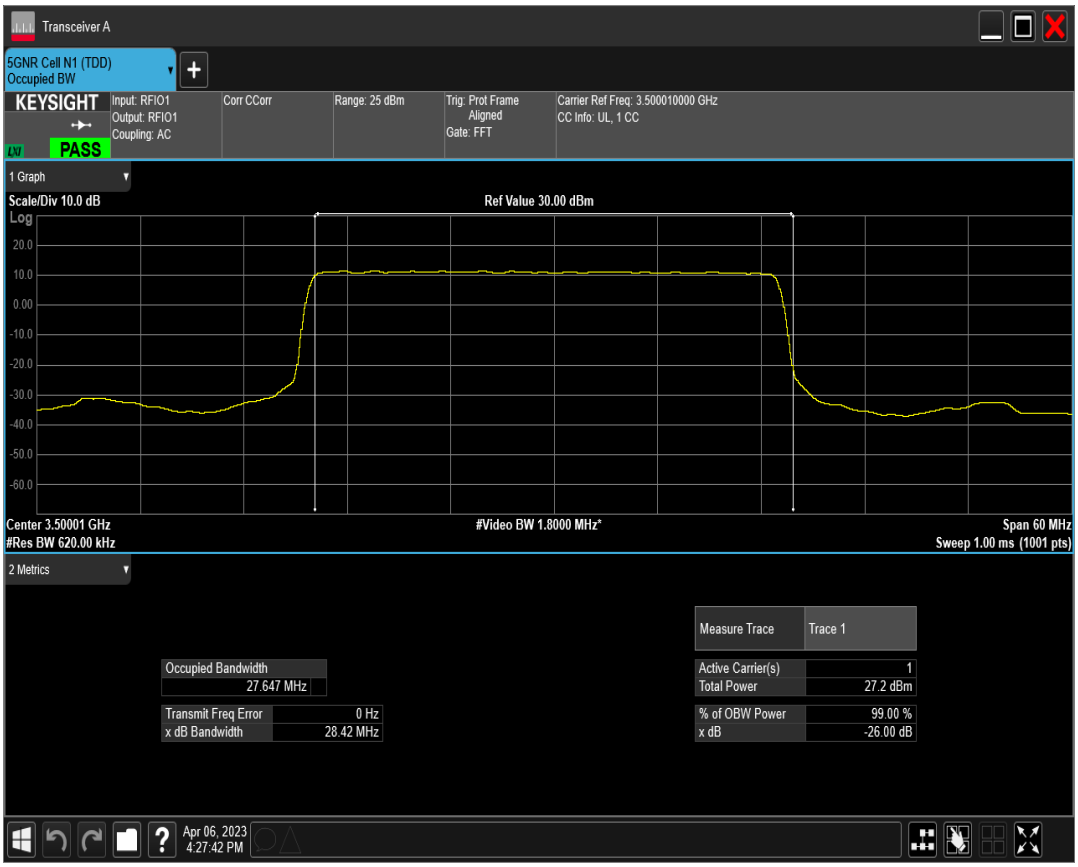
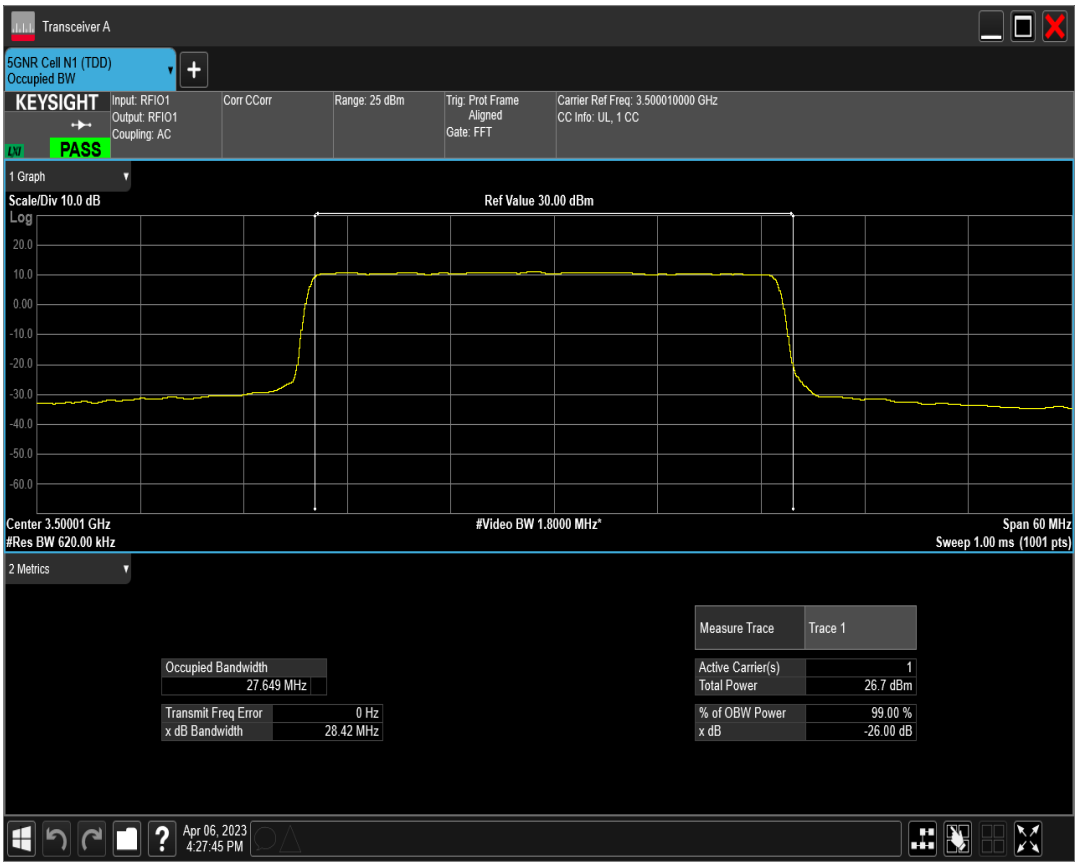


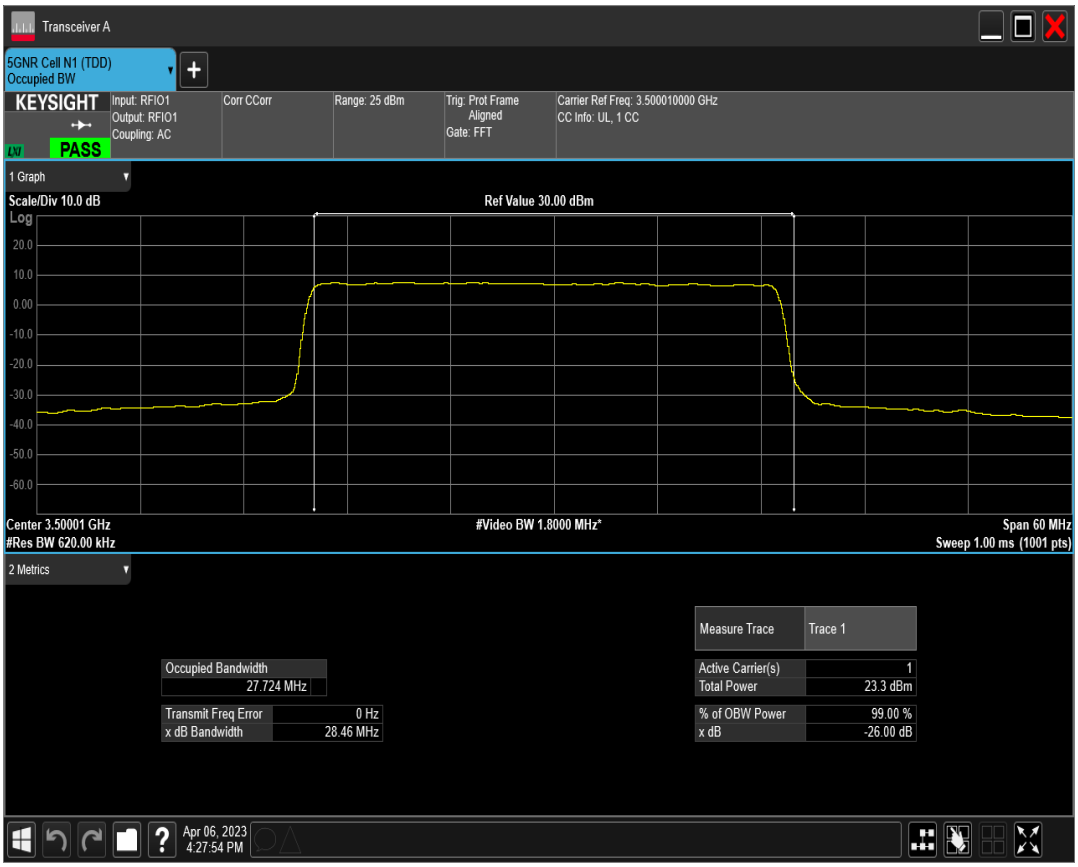
n77(3450-3550) SCS=30kHz DFT_QPSK BW=30MHz Channel=633334 RB=75@0



n77(3450-3550) SCS=30kHz DFT_QAM16 BW=30MHz Channel=633334 RB=75@0

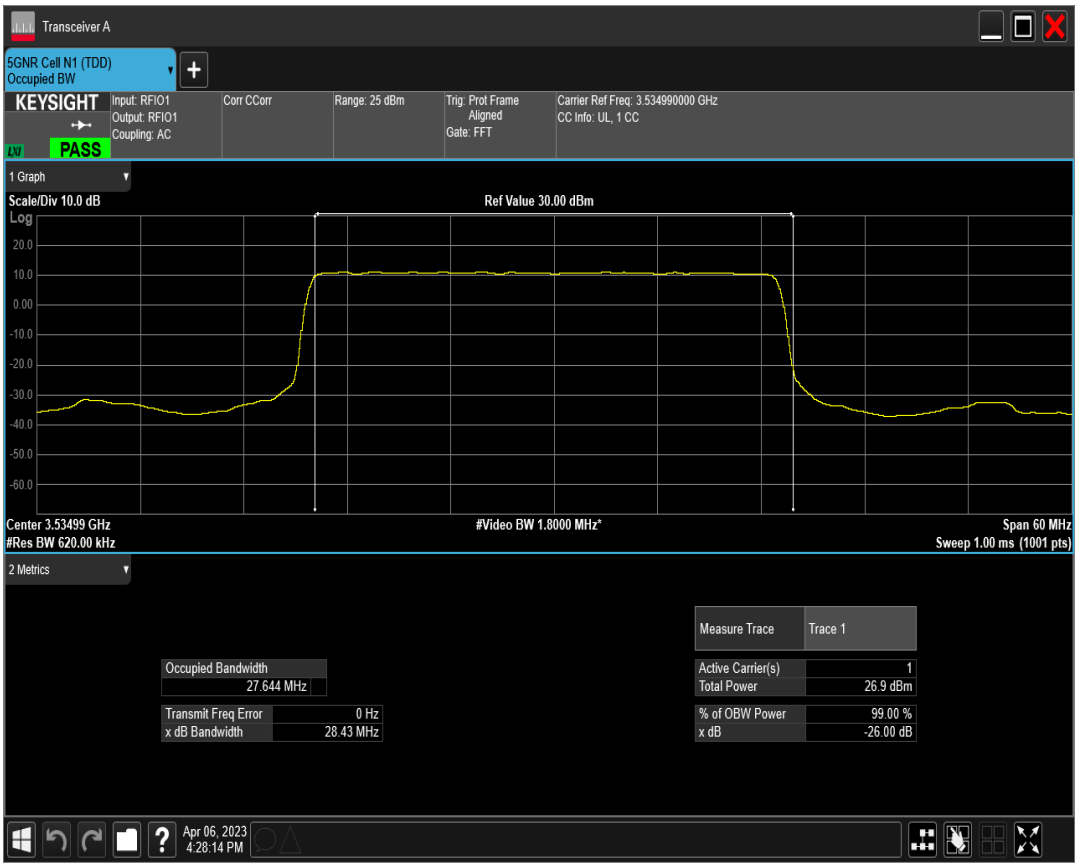
n77(3450-3550) SCS=30kHz DFT_QAM64 BW=30MHz Channel=633334 RB=75@0

n77(3450-3550) SCS=30kHz DFT_QAM256 BW=30MHz Channel=633334 RB=75@0

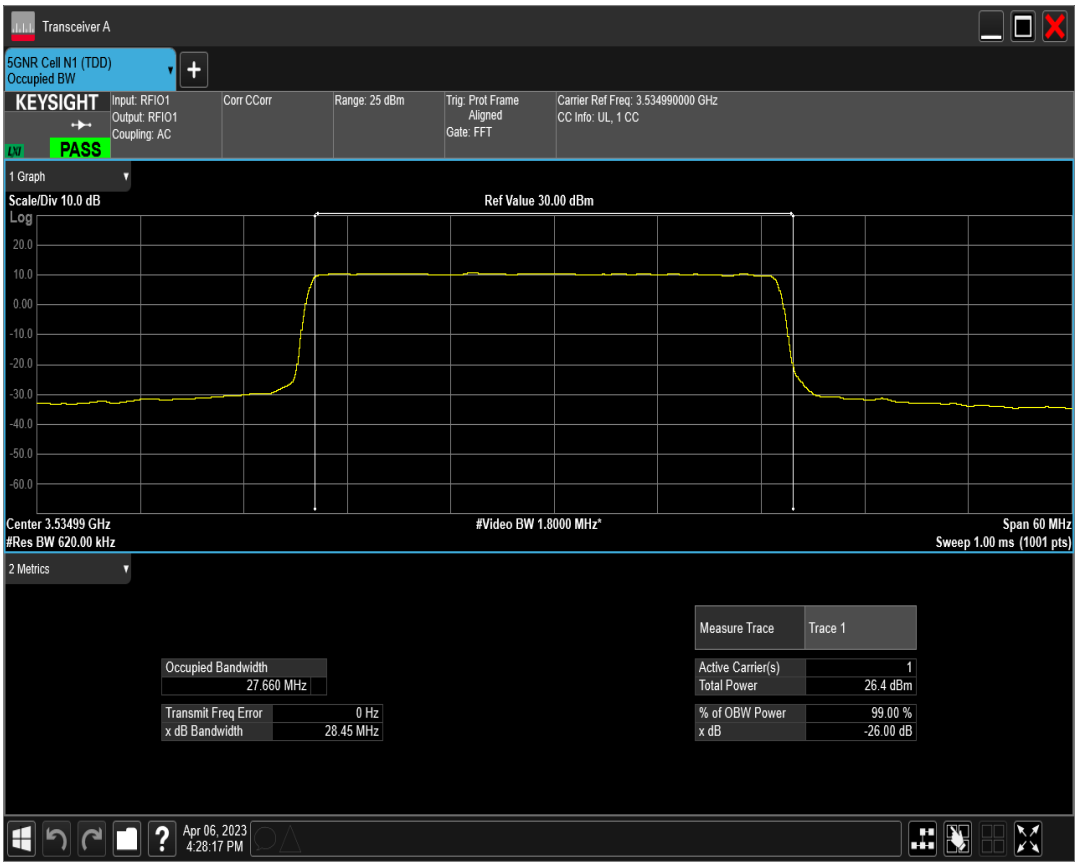


n77(3450-3550) SCS=30kHz CP_QPSK BW=30MHz Channel=633334 RB=78@0

n77(3450-3550) SCS=30kHz DFT_BPSK BW=30MHz Channel=635666 RB=75@0



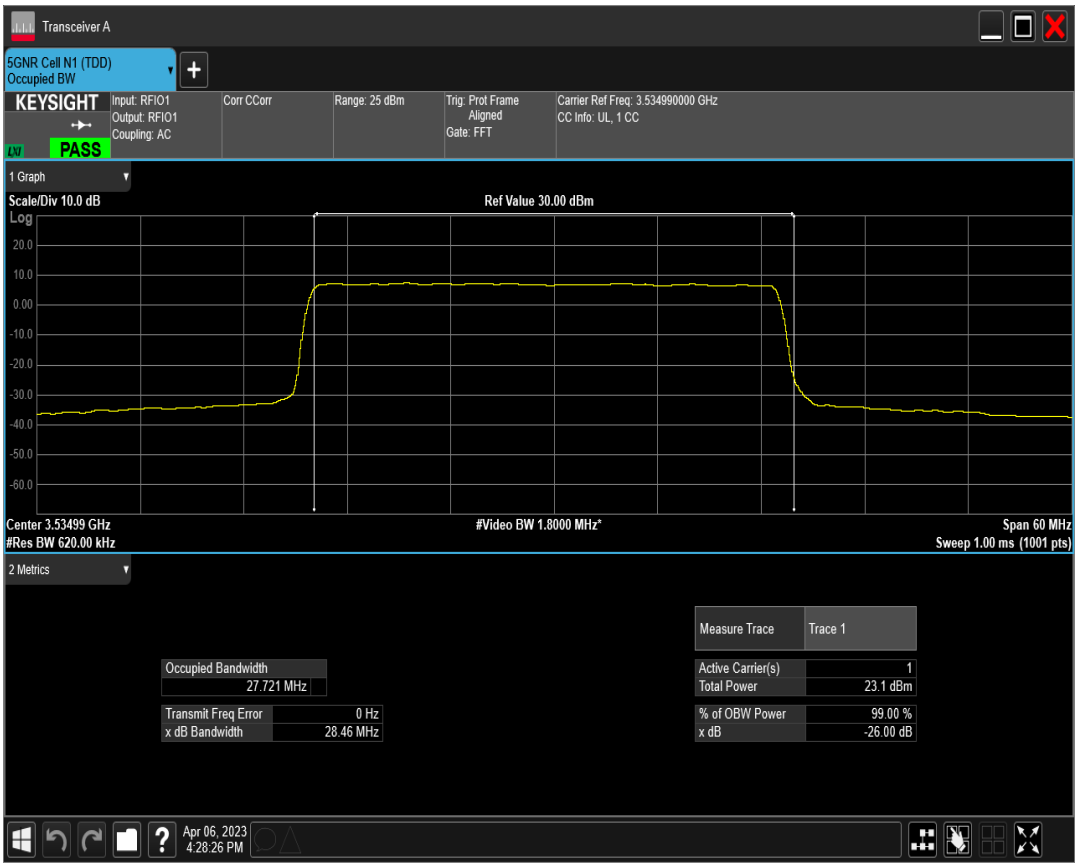
n77(3450-3550) SCS=30kHz DFT_QPSK BW=30MHz Channel=635666 RB=75@0



n77(3450-3550) SCS=30kHz DFT_QAM16 BW=30MHz Channel=635666 RB=75@0

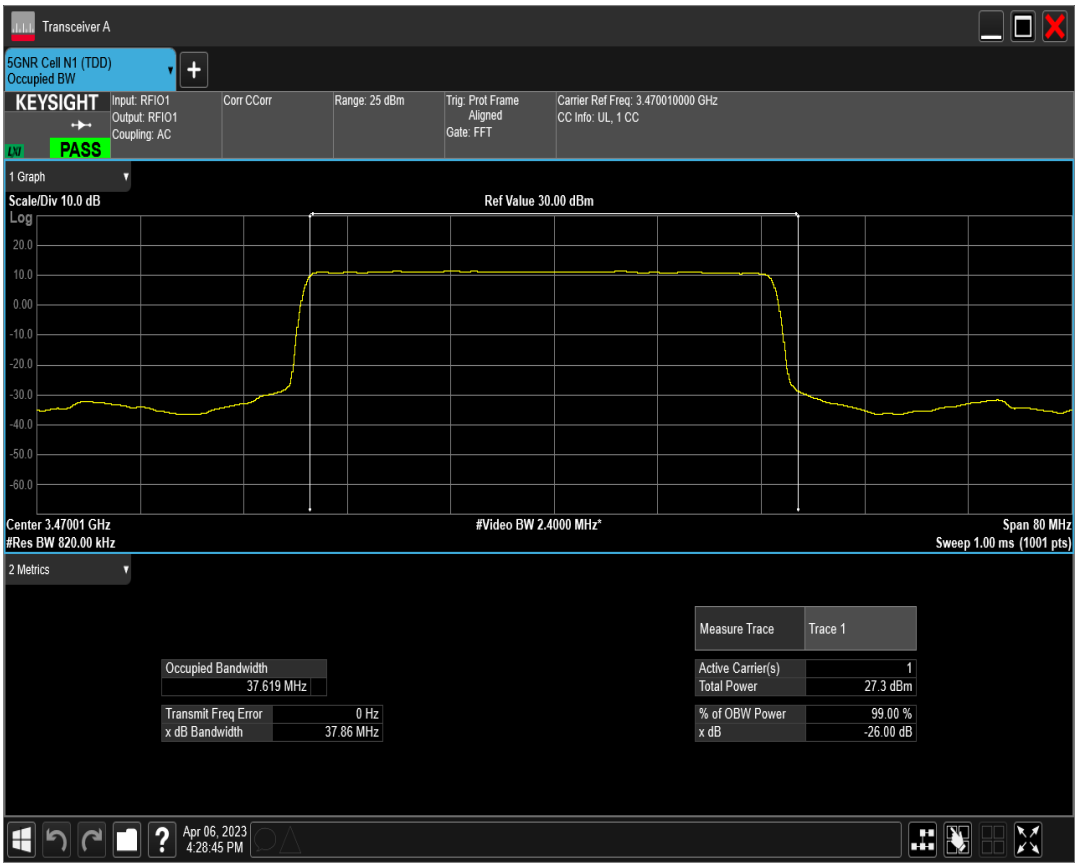
n77(3450-3550) SCS=30kHz DFT_QAM64 BW=30MHz Channel=635666 RB=75@0

n77(3450-3550) SCS=30kHz DFT_QAM256 BW=30MHz Channel=635666 RB=75@0



n77(3450-3550) SCS=30kHz CP_QPSK BW=30MHz Channel=635666 RB=78@0

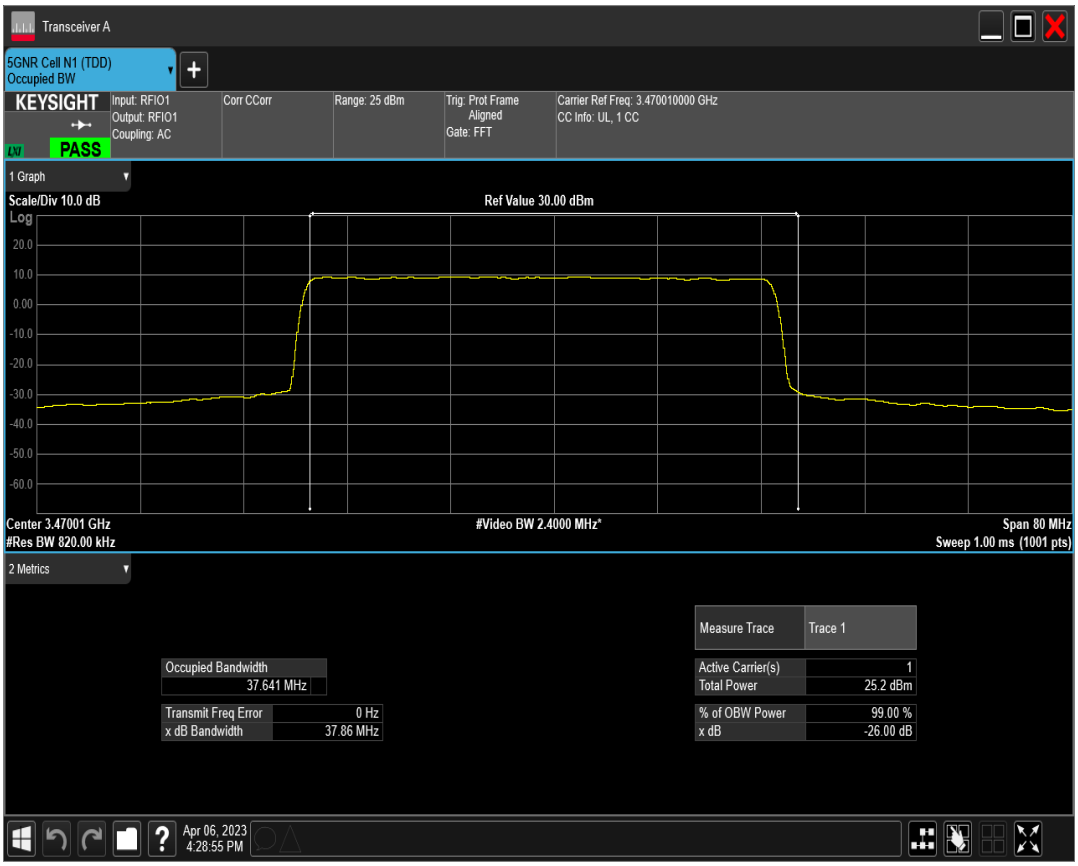
n77(3450-3550) SCS=30kHz DFT_BPSK BW=40MHz Channel=631334 RB=100@0



