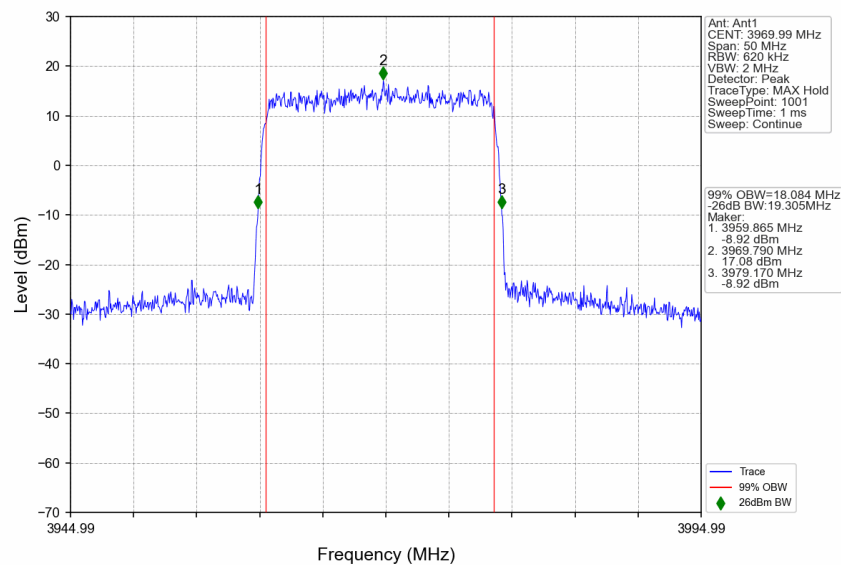


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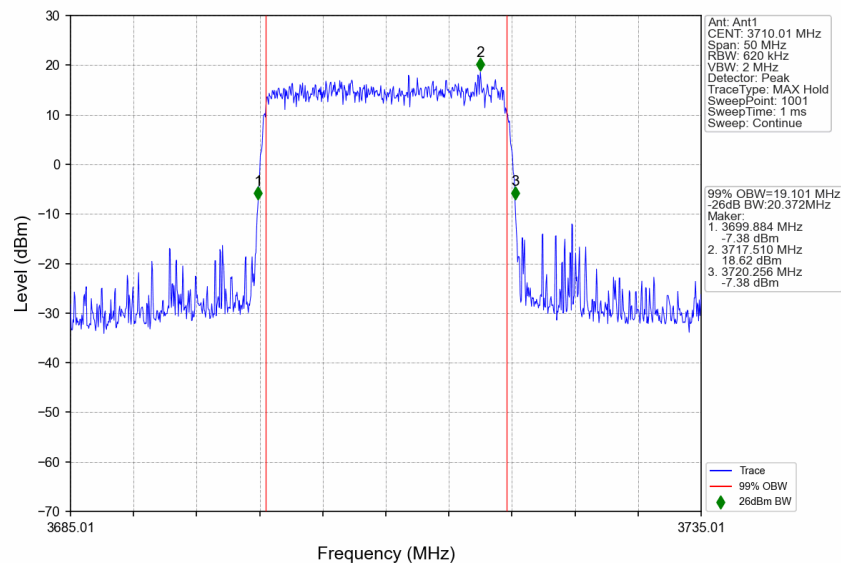
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n77a_15kHz_SISO_NTNV_20MHz_DFT-s-OFDM_256_QAM_3969.99MHz_Outer_Full



n77a_15kHz_SISO_NTNV_20MHz_CP-OFDM_QPSK_3710.01MHz_Outer_Full



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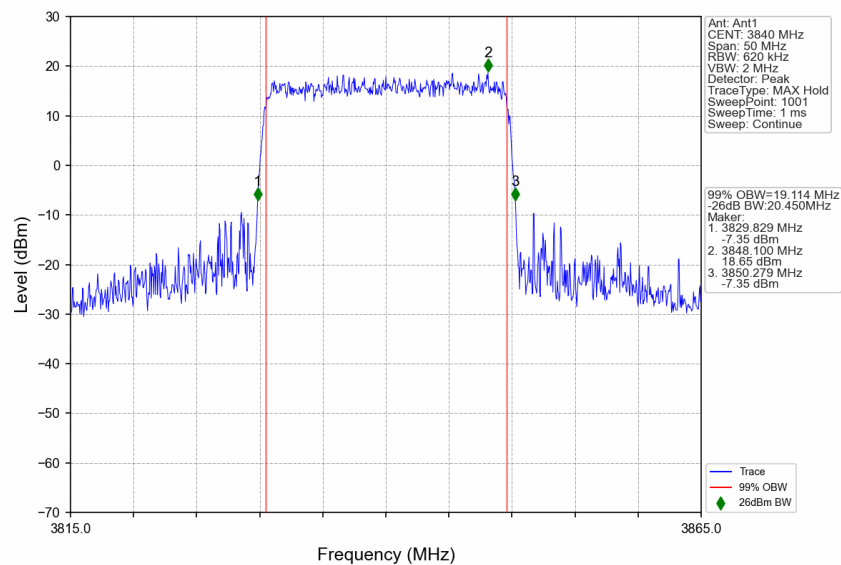
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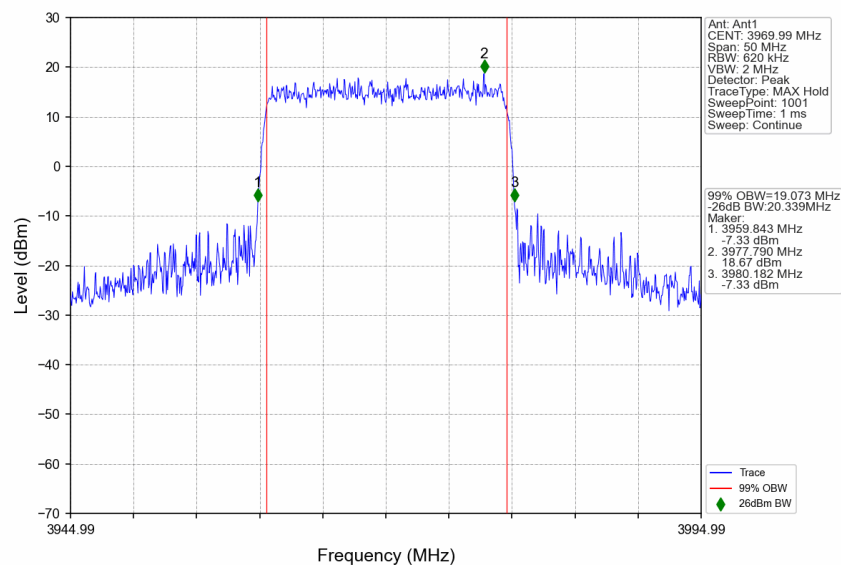
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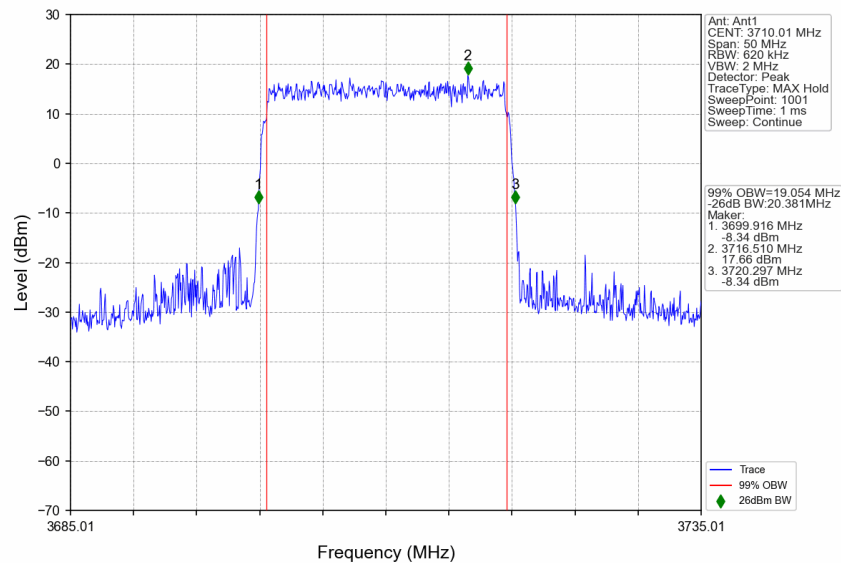
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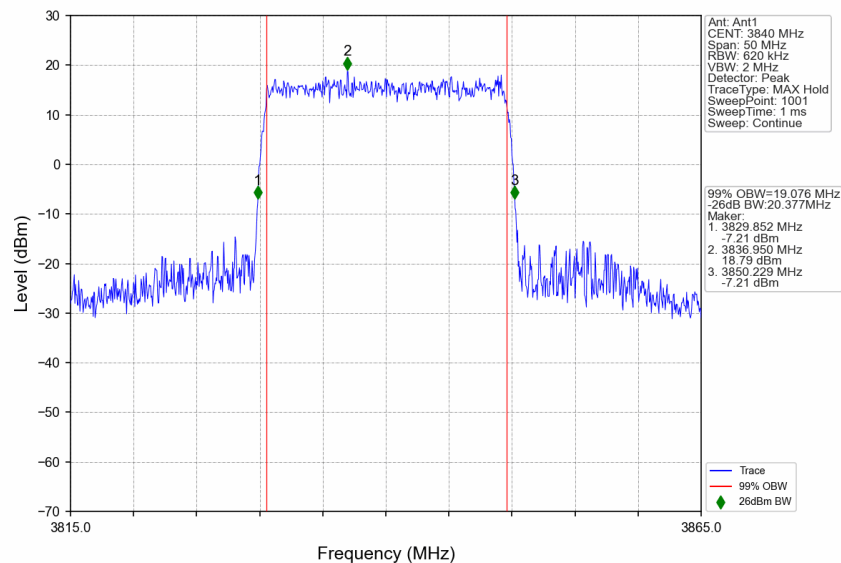
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n77a_15kHz_SISO_NTNV_20MHz_CP-OFDM_16_QAM_3710.01MHz_Outer_Full



n77a_15kHz_SISO_NTNV_20MHz_CP-OFDM_16_QAM_3840MHz_Outer_Full



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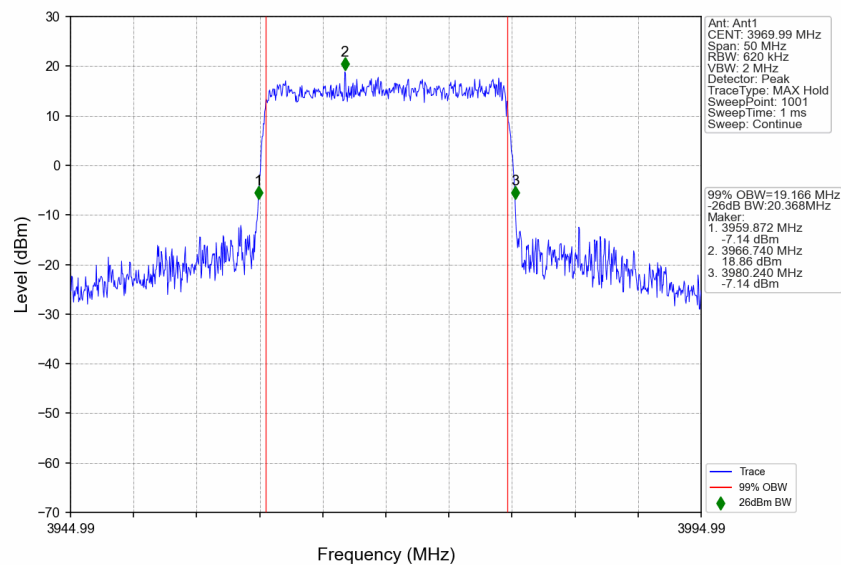
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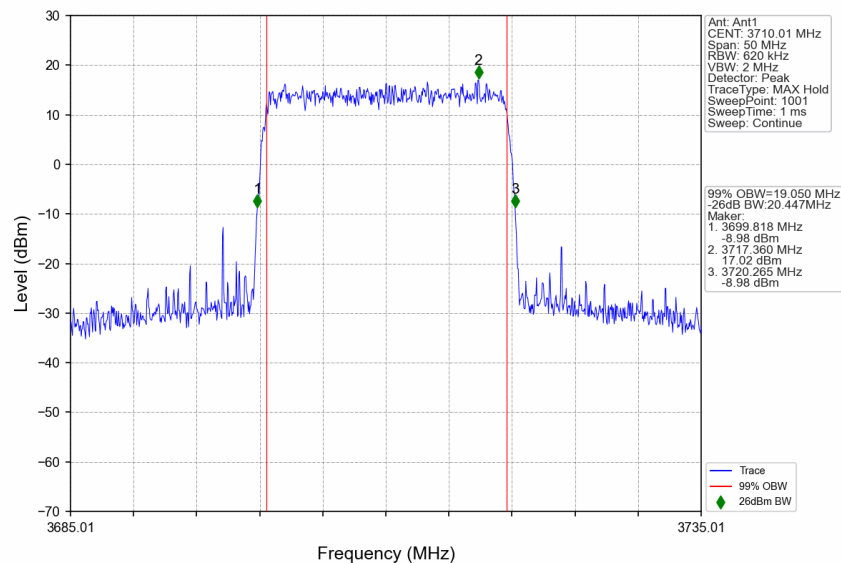
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n77a_15kHz_SISO_NTNV_20MHz_CP-OFDM 16 QAM_3969.99MHz_Outer_Full



n77a_15kHz_SISO_NTNV_20MHz_CP-OFDM 64 QAM_3710.01MHz_Outer_Full



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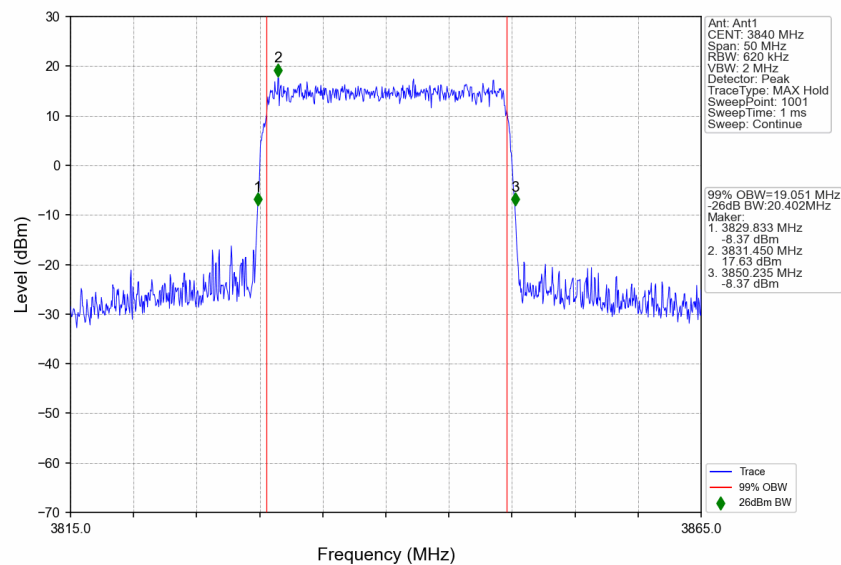
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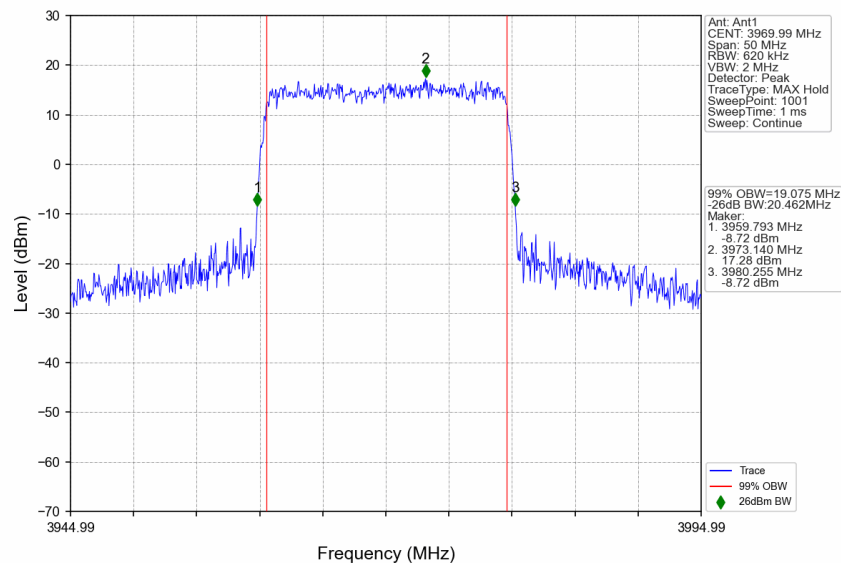
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n77a_15kHz_SISO_NTNV_20MHz_CP-OFDM_64_QAM_3840MHz_Outer_Full



