Bandwidth 80M Ch.106(5530MHz) SU MCS0

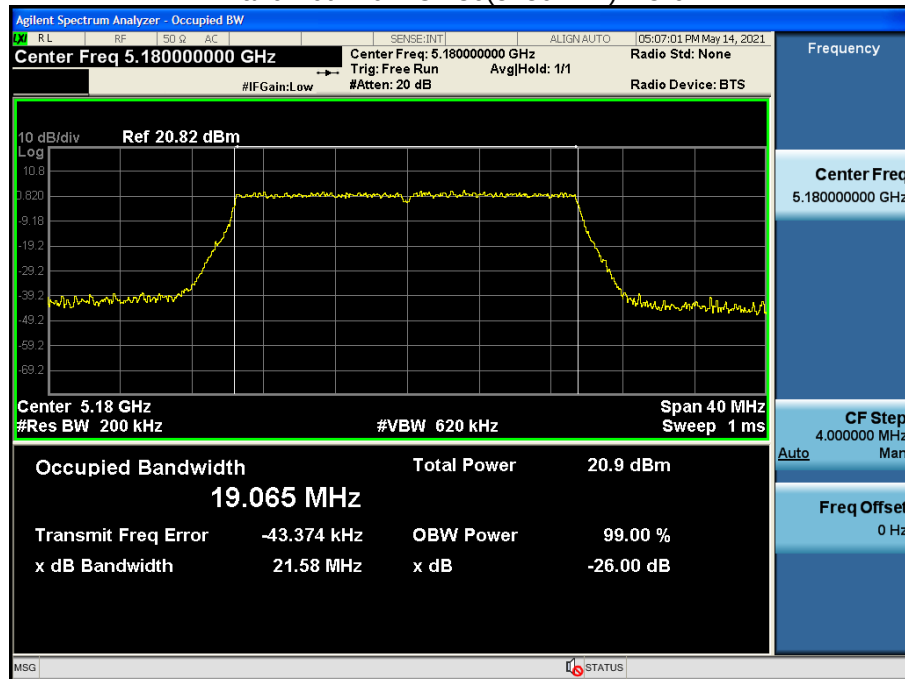


2. 26dB Bandwidth

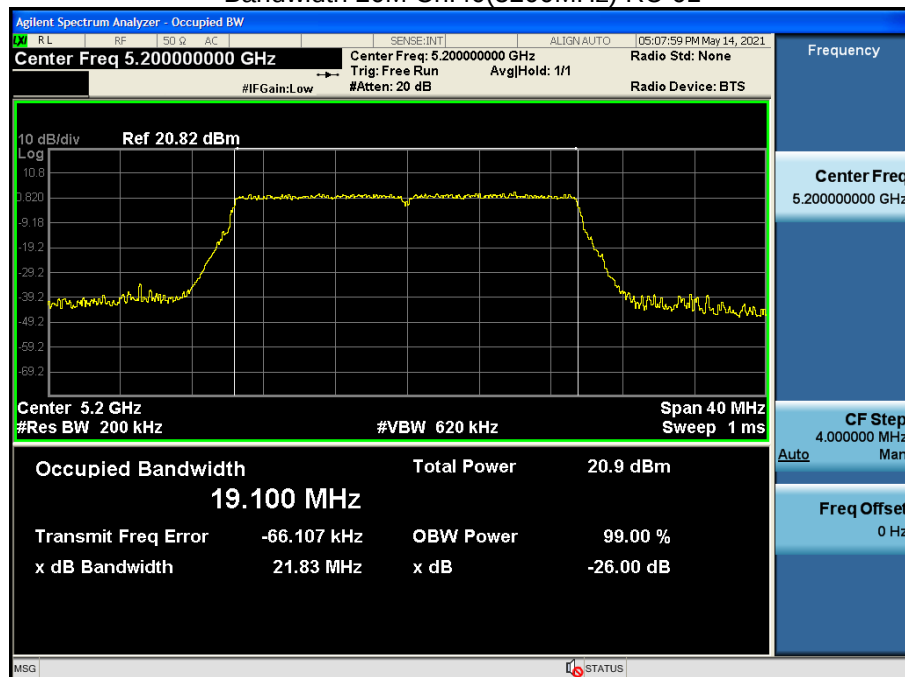
Note:

1. In order to simplify the report, attached plots were only MIMO Ant.1 (Worst Case: Ant.1).
2. In order to simplify the report, attached plots were only the most wide channel.

