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Appendix B:
802.11ax
Test Plot

FCC ID
A3LSMG990B

REVISION HISTORY

The revision history for this document is shown in table.

Revision No.	Date of Issue	Description
0	June 14, 2021	Initial Release
1	July 14, 2021	Revised the total PSD result on page 71.

Note:

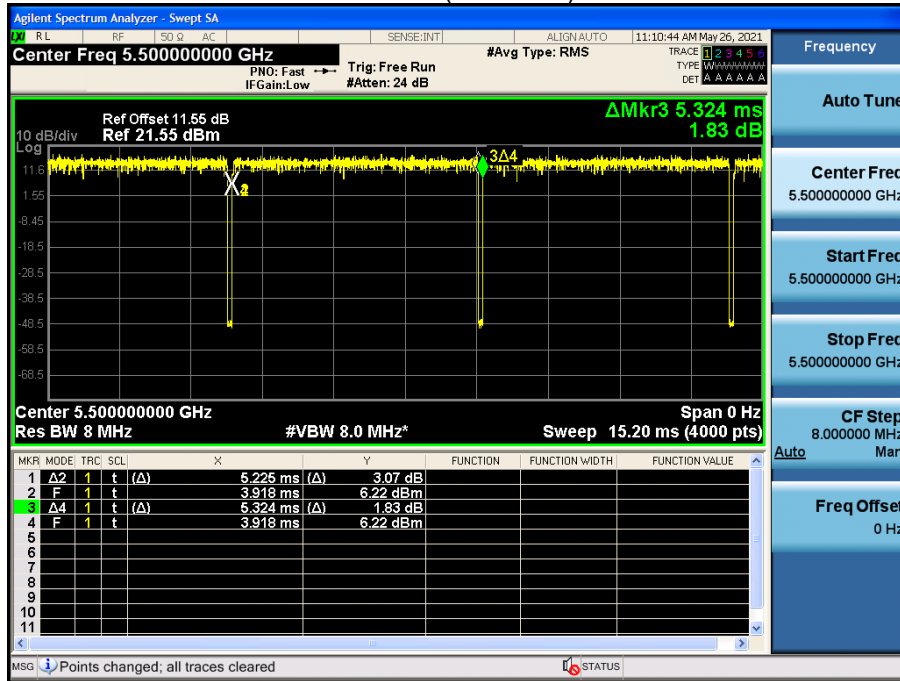
In order to simplify the report, attached plots were only the most lowest datarate.

1. Duty Cycle

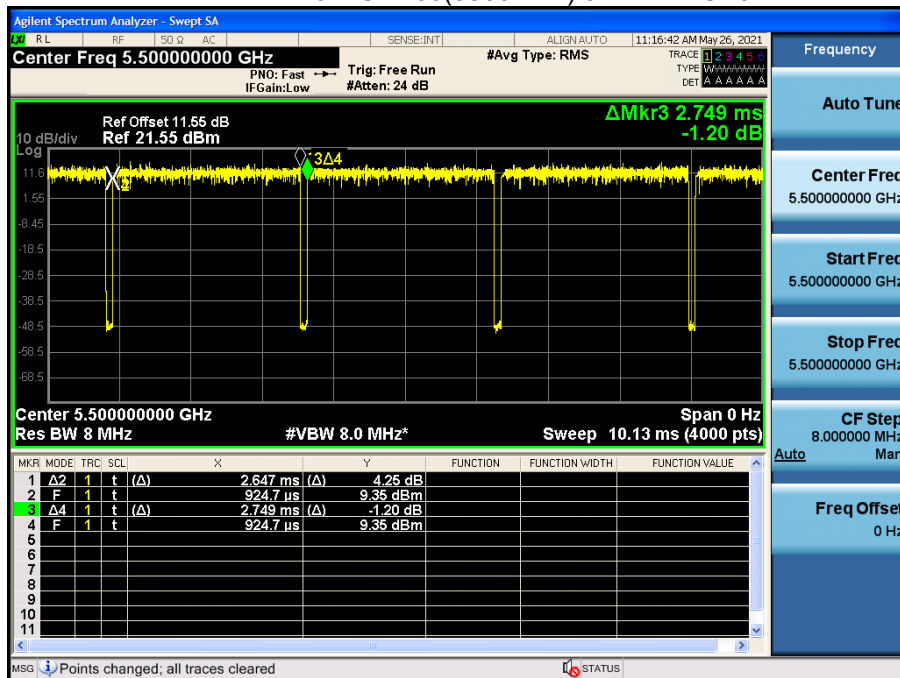
Note:

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

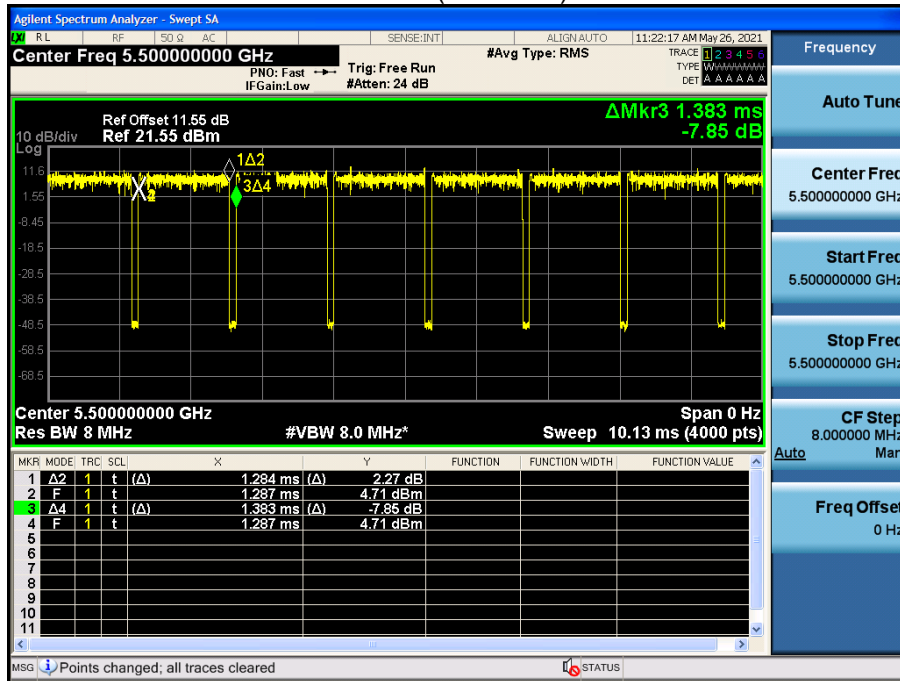
Bandwidth 20M Ch.100(5500MHz) 26Tone MCS0



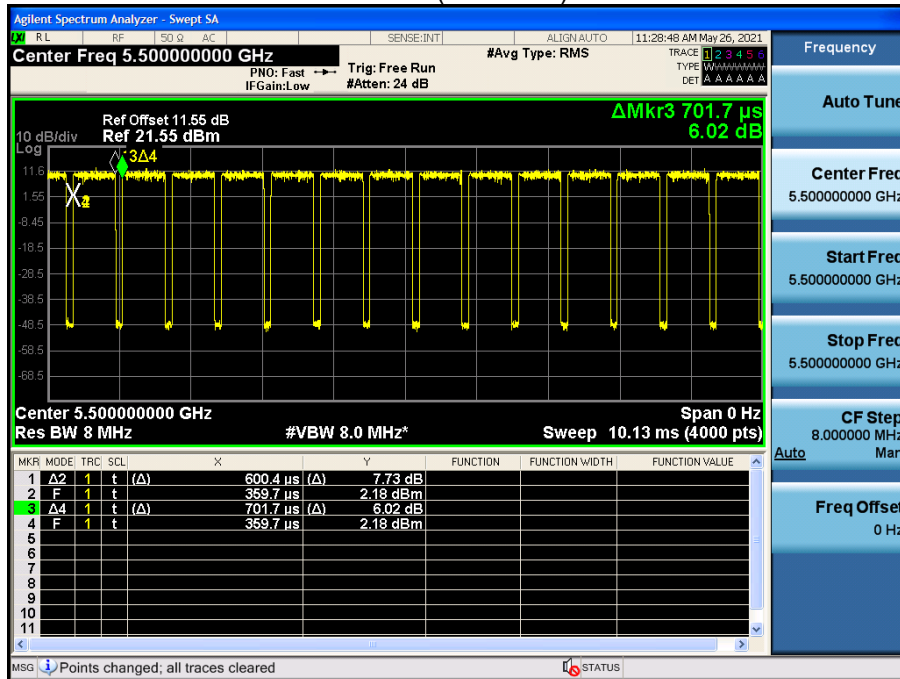
Bandwidth 20M Ch.100(5500MHz) 52Tone MCS0



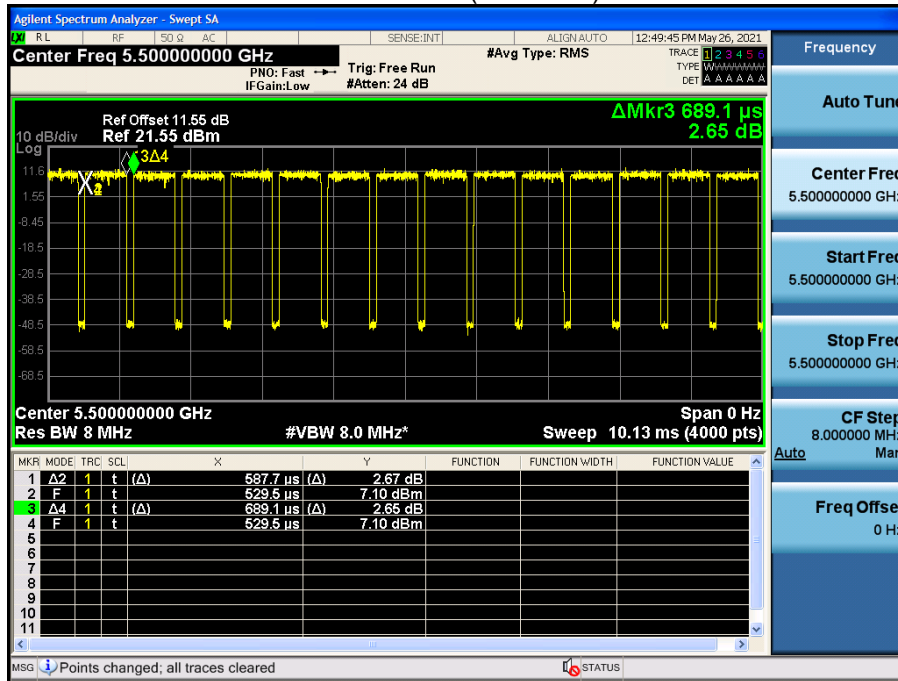
Bandwidth 20M Ch.100(5500MHz) 106Tone MCS0



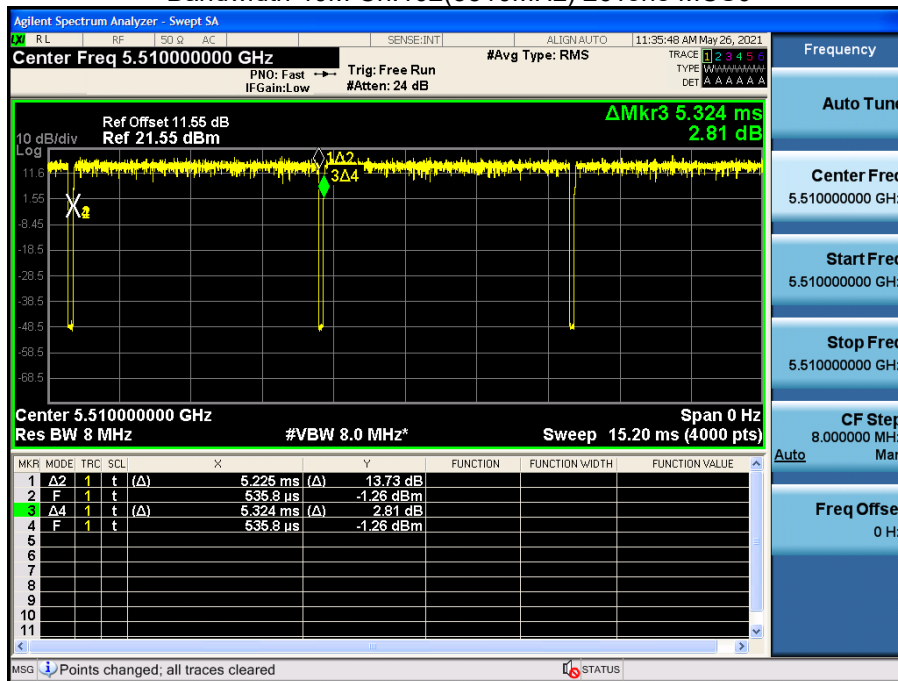
Bandwidth 20M Ch.100(5500MHz) 242Tone MCS0



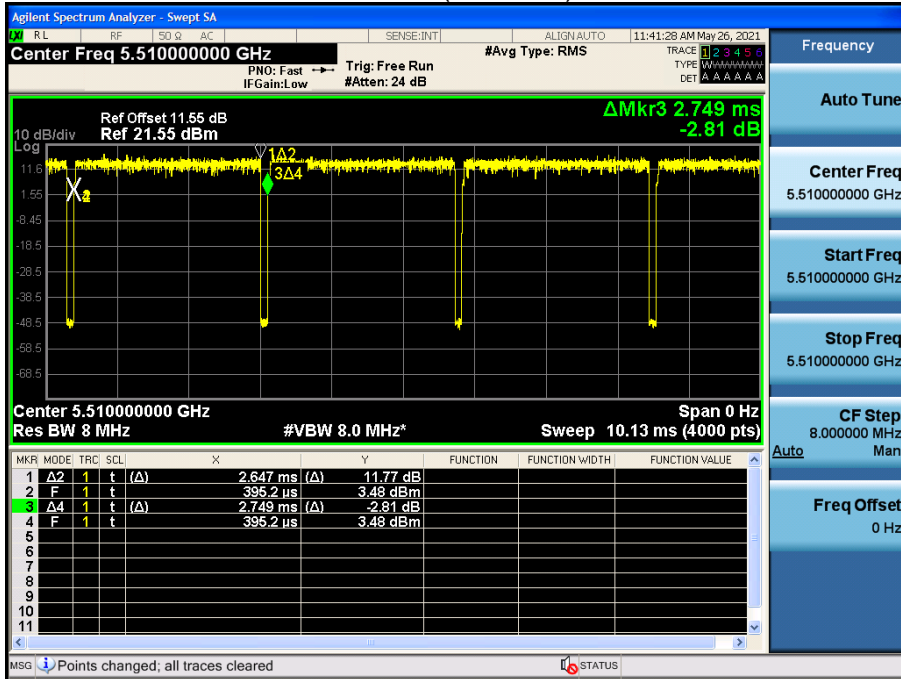
Bandwidth 20M Ch.100(5500MHz) SU MCSO



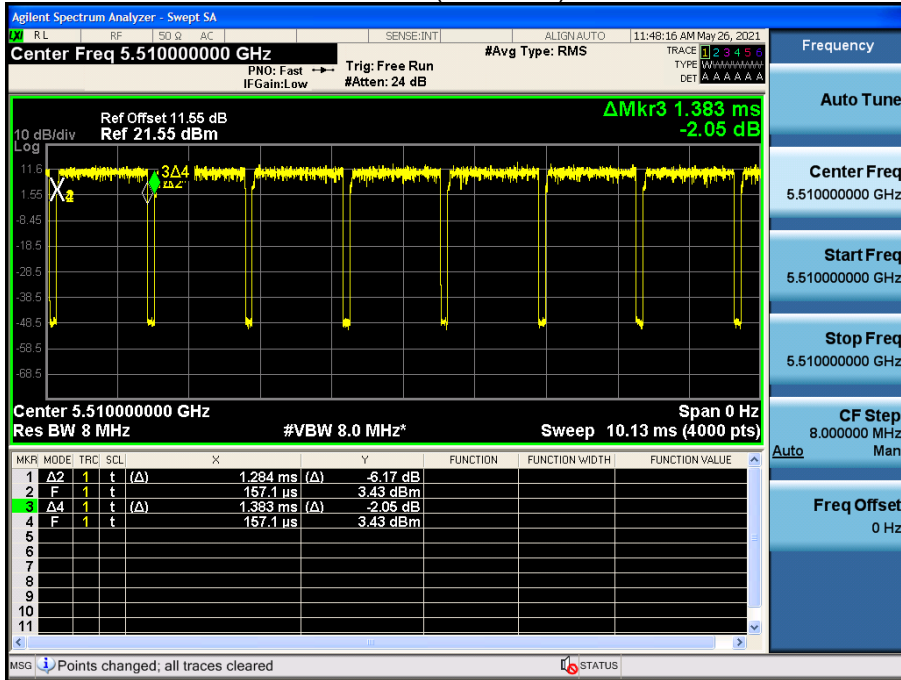
Bandwidth 40M Ch.102(5510MHz) 26Tone MCSO



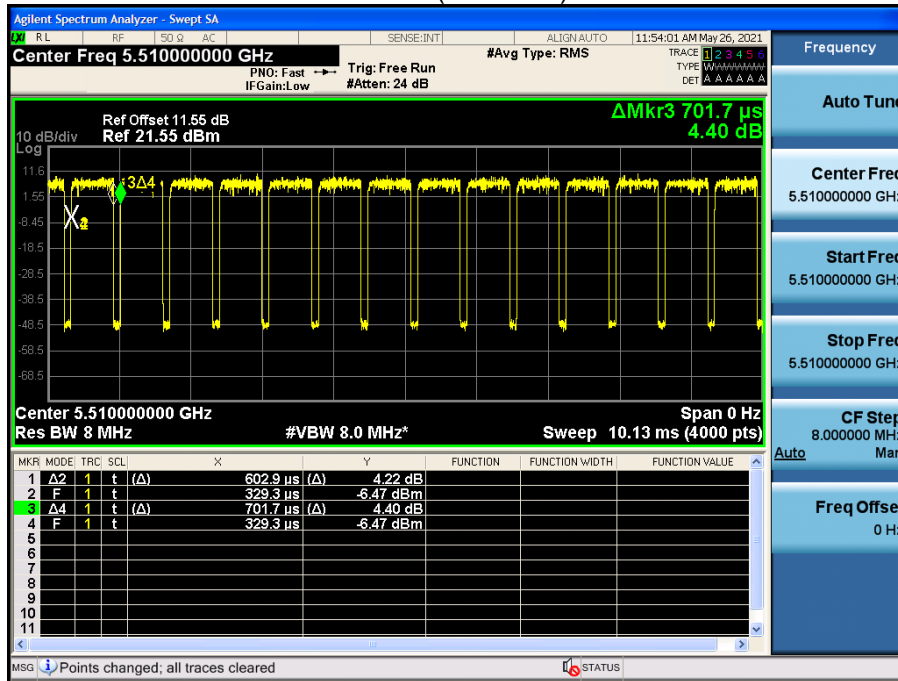
Bandwidth 40M Ch.102(5510MHz) 52Tone MCS0



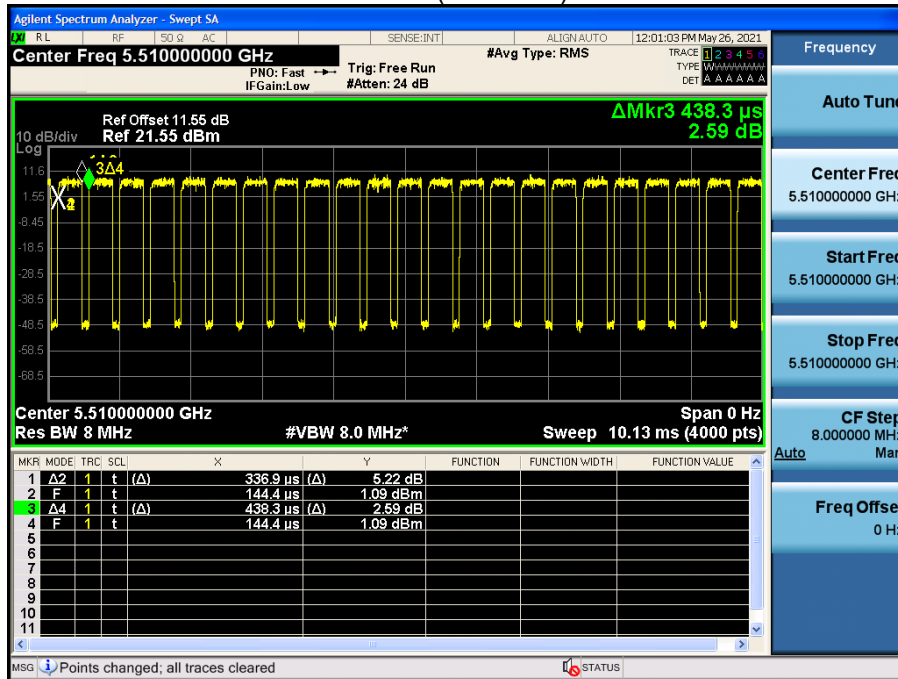
Bandwidth 40M Ch.102(5510MHz) 106Tone MCS0



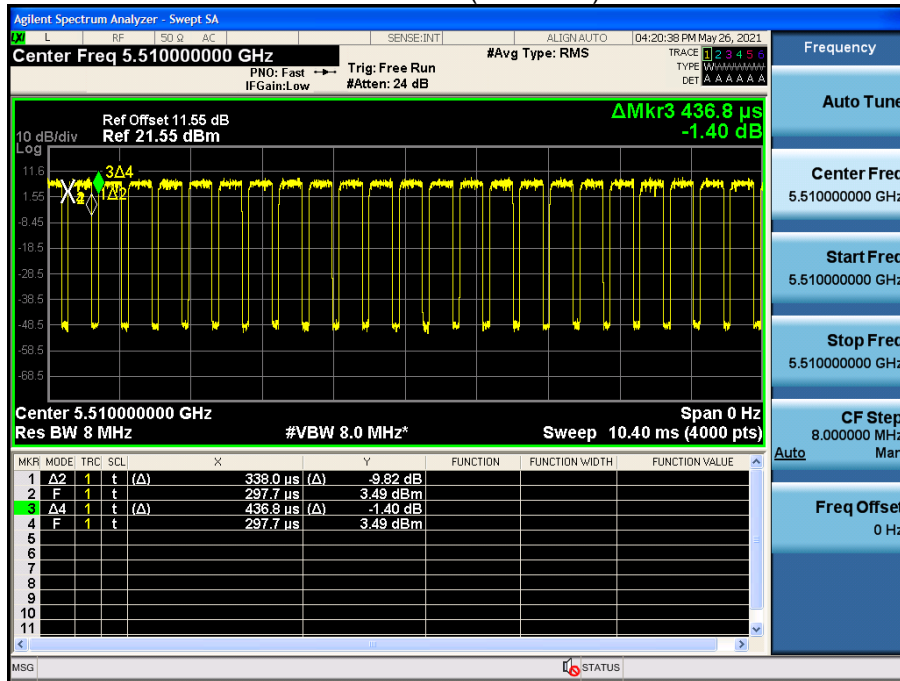
Bandwidth 40M Ch.102(5510MHz) 242Tone MCS0



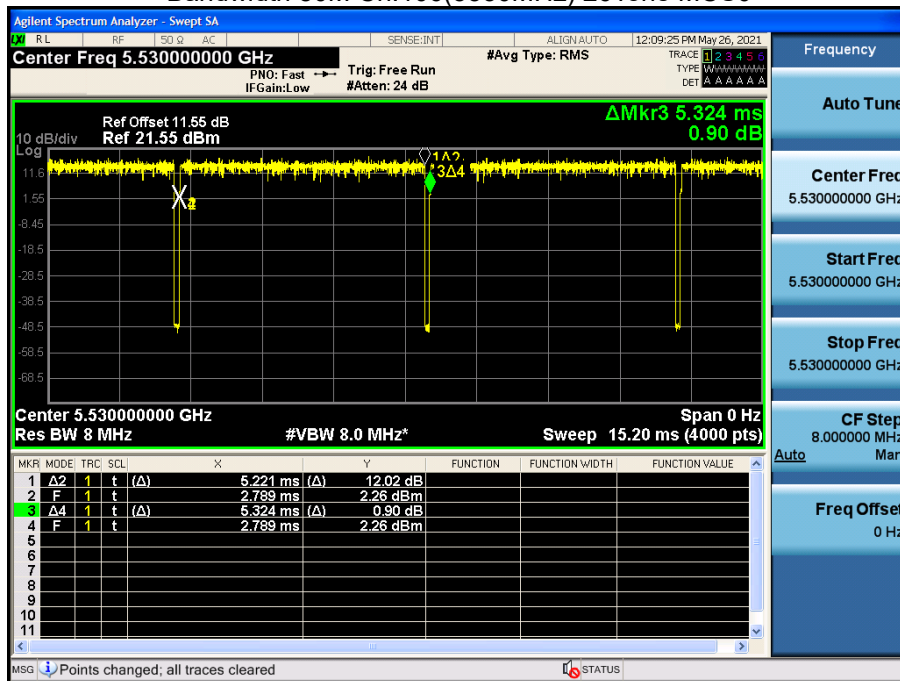
Bandwidth 40M Ch.102(5510MHz) 484Tone MCS0



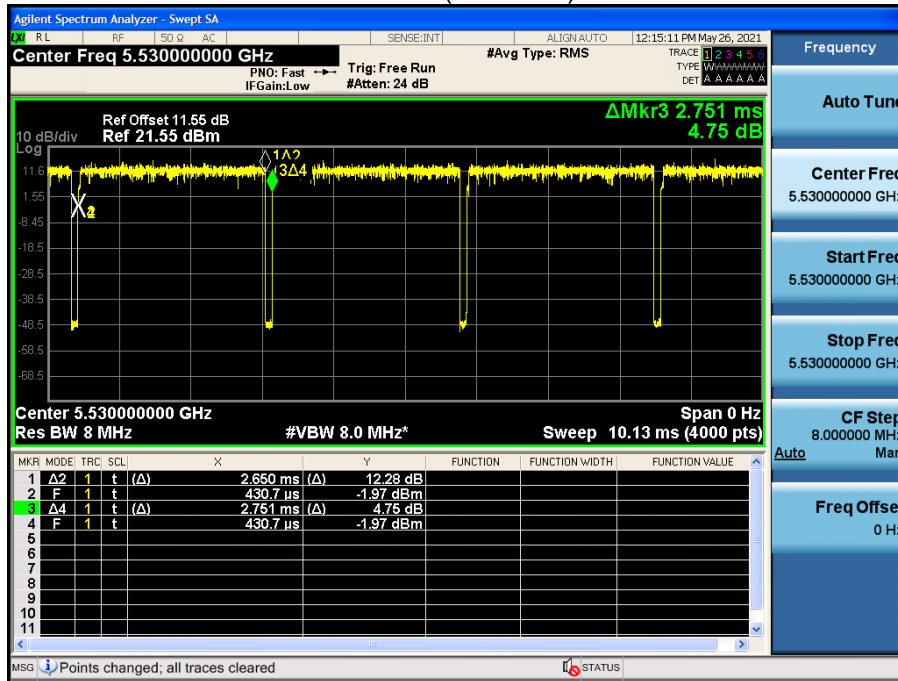
Bandwidth 40M Ch.102(5510MHz) SU MCSO



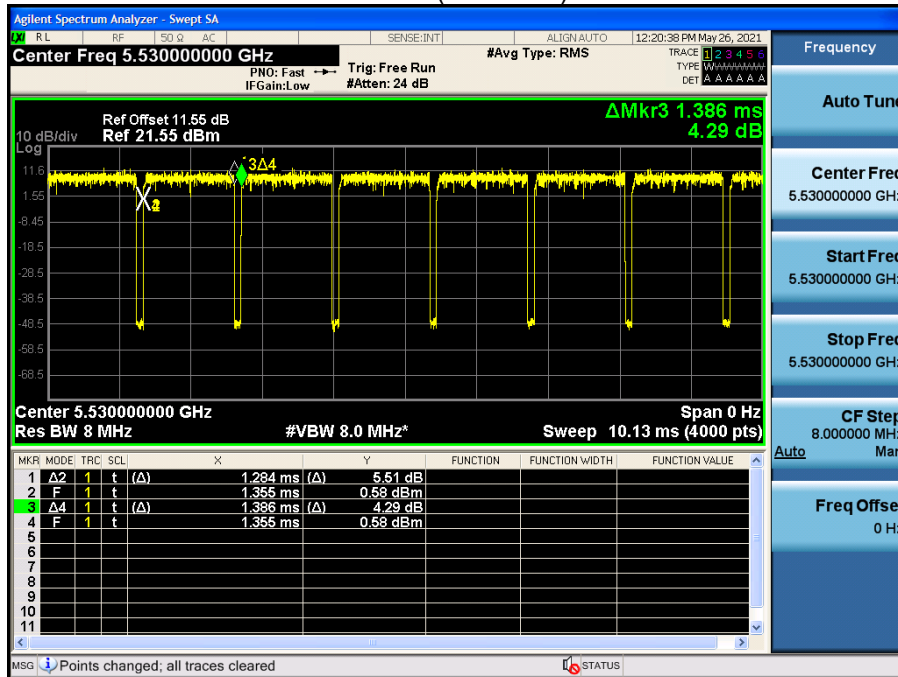
Bandwidth 80M Ch.106(5530MHz) 26Tone MCSO



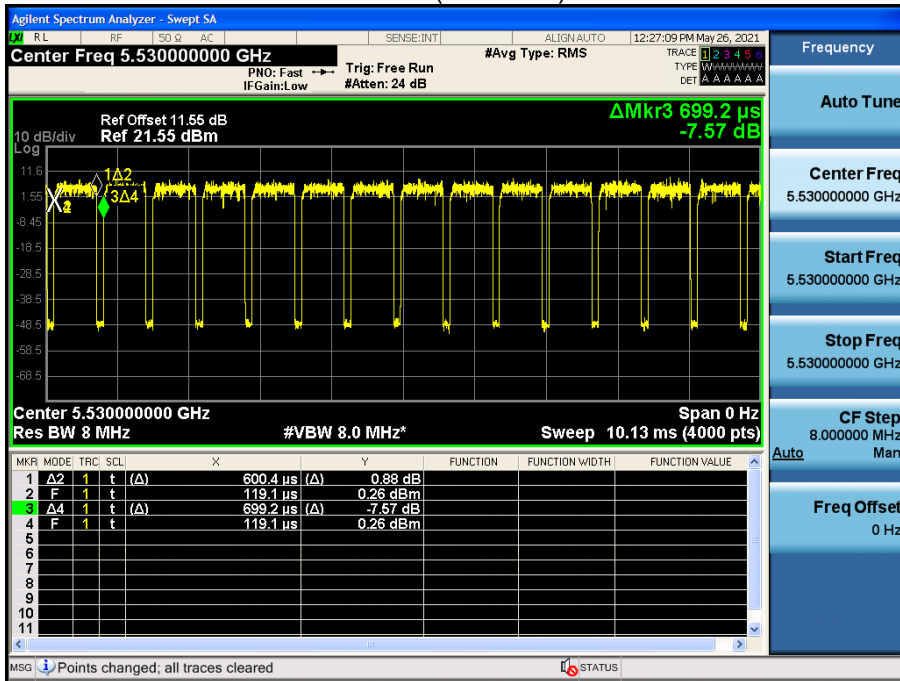
Bandwidth 80M Ch.106(5530MHz) 52Tone MCS0