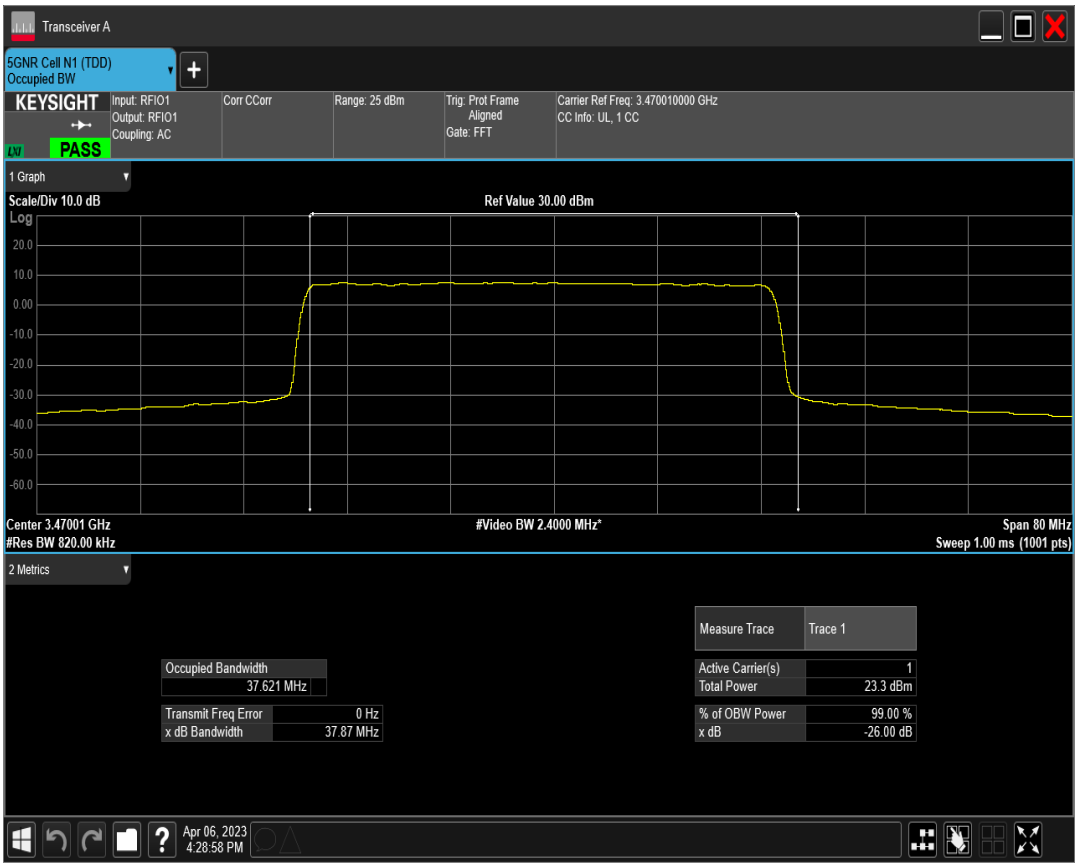
n77(3450-3550) SCS=30kHz DFT_QPSK BW=40MHz Channel=631334 RB=100@0

n77(3450-3550) SCS=30kHz DFT_QAM16 BW=40MHz Channel=631334 RB=100@0

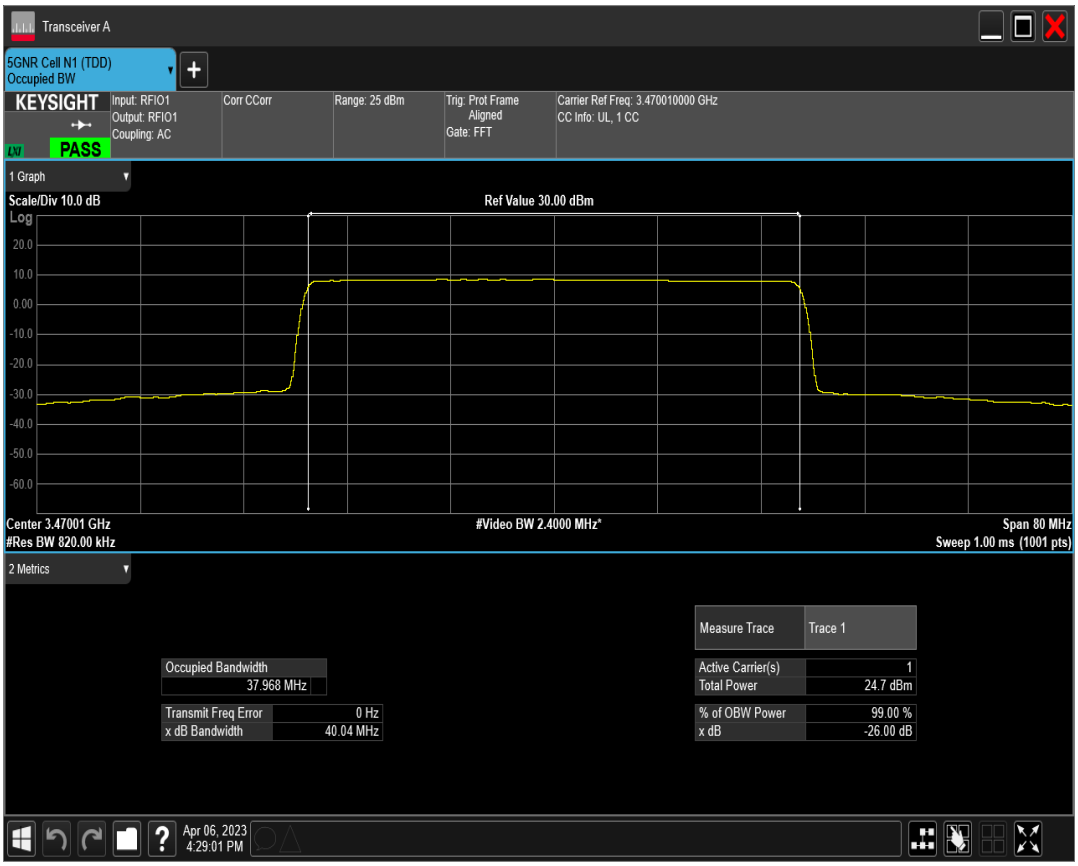
n77(3450-3550) SCS=30kHz DFT_QAM64 BW=40MHz Channel=631334 RB=100@0



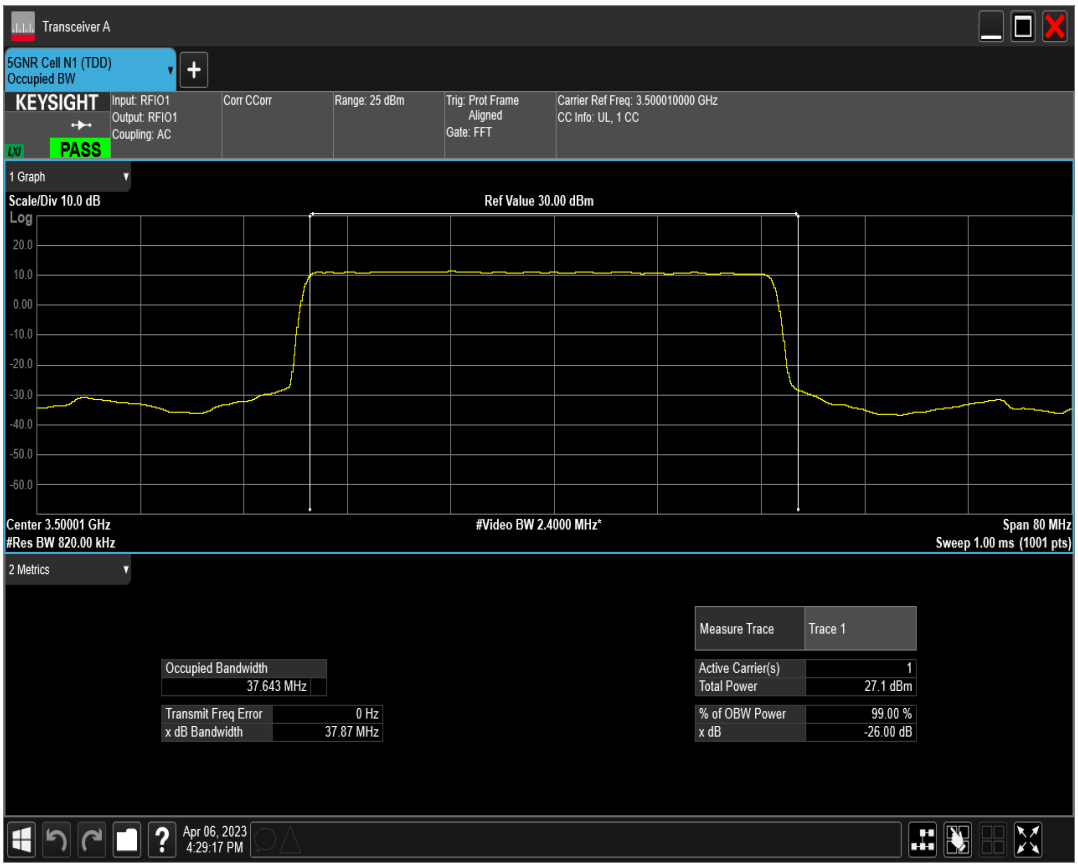
n77(3450-3550) SCS=30kHz DFT_QAM256 BW=40MHz Channel=631334 RB=100@0



n77(3450-3550) SCS=30kHz CP_QPSK BW=40MHz Channel=631334 RB=106@0



n77(3450-3550) SCS=30kHz DFT_BPSK BW=40MHz Channel=633334 RB=100@0



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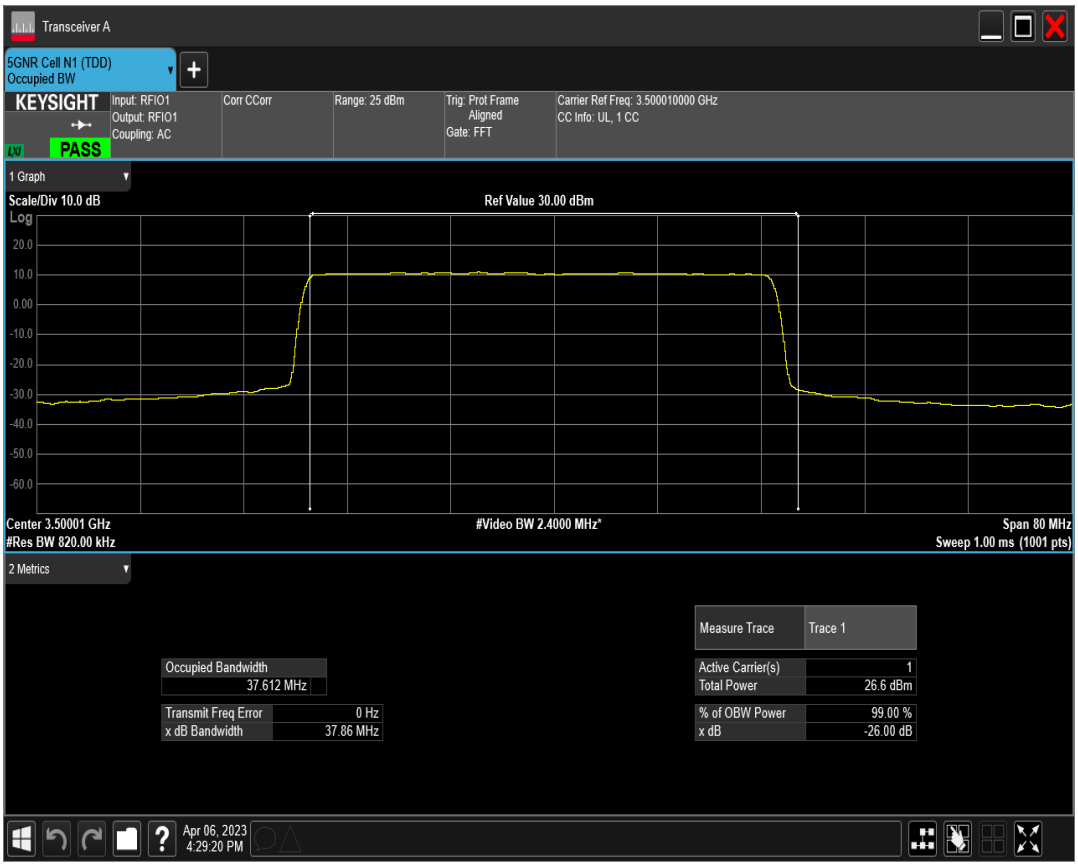
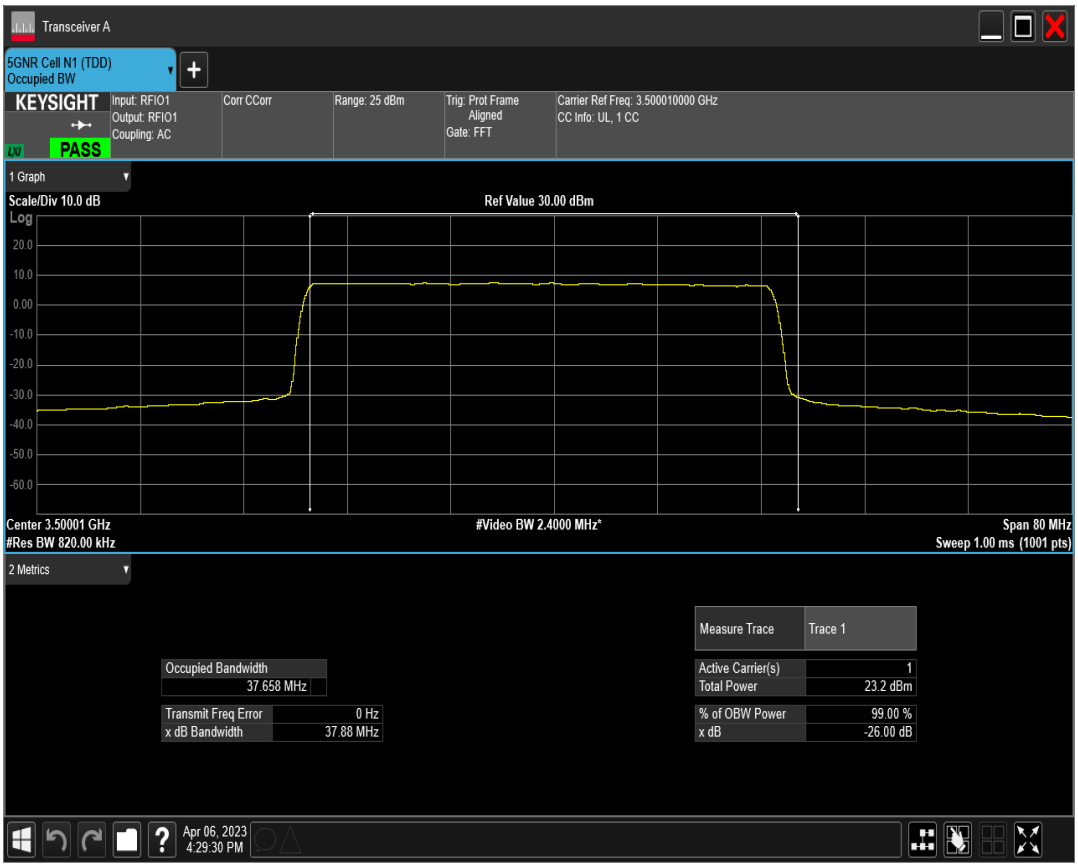


n77(3450-3550) SCS=30kHz DFT_QAM16 BW=40MHz Channel=633334 RB=100@0

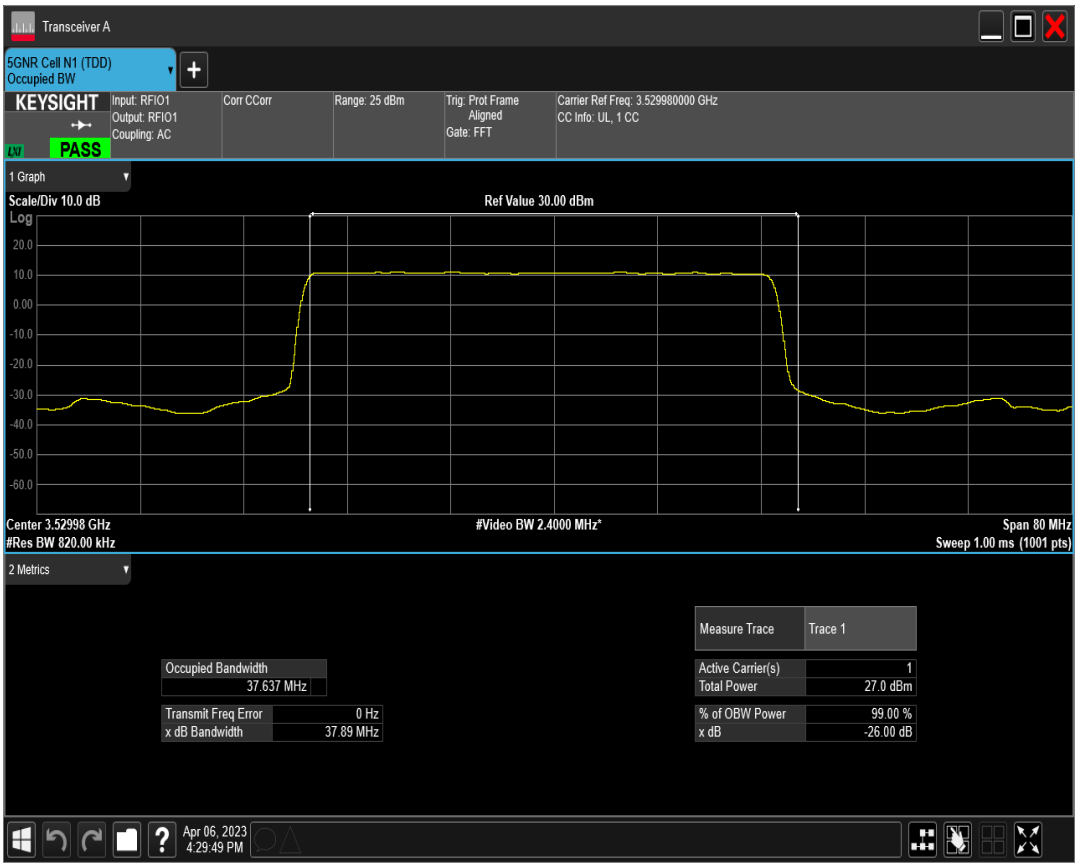
n77(3450-3550) SCS=30kHz DFT_QAM64 BW=40MHz Channel=633334 RB=100@0

n77(3450-3550) SCS=30kHz DFT_QAM256 BW=40MHz Channel=633334 RB=100@0

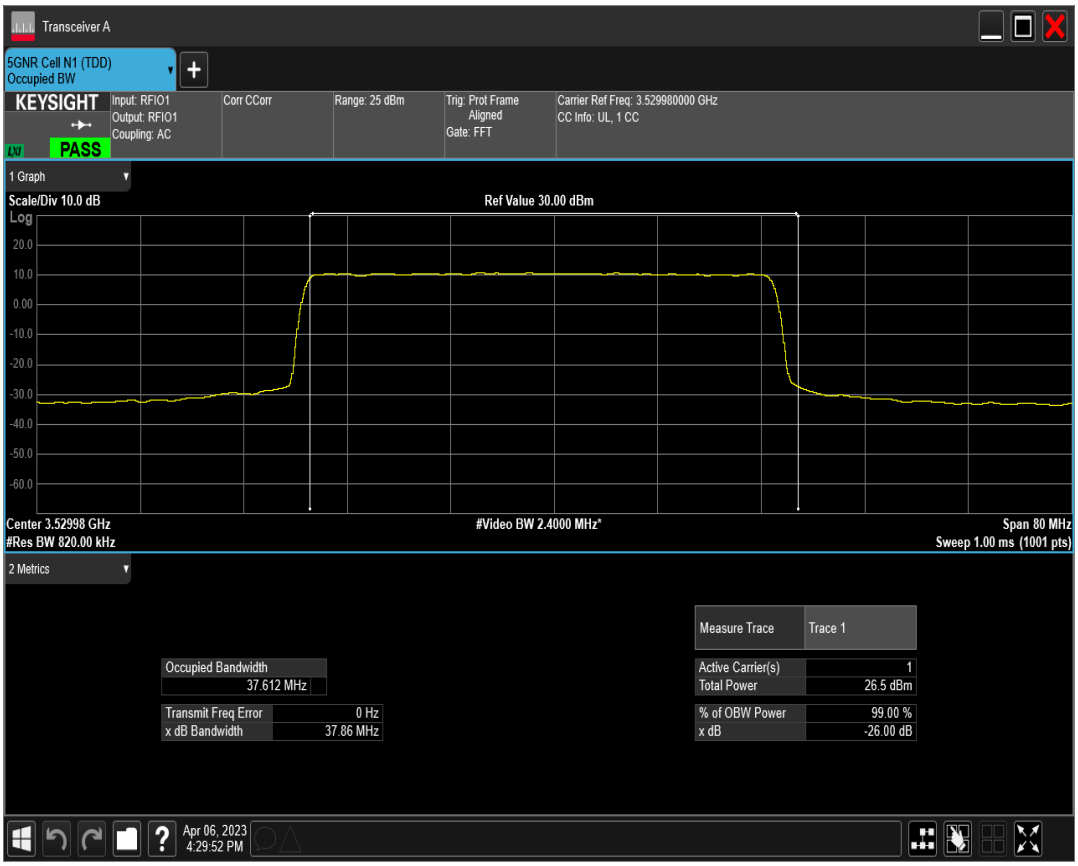


n77(3450-3550) SCS=30kHz CP_QPSK BW=40MHz Channel=633334 RB=106@0

n77(3450-3550) SCS=30kHz DFT_BPSK BW=40MHz Channel=635332 RB=100@0



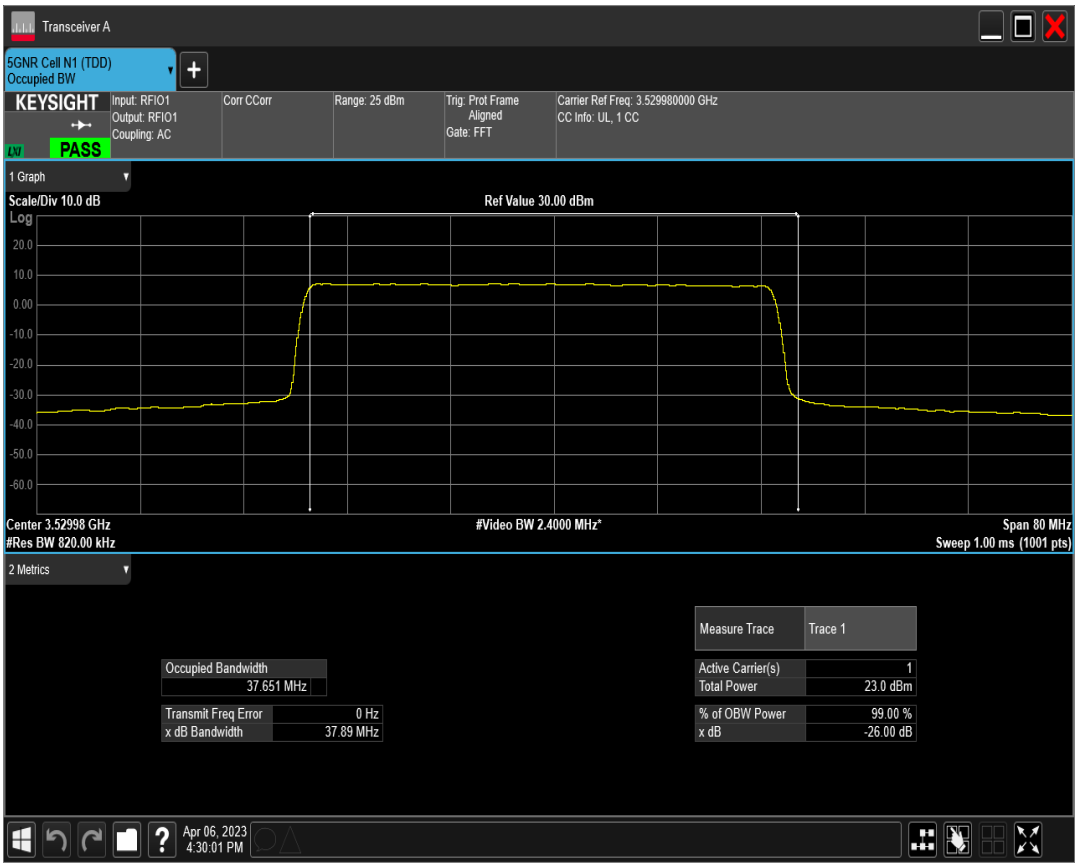
n77(3450-3550) SCS=30kHz DFT_QPSK BW=40MHz Channel=635332 RB=100@0



n77(3450-3550) SCS=30kHz DFT_QAM16 BW=40MHz Channel=635332 RB=100@0

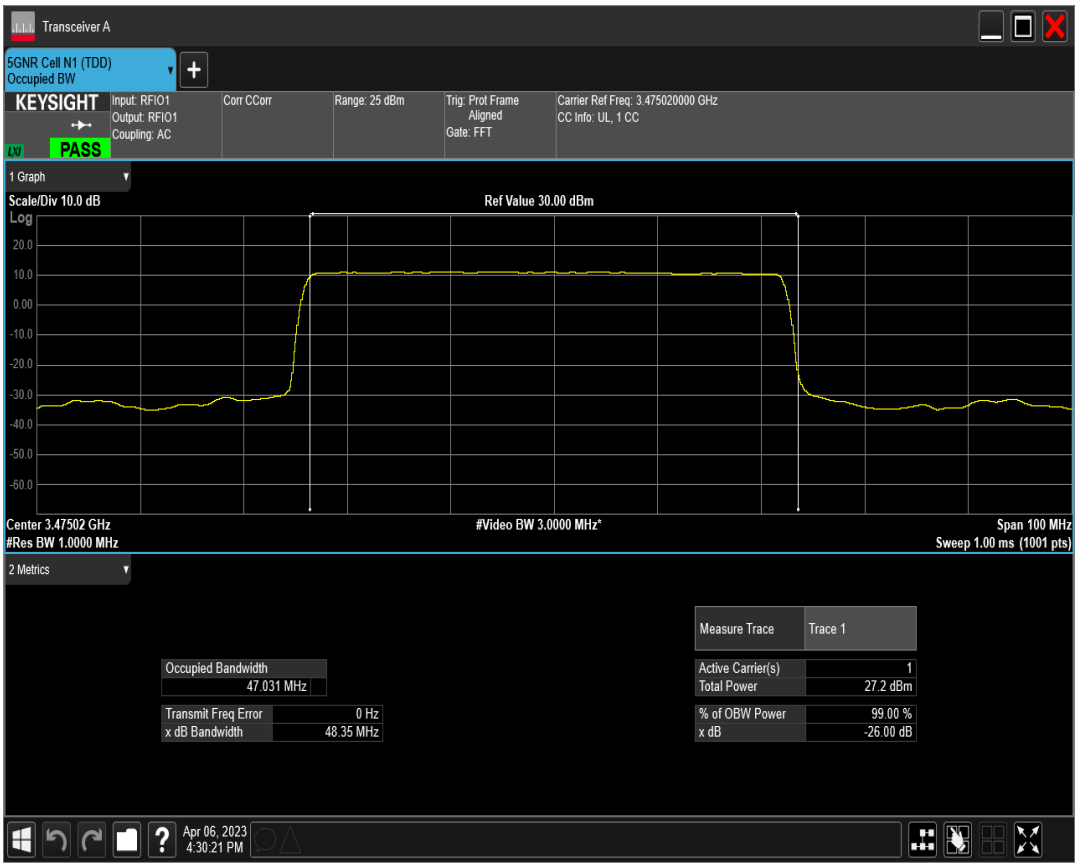
n77(3450-3550) SCS=30kHz DFT_QAM64 BW=40MHz Channel=635332 RB=100@0

