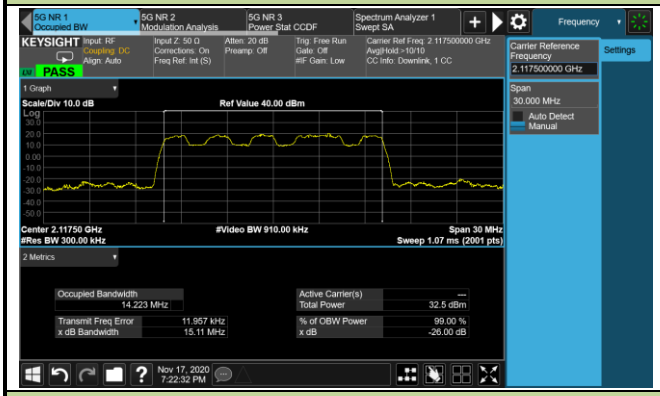
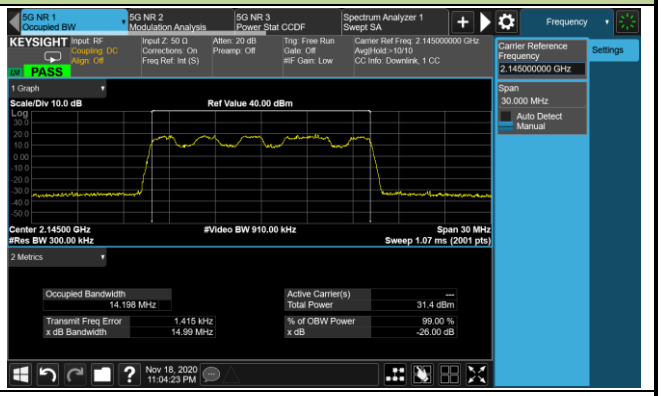
15MHz Channel Bandwidth - QPSK

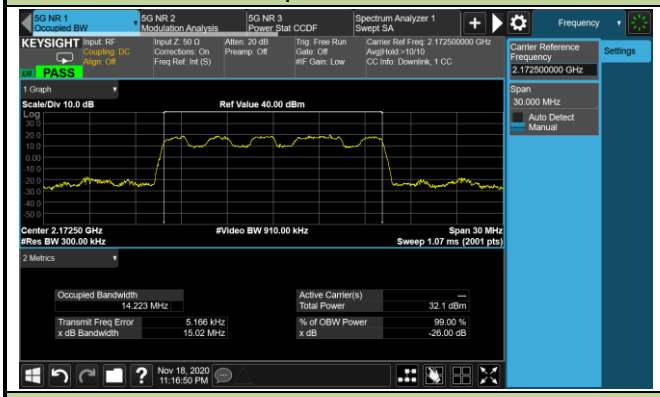
Bottom Channel



Middle Channel

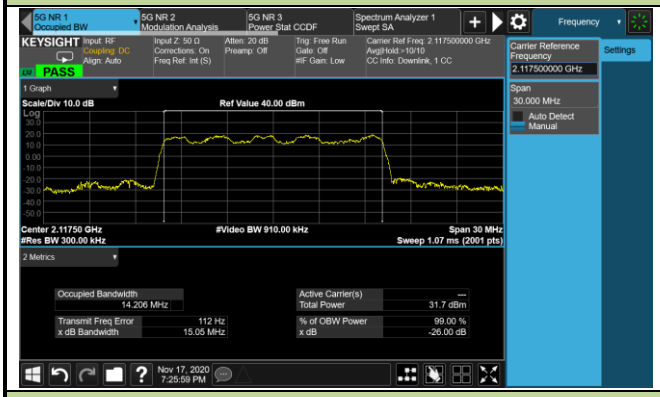


Top Channel

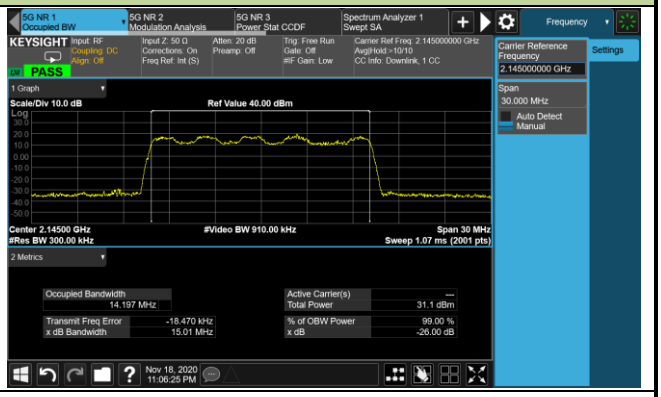


15MHz Channel Bandwidth - 16QAM

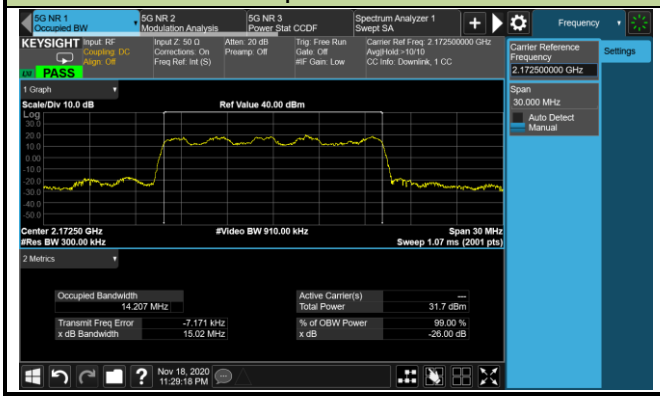
Bottom Channel

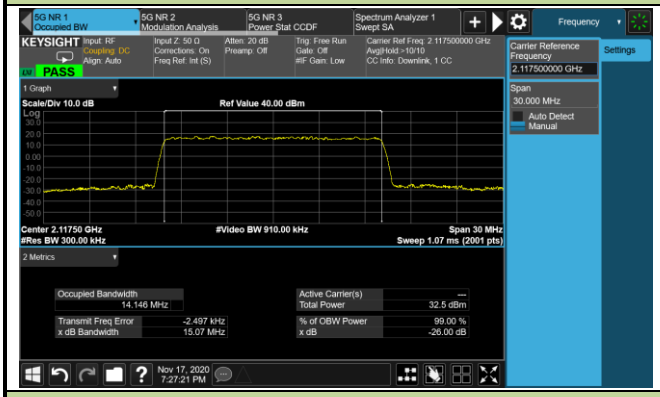
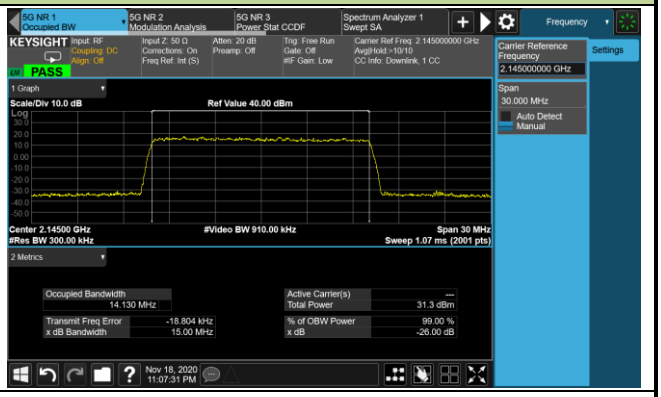
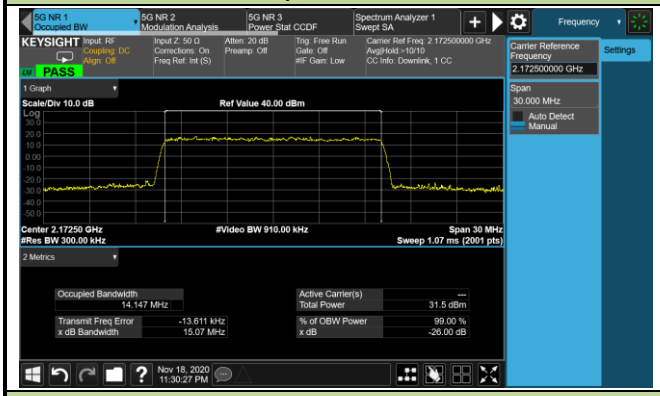


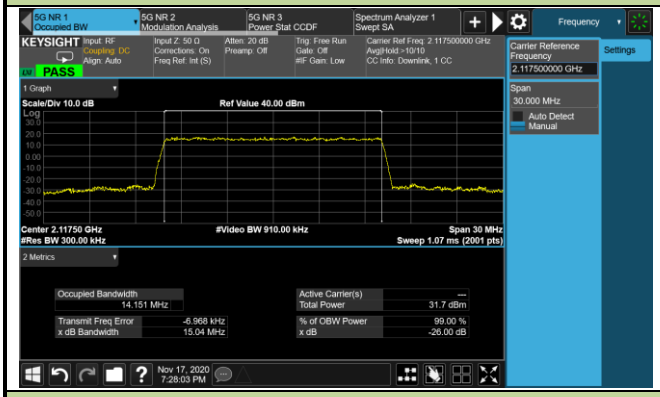
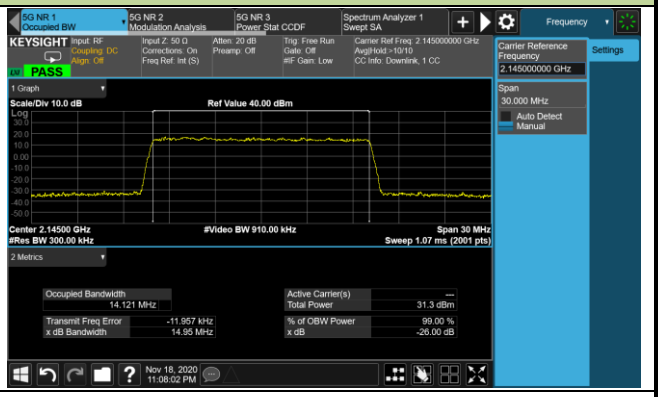
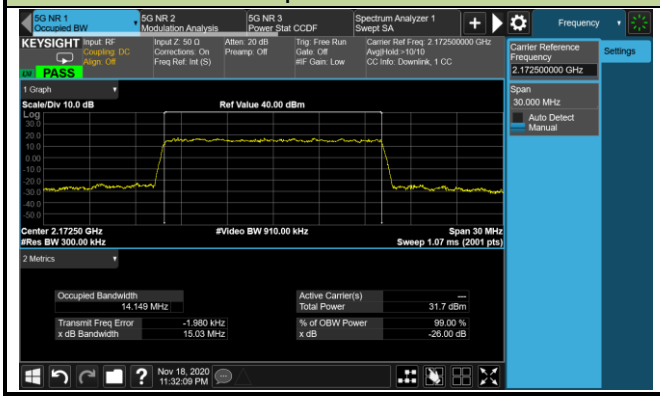
Middle Channel

