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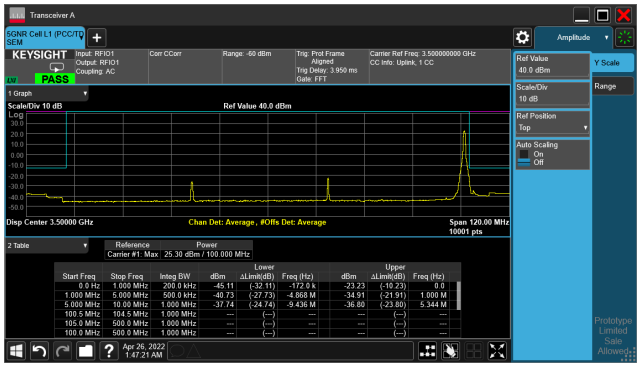	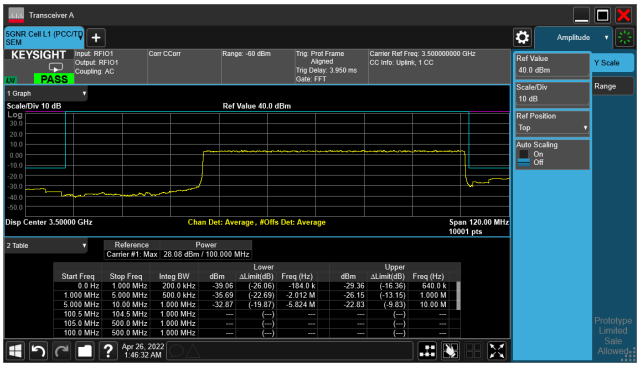
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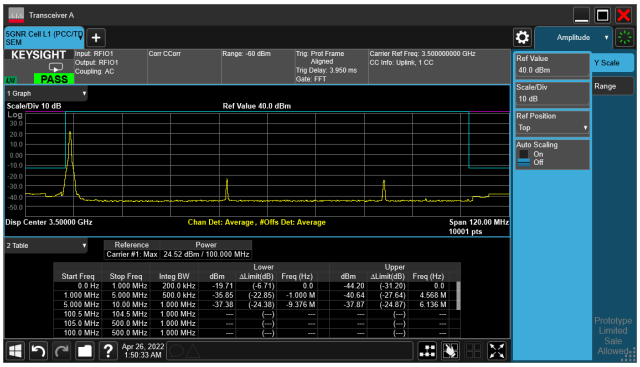	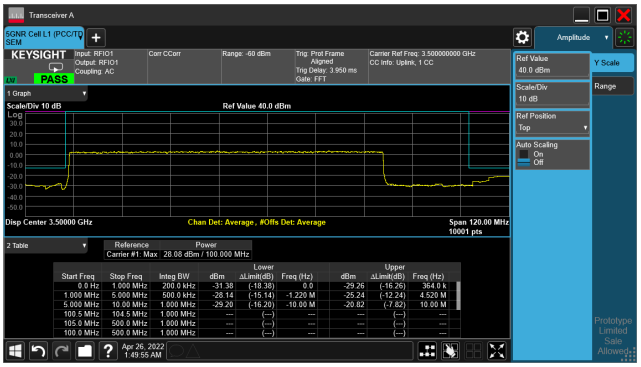
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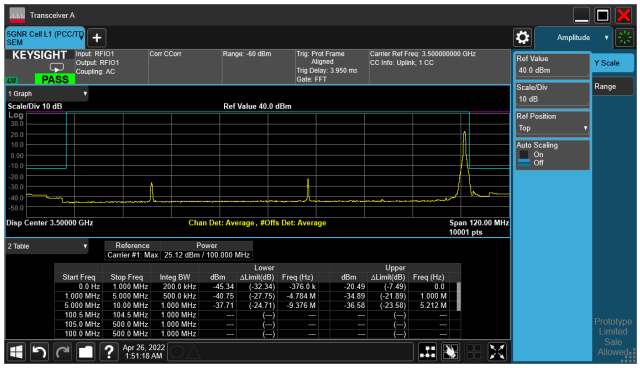	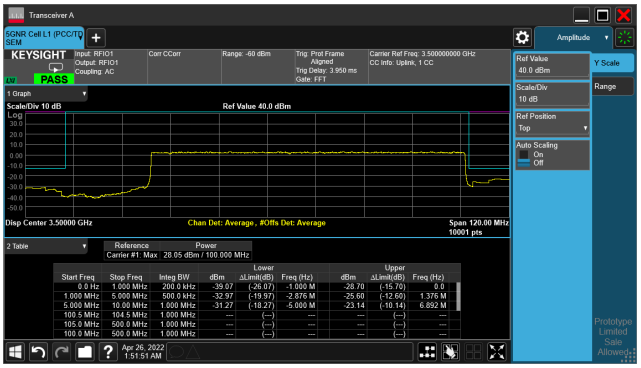

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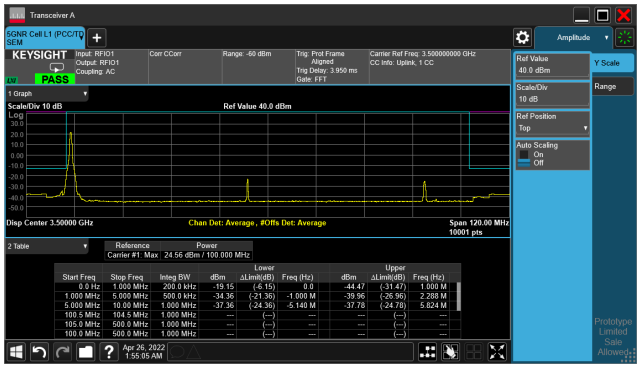	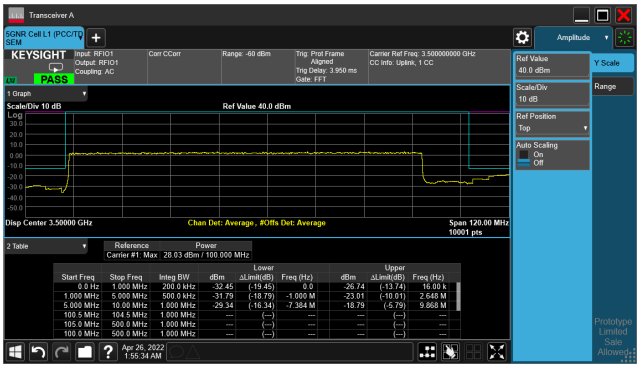
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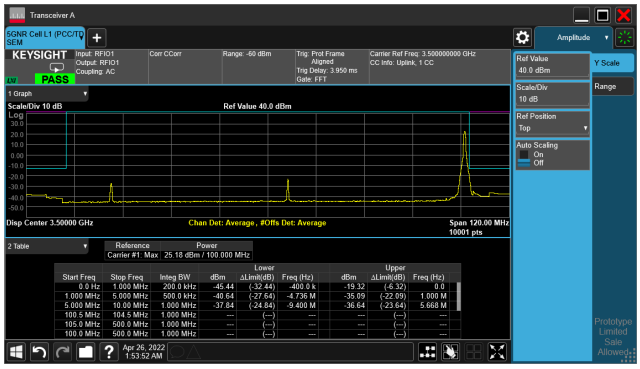
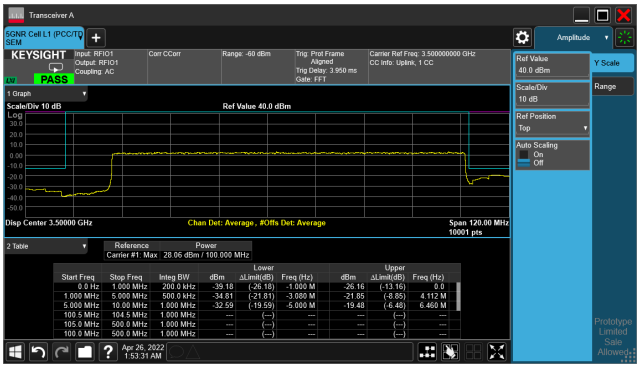
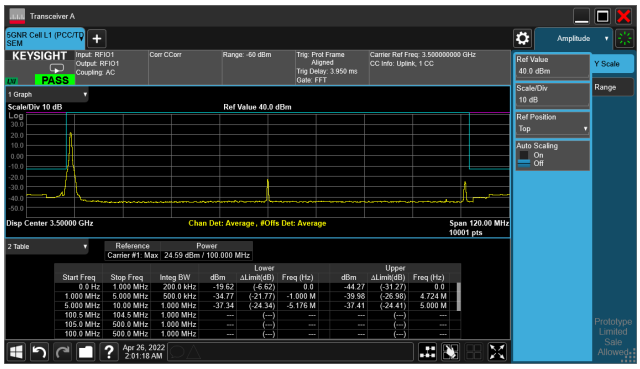
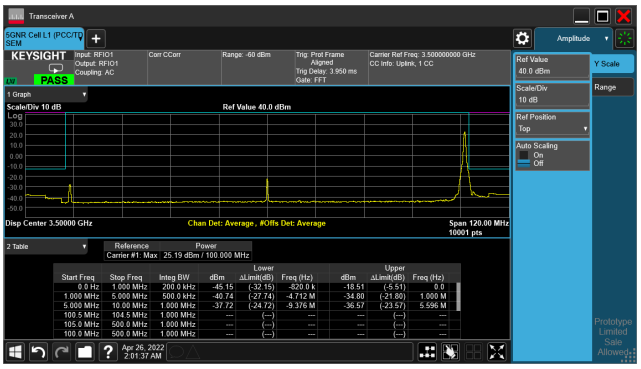
	
