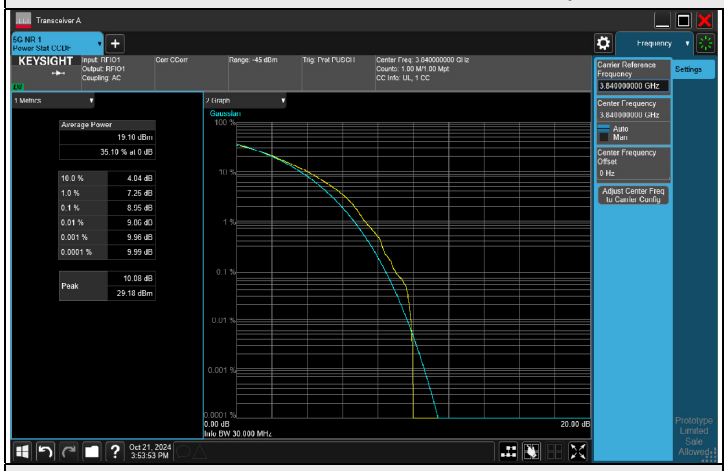
NR n77 SCS 30 kHz (3.7 GHz ~ 3.98 GHz) - MIMO-Ant 4, Channel Bandwidth: 30 MHz

Modulation	RB Size	RB Offset	Peak To Average Ratio (dB)		
			CH 647668	CH 656000	CH 664332
			3715.02 MHz	3840 MHz	3964.98 MHz
BPSK	1	77	4.87	4.53	4.57
	1	0	4.41	4.95	4.67
	75	0	4.49	4.55	4.67
QPSK	1	77	8.48	7.77	7.92
	1	0	7.52	7.44	7.63
	78	0	8.25	8.56	8.29
16QAM	1	77	8.82	8.95	8.55
	1	0	8.70	8.38	8.62
	78	0	8.47	8.35	8.71
64QAM	1	77	8.17	8.45	8.56
	1	0	8.00	8.11	8.04
	78	0	8.41	8.38	8.49
256QAM	1	77	7.26	7.37	7.45
	1	0	7.15	7.43	7.82
	78	0	8.62	8.59	8.61

Spectrum Plot of Worst Value

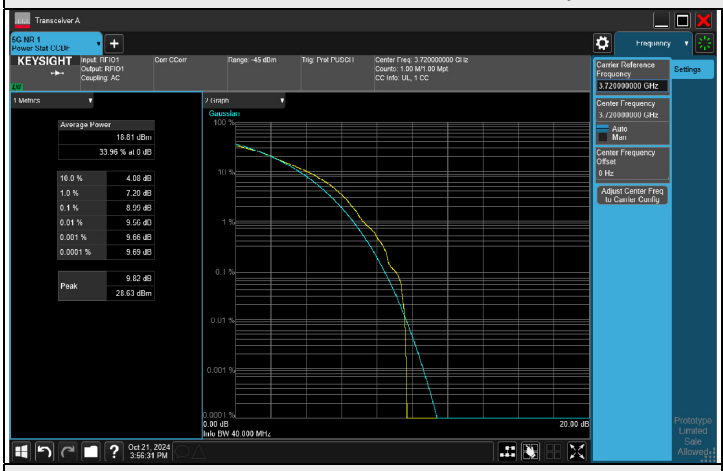


16QAM CH 656000 (3840 MHz)

NR n77 SCS 30 kHz (3.7 GHz ~ 3.98 GHz) - MIMO-Ant 4, Channel Bandwidth: 40 MHz

Modulation	RB Size	RB Offset	Peak To Average Ratio (dB)		
			CH 648000	CH 656000	CH 664000
			3720 MHz	3840 MHz	3960 MHz
BPSK	1	105	4.49	4.41	4.29
	1	0	4.82	4.66	4.52
	100	0	4.56	4.61	4.63
QPSK	1	105	7.17	8.89	7.89
	1	0	7.13	8.15	7.92
	106	0	8.30	8.30	8.60
16QAM	1	105	8.90	8.65	8.13
	1	0	8.99	8.54	8.39
	106	0	8.20	8.31	8.41
64QAM	1	105	8.03	8.50	8.62
	1	0	7.94	8.44	8.16
	106	0	8.20	8.67	8.75
256QAM	1	105	7.52	7.47	7.33
	1	0	7.89	7.72	7.53
	106	0	8.56	8.44	8.30

Spectrum Plot of Worst Value

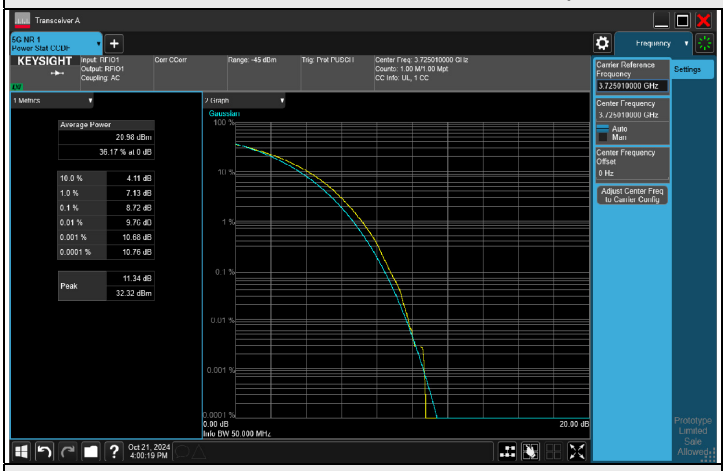


16QAM CH 648000 (3720 MHz)

