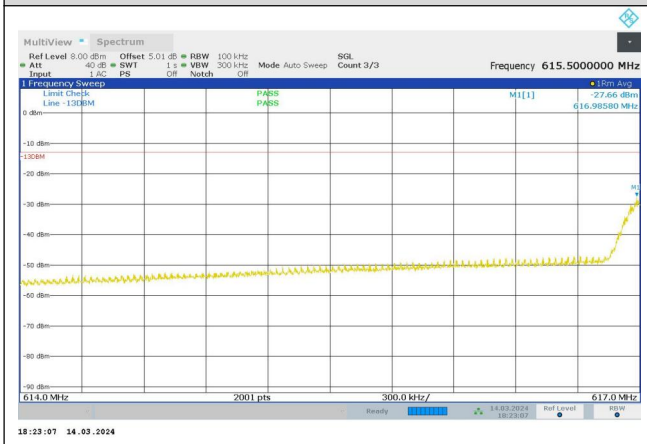
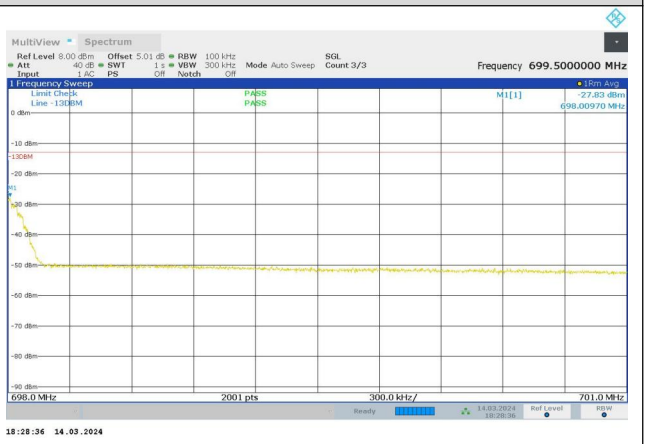
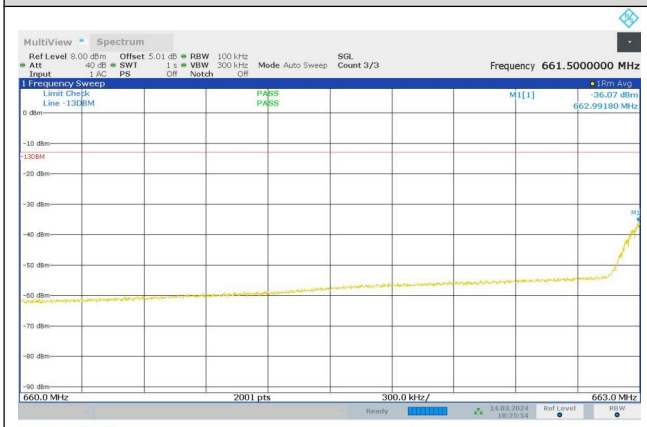
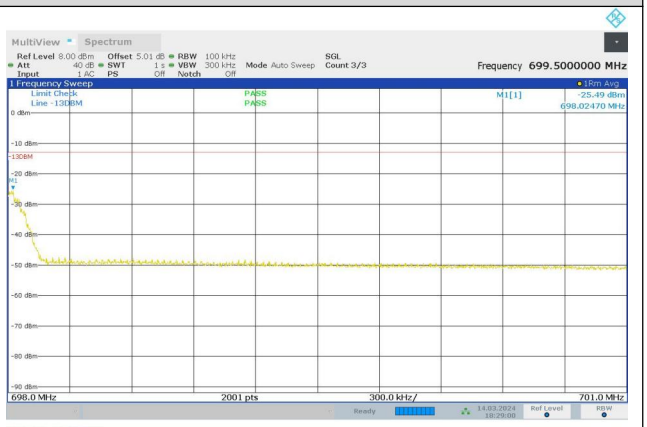
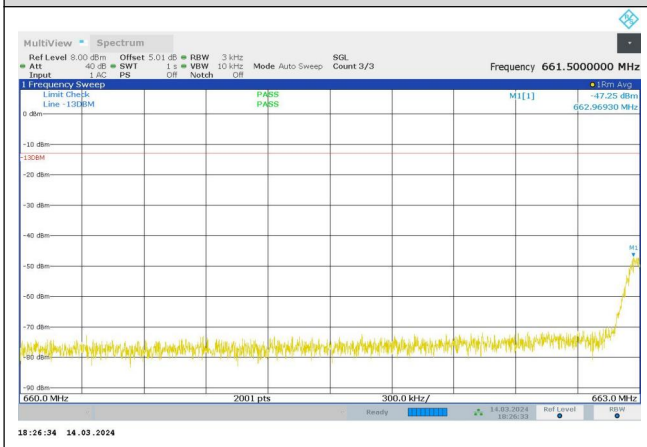
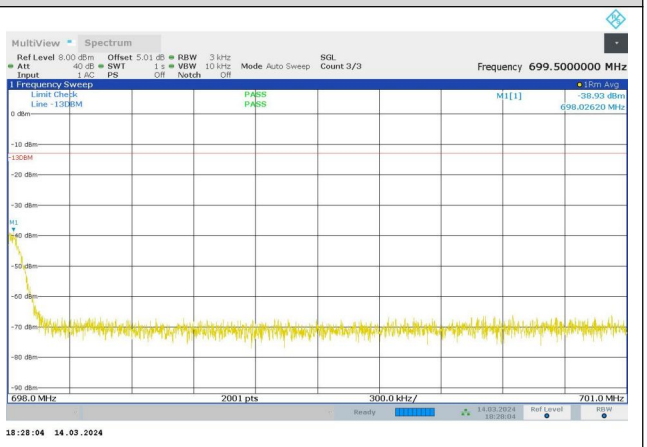
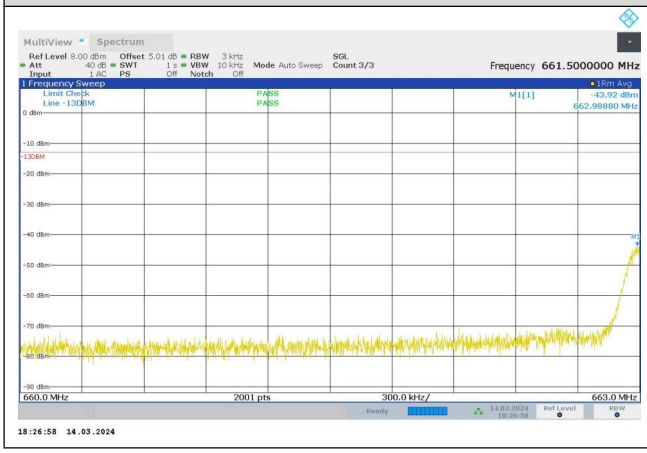
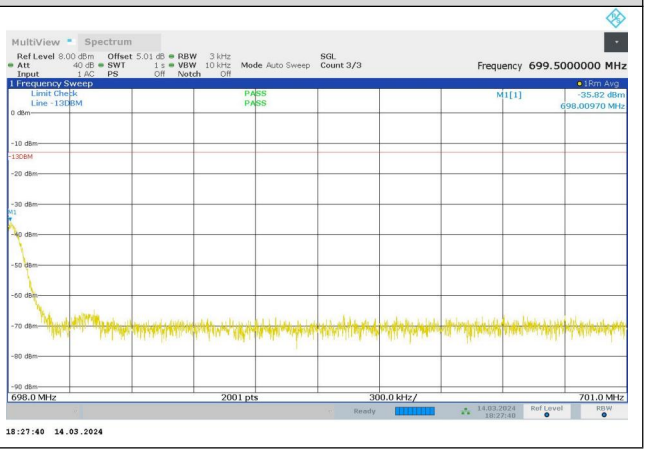
3.4.4 Test results

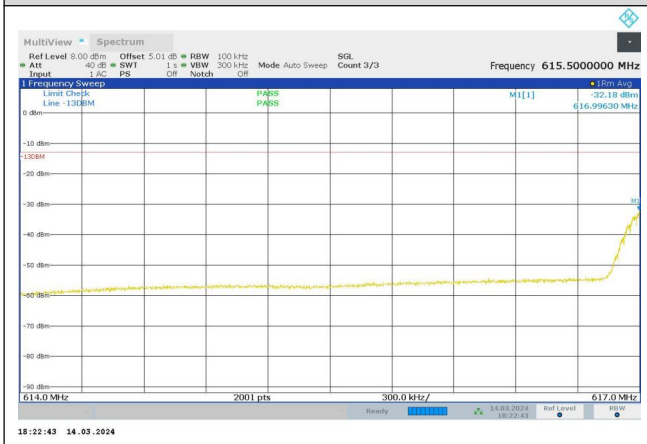
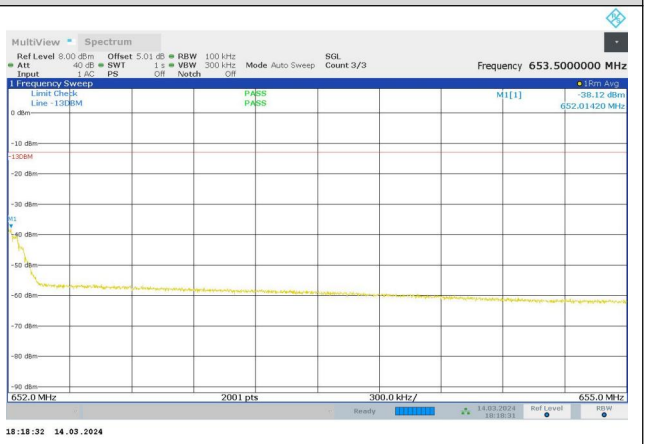
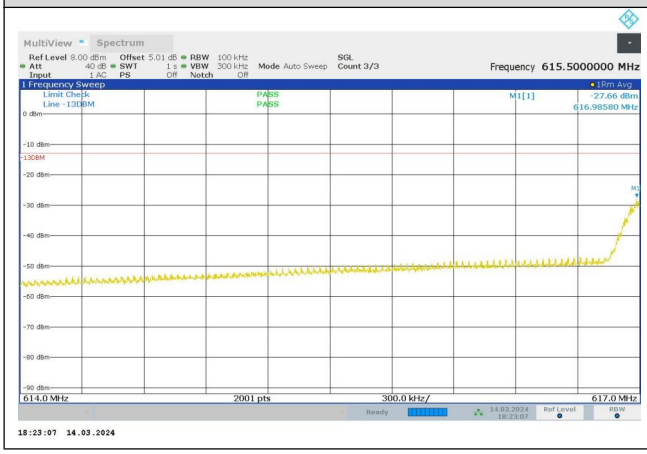
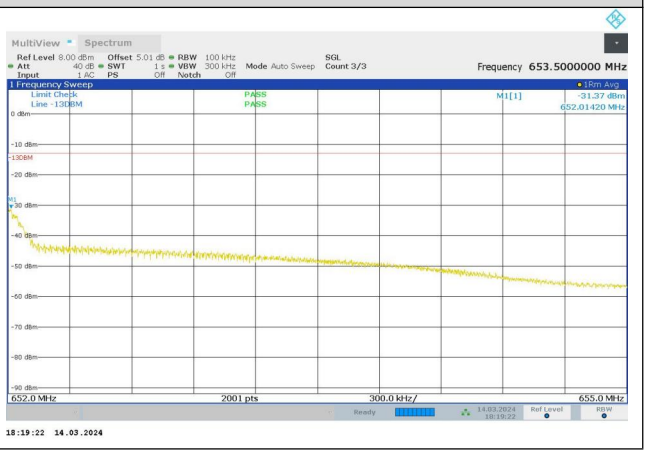
600 MHz Service