5G NR n77_CH 633334_100M_ pi/2 BPSK _1RB0	**5G NR n77_CH 633334_100M_ pi/2 BPSK _1RB272**
	

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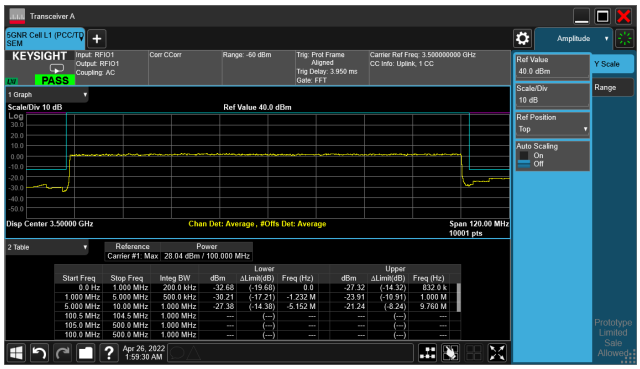
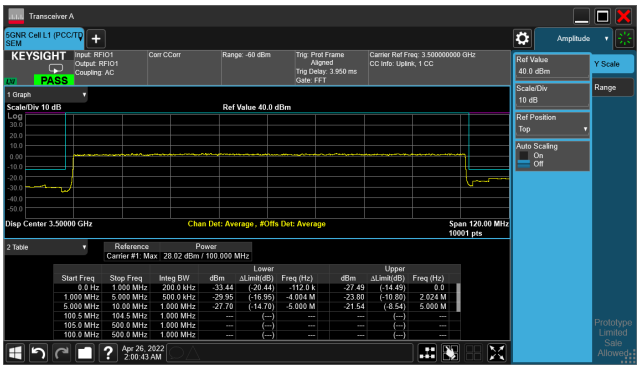
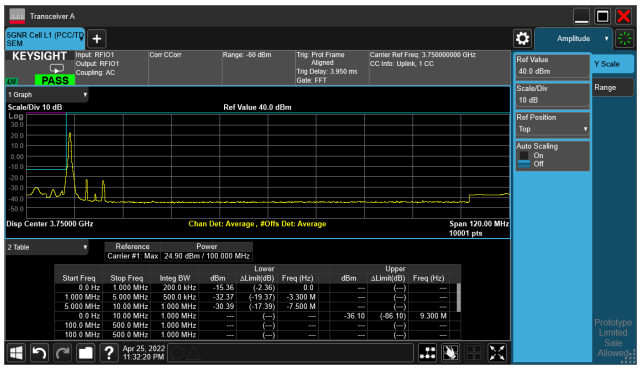
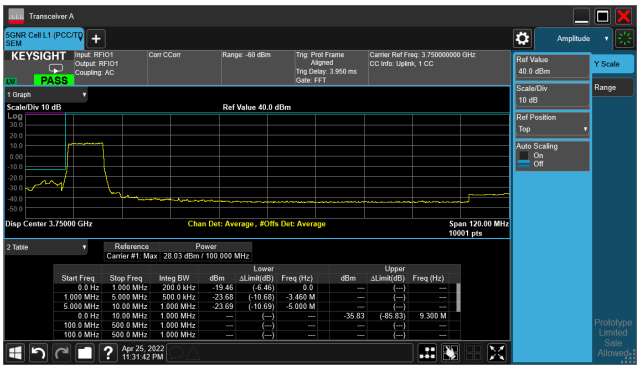
	

Mode 5: 5G NR n77 (Part 27 3700~3980 MHz)

5G NR n77_CH647000_10M_pi/2 BPSK_1RB0	5G NR n77_CH647000_10M_pi/2 BPSK_24RB0
	
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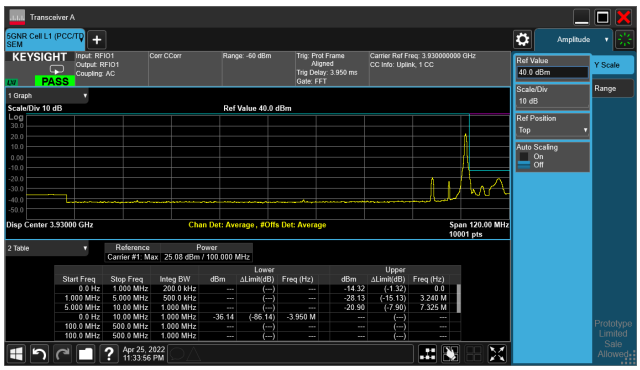	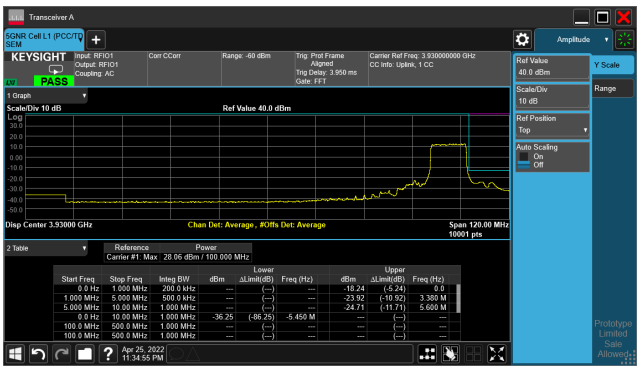
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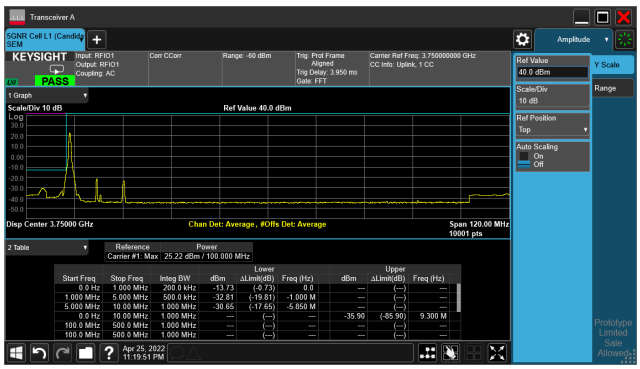
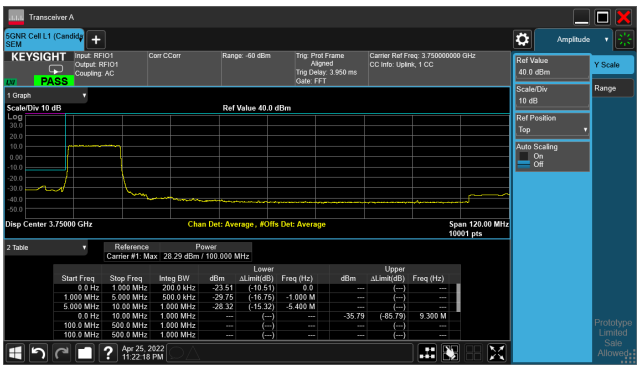
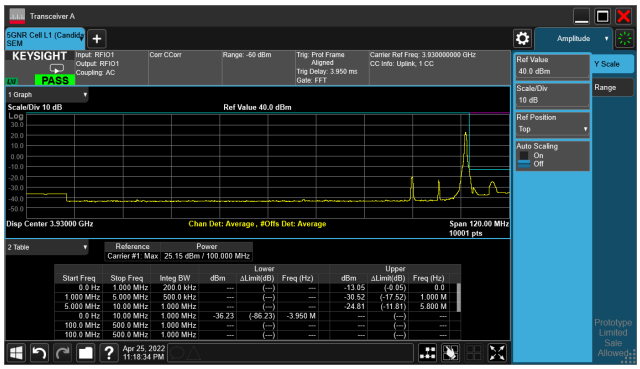
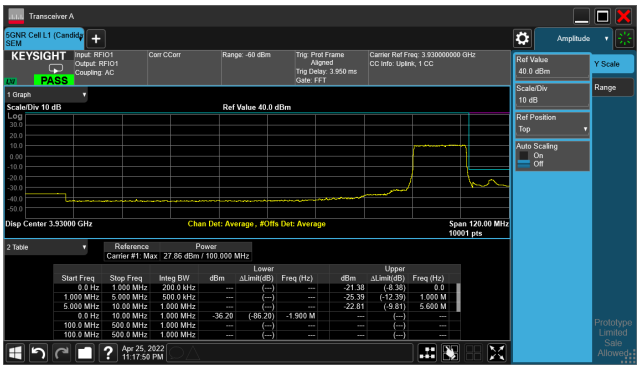
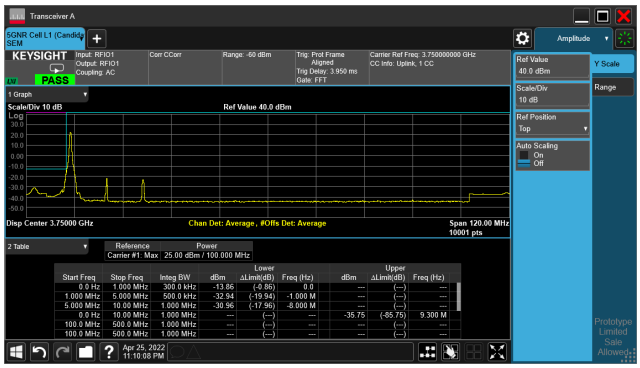
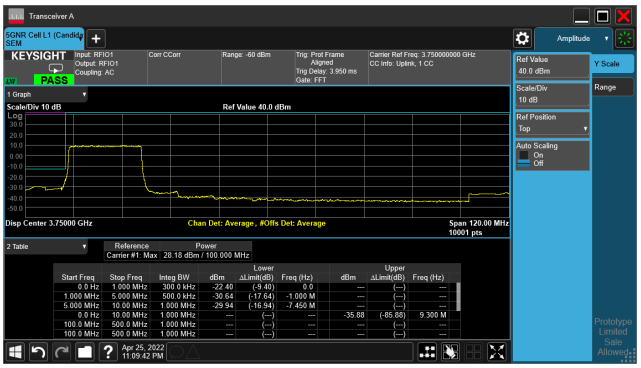
	