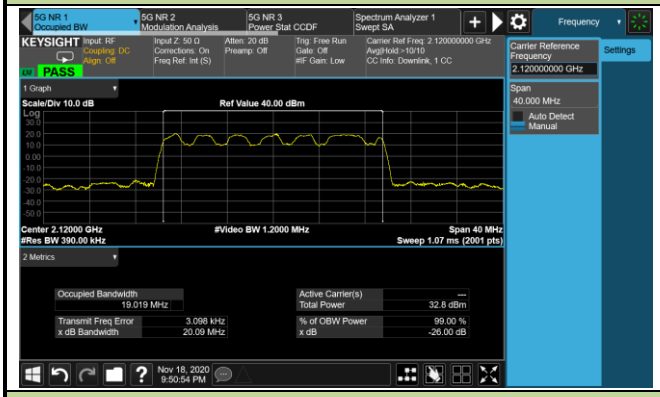
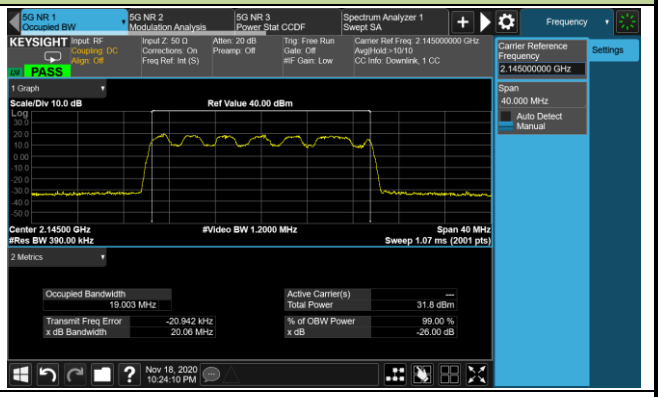
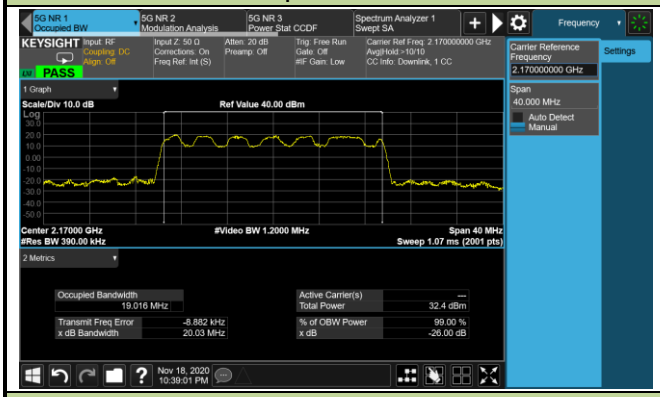


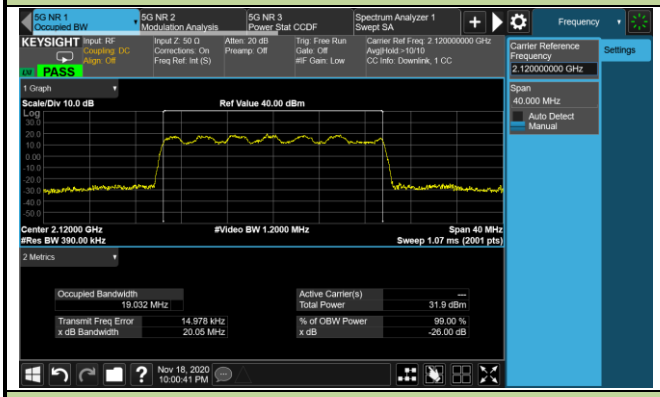
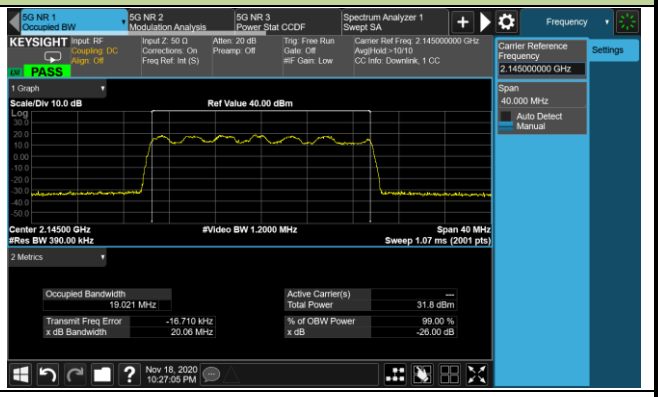
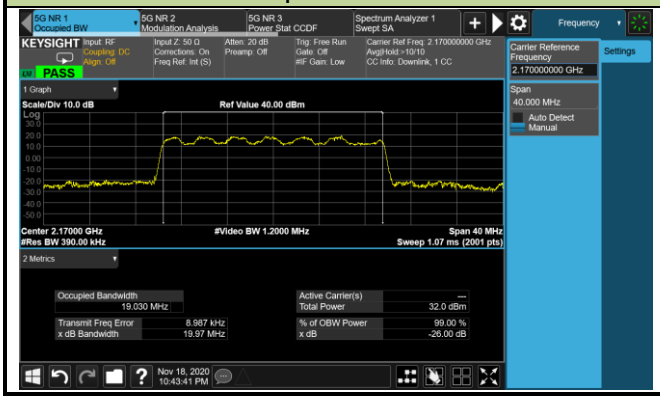
Top Channel

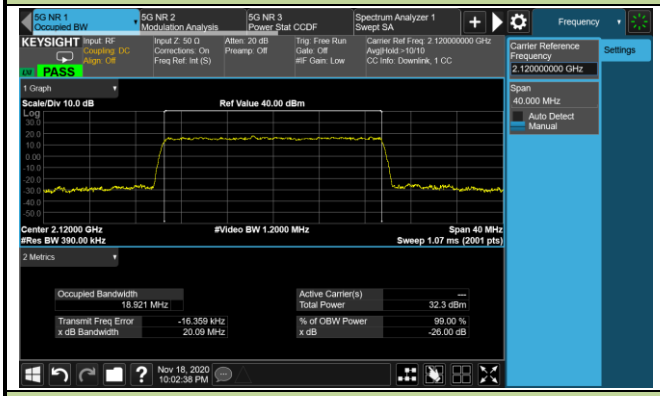
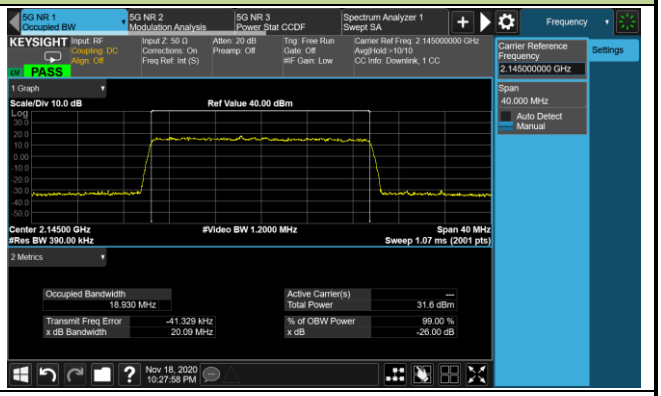
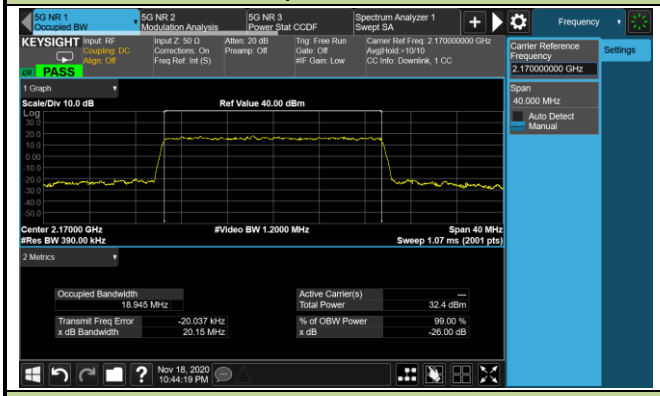


