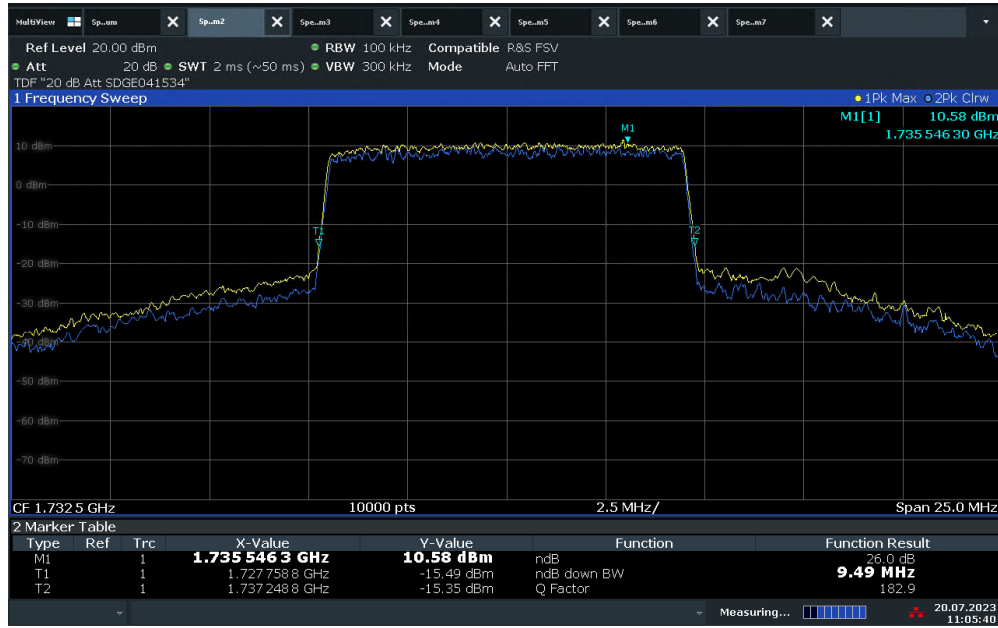




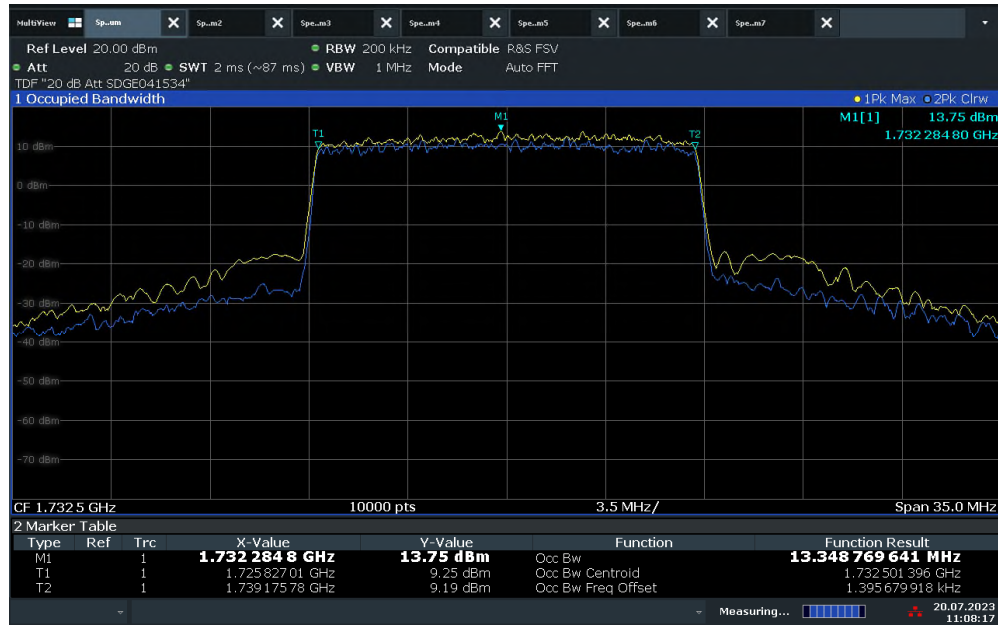
FCC ID: YETG41-BE
 IC: 9298A-G41BE

LTE Band 4 Uplink (10 MHz BW) / Mid Channel 1732.5 MHz / 26dB BW



11:05:41 20.07.2023

LTE Band 4 Uplink (15 MHz BW) / Mid Channel 1732.5 MHz / 99%OBW

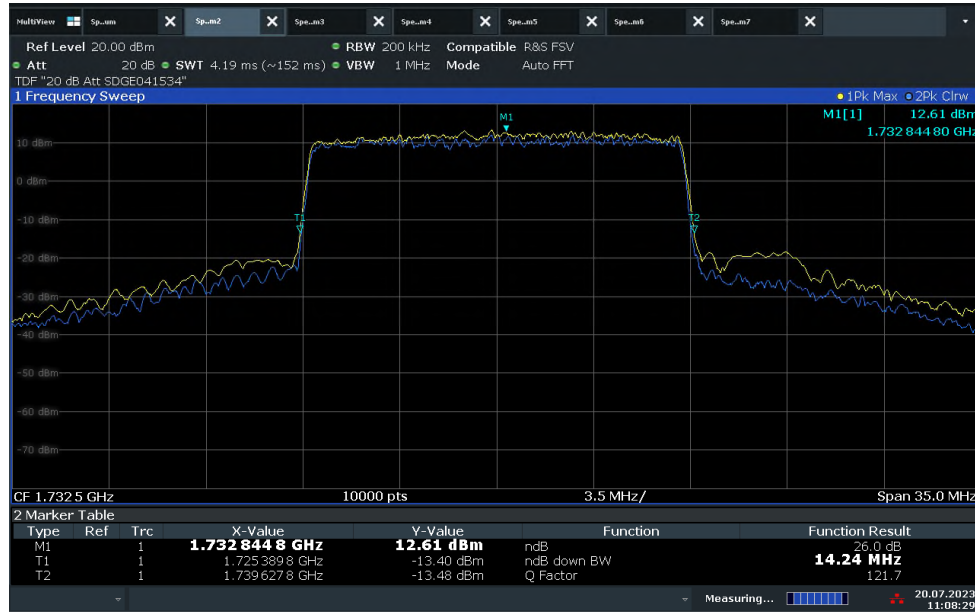


11:08:18 20.07.2023



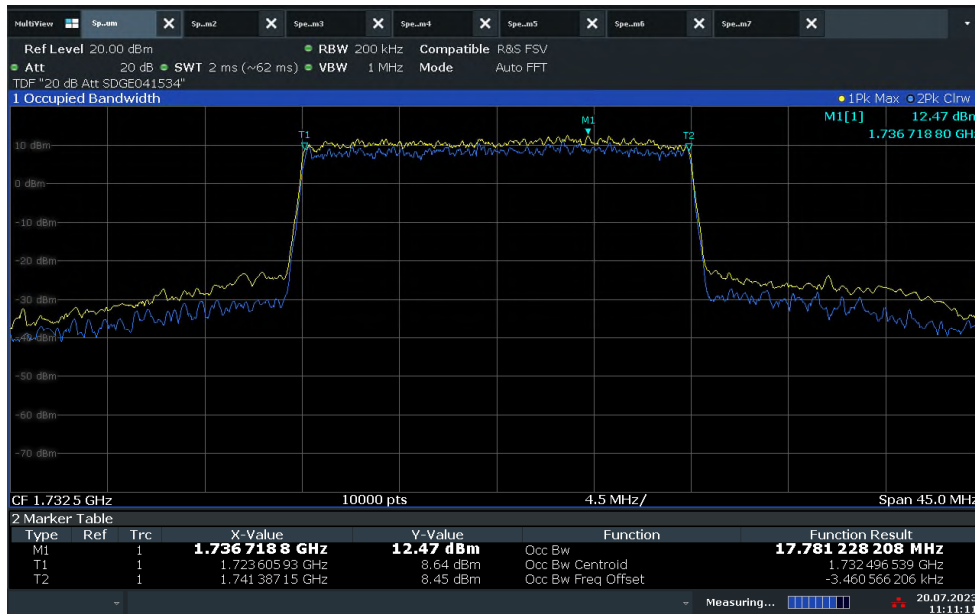
FCC ID: YETG41-BE
 IC: 9298A-G41BE

LTE Band 4 Uplink (15 MHz BW) / Mid Channel 1732.5 MHz / 26dB BW



11:08:30 20.07.2023

LTE Band 4 Uplink (20 MHz BW) / Mid Channel 1732.5 MHz / 99%OBW

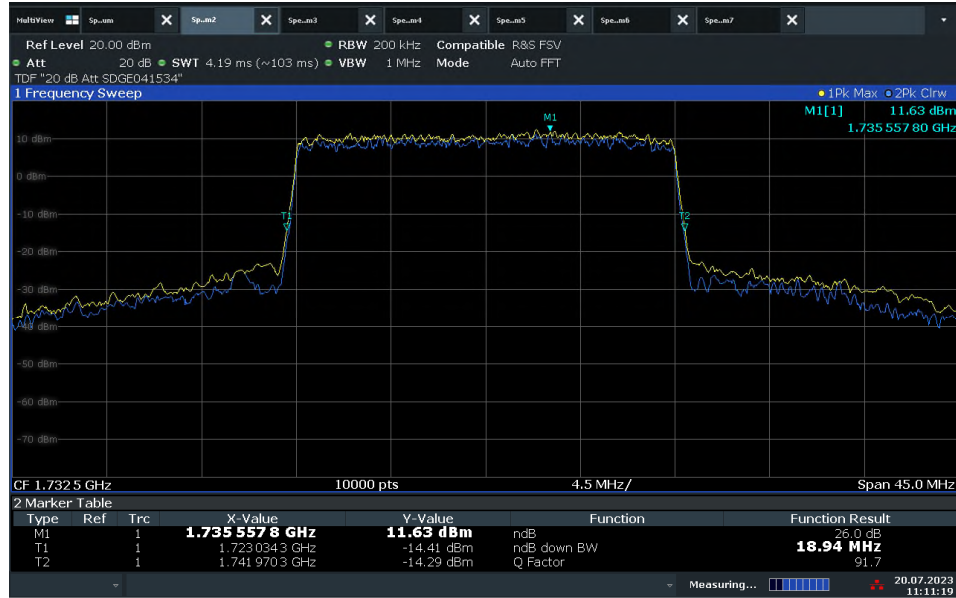


11:11:11 20.07.2023



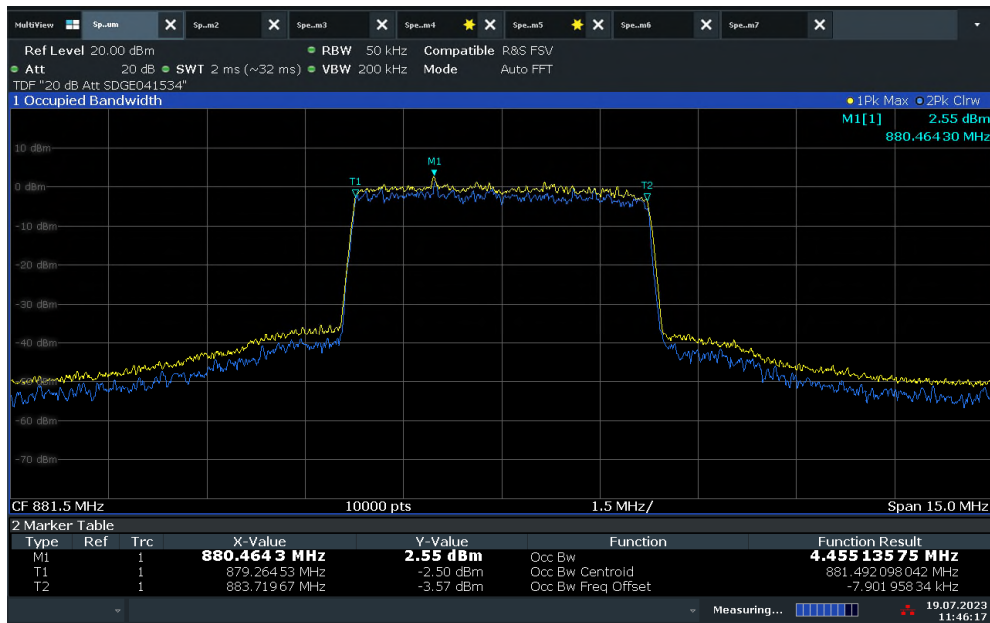
FCC ID: YETG41-BE
 IC: 9298A-G41BE

LTE Band 4 Uplink (20 MHz BW) / Mid Channel 1732.5 MHz / 26dB BW



11:11:19 20.07.2023

LTE Band 5 Downlink (5 MHz BW) Mid Channel 891.5 MHz 99% OBW

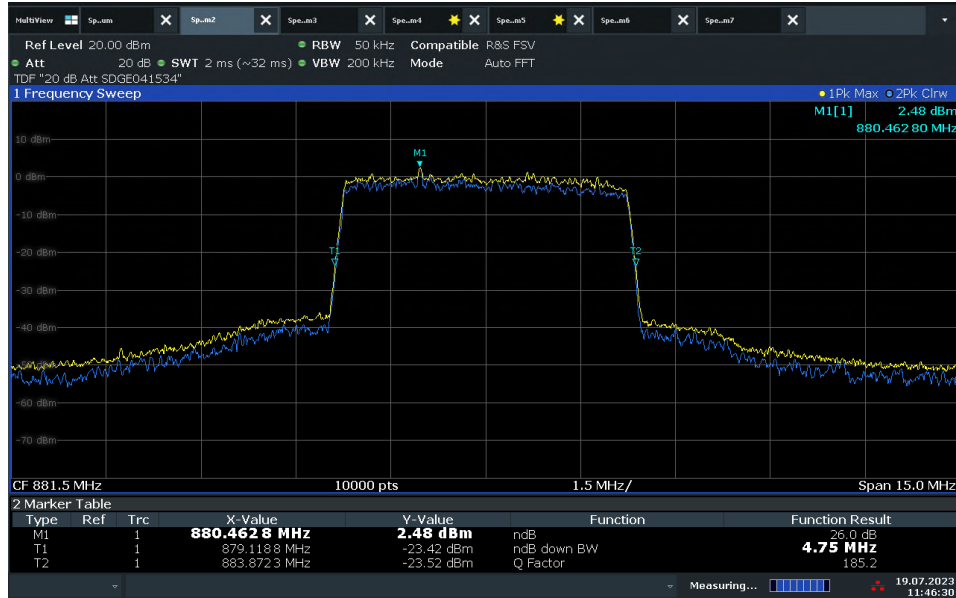


11:46:18 19.07.2023



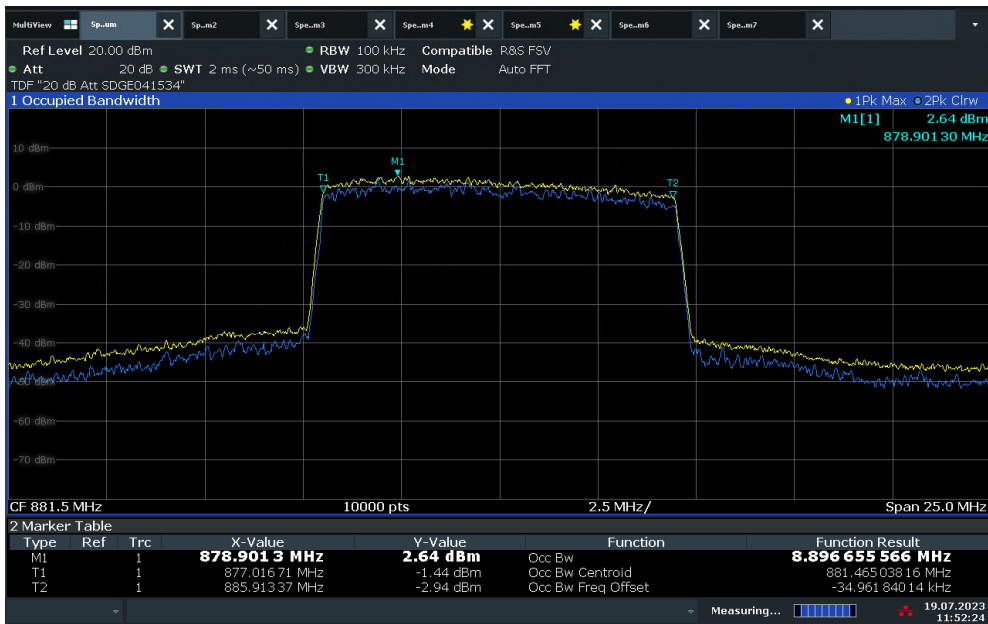
FCC ID: YETG41-BE
 IC: 9298A-G41BE

LTE Band 5 Downlink (5 MHz BW) Mid Channel 891.5 MHz 26 dB BW



11:46:31 19.07.2023

LTE Band 5 Downlink (10 MHz BW) Mid Channel 891.5 MHz 99% OBW

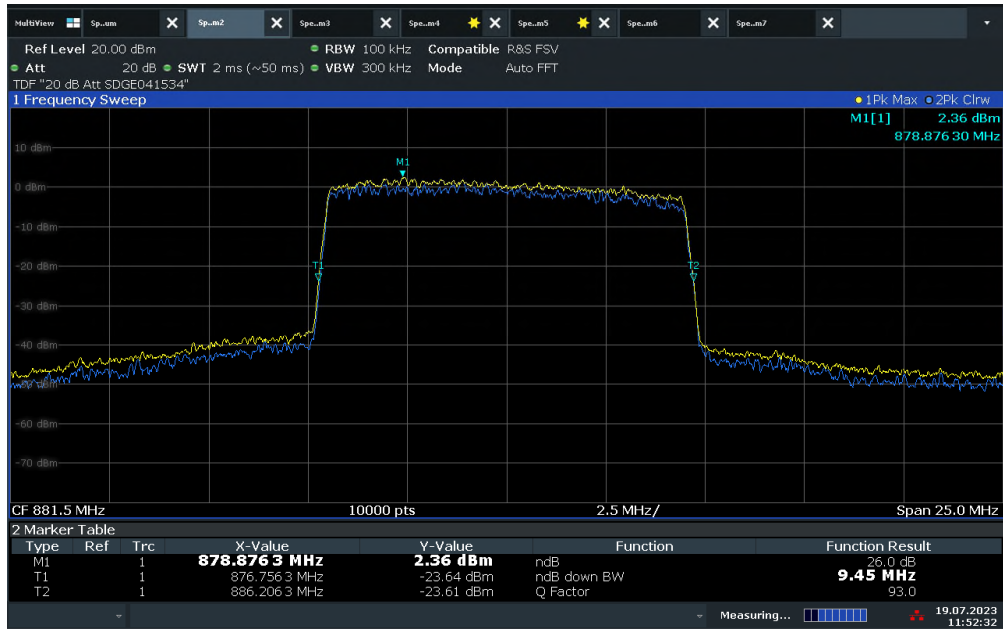


11:52:25 19.07.2023



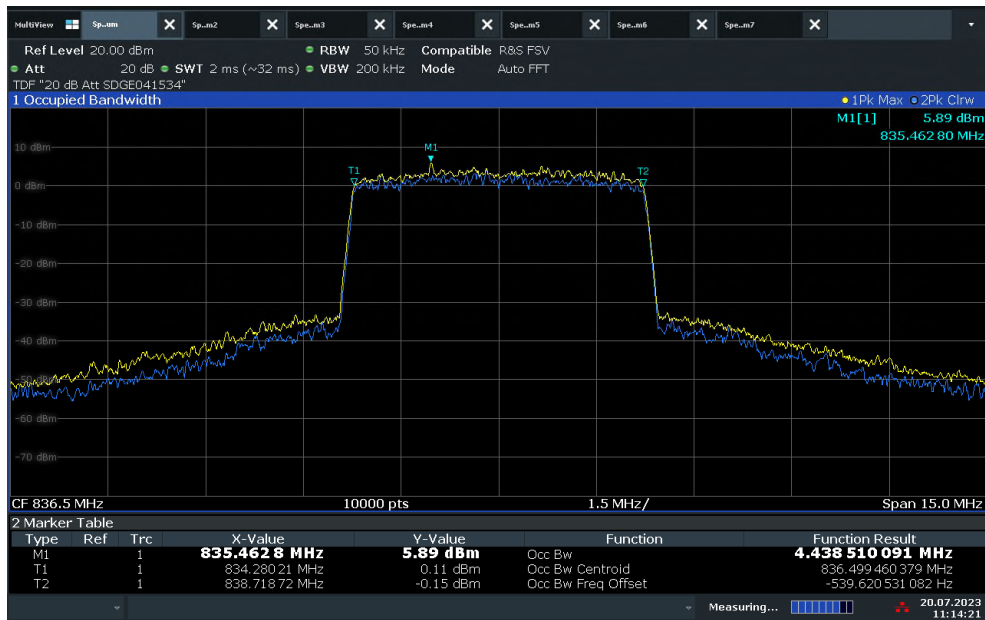
FCC ID: YETG41-BE
IC: 9298A-G41BE

LTE Band 5 Downlink (10 MHz BW) Mid Channel 891.5 MHz 26 dB BW



11:52:33 19.07.2023

