

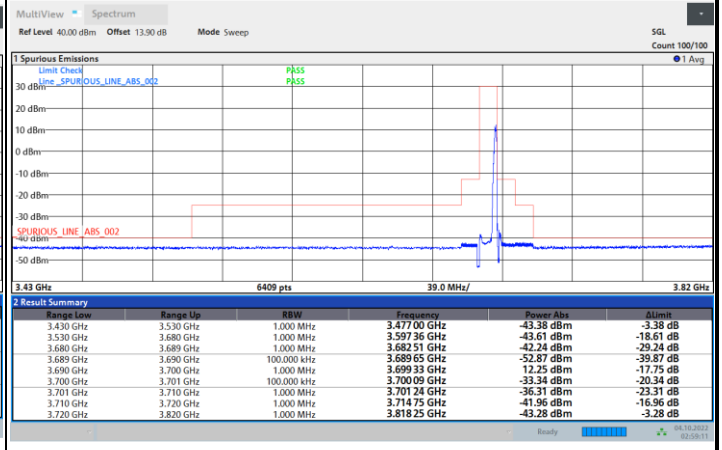
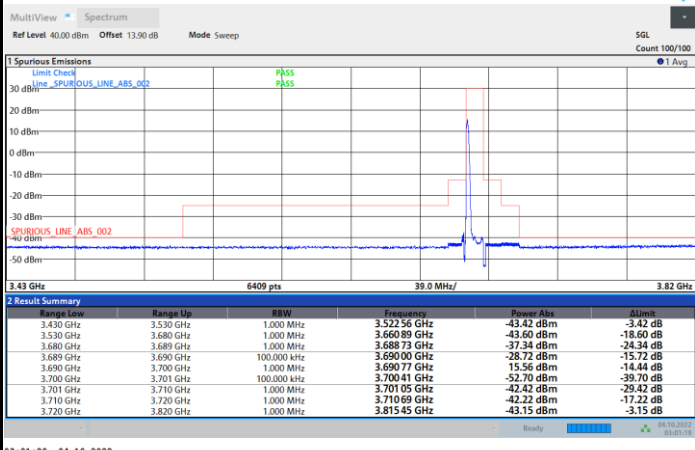


FR1 n48 / 10MHz / CP OFDM / 64QAM

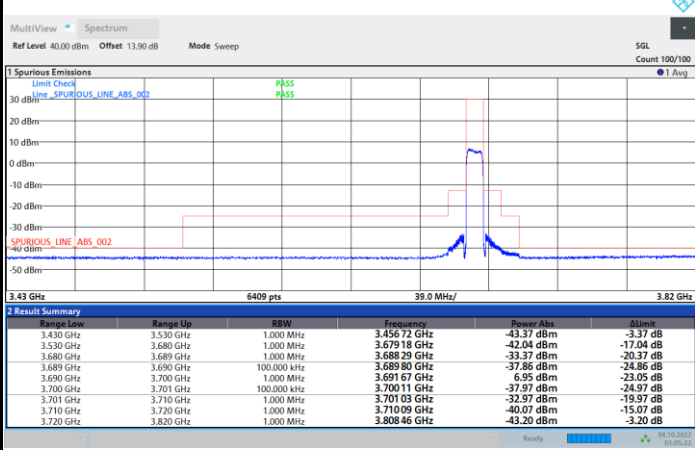
Highest Channel

1RB0

1RBmax



Full RB



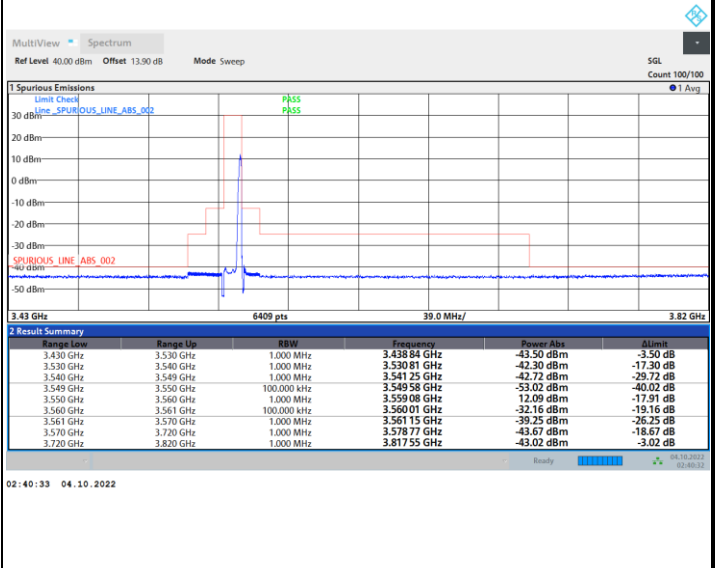
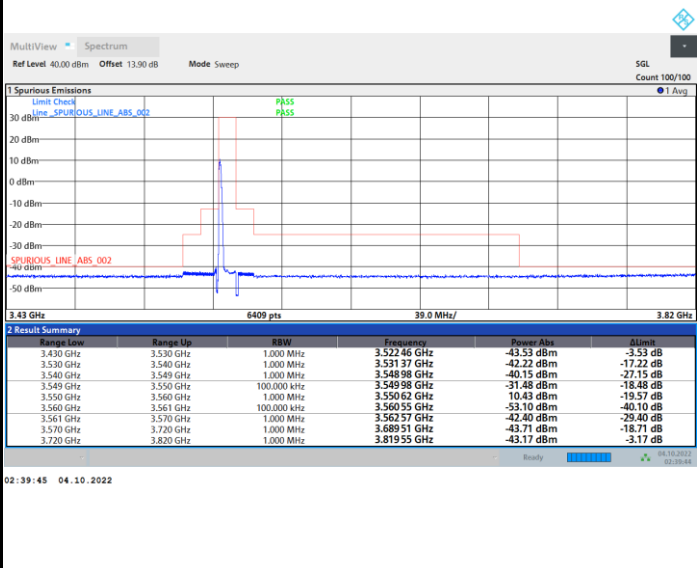


FR1 n48 / 10MHz / CP OFDM / 256QAM

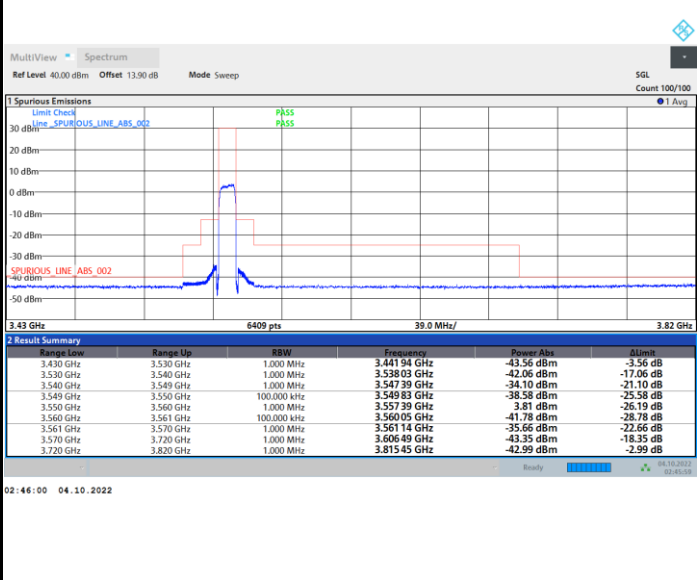
Lowest Channel

1RB0

1RBmax



Full RB



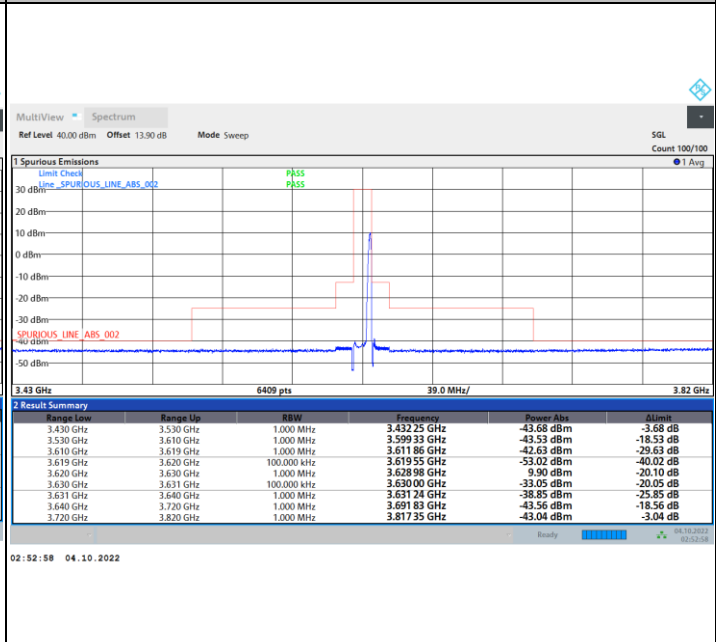
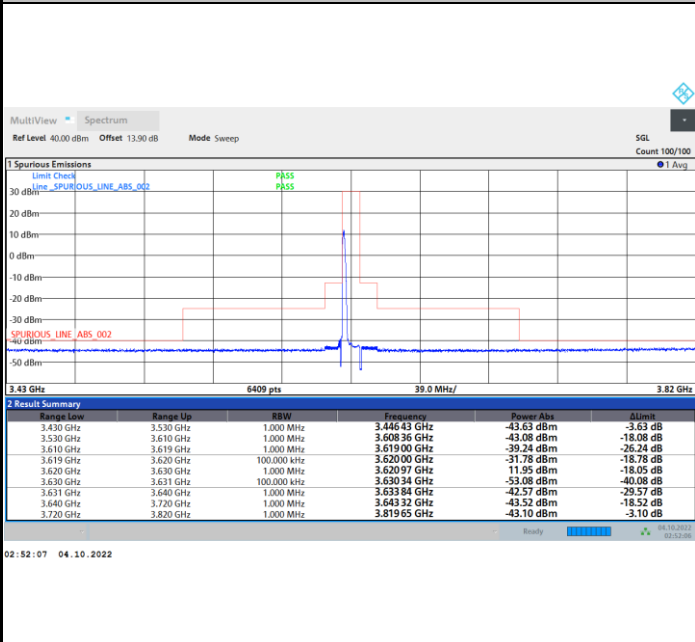


FR1 n48 / 10MHz / CP OFDM / 256QAM

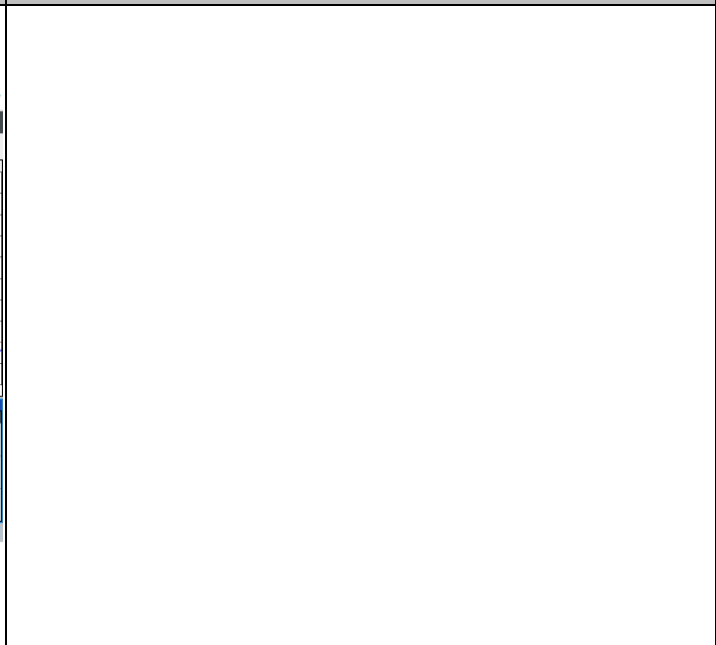
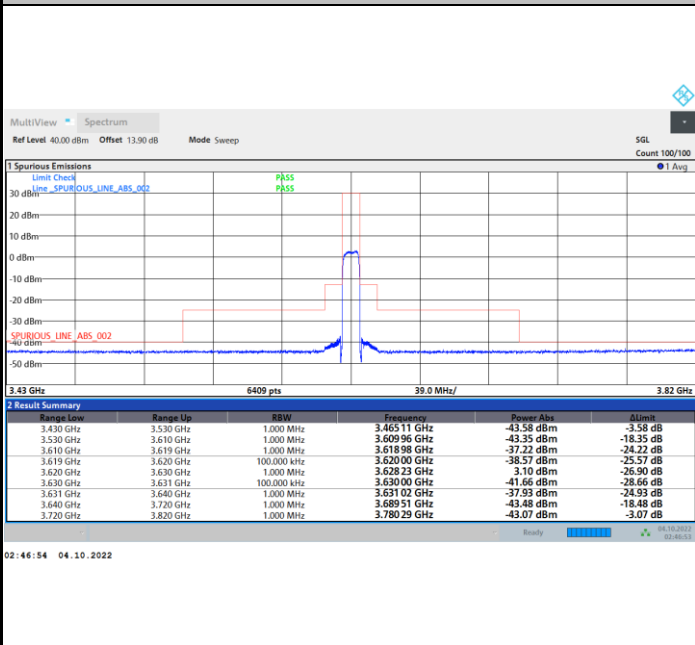
Middle Channel

1RB0

1RBmax



Full RB



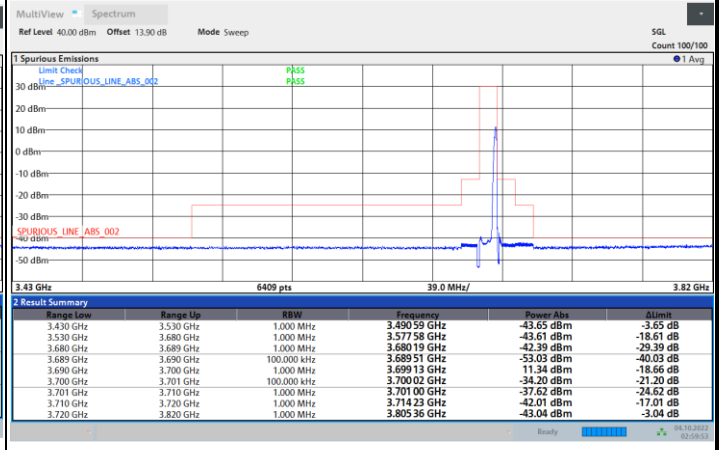
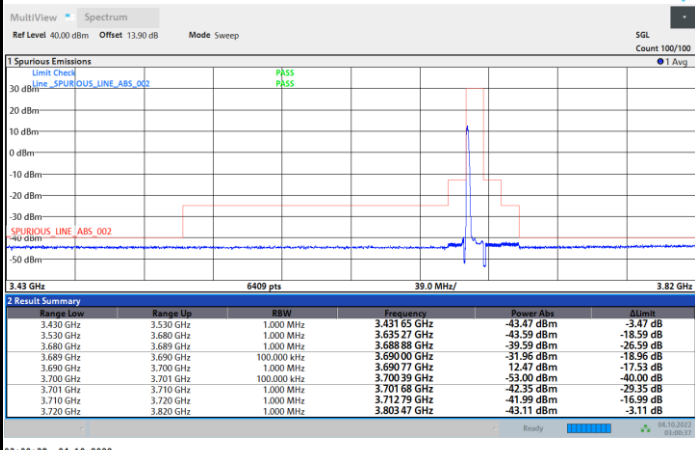


FR1 n48 / 10MHz / CP OFDM / 256QAM

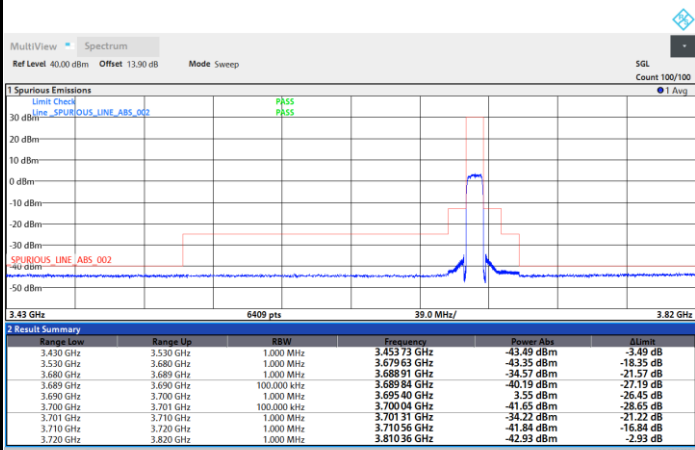
Highest Channel

1RB0

1RBmax



Full RB

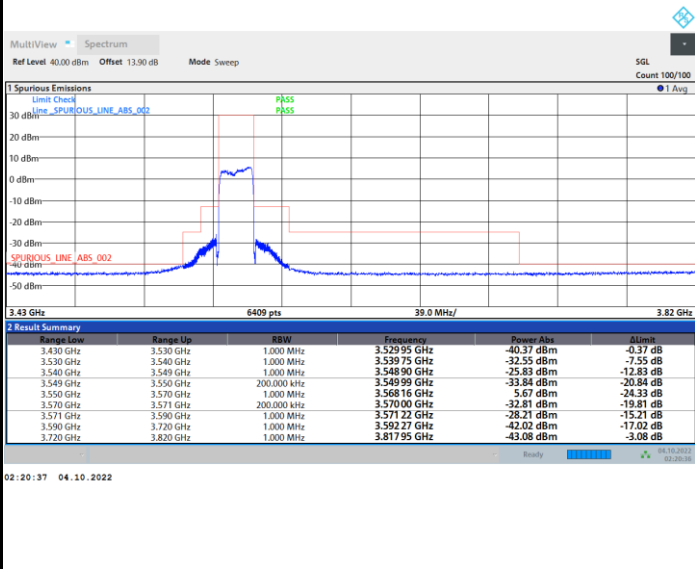




FR1 n48 / 20MHz / CP OFDM / QPSK

Lowest Channel

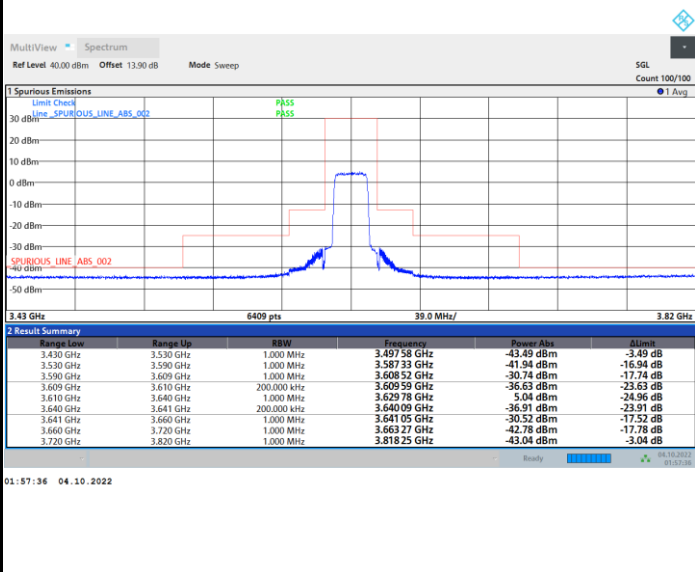
Full RB



FR1 n48 / 20MHz / CP OFDM / QPSK

Middle Channel

Full RB

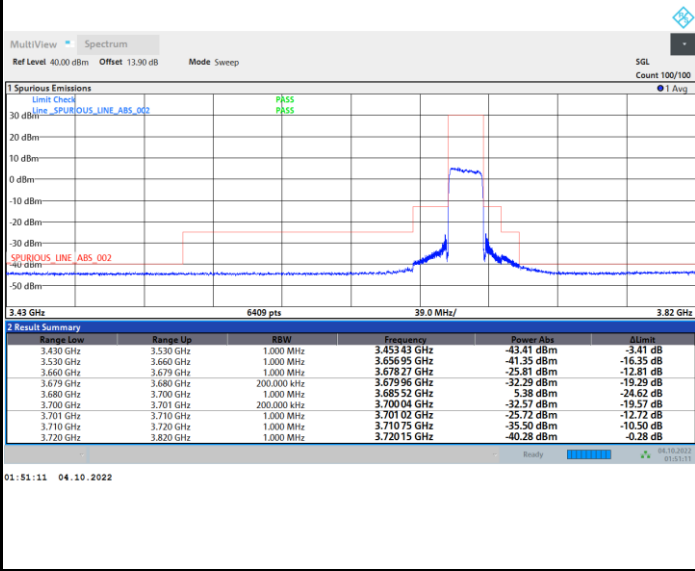




FR1 n48 / 20MHz / CP OFDM / QPSK

Highest Channel

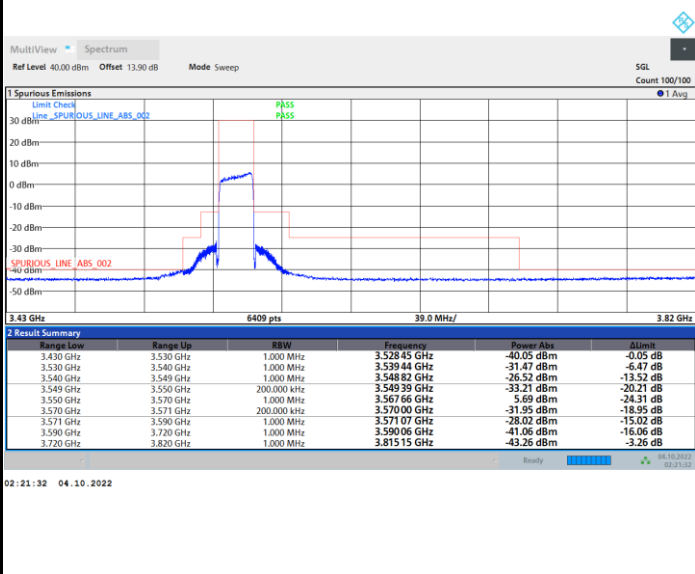
Full RB



FR1 n48 / 20MHz / CP OFDM / 16QAM

Lowest Channel

Full RB

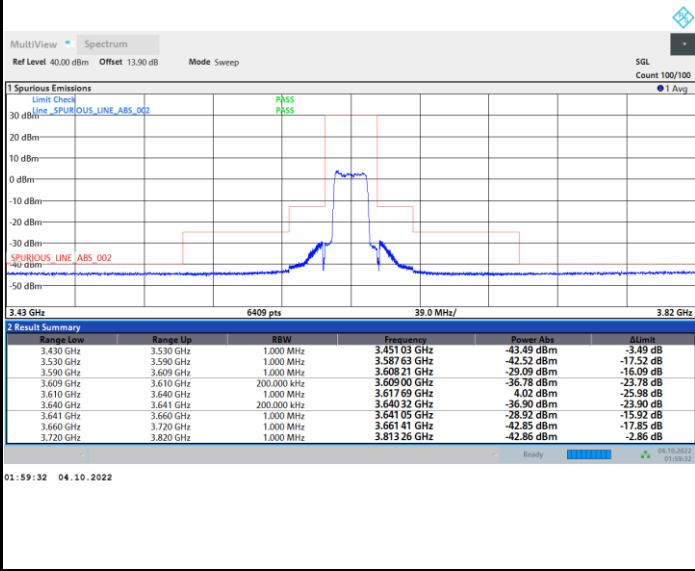




FR1 n48 / 20MHz / CP OFDM / 16QAM

Middle Channel

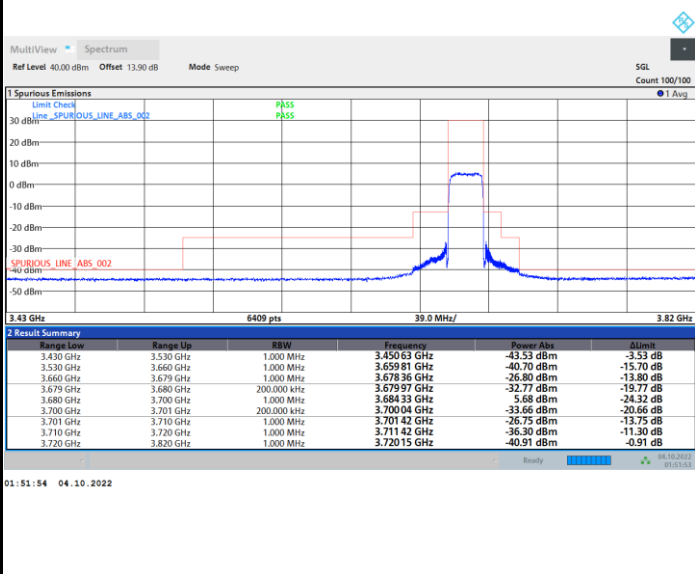
Full RB



FR1 n48 / 20MHz / CP OFDM / 16QAM

Highest Channel

Full RB

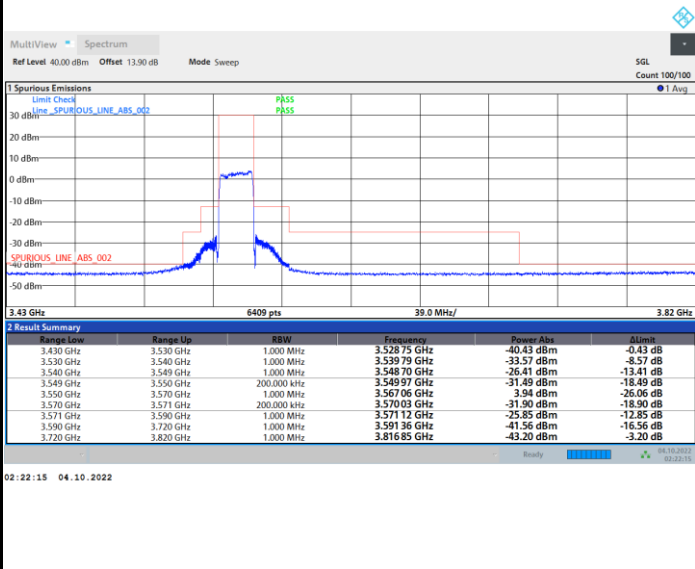




FR1 n48 / 20MHz / CP OFDM / 64QAM

Lowest Channel

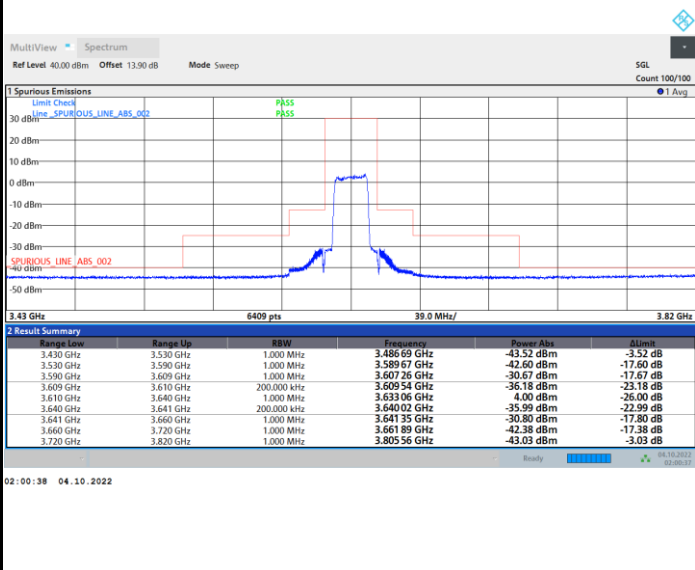
Full RB



FR1 n48 / 20MHz / CP OFDM / 64QAM

Middle Channel

Full RB

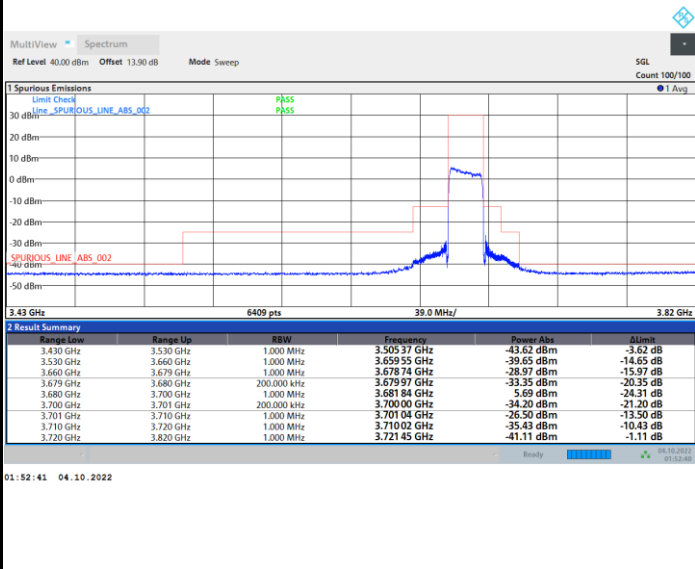




FR1 n48 / 20MHz / CP OFDM / 64QAM

Highest Channel

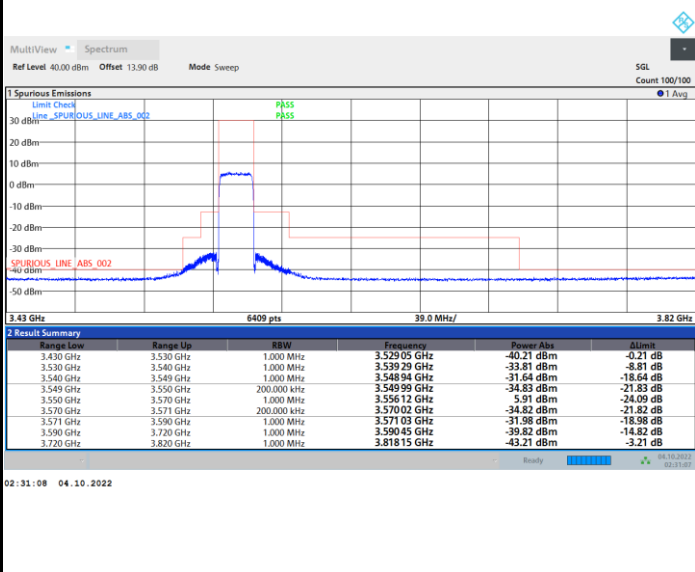
Full RB



FR1 n48 / 20MHz / CP OFDM / 256QAM

Lowest Channel

Full RB

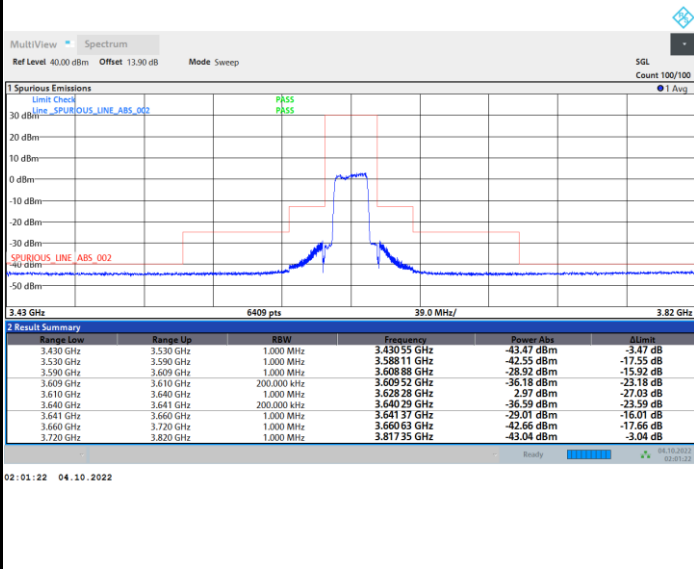




FR1 n48 / 20MHz / CP OFDM / 256QAM

Middle Channel

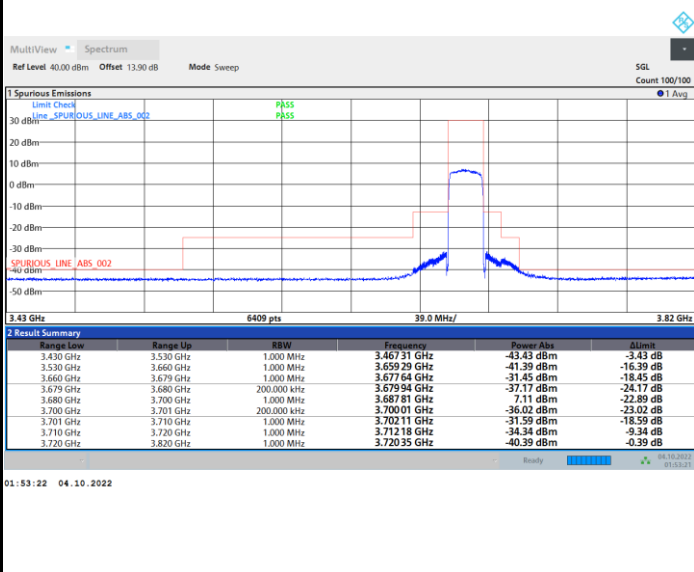
Full RB



FR1 n48 / 20MHz / CP OFDM / 256QAM

Highest Channel

Full RB





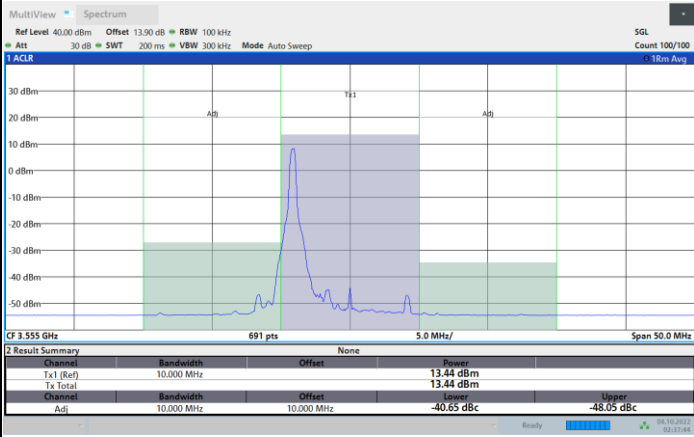
Adjacent Channel Leakage Ratio (ACLR)

FR1 n48 / 10MHz / CP OFDM / QPSK

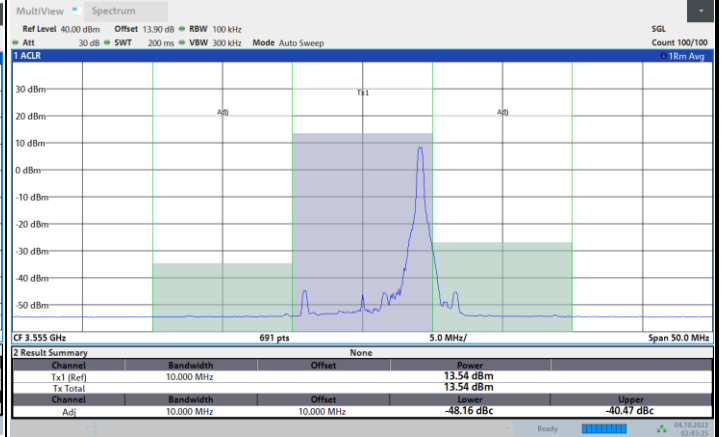
Lowest Channel

1RB0

1RBmax

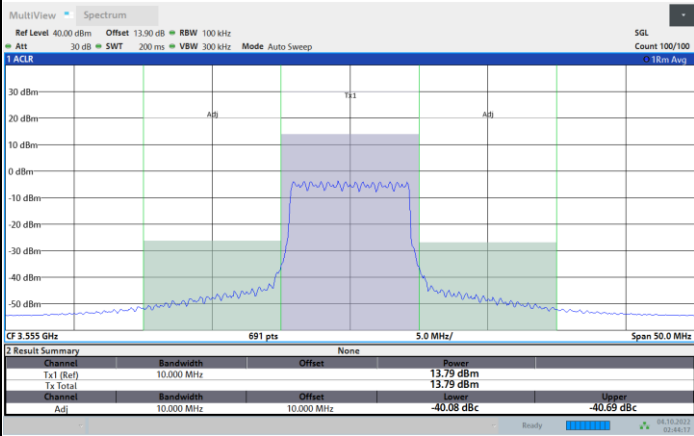


02:37:44 04.10.2022



02:43:26 04.10.2022

Full RB



02:44:17 04.10.2022

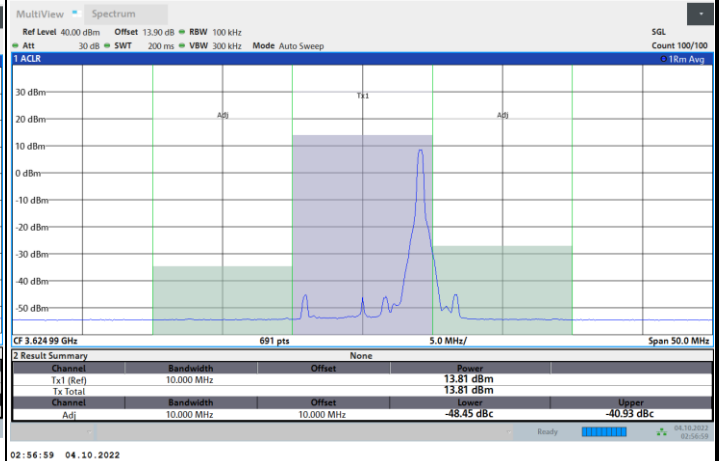
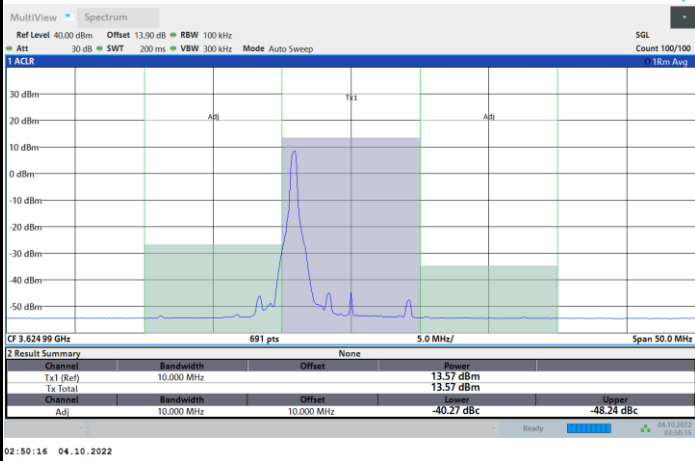


FR1 n48 / 10MHz / CP OFDM / QPSK

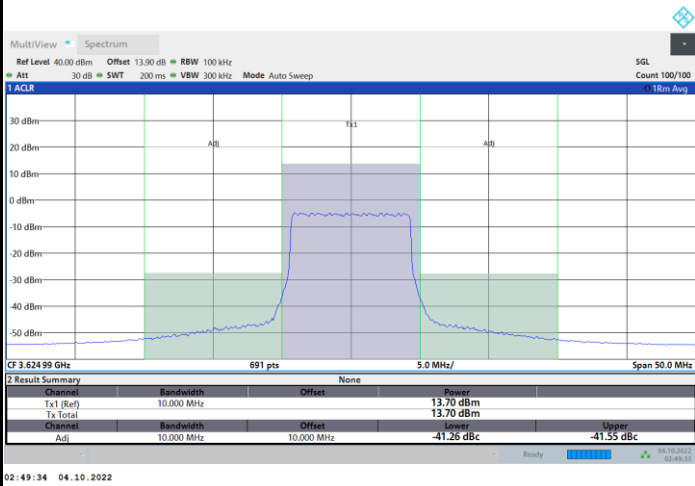
Middle Channel

1RB0

1RBmax



Full RB



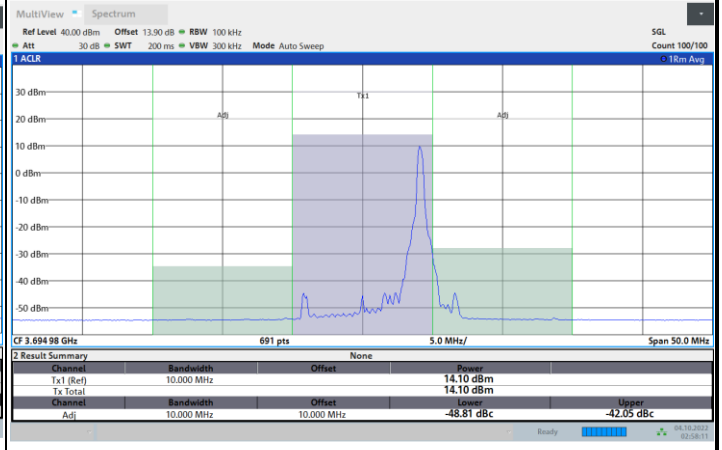
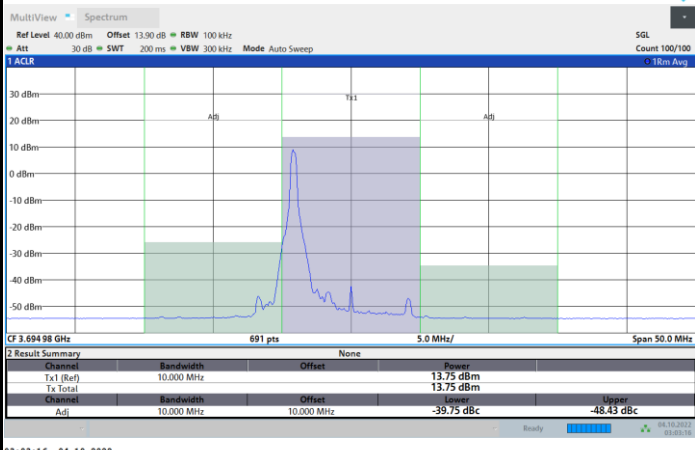


FR1 n48 / 10MHz / CP OFDM / QPSK

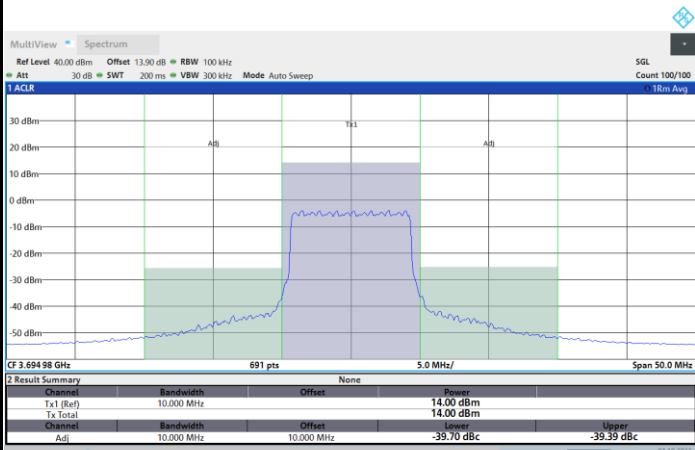
Highest Channel

1RB0

1RBmax



Full RB



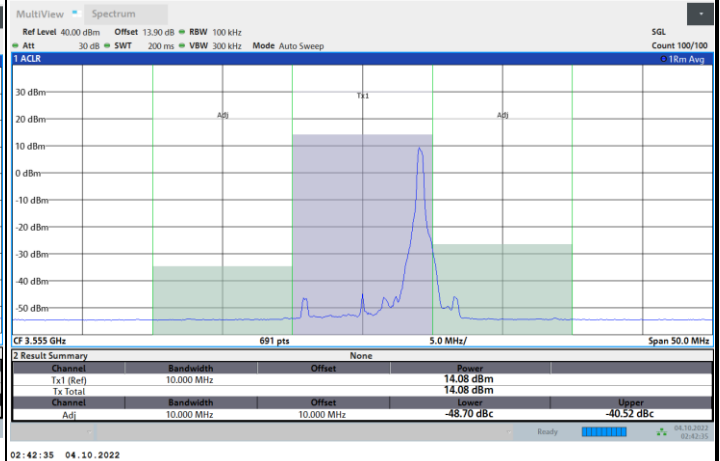
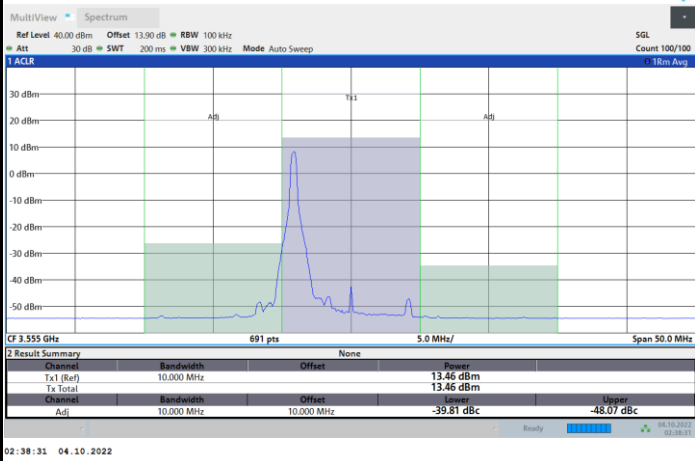


FR1 n48 / 10MHz / CP OFDM / 16QAM

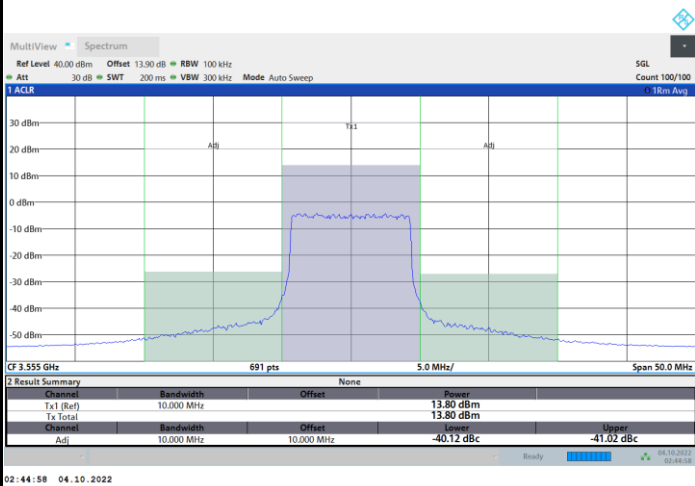
Lowest Channel

1RB0

1RBmax



Full RB



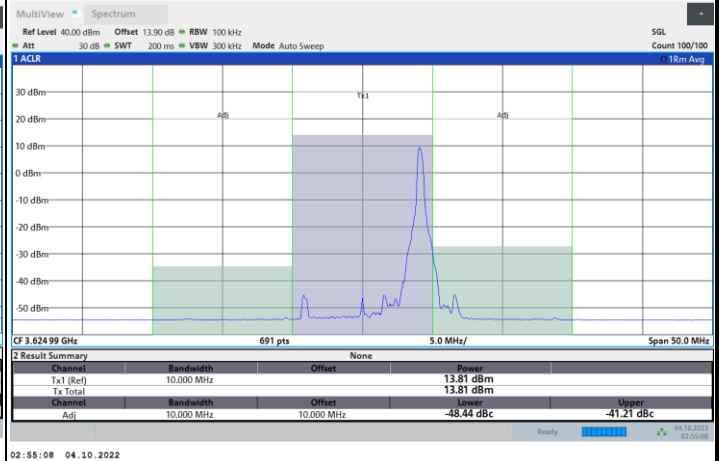


FR1 n48 / 10MHz / CP OFDM / 16QAM

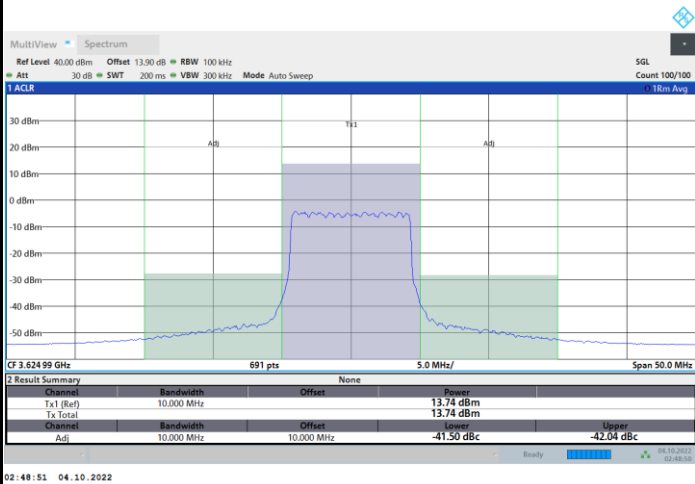
Middle Channel

1RB0

1RBmax



Full RB



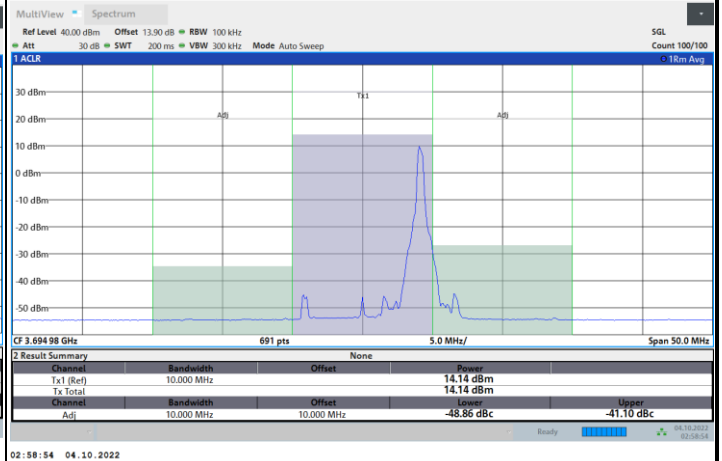
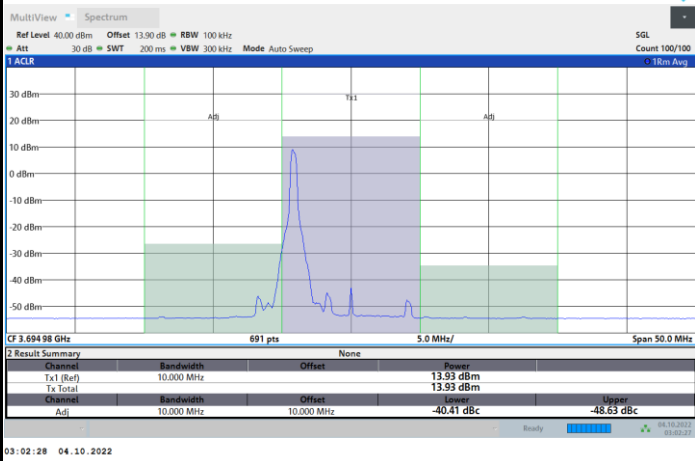


FR1 n48 / 10MHz / CP OFDM / 16QAM

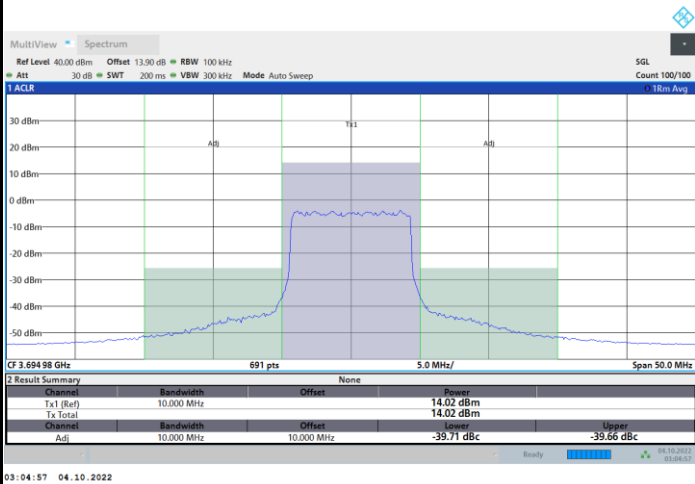
Highest Channel

1RB0

1RBmax



Full RB



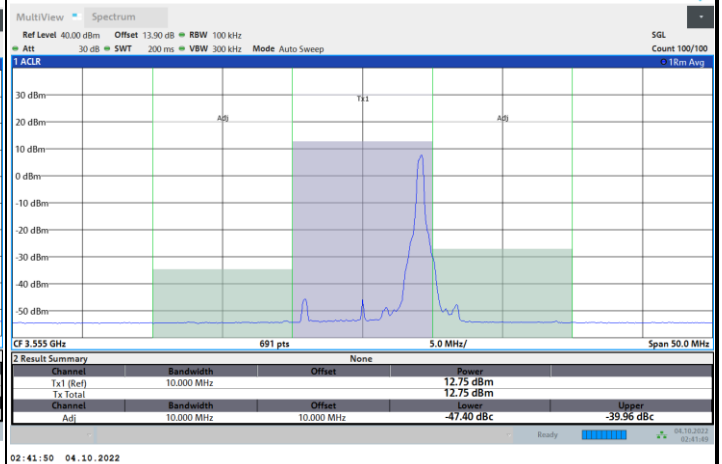
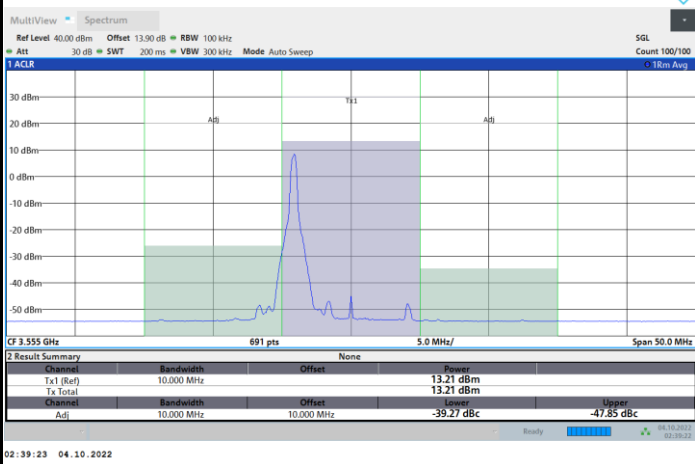


FR1 n48 / 10MHz / CP OFDM / 64QAM

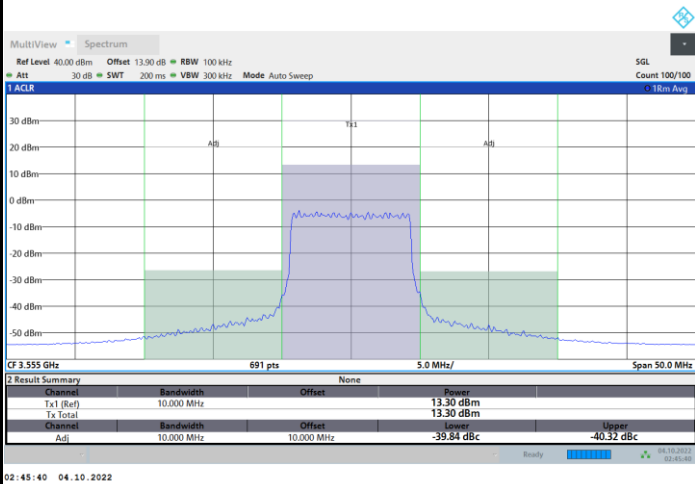
Lowest Channel

1RB0

1RBmax



Full RB



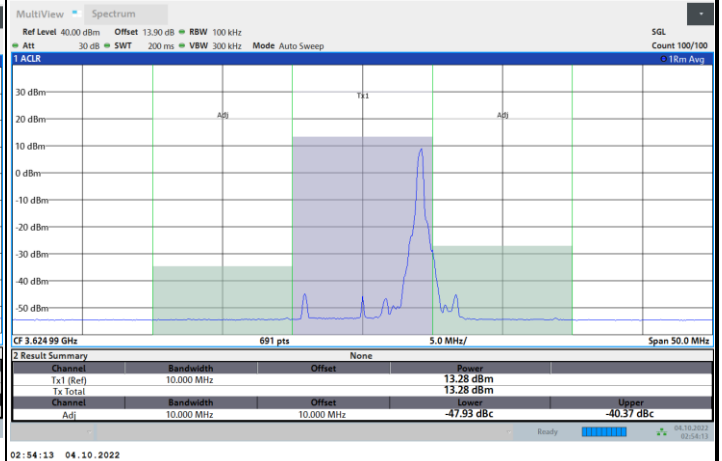


FR1 n48 / 10MHz / CP OFDM / 64QAM

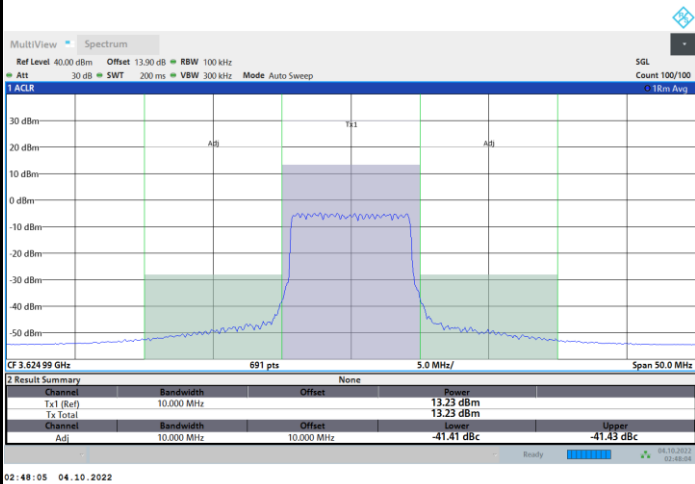
Middle Channel

1RB0

1RBmax



Full RB



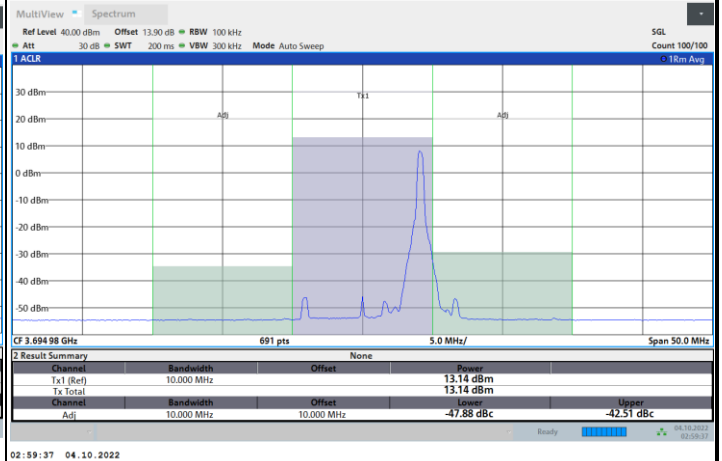
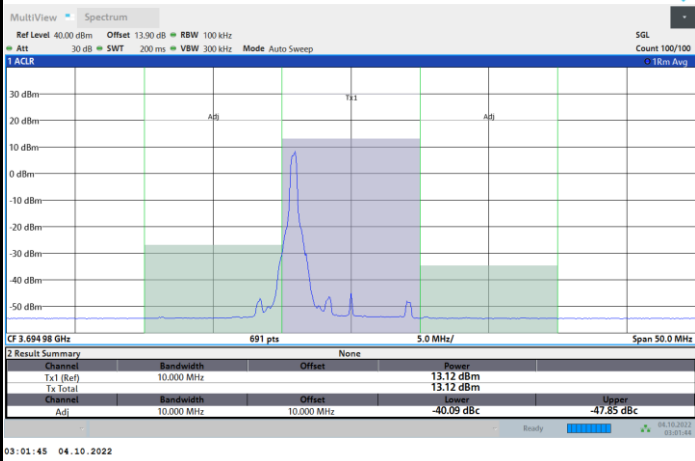


FR1 n48 / 10MHz / CP OFDM / 64QAM

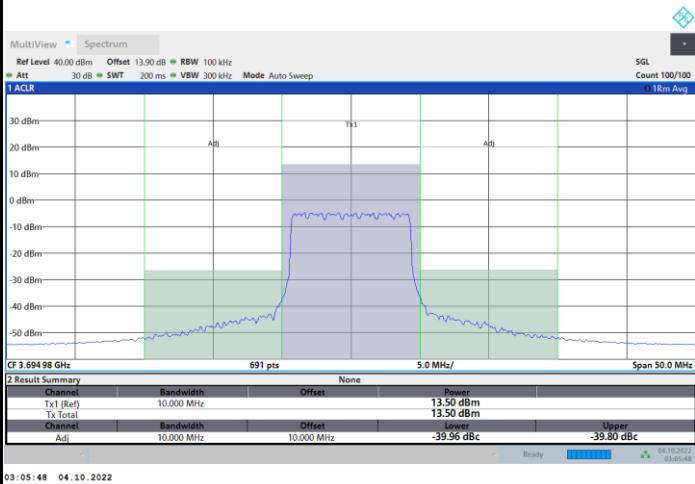
Highest Channel

1RB0

1RBmax



Full RB



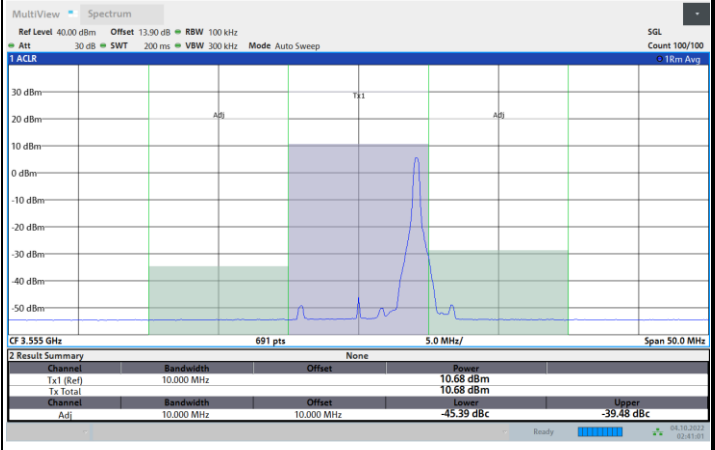
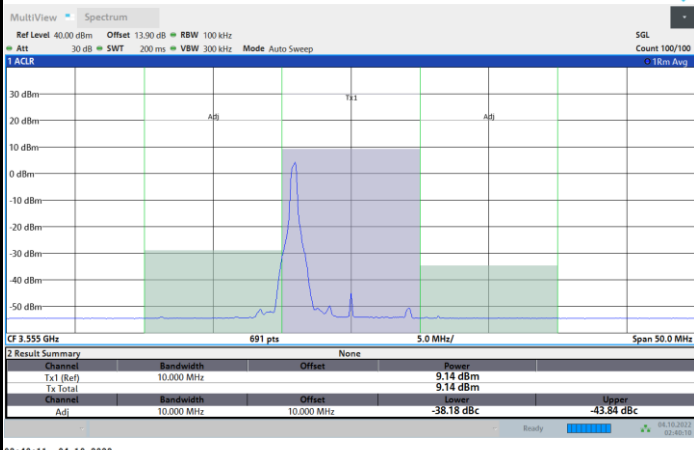


FR1 n48 / 10MHz / CP OFDM / 256QAM

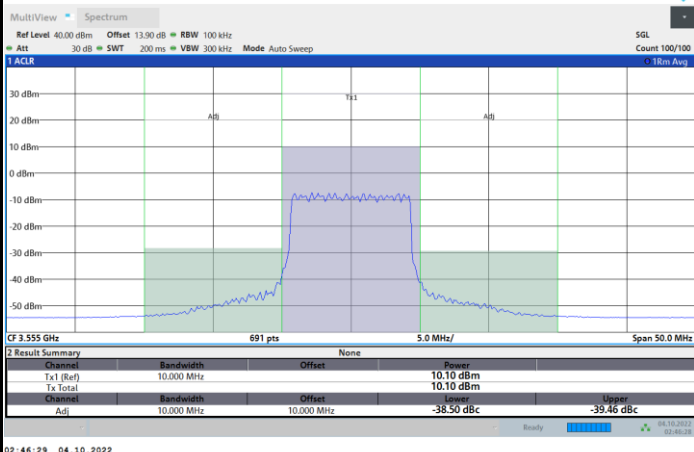
Lowest Channel

1RB0

1RBmax



Full RB



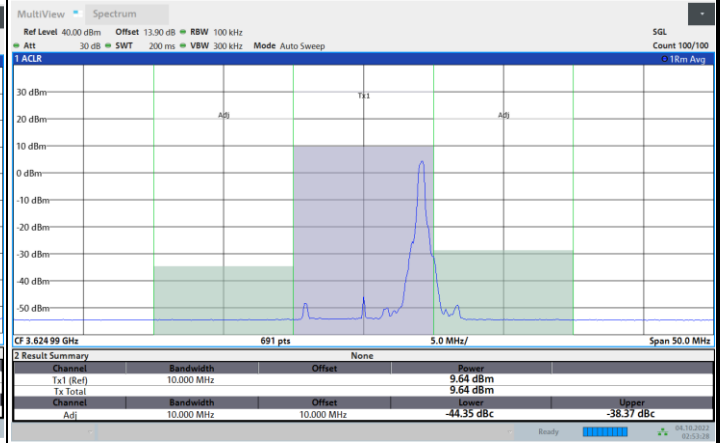
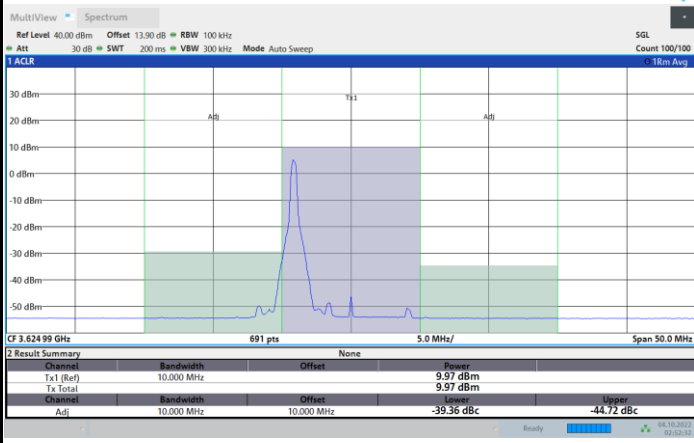


FR1 n48 / 10MHz / CP OFDM / 256QAM

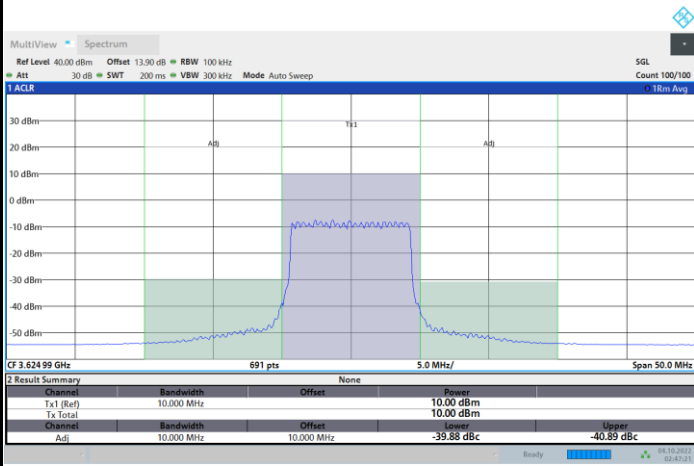
Middle Channel

1RB0

1RBmax



Full RB



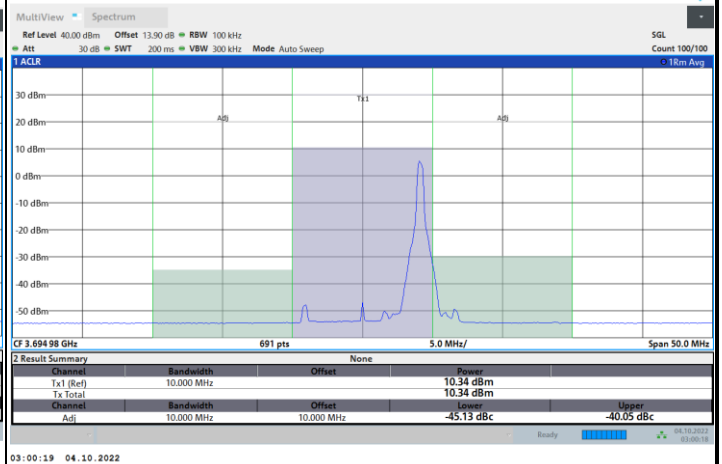
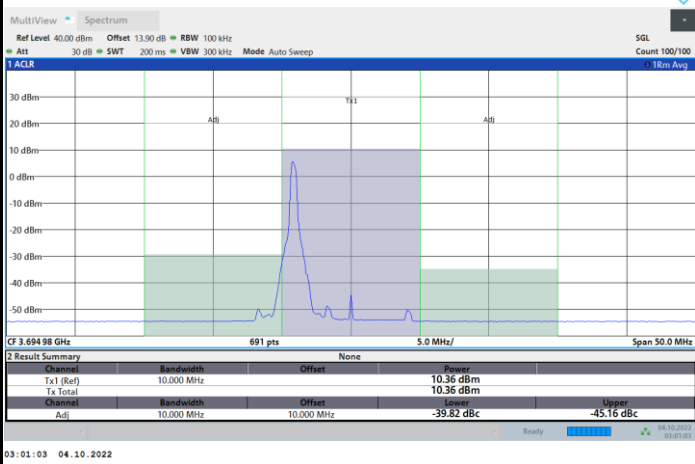


FR1 n48 / 10MHz / CP OFDM / 256QAM

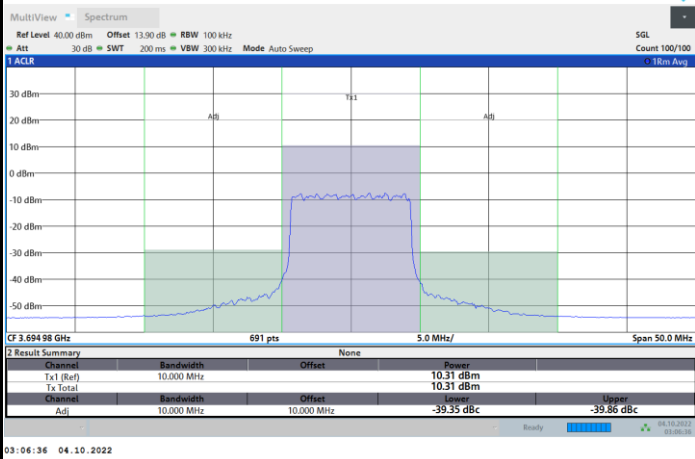
Highest Channel

1RB0

1RBmax



Full RB

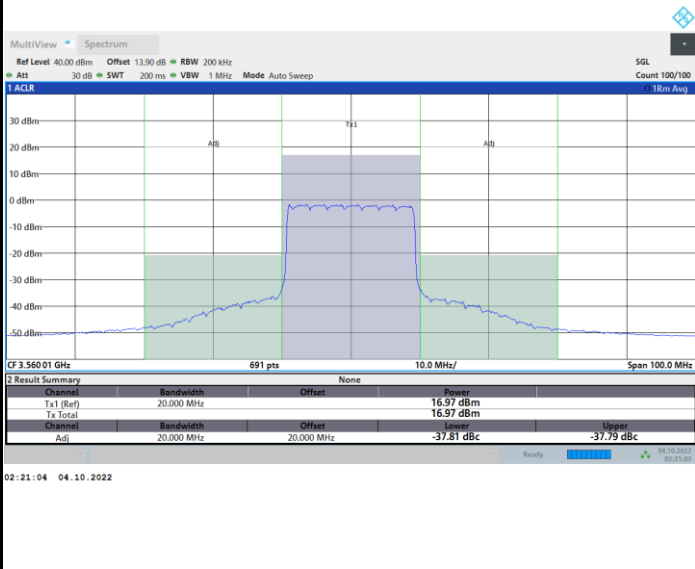




FR1 n48 / 20MHz / CP OFDM / QPSK

Lowest Channel

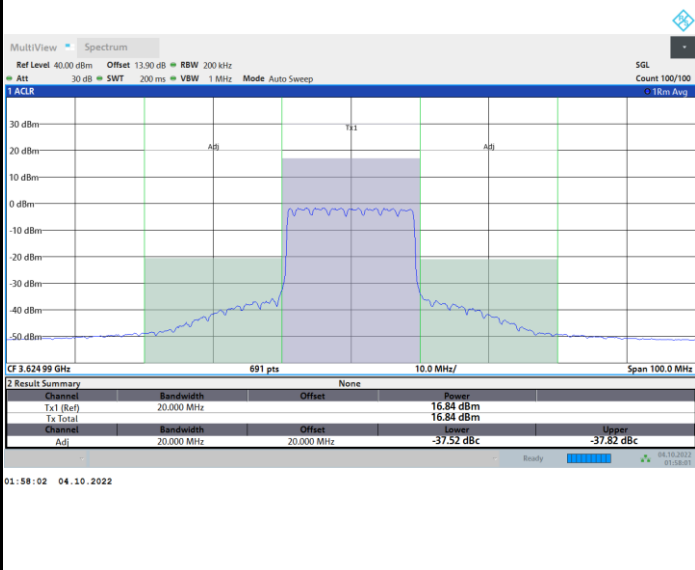
Full RB



FR1 n48 / 20MHz / CP OFDM / QPSK

Middle Channel

Full RB

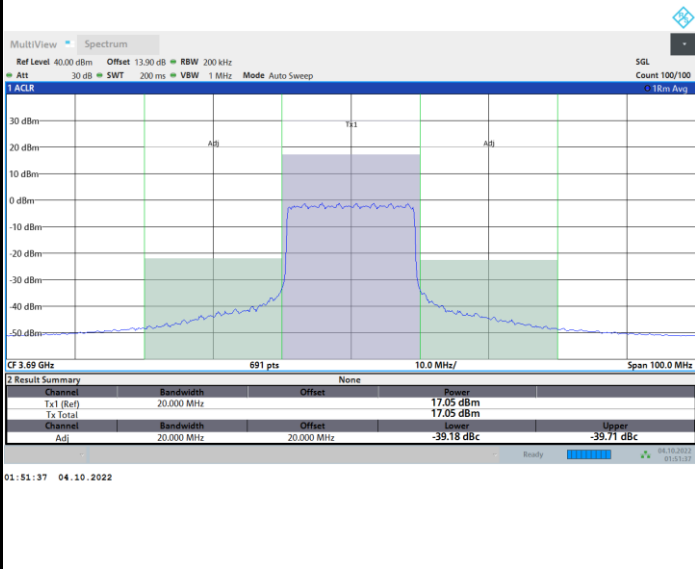




FR1 n48 / 20MHz / CP OFDM / QPSK

Highest Channel

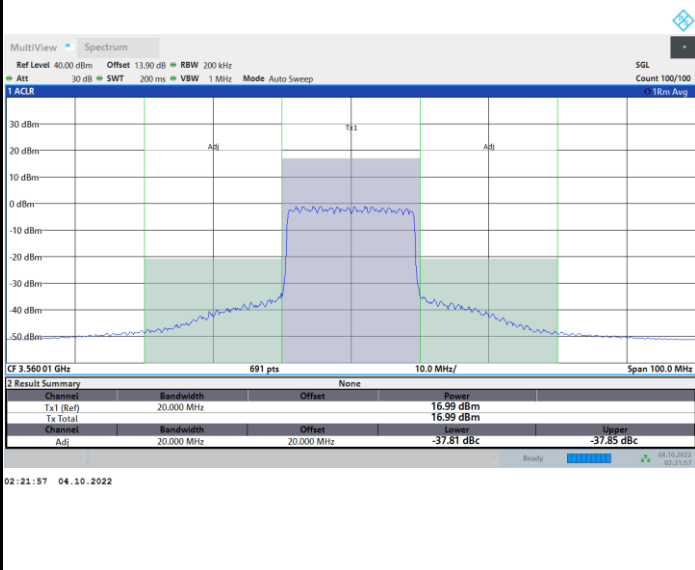
Full RB



FR1 n48 / 20MHz / CP OFDM / 16QAM

Lowest Channel

Full RB

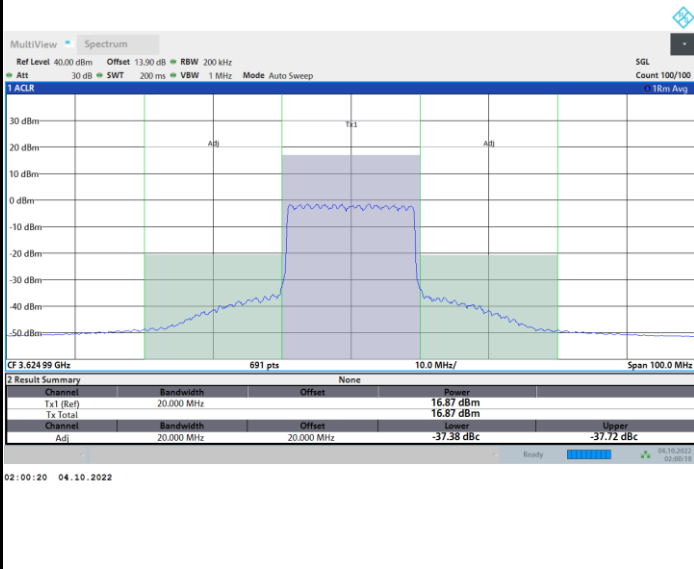




FR1 n48 / 20MHz / CP OFDM / 16QAM

Middle Channel

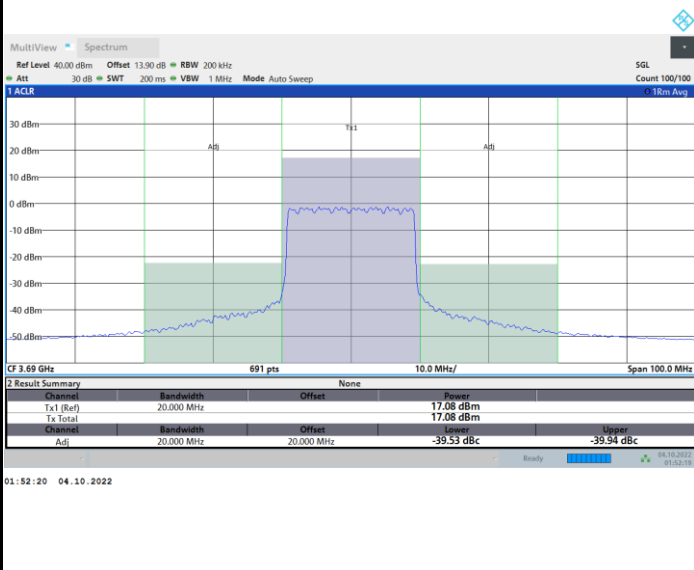
Full RB



FR1 n48 / 20MHz / CP OFDM / 16QAM

Highest Channel

Full RB

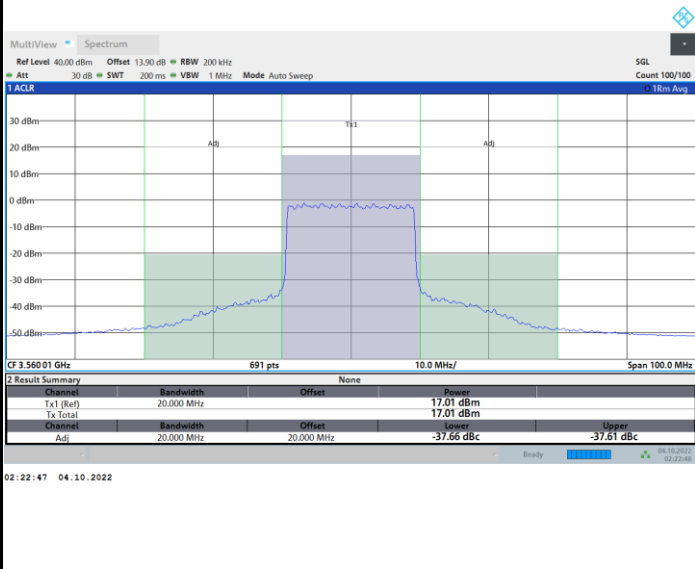




FR1 n48 / 20MHz / CP OFDM / 64QAM

Lowest Channel

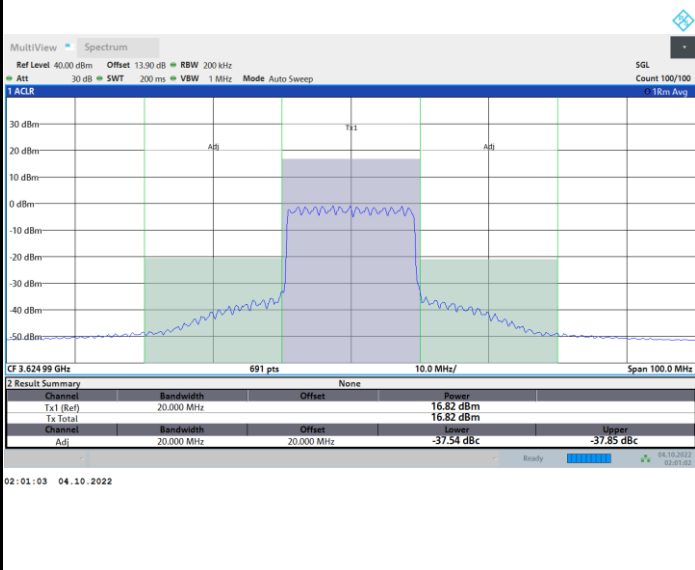
Full RB



FR1 n48 / 20MHz / CP OFDM / 64QAM

Middle Channel

Full RB

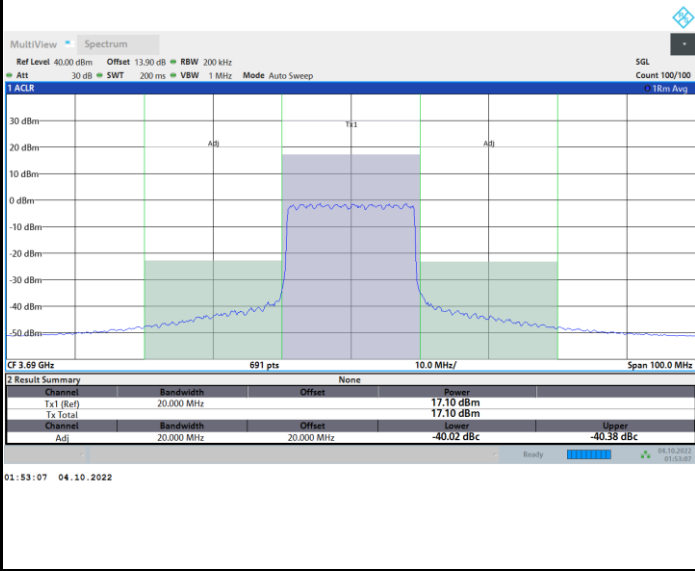




FR1 n48 / 20MHz / CP OFDM / 64QAM

Highest Channel

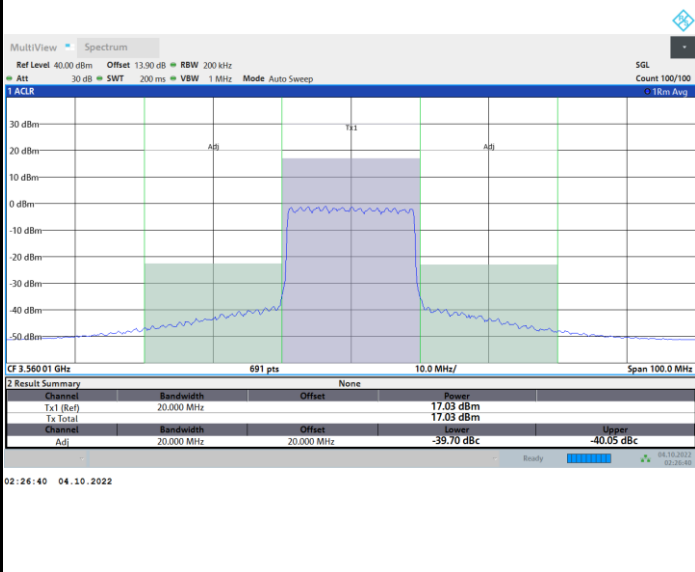
Full RB



FR1 n48 / 20MHz / CP OFDM / 256QAM

Lowest Channel

Full RB

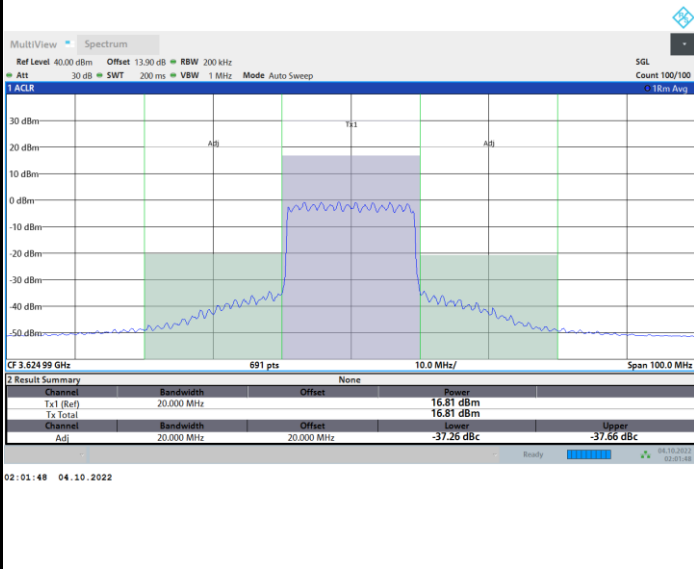




FR1 n48 / 20MHz / CP OFDM / 256QAM

Middle Channel

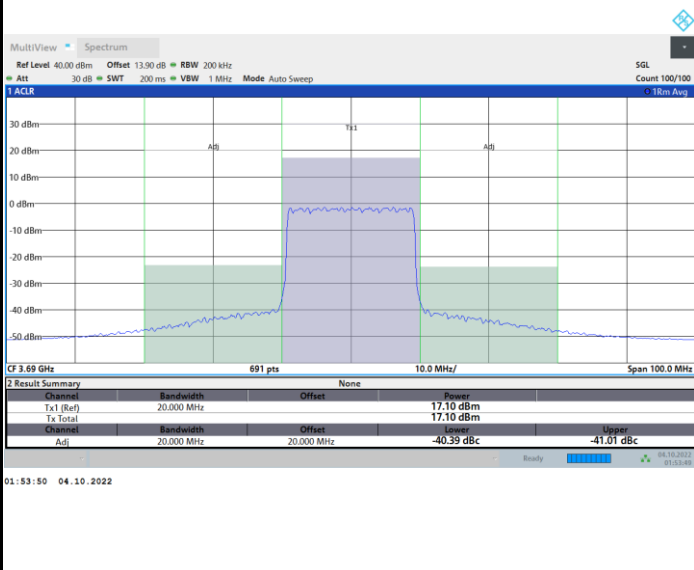
Full RB



FR1 n48 / 20MHz / CP OFDM / 256QAM

Highest Channel

Full RB



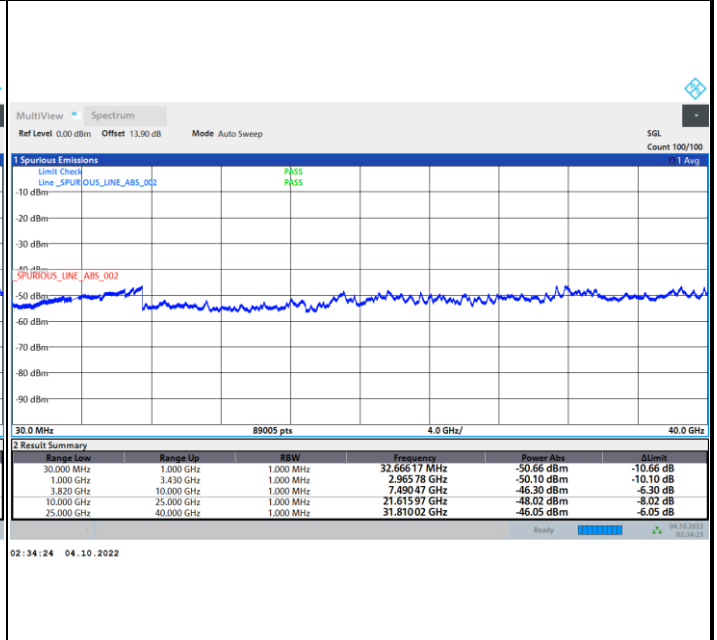
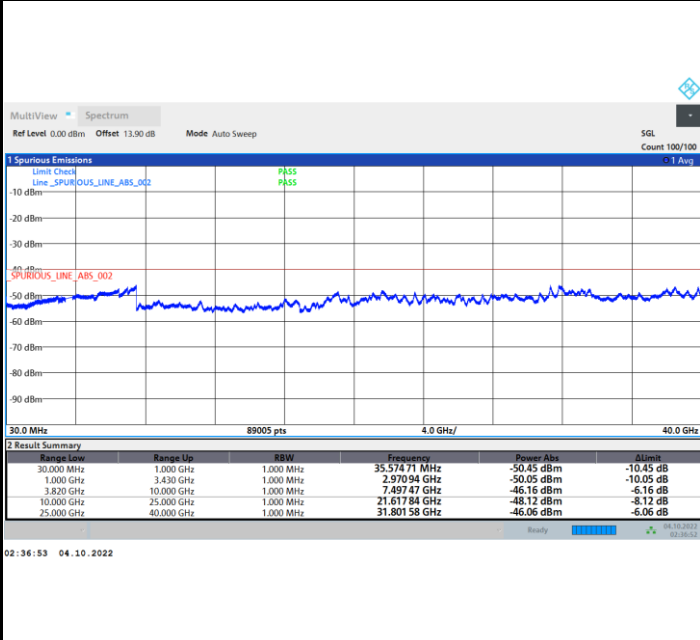


Conducted Spurious Emission

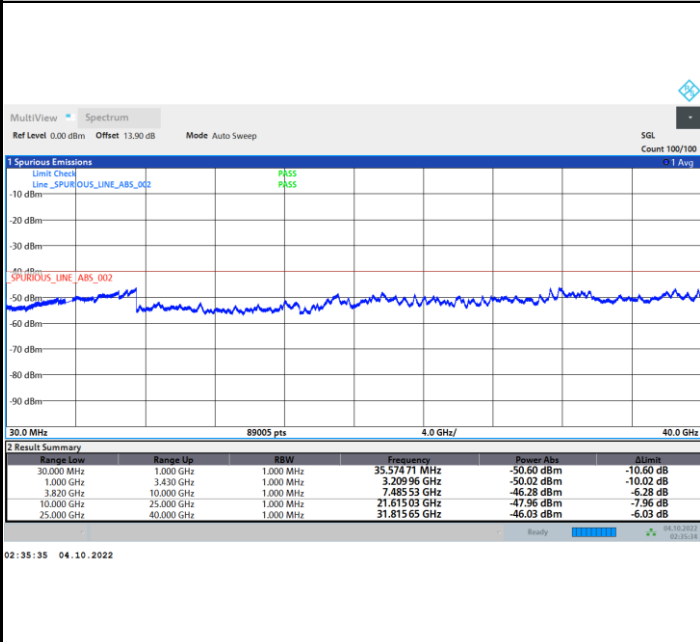
FR1 n48 / 10MHz / CP OFDM / QPSK / 1RB1

Lowest Channel

Middle Channel



Highest Channel

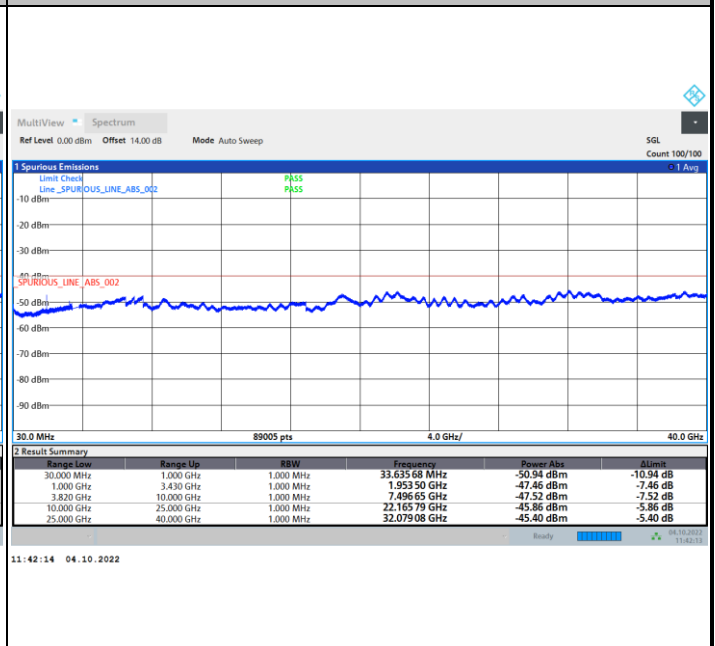
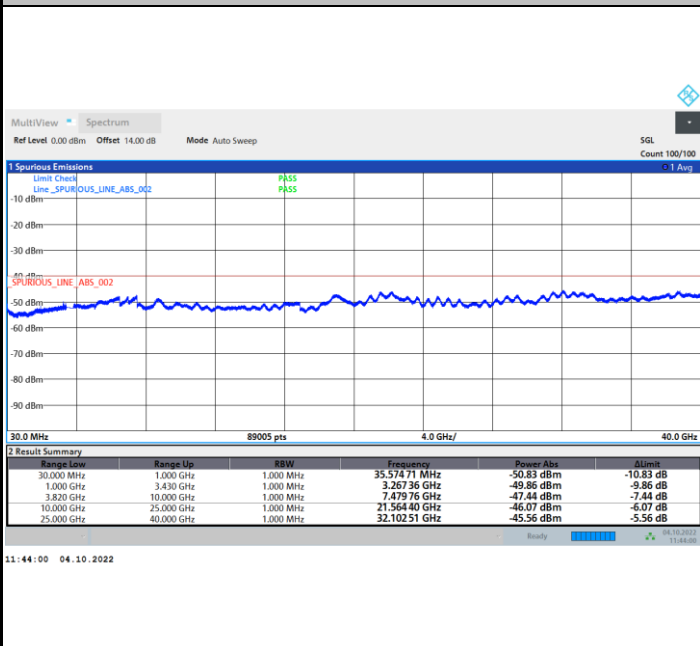




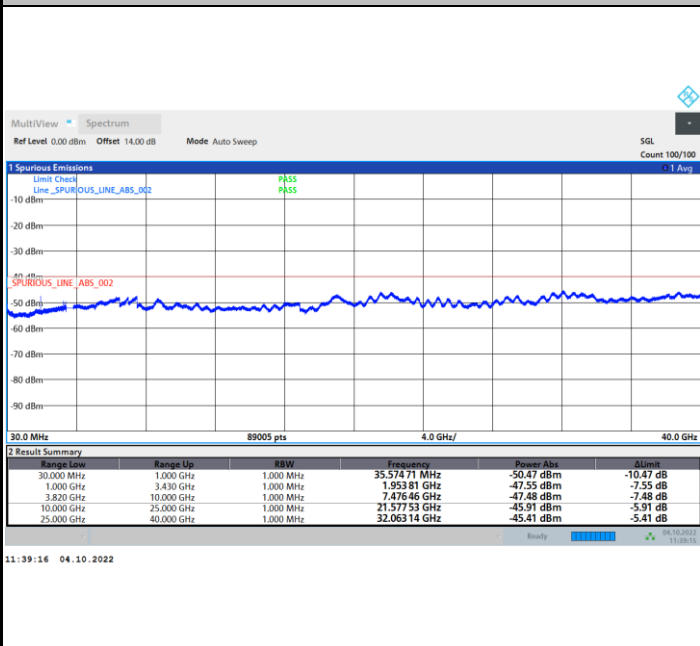
FR1 n48 / 20MHz / CP OFDM / QPSK / 1RB1

Lowest Channel

Middle Channel



Highest Channel





Frequency Stability

Test Conditions		FR1 n48 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 20MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0042	PASS
40	Normal Voltage	0.0039	
30	Normal Voltage	0.0002	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0001	
0	Normal Voltage	0.0044	
-10	Normal Voltage	0.0007	
-20	Normal Voltage	0.0038	
-30	Normal Voltage	0.0022	
20	Maximum Voltage	0.0037	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0002	

Note:

1. Normal Voltage = 3.85 V. ; Battery End Point (BEP) = 3.3 V. ; Maximum Voltage = 4.25 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



Appendix B. Test Results of Radiated Test

<Ant. 4>

5G NR n48

5G NR n48 / 10MHz / 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	7101	-49.79	-40	-9.79	-47.91	-59.50	1.84	11.55	H
	10655	-51.27	-40	-11.27	-53.88	-59.74	2.23	10.71	H
	14205	-48.92	-40	-8.92	-57.65	-58.55	2.65	12.28	H
	21303	-63.01	-40	-23.01	-77.38	-77.85	3.32	18.16	H
	24854	-55.82	-40	-15.82	-74.1	-70.59	3.71	18.49	H
	28404	-56.24	-40	-16.24	-76.75	-71.71	3.99	19.46	H
									H
	7101	-52.90	-40	-12.90	-51.26	-62.61	1.84	11.55	V
	10655	-49.34	-40	-9.34	-51.54	-57.81	2.23	10.71	V
	14205	-49.27	-40	-9.27	-57.88	-58.90	2.65	12.28	V
	21303	-63.39	-40	-23.39	-77.44	-78.23	3.32	18.16	V
	24854	-53.10	-40	-13.10	-71.06	-67.87	3.71	18.49	V
28404	-56.43	-40	-16.43	-76.52	-71.90	3.99	19.46	V	
Middle	7241	-51.90	-40	-11.90	-50.4	-61.36	1.86	11.32	H
	10862	-52.31	-40	-12.31	-55.33	-60.68	2.21	10.58	H
	14480	-48.75	-40	-8.75	-57.74	-58.24	2.62	12.11	H
	18102	-53.10	-40	-13.10	-64.61	-67.47	3.23	17.60	H
	21723	-62.13	-40	-22.13	-77.32	-77.32	3.43	18.62	H
	25344	-55.05	-40	-15.05	-73.37	-70.08	3.78	18.81	H
									H
	7241	-53.37	-40	-13.37	-52.2	-62.83	1.86	11.32	V
	10862	-50.74	-40	-10.74	-53.54	-59.11	2.21	10.58	V
	14480	-49.24	-40	-9.24	-58.71	-58.73	2.62	12.11	V
	18102	-56.57	-40	-16.57	-67.78	-70.94	3.23	17.60	V
	21723	-62.18	-40	-22.18	-77.03	-77.37	3.43	18.62	V
25344	-56.01	-40	-16.01	-74.05	-71.04	3.78	18.81	V	



Highest	7380	-46.53	-40	-6.53	-45.36	-55.99	1.93	11.39	H
	11075	-49.36	-40	-9.36	-52.86	-57.72	2.23	10.59	H
	14760	-48.93	-40	-8.93	-58.02	-59.01	2.59	12.67	H
	18452	-62.45	-40	-22.45	-74.29	-76.81	3.24	17.60	H
	22143	-58.99	-40	-18.99	-74.64	-74.34	3.52	18.87	H
	25834	-55.43	-40	-15.43	-74.16	-70.60	3.90	19.07	H
									H
	7380	-49.63	-40	-9.63	-48.59	-59.09	1.93	11.39	V
	11075	-46.76	-40	-6.76	-50.2	-55.12	2.23	10.59	V
	14760	-47.85	-40	-7.85	-57.97	-57.93	2.59	12.67	V
	18452	-60.15	-40	-20.15	-71.76	-74.51	3.24	17.60	V
	22143	-58.50	-40	-18.50	-73.76	-73.85	3.52	18.87	V
	25834	-54.90	-40	-14.90	-73.33	-70.07	3.90	19.07	V
									V

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



MIMO <Ant. 4+6>

5G NR n48 MIMO

5G NR n48 MIMO / 10MHz / QPSK									
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	7101	-55.53	-40	-15.53	-53.66	-65.24	1.84	11.55	H
	10655	-53.70	-40	-13.70	-56.3	-62.17	2.23	10.71	H
	14205	-48.94	-40	-8.94	-57.67	-58.57	2.65	12.28	H
	21303	-63.19	-40	-23.19	-77.56	-78.03	3.32	18.16	H
	24854	-52.28	-40	-12.28	-70.56	-67.05	3.71	18.49	H
	28404	-56.47	-40	-16.47	-76.98	-71.94	3.99	19.46	H
									H
	7101	-53.50	-40	-13.50	-51.87	-63.21	1.84	11.55	V
	10655	-54.03	-40	-14.03	-56.22	-62.50	2.23	10.71	V
	14205	-48.96	-40	-8.96	-57.56	-58.59	2.65	12.28	V
	21303	-62.95	-40	-22.95	-77	-77.79	3.32	18.16	V
	24854	-51.59	-40	-11.59	-69.55	-66.36	3.71	18.49	V
	28404	-54.43	-40	-14.43	-74.53	-69.90	3.99	19.46	V
									V
Middle	7241	-48.72	-40	-8.72	-47.22	-58.18	1.86	11.32	H
	10862	-52.46	-40	-12.46	-55.48	-60.83	2.21	10.58	H
	14480	-48.60	-40	-8.60	-57.59	-58.09	2.62	12.11	H
	18102	-60.67	-40	-20.67	-72.17	-75.04	3.23	17.60	H
	21723	-61.75	-40	-21.75	-76.94	-76.94	3.43	18.62	H
	25344	-45.29	-40	-5.29	-63.61	-60.32	3.78	18.81	H
									H
	7241	-51.79	-40	-11.79	-50.62	-61.25	1.86	11.32	V
	10862	-51.94	-40	-11.94	-54.74	-60.31	2.21	10.58	V
	14480	-48.02	-40	-8.02	-57.49	-57.51	2.62	12.11	V
	18102	-59.95	-40	-19.95	-71.16	-74.32	3.23	17.60	V
	21723	-62.12	-40	-22.12	-76.97	-77.31	3.43	18.62	V
	25344	-52.63	-40	-12.63	-70.67	-67.66	3.78	18.81	V



Highest	7380	-48.91	-40	-8.91	-47.75	-58.37	1.93	11.39	H
	11075	-50.47	-40	-10.47	-53.96	-58.83	2.23	10.59	H
	14760	-48.64	-40	-8.64	-57.74	-58.72	2.59	12.67	H
	18452	-61.57	-40	-21.57	-73.41	-75.93	3.24	17.60	H
	22143	-61.80	-40	-21.80	-77.44	-77.15	3.52	18.87	H
	25834	-52.84	-40	-12.84	-71.57	-68.01	3.90	19.07	H
									H
	7380	-47.85	-40	-7.85	-46.82	-57.31	1.93	11.39	V
	11075	-51.58	-40	-11.58	-55.01	-59.94	2.23	10.59	V
	14760	-46.86	-40	-6.86	-56.99	-56.94	2.59	12.67	V
	18452	-63.01	-40	-23.01	-74.62	-77.37	3.24	17.60	V
	22143	-60.58	-40	-20.58	-75.84	-75.93	3.52	18.87	V
	25834	-56.64	-40	-16.64	-75.07	-71.81	3.90	19.07	V
									V

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

Appendix C. Setup Photographs

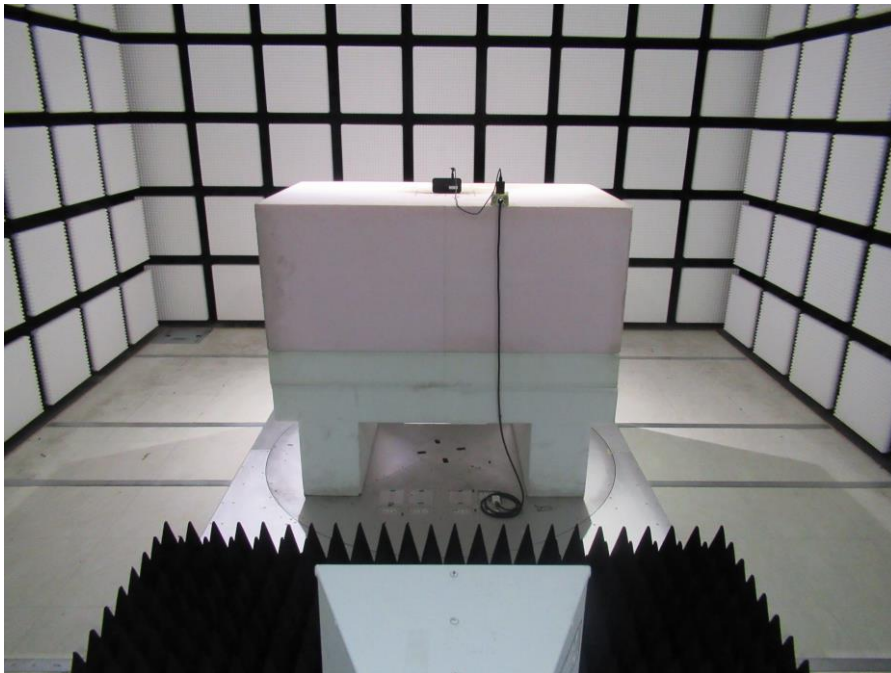
<Radiated Emission>

Y Plane

LF

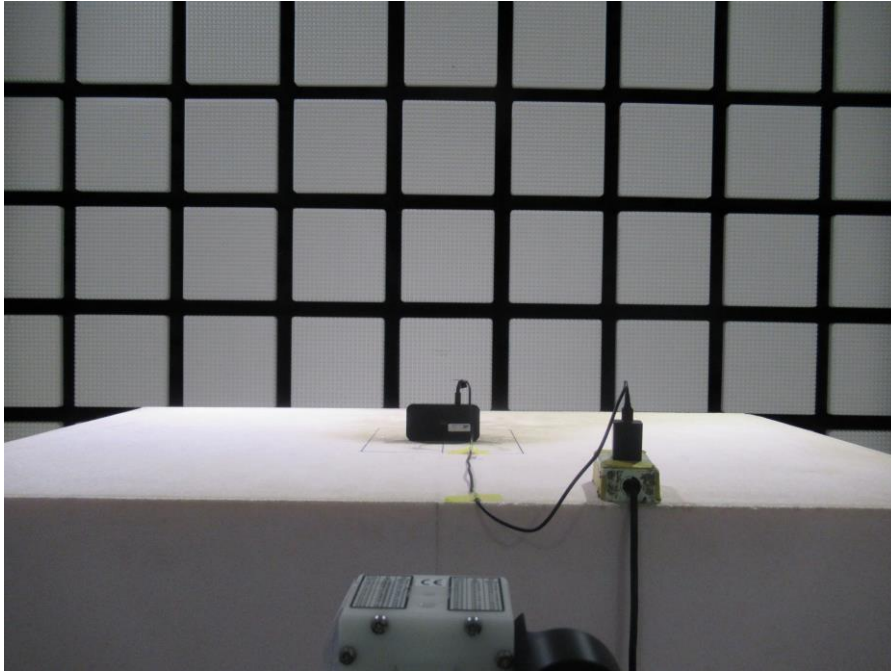


HF





SHF

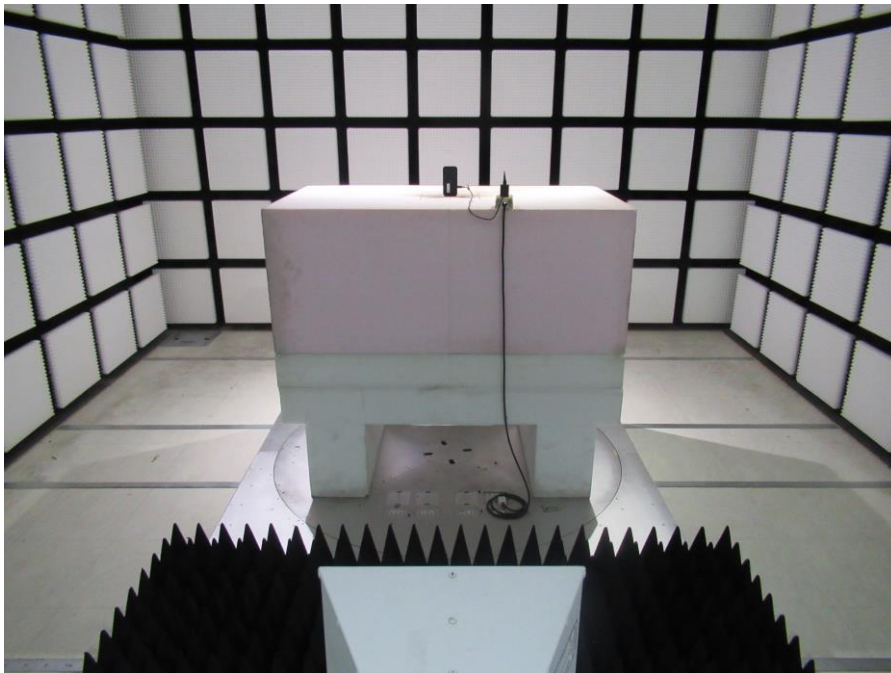


Z Plane

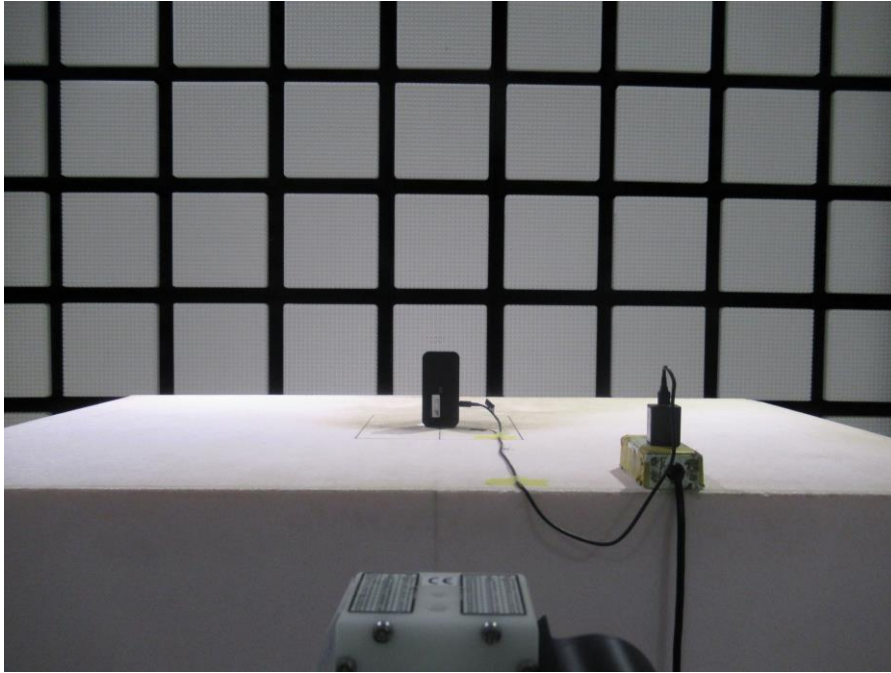
LF



HF



SHF



————THE END————