NR n77 SCS 30 kHz (3.7 GHz ~ 3.98 GHz) - MIMO-Ant 4, Channel Bandwidth: 50 MHz

Modulation	RB Size	RB Offset	Peak To Average Ratio (dB)		
			CH 648334	CH 656000	CH 663666
			3725.01 MHz	3840 MHz	3954.99 MHz
BPSK	1	132	4.72	4.34	4.41
	1	0	4.67	4.79	4.40
	128	0	4.60	4.74	5.09
QPSK	1	132	7.62	7.61	7.87
	1	0	7.65	7.64	7.11
	133	0	8.38	8.66	8.52
16QAM	1	132	8.19	8.53	8.57
	1	0	8.33	8.57	8.41
	133	0	8.72	8.57	8.60
64QAM	1	132	8.39	8.00	8.16
	1	0	8.03	8.19	8.21
	133	0	8.33	8.44	8.40
256QAM	1	132	8.14	8.09	7.57
	1	0	7.90	7.47	7.12
	133	0	8.50	8.63	8.44

Spectrum Plot of Worst Value

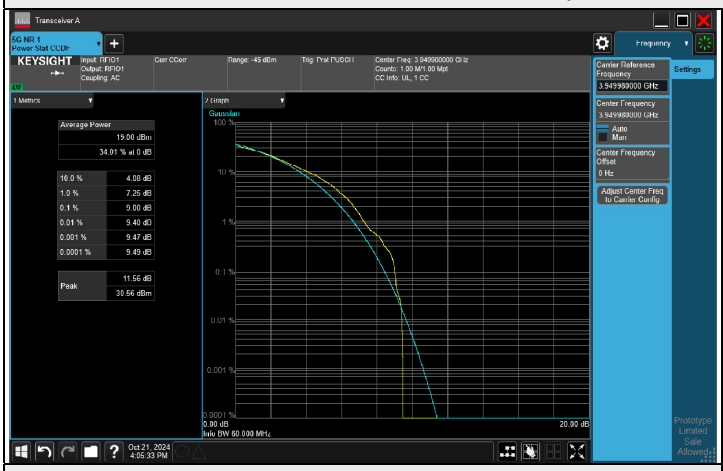


16QAM CH 648334 (3725.01 MHz)

NR n77 SCS 30 kHz (3.7 GHz ~ 3.98 GHz) - MIMO-Ant 4, Channel Bandwidth: 60 MHz

Modulation	RB Size	RB Offset	Peak To Average Ratio (dB)		
			CH 648668	CH 656000	CH 663332
			3730.02 MHz	3840 MHz	3949.98 MHz
BPSK	1	161	4.73	4.67	4.40
	1	0	4.42	4.69	4.45
	162	0	4.52	5.13	4.43
QPSK	1	161	7.73	7.49	7.97
	1	0	7.45	7.69	7.45
	162	0	8.04	8.13	8.49
16QAM	1	161	8.99	8.47	9.00
	1	0	8.14	8.19	8.51
	162	0	8.37	8.21	8.54
64QAM	1	161	8.94	8.34	8.12
	1	0	8.15	8.33	8.00
	162	0	8.22	8.79	8.92
256QAM	1	161	7.45	8.24	7.78
	1	0	7.66	7.88	8.14
	162	0	8.63	8.86	8.87

Spectrum Plot of Worst Value

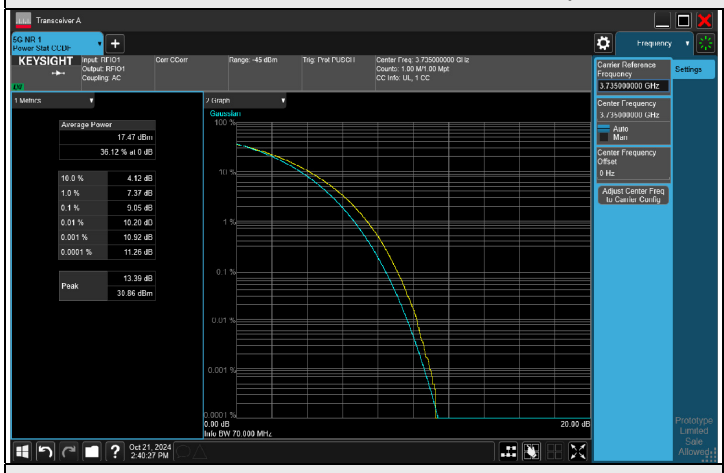


16QAM CH 663332 (3949.98 MHz)

NR n77 SCS 30 kHz (3.7 GHz ~ 3.98 GHz) - MIMO-Ant 4, Channel Bandwidth: 70 MHz

Modulation	RB Size	RB Offset	Peak To Average Ratio (dB)		
			CH 649000	CH 656000	CH 663000
			3735 MHz	3840 MHz	3945 MHz
BPSK	1	188	4.78	4.39	4.41
	1	0	4.44	4.64	4.44
	180	0	4.36	5.00	5.05
QPSK	1	188	7.65	7.19	7.90
	1	0	7.82	7.69	7.89
	189	0	8.39	8.72	8.85
16QAM	1	188	9.00	8.21	8.60
	1	0	8.80	8.47	8.53
	189	0	8.44	8.21	8.56
64QAM	1	188	7.95	8.07	8.40
	1	0	7.82	8.31	8.30
	189	0	8.40	8.47	8.56
256QAM	1	188	7.21	7.20	7.59
	1	0	7.31	7.72	7.60
	189	0	9.05	8.54	8.33