LTE Band 5 Uplink (5 MHz BW) Mid Channel 826.5 MHz 99% OBW

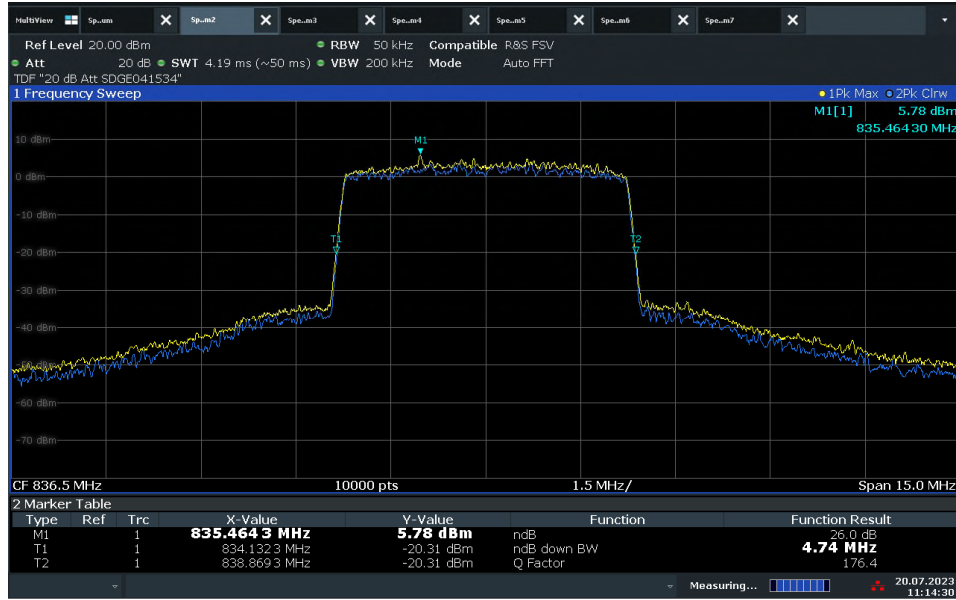


11:14:22 20.07.2023



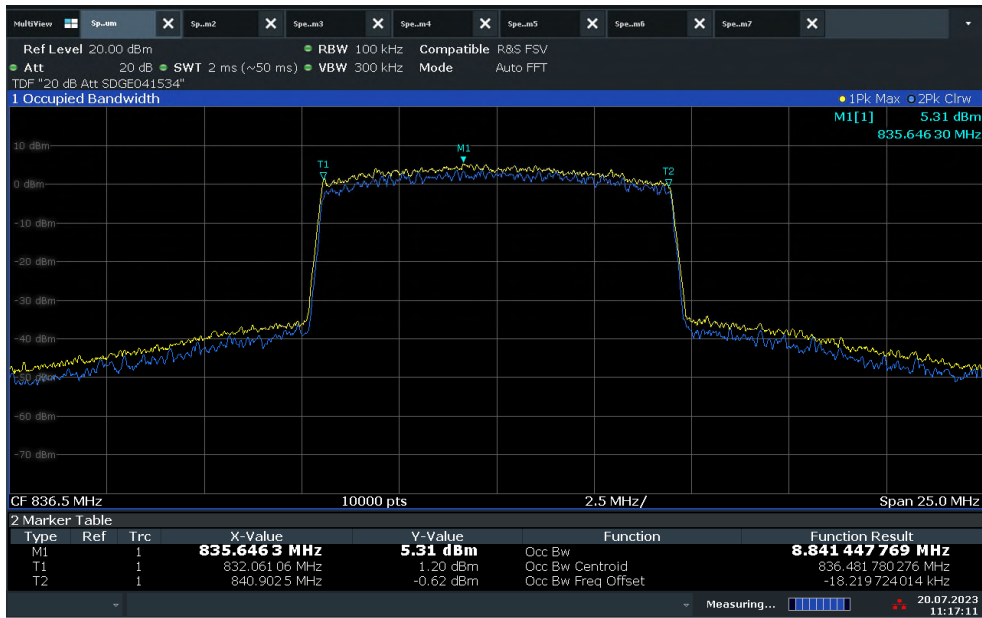
FCC ID: YETG41-BE
IC: 9298A-G41BE

LTE Band 5 Uplink (5 MHz BW) Mid Channel 826.5 MHz 26 dB BW



11:14:31 20.07.2023

LTE Band 5 Uplink (10 MHz BW) Mid Channel 826.5 MHz 99% OBW

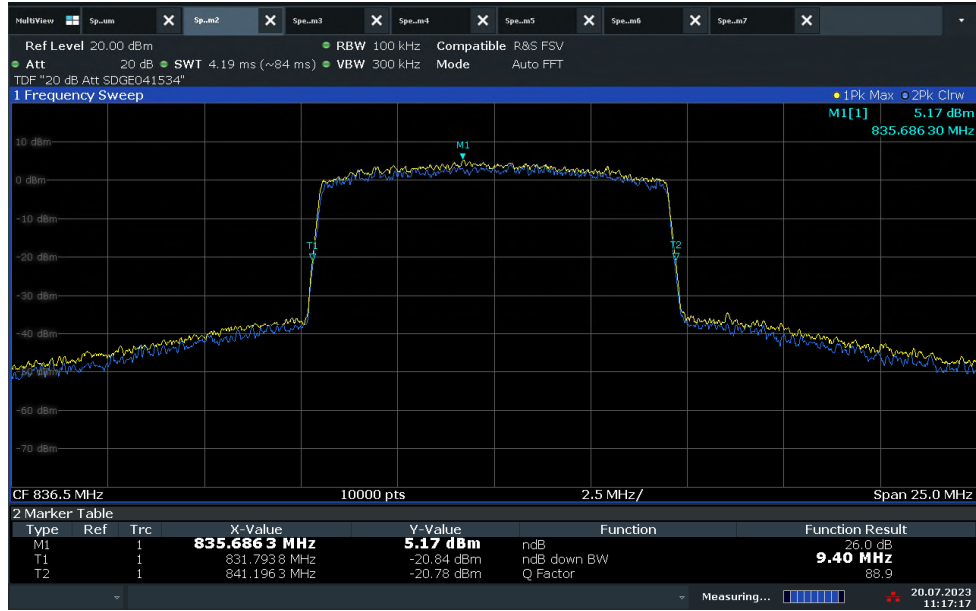


11:17:11 20.07.2023



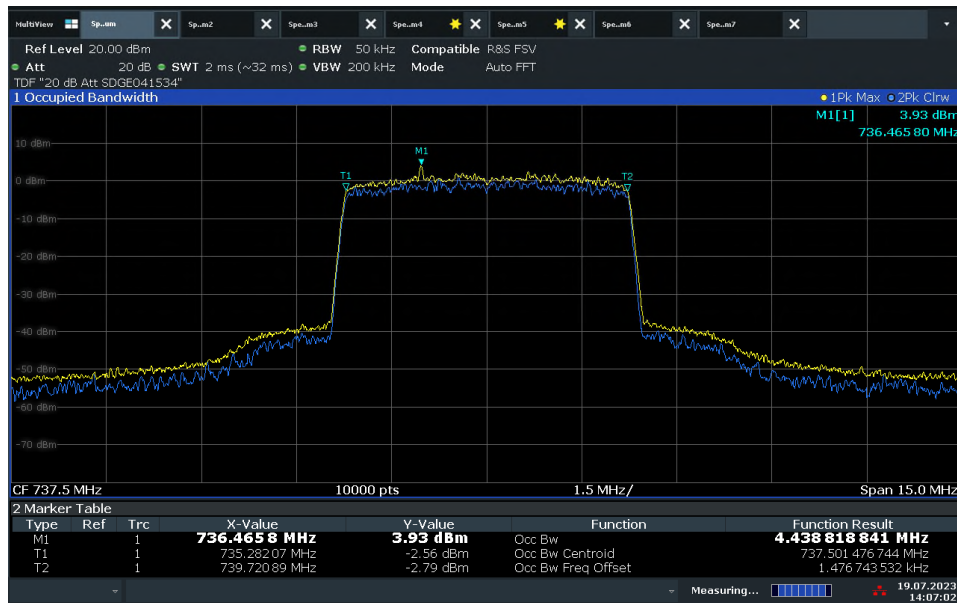
FCC ID: YETG41-BE
 IC: 9298A-G41BE

LTE Band 5 Uplink (10 MHz BW) Mid Channel 826.5 MHz 26 dB BW



11:17:17 20.07.2023

LTE Band 12 Downlink (5 MHz BW) / Mid Channel 737.5 MHz / 99%OBW



14:07:02 19.07.2023



FCC ID: YETG41-BE
 IC: 9298A-G41BE

LTE Band 12 Downlink (5 MHz BW) / Mid Channel 737.5 MHz / 26dB BW



14:07:13 19.07.2023

LTE Band 12 Downlink (10 MHz BW) / Mid Channel 737.5 MHz / 99%OBW



14:13:55 19.07.2023



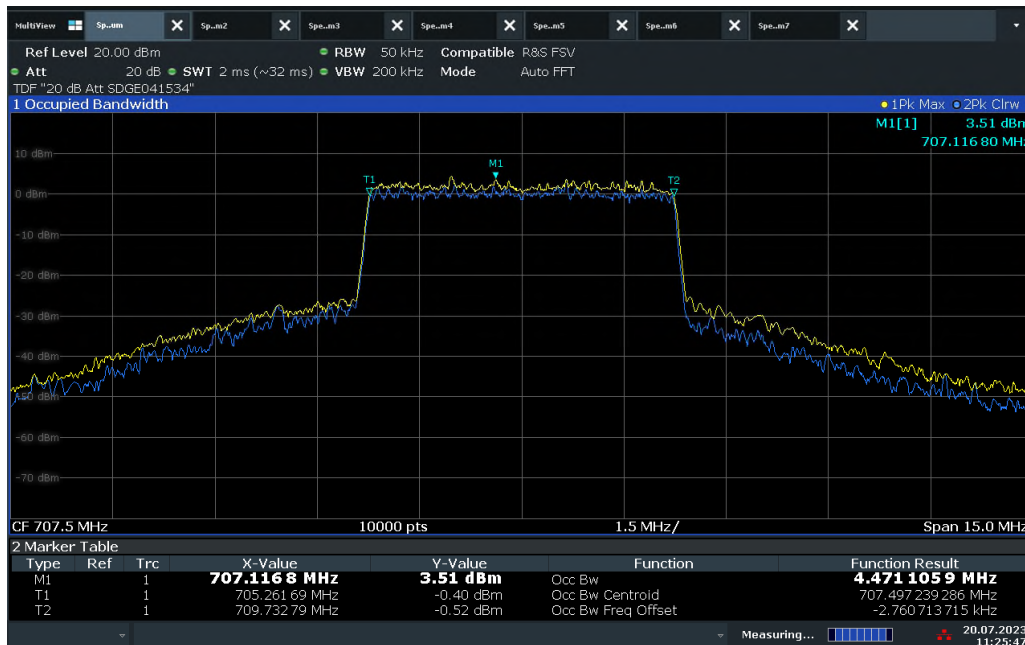
FCC ID: YETG41-BE
 IC: 9298A-G41BE

LTE Band 12 Downlink (10 MHz BW) / Mid Channel 737.5 MHz / 26dB BW



14:14:03 19.07.2023

LTE Band 12 Uplink (5 MHz BW) / Mid Channel 707.5 MHz / 99%OBW

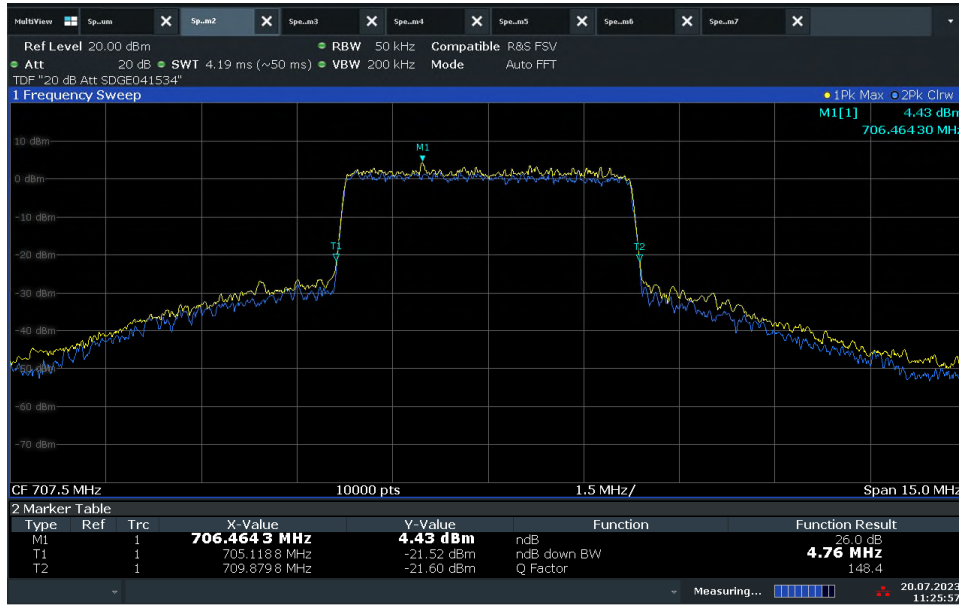


11:25:48 20.07.2023

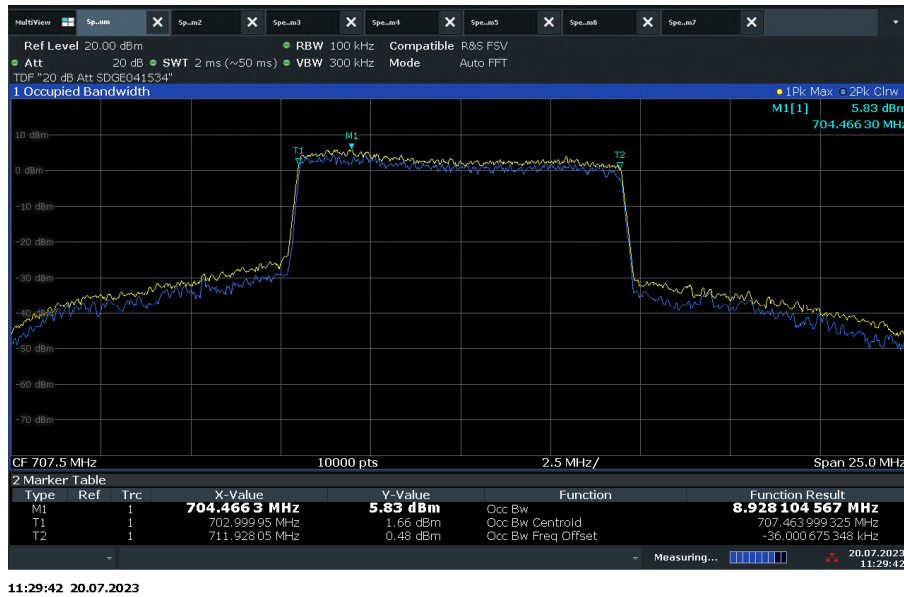


FCC ID: YETG41-BE
 IC: 9298A-G41BE

LTE Band 12 Uplink (5 MHz BW) / Mid Channel 707.5 MHz / 26dB BW



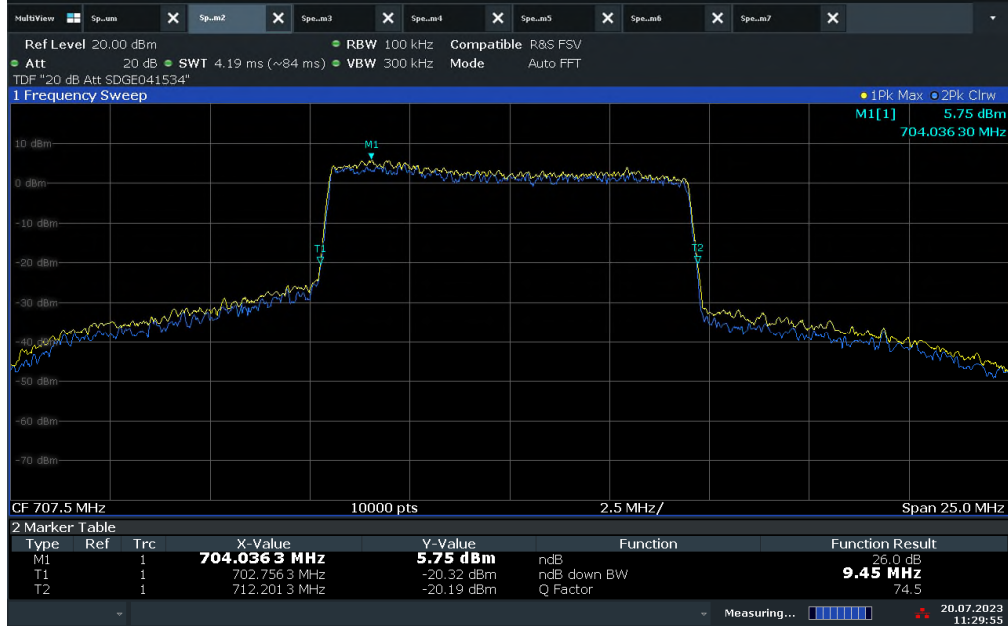
LTE Band 12 Uplink (10 MHz BW) / Mid Channel 707.5 MHz / 99%OBW