600 MHz Service-UL-AWGN-Pre AGC-LOW	600 MHz Service-UL-AWGN-Pre AGC-HIGH
	
600 MHz Service-UL-AWGN-Pre AGC+3db-LOW	**600 MHz Service-UL-GSM-Pre AGC+3db-HIGH**
	

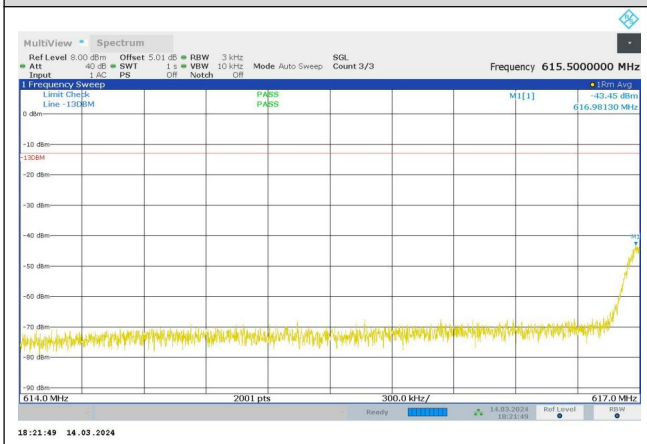
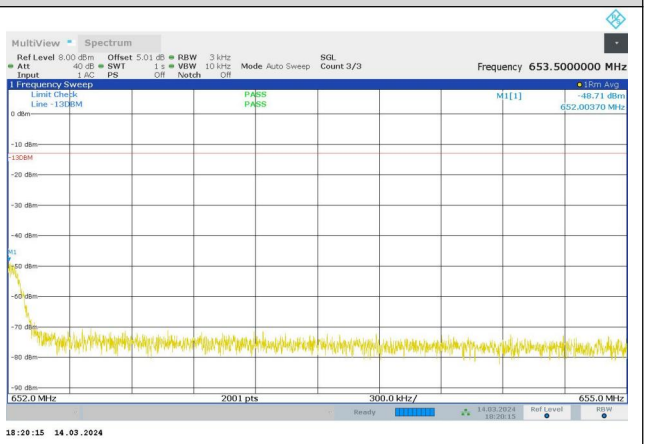
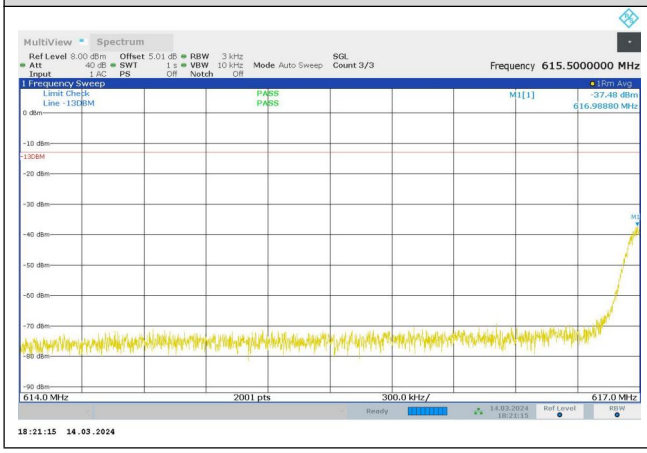
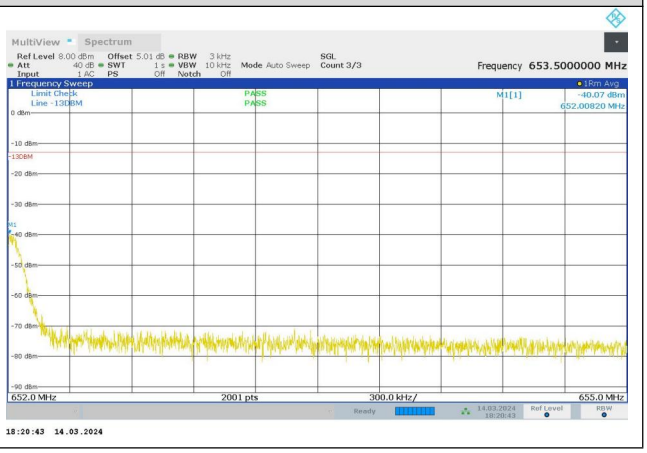
600 MHz Service

600 MHz Service-UL-GSM-Pre AGC-LOW	600 MHz Service-UL-GSM-Pre AGC-HIGH
	
600 MHz Service-UL-GSM-Pre AGC+3db-LOW	**600 MHz Service-UL-GSM-Pre AGC+3db-HIGH**
	

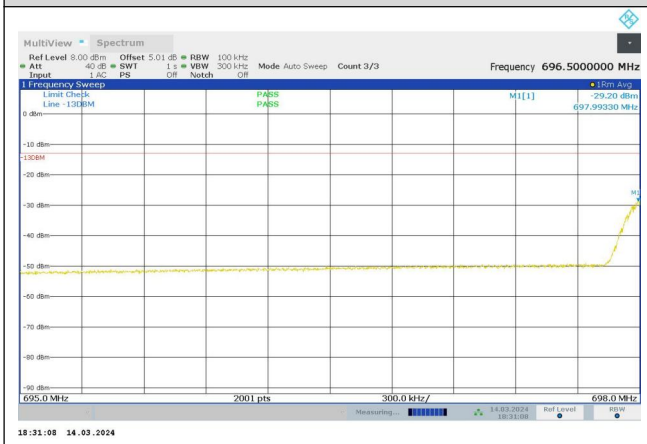
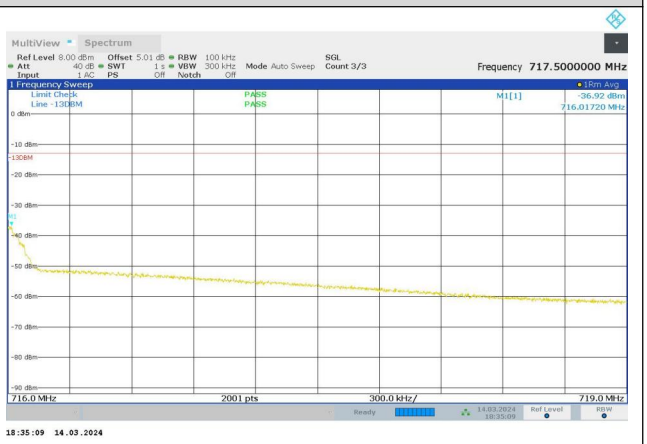
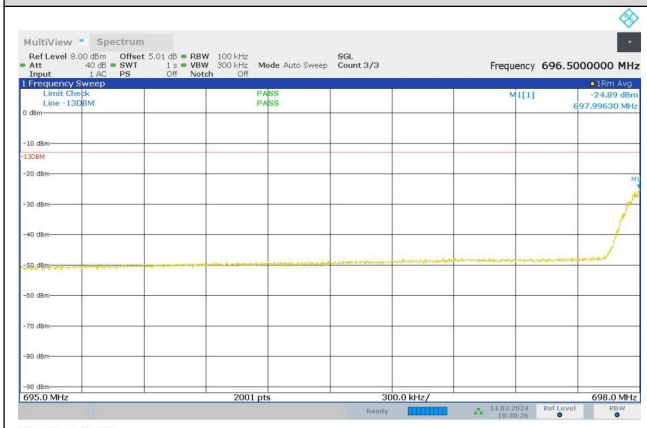
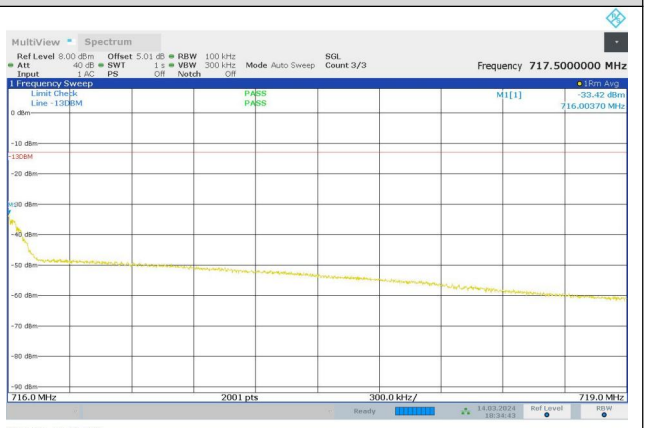
600 MHz Service

600 MHz Service-DL-AWGN-Pre AGC-LOW	600 MHz Service-DL-AWGN-Pre AGC-HIGH
	
600 MHz Service-DL-AWGN-Pre AGC+3db-LOW	**600 MHz Service-DL-GSM-Pre AGC+3db-HIGH**
	

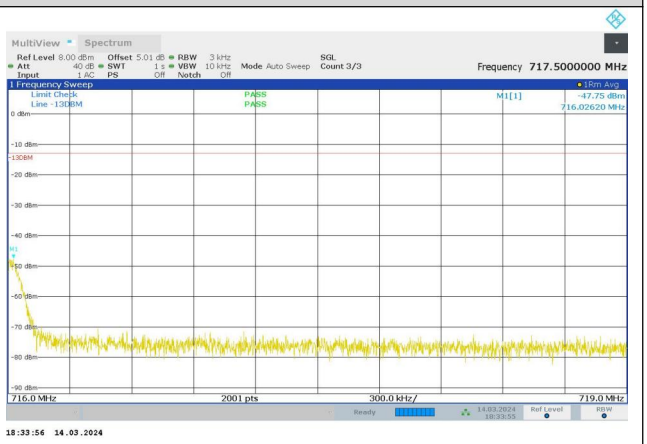
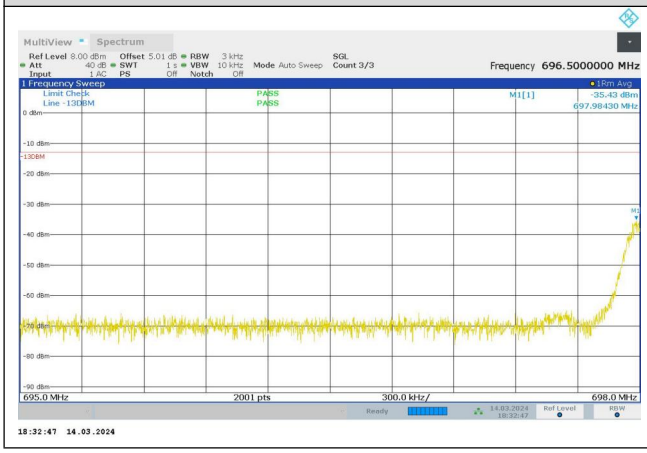
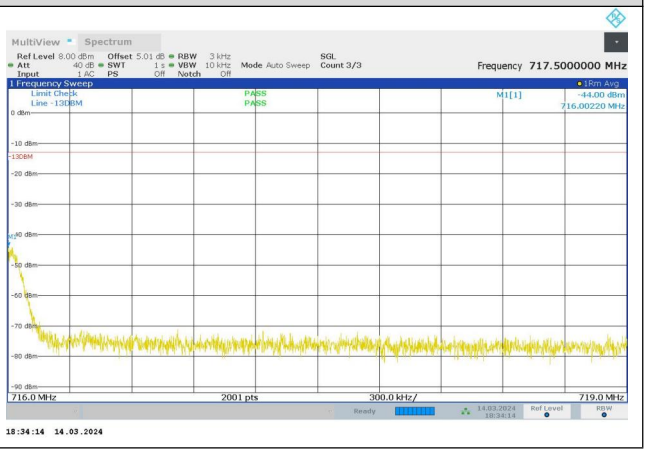
600 MHz Service

600 MHz Service-DL-GSM-Pre AGC-LOW	600 MHz Service-DL-GSM-Pre AGC-HIGH
	
600 MHz Service-DL-GSM-Pre AGC+3db-LOW	**600 MHz Service-DL-GSM-Pre AGC+3db-HIGH**
	

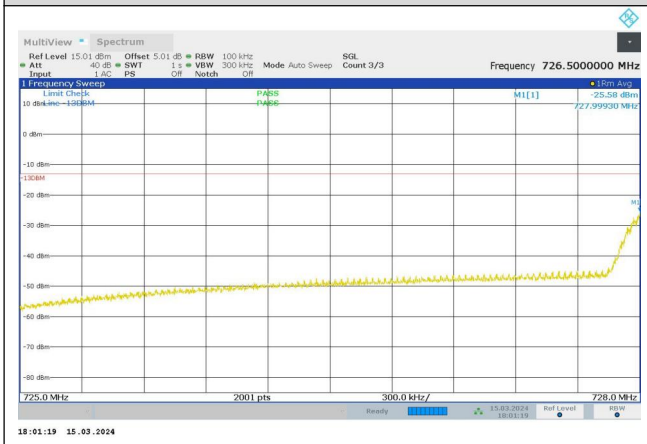
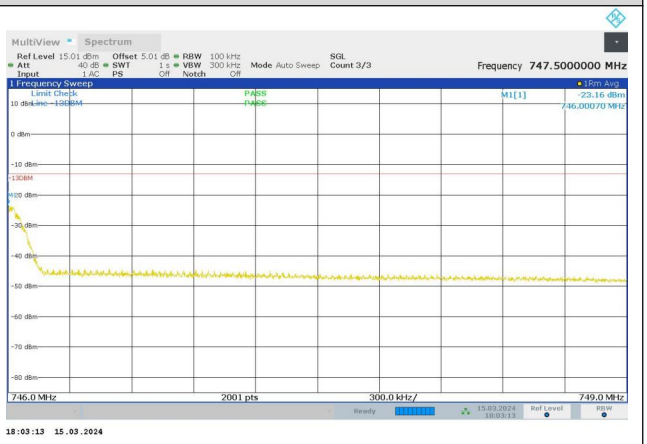
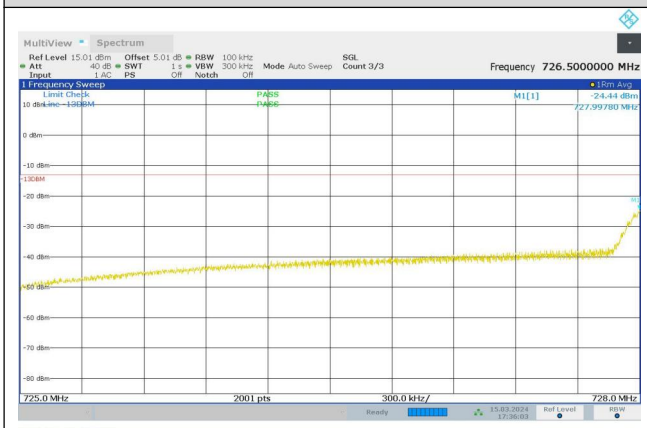
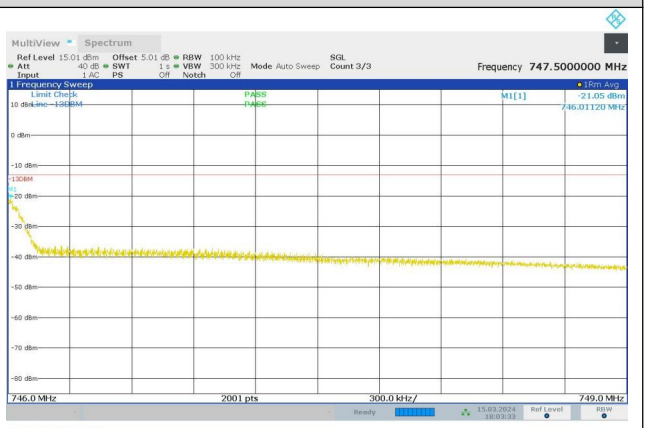
Lower 700 MHz