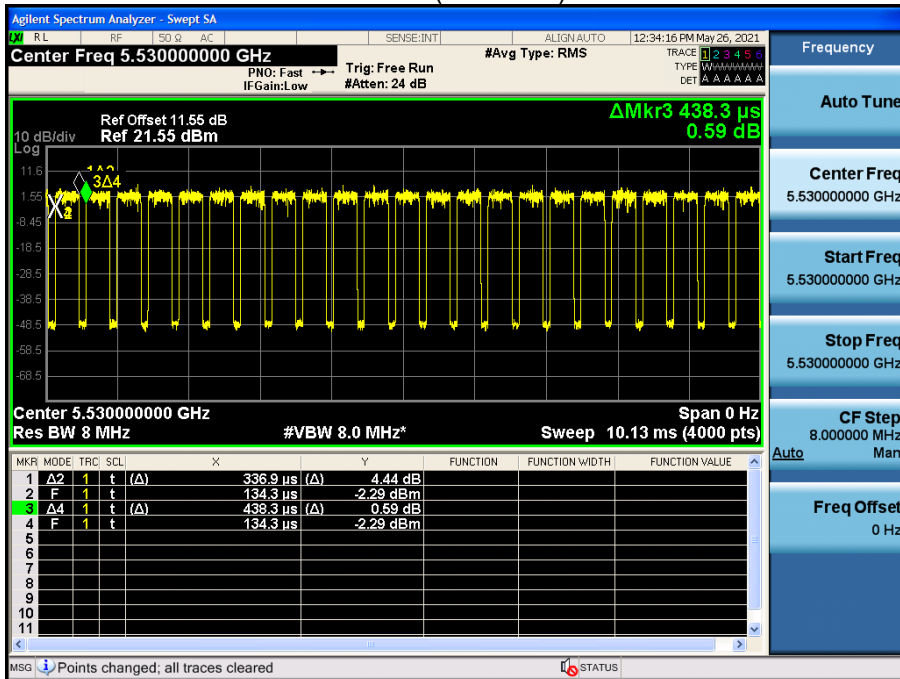
Bandwidth 80M Ch.106(5530MHz) 106Tone MCS0



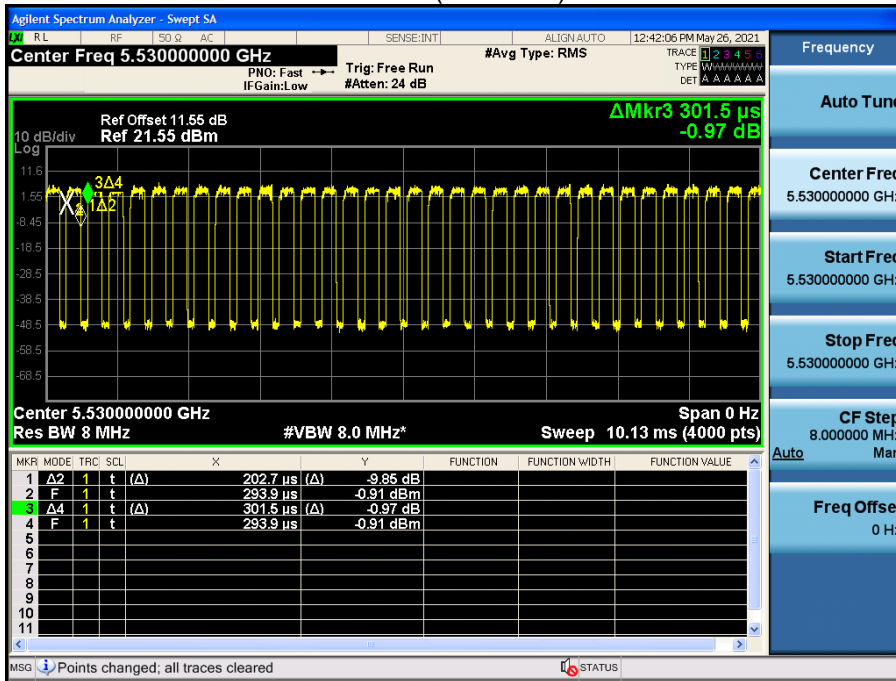
Bandwidth 80M Ch.106(5530MHz) 242Tone MCS0



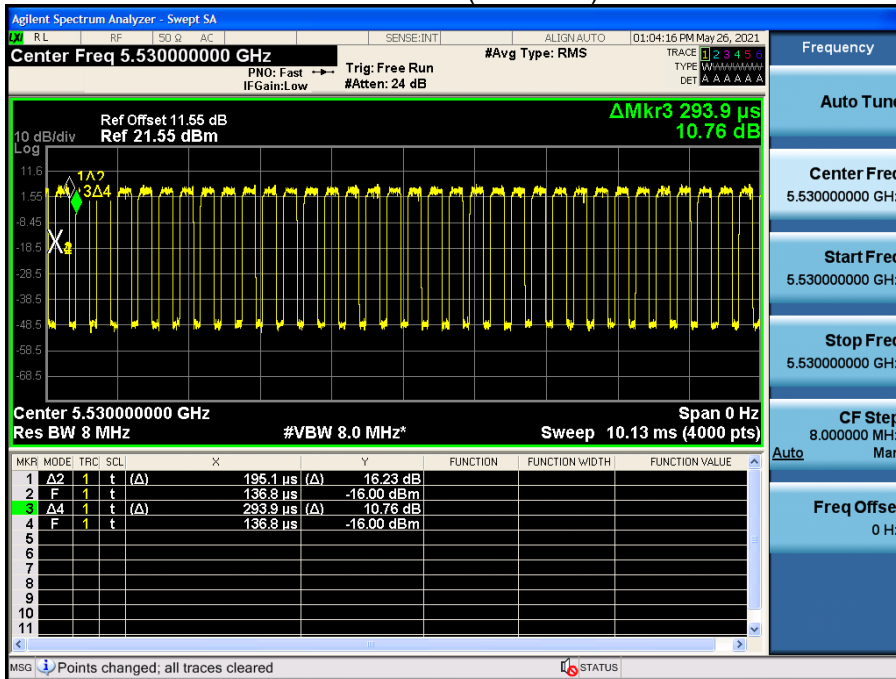
Bandwidth 80M Ch.106(5530MHz) 484Tone MCS0



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



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

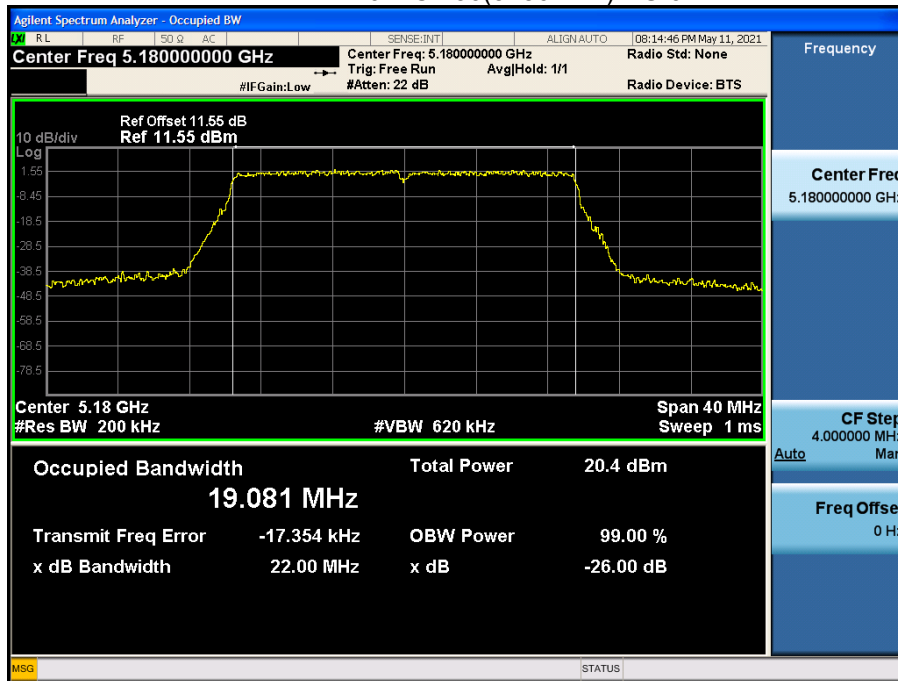


2. 26dB Bandwidth

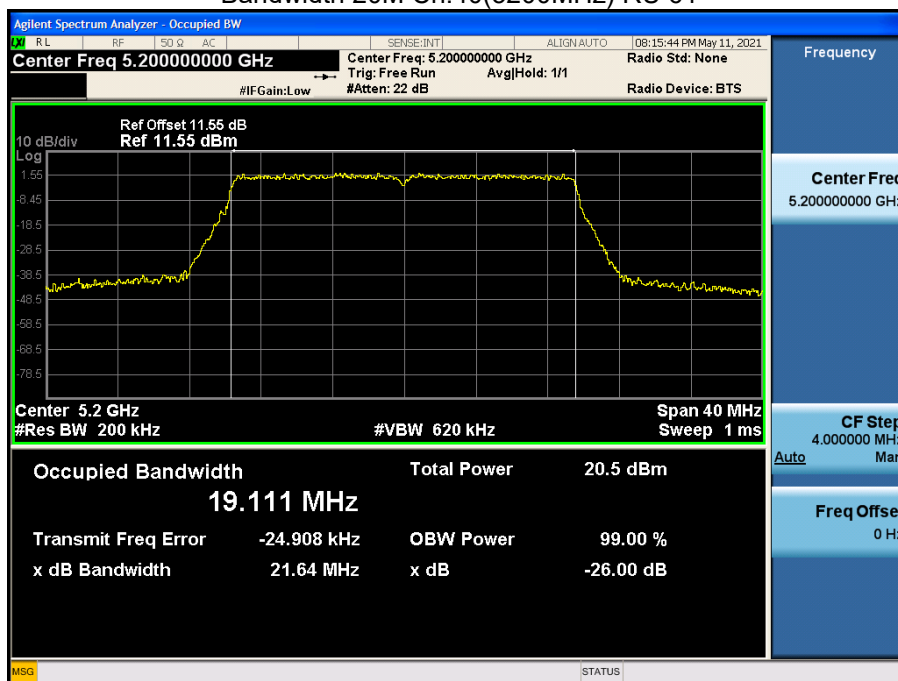
Note:

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.