n77(3450-3550) SCS=30kHz DFT_QAM256 BW=40MHz Channel=635332 RB=100@0

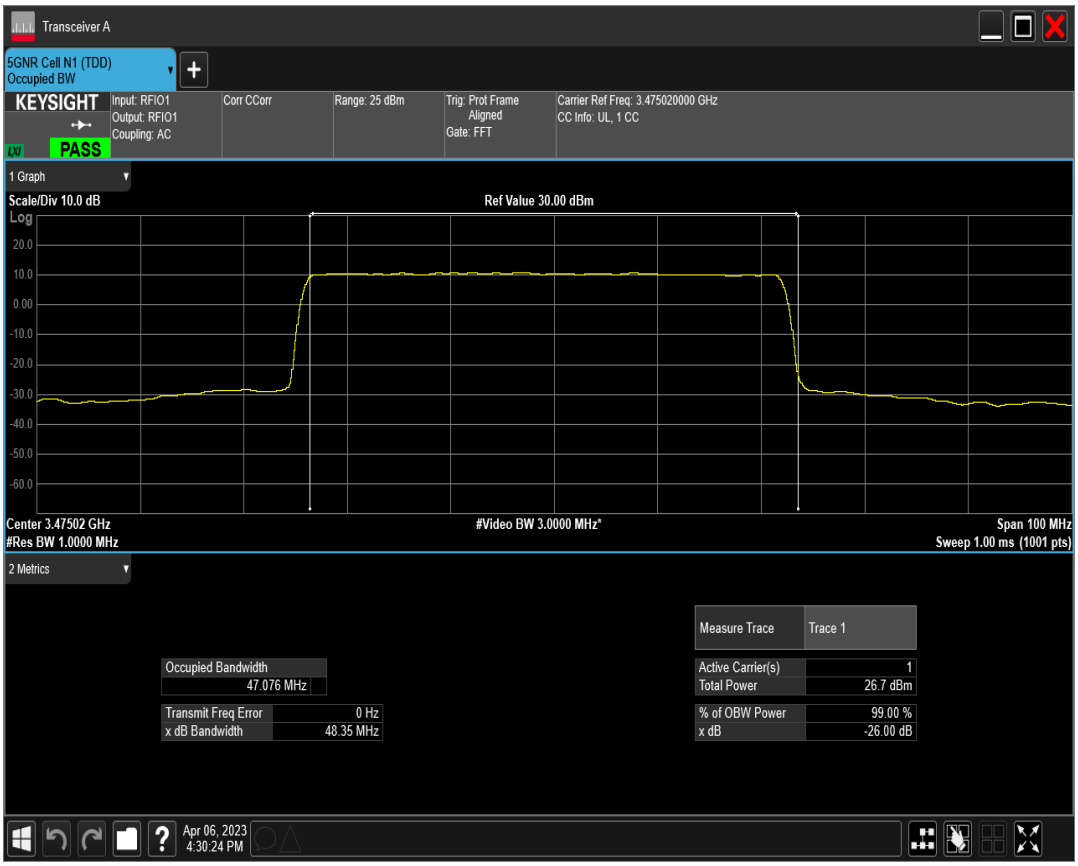


n77(3450-3550) SCS=30kHz CP_QPSK BW=40MHz Channel=635332 RB=106@0

n77(3450-3550) SCS=30kHz DFT_BPSK BW=50MHz Channel=631668 RB=128@0



n77(3450-3550) SCS=30kHz DFT_QPSK BW=50MHz Channel=631668 RB=128@0

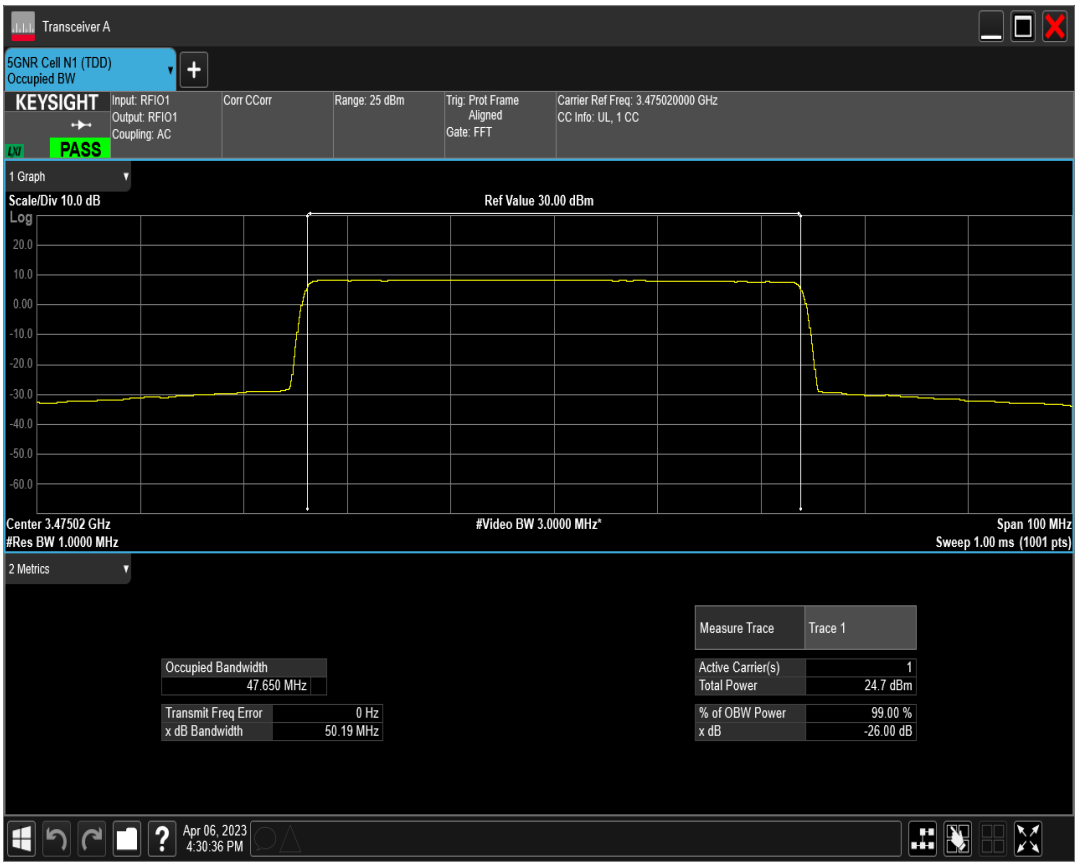


n77(3450-3550) SCS=30kHz DFT_QAM16 BW=50MHz Channel=631668 RB=128@0

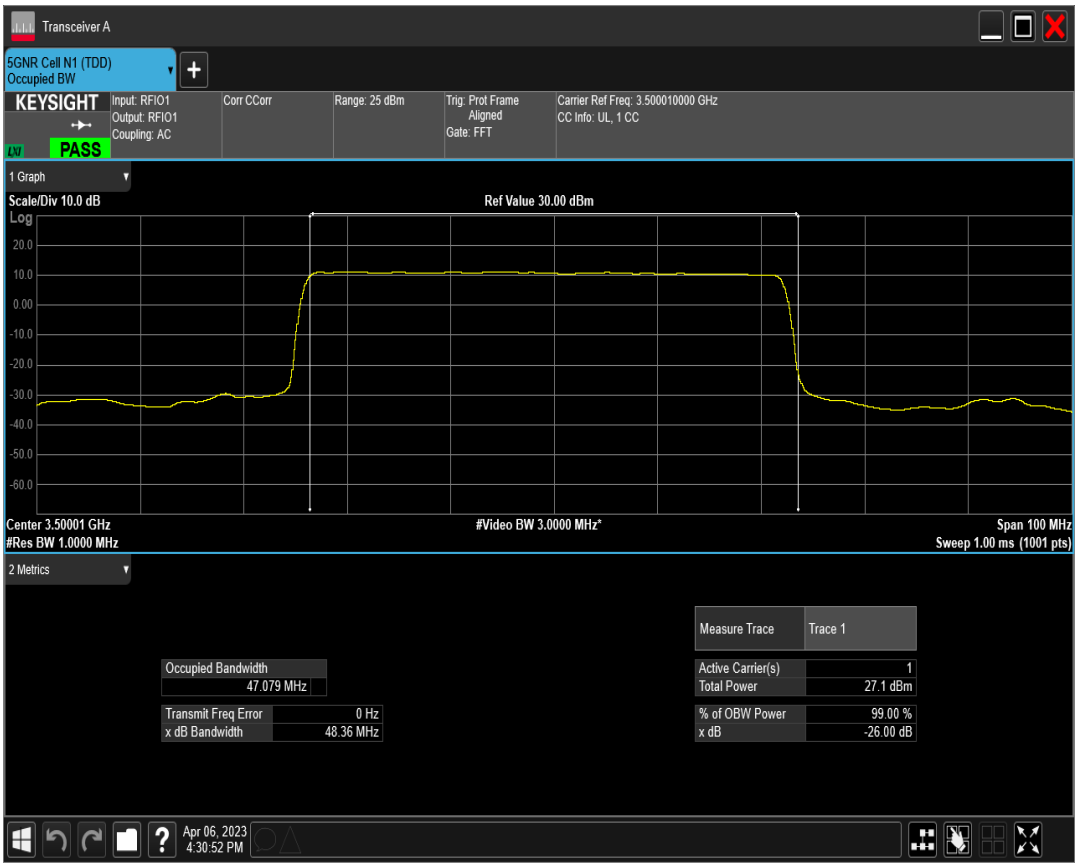
n77(3450-3550) SCS=30kHz DFT_QAM64 BW=50MHz Channel=631668 RB=128@0

n77(3450-3550) SCS=30kHz DFT_QAM256 BW=50MHz Channel=631668 RB=128@0

n77(3450-3550) SCS=30kHz CP_QPSK BW=50MHz Channel=631668 RB=133@0



n77(3450-3550) SCS=30kHz DFT_BPSK BW=50MHz Channel=633334 RB=128@0



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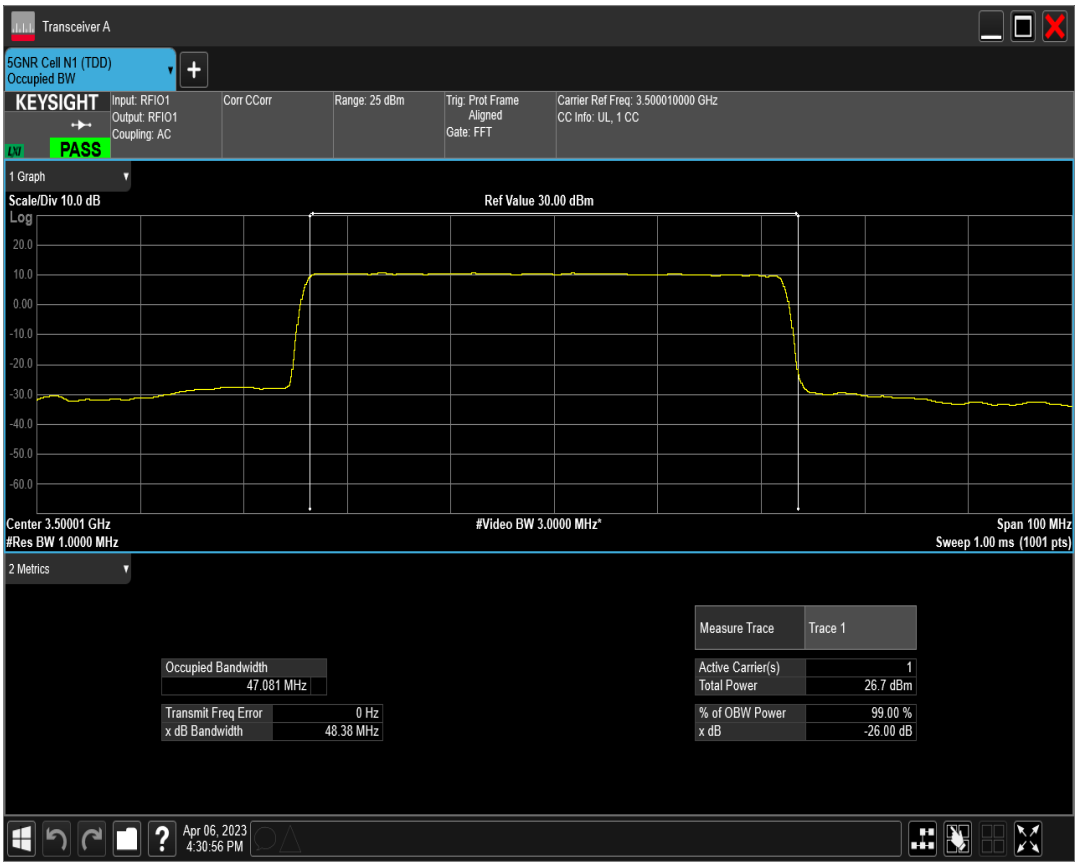
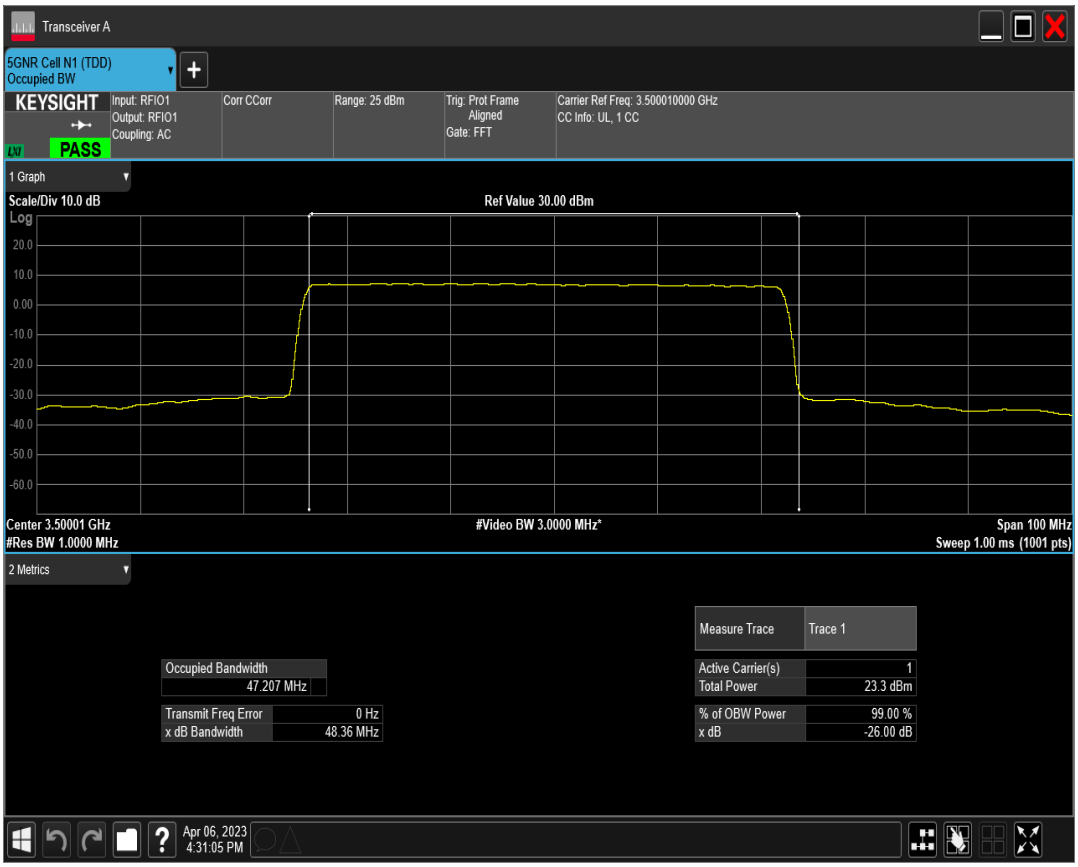


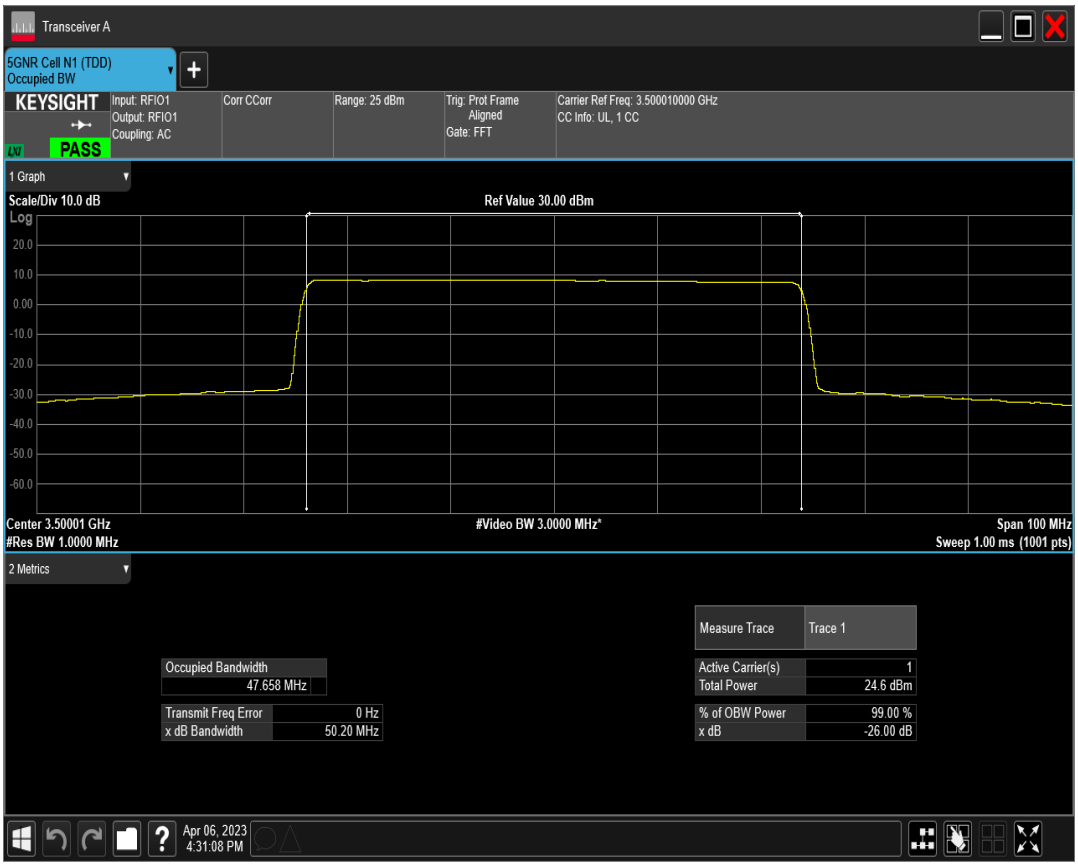
n77(3450-3550) SCS=30kHz DFT_QAM16 BW=50MHz Channel=633334 RB=128@0

n77(3450-3550) SCS=30kHz DFT_QAM64 BW=50MHz Channel=633334 RB=128@0

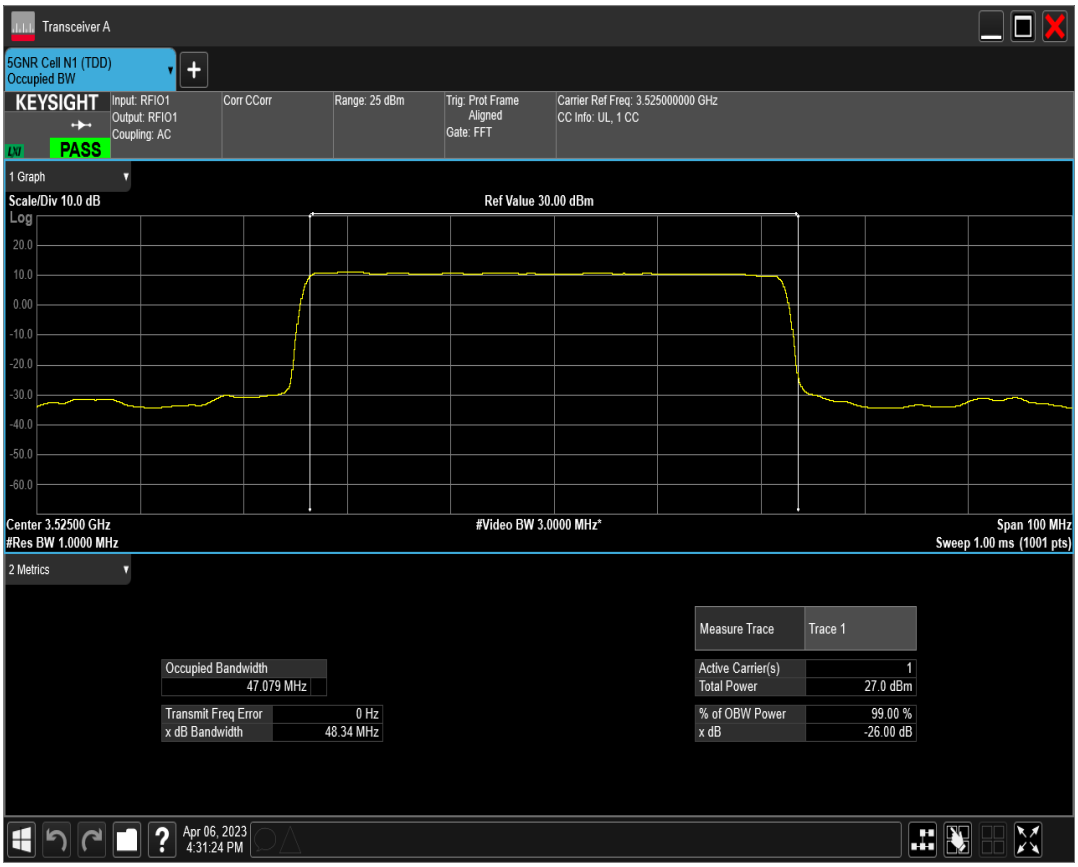
n77(3450-3550) SCS=30kHz DFT_QAM256 BW=50MHz Channel=633334 RB=128@0



n77(3450-3550) SCS=30kHz CP_QPSK BW=50MHz Channel=633334 RB=133@0



n77(3450-3550) SCS=30kHz DFT_BPSK BW=50MHz Channel=635000 RB=128@0



n77(3450-3550) SCS=30kHz DFT_QPSK BW=50MHz Channel=635000 RB=128@0

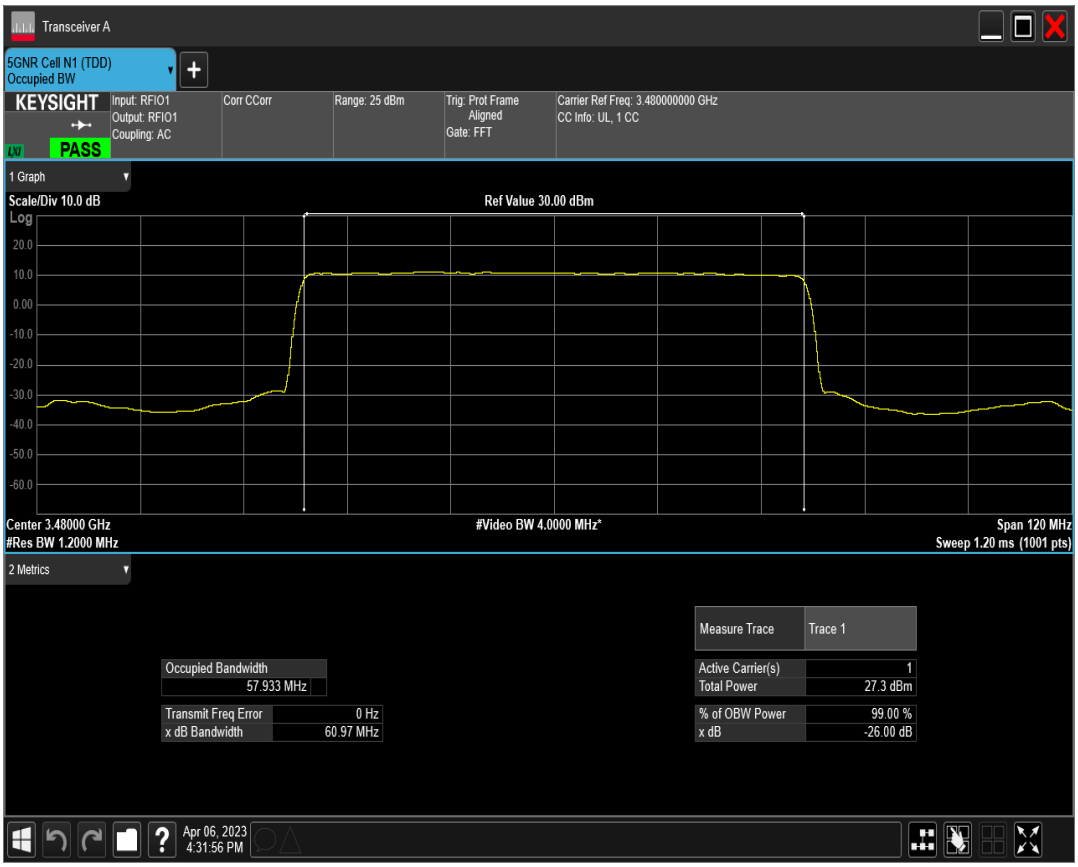
n77(3450-3550) SCS=30kHz DFT_QAM16 BW=50MHz Channel=635000 RB=128@0