Lower 700 MHz-UL-AWGN-Pre AGC-LOW	Lower 700 MHz-UL-AWGN-Pre AGC-HIGH
	
Lower 700 MHz-UL-AWGN-Pre AGC+3db-LOW	**Lower 700 MHz-UL-AWGN-Pre AGC+3db-HIGH**
	

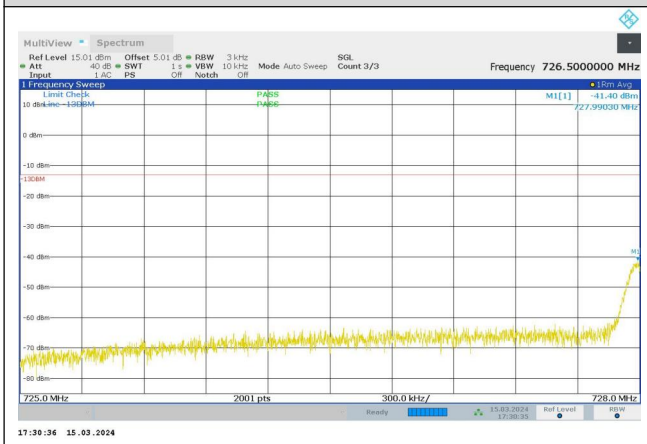
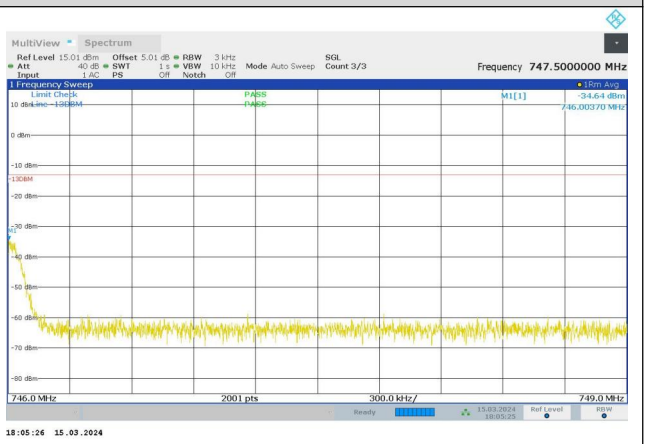
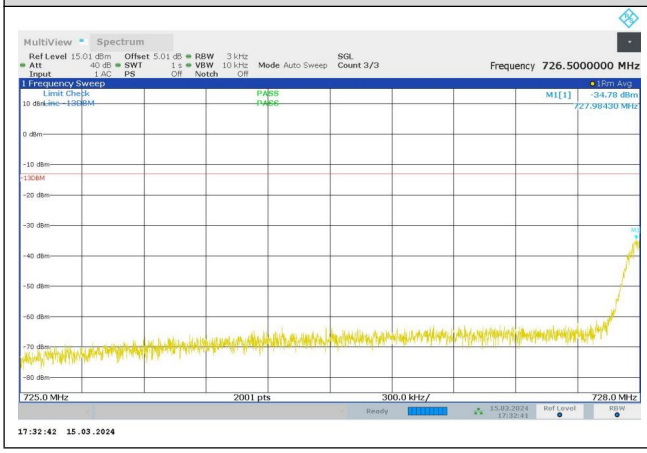
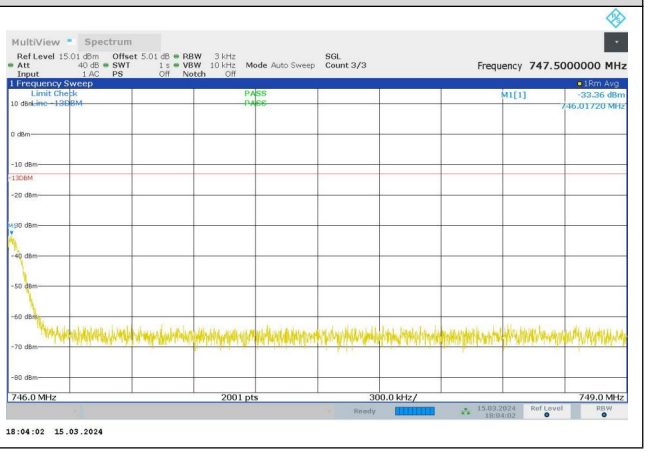
Lower 700 MHz

Lower 700 MHz-UL-GSM-Pre AGC-LOW	Lower 700 MHz-UL-GSM-Pre AGC-HIGH
	
Lower 700 MHz-UL-GSM-Pre AGC+3db-LOW	**Lower 700 MHz-UL-GSM-Pre AGC+3db-HIGH**
	

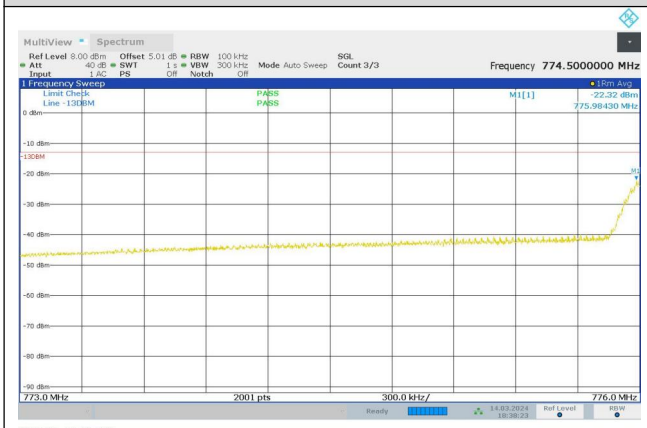
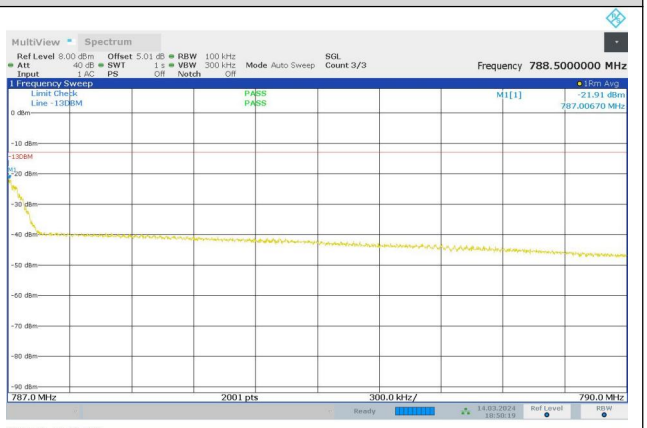
Lower 700 MHz

Lower 700 MHz-DL-AWGN-Pre AGC-LOW	Lower 700 MHz-DL-AWGN-Pre AGC-HIGH
	
Lower 700 MHz-DL-AWGN-Pre AGC+3db-LOW	**Lower 700 MHz-DL-AWGN-Pre AGC+3db-HIGH**
	

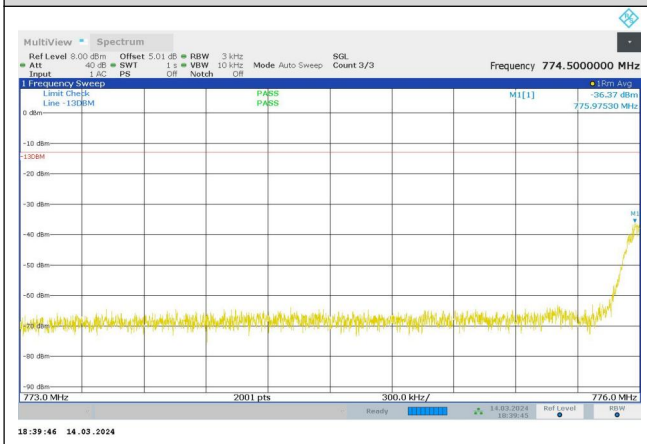
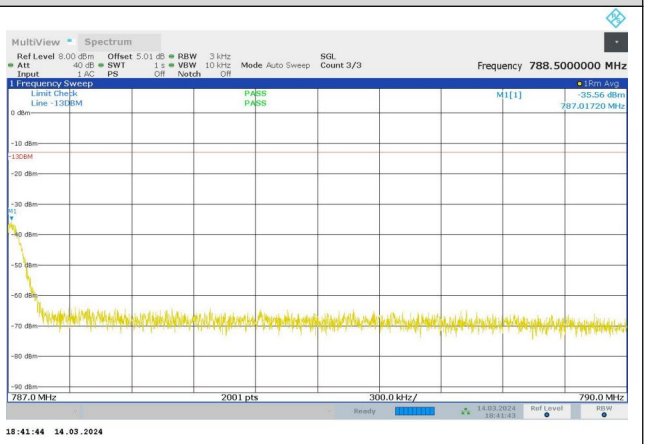
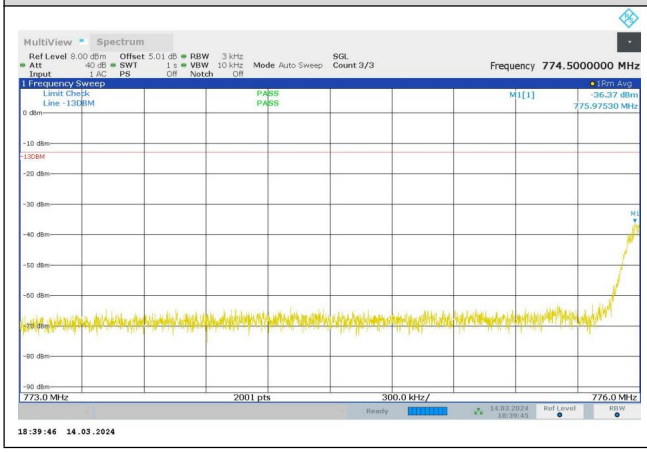
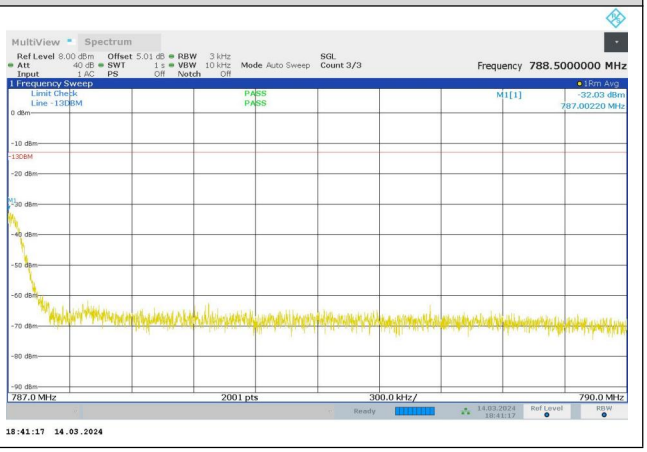
Lower 700 MHz