Spectrum Plot of Worst Value

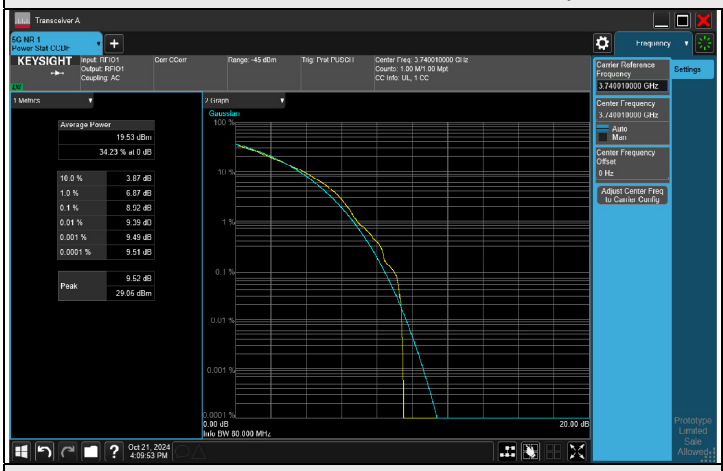


256QAM CH 649000 (3735 MHz)

NR n77 SCS 30 kHz (3.7 GHz ~ 3.98 GHz) - MIMO-Ant 4, Channel Bandwidth: 80 MHz

Modulation	RB Size	RB Offset	Peak To Average Ratio (dB)		
			CH 649334	CH 656000	CH 662666
			3740.01 MHz	3840 MHz	3939.99 MHz
BPSK	1	216	4.49	4.61	4.66
	1	0	5.00	4.90	4.70
	216	0	5.35	5.10	4.94
QPSK	1	216	7.99	8.27	7.42
	1	0	7.63	7.80	7.68
	217	0	8.19	8.34	8.42
16QAM	1	216	8.92	8.47	8.11
	1	0	8.51	8.23	8.08
	217	0	8.48	8.47	8.33
64QAM	1	216	8.50	7.97	8.24
	1	0	7.83	8.34	8.25
	217	0	8.52	8.82	8.62
256QAM	1	216	7.51	7.69	7.17
	1	0	7.53	7.40	7.46
	217	0	8.40	8.64	8.68

Spectrum Plot of Worst Value

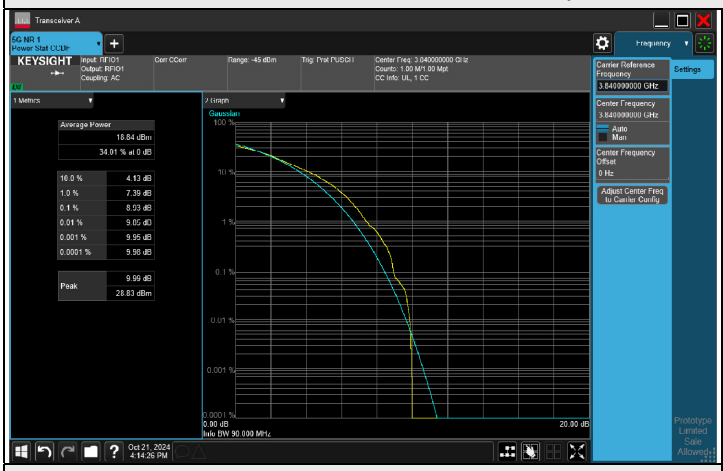


16QAM CH 649334 (3740.01 MHz)

NR n77 SCS 30 kHz (3.7 GHz ~ 3.98 GHz) - MIMO-Ant 4, Channel Bandwidth: 90 MHz

Modulation	RB Size	RB Offset	Peak To Average Ratio (dB)		
			CH 649668	CH 656000	CH 662332
			3745.02 MHz	3840 MHz	3934.98 MHz
BPSK	1	244	4.46	4.41	4.68
	1	0	4.34	4.70	4.43
	243	0	4.27	4.61	4.71
QPSK	1	244	7.63	7.89	7.56
	1	0	7.61	7.80	8.10
	245	0	8.44	8.74	8.31
16QAM	1	244	8.32	8.76	8.71
	1	0	8.53	8.93	8.55
	245	0	8.25	8.20	8.32
64QAM	1	244	8.39	7.94	8.26
	1	0	8.20	8.17	8.22
	245	0	8.78	8.90	8.46
256QAM	1	244	7.78	8.01	7.84
	1	0	7.32	7.75	7.86
	245	0	8.67	8.88	8.65

Spectrum Plot of Worst Value

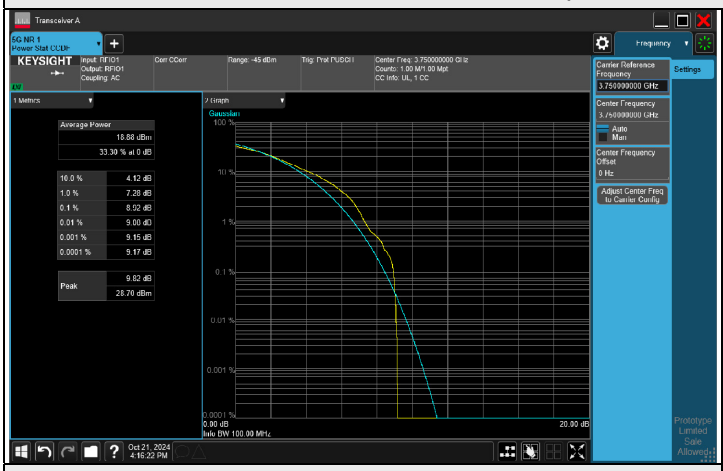


16QAM CH 656000 (3840 MHz)