n77a_15kHz_SISO_NTNV_20MHz_CP-OFDM_64_QAM_3969.99MHz_Outer_Full



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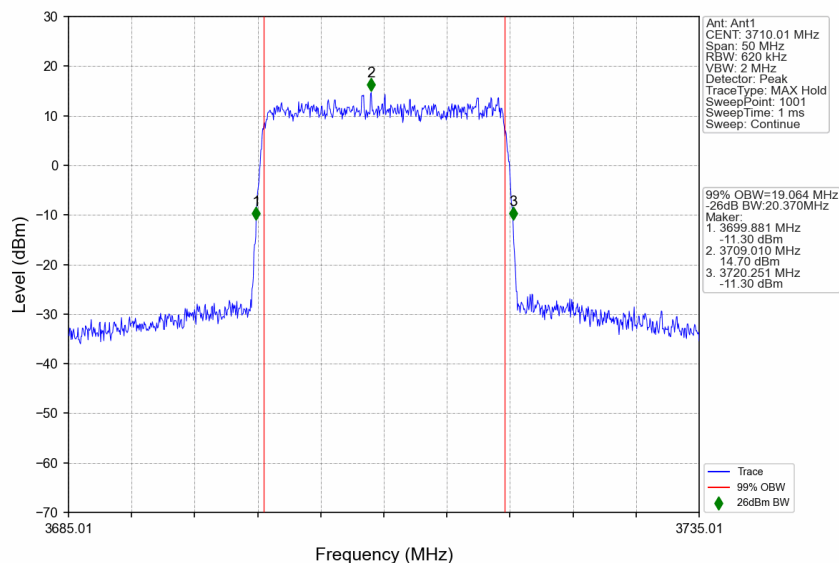
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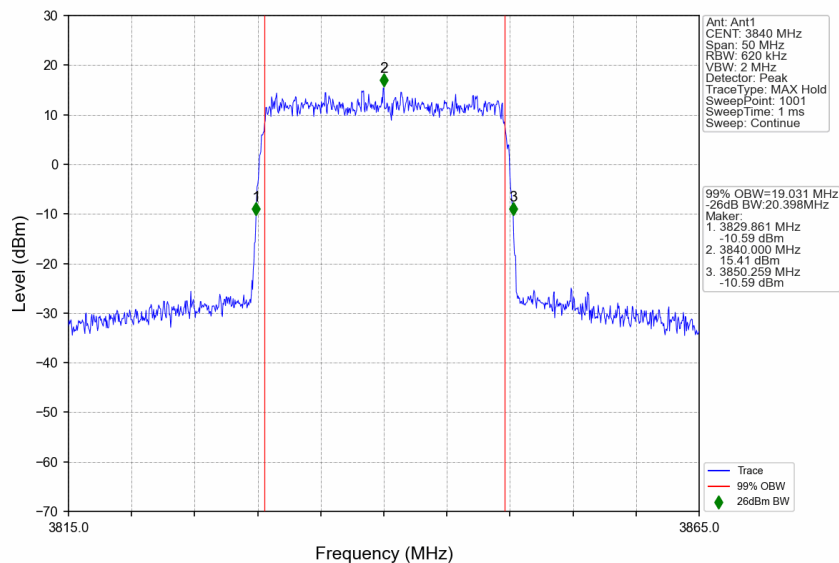
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n77a_15kHz_SISO_NTNV_20MHz_CP-OFDM_256_QAM_3710.01MHz_Outer_Full



n77a_15kHz_SISO_NTNV_20MHz_CP-OFDM_256_QAM_3840MHz_Outer_Full



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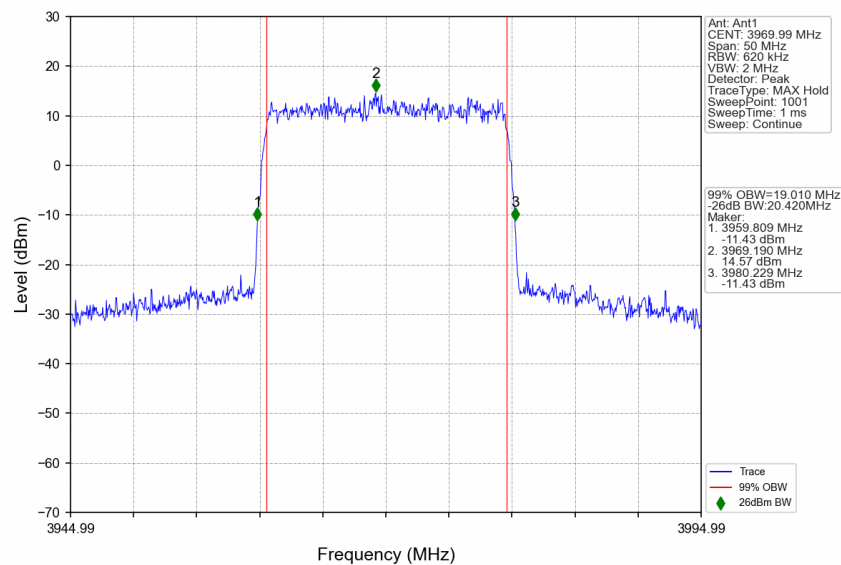
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4.4 15k_SISO_25MHz_NTNV

4.4.1 Test Result

5G NR n77a SCS=15kHz SISO 25MHz NTN						
Modulation	Frequency (MHz)	RB Allocation	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit (MHz)	Verdict
DFT-s-OFDM PI/2 BPSK	3712.5	Outer Full	23.16	24.68	/	Pass
	3840	Outer Full	23.19	24.63	/	Pass
	3967.5	Outer Full	23.21	24.62	/	Pass
DFT-s-OFDM QPSK	3712.5	Outer Full	23.05	24.60	/	Pass
	3840	Outer Full	23.02	24.68	/	Pass
	3967.5	Outer Full	23.06	24.69	/	Pass
DFT-s-OFDM 16 QAM	3712.5	Outer Full	23.09	24.64	/	Pass
	3840	Outer Full	23.03	24.68	/	Pass
	3967.5	Outer Full	23.06	24.65	/	Pass
DFT-s-OFDM 64 QAM	3712.5	Outer Full	23.06	24.64	/	Pass
	3840	Outer Full	23.13	24.57	/	Pass
	3967.5	Outer Full	23.06	24.65	/	Pass
DFT-s-OFDM 256 QAM	3712.5	Outer Full	23.08	24.69	/	Pass
	3840	Outer Full	23.05	24.65	/	Pass
	3967.5	Outer Full	23.04	24.62	/	Pass
CP-OFDM QPSK	3712.5	Outer Full	23.86	25.58	/	Pass
	3840	Outer Full	23.92	25.46	/	Pass
	3967.5	Outer Full	23.96	25.60	/	Pass
CP-OFDM 16 QAM	3712.5	Outer Full	23.89	25.55	/	Pass
	3840	Outer Full	23.95	25.45	/	Pass
	3967.5	Outer Full	23.95	25.60	/	Pass
CP-OFDM 64 QAM	3712.5	Outer Full	23.93	25.60	/	Pass
	3840	Outer Full	23.96	25.58	/	Pass
	3967.5	Outer Full	23.96	25.57	/	Pass
CP-OFDM 256 QAM	3712.5	Outer Full	23.86	25.56	/	Pass
	3840	Outer Full	23.87	25.54	/	Pass
	3967.5	Outer Full	23.92	25.52	/	Pass



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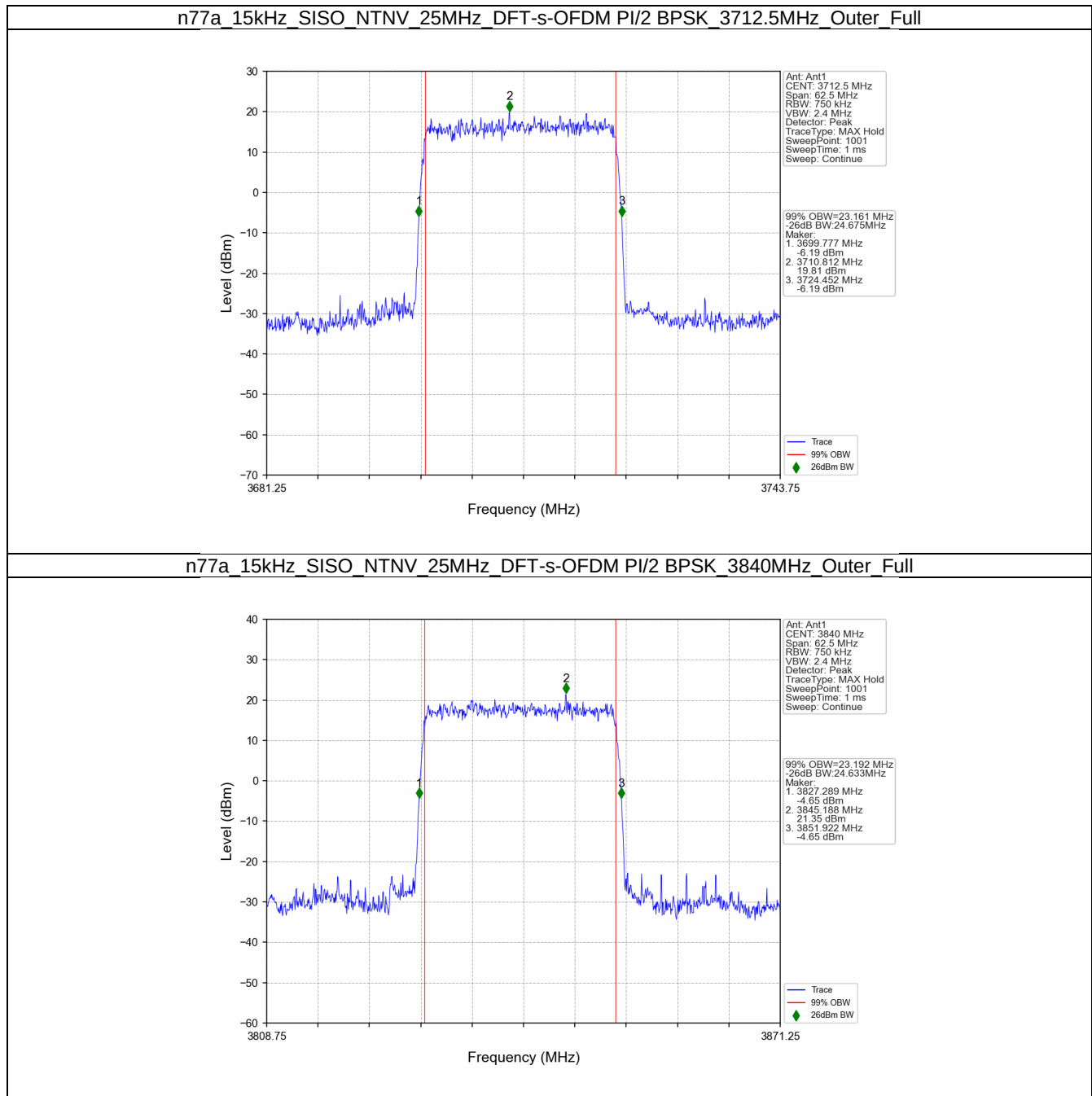
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4.4.2 Test Graph



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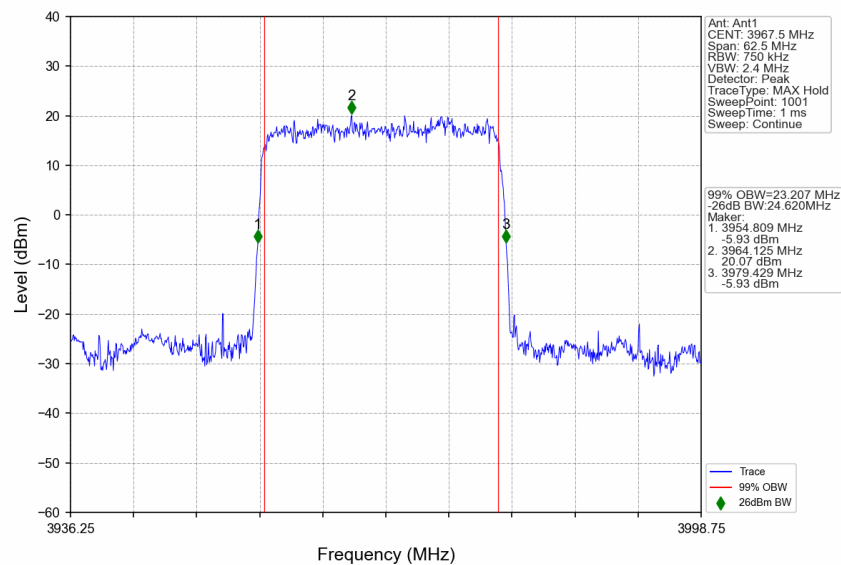
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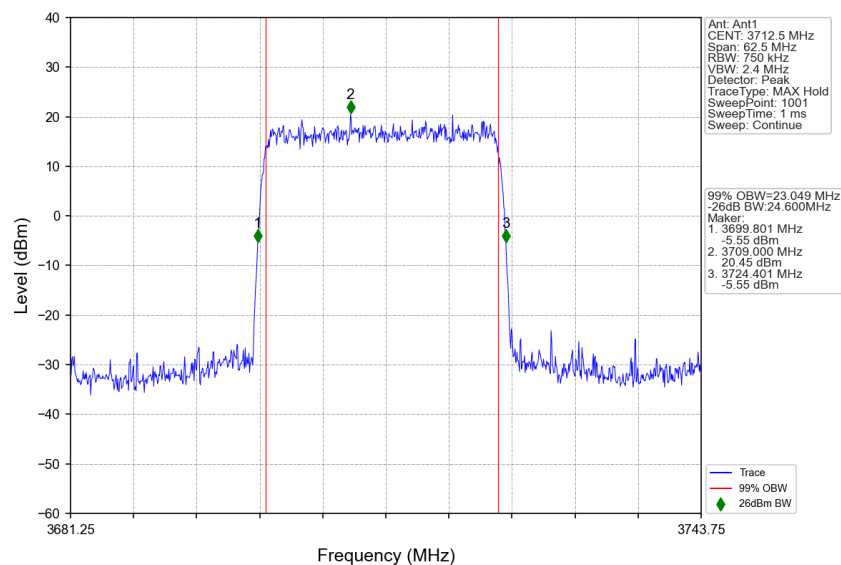
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n77a_15kHz_SISO_NTNV_25MHz_DFT-s-OFDM PI/2 BPSK 3967.5MHz_Outer_Full



n77a_15kHz_SISO_NTNV_25MHz_DFT-s-OFDM QPSK 3712.5MHz_Outer_Full



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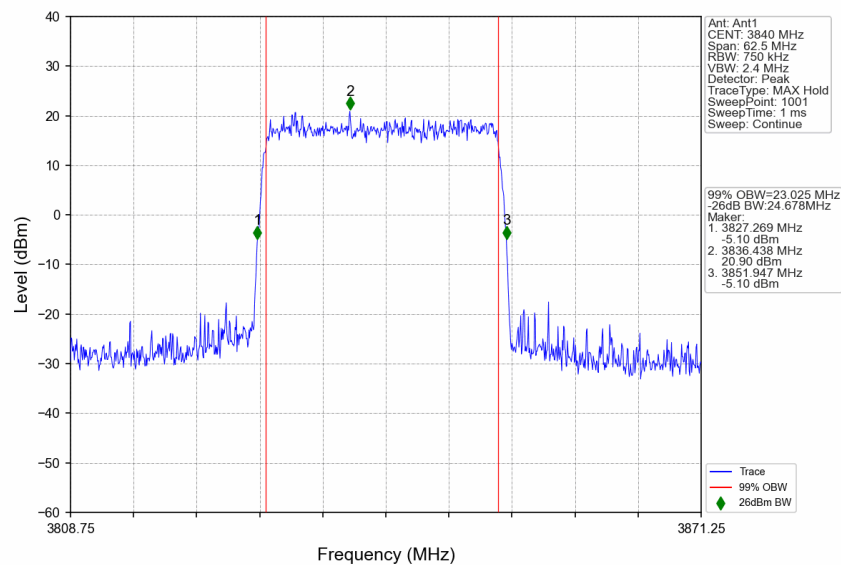
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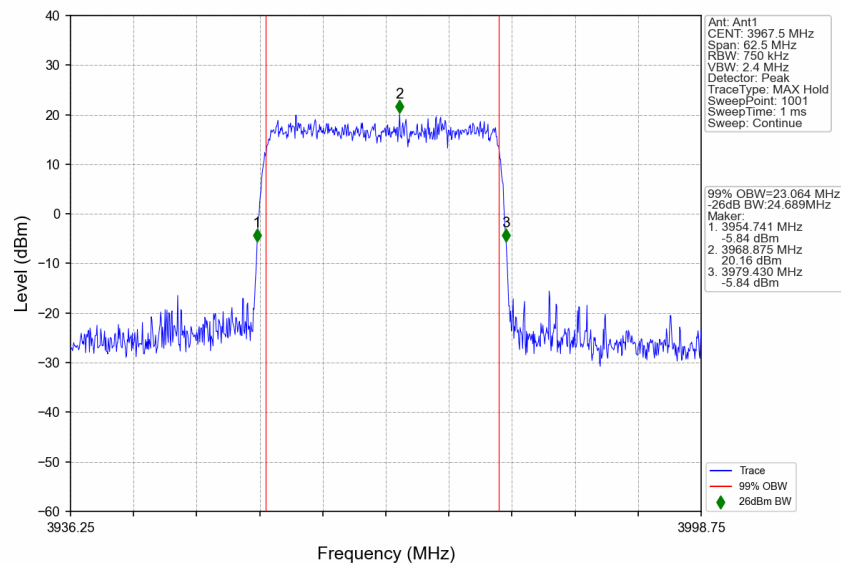
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n77a_15kHz_SISO_NTNV_25MHz_DFT-s-OFDM QPSK_3840MHz_Outer_Full