Lower 700 MHz-DL-GSM-Pre AGC-LOW	Lower 700 MHz-DL-GSM-Pre AGC-HIGH
	
Lower 700 MHz-DL-GSM-Pre AGC+3db-LOW	**Lower 700 MHz-DL-GSM-Pre AGC+3db-HIGH**
	

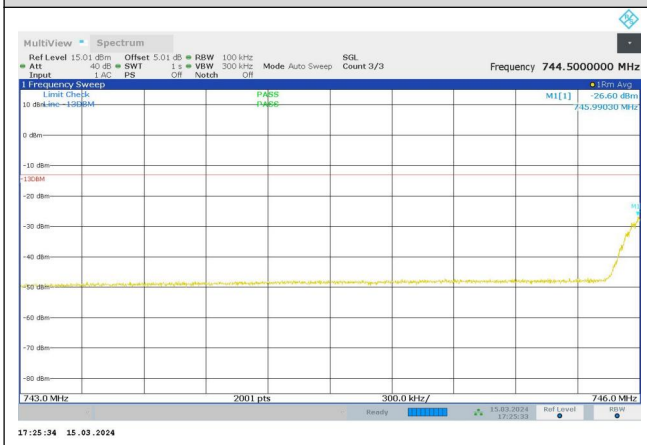
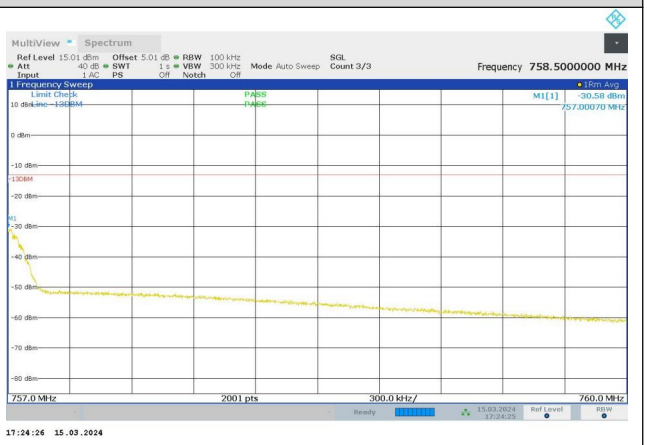
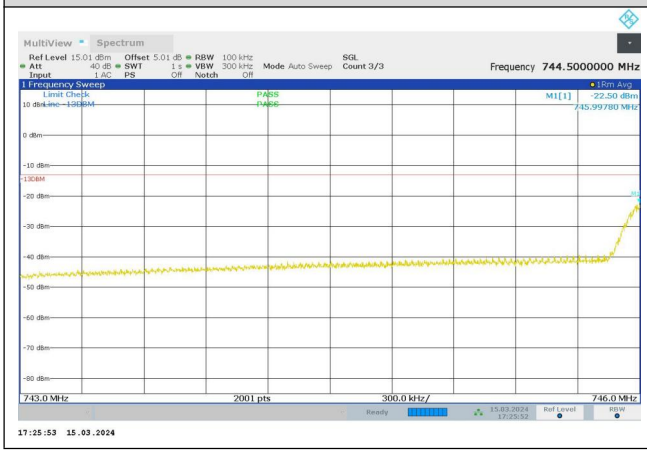
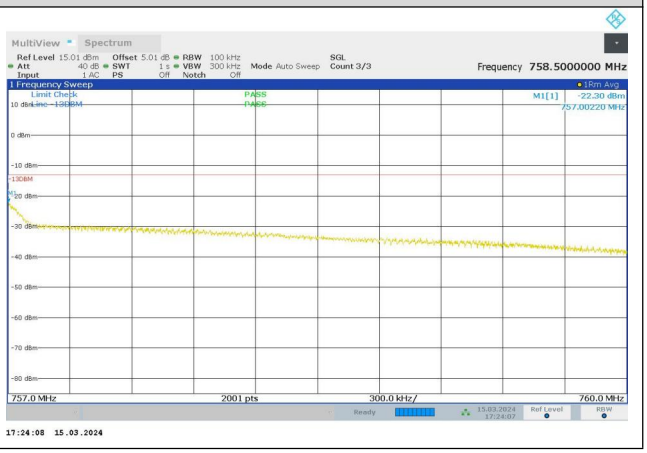
Upper 700 MHz

Upper 700 MHz-UL-AWGN-Pre AGC-LOW	Upper 700 MHz-UL-AWGN-Pre AGC-HIGH
Upper 700 MHz-UL-AWGN-Pre AGC+3db-LOW	**Upper 700 MHz-UL-AWGN-Pre AGC+3db-HIGH**
	

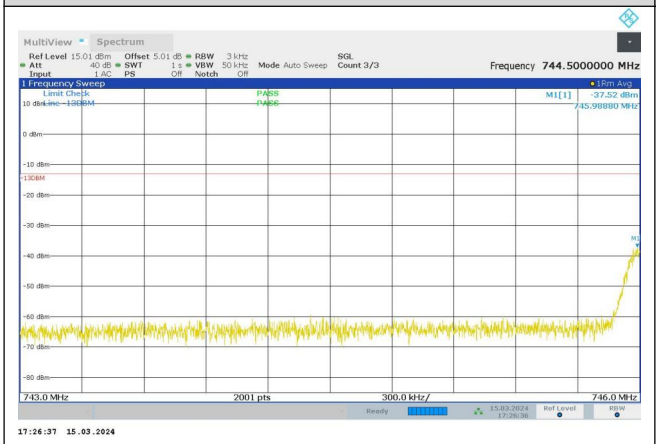
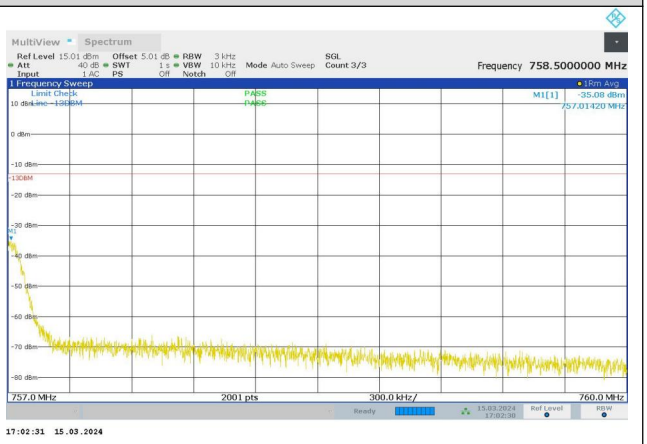
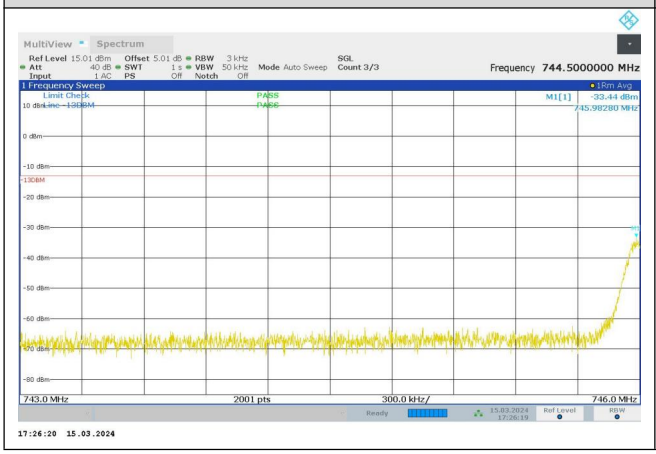
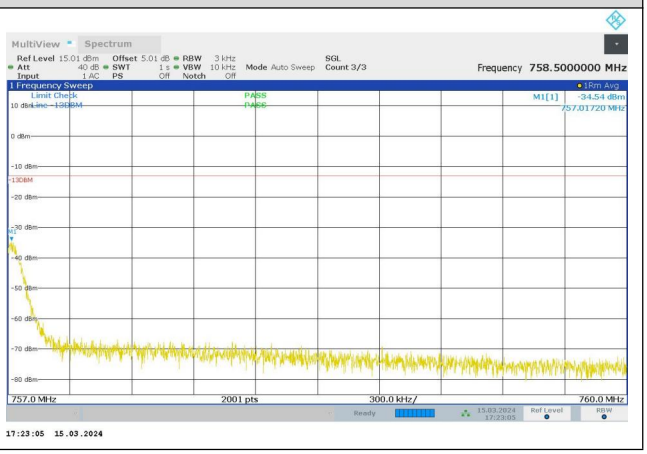
Upper 700 MHz

Upper 700 MHz-UL-GSM-Pre AGC-LOW	Upper 700 MHz-UL-GSM-Pre AGC-HIGH
	
Upper 700 MHz-UL-GSM-Pre AGC+3db-LOW	**Upper 700 MHz-UL-GSM-Pre AGC+3db-HIGH**
	

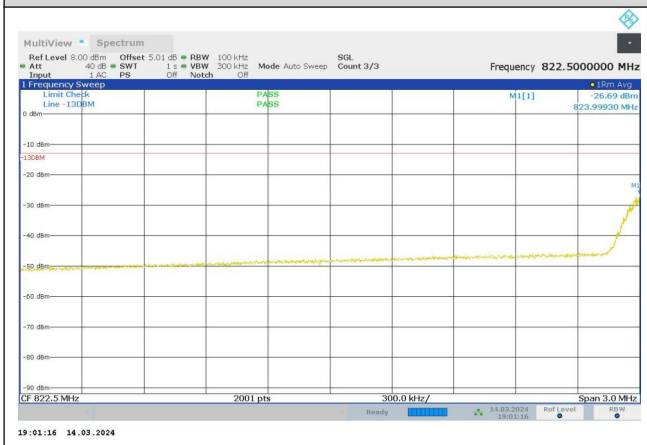
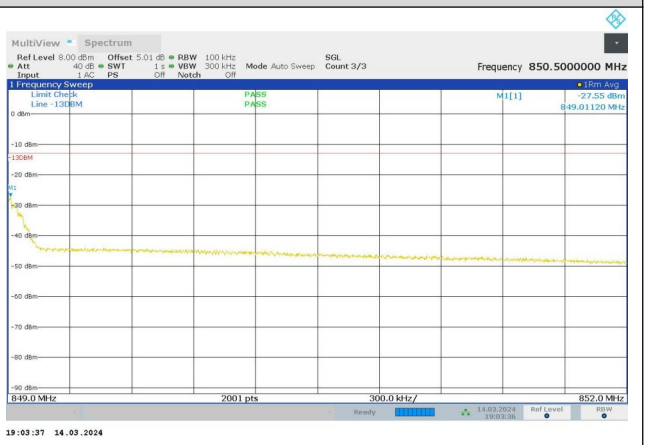
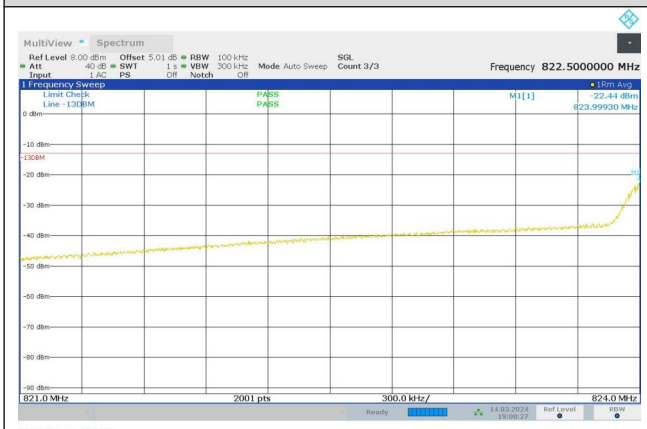
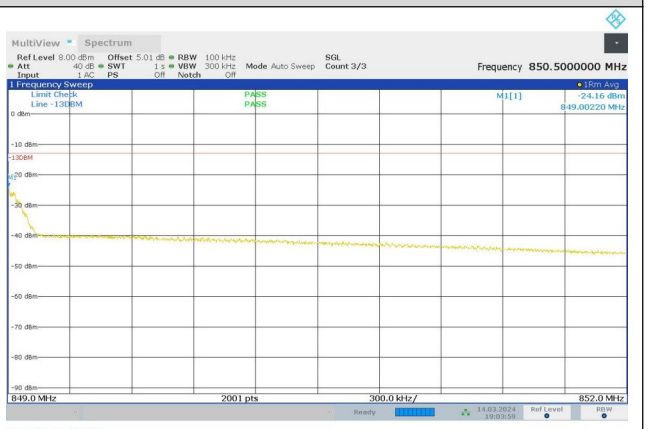
Upper 700 MHz

Upper 700 MHz-DL-AWGN-Pre AGC-LOW	Upper 700 MHz-DL-AWGN-Pre AGC-HIGH
	
Upper 700 MHz-DL-AWGN-Pre AGC+3db-LOW	**Upper 700 MHz-DL-AWGN-Pre AGC+3db-HIGH**
	

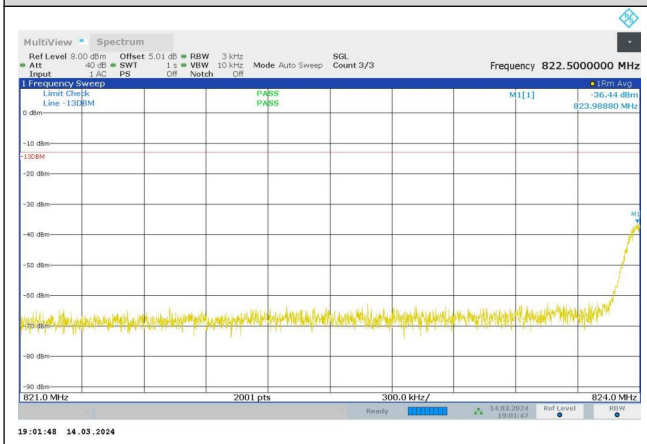
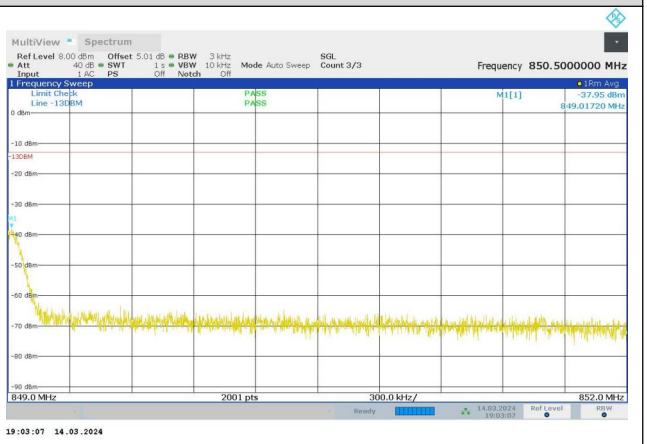
Upper 700 MHz