FCC ID: YETG41-BE
 IC: 9298A-G41BE

LTE Band 12 Uplink (10 MHz BW) / Mid Channel 707.5 MHz / 26dB BW



11:29:56 20.07.2023

LTE Band 13 Downlink (5 MHz BW) / Mid Channel 751.0 MHz / 99%OBW

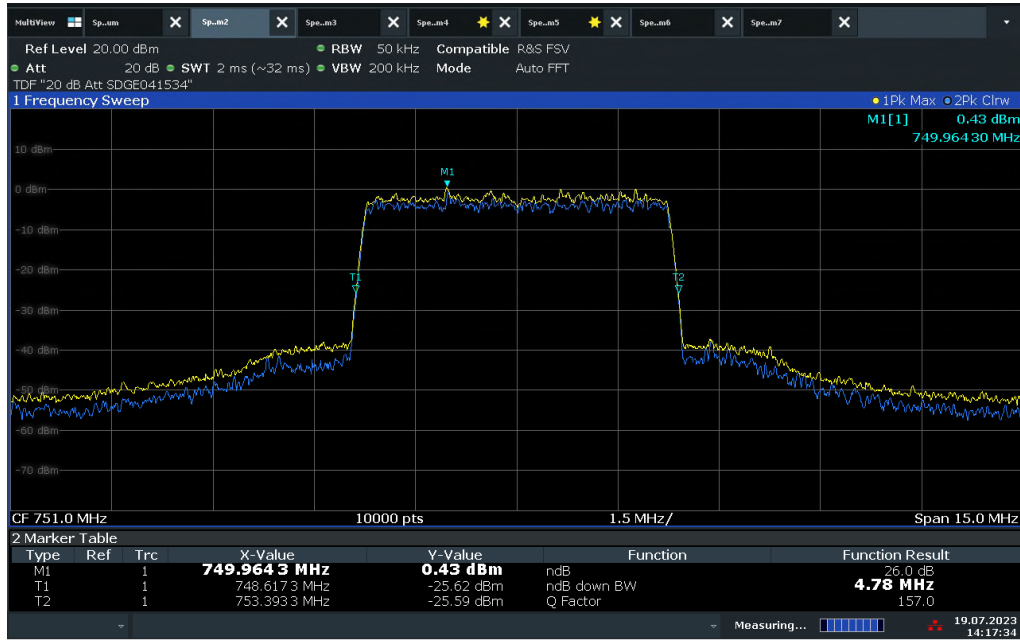


14:17:20 19.07.2023



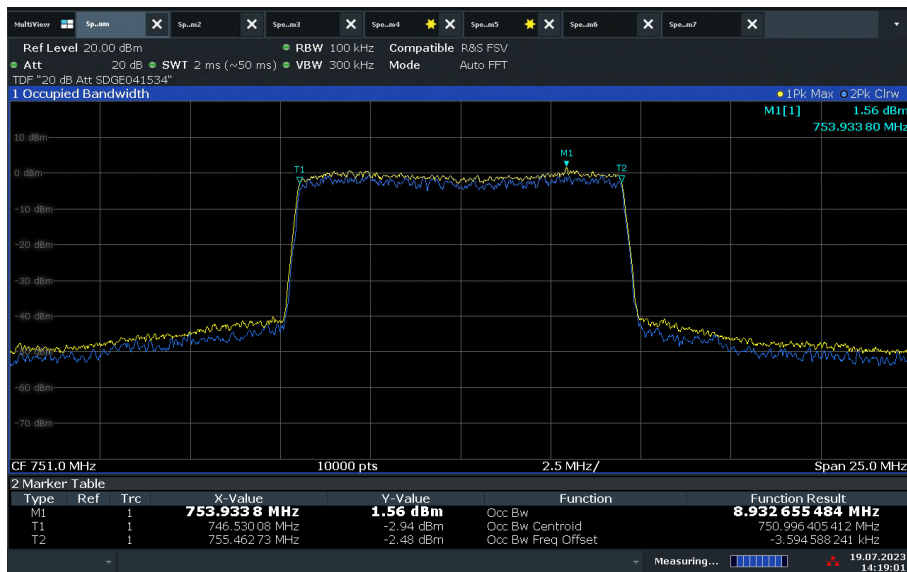
FCC ID: YETG41-BE
IC: 9298A-G41BE

LTE Band 13 Downlink (5 MHz BW) / Mid Channel 751.0 MHz / 26dB BW



14:17:34 19.07.2023

LTE Band 13 Downlink (10 MHz BW) / Mid Channel 751.0 MHz / 99%OBW

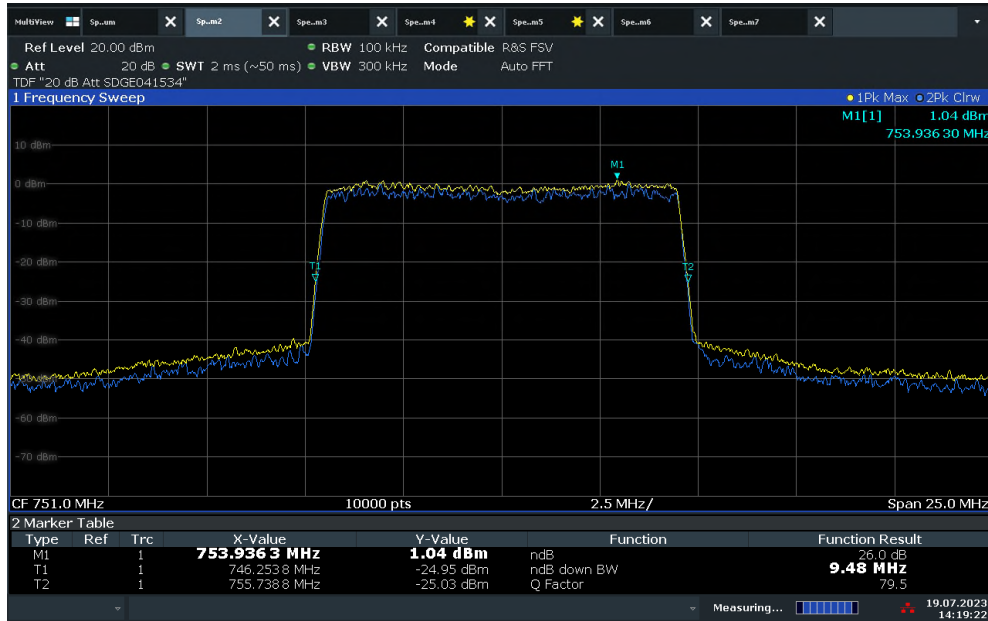


14:19:01 19.07.2023



FCC ID: YETG41-BE
 IC: 9298A-G41BE

LTE Band 13 Downlink (10 MHz BW) / Mid Channel 751.0 MHz / 26dB BW



14:19:23 19.07.2023

LTE Band 13 Uplink (5 MHz BW) / Mid Channel 782.0 MHz / 99%OBW

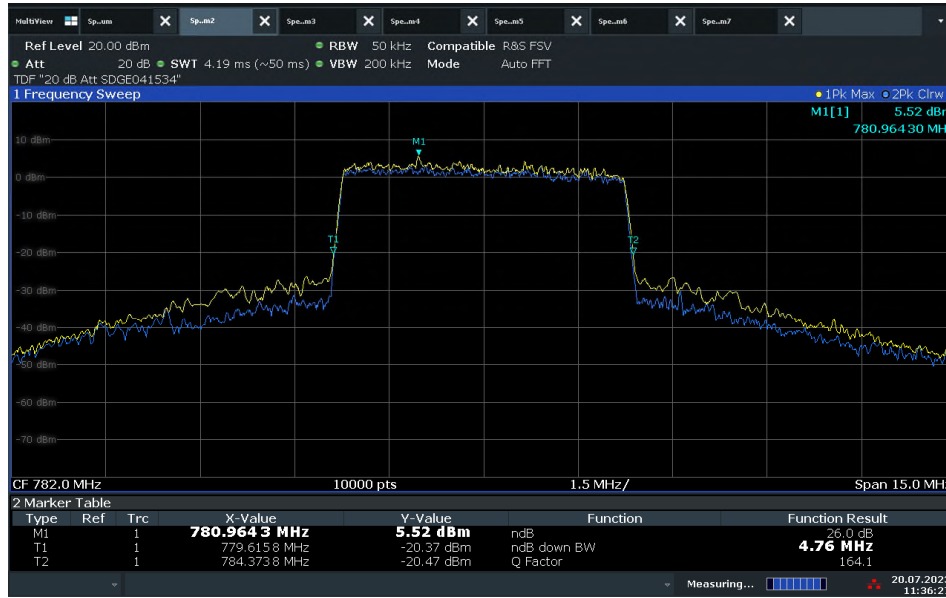


11:39:01 20.07.2023



FCC ID: YETG41-BE
 IC: 9298A-G41BE

LTE Band 13 Uplink (5 MHz BW) / Mid Channel 782.0 MHz / 26dB BW



11:36:27 20.07.2023

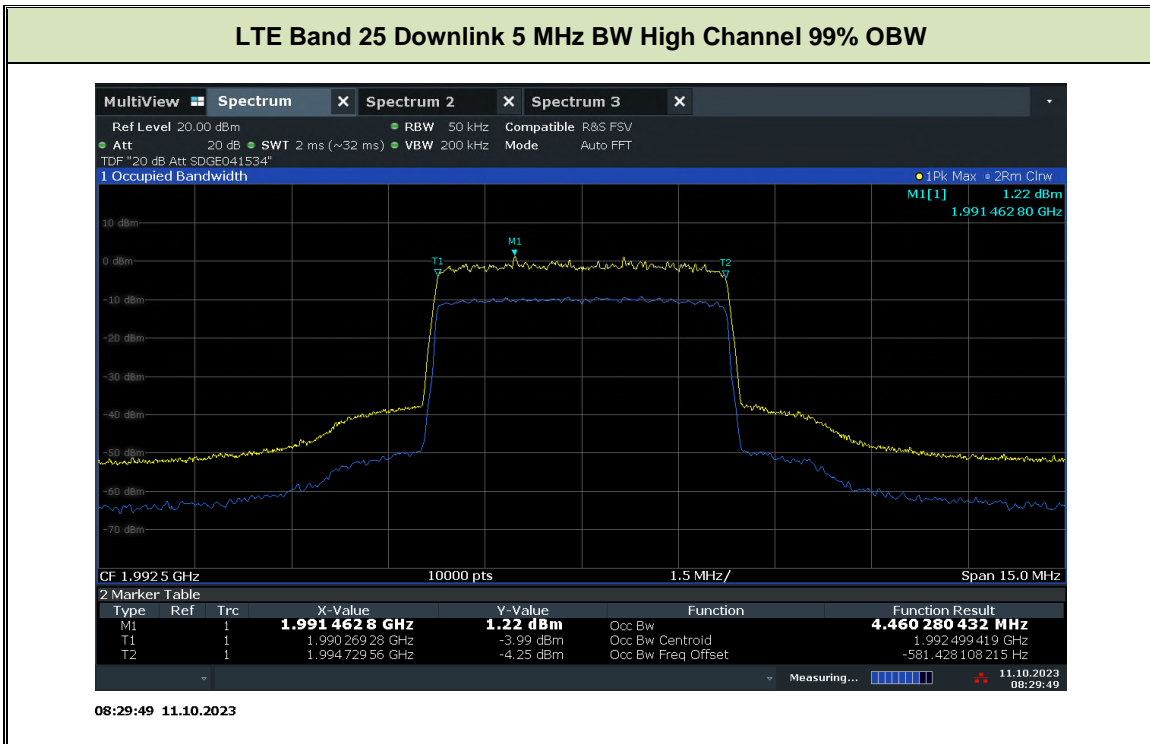
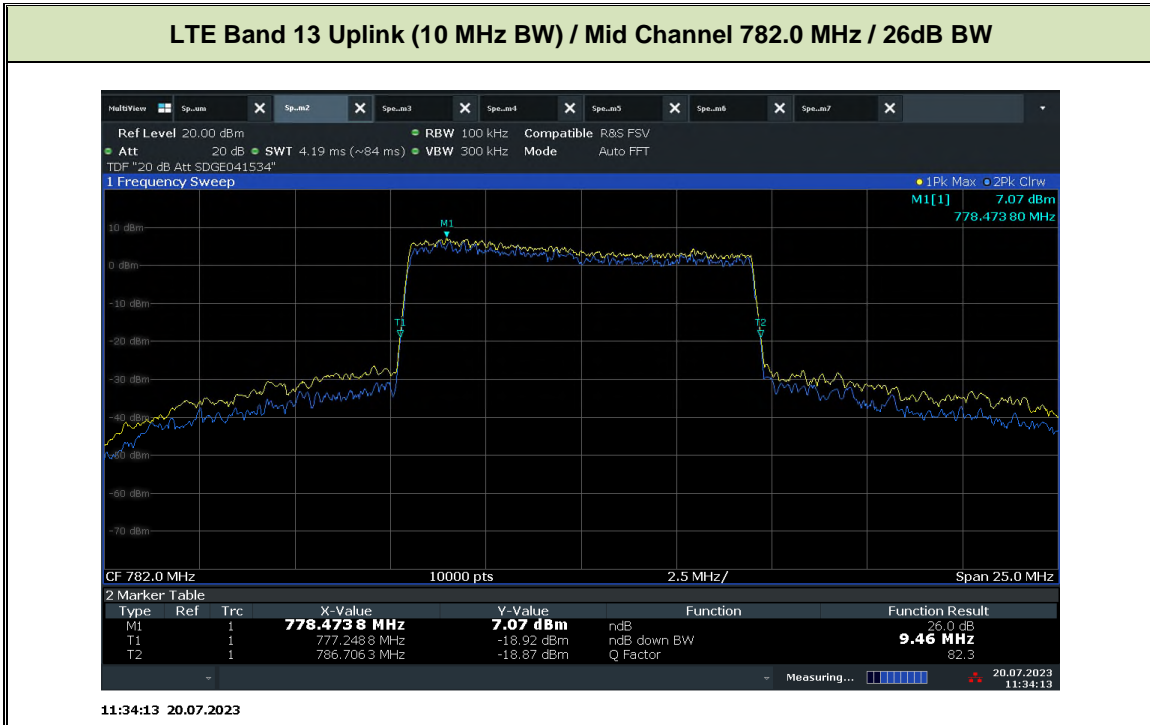
LTE Band 13 Uplink (10 MHz BW) / Mid Channel 782.0 MHz / 99%OBW