5G NR n77_CH664832_15M_pi/2 BPSK_1RB37	5G NR n77_CH664832_15M_pi/2 BPSK_36RB2
	
5G NR n77_CH647334_20M_pi/2 BPSK_1RB0	5G NR n77_CH647334_20M_pi/2 BPSK_50RB0
	
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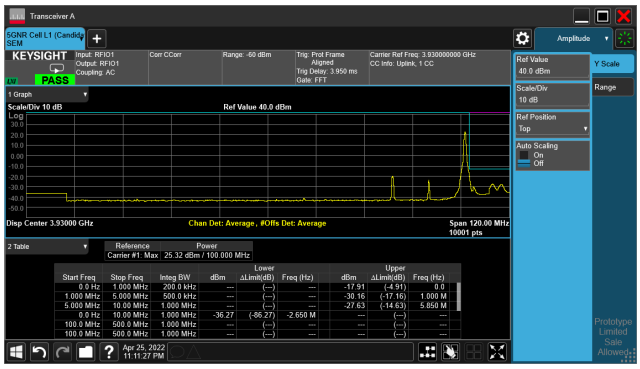	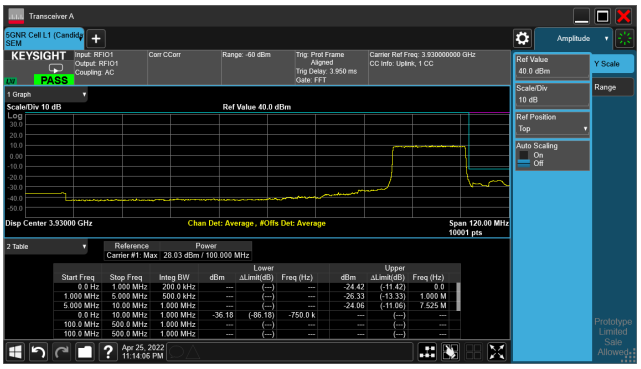

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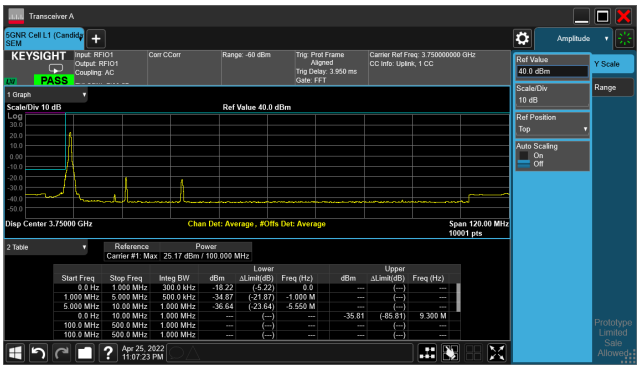	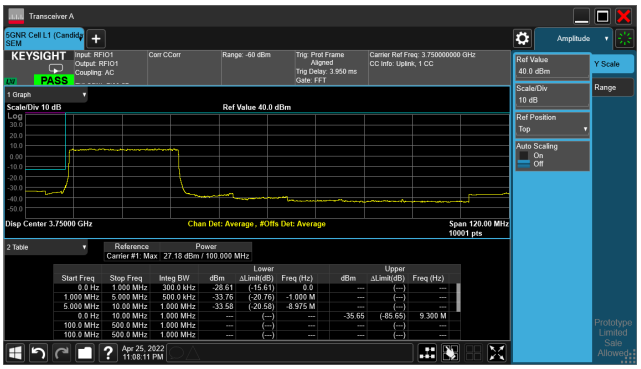
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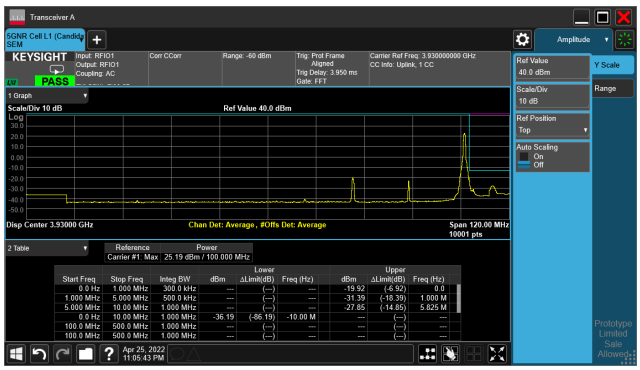	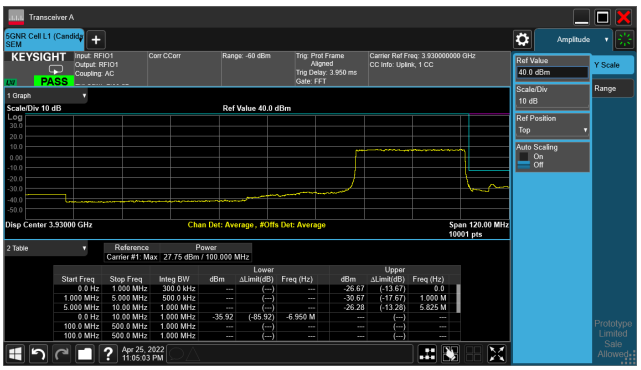
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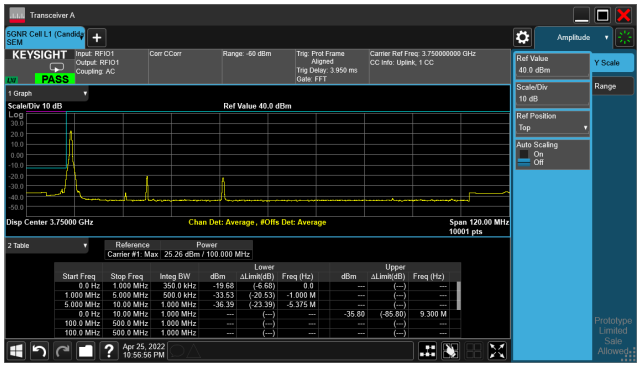	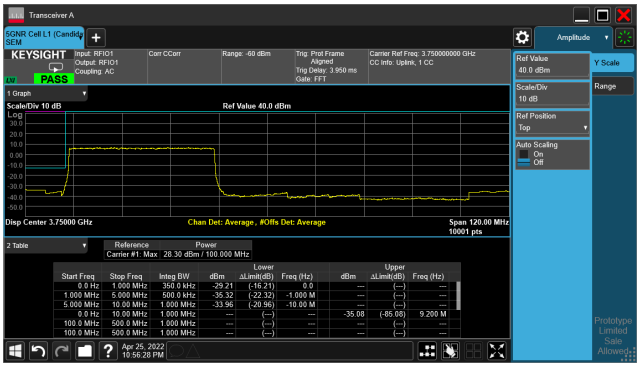

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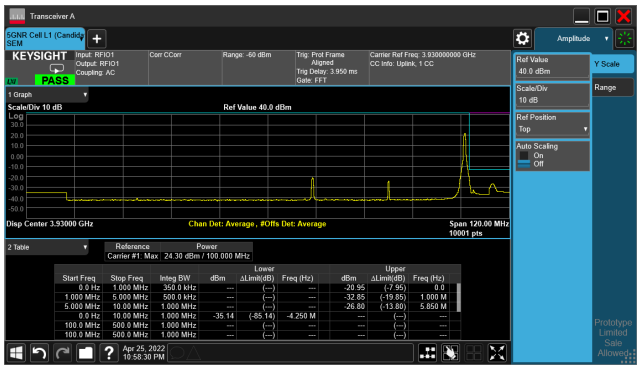	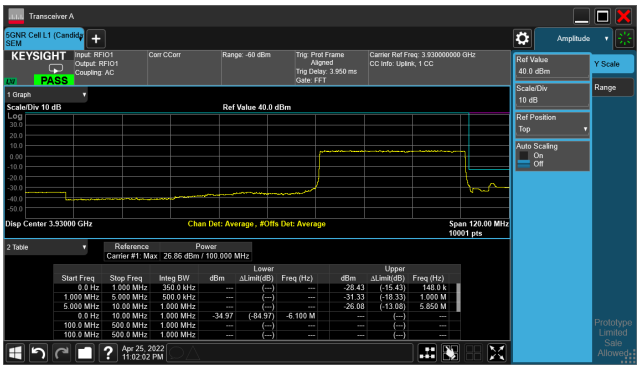
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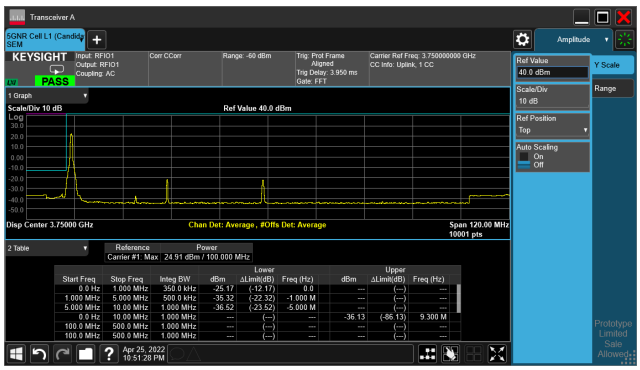	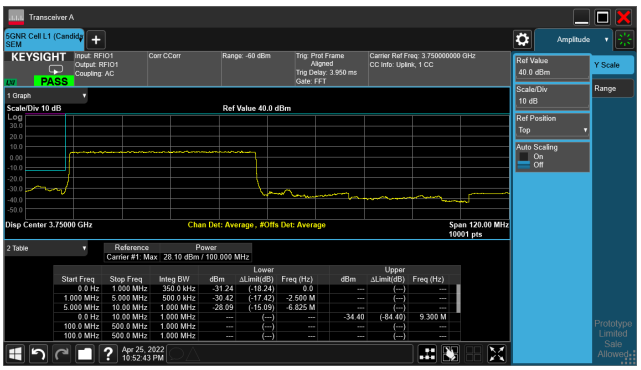
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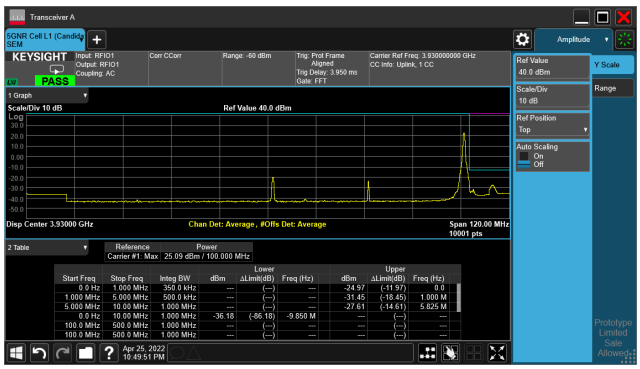	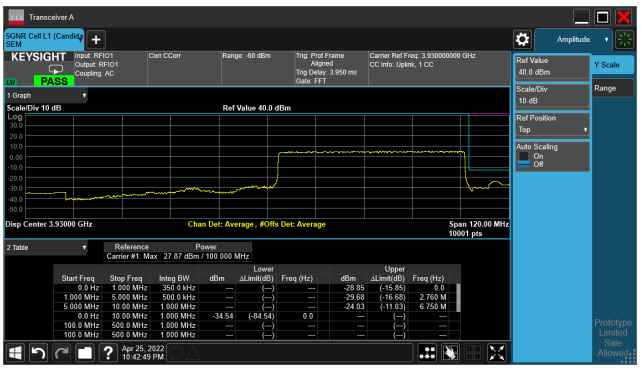