n77a_15kHz_SISO_NTNV_25MHz_DFT-s-OFDM QPSK_3967.5MHz_Outer_Full



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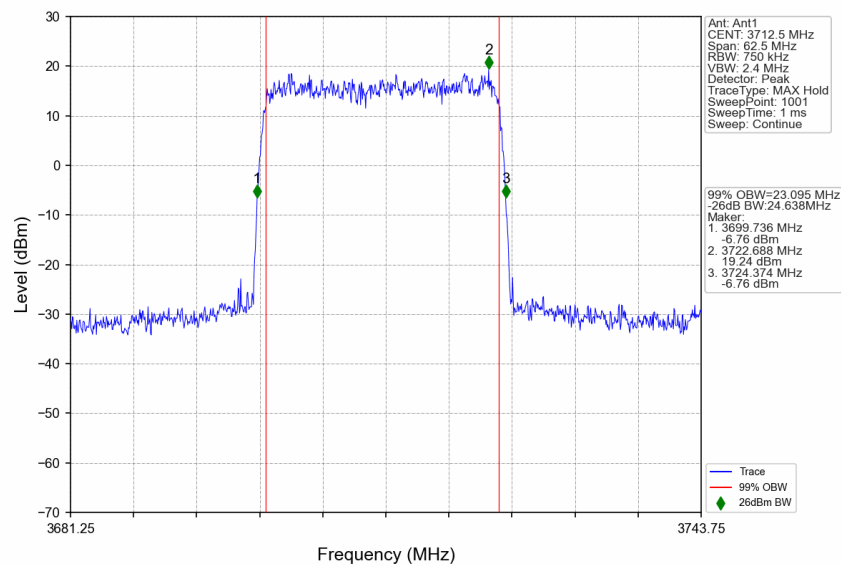
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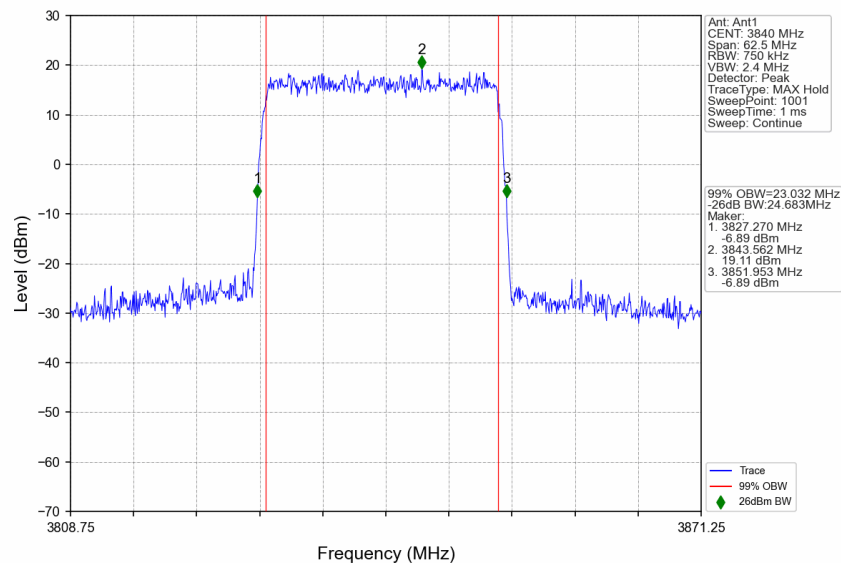
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n77a_15kHz_SISO_NTNV_25MHz_DFT-s-OFDM_16_QAM_3712.5MHz_Outer_Full



n77a_15kHz_SISO_NTNV_25MHz_DFT-s-OFDM_16_QAM_3840MHz_Outer_Full



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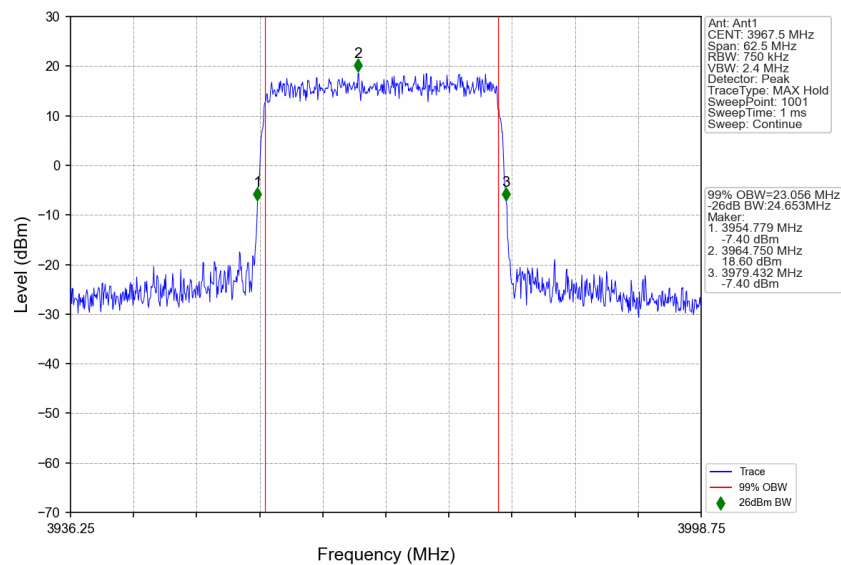
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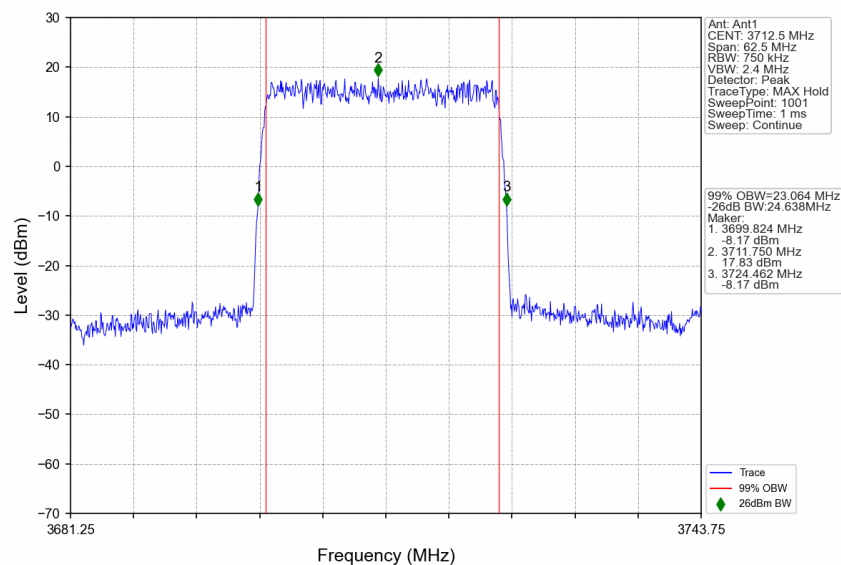
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n77a_15kHz_SISO_NTNV_25MHz_DFT-s-OFDM 16 QAM_3967.5MHz_Outer_Full



n77a_15kHz_SISO_NTNV_25MHz_DFT-s-OFDM 64 QAM_3712.5MHz_Outer_Full



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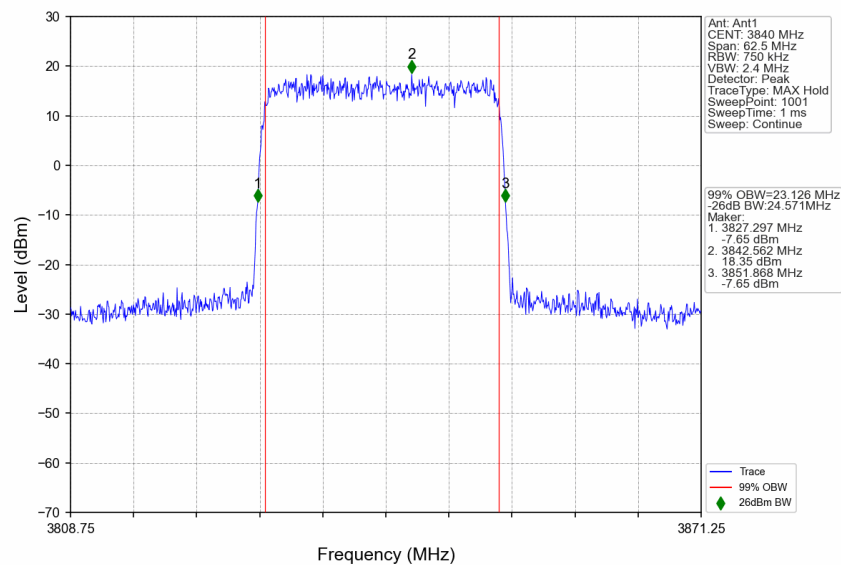
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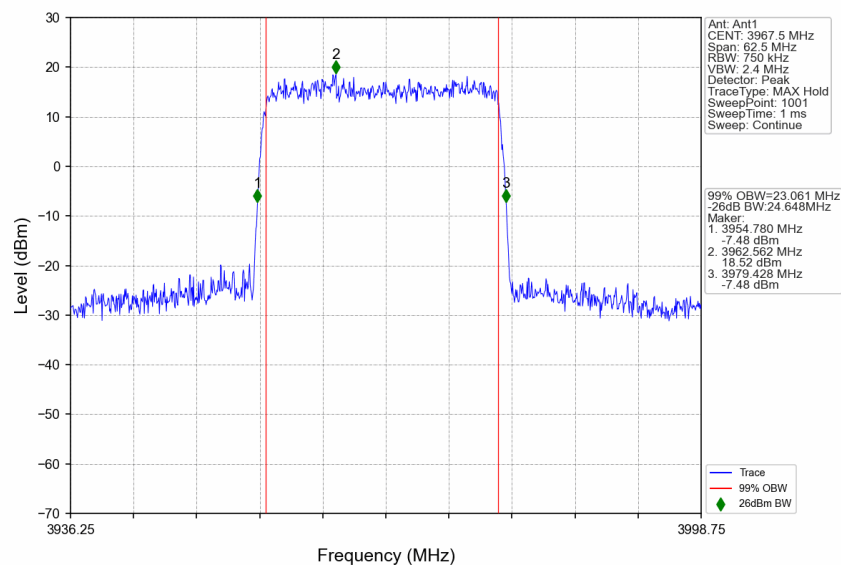
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n77a_15kHz_SISO_NTNV_25MHz_DFT-s-OFDM_64_QAM_3840MHz_Outer_Full



n77a_15kHz_SISO_NTNV_25MHz_DFT-s-OFDM_64_QAM_3967.5MHz_Outer_Full



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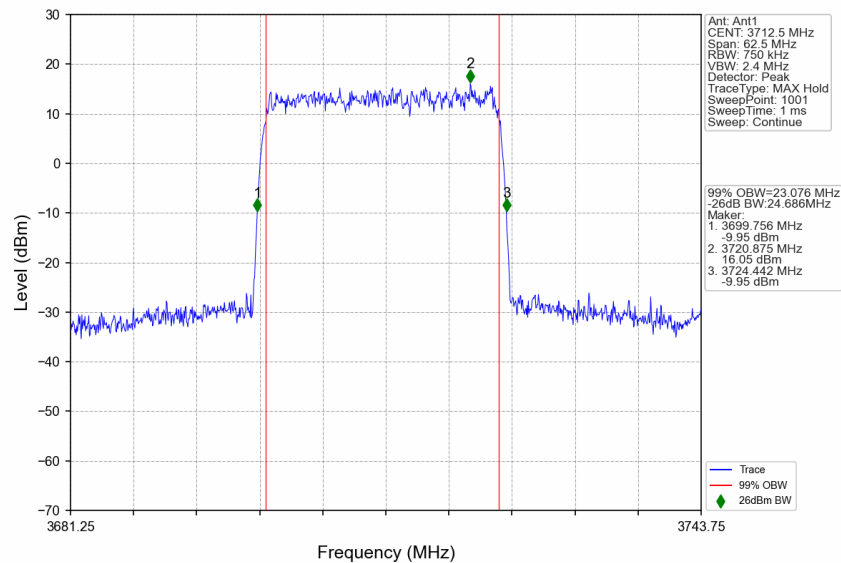
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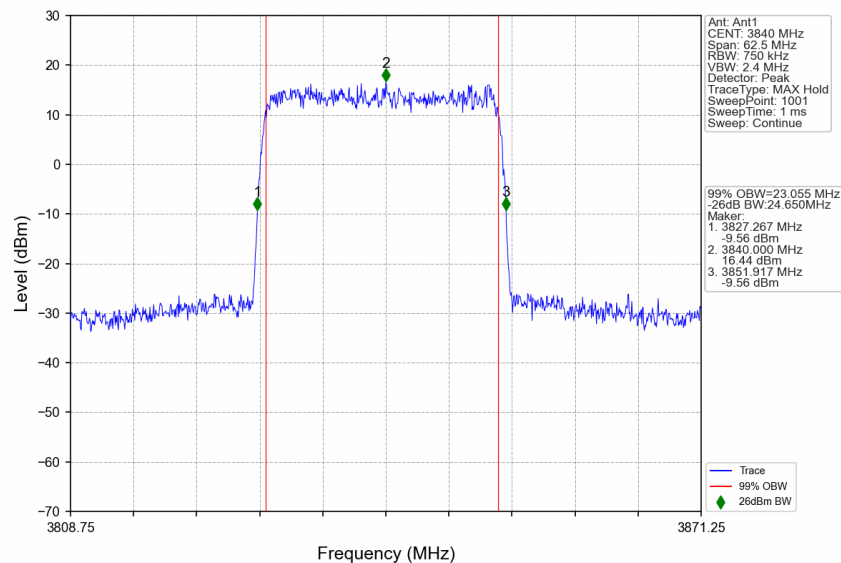
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n77a_15kHz_SISO_NTNV_25MHz_DFT-s-OFDM_256_QAM_3712.5MHz_Outer_Full



n77a_15kHz_SISO_NTNV_25MHz_DFT-s-OFDM_256_QAM_3840MHz_Outer_Full



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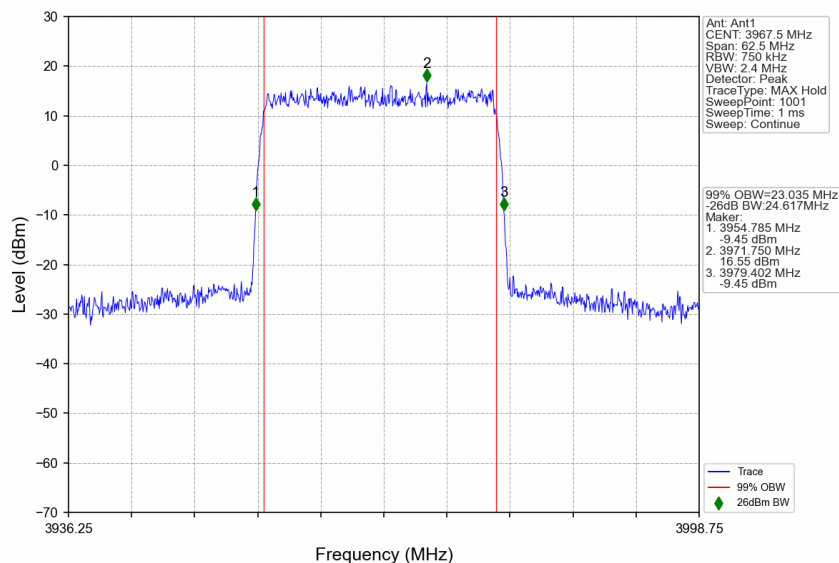
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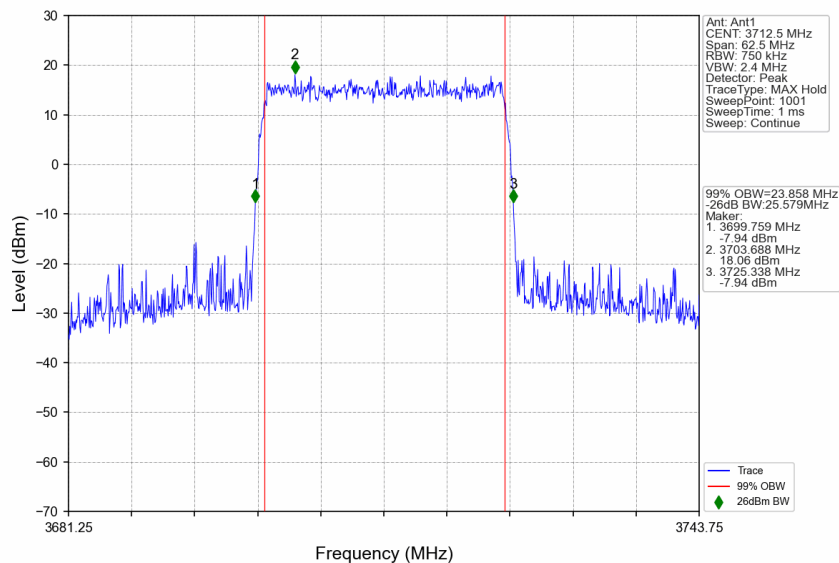
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n77a_15kHz_SISO_NTNV_25MHz_DFT-s-OFDM_256_QAM_3967.5MHz_Outer_Full



