

HCT Co., Ltd.

Appendix B: 802.11ax Test Plot

FCC ID A3LSMG990E

REVISION HISTORY

The revision history for this document is shown in table.

Revision No.	Date of Issue	Description
0	September 17, 2021	Initial Release

Note:

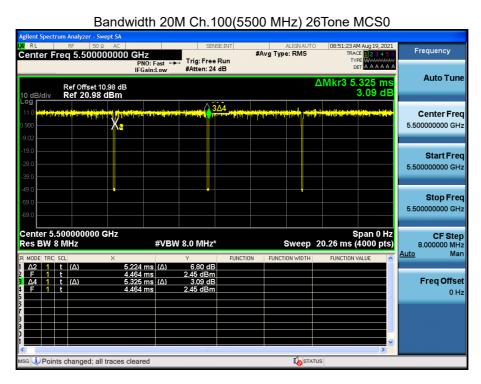
In order to simplify the report, attached plots were only the most lowest datarate.

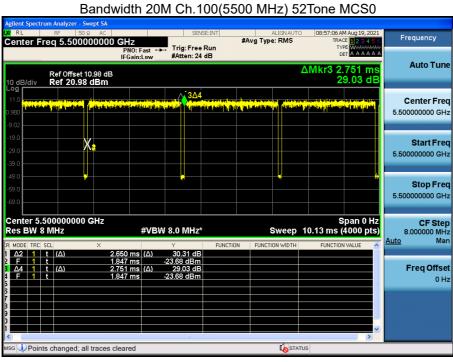


1. Duty Cycle

Note:

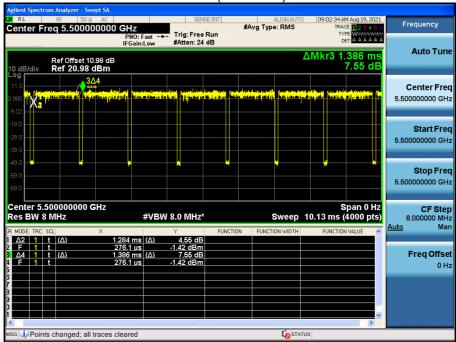
In order to simplify the report, attached plots were only the most lowest datarate.