n77(3450-3550) SCS=30kHz DFT_QAM64 BW=50MHz Channel=635000 RB=128@0

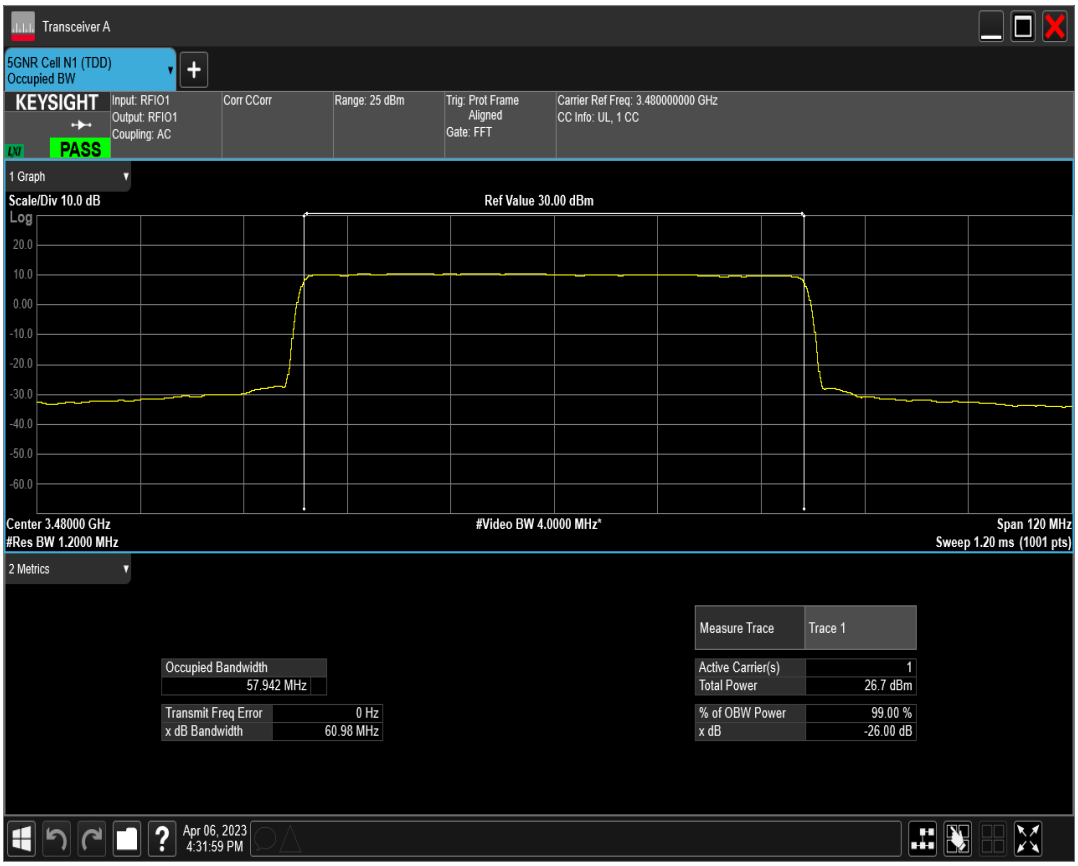
n77(3450-3550) SCS=30kHz DFT_QAM256 BW=50MHz Channel=635000 RB=128@0

n77(3450-3550) SCS=30kHz CP_QPSK BW=50MHz Channel=635000 RB=133@0

n77(3450-3550) SCS=30kHz DFT_BPSK BW=60MHz Channel=632000 RB=162@0



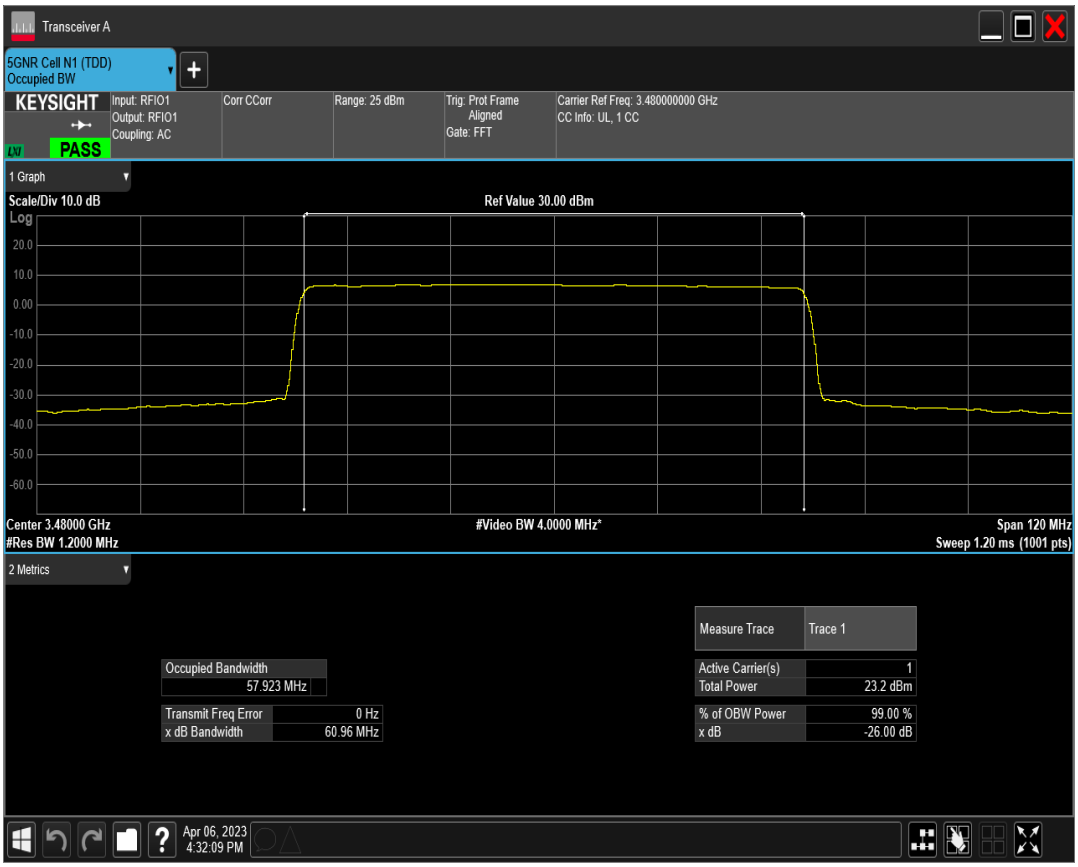
n77(3450-3550) SCS=30kHz DFT_QPSK BW=60MHz Channel=632000 RB=162@0



n77(3450-3550) SCS=30kHz DFT_QAM16 BW=60MHz Channel=632000 RB=162@0

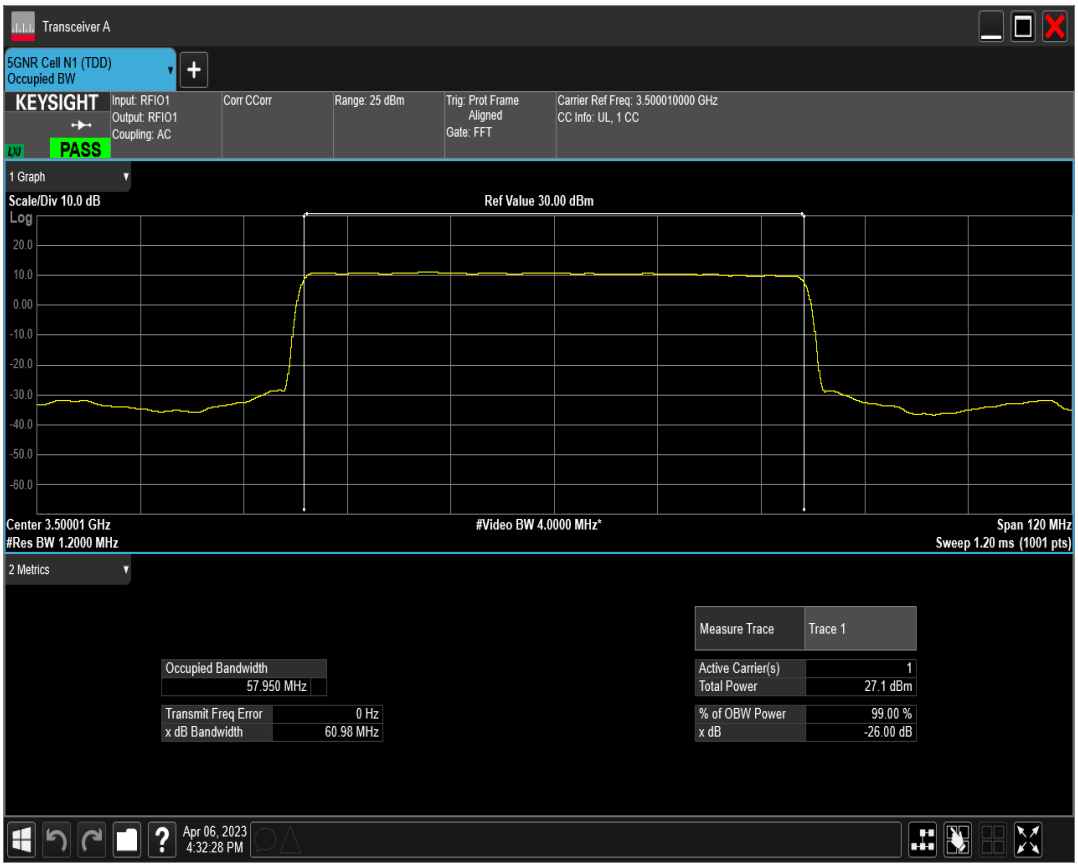
n77(3450-3550) SCS=30kHz DFT_QAM64 BW=60MHz Channel=632000 RB=162@0

n77(3450-3550) SCS=30kHz DFT_QAM256 BW=60MHz Channel=632000 RB=162@0



n77(3450-3550) SCS=30kHz CP_QPSK BW=60MHz Channel=632000 RB=162@0

n77(3450-3550) SCS=30kHz DFT_BPSK BW=60MHz Channel=633334 RB=162@0



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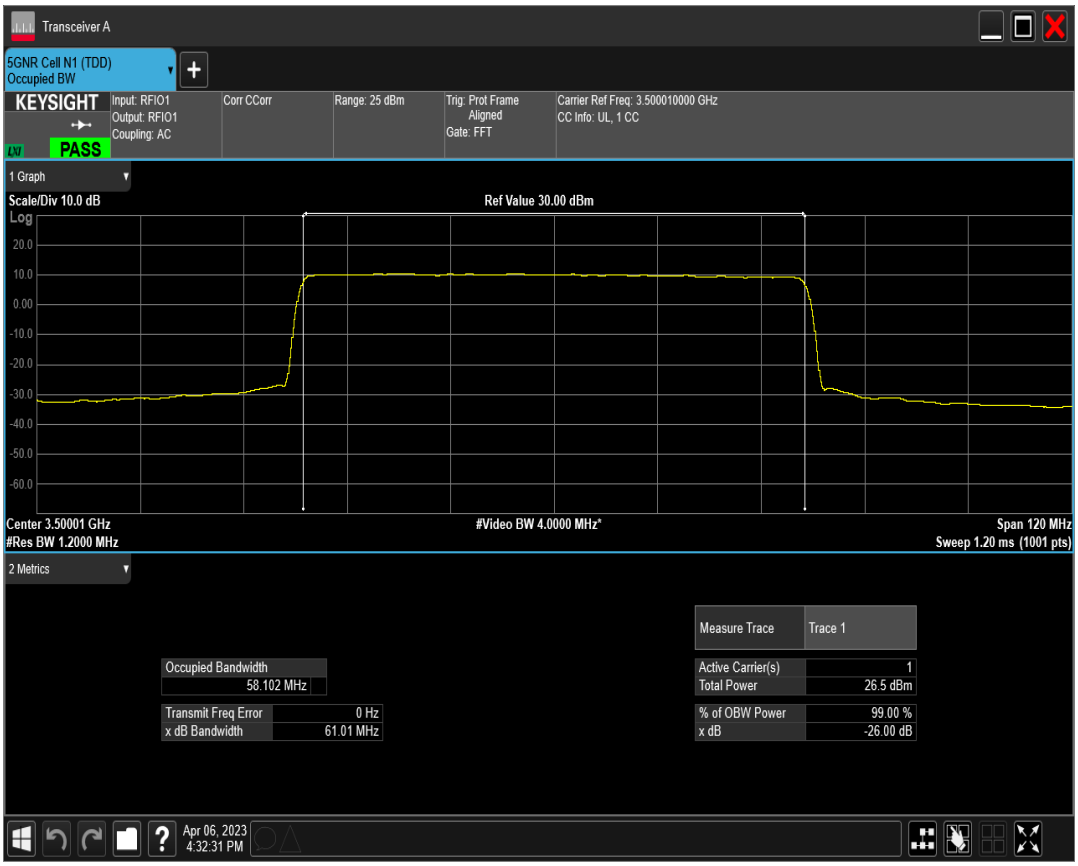
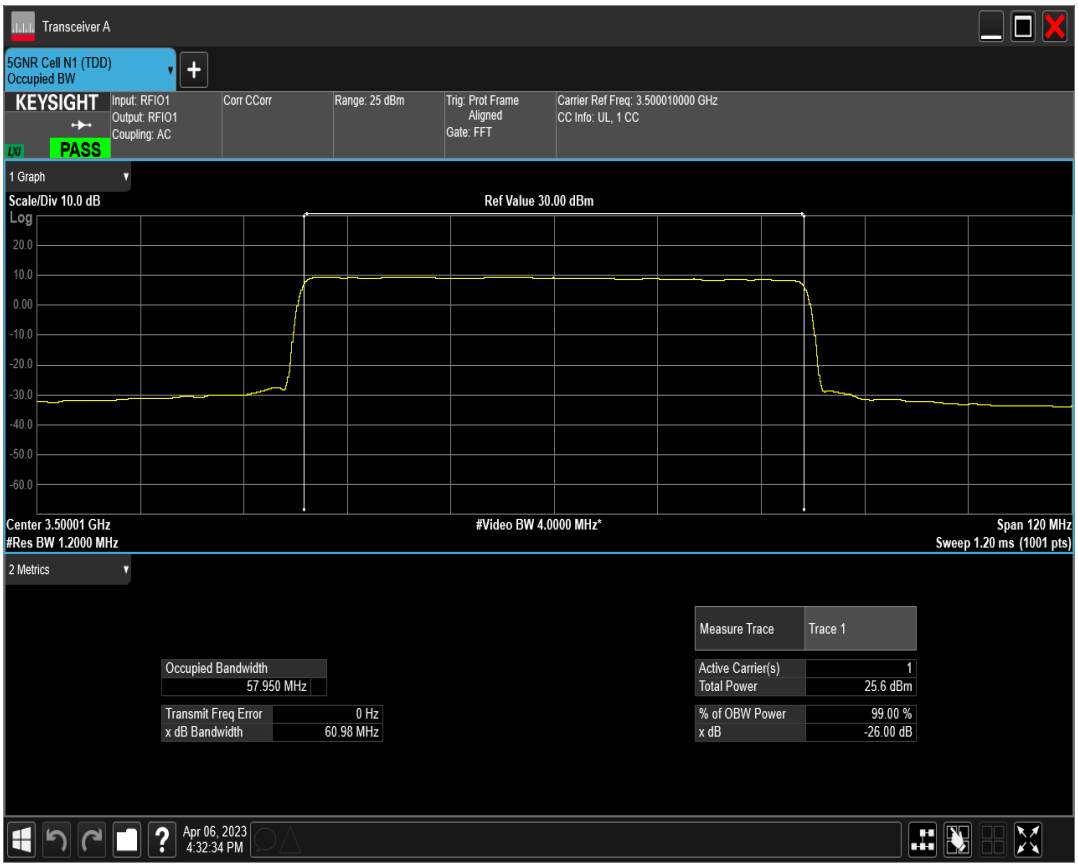


n77(3450-3550) SCS=30kHz DFT_QAM16 BW=60MHz Channel=633334 RB=162@0



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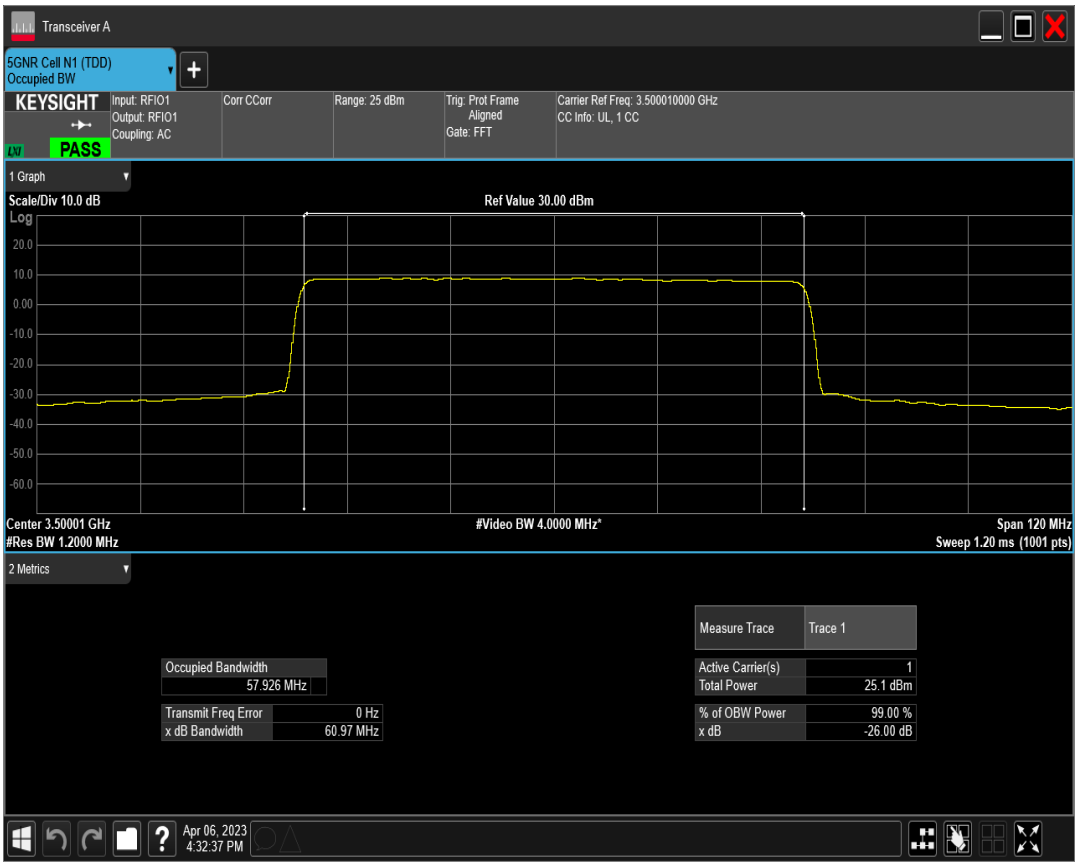

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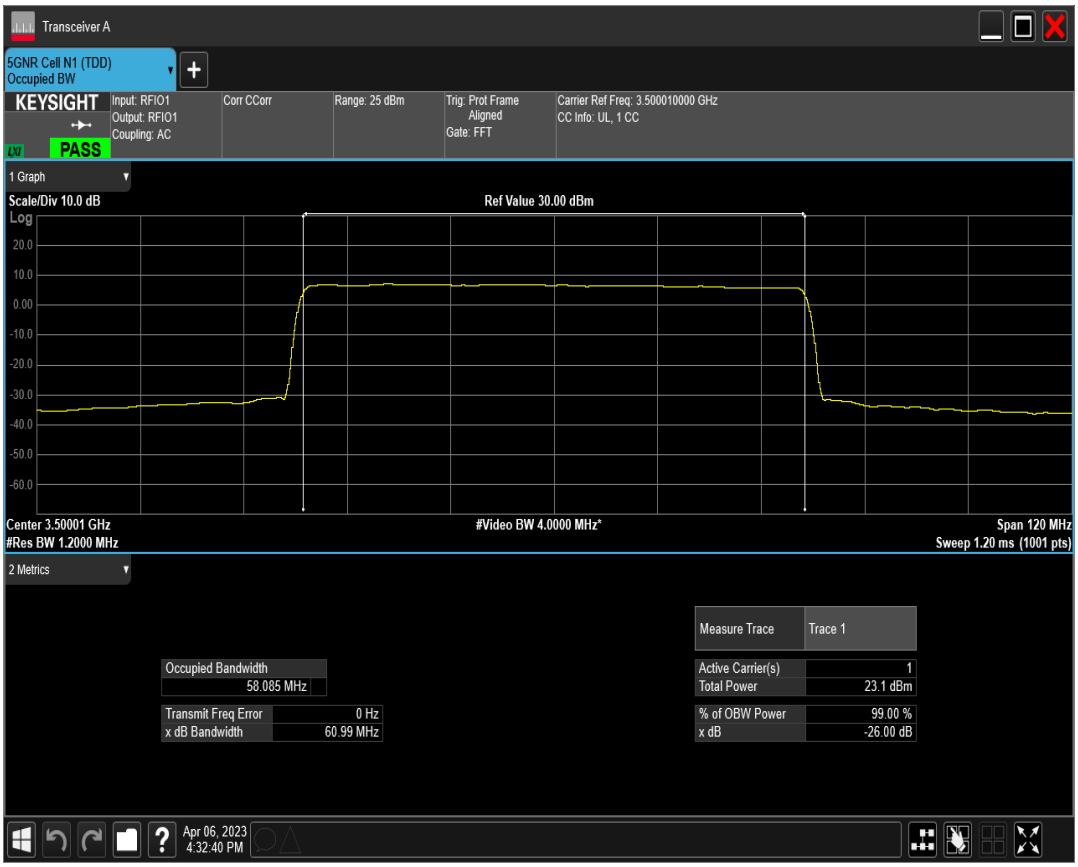
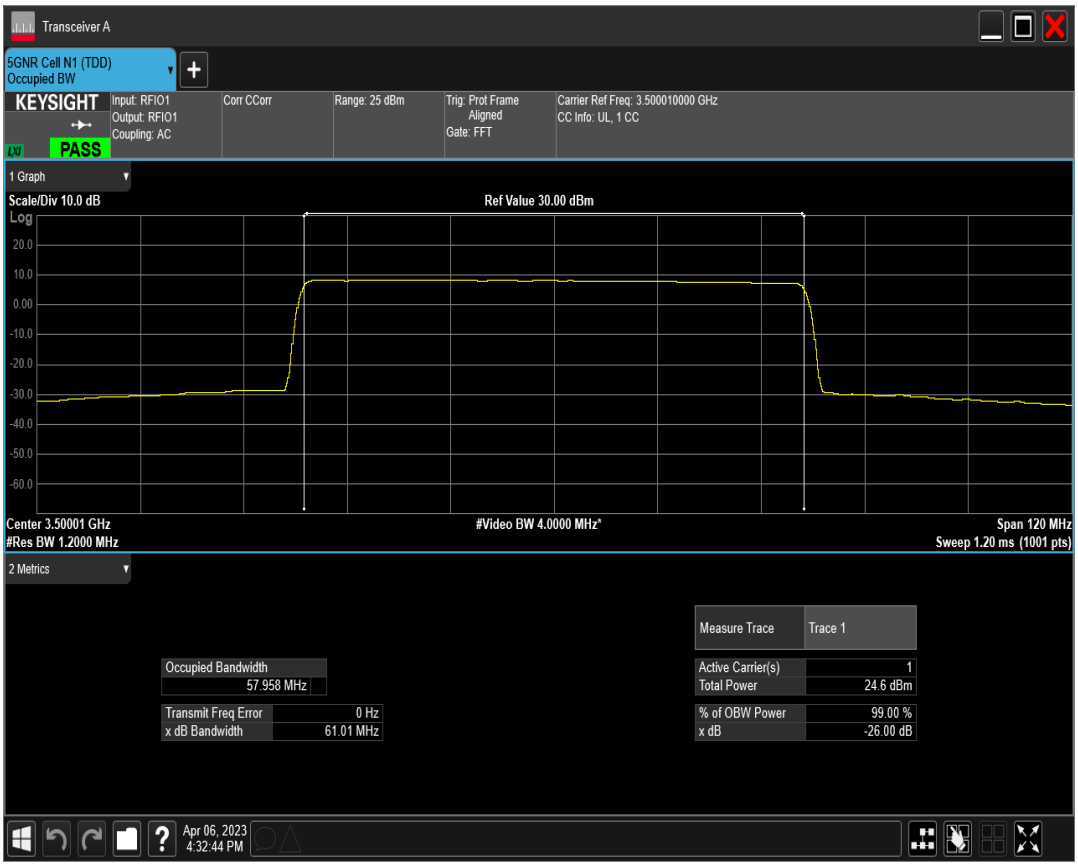
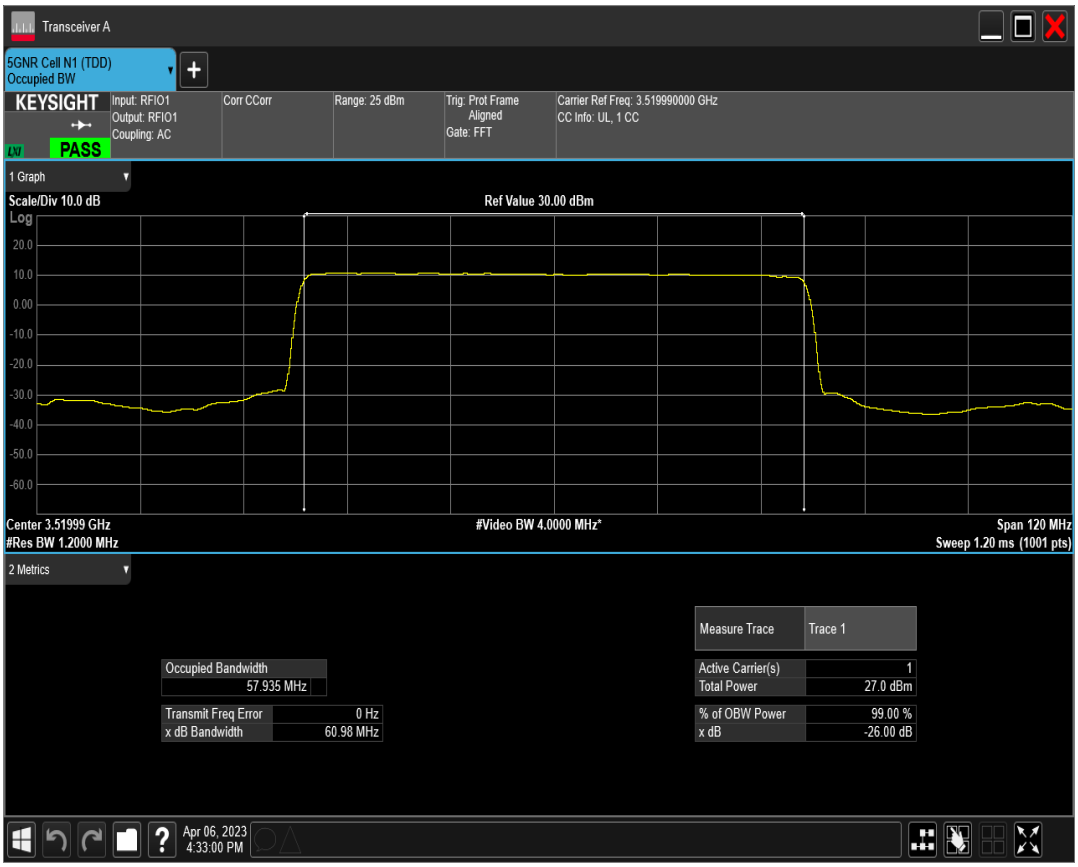