Upper 700 MHz-DL-GSM-Pre AGC-LOW	Upper 700 MHz-DL-GSM-Pre AGC-HIGH
	
Upper 700 MHz-DL-GSM-Pre AGC+3db-LOW	**Upper 700 MHz-DL-GSM-Pre AGC+3db-HIGH**
	

Cellular

Cellular-UL-AWGN-Pre AGC-LOW	Cellular-UL-AWGN-Pre AGC-HIGH
	
Cellular-UL-AWGN-Pre AGC+3db-LOW	**Cellular-UL-AWGN-Pre AGC+3db-HIGH**
	

Cellular

Cellular-UL-GSM-Pre AGC-LOW	Cellular-UL-GSM-Pre AGC-HIGH
	
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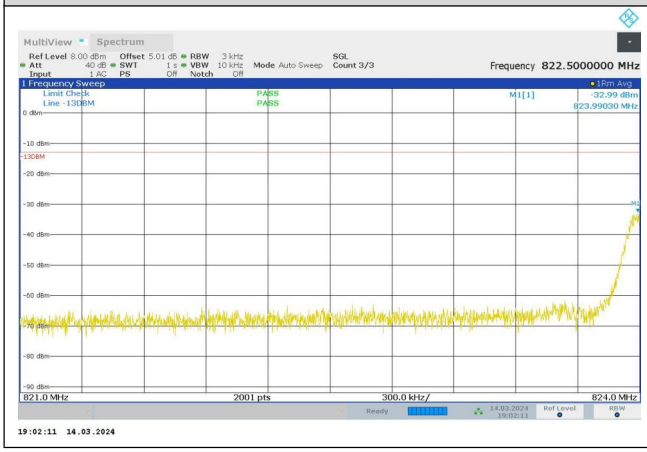
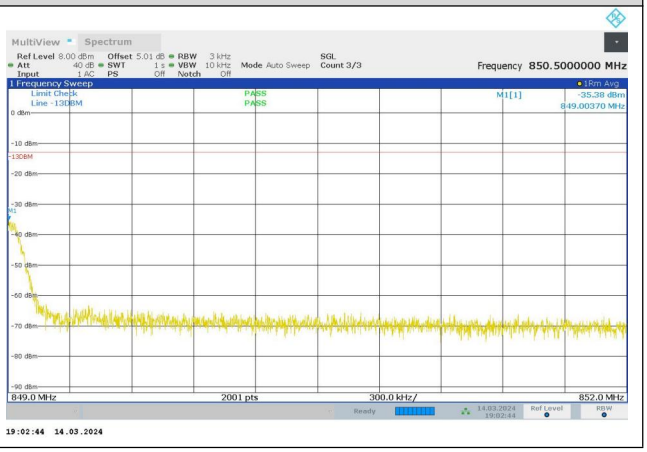
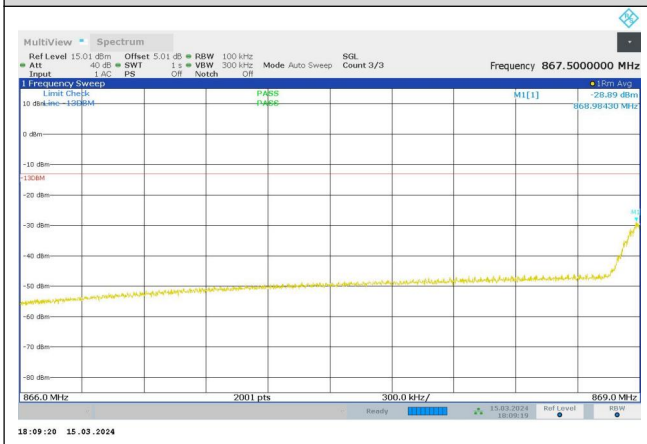
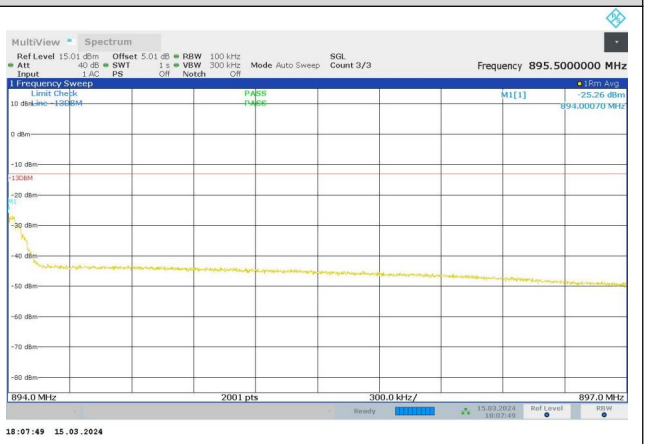
	

Cellular

Cellular-DL-AWGN-Pre AGC-LOW	Cellular-DL-AWGN-Pre AGC-HIGH
	
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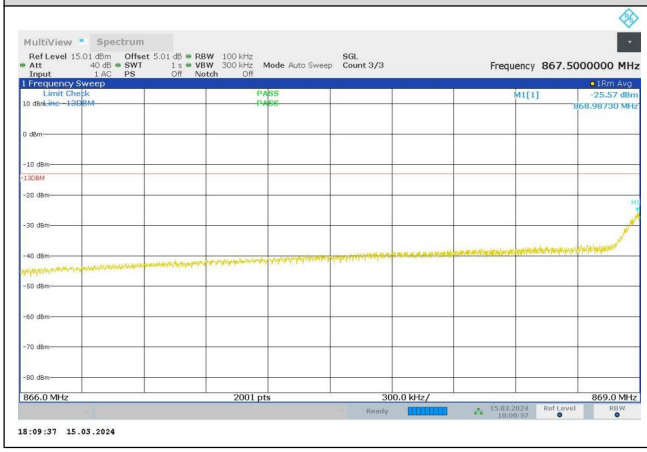
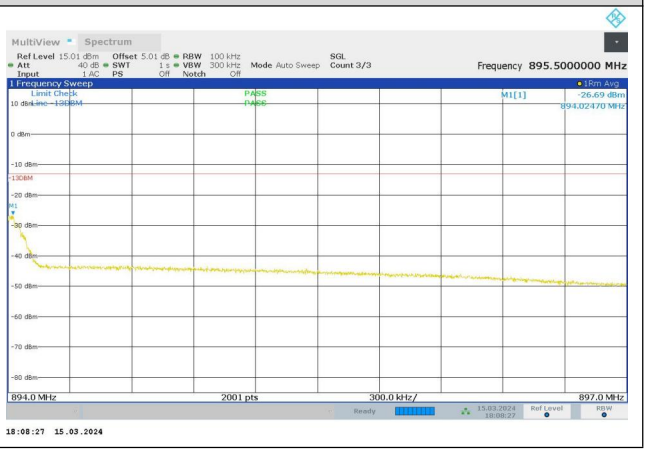
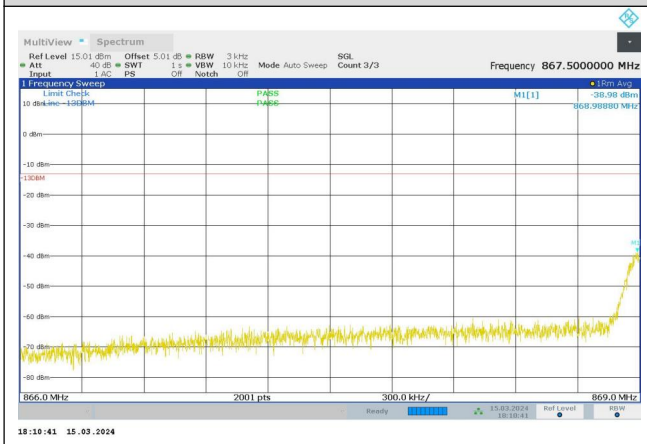
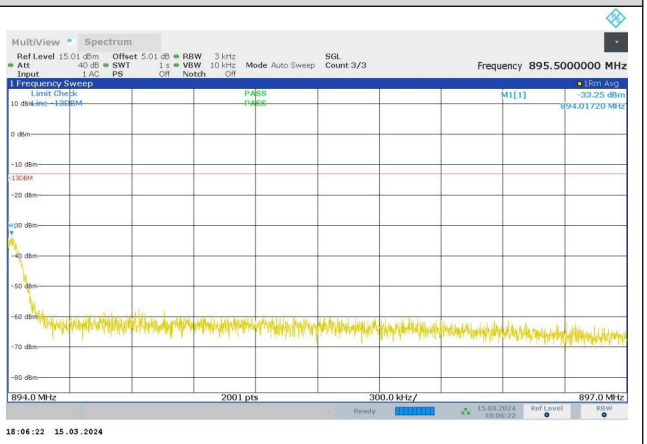
	

Cellular

Cellular-DL-GSM-Pre AGC-LOW	Cellular-DL-GSM-Pre AGC-HIGH
	
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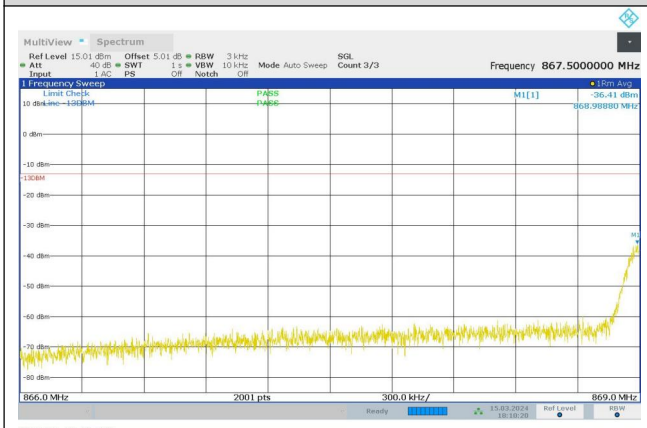
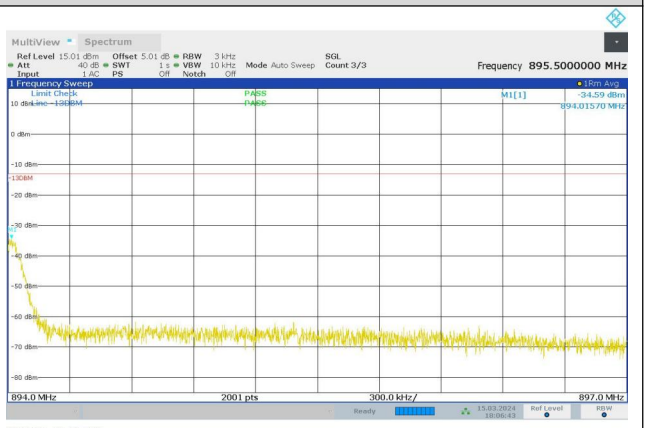
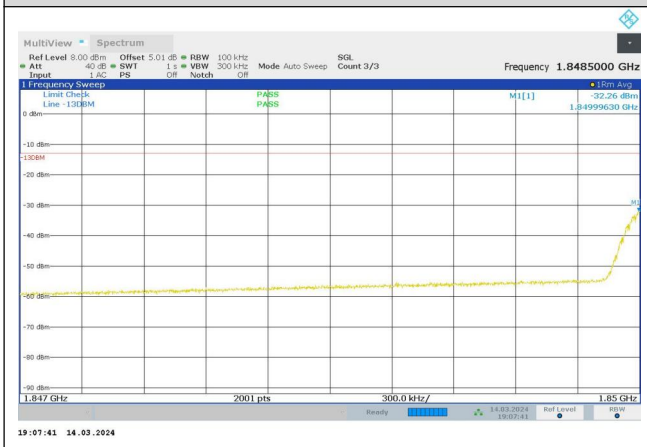
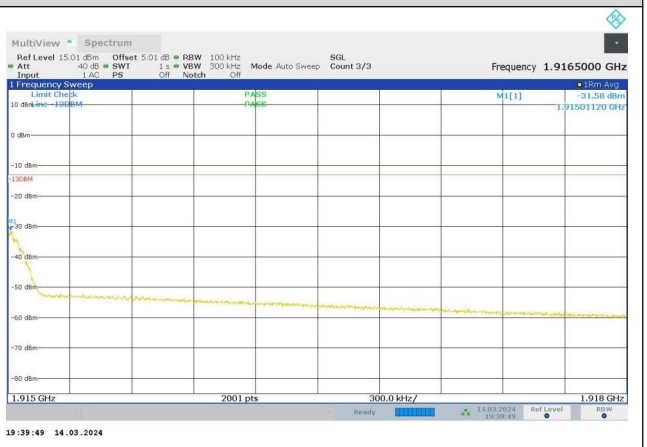
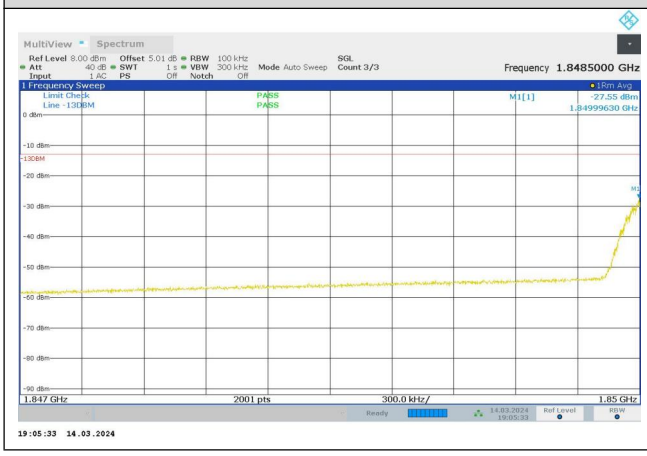
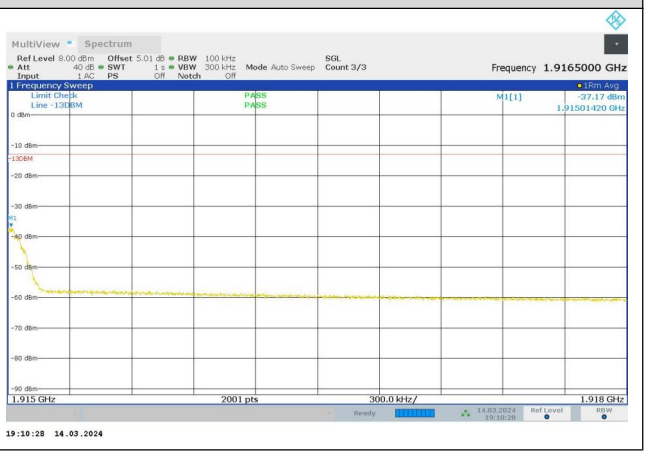
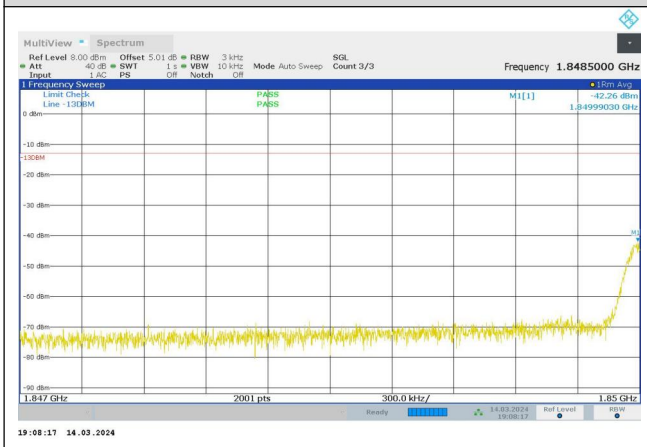
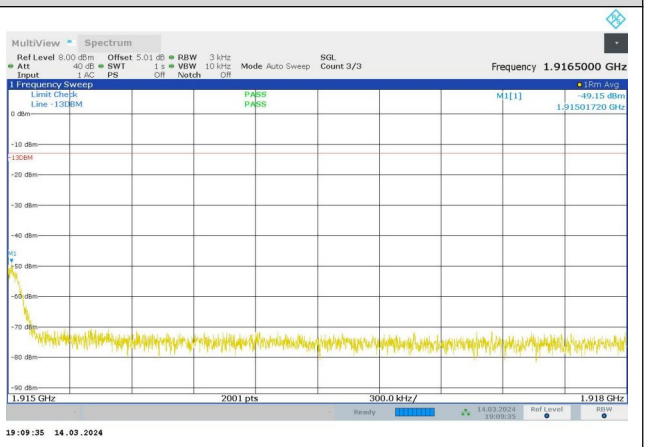
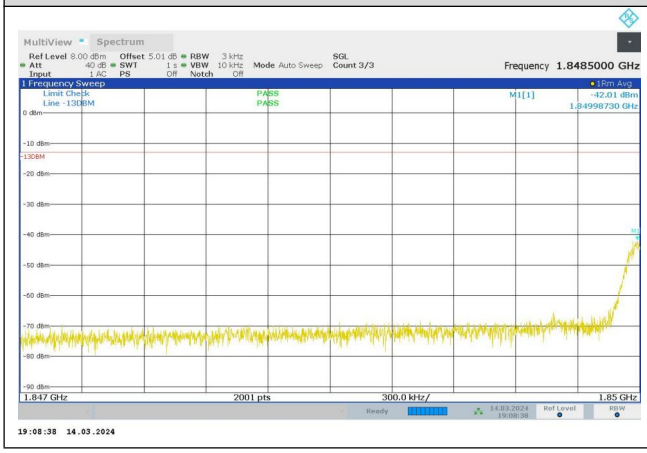
	