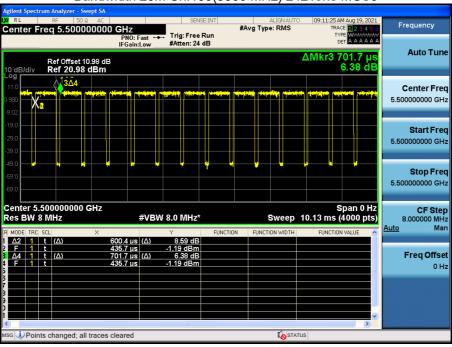






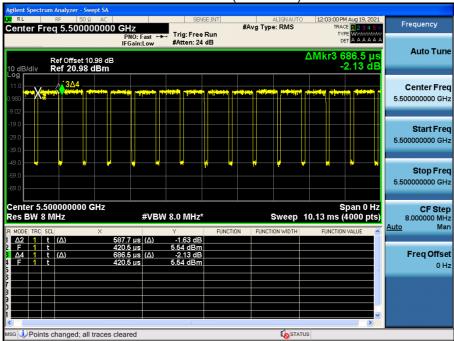


Bandwidth 20M Ch.100(5500 MHz) 242Tone MCS0

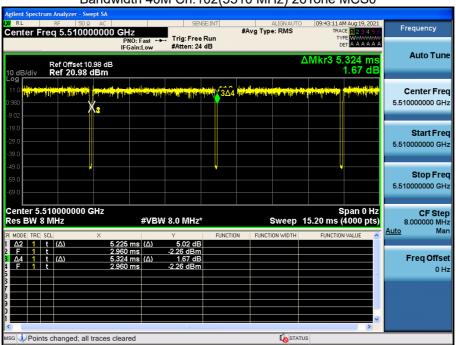




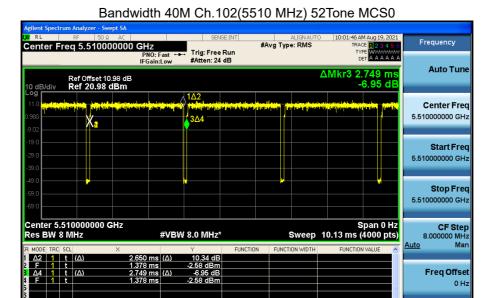
Bandwidth 20M Ch.100(5500 MHz) SU MCS0



Bandwidth 40M Ch.102(5510 MHz) 26Tone MCS0

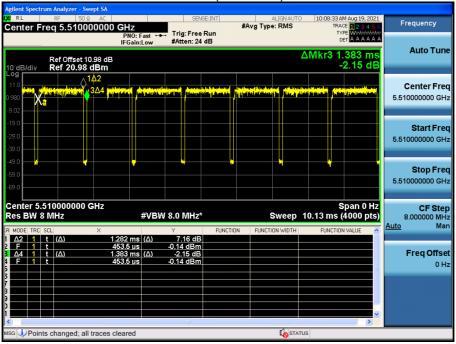




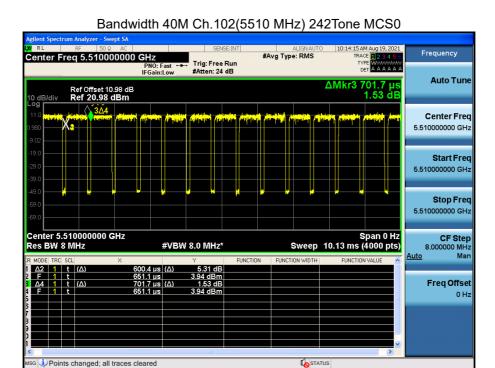


Bandwidth 40M Ch.102(5510 MHz) 106Tone MCS0

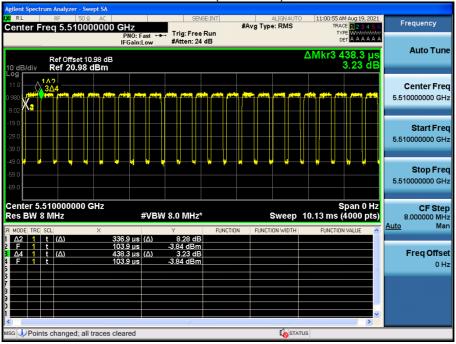
G Points changed; all traces cleared





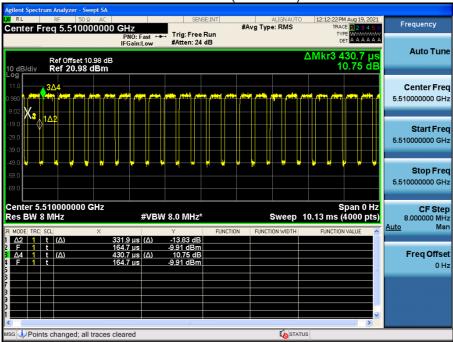


Bandwidth 40M Ch.102(5510 MHz) 484Tone MCS0

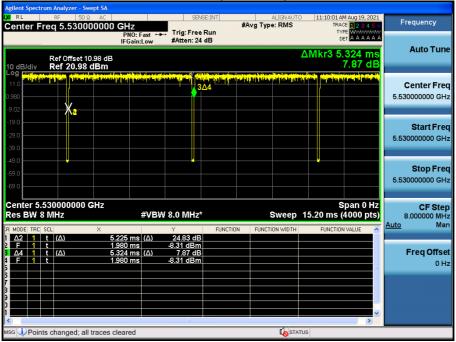




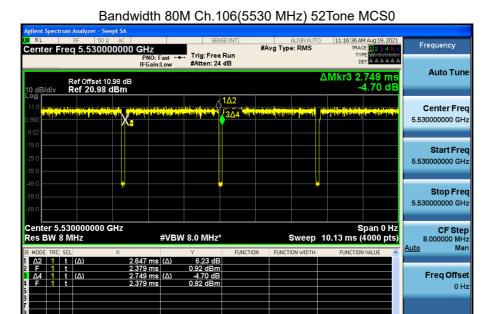
Bandwidth 40M Ch.102(5510 MHz) SU MCS0



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

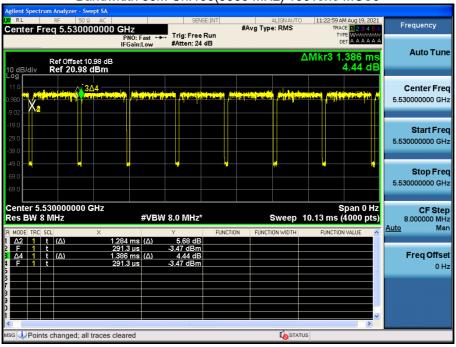




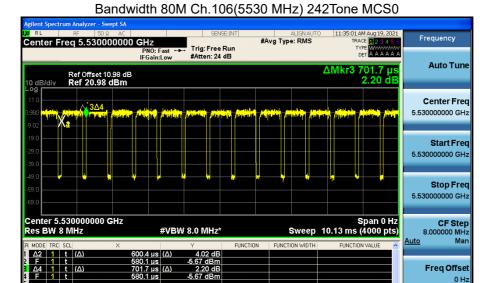


Bandwidth 80M Ch.106(5530 MHz) 106Tone MCS0

G Points changed; all traces cleared

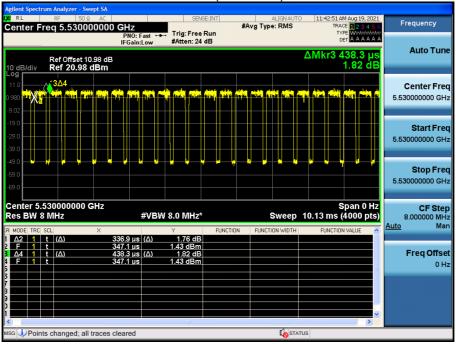






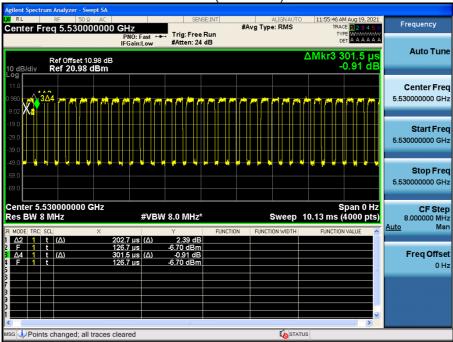
Bandwidth 80M Ch.106(5530 MHz) 484Tone MCS0