11:34:38 20.07.2023



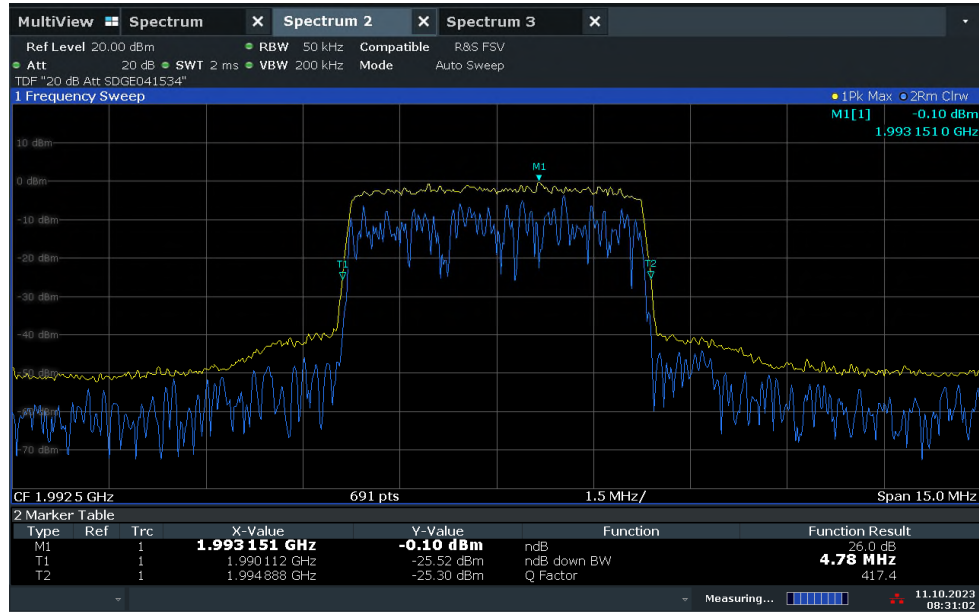
FCC ID: YETG41-BE
 IC: 9298A-G41BE





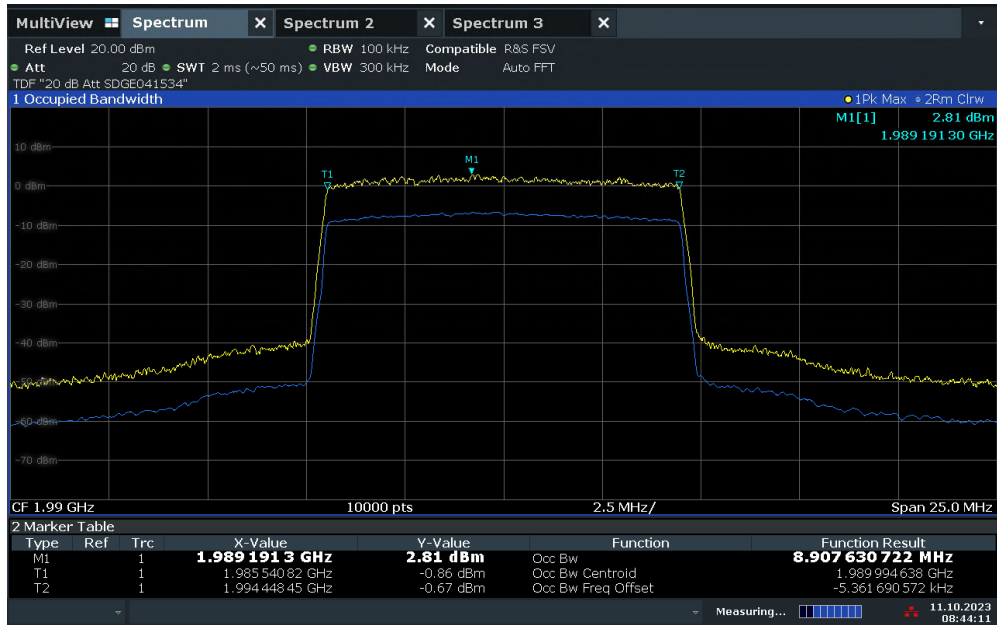
FCC ID: YETG41-BE
 IC: 9298A-G41BE

LTE Band 25 Downlink 5 MHz BW High Channel -26dB BW



08:31:02 11.10.2023

LTE Band 25 Downlink 10 MHz BW High Channel 99% OBW

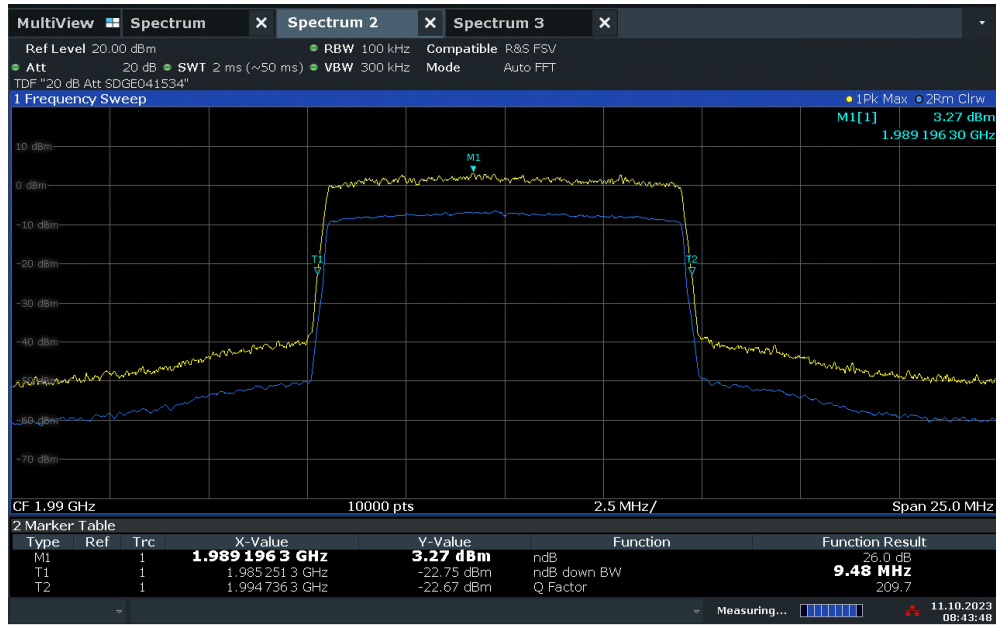


08:44:12 11.10.2023



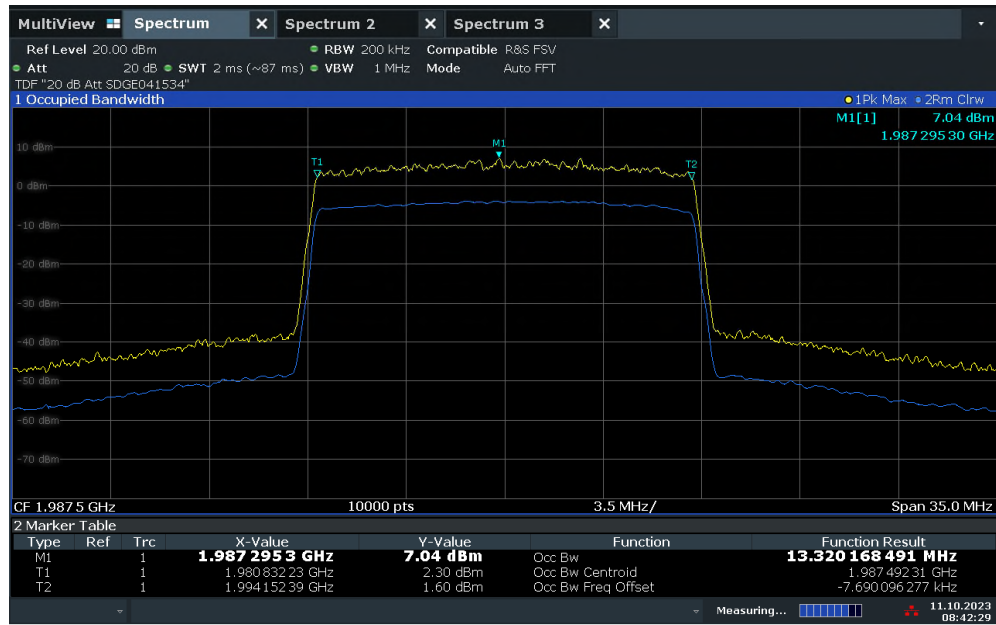
FCC ID: YETG41-BE
IC: 9298A-G41BE

LTE Band 25 Downlink 10 MHz BW High Channel -26dB BW



08:43:49 11.10.2023

LTE Band 25 Downlink 15 MHz BW High Channel 99% OBW

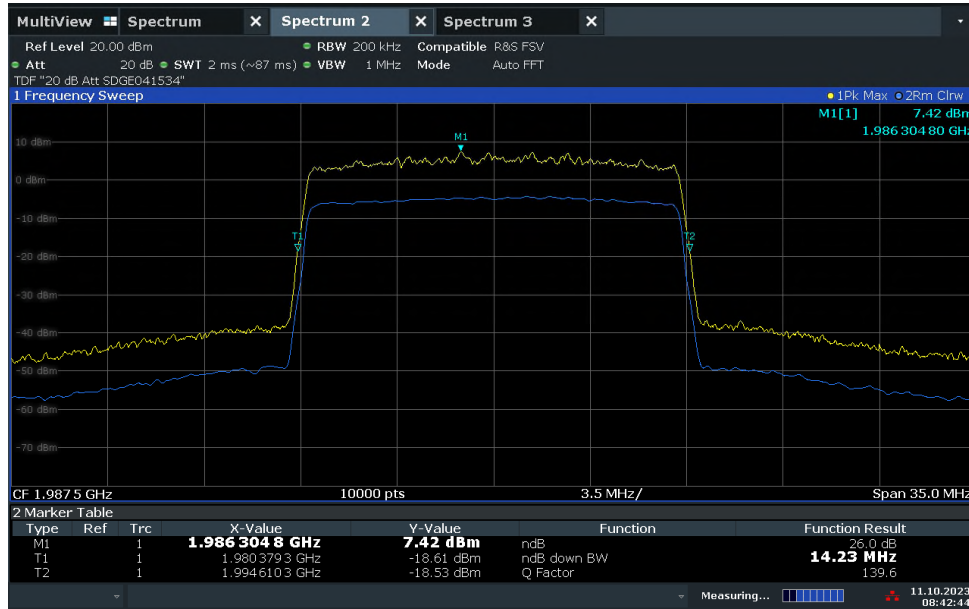


08:42:29 11.10.2023



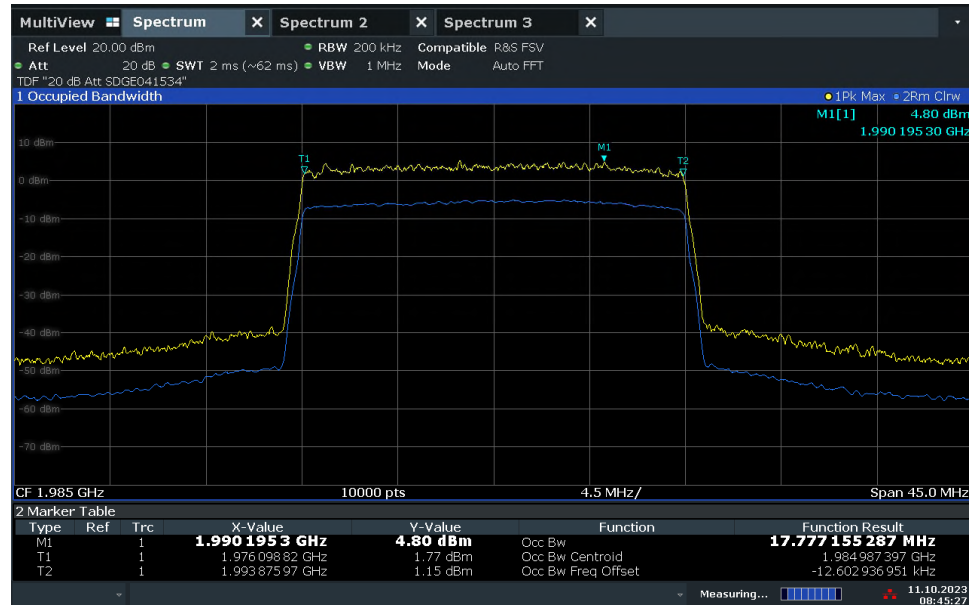
FCC ID: YETG41-BE
IC: 9298A-G41BE

LTE Band 25 Downlink 15MHz BW High Channel -26dB BW



08:42:45 11.10.2023

LTE Band 25 Downlink 20 MHz BW High Channel 99% OBW

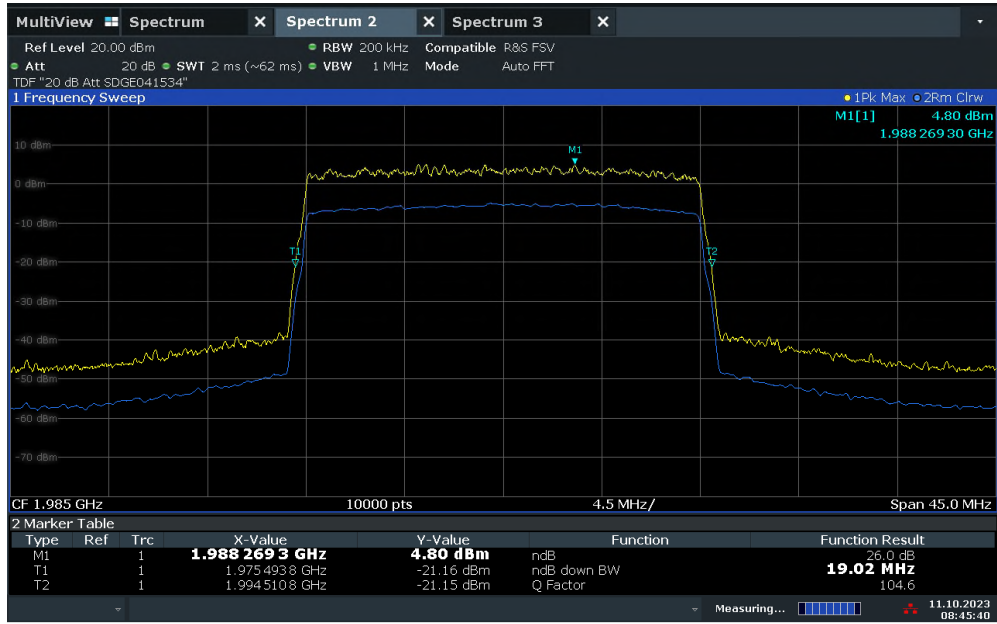


08:45:28 11.10.2023



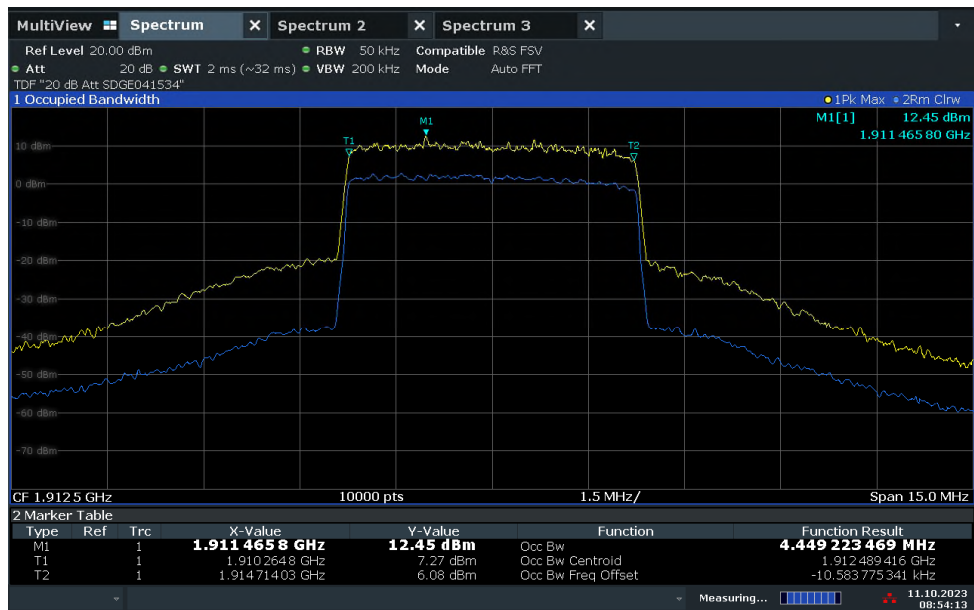
FCC ID: YETG41-BE
 IC: 9298A-G41BE

LTE Band 25 Downlink 20 MHz BW High Channel -26dB BW



08:45:41 11.10.2023

LTE Band 25 Uplink 5 MHz BW High Channel 99% OBW



08:54:13 11.10.2023



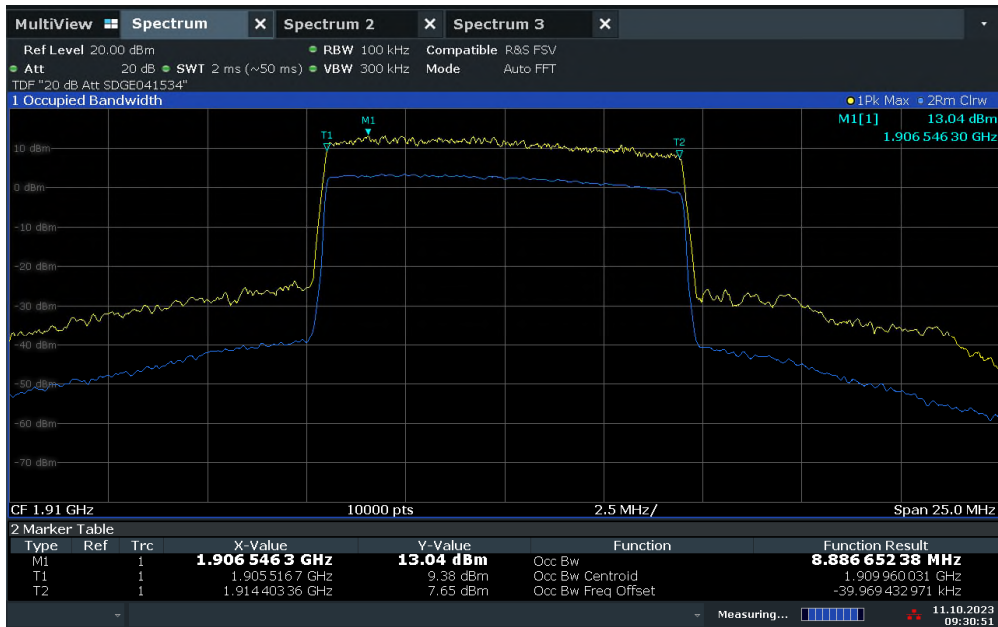
FCC ID: YETG41-BE
 IC: 9298A-G41BE

LTE Band 25 Uplink 5 MHz BW High Channel -26dB BW



08:54:46 11.10.2023