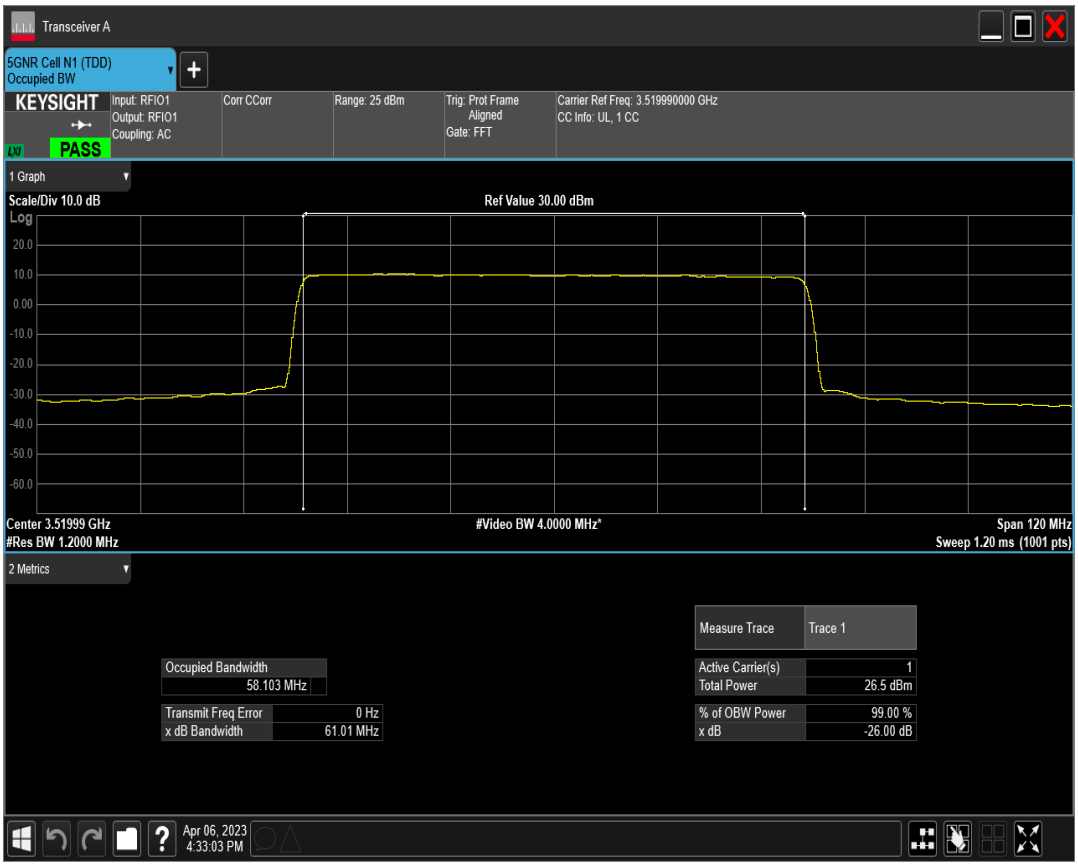
n77(3450-3550) SCS=30kHz CP_QPSK BW=60MHz Channel=633334 RB=162@0



n77(3450-3550) SCS=30kHz DFT_BPSK BW=60MHz Channel=634666 RB=162@0



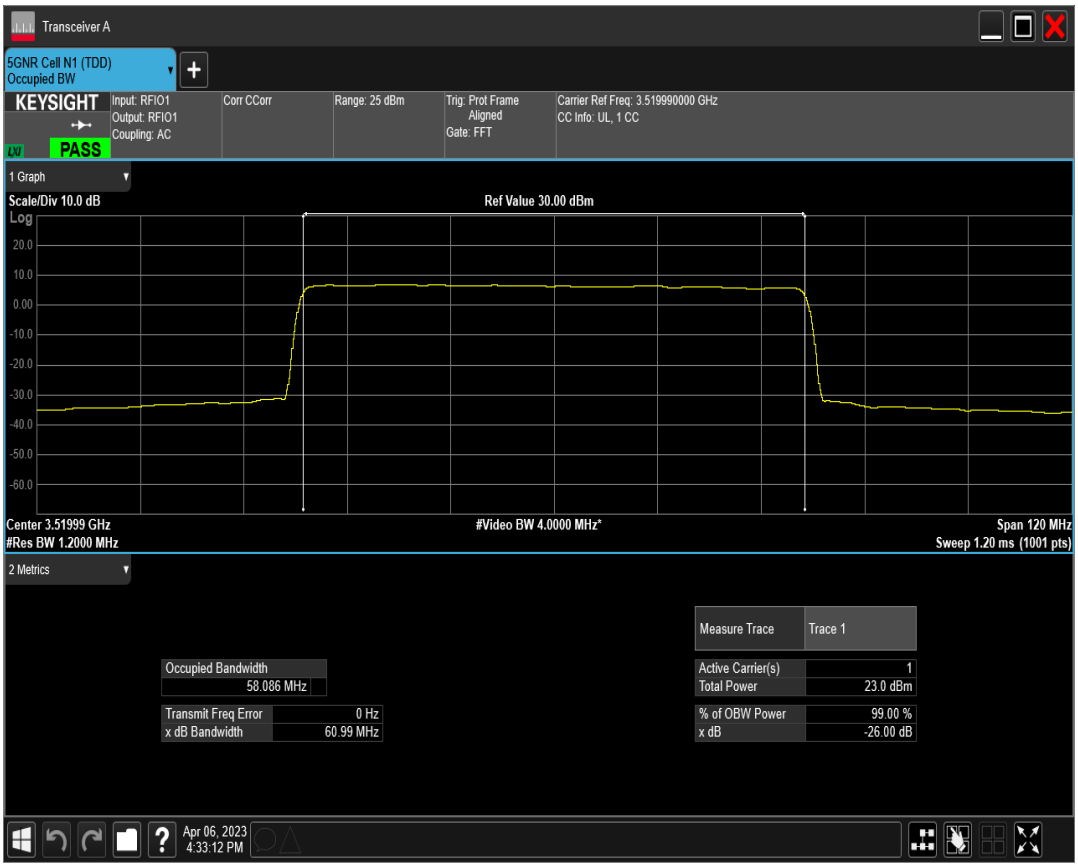
n77(3450-3550) SCS=30kHz DFT_QPSK BW=60MHz Channel=634666 RB=162@0



n77(3450-3550) SCS=30kHz DFT_QAM16 BW=60MHz Channel=634666 RB=162@0

n77(3450-3550) SCS=30kHz DFT_QAM64 BW=60MHz Channel=634666 RB=162@0

n77(3450-3550) SCS=30kHz DFT_QAM256 BW=60MHz Channel=634666 RB=162@0



n77(3450-3550) SCS=30kHz CP_QPSK BW=60MHz Channel=634666 RB=162@0

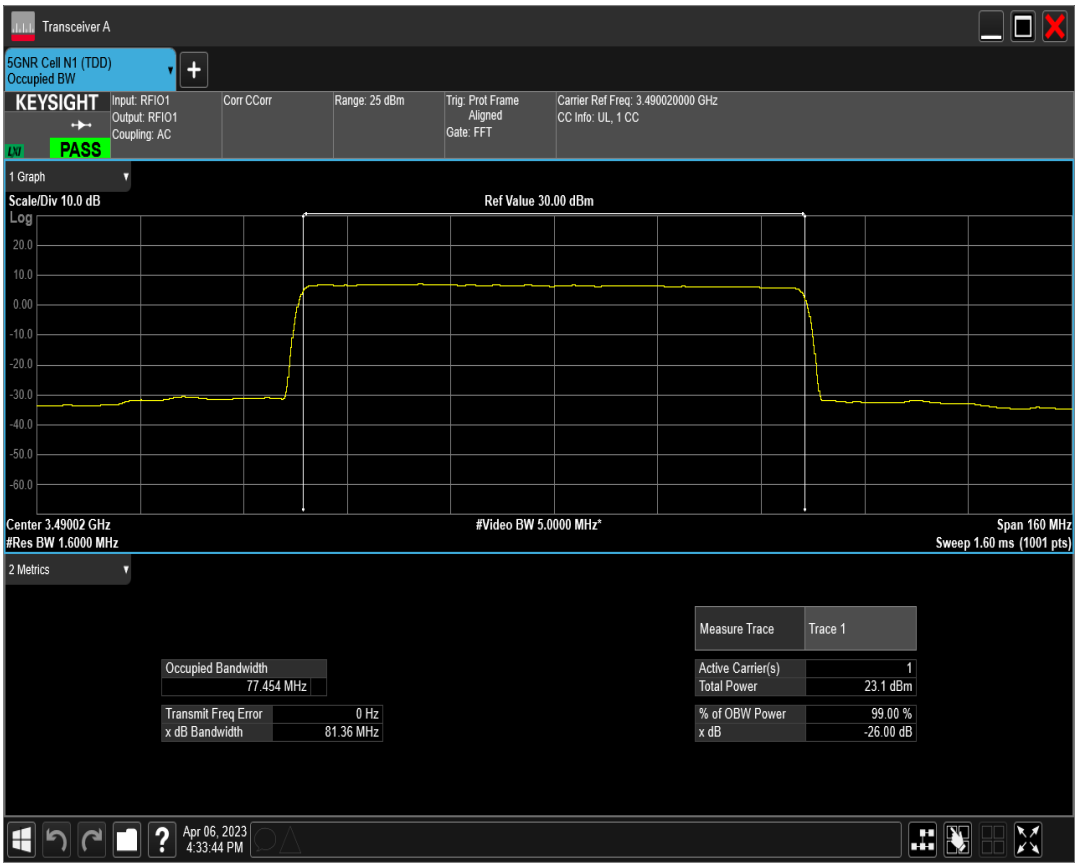
n77(3450-3550) SCS=30kHz DFT_BPSK BW=80MHz Channel=632668 RB=216@0

n77(3450-3550) SCS=30kHz DFT_QPSK BW=80MHz Channel=632668 RB=216@0

n77(3450-3550) SCS=30kHz DFT_QAM16 BW=80MHz Channel=632668 RB=216@0

n77(3450-3550) SCS=30kHz DFT_QAM64 BW=80MHz Channel=632668 RB=216@0

n77(3450-3550) SCS=30kHz DFT_QAM256 BW=80MHz Channel=632668 RB=216@0



n77(3450-3550) SCS=30kHz CP_QPSK BW=80MHz Channel=632668 RB=217@0

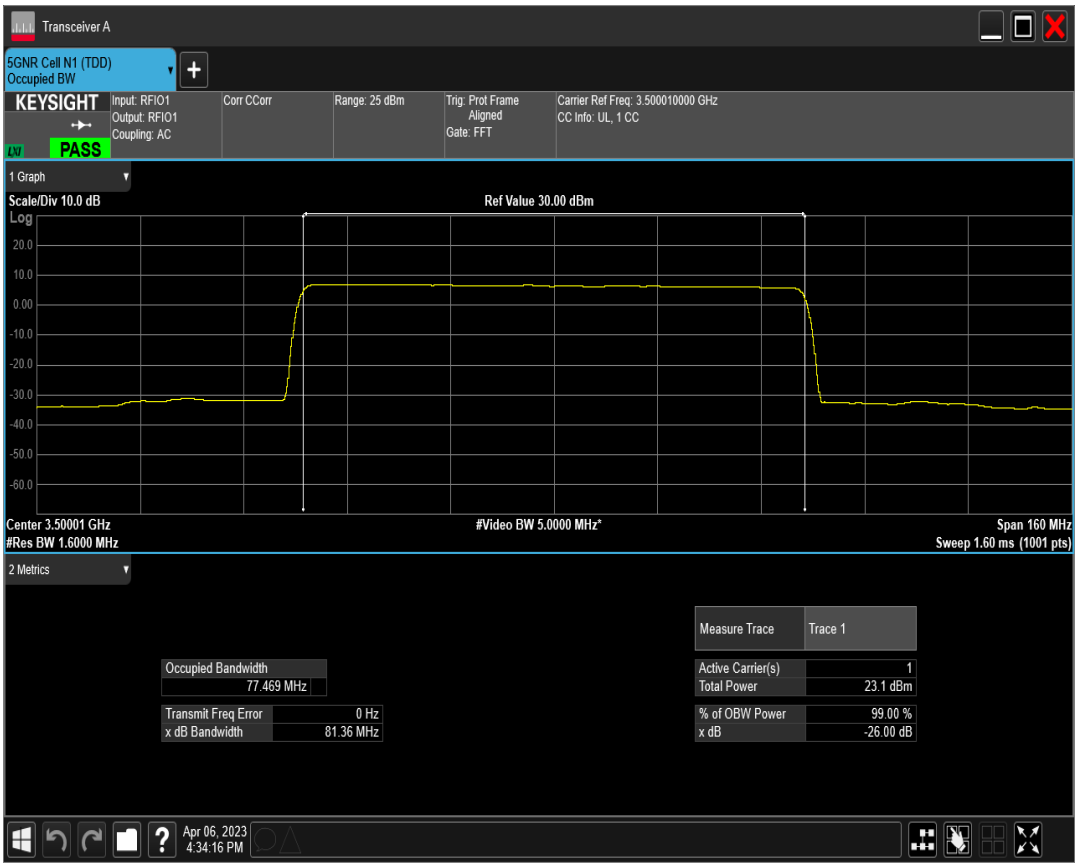
n77(3450-3550) SCS=30kHz DFT_BPSK BW=80MHz Channel=633334 RB=216@0

n77(3450-3550) SCS=30kHz DFT_QPSK BW=80MHz Channel=633334 RB=216@0

n77(3450-3550) SCS=30kHz DFT_QAM16 BW=80MHz Channel=633334 RB=216@0

n77(3450-3550) SCS=30kHz DFT_QAM64 BW=80MHz Channel=633334 RB=216@0

n77(3450-3550) SCS=30kHz DFT_QAM256 BW=80MHz Channel=633334 RB=216@0



n77(3450-3550) SCS=30kHz CP_QPSK BW=80MHz Channel=633334 RB=217@0

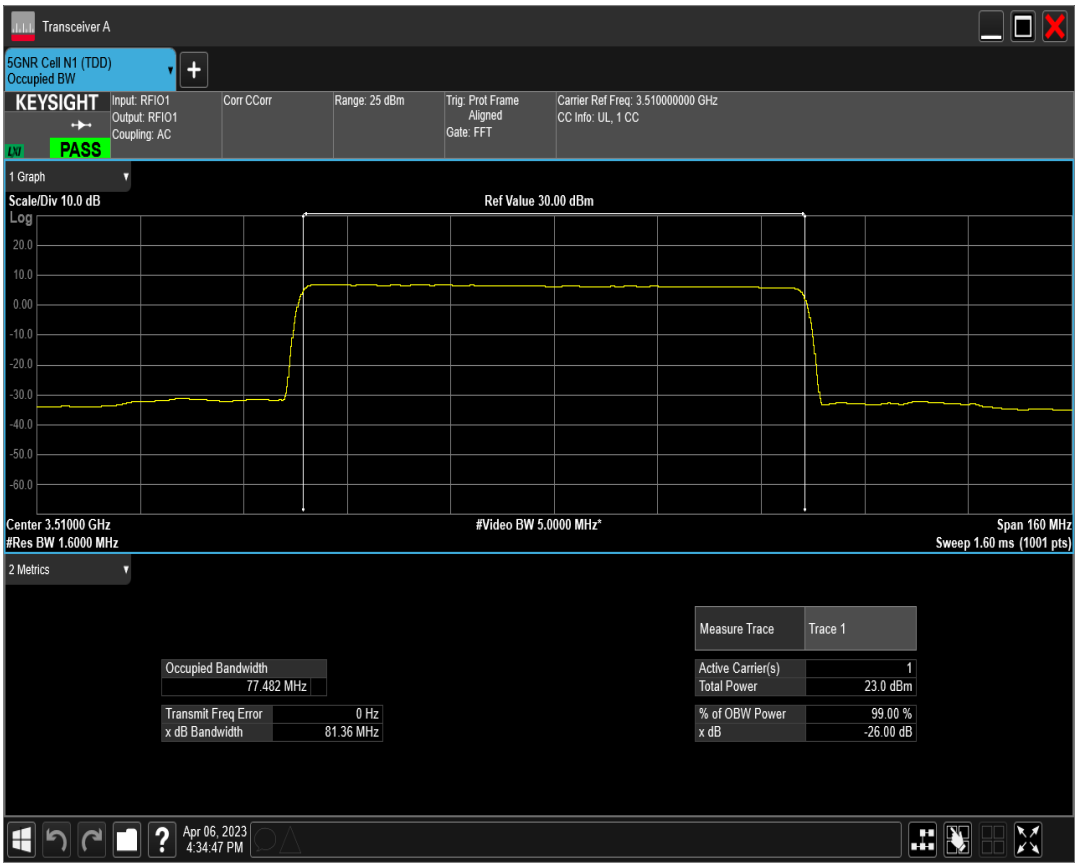
n77(3450-3550) SCS=30kHz DFT_BPSK BW=80MHz Channel=634000 RB=216@0

n77(3450-3550) SCS=30kHz DFT_QPSK BW=80MHz Channel=634000 RB=216@0

n77(3450-3550) SCS=30kHz DFT_QAM16 BW=80MHz Channel=634000 RB=216@0

n77(3450-3550) SCS=30kHz DFT_QAM64 BW=80MHz Channel=634000 RB=216@0

n77(3450-3550) SCS=30kHz DFT_QAM256 BW=80MHz Channel=634000 RB=216@0



n77(3450-3550) SCS=30kHz CP_QPSK BW=80MHz Channel=634000 RB=217@0

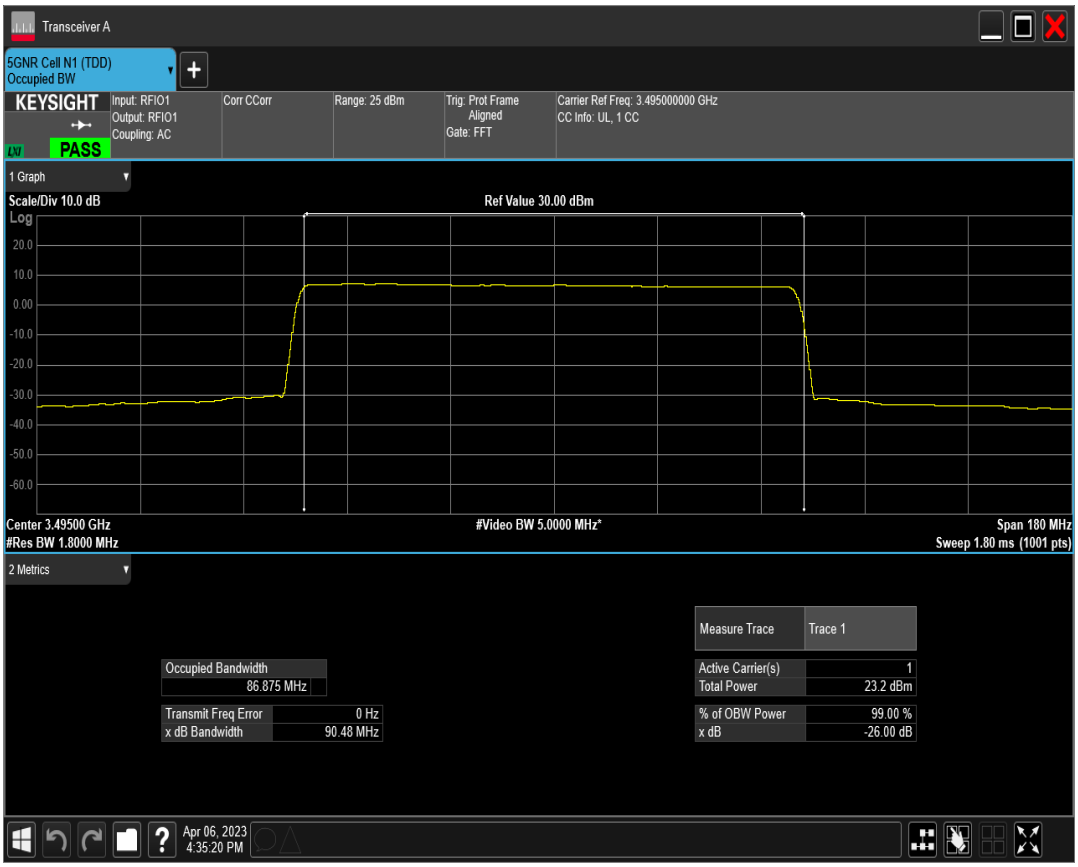
n77(3450-3550) SCS=30kHz DFT_BPSK BW=90MHz Channel=633000 RB=240@0

n77(3450-3550) SCS=30kHz DFT_QPSK BW=90MHz Channel=633000 RB=240@0

n77(3450-3550) SCS=30kHz DFT_QAM16 BW=90MHz Channel=633000 RB=240@0

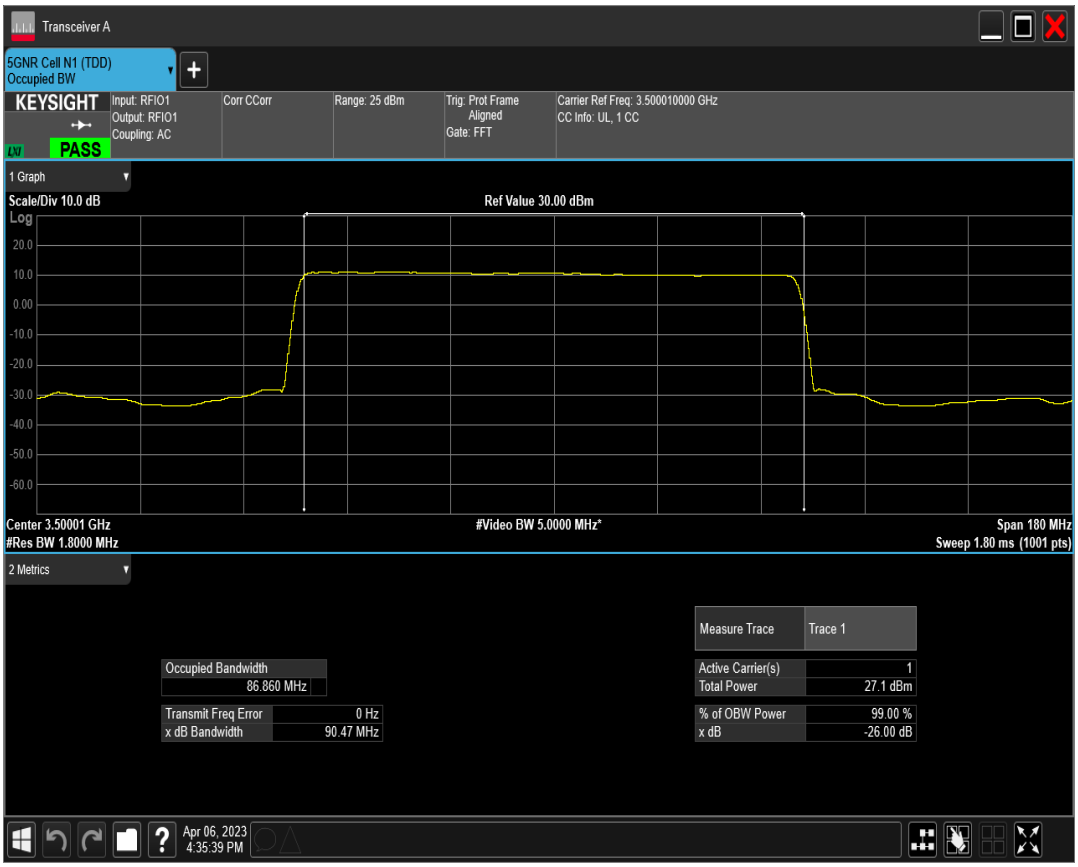
n77(3450-3550) SCS=30kHz DFT_QAM64 BW=90MHz Channel=633000 RB=240@0