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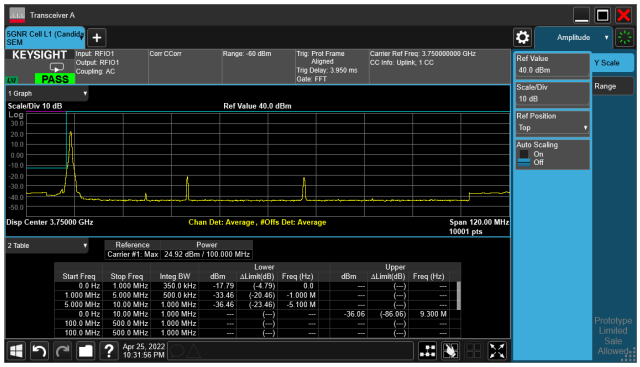	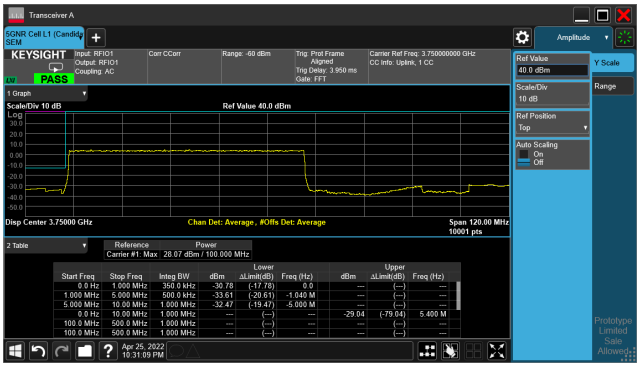
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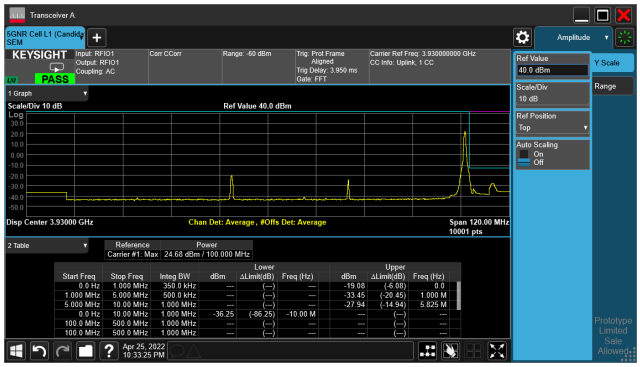
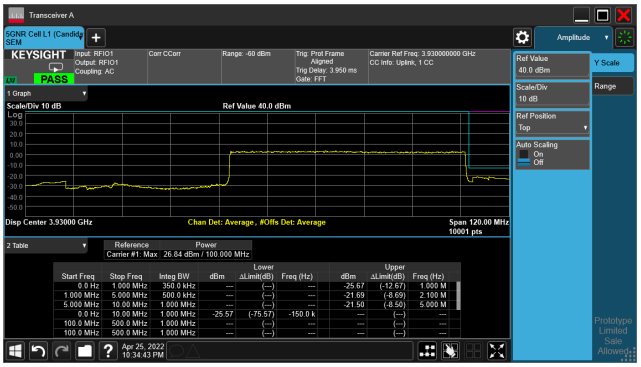
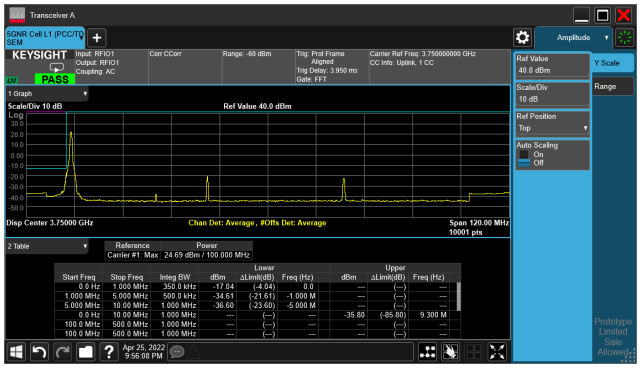
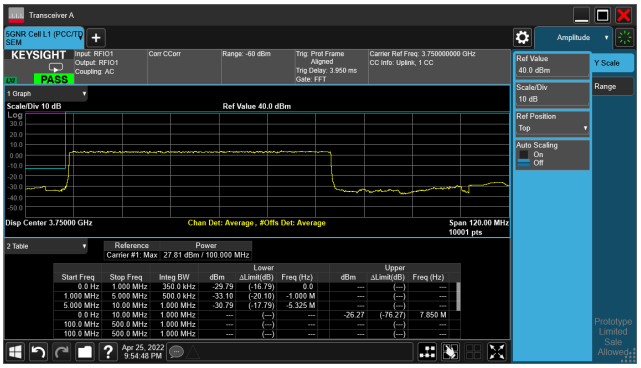
	
5G NR n77_CH649000_70M_pi/2 BPSK_1RB0	5G NR n77_CH649000_70M_pi/2 BPSK_180RB0
	

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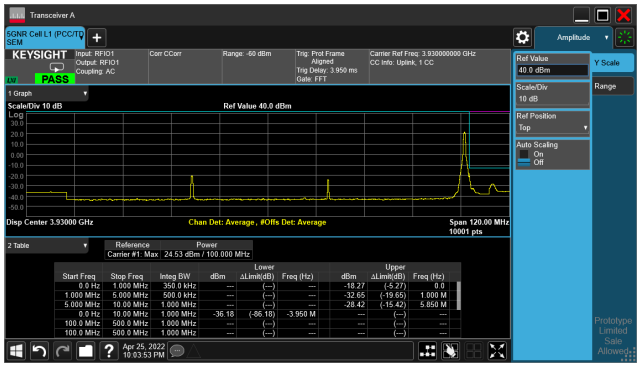
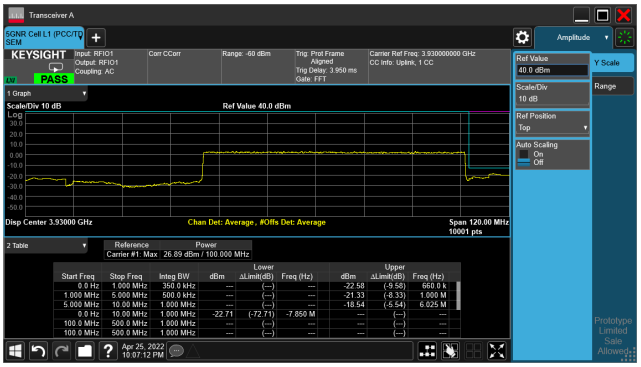
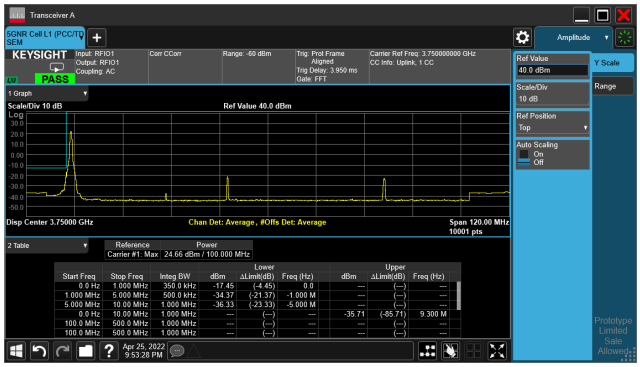
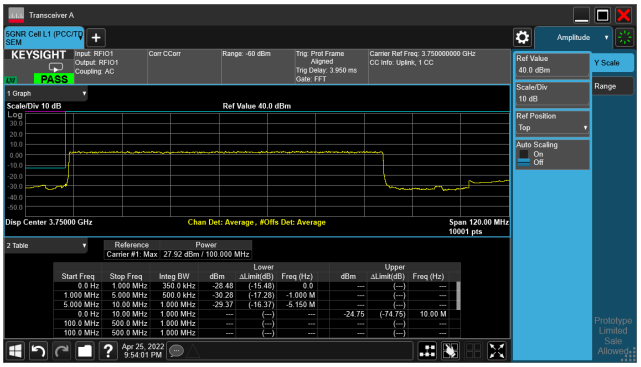
	