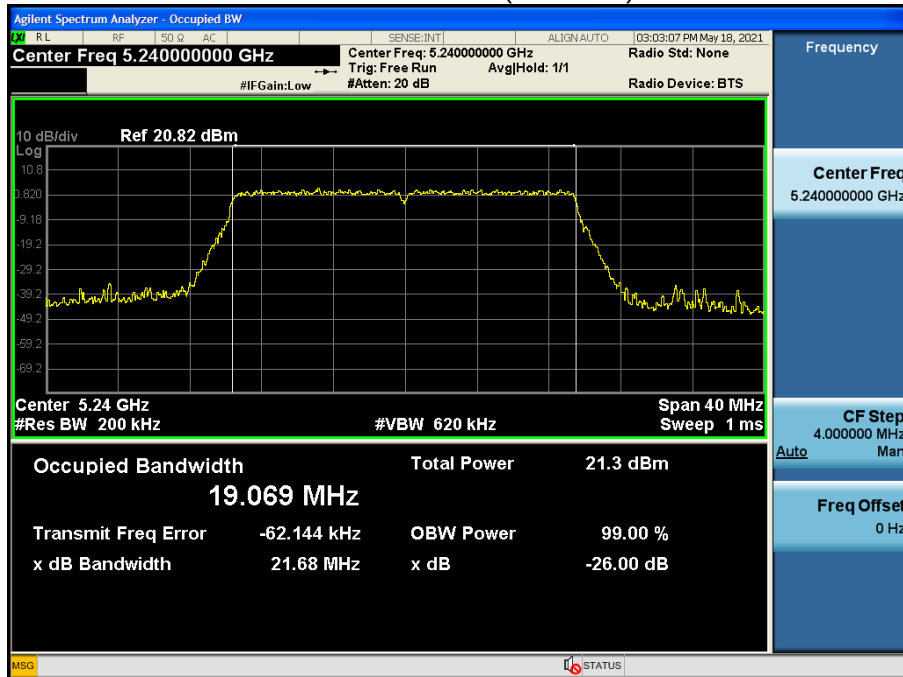
Bandwidth 20M Ch.36(5180MHz) RU 61



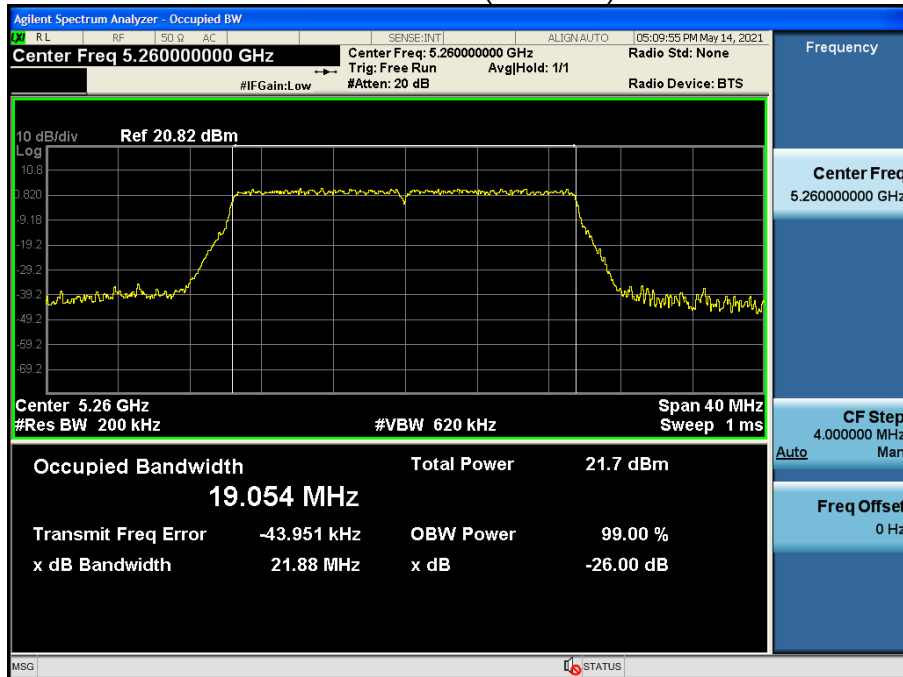
Bandwidth 20M Ch.40(5200MHz) RU 61



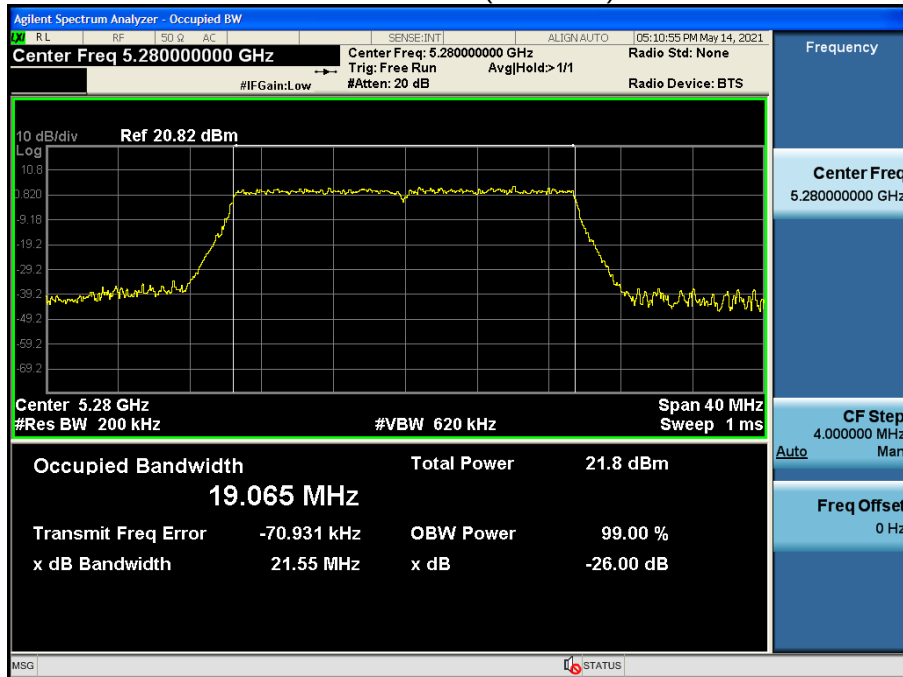
Bandwidth 20M Ch.48(5240MHz) SU



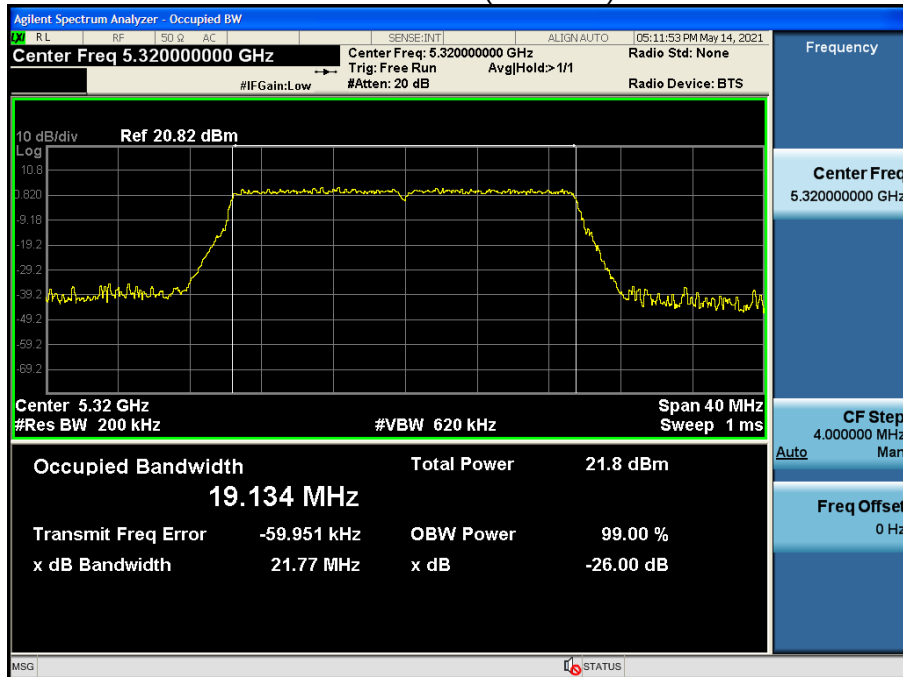
Bandwidth 20M Ch.52(5260MHz) RU 61



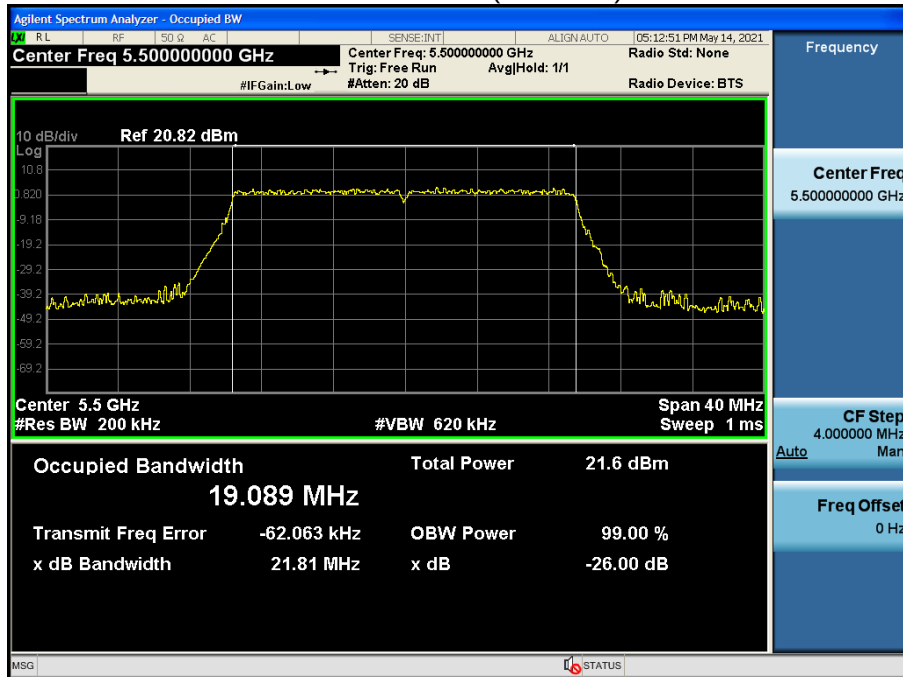
Bandwidth 20M Ch.56(5280MHz) RU 61



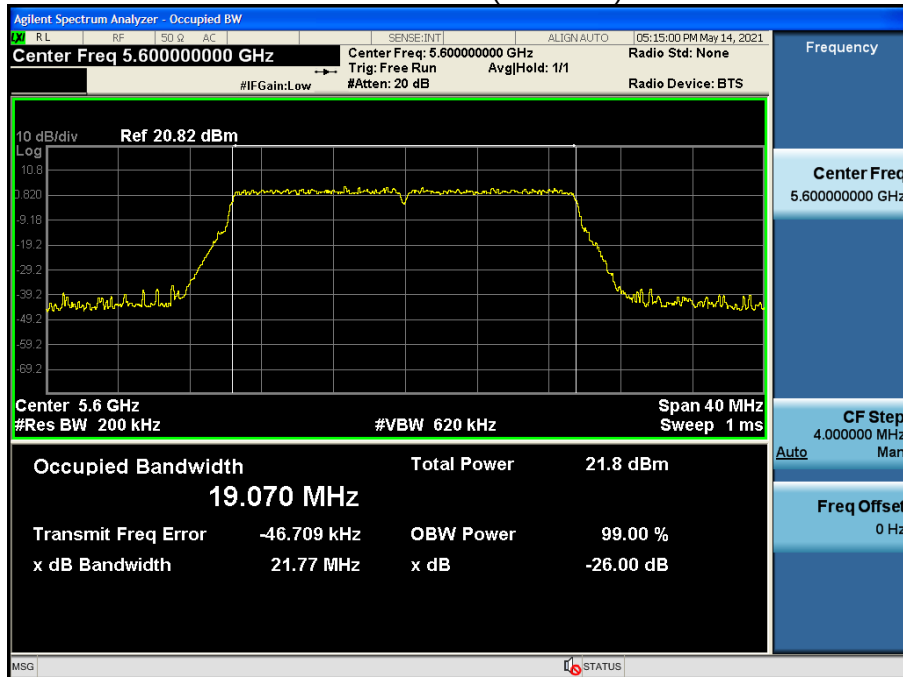
Bandwidth 20M Ch.64(5320MHz) RU 61



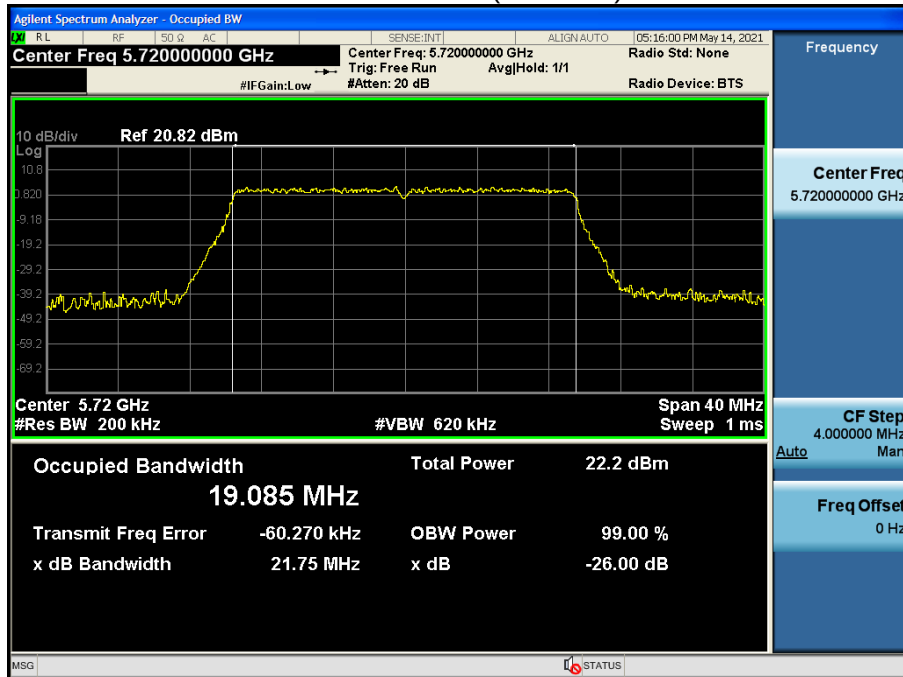
Bandwidth 20M Ch.100(5500MHz) RU 61



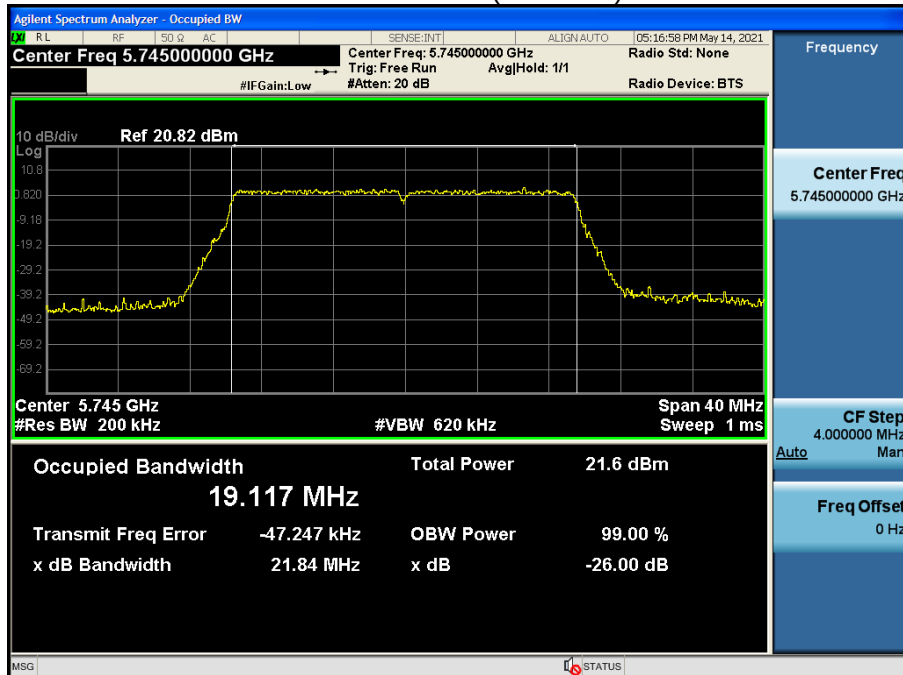
Bandwidth 20M Ch.120(5600MHz) RU 61



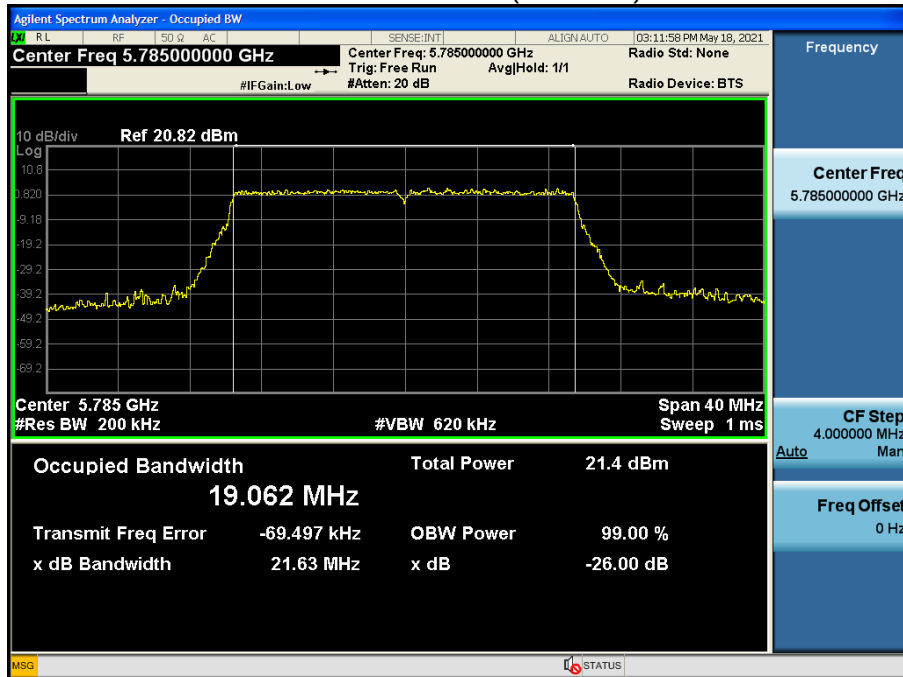
Bandwidth 20M Ch.144(5720MHz) RU 61



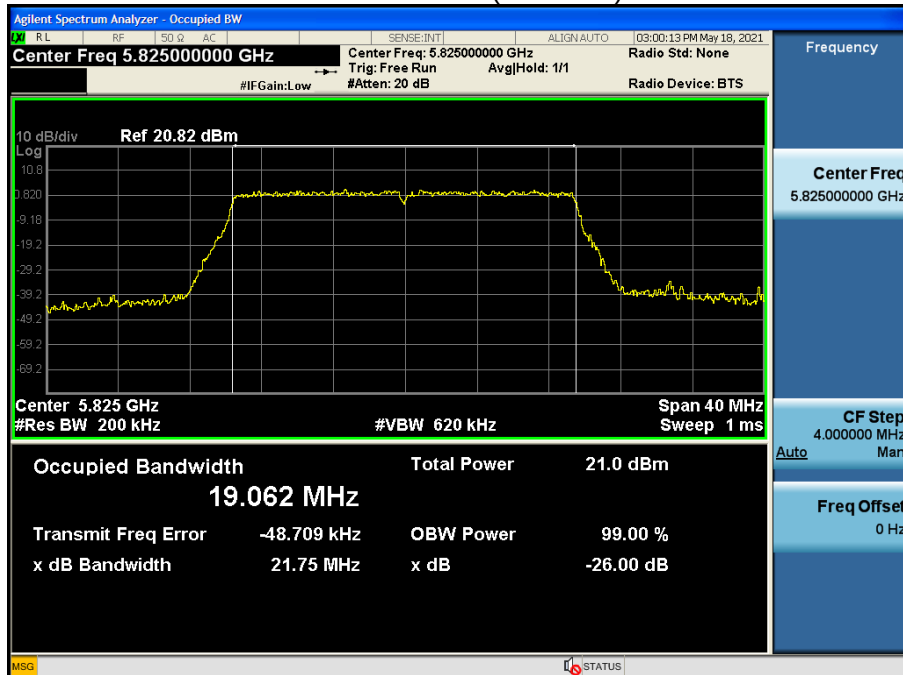
Bandwidth 20M Ch.149(5745MHz) RU 61



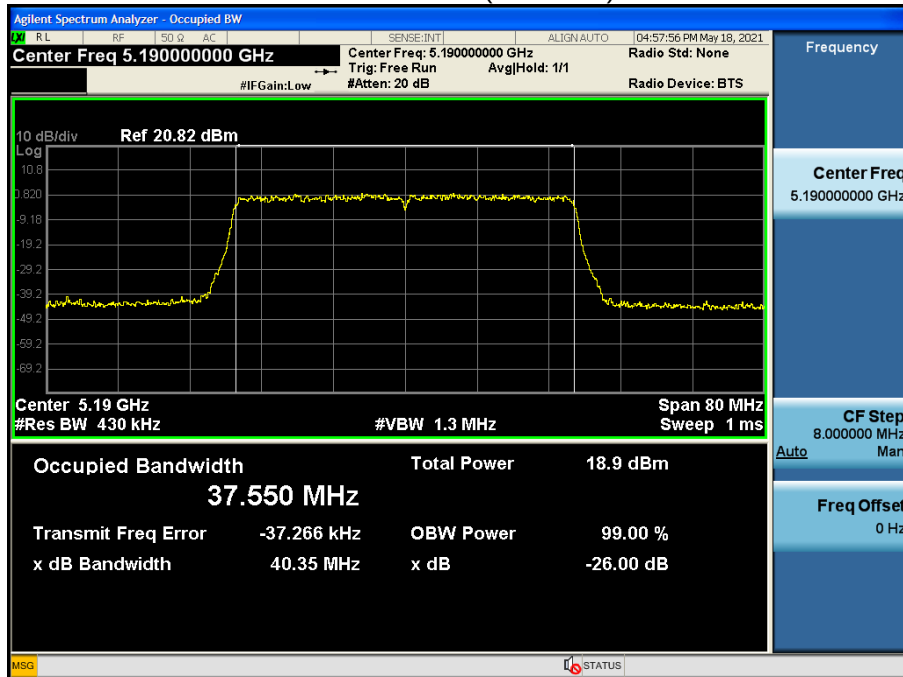
Bandwidth 20M Ch.157(5785MHz) SU



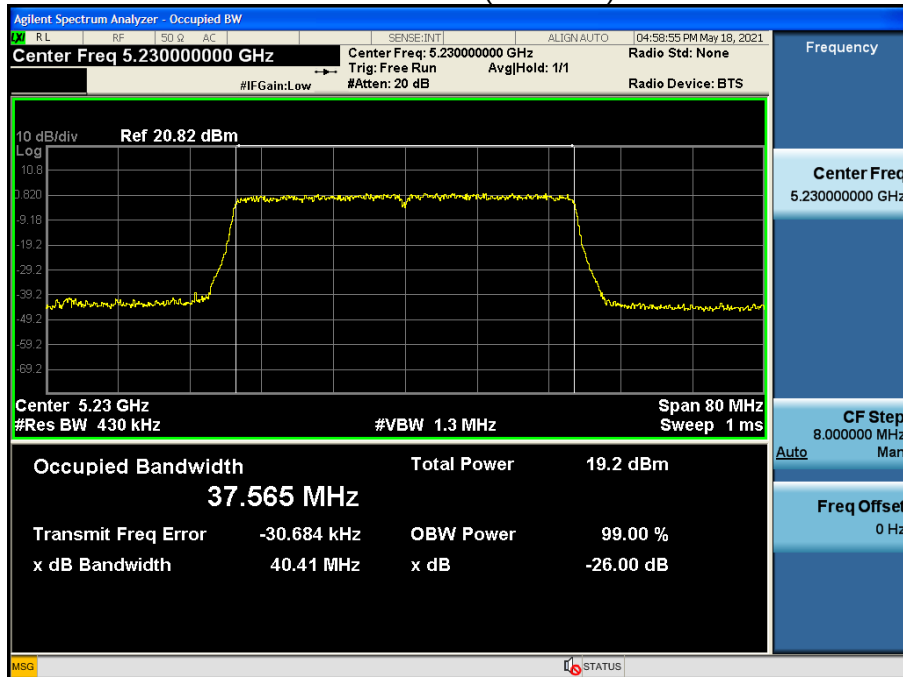
Bandwidth 20M Ch.165(5825MHz) RU 61



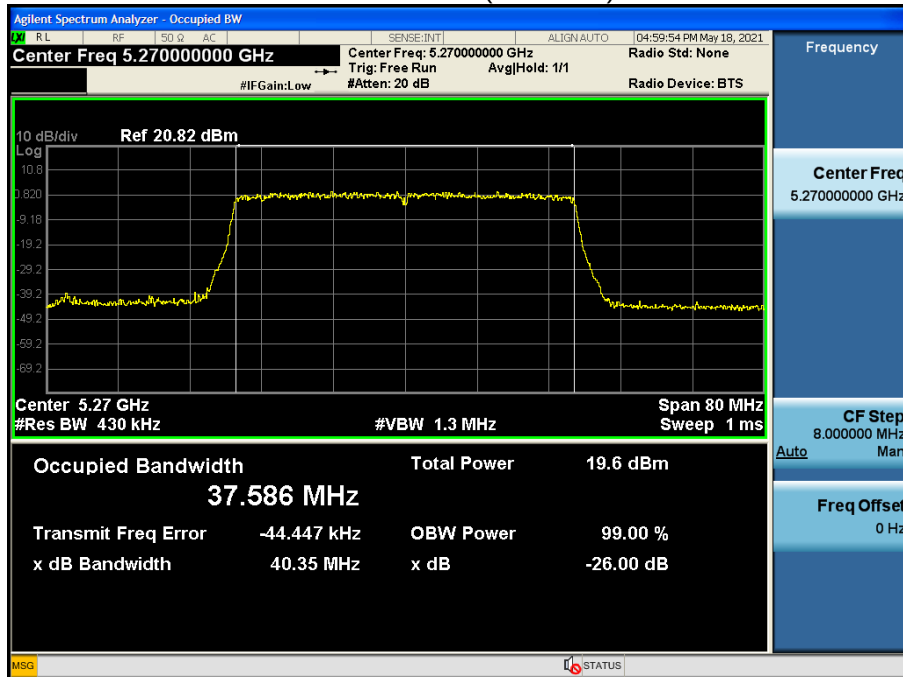
Bandwidth 40M Ch.38(5190MHz) RU 65



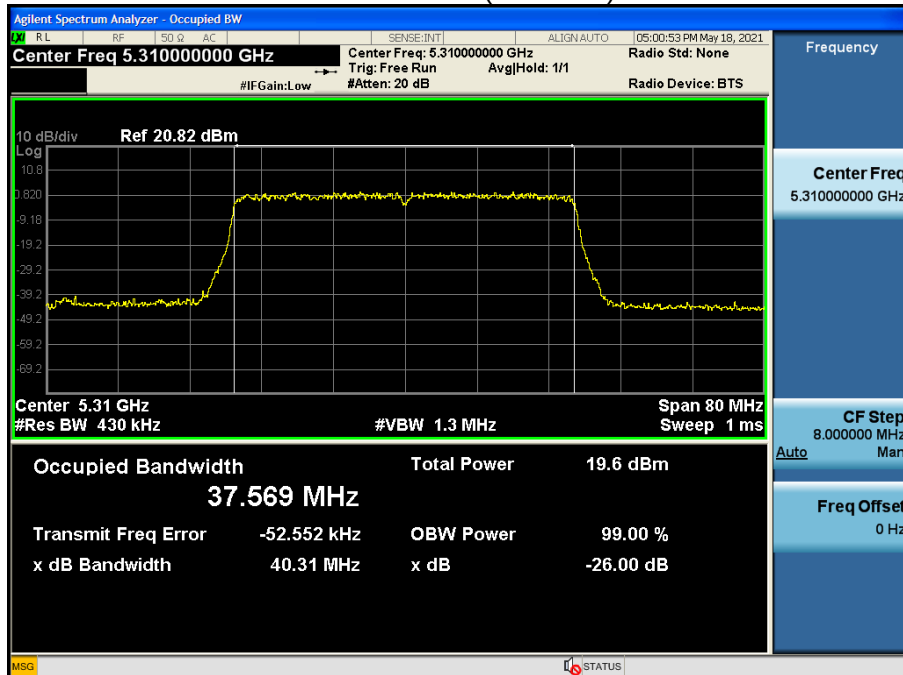
Bandwidth 40M Ch.46(5230MHz) RU 65