n77(3450-3550) SCS=30kHz DFT_QAM256 BW=90MHz Channel=633000 RB=240@0



n77(3450-3550) SCS=30kHz CP_QPSK BW=90MHz Channel=633000 RB=245@0

n77(3450-3550) SCS=30kHz DFT_BPSK BW=90MHz Channel=633334 RB=240@0

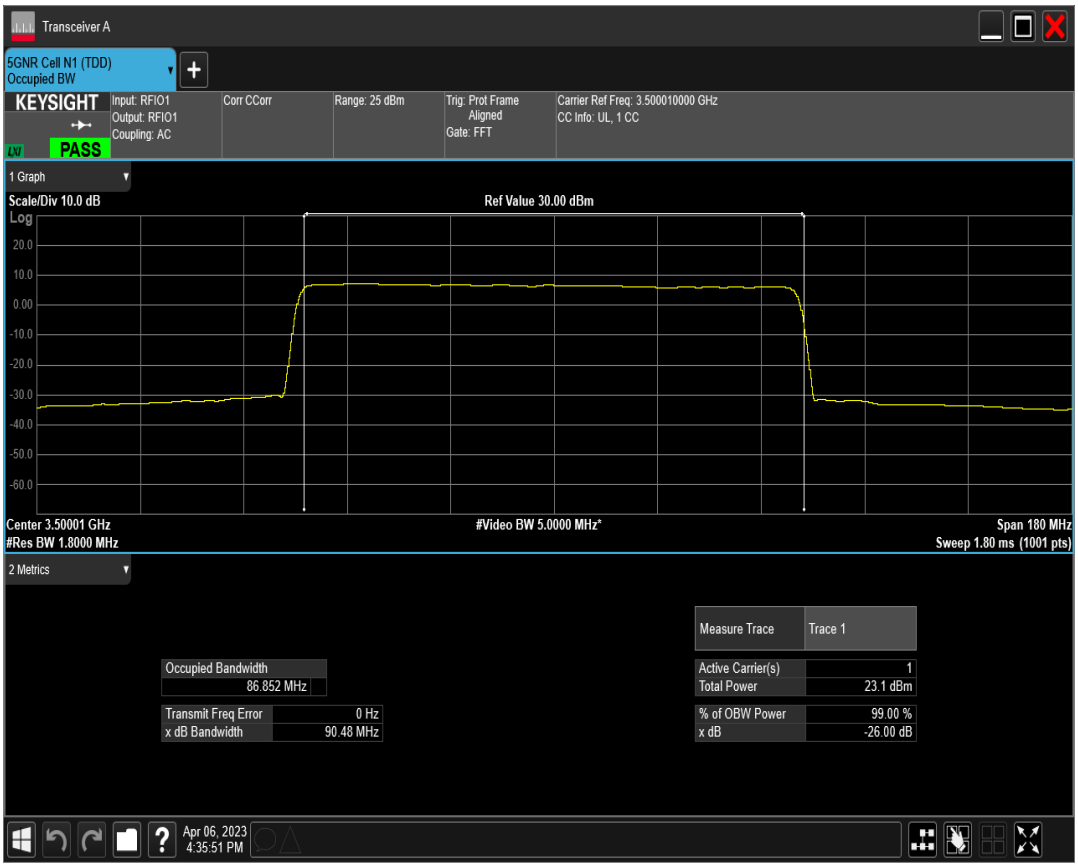


n77(3450-3550) SCS=30kHz DFT_QPSK BW=90MHz Channel=633334 RB=240@0

n77(3450-3550) SCS=30kHz DFT_QAM16 BW=90MHz Channel=633334 RB=240@0

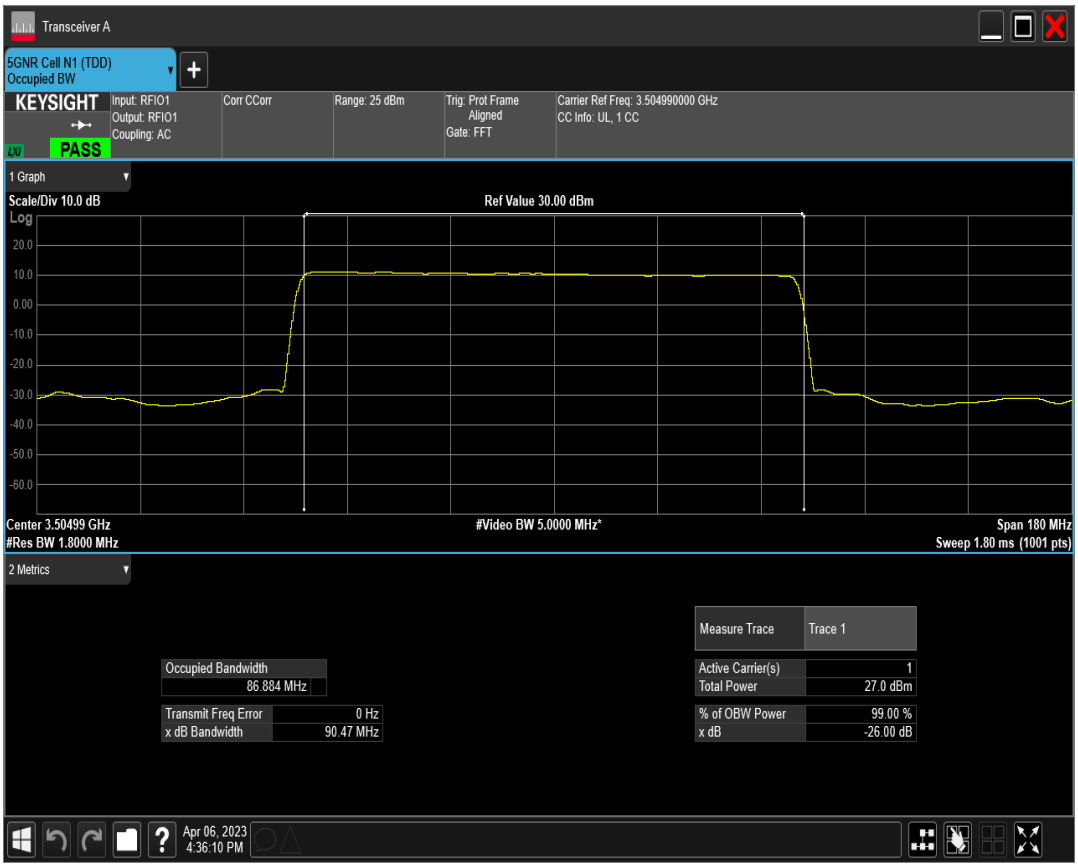
n77(3450-3550) SCS=30kHz DFT_QAM64 BW=90MHz Channel=633334 RB=240@0

n77(3450-3550) SCS=30kHz DFT_QAM256 BW=90MHz Channel=633334 RB=240@0



n77(3450-3550) SCS=30kHz CP_QPSK BW=90MHz Channel=633334 RB=245@0

n77(3450-3550) SCS=30kHz DFT_BPSK BW=90MHz Channel=633666 RB=240@0

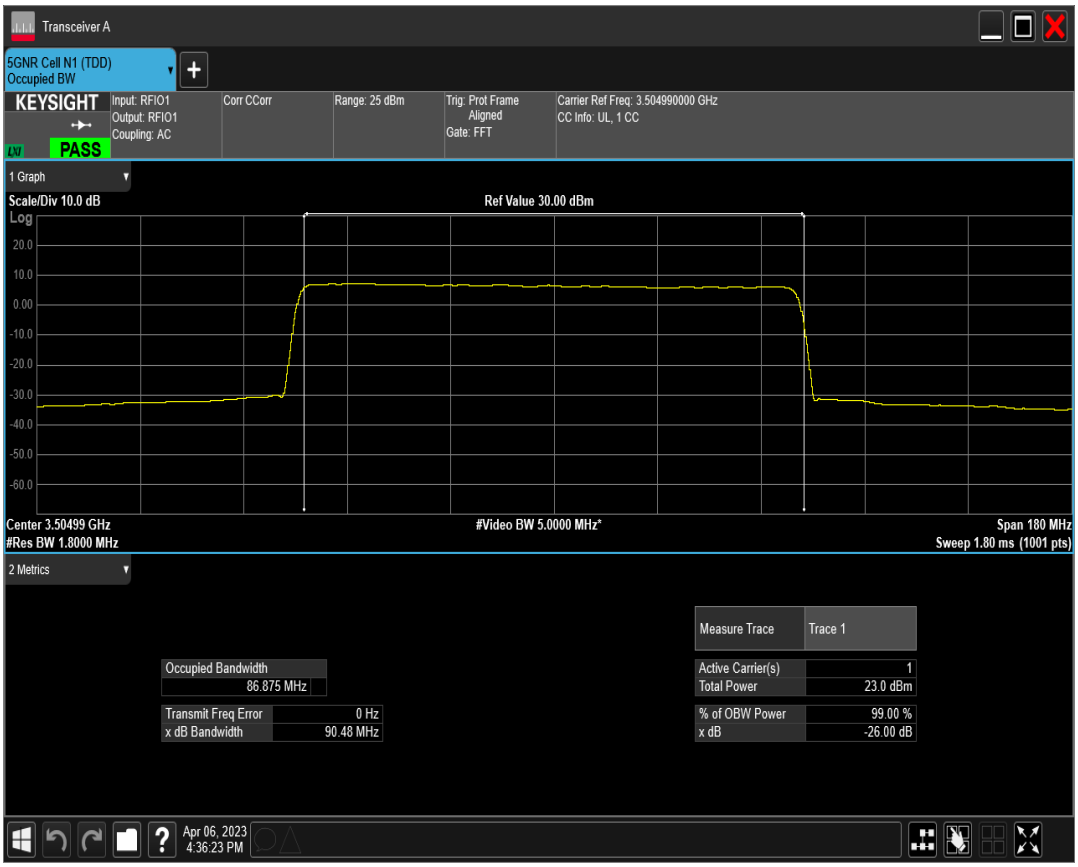


n77(3450-3550) SCS=30kHz DFT_QPSK BW=90MHz Channel=633666 RB=240@0

n77(3450-3550) SCS=30kHz DFT_QAM16 BW=90MHz Channel=633666 RB=240@0

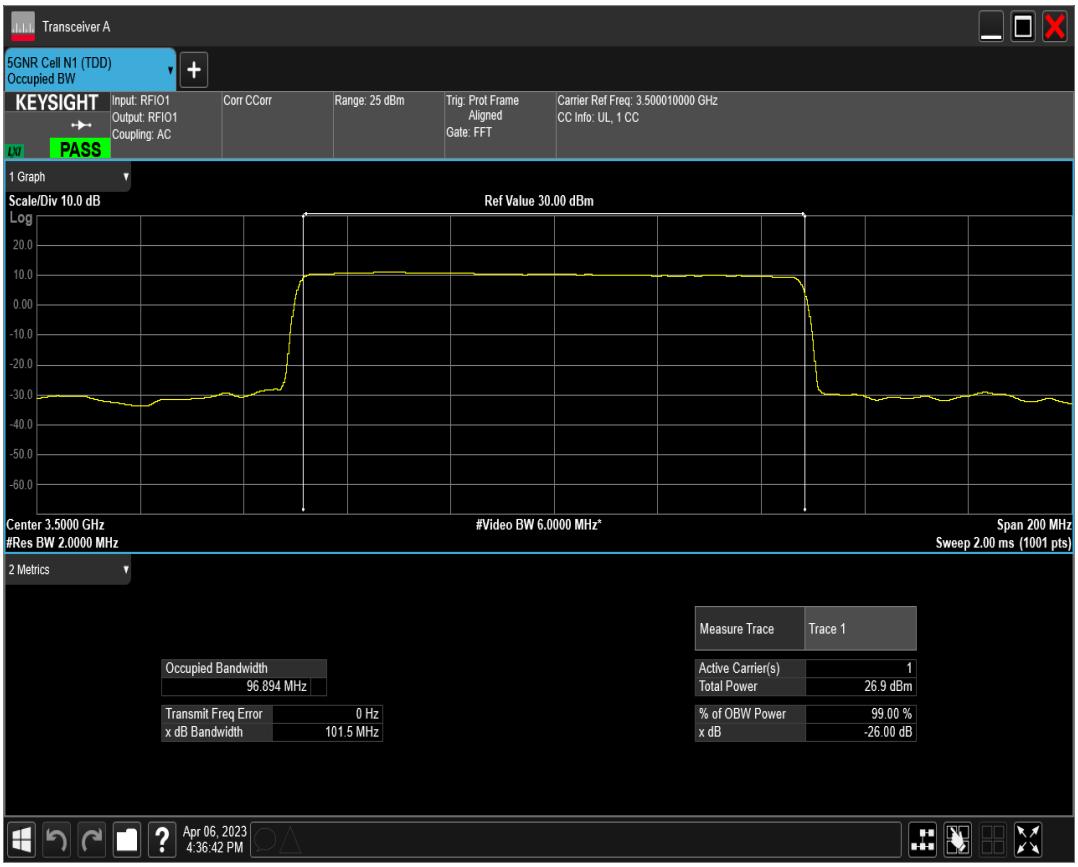
n77(3450-3550) SCS=30kHz DFT_QAM64 BW=90MHz Channel=633666 RB=240@0

n77(3450-3550) SCS=30kHz DFT_QAM256 BW=90MHz Channel=633666 RB=240@0

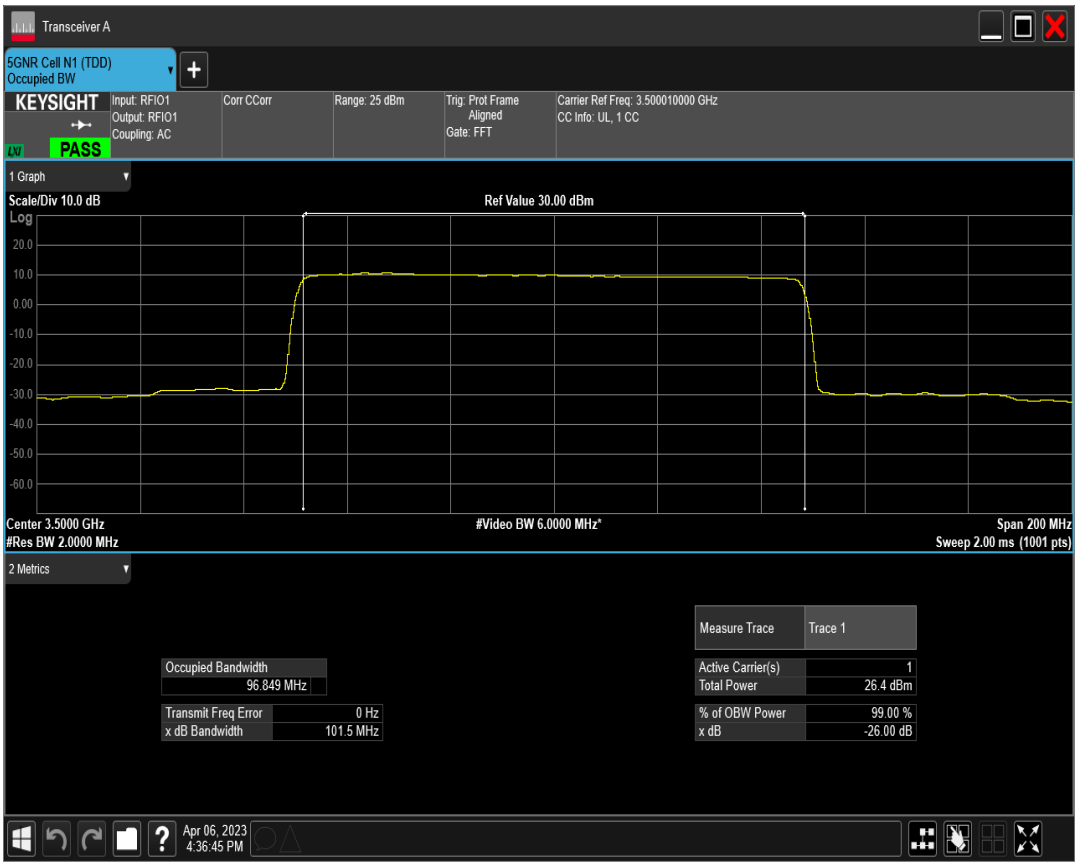


n77(3450-3550) SCS=30kHz CP_QPSK BW=90MHz Channel=633666 RB=245@0

n77(3450-3550) SCS=30kHz DFT_BPSK BW=100MHz Channel=633334 RB=270@0



n77(3450-3550) SCS=30kHz DFT_QPSK BW=100MHz Channel=633334 RB=270@0



n77(3450-3550) SCS=30kHz DFT_QAM16 BW=100MHz Channel=633334 RB=270@0

n77(3450-3550) SCS=30kHz DFT_QAM64 BW=100MHz Channel=633334 RB=270@0

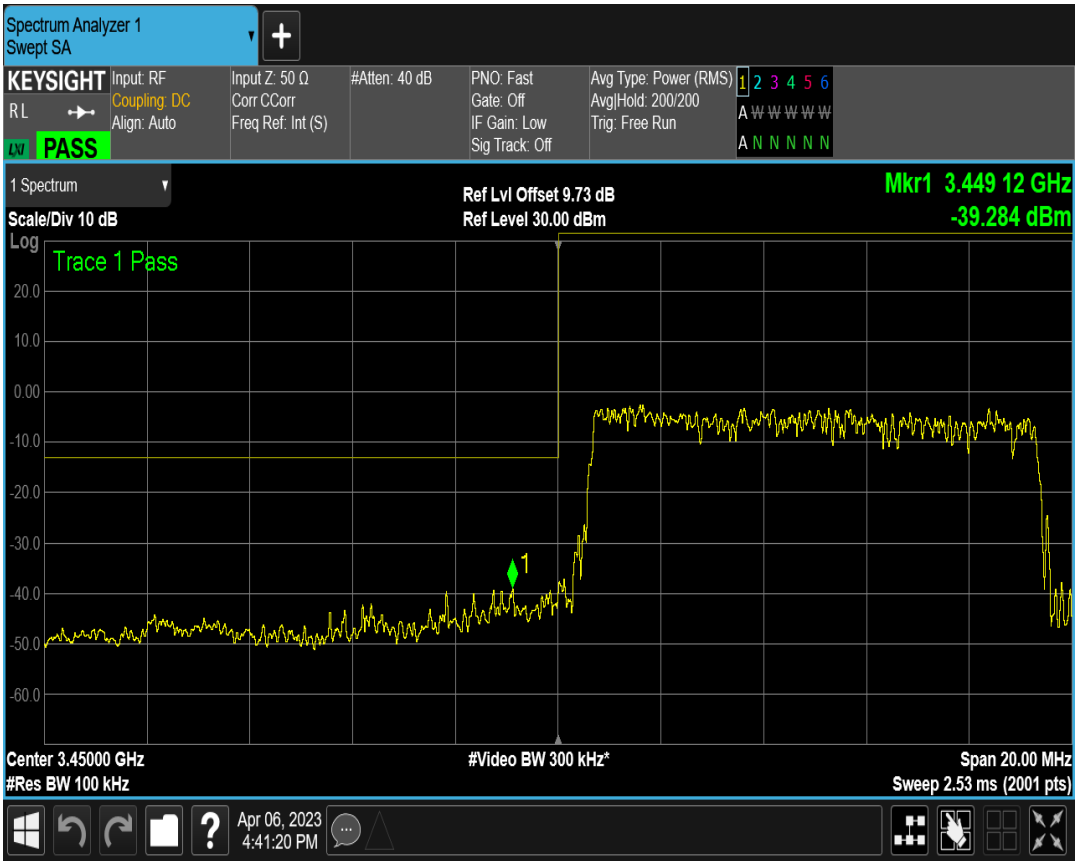
n77(3450-3550) SCS=30kHz DFT_QAM256 BW=100MHz Channel=633334 RB=270@0

n77(3450-3550) SCS=30kHz CP_QPSK BW=100MHz Channel=633334 RB=273@0

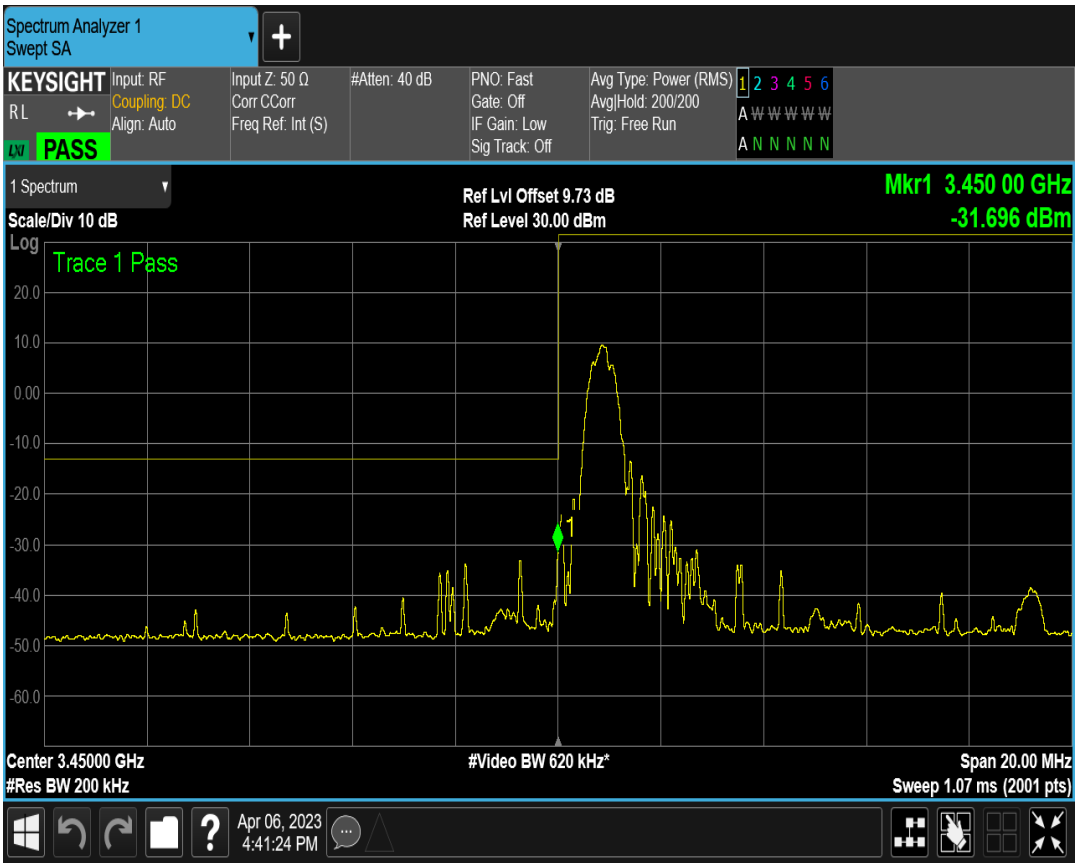
5 Band edge for NR FR1

Band	SCS (kHz)	Bandwidth (MHz)	UL Channel	RB Allocation	Modulation	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Verdict
n77(3450-3550)	30	10	630334	24@0	DFT_QPSK	3449.12	-39.28	-13	PASS
n77(3450-3550)	30	10	630334	1@0	DFT_QPSK	3450.00	-31.69	-13	PASS
n77(3450-3550)	30	10	636332	24@0	DFT_QPSK	3550.00	-39.78	-13	PASS
n77(3450-3550)	30	10	636332	1@23	DFT_QPSK	3550.03	-28.97	-13	PASS
n77(3450-3550)	30	100	633334	270@0	DFT_QPSK	3450.00	-24.28	-13	PASS
n77(3450-3550)	30	100	633334	1@0	DFT_QPSK	3449.90	-29.19	-13	PASS