NR n77 SCS 30 kHz (3.7 GHz ~ 3.98 GHz) - MIMO-Ant 4, Channel Bandwidth: 100 MHz

Modulation	RB Size	RB Offset	Peak To Average Ratio (dB)		
			CH 650000	CH 656000	CH 662000
			3750 MHz	3840 MHz	3930 MHz
BPSK	1	272	4.69	5.20	5.16
	1	0	4.29	4.63	4.30
	270	0	5.13	5.20	5.17
QPSK	1	272	8.50	7.84	7.74
	1	0	7.43	7.71	7.77
	273	0	8.24	8.50	8.32
16QAM	1	272	8.92	7.89	8.13
	1	0	8.16	8.16	8.15
	273	0	8.70	8.70	8.55
64QAM	1	272	8.70	8.10	8.44
	1	0	8.03	8.10	8.39
	273	0	8.49	8.53	8.27
256QAM	1	272	7.29	7.52	7.54
	1	0	7.17	7.49	7.52
	273	0	8.50	8.64	8.42

Spectrum Plot of Worst Value



16QAM CH 650000 (3750 MHz)

7.4 Bandwidth

Input Power:	7.2 Vdc	Environmental Conditions:	22°C, 73% RH	Tested By:	James Yang

7.4.1 NR n2 SCS 15 kHz

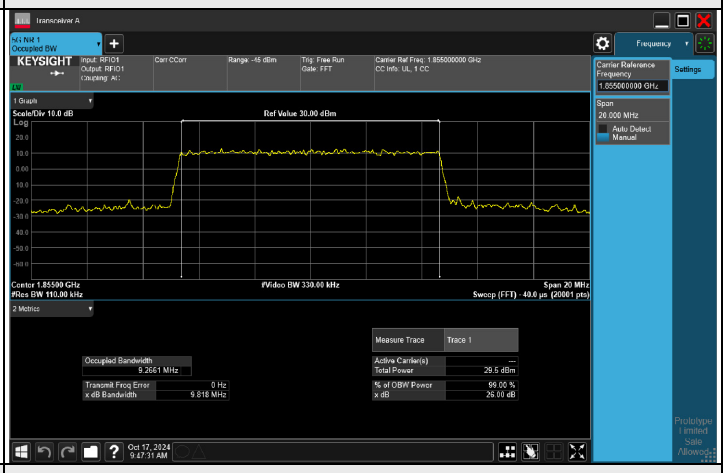
NR n2 SCS 15 kHz - MIMO-Ant 1, Channel Bandwidth: 5 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
BPSK	370500	1852.5	4.4661	4.788
BPSK	376000	1880	4.4524	4.788
BPSK	381500	1907.5	4.4711	4.725
QPSK	370500	1852.5	4.4583	4.814
QPSK	376000	1880	4.4605	4.807
QPSK	381500	1907.5	4.4675	4.743
16QAM	370500	1852.5	4.4721	4.819
16QAM	376000	1880	4.4682	4.818
16QAM	381500	1907.5	4.4643	4.701
64QAM	370500	1852.5	4.4774	4.818
64QAM	376000	1880	4.4754	4.862
64QAM	381500	1907.5	4.4659	4.728
256QAM	370500	1852.5	4.4613	4.828
256QAM	376000	1880	4.4624	4.794
256QAM	381500	1907.5	4.4623	4.726

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
64QAM CH 370500 (1852.5 MHz)	64QAM CH 376000 (1880 MHz)

NR n2 SCS 15 kHz - MIMO-Ant 1, Channel Bandwidth: 10 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
BPSK	371000	1855	9.1962	9.391
BPSK	376000	1880	9.2162	9.344
BPSK	381000	1905	9.2242	9.394
QPSK	371000	1855	9.2728	9.771
QPSK	376000	1880	9.2844	9.757
QPSK	381000	1905	9.2864	9.784
16QAM	371000	1855	9.2661	9.818
16QAM	376000	1880	9.2721	9.775
16QAM	381000	1905	9.2764	9.755
64QAM	371000	1855	9.2662	9.725
64QAM	376000	1880	9.2648	9.748
64QAM	381000	1905	9.2704	9.760
256QAM	371000	1855	9.2609	9.740
256QAM	376000	1880	9.2606	9.718
256QAM	381000	1905	9.2647	9.760

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
QPSK CH 381000 (1905 MHz)	16QAM CH 371000 (1855 MHz)

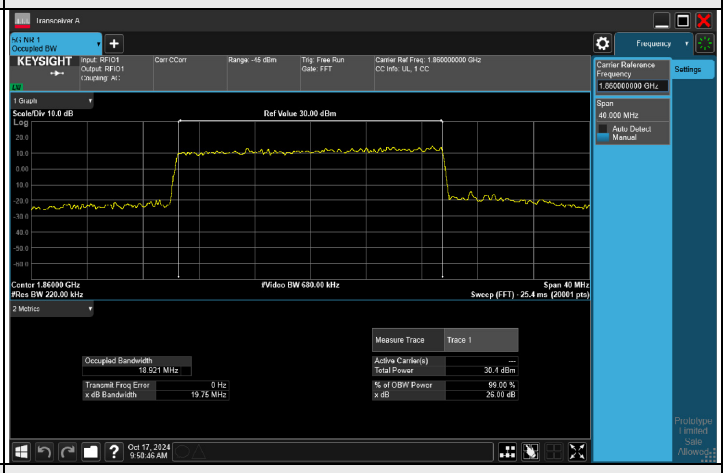
NR n2 SCS 15 kHz - MIMO-Ant 1, Channel Bandwidth: 15 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
BPSK	371500	1857.5	14.002	14.00
BPSK	376000	1880	14.070	13.98
BPSK	380500	1902.5	14.011	13.96
QPSK	371500	1857.5	14.080	14.76
QPSK	376000	1880	14.062	14.61
QPSK	380500	1902.5	14.029	14.67
16QAM	371500	1857.5	14.092	14.72
16QAM	376000	1880	14.098	14.70
16QAM	380500	1902.5	14.058	14.75
64QAM	371500	1857.5	14.107	14.70
64QAM	376000	1880	14.116	14.73
64QAM	380500	1902.5	14.089	14.64
256QAM	371500	1857.5	14.092	14.75
256QAM	376000	1880	14.080	14.67
256QAM	380500	1902.5	14.053	14.67