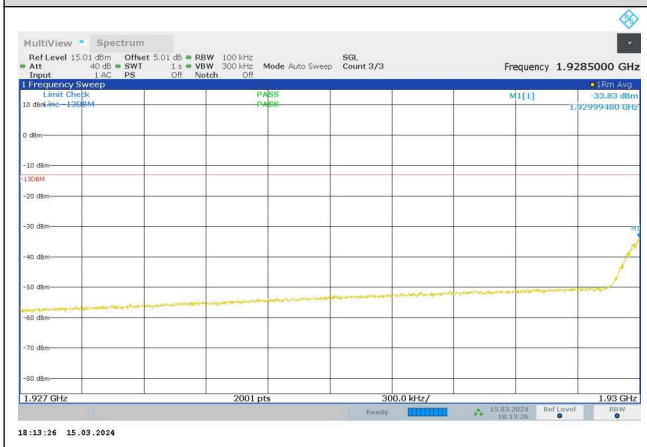
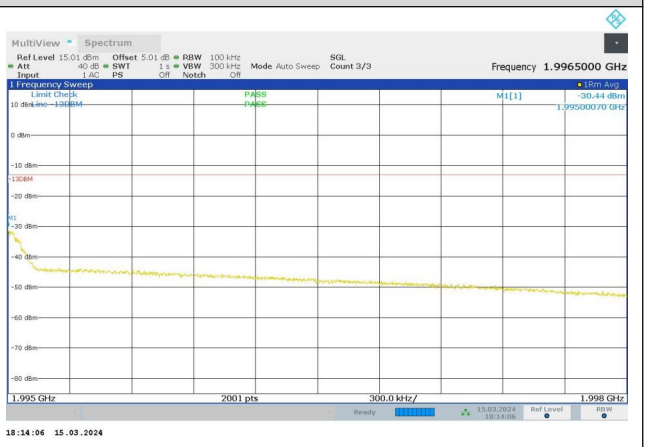
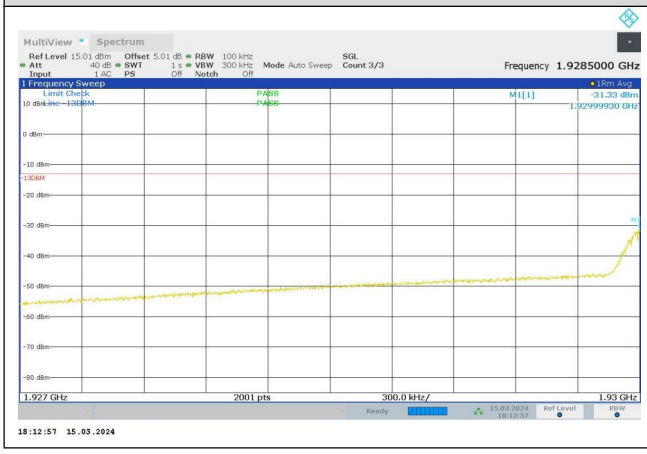
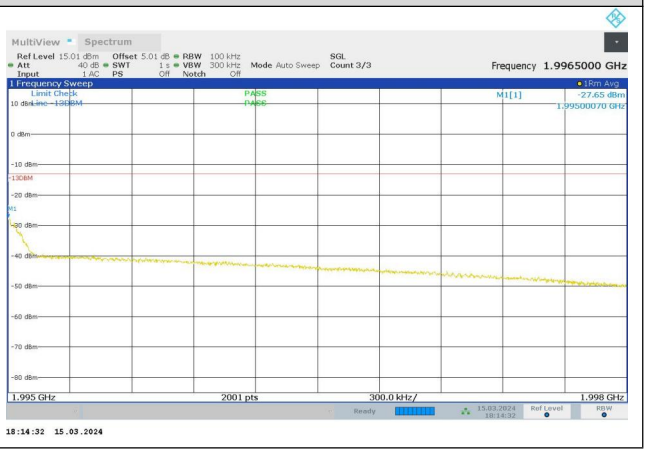
Broadband PCS

Broadband PCS-UL-AWGN-Pre AGC-LOW	Broadband PCS-UL-AWGN-Pre AGC-HIGH
	
Broadband PCS-UL-AWGN-Pre AGC+3db-LOW	**Broadband PCS-UL-AWGN-Pre AGC+3db-HIGH**
	

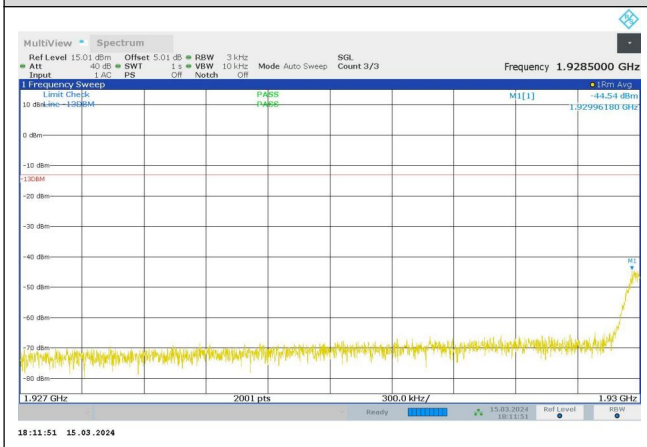
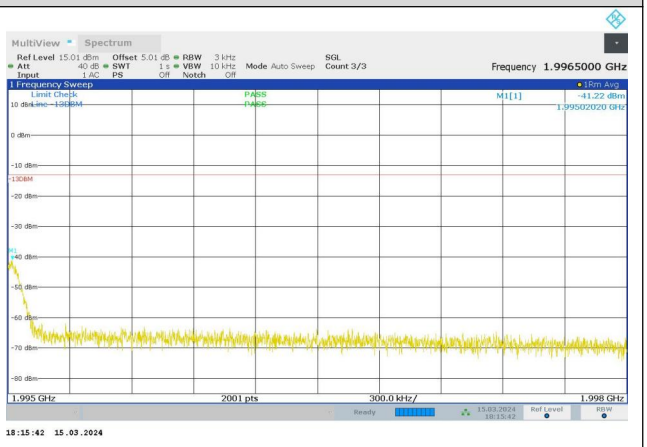
Broadband PCS