GG Points changed; all traces cleared

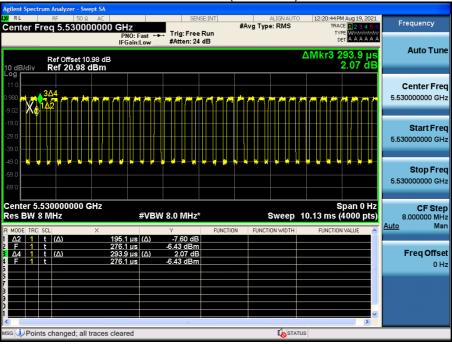








Bandwidth 80M Ch.106(5530 MHz) SU MCS0

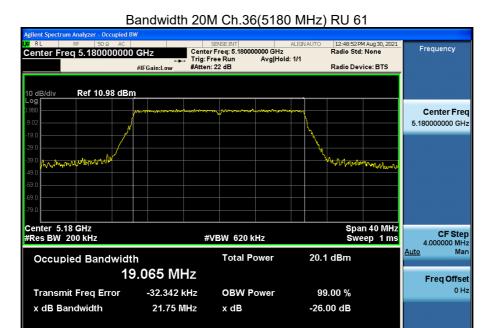


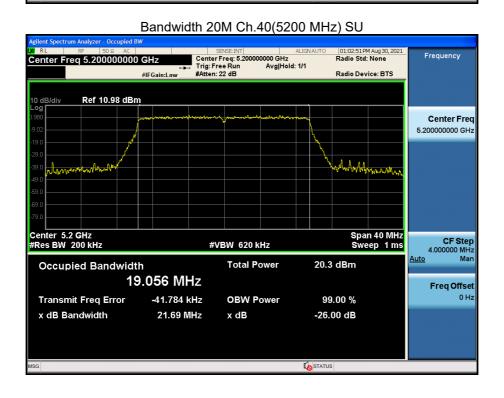


2. 26 dB Bandwidth

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.









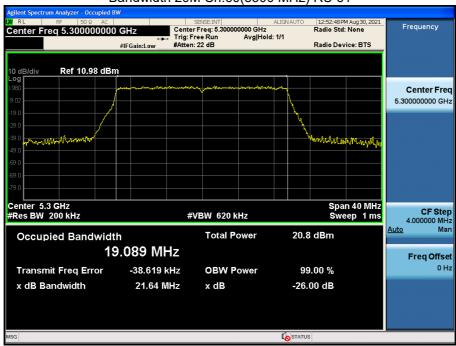


Bandwidth 20M Ch.52(5260 MHz) SU









Bandwidth 20M Ch.64(5320 MHz) SU





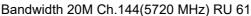




Bandwidth 20M Ch.120(5600 MHz) SU







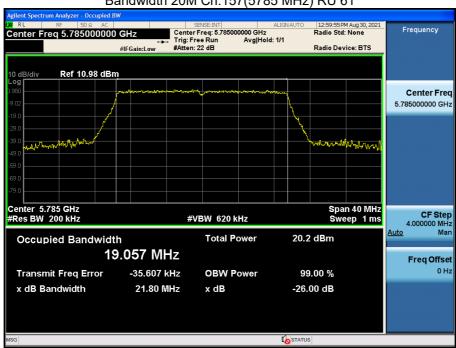


Bandwidth 20M Ch.149(5745 MHz) RU 61





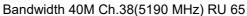




Bandwidth 20M Ch.165(5825 MHz) RU 61





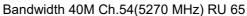




Bandwidth 40M Ch.46(5230 MHz) RU 65





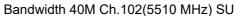




Bandwidth 40M Ch.62(5310 MHz) RU 65









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









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







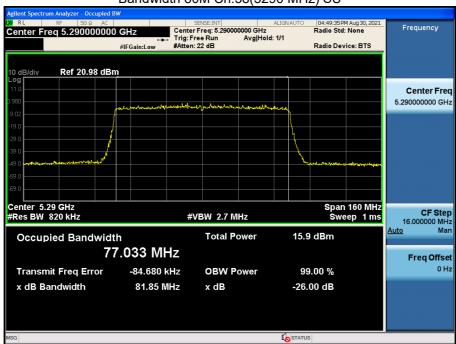


Bandwidth 80M Ch.42(5210 MHz) RU 67









Bandwidth 80M Ch.106(5530 MHz) SU





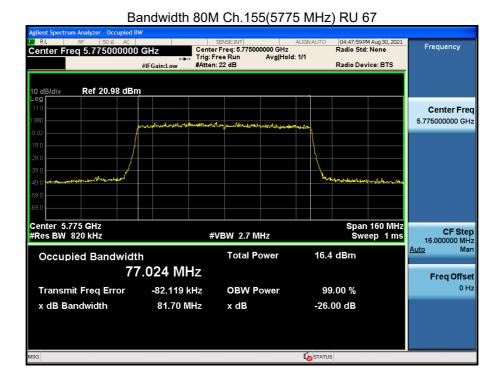




Bandwidth 80M Ch.138(5690 MHz) RU 67







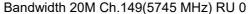


3. 6 dB Bandwidth

Note:

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

3.1 MIMO Ant1

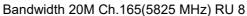


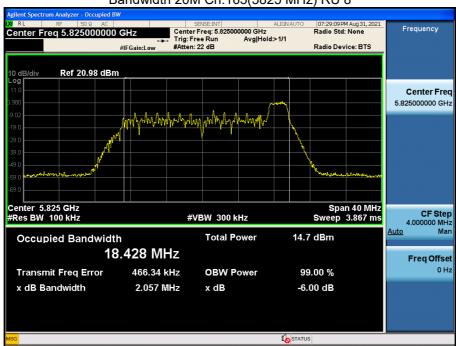


Bandwidth 20M Ch.157(5785 MHz) RU 8

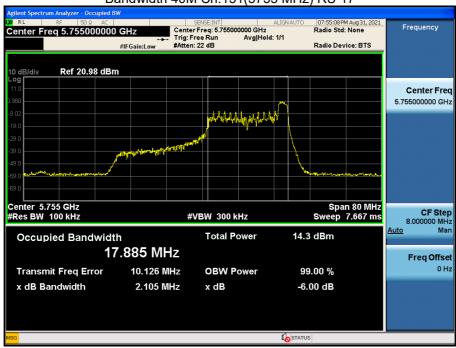








Bandwidth 40M Ch.151(5755 MHz) RU 17









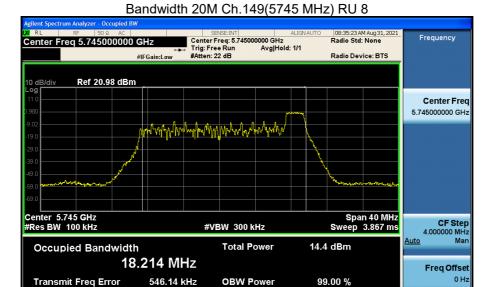
Bandwidth 80M Ch.155(5775 MHz) RU 0





3.2 MIMO Ant2

x dB Bandwidth



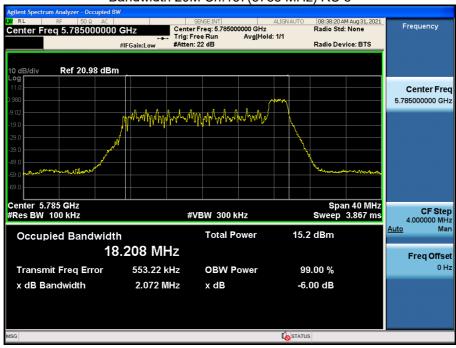
Bandwidth 20M Ch.157(5785 MHz) RU 8

x dB

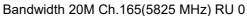
-6.00 dB

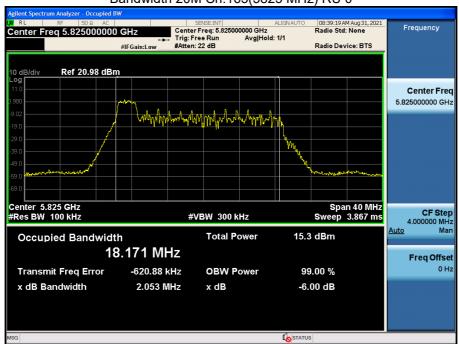
STATUS

2.099 MHz







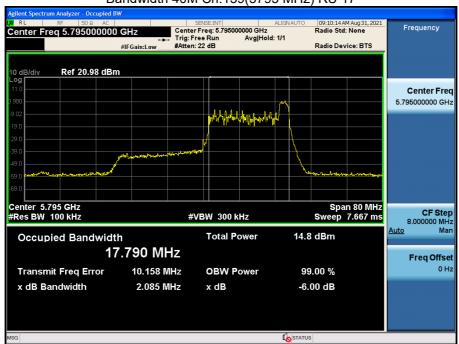


Bandwidth 40M Ch.151(5755 MHz) RU 0









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



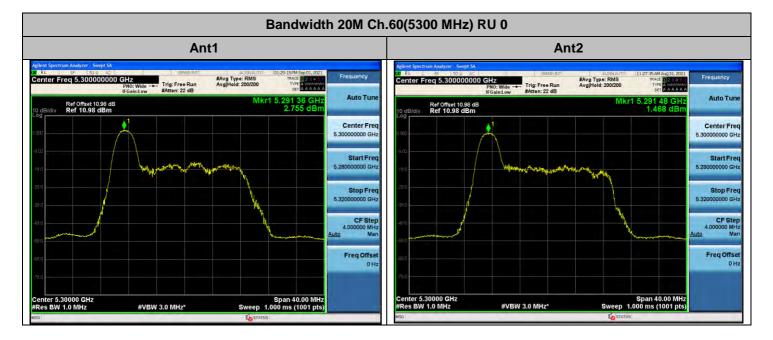


4. Power Spectral Density

Note:

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

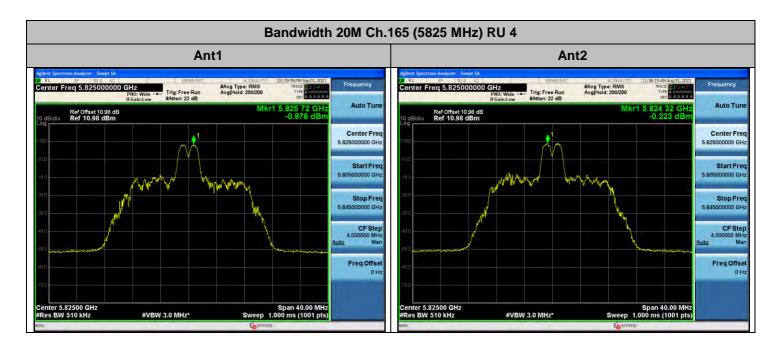
4.1 SUM (MIMO Ant 1 + MIMO Ant 2)



SUM PSD	Duty Cycle Factor	Total PSD
(dBm)	(dB)	(dBm)
5.169	0.859	6.028

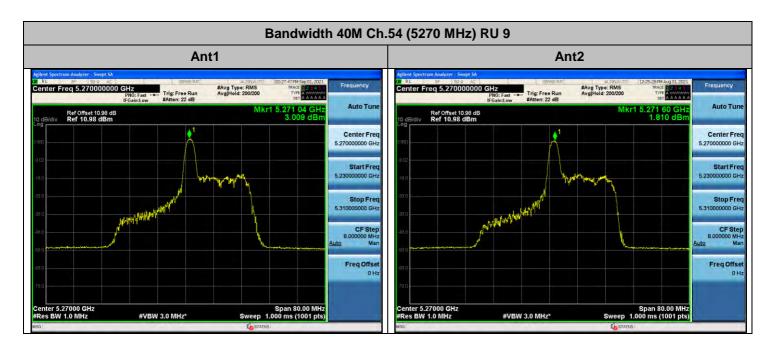
Note:





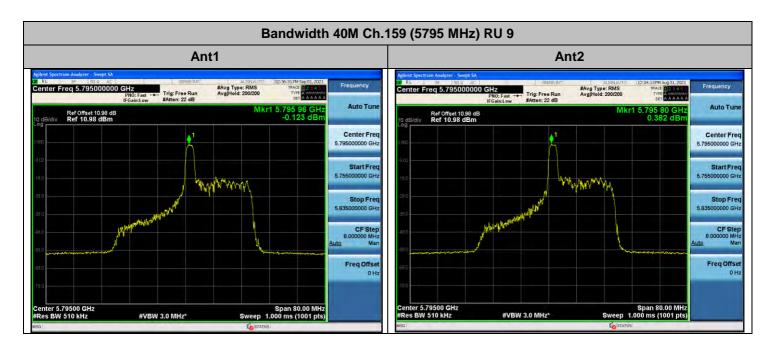
SUM PSD	Duty Cycle Factor	Total PSD
(dBm)	(dB)	(dBm)
2.472	0.859	3.331





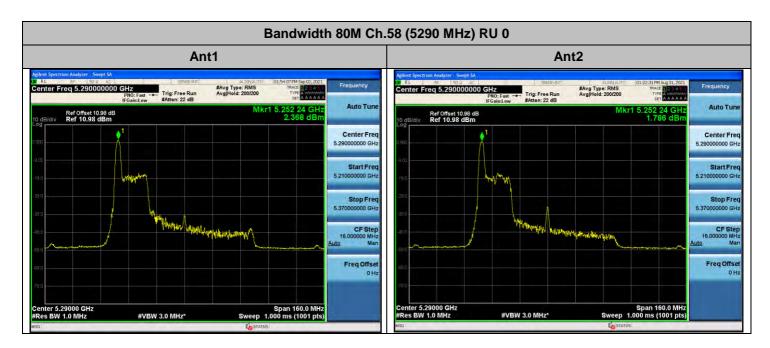
SUM PSD	Duty Cycle Factor	Total PSD
(dBm)	(dB)	(dBm)
5.461	0.859	6.320





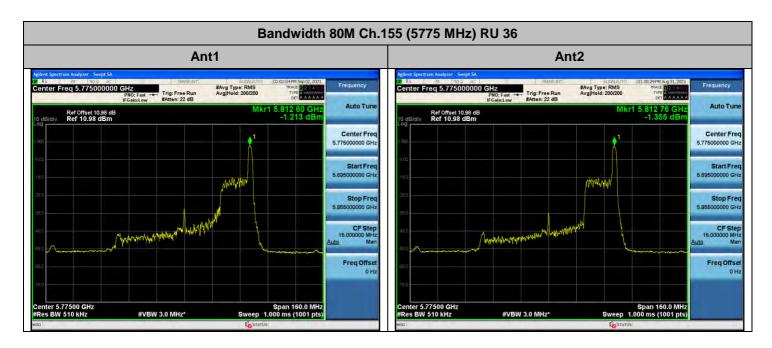
SUM PSD	Duty Cycle Factor	Total PSD
(dBm)	(dB)	(dBm)
3.147	0.859	4.006





SUM PSD	Duty Cycle Factor	Total PSD
(dBm)	(dB)	(dBm)
5.097	0.859	5.956





SUM PSD	Duty Cycle Factor	Total PSD
(dBm)	(dB)	(dBm)
1.727	0.859	2.585



5. Straddle Channel 5.1 26 dB Bandwidth

Note:

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

5.1.1 MIMO Ant1

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



UNII 2C	Straddle Frequency [MHz]	Measured Frequency [MHz]	26dB Bandwidth [MHz]
	5725	5709.04	15.96

Note:

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





UNII 3 Measured Frequency [MHz] Straddle Frequency [MHz] 26dB Bandwidth [MHz] 5730.84 5725 5.84

Note:

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





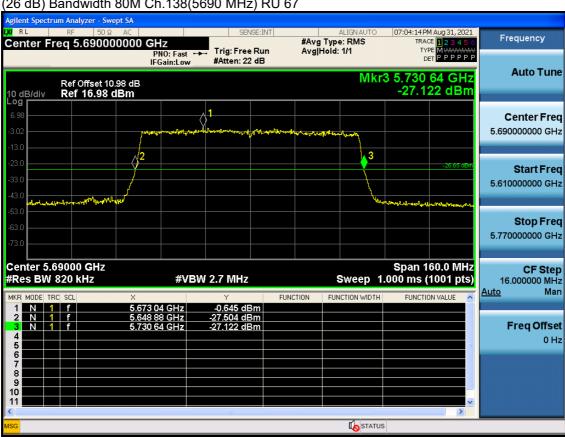
(26 dB) Bandwidth 40M Ch.142(5710 MHz) RU 65

UNII 2C	Straddle Frequency	Measured Frequency	26dB Bandwidth
	[MHz]	[MHz]	[MHz]
	5725	5689.68	35.32
UNII 3	Measured Frequency	Straddle Frequency	26dB Bandwidth
	[MHz]	[MHz]	[MHz]
- 111	5730.16	5725	5.16

Note:

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





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

UNII 3	Straddle Frequency [MHz]	Measured Frequency [MHz]	26dB Bandwidth [MHz]
	5725	5648.88	76.12