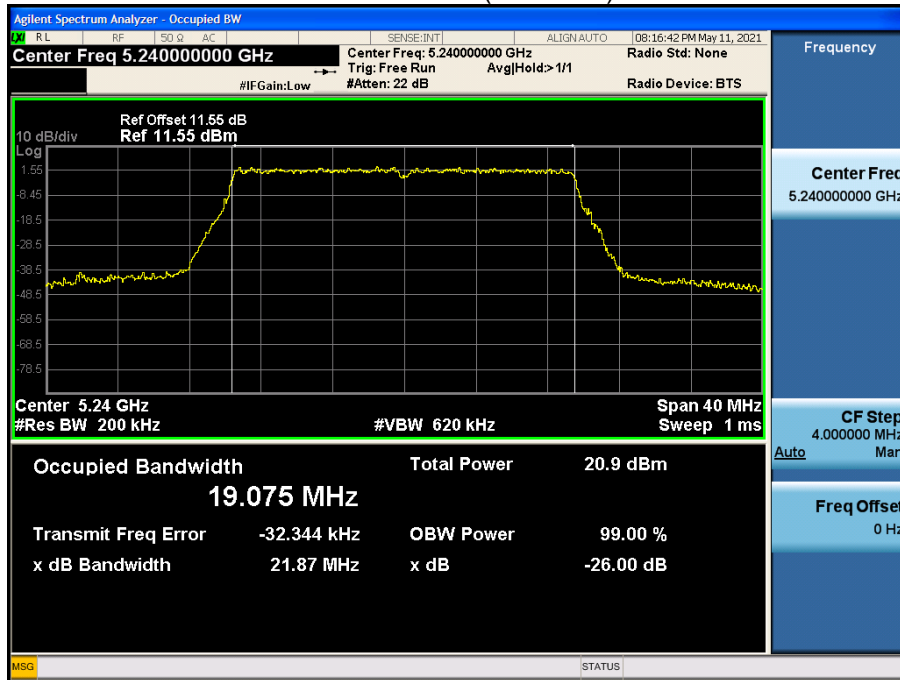
Bandwidth 20M Ch.36(5180MHz) RU 61



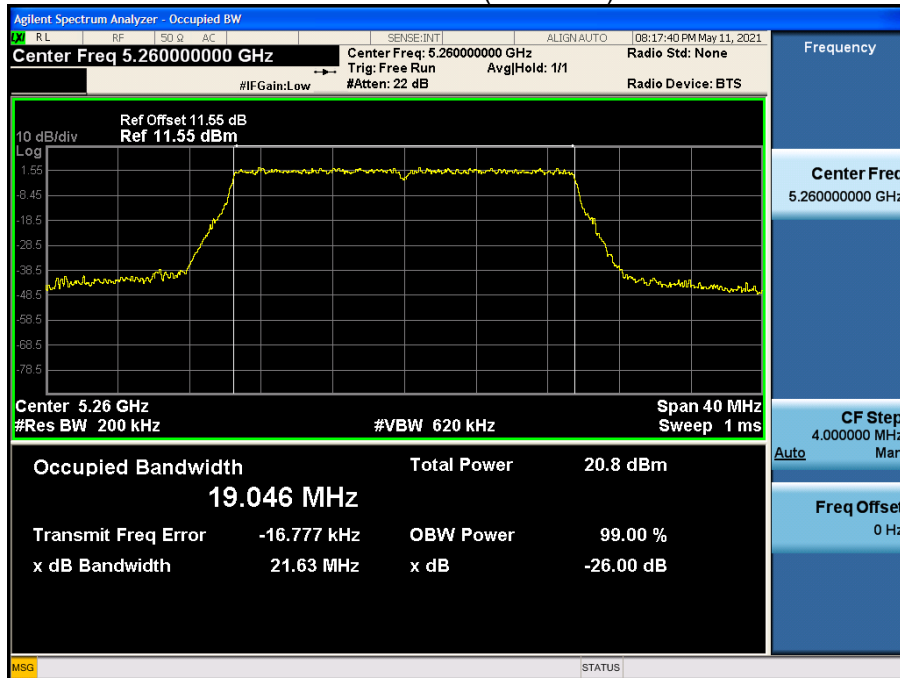
Bandwidth 20M Ch.40(5200MHz) RU 61



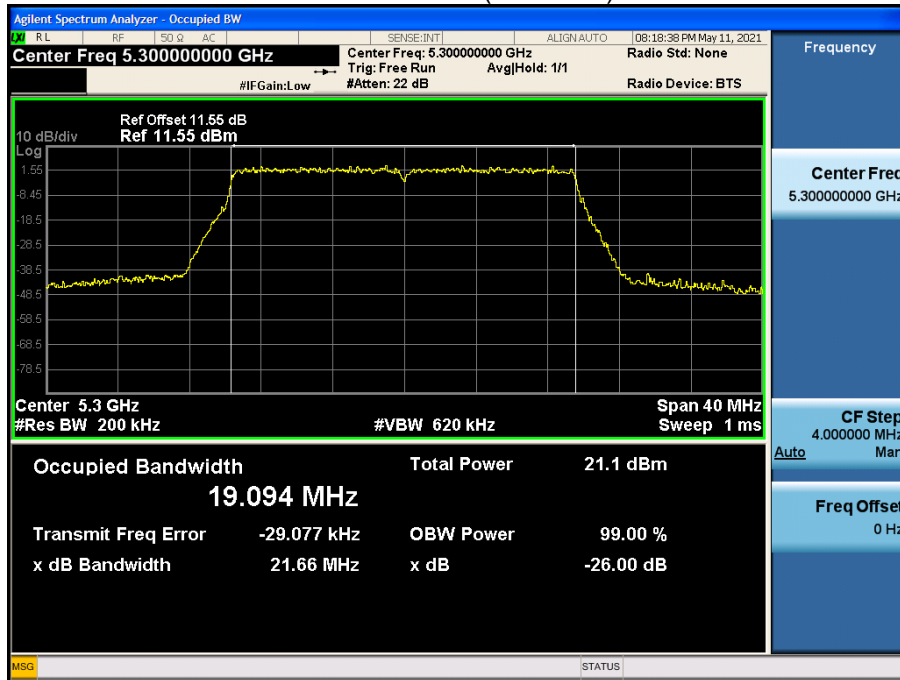
Bandwidth 20M Ch.48(5240MHz) RU 61



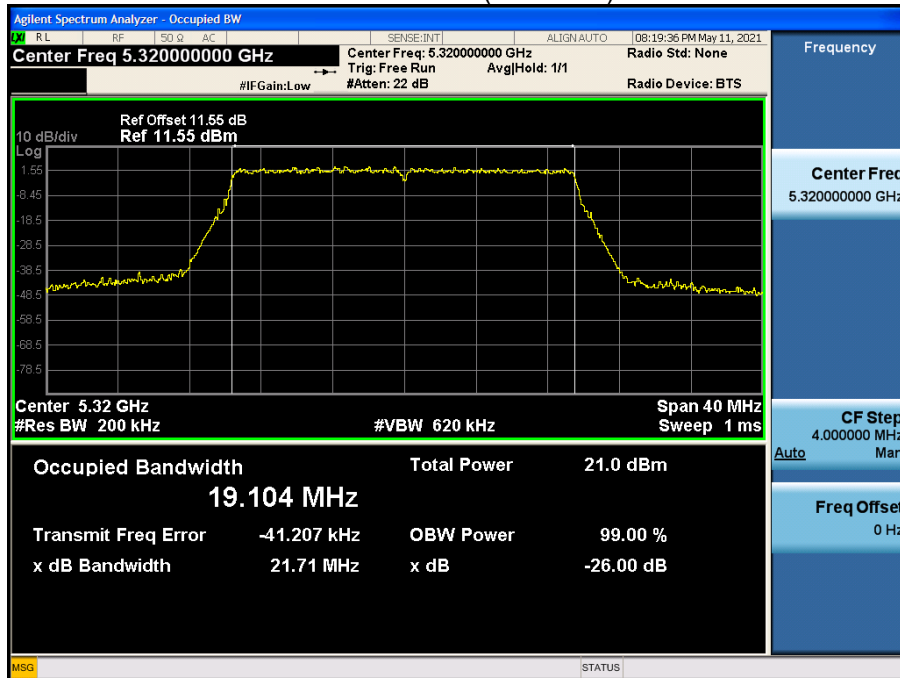
Bandwidth 20M Ch.52(5260MHz) RU 61



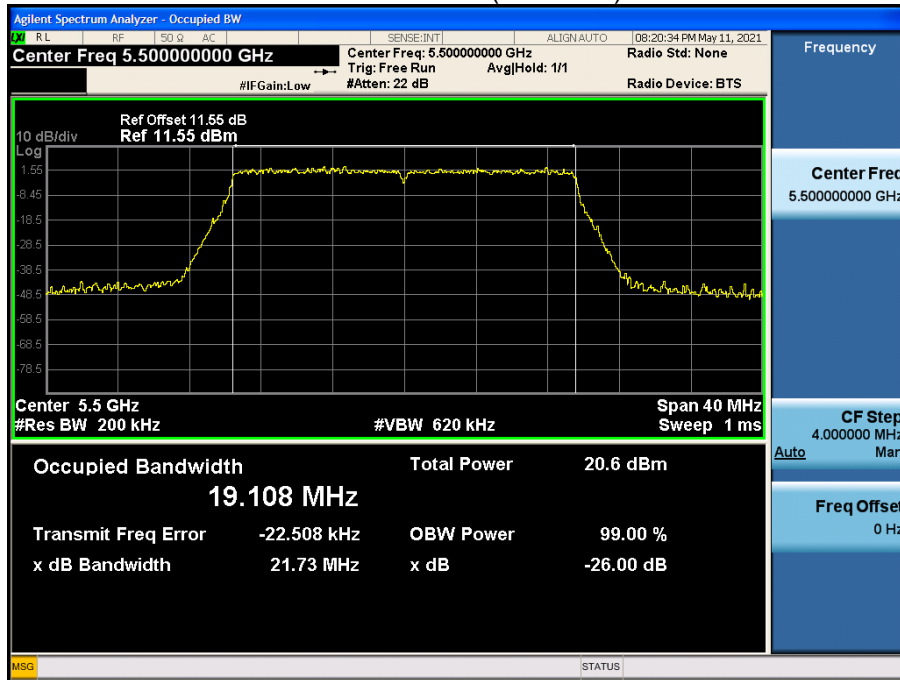
Bandwidth 20M Ch.56(5280MHz) RU 61



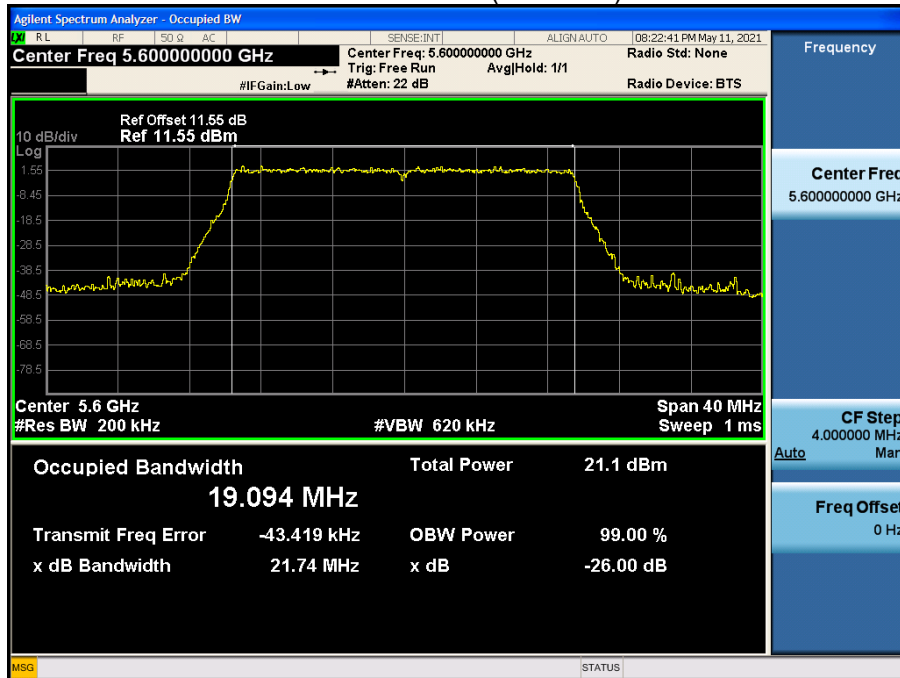
Bandwidth 20M Ch.64(5320MHz) RU 61



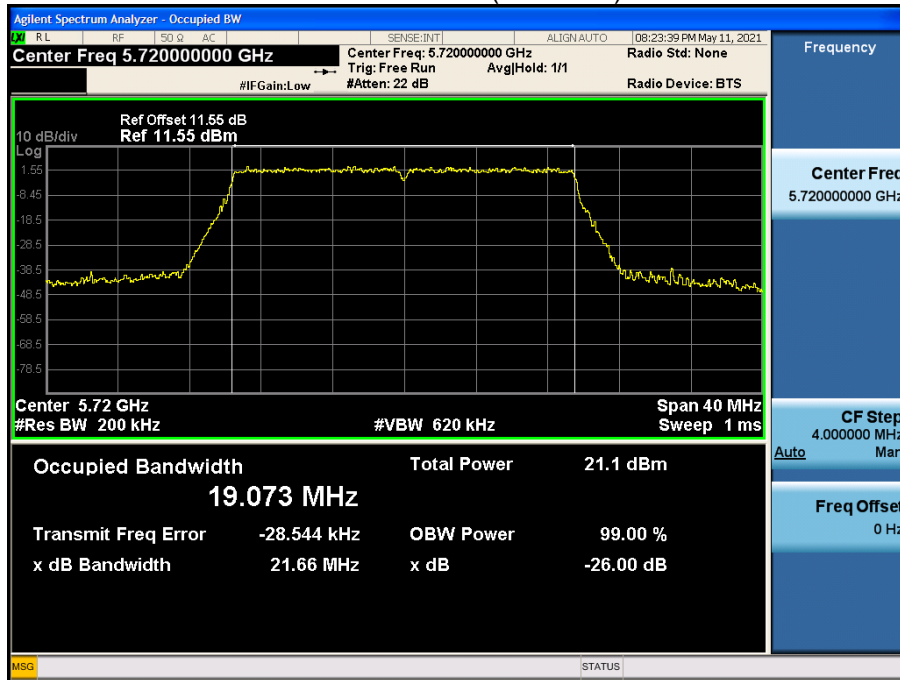
Bandwidth 20M Ch.100(5500MHz) RU 61



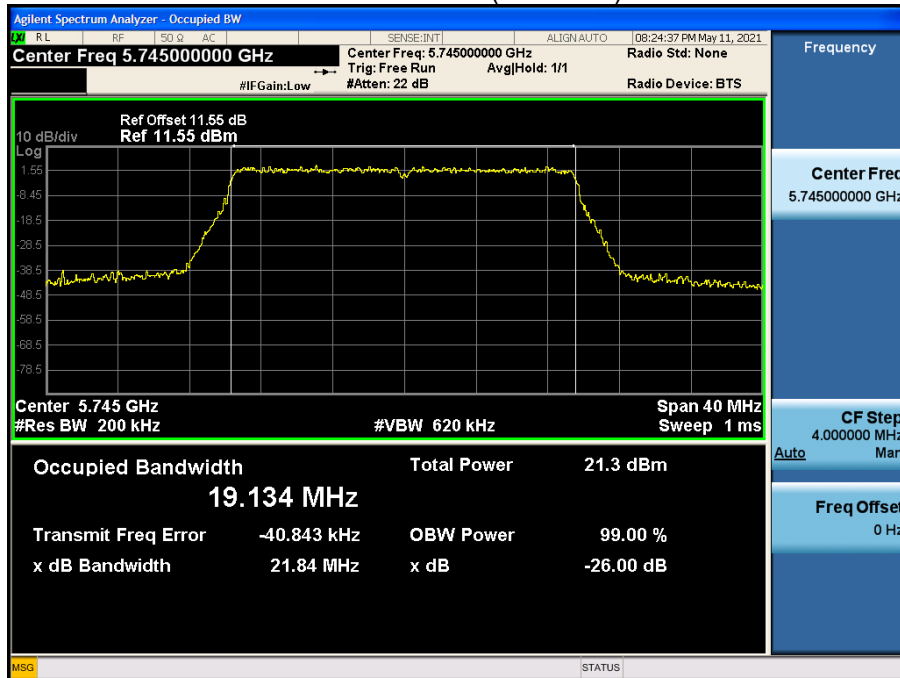
Bandwidth 20M Ch.120(5600MHz) RU 61



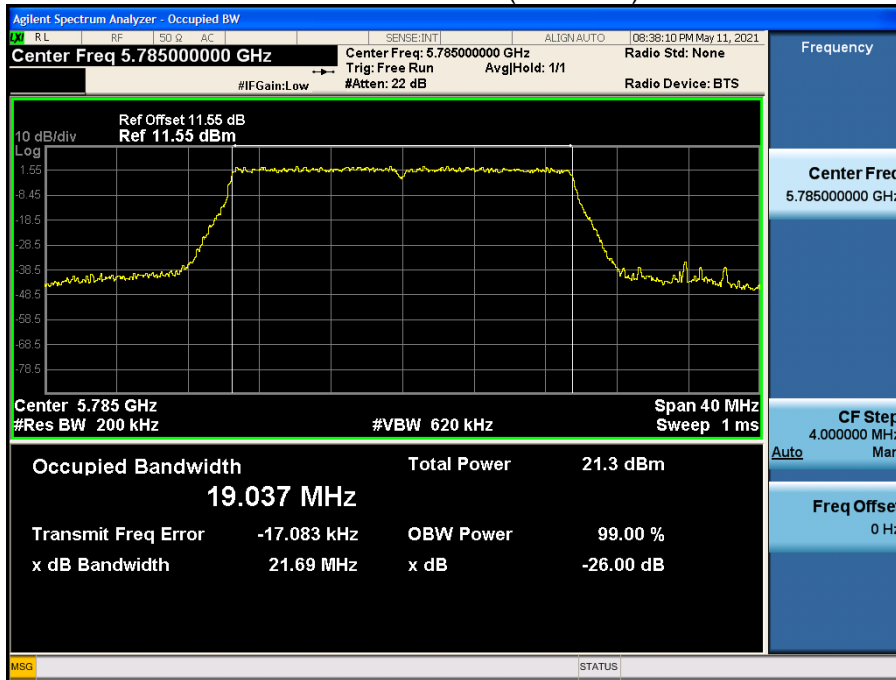
Bandwidth 20M Ch.144(5720MHz) RU 61



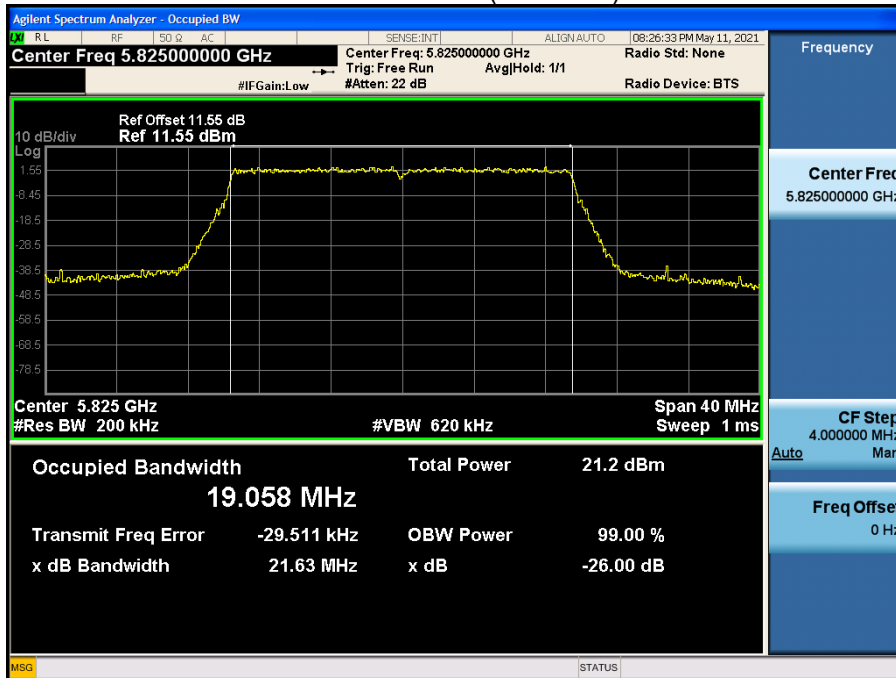
Bandwidth 20M Ch.149(5745MHz) RU 61



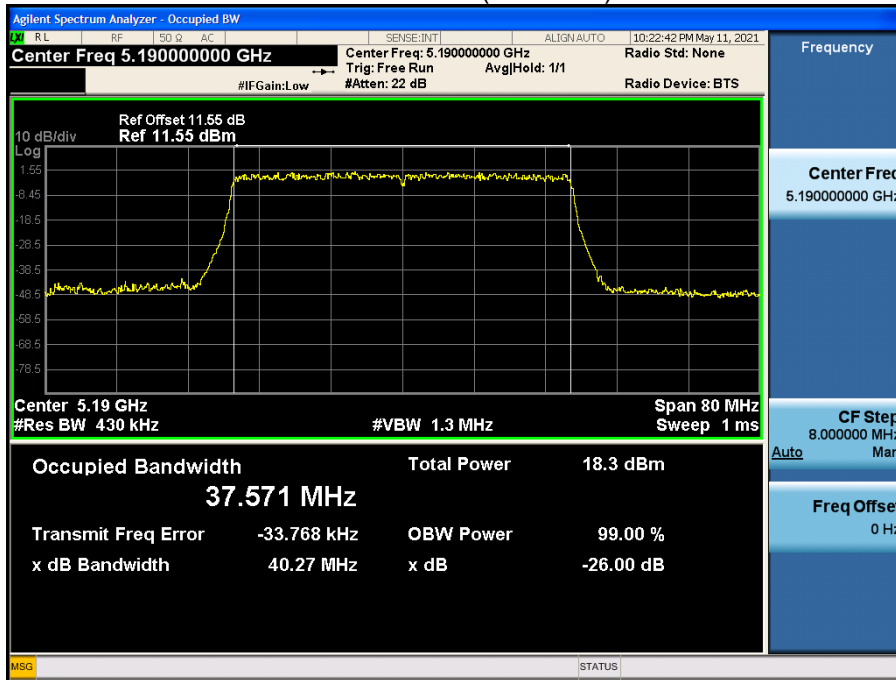
Bandwidth 20M Ch.157(5785MHz) SU



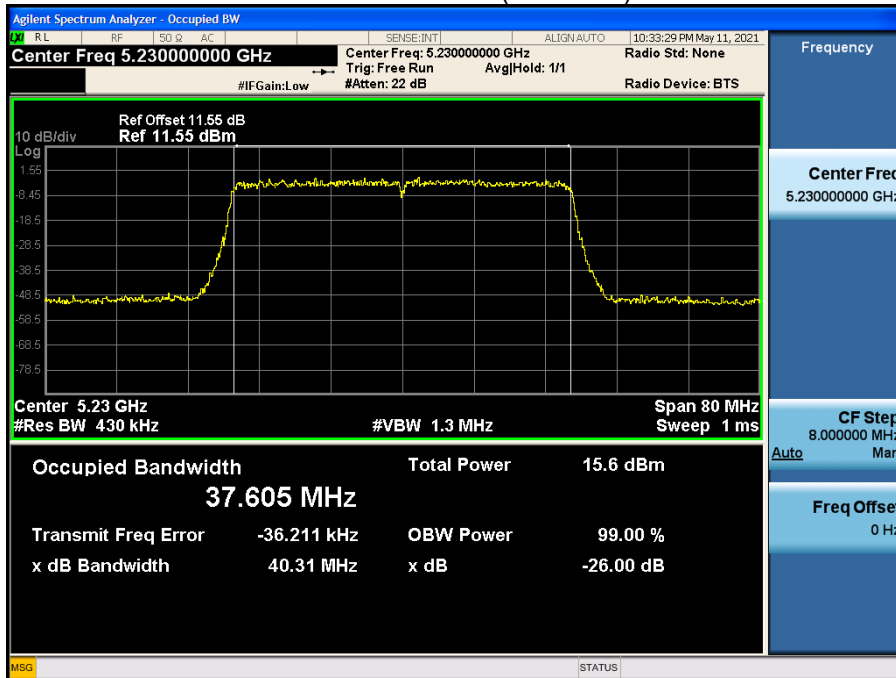
Bandwidth 20M Ch.165(5825MHz) RU 61



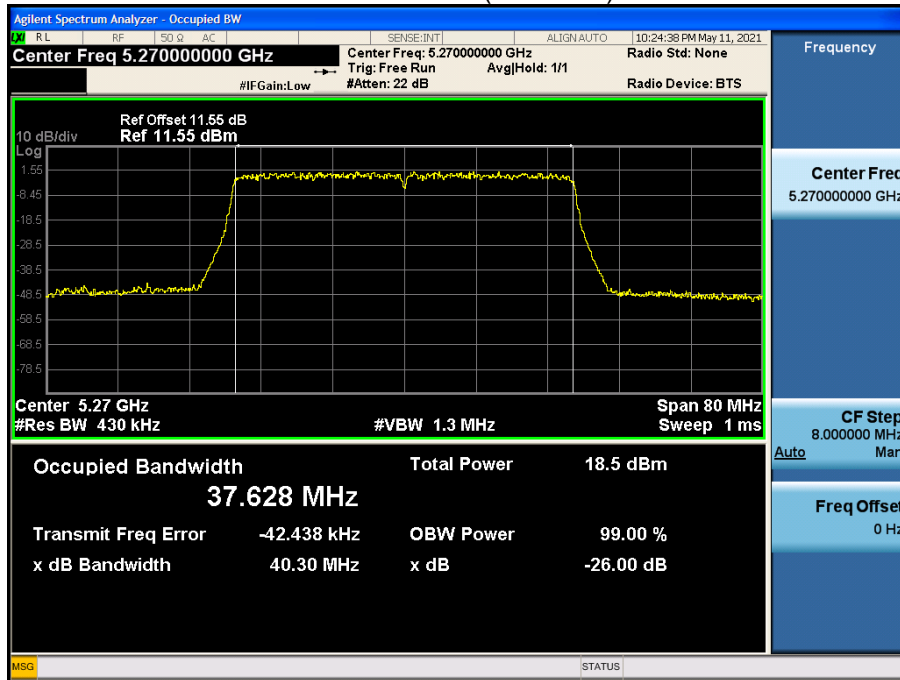
Bandwidth 40M Ch.38(5190MHz) RU 65



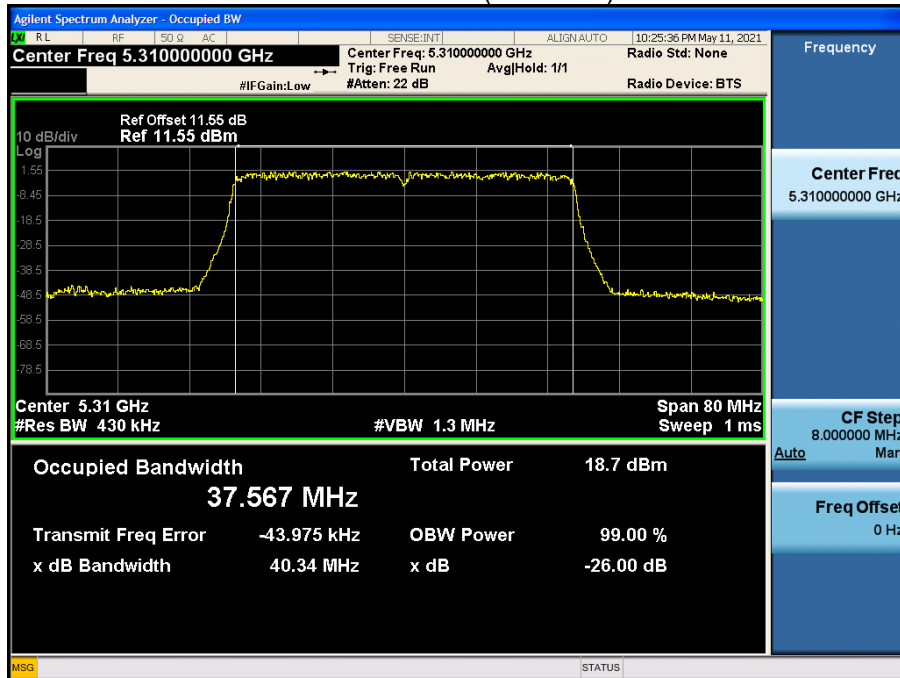
Bandwidth 40M Ch.46(5230MHz) SU



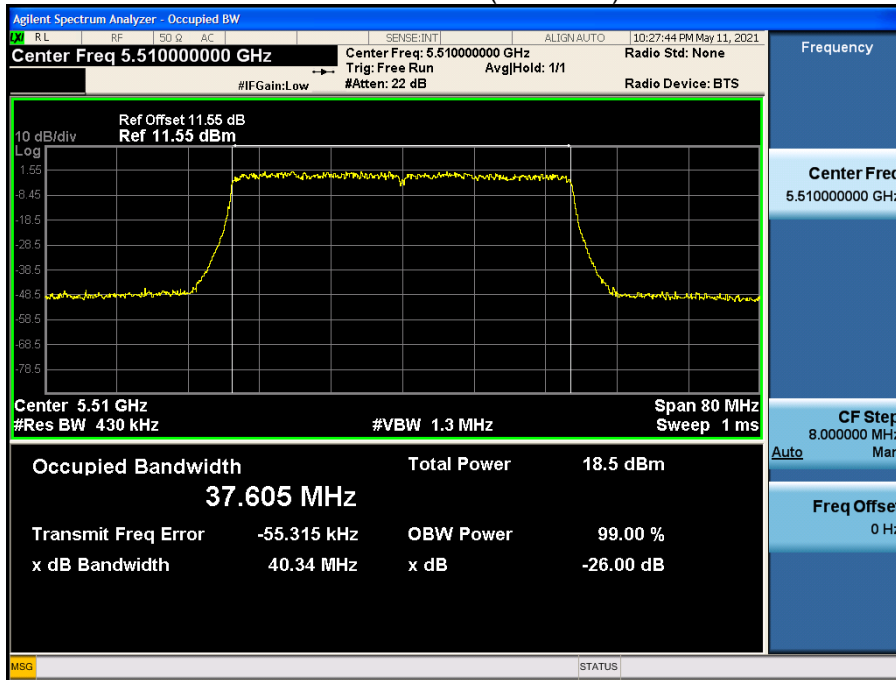
Bandwidth 40M Ch.54(5270MHz) RU 65



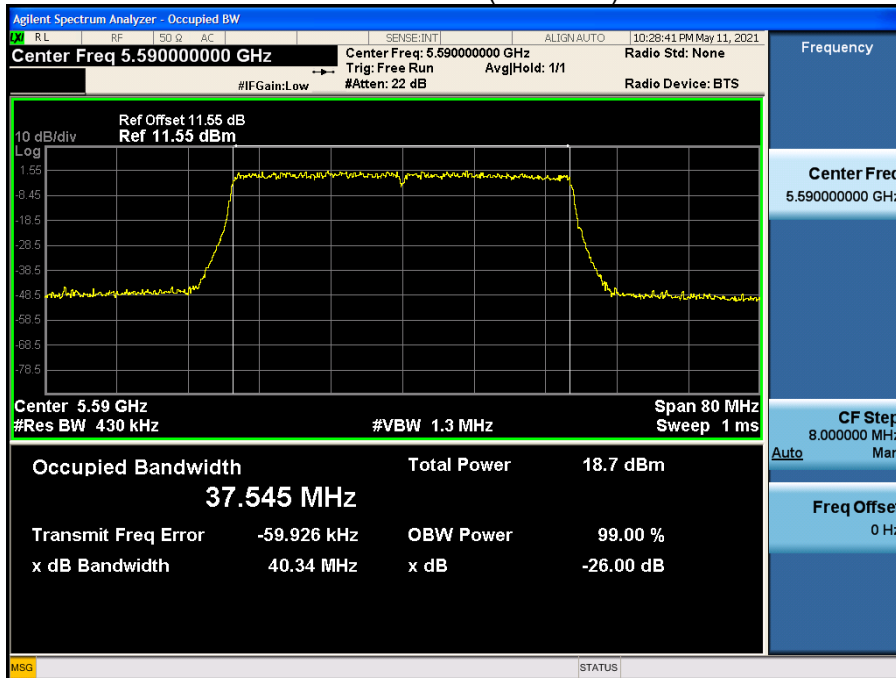
Bandwidth 40M Ch.62(5310MHz) RU 65



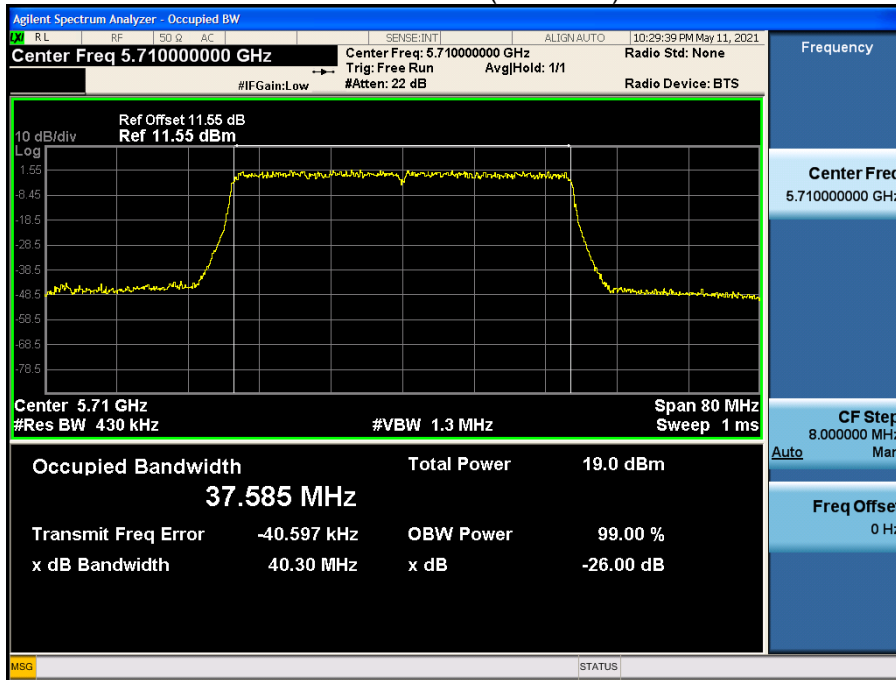
Bandwidth 40M Ch.102(5510MHz) RU 65



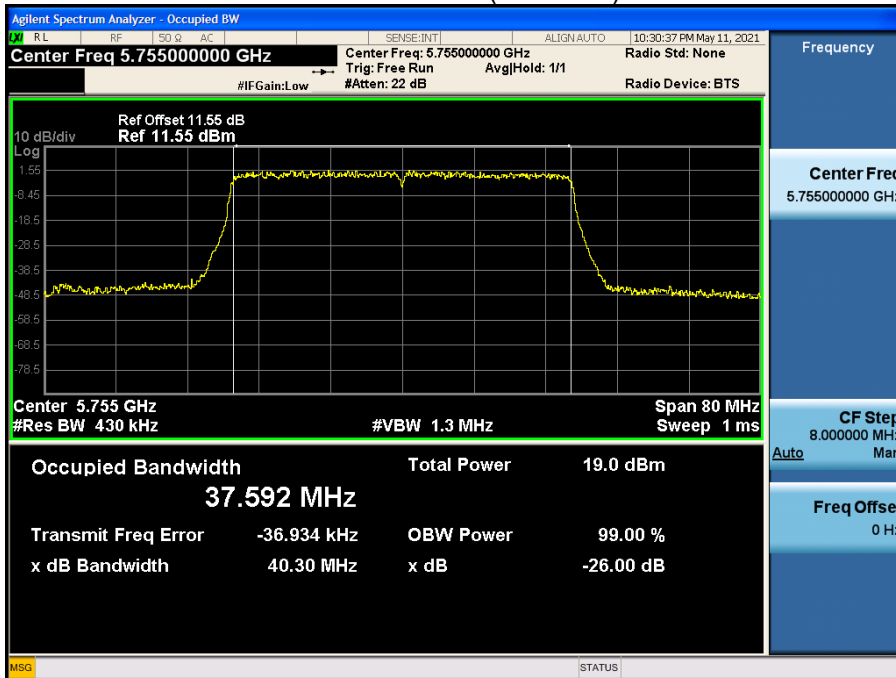
Bandwidth 40M Ch.118(5590MHz) RU 65



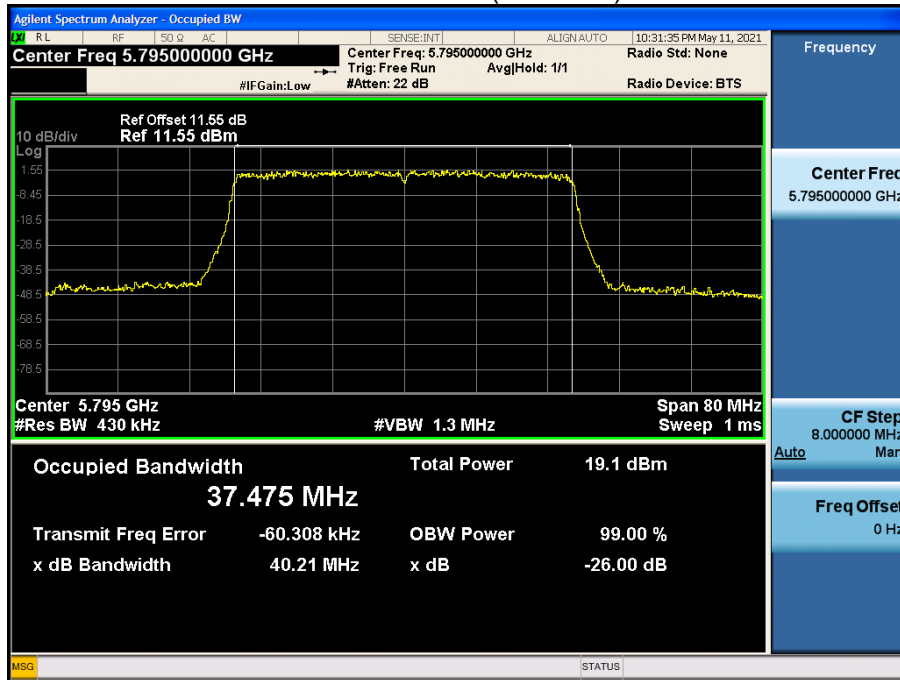
Bandwidth 40M Ch.142(5710MHz) RU 65



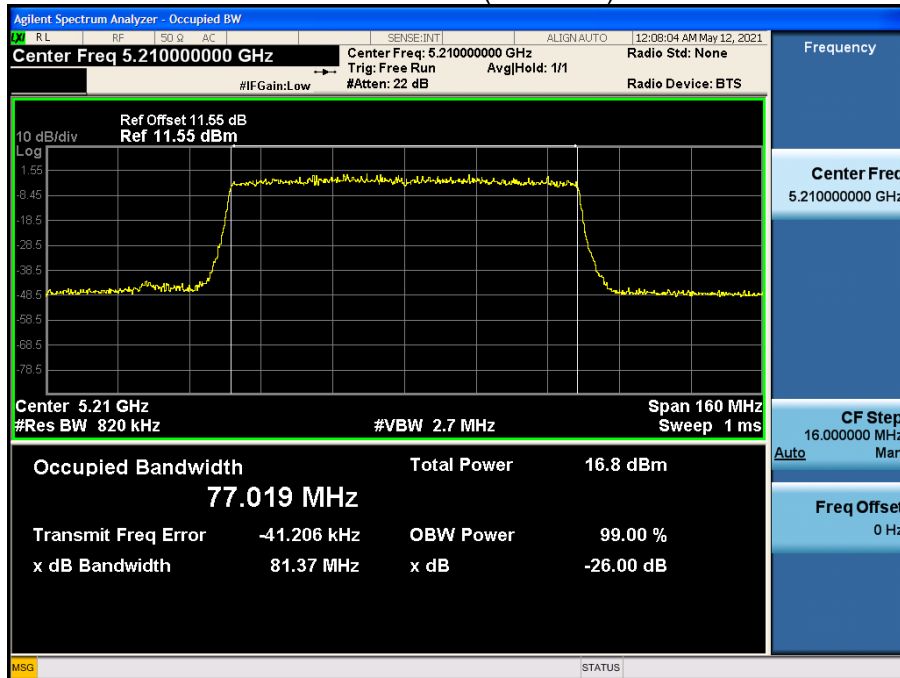
Bandwidth 40M Ch.151(5755MHz) RU 65



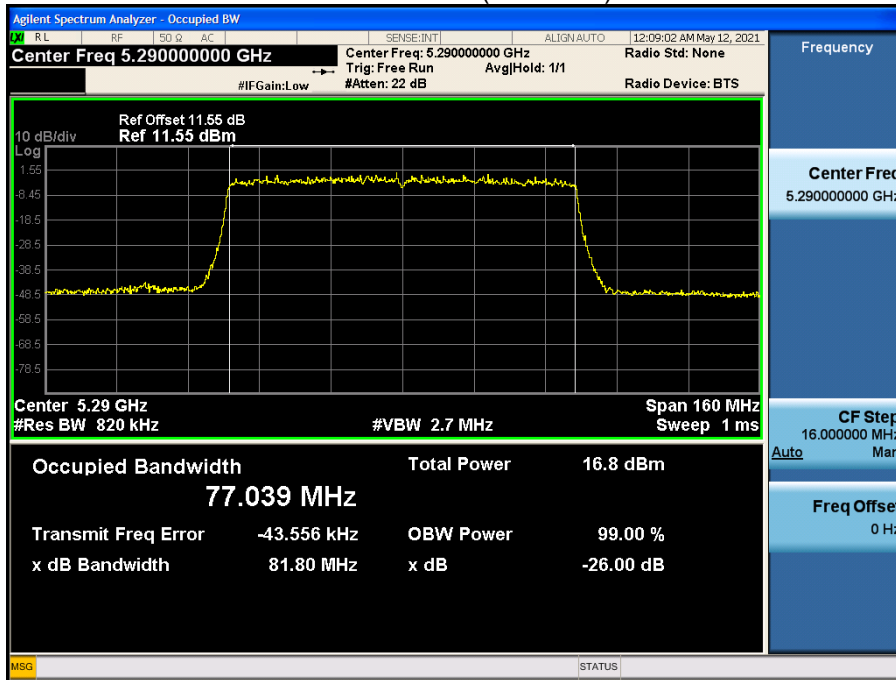
Bandwidth 40M Ch.159(5795MHz) RU 65



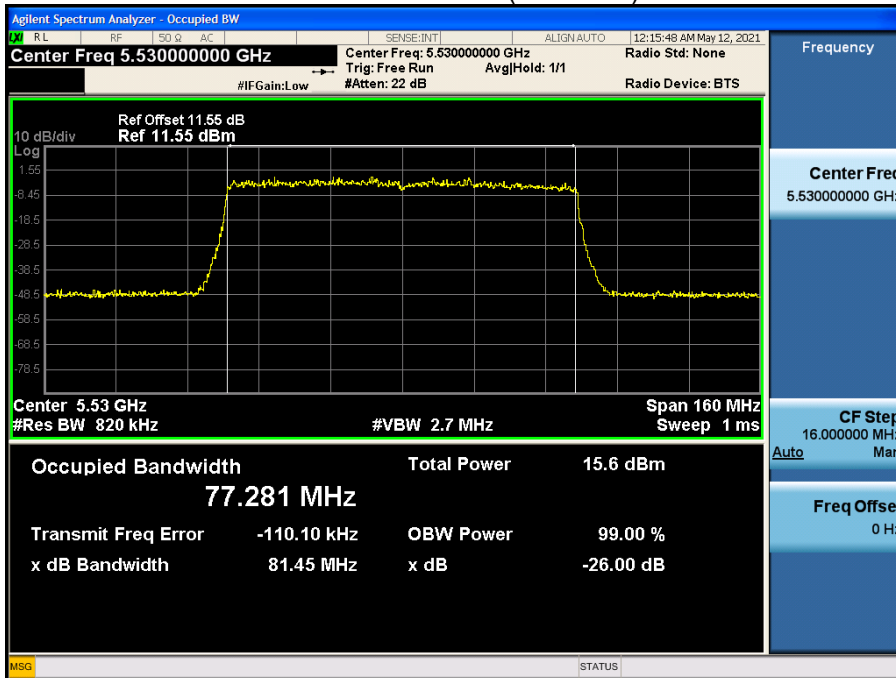
Bandwidth 80M Ch.42(5210MHz) RU 67



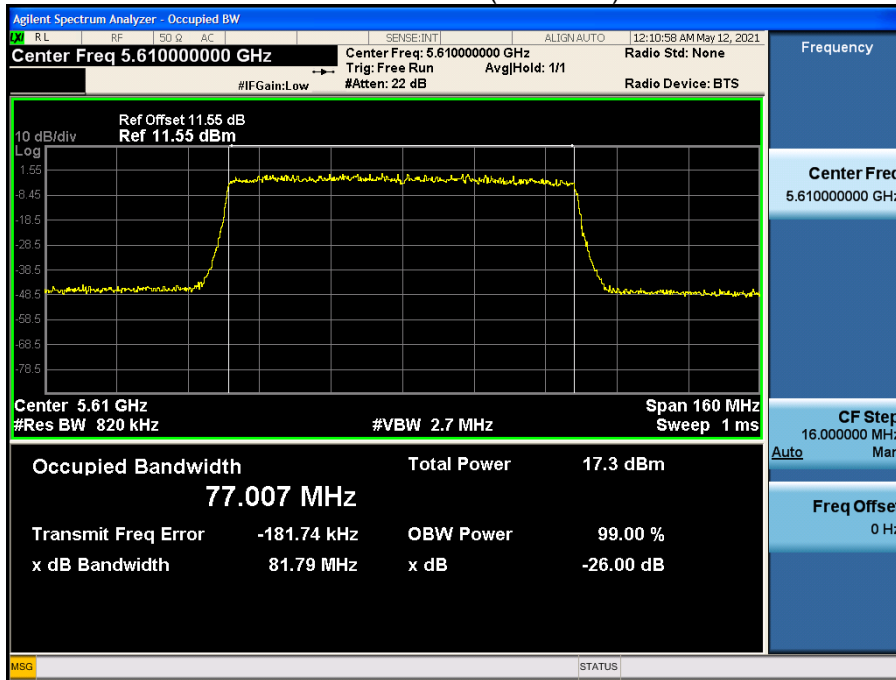
Bandwidth 80M Ch.58(5290MHz) RU 67



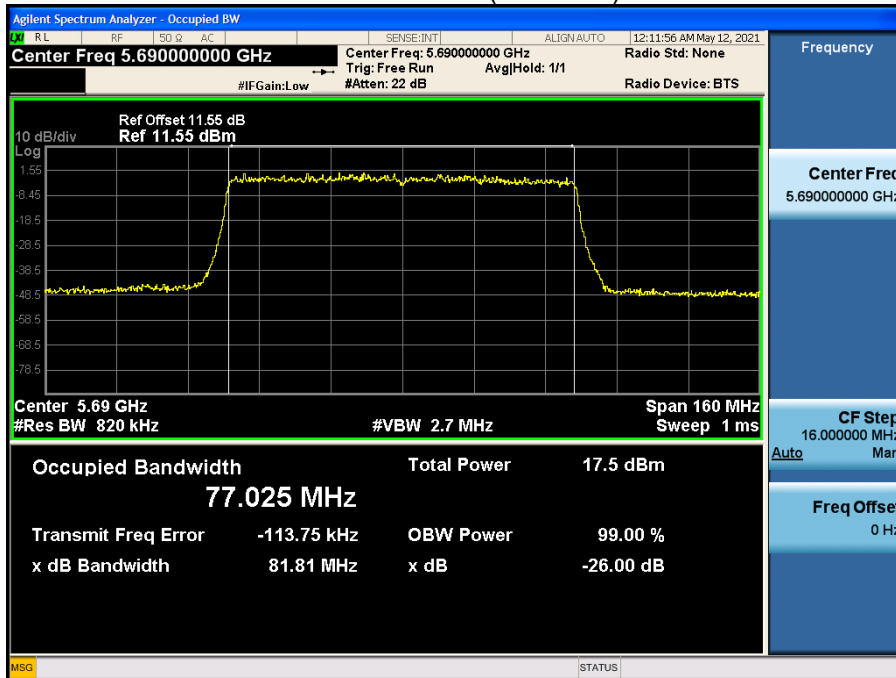
Bandwidth 80M Ch.106(5530MHz) SU



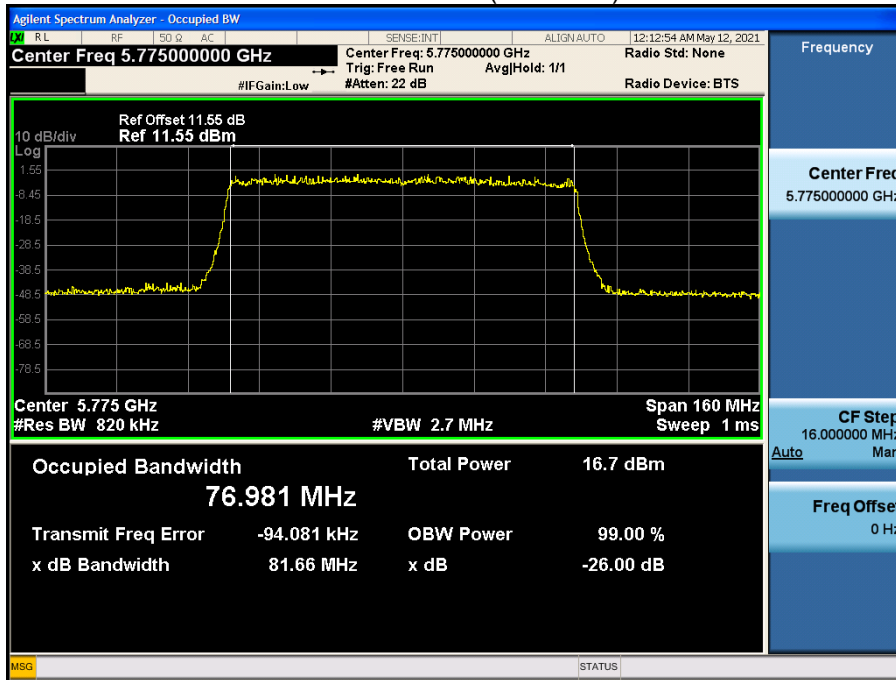
Bandwidth 80M Ch.122(5610MHz) RU 67



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



Bandwidth 80M Ch.155(5775MHz) RU 67



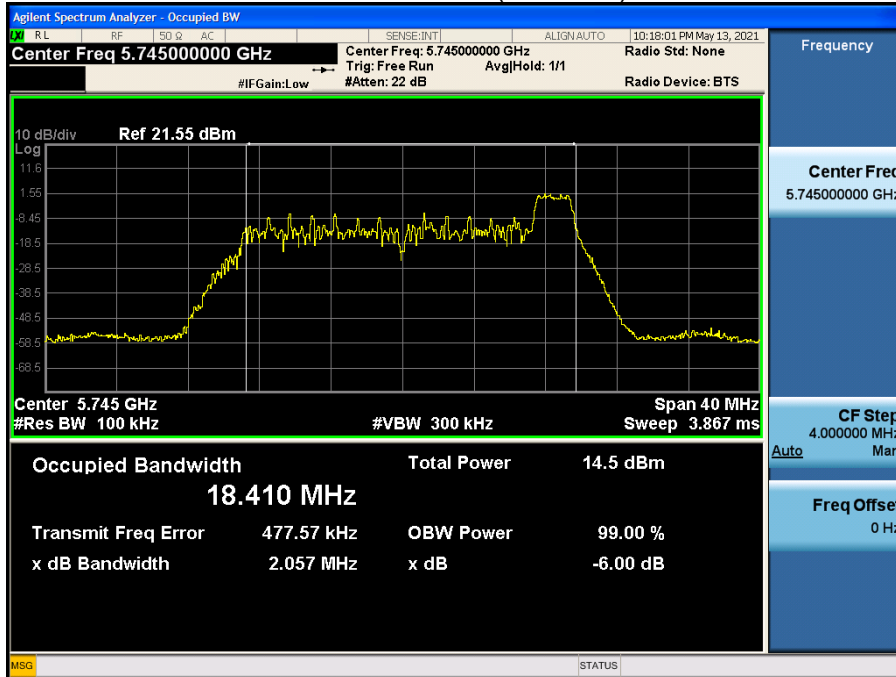
3. 6dB Bandwidth

Note:

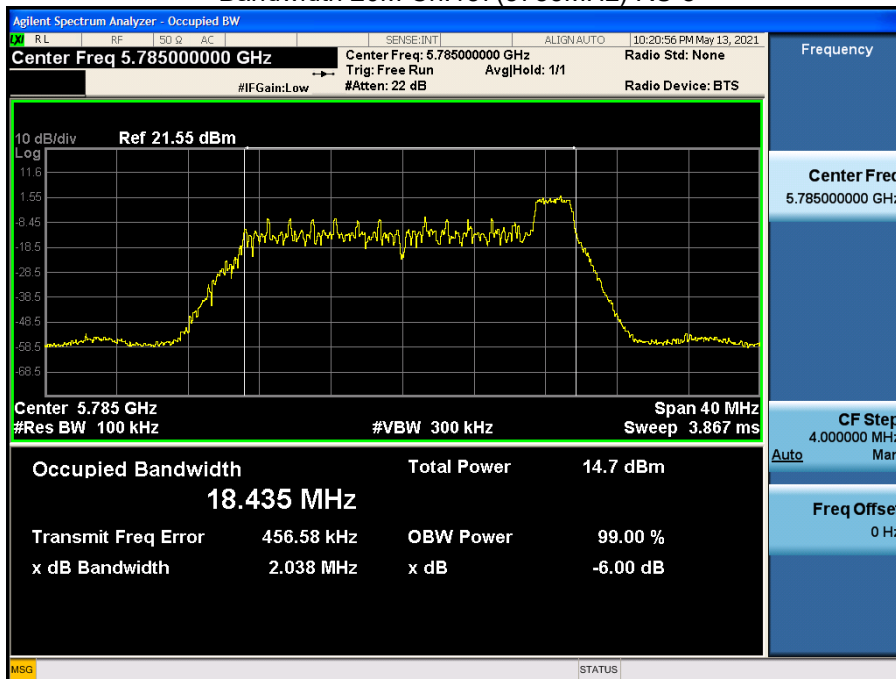
1. In order to simplify the report, attached plots were only the most narrow channel.