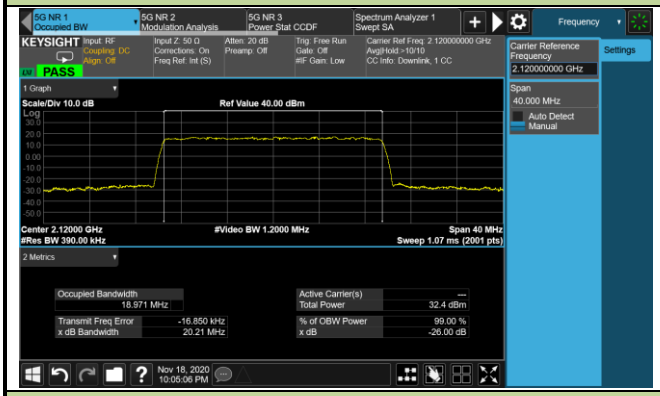
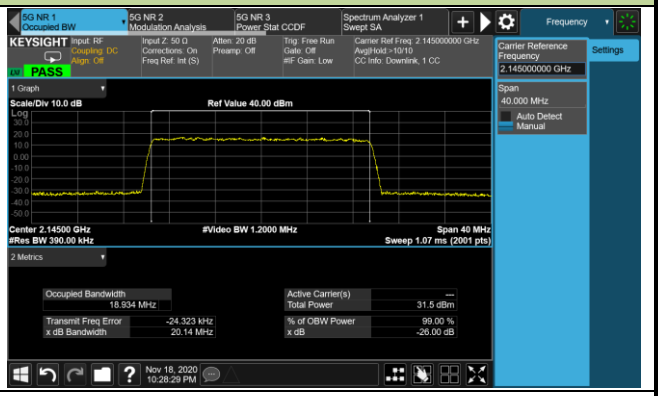
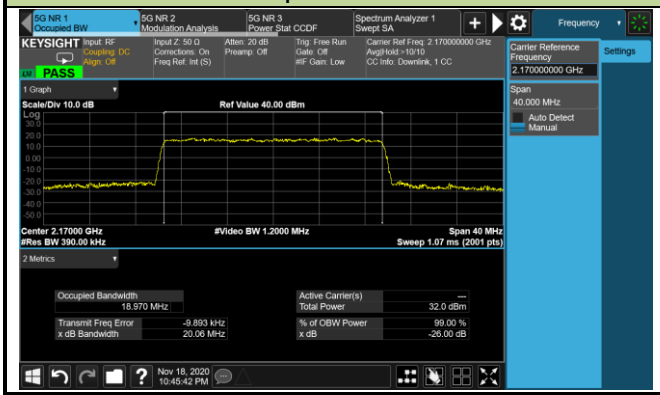
15MHz Channel Bandwidth - 64QAM	
Bottom Channel	Middle Channel
	
Top Channel	
	

15MHz Channel Bandwidth - 256QAM	
Bottom Channel	Middle Channel
	
Top Channel	
	

20MHz Channel Bandwidth - QPSK	
Bottom Channel	Middle Channel
	
Top Channel	
	

20MHz Channel Bandwidth - 16QAM	
Bottom Channel	Middle Channel
	
Top Channel	
	

20MHz Channel Bandwidth - 64QAM	
Bottom Channel	Middle Channel
	
Top Channel	
	

20MHz Channel Bandwidth - 256QAM	
Bottom Channel	Middle Channel
	
Top Channel	
	

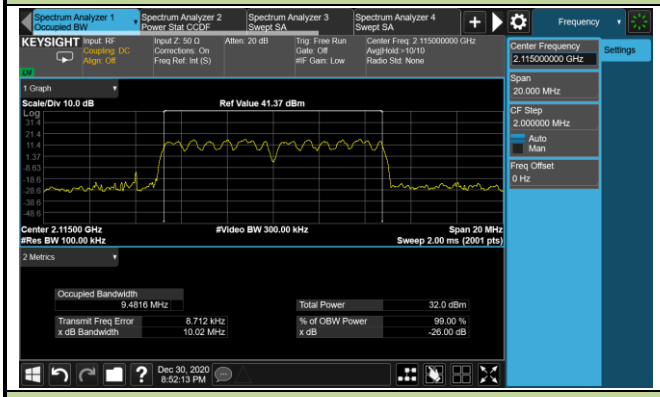
Product	AirScale Indoor Radio ASiR-pRRH	Test Engineer	Peter Xu
Test Site	SR2	Test Date	2020/12/30
Test Configuration	n66 (Multi Carrier)		

Frequency (MHz)	Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
QPSK			
2112.5 + 2117.5	5 + 5	10.02	9.48
2140.0 + 2145.0	5 + 5	10.01	9.46
2172.5 + 2177.5	5 + 5	9.96	9.46
2115.0 + 2125.0	10 + 10	20.00	19.09
2135.0 + 2145.0	10 + 10	19.96	18.95
2165.0 + 2175.0	10 + 10	19.99	19.02
2117.5 + 2132.5	15 + 15	30.12	29.06
2130.0 + 2145.0	15 + 15	29.85	29.04
2157.5 + 2172.5	15 + 15	29.86	29.09
2120.0 + 2140.0	20 + 20	39.82	38.77
2125.0 + 2145.0	20 + 20	39.84	38.78
2150.0 + 2170.0	20 + 20	39.81	38.85
16QAM			
2112.5 + 2117.5	5 + 5	10.00	9.47
2140.0 + 2145.0	5 + 5	9.96	9.47
2172.5 + 2177.5	5 + 5	9.98	9.47
2115.0 + 2125.0	10 + 10	19.96	19.11
2135.0 + 2145.0	10 + 10	19.96	19.10
2165.0 + 2175.0	10 + 10	19.97	19.11
2117.5 + 2132.5	15 + 15	30.11	29.02
2130.0 + 2145.0	15 + 15	29.81	29.00
2157.5 + 2172.5	15 + 15	29.90	29.06
2120.0 + 2140.0	20 + 20	39.93	38.79
2125.0 + 2145.0	20 + 20	39.85	38.77
2150.0 + 2170.0	20 + 20	39.85	38.85

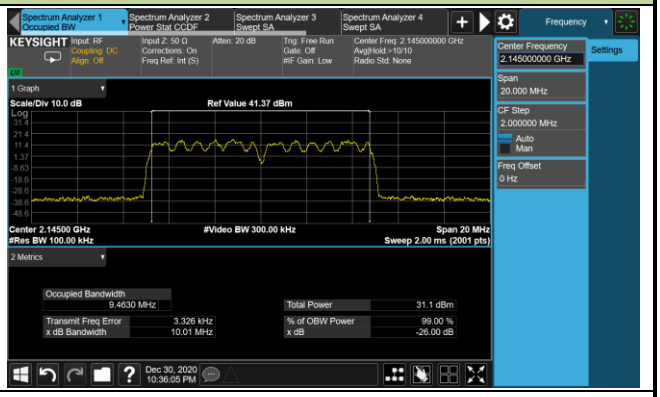
Frequency (MHz)	Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
64QAM			
2112.5 + 2117.5	5 + 5	10.01	9.45
2140.0 + 2145.0	5 + 5	9.99	9.43
2172.5 + 2177.5	5 + 5	9.98	9.42
2115.0 + 2125.0	10 + 10	20.03	19.19
2135.0 + 2145.0	10 + 10	20.00	19.21
2165.0 + 2175.0	10 + 10	20.00	19.22
2117.5 + 2132.5	15 + 15	30.11	28.97
2130.0 + 2145.0	15 + 15	29.87	28.92
2157.5 + 2172.5	15 + 15	29.86	28.99
2120.0 + 2140.0	20 + 20	39.94	38.66
2125.0 + 2145.0	20 + 20	39.85	38.68
2150.0 + 2170.0	20 + 20	39.88	38.74
256QAM			
2112.5 + 2117.5	5 + 5	9.98	9.43
2140.0 + 2145.0	5 + 5	9.96	9.41
2172.5 + 2177.5	5 + 5	9.99	9.43
2115.0 + 2125.0	10 + 10	20.09	19.20
2135.0 + 2145.0	10 + 10	20.09	19.18
2165.0 + 2175.0	10 + 10	20.03	19.21
2117.5 + 2132.5	15 + 15	30.09	28.99
2130.0 + 2145.0	15 + 15	29.85	28.97
2157.5 + 2172.5	15 + 15	29.90	28.97
2120.0 + 2140.0	20 + 20	39.88	38.70
2125.0 + 2145.0	20 + 20	39.93	38.66
2150.0 + 2170.0	20 + 20	39.93	38.74