Note:

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





UNII 3 Measured Frequency [MHz] Straddle Frequency [MHz] 26dB Bandwidth [MHz] 5730.96 5725 5.96

Note:

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



5.1.2 MIMO Ant2

(26 dB) Bandwidth 20M Ch.144(5720 MHz) RU 53

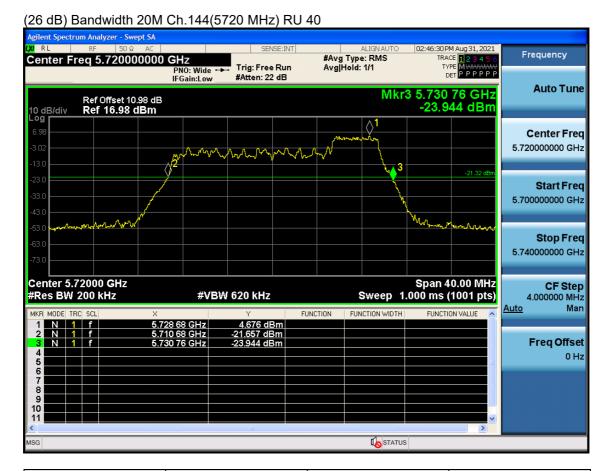


UNII 2C	Straddle Frequency [MHz]	Measured Frequency [MHz]	26dB Bandwidth [MHz]
	5725	5709.2	15.80

Note:

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





UNII 3 Measured Frequency [MHz] Straddle Frequency [MHz] 26dB Bandwidth [MHz] 5730.76 5725 5.76

Note:

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





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

UNII 2C	Straddle Frequency	Measured Frequency	26dB Bandwidth
	[MHz]	[MHz]	[MHz]
	5725	5690	35.00

Note:

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





UNII 3 Measured Frequency [MHz] Straddle Frequency [MHz] 26dB Bandwidth [MHz] 5730.08 5725 5.08

Note:

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





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

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

Note:

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





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

Note:

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



5.2 6 dB Bandwidth

Note:

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

5.2.1 MIMO Ant1

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



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

Note:





Measured Frequency
[MHz]Straddle Frequency
[MHz]6dB Bandwidth
[MHz]5727.0457252.04

Note:





Measured Frequency
[MHz]Straddle Frequency
[MHz]6dB Bandwidth
[MHz]5727.1257252.12

Note:



5.2.2 MIMO Ant2

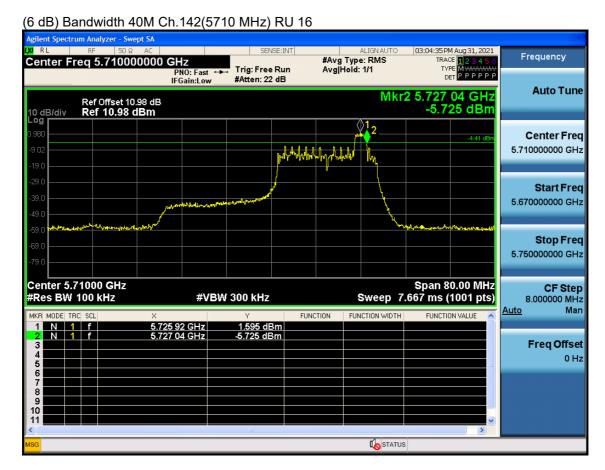
(6 dB) Bandwidth 20M Ch.144(5720 MHz) RU 7



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

Note:





Measured Frequency
[MHz]Straddle Frequency
[MHz]6dB Bandwidth
[MHz]5727.0457252.04

Note:





Measured Frequency
[MHz]Straddle Frequency
[MHz]6dB Bandwidth
[MHz]5727.1257252.12

Note:



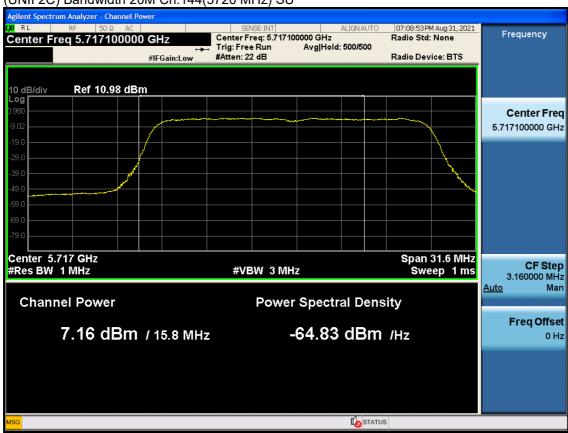
5.3 Output Power

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(5720 MHz) SU



Measured Value (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)
7.16	3.010	10.17

Note



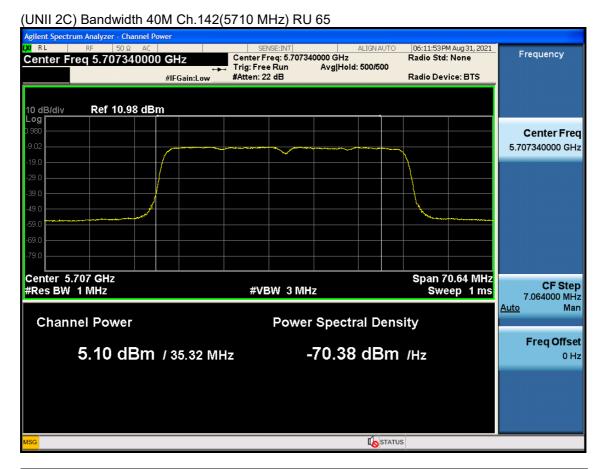


(UNII 3) Bandwidth 20M Ch.144(5720 MHz) RU 54

Measured Value	Duty Cycle Factor	Total Power
(dBm)	(dB)	(dBm)
4.53	2.083	6.61

Note:





Measured Value
(dBm)Duty Cycle Factor
(dB)Total Power
(dBm)5.103.2458.35

Note:





Measured Value	Duty Cycle Factor	Total Power
(dBm)	(dB)	(dBm)
2.34	1.379	3.72

Note:





Measured Value (dBm) Duty Cycle Factor (dB) Total Power (dBm) 4.83 3.010 7.84

Note:





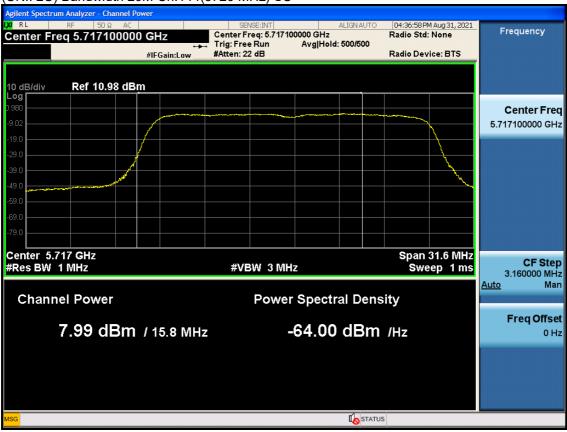
Measured Value (dBm) Duty Cycle Factor (dB) Total Power (dBm) 2.26 0.859 3.12

Note:



5.3.2 MIMO Ant2

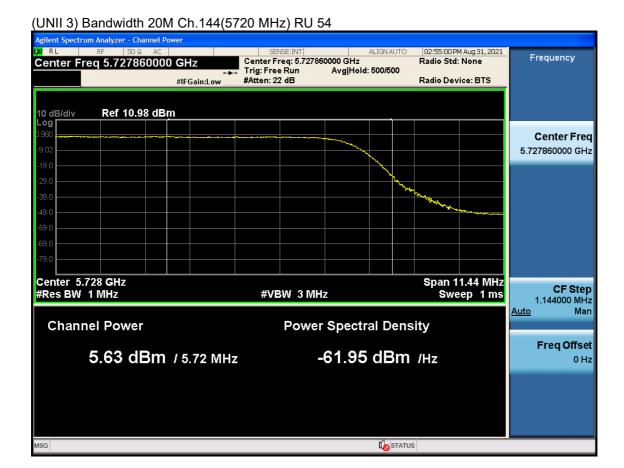
(UNII 2C) Bandwidth 20M Ch.144(5720 MHz) SU



Measured Value	Duty Cycle Factor	Total Power
(dBm)	(dB)	(dBm)
7.99	3.010	

Note:

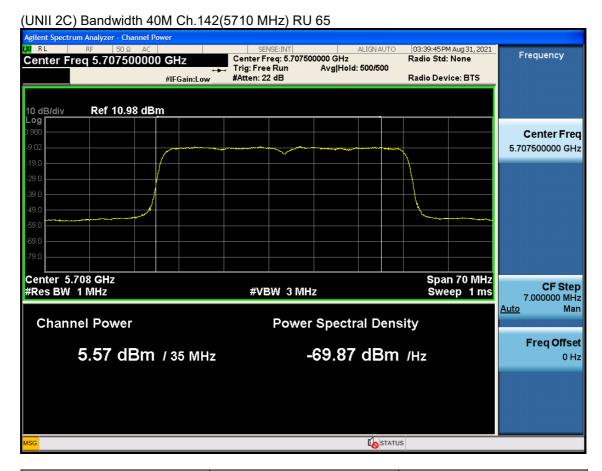




Measured Value	Duty Cycle Factor	Total Power
(dBm)	(dB)	(dBm)
5.63	2.083	7.71

Note:

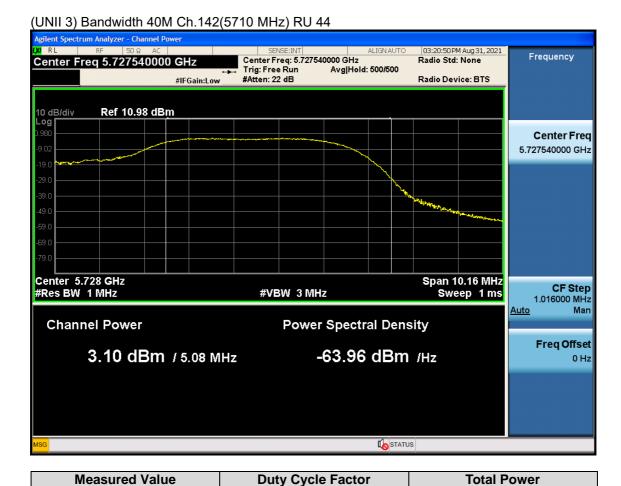




Measured Value	Duty Cycle Factor	Total Power
(dBm)	(dB)	(dBm)
5.57	3.245	

Note:





(dB)

1.379

(dBm)