LTE Band 25 Uplink 10 MHz BW High Channel 99% OBW

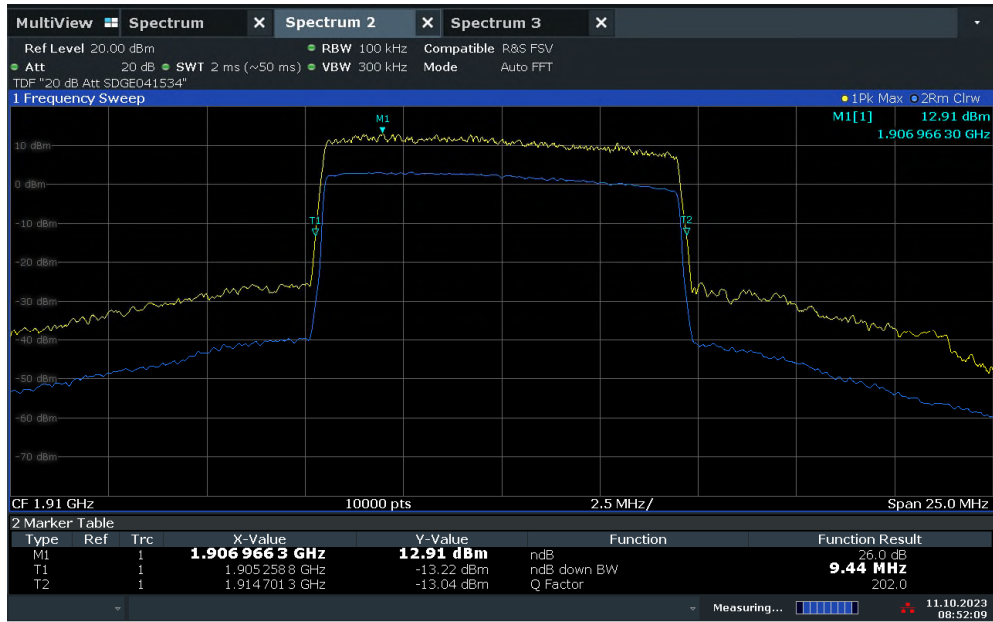


09:30:51 11.10.2023



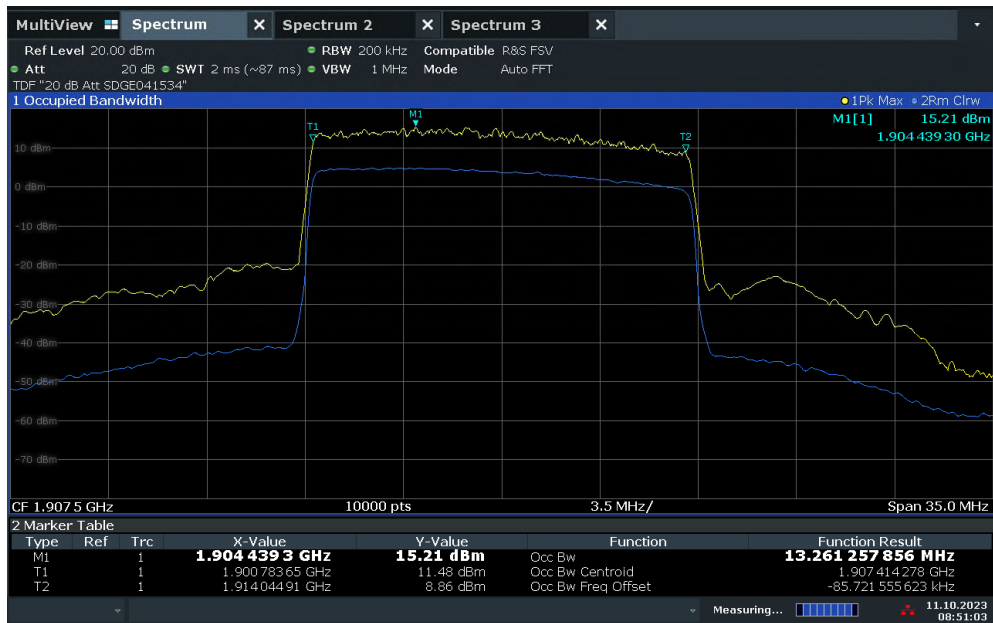
FCC ID: YETG41-BE
IC: 9298A-G41BE

LTE Band 25 Uplink 10 MHz BW High Channel -26dB BW



08:52:09 11.10.2023

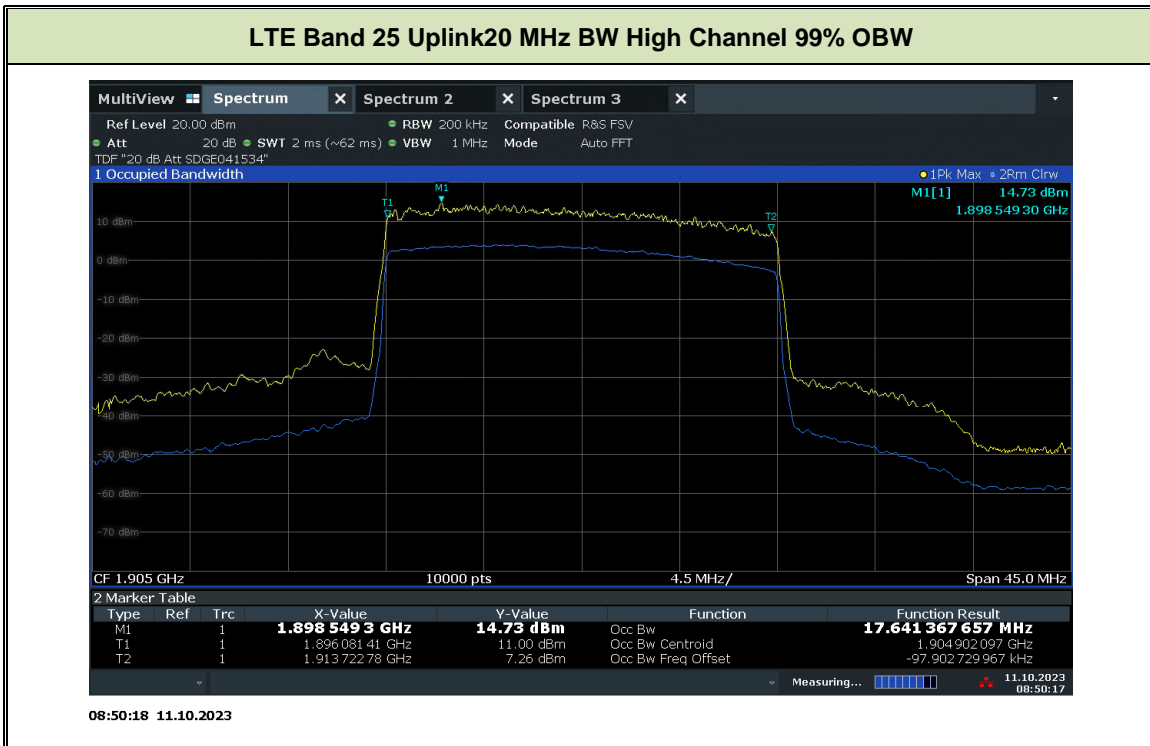
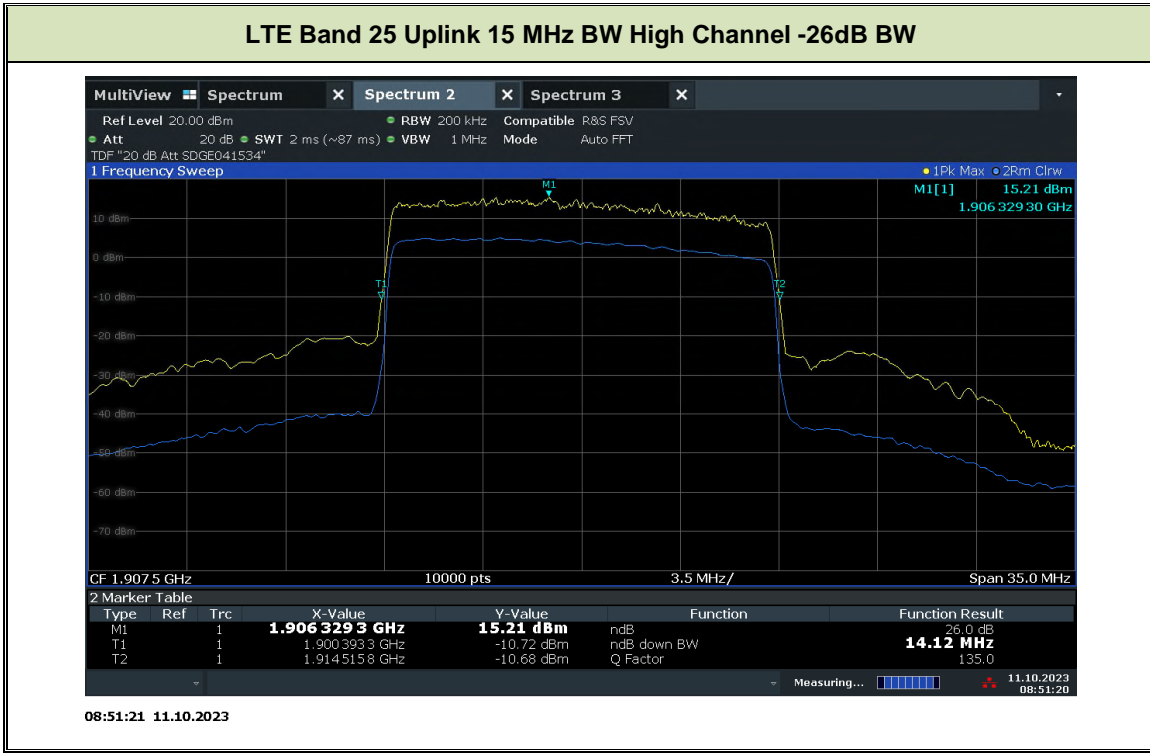
LTE Band 25 Uplink 15 MHz BW High Channel 99% OBW



08:51:04 11.10.2023

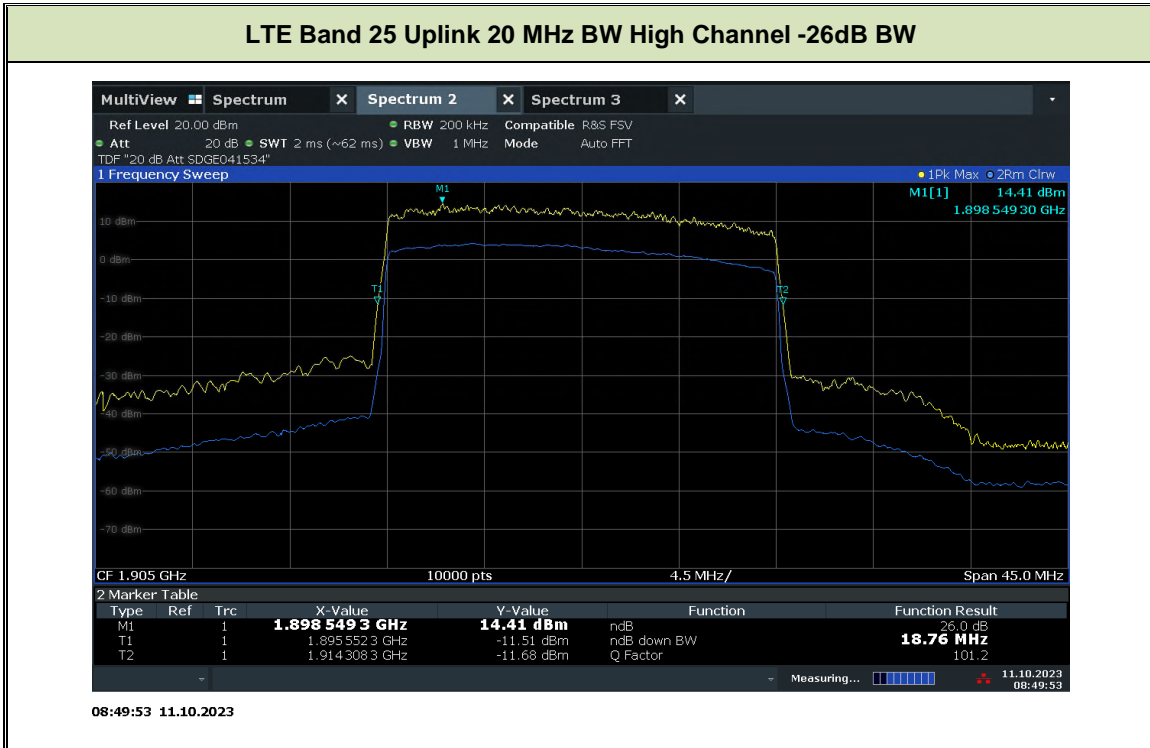


FCC ID: YETG41-BE
IC: 9298A-G41BE





FCC ID: YETG41-BE
 IC: 9298A-G41BE





FCC ID: YETG41-BE
IC: 9298A-G41BE

2.11 Oscillation Detection

2.11.1 Specification Reference

FCC 47 CFR Part 20. Clause 20.21(e)(9)(ii)(A)
KDB935210 D04, Clause 7.11

2.11.2 Standard Applicable

FCC 47 CFR Part 20. Clause 20.21(e)(9)(ii)(A) Anti-Oscillation:

Consumer boosters must be able to detect and mitigate (i.e., by automatic gain reduction or shut down), any oscillations in uplink and downlink bands. Oscillation detection and mitigation must occur automatically within 0.3 seconds in the uplink band and within 1 second in the downlink band. In cases where oscillation is detected, the booster must continue mitigation for at least one minute before restarting. After five such restarts, the booster must not resume operation until manually reset.