5G NR n77_CH649334_80M_pi/2 BPSK_1RB0	5G NR n77_CH649334_80M_pi/2 BPSK_216RB0
	
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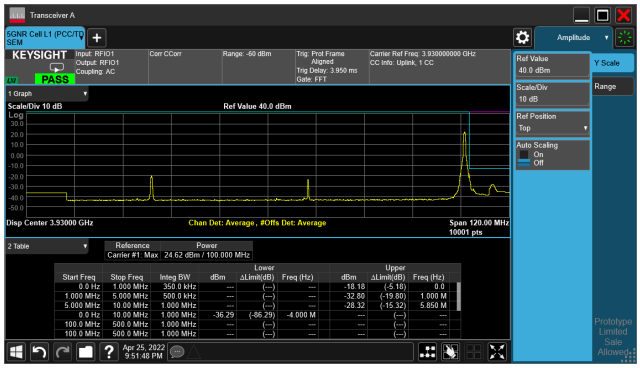
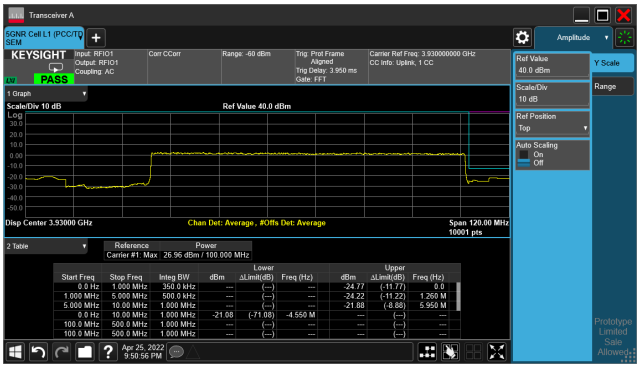
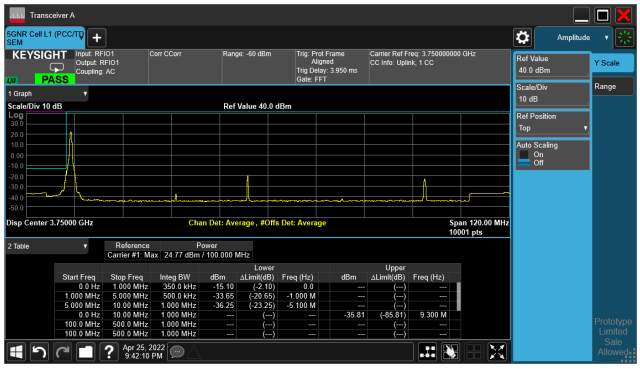
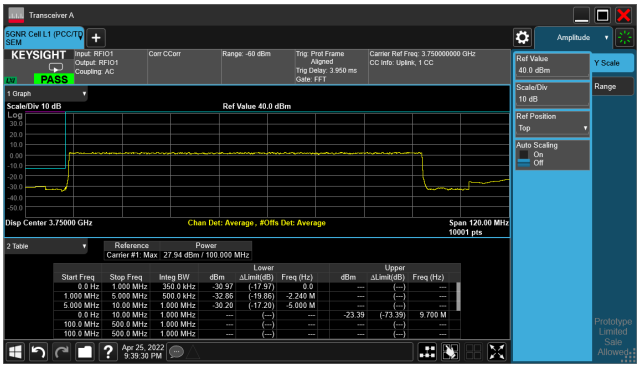
	

5G NR n77_CH649668_90M_pi/2 BPSK_1RB0	5G NR n77_CH649668_90M_pi/2 BPSK_243RB0
	
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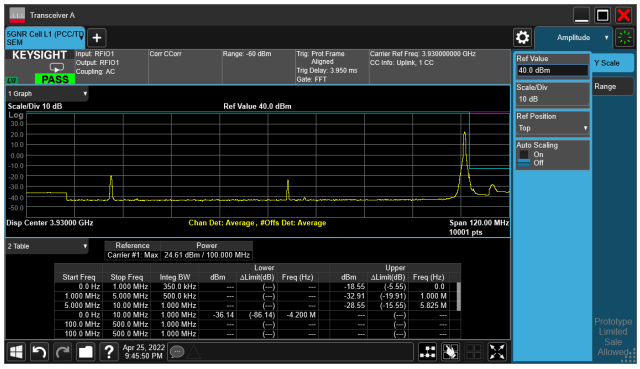	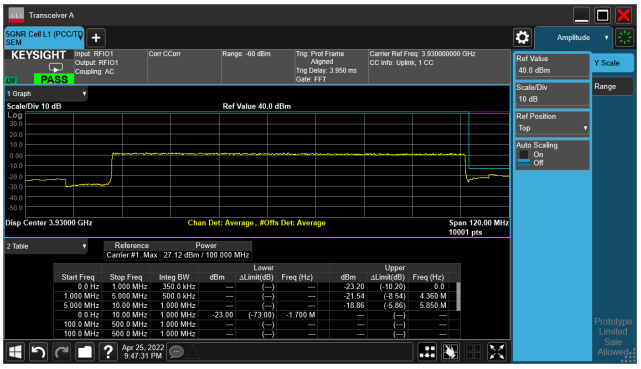
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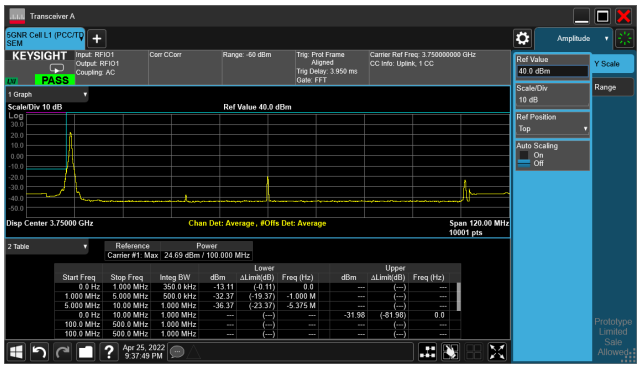	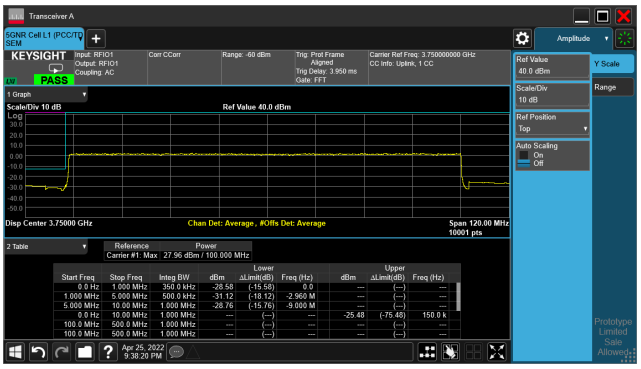

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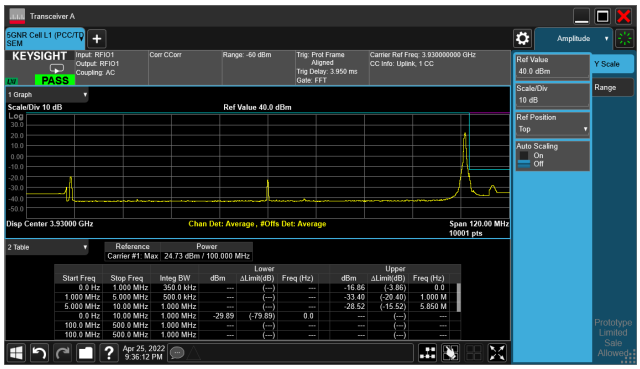
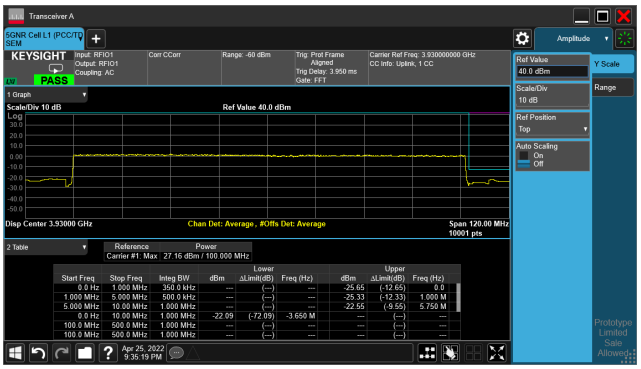
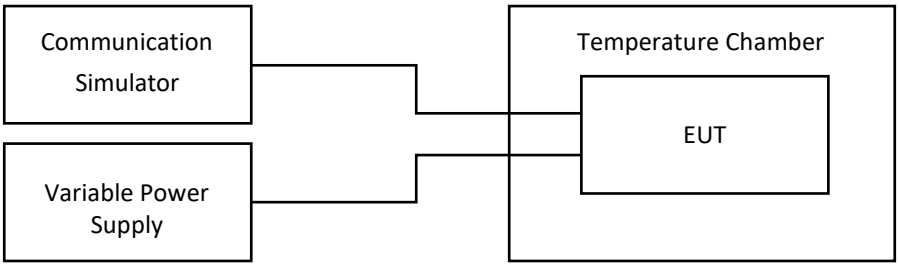
	

8. Frequency Stability

8.1. Test Setup



8.2. Test Procedure

Frequency Stability under Temperature Variations:

The EUT under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a communication simulator. The EUT was placed inside the temperature chamber. Set the EUT 20℃ operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30℃. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10℃ increased per stage until the highest temperature of +50℃ reached.