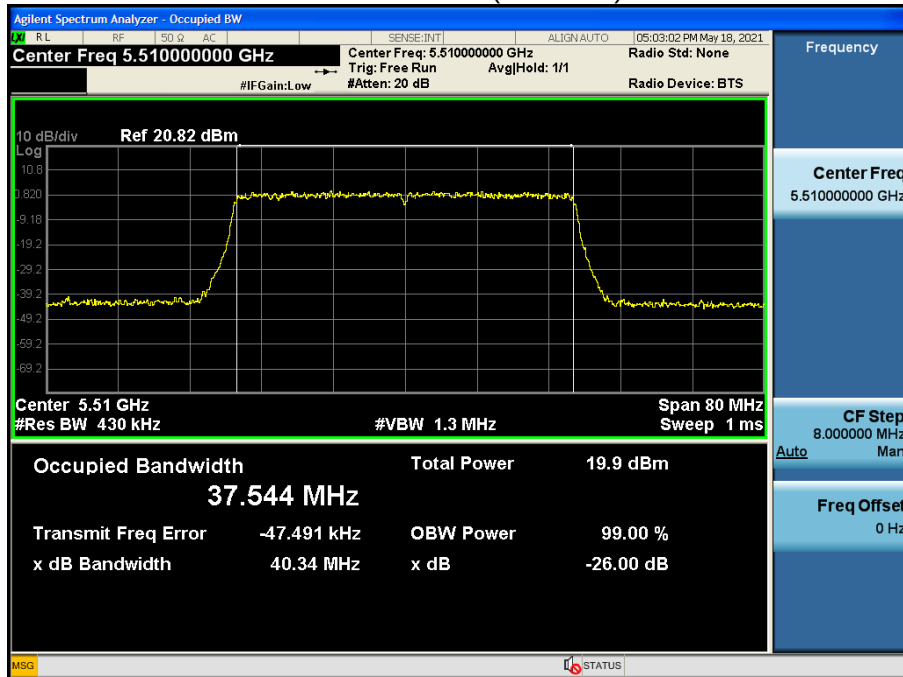
Bandwidth 40M Ch.54(5270MHz) RU 65



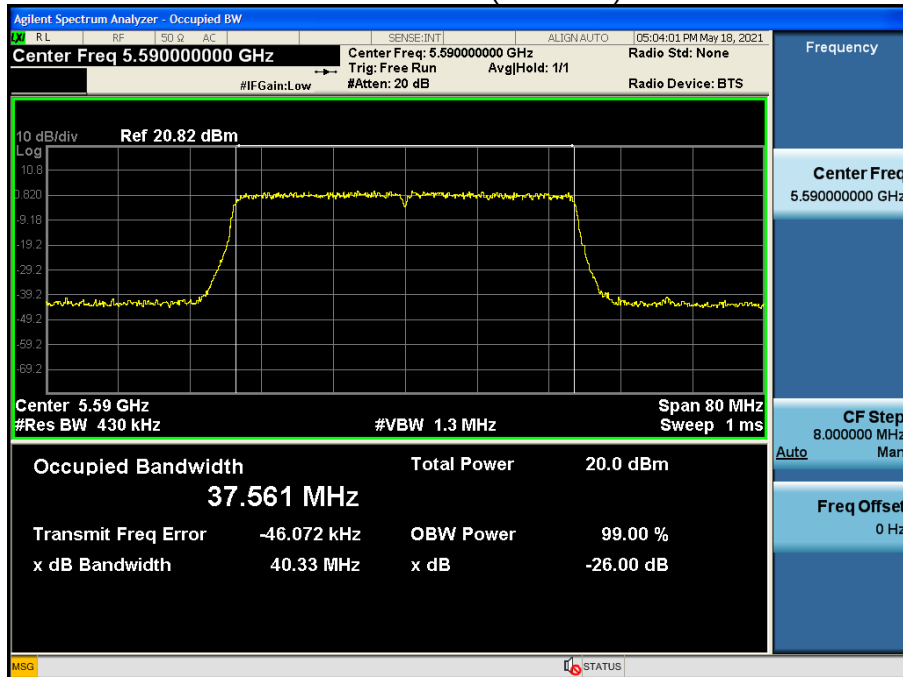
Bandwidth 40M Ch.62(5310MHz) RU 65



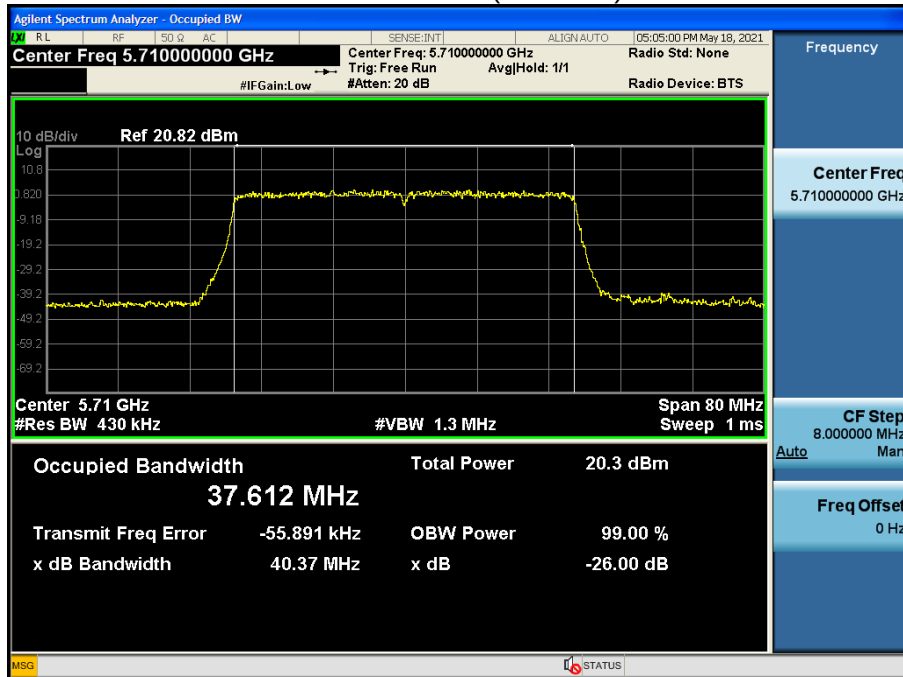
Bandwidth 40M Ch.102(5510MHz) RU 65



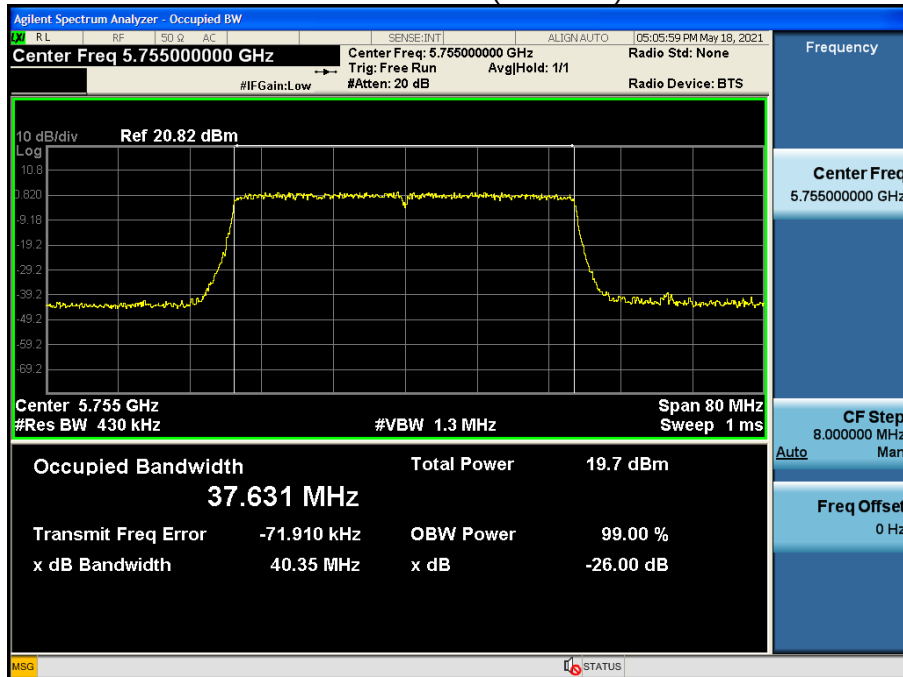
Bandwidth 40M Ch.118(5590MHz) RU 65



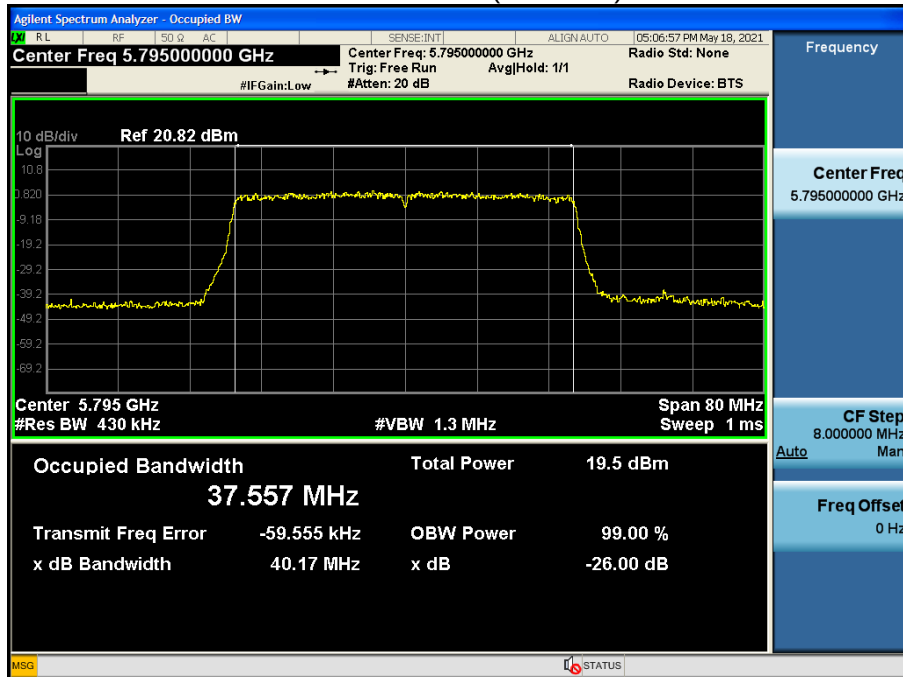
Bandwidth 40M Ch.142(5710MHz) RU 65



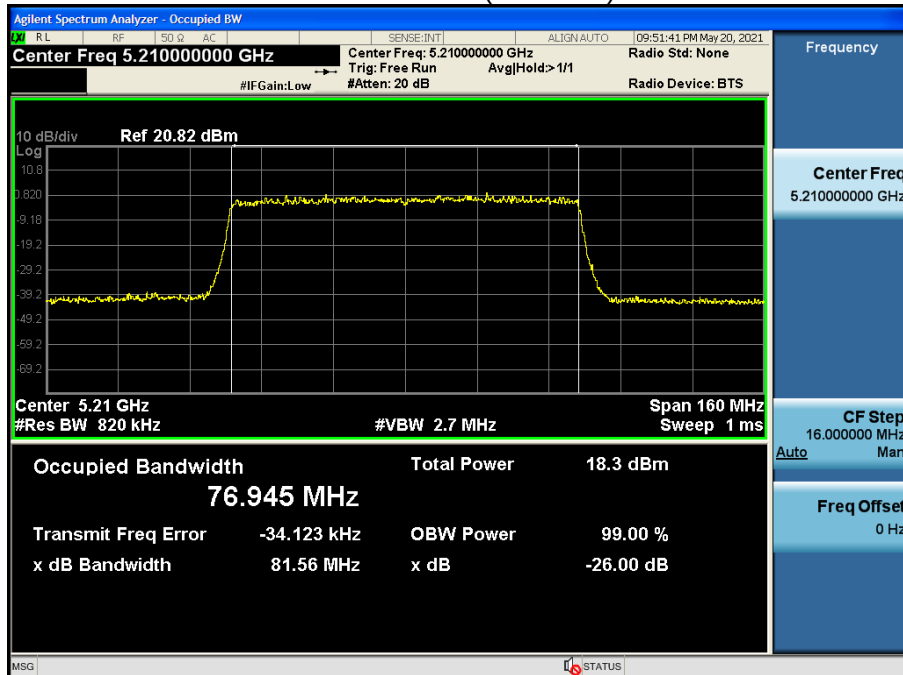
Bandwidth 40M Ch.151(5755MHz) RU 65



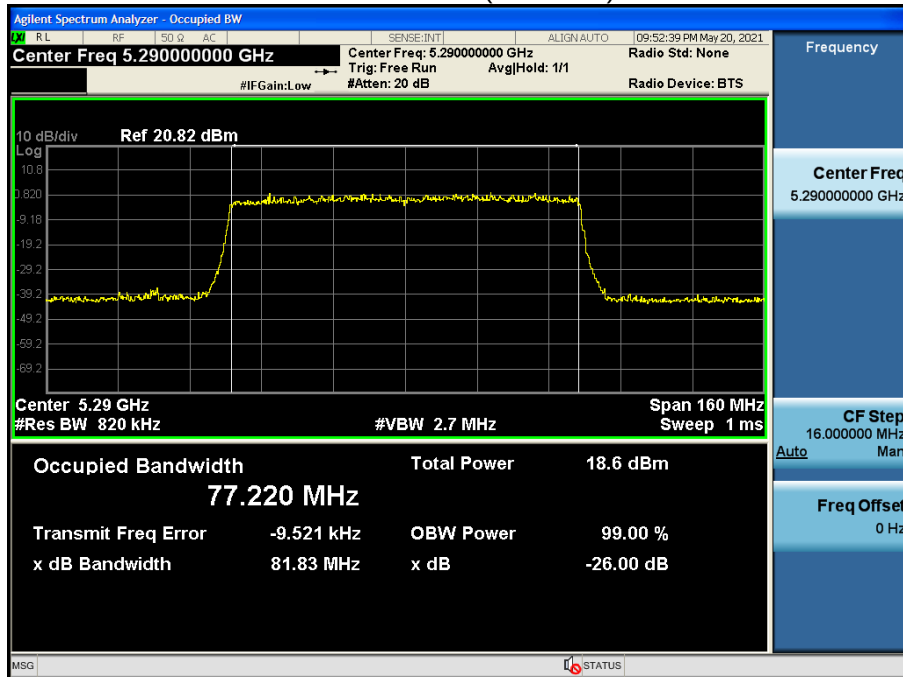
Bandwidth 40M Ch.159(5795MHz) RU 65



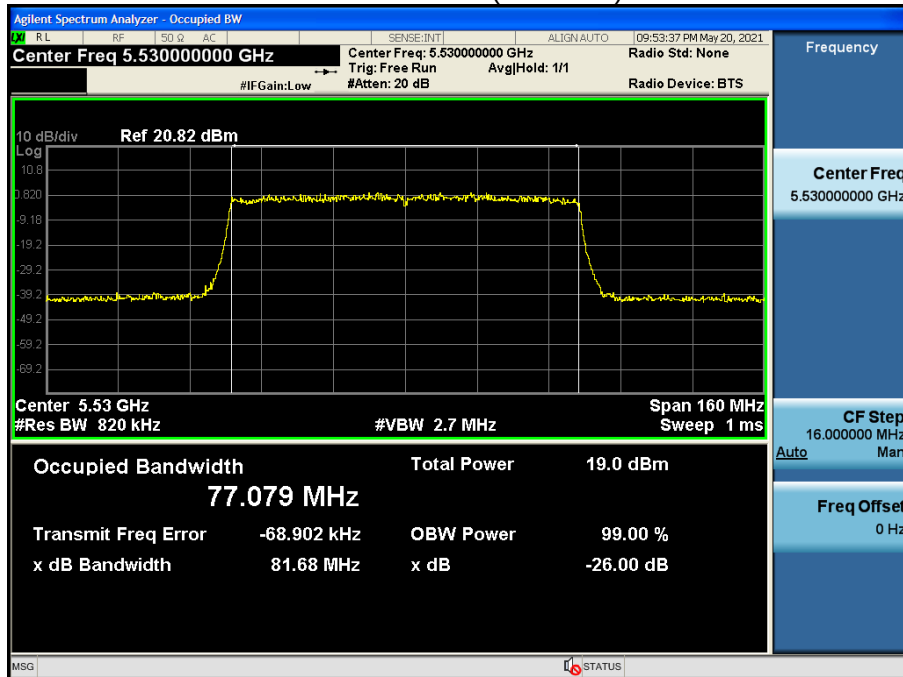
Bandwidth 80M Ch.42(5210MHz) RU 67



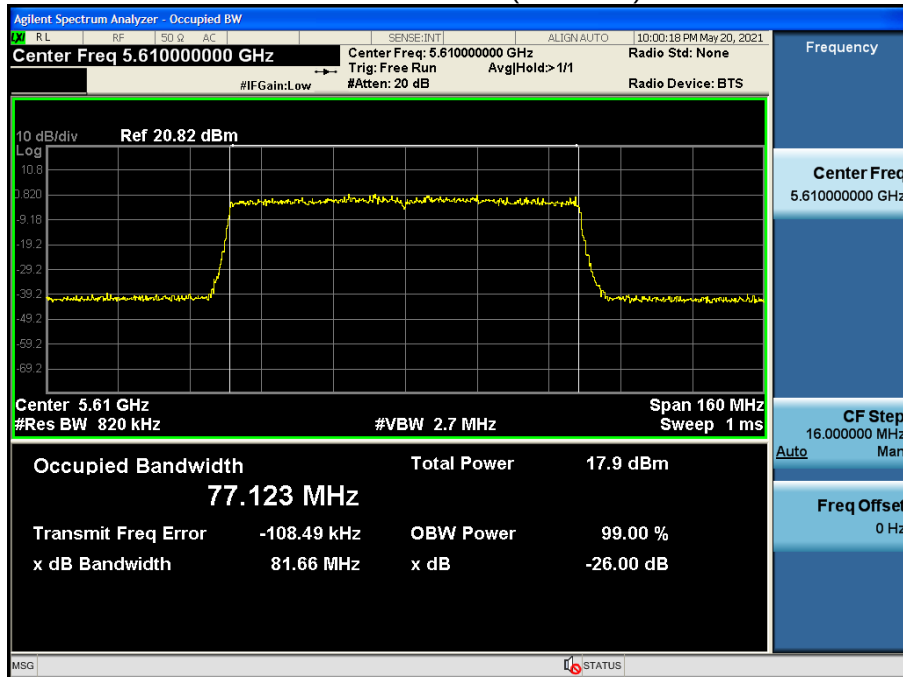
Bandwidth 80M Ch.58(5290MHz) RU 67



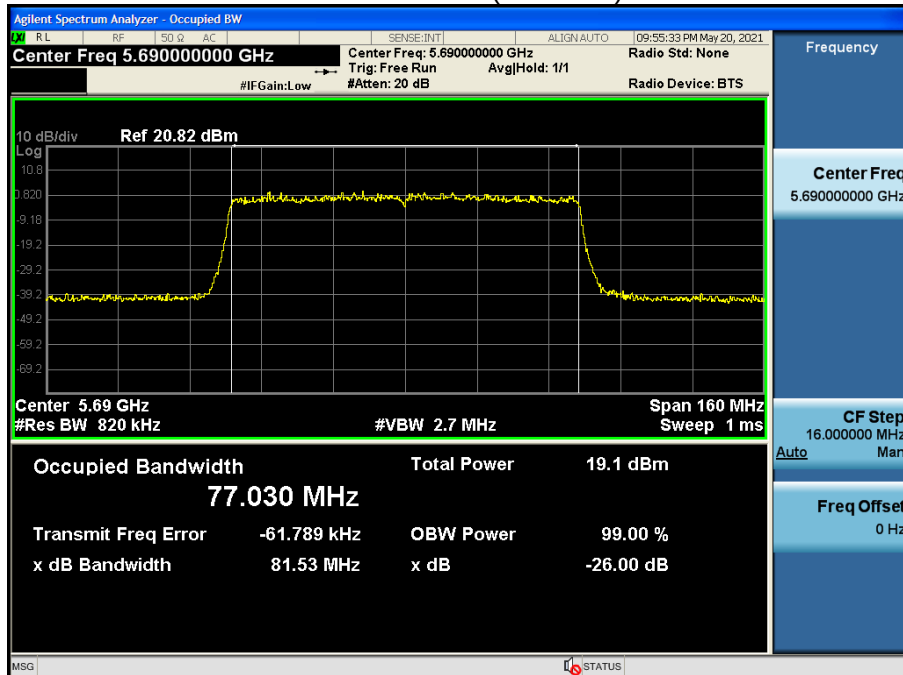
Bandwidth 80M Ch.106(5530MHz) RU 67



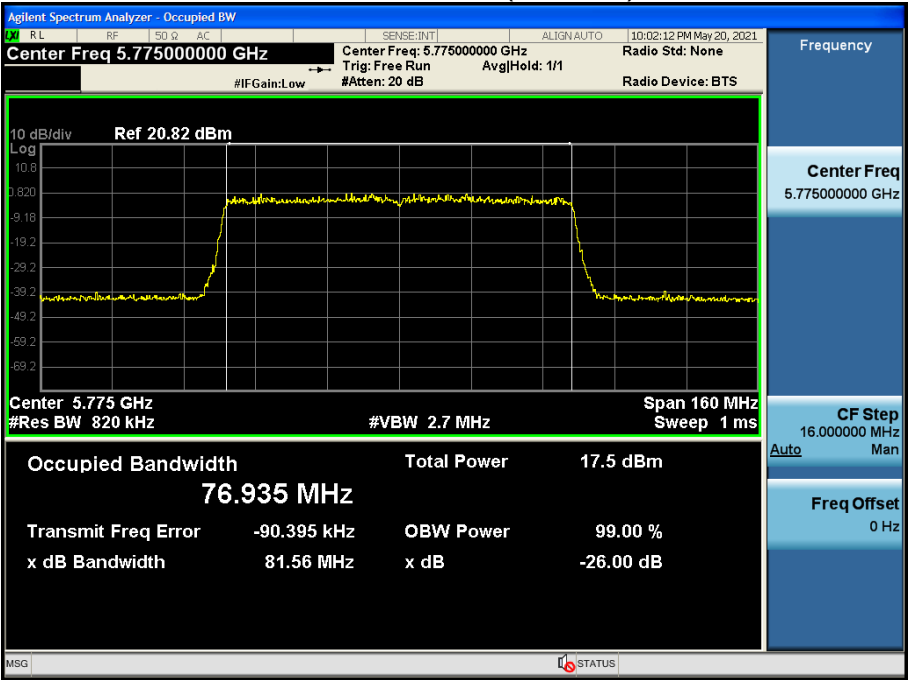
Bandwidth 80M Ch.122(5610MHz) SU



Bandwidth 80M Ch.138(5690MHz) RU 67



Bandwidth 80M Ch.155(5775MHz) SU



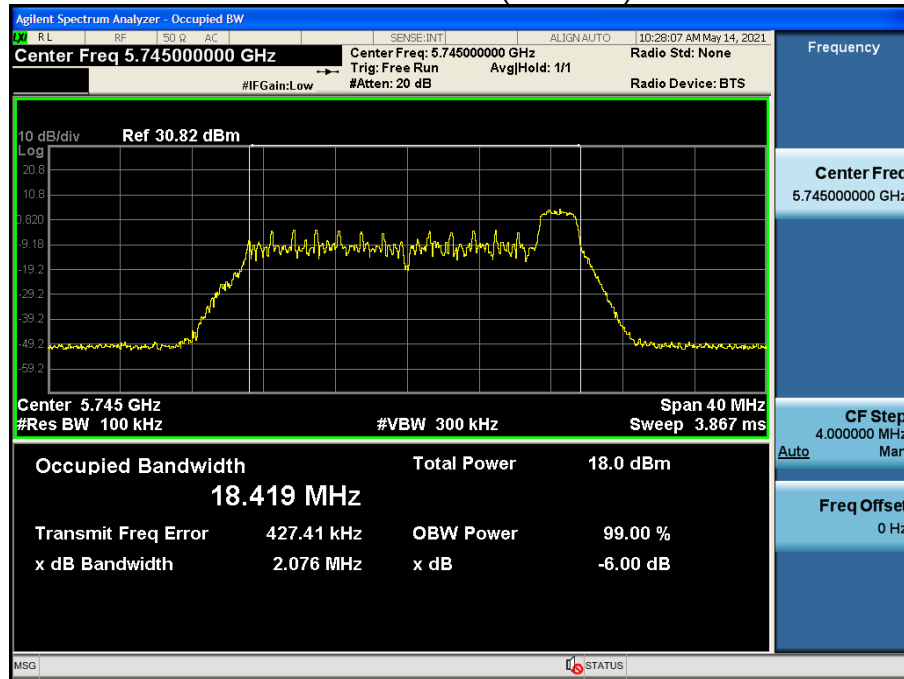
3. 6dB Bandwidth

Note:

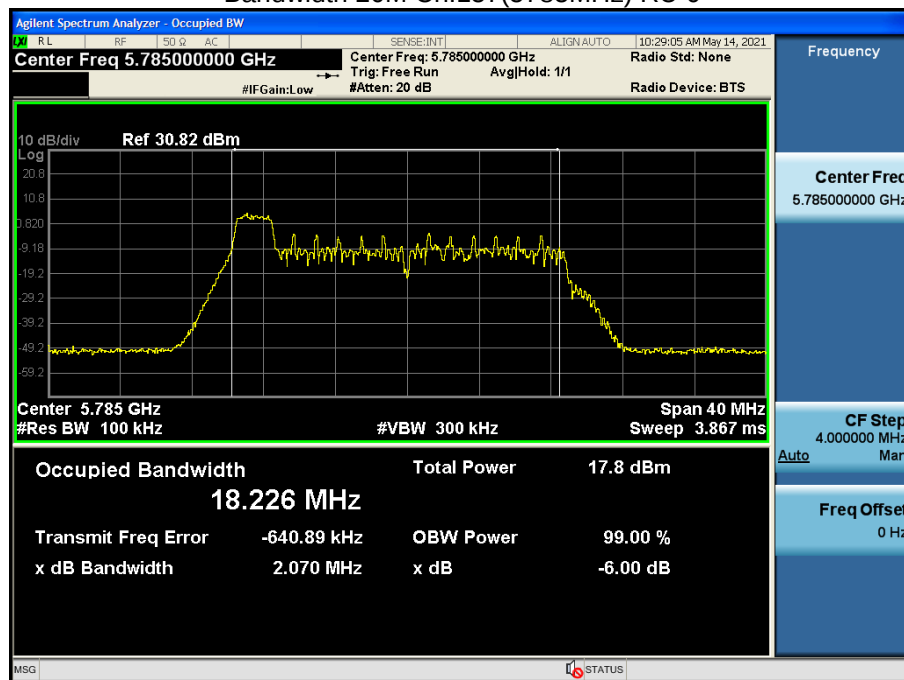
1. In order to simplify the report, attached plots were only the most narrow channel.