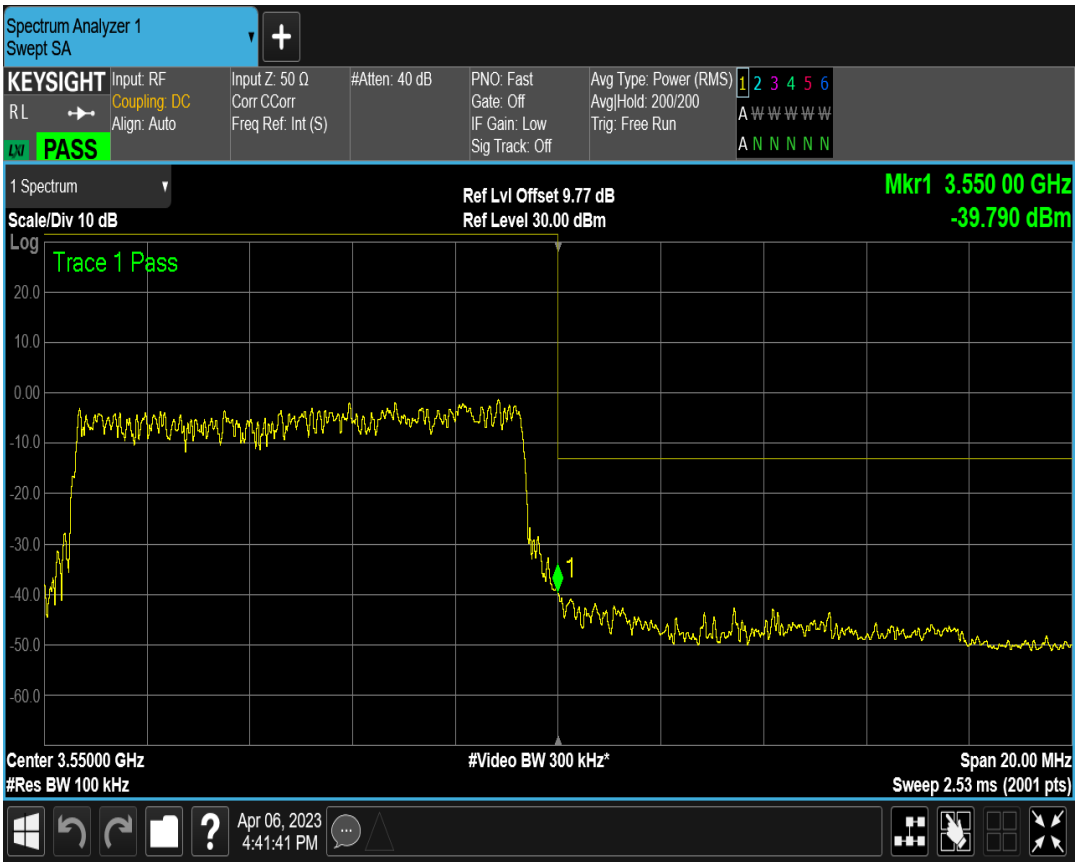
n77(3450-3550) SCS=30kHz DFT_QPSK BW=10MHz Channel=630334 RB=24@0



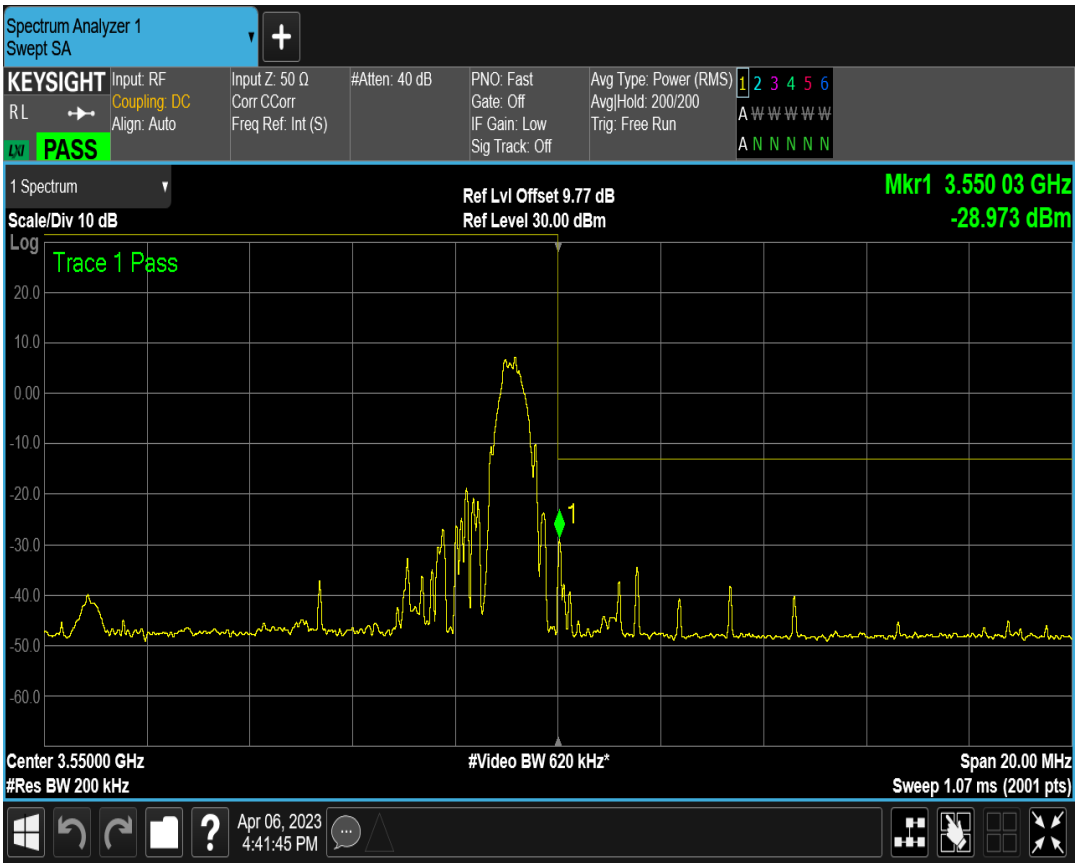
n77(3450-3550) SCS=30kHz DFT_QPSK BW=10MHz Channel=630334 RB=1@0



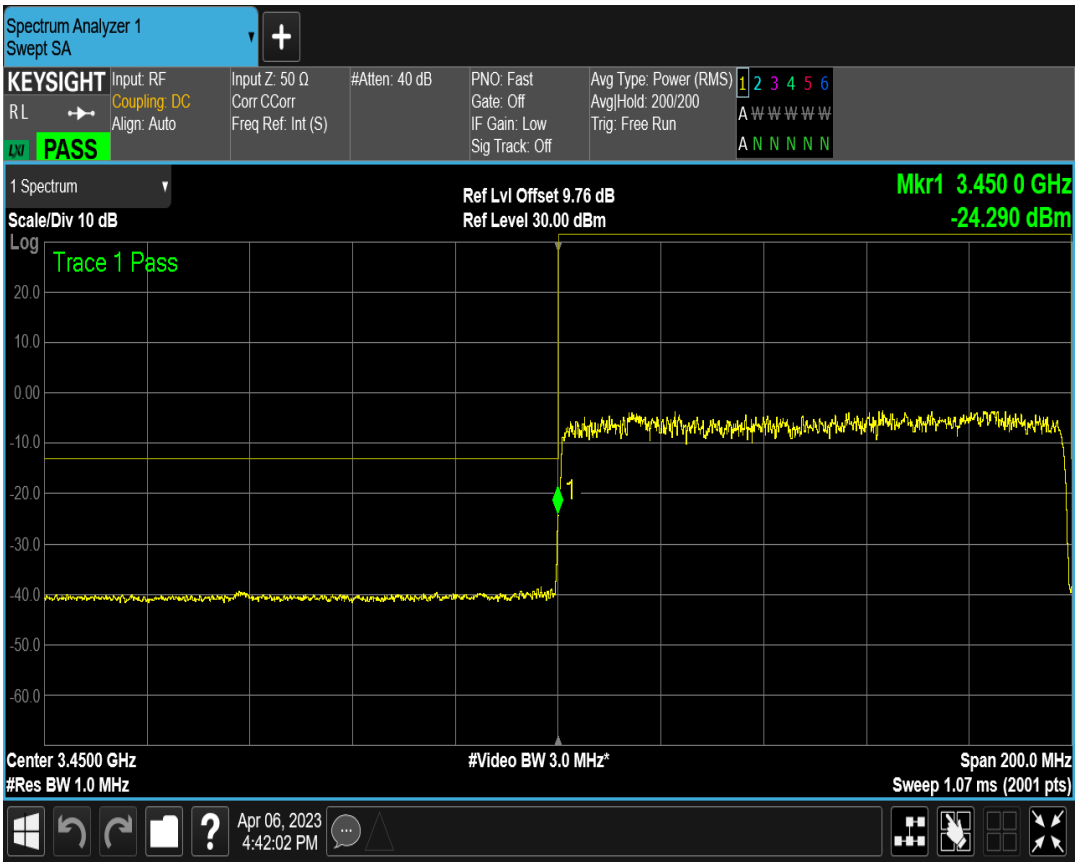
n77(3450-3550) SCS=30kHz DFT_QPSK BW=10MHz Channel=636332 RB=24@0



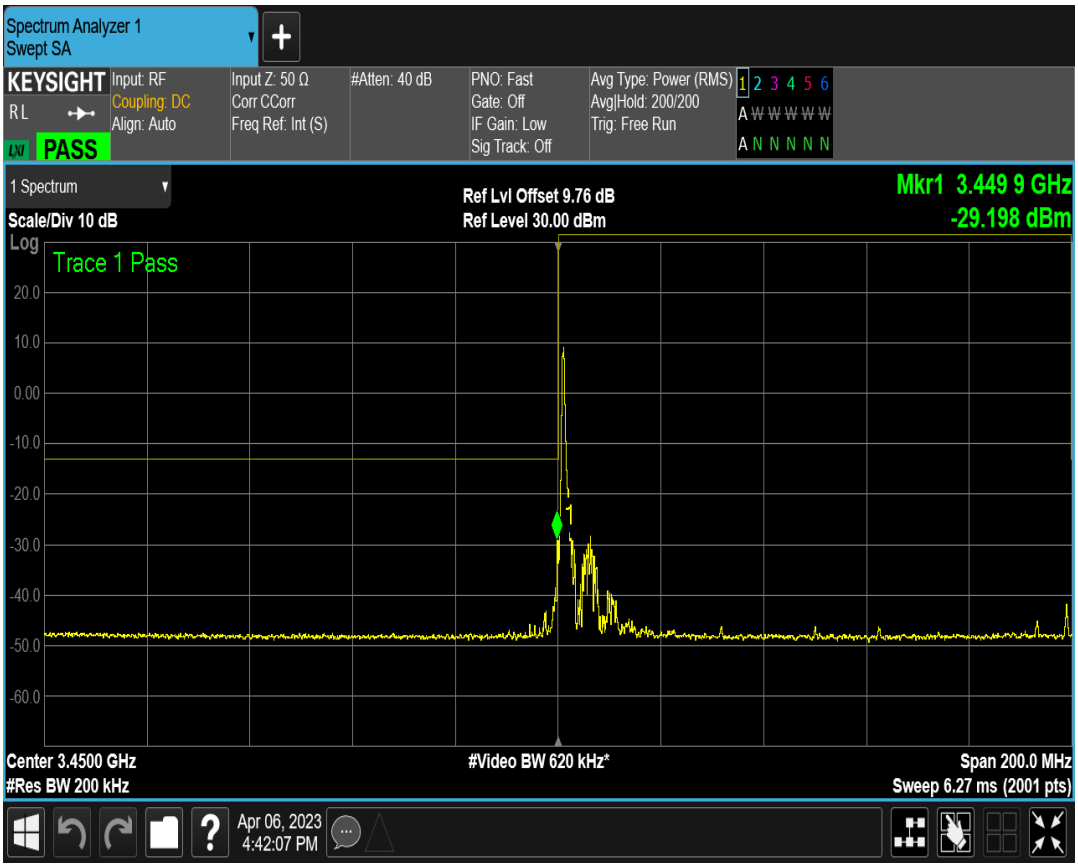
n77(3450-3550) SCS=30kHz DFT_QPSK BW=10MHz Channel=636332 RB=1@23



n77(3450-3550) SCS=30kHz DFT_QPSK BW=100MHz Channel=633334 RB=270@0



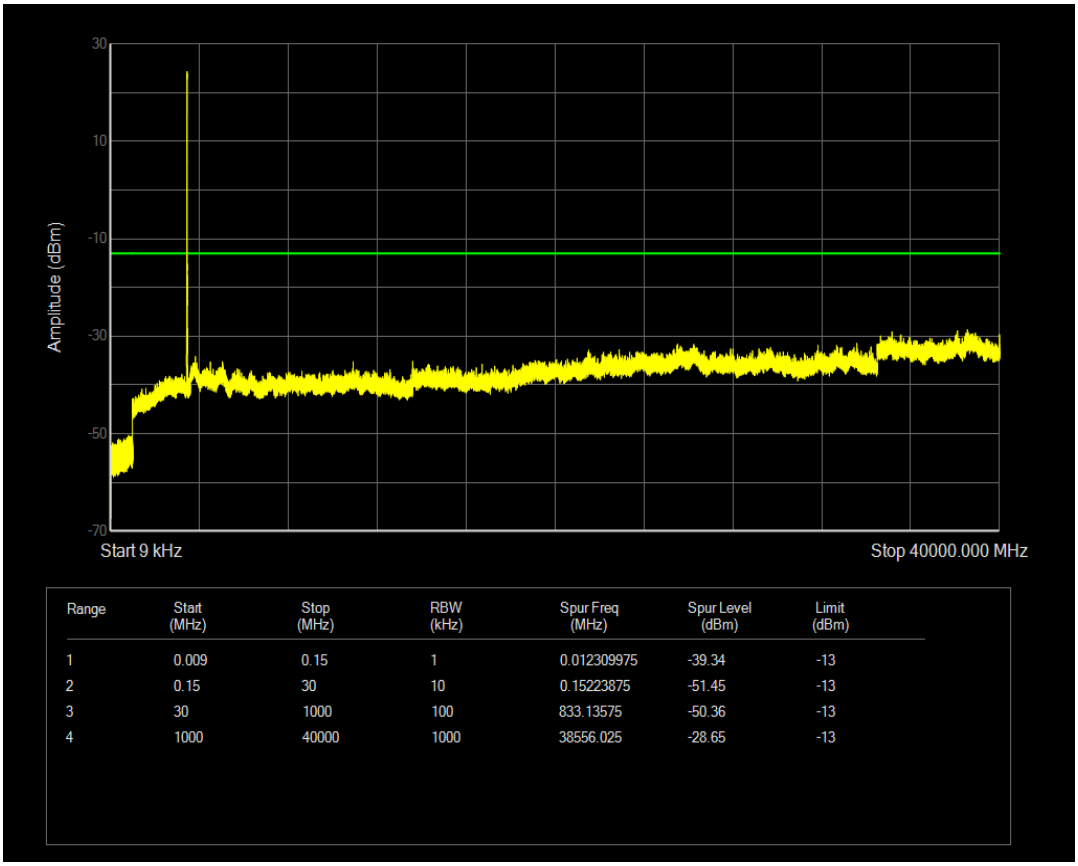
n77(3450-3550) SCS=30kHz DFT_QPSK BW=100MHz Channel=633334 RB=1@0


Spectrum Analyzer 1
Swept SA
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corr CCorr
Freq Ref: Int (S)
#Atten: 40 dB
PNO: Fast
Gate: Off
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Avg|Hold: 200/200
Trig: Free Run
PASS
1 Spectrum
Scale/Div 10 dB
Log
Ref Lvl Offset 9.76 dB
Ref Level 30.00 dBm
Mkr1 3.449 9 GHz
-29.198 dBm
Trace 1 Pass
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
Center 3.4500 GHz
#Res BW 200 kHz
#Video BW 620 kHz*
Span 200.0 MHz
Sweep 6.27 ms (2001 pts)
Apr 06, 2023
4:42:07 PM

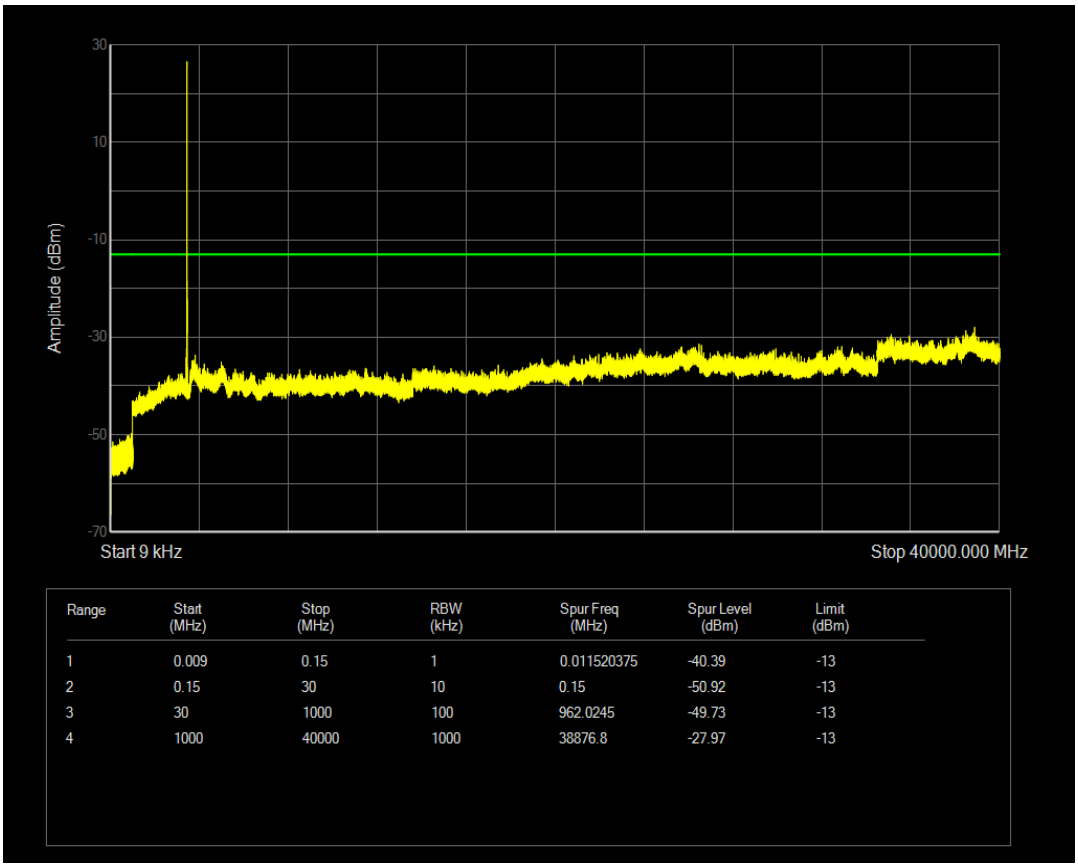
6 Out-of-band emissions for NR FR1

Band	SCS (kHz)	Bandwidth (MHz)	UL Channel	RB Allocation	Modulation	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Verdict
n77(3450-3550)	30	10	630334	24@0	DFT_QPSK	38556.03	-28.65	-13	PASS
n77(3450-3550)	30	10	630334	1@0	DFT_QPSK	38876.80	-27.97	-13	PASS
n77(3450-3550)	30	10	630334	1@23	DFT_QPSK	38642.80	-29.20	-13	PASS
n77(3450-3550)	30	10	633334	24@0	DFT_QPSK	38608.68	-29.08	-13	PASS
n77(3450-3550)	30	10	633334	1@0	DFT_QPSK	38156.28	-29.06	-13	PASS
n77(3450-3550)	30	10	633334	1@23	DFT_QPSK	38066.58	-27.87	-13	PASS
n77(3450-3550)	30	10	636332	24@0	DFT_QPSK	38620.38	-28.97	-13	PASS
n77(3450-3550)	30	10	636332	1@0	DFT_QPSK	38628.18	-28.33	-13	PASS
n77(3450-3550)	30	10	636332	1@23	DFT_QPSK	38622.33	-28.26	-13	PASS
n77(3450-3550)	30	100	633334	270@0	DFT_QPSK	38959.68	-28.94	-13	PASS
n77(3450-3550)	30	100	633334	1@0	DFT_QPSK	38554.08	-28.70	-13	PASS
n77(3450-3550)	30	100	633334	1@272	DFT_QPSK	34721.35	-29.03	-13	PASS

n77(3450-3550) SCS=30kHz DFT_QPSK BW=10MHz Channel=630334 RB=24@0

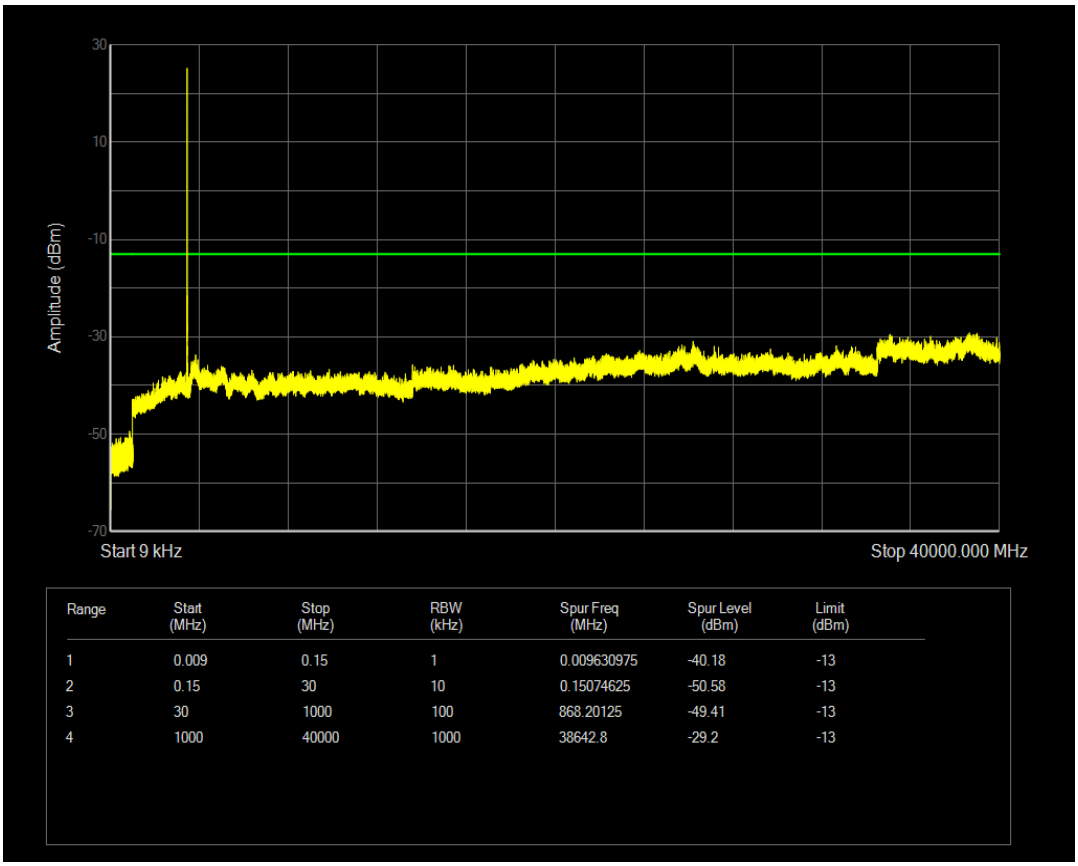


n77(3450-3550) SCS=30kHz DFT_QPSK BW=10MHz Channel=630334 RB=1@0



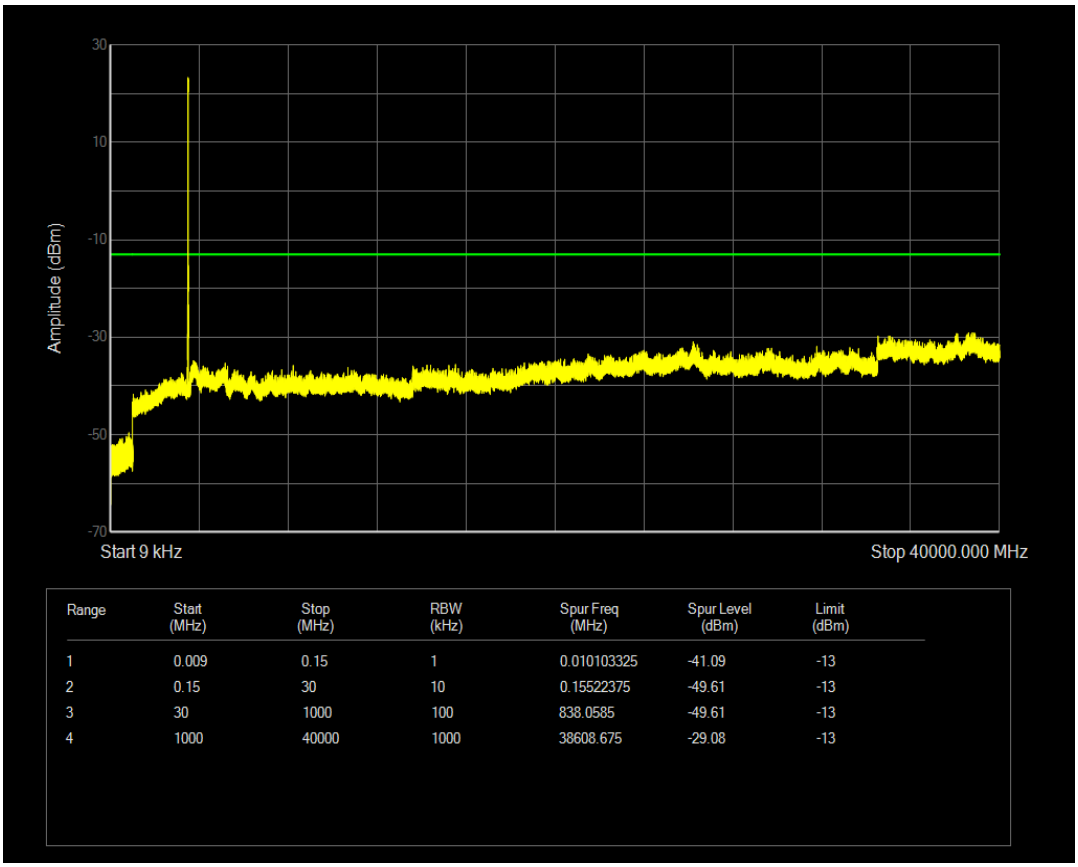
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.011520375	-40.39	-13
2	0.15	30	10	0.15	-50.92	-13
3	30	1000	100	962.0245	-49.73	-13
4	1000	40000	1000	38876.8	-27.97	-13