n77a_15kHz_SISO_NTNV_25MHz_CP-OFDM_QPSK_3712.5MHz_Outer_Full



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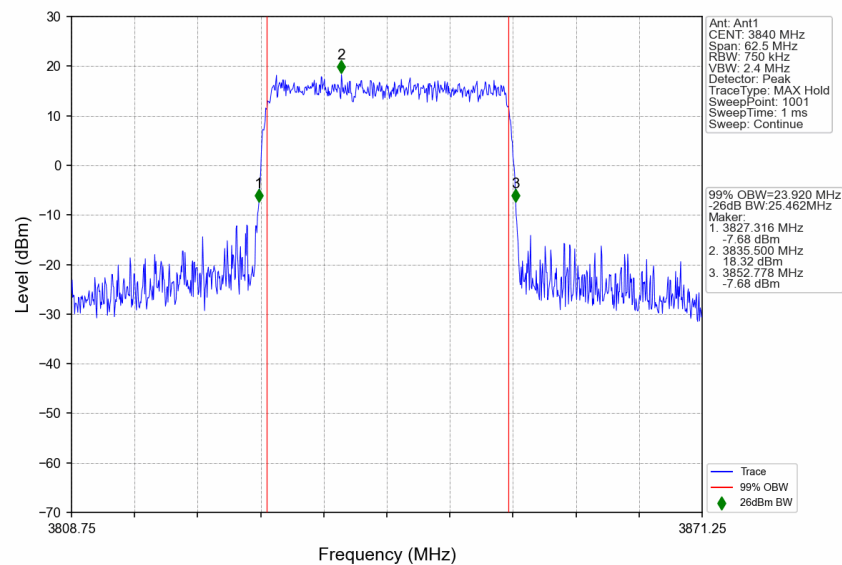
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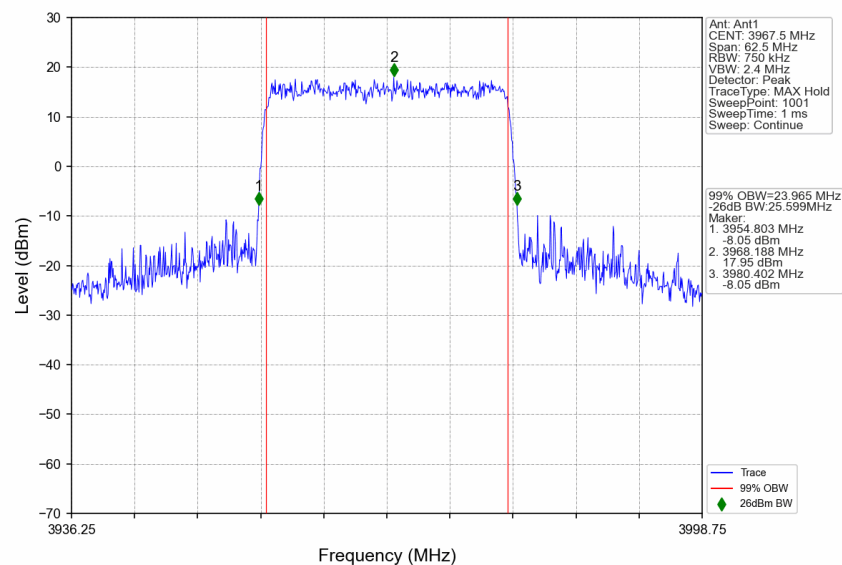
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n77a_15kHz_SISO_NTNV_25MHz_CP-OFDM QPSK_3840MHz_Outer_Full



n77a_15kHz_SISO_NTNV_25MHz_CP-OFDM QPSK_3967.5MHz_Outer_Full



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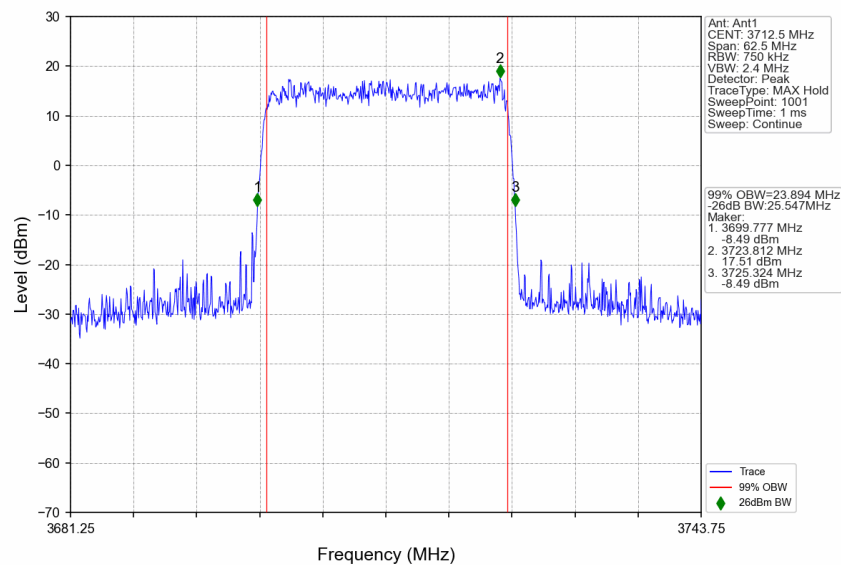
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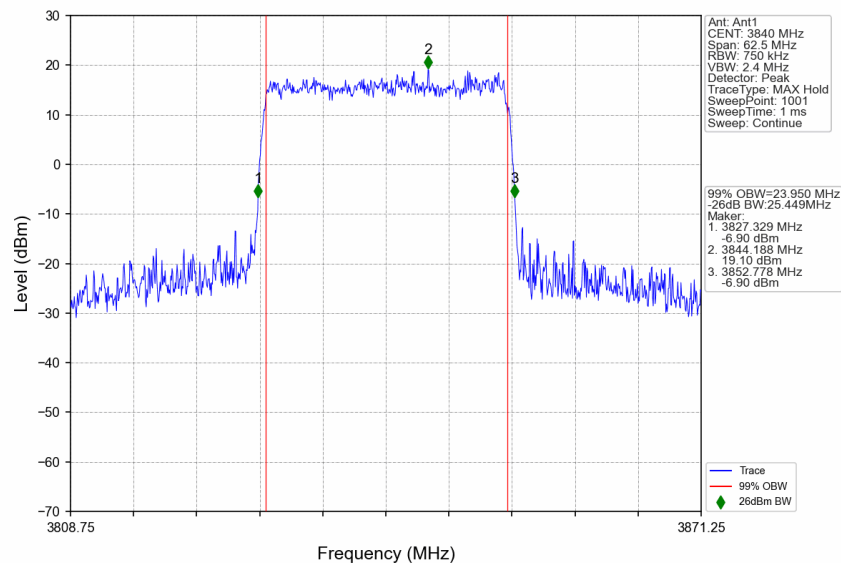
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n77a_15kHz_SISO_NTNV_25MHz_CP-OFDM_16_QAM_3712.5MHz_Outer_Full



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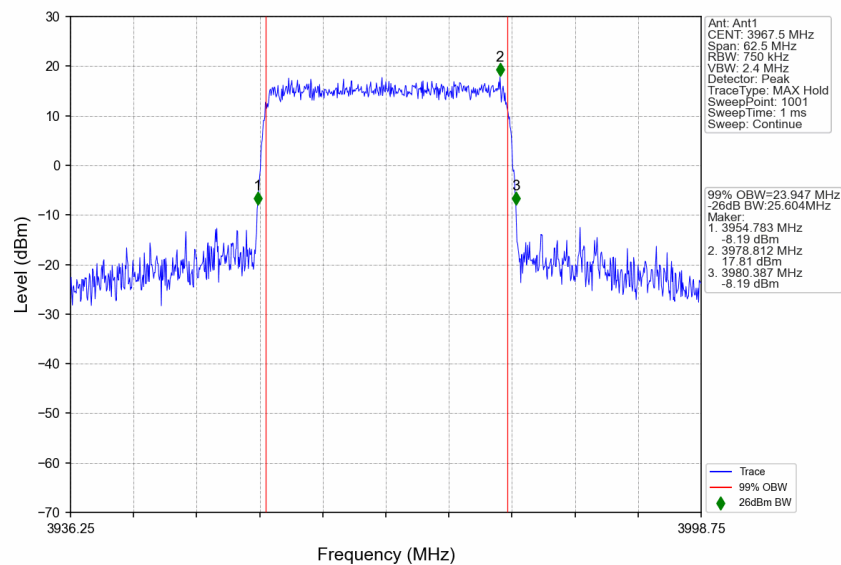
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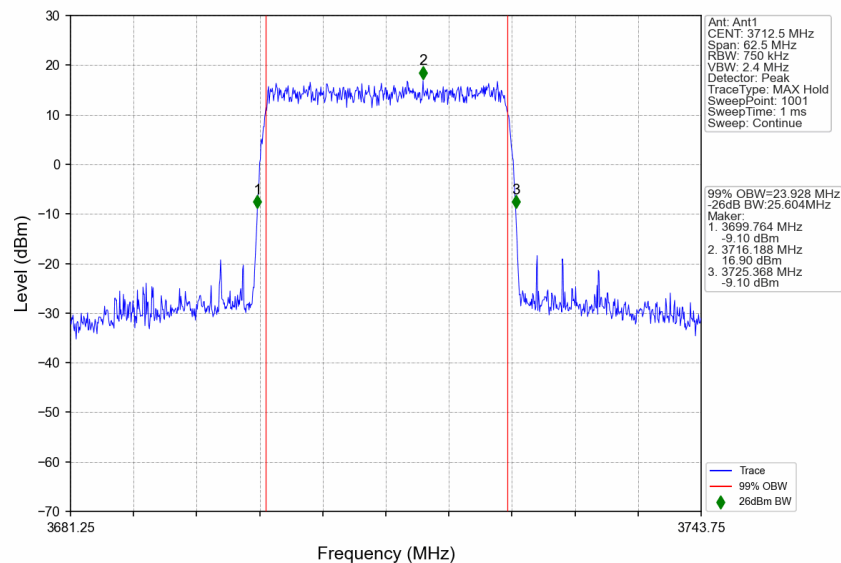
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n77a_15kHz_SISO_NTNV_25MHz_CP-OFDM 64 QAM_3712.5MHz_Outer_Full



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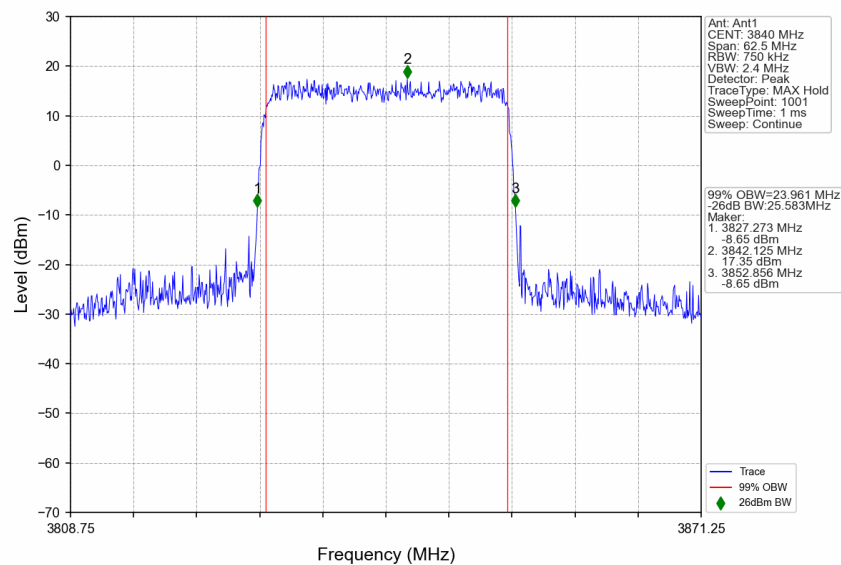
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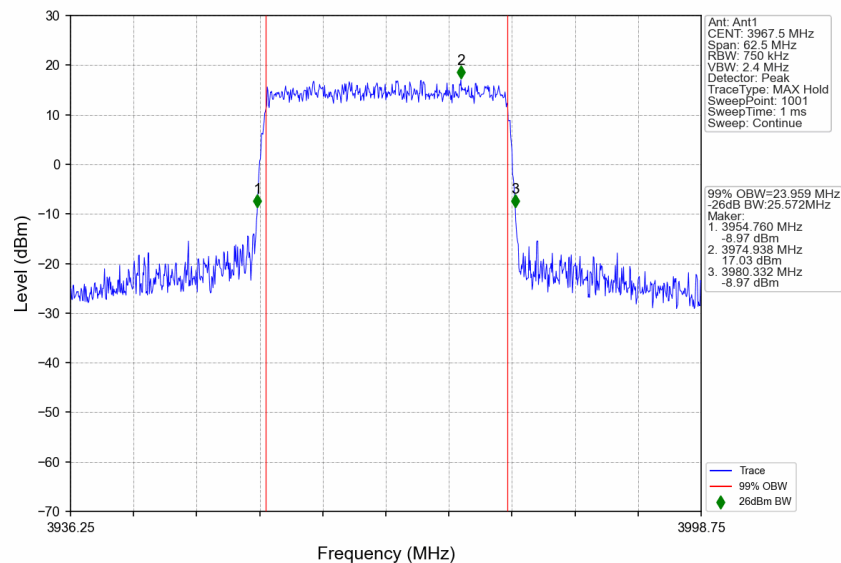
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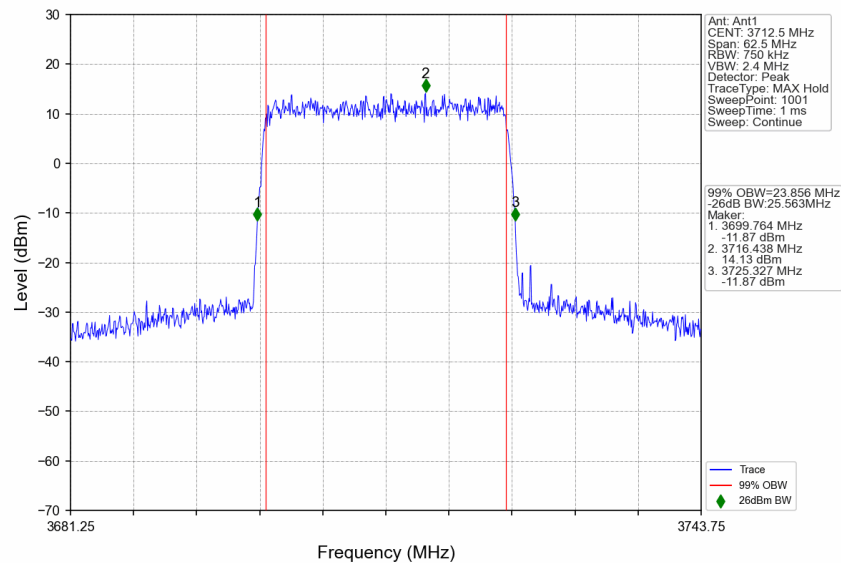
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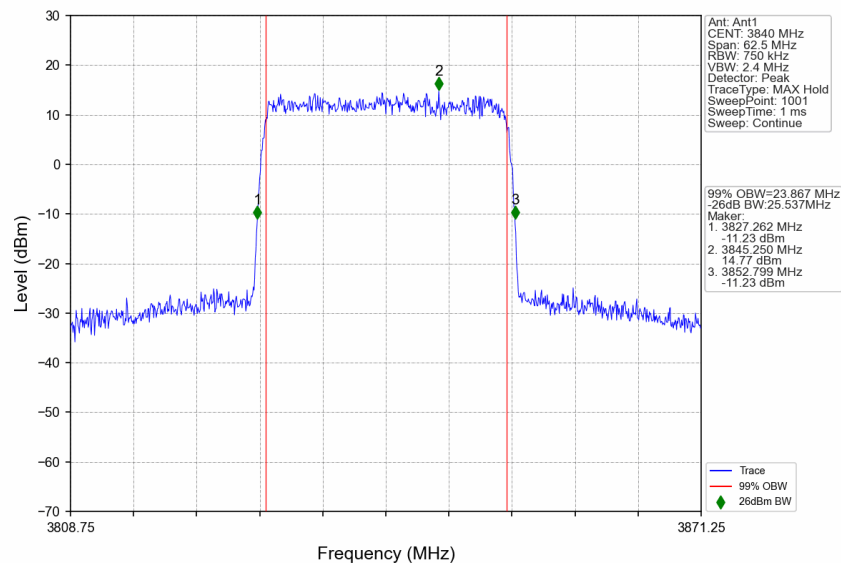
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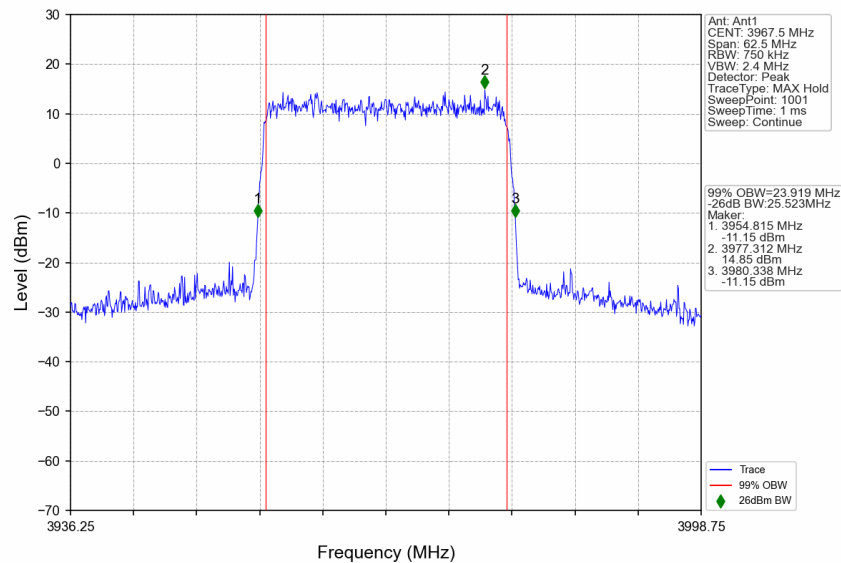
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n77a_15kHz_SISO_NTNV_25MHz_CP-OFDM_256_QAM_3967.5MHz_Outer_Full