5 + 5MHz Channel Bandwidth - QPSK

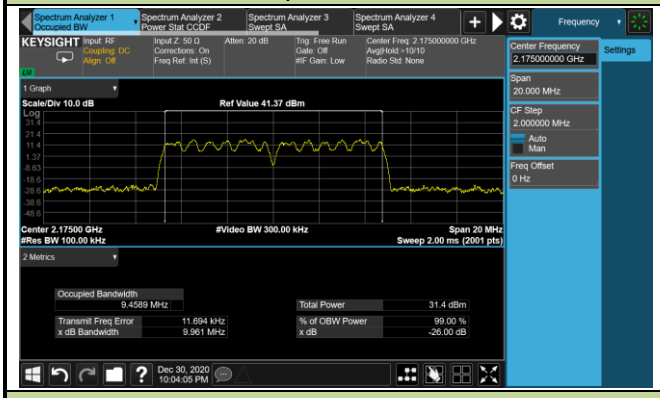
Bottom Channel



Middle Channel

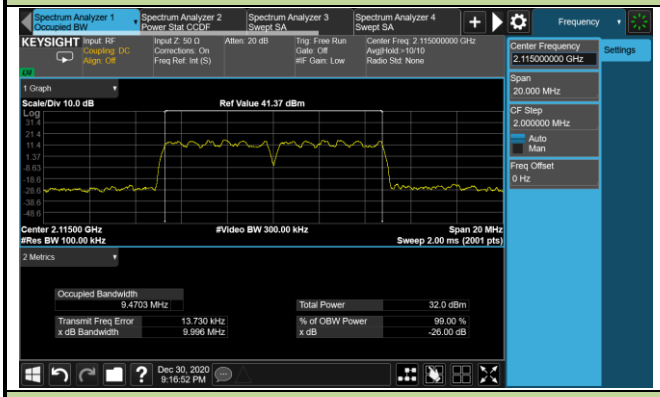


Top Channel

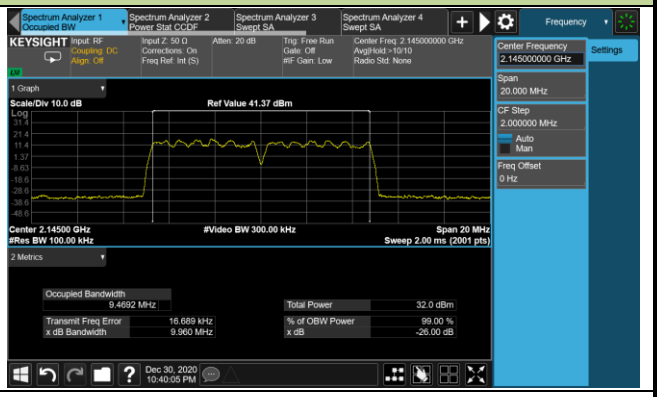


5 + 5MHz Channel Bandwidth - 16QAM

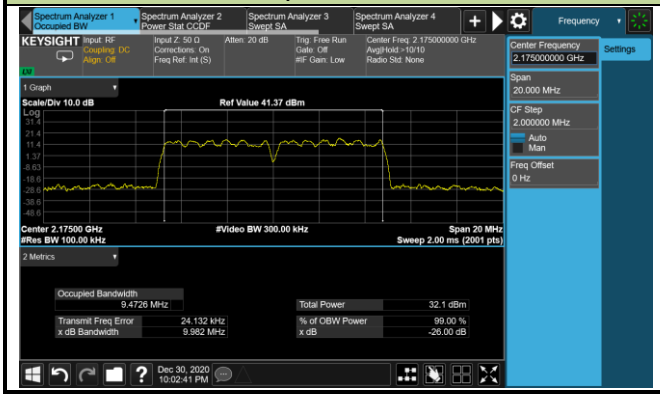
Bottom Channel

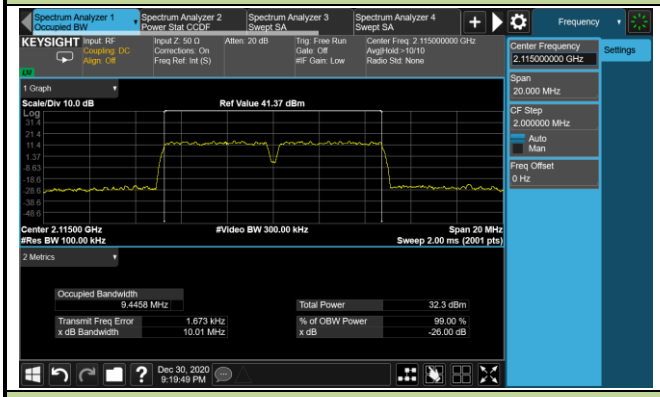
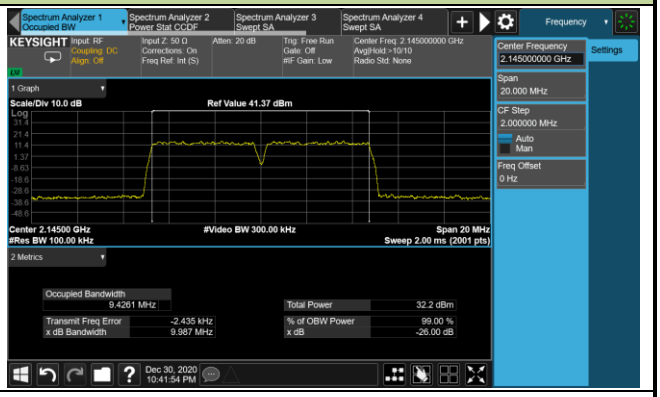
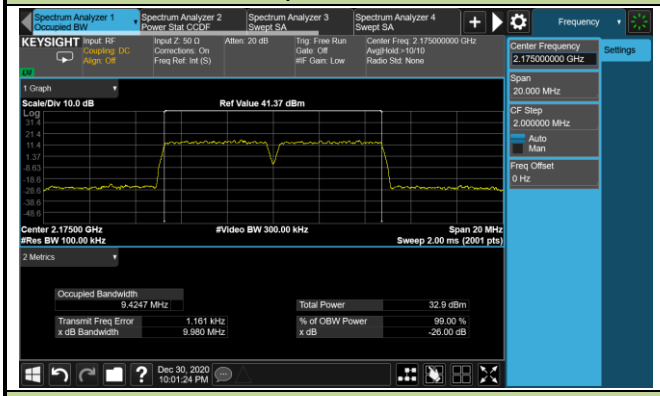


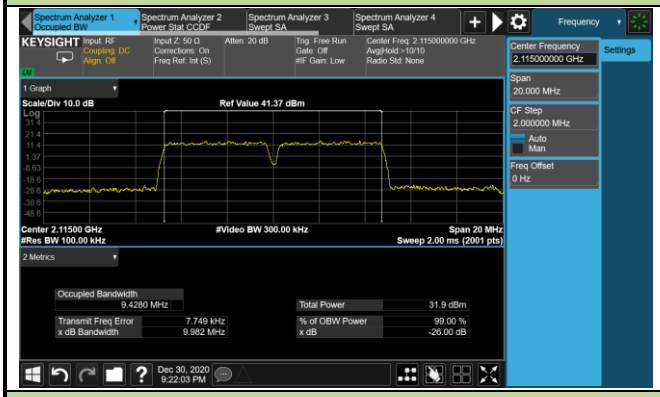
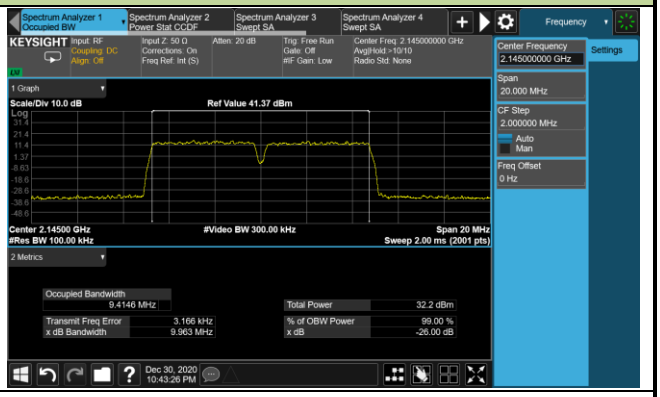
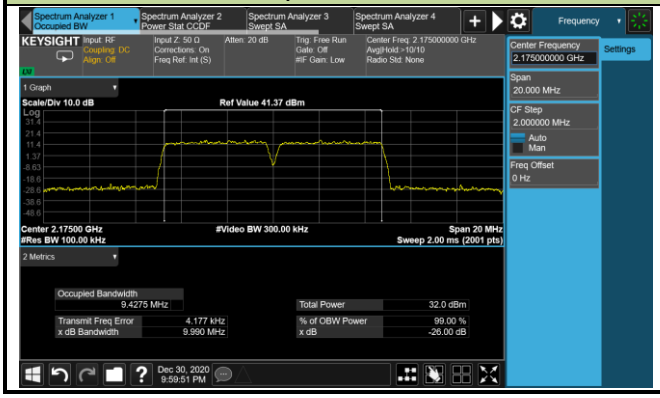
Middle Channel



Top Channel

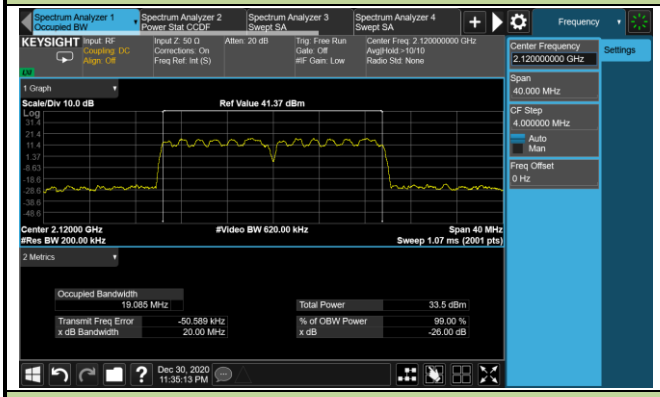


5 + 5MHz Channel Bandwidth - 64QAM	
Bottom Channel	Middle Channel
	
Top Channel	
	

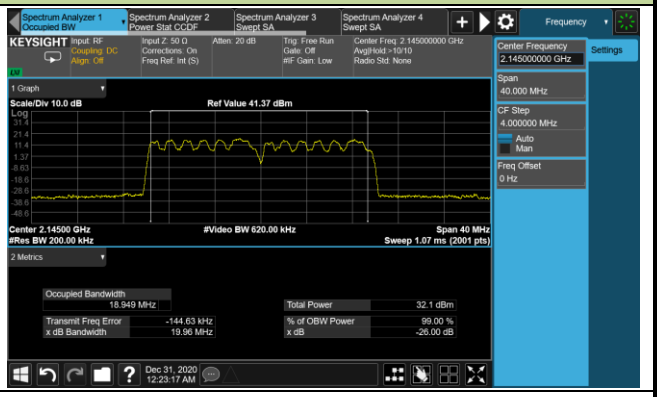
5 + 5MHz Channel Bandwidth - 256QAM	
Bottom Channel	Middle Channel
	