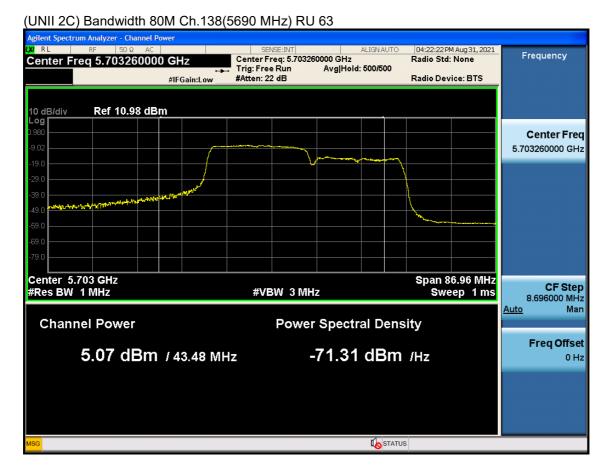
4.48

Note:

Measured Value (dBm)

3.10





Measured Value (dBm) Duty Cycle Factor (dB) Total Power (dBm) 5.07 3.010 8.08

Note:





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

Measured Value	Duty Cycle Factor	Total Power
(dBm)	(dB)	(dBm)
2.35	1.368	3.72

Note:



5.4 Power Spectral Density

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

5.4.1 MIMO Ant1

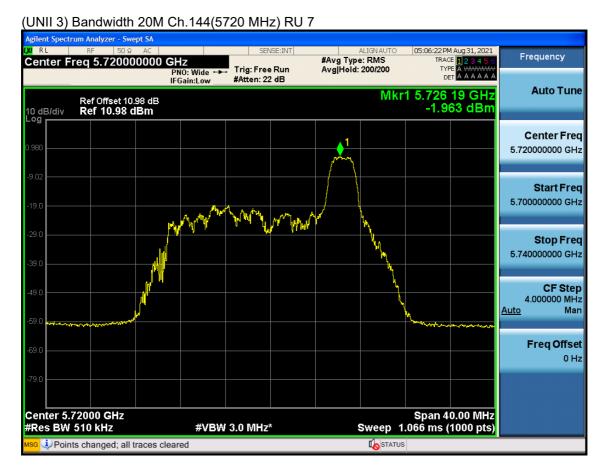
(UNII 2C) Bandwidth 20M Ch.144(5720 MHz) RU 53



Measured Value	Duty Cycle Factor	Total PSD
(dBm)	(dB)	(dBm)
-0.612	2.083	1.471

Note:





Measured Value (dBm) Duty Cycle Factor (dB) Total PSD (dBm) -1.963 0.859 -1.104

Note:





Measured Value	Duty Cycle Factor	Total PSD
(dBm)	(dB)	(dBm)
1.225	0.859	

Note:





Measured Value (dBm) Duty Cycle Factor (dB) Total PSD (dBm) -2.580 0.859 -1.721

Note:





Measured Value (dBm) Duty Cycle Factor (dB) Total PSD (dBm) -2.855 1.368 -1.487

Note:





Measured Value (dBm) Duty Cycle Factor (dB) Total PSD (dBm) -2.389 0.859 -1.530

Note:



5.4.2 MIMO Ant2

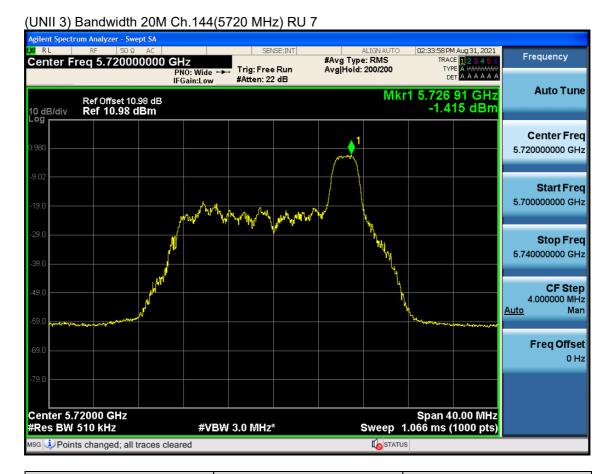
(UNII 2C) Bandwidth 20M Ch.144(5720 MHz) RU 54



Measured Value	Duty Cycle Factor	Total PSD
(dBm)	(dB)	(dBm)
0.668	2.083	2.751

Note:





Measured Value (dBm) Duty Cycle Factor (dB) Total PSD (dBm) -1.415 0.859 -0.556

Note:

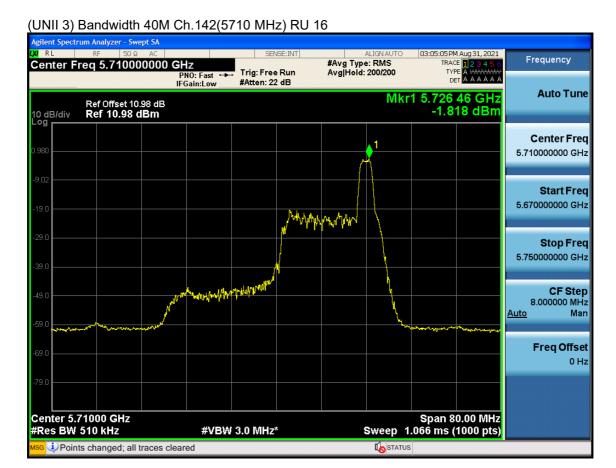




Measured Value (dBm) Duty Cycle Factor (dB) Total PSD (dBm) 1.148 0.859 2.007

Note:





Measured Value (dBm) Duty Cycle Factor (dB) Total PSD (dBm) -1.818 0.859 -0.959

Note:





Measured Value (dBm) Duty Cycle Factor (dB) Total PSD (dBm) -2.142 1.368 -0.774

Note:





Measured Value (dBm) Duty Cycle Factor (dB) Total PSD (dBm) -2.515 0.859 -1.656

Note: