

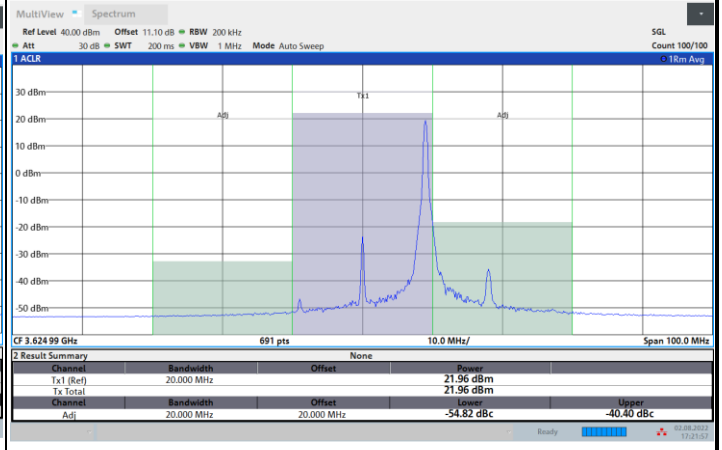
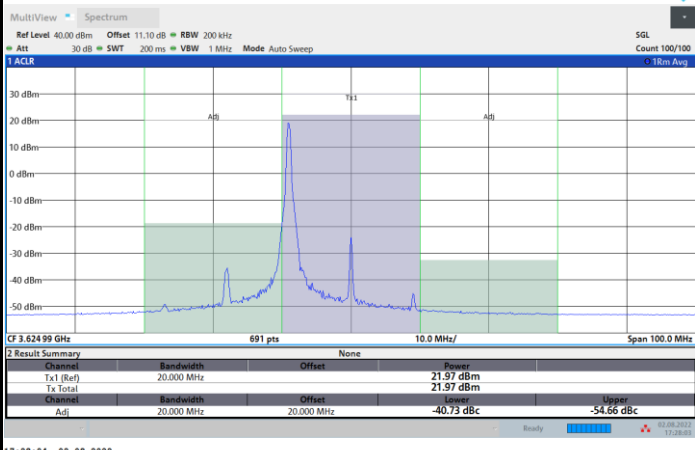


FR1 n48 / 20MHz / DFT-S OFDM / QPSK

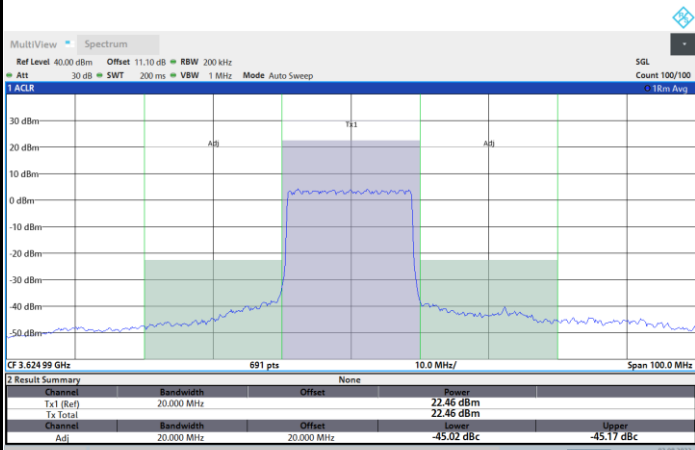
Middle Channel

1RB0

1RBmax



Full RB



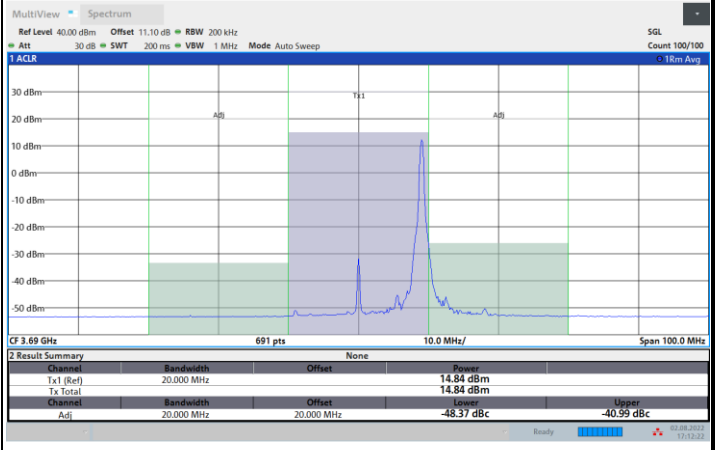
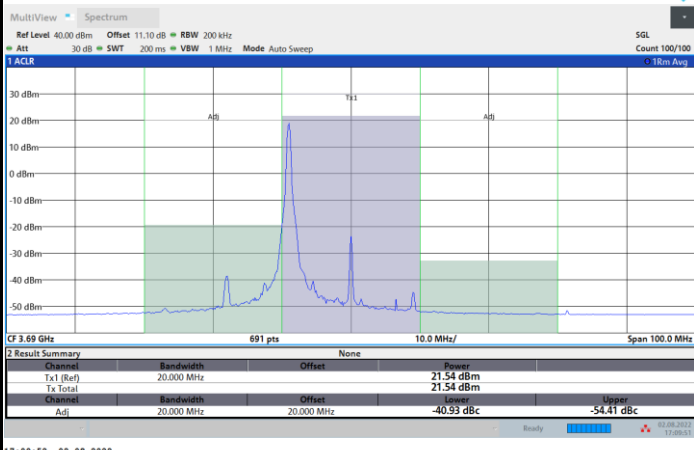


FR1 n48 / 20MHz / DFT-S OFDM / QPSK

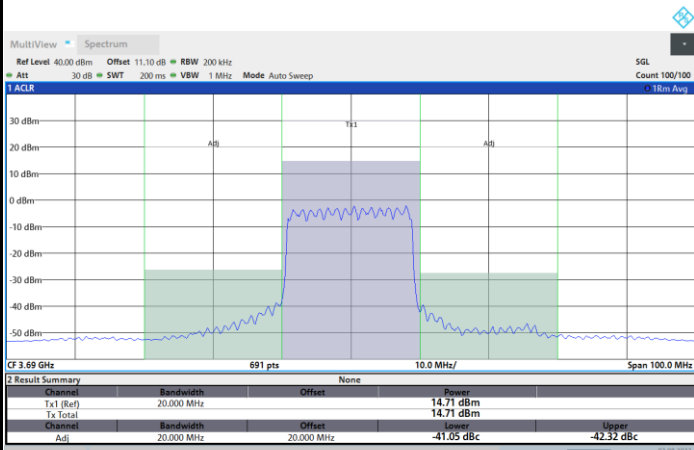
Highest Channel

1RB0

1RBmax



Full RB



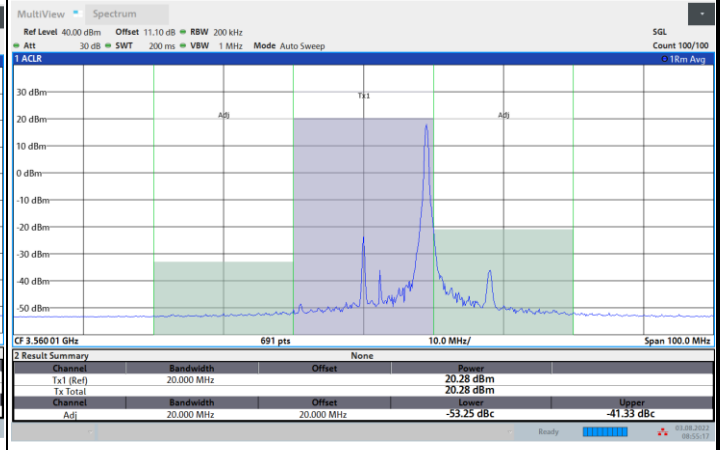
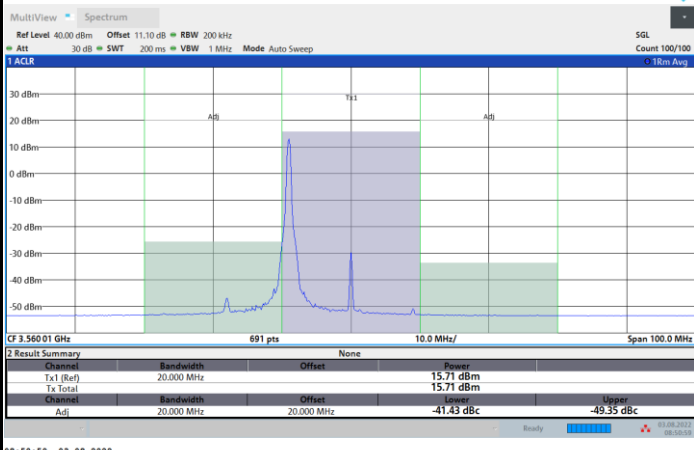


FR1 n48 / 20MHz / DFT-S OFDM / 16QAM

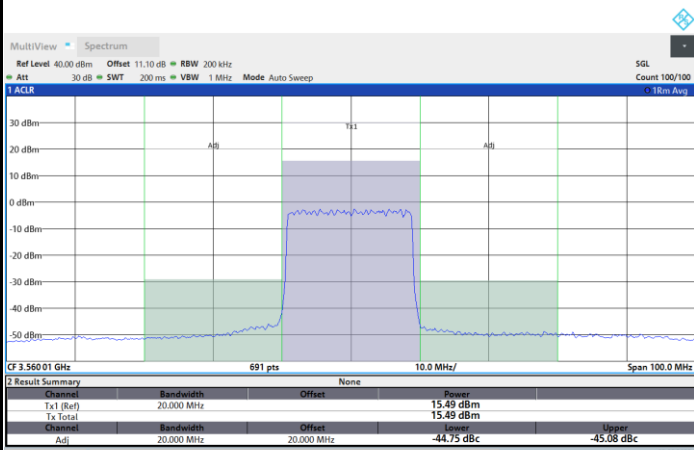
Lowest Channel

1RB0

1RBmax



Full RB



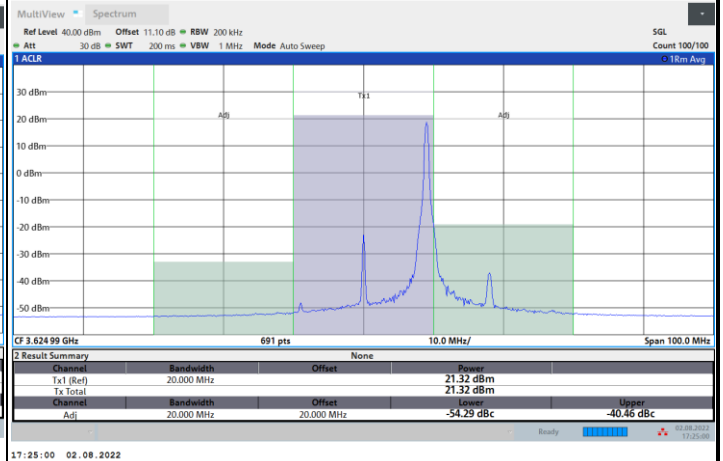
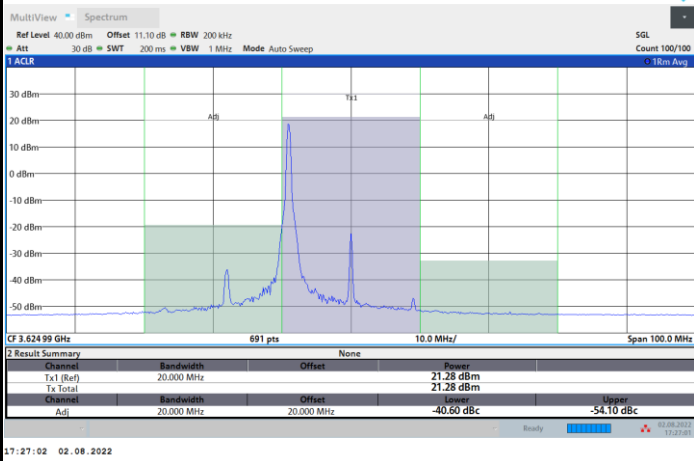


FR1 n48 / 20MHz / DFT-S OFDM / 16QAM

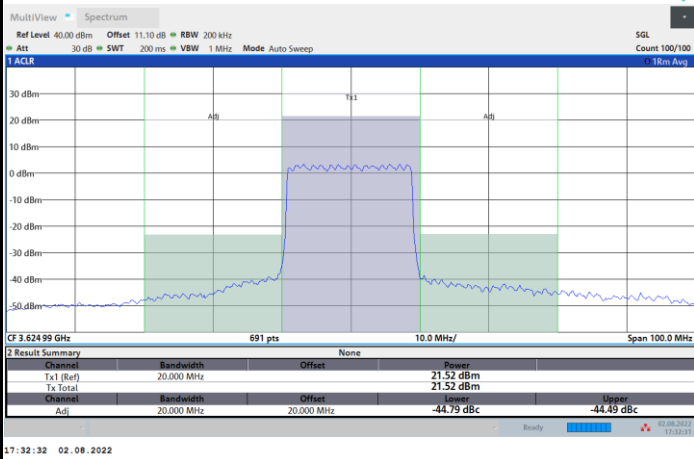
Middle Channel

1RB0

1RBmax



Full RB



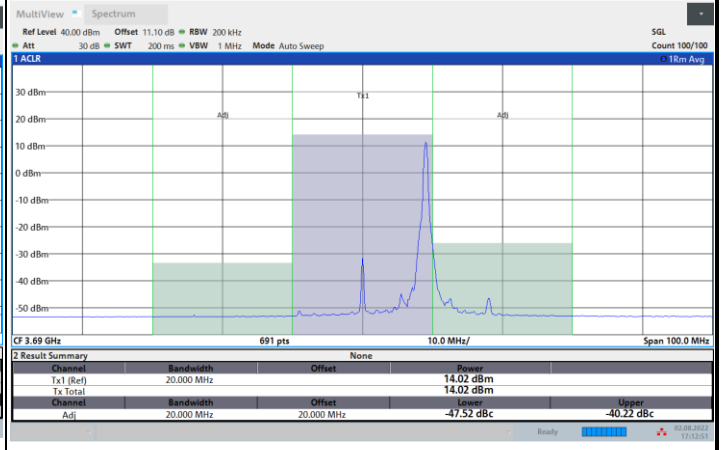
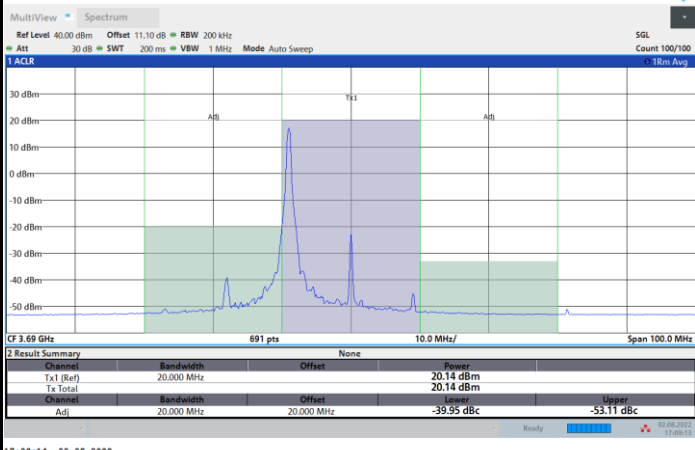


FR1 n48 / 20MHz / DFT-S OFDM / 16QAM

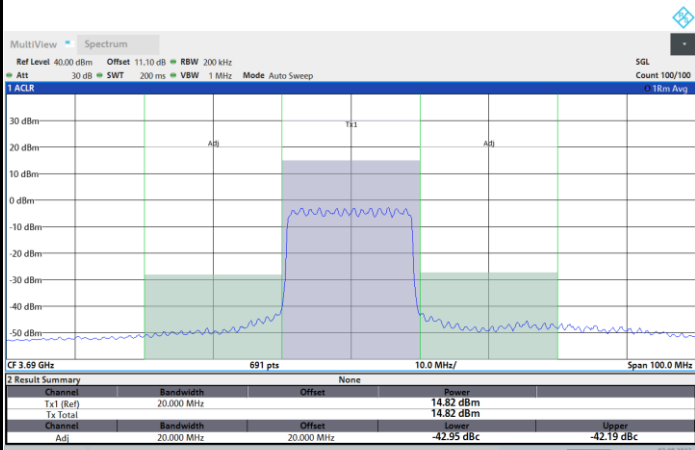
Highest Channel

1RB0

1RBmax



Full RB



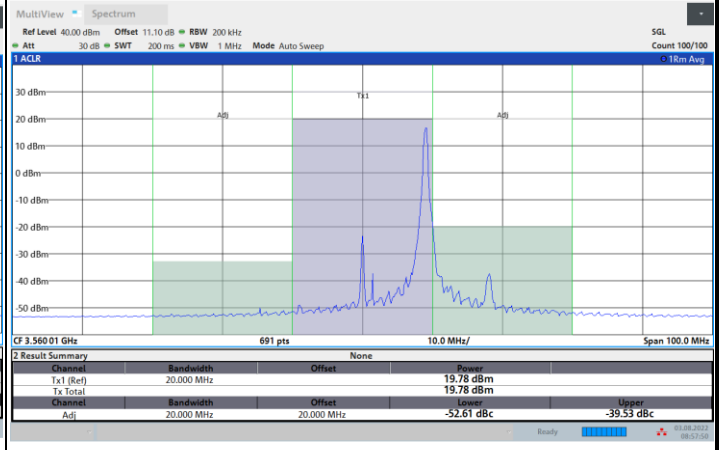
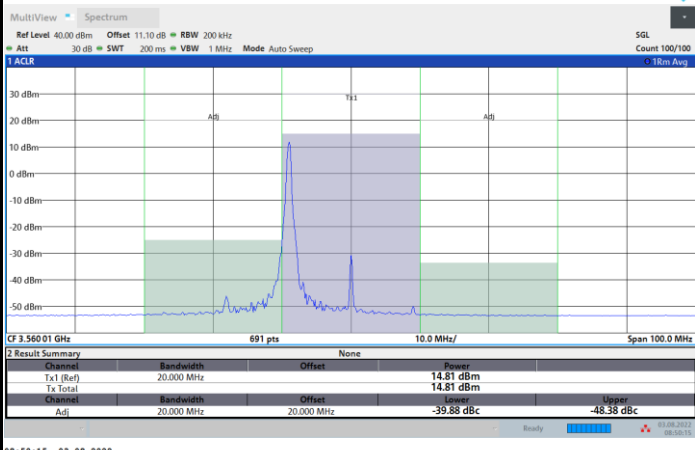


FR1 n48 / 20MHz / DFT-S OFDM / 64QAM

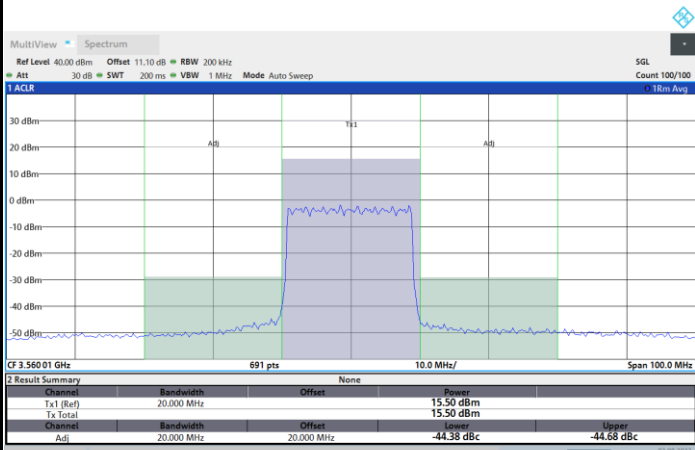
Lowest Channel

1RB0

1RBmax



Full RB



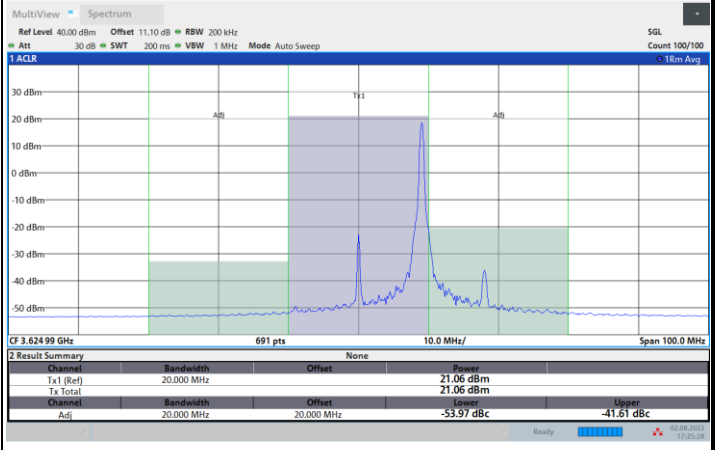
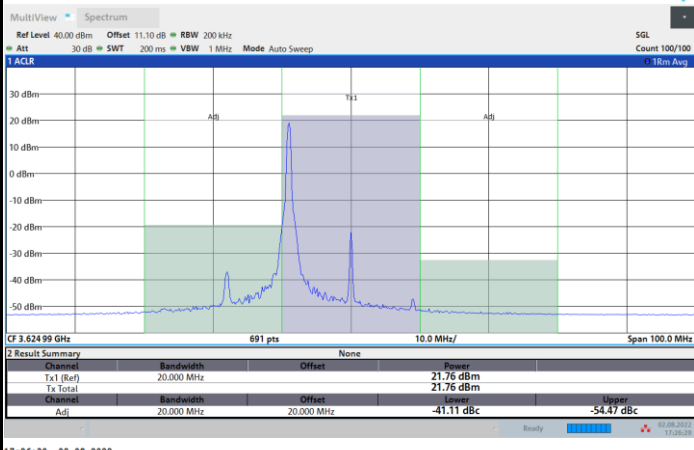


FR1 n48 / 20MHz / DFT-S OFDM / 64QAM

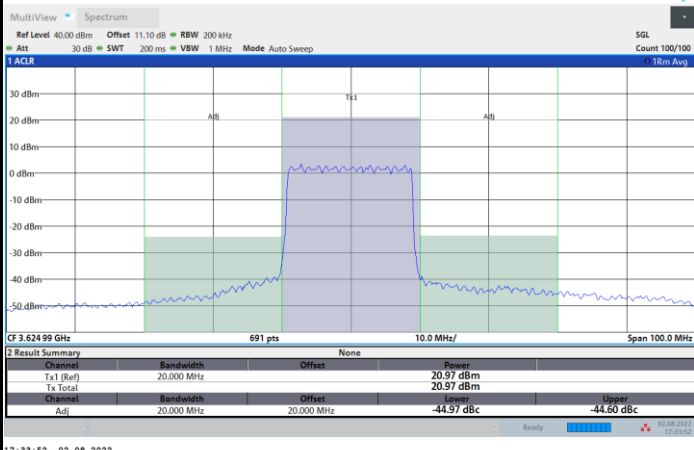
Middle Channel

1RB0

1RBmax



Full RB



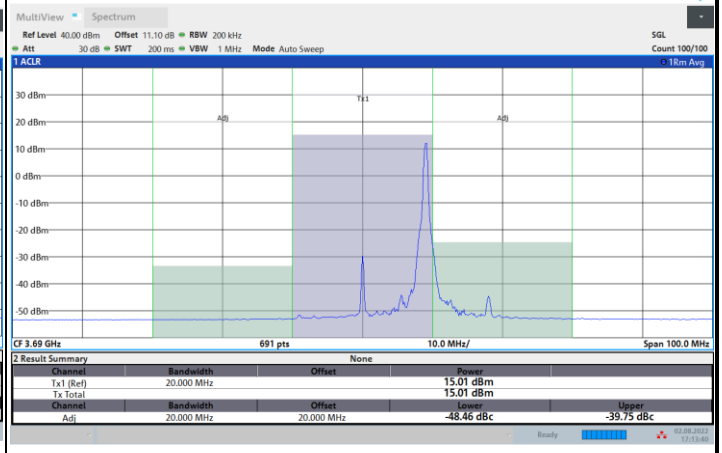
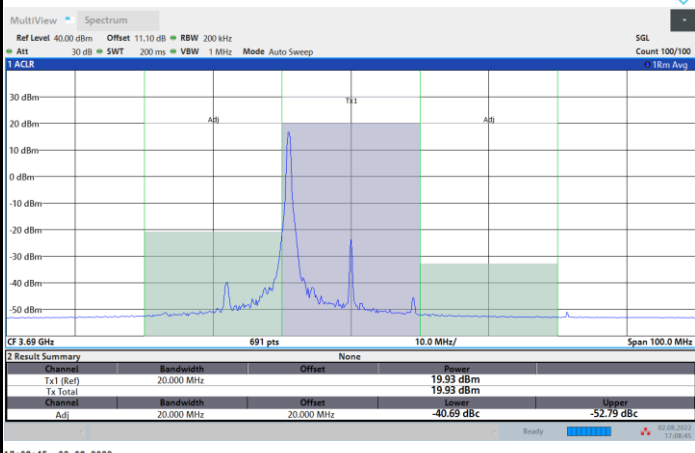


FR1 n48 / 20MHz / DFT-S OFDM / 64QAM

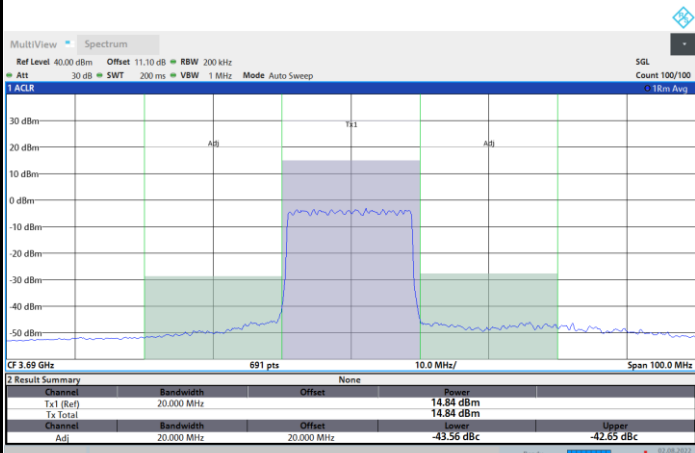
Highest Channel

1RB0

1RBmax



Full RB



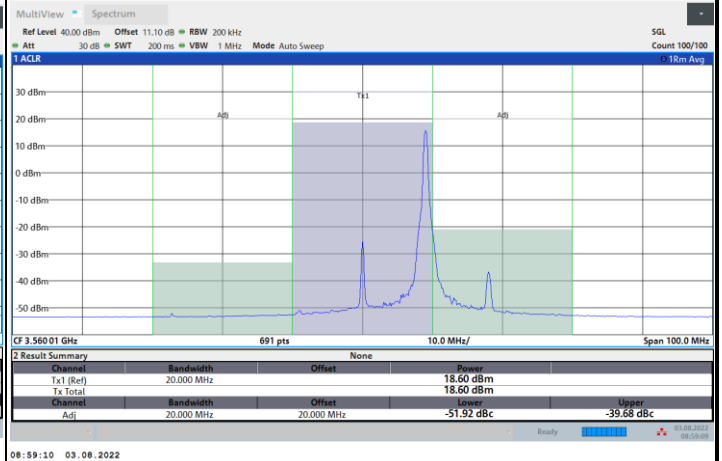
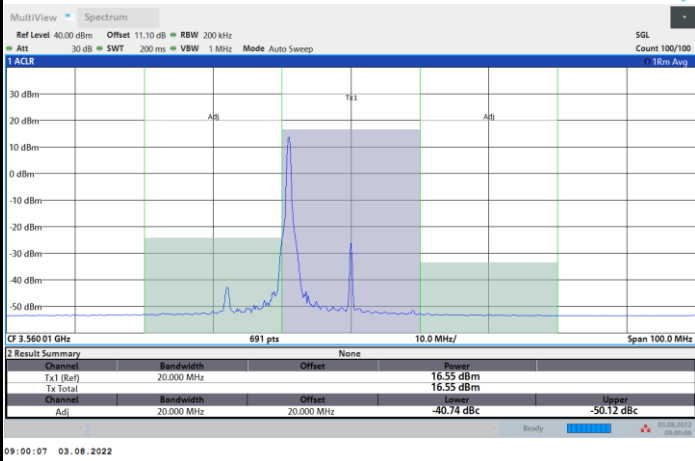


FR1 n48 / 20MHz / DFT-S OFDM / 256QAM

Lowest Channel

1RB0

1RBmax



Full RB



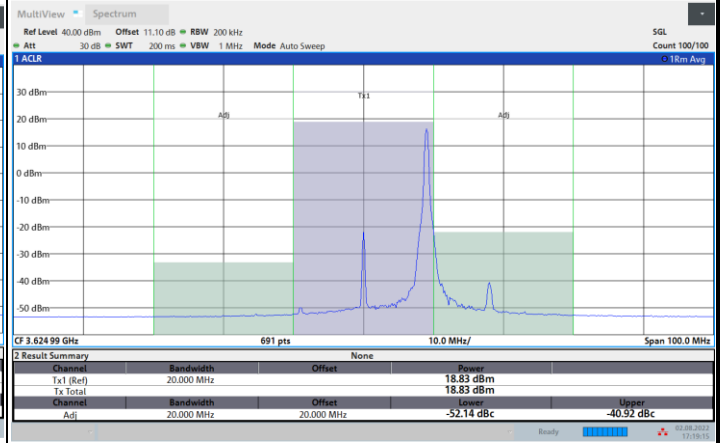
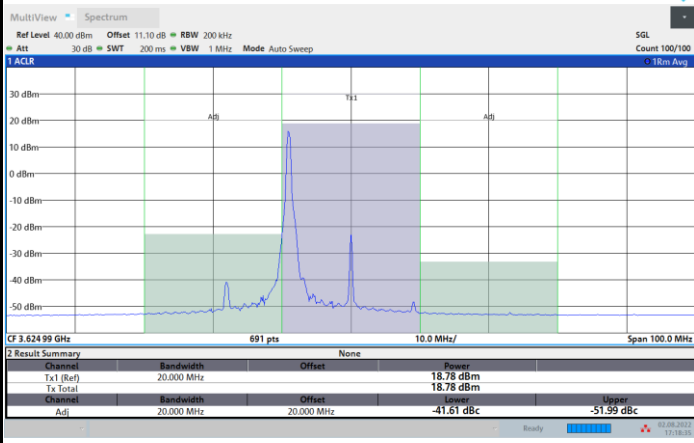


FR1 n48 / 20MHz / DFT-S OFDM / 256QAM

Middle Channel

1RB0

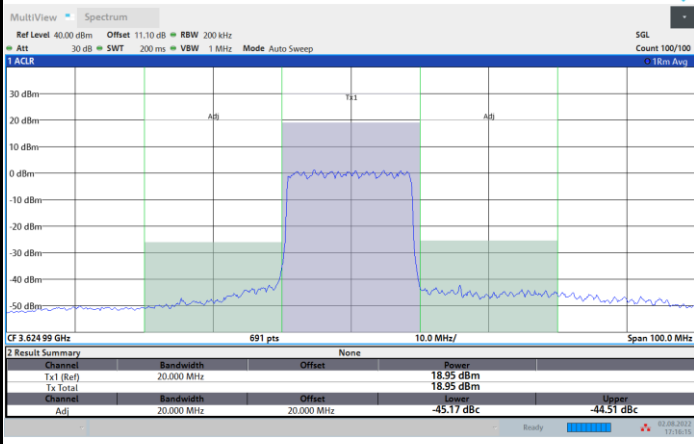
1RBmax



17:18:36 02.08.2022

17:19:16 02.08.2022

Full RB



17:16:15 02.08.2022

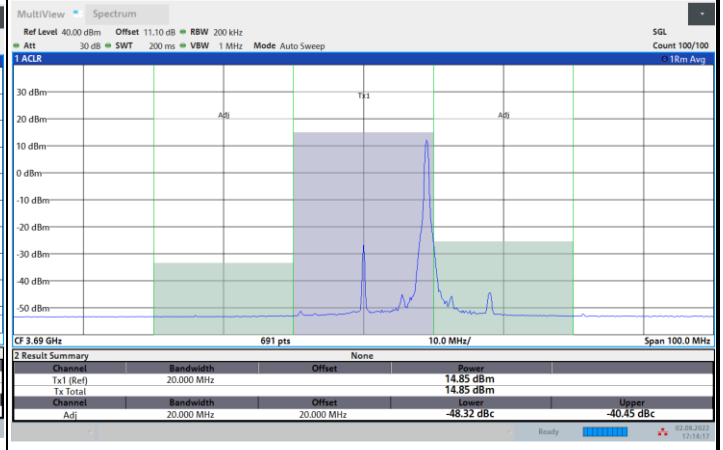
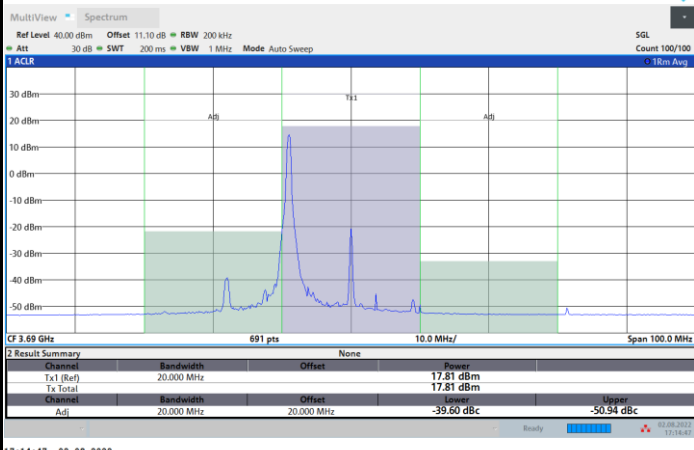


FR1 n48 / 20MHz / DFT-S OFDM / 256QAM

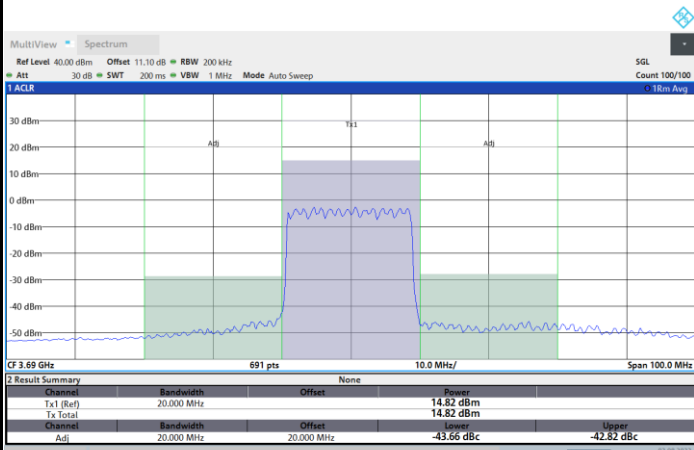
Highest Channel

1RB0

1RBmax



Full RB



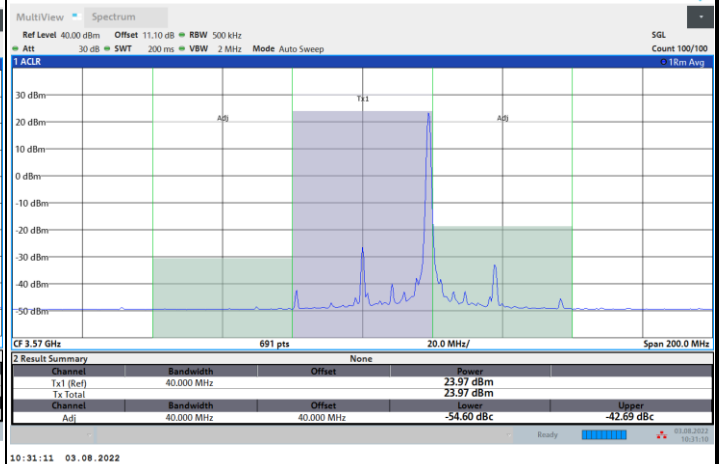


FR1 n48 / 40MHz / DFT-S OFDM / PI/2 BPSK

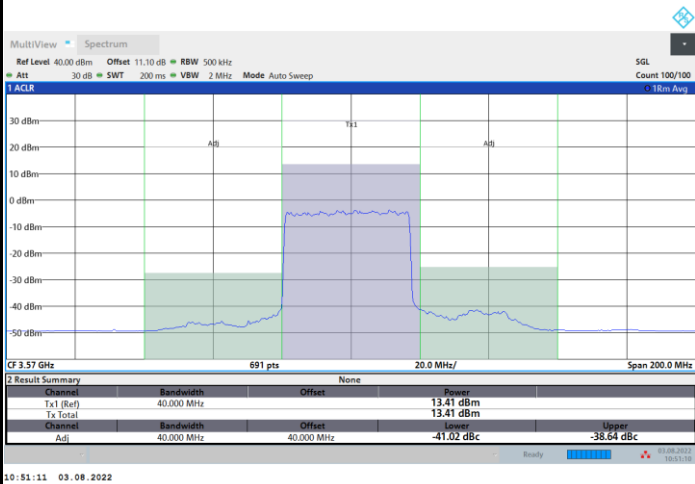
Lowest Channel

1RB0

1RBmax



Full RB



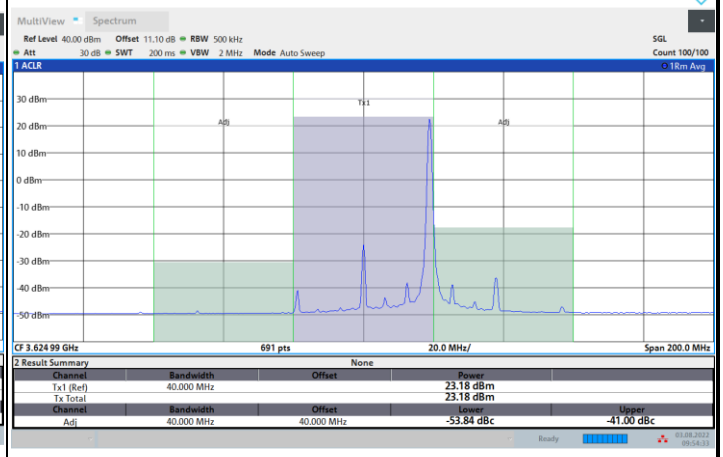
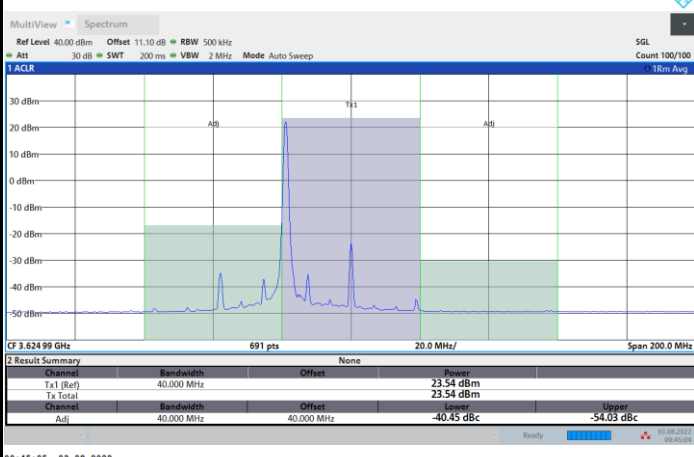


FR1 n48 / 40MHz / DFT-S OFDM / PI/2 BPSK

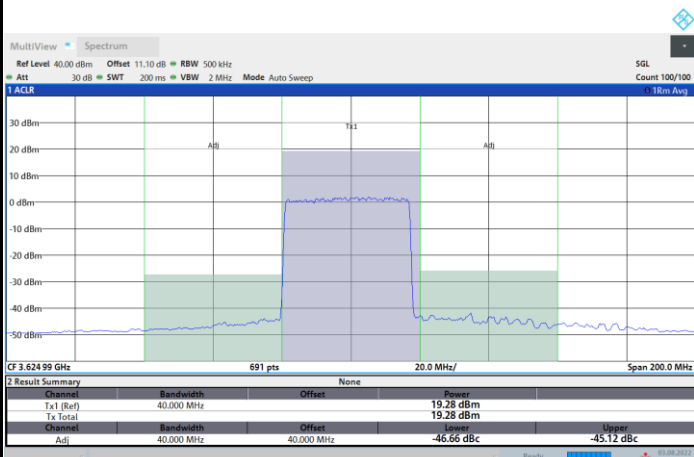
Middle Channel

1RB0

1RBmax



Full RB



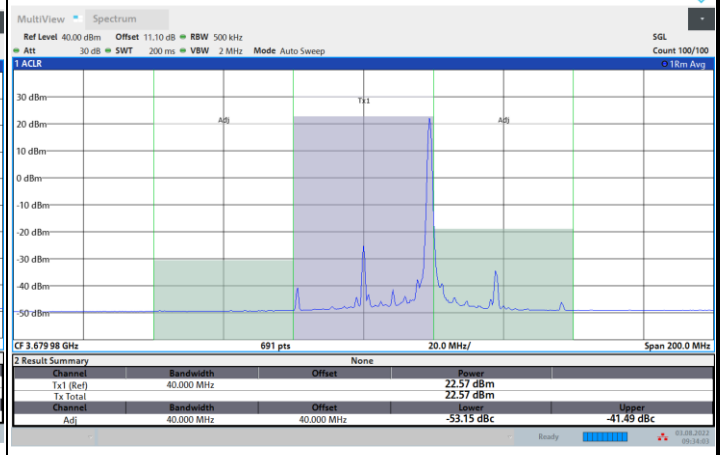
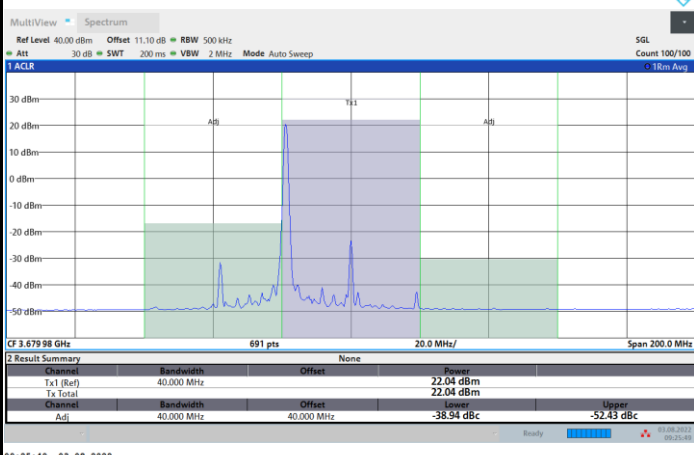


FR1 n48 / 40MHz / DFT-S OFDM / PI/2 BPSK

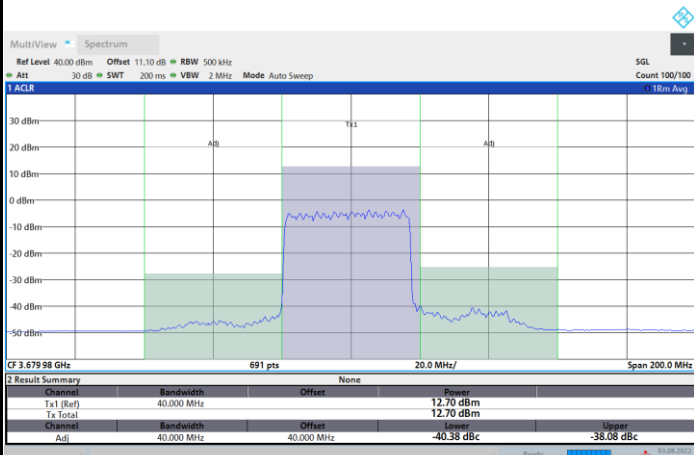
Highest Channel

1RB0

1RBmax



Full RB



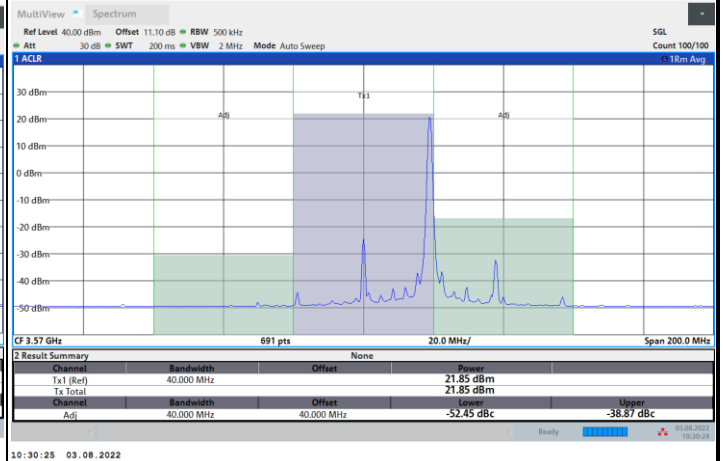
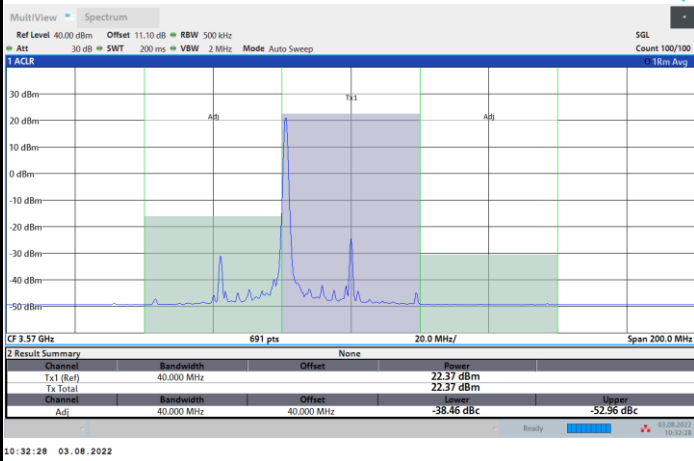


FR1 n48 / 40MHz / DFT-S OFDM / QPSK

Lowest Channel

1RB0

1RBmax



Full RB



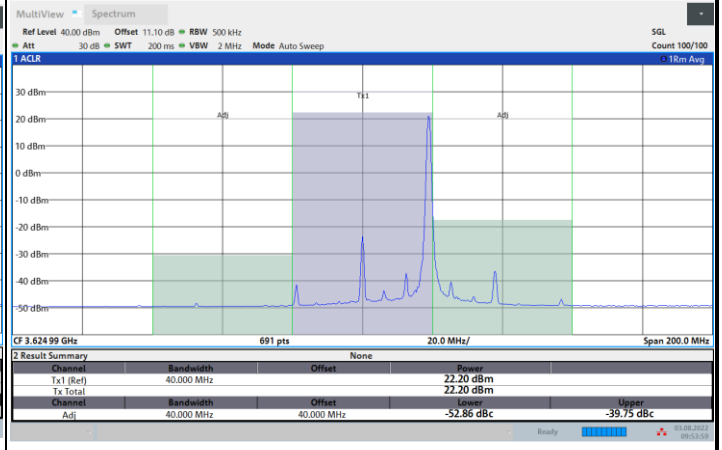
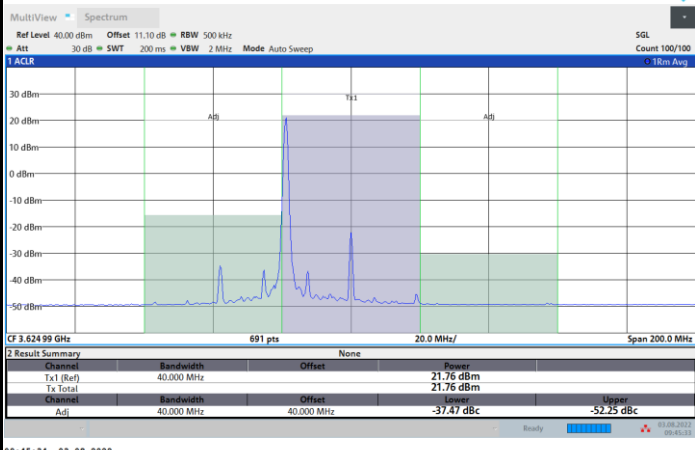


FR1 n48 / 40MHz / DFT-S OFDM / QPSK

Middle Channel

1RB0

1RBmax



Full RB



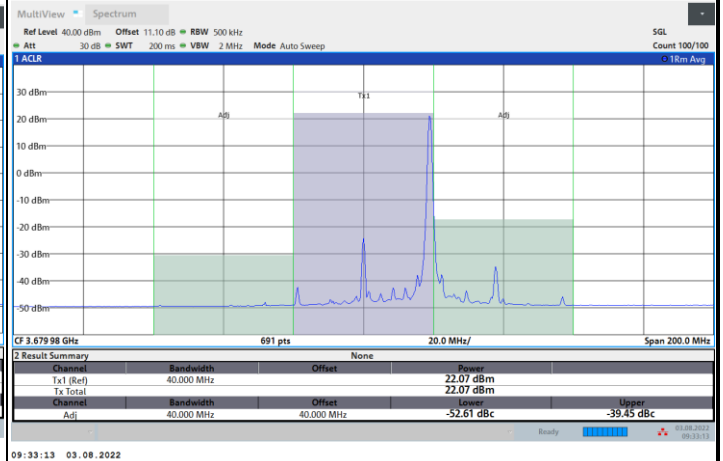


FR1 n48 / 40MHz / DFT-S OFDM / QPSK

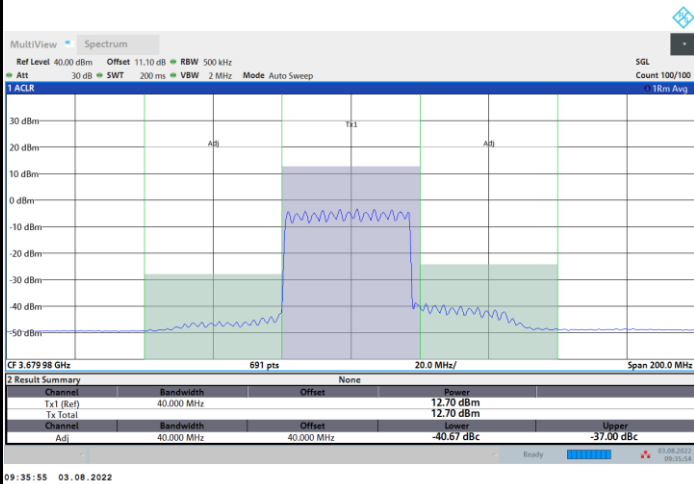
Highest Channel

1RB0

1RBmax



Full RB



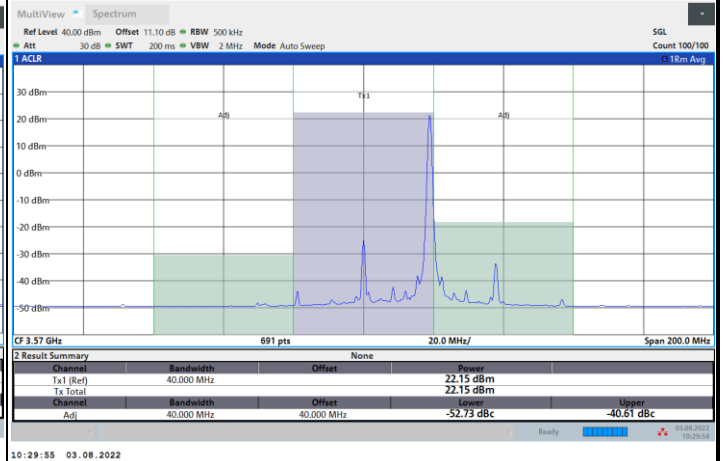
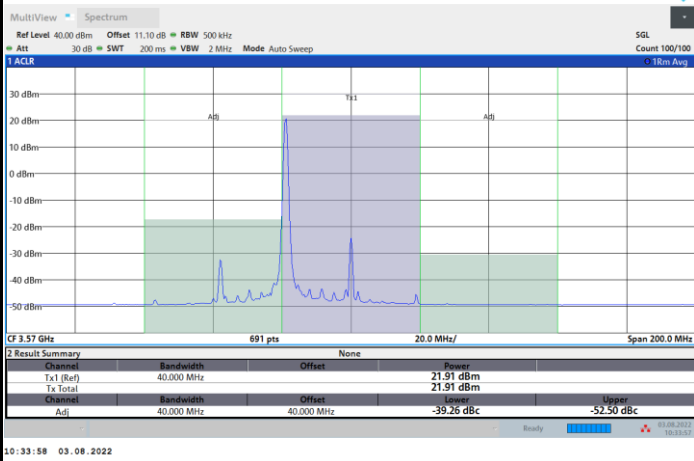


FR1 n48 / 40MHz / DFT-S OFDM / 16QAM

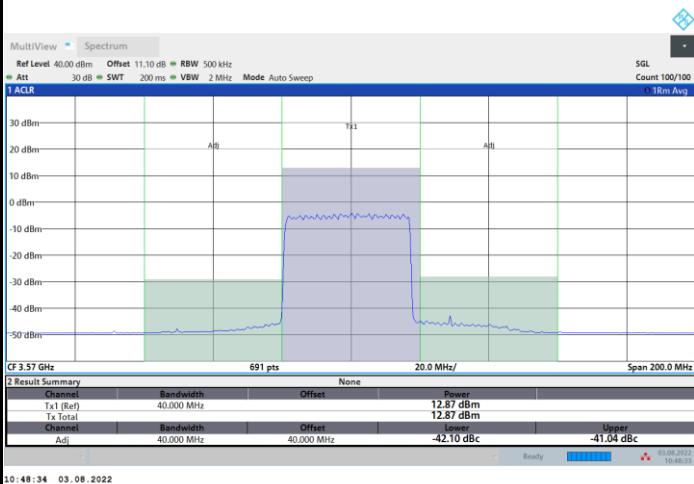
Lowest Channel

1RB0

1RBmax



Full RB



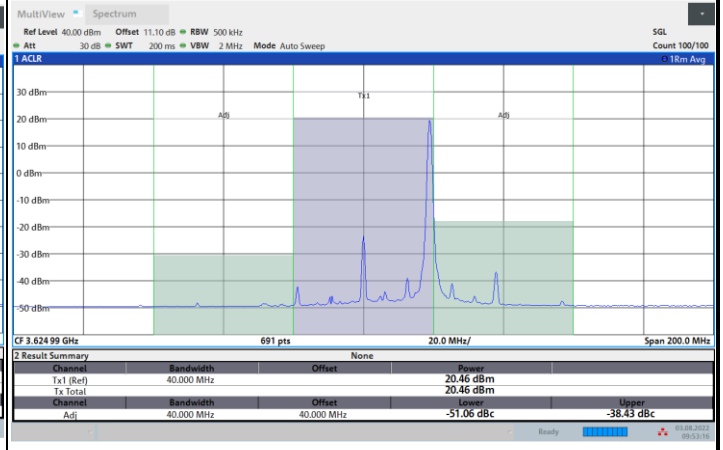
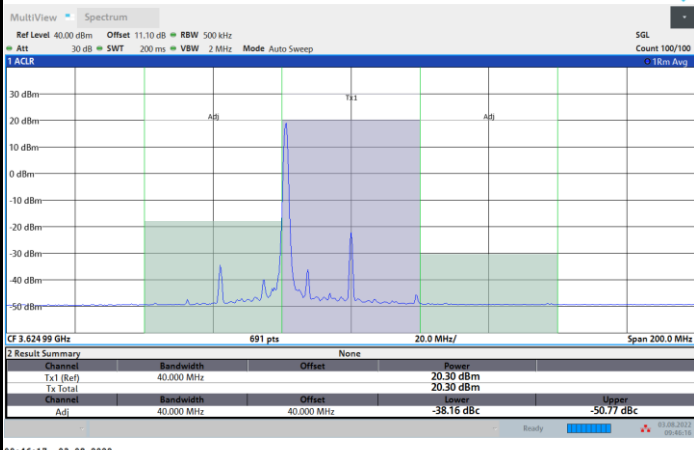


FR1 n48 / 40MHz / DFT-S OFDM / 16QAM

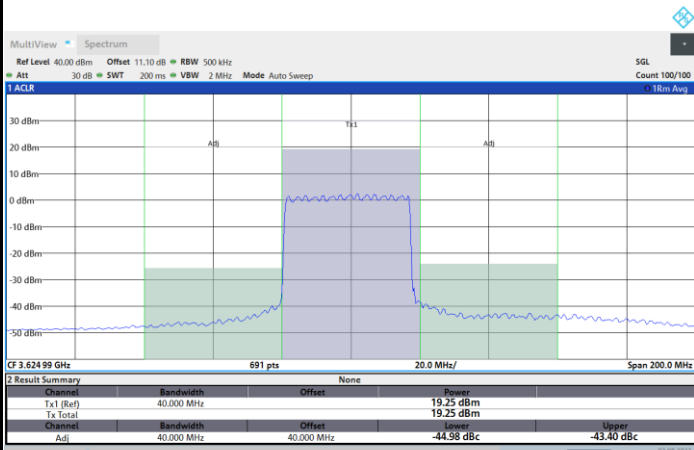
Middle Channel

1RB0

1RBmax



Full RB



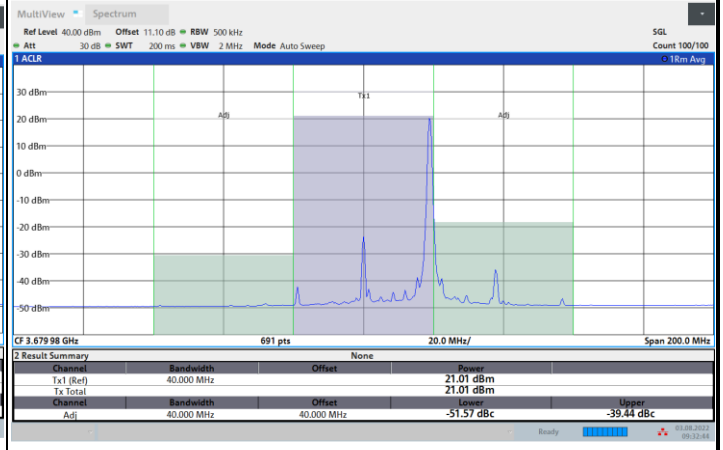
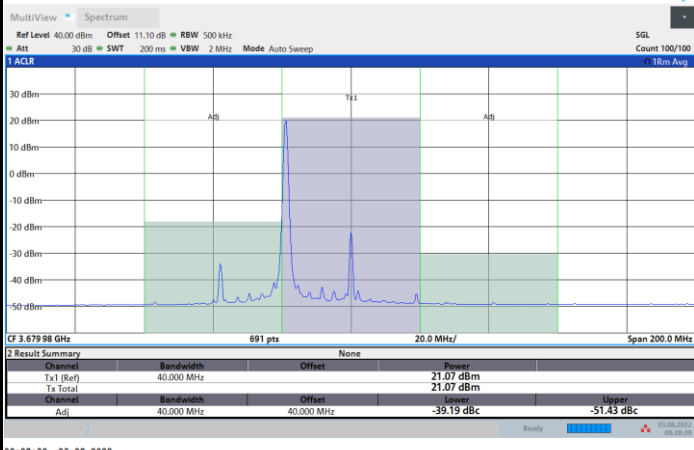


FR1 n48 / 40MHz / DFT-S OFDM / 16QAM

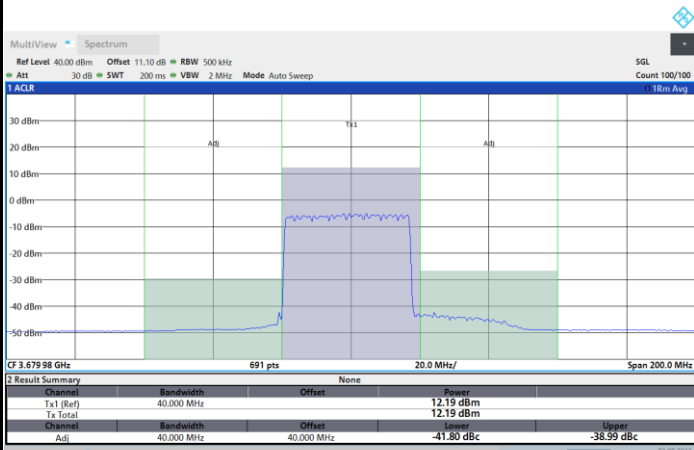
Highest Channel

1RB0

1RBmax



Full RB



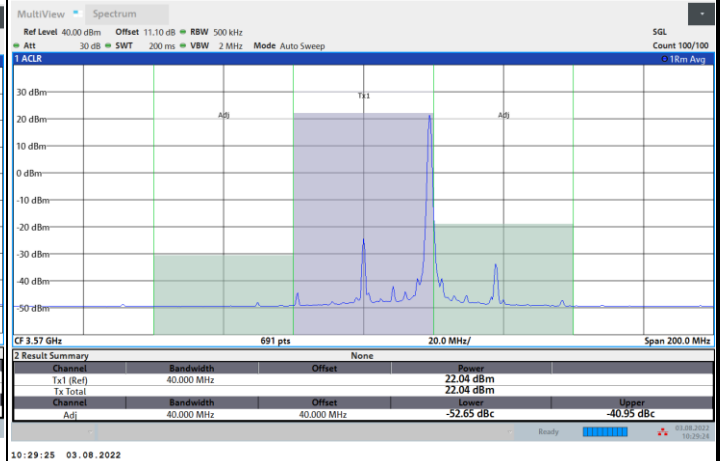
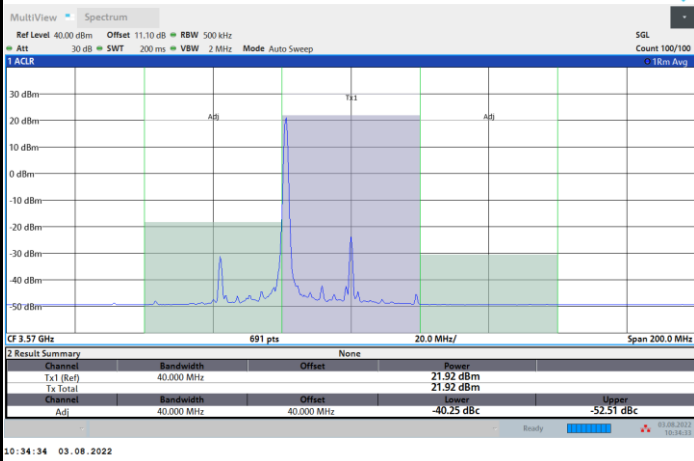


FR1 n48 / 40MHz / DFT-S OFDM / 64QAM

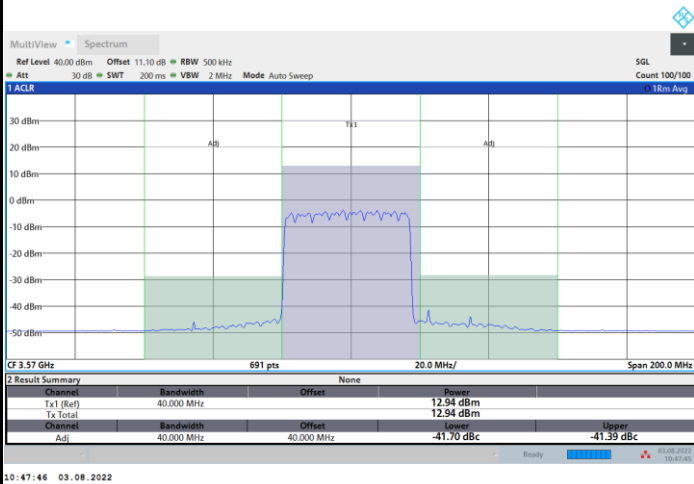
Lowest Channel

1RB0

1RBmax



Full RB



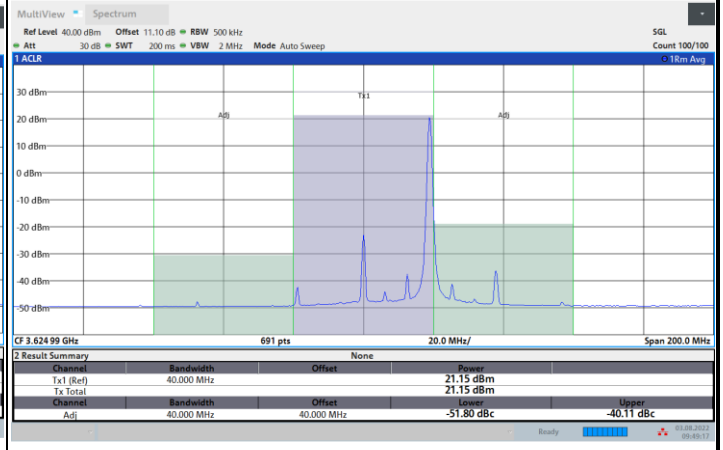


FR1 n48 / 40MHz / DFT-S OFDM / 64QAM

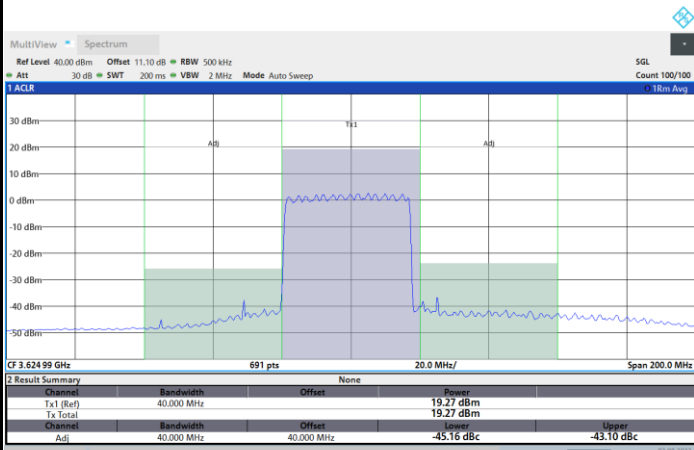
Middle Channel

1RB0

1RBmax



Full RB



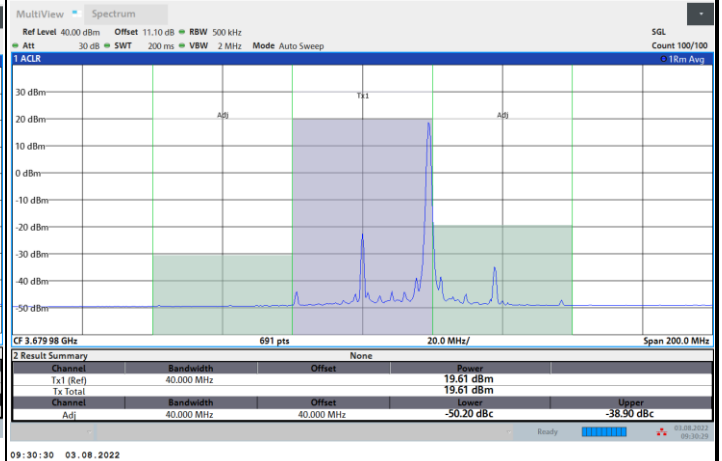
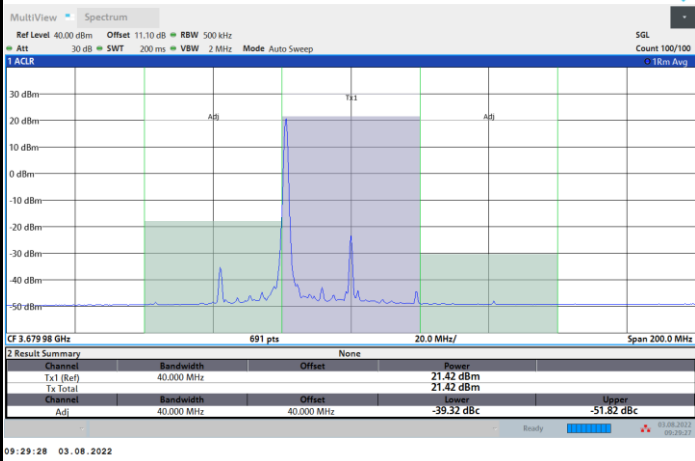


FR1 n48 / 40MHz / DFT-S OFDM / 64QAM

Highest Channel

1RB0

1RBmax



Full RB



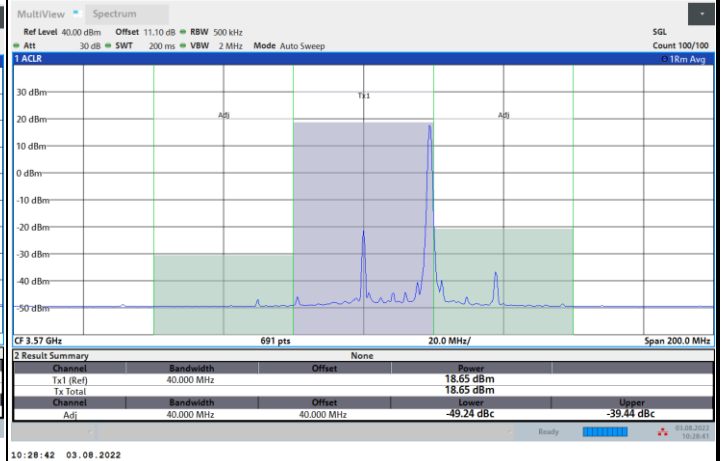
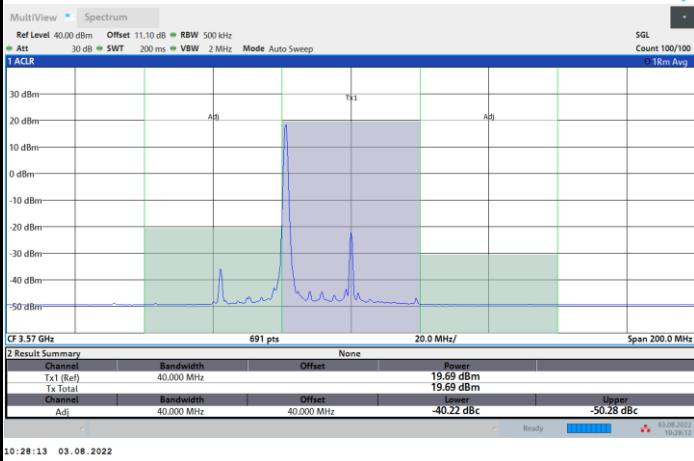


FR1 n48 / 40MHz / DFT-S OFDM / 256QAM

Lowest Channel

1RB0

1RBmax



Full RB



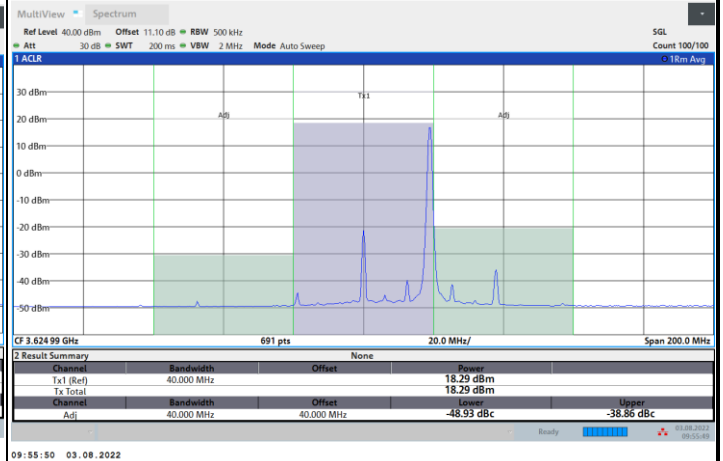
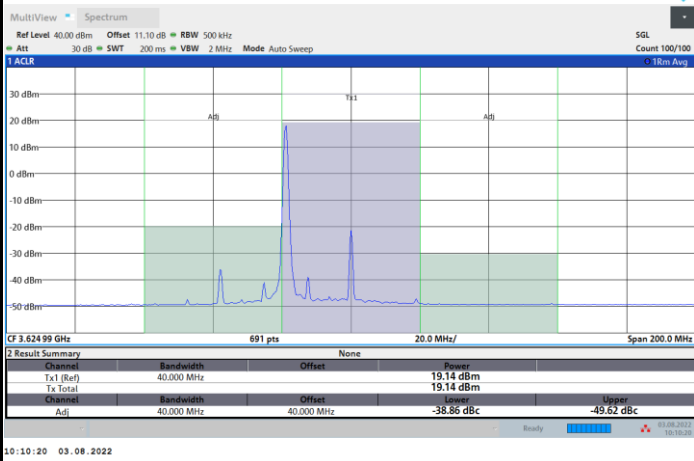


FR1 n48 / 40MHz / DFT-S OFDM / 256QAM

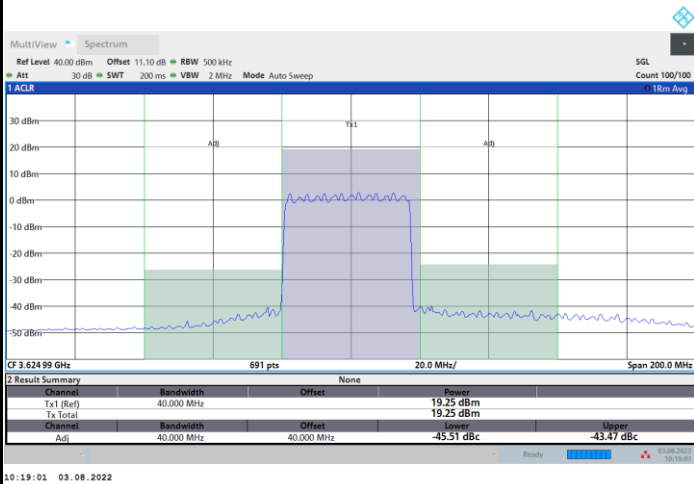
Middle Channel

1RB0

1RBmax



Full RB



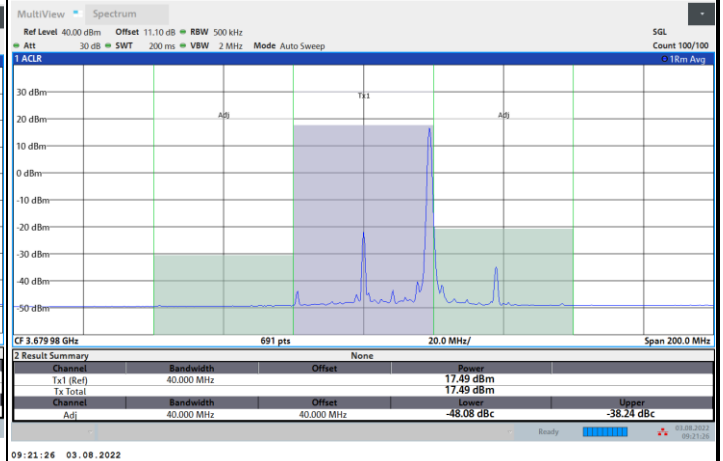
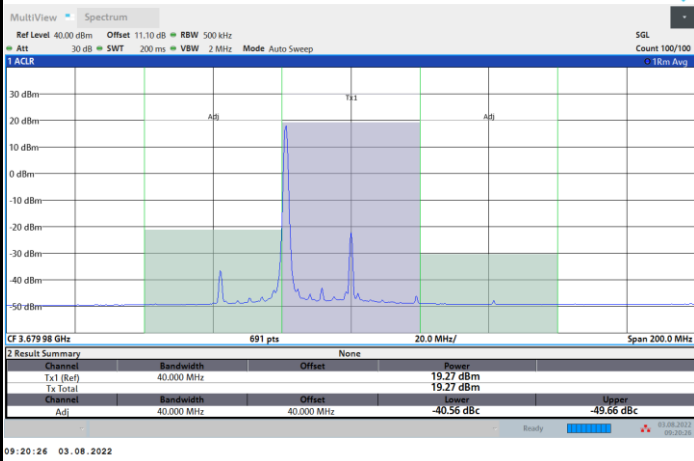


FR1 n48 / 40MHz / DFT-S OFDM / 256QAM

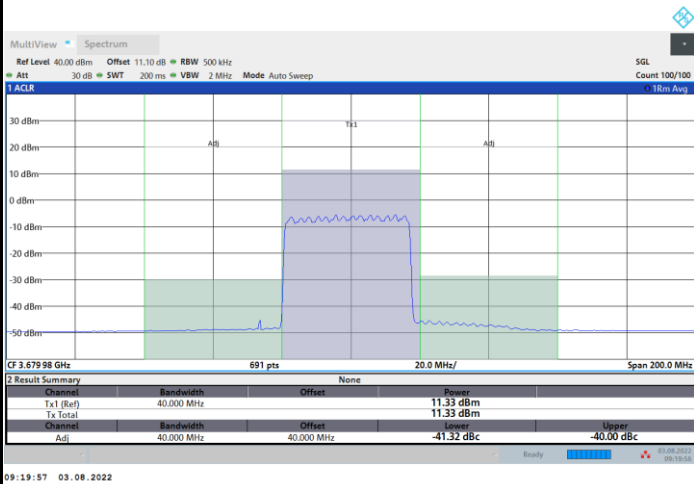
Highest Channel

1RB0

1RBmax



Full RB

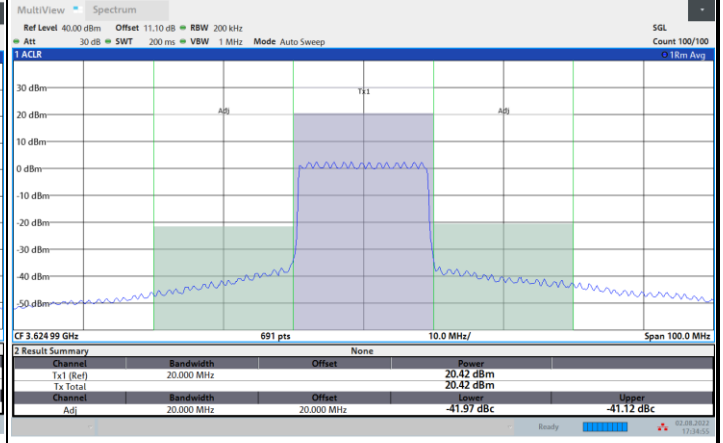
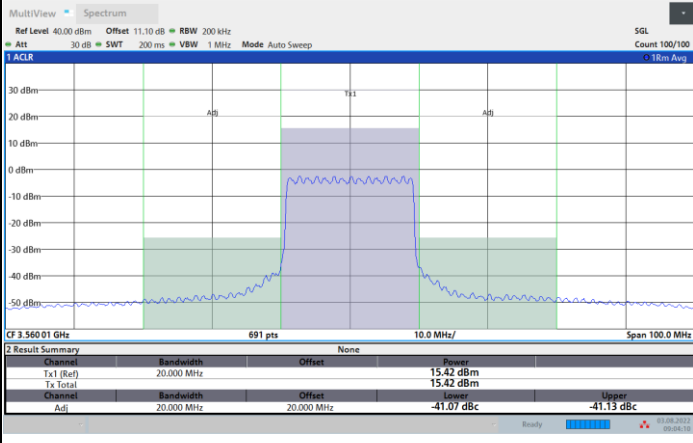




FR1 n48 / 20MHz / CP OFDM / QPSK / Full RB

Lowest Channel

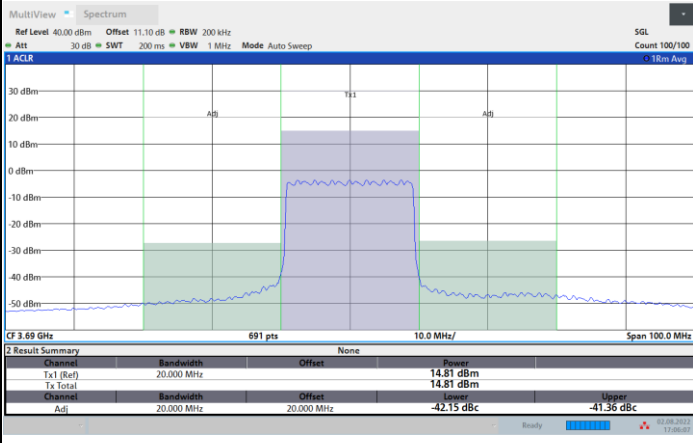
Middle Channel



09:04:10 03.08.2022

17:34:56 02.08.2022

Highest Channel



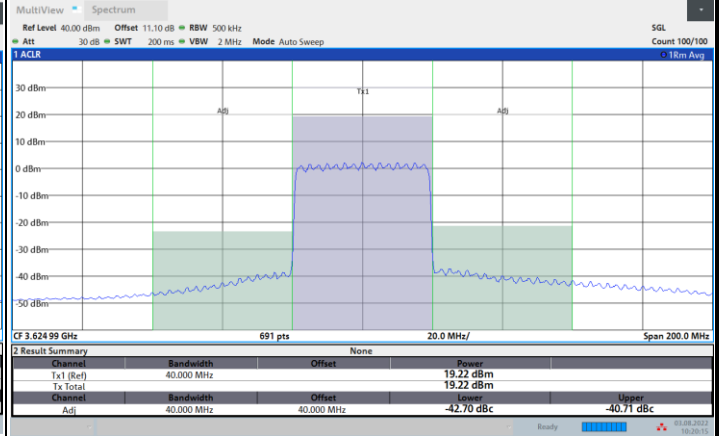
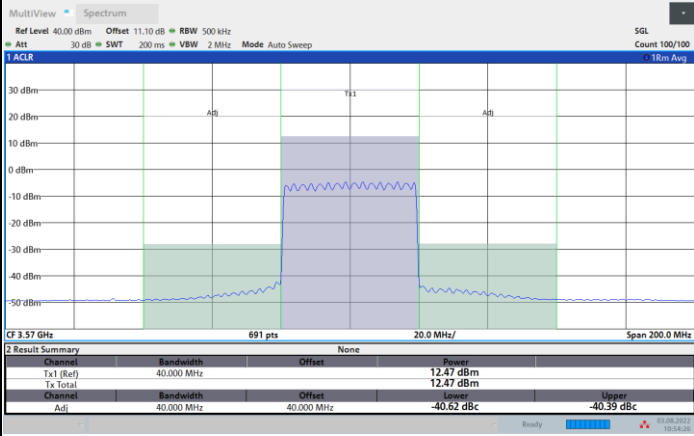
17:06:08 02.08.2022



FR1 n48 / 40MHz / CP OFDM / QPSK / Full RB

Lowest Channel

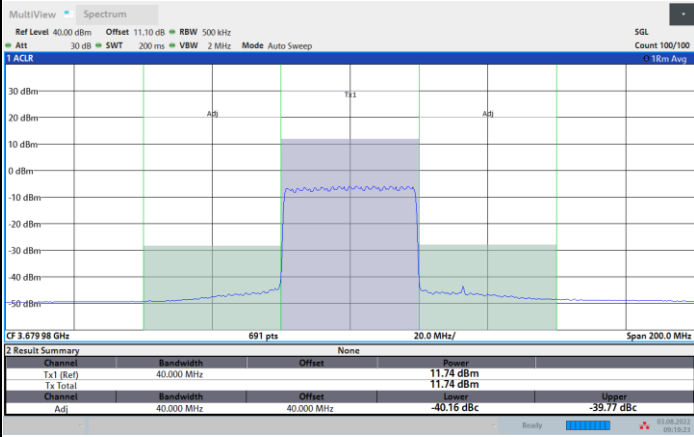
Middle Channel



10:54:27 03.08.2022

10:20:16 03.08.2022

Highest Channel



09:19:23 03.08.2022

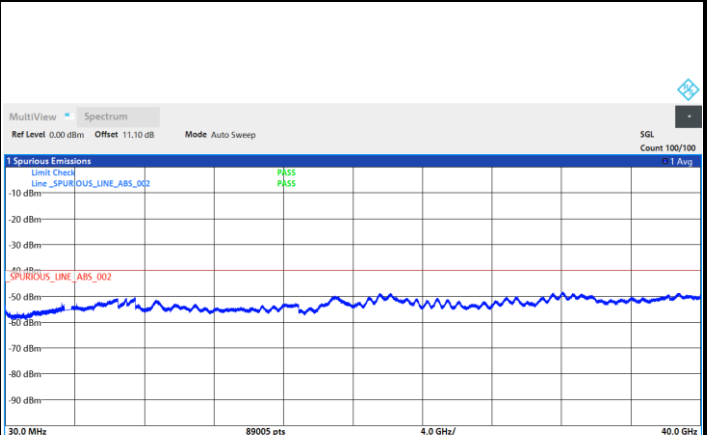


Conducted Spurious Emission

FR1 n48 / 20MHz / DFT-S OFDM / QPSK / 1RB1

Lowest Channel

Middle Channel



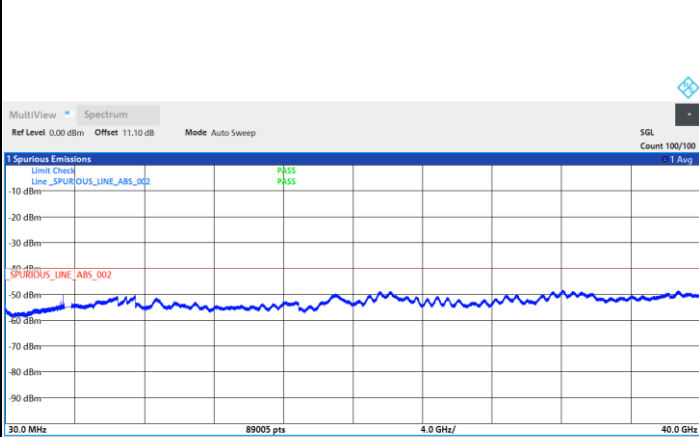
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	35.574 71 MHz	-53.87 dBm	-13.87 dB
1.000 GHz	3.430 GHz	1.000 MHz	3.267 36 GHz	-53.00 dBm	-13.00 dB
3.820 GHz	10.000 GHz	1.000 MHz	7.484 70 GHz	-50.43 dBm	-10.43 dB
10.000 GHz	25.000 GHz	1.000 MHz	22.133 92 GHz	-48.76 dBm	-8.76 dB
25.000 GHz	40.000 GHz	1.000 MHz	32.108 61 GHz	-48.16 dBm	-8.16 dB

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	34.605 20 MHz	-53.49 dBm	-13.49 dB
1.000 GHz	3.430 GHz	1.000 MHz	3.267 06 GHz	-52.44 dBm	-12.44 dB
3.820 GHz	10.000 GHz	1.000 MHz	7.453 39 GHz	-50.45 dBm	-10.45 dB
10.000 GHz	25.000 GHz	1.000 MHz	21.556 44 GHz	-48.77 dBm	-8.77 dB
25.000 GHz	40.000 GHz	1.000 MHz	32.099 70 GHz	-48.26 dBm	-8.26 dB

16:22:59 02.08.2022

16:03:23 02.08.2022

Highest Channel



Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	35.089 96 MHz	-53.93 dBm	-13.93 dB
1.000 GHz	3.430 GHz	1.000 MHz	3.358 48 GHz	-50.35 dBm	-10.35 dB
3.820 GHz	10.000 GHz	1.000 MHz	7.459 16 GHz	-50.35 dBm	-10.35 dB
10.000 GHz	25.000 GHz	1.000 MHz	21.560 65 GHz	-48.84 dBm	-8.84 dB
25.000 GHz	40.000 GHz	1.000 MHz	32.054 70 GHz	-48.38 dBm	-8.38 dB

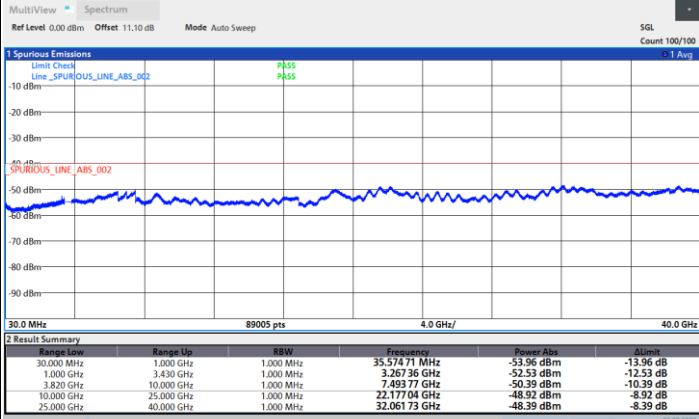
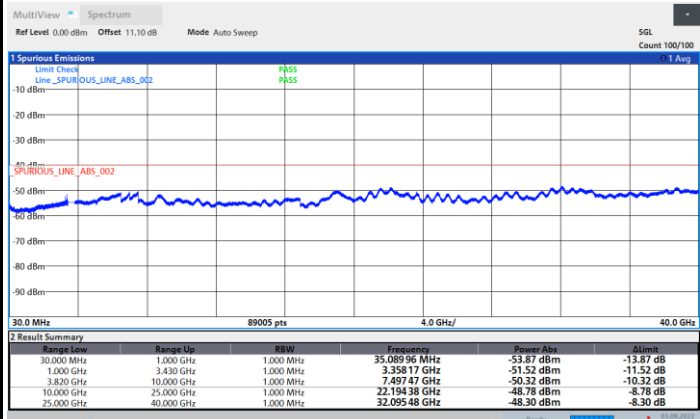
16:04:34 02.08.2022



FR1 n48 / 40MHz / DFT-S OFDM / QPSK / 1RB1

Lowest Channel

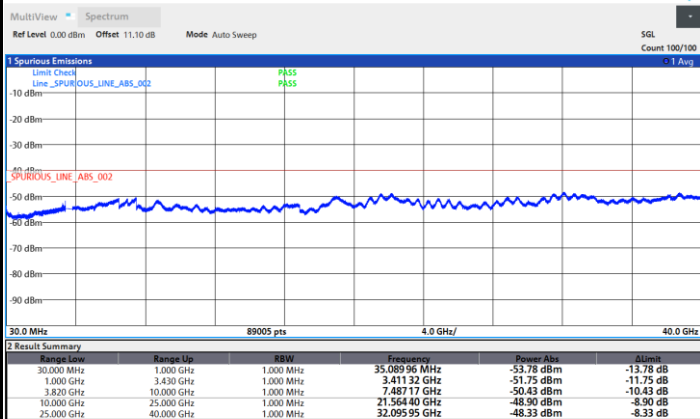
Middle Channel



11:23:04 03.08.2022

15:45:03 02.08.2022

Highest Channel



15:46:08 02.08.2022



Frequency Stability

Test Conditions		FR1 n48 (BPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 20MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0015	PASS
40	Normal Voltage	0.0025	
30	Normal Voltage	0.0020	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0017	
0	Normal Voltage	0.0027	
-10	Normal Voltage	0.0022	
-20	Normal Voltage	0.0021	
-30	Normal Voltage	0.0005	
20	Maximum Voltage	0.0010	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0007	

Note:

- 1. Normal Voltage = 3.3 V. ; Battery End Point (BEP) = 3.14 V. ; Maximum Voltage = 3.47 V.
- 2. The frequency fundamental emissions stay within the authorized frequency block.



Appendix B. Test Results of Radiated Test

5G NR n48

<Ant. 1>

5G NR n48 / 40MHz / PI/2 BPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	7105	-53.96	-40	-13.96	-52.09	-63.66	1.84	11.54	H
	10657	-54.68	-40	-14.68	-55.68	-63.15	2.23	10.71	H
	14209	-48.95	-40	-8.95	-57.69	-58.58	2.65	12.27	H
	21314	-63.01	-40	-23.01	-77.41	-77.87	3.32	18.18	H
	24866	-59.74	-40	-19.74	-78.02	-74.51	3.71	18.48	H
	28418	-57.20	-40	-17.20	-77.71	-72.66	3.99	19.45	H
	7105	-54.33	-40	-14.33	-52.71	-64.03	1.84	11.54	V
	10657	-49.72	-40	-9.72	-51.93	-58.19	2.23	10.71	V
	14209	-49.01	-40	-9.01	-57.64	-58.64	2.65	12.27	V
	21314	-63.60	-40	-23.60	-77.7	-78.46	3.32	18.18	V
	24866	-60.35	-40	-20.35	-78.31	-75.12	3.71	18.48	V
	28418	-57.98	-40	-17.98	-78.08	-73.44	3.99	19.45	V
Middle	7215	-57.19	-40	-17.19	-55.62	-66.65	1.85	11.31	H
	10822	-51.56	-40	-11.56	-54.5	-59.95	2.22	10.61	H
	14429	-48.70	-40	-8.70	-57.65	-58.22	2.63	12.14	H
	18036	-62.24	-40	-22.24	-73.67	-76.61	3.23	17.60	H
	21644	-61.78	-40	-21.78	-76.89	-76.91	3.41	18.54	H
	25251	-59.79	-40	-19.79	-78.1	-74.73	3.76	18.70	H
	7215	-56.17	-40	-16.17	-54.97	-65.63	1.85	11.31	V
	10822	-51.17	-40	-11.17	-53.85	-59.56	2.22	10.61	V
	14429	-48.30	-40	-8.30	-57.61	-57.82	2.63	12.14	V
	18036	-61.83	-40	-21.83	-72.96	-76.20	3.23	17.60	V
	21644	-62.20	-40	-22.20	-76.98	-77.33	3.41	18.54	V
	25251	-60.04	-40	-20.04	-78.06	-74.98	3.76	18.70	V



Highest	7325	-55.75	-40	-15.75	-54.45	-65.21	1.90	11.36	H
	10987	-51.92	-40	-11.92	-55.19	-60.23	2.20	10.51	H
	14649	-49.18	-40	-9.18	-58.25	-59.01	2.60	12.43	H
	18311	-62.85	-40	-22.85	-74.55	-77.21	3.24	17.60	H
	21974	-62.44	-40	-22.44	-77.88	-77.81	3.50	18.87	H
	25636	-59.71	-40	-19.71	-78.2	-74.88	3.85	19.03	H
									H
	7325	-55.53	-40	-15.53	-54.44	-64.99	1.90	11.36	V
	10987	-50.17	-40	-10.17	-53.34	-58.48	2.20	10.51	V
	14649	-48.01	-40	-8.01	-57.88	-57.84	2.60	12.43	V
	18311	-61.19	-40	-21.19	-72.63	-75.55	3.24	17.60	V
	21974	-62.48	-40	-22.48	-77.55	-77.85	3.50	18.87	V
	25636	-59.16	-40	-19.16	-77.38	-74.33	3.85	19.03	V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



<Ant. 2>

5G NR n48 / 40MHz / PI/2 BPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Highest	7324	-55.31	-40	-15.31	-53.94	-64.77	1.90	11.36	H
	10986	-52.62	-40	-12.62	-55.57	-60.93	2.20	10.51	H
	14651	-49.09	-40	-9.09	-58.11	-58.92	2.60	12.43	H
	18310	-61.99	-40	-21.99	-73.69	-76.35	3.24	17.60	H
	21973	-61.67	-40	-21.67	-77.11	-77.04	3.50	18.87	H
	25635	-58.18	-40	-18.18	-76.67	-73.35	3.85	19.03	H
									H
	7324	-55.36	-40	-15.36	-54.19	-64.82	1.90	11.36	V
	10986	-52.57	-40	-12.57	-55.42	-60.88	2.20	10.51	V
	14651	-48.20	-40	-8.20	-58.02	-58.03	2.60	12.43	V
	18310	-62.87	-40	-22.87	-74.31	-77.23	3.24	17.60	V
	21973	-63.04	-40	-23.04	-78.11	-78.41	3.50	18.87	V
	25635	-59.45	-40	-19.45	-77.67	-74.62	3.85	19.03	V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.