Frequency Stability under Voltage Variations:

Set chamber temperature to 20℃. Use a variable AC or DC power supply to power the EUT and set the voltage to rated voltage. Reduce the input voltage to specify extreme voltage variation (±15%) and endpoint, record the maximum frequency change.

8.3. Test Methodology and Reference Procedures

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI C63.26-2015

KDB 662911 D01 Multiple Transmitter Output v02r01

8.4. Test Result of Frequency Stability

Mode 1: 5G NR n2

5G NR n2 / 5MHz / 1852.5 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	0.55	0.0003
120.00	1.85	0.0010
102.00	1.60	0.0009

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	0.97	0.0005
-20	2.20	0.0012
-10	1.67	0.0009
0	0.33	0.0002
10	1.09	0.0006
20	1.59	0.0009
30	1.65	0.0009
40	1.45	0.0008
50	1.19	0.0006

5G NR n2 / 5MHz / 1907.5 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.56	0.0008
120.00	1.89	0.0010
102.00	2.68	0.0014

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.13	0.0011
-20	1.24	0.0007
-10	0.65	0.0003
0	0.92	0.0005
10	1.47	0.0008
20	1.06	0.0006
30	1.46	0.0008
40	2.53	0.0013
50	1.77	0.0009

5G NR n2 / 10 MHz / 1855 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.57	0.0008
120.00	1.30	0.0007
102.00	1.02	0.0005

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	0.62	0.0003
-20	1.75	0.0009
-10	0.12	0.0001
0	1.31	0.0007
10	0.69	0.0004
20	0.99	0.0005
30	1.43	0.0008
40	0.00	0.0000
50	0.62	0.0003

5G NR n2 / 10MHz / 1905 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	2.03	0.0011
120.00	2.10	0.0011
102.00	1.13	0.0006

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.58	0.0008
-20	1.51	0.0008
-10	1.07	0.0006
0	1.36	0.0007
10	0.78	0.0004
20	2.48	0.0013
30	2.60	0.0014
40	1.63	0.0009
50	1.00	0.0005

5G NR n2 / 15 MHz / 1857.5 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.86	0.0010
120.00	2.45	0.0013
102.00	1.99	0.0011

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.89	0.0016
-20	2.26	0.0012
-10	2.63	0.0014
0	1.10	0.0006
10	2.00	0.0011
20	1.83	0.0010
30	2.05	0.0011
40	2.53	0.0014
50	1.61	0.0009

5G NR n2 / 15MHz / 1902.5 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.81	0.0010
120.00	2.11	0.0011
102.00	2.23	0.0012

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.29	0.0012
-20	1.01	0.0005
-10	1.78	0.0009
0	2.46	0.0013
10	1.60	0.0008
20	1.57	0.0008
30	2.22	0.0012
40	1.23	0.0006
50	1.32	0.0007

5G NR n2 / 20 MHz / 1860 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.47	0.0008
120.00	1.52	0.0008
102.00	1.30	0.0007

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.00	0.0005
-20	1.46	0.0008
-10	1.28	0.0007
0	1.24	0.0007
10	0.51	0.0003
20	1.25	0.0007
30	1.44	0.0008
40	0.67	0.0004
50	1.64	0.0009

5G NR n2 / 20MHz / 1900 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.79	0.0009
120.00	1.80	0.0009
102.00	0.19	0.0001

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	0.93	0.0005
-20	1.67	0.0009
-10	0.59	0.0003
0	0.56	0.0003
10	1.11	0.0006
20	1.47	0.0008
30	0.70	0.0004
40	1.05	0.0006
50	0.96	0.0005

Mode 2: 5G NR n5

5G NR n5 / 5 MHz / 826.5 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	3.21	0.0039
120.00	3.50	0.0042
102.00	3.25	0.0039

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.45	0.0030
-20	3.59	0.0043
-10	3.19	0.0039
0	3.09	0.0037
10	3.59	0.0043
20	3.22	0.0039
30	4.32	0.0052
40	2.73	0.0033
50	3.57	0.0043

5G NR n5 / 5MHz / 846.5 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.68	0.0020
120.00	1.90	0.0022
102.00	1.05	0.0012

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.01	0.0012
-20	0.69	0.0008
-10	2.16	0.0026
0	0.81	0.0010
10	2.09	0.0025
20	1.12	0.0013
30	1.23	0.0015
40	1.41	0.0017
50	0.31	0.0004

5G NR n5 / 10 MHz / 829 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	0.58	0.0007
120.00	1.52	0.0018
102.00	2.03	0.0024

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	0.79	0.0010
-20	0.29	0.0003
-10	1.72	0.0021
0	1.00	0.0012
10	1.85	0.0022
20	1.17	0.0014
30	0.97	0.0012
40	1.17	0.0014
50	1.28	0.0015

5G NR n5 / 10 MHz / 844 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	2.54	0.0030
120.00	2.66	0.0032
102.00	2.23	0.0026

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.98	0.0035
-20	1.10	0.0013
-10	2.04	0.0024
0	1.68	0.0020
10	2.33	0.0028
20	1.73	0.0020
30	2.59	0.0031
40	1.90	0.0023
50	2.28	0.0027

5G NR n5 / 15 MHz / 831.5 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	0.70	0.0008
120.00	1.48	0.0018
102.00	1.12	0.0013

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	0.09	0.0001
-20	0.92	0.0011
-10	1.17	0.0014
0	0.73	0.0009
10	0.69	0.0008
20	1.15	0.0014
30	0.91	0.0011
40	0.12	0.0001
50	1.61	0.0019

5G NR n5 / 15 MHz / 841.5 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	0.42	0.0005
120.00	0.33	0.0004
102.00	0.56	0.0007

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	-0.52	-0.0006
-20	-0.85	-0.0010
-10	-0.36	-0.0004
0	0.50	0.0006
10	-0.04	0.0000
20	-0.27	-0.0003
30	0.03	0.0000
40	-0.20	-0.0002
50	-1.24	-0.0015

5G NR n5 / 20 MHz / 834 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	2.51	0.0030
120.00	3.10	0.0037
102.00	3.31	0.0040

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.88	0.0023
-20	2.84	0.0034
-10	2.45	0.0029
0	2.19	0.0026
10	2.45	0.0029
20	2.90	0.0035
30	2.91	0.0035
40	2.79	0.0033
50	2.39	0.0029

5G NR n5 / 20 MHz / 839 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.57	0.0019
120.00	2.71	0.0032
102.00	2.89	0.0034

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.90	0.0023
-20	2.13	0.0025
-10	1.90	0.0023
0	1.24	0.0015
10	1.61	0.0019
20	1.87	0.0022
30	1.94	0.0023
40	1.83	0.0022
50	2.55	0.0030

Mode 3: 5G NR n66

5G NR n66 / 5 MHz / 1712.5 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	2.41	0.0014
120.00	3.02	0.0018
102.00	2.96	0.0017

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.26	0.0013
-20	2.65	0.0015
-10	3.08	0.0018
0	3.08	0.0018
10	2.36	0.0014
20	2.89	0.0017
30	3.45	0.0020
40	2.91	0.0017
50	2.73	0.0016

5G NR n66 / 5 MHz / 1777.5 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	2.76	0.0016
120.00	3.41	0.0019
102.00	3.09	0.0017

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.94	0.0017
-20	2.03	0.0011
-10	2.91	0.0016
0	2.85	0.0016
10	2.44	0.0014
20	3.37	0.0019
30	3.11	0.0017
40	1.61	0.0009
50	2.98	0.0017

5G NR n66 / 10 MHz / 1715 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.82	0.0011
120.00	1.96	0.0011
102.00	1.03	0.0006

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	0.87	0.0005
-20	0.95	0.0006
-10	1.59	0.0009
0	1.38	0.0008
10	0.44	0.0003
20	1.34	0.0008
30	1.44	0.0008
40	2.03	0.0012
50	1.16	0.0007

5G NR n66 / 10 MHz / 1775 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	2.27	0.0013
120.00	3.01	0.0017
102.00	2.81	0.0016

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	3.16	0.0018
-20	3.54	0.0020
-10	3.09	0.0017
0	1.44	0.0008
10	2.13	0.0012
20	2.67	0.0015
30	2.40	0.0014
40	2.55	0.0014
50	2.26	0.0013

5G NR n66 / 15 MHz / 1717.5 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.39	0.0008
120.00	1.55	0.0009
102.00	0.85	0.0005

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	0.73	0.0004
-20	0.68	0.0004
-10	1.44	0.0008
0	0.59	0.0003
10	1.24	0.0007
20	0.58	0.0003
30	1.62	0.0009
40	1.56	0.0009
50	0.93	0.0005

5G NR n66 / 15 MHz / 1772.5 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.30	0.0007
120.00	2.24	0.0013
102.00	0.59	0.0003

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.24	0.0013
-20	1.51	0.0009
-10	1.68	0.0009
0	1.94	0.0011
10	2.47	0.0014
20	0.93	0.0005
30	2.03	0.0011
40	2.57	0.0014
50	1.56	0.0009

5G NR n66 / 20 MHz / 1720 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	0.36	0.0002
120.00	1.72	0.0010
102.00	1.56	0.0009

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.60	0.0009
-20	2.08	0.0012
-10	1.88	0.0011
0	1.21	0.0007
10	2.26	0.0013
20	1.16	0.0007
30	0.70	0.0004
40	1.44	0.0008
50	1.20	0.0007