Top Channel	
	

10 + 10MHz Channel Bandwidth - QPSK

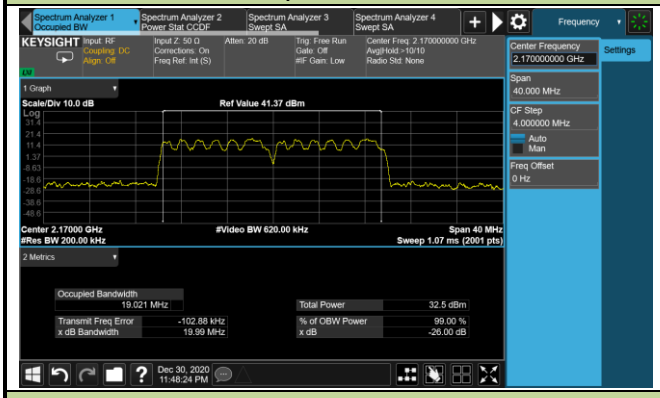
Bottom Channel



Middle Channel

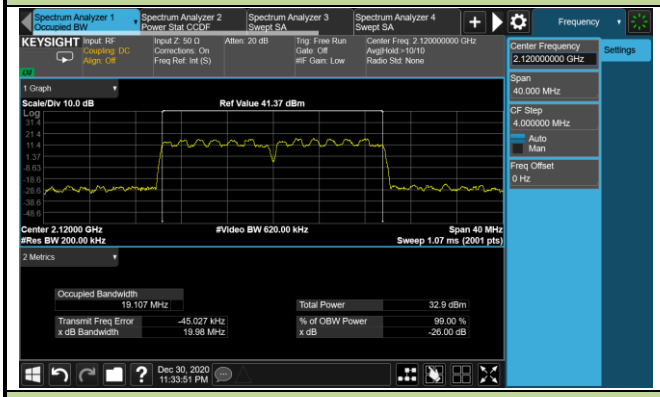


Top Channel

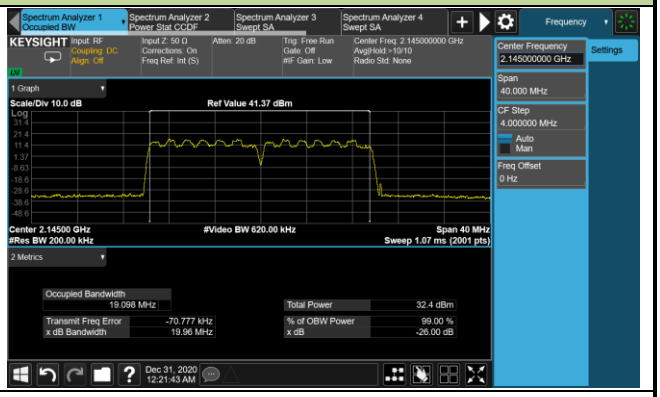


10 + 10MHz Channel Bandwidth - 16QAM

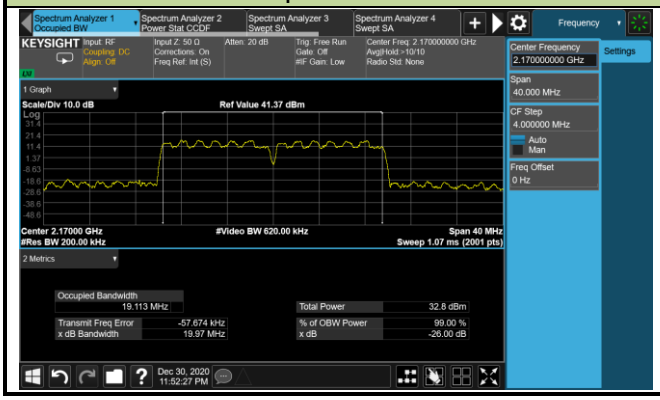
Bottom Channel



Middle Channel

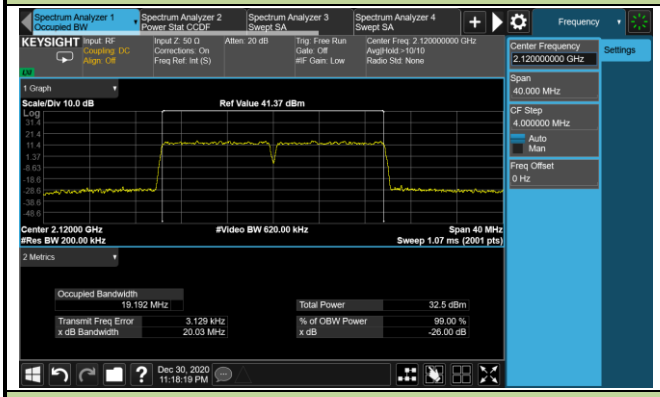


Top Channel

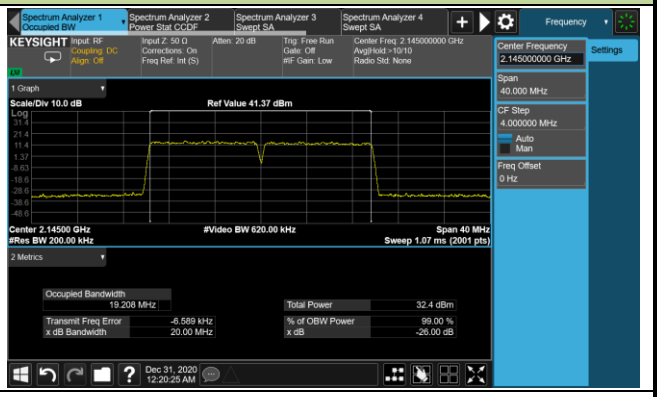


10 + 10MHz Channel Bandwidth - 64QAM

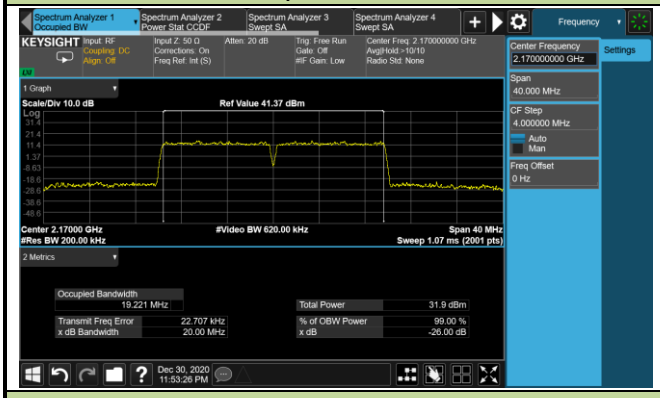
Bottom Channel



Middle Channel

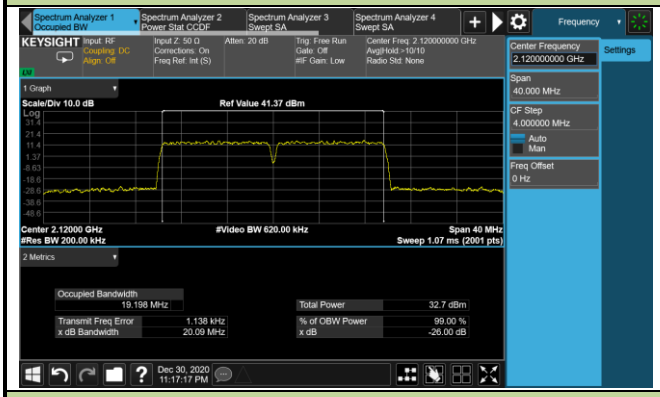


Top Channel

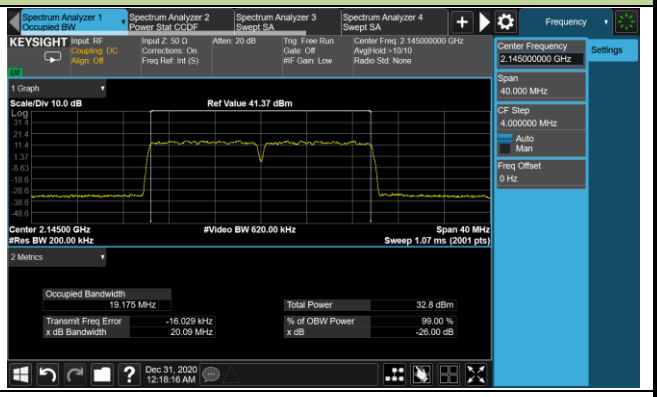


10 + 10MHz Channel Bandwidth - 256QAM

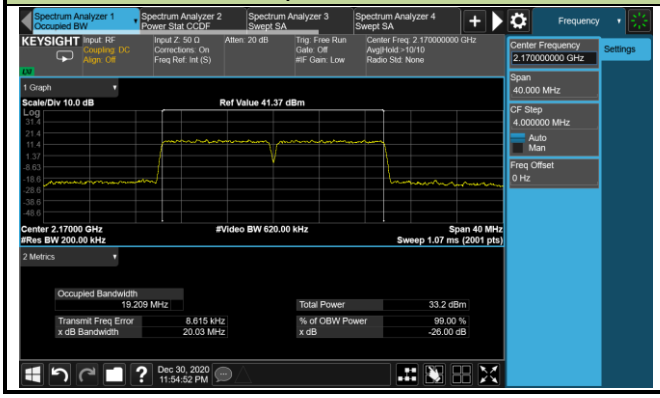