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4.5 15k_SISO_30MHz_NTNV

4.5.1 Test Result

5G NR n77a SCS=15kHz SISO 30MHz NTN						
Modulation	Frequency (MHz)	RB Allocation	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit (MHz)	Verdict
DFT-s-OFDM PI/2 BPSK	3715.005	Outer Full	28.75	30.77	/	Pass
	3840	Outer Full	28.81	30.73	/	Pass
	3964.995	Outer Full	28.84	30.73	/	Pass
DFT-s-OFDM QPSK	3715.005	Outer Full	28.81	30.74	/	Pass
	3840	Outer Full	28.87	30.68	/	Pass
	3964.995	Outer Full	28.78	30.76	/	Pass
DFT-s-OFDM 16 QAM	3715.005	Outer Full	28.88	30.72	/	Pass
	3840	Outer Full	28.71	30.79	/	Pass
	3964.995	Outer Full	28.72	30.72	/	Pass
DFT-s-OFDM 64 QAM	3715.005	Outer Full	28.79	30.81	/	Pass
	3840	Outer Full	28.71	30.74	/	Pass
	3964.995	Outer Full	28.77	30.77	/	Pass
DFT-s-OFDM 256 QAM	3715.005	Outer Full	28.83	30.73	/	Pass
	3840	Outer Full	28.82	30.73	/	Pass
	3964.995	Outer Full	28.80	30.72	/	Pass
CP-OFDM QPSK	3715.005	Outer Full	28.78	30.82	/	Pass
	3840	Outer Full	28.95	30.76	/	Pass
	3964.995	Outer Full	28.70	30.71	/	Pass
CP-OFDM 16 QAM	3715.005	Outer Full	28.75	30.74	/	Pass
	3840	Outer Full	28.67	30.66	/	Pass
	3964.995	Outer Full	28.73	30.72	/	Pass
CP-OFDM 64 QAM	3715.005	Outer Full	28.77	30.73	/	Pass
	3840	Outer Full	28.76	30.73	/	Pass
	3964.995	Outer Full	28.79	30.77	/	Pass
CP-OFDM 256 QAM	3715.005	Outer Full	28.76	30.74	/	Pass
	3840	Outer Full	28.71	30.68	/	Pass
	3964.995	Outer Full	28.70	30.69	/	Pass



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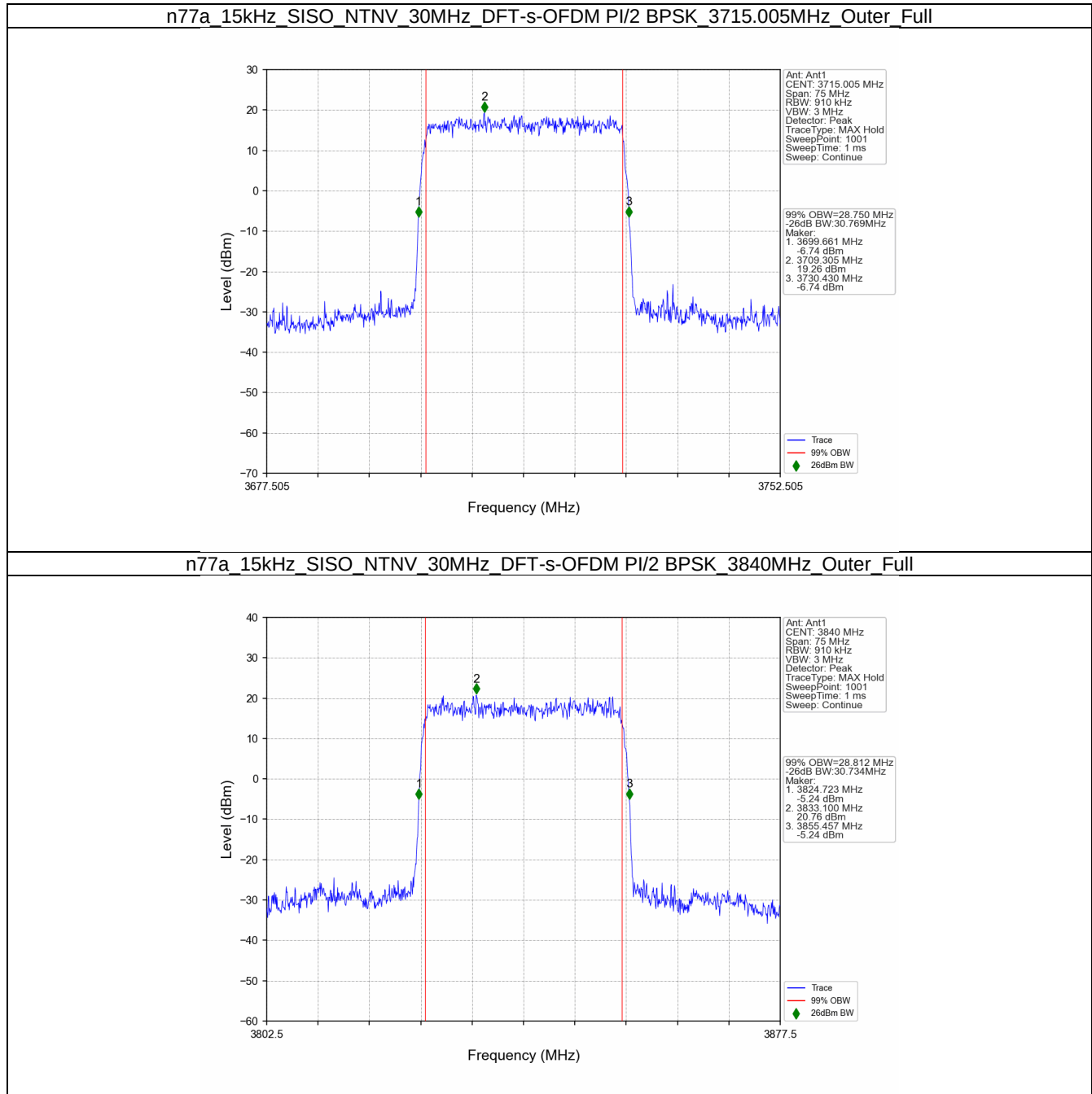
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4.5.2 Test Graph



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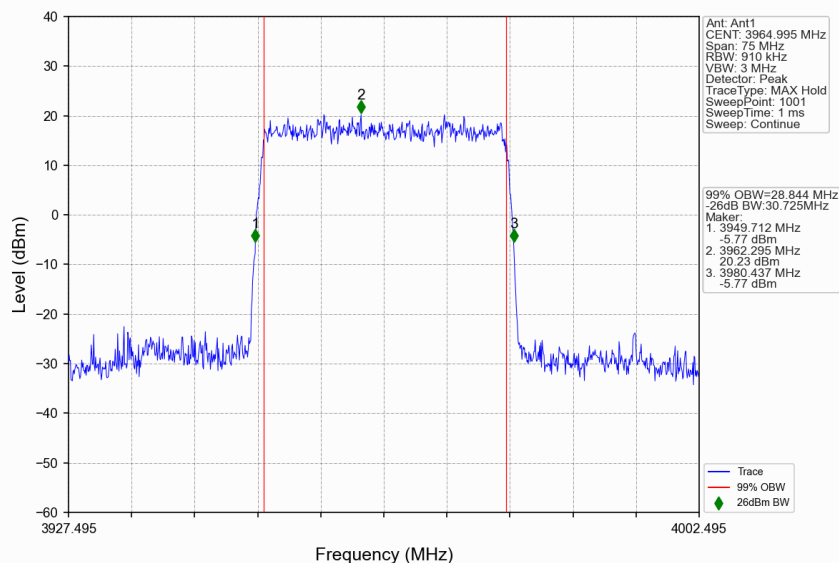
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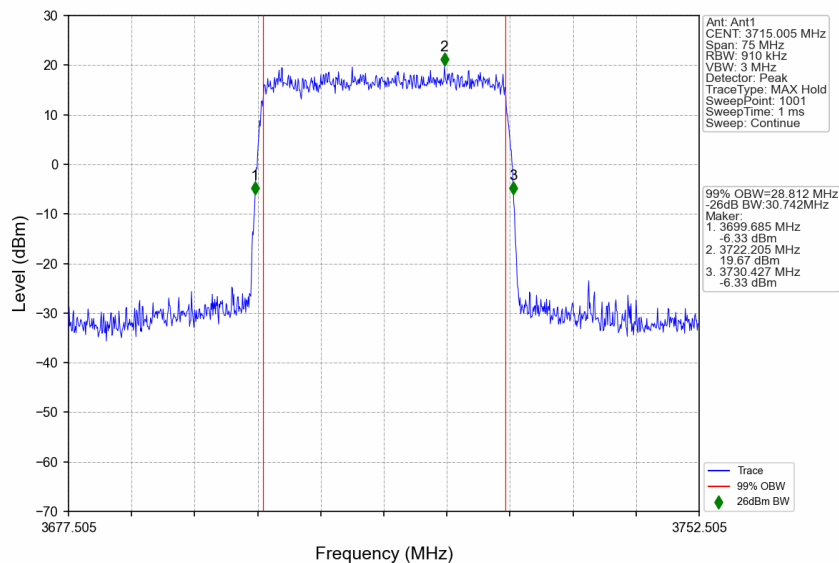
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n77a_15kHz_SISO_NTNV_30MHz_DFT-s-OFDM PI/2 BPSK_3964.995MHz_Outer_Full



n77a_15kHz_SISO_NTNV_30MHz_DFT-s-OFDM QPSK_3715.005MHz_Outer_Full



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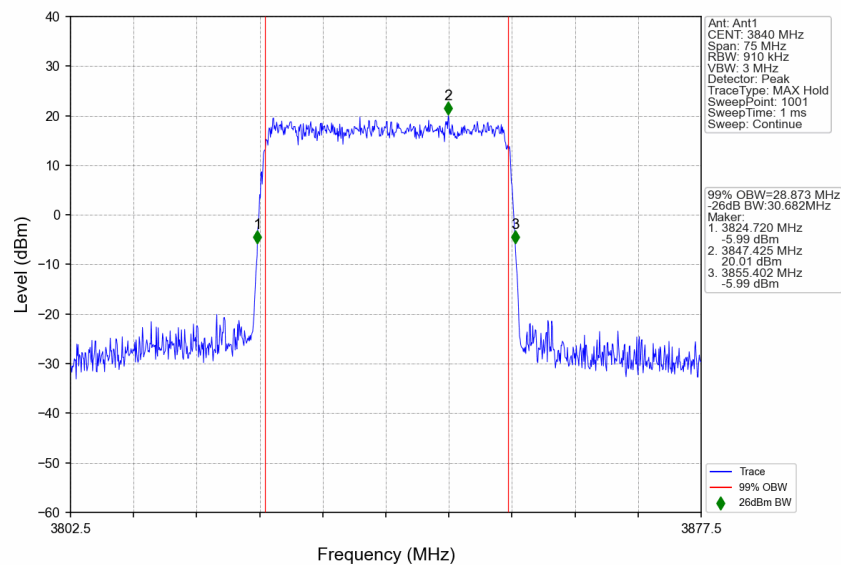
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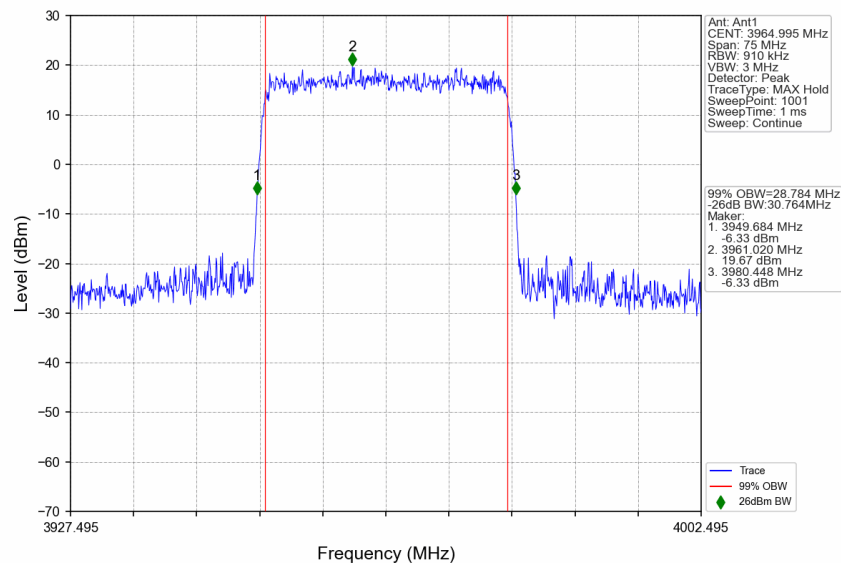
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n77a_15kHz_SISO_NTNV_30MHz_DFT-s-OFDM QPSK_3840MHz_Outer_Full



n77a_15kHz_SISO_NTNV_30MHz_DFT-s-OFDM QPSK_3964.995MHz_Outer_Full



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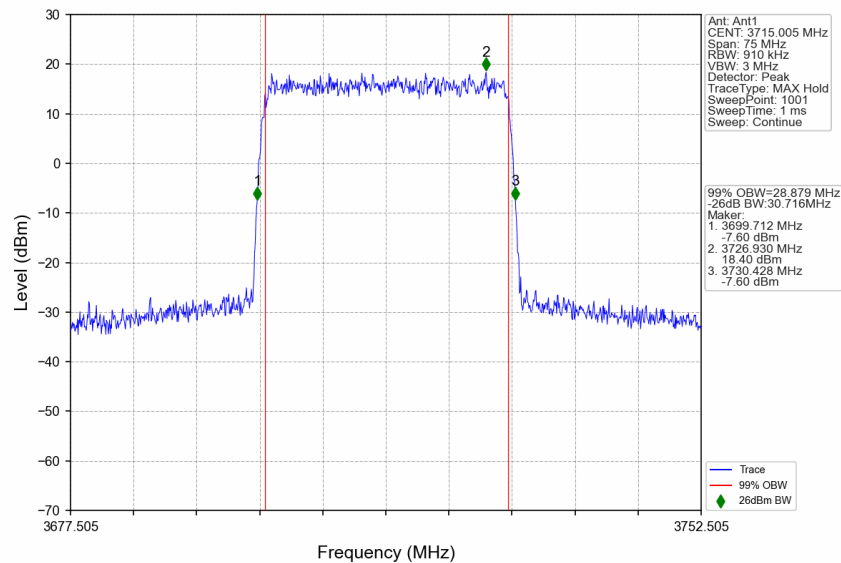
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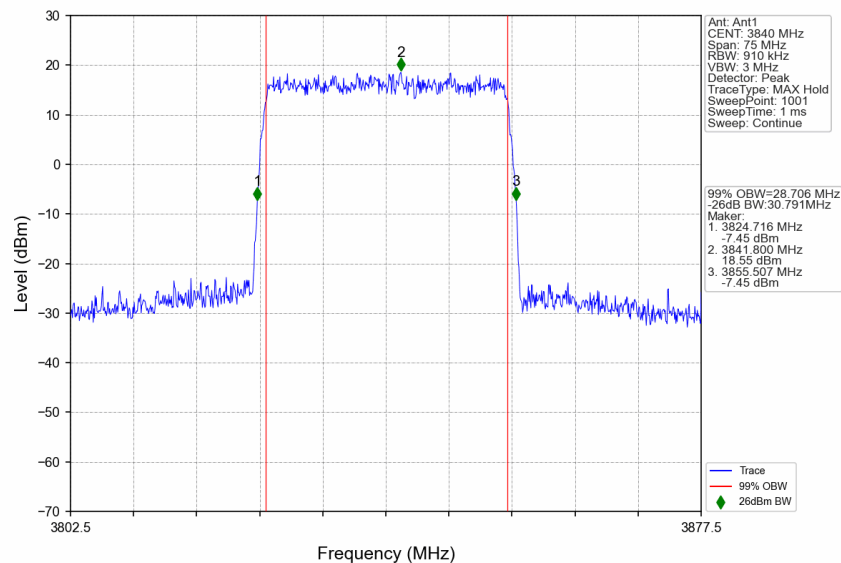
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n77a_15kHz_SISO_NTNV_30MHz_DFT-s-OFDM_16_QAM_3715.005MHz_Outer_Full