5G NR n66 / 20 MHz / 1770 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	-0.93	-0.0005
120.00	0.66	0.0004
102.00	-0.28	-0.0002

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	0.59	0.0003
-20	1.56	0.0009
-10	-0.39	-0.0002
0	-0.32	-0.0002
10	0.01	0.0000
20	0.33	0.0002
30	1.13	0.0006
40	-0.72	-0.0004
50	0.09	0.0001

5G NR n66 / 30 MHz / 1725 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	0.77	0.0004
120.00	1.72	0.0010
102.00	2.01	0.0012

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.49	0.0009
-20	1.24	0.0007
-10	2.18	0.0013
0	1.11	0.0006
10	0.25	0.0001
20	1.17	0.0007
30	0.83	0.0005
40	1.53	0.0009
50	1.11	0.0006

5G NR n66 / 30 MHz / 1765 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	-1.04	-0.0006
120.00	-0.71	-0.0004
102.00	-1.62	-0.0009

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	-1.08	-0.0006
-20	-0.88	-0.0005
-10	-1.20	-0.0007
0	-0.91	-0.0005
10	-0.95	-0.0005
20	-1.68	-0.0010
30	-1.61	-0.0009
40	-0.83	-0.0005
50	-2.07	-0.0012

5G NR n66 / 40 MHz / 1730 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	0.51	0.0003
120.00	1.68	0.0010
102.00	0.96	0.0006

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.56	0.0009
-20	0.98	0.0006
-10	0.12	0.0001
0	1.06	0.0006
10	0.97	0.0006
20	0.70	0.0004
30	1.09	0.0006
40	1.48	0.0009
50	0.66	0.0004

5G NR n66 / 40 MHz / 1760 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	-0.58	-0.0003
120.00	-1.11	-0.0006
102.00	-1.79	-0.0010

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	-1.94	-0.0011
-20	-1.95	-0.0011
-10	-2.11	-0.0012
0	-2.17	-0.0012
10	-1.80	-0.0010
20	-1.46	-0.0008
30	-1.54	-0.0009
40	-2.43	-0.0014
50	-2.27	-0.0013

Mode 4: 5G NR n77 (Part 27 3450~3550 MHz)

5G NR n77 / 10 MHz / 3455 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	-1.69	-0.0005
120.00	-1.25	-0.0004
102.00	-1.68	-0.0005

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	-1.82	-0.0005
-20	-1.47	-0.0004
-10	-1.91	-0.0006
0	-1.65	-0.0005
10	-1.54	-0.0004
20	-1.19	-0.0003
30	-1.32	-0.0004
40	-1.25	-0.0004
50	-2.19	-0.0006

5G NR n77 / 10 MHz / 3545 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	2.22	0.0006
120.00	1.94	0.0005
102.00	2.12	0.0006

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.34	0.0004
-20	0.87	0.0002
-10	1.42	0.0004
0	0.51	0.0001
10	2.18	0.0006
20	1.56	0.0004
30	1.82	0.0005
40	0.61	0.0002
50	1.67	0.0005

5G NR n77 / 15 MHz / 3457.5 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.40	0.0004
120.00	2.37	0.0007
102.00	1.45	0.0004

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.71	0.0008
-20	0.73	0.0002
-10	1.91	0.0006
0	2.74	0.0008
10	1.61	0.0005
20	2.76	0.0008
30	1.68	0.0005
40	1.99	0.0006
50	1.06	0.0003

5G NR n77 / 15 MHz / 3542.5 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.91	0.0005
120.00	1.45	0.0004
102.00	1.41	0.0004

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	-0.15	0.0000
-20	0.75	0.0002
-10	1.31	0.0004
0	1.01	0.0003
10	0.59	0.0002
20	0.51	0.0001
30	-0.08	0.0000
40	0.08	0.0000
50	1.29	0.0004

5G NR n77 / 20 MHz / 3460 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.66	0.0005
120.00	2.08	0.0006
102.00	1.73	0.0005

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.17	0.0006
-20	1.41	0.0004
-10	1.15	0.0003
0	1.42	0.0004
10	0.79	0.0002
20	1.69	0.0005
30	1.36	0.0004
40	0.99	0.0003
50	1.46	0.0004

5G NR n77 / 20 MHz / 3540 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	0.37	0.0001
120.00	0.76	0.0002
102.00	-0.44	-0.0001

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	0.37	0.0001
-20	0.32	0.0001
-10	0.74	0.0002
0	1.25	0.0004
10	0.26	0.0001
20	0.98	0.0003
30	0.20	0.0001
40	-0.48	-0.0001
50	0.59	0.0002

5G NR n77 / 30 MHz / 3465 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	-1.57	-0.0005
120.00	-0.37	-0.0001
102.00	-1.59	-0.0005

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	-0.58	-0.0002
-20	-0.62	-0.0002
-10	-0.04	0.0000
0	-1.56	-0.0005
10	-0.67	-0.0002
20	-1.12	-0.0003
30	-0.29	-0.0001
40	-0.45	-0.0001
50	-0.48	-0.0001

5G NR n77 / 30 MHz / 3535 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	-4.32	-0.0012
120.00	-2.89	-0.0008
102.00	-3.28	-0.0009

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	-2.75	-0.0008
-20	-3.23	-0.0009
-10	-3.23	-0.0009
0	-3.53	-0.0010
10	-4.29	-0.0012
20	-3.72	-0.0011
30	-3.52	-0.0010
40	-3.05	-0.0009
50	-3.91	-0.0011

5G NR n77 / 40 MHz / 3470 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.77	0.0005
120.00	2.94	0.0008
102.00	1.91	0.0006

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	3.03	0.0009
-20	2.12	0.0006
-10	2.39	0.0007
0	2.19	0.0006
10	1.68	0.0005
20	1.70	0.0005
30	2.77	0.0008
40	2.32	0.0007
50	1.82	0.0005

5G NR n77 / 40 MHz /3530 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	2.81	0.0008
120.00	2.98	0.0008
102.00	2.04	0.0006

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.80	0.0008
-20	1.86	0.0005
-10	1.94	0.0005
0	1.95	0.0006
10	2.14	0.0006
20	3.00	0.0008
30	2.82	0.0008
40	2.29	0.0006
50	3.25	0.0009

5G NR n77 / 50 MHz / 3475 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	0.84	0.0002
120.00	1.42	0.0004
102.00	1.23	0.0004

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	0.44	0.0001
-20	0.51	0.0001
-10	0.78	0.0002
0	0.26	0.0001
10	0.25	0.0001
20	0.99	0.0003
30	0.56	0.0002
40	0.74	0.0002
50	1.00	0.0003

5G NR n77 / 50 MHz / 3525 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	-0.69	-0.0002
120.00	-0.97	-0.0003
102.00	-1.05	-0.0003

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	-1.80	-0.0005
-20	-1.13	-0.0003
-10	-1.07	-0.0003
0	-2.53	-0.0007
10	-2.17	-0.0006
20	-1.53	-0.0004
30	-1.41	-0.0004
40	-1.26	-0.0004
50	-1.07	-0.0003

5G NR n77 / 60 MHz / 3480 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	2.98	0.0009
120.00	4.20	0.0012
102.00	4.66	0.0013

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	3.10	0.0009
-20	3.43	0.0010
-10	3.43	0.0010
0	3.22	0.0009
10	3.48	0.0010
20	4.38	0.0013
30	4.54	0.0013
40	2.74	0.0008
-30	3.10	0.0009

5G NR n77 / 60 MHz / 3520 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	3.59	0.0010
120.00	2.98	0.0008
102.00	2.76	0.0008

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.83	0.0008
-20	2.24	0.0006
-10	1.73	0.0005
0	2.24	0.0006
10	2.36	0.0007
20	2.23	0.0006
30	2.64	0.0008
40	2.12	0.0006
50	2.65	0.0008

5G NR n77 / 70 MHz / 3485 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.68	0.0005
120.00	2.88	0.0008
102.00	2.72	0.0008

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.82	0.0008
-20	2.75	0.0008
-10	2.30	0.0007
0	1.77	0.0005
10	1.73	0.0005
20	2.97	0.0009
30	2.75	0.0008
40	1.84	0.0005
50	2.81	0.0008

5G NR n77 / 70 MHz / 3515 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.01	0.0003
120.00	1.67	0.0005
102.00	0.87	0.0002

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.54	0.0004
-20	0.80	0.0002
-10	1.52	0.0004
0	0.94	0.0003
10	0.83	0.0002
20	1.25	0.0004
30	0.91	0.0003
40	0.83	0.0002
50	0.48	0.0001

5G NR n77 / 80 MHz / 3490 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	3.17	0.0009
120.00	2.85	0.0008
102.00	1.79	0.0005

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.99	0.0006
-20	2.35	0.0007
-10	2.93	0.0008
0	3.08	0.0009
10	2.04	0.0006
20	2.07	0.0006
30	1.67	0.0005
40	1.95	0.0006
50	2.17	0.0006

5G NR n77 / 80 MHz / 3510 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.54	0.0004
120.00	2.23	0.0006
102.00	2.74	0.0008

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.68	0.0005
-20	1.32	0.0004
-10	2.08	0.0006
0	1.89	0.0005
10	1.58	0.0005
20	0.40	0.0001
30	2.12	0.0006
40	1.28	0.0004
50	2.38	0.0007

5G NR n77 / 90 MHz / 3495 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.65	0.0005
120.00	2.54	0.0007
102.00	2.43	0.0007

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.12	0.0006
-20	2.16	0.0006
-10	1.68	0.0005
0	2.00	0.0006
10	2.63	0.0008
20	1.50	0.0004
30	1.53	0.0004
40	2.47	0.0007
50	1.52	0.0004