Bottom Channel



Middle Channel

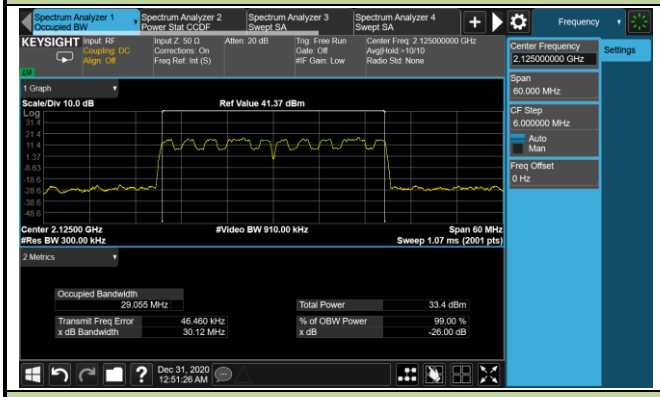


Top Channel

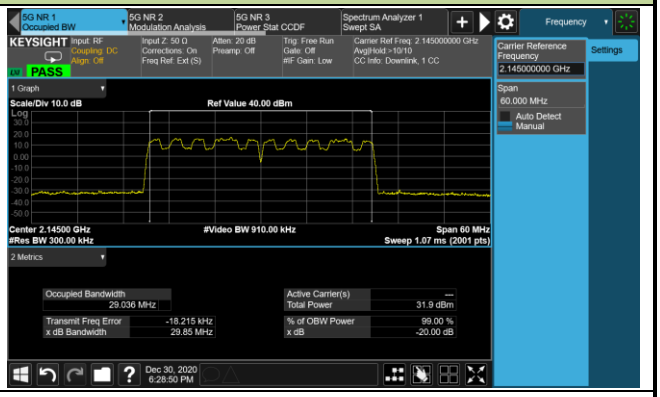


15 +15MHz Channel Bandwidth - QPSK

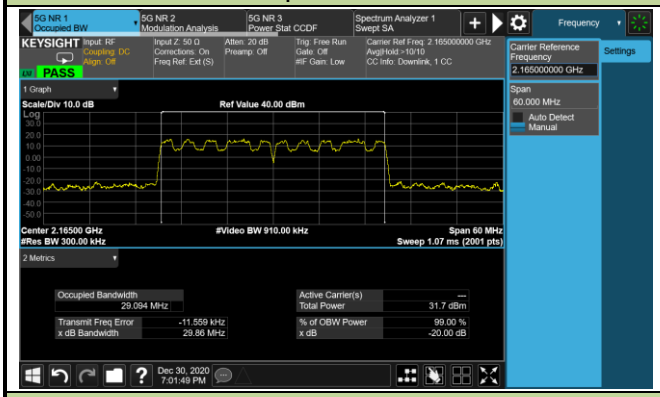
Bottom Channel



Middle Channel

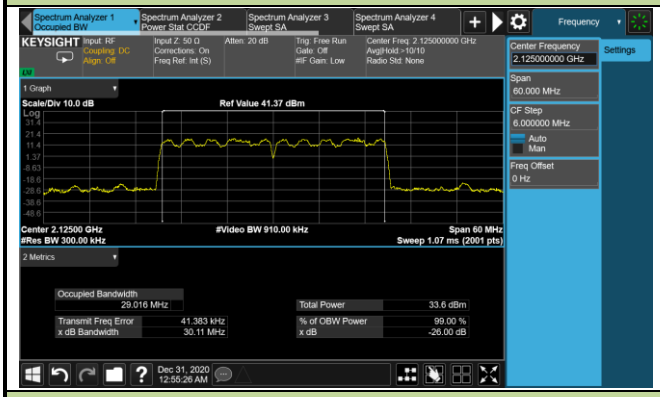


Top Channel

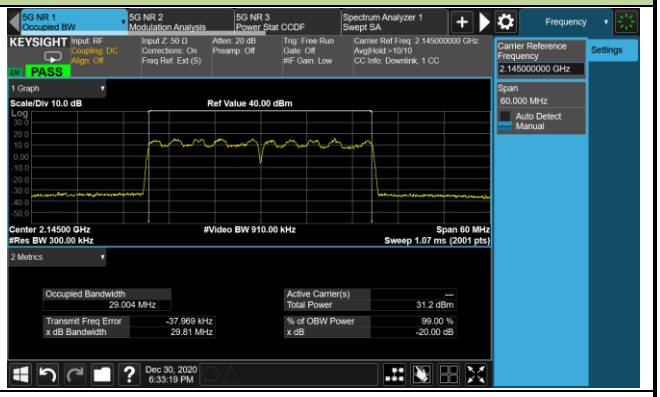


15 + 15MHz Channel Bandwidth - 16QAM

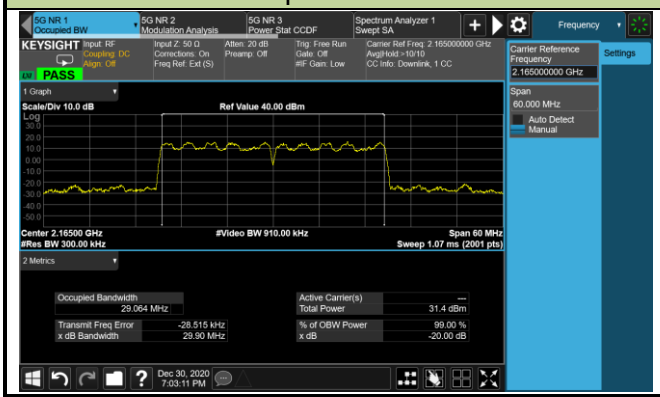
Bottom Channel

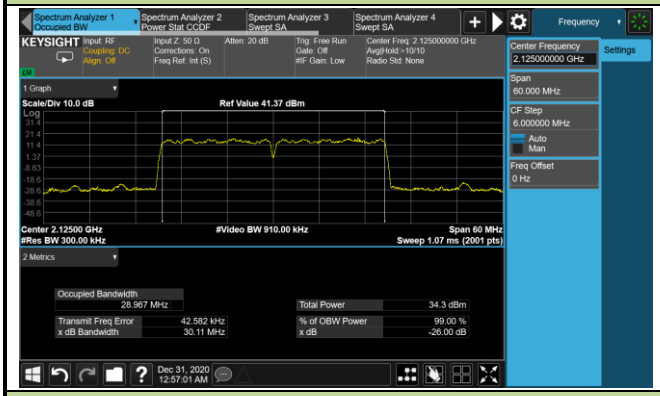
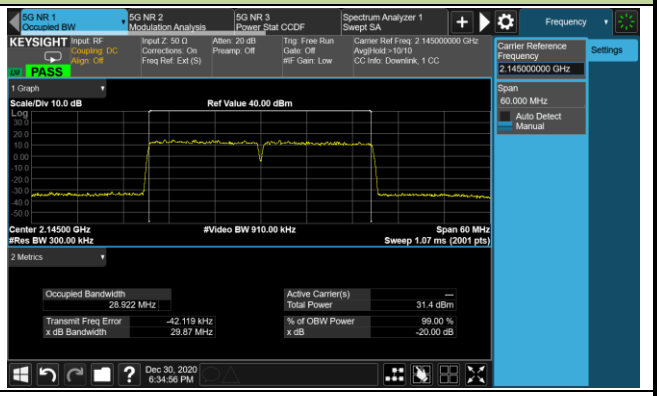
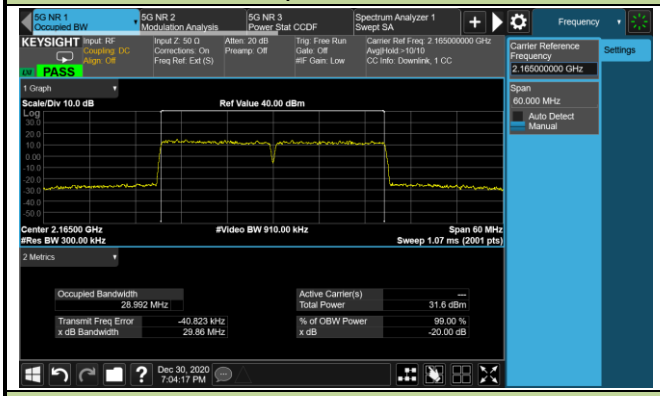


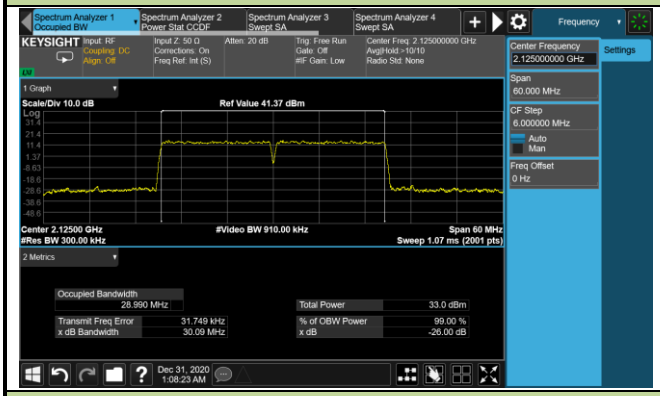
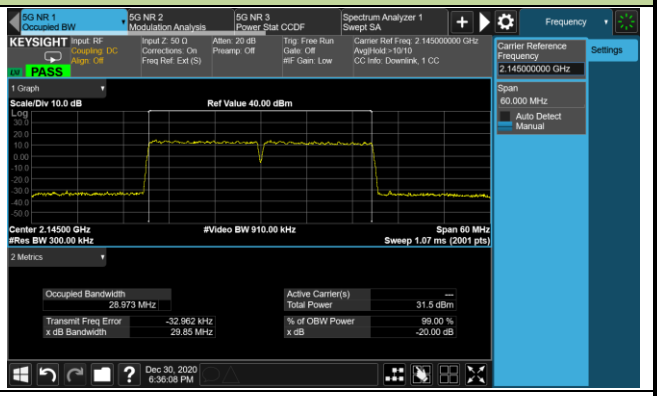
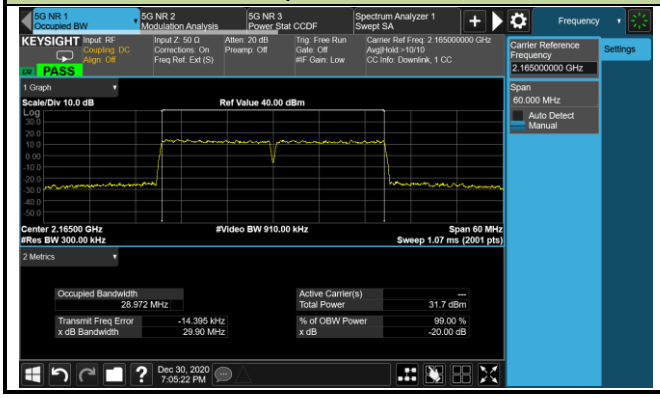
Middle Channel