n77a_15kHz_SISO_NTNV_30MHz_DFT-s-OFDM_16_QAM_3840MHz_Outer_Full



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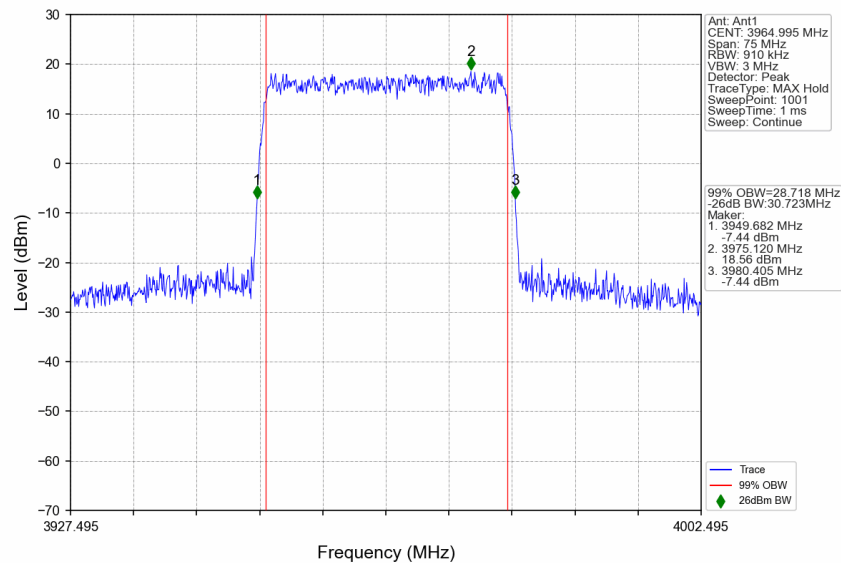
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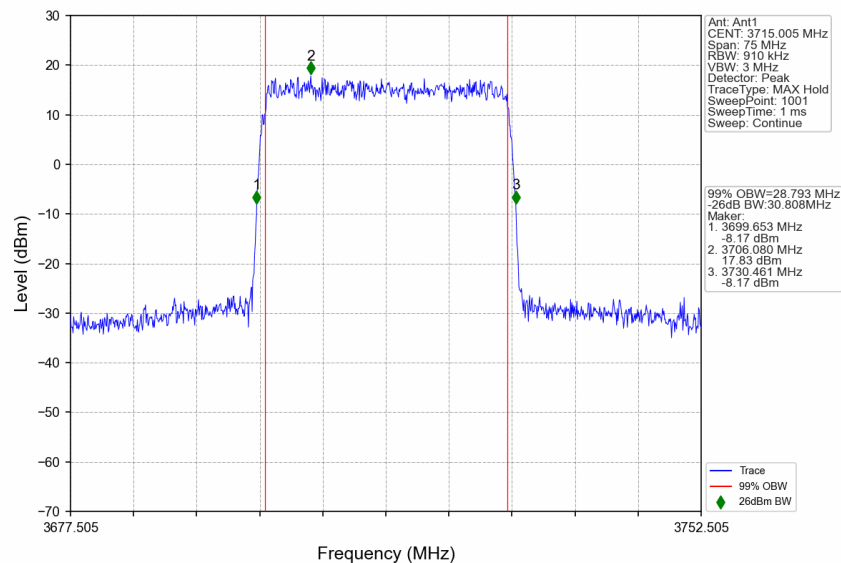
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n77a_15kHz_SISO_NTNV_30MHz_DFT-s-OFDM 16 QAM_3964.995MHz_Outer_Full



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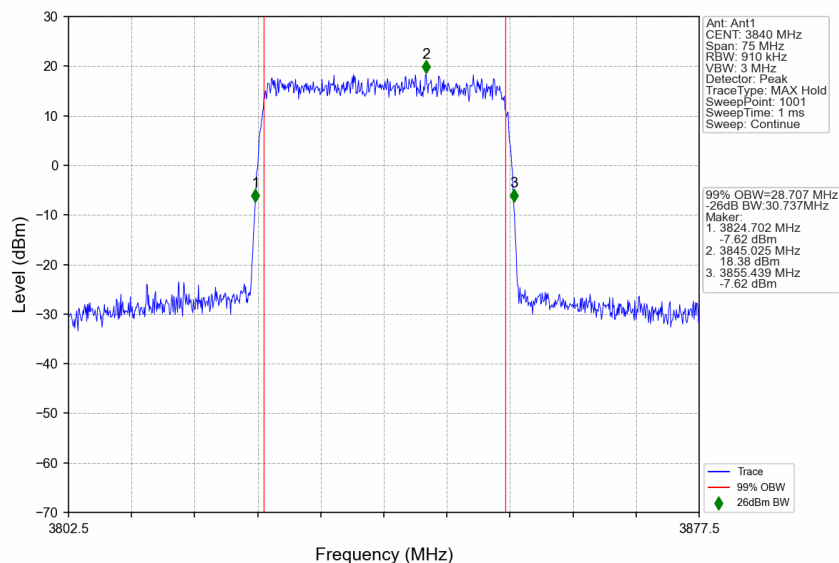
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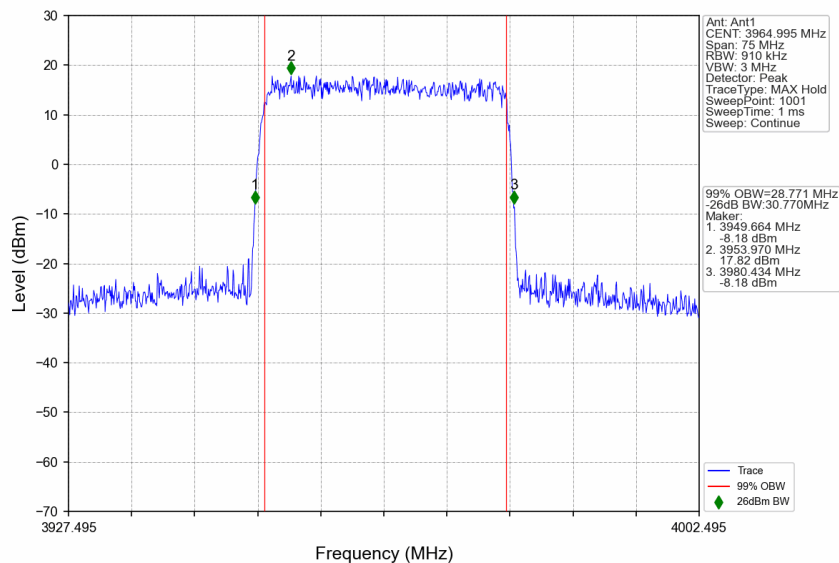
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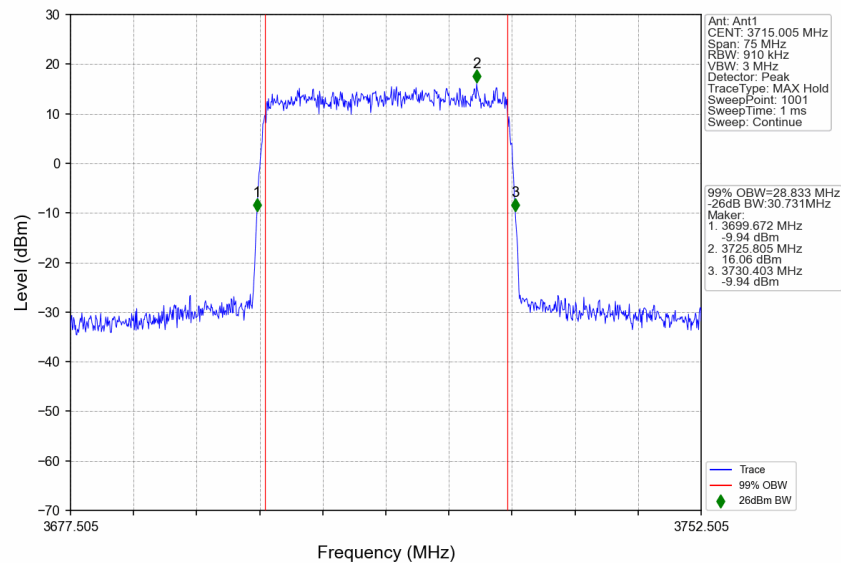
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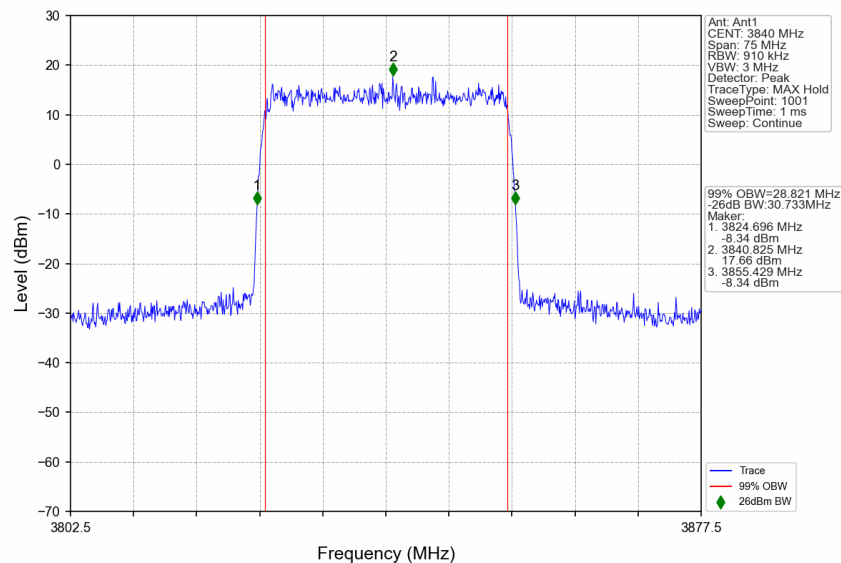
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n77a_15kHz_SISO_NTNV_30MHz_DFT-s-OFDM 256 QAM_3840MHz_Outer_Full



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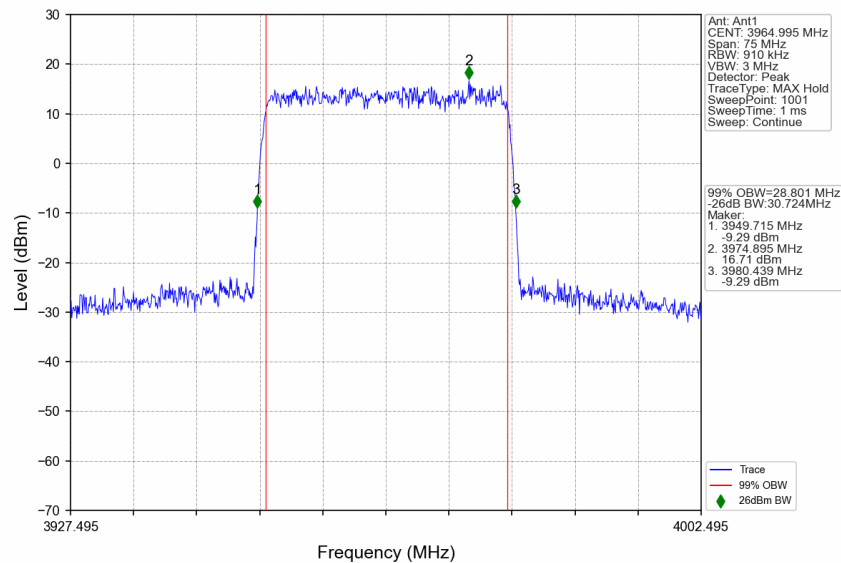
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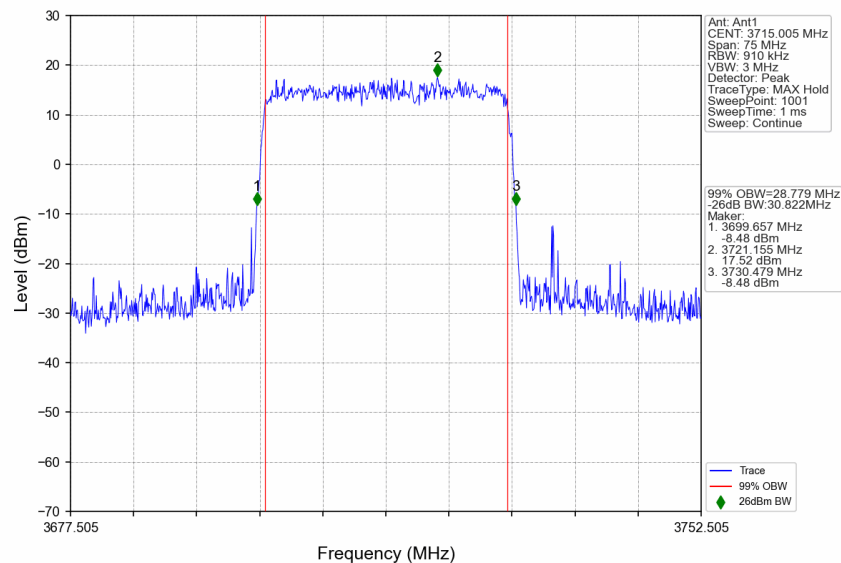
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n77a_15kHz_SISO_NTNV_30MHz_CP-OFDM QPSK_3715.005MHz_Outer_Full



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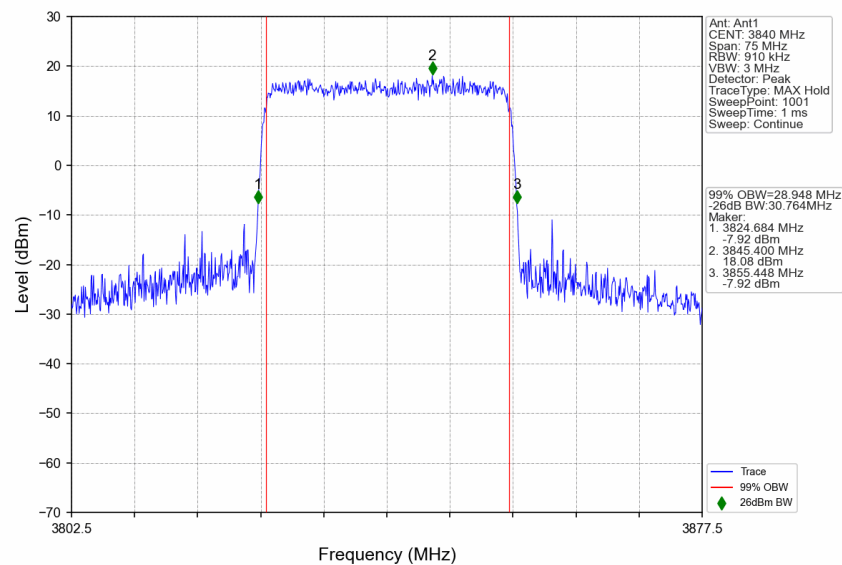
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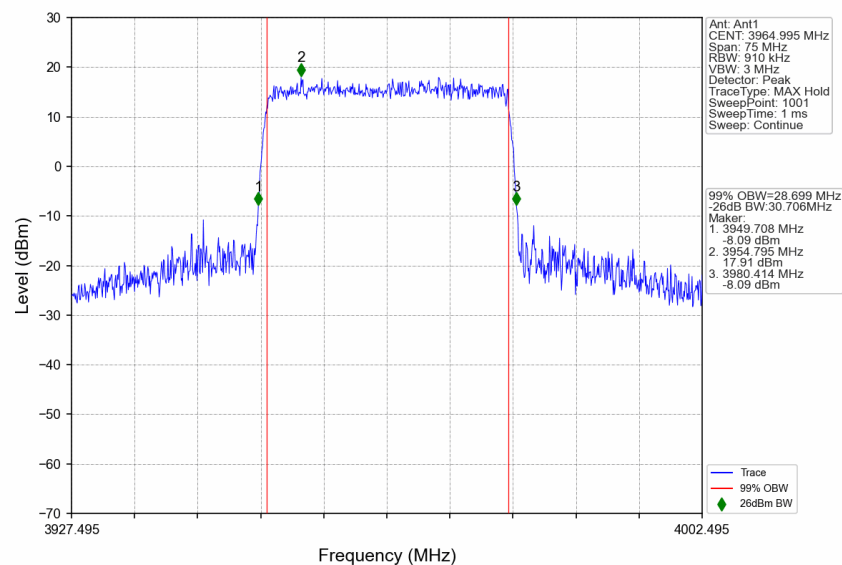
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n77a_15kHz_SISO_NTNV_30MHz_CP-OFDM QPSK_3964.995MHz_Outer_Full