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
64QAM CH 376000 (1880 MHz)	QPSK CH 371500 (1857.5 MHz)

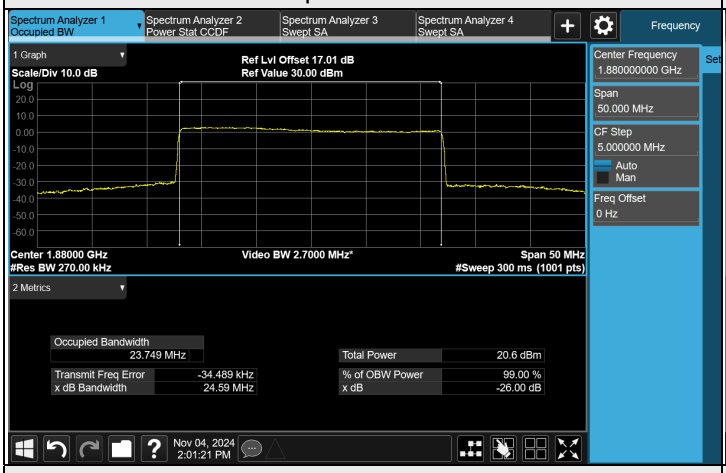
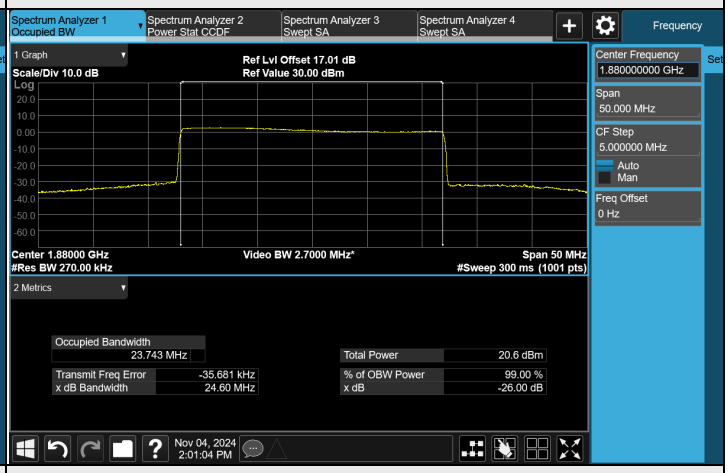
NR n2 SCS 15 kHz - MIMO-Ant 1, Channel Bandwidth: 20 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
BPSK	372000	1860	18.728	18.57
BPSK	376000	1880	18.834	18.55
BPSK	380000	1900	18.672	18.54
QPSK	372000	1860	18.873	19.69
QPSK	376000	1880	18.897	19.67
QPSK	380000	1900	18.790	19.62
16QAM	372000	1860	18.921	19.75
16QAM	376000	1880	18.929	19.69
16QAM	380000	1900	18.873	19.69
64QAM	372000	1860	18.889	19.72
64QAM	376000	1880	18.889	19.72
64QAM	380000	1900	18.805	19.69
256QAM	372000	1860	18.910	19.71
256QAM	376000	1880	18.893	19.72
256QAM	380000	1900	18.806	19.71

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
16QAM CH 376000 (1880 MHz)	16QAM CH 372000 (1860 MHz)

NR n2 SCS 15 kHz - MIMO-Ant 1, Channel Bandwidth: 25 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
BPSK	372500	1862.5	22.831	23.68
BPSK	376000	1880	22.843	23.67
BPSK	379500	1897.5	22.765	23.66
QPSK	372500	1862.5	23.731	24.58
QPSK	376000	1880	23.743	24.60
QPSK	379500	1897.5	23.662	24.57
16QAM	372500	1862.5	23.736	24.59
16QAM	376000	1880	23.749	24.59
16QAM	379500	1897.5	23.668	24.57
64QAM	372500	1862.5	23.722	24.58
64QAM	376000	1880	23.730	24.58
64QAM	379500	1897.5	23.651	24.56
256QAM	372500	1862.5	23.738	24.59
256QAM	376000	1880	23.740	24.58
256QAM	379500	1897.5	23.663	24.56

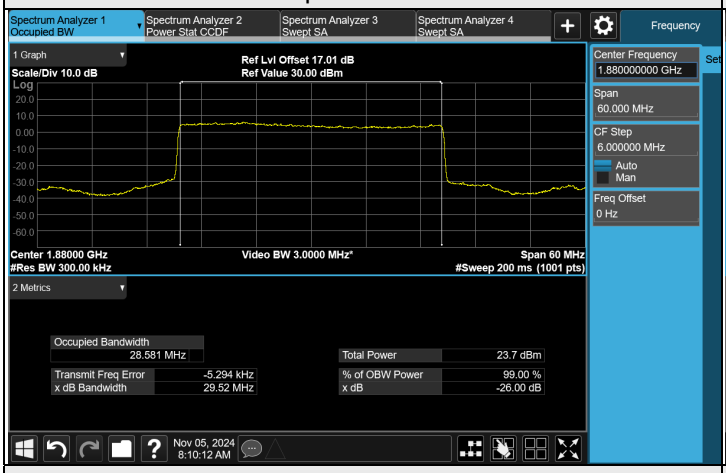
Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
16QAM CH 376000 (1880 MHz)	QPSK CH 376000 (1880 MHz)