Broadband PCS-UL-GSM-Pre AGC-LOW	Broadband PCS-UL-GSM-Pre AGC-HIGH
	
Broadband PCS-UL-GSM-Pre AGC+3db-LOW	**Broadband PCS-UL-GSM-Pre AGC+3db-HIGH**
	

Broadband PCS

Broadband PCS-DL-AWGN-Pre AGC-LOW	Broadband PCS-DL-AWGN-Pre AGC-HIGH
	
Broadband PCS-DL-AWGN-Pre AGC+3db-LOW	**Broadband PCS-DL-GSM-Pre AGC+3db-HIGH**
	

Broadband PCS

Broadband PCS-DL-GSM-Pre AGC-LOW	Broadband PCS-DL-GSM-Pre AGC-HIGH
	
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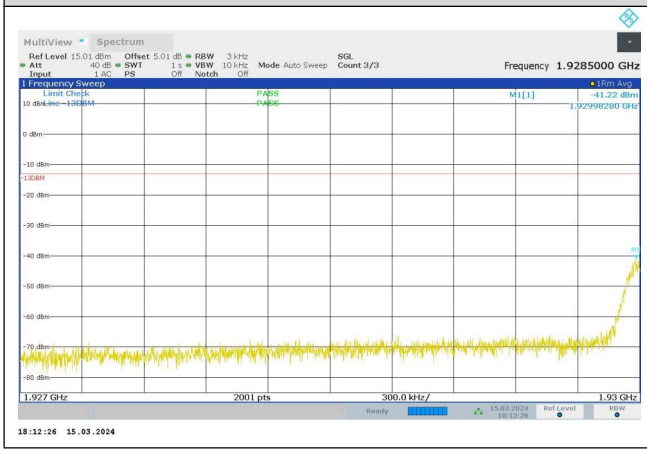
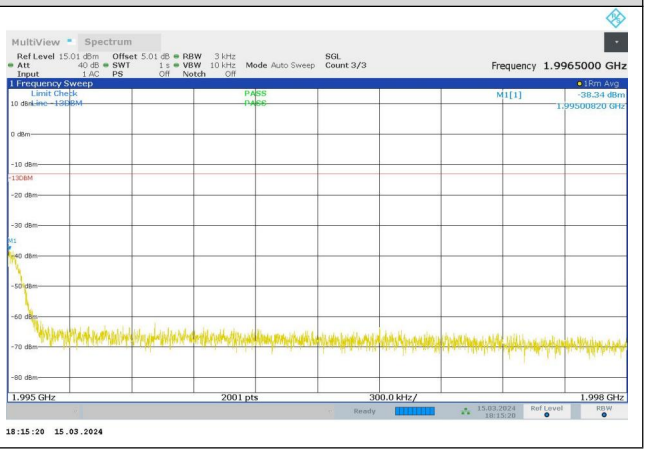
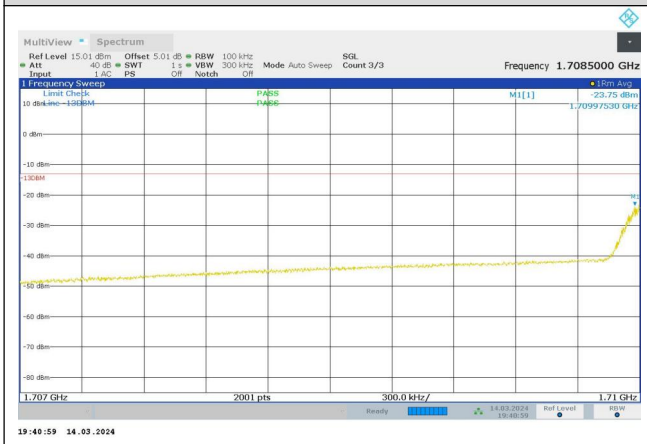
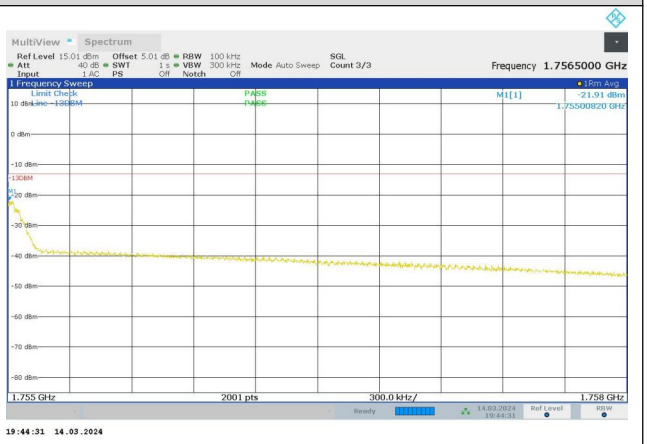
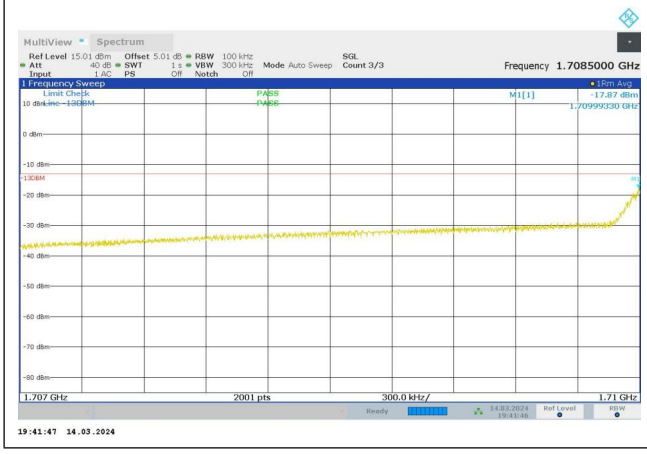
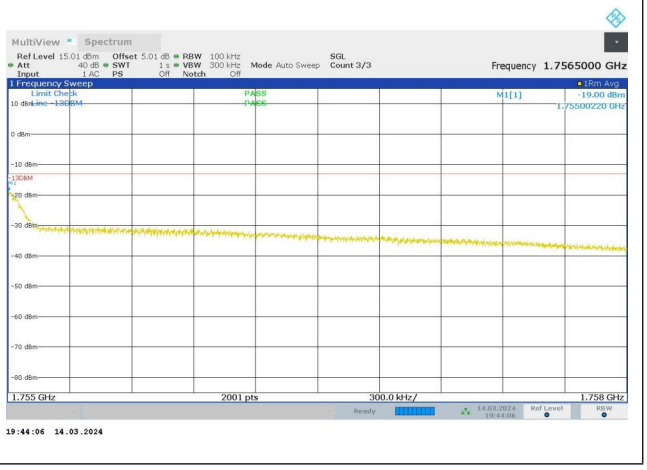
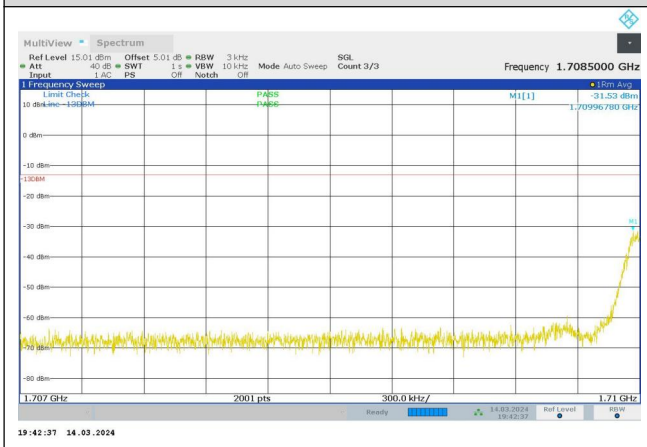
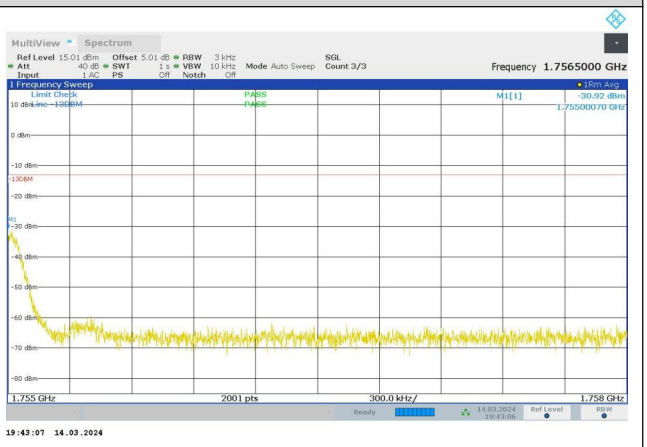
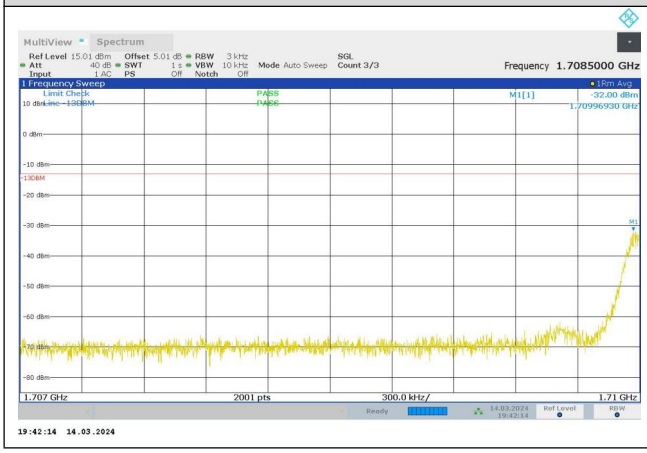
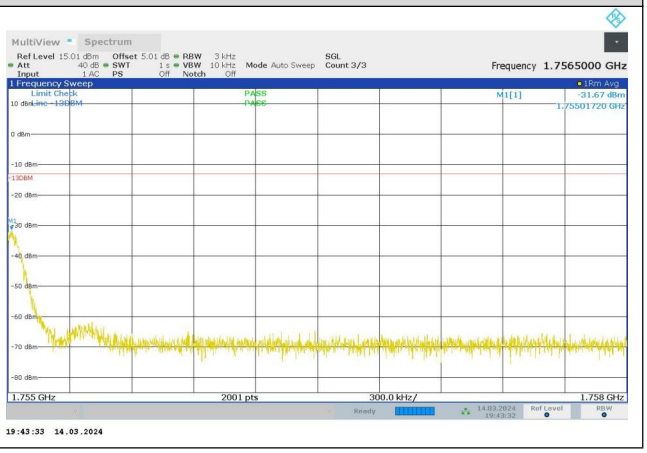
	

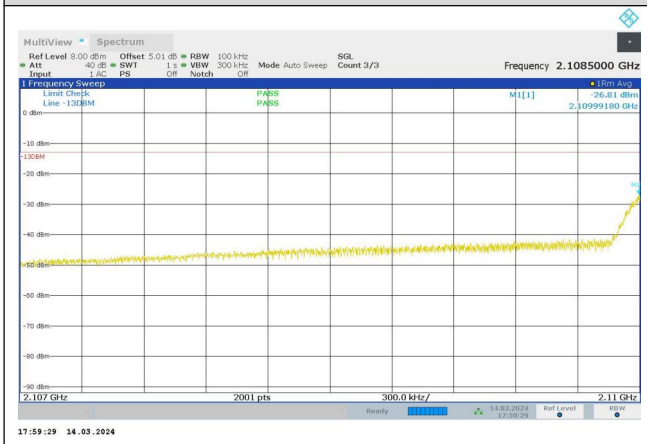
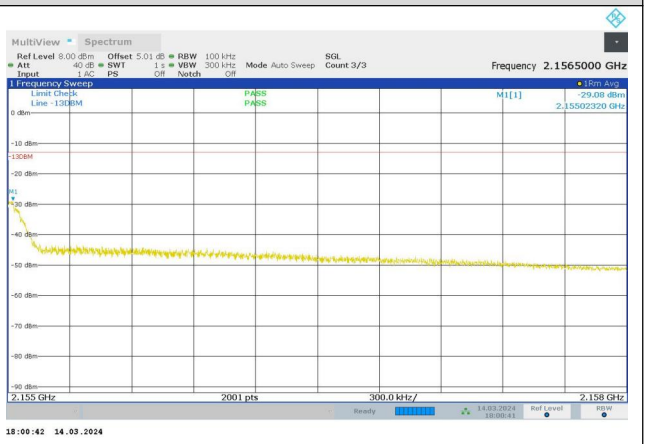
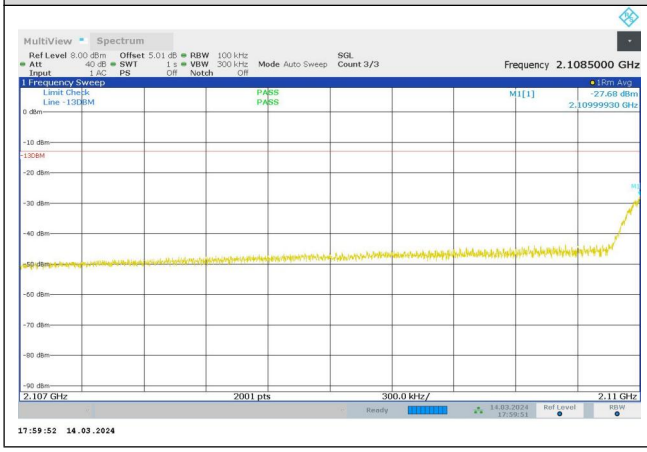
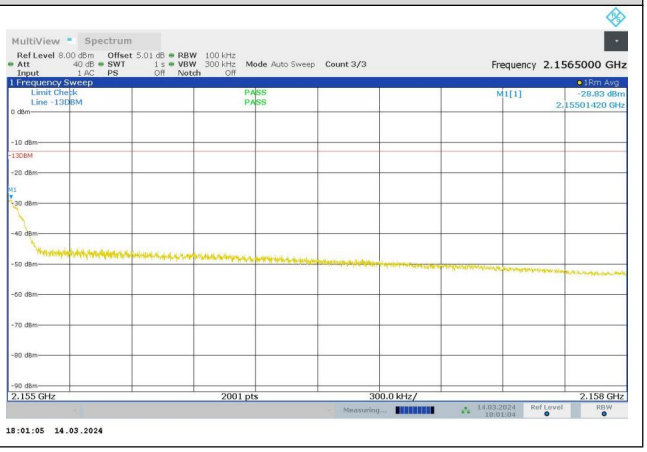
AWS-1