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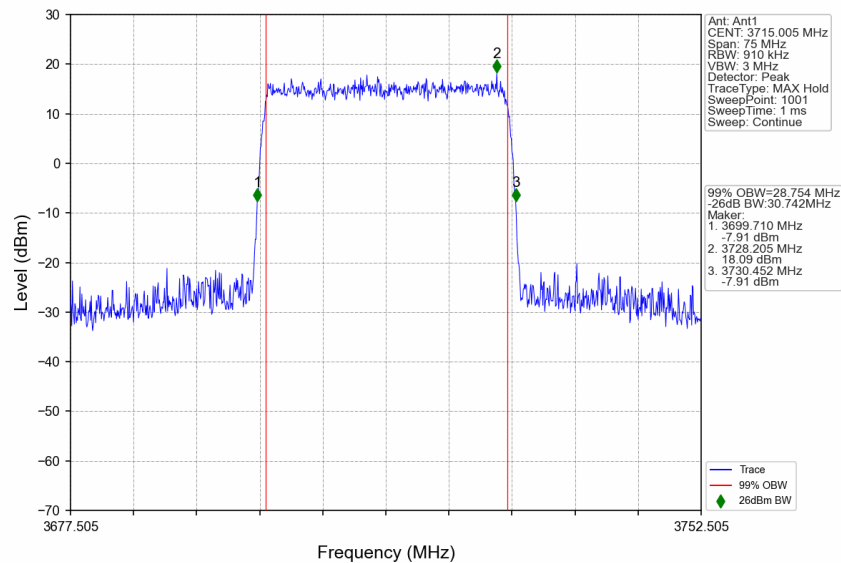
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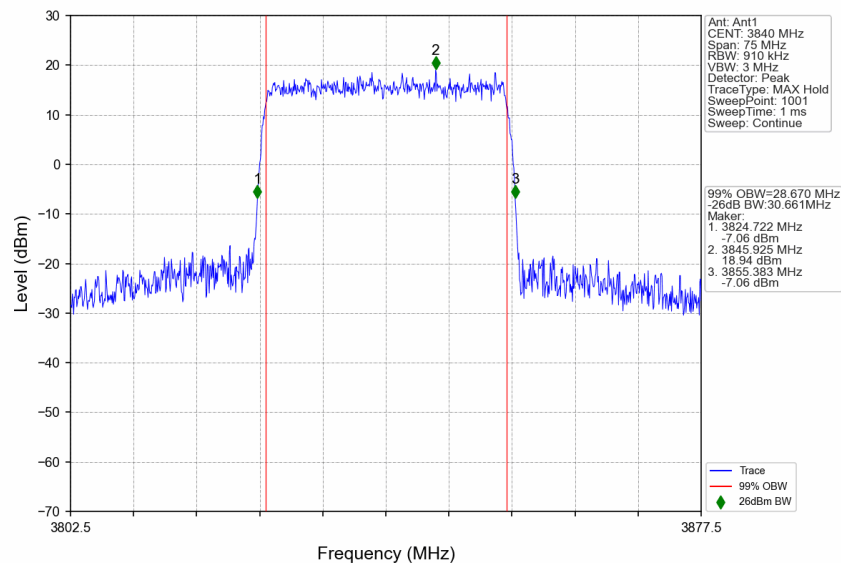
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n77a_15kHz_SISO_NTNV_30MHz_CP-OFDM_16_QAM_3715.005MHz_Outer_Full



n77a_15kHz_SISO_NTNV_30MHz_CP-OFDM_16_QAM_3840MHz_Outer_Full



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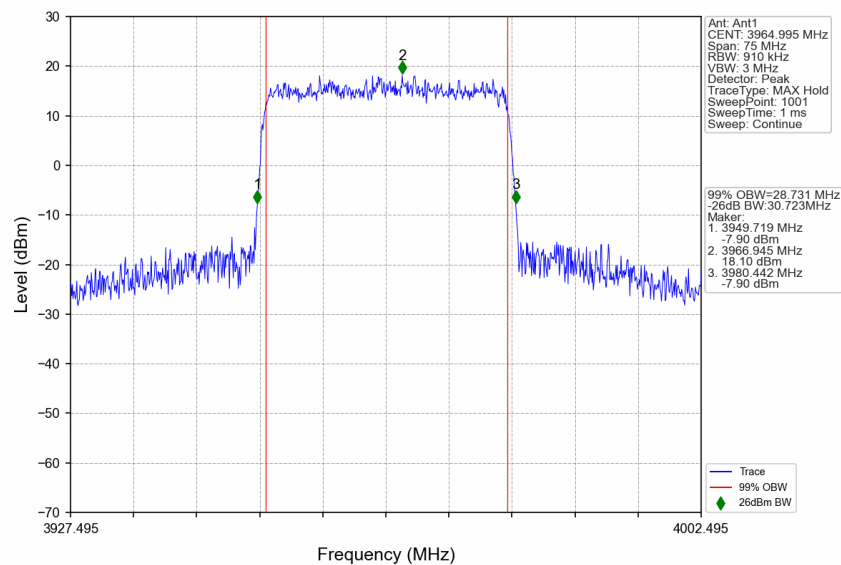
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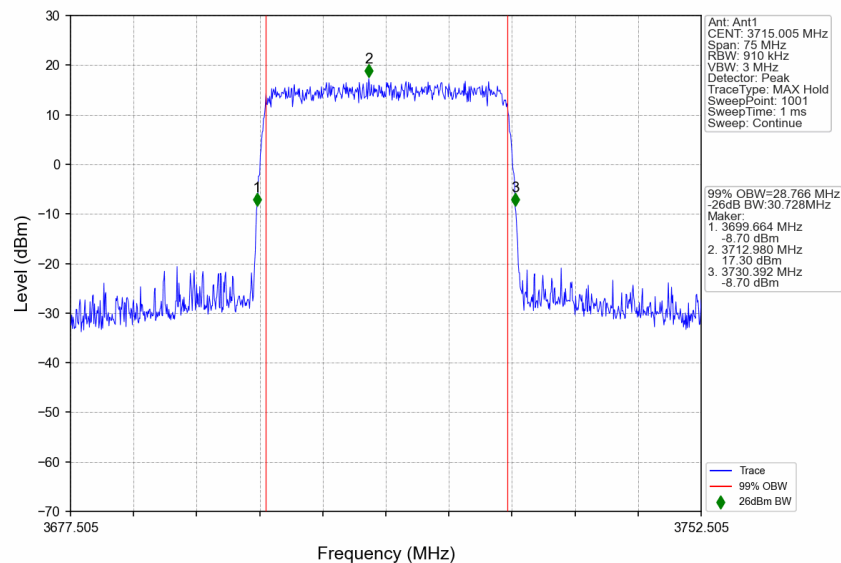
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n77a_15kHz_SISO_NTNV_30MHz_CP-OFDM 64 QAM_3715.005MHz_Outer_Full



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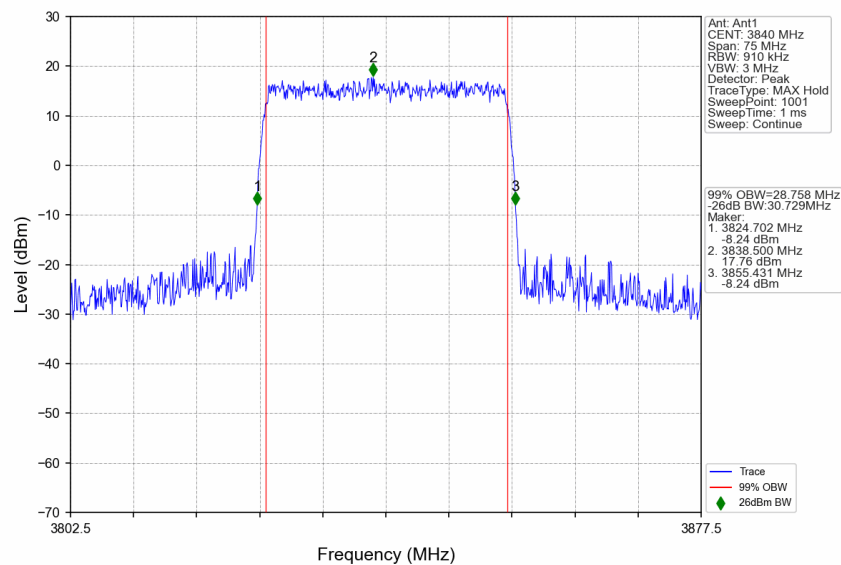
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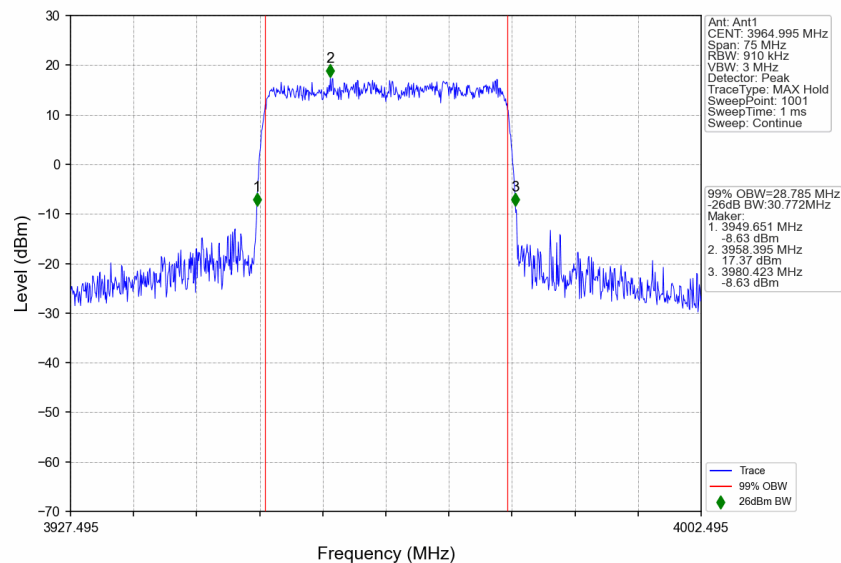
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n77a_15kHz_SISO_NTNV_30MHz_CP-OFDM_64_QAM_3840MHz_Outer_Full



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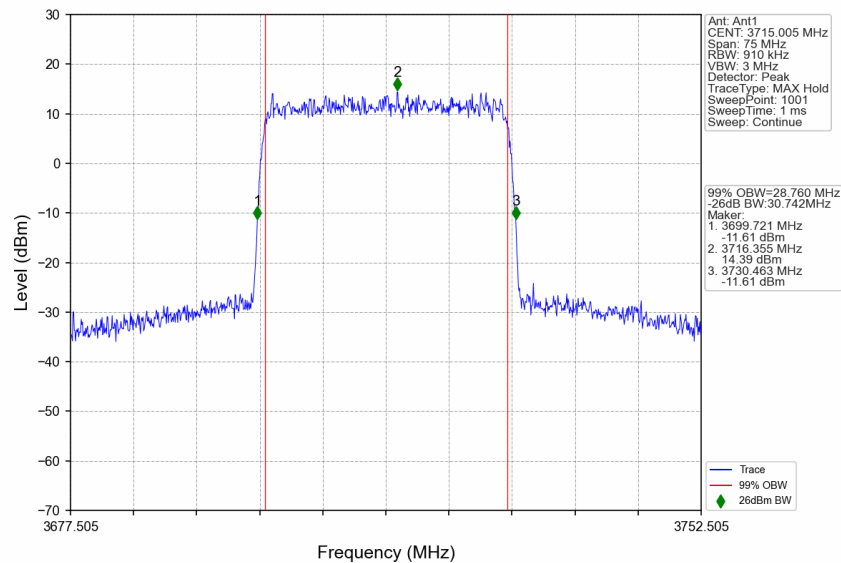
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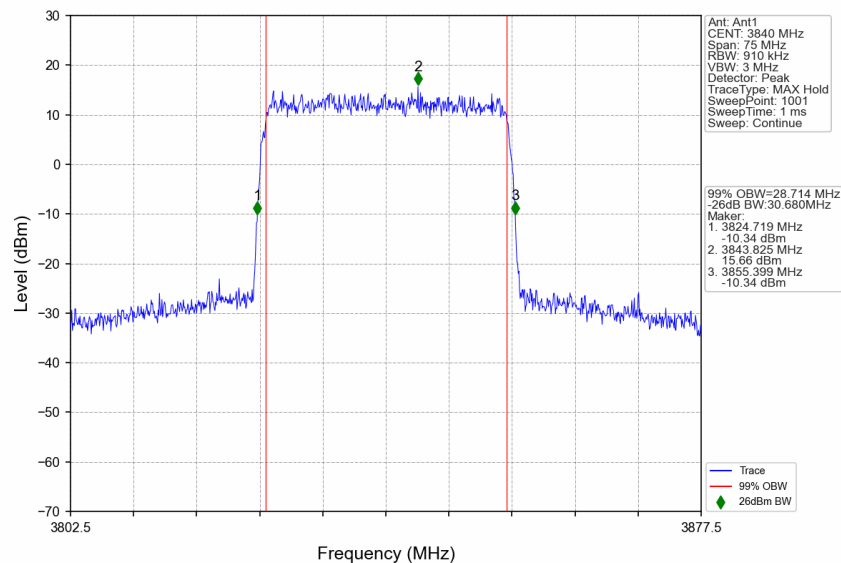
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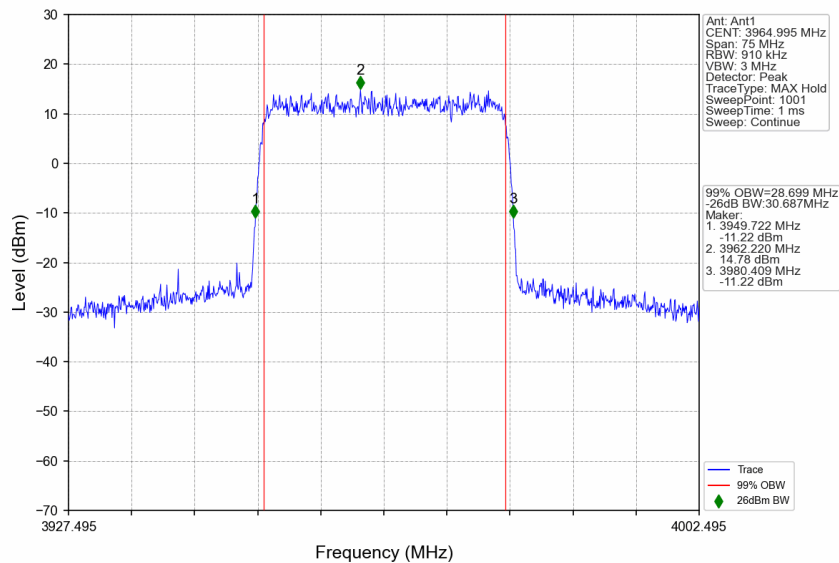
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4.6 15k_SISO_40MHz_NTNV

4.6.1 Test Result

5G NR n77a SCS=15kHz SISO 40MHz NTN						
Modulation	Frequency (MHz)	RB Allocation	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit (MHz)	Verdict
DFT-s-OFDM PI/2 BPSK	3720	Outer Full	38.81	41.21	/	Pass
	3840	Outer Full	38.83	41.27	/	Pass
	3960	Outer Full	38.85	41.45	/	Pass
DFT-s-OFDM QPSK	3720	Outer Full	38.79	41.36	/	Pass
	3840	Outer Full	38.84	41.50	/	Pass
	3960	Outer Full	38.89	41.38	/	Pass
DFT-s-OFDM 16 QAM	3720	Outer Full	38.84	41.42	/	Pass
	3840	Outer Full	38.85	41.45	/	Pass
	3960	Outer Full	38.84	41.45	/	Pass
DFT-s-OFDM 64 QAM	3720	Outer Full	38.77	41.45	/	Pass
	3840	Outer Full	38.84	41.35	/	Pass
	3960	Outer Full	38.72	41.34	/	Pass
DFT-s-OFDM 256 QAM	3720	Outer Full	38.97	41.45	/	Pass
	3840	Outer Full	38.75	41.43	/	Pass
	3960	Outer Full	38.77	41.36	/	Pass
CP-OFDM QPSK	3720	Outer Full	38.93	41.50	/	Pass
	3840	Outer Full	38.78	41.39	/	Pass
	3960	Outer Full	38.87	41.38	/	Pass
CP-OFDM 16 QAM	3720	Outer Full	38.72	41.18	/	Pass
	3840	Outer Full	38.85	41.35	/	Pass
	3960	Outer Full	38.78	41.43	/	Pass
CP-OFDM 64 QAM	3720	Outer Full	38.90	41.43	/	Pass
	3840	Outer Full	38.92	41.47	/	Pass
	3960	Outer Full	38.80	41.45	/	Pass
CP-OFDM 256 QAM	3720	Outer Full	38.94	41.49	/	Pass
	3840	Outer Full	38.87	41.41	/	Pass
	3960	Outer Full	38.92	41.48	/	Pass