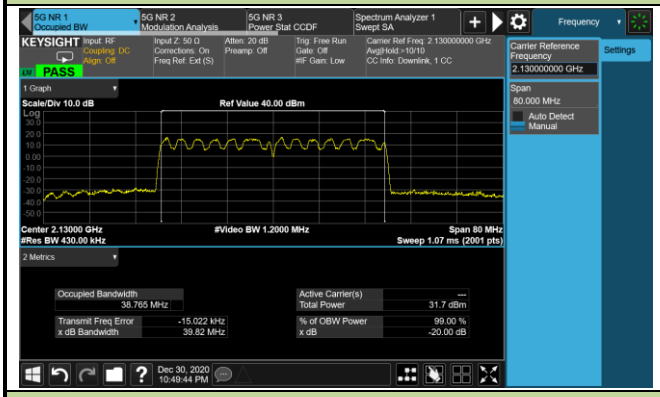
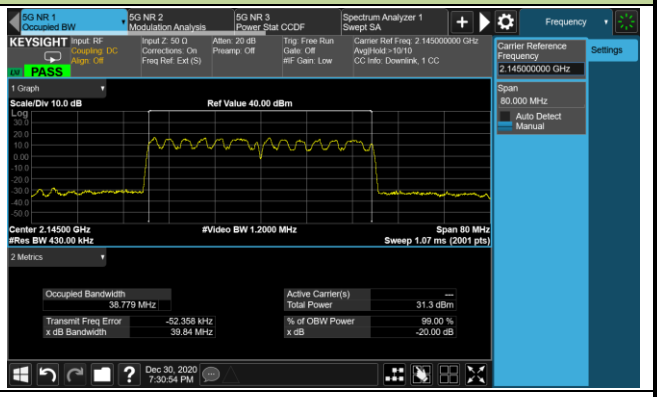
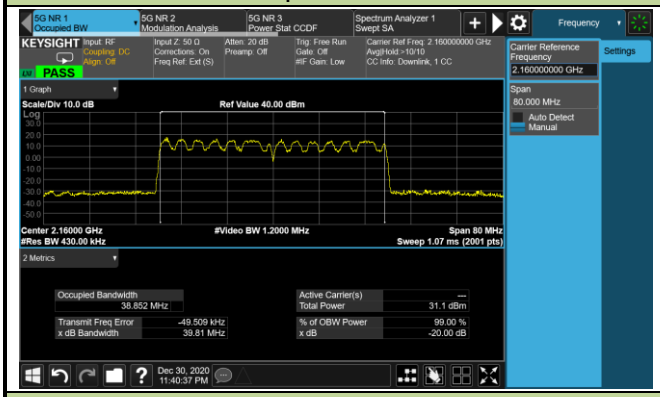


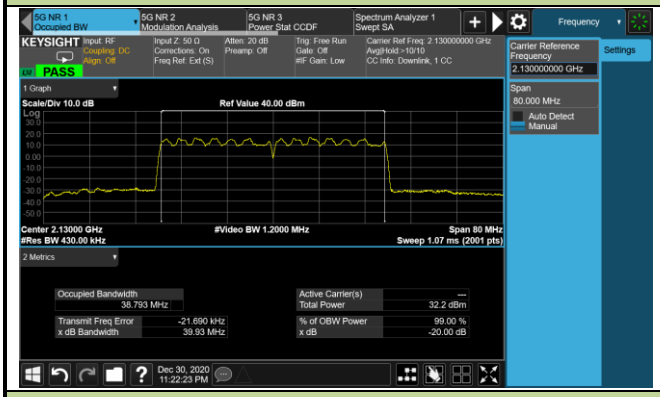
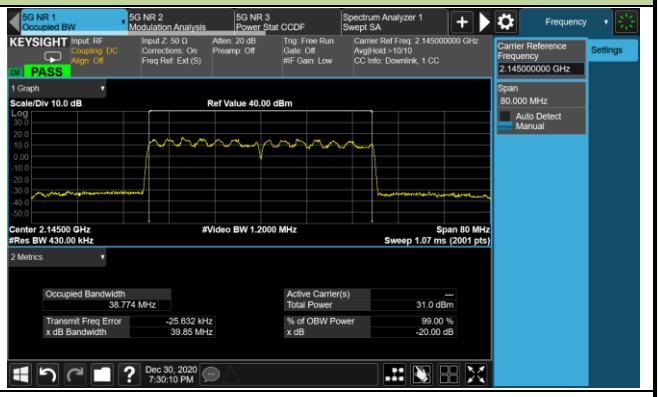
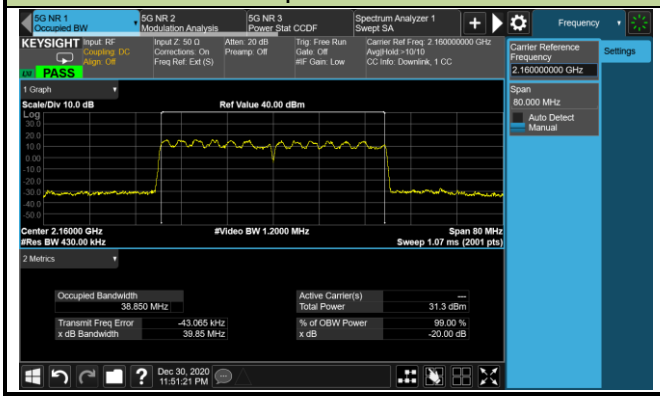
Top Channel

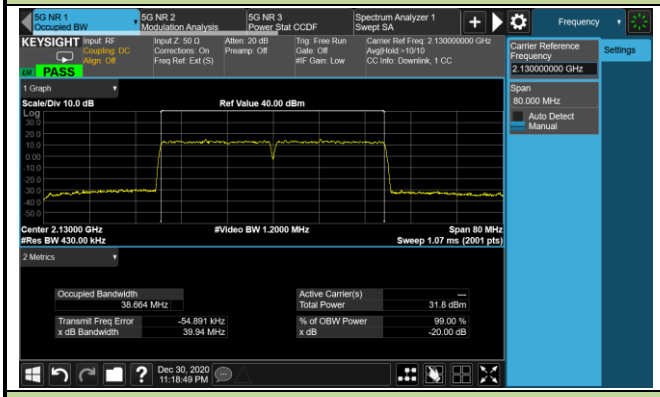
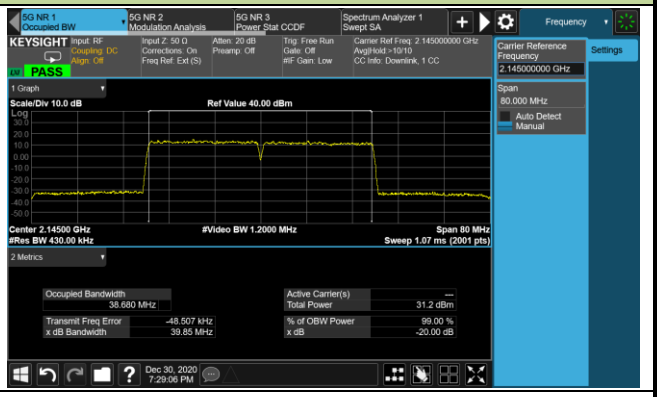
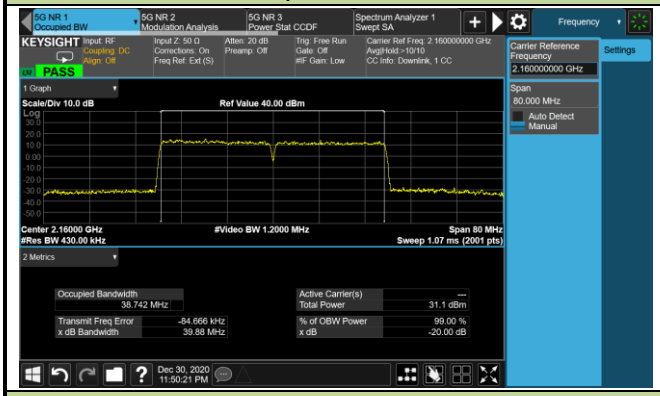


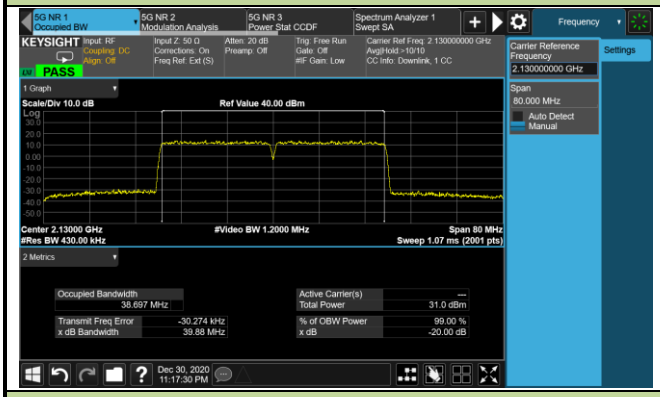
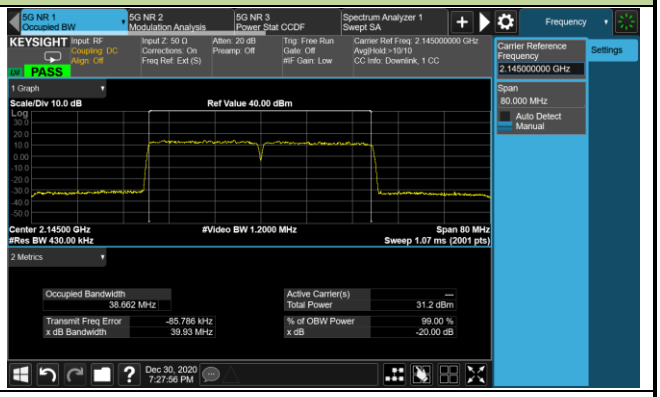
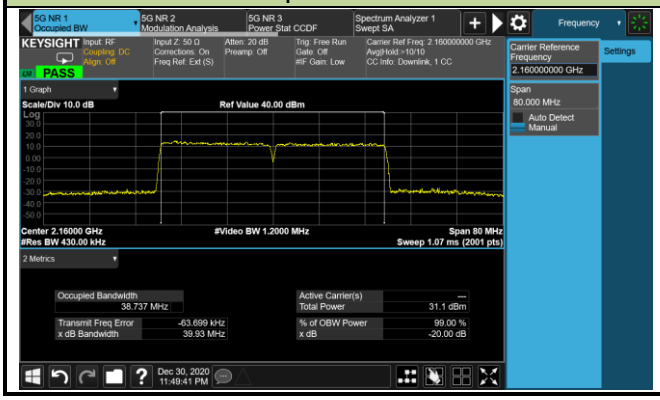
15 + 15MHz Channel Bandwidth - 64QAM	
Bottom Channel	Middle Channel
	