3.1 MIMO Ant1

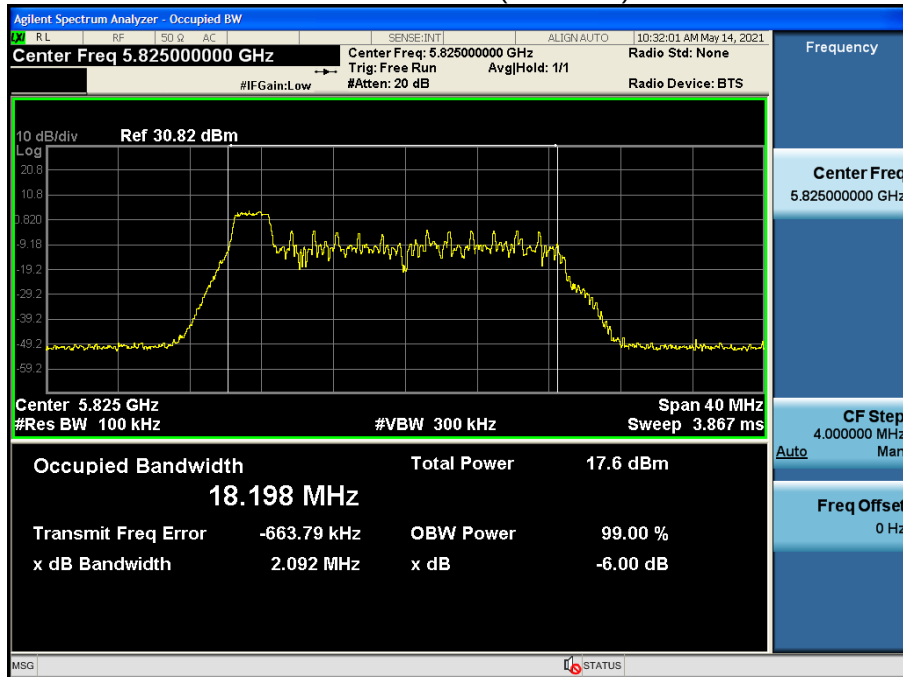
Bandwidth 20M Ch.149(5745MHz) RU 8



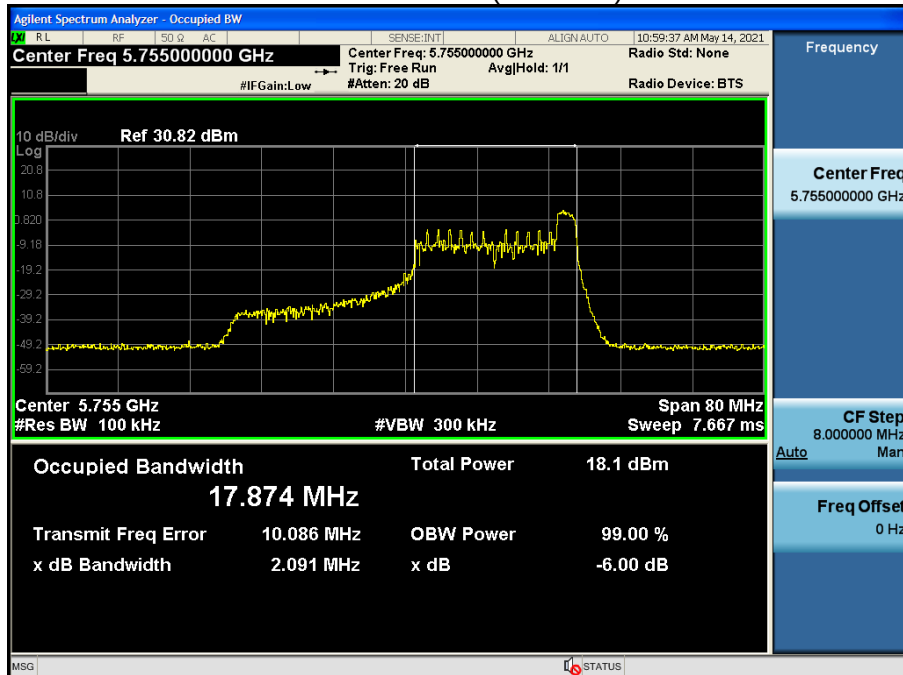
Bandwidth 20M Ch.157(5785MHz) RU 0



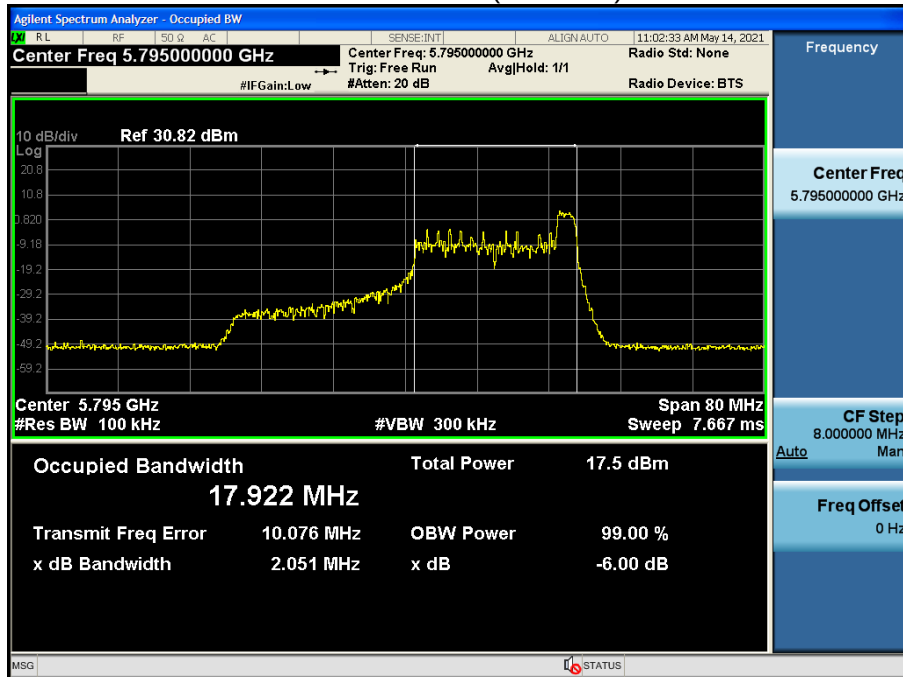
Bandwidth 20M Ch.165(5825MHz) RU 0



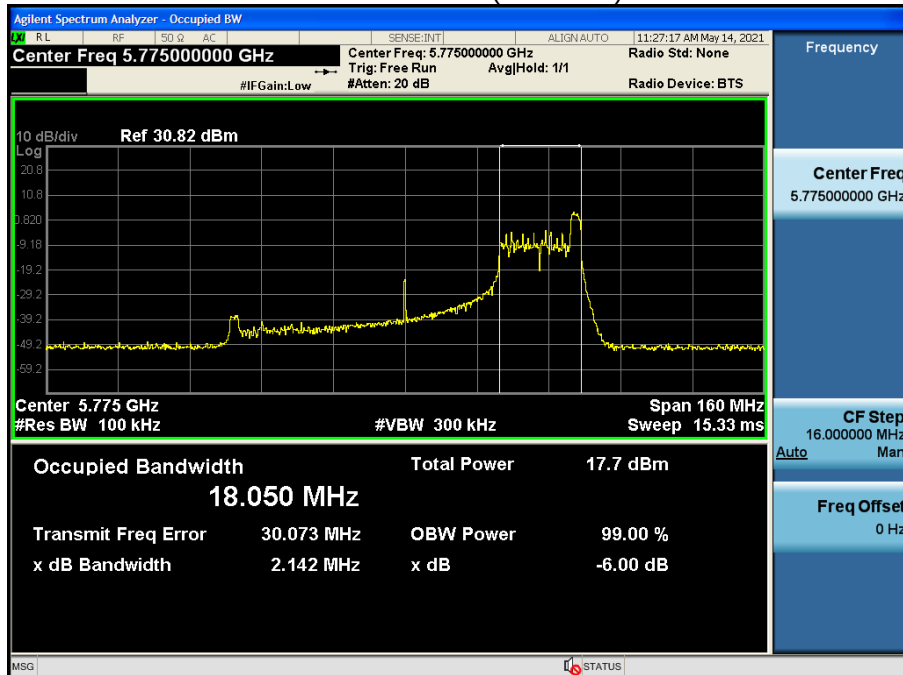
Bandwidth 40M Ch.151(5755MHz) RU 17



Bandwidth 40M Ch.159(5795MHz) RU 17

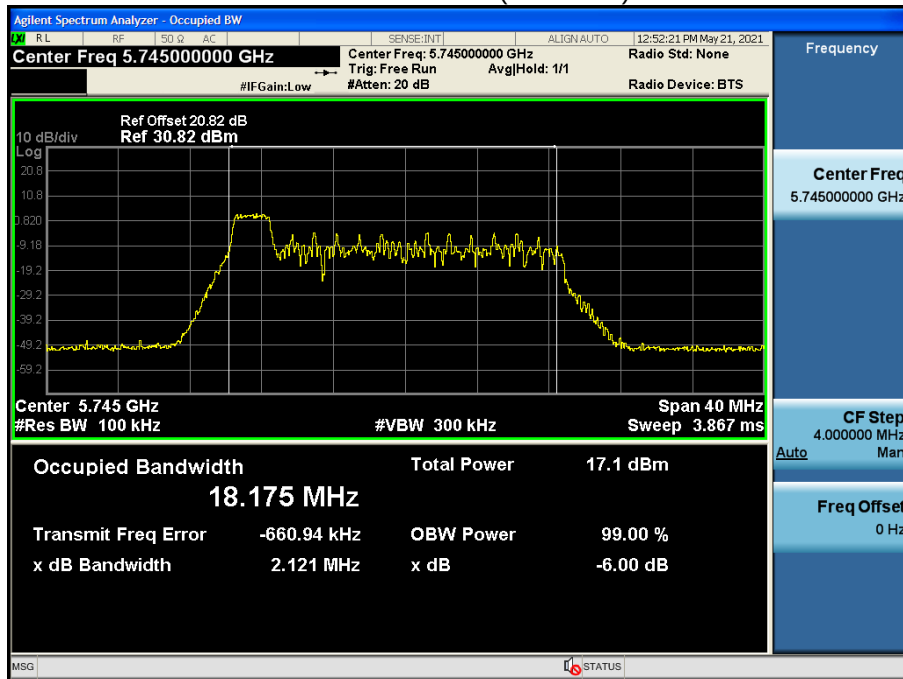


Bandwidth 80M Ch.155(5775MHz) RU 36

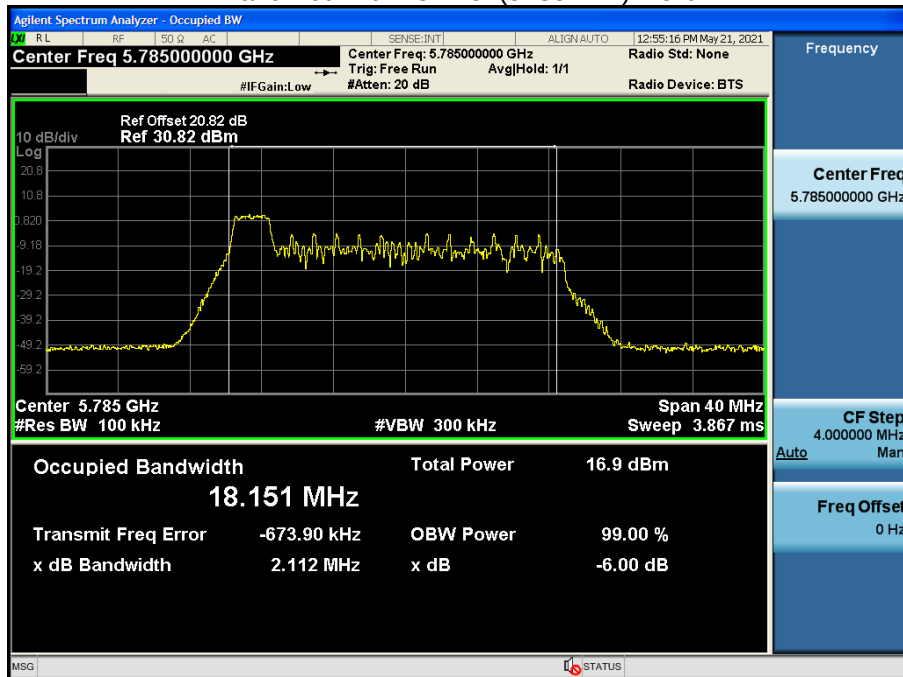


3.2 MIMO Ant2

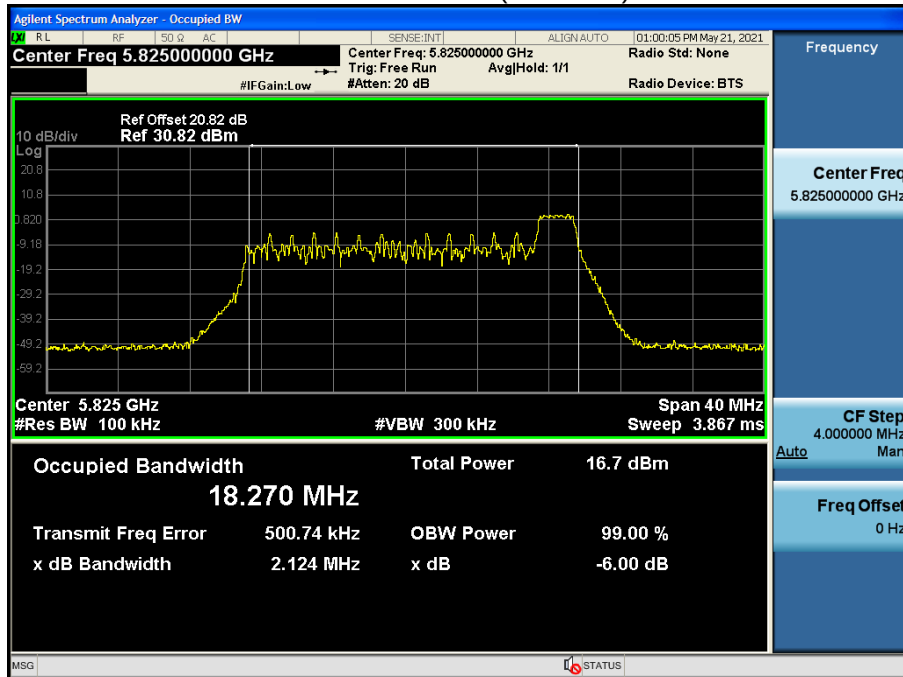
Bandwidth 20M Ch.149(5745MHz) RU 0



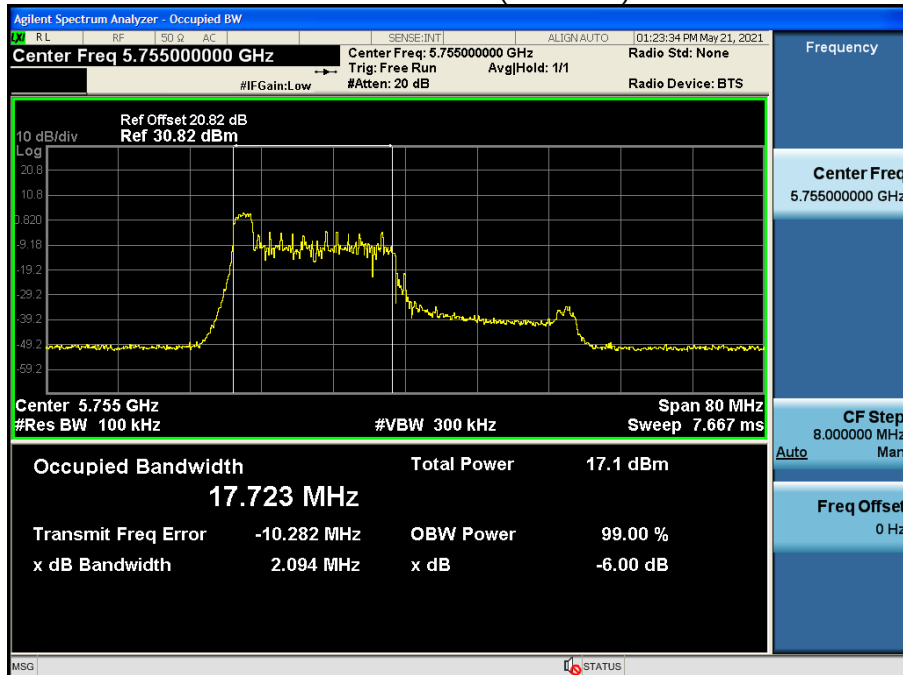
Bandwidth 20M Ch.157(5785MHz) RU 0



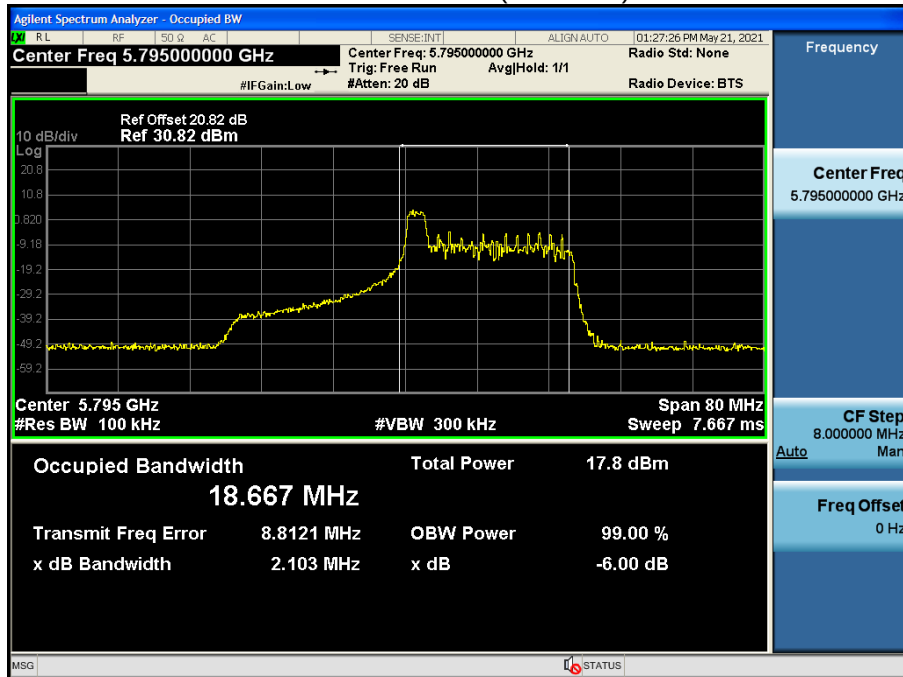
Bandwidth 20M Ch.165(5825MHz) RU 8



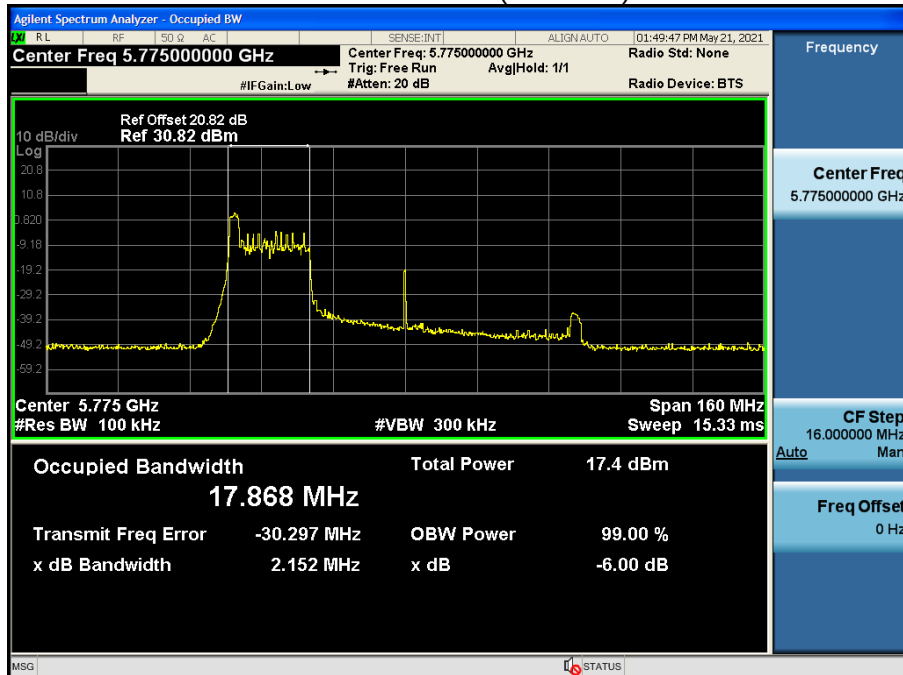
Bandwidth 40M Ch.151(5755MHz) RU 0



Bandwidth 40M Ch.159(5795MHz) RU 9



Bandwidth 80M Ch.155(5775MHz) RU 0



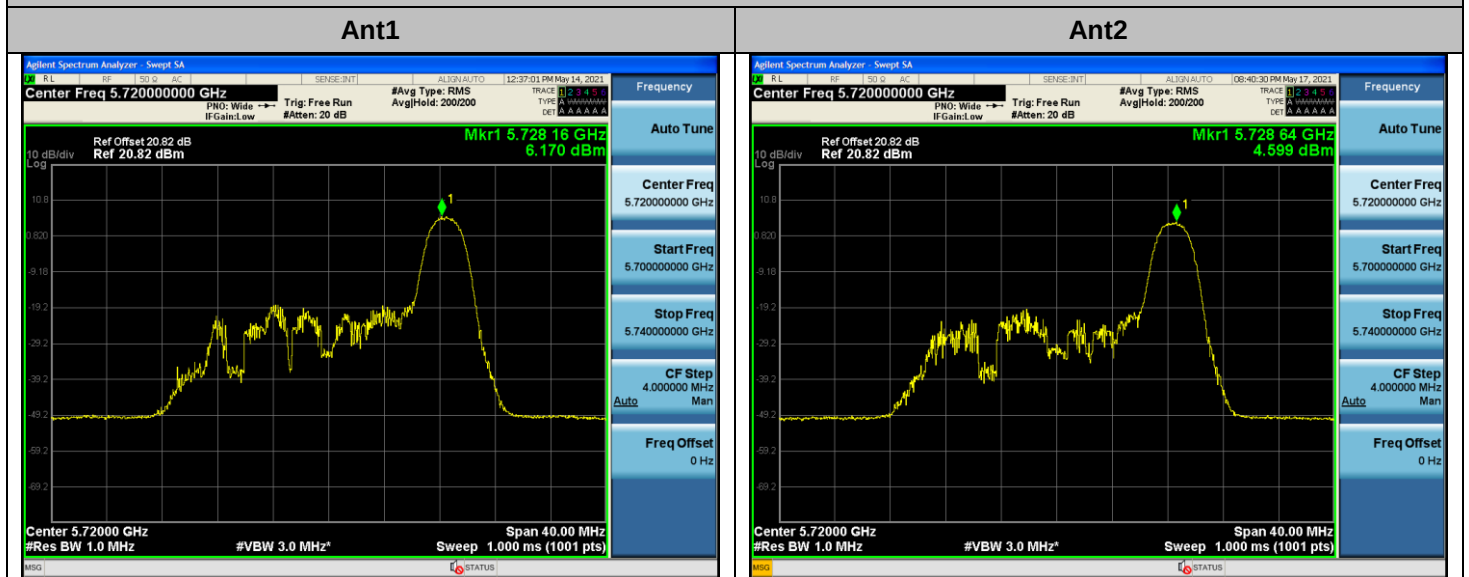
4. Power Spectral Density

Note:

1. In order to simplify the report, attached plots were only channel of highest PSD.

4.1 SUM (MIMO Ant 1 + MIMO Ant 2)

Bandwidth 20M Ch.144(5720MHz) RU 8

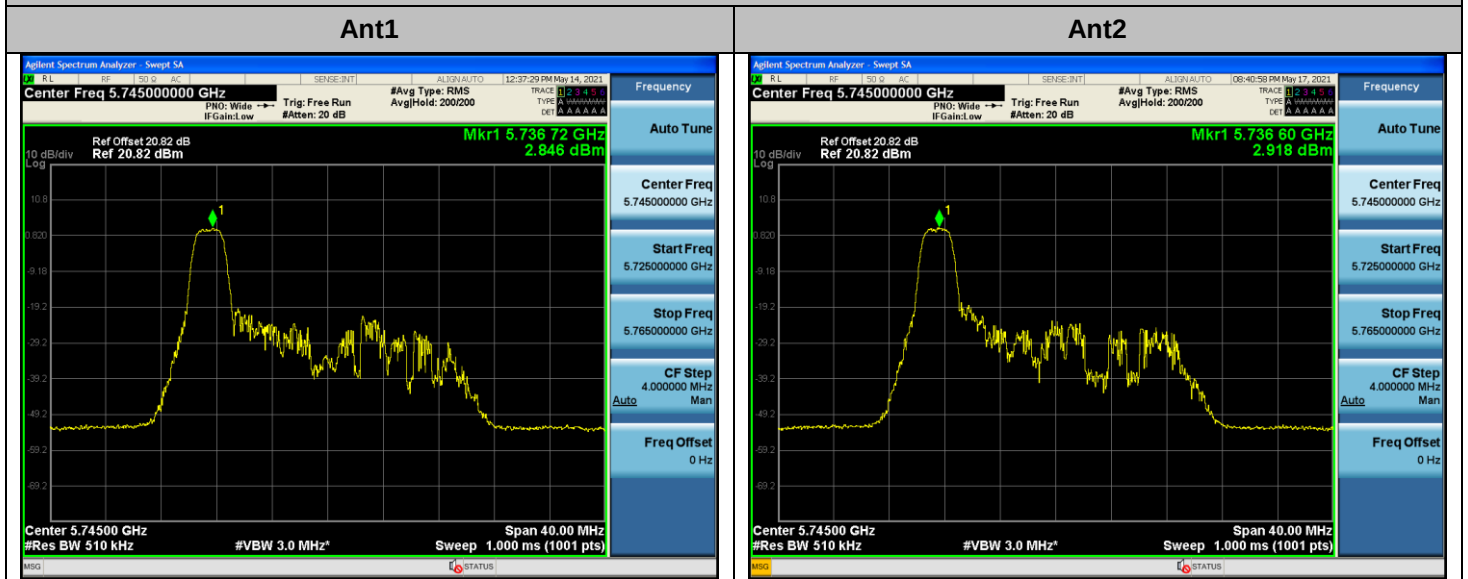


SUM PSD (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
8.465	0.081	8.546

Note:

Total PSD (dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

Bandwidth 20M Ch.149 (5745MHz) RU 0

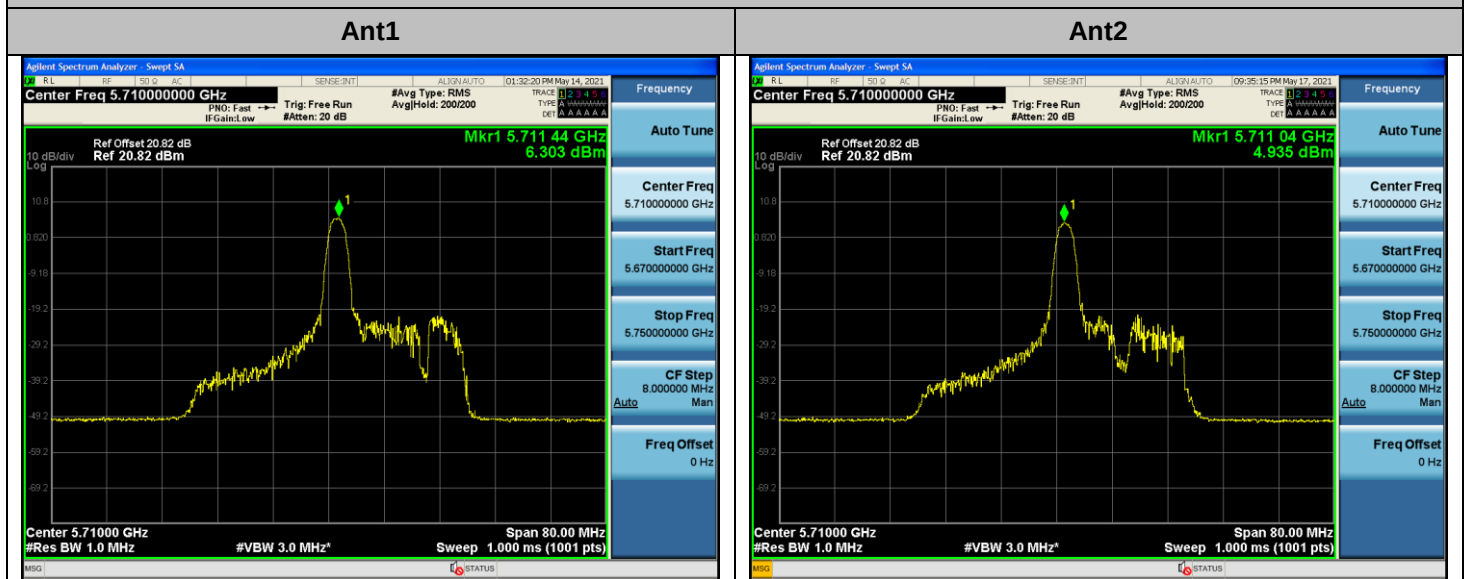


SUM PSD (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
5.892	0.081	5.973

Note:

Total PSD (dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

Bandwidth 40M Ch.142 (5710MHz) RU 9

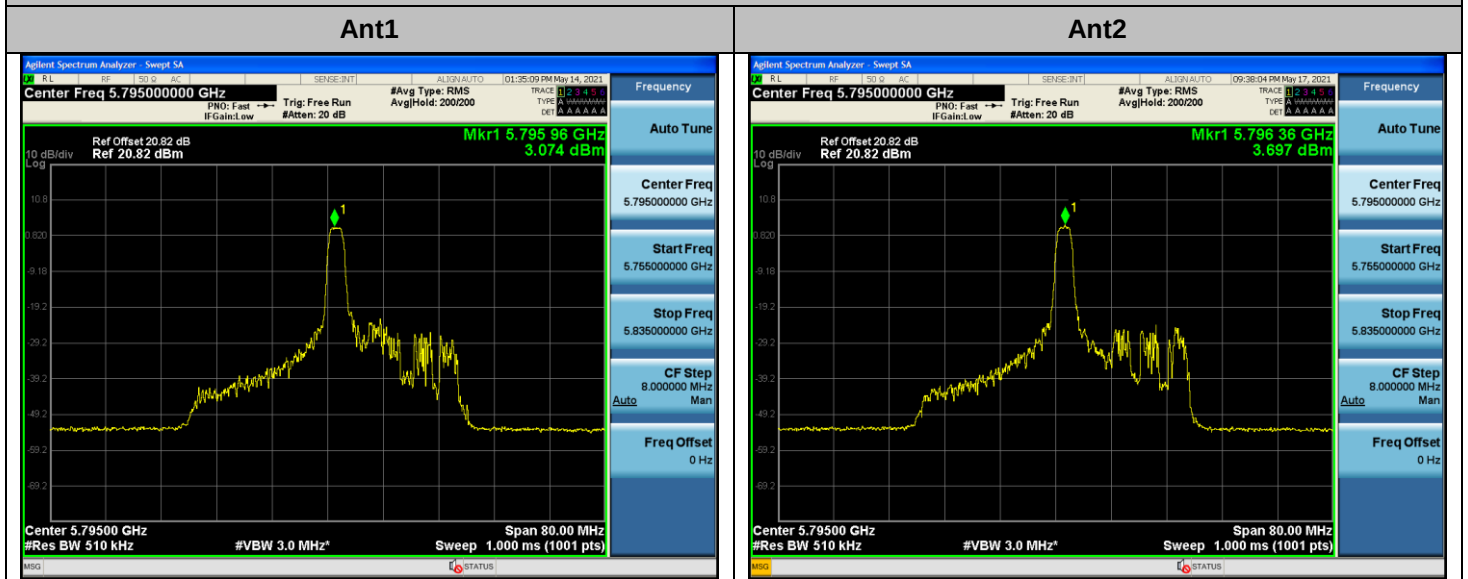


SUM PSD (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
8.683	0.085	8.768

Note:

Total PSD (dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

Bandwidth 40M Ch.159 (5795MHz) RU 9

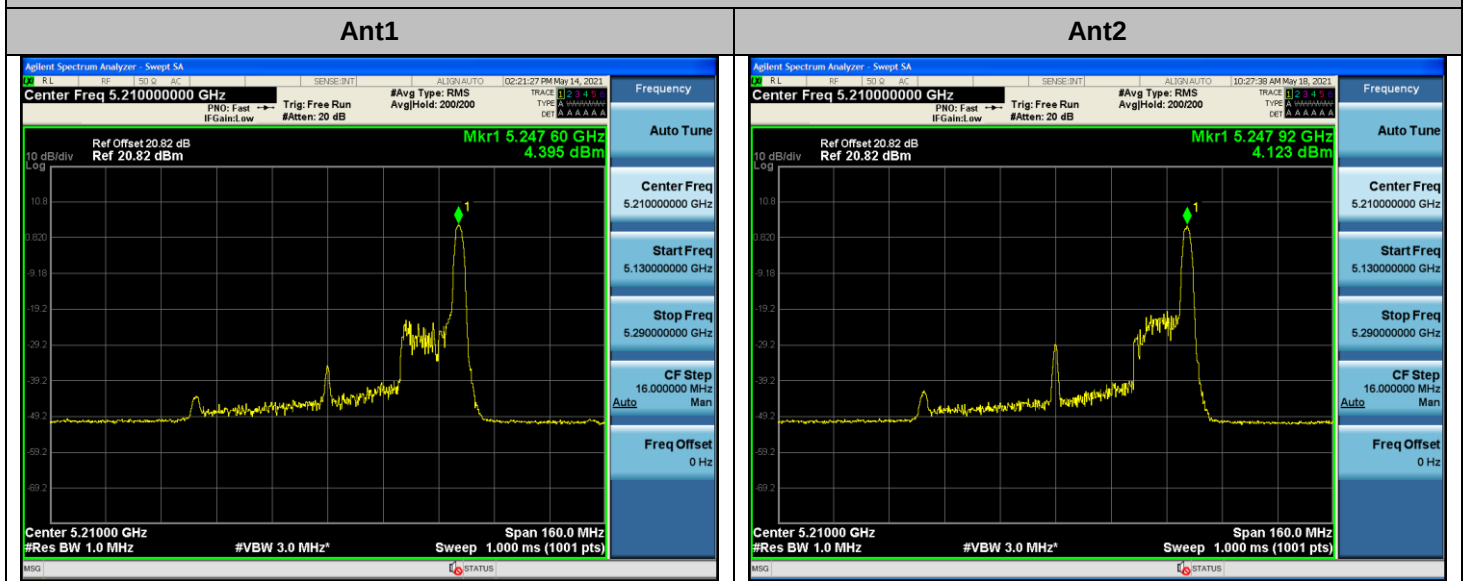


SUM PSD (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
6.407	0.085	6.492

Note:

Total PSD (dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

Bandwidth 80M Ch.42 (5210MHz) RU 36



SUM PSD (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
7.271	0.083	7.354

Note:

Total PSD (dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

Bandwidth 80M Ch.155 (5775MHz) RU 36



SUM PSD (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
4.928	0.083	5.011

Note:

Total PSD (dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

5. Straddle Channel

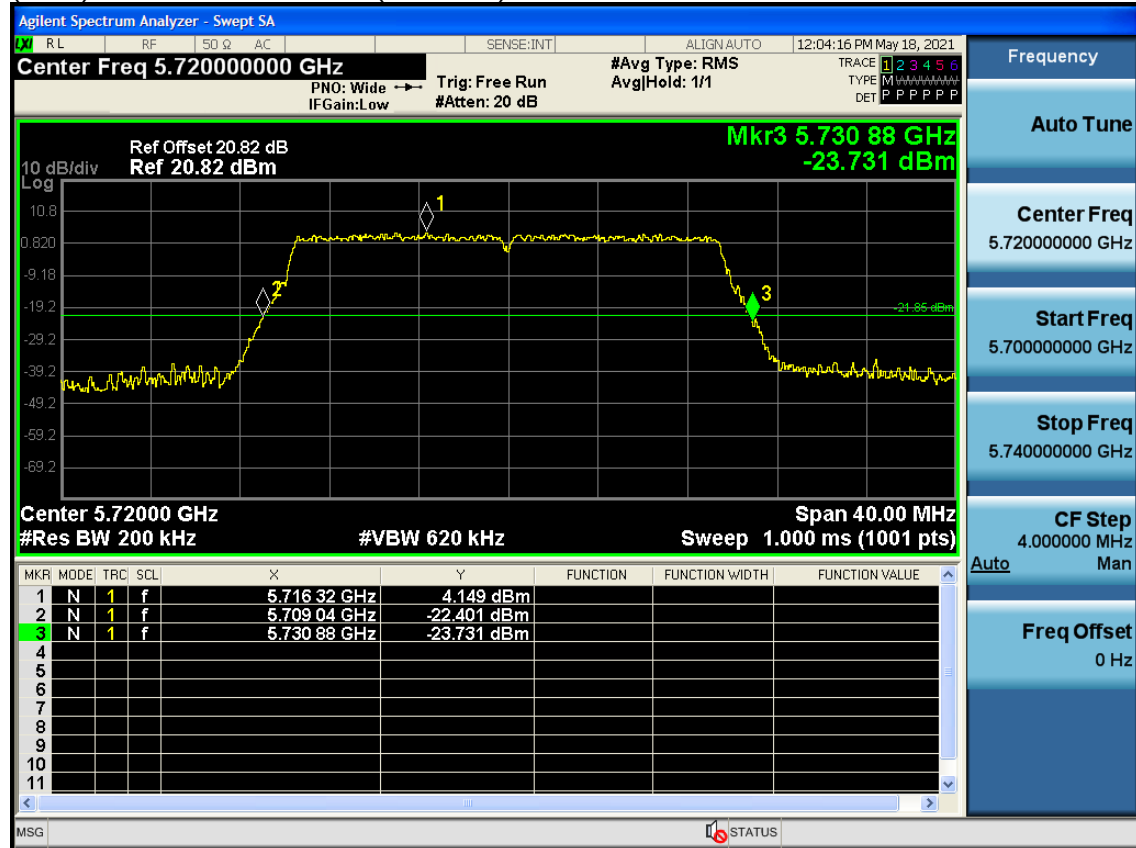
5.1 26dB Bandwidth

Note:

1. In order to simplify the report, attached plots were only the most wide channel.

5.1.1 MIMO Ant1

(26dB) Bandwidth 20M Ch.144(5720MHz) RU 61

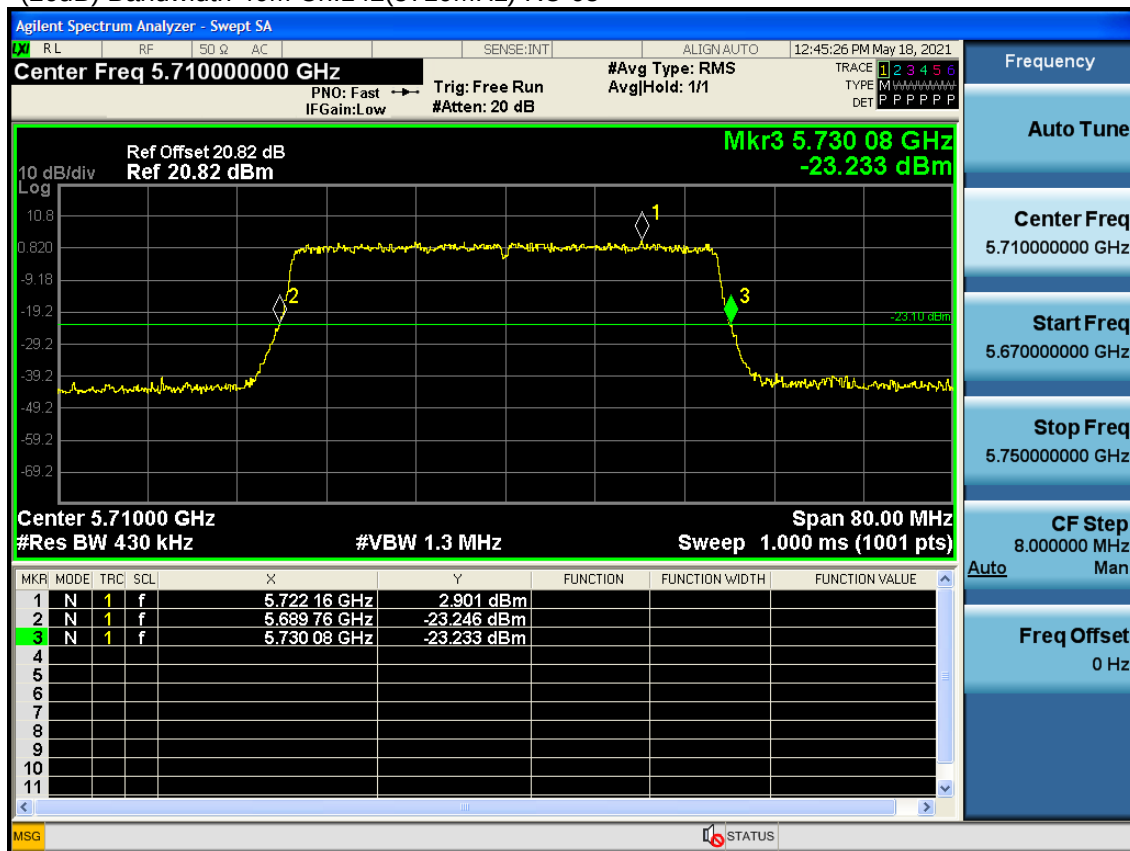


UNII 2C	5725 [MHz]	Measured Frequency [MHz]	26dB Bandwidth [MHz]
	5725	5709.04	15.96
UNII 3	Measured Frequency [MHz]	5725 [MHz]	26dB Bandwidth [MHz]
	5730.88	5725	5.88

Note:

1. [UNII 2C] 26dB Bandwidth = 5725MHz - Measured Frequency[MHz]
2. [UNII 3] 26dB Bandwidth = Measured Frequency[MHz] -5725MHz

(26dB) Bandwidth 40M Ch.142(5710MHz) RU 65

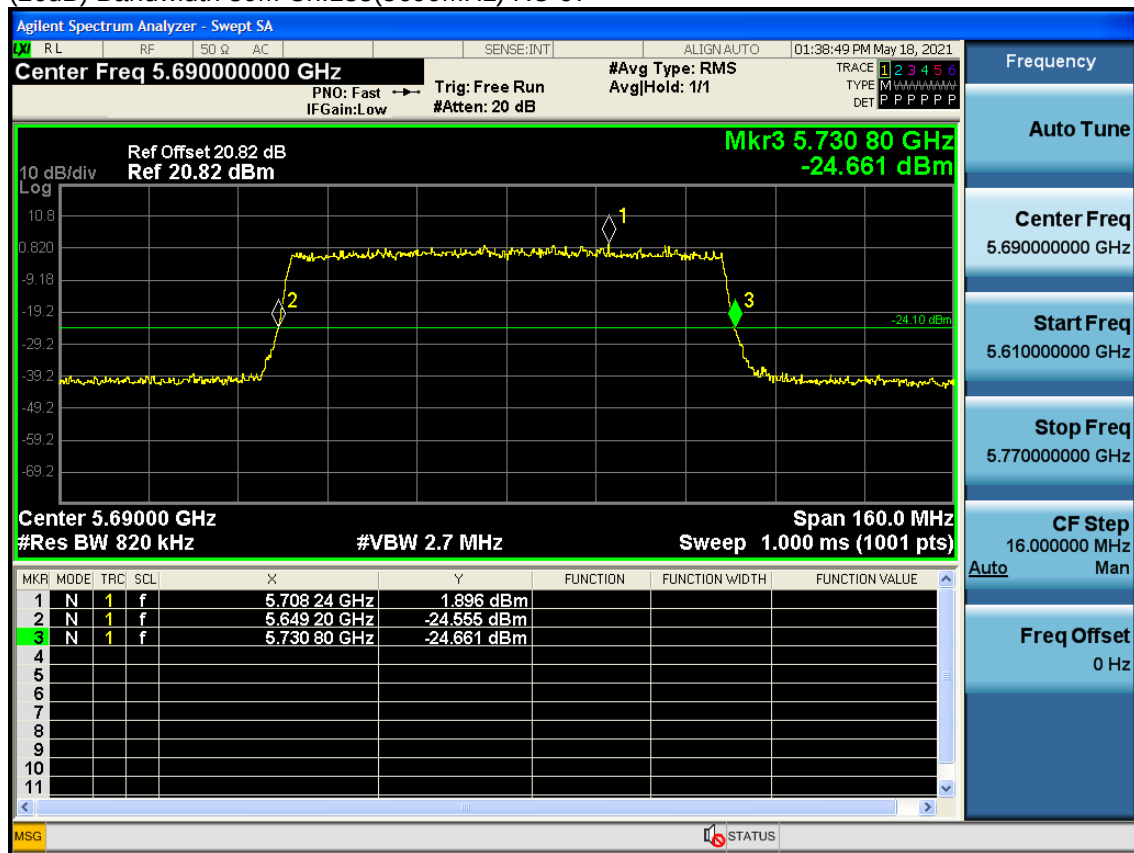


UNII 2C	5725 [MHz]	Measured Frequency [MHz]	26dB Bandwidth [MHz]
	5725	5689.76	35.24
UNII 3	Measured Frequency [MHz]	5725 [MHz]	26dB Bandwidth [MHz]
	5730.08	5725	5.08

Note:

1. [UNII 2C] 26dB Bandwidth = 5725MHz - Measured Frequency[MHz]
2. [UNII 3] 26dB Bandwidth = Measured Frequency[MHz] -5725MHz

(26dB) Bandwidth 80M Ch.138(5690MHz) RU 67

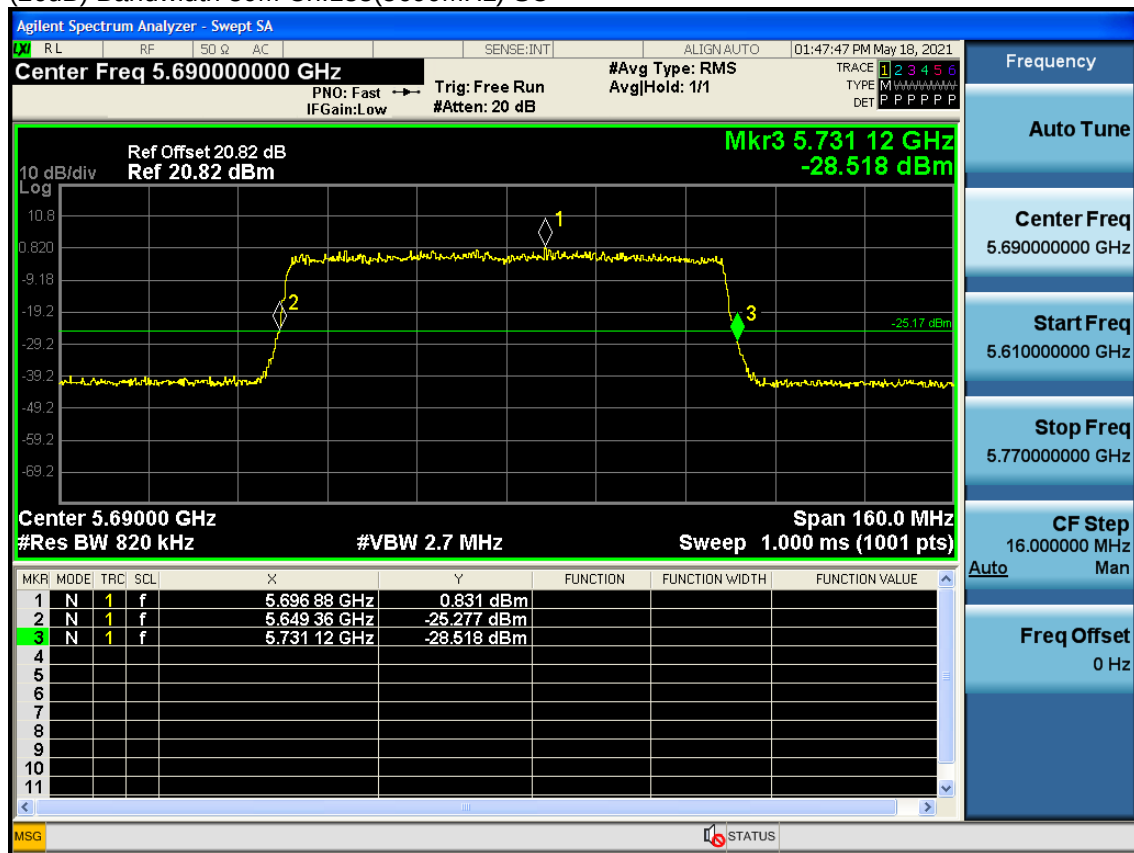


UNII 2C	5725 [MHz]	Measured Frequency [MHz]	26dB Bandwidth [MHz]
	5725	5649.2	75.80

Note:

1. [UNII 2C] 26dB Bandwidth = 5725MHz - Measured Frequency[MHz]

(26dB) Bandwidth 80M Ch.138(5690MHz) SU



UNII 3	Measured Frequency [MHz]	5725 [MHz]	26dB Bandwidth [MHz]
	5731.12	5725	6.12

Note:

1. [UNII 3] 26dB Bandwidth = Measured Frequency[MHz] -5725MHz

5.1.2 MIMO Ant2

(26dB) Bandwidth 20M Ch.144(5720MHz) SU



UNII 2C	5725 [MHz]	Measured Frequency [MHz]	26dB Bandwidth [MHz]
	5725	5709.12	15.88

Note:

1. [UNII 2C] 26dB Bandwidth = 5725MHz - Measured Frequency[MHz]

(26dB) Bandwidth 20M Ch.144(5720MHz) RU 61

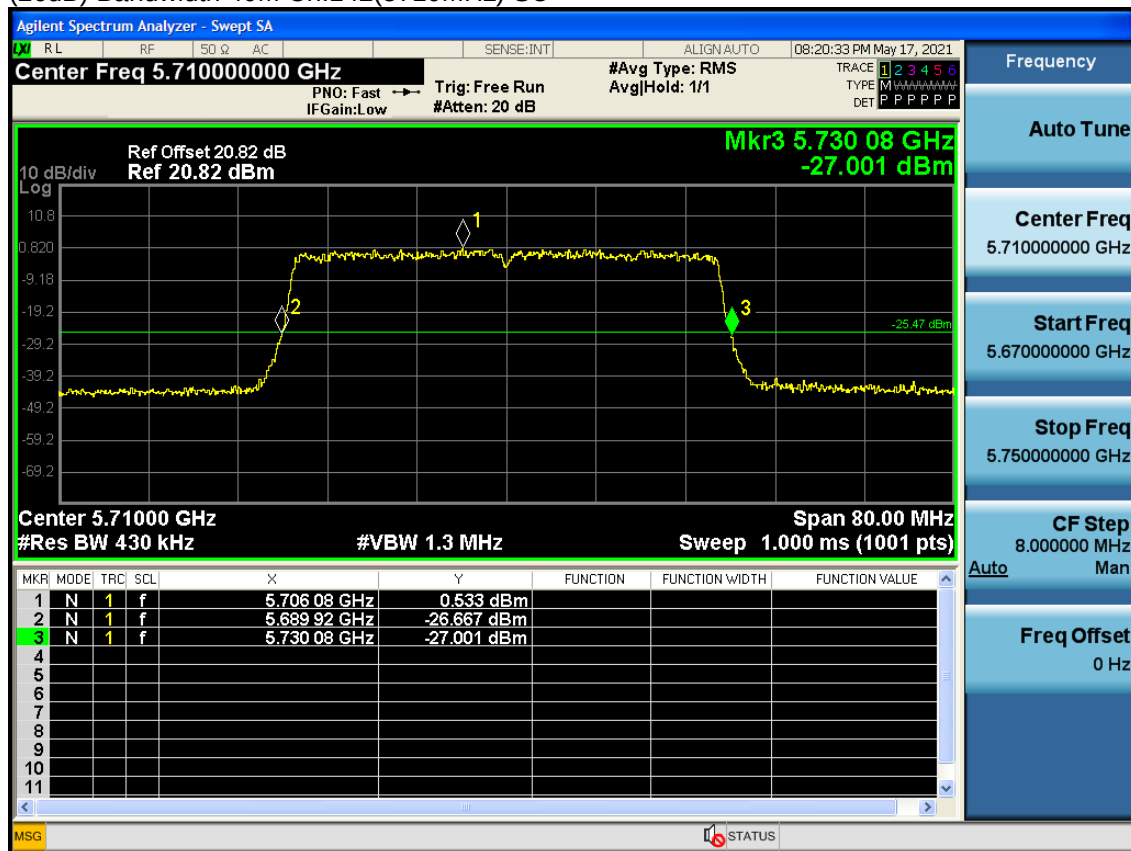


UNII 3	Measured Frequency [MHz]	5725 [MHz]	26dB Bandwidth [MHz]
	5730.72	5725	5.72

Note:

1. [UNII 3] 26dB Bandwidth = Measured Frequency[MHz] -5725MHz

(26dB) Bandwidth 40M Ch.142(5710MHz) SU

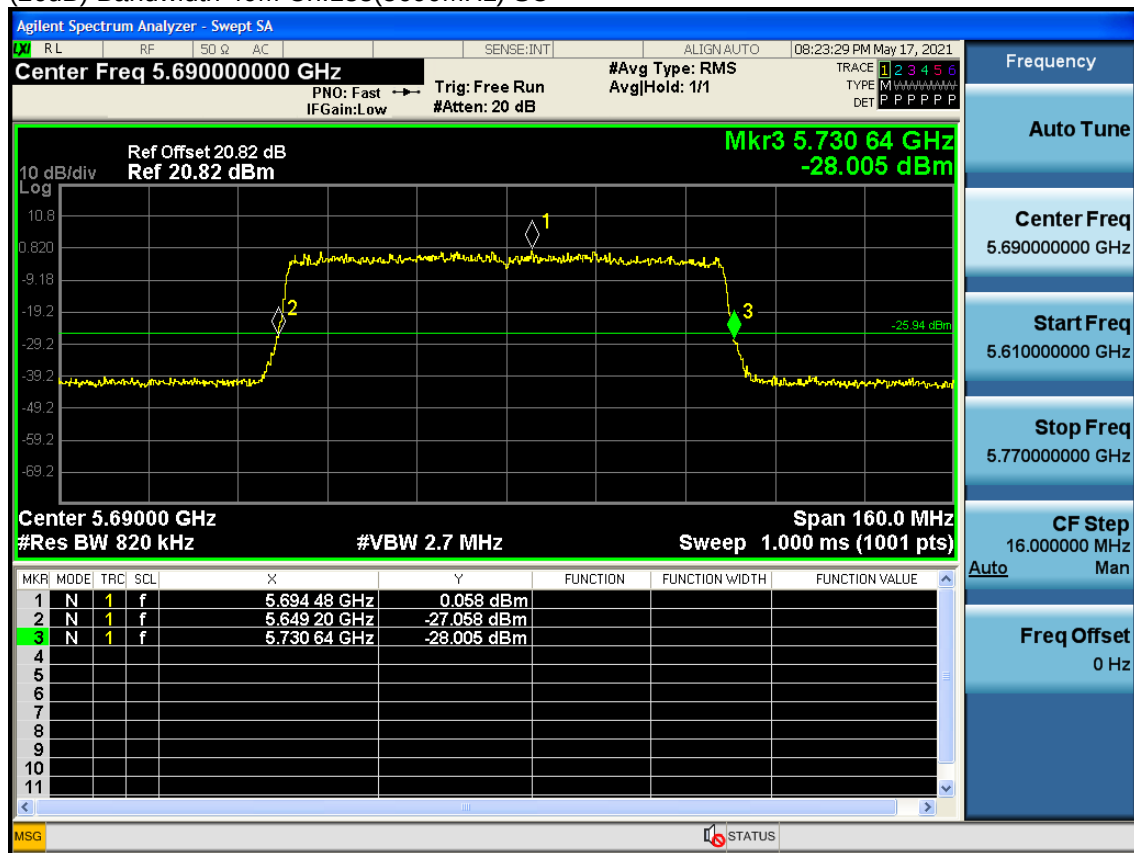


UNII 2C	5725 [MHz]	Measured Frequency [MHz]	26dB Bandwidth [MHz]
	5725	5689.92	35.08
UNII 3	Measured Frequency [MHz]	5725 [MHz]	26dB Bandwidth [MHz]
	5730.08	5725	5.08

Note:

1. [UNII 2C] 26dB Bandwidth = 5725MHz - Measured Frequency[MHz]
2. [UNII 3] 26dB Bandwidth = Measured Frequency[MHz] -5725MHz

(26dB) Bandwidth 40M Ch.138(5690MHz) SU



UNII 2C	5725 [MHz]	Measured Frequency [MHz]	26dB Bandwidth [MHz]
	5725	5649.2	75.80

Note:

1. [UNII 2C] 26dB Bandwidth = 5725MHz - Measured Frequency[MHz]

(26dB) Bandwidth 40M Ch.138(5690MHz) RU 52



UNII 3	5725 [MHz]	Measured Frequency [MHz]	26dB Bandwidth [MHz]
	5730.8	5725	5.80

Note:

1. [UNII 3] 26dB Bandwidth = Measured Frequency[MHz] -5725MHz

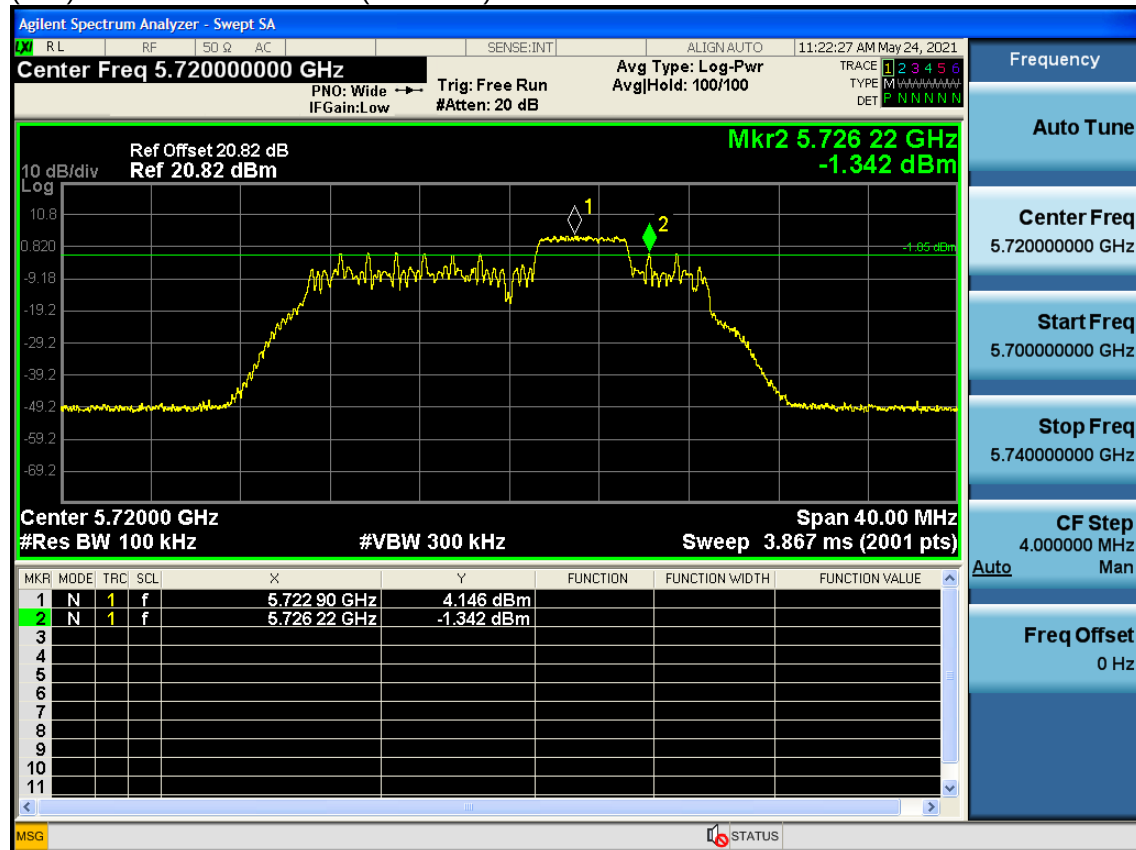
5.2 6dB Bandwidth

Note:

1. In order to simplify the report, attached plots were only the most narrow channel.

5.2.1 MIMO Ant1

(6dB) Bandwidth 20M Ch.144(5720MHz) RU 39

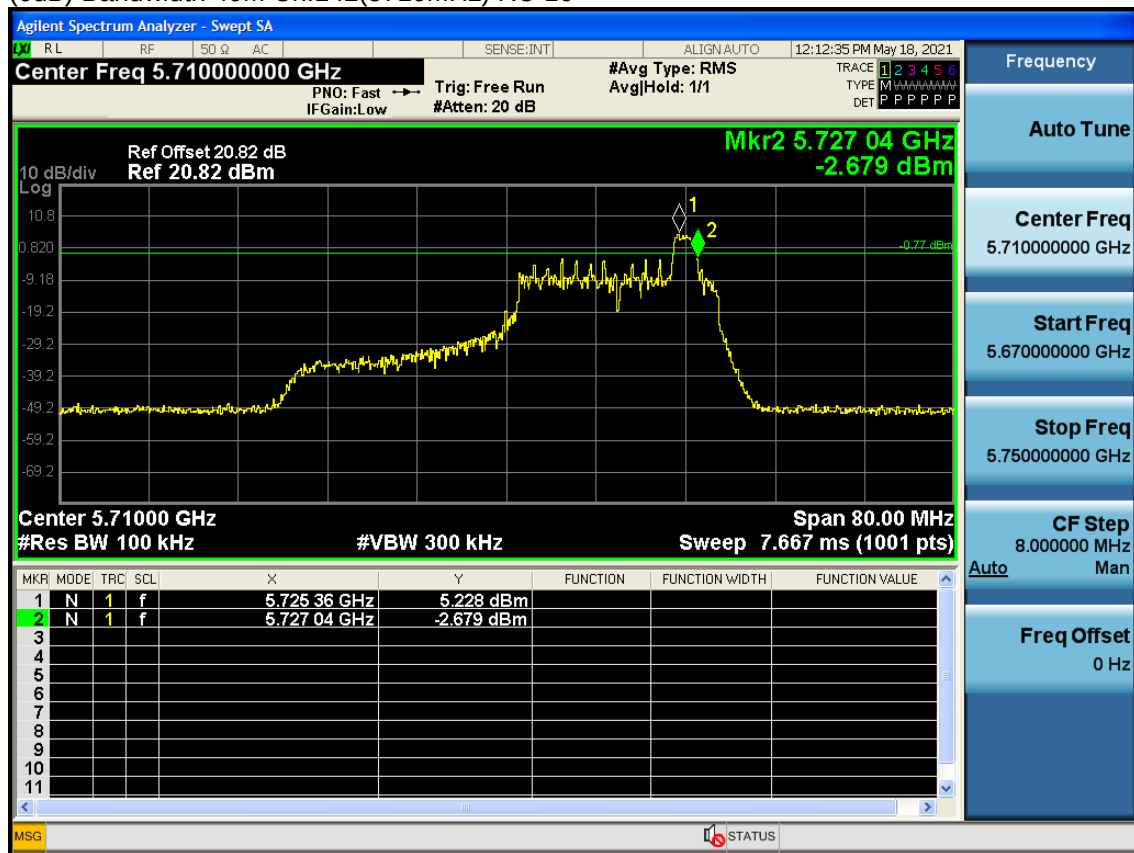


Measured Frequency [MHz]	5725 [MHz]	6dB Bandwidth [MHz]
5726.22	5725	1.22

Note:

6dB Bandwidth = Measured Frequency[MHz] – 5725MHz

(6dB) Bandwidth 40M Ch.142(5710MHz) RU 16



Measured Frequency [MHz]	5725 [MHz]	6dB Bandwidth [MHz]
5727.04	5725	2.04

Note:

6dB Bandwidth = Measured Frequency[MHz] – 5725MHz

(6dB) Bandwidth 80M Ch.138(5690MHz) RU 35



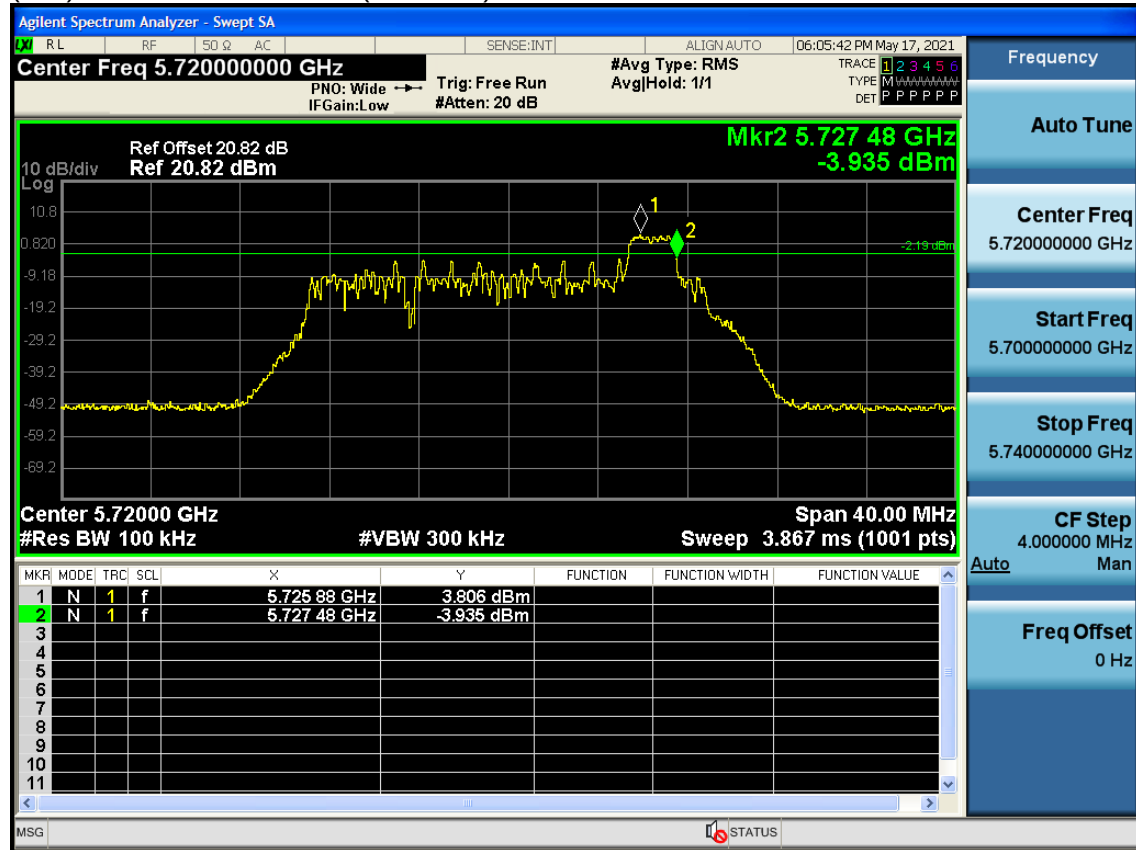
Measured Frequency [MHz]	5725 [MHz]	6dB Bandwidth [MHz]
5727.12	5725	2.12

Note:

6dB Bandwidth = Measured Frequency[MHz] – 5725MHz

5.2.2 MIMO Ant2

(6dB) Bandwidth 20M Ch.144(5720MHz) RU 7

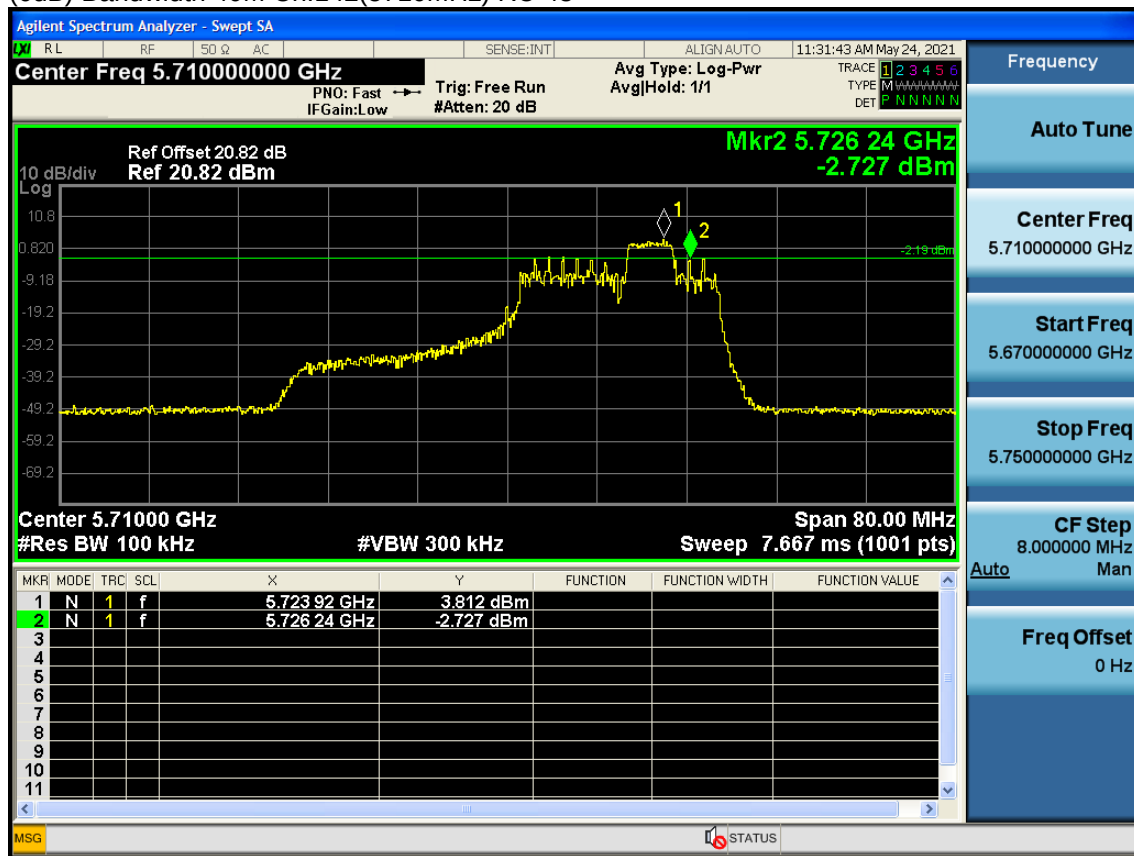


Measured Frequency [MHz]	5725 [MHz]	6dB Bandwidth [MHz]
5727.48	5725	2.48

Note:

6dB Bandwidth = Measured Frequency[MHz] – 5725MHz

(6dB) Bandwidth 40M Ch.142(5710MHz) RU 43

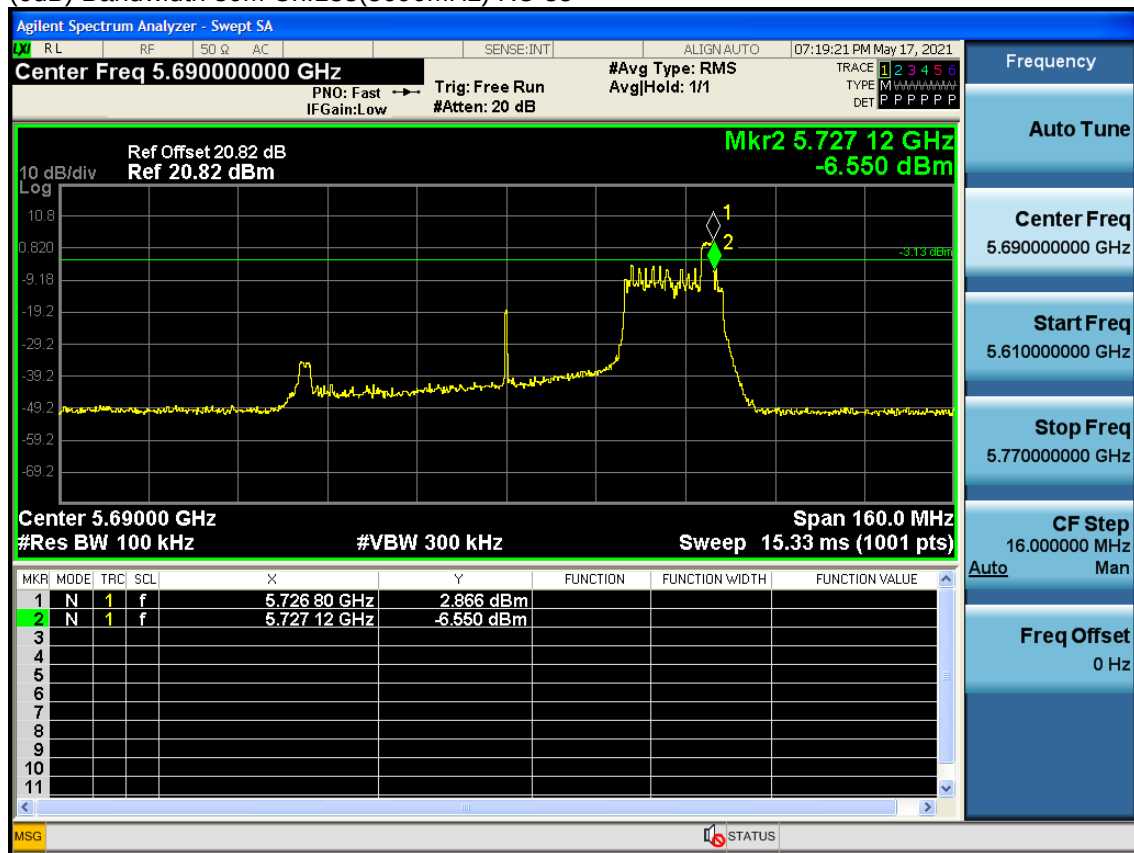


Measured Frequency [MHz]	5725 [MHz]	6dB Bandwidth [MHz]
5726.24	5725	1.24

Note:

6dB Bandwidth = Measured Frequency[MHz] – 5725MHz

(6dB) Bandwidth 80M Ch.138(5690MHz) RU 35



Measured Frequency [MHz]	5725 [MHz]	6dB Bandwidth [MHz]
5727.12	5725	2.12

Note:

6dB Bandwidth = Measured Frequency[MHz] – 5725MHz

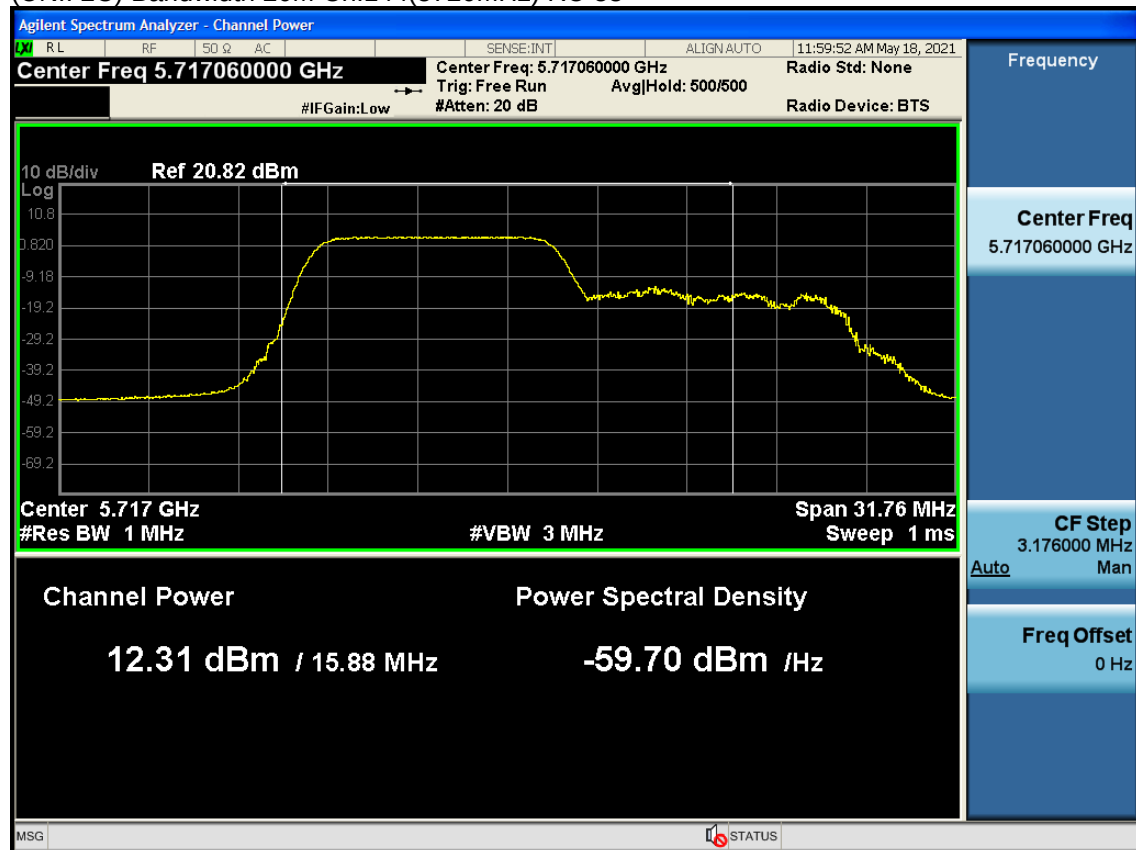
5.3 Output Power

Note:

1. In order to simplify the report, attached plots were only channel of highest Power.

5.3.1 MIMO Ant1

(UNII 2C) Bandwidth 20M Ch.144(5720MHz) RU 53

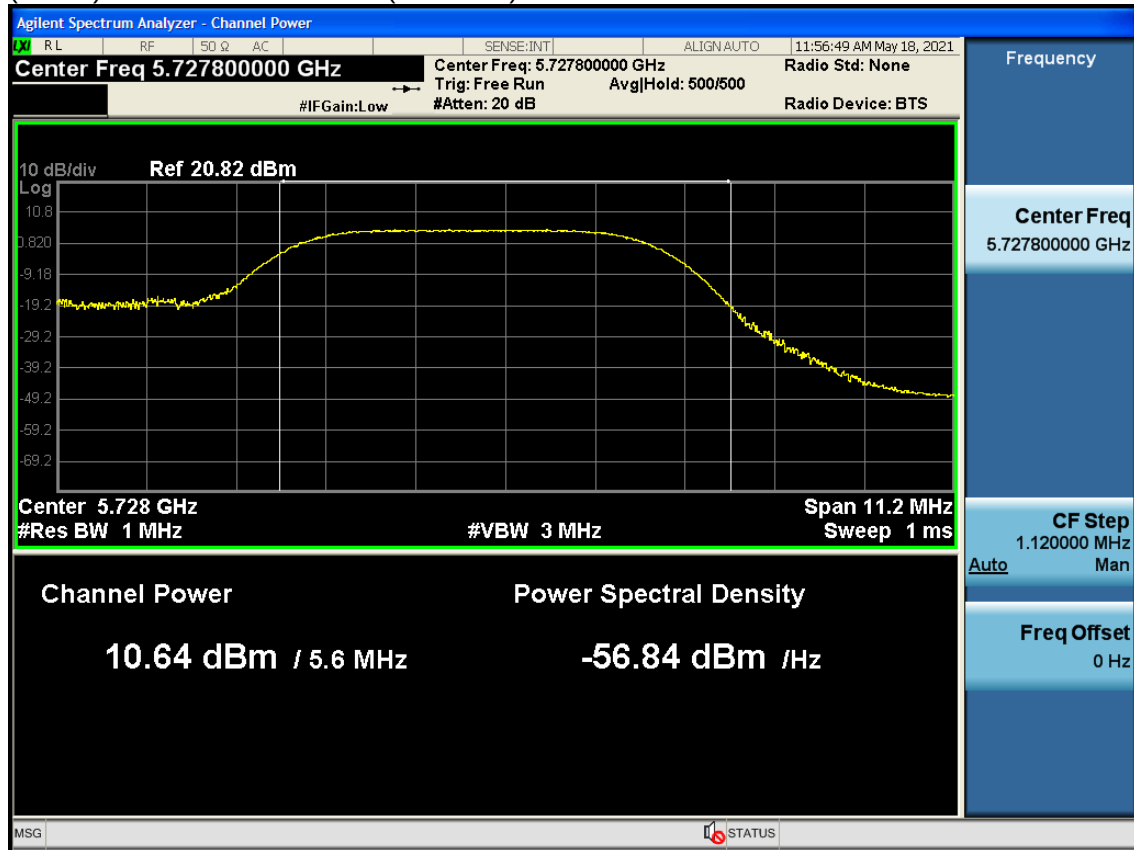


Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
12.31	0.330	12.64

Note:

Total Power(dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

(UNII 3) Bandwidth 20M Ch.144(5720MHz) RU 40

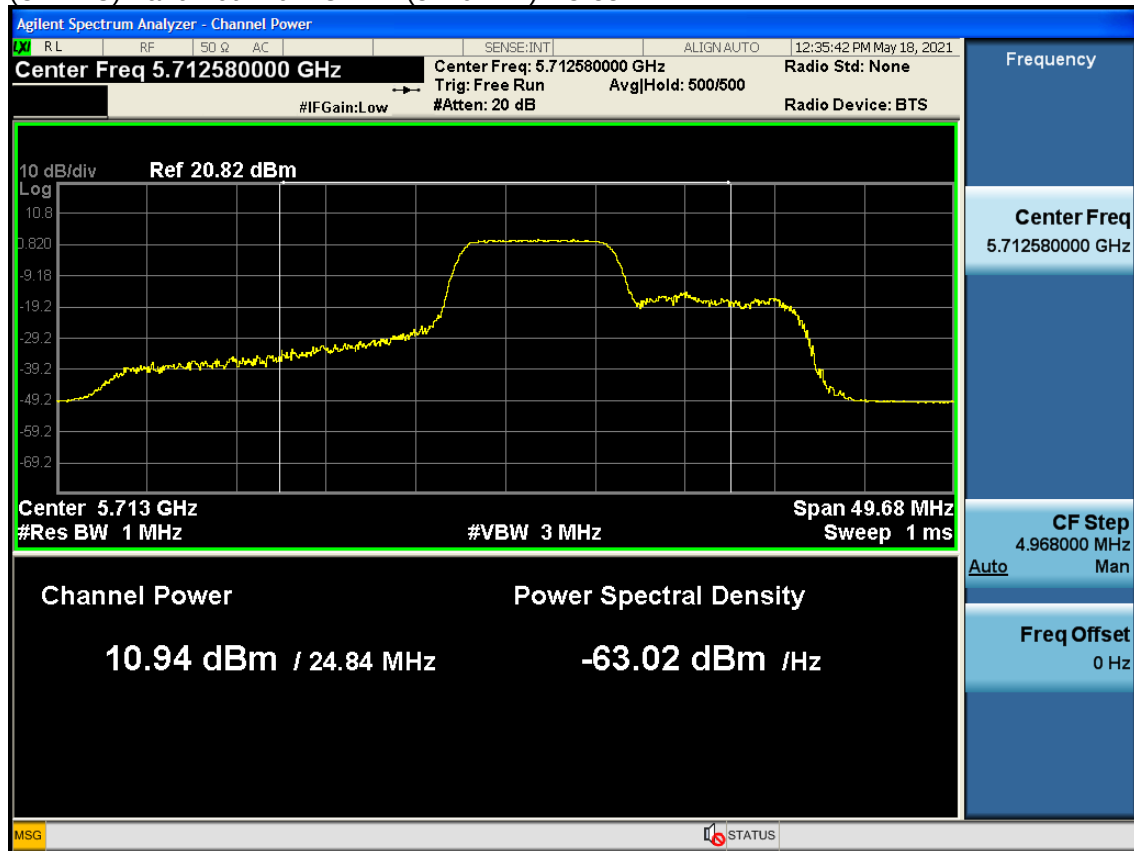


Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
10.64	0.159	10.80

Note:

Total Power(dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

(UNII 2C) Bandwidth 40M Ch.142(5710MHz) RU 55



Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
10.94	0.322	11.26

Note:

Total Power(dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

(UNII 3) Bandwidth 40M Ch.142(5710MHz) RU 44

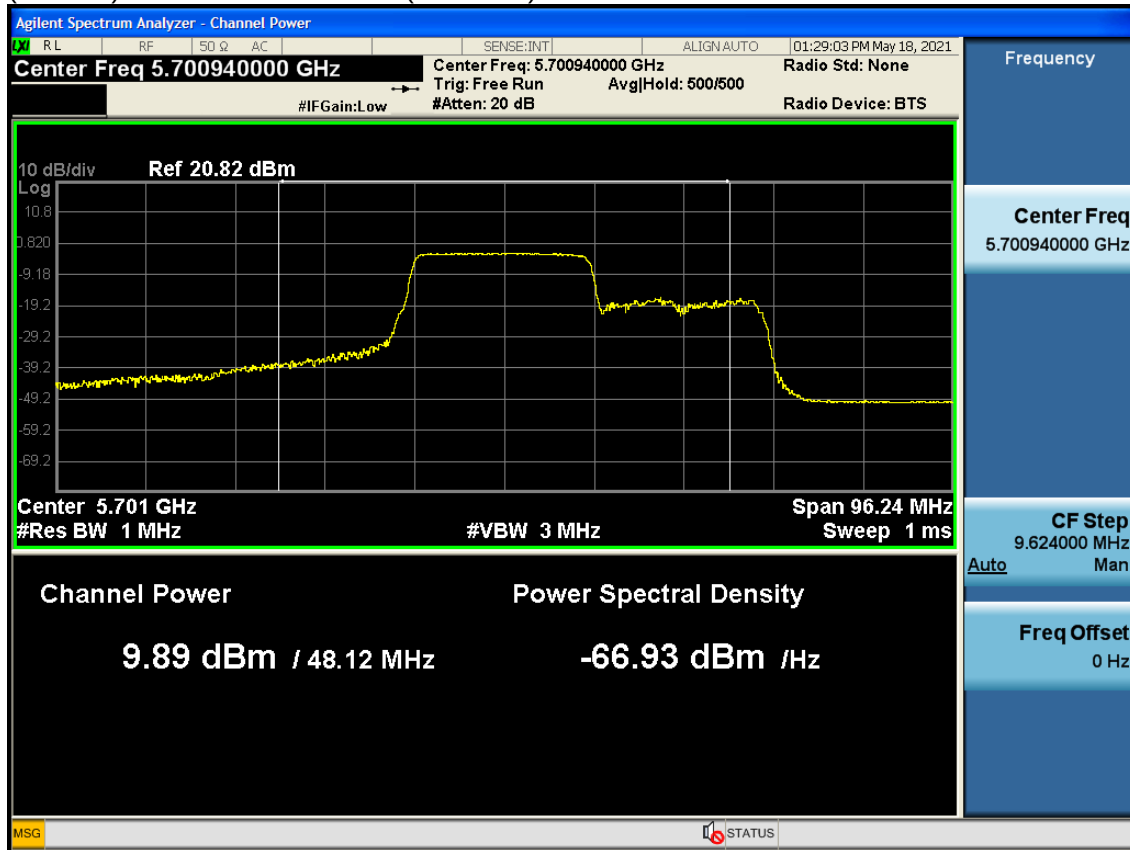


Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
8.94	0.163	9.10

Note:

Total Power(dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

(UNII 2C) Bandwidth 80M Ch.138(5690MHz) RU 63

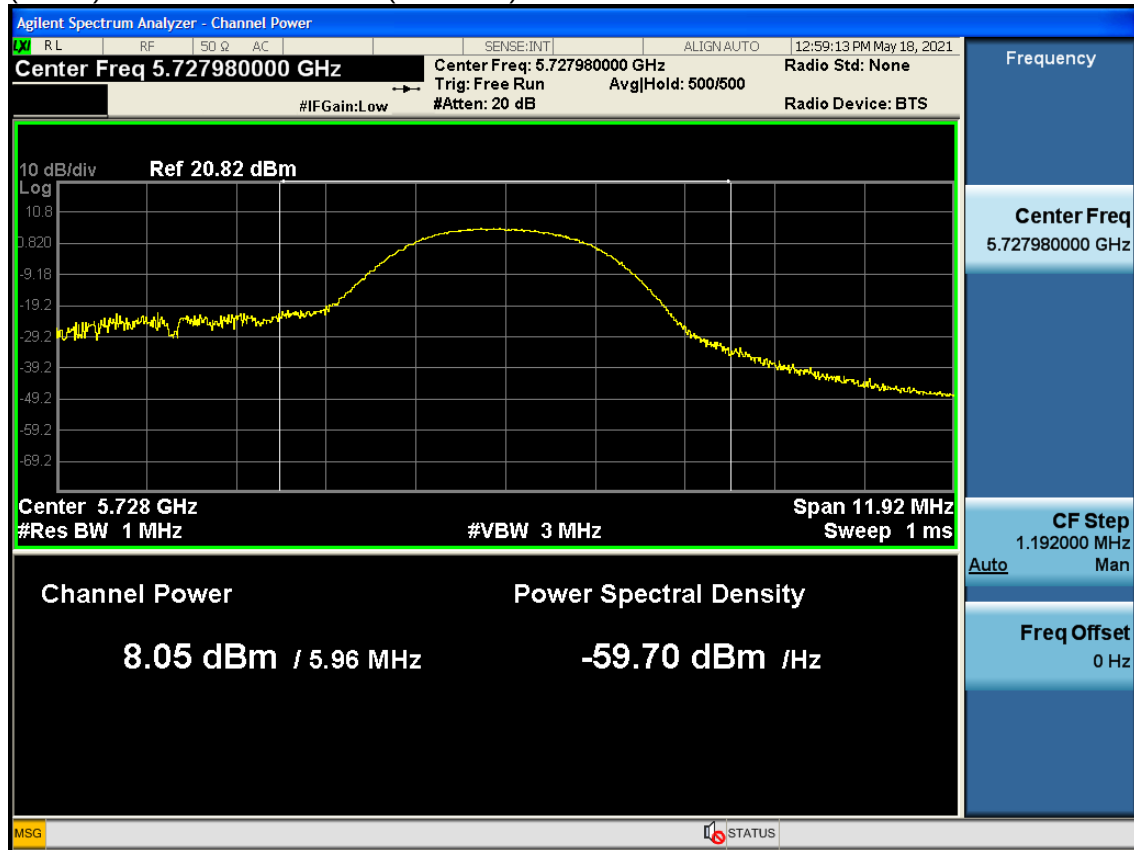


Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
9.89	0.677	10.57

Note:

Total Power(dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

(UNII 3) Bandwidth 80M Ch.138(5690MHz) RU 36



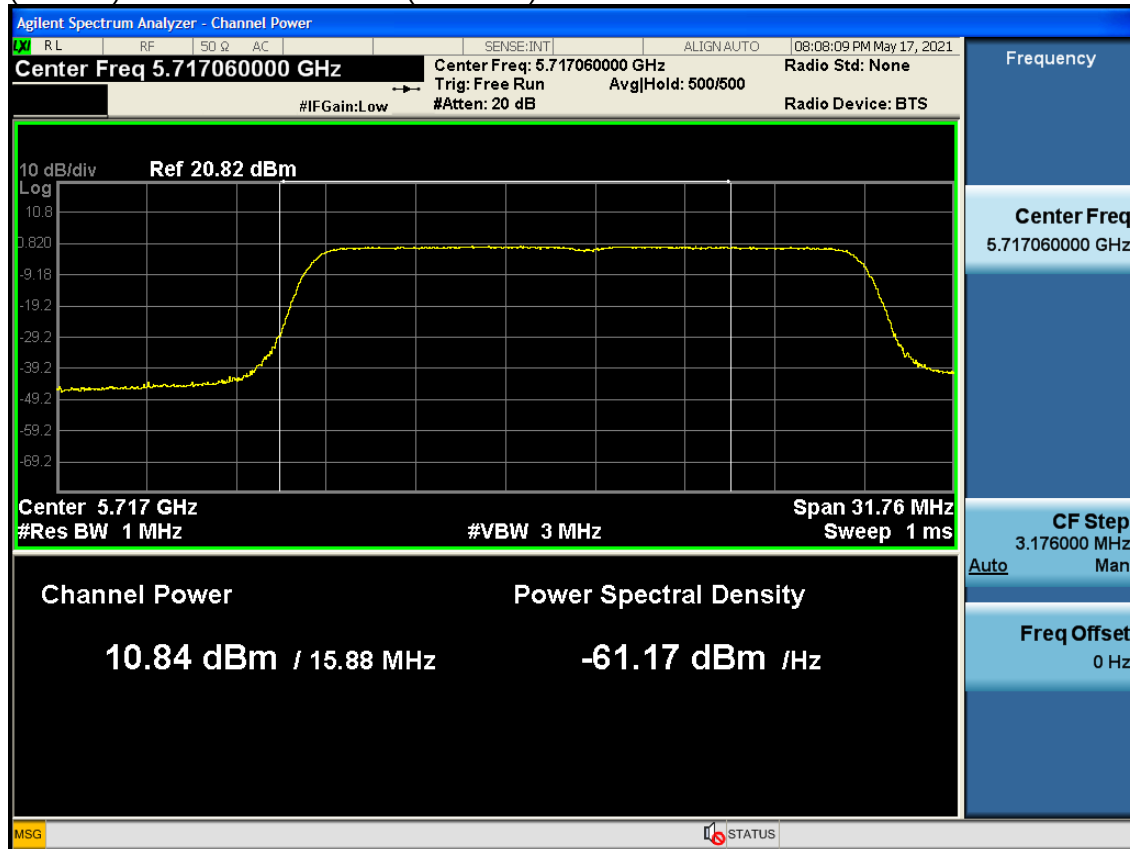
Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
8.05	0.083	8.13

Note:

Total Power(dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

5.3.2 MIMO Ant2

(UNII 2C) Bandwidth 20M Ch.144(5720MHz) SU



Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
10.84	0.672	11.51

Note:

Total Power(dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

(UNII 3) Bandwidth 20M Ch.144(5720MHz) RU 40



Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
9.26	0.159	9.42

Note:

Total Power(dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

(UNII 2C) Bandwidth 40M Ch.142(5710MHz) RU 55

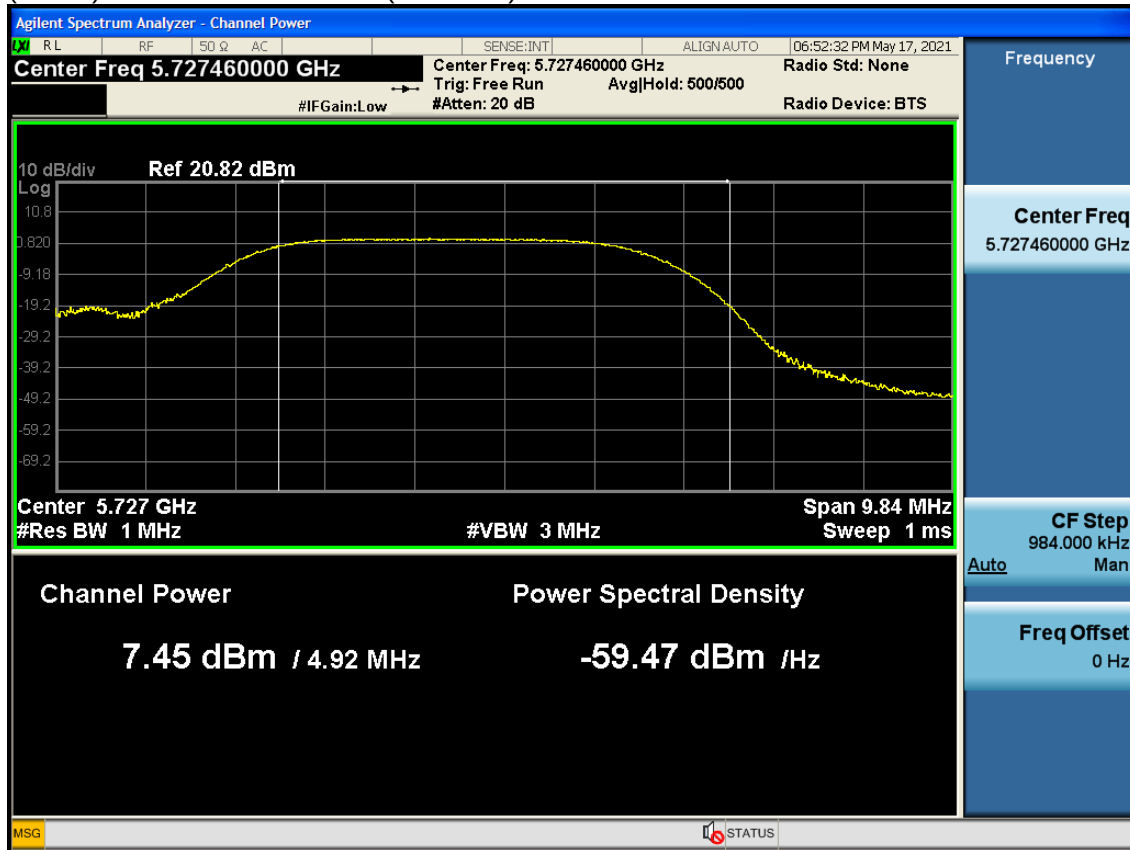


Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
9.49	0.322	9.81

Note:

Total Power(dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

(UNII 3) Bandwidth 40M Ch.142(5710MHz) RU 44

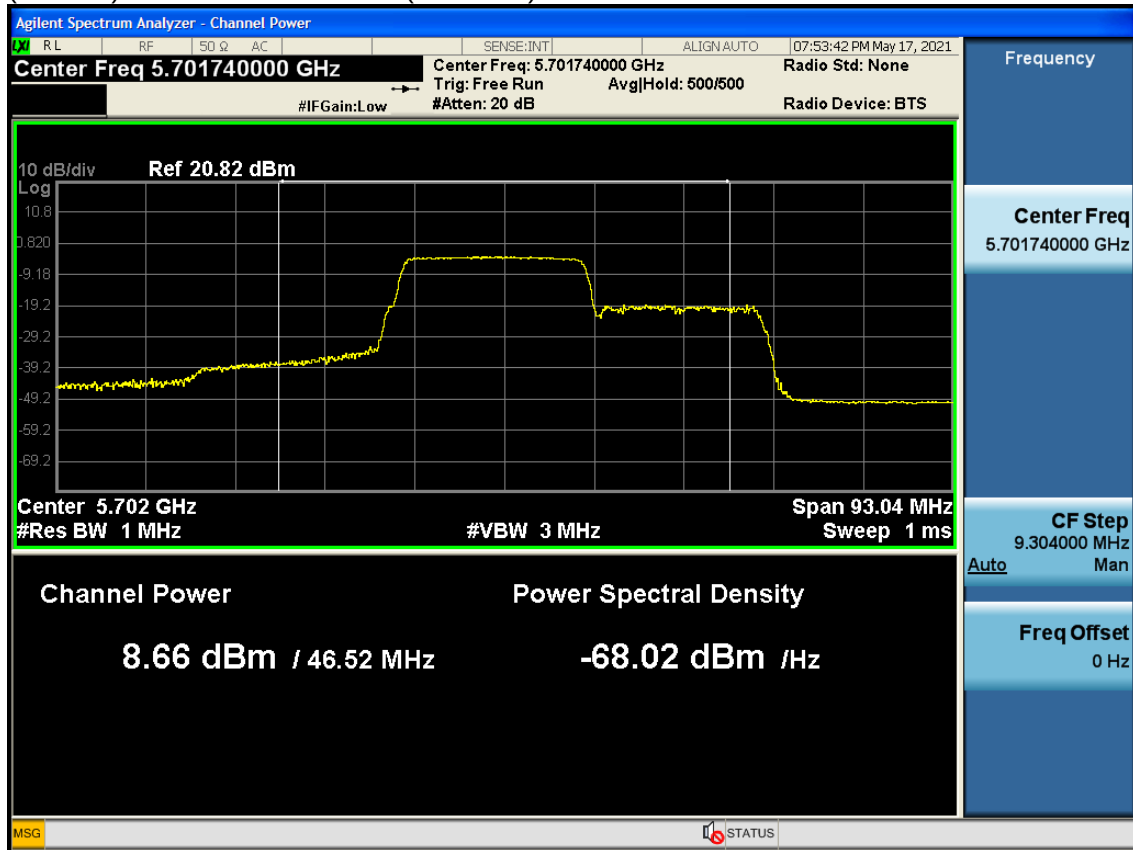


Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
7.45	0.163	7.61

Note:

Total Power(dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

(UNII 2C) Bandwidth 80M Ch.138(5690MHz) RU 63

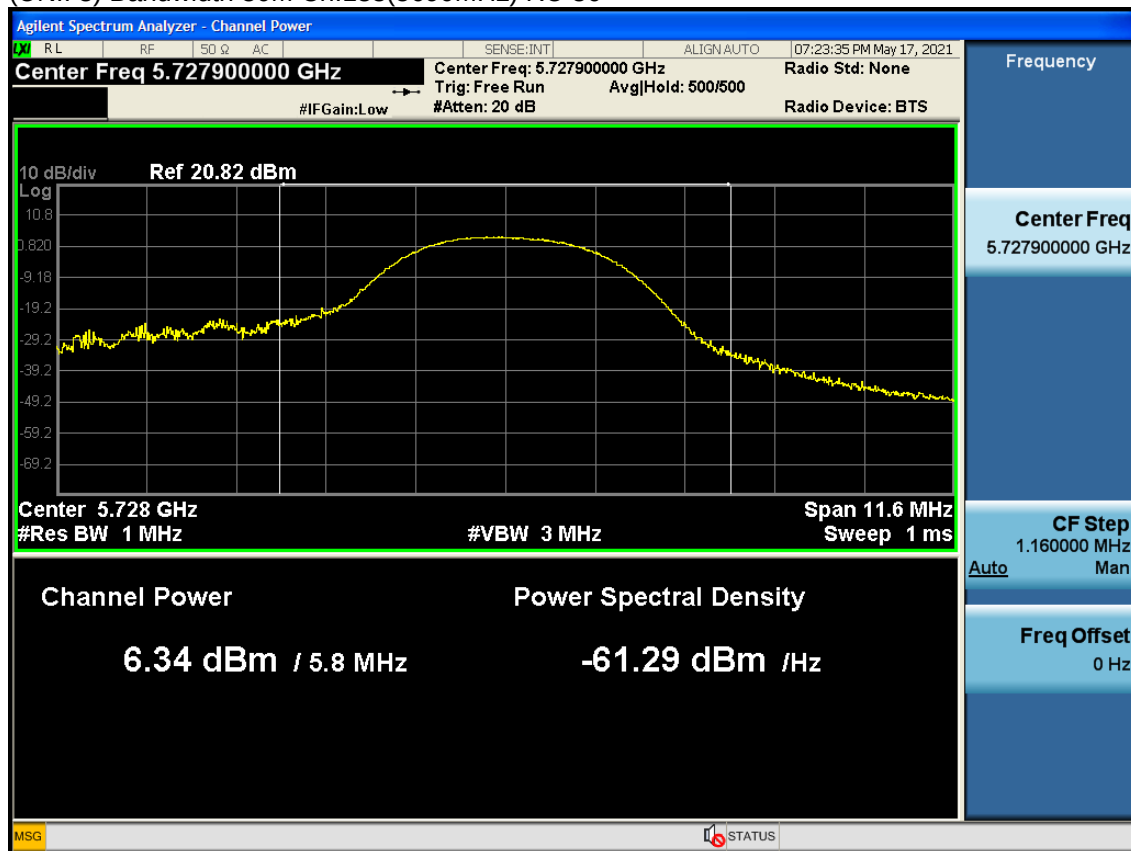


Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
8.66	0.677	9.34

Note:

Total Power(dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

(UNII 3) Bandwidth 80M Ch.138(5690MHz) RU 36



Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
6.34	0.083	6.42

Note:

Total Power(dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

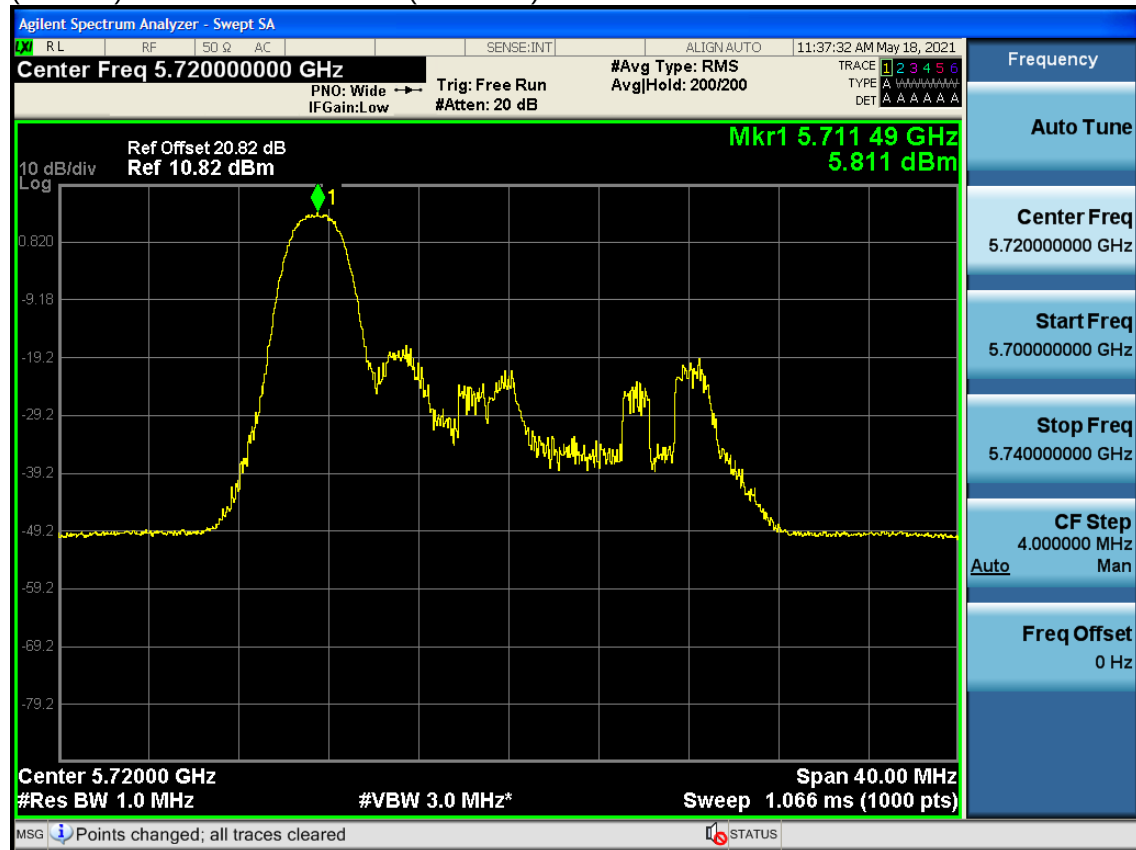
5.4 Power Spectral Density

Note:

1. In order to simplify the report, attached plots were only channel of highest PSD.

5.4.1 MIMO Ant1

(UNII 2C) Bandwidth 20M Ch.144(5720MHz) RU 0



Reading Value (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
5.811	0.081	5.892

Note:

Total PSD (dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

(UNII 3) Bandwidth 20M Ch.144(5720MHz) RU 7

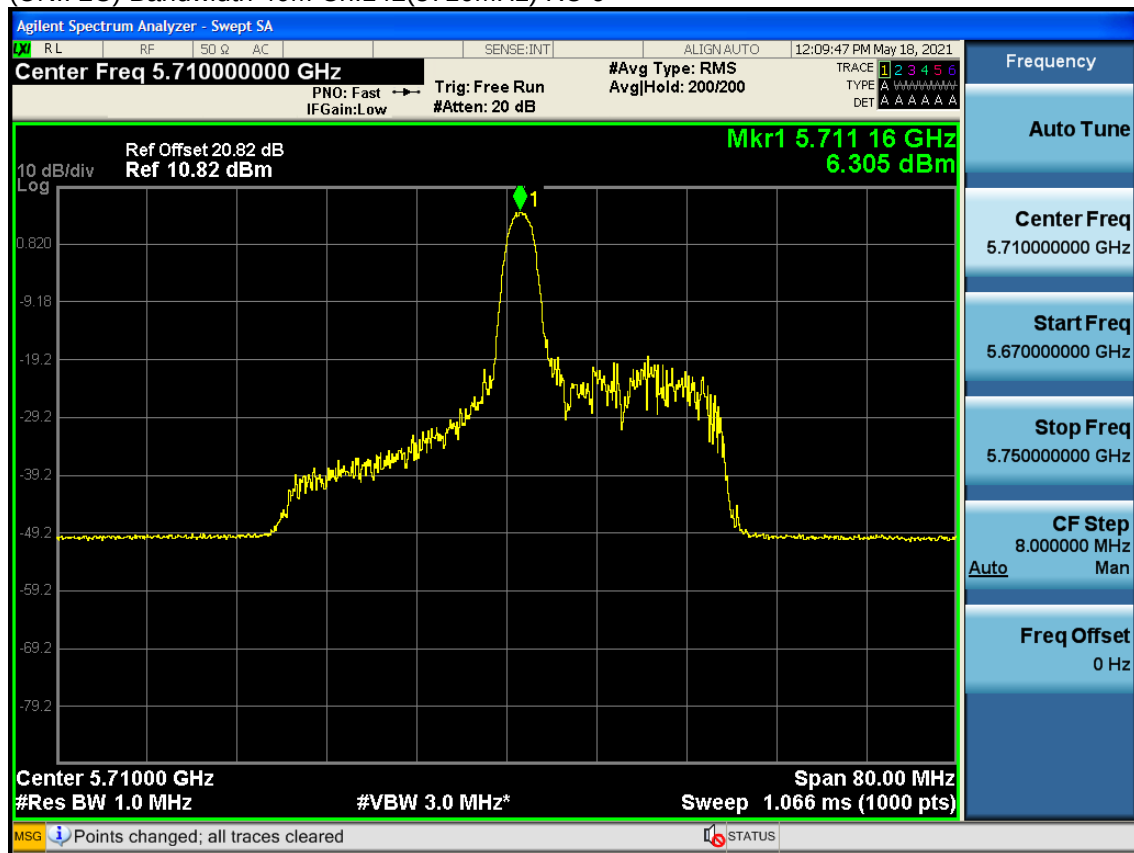


Reading Value (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
3.652	0.081	3.733

Note:

Total PSD (dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

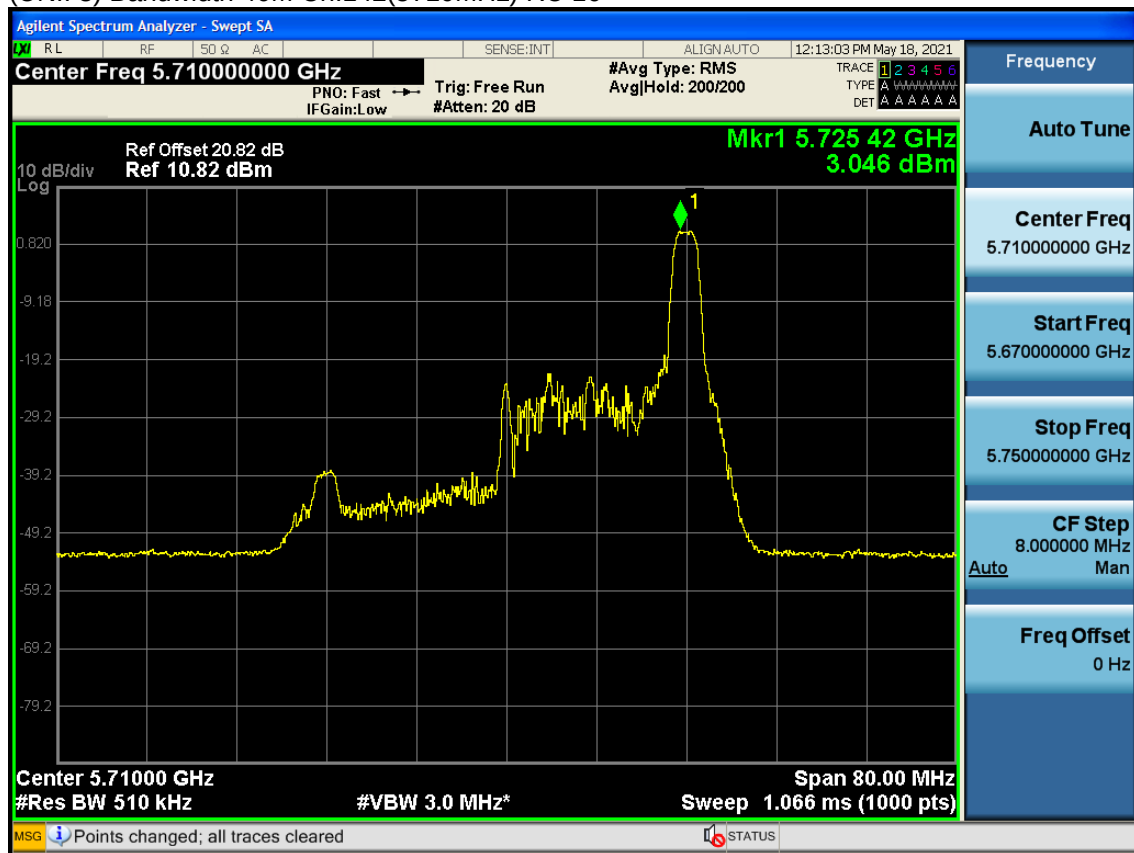
(UNII 2C) Bandwidth 40M Ch.142(5710MHz) RU 9



Note:

Total PSD (dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

(UNII 3) Bandwidth 40M Ch.142(5710MHz) RU 16

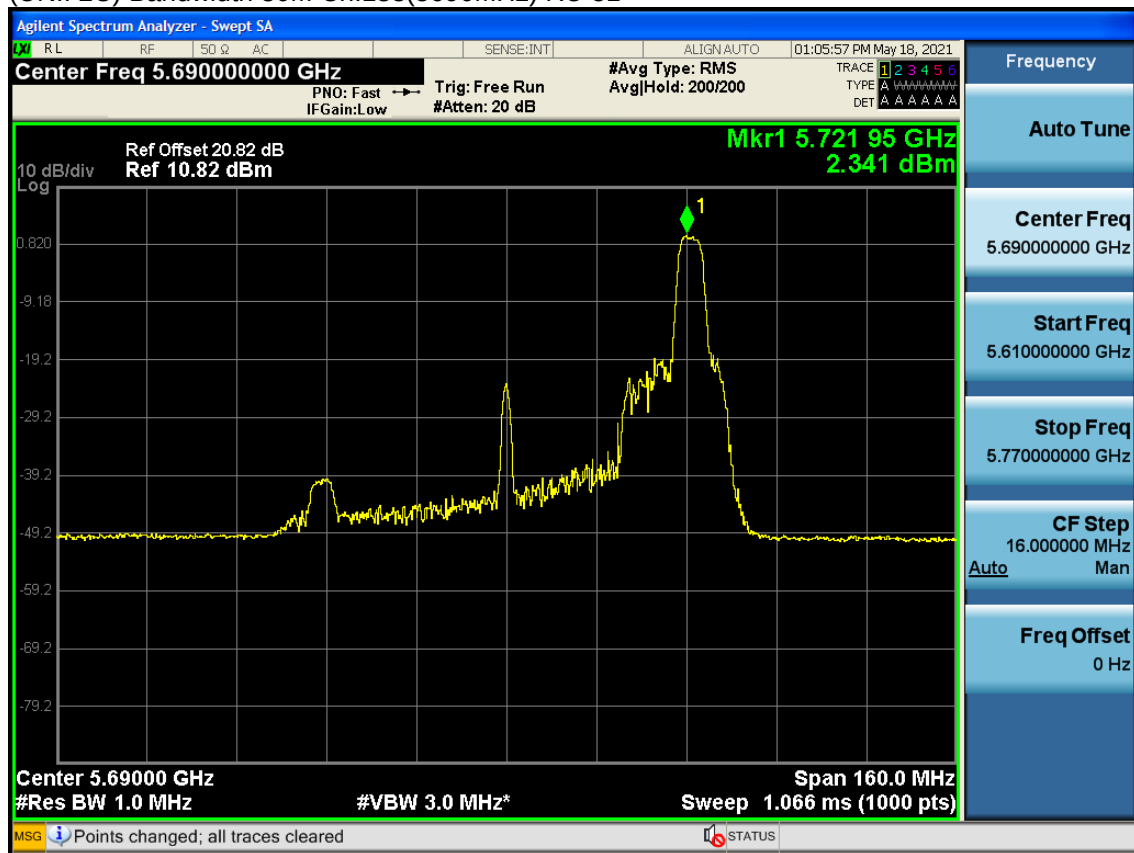


Reading Value (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
3.046	0.085	3.131

Note:

Total PSD (dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

(UNII 2C) Bandwidth 80M Ch.138(5690MHz) RU 51

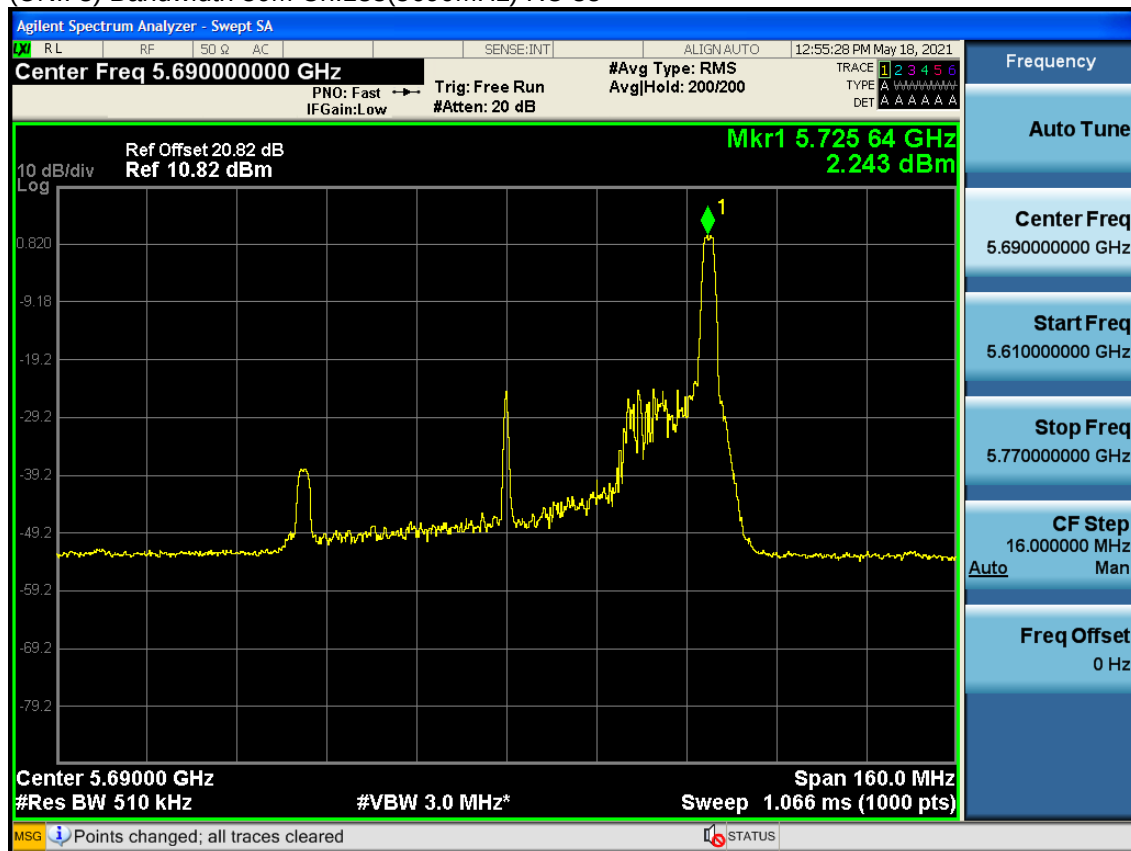


Reading Value (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
2.341	0.163	2.504

Note:

Total PSD (dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

(UNII 3) Bandwidth 80M Ch.138(5690MHz) RU 35



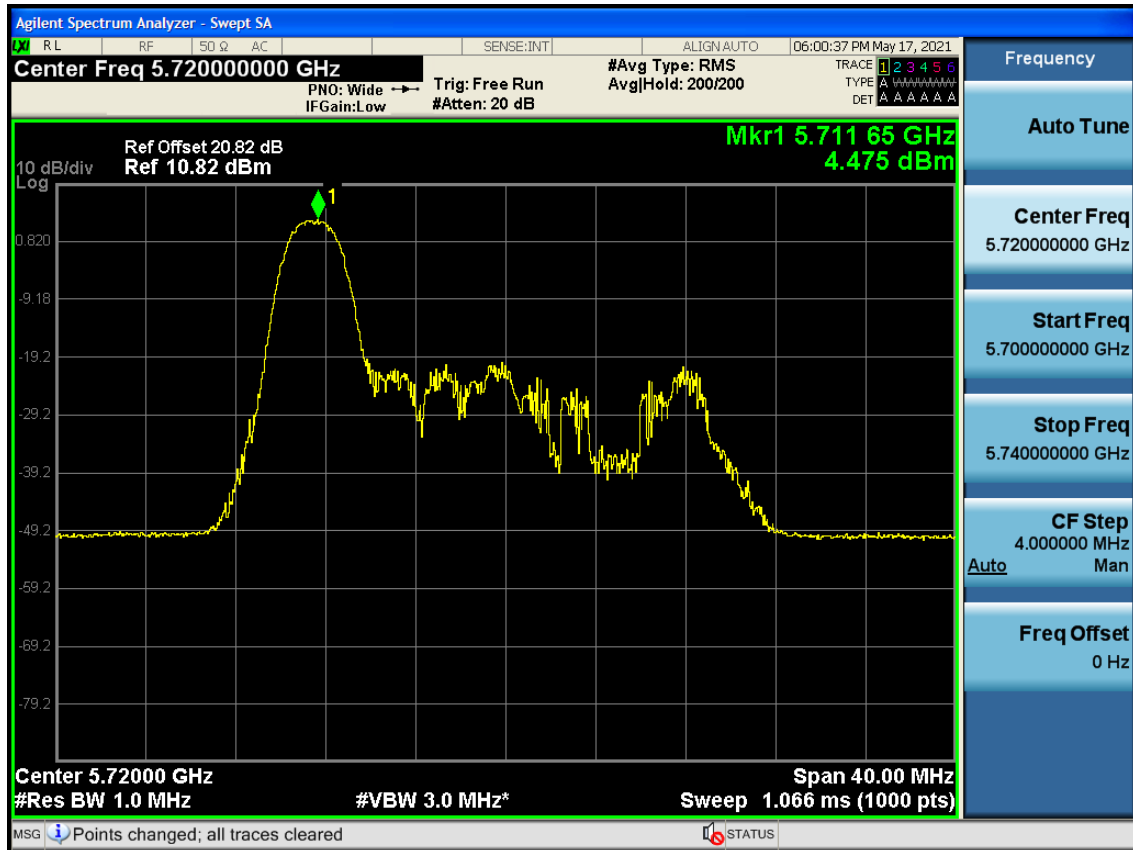
Reading Value (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
2.243	0.083	2.326

Note:

Total PSD (dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

5.4.2 MIMO Ant2

(UNII 2C) Bandwidth 20M Ch.144(5720MHz) RU 0

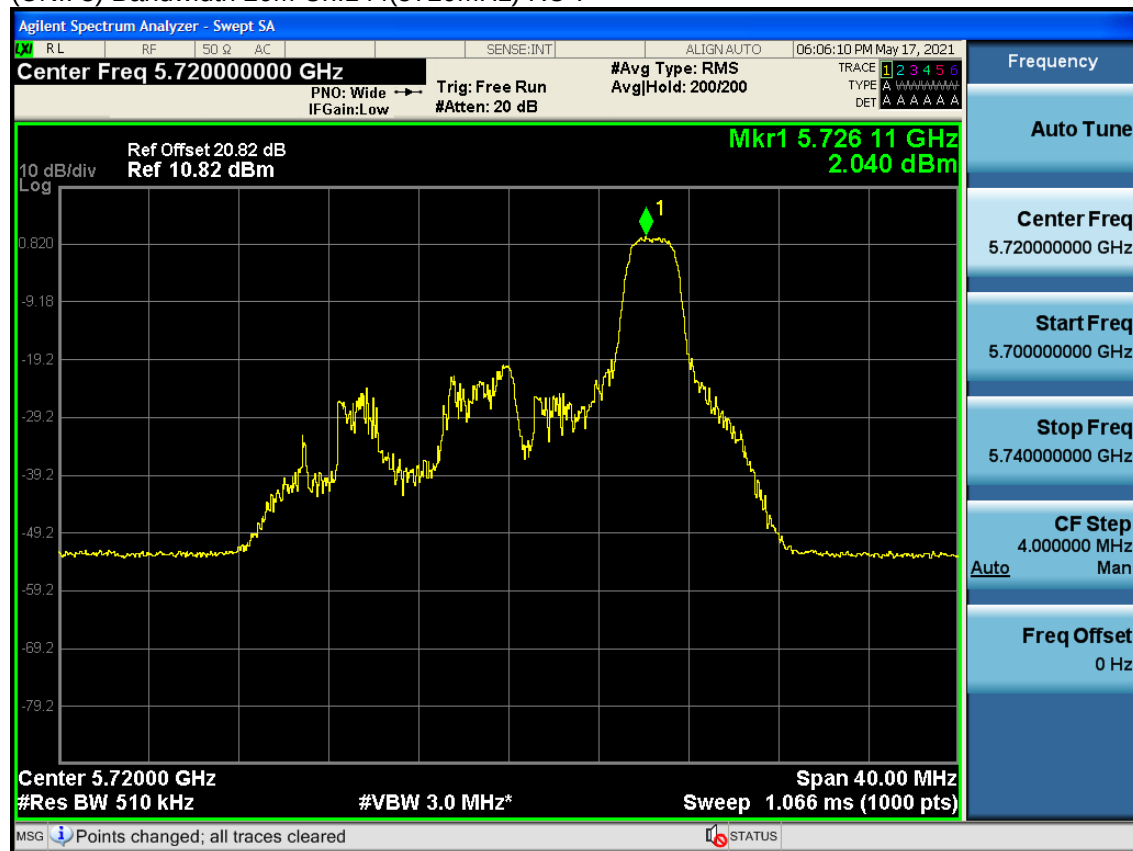


Reading Value (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
4.475	0.081	4.556

Note:

Total PSD (dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

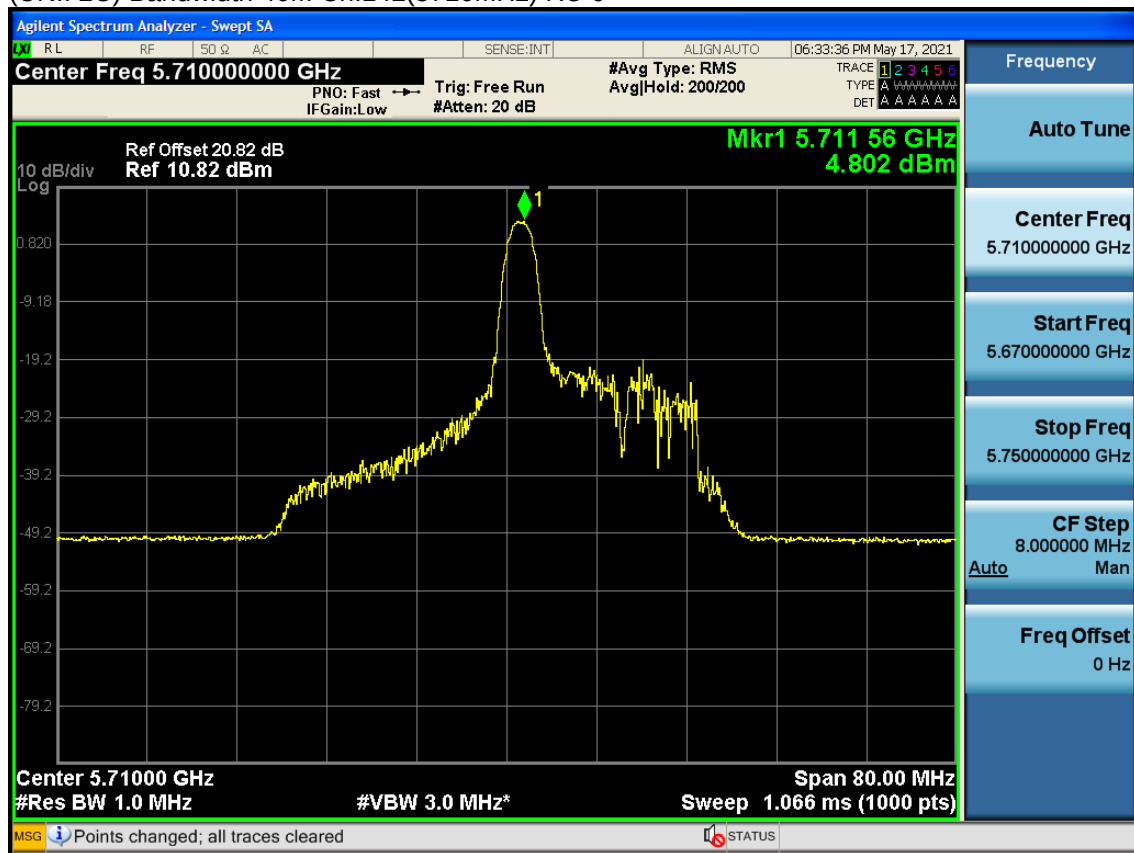
(UNII 3) Bandwidth 20M Ch.144(5720MHz) RU 7



Note:

Total PSD (dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

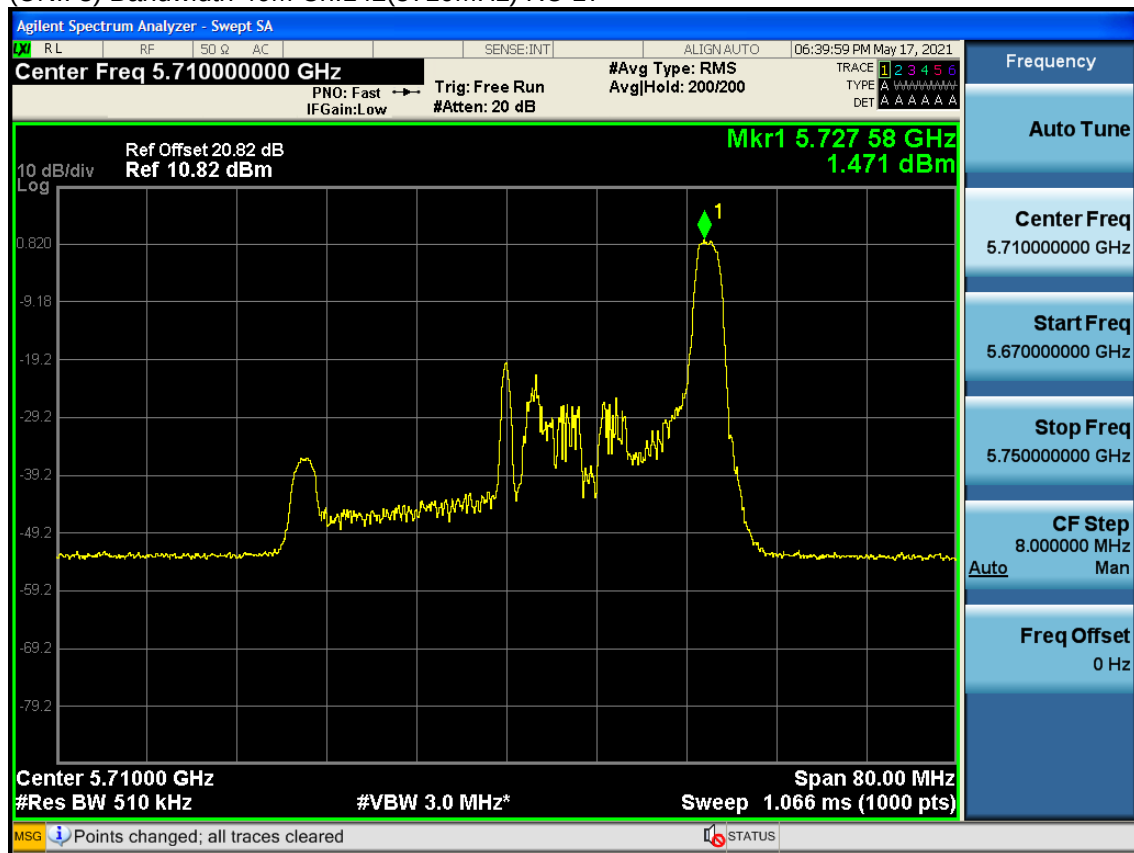
(UNII 2C) Bandwidth 40M Ch.142(5710MHz) RU 9



Note:

Total PSD (dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

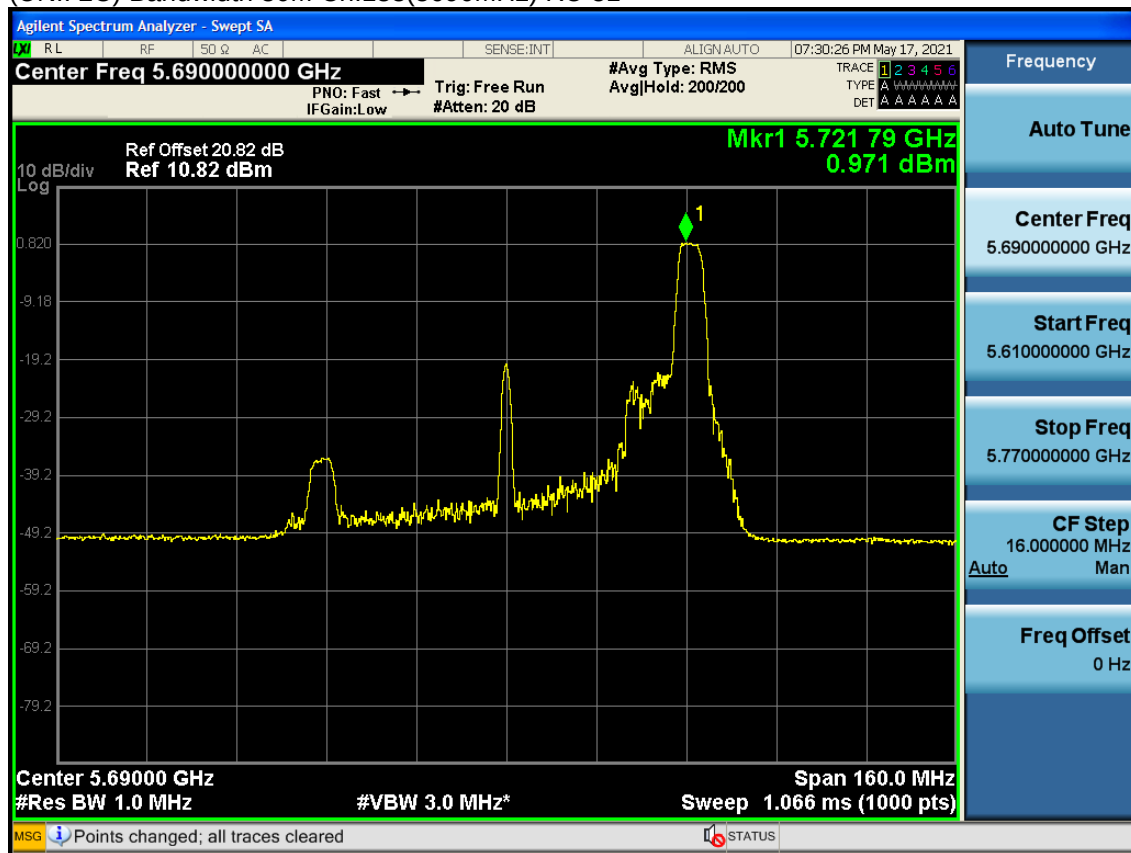
(UNII 3) Bandwidth 40M Ch.142(5710MHz) RU 17



Note:

Total PSD (dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

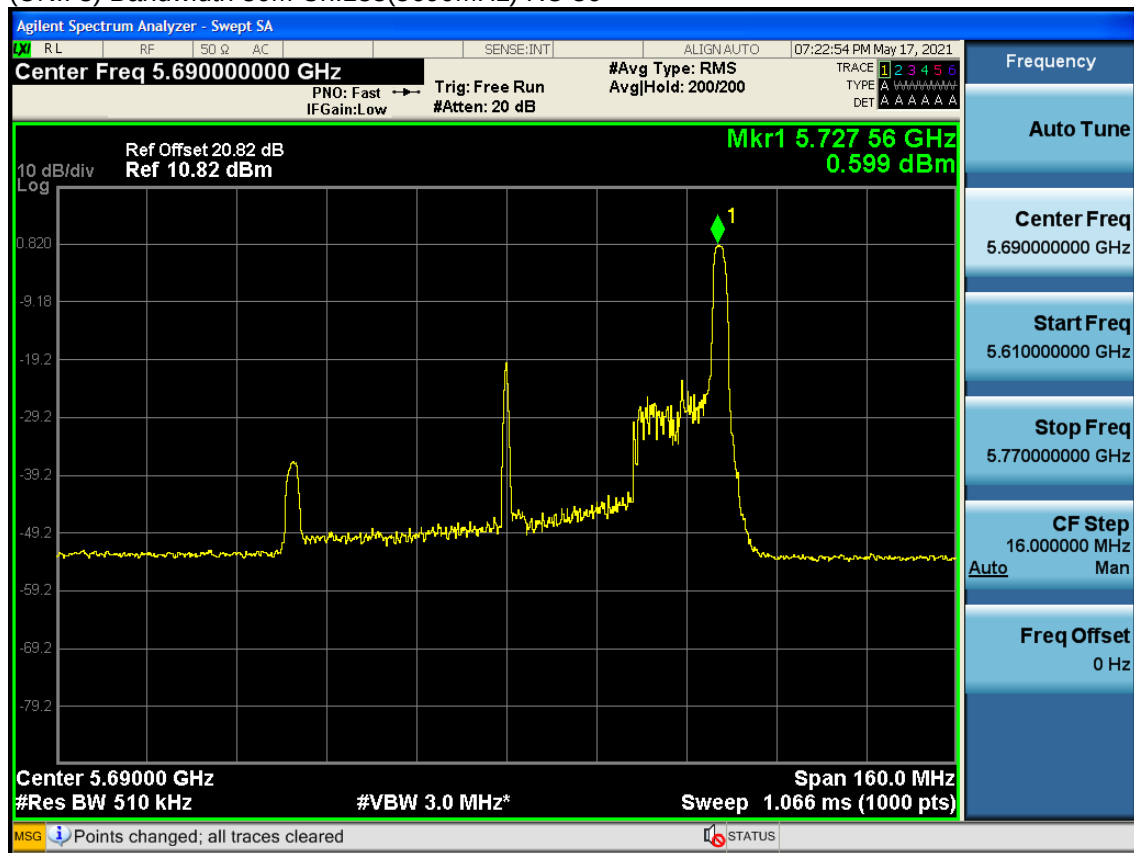
(UNII 2C) Bandwidth 80M Ch.138(5690MHz) RU 51



Note:

Total PSD (dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)

(UNII 3) Bandwidth 80M Ch.138(5690MHz) RU 36



Note:

Total PSD (dBm) = Reading Value(dBm) + Duty Cycle Factor(dB)