NR n2 SCS 15 kHz - MIMO-Ant 1, Channel Bandwidth: 30 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
BPSK	373000	1865	28.508	29.50
BPSK	376000	1880	28.581	29.52
BPSK	379000	1895	28.515	29.51
QPSK	373000	1865	28.484	29.50
QPSK	376000	1880	28.558	29.53
QPSK	379000	1895	28.496	29.51
16QAM	373000	1865	28.474	29.50
16QAM	376000	1880	28.548	29.52
16QAM	379000	1895	28.492	29.52
64QAM	373000	1865	28.491	29.50
64QAM	376000	1880	28.576	29.51
64QAM	379000	1895	28.512	29.52
256QAM	373000	1865	28.491	29.51
256QAM	376000	1880	28.550	29.52
256QAM	379000	1895	28.490	29.52

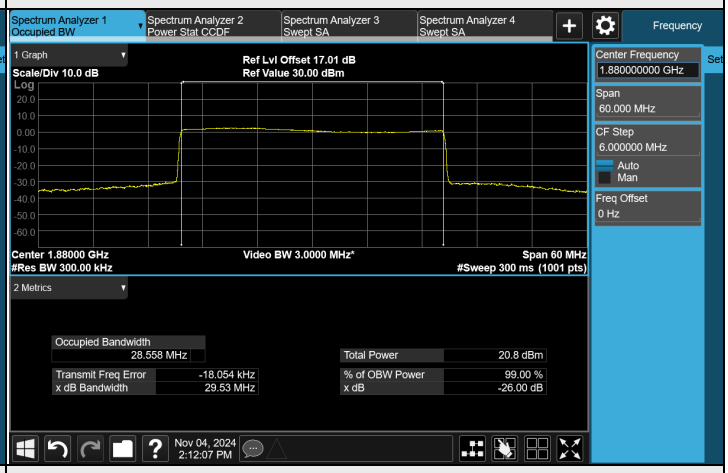
Spectrum Plot of Worst Value

Occupied bandwidth



BPSK CH 376000 (1880 MHz)

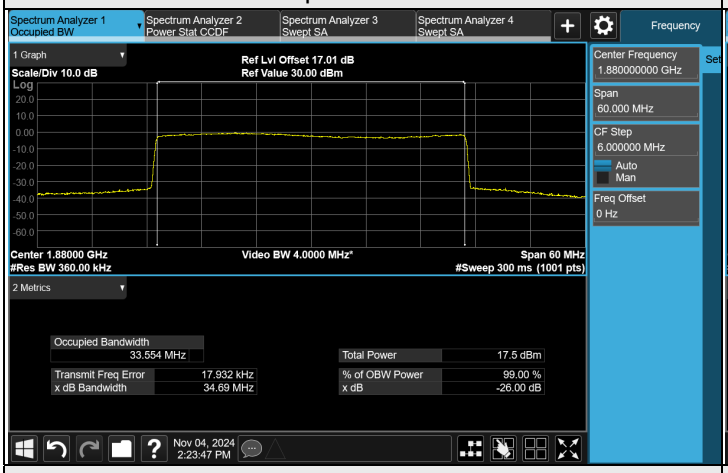
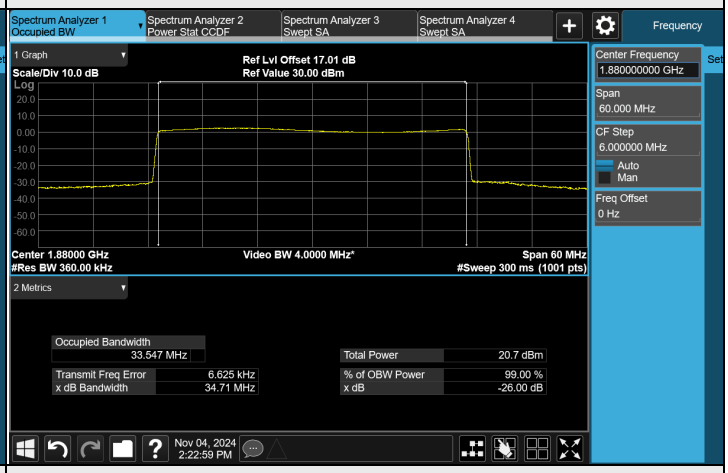
26 dB Bandwidth



QPSK CH 376000 (1880 MHz)

NR n2 SCS 15 kHz - MIMO-Ant 1, Channel Bandwidth: 35 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
BPSK	373500	1867.5	32.045	33.24
BPSK	376000	1880	32.143	33.27
BPSK	378500	1892.5	32.135	33.25
QPSK	373500	1867.5	33.430	34.67
QPSK	376000	1880	33.547	34.71
QPSK	378500	1892.5	33.527	34.70
16QAM	373500	1867.5	33.432	34.66
16QAM	376000	1880	33.540	34.69
16QAM	378500	1892.5	33.524	34.68
64QAM	373500	1867.5	33.433	34.65
64QAM	376000	1880	33.544	34.70
64QAM	378500	1892.5	33.526	34.68
256QAM	373500	1867.5	33.448	34.66
256QAM	376000	1880	33.554	34.69
256QAM	378500	1892.5	33.545	34.70