2.11.3 Equipment Under Test and Modification State

Serial No: 560311000026 / Test Configuration A, B, C and D

2.11.4 Date of Test/Initial of test personnel who performed the test.

September 11, 2023/MARG

2.11.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.11.6 Environmental Conditions

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility.

Ambient Temperature	25.8°C
Relative Humidity	53.3%
ATM Pressure	99.0kPa

2.11.7 Additional Observations

- This is conducted Test.
- The test procedure is per Section 7.11 of KDB935210 (D04 Provider Specific Booster Measurements v02r03). Appropriate offset (line losses) applied.
- The EUT operated in Normal Mode when testing Oscillation Mitigation Time. Setup the EUT according to Figure 10 and 11 of Section 7.11 of KDB935210 for Normal Mode.
- The EUT operated in Test Mode when testing Re-Try event. Setup the EUT according to Figure 12 of Section 7.11 of KDB935210 for Test Mode.
- Evaluations are conducted at Donnor and Server Ports.
- Signal: 5MHz LTE.



FCC ID: YETG41-BE
 IC: 9298A-G41BE

2.11.8 Test Results Summary

Band	Signal Path	Frequency (MHz)	Mitigation Time (Sec)	Limit (Sec)	Margin (Sec)
LTE Band 2 Downlink	Server Port	1960	0.725	1	0.275
LTE Band 2 Uplink	Donnor Port	1880	0.021	0.3	0.279
LTE Band 4 Downlink	Server Port	2132.5	0.710	1	0.29
LTE Band 4 Uplink	Donnor Port	1732.5	0.043	0.3	0.257
LTE Band 5 Downlink	Server Port	881.5	0.826	1	0.174
LTE Band 5 Uplink	Donnor Port	836.5	0.014	0.3	0.286
LTE Band 12 Downlink	Server Port	737.5	0.630	1	0.37
LTE Band 12 Uplink	Donnor Port	707.5	0.014	0.3	0.286
LTE Band 13 Downlink	Server Port	751.0	0.695	1	0.305
LTE Band 13 Uplink	Donnor Port	782.0	0.130	0.3	0.17
LTE Band 25 Downlink	Server Port	1962.5	0.710	1	0.29
LTE Band 25 Uplink	Donnor Port	1882.5	0.021	0.3	0.279

Band	Signal Path	Frequency (MHz)	Re-try Event	Limit Event	Margin (Sec)
LTE Band 2 Downlink	Server Port	1960	0	5	5
LTE Band 2 Uplink	Donnor Port	1880	0	5	5
LTE Band 4 Downlink	Server Port	2132.5	0	5	5
LTE Band 4 Uplink	Donnor Port	1732.5	0	5	5
LTE Band 5 Downlink	Server Port	881.5	0	5	5
LTE Band 5 Uplink	Donnor Port	836.5	0	5	5
LTE Band 12 Downlink	Server Port	737.5	0	5	5
LTE Band 12 Uplink	Donnor Port	707.5	0	5	5
LTE Band 13 Downlink	Server Port	751.0	0	5	5
LTE Band 13 Uplink	Donnor Port	782.0	0	5	5
LTE Band 25 Downlink	Server Port	1962.5	0	5	5
LTE Band 25 Uplink	Donnor Port	1882.5	0	5	5



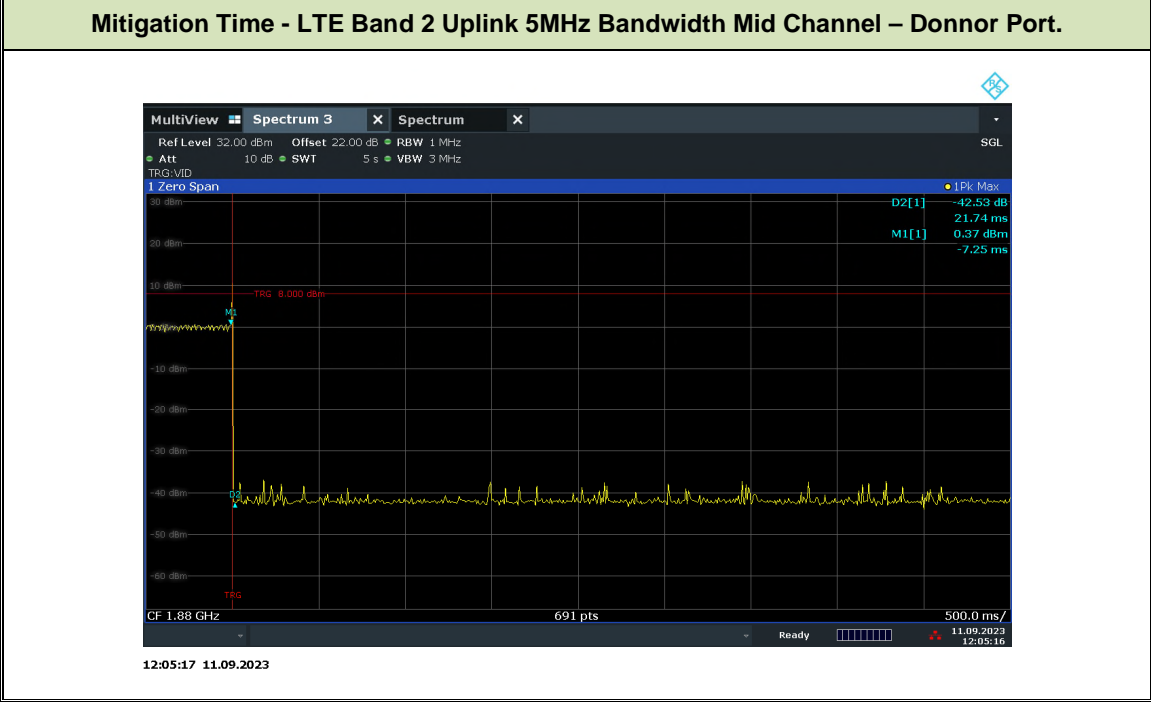
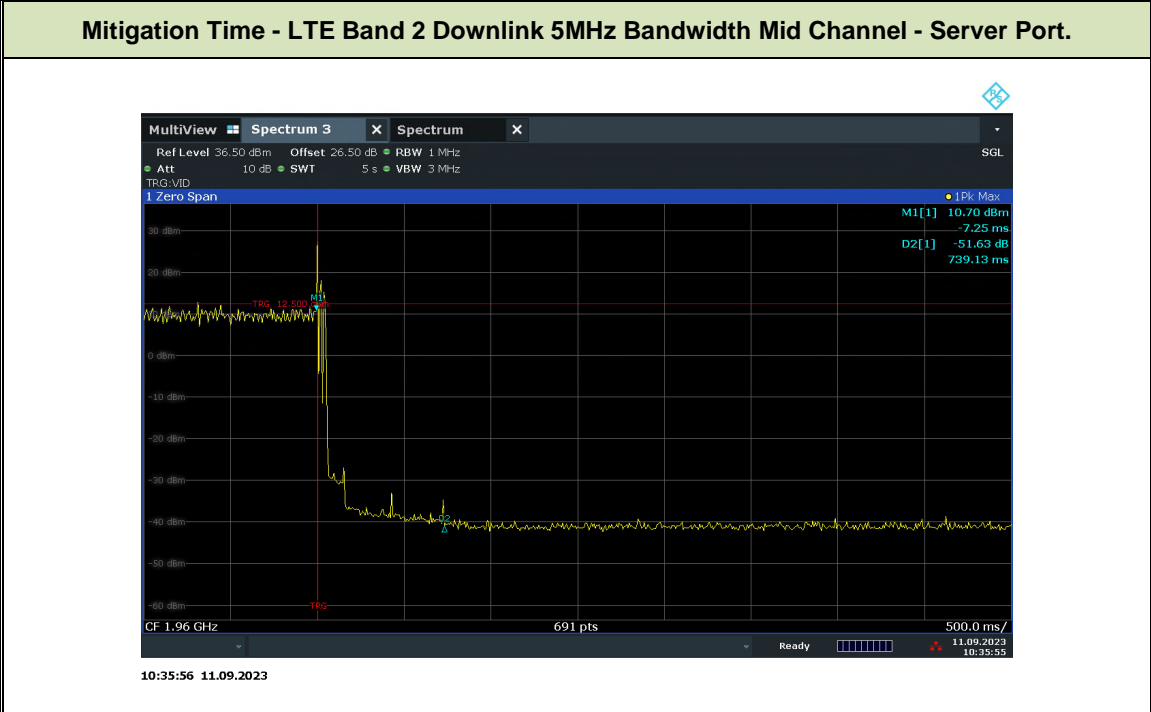
FCC ID: YETG41-BE
 IC: 9298A-G41BE

Band	Signal Path	Frequency (MHz)	Level	Peak Oscillation Level	Level
LTE Band 2 Downlink	Server Port	1960	-82.5	< 2dB	12
LTE Band 2 Uplink	Donnor Port	1880	-77.5	< 2dB	12
LTE Band 4 Downlink	Server Port	2132.5	-82.5	< 2dB	12
LTE Band 4 Uplink	Donnor Port	1732.5	-77.3	< 2dB	12
LTE Band 5 Downlink	Server Port	881.5	-82.4	< 2dB	12
LTE Band 5 Uplink	Donnor Port	836.5	-75.8	< 2dB	12
LTE Band 12 Downlink	Server Port	737.5	-82.2	< 2dB	12
LTE Band 12 Uplink	Donnor Port	707.5	-75.6	< 2dB	12
LTE Band 13 Downlink	Server Port	751.0	-82.3	< 2dB	12
LTE Band 13 Uplink	Donnor Port	782.0	-75.5	< 2dB	12
LTE Band 25 Downlink	Server Port	1962.5	-82.5	< 2dB	12
LTE Band 25 Uplink	Donnor Port	1882.5	-77.5	< 2dB	12



FCC ID: YETG41-BE
IC: 9298A-G41BE

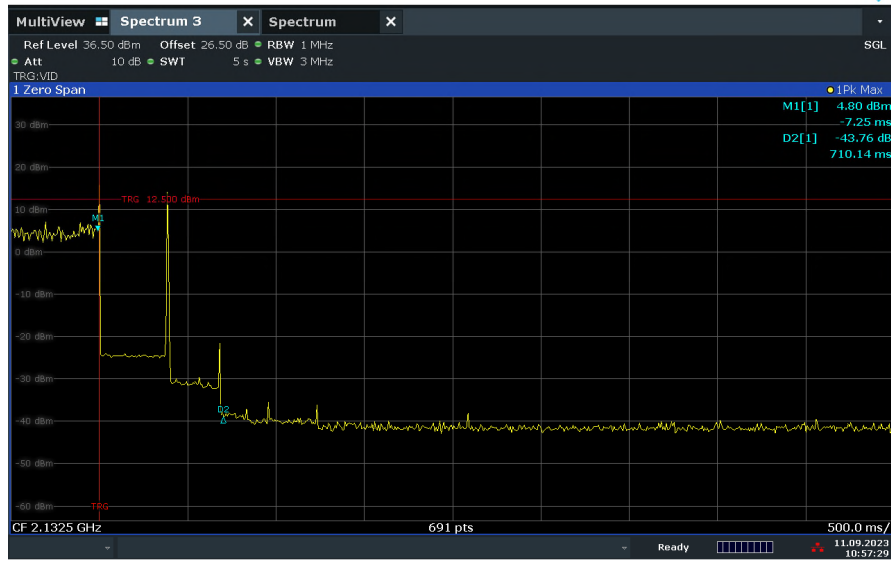
2.11.9 Test Results Plots





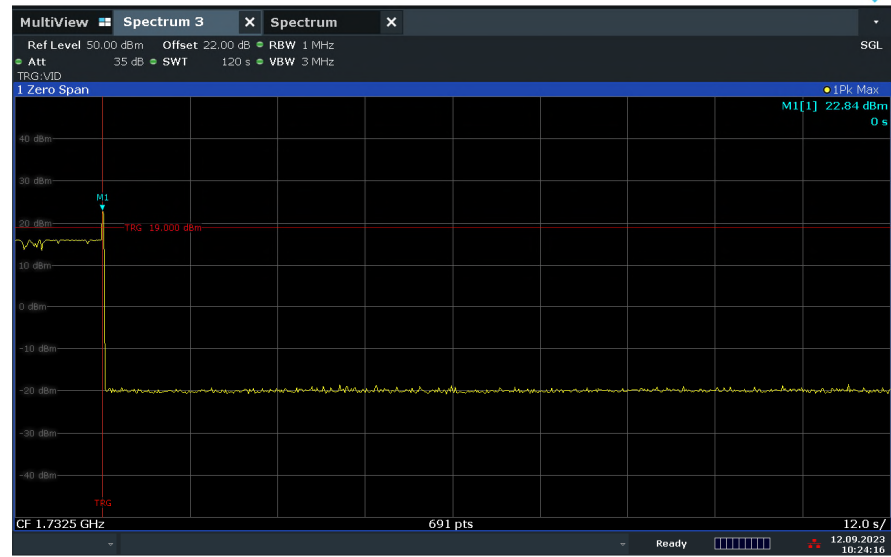
FCC ID: YETG41-BE
IC: 9298A-G41BE

Mitigation Time - LTE Band 4 Downlink 5MHz Bandwidth Mid Channel – Server Port.



10:57:29 11.09.2023

Mitigation Time - LTE Band 4 Uplink 5MHz Bandwidth Mid Channel – Donnor Port.