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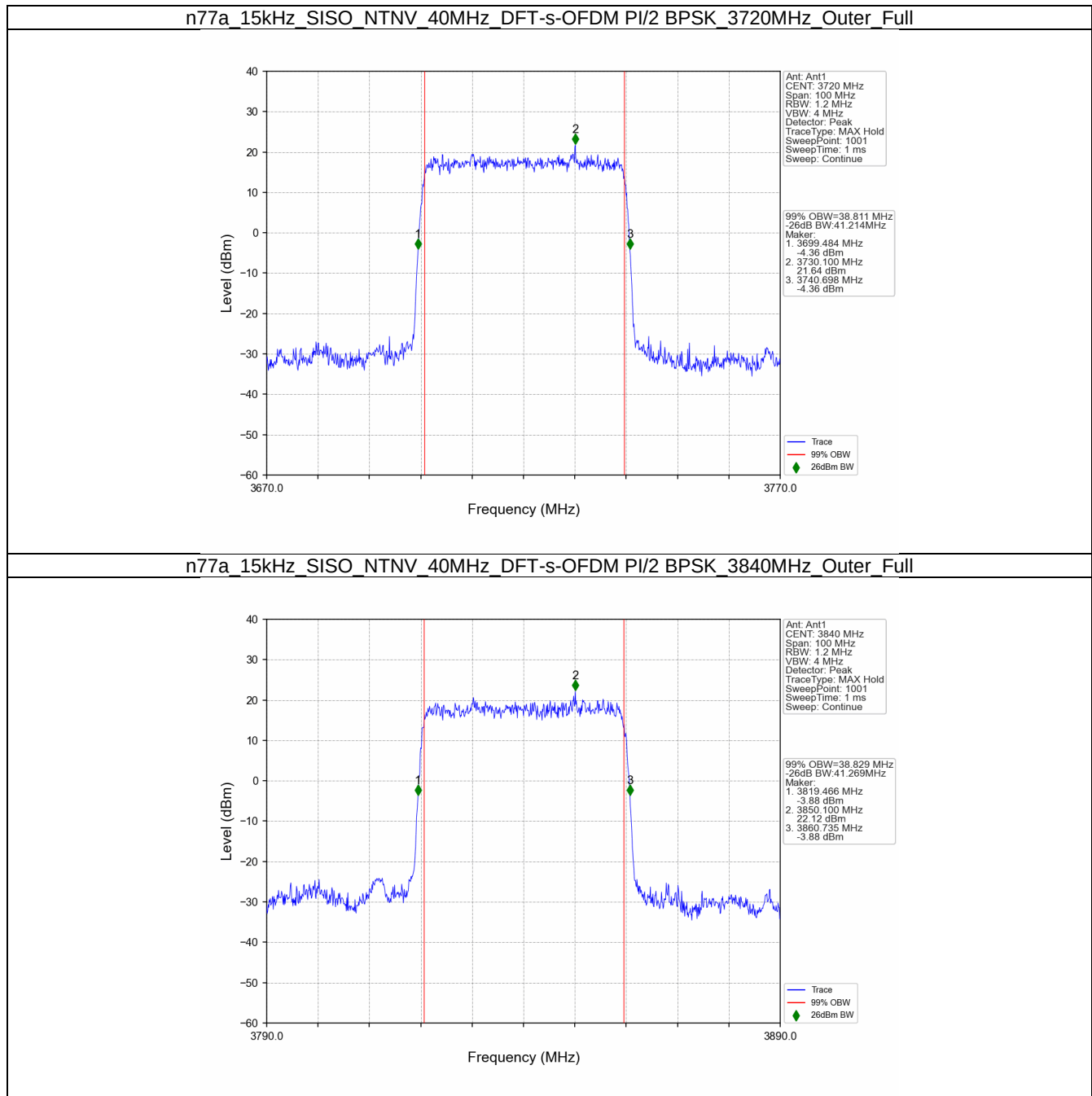
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4.6.2 Test Graph



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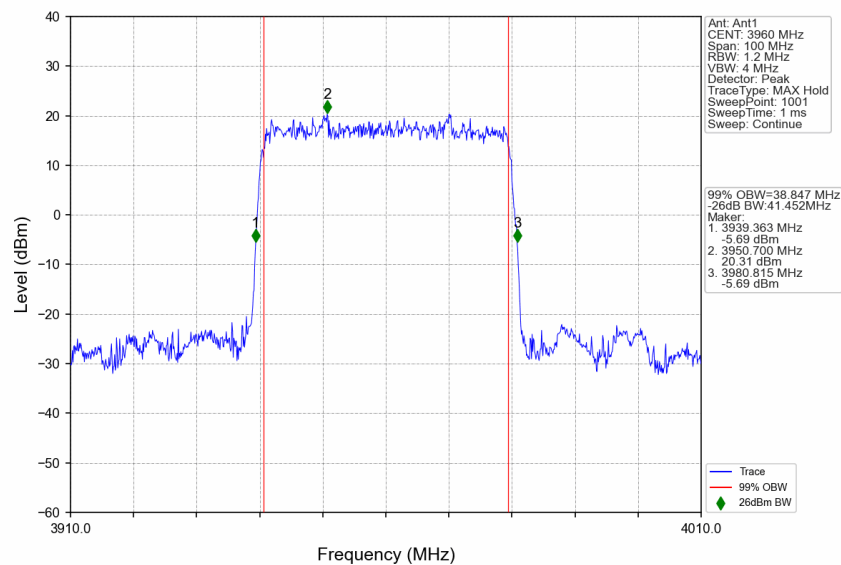
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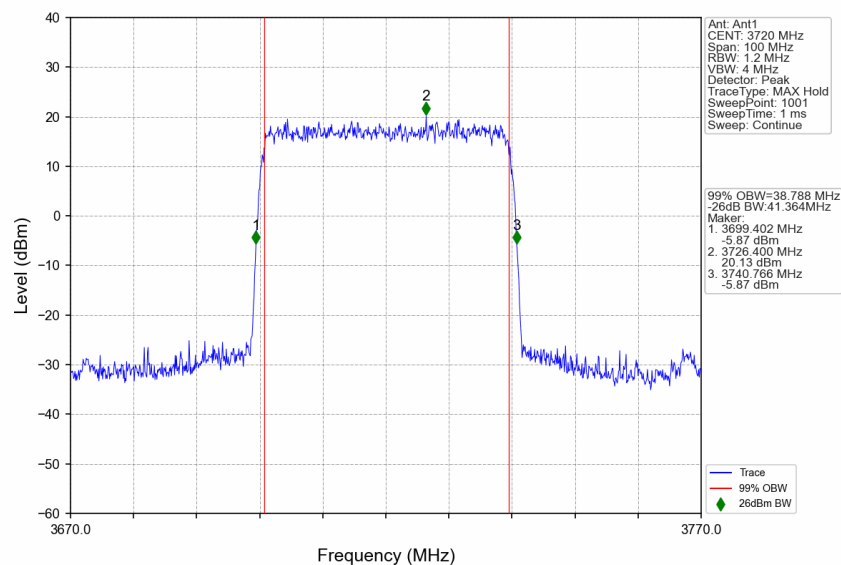
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n77a_15kHz_SISO_NTNV_40MHz_DFT-s-OFDM PI/2 BPSK_3960MHz_Outer_Full



n77a_15kHz_SISO_NTNV_40MHz_DFT-s-OFDM QPSK_3720MHz_Outer_Full



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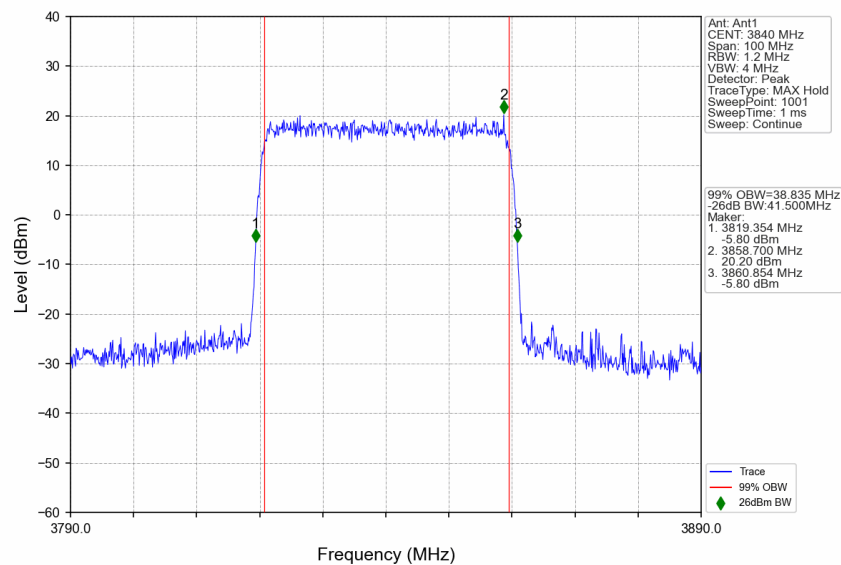
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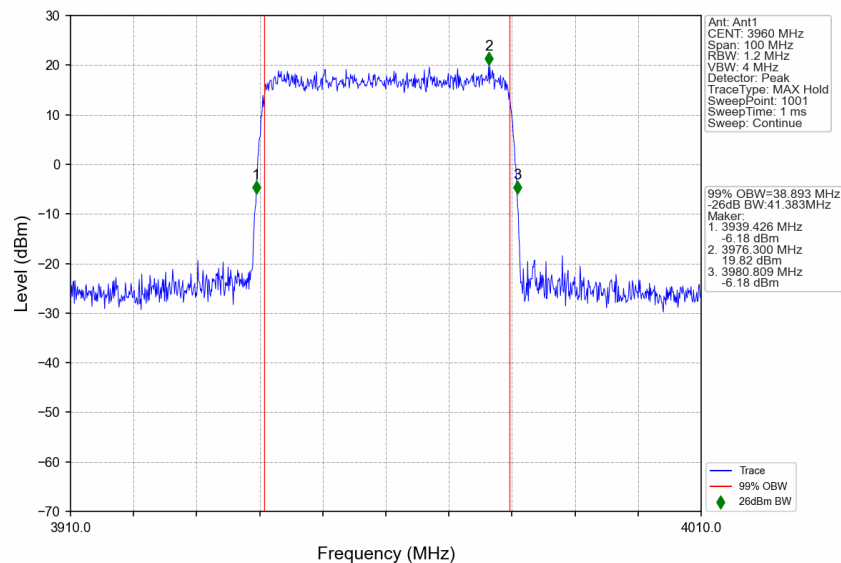
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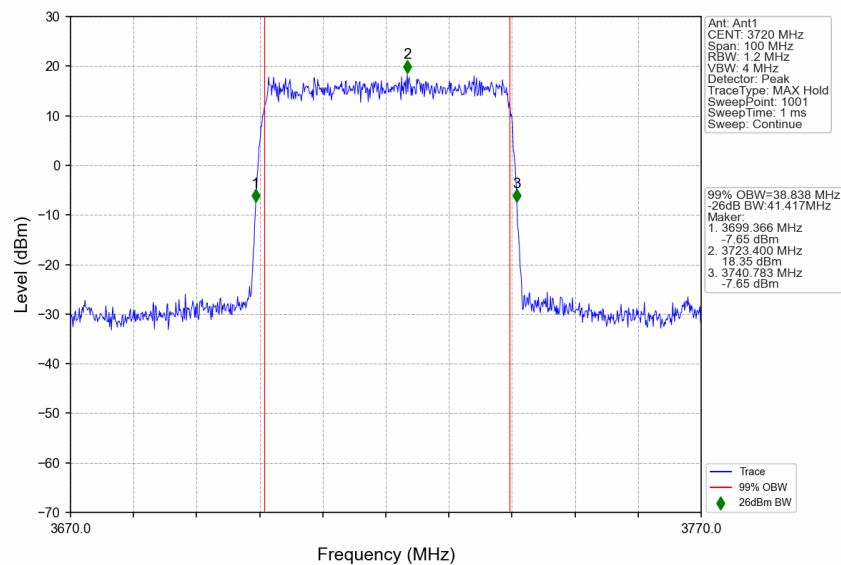
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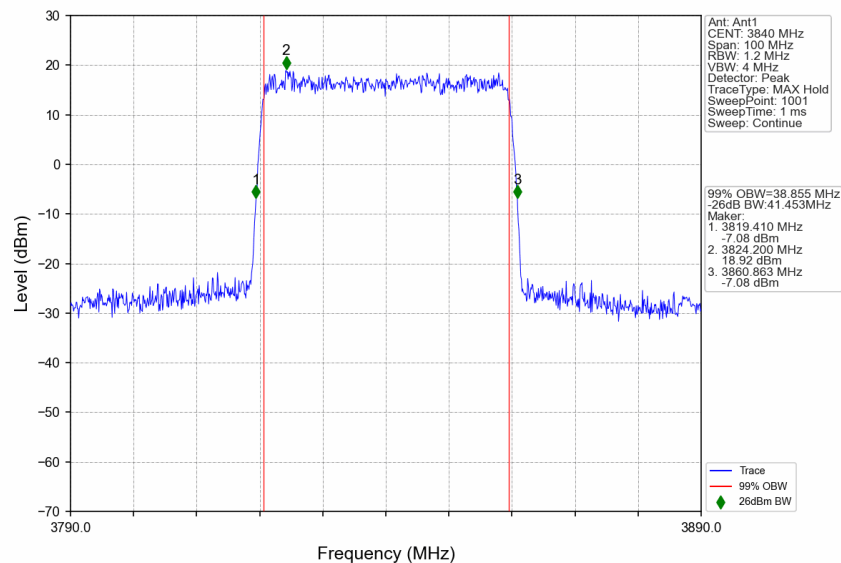
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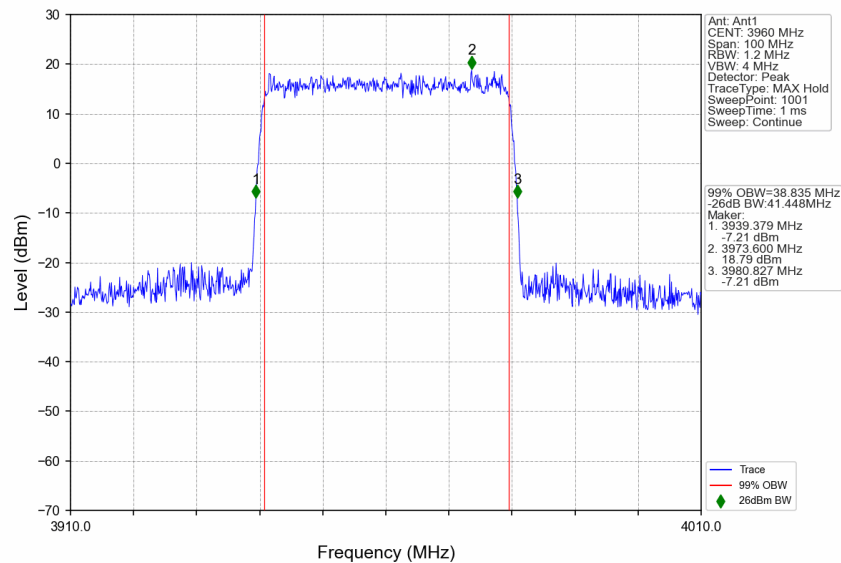
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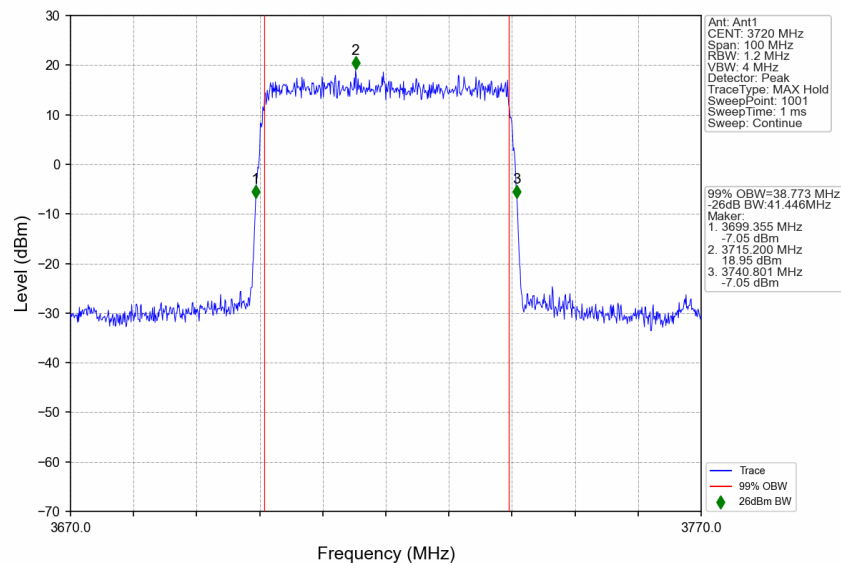
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n77a_15kHz_SISO_NTNV_40MHz_DFT-s-OFDM_16_QAM_3960MHz_Outer_Full



n77a_15kHz_SISO_NTNV_40MHz_DFT-s-OFDM_64_QAM_3720MHz_Outer_Full



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