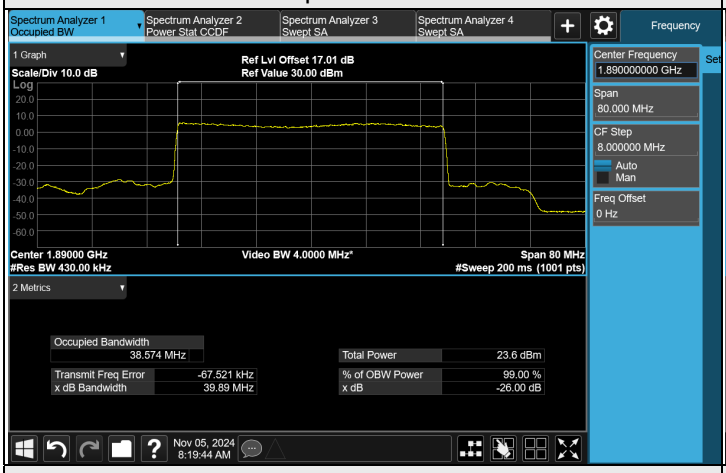
Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
256QAM CH 376000 (1880 MHz)	QPSK CH 376000 (1880 MHz)

NR n2 SCS 15 kHz - MIMO-Ant 1, Channel Bandwidth: 40 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
BPSK	374000	1870	38.470	39.85
BPSK	376000	1880	38.564	39.88
BPSK	378000	1890	38.574	39.89
QPSK	374000	1870	38.442	39.85
QPSK	376000	1880	38.535	39.89
QPSK	378000	1890	38.533	39.89
16QAM	374000	1870	38.454	39.86
16QAM	376000	1880	38.538	39.89
16QAM	378000	1890	38.548	39.89
64QAM	374000	1870	38.450	39.85
64QAM	376000	1880	38.543	39.89
64QAM	378000	1890	38.529	39.89
256QAM	374000	1870	38.450	39.85
256QAM	376000	1880	38.550	39.90
256QAM	378000	1890	38.547	39.89

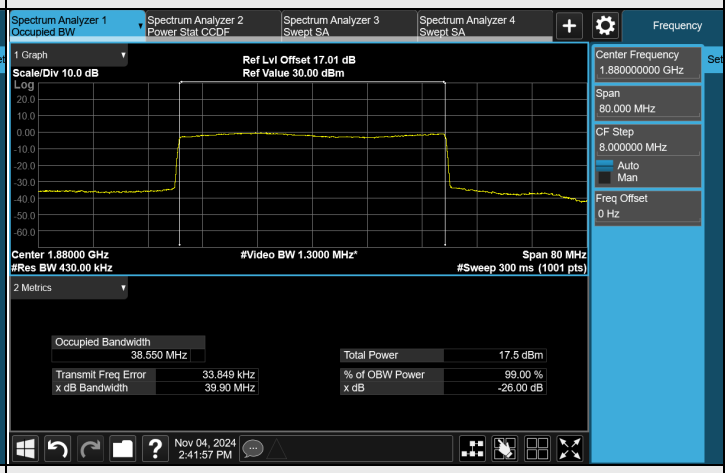
Spectrum Plot of Worst Value

Occupied bandwidth



BPSK CH 378000 (1890 MHz)

26 dB Bandwidth



256QAM CH 376000 (1880 MHz)

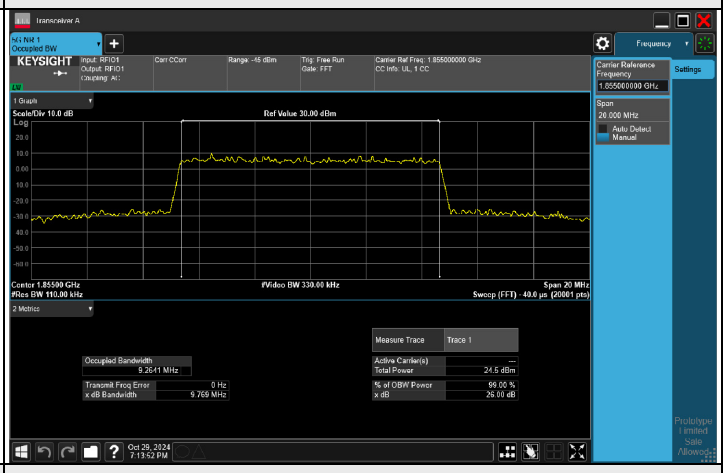
NR n2 SCS 15 kHz - MIMO-Ant 4, Channel Bandwidth: 5 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
BPSK	370500	1852.5	4.4683	4.860
BPSK	376000	1880	4.4630	4.799
BPSK	381500	1907.5	4.4785	4.722
QPSK	370500	1852.5	4.4621	4.772
QPSK	376000	1880	4.4572	4.756
QPSK	381500	1907.5	4.4605	4.75
16QAM	370500	1852.5	4.4635	4.814
16QAM	376000	1880	4.4581	4.852
16QAM	381500	1907.5	4.4556	4.731
64QAM	370500	1852.5	4.4592	4.832
64QAM	376000	1880	4.4573	4.800
64QAM	381500	1907.5	4.4660	4.735
256QAM	370500	1852.5	4.4643	4.804
256QAM	376000	1880	4.4605	4.837
256QAM	381500	1907.5	4.4589	4.737

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
BPSK CH 370500 (1852.5 MHz)	BPSK CH 370500 (1852.5 MHz)