3.1 MIMO Ant1

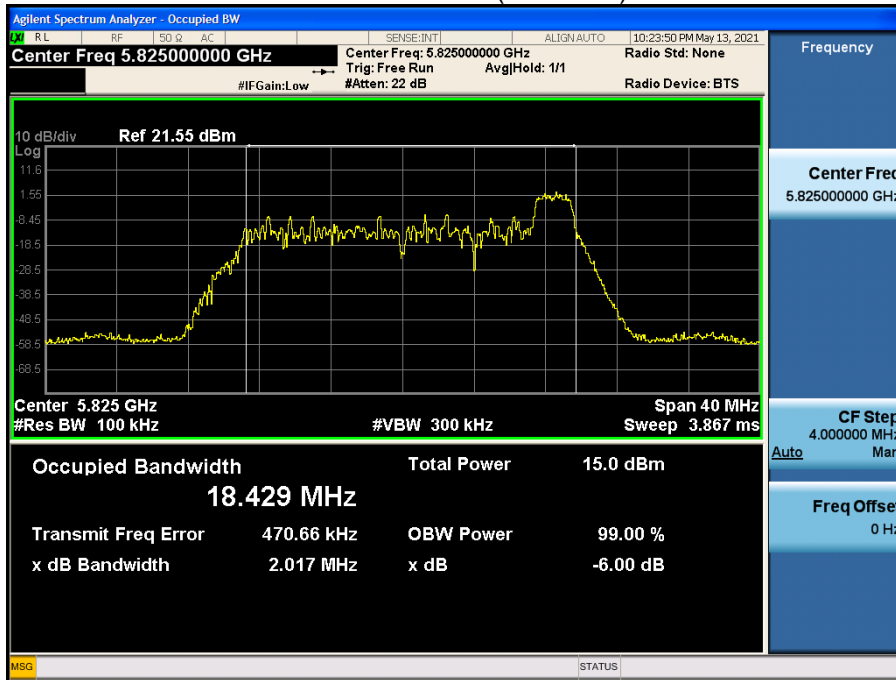
Bandwidth 20M Ch.149(5745MHz) RU 8



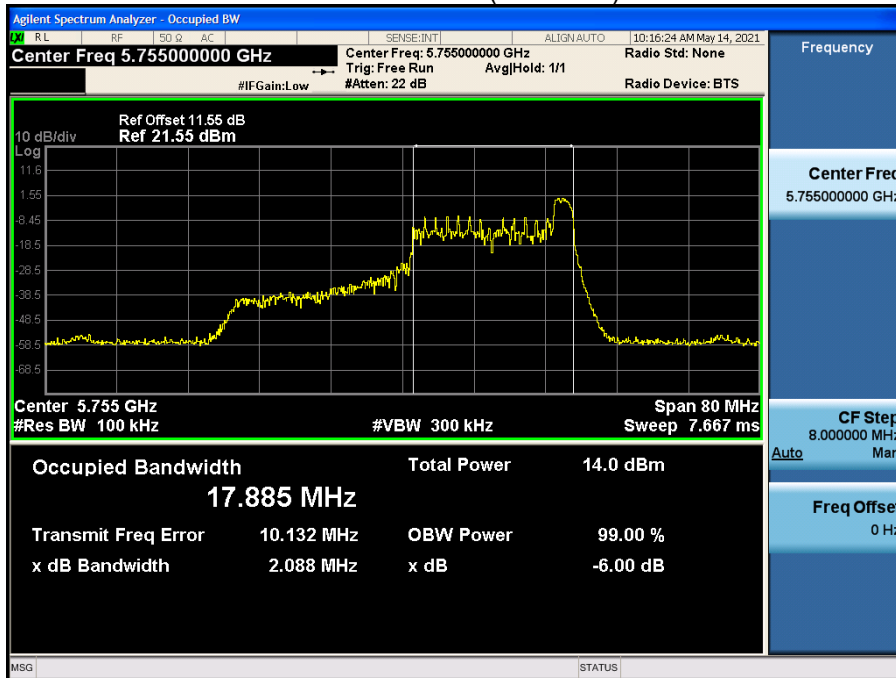
Bandwidth 20M Ch.157(5785MHz) RU 8



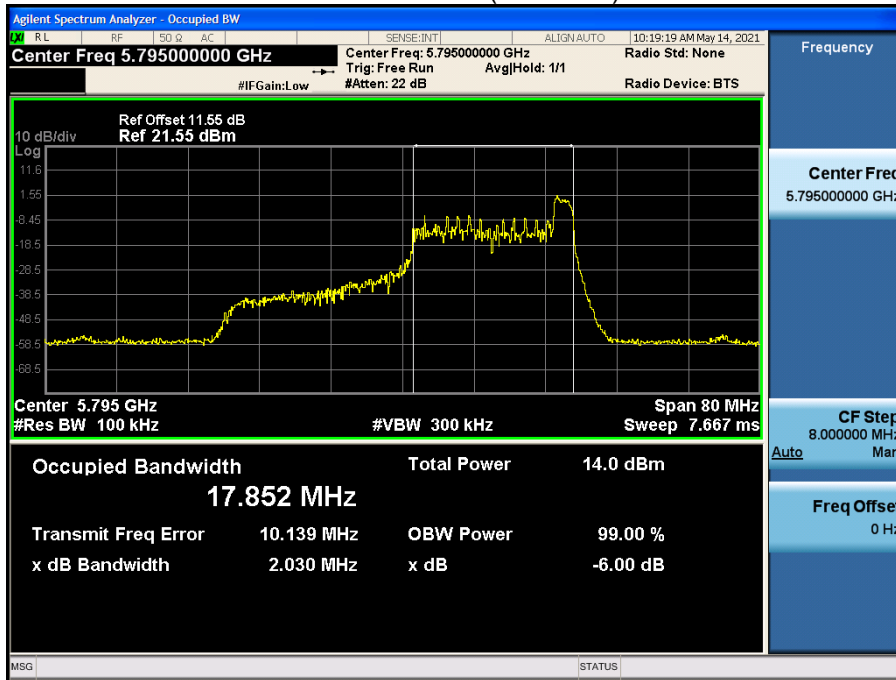
Bandwidth 20M Ch.165(5825MHz) RU 8



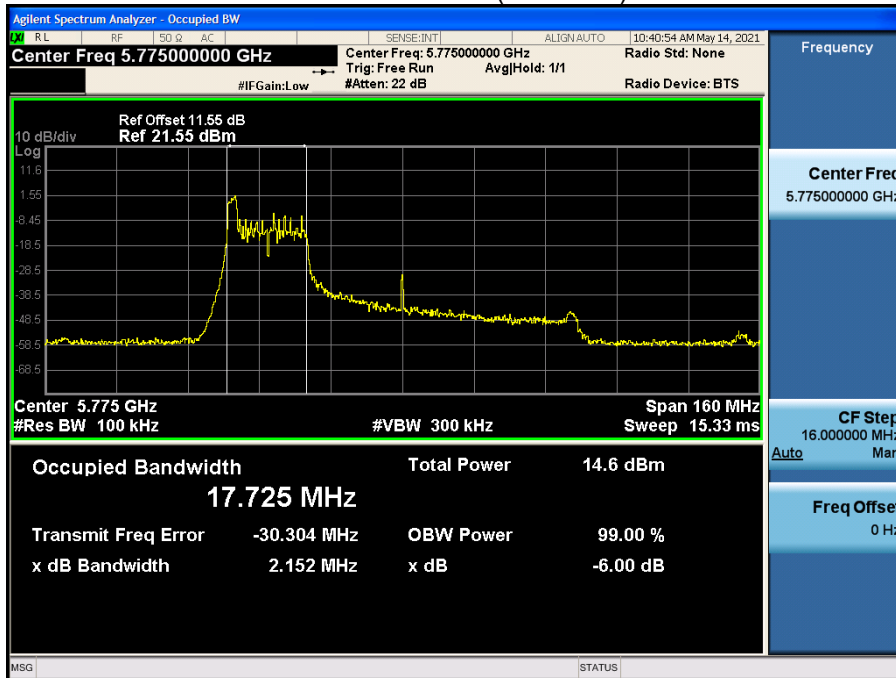
Bandwidth 40M Ch.151(5755MHz) RU 17



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

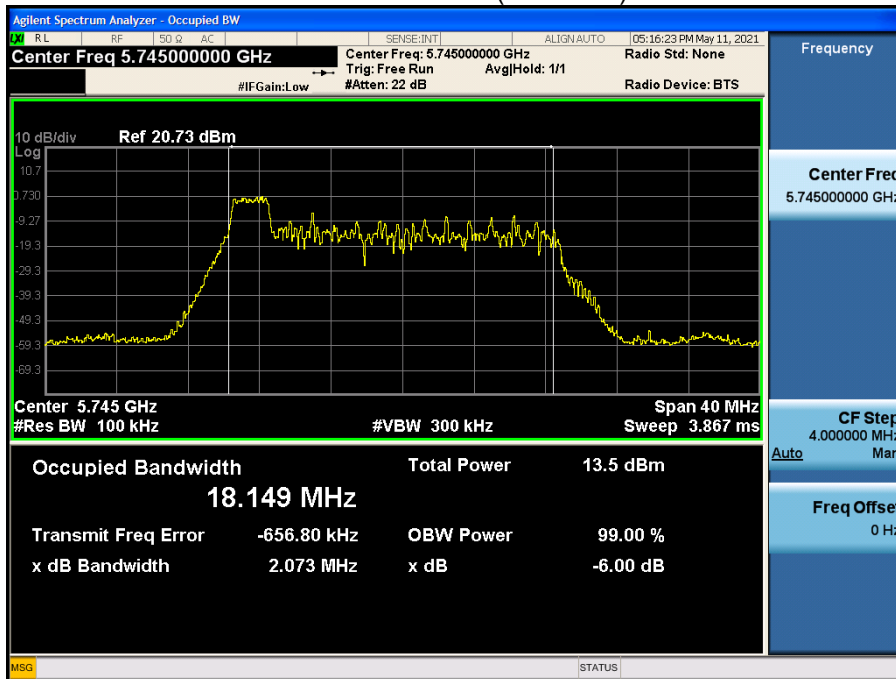


Bandwidth 80M Ch.155(5775MHz) RU 0

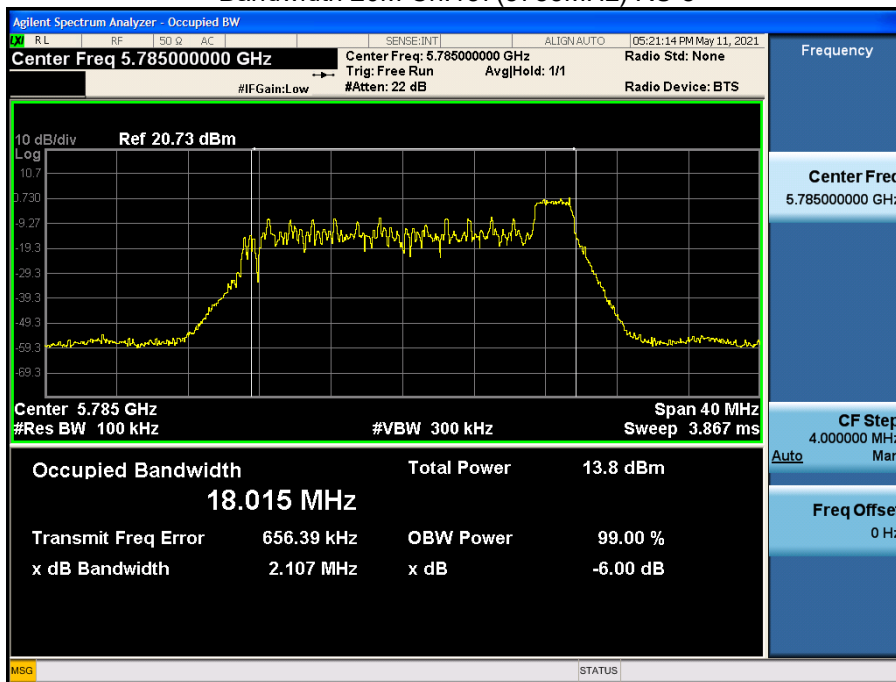


3.2 MIMO Ant2

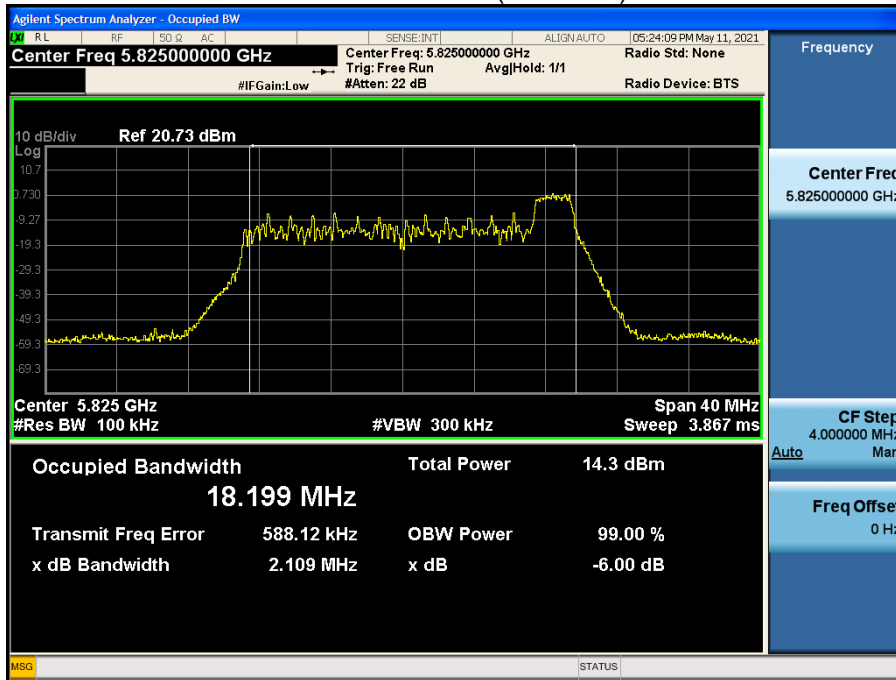
Bandwidth 20M Ch.149(5745MHz) RU 0



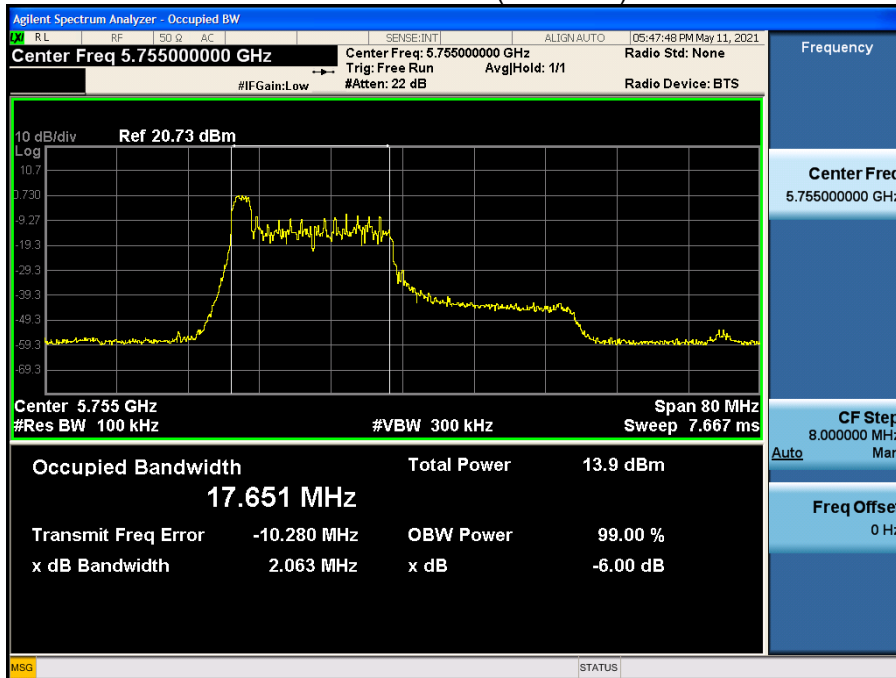
Bandwidth 20M Ch.157(5785MHz) RU 8



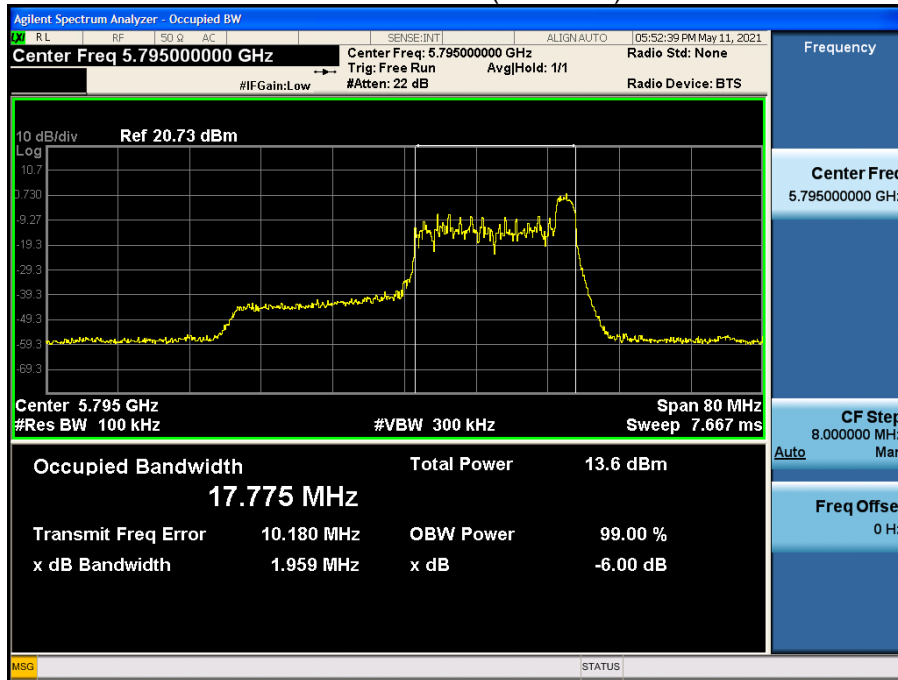
Bandwidth 20M Ch.165(5825MHz) RU 8



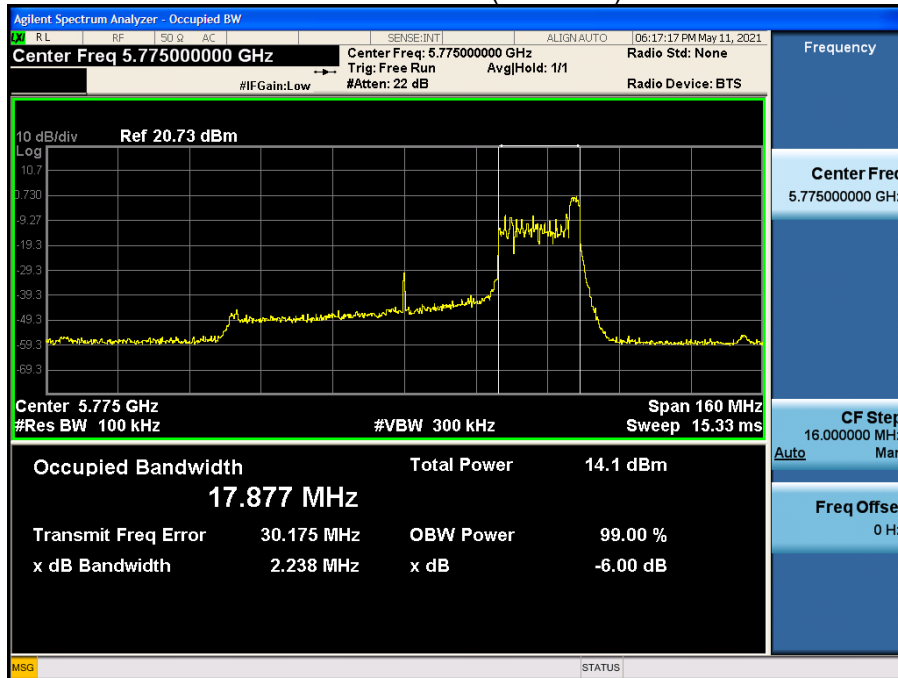
Bandwidth 40M Ch.151(5755MHz) RU 0



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



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



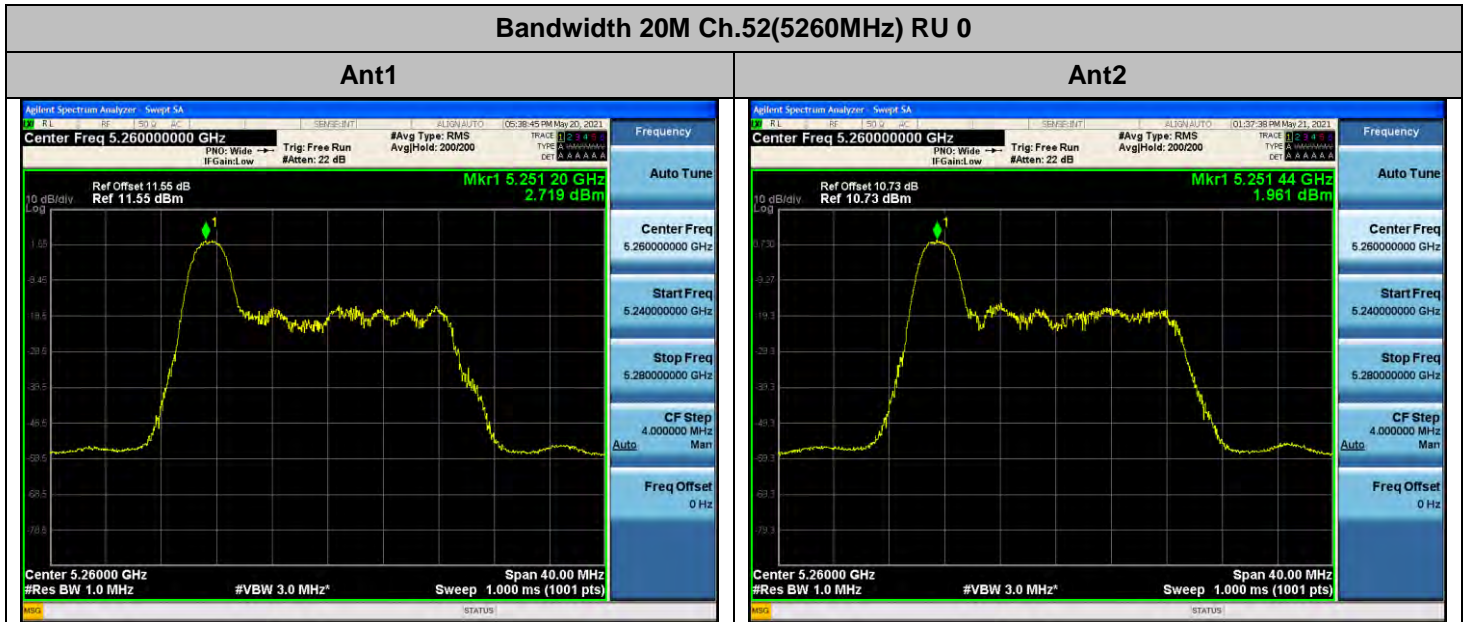
4. Power Spectral Density

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.52(5260MHz) RU 0

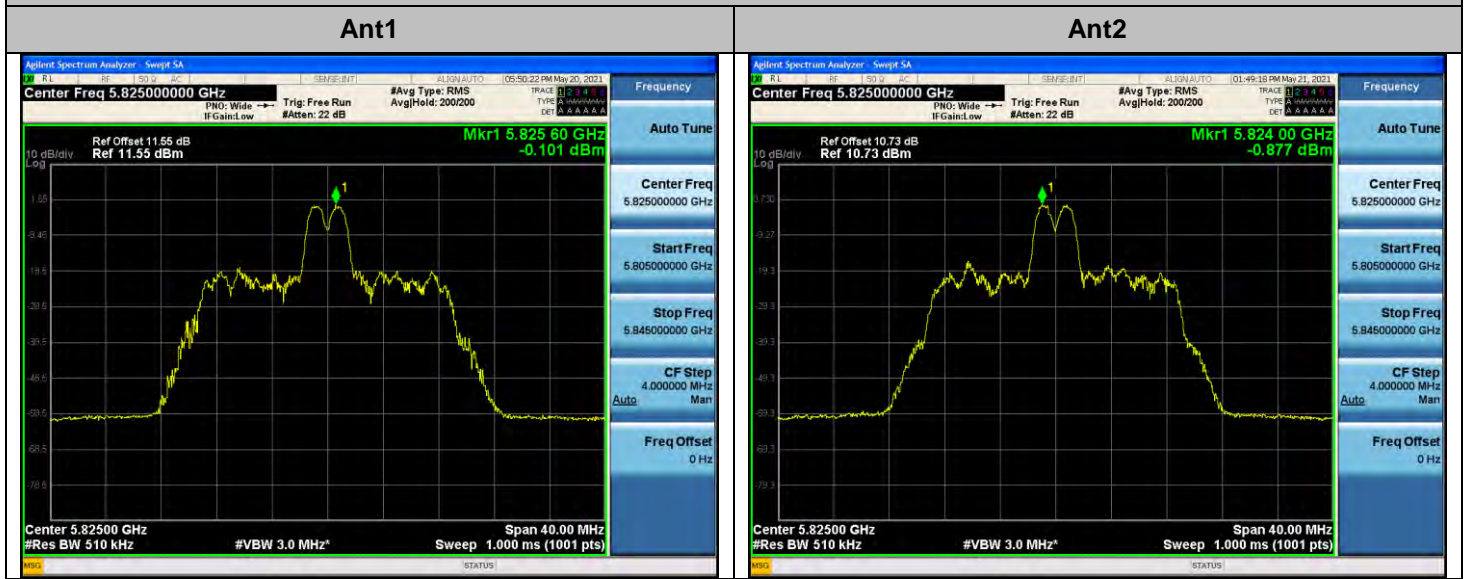


SUM PSD (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
5.367	0.863	6.230

Note:

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

Bandwidth 20M Ch.165 (5825MHz) RU 4



SUM PSD (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
2.539	0.863	3.401

Note:

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

Bandwidth 40M Ch.62 (5310MHz) RU 9



SUM PSD (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
5.240	0.859	6.098

Note:

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

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

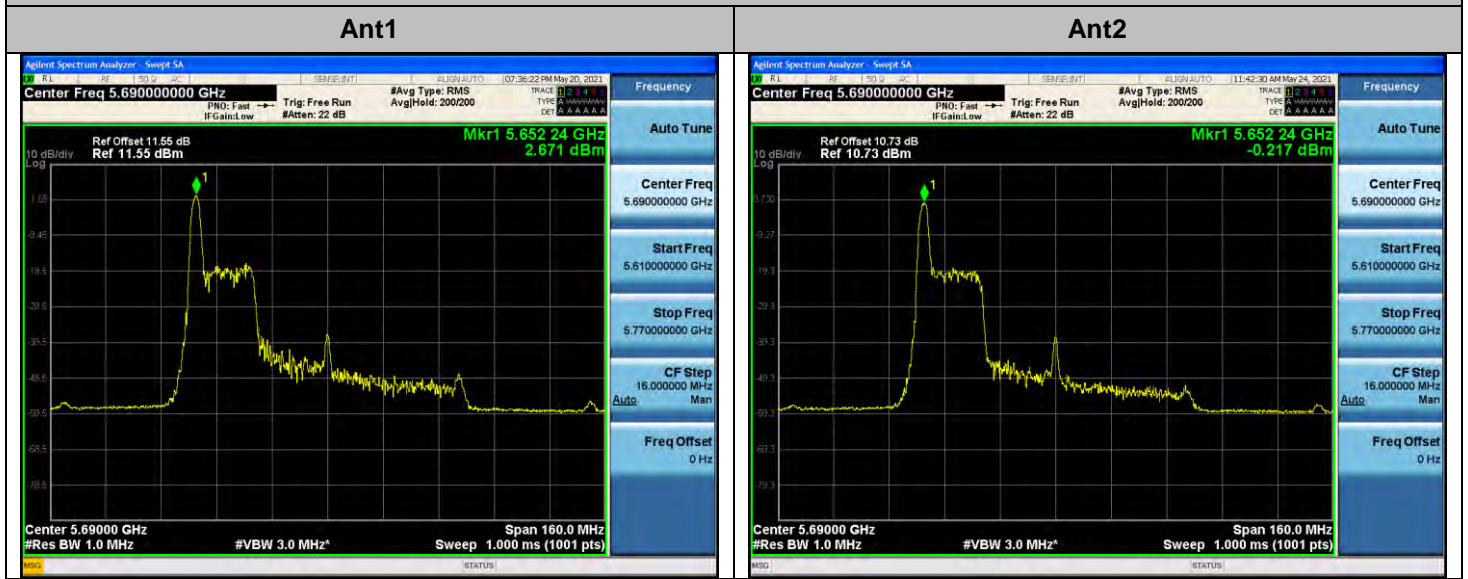


SUM PSD (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
2.866	0.859	3.725

Note:

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

Bandwidth 80M Ch.138 (5690MHz) RU 0

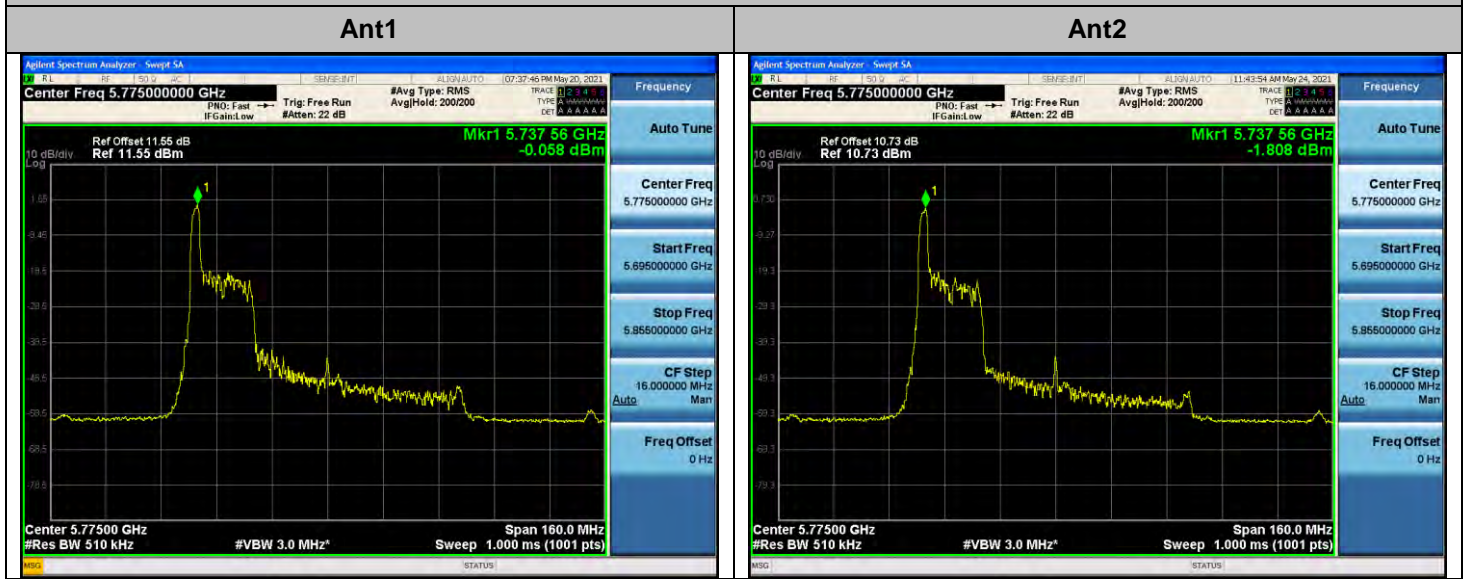


SUM PSD (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
4.473	0.859	5.332

Note:

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

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



SUM PSD (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
2.165	0.859	3.023

Note:

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

5. Straddle Channel

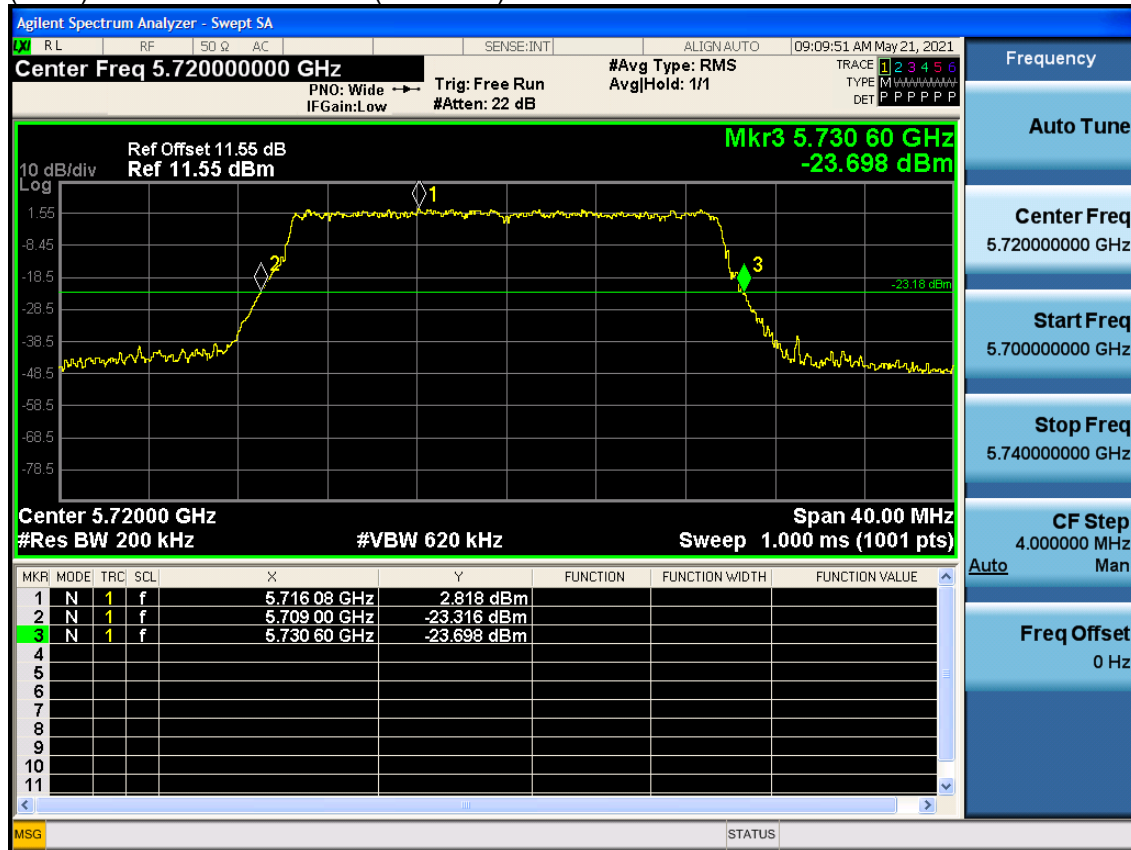
5.1 26dB Bandwidth

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

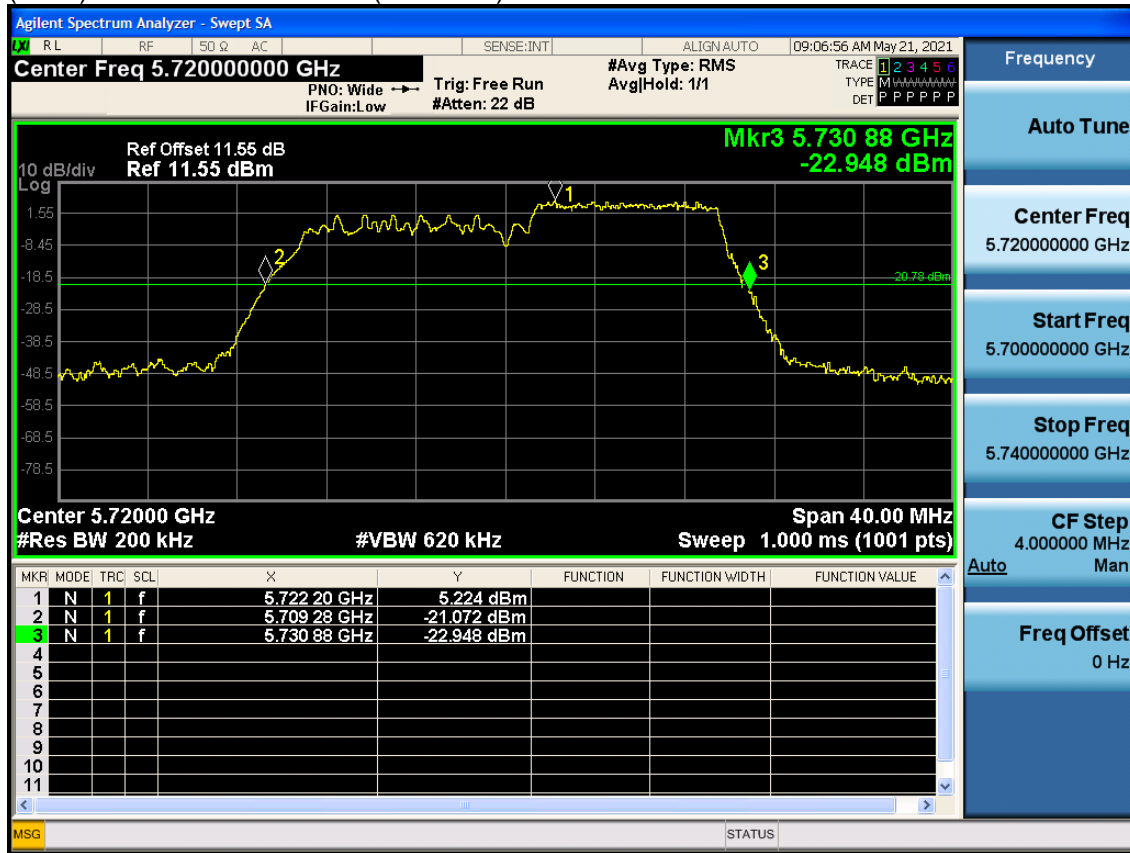


UNII 2C	5725 [MHz]	Measured Frequency [MHz]	26dB Bandwidth [MHz]
	5725	5709.00	16.00

Note:

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

(26dB) Bandwidth 20M Ch.144(5720MHz) RU 54

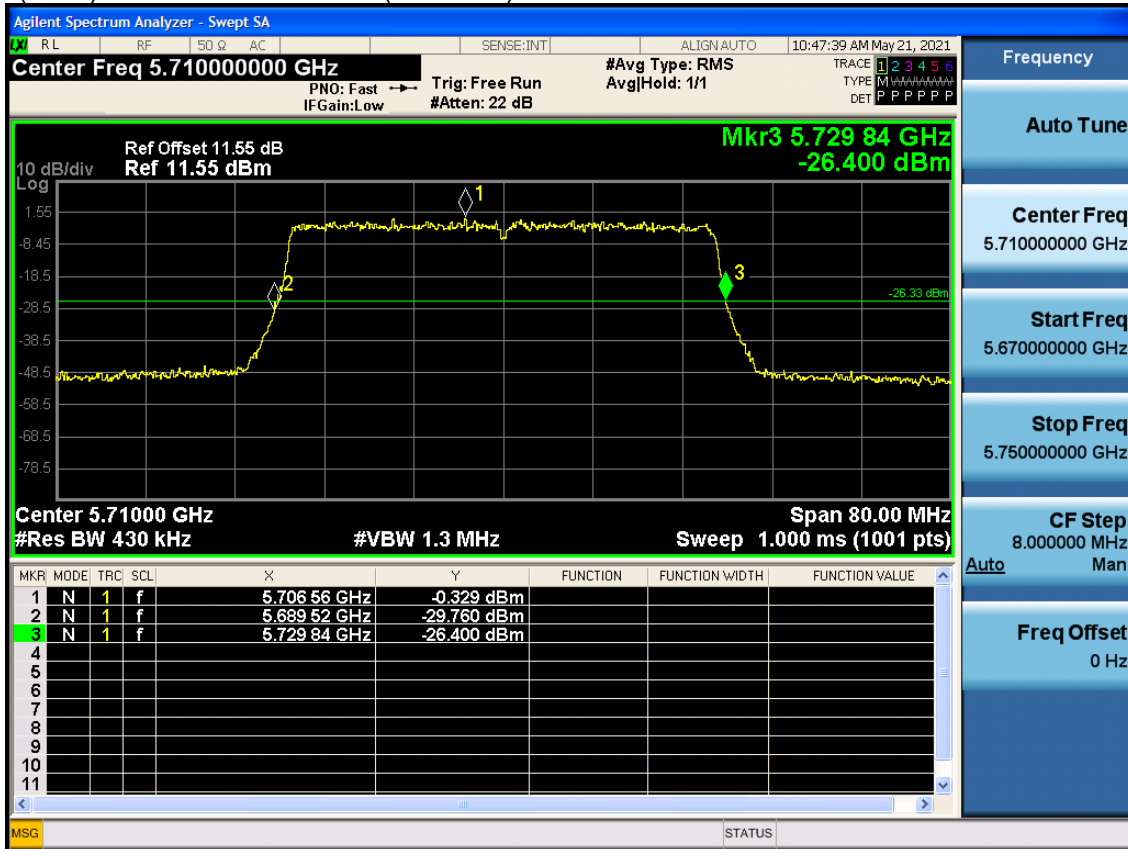


UNII 3	Measured Frequency [MHz]	5725 [MHz]	26dB Bandwidth [MHz]
		5730.88	5725

Note:

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

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

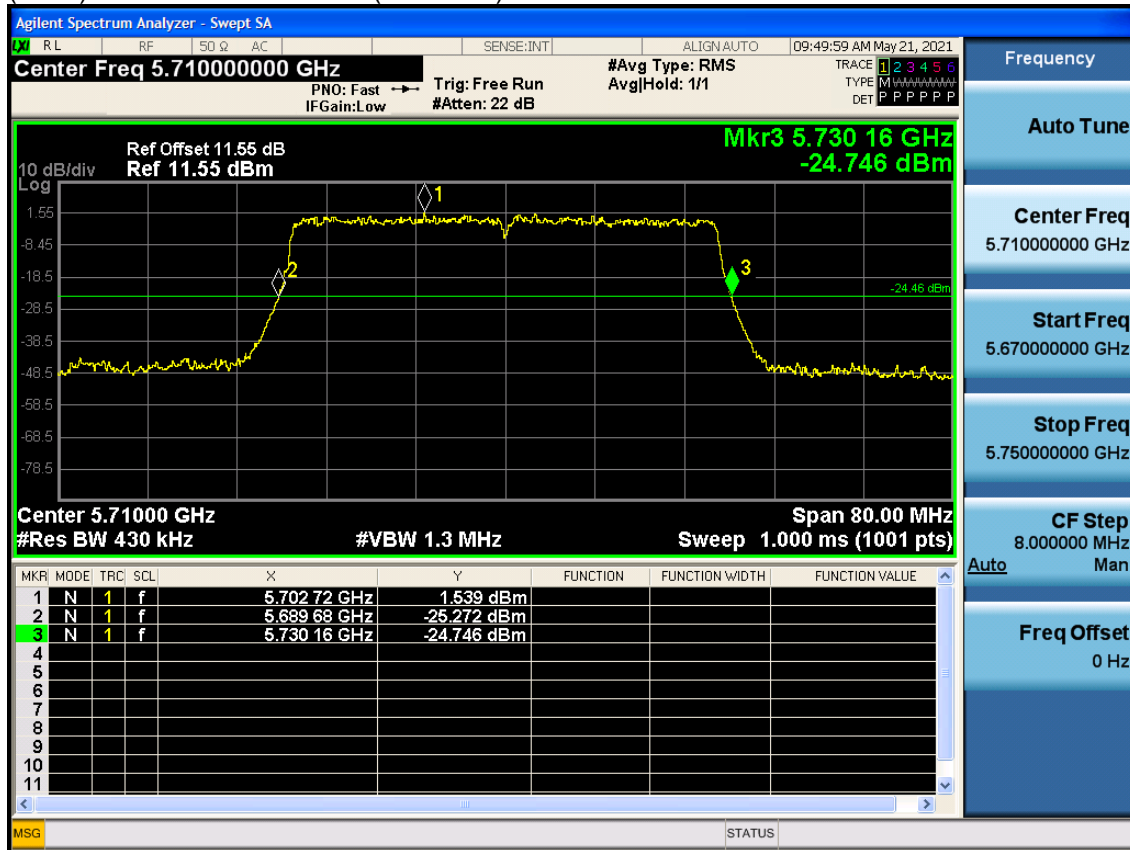


UNII 2C	5725 [MHz]	Measured Frequency [MHz]	26dB Bandwidth [MHz]
	5725	5689.52	35.48

Note:

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

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

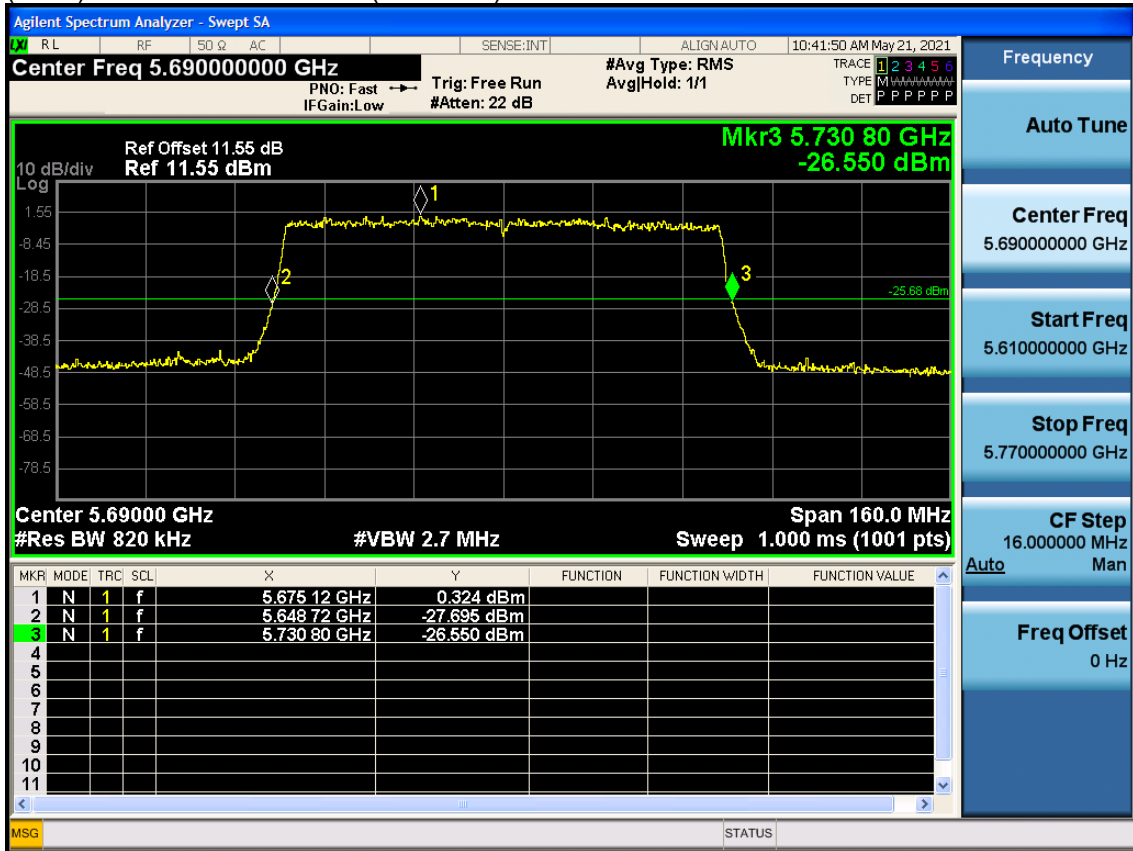


UNII 3	Measured Frequency [MHz]	5725 [MHz]	26dB Bandwidth [MHz]
		5730.16	5725

Note:

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

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



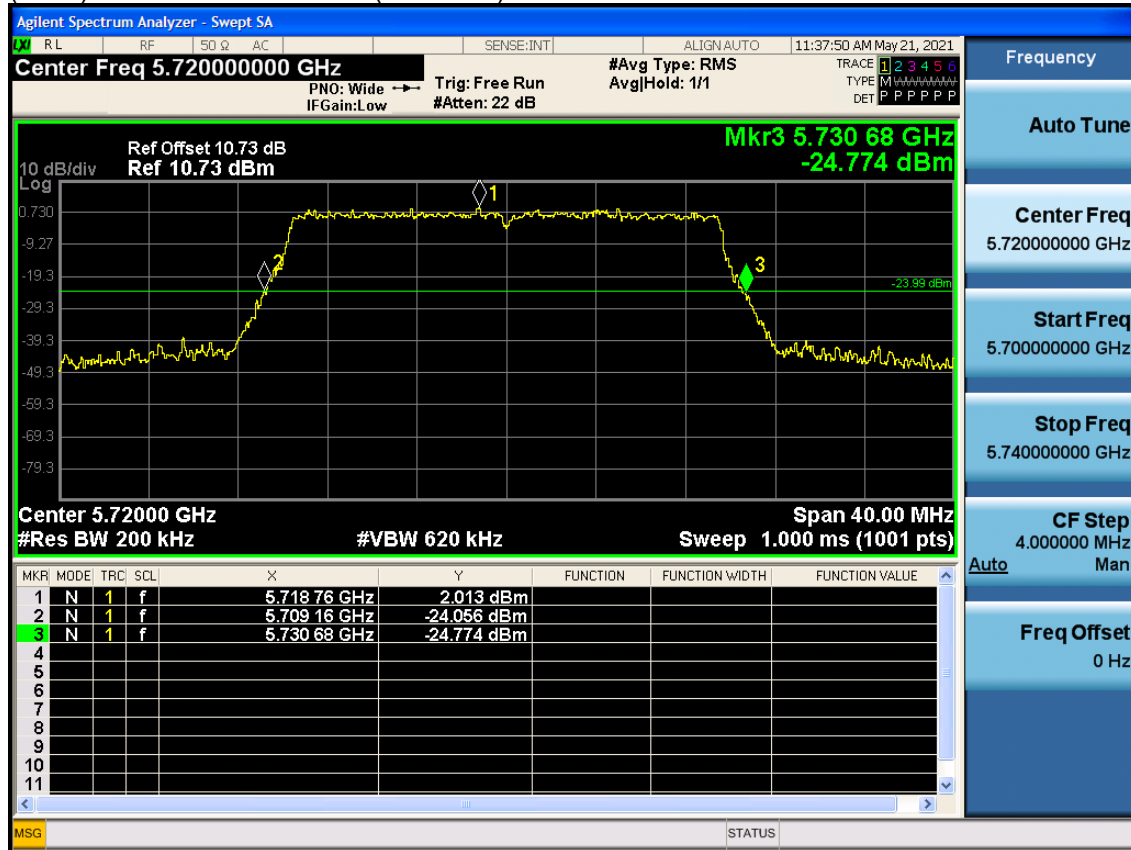
UNII 2C	5725 [MHz]	Measured Frequency [MHz]	26dB Bandwidth [MHz]
		5725	5648.72
UNII 3	Measured Frequency [MHz]	5725 [MHz]	26dB Bandwidth [MHz]
		5730.8	5725

Note:

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

5.1.2 MIMO Ant2

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

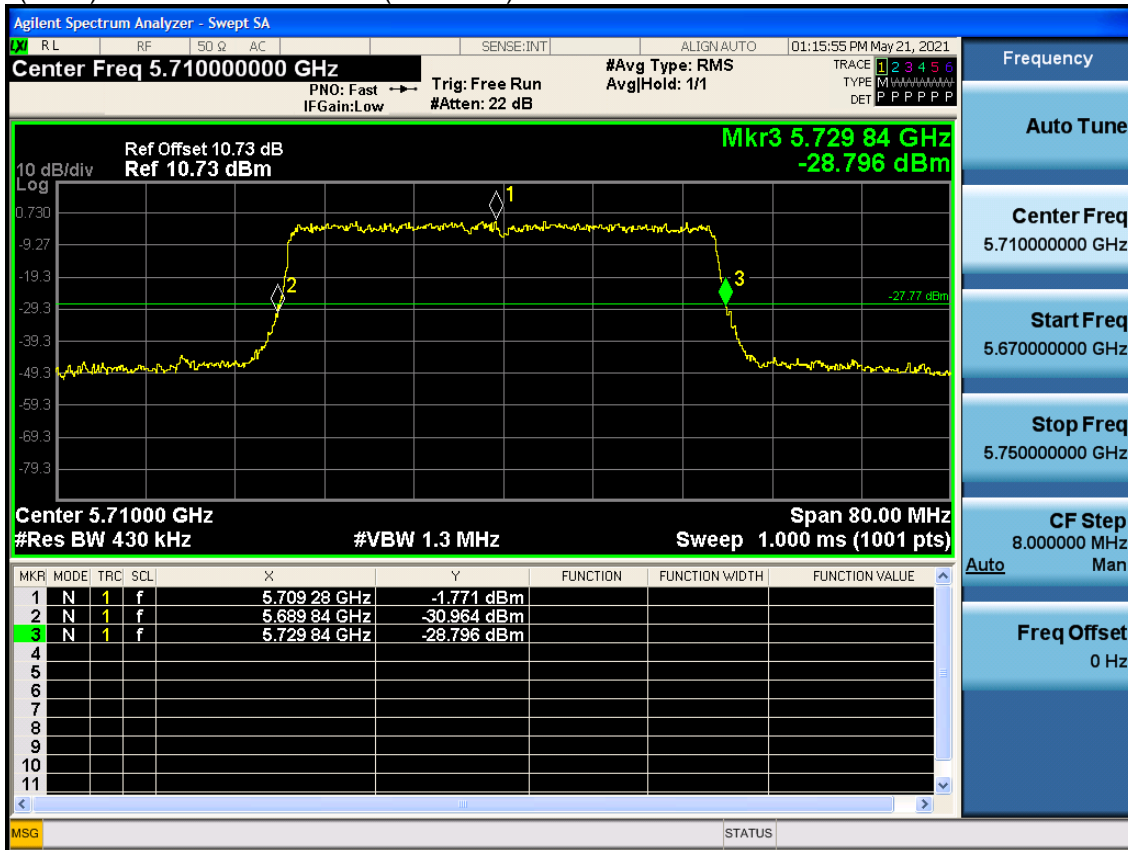


UNII 2C	5725 [MHz]	Measured Frequency [MHz]	26dB Bandwidth [MHz]
		5725	5709.16
UNII 3	Measured Frequency [MHz]	5725 [MHz]	26dB Bandwidth [MHz]
		5730.68	5725

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) SU

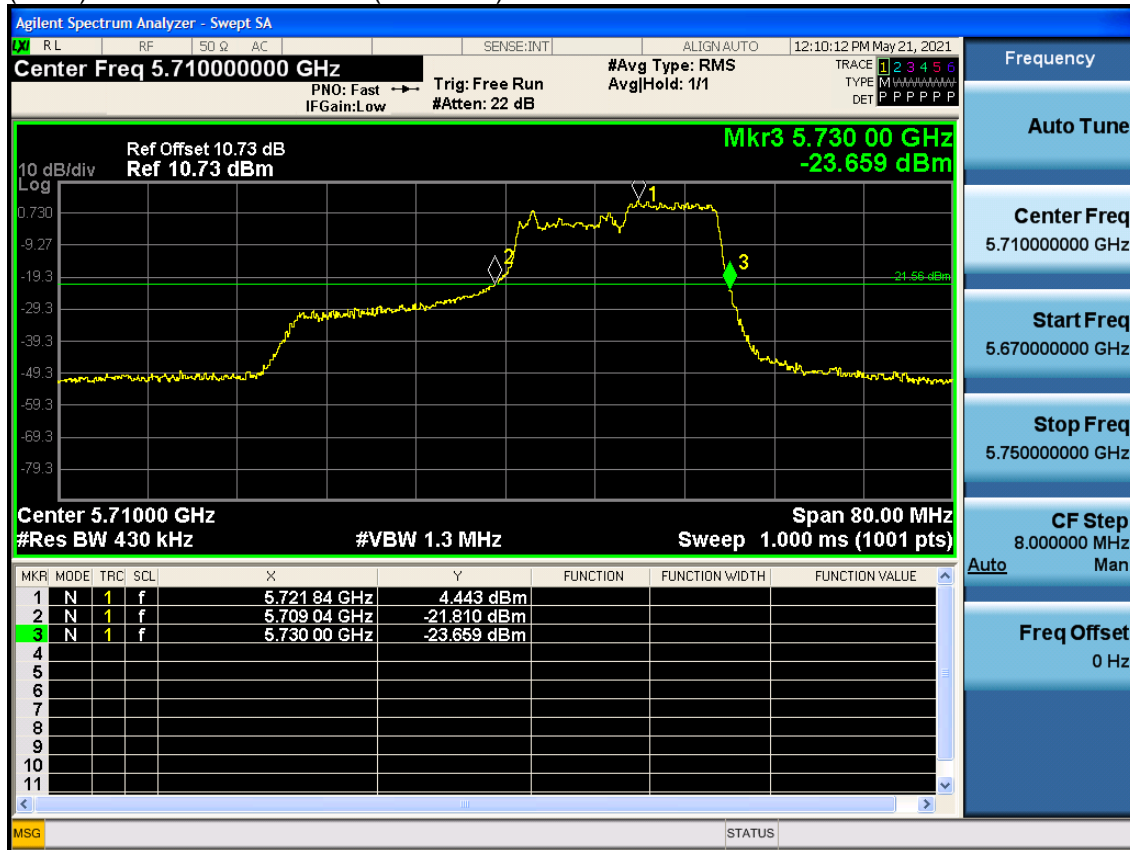


UNII 2C	5725 [MHz]	Measured Frequency [MHz]	26dB Bandwidth [MHz]
	5725	5689.84	35.16

Note:

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

(26dB) Bandwidth 40M Ch.142(5710MHz) RU 56

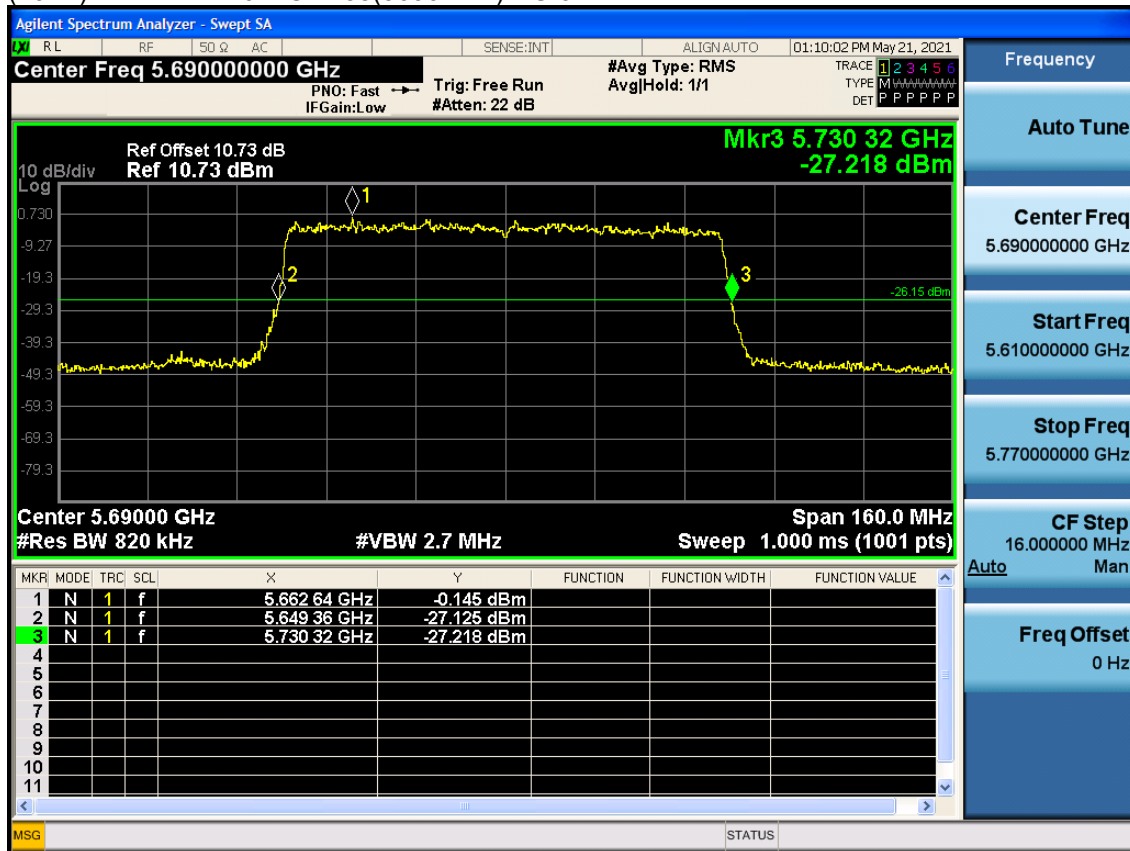


UNII 3	Measured Frequency [MHz]	5725 [MHz]	26dB Bandwidth [MHz]
		5730	5725

Note:

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

(26dB) Bandwidth 40M Ch.138(5690MHz) RU 67

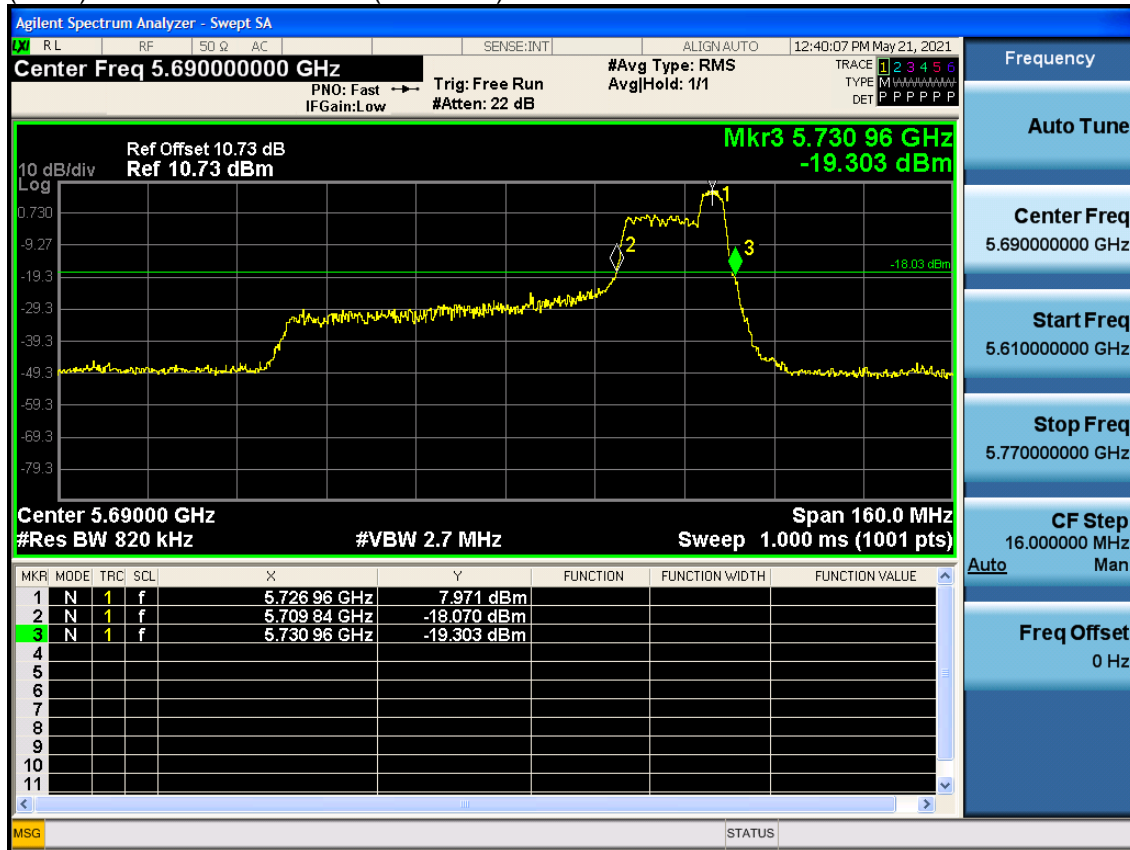


UNII 2C	5725 [MHz]	Measured Frequency [MHz]	26dB Bandwidth [MHz]
	5725	5649.36	75.64

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]
	5730.96	5725	5.96

Note:

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

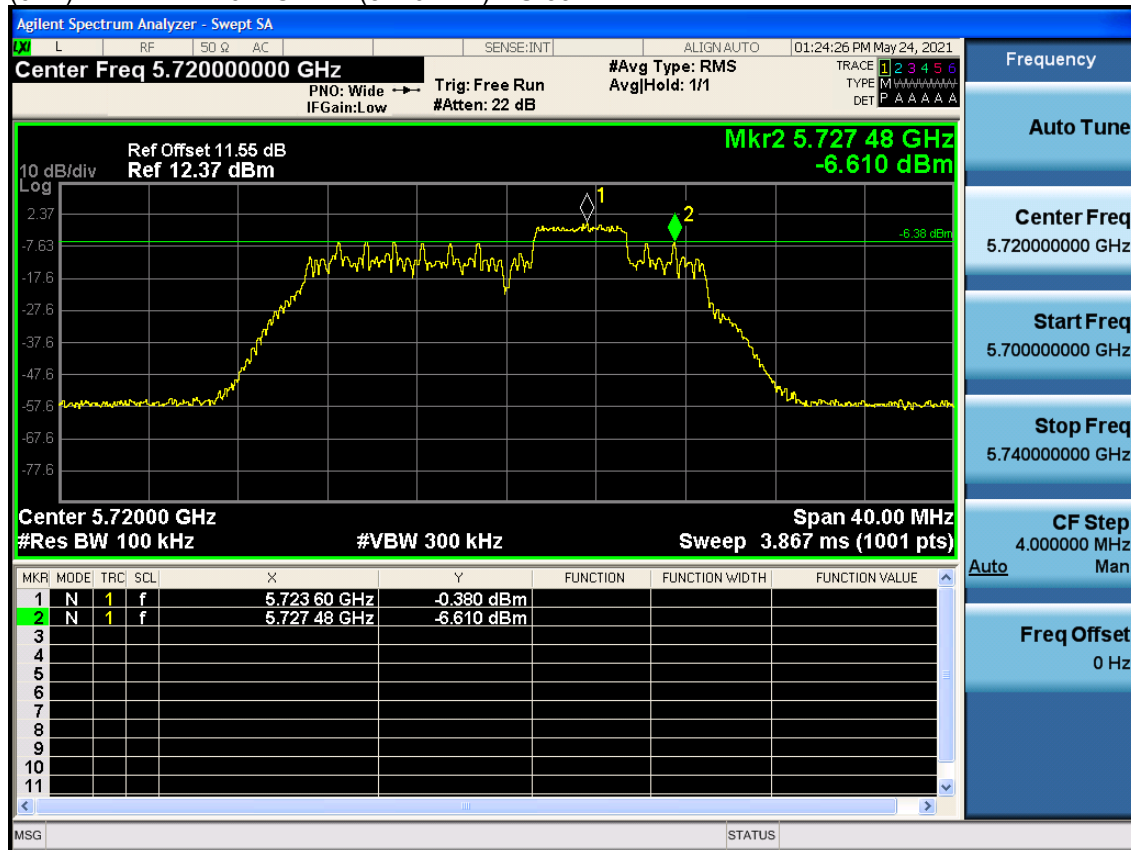
5.2 6dB Bandwidth

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

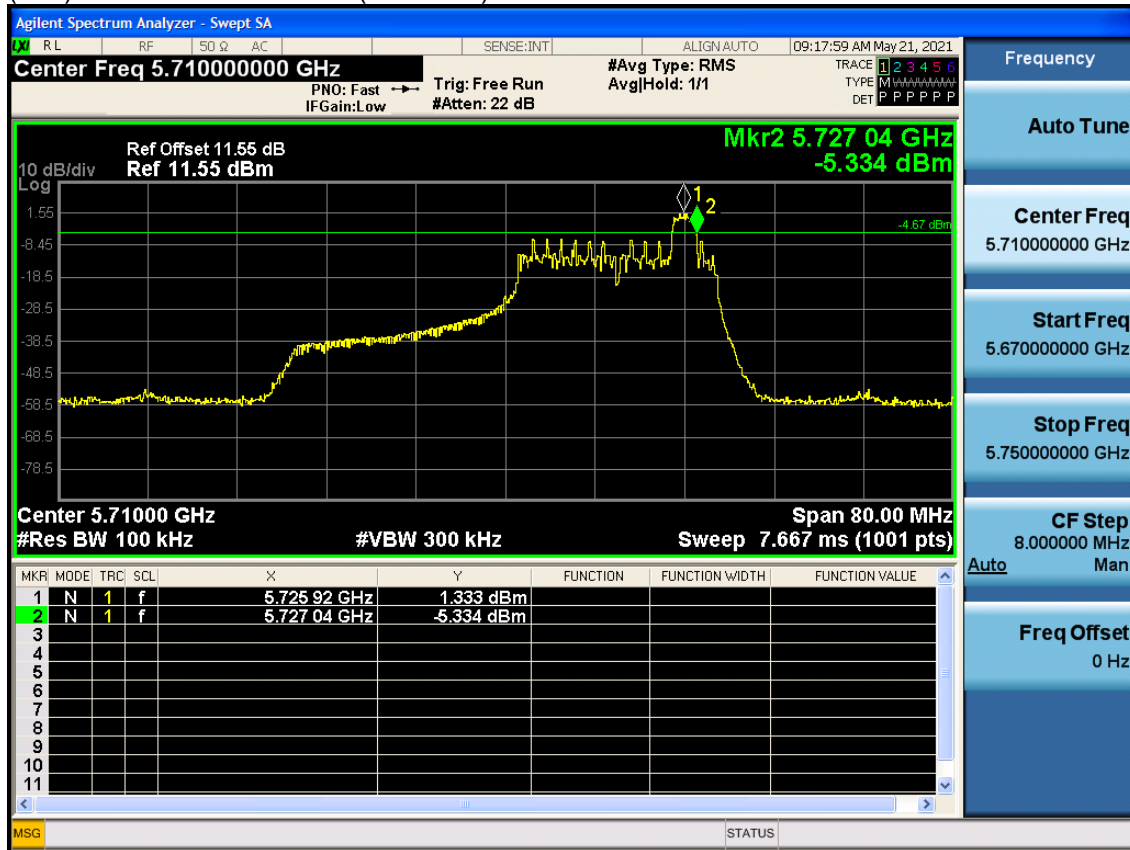


Measured Frequency [MHz]	5725 [MHz]	6dB Bandwidth [MHz]
5727.48	5725	2.48

Note:

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

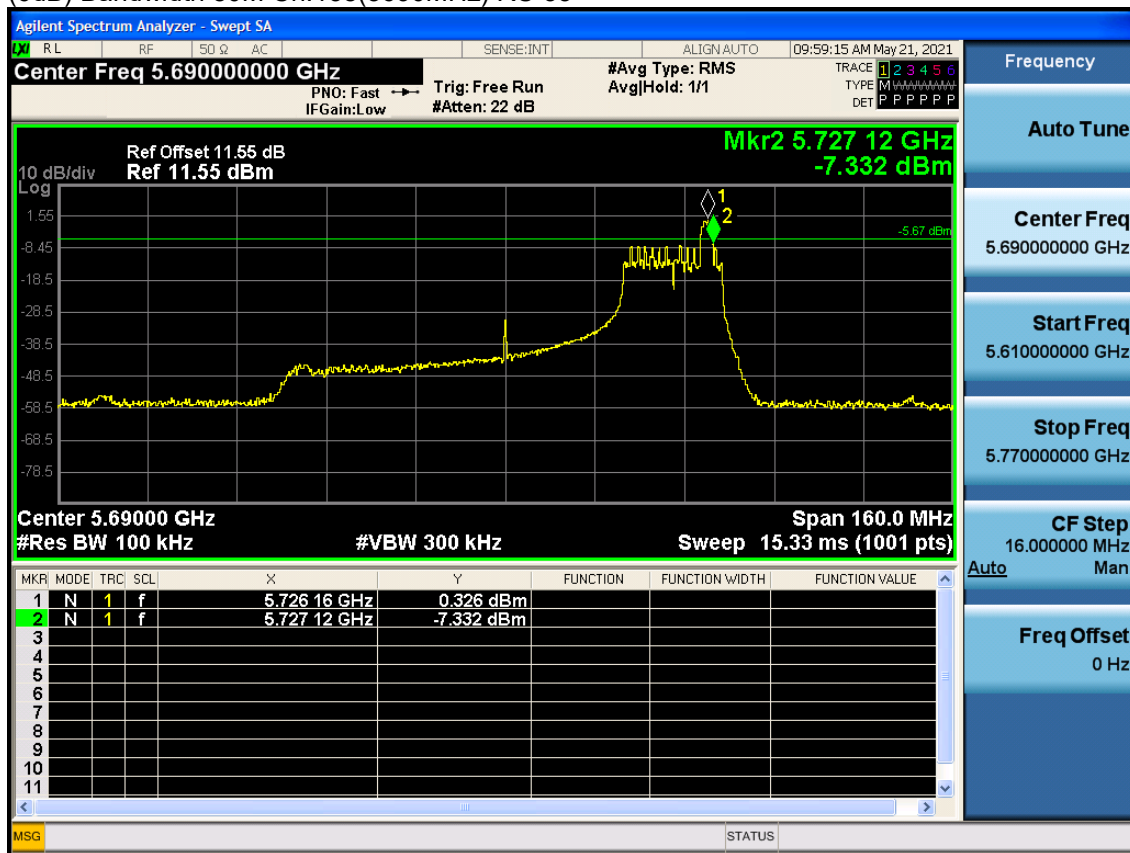
(6dB) Bandwidth 40M Ch.142(5710MHz) RU 16



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

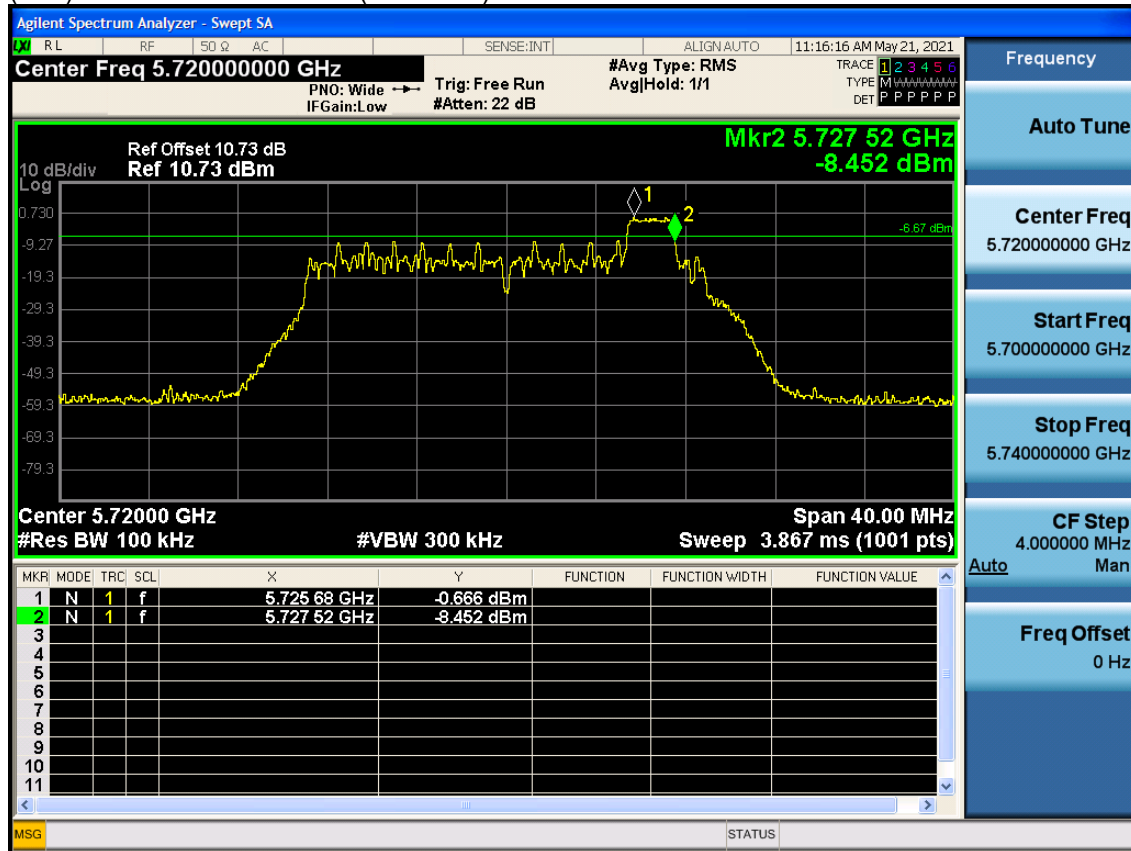


Measured Frequency [MHz]	5725 [MHz]	6dB Bandwidth [MHz]
5727.12	5725	2.12

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

5.2.2 MIMO Ant2

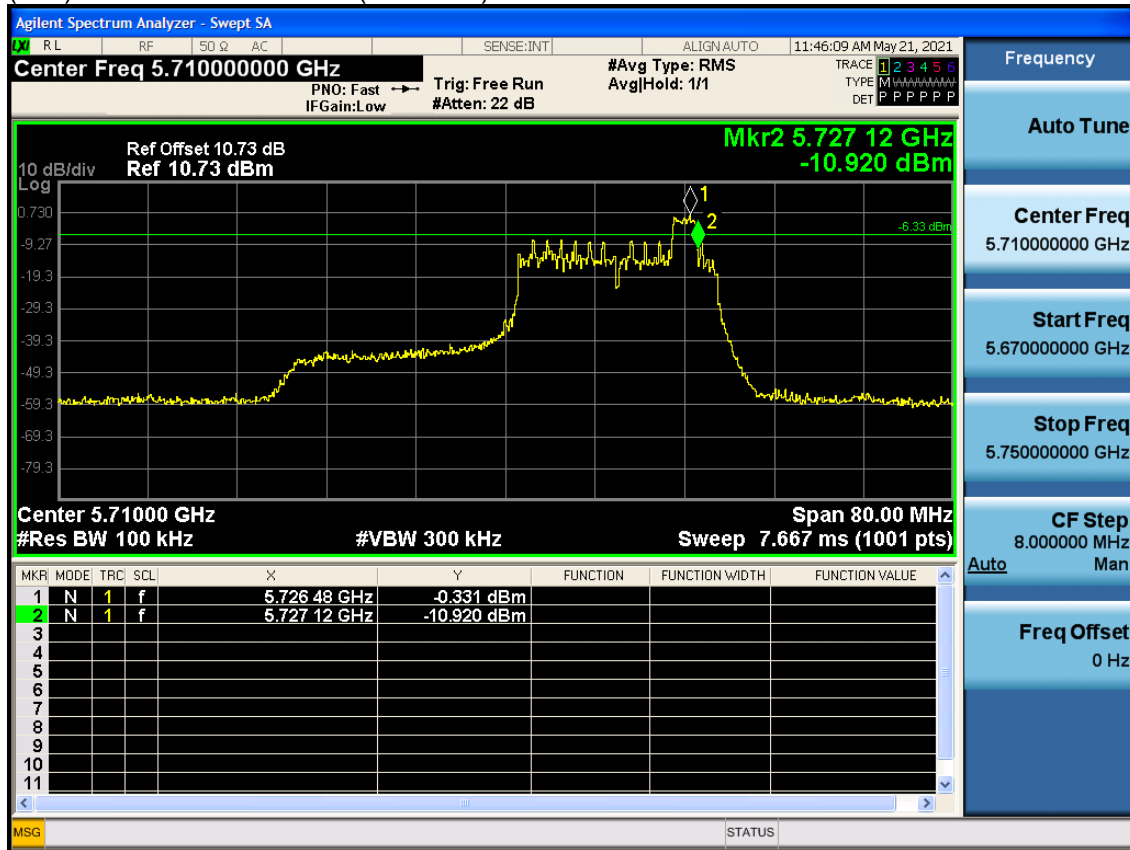
(6dB) Bandwidth 20M Ch.144(5720MHz) RU 7



Measured Frequency [MHz]	5725 [MHz]	6dB Bandwidth [MHz]
5727.52	5725	2.52

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

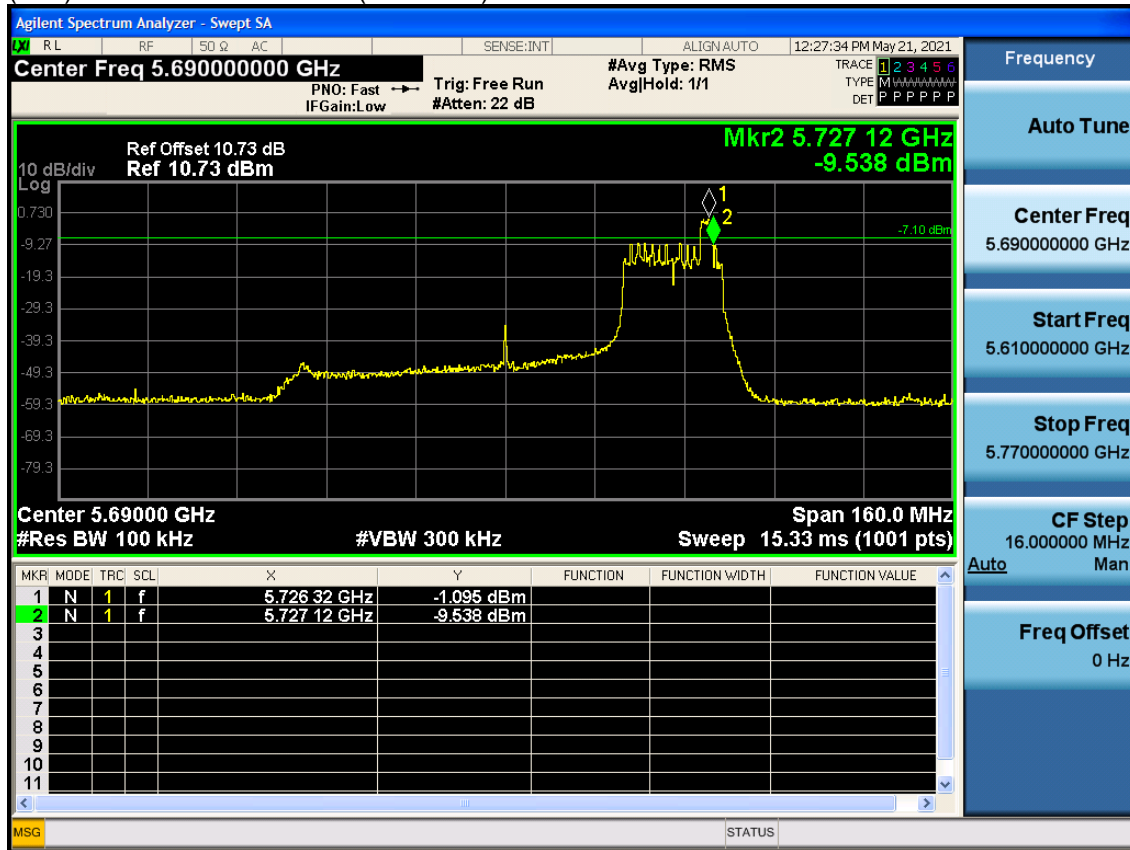
(6dB) Bandwidth 40M Ch.142(5710MHz) RU 16



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

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

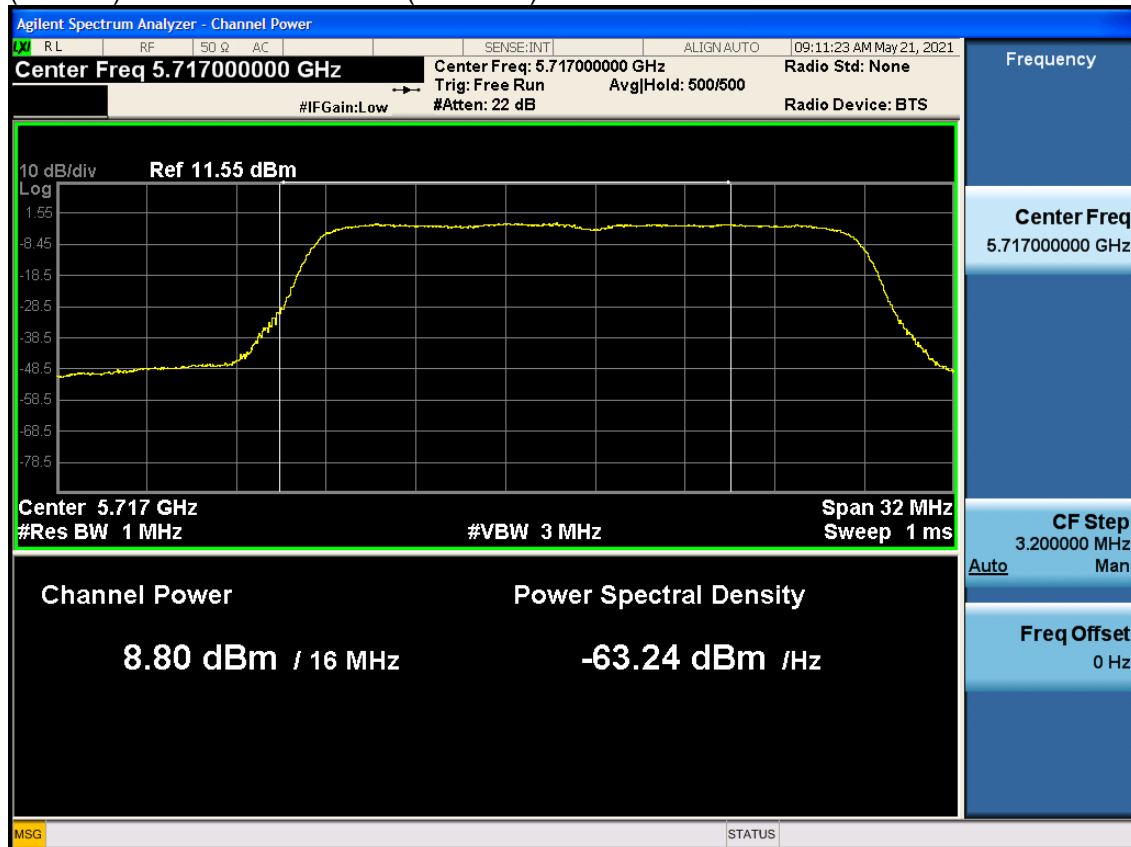
5.3 Output Power

Note:

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

5.3.1 MIMO Ant1

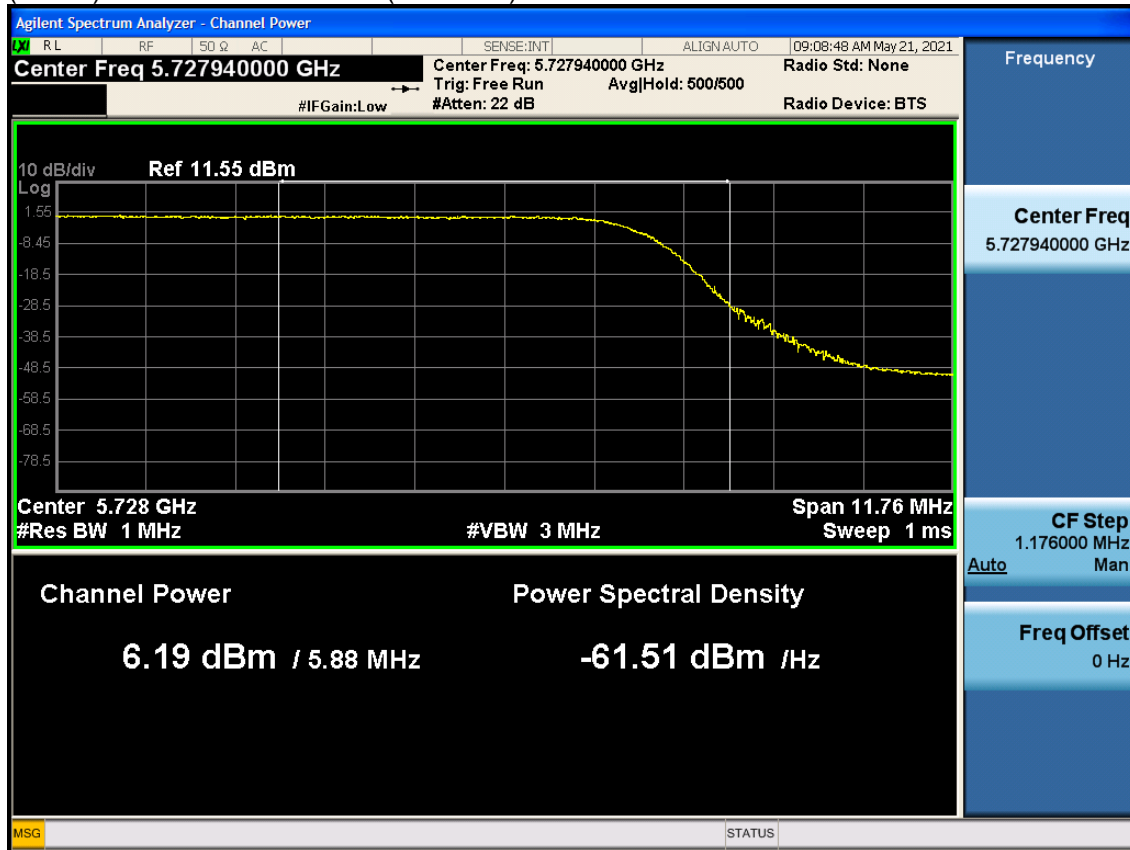
(UNII 2C) Bandwidth 20M Ch.144(5720MHz) RU 61



Note:

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

(UNII 3) Bandwidth 20M Ch.144(5720MHz) RU 54

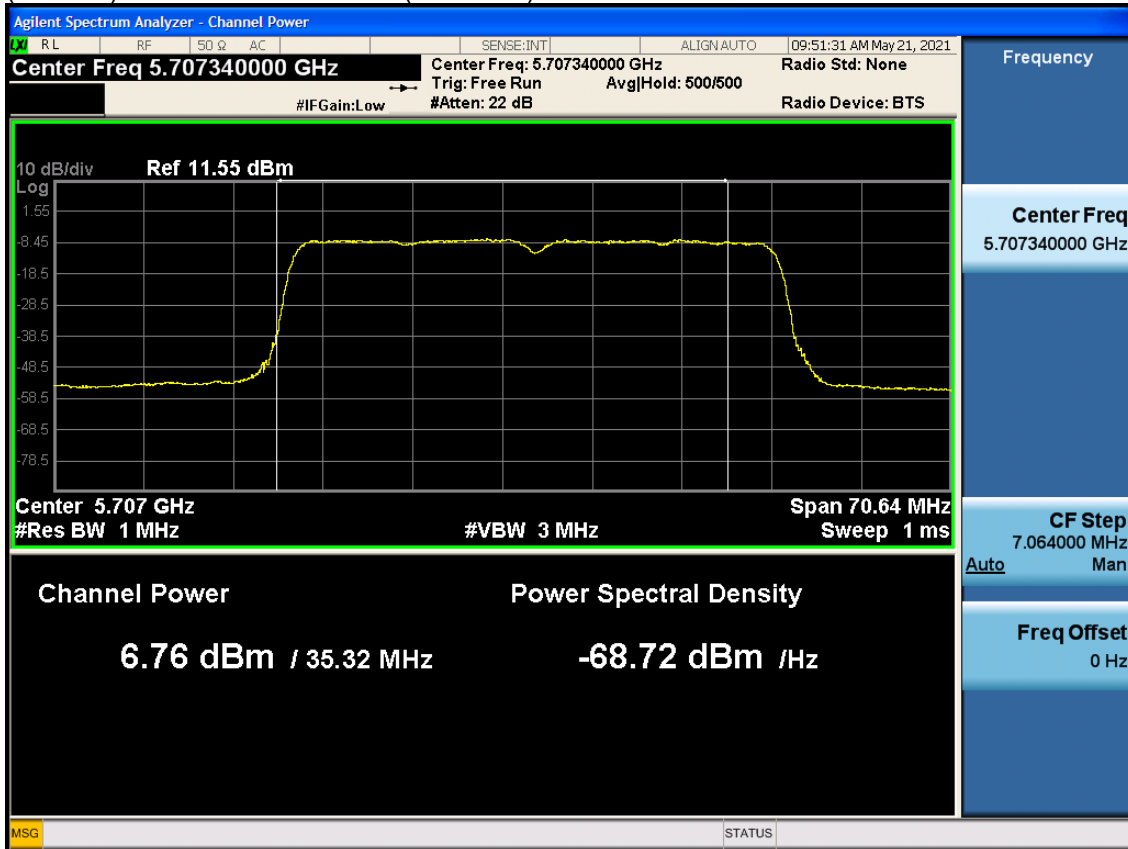


Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
6.19	2.083	8.27

Note:

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

(UNII 2C) Bandwidth 40M Ch.142(5710MHz) RU 65

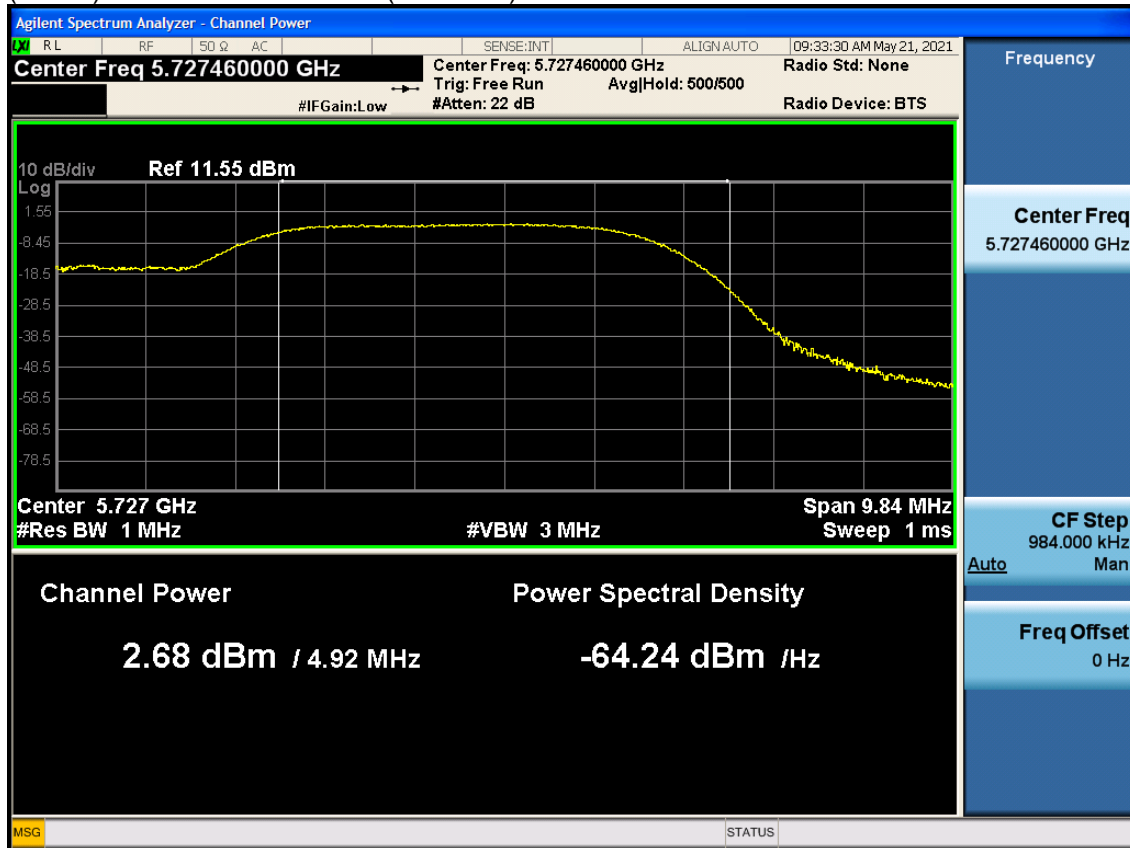


Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
6.76	3.126	9.89

Note:

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

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

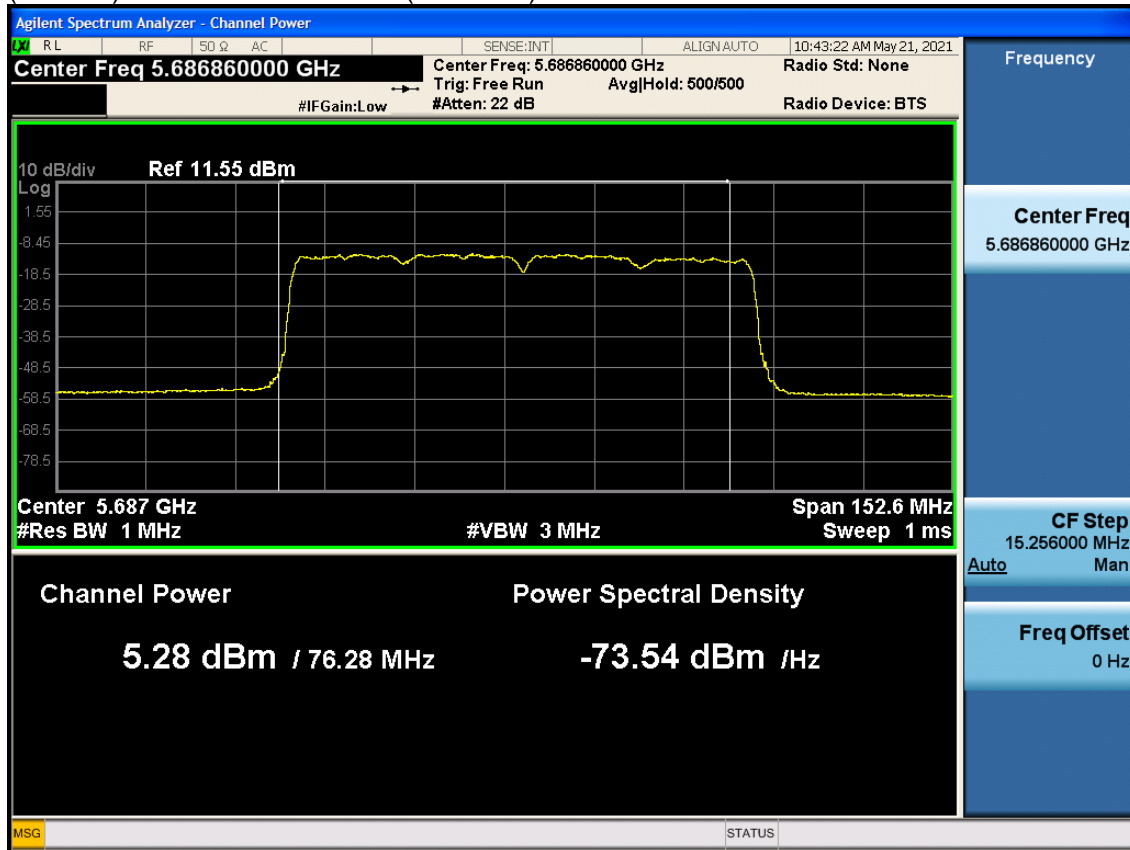


Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
2.68	1.379	4.06

Note:

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

(UNII 2C) Bandwidth 80M Ch.138(5690MHz) RU 67

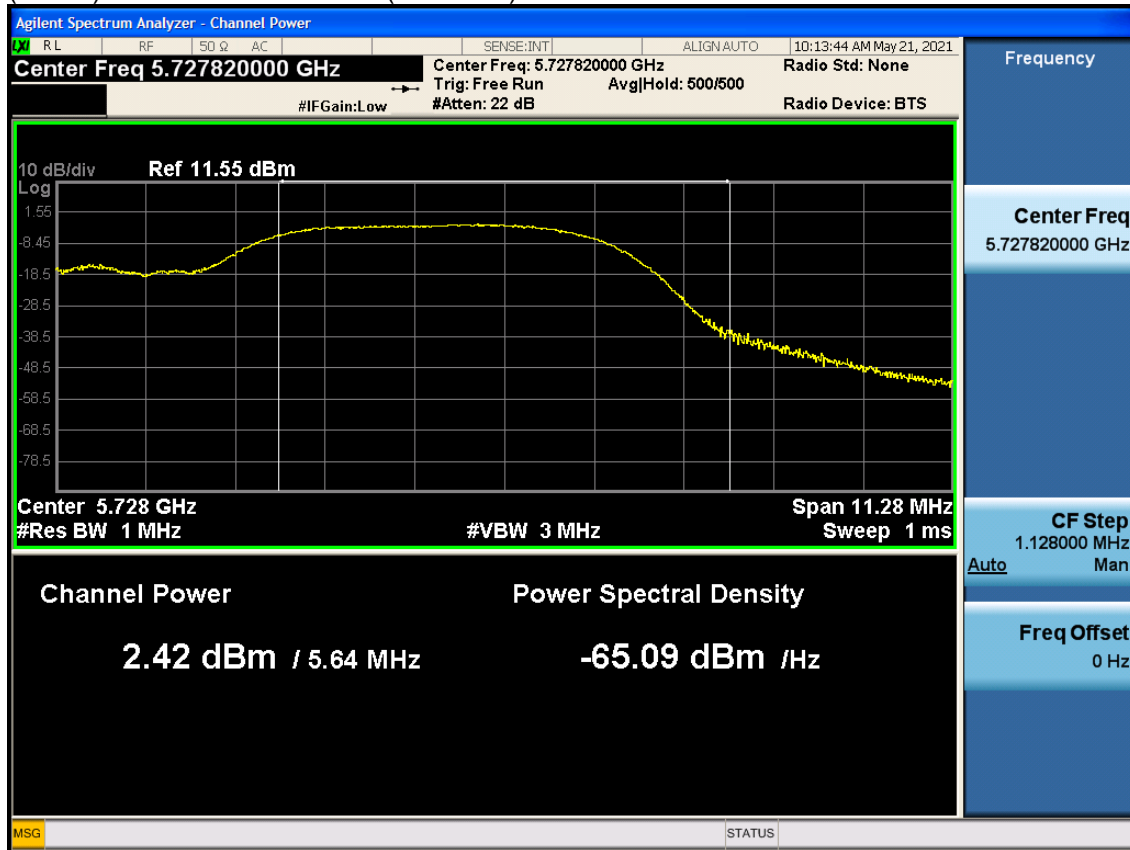


Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
5.28	3.388	8.67

Note:

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

(UNII 3) Bandwidth 80M Ch.138(5690MHz) RU 52



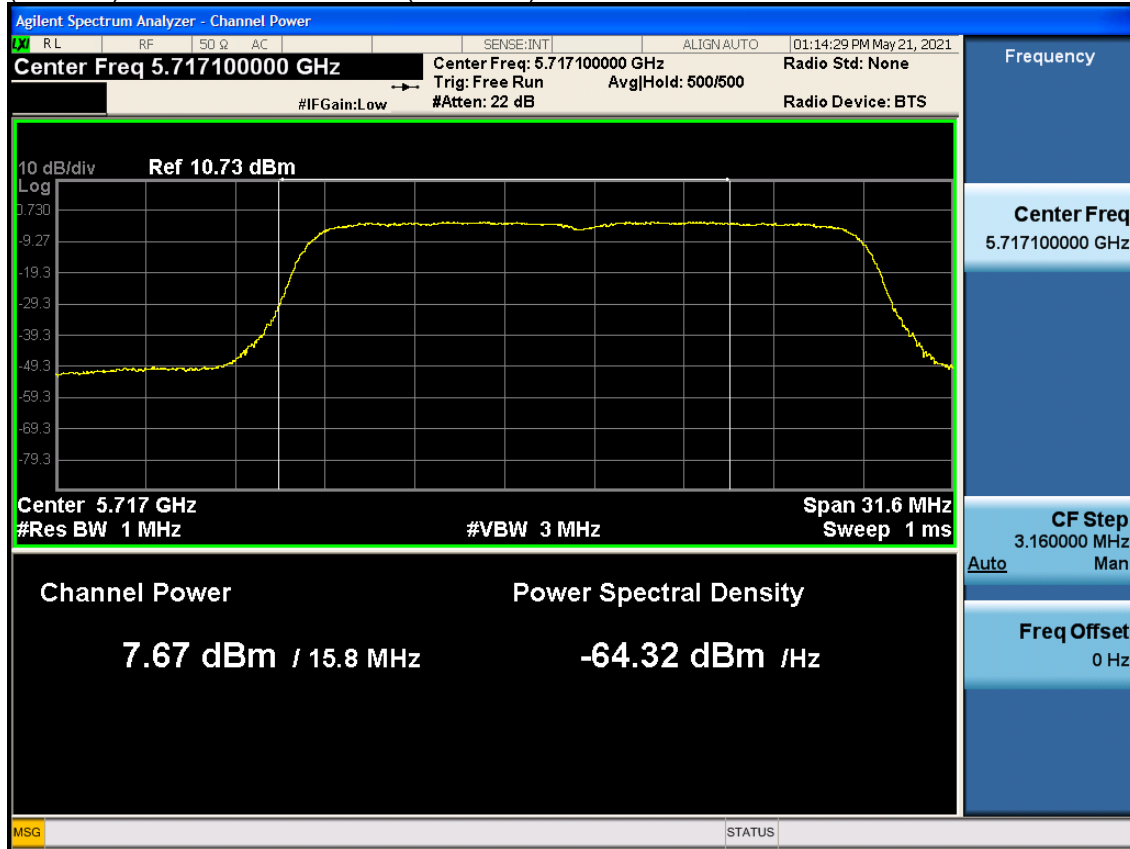
Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
2.42	1.368	3.79

Note:

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

5.3.2 MIMO Ant2

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

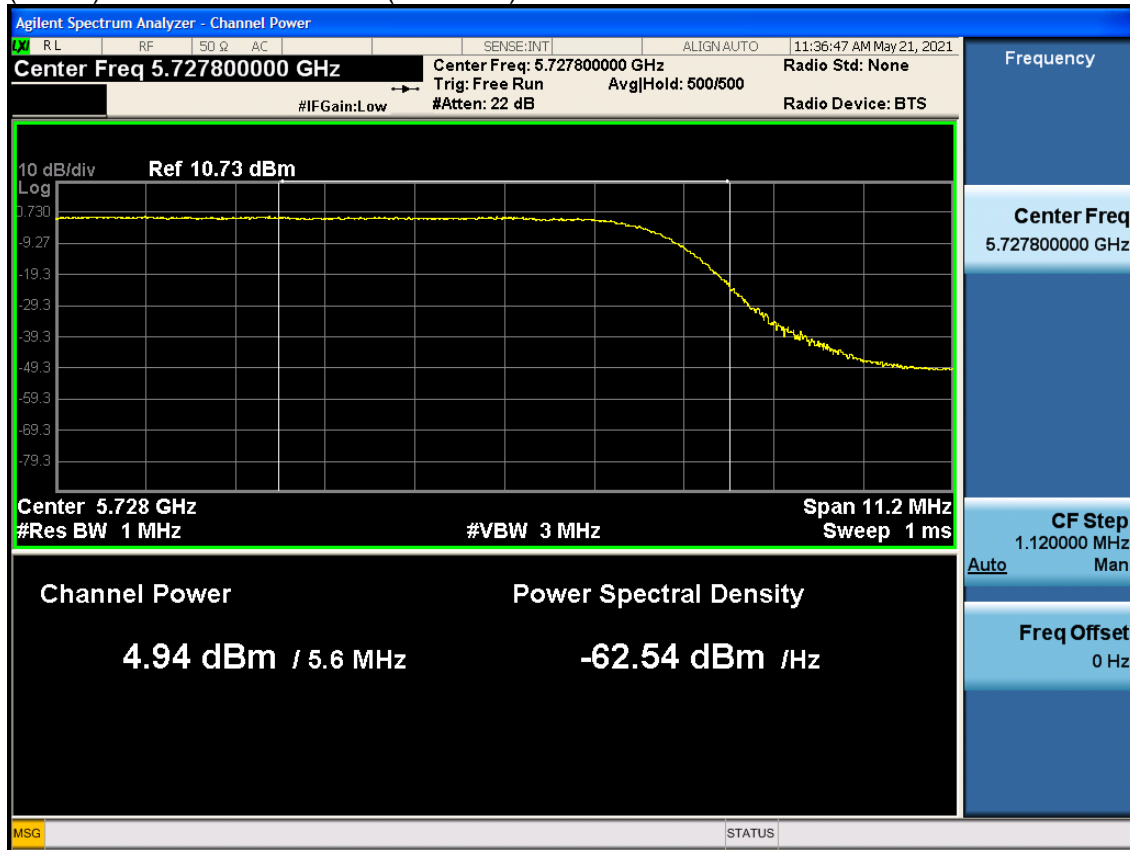


Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
7.67	3.010	10.68

Note:

$$\text{Total Power(dBm)} = \text{Reading Value(dBm)} + \text{Duty Cycle Factor(dB)}$$

(UNII 3) Bandwidth 20M Ch.144(5720MHz) RU 54

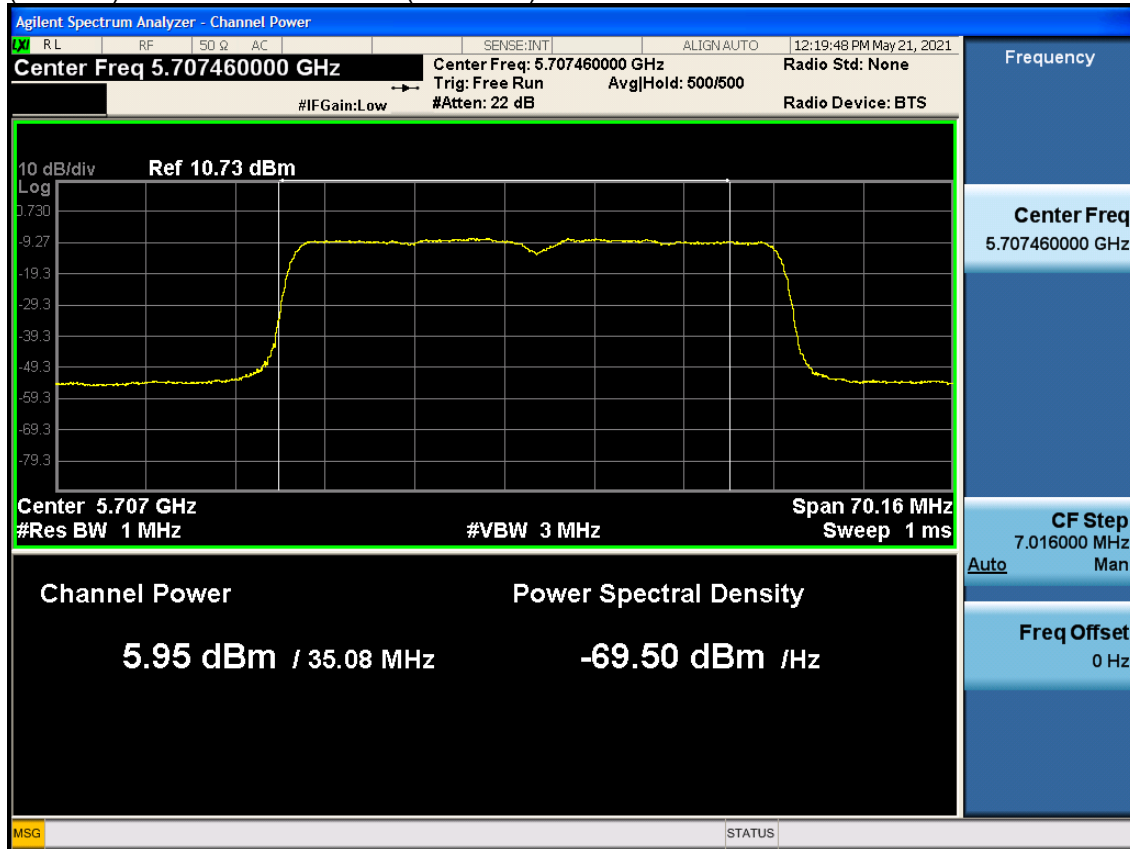


Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
4.94	2.083	7.02

Note:

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

(UNII 2C) Bandwidth 40M Ch.142(5710MHz) RU 65

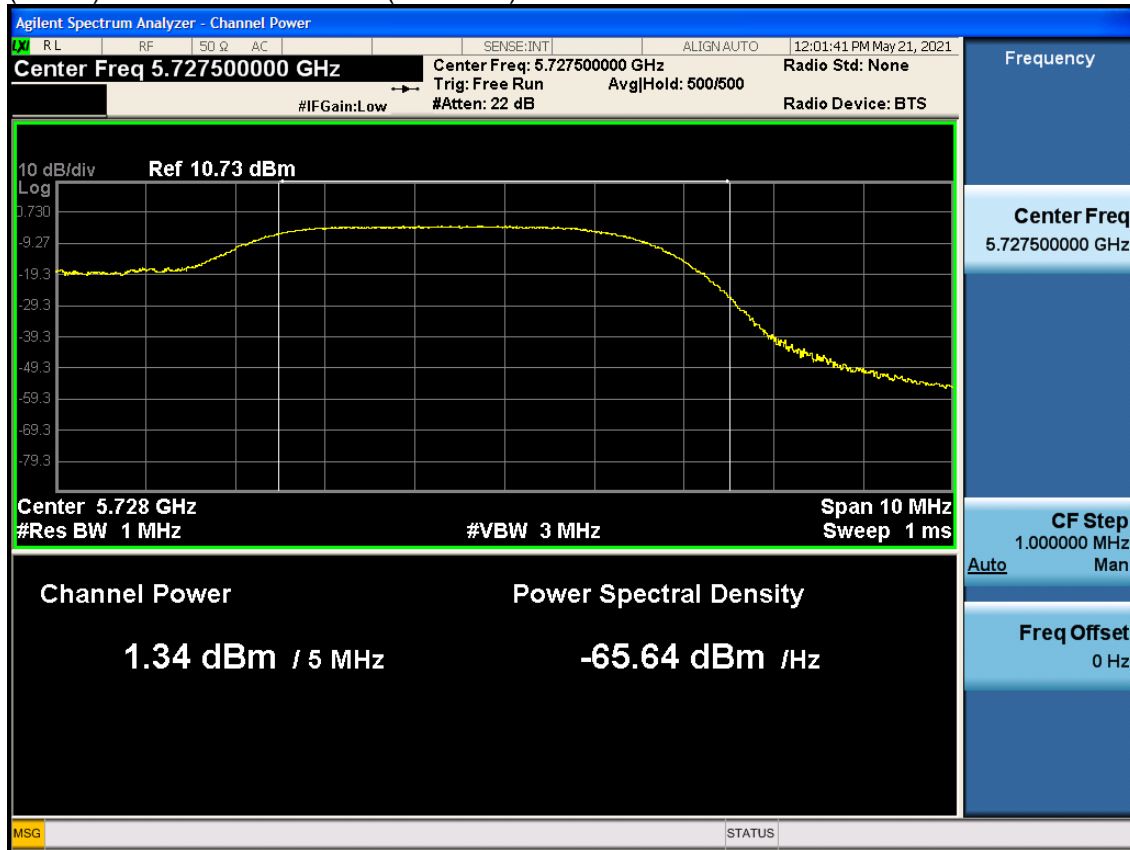


Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
5.95	3.126	9.08

Note:

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

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

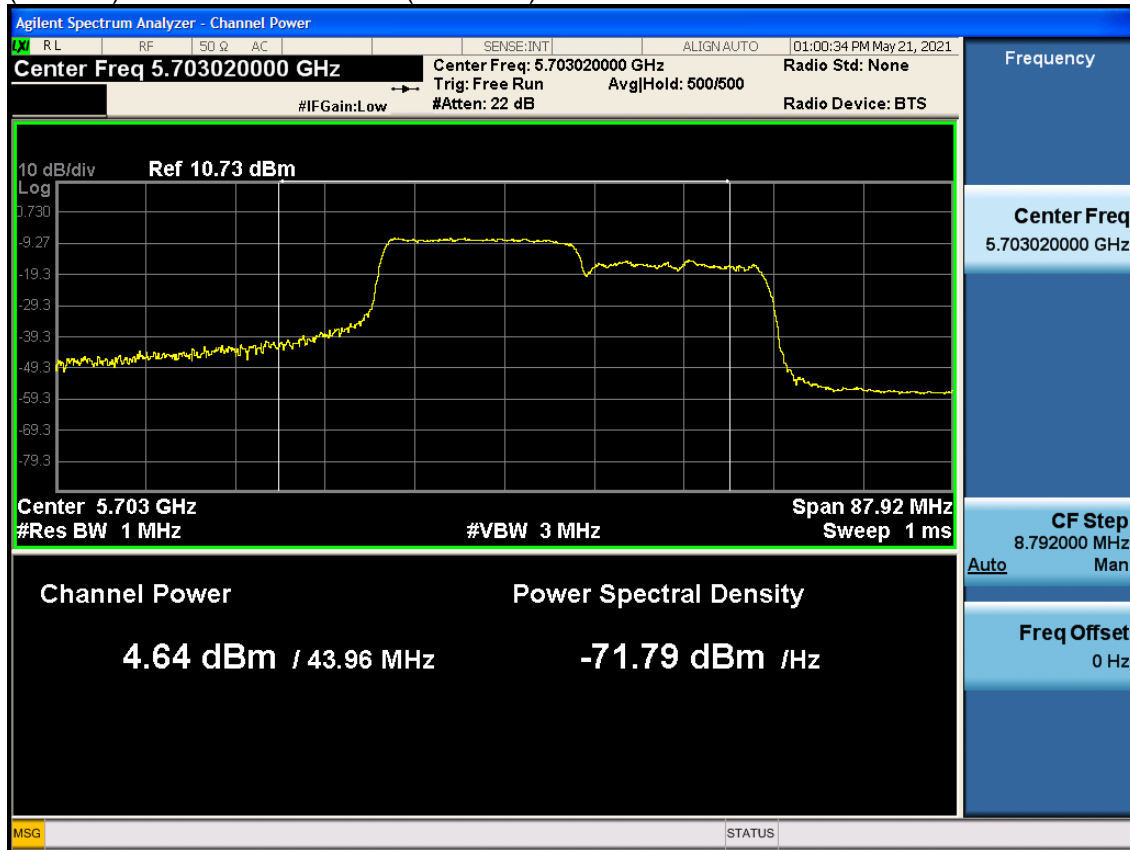


Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
1.34	1.379	2.72

Note:

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

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

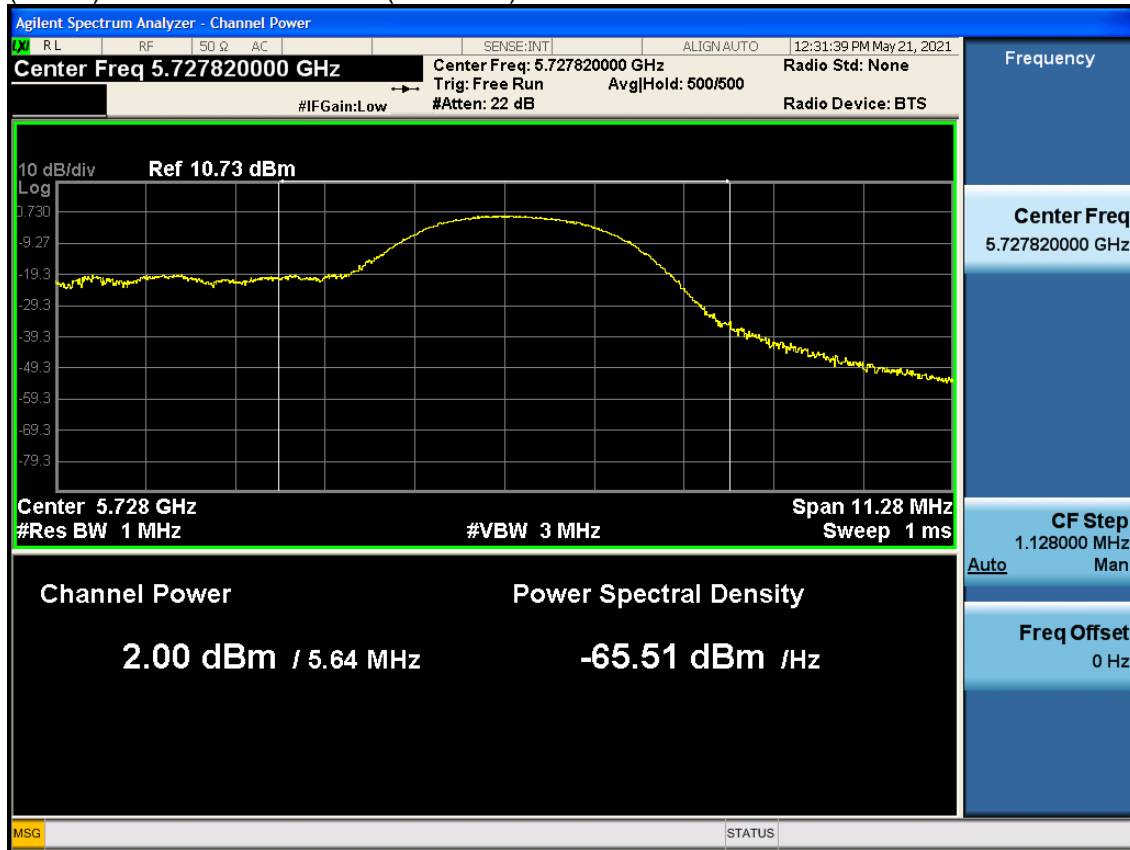


Reading Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
4.64	2.903	7.54

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)
2.00	0.859	2.86

Note:

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

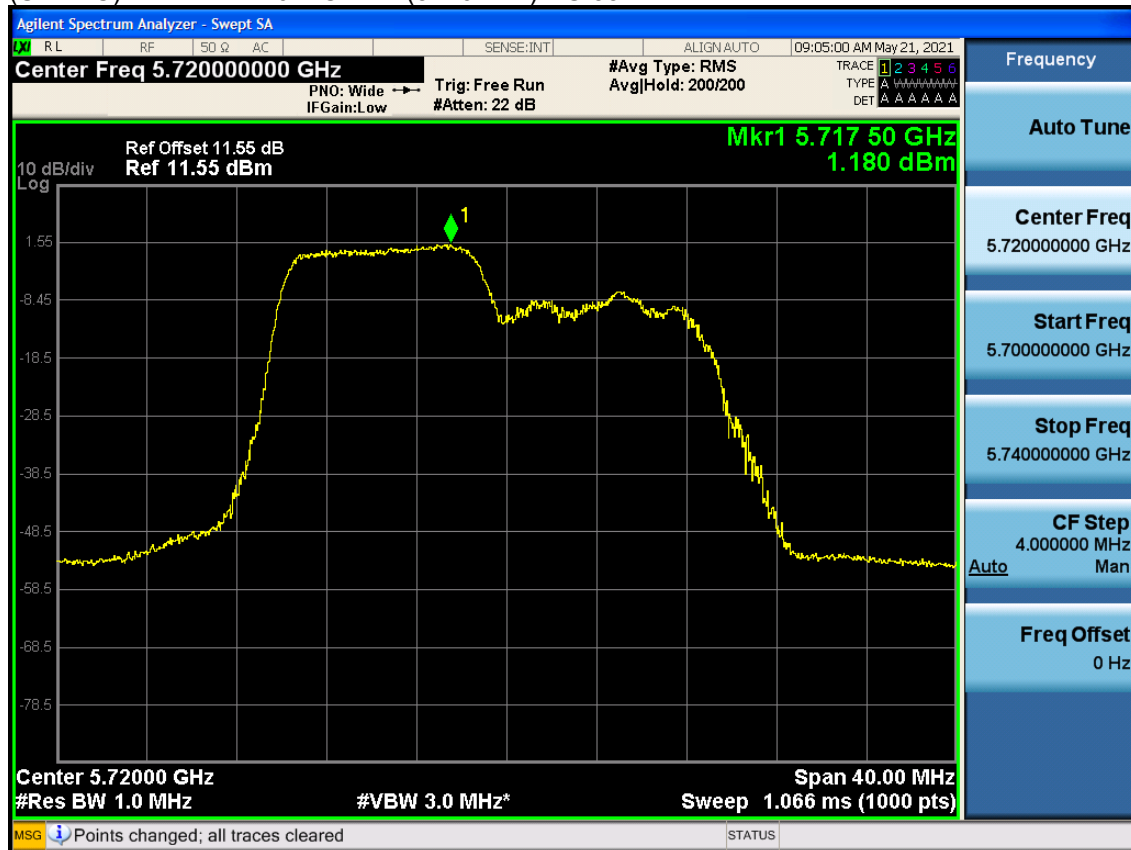
5.4 Power Spectral Density

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 53

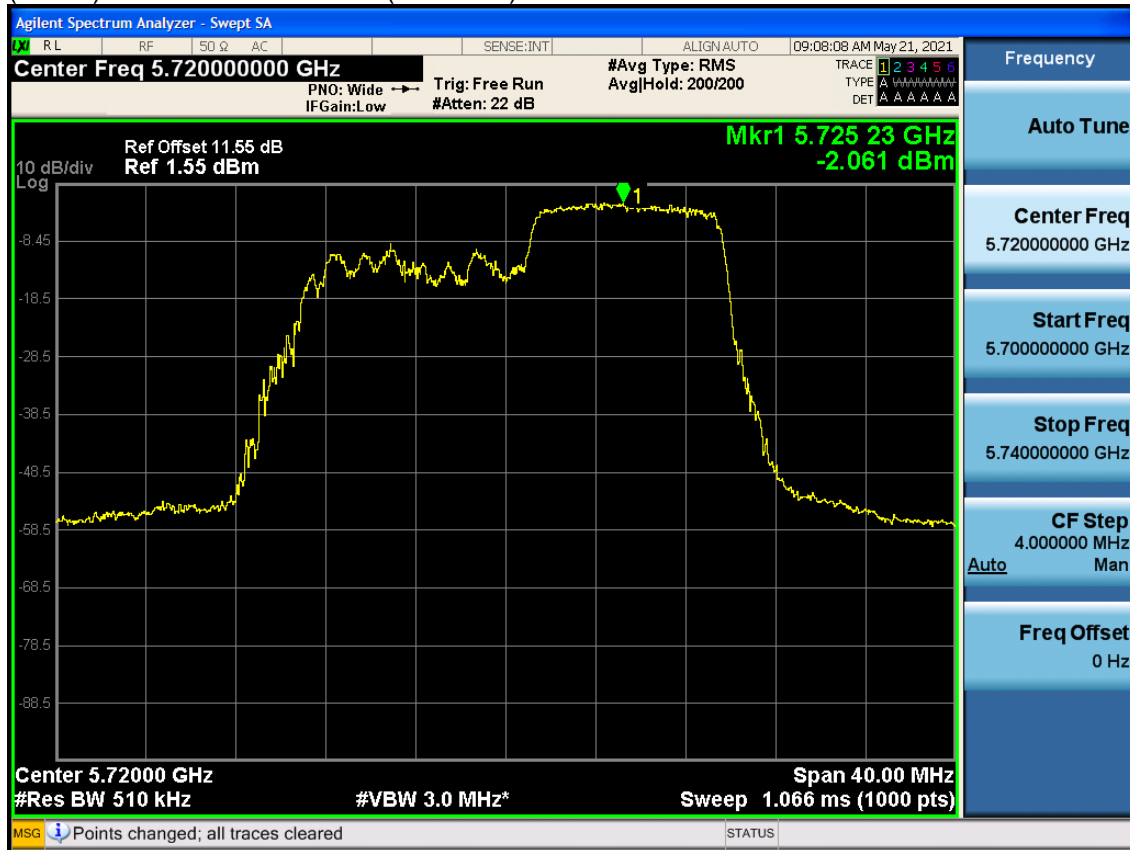


Reading Value (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
1.180	2.083	3.263

Note:

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

(UNII 3) Bandwidth 20M Ch.144(5720MHz) RU 54

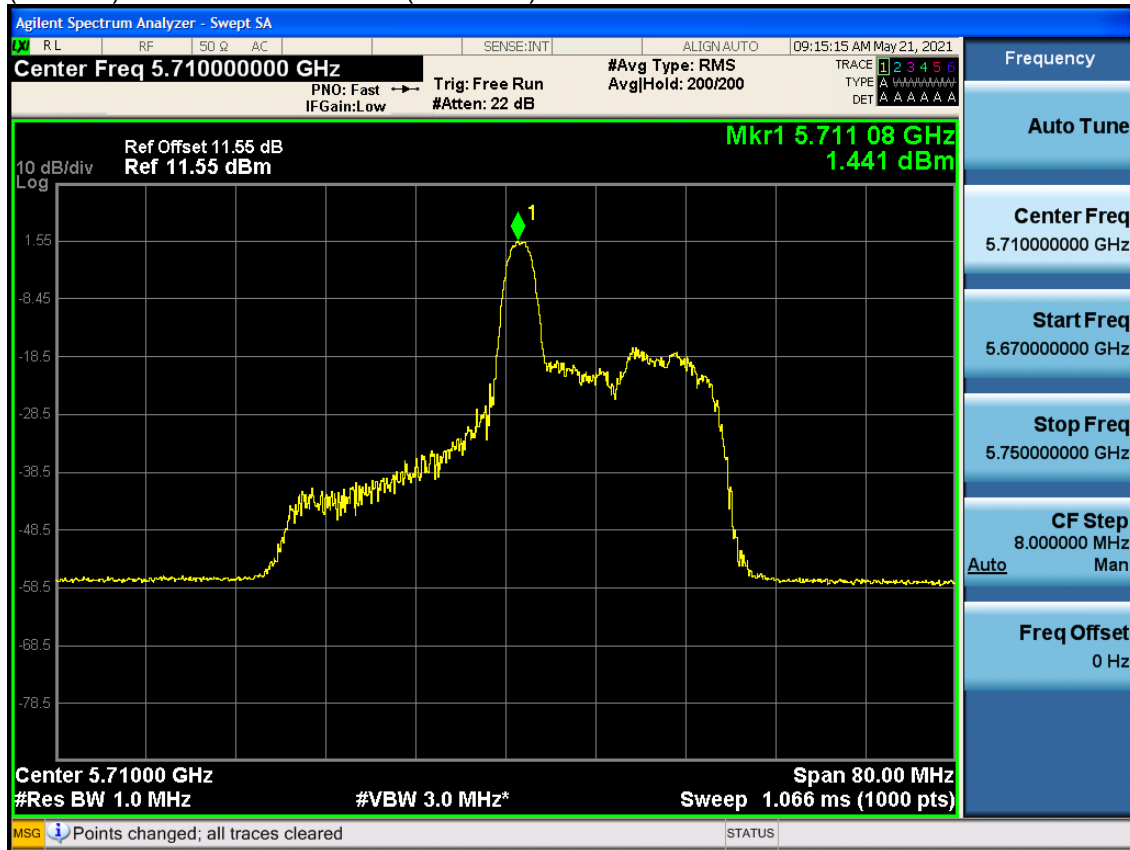


Reading Value (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
-2.061	2.083	0.022

Note:

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

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



Reading Value (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
1.441	0.859	2.300

Note:

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

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



Reading Value (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
-1.878	0.859	-1.019

Note:

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

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

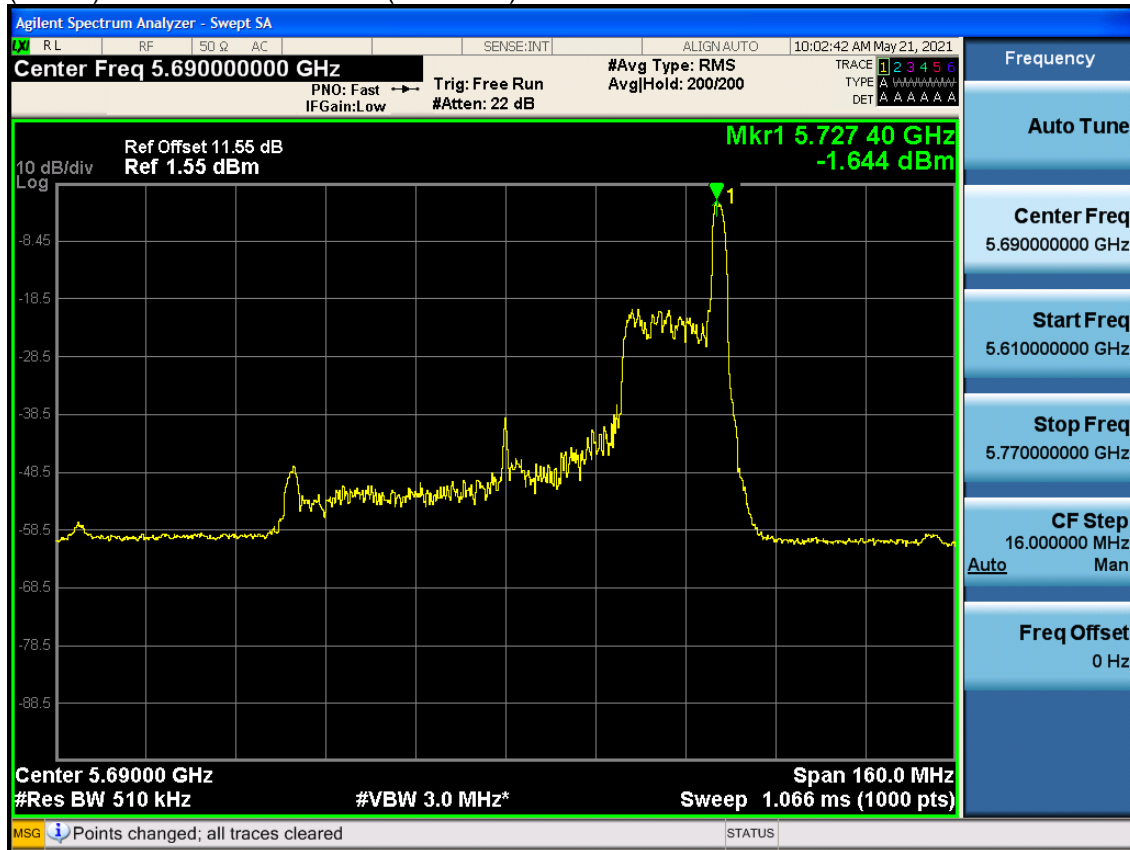


Reading Value (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
-2.109	1.368	-0.741

Note:

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

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



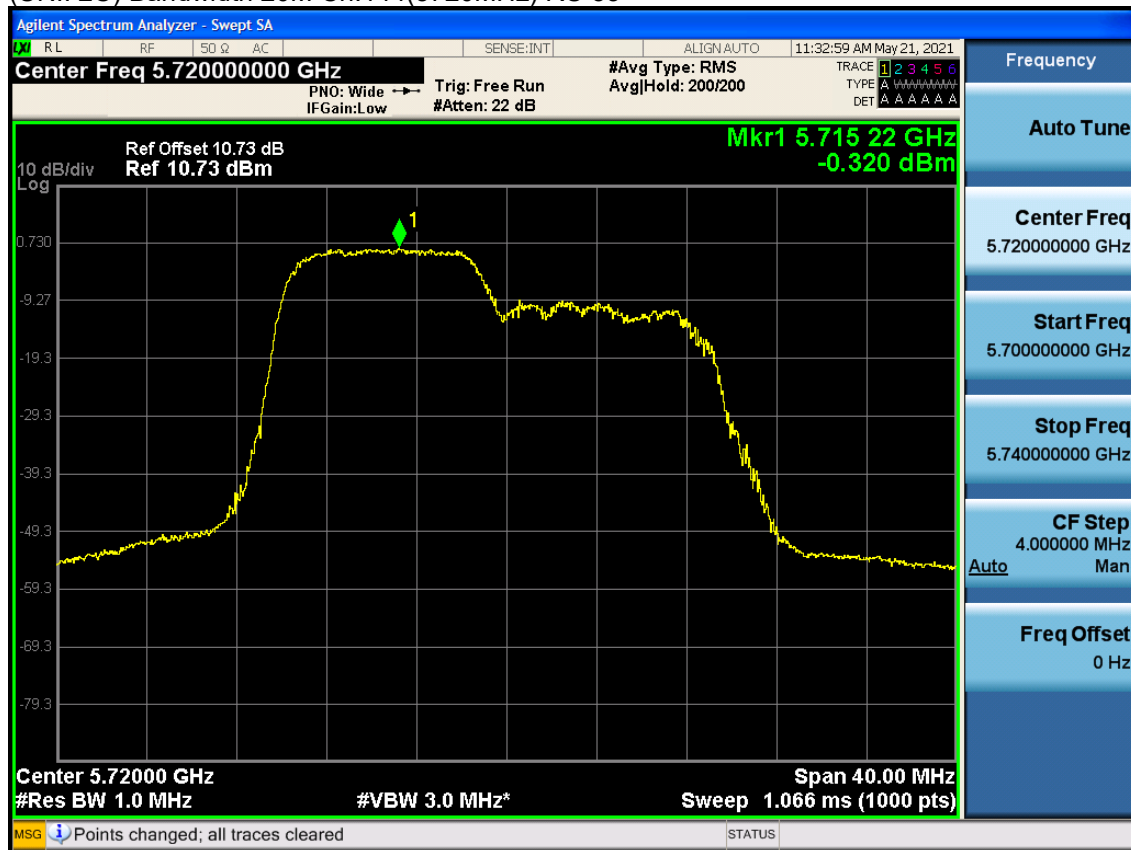
Reading Value (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
-1.644	0.859	-0.785

Note:

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

5.4.2 MIMO Ant2

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

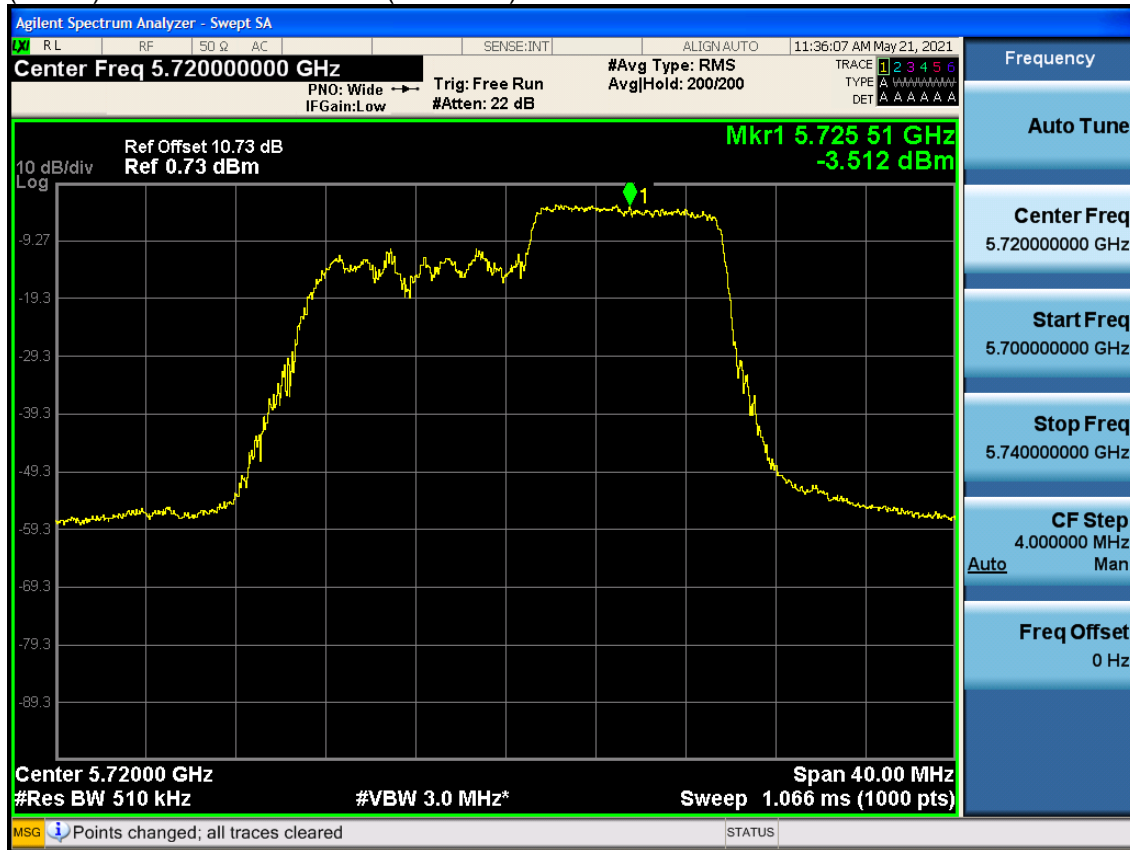


Reading Value (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
-0.320	2.083	1.763

Note:

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

(UNII 3) Bandwidth 20M Ch.144(5720MHz) RU 54

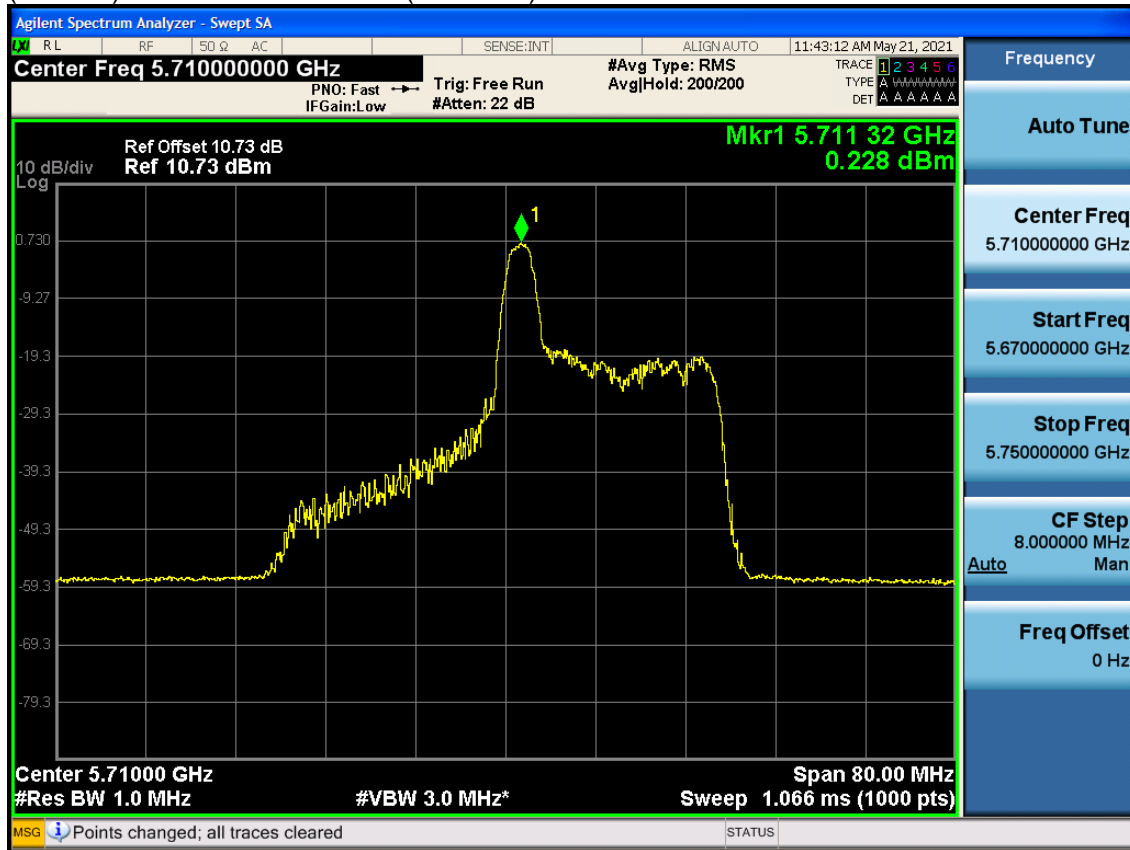


Reading Value (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
-3.512	2.083	-1.429

Note:

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

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

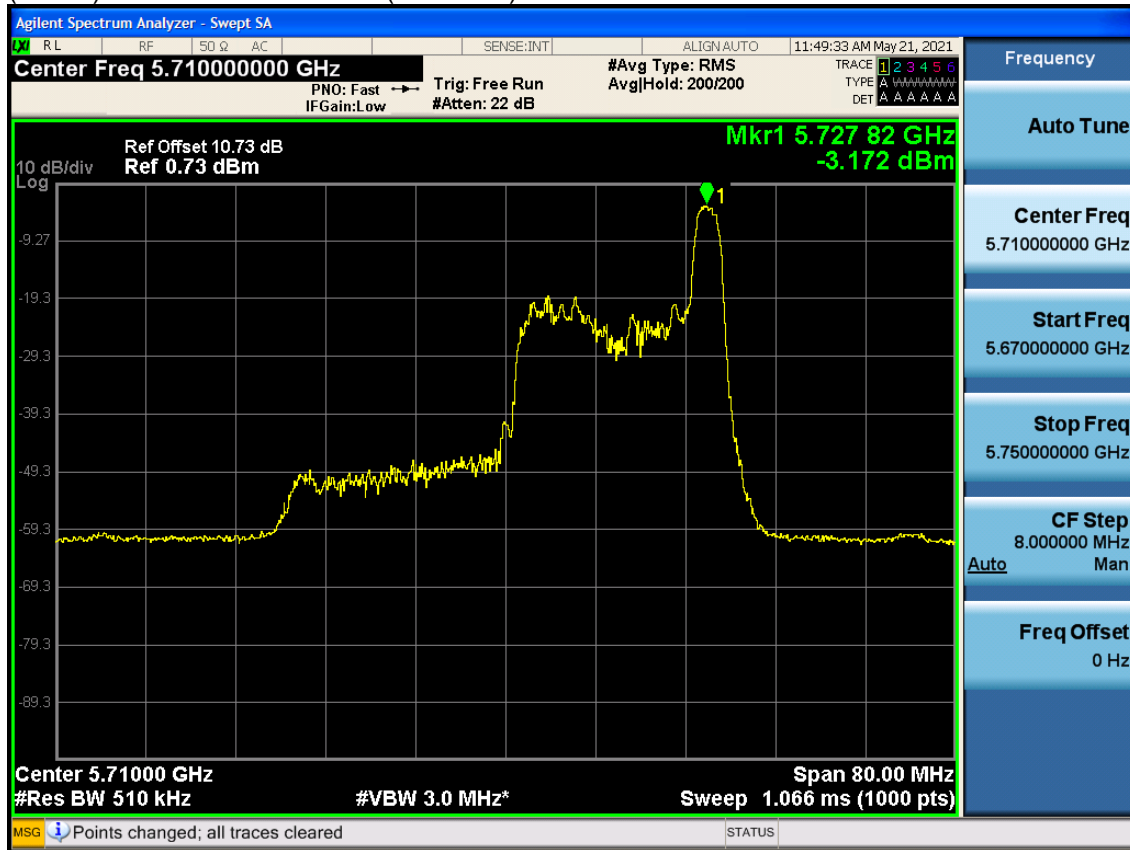


Reading Value (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
0.228	0.859	1.087

Note:

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

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

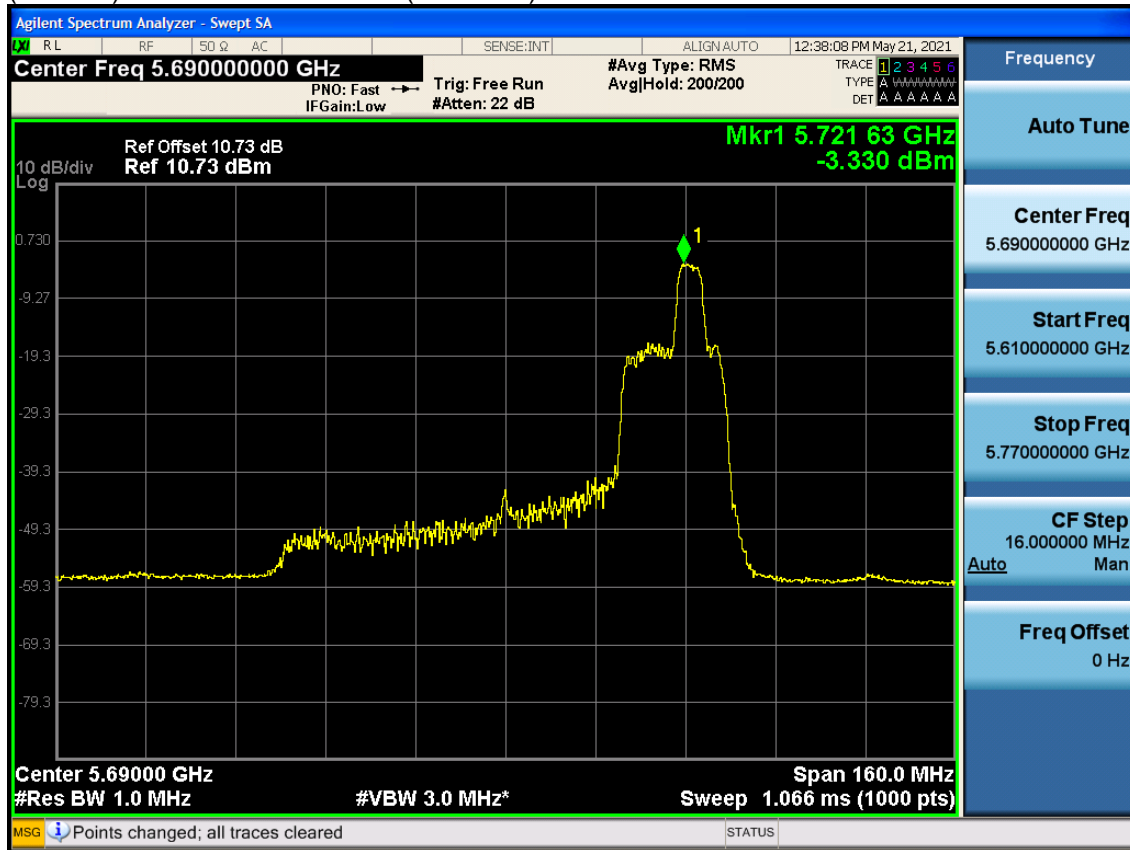


Reading Value (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
-3.172	0.859	-2.313

Note:

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

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



Frequency

Auto Tune

Center Freq
5.690000000 GHz

Start Freq
5.610000000 GHz

Stop Freq
5.770000000 GHz

CF Step
16.000000 MHz
Auto Man

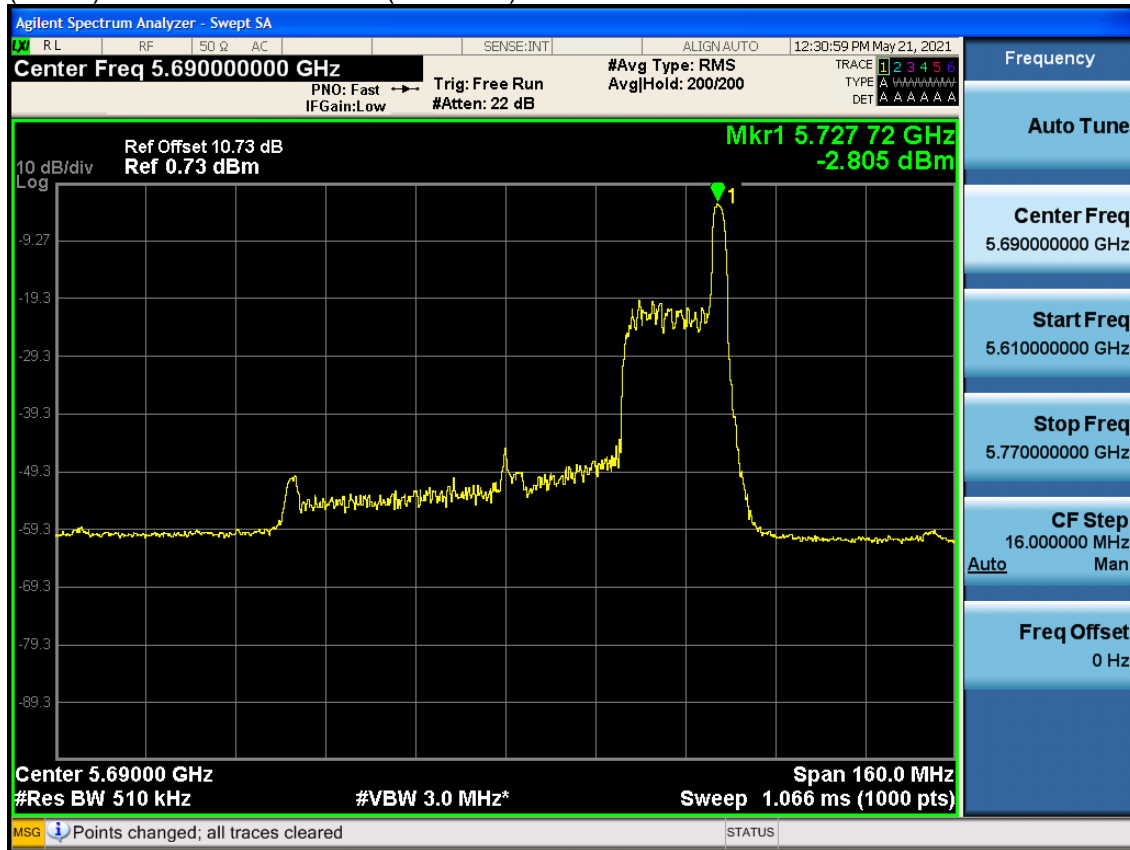
Freq Offset
0 Hz

Reading Value (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)
-3.330	1.368	-1.962

Note:

Total PSD (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 PSD (dBm)
-2.805	0.859	-1.946

Note:

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