AWS-1-UL-AWGN-Pre AGC-LOW	AWS-1-UL-AWGN-Pre AGC-HIGH
	
AWS-1-UL-AWGN-Pre AGC+3db-LOW	**AWS-1-UL-AWGN-Pre AGC+3db-HIGH**
	

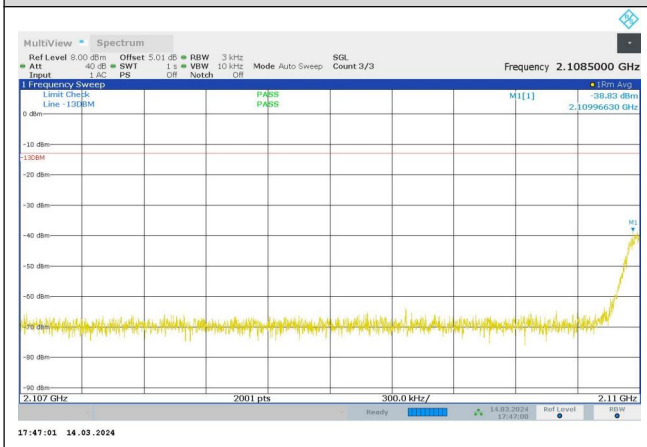
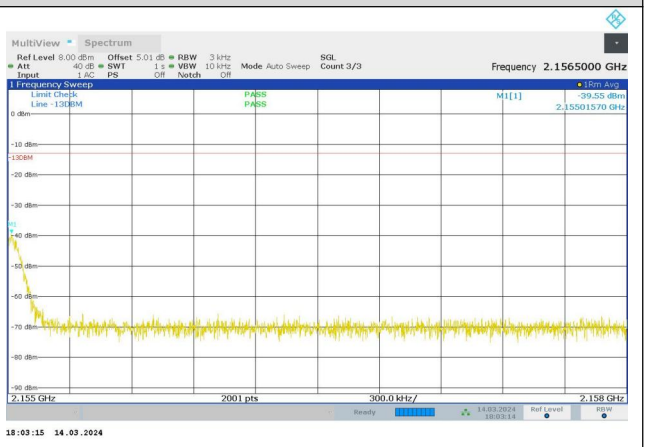
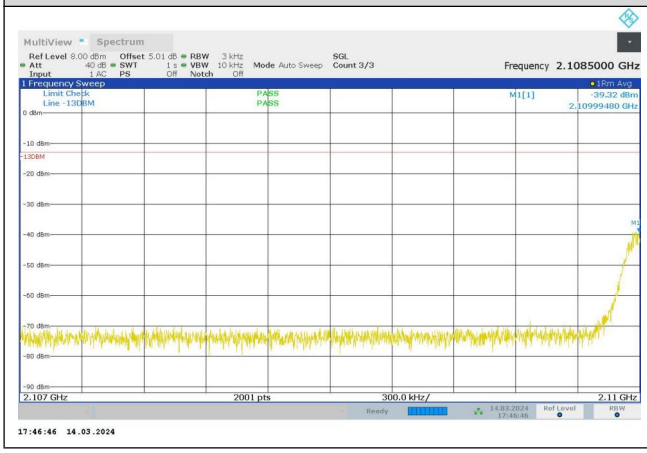
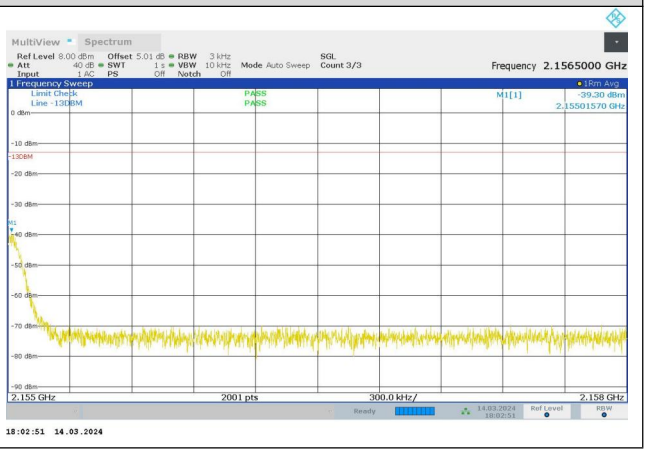
AWS-1

AWS-1-UL-GSM-Pre AGC-LOW	AWS-1-UL-GSM-Pre AGC-HIGH
	
AWS-1-UL-GSM-Pre AGC+3db-LOW	**AWS-1-UL-GSM-Pre AGC+3db-HIGH**
	

AWS-1

AWS-1-DL-AWGN-Pre AGC-LOW	AWS-1-DL-AWGN-Pre AGC-HIGH
	
AWS-1-DL-AWGN-Pre AGC+3db-LOW	**AWS-1-DL-AWGN-Pre AGC+3db-HIGH**
	

AWS-1

AWS-1-DL-GSM-Pre AGC-LOW	AWS-1-DL-GSM-Pre AGC-HIGH
	
AWS-1-DL-GSM-Pre AGC+3db-LOW	**AWS-1-DL-GSM-Pre AGC+3db-HIGH**
	

3.5 TRANSMITTER SPURIOUS EMISSIONS MEASUREMENT

3.5.1 tandard Applicable

FCC §2.1053, §22.917, §24.238 and §27.53.

Spurious attenuation limit in dB = 43 + 10 Log10 (power out in Watts)= -13dBm

(a) Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation. Curves or equivalent data shall be supplied showing the magnitude of each harmonic and other spurious emission. For this test, single sideband, independent sideband, and controlled carrier transmitters shall be modulated under the conditions specified in paragraph (c) of § 2.1049, as appropriate. For equipment operating on frequencies below 890 MHz, an open field test is normally required, with the measuring instrument antenna located in the far-field at all test frequencies. In the event it is either impractical or impossible to make open field measurements (e.g. a broadcast transmitter installed in a building) measurements will be accepted of the equipment as installed. Such measurements must be accompanied by a description of the site where the measurements were made showing the location of any possible source of reflections which might distort the field strength measurements. Information submitted shall include the relative radiated power of each spurious emission with reference to the rated power output of the transmitter,

3.5.2 Measurement procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the receiving antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT.

The test was performed by placing the EUT on 3-orthogonal axis. The frequency range up to tenth harmonic of the fundamental frequency was investigated.

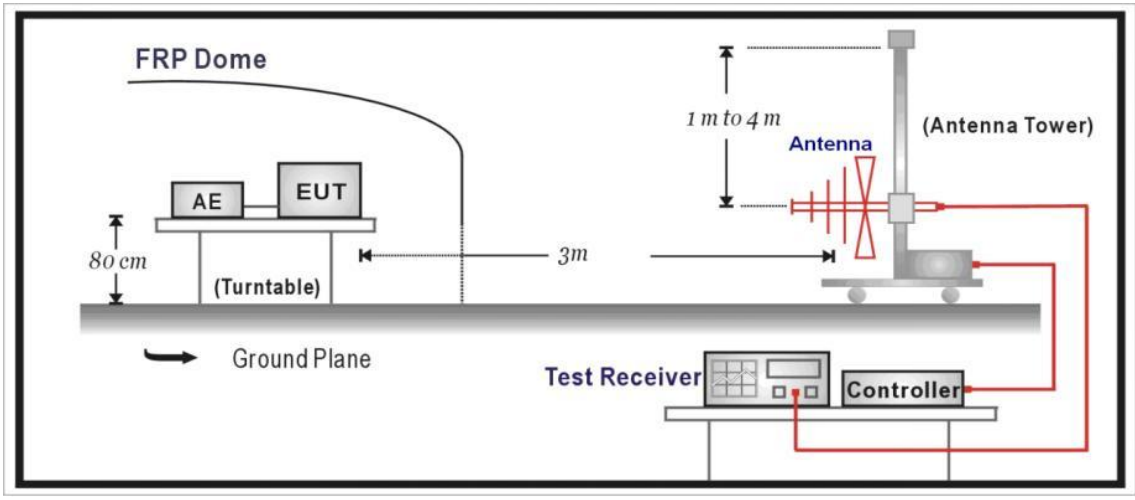
Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = 10 lg (TXpwr in Watts/0.001) – the absolute level

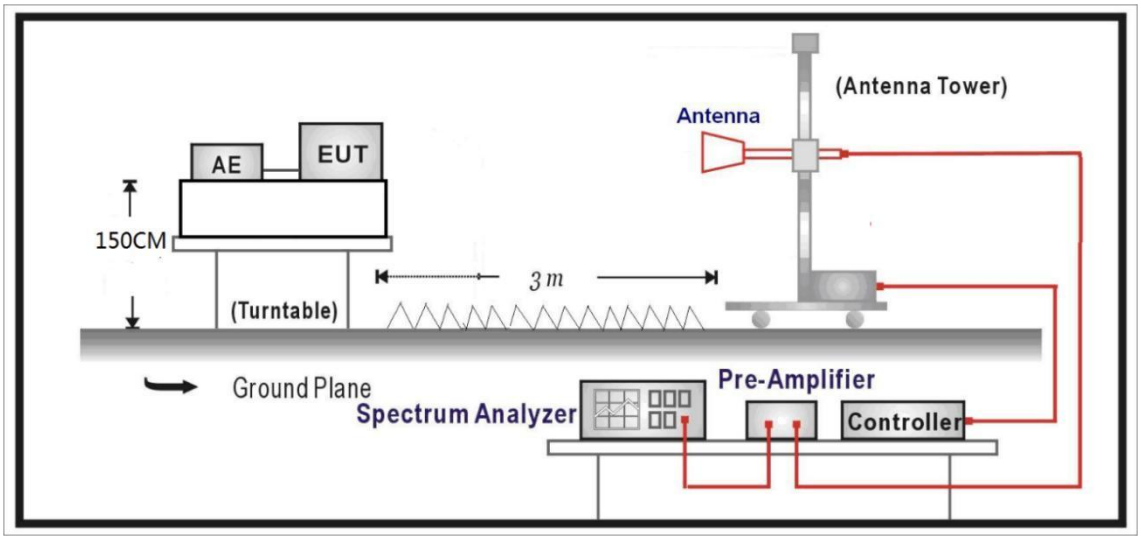
Spurious attenuation limit in dB = 43 + 10 Log10 (power out in Watts)

3.5.3 Test setup

30MHz-1GHz Test Setup:



1GHz -40GHz Test Setup:



3.5.4 Test results

Test Mode	600 MHz Service - Uplink(Pro25T-6S-IOT)						
Horizontal							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]
1	57.1807	-94.16	-66.38	-13.00	53.38	27.78	74
2	129.948	-87.55	-63.78	-13.00	50.78	23.77	135
3	454.5115	-92.70	-62.86	-13.00	49.86	29.84	135
4	2228.4457	-58.53	-48.48	-13.00	35.48	10.05	319
5	5783.8284	-59.53	-39.60	-13.00	26.60	19.93	172
6	16960.9361	-78.82	-44.34	-13.00	31.34	34.48	360
Vertical							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]
1	48.7269	-93.05	-64.59	-13.00	51.59	28.46	172
2	95.8116	-84.88	-65.16	-13.00	52.16	19.72	233
3	167.2947	-90.31	-65.28	-13.00	52.28	25.03	111
4	2401.3803	-36.51	-27.17	-13.00	14.17	9.34	0
5	6187.1287	-60.72	-40.40	-13.00	27.40	20.32	360
6	16395.7696	-78.34	-44.57	-13.00	31.57	33.77	173

Test Mode	600 MHz Service - Downllink(Pro25T-6S-IOT)						
Horizontal							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]
1	56.6457	-94.44	-66.75	-13.00	53.75	27.69	260
2	169.3279	-90.59	-65.08	-13.00	52.08	25.51	140
3	751.2521	-86.81	-51.23	-13.00	38.23	35.58	320
4	1966.9534	-56.29	-48.03	-13.00	35.03	8.26	140
5	5740.264	-59.61	-40.30	-13.00	27.30	19.31	100
6	17350.5851	-80.86	-45.82	-13.00	32.82	35.04	320
Vertical							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]
1	47.2287	-94.09	-65.98	-13.00	52.98	28.11	80
2	139.579	-92.23	-66.94	-13.00	53.94	25.29	20
3	482.6553	-93.04	-62.20	-13.00	49.20	30.84	20
4	738.0898	-85.97	-50.55	-13.00	37.55	35.42	20
5	5740.9241	-59.07	-39.98	-13.00	26.98	19.09	40
6	16378.2178	-77.67	-44.48	-13.00	31.48	33.19	140

Test Mode	Lower700 MHz - Uplink(Pro25T-6S-IOT)						
Horizontal							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]
1	56.9667	-94.54	-66.79	-13.00	53.79	27.75	110
2	130.269	-88.42	-64.54	-13.00	51.54	23.88	110
3	517.7548	-93.19	-62.37	-13.00	49.37	30.82	233
4	2005.3411	-57.86	-50.32	-13.00	37.32	7.54	294
5	5248.8449	-57.51	-39.08	-13.00	26.08	18.43	72
6	16313.8614	-76.91	-45.43	-13.00	32.43	31.48	0
Vertical							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]
1	47.0147	-92.87	-64.86	-13.00	51.86	28.01	258
2	95.3835	-85.02	-65.31	-13.00	52.31	19.71	320
3	166.0106	-89.55	-64.77	-13.00	51.77	24.78	195
4	3408.9109	-54.63	-42.19	-13.00	29.19	12.44	294
5	5763.3663	-57.54	-38.64	-13.00	25.64	18.90	234
6	16370.027	-77.11	-44.90	-13.00	31.90	32.21	254

Test Mode	Lower700 MHz - Downllink(Pro25T-6S-IOT)						
Horizontal							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]
1	56.2176	-94.23	-66.66	-13.00	53.66	27.57	260
2	177.9958	-92.10	-67.01	-13.00	54.01	25.09	260
3	554.6735	-92.51	-61.20	-13.00	48.20	31.31	200
4	1093.4723	-92.01	-52.73	-13.00	39.73	39.28	20
5	3122.1122	-60.43	-44.96	-13.00	31.96	15.47	220
6	5971.6172	-61.22	-40.88	-13.00	27.88	20.34	0
Vertical							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]
1	52.1512	-93.43	-65.91	-13.00	52.91	27.52	200
2	149.959	-93.07	-67.27	-13.00	54.27	25.80	140
3	455.1535	-93.61	-63.50	-13.00	50.50	30.11	80
4	1953.6507	-56.44	-49.98	-13.00	36.98	6.46	320
5	6122.4422	-62.16	-41.38	-13.00	28.38	20.78	220
6	16391.0891	-79.28	-44.82	-13.00	31.82	34.46	200