n77(3450-3550) SCS=30kHz DFT_QPSK BW=10MHz Channel=630334 RB=1@23



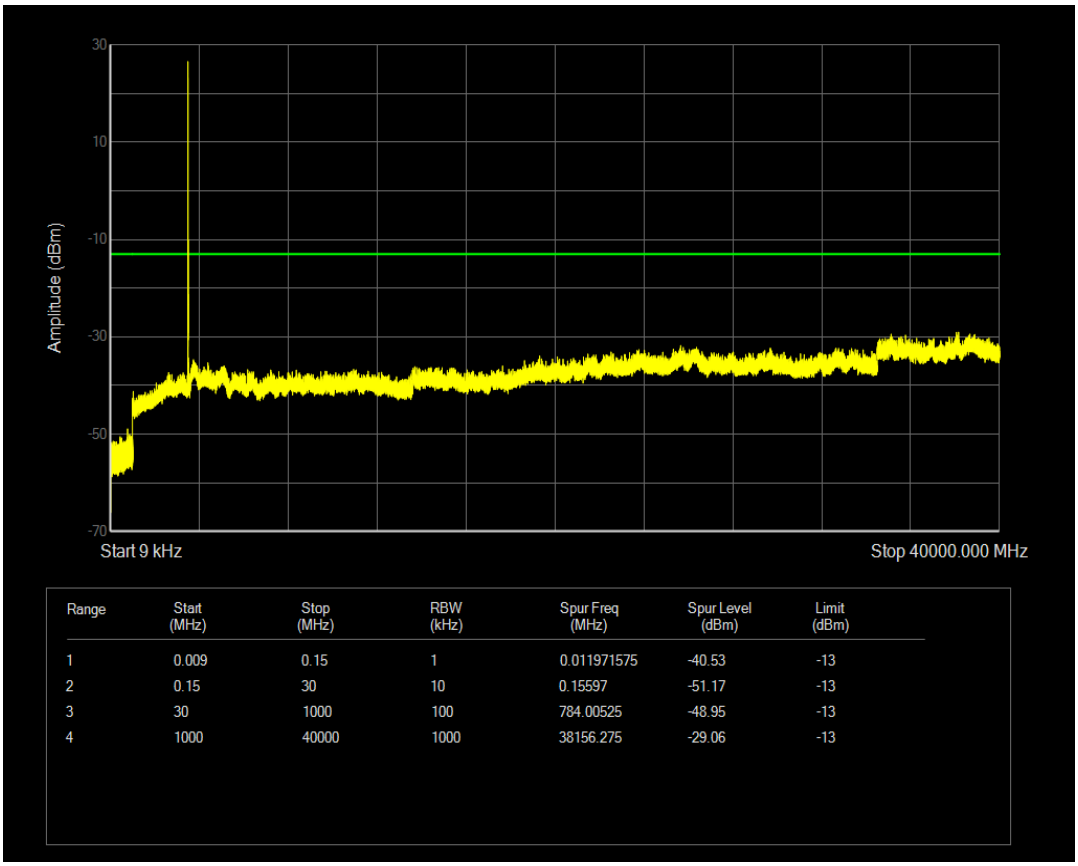
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.009630975	-40.18	-13
2	0.15	30	10	0.15074625	-50.58	-13
3	30	1000	100	868.20125	-49.41	-13
4	1000	40000	1000	38642.8	-29.2	-13

n77(3450-3550) SCS=30kHz DFT_QPSK BW=10MHz Channel=633334 RB=24@0



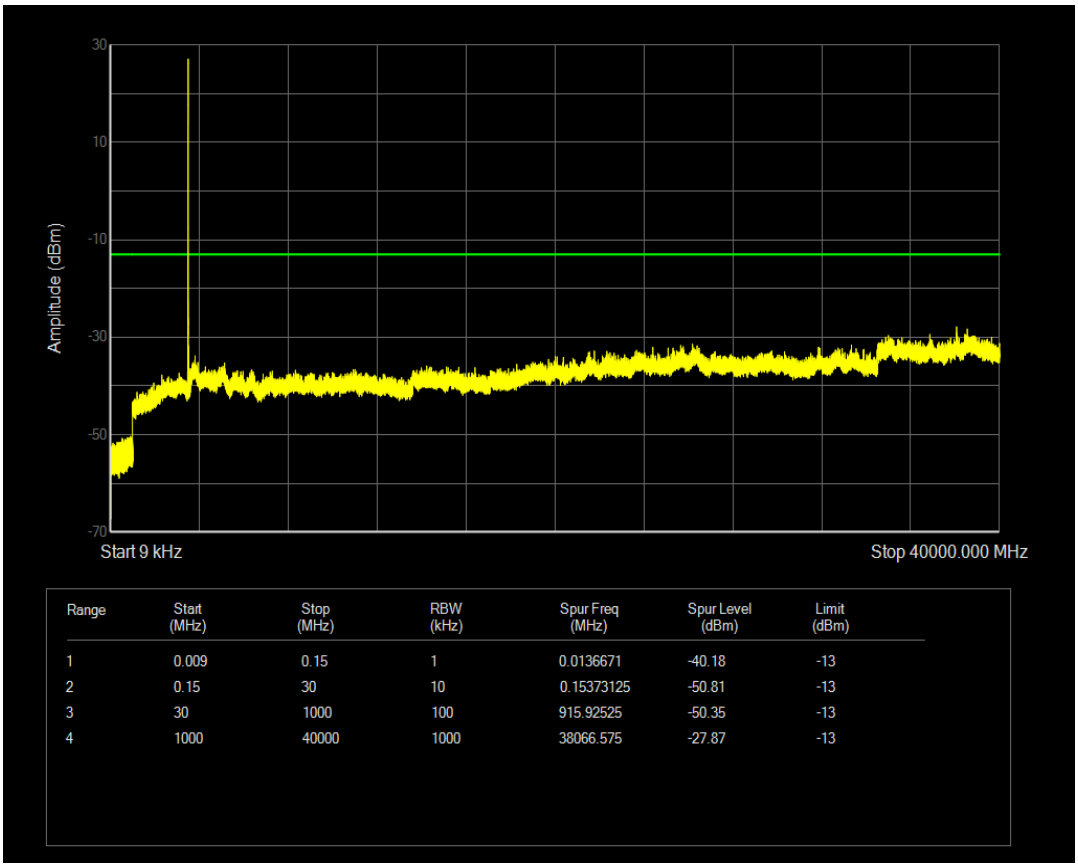
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.010103325	-41.09	-13
2	0.15	30	10	0.15522375	-49.61	-13
3	30	1000	100	838.0585	-49.61	-13
4	1000	40000	1000	38608.675	-29.08	-13

n77(3450-3550) SCS=30kHz DFT_QPSK BW=10MHz Channel=633334 RB=1@0



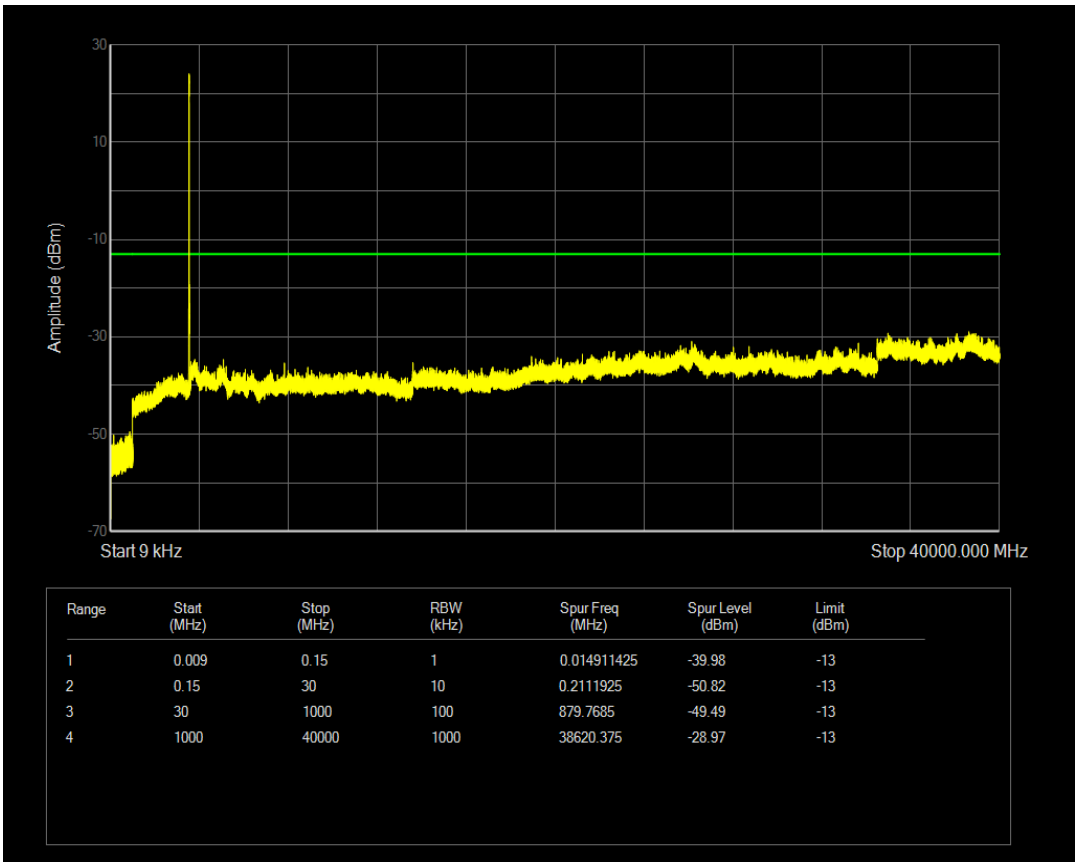
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.011971575	-40.53	-13
2	0.15	30	10	0.15597	-51.17	-13
3	30	1000	100	784.00525	-48.95	-13
4	1000	40000	1000	38156.275	-29.06	-13

n77(3450-3550) SCS=30kHz DFT_QPSK BW=10MHz Channel=633334 RB=1@23



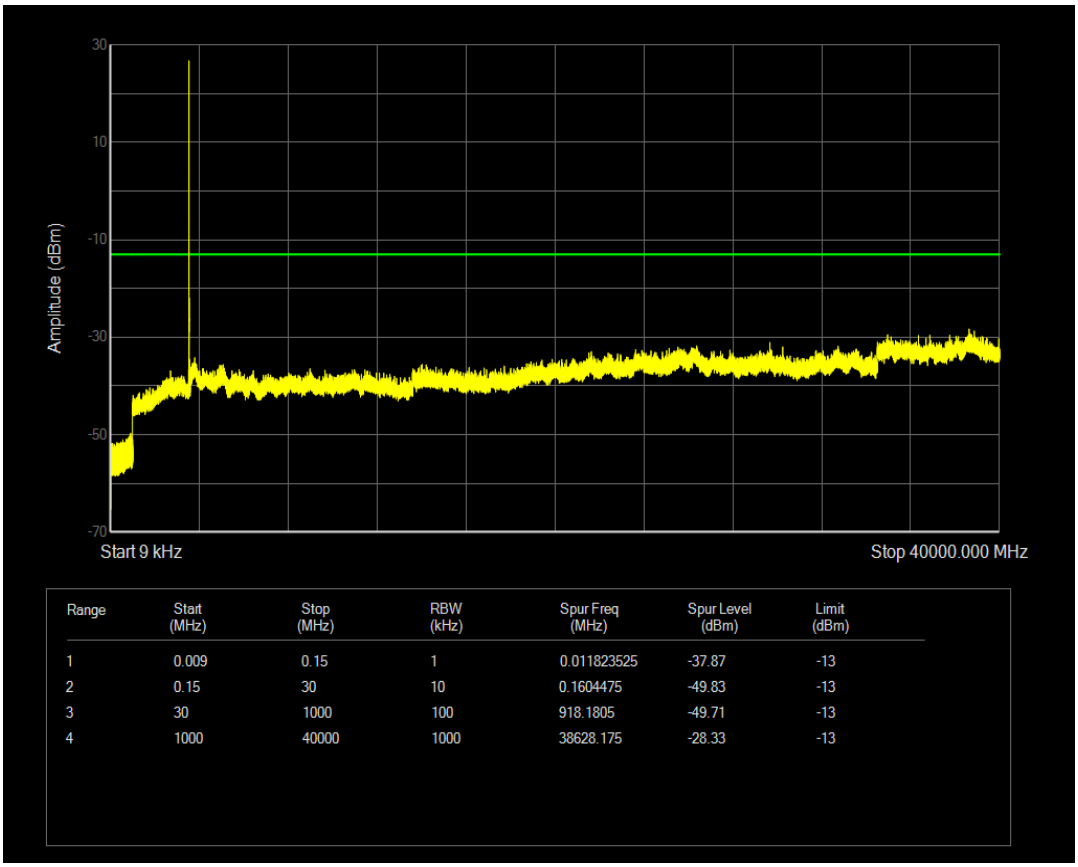
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.0136671	-40.18	-13
2	0.15	30	10	0.15373125	-50.81	-13
3	30	1000	100	915.92525	-50.35	-13
4	1000	40000	1000	38066.575	-27.87	-13

n77(3450-3550) SCS=30kHz DFT_QPSK BW=10MHz Channel=636332 RB=24@0



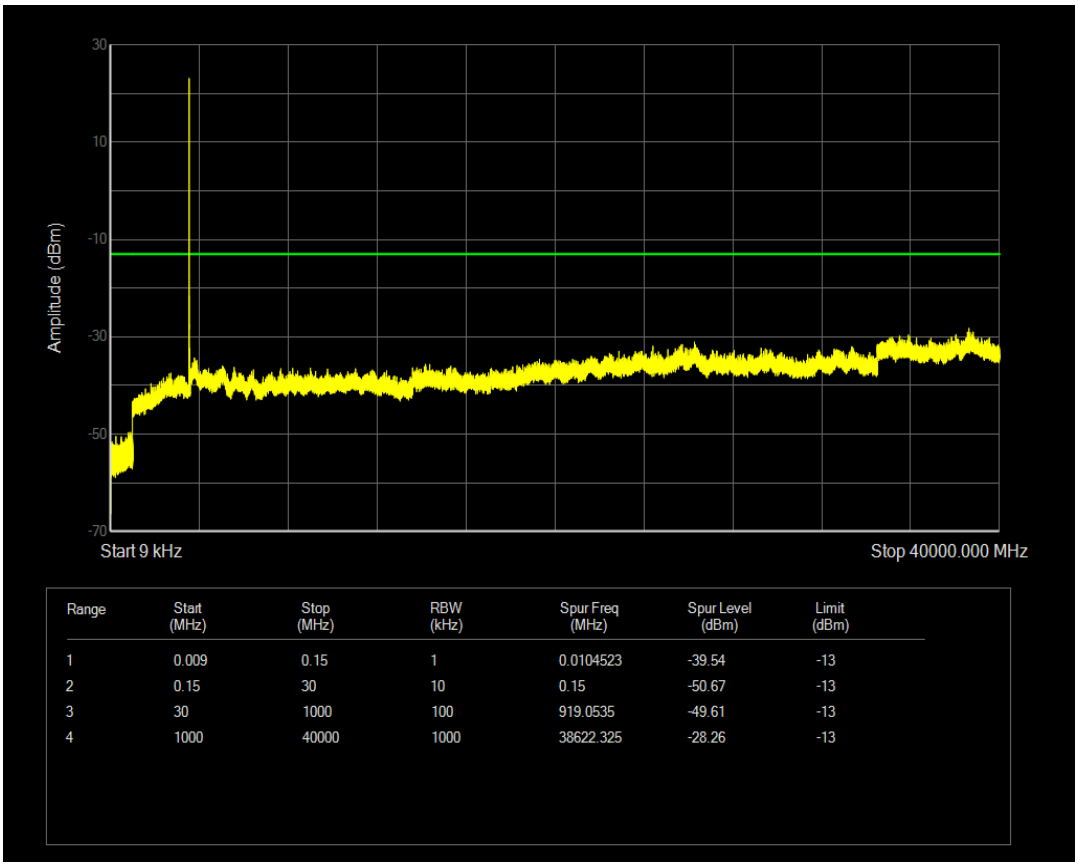
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.014911425	-39.98	-13
2	0.15	30	10	0.2111925	-50.82	-13
3	30	1000	100	879.7685	-49.49	-13
4	1000	40000	1000	38620.375	-28.97	-13

n77(3450-3550) SCS=30kHz DFT_QPSK BW=10MHz Channel=636332 RB=1@0



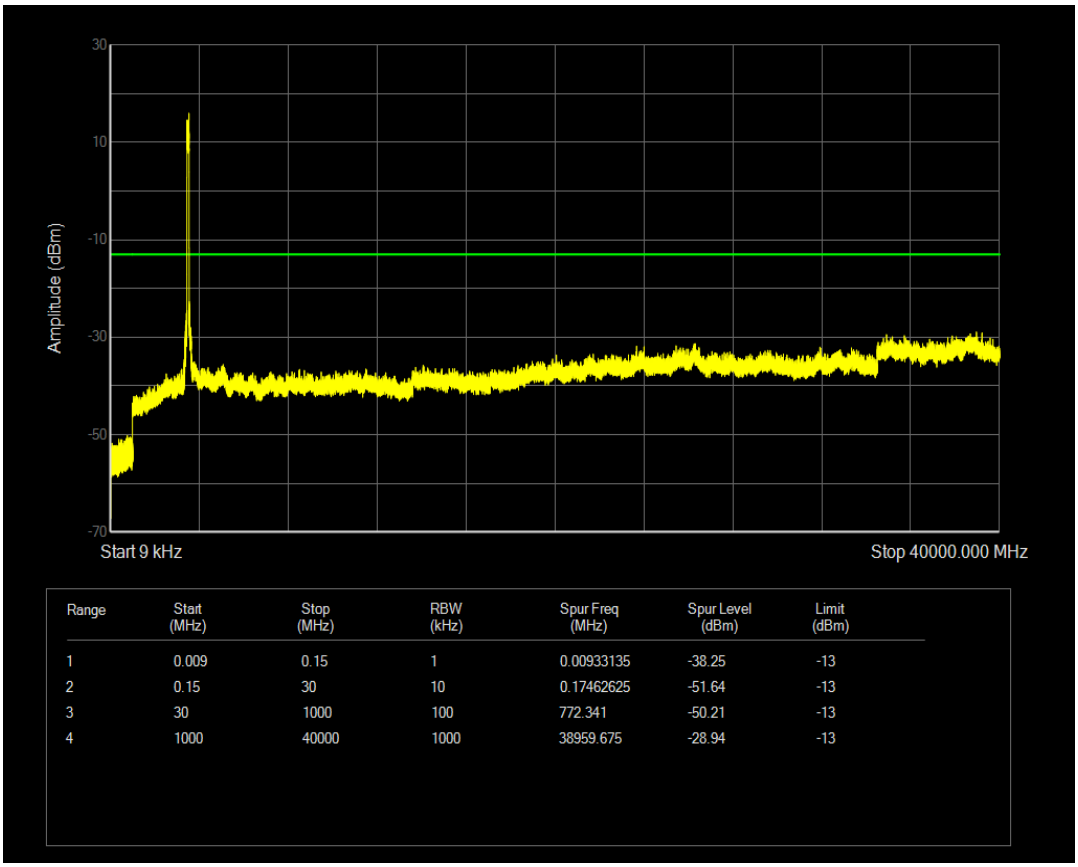
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.011823525	-37.87	-13
2	0.15	30	10	0.1604475	-49.83	-13
3	30	1000	100	918.1805	-49.71	-13
4	1000	40000	1000	38628.175	-28.33	-13

n77(3450-3550) SCS=30kHz DFT_QPSK BW=10MHz Channel=636332 RB=1@23



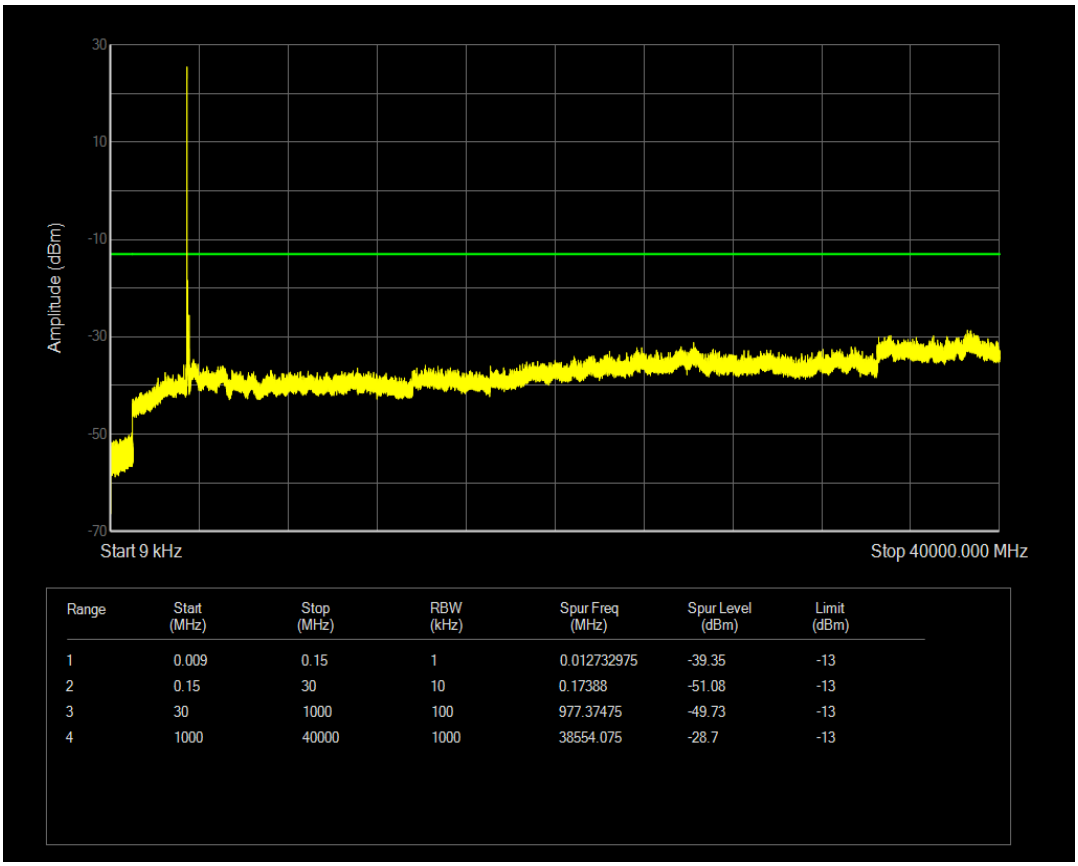
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.0104523	-39.54	-13
2	0.15	30	10	0.15	-50.67	-13
3	30	1000	100	919.0535	-49.61	-13
4	1000	40000	1000	38622.325	-28.26	-13

n77(3450-3550) SCS=30kHz DFT_QPSK BW=100MHz Channel=633334 RB=270@0



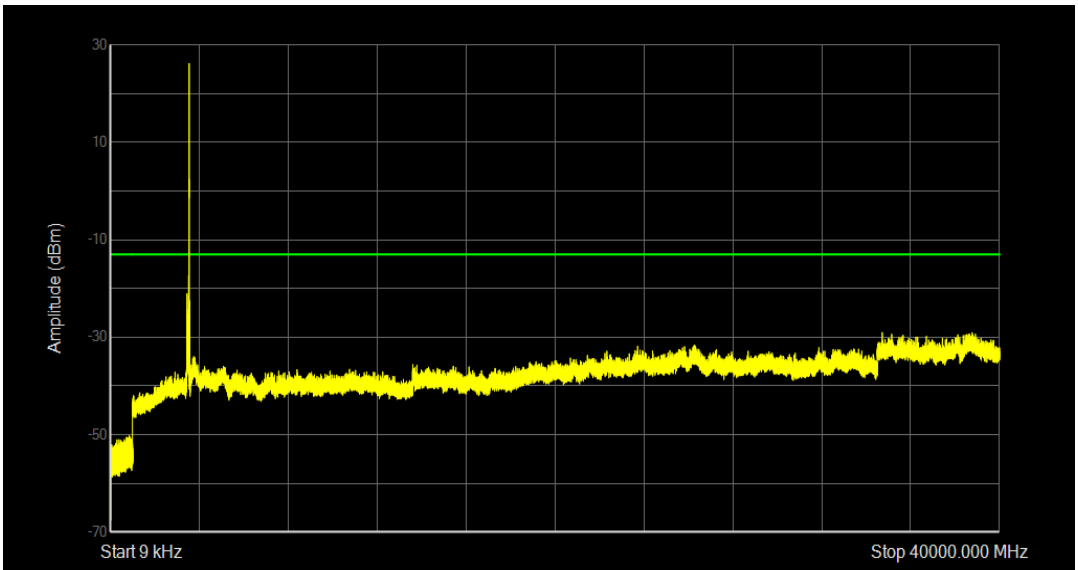
Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.00933135	-38.25	-13
2	0.15	30	10	0.17462625	-51.64	-13
3	30	1000	100	772.341	-50.21	-13
4	1000	40000	1000	38959.675	-28.94	-13

n77(3450-3550) SCS=30kHz DFT_QPSK BW=100MHz Channel=633334 RB=1@0



Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.012732975	-39.35	-13
2	0.15	30	10	0.17388	-51.08	-13
3	30	1000	100	977.37475	-49.73	-13
4	1000	40000	1000	38554.075	-28.7	-13

n77(3450-3550) SCS=30kHz DFT_QPSK BW=100MHz Channel=633334 RB=1@272



Range	Start (MHz)	Stop (MHz)	RBW (kHz)	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)
1	0.009	0.15	1	0.014502525	-39.84	-13
2	0.15	30	10	0.1514925	-51.31	-13
3	30	1000	100	849.844	-50.17	-13
4	1000	40000	1000	34721.35	-29.03	-13