Top Channel	
	

15 + 15MHz Channel Bandwidth - 256QAM	
Bottom Channel	Middle Channel
	
Top Channel	
	

20 + 20MHz Channel Bandwidth - QPSK	
Bottom Channel	Middle Channel
	
Top Channel	
	

20 + 20MHz Channel Bandwidth - 16QAM	
Bottom Channel	Middle Channel
	
Top Channel	
	

20 + 20MHz Channel Bandwidth - 64QAM	
Bottom Channel	Middle Channel
	
Top Channel	
	

20 + 20MHz Channel Bandwidth - 256QAM	
Bottom Channel	Middle Channel
	
Top Channel	
	

6.5. Band Edge Measurement

6.5.1.Test Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to -13dBm.

This device can be impelement MIMO function, so the limit of spurious emissions needs to be reduced by 10*log($Numbers_{Ant}$) according to FCC KDB 662911 D01 guidance.

The limit is adjusted to -13 dBm - 10*log (2) = -16.01dBm

6.5.2.Test Procedure Used

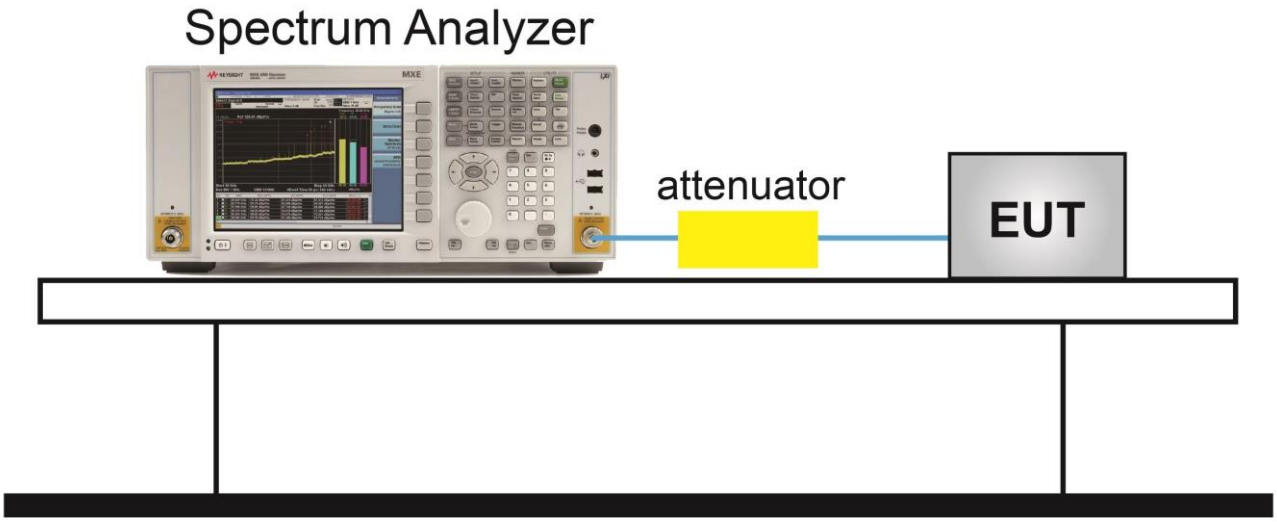
KDB 971168 D01v03r01 - Section 6.1

ANSI C63.26-2015 - Section 5.7.1

6.5.3.Test Setting

1. Set the analyzer frequency to low or high channel.
1. RBW = The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW
2. VBW ≥ 3*RBW
3. Sweep time = auto
4. Detector = power averaging (rms)
5. Set sweep trigger to “free run”
6. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. To accurately determine the average power over the on and off time of the transmitter, it can be necessary to increase the number of traces to be averaged above 100, or if using a manually configured sweep time, increase the sweep time.

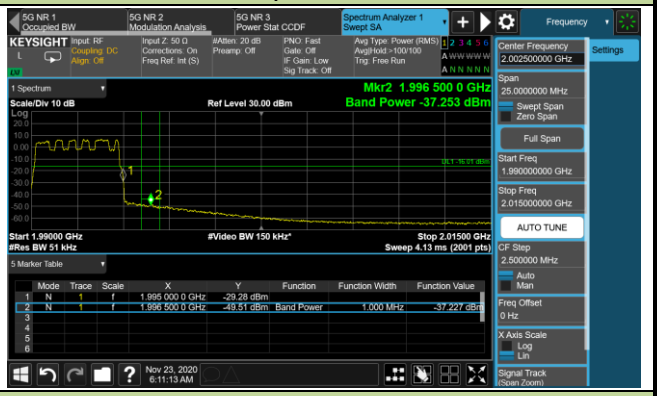
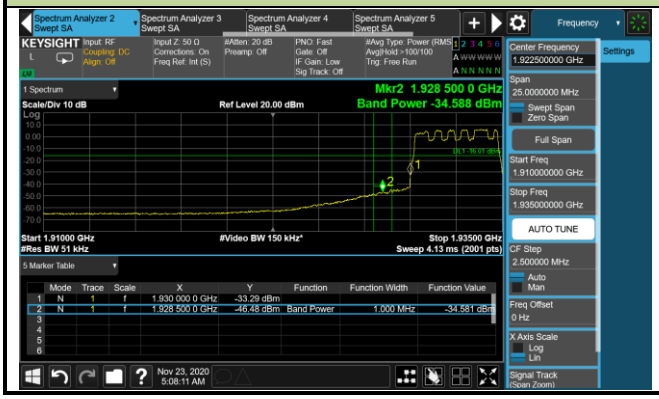
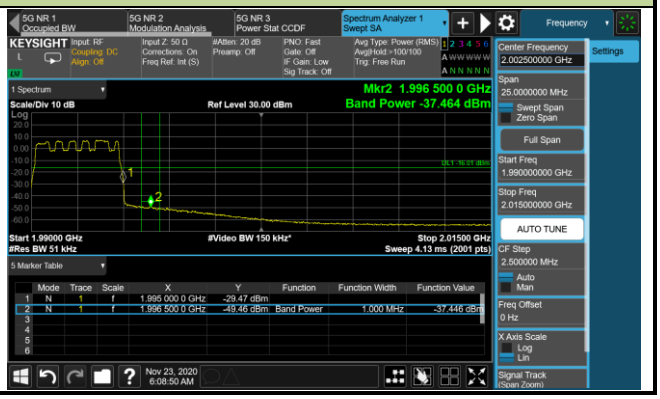
6.5.4.Test Setup

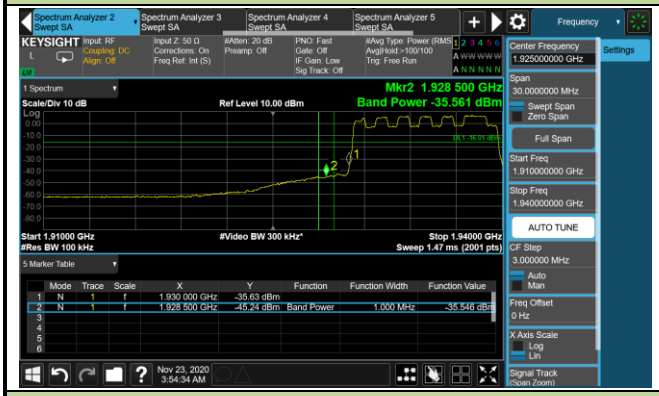


6.5.5.Test Result

Product	AirScale Indoor Radio ASiR-pRRH	Test Engineer	Peter Xu
Test Site	SR2	Test Date	2020/11/23
Test Configuration	n25, QPSK		

Frequency (MHz)	Channel Bandwidth (MHz)	Max Band Edge (dBm)		Limit (dBm)	Result
		Ant 0	Ant 1		
1932.5	5	-33.91	-33.29	≤ -16.01	Pass
1992.5	5	-29.28	-29.47	≤ -16.01	Pass
1935.0	10	-35.55	-35.23	≤ -16.01	Pass
1990.0	10	-36.80	-34.75	≤ -16.01	Pass
1937.5	15	-37.04	-35.73	≤ -16.01	Pass
1987.5	15	-35.38	-32.03	≤ -16.01	Pass
1940.0	20	-38.32	-35.24	≤ -16.01	Pass
1985.0	20	-36.43	-36.90	≤ -16.01	Pass

5MHz Channel Bandwidth - Ant 0	
Bottom Channel	Top Channel
	
5MHz Channel Bandwidth - Ant 1	
Bottom Channel	Top Channel
	

10MHz Channel Bandwidth - Ant 0	
Bottom Channel	Top Channel
	
10MHz Channel Bandwidth - Ant 1	
Bottom Channel	Top Channel