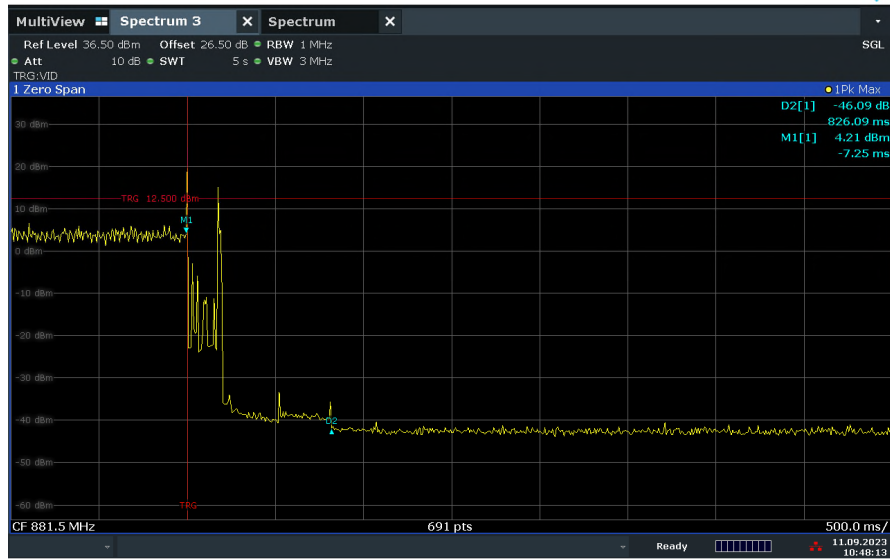


10:24:17 12.09.2023

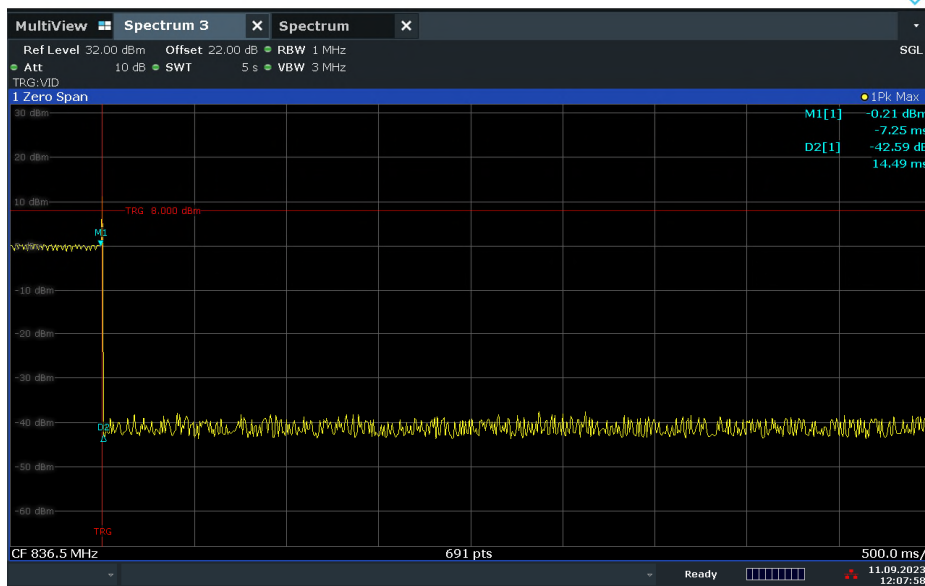


FCC ID: YETG41-BE
IC: 9298A-G41BE

Mitigation Time - LTE Band 5 Downlink 5MHz Bandwidth Mid Channel – Server Port.



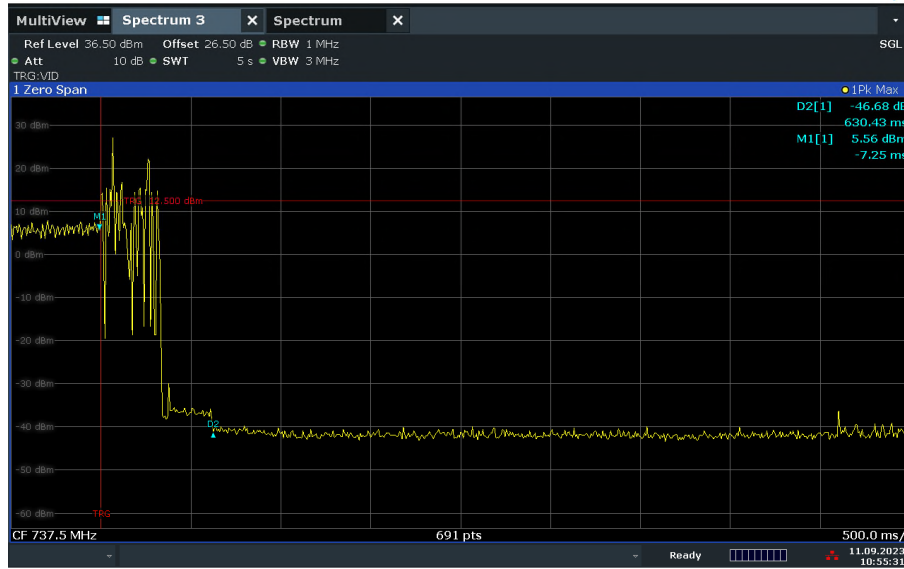
Mitigation Time - LTE Band 5 Uplink 5MHz Bandwidth Mid Channel – Donnor Port.





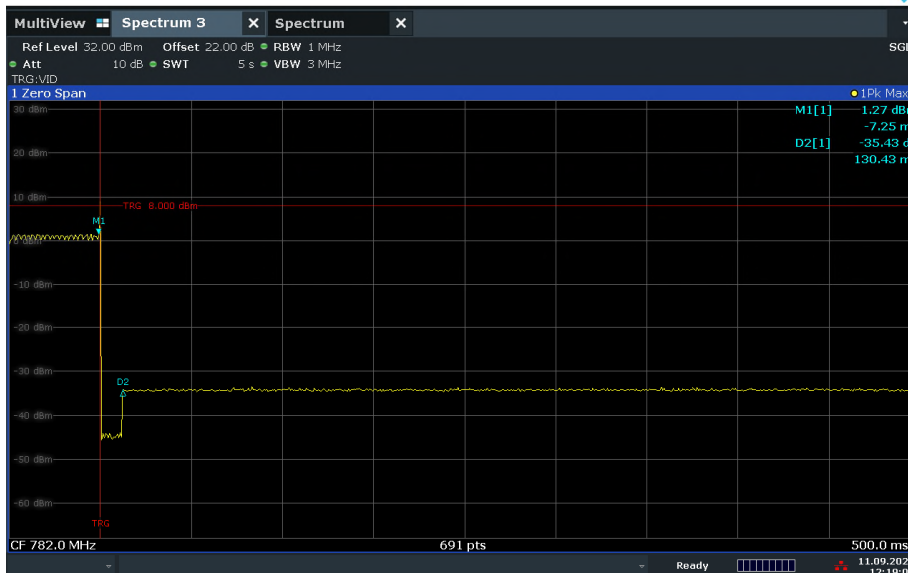
FCC ID: YETG41-BE
IC: 9298A-G41BE

Mitigation Time - LTE Band 12 Downlink 5MHz Bandwidth Mid Channel – Server Port.



10:55:31 11.09.2023

Mitigation Time - LTE Band 12 Uplink 5MHz Bandwidth Mid Channel – Donnor Port.

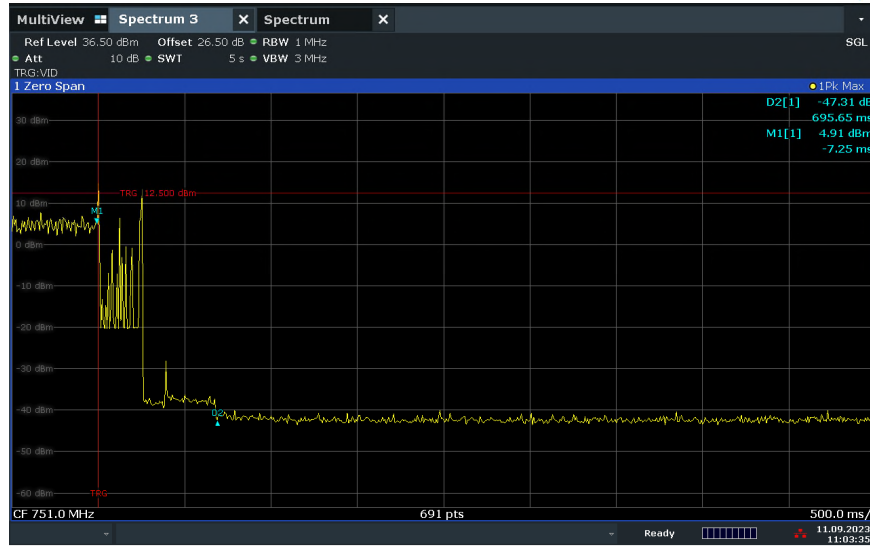


12:19:05 11.09.2023



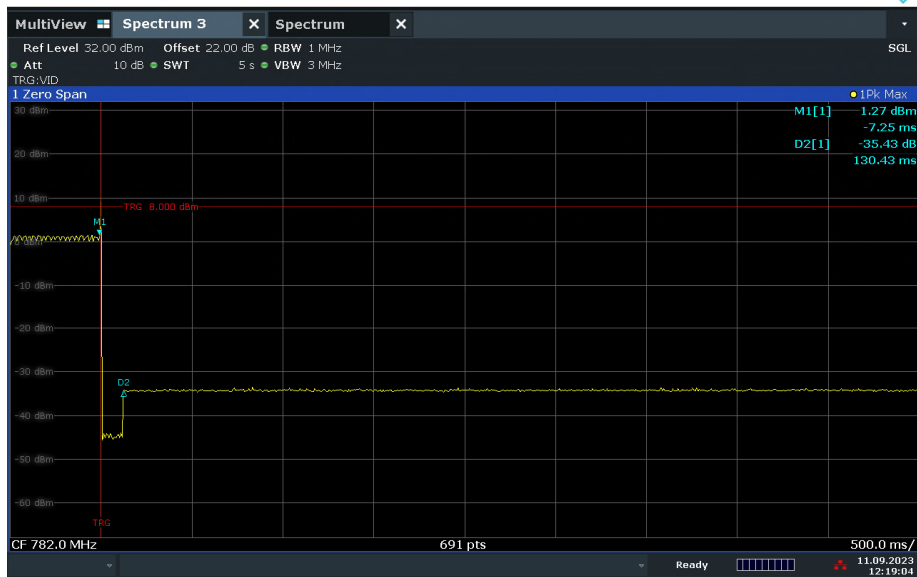
FCC ID: YETG41-BE
IC: 9298A-G41BE

Mitigation Time - LTE Band 13 Downlink 5MHz Bandwidth Mid Channel – Server Port.



11:03:35 11.09.2023

Mitigation Time - LTE Band 13 Uplink 5MHz Bandwidth Mid Channel – Donnor Port.

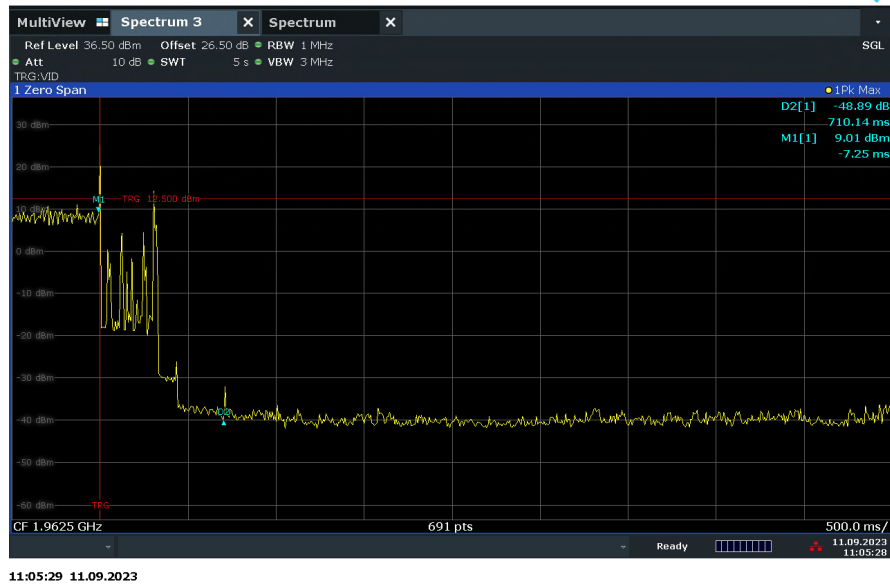


12:19:05 11.09.2023

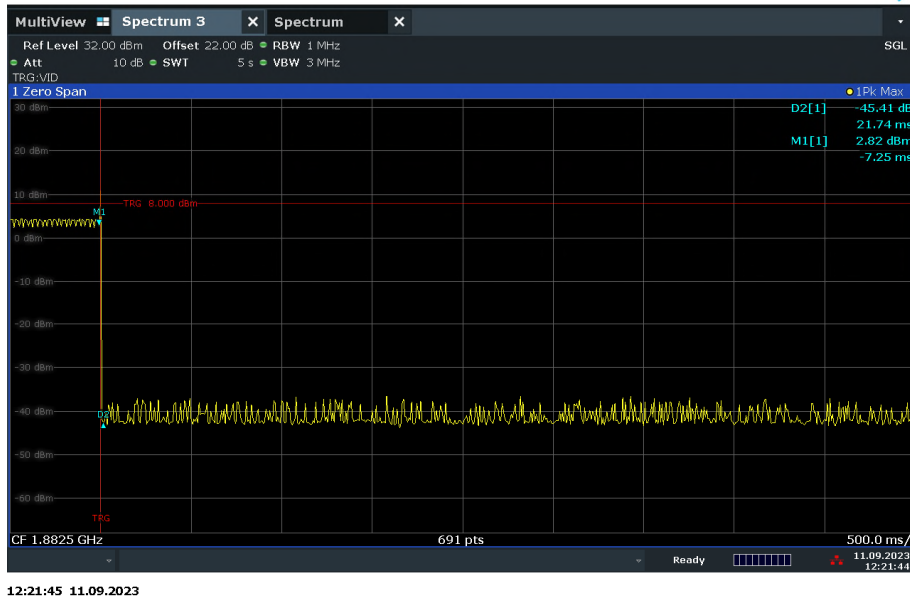


FCC ID: YETG41-BE
IC: 9298A-G41BE

Mitigation Time - LTE Band 25 Downlink 5MHz Bandwidth Mid Channel – Server Port.



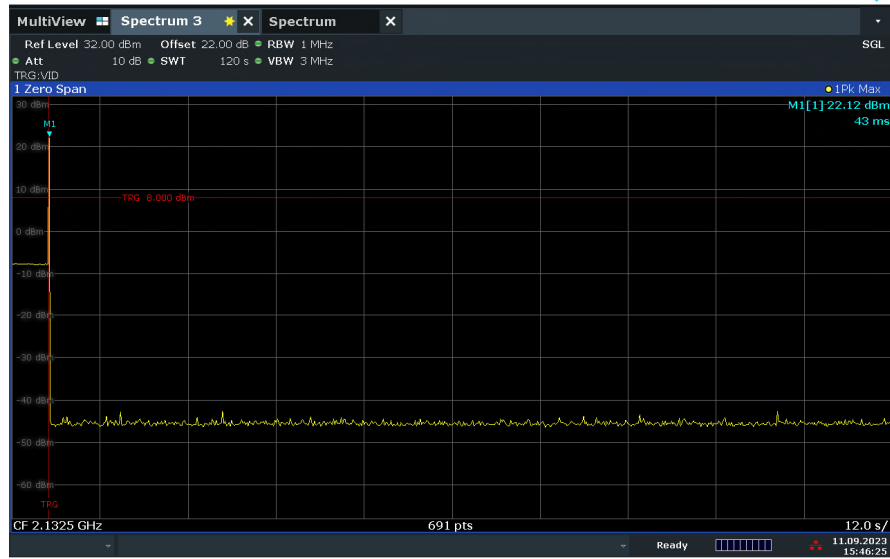
Mitigation Time - LTE Band 25 Uplink 5MHz Bandwidth Mid Channel – Donnor Port.



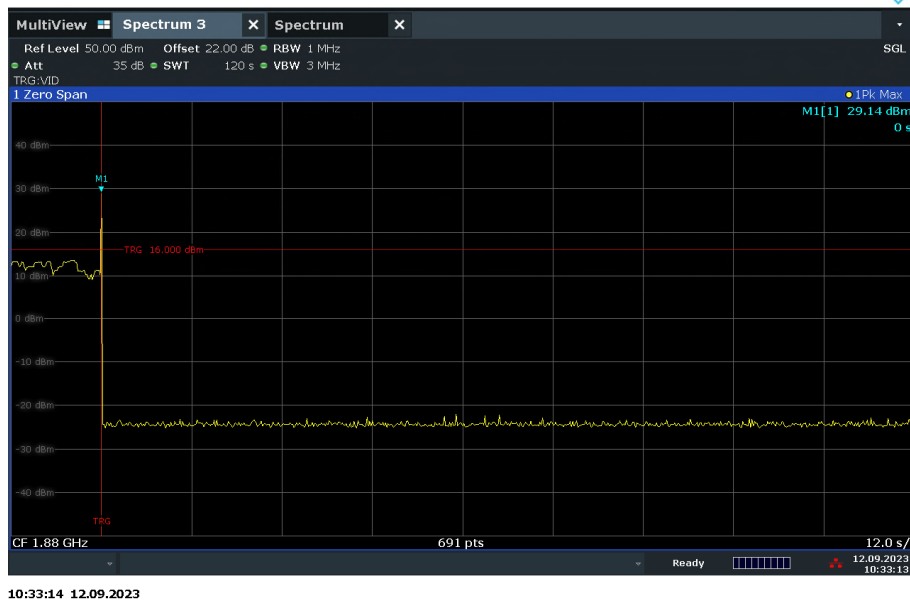


FCC ID: YETG41-BE
IC: 9298A-G41BE

Retry Event - LTE Band 2 Downlink 5MHz Bandwidth Mid Channel – Server Port.