5G NR n77 / 90 MHz / 3505 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.07	0.0003
120.00	1.57	0.0004
102.00	1.95	0.0006

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.55	0.0004
-20	1.32	0.0004
-10	1.06	0.0003
0	1.09	0.0003
10	1.61	0.0005
20	2.02	0.0006
30	1.59	0.0005
40	0.62	0.0002
50	2.45	0.0007

5G NR n77 / 100 MHz / 3500 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.47	0.0004
120.00	1.89	0.0005
102.00	1.09	0.0003

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.23	0.0004
-20	1.86	0.0005
-10	0.94	0.0003
0	1.35	0.0004
10	0.57	0.0002
20	1.61	0.0005
30	1.83	0.0005
40	2.22	0.0006
50	1.81	0.0005

Mode 5: 5G NR n77 (Part 27 3700~3980 MHz)

5G NR n77 / 10 MHz / 3705 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	0.70	0.0002
120.00	1.78	0.0005
102.00	2.12	0.0006

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.37	0.0004
-20	0.62	0.0002
-10	1.84	0.0005
0	1.52	0.0004
10	0.91	0.0002
20	1.97	0.0005
30	1.16	0.0003
40	1.58	0.0004
50	0.56	0.0002

5G NR n77 / 10 MHz / 3975 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.45	0.0004
120.00	1.94	0.0005
102.00	1.72	0.0004

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.63	0.0004
-20	0.47	0.0001
-10	1.91	0.0005
0	1.80	0.0005
10	0.64	0.0002
20	1.44	0.0004
30	1.65	0.0004
40	1.27	0.0003
50	1.49	0.0004

5G NR n77 / 15 MHz / 3707.5 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.48	0.0004
120.00	1.66	0.0004
102.00	0.80	0.0002

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.32	0.0004
-20	0.98	0.0003
-10	0.59	0.0002
0	1.54	0.0004
10	1.22	0.0003
20	1.51	0.0004
30	0.77	0.0002
40	1.22	0.0003
50	1.26	0.0003

5G NR n77 / 15 MHz / 3972.5 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	0.96	0.0002
120.00	2.03	0.0005
102.00	1.62	0.0004

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.18	0.0003
-20	1.53	0.0004
-10	1.67	0.0004
0	1.80	0.0005
10	2.12	0.0005
20	2.69	0.0007
30	1.95	0.0005
40	0.96	0.0002
50	1.22	0.0003

5G NR n77 / 20 MHz / 3710 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	-1.61	-0.0004
120.00	1.88	0.0005
102.00	-1.23	-0.0003

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.49	0.0004
-20	1.41	0.0004
-10	1.01	0.0003
0	0.92	0.0002
10	1.63	0.0004
20	1.87	0.0005
30	1.81	0.0005
40	0.46	0.0001
50	1.37	0.0004

5G NR n77 / 20 MHz / 3970 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	-1.37	-0.0003
120.00	-0.88	-0.0002
102.00	-1.03	-0.0003

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	-2.05	-0.0005
-20	-1.35	-0.0003
-10	-1.87	-0.0005
0	-1.08	-0.0003
10	-1.43	-0.0004
20	-1.21	-0.0003
30	-1.54	-0.0004
40	-0.83	-0.0002
50	-0.53	-0.0001

5G NR n77 / 30 MHz / 3715 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.33	0.0004
120.00	1.51	0.0004
102.00	1.18	0.0003

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.47	0.0004
-20	0.74	0.0002
-10	1.05	0.0003
0	1.17	0.0003
10	1.07	0.0003
20	0.64	0.0002
30	1.65	0.0004
40	0.60	0.0002
50	1.96	0.0005

5G NR n77 / 30 MHz / 3965 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	3.24	0.0008
120.00	3.67	0.0009
102.00	3.05	0.0008

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	3.23	0.0008
-20	3.14	0.0008
-10	3.60	0.0009
0	3.26	0.0008
10	2.76	0.0007
20	3.83	0.0010
30	3.54	0.0009
40	3.59	0.0009
50	4.10	0.0010

5G NR n77 / 40 MHz / 3720 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.76	0.0005
120.00	2.18	0.0006
102.00	1.59	0.0004

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.35	0.0006
-20	1.35	0.0004
-10	0.63	0.0002
0	1.78	0.0005
10	2.59	0.0007
20	1.96	0.0005
30	1.79	0.0005
40	2.11	0.0006
50	2.36	0.0006

5G NR n77 / 40 MHz / 3960 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	0.66	0.0002
120.00	0.88	0.0002
102.00	0.81	0.0002

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	0.37	0.0001
-20	0.33	0.0001
-10	-0.28	-0.0001
0	-0.22	-0.0001
10	0.32	0.0001
20	1.42	0.0004
30	1.18	0.0003
40	0.31	0.0001
50	0.29	0.0001

5G NR n77 / 50 MHz / 3725 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	-2.41	-0.0006
120.00	-1.33	-0.0004
102.00	-1.45	-0.0004

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	-1.60	-0.0004
-20	-1.20	-0.0003
-10	-2.50	-0.0007
0	-2.44	-0.0007
10	-0.77	-0.0002
20	-1.94	-0.0005
30	-1.50	-0.0004
40	-1.69	-0.0005
50	-2.40	-0.0006

5G NR n77 / 50 MHz / 3955 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.55	0.0004
120.00	1.82	0.0005
102.00	1.60	0.0004

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.03	0.0003
-20	1.74	0.0004
-10	1.83	0.0005
0	1.91	0.0005
10	1.96	0.0005
20	1.47	0.0004
30	1.37	0.0003
40	1.42	0.0004
50	2.08	0.0005

5G NR n77 / 60 MHz / 3730 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.45	0.0004
120.00	2.71	0.0007
102.00	3.01	0.0008

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.81	0.0008
-20	1.74	0.0005
-10	1.57	0.0004
0	2.08	0.0006
10	1.21	0.0003
20	2.99	0.0008
30	1.70	0.0005
40	1.98	0.0005
50	2.48	0.0007

5G NR n77 / 60 MHz / 3950 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	2.86	0.0007
120.00	2.85	0.0007
102.00	2.56	0.0006

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.43	0.0006
-20	1.58	0.0004
-10	2.64	0.0007
0	1.60	0.0004
10	1.86	0.0005
20	1.12	0.0003
30	2.85	0.0007
40	2.41	0.0006
50	2.56	0.0006

5G NR n77 / 70 MHz / 3735 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.47	0.0004
120.00	2.72	0.0007
102.00	1.91	0.0005

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.38	0.0004
-20	2.80	0.0007
-10	2.02	0.0005
0	1.69	0.0005
10	2.13	0.0006
20	2.43	0.0007
30	1.48	0.0004
40	2.27	0.0006
50	2.74	0.0007

5G NR n77 / 70 MHz / 3945 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	-1.00	-0.0003
120.00	-0.86	-0.0002
102.00	-1.03	-0.0003

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	-0.62	-0.0002
-20	-2.05	-0.0005
-10	-1.50	-0.0004
0	-0.54	-0.0001
10	-1.53	-0.0004
20	-1.48	-0.0004
30	-0.34	-0.0001
40	-1.27	-0.0003
50	-2.57	-0.0007

5G NR n77 / 80 MHz / 3740 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.66	0.0004
120.00	1.69	0.0005
102.00	1.99	0.0005

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.04	0.0003
-20	0.82	0.0002
-10	0.83	0.0002
0	1.14	0.0003
10	0.72	0.0002
20	1.58	0.0004
30	1.40	0.0004
40	1.10	0.0003
50	0.18	0.0000

5G NR n77 / 80 MHz / 3940 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.20	0.0003
120.00	1.58	0.0004
102.00	0.98	0.0002

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	0.65	0.0002
-20	1.27	0.0003
-10	2.34	0.0006
0	1.42	0.0004
10	0.61	0.0002
20	0.88	0.0002
30	1.81	0.0005
40	1.09	0.0003
50	1.42	0.0004

5G NR n77 / 90 MHz / 3745 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	3.43	0.0009
120.00	3.54	0.0009
102.00	2.91	0.0008

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.83	0.0008
-20	3.38	0.0009
-10	2.29	0.0006
0	2.84	0.0008
10	3.48	0.0009
20	3.38	0.0009
30	2.38	0.0006
40	2.50	0.0007
50	3.28	0.0009

5G NR n77 / 90 MHz / 3935 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	2.71	0.0007
120.00	2.58	0.0007
102.00	2.24	0.0006

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.64	0.0004
-20	2.40	0.0006
-10	2.44	0.0006
0	1.53	0.0004
10	2.64	0.0007
20	2.00	0.0005
30	2.05	0.0005
40	2.97	0.0008
50	2.40	0.0006

5G NR n77 / 100 MHz / 3750 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.04	0.0003
120.00	2.11	0.0006
102.00	1.37	0.0004

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	2.44	0.0007
-20	0.74	0.0002
-10	1.01	0.0003
0	0.99	0.0003
10	1.25	0.0003
20	0.89	0.0002
30	1.24	0.0003
40	1.34	0.0004
50	1.62	0.0004

5G NR n77 / 100 MHz / 3930 MHz

Voltage (VAC)	Frequency Stability (Hz)	Frequency Stability (ppm)
138.00	1.79	0.0005
120.00	1.52	0.0004
102.00	1.28	0.0003

Temperature (°C)	Frequency Stability (Hz)	Frequency Stability (ppm)
-30	1.37	0.0003
-20	0.94	0.0002
-10	0.66	0.0002
0	1.60	0.0004
10	0.37	0.0001
20	1.40	0.0004
30	1.07	0.0003
40	1.48	0.0004
50	1.00	0.0003