NR n2 SCS 15 kHz - MIMO-Ant 4, Channel Bandwidth: 10 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
BPSK	371000	1855	9.1950	9.395
BPSK	376000	1880	9.1867	9.424
BPSK	381000	1905	9.2068	9.424
QPSK	371000	1855	9.2721	9.766
QPSK	376000	1880	9.2784	9.759
QPSK	381000	1905	9.2622	9.753
16QAM	371000	1855	9.2470	9.678
16QAM	376000	1880	9.2523	9.705
16QAM	381000	1905	9.2429	9.743
64QAM	371000	1855	9.2804	9.758
64QAM	376000	1880	9.2627	9.669
64QAM	381000	1905	9.2527	9.744
256QAM	371000	1855	9.2641	9.769
256QAM	376000	1880	9.2604	9.741
256QAM	381000	1905	9.2709	9.719

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
64QAM CH 371000 (1855 MHz)	256QAM CH 371000 (1855 MHz)

NR n2 SCS 15 kHz - MIMO-Ant 4, Channel Bandwidth: 15 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
BPSK	371500	1857.5	13.984	14.04
BPSK	376000	1880	14.016	13.99
BPSK	380500	1902.5	13.960	13.99
QPSK	371500	1857.5	14.116	14.74
QPSK	376000	1880	14.121	14.72
QPSK	380500	1902.5	14.059	14.75
16QAM	371500	1857.5	14.089	14.68
16QAM	376000	1880	14.098	14.77
16QAM	380500	1902.5	14.053	14.68
64QAM	371500	1857.5	14.104	14.69
64QAM	376000	1880	14.086	14.76
64QAM	380500	1902.5	14.056	14.69
256QAM	371500	1857.5	14.104	14.76
256QAM	376000	1880	14.103	14.70
256QAM	380500	1902.5	14.062	14.72

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
QPSK CH 376000 (1880 MHz)	16QAM CH 376000 (1880 MHz)

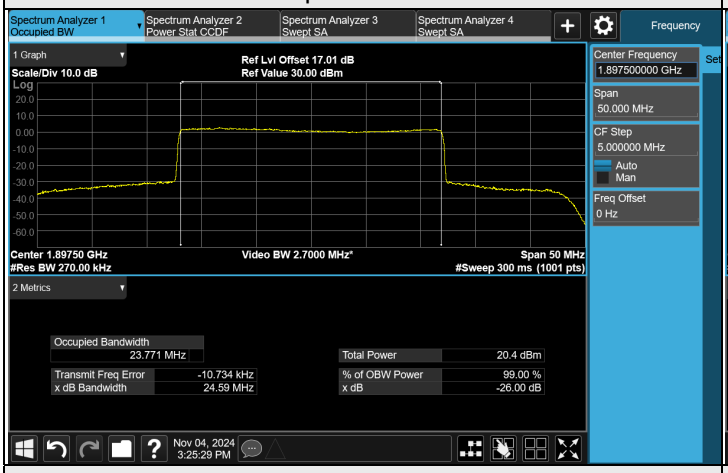
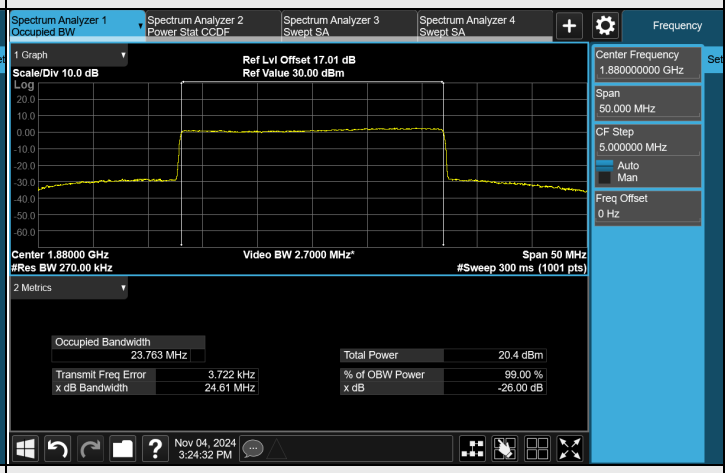
NR n2 SCS 15 kHz - MIMO-Ant 4, Channel Bandwidth: 20 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
BPSK	372000	1860	18.700	18.60
BPSK	376000	1880	18.829	18.60
BPSK	380000	1900	18.641	18.57
QPSK	372000	1860	18.906	19.66
QPSK	376000	1880	18.908	19.65
QPSK	380000	1900	18.828	19.60
16QAM	372000	1860	18.922	19.68
16QAM	376000	1880	18.917	19.70
16QAM	380000	1900	18.833	19.66
64QAM	372000	1860	18.909	19.66
64QAM	376000	1880	18.913	19.69
64QAM	380000	1900	18.845	19.63
256QAM	372000	1860	18.905	19.71
256QAM	376000	1880	18.910	19.72
256QAM	380000	1900	18.806	19.67

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
16QAM CH 372000 (1860 MHz)	256QAM CH 376000 (1880 MHz)

NR n2 SCS 15 kHz - MIMO-Ant 4, Channel Bandwidth: 25 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
BPSK	372500	1862.5	22.742	23.65
BPSK	376000	1880	22.856	23.69
BPSK	379500	1897.5	22.865	23.68
QPSK	372500	1862.5	23.634	24.57
QPSK	376000	1880	23.753	24.60
QPSK	379500	1897.5	23.755	24.60
16QAM	372500	1862.5	23.634	24.56
16QAM	376000	1880	23.763	24.61
16QAM	379500	1897.5	23.771	24.59
64QAM	372500	1862.5	23.627	24.56
64QAM	376000	1880	23.740	24.59
64QAM	379500	1897.5	23.746	24.58
256QAM	372500	1862.5	23.633	24.56
256QAM	376000	1880	23.747	24.60
256QAM	379500	1897.5	23.760	24.60

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
16QAM CH 379500 (1897.5 MHz)	16QAM CH 376000 (1880 MHz)