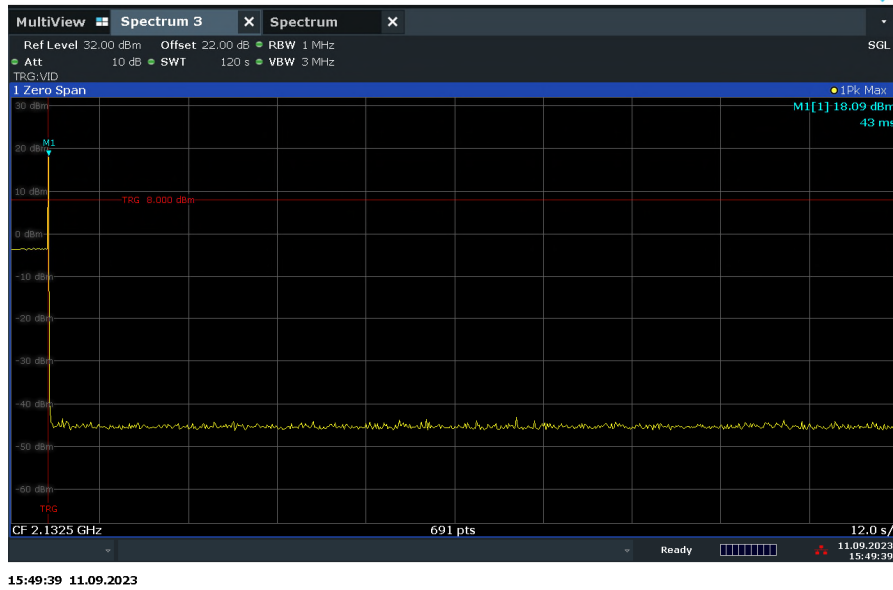
Retry Event - LTE Band 2 Uplink 5MHz Bandwidth Mid Channel – Donnor Port.



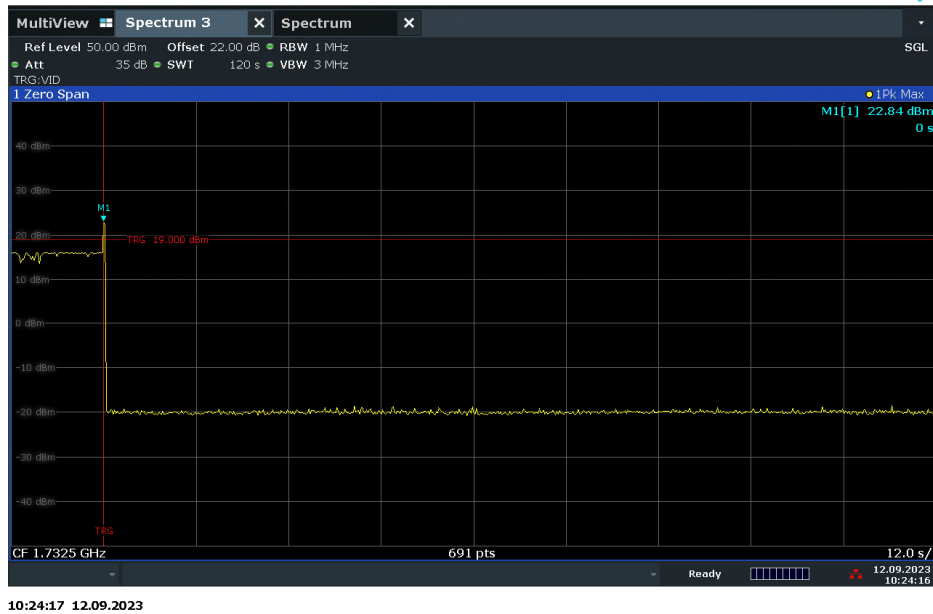


FCC ID: YETG41-BE
IC: 9298A-G41BE

Retry Event - LTE Band 4 Downlink 5MHz Bandwidth Mid Channel – Server Port.



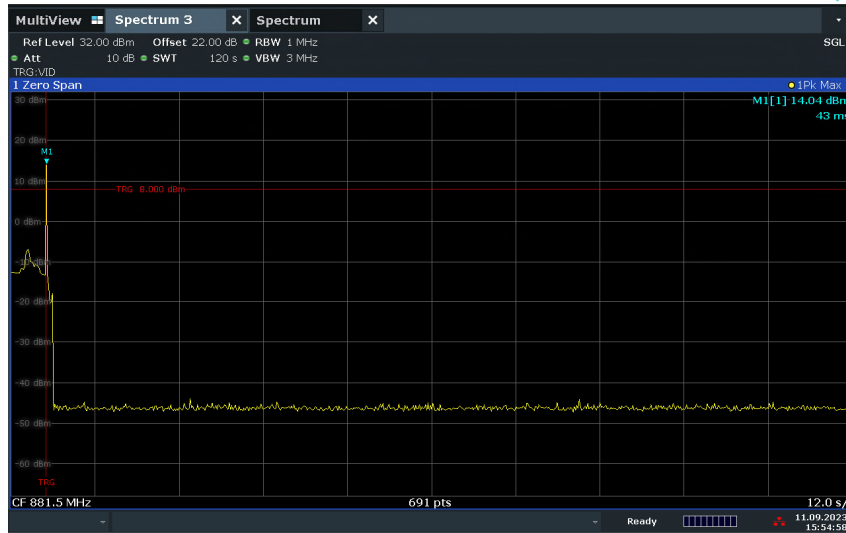
Retry Event - LTE Band 4 Uplink 5MHz Bandwidth Mid Channel – Donnor Port.





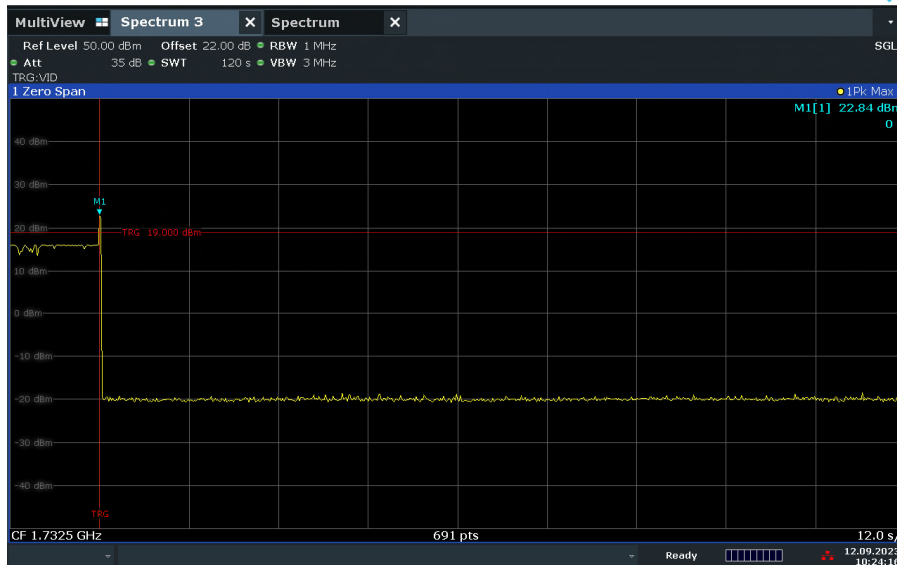
FCC ID: YETG41-BE
IC: 9298A-G41BE

Retry Event - LTE Band 5 Downlink 5MHz Bandwidth Mid Channel – Server Port.



15:54:59 11.09.2023

Retry Event - LTE Band 4 Uplink 5MHz Bandwidth Mid Channel – Donnor Port.

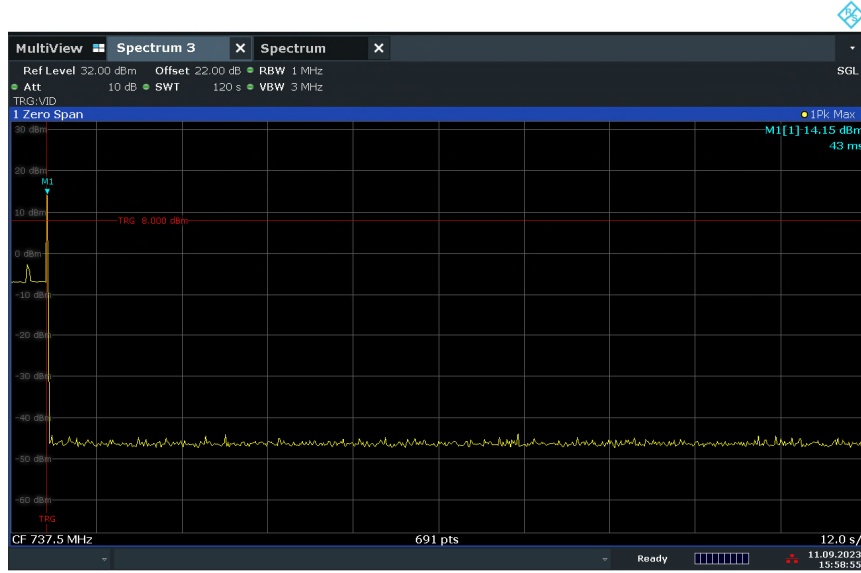


10:24:17 12.09.2023



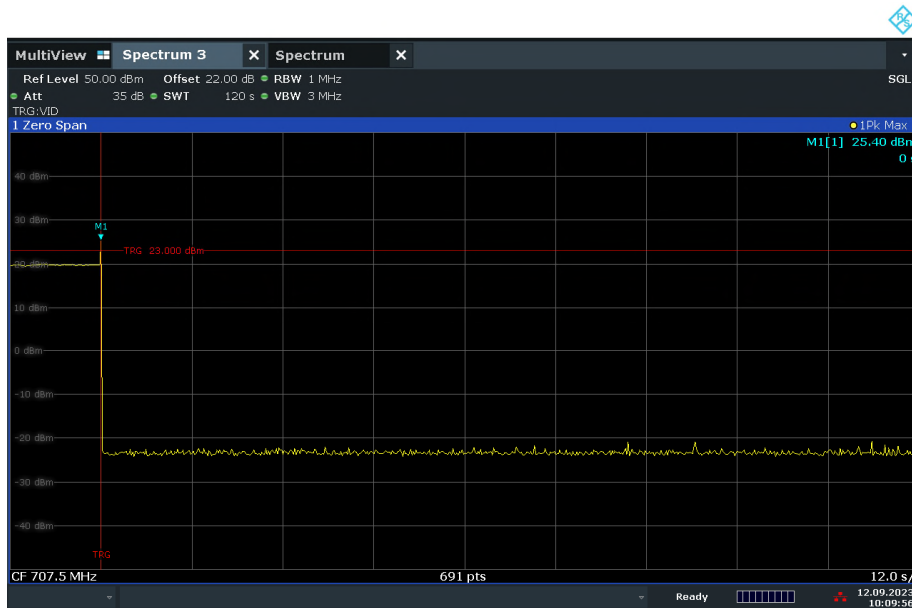
FCC ID: YETG41-BE
IC: 9298A-G41BE

Retry Event - LTE Band 12 Downlink 5MHz Bandwidth Mid Channel – Server Port.



15:58:56 11.09.2023

Retry Event - LTE Band 12 Uplink 5MHz Bandwidth Mid Channel – Donnor Port.

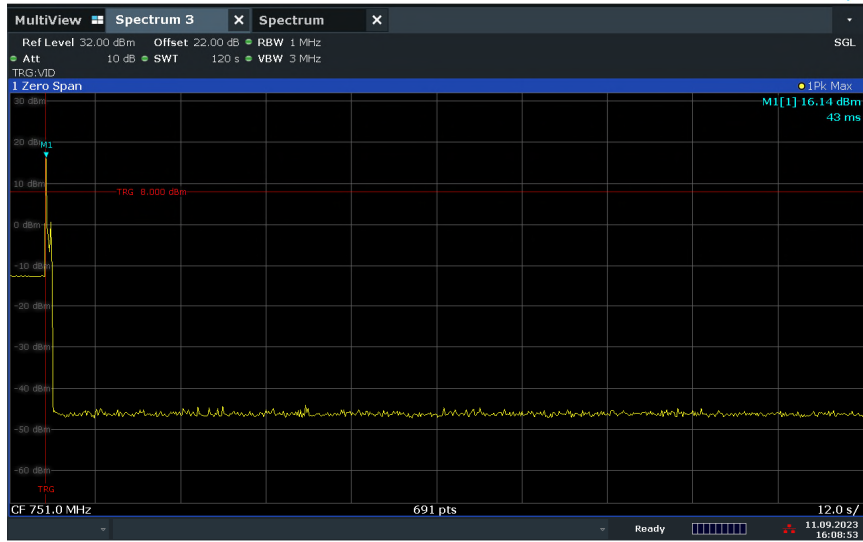


10:09:56 12.09.2023



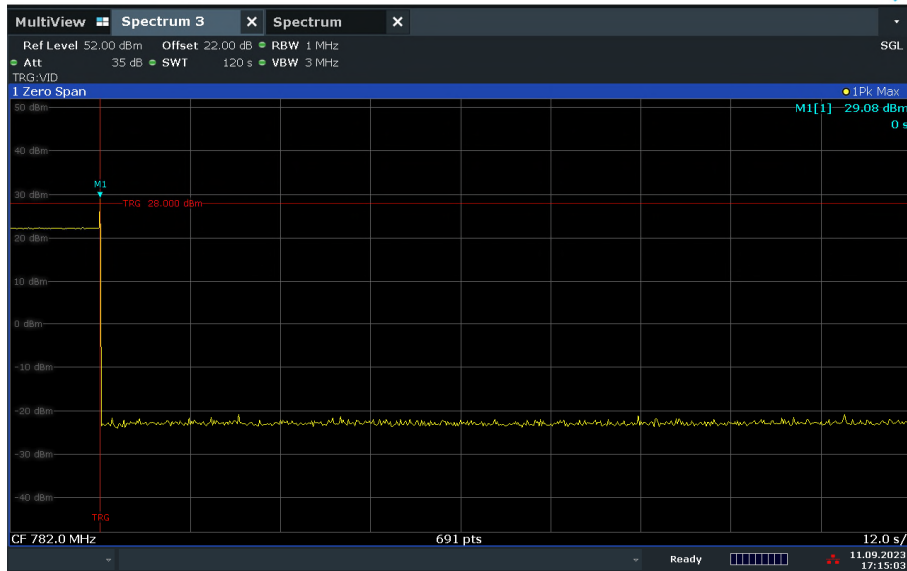
FCC ID: YETG41-BE
IC: 9298A-G41BE

Retry Event - LTE Band 13 Downlink 5MHz Bandwidth Mid Channel – Server Port.



16:08:53 11.09.2023

Retry Event - LTE Band 13 Uplink 5MHz Bandwidth Mid Channel – Donnor Port.

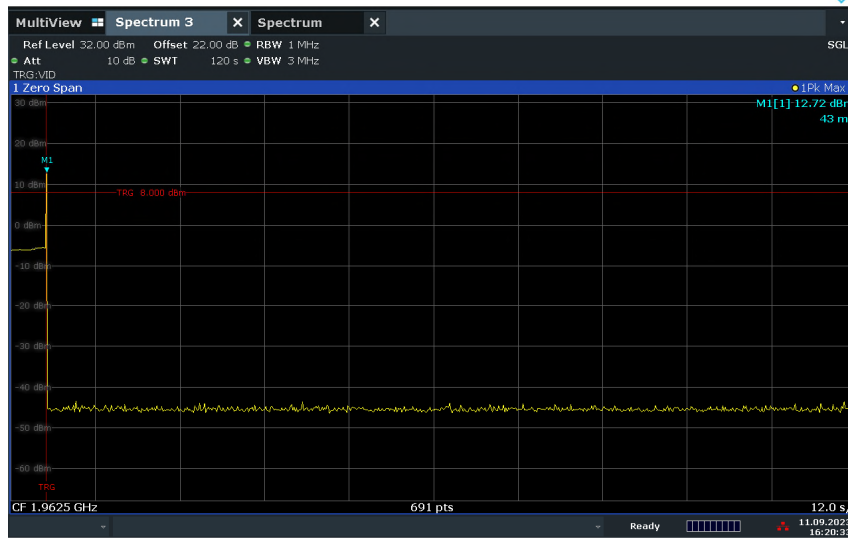


17:15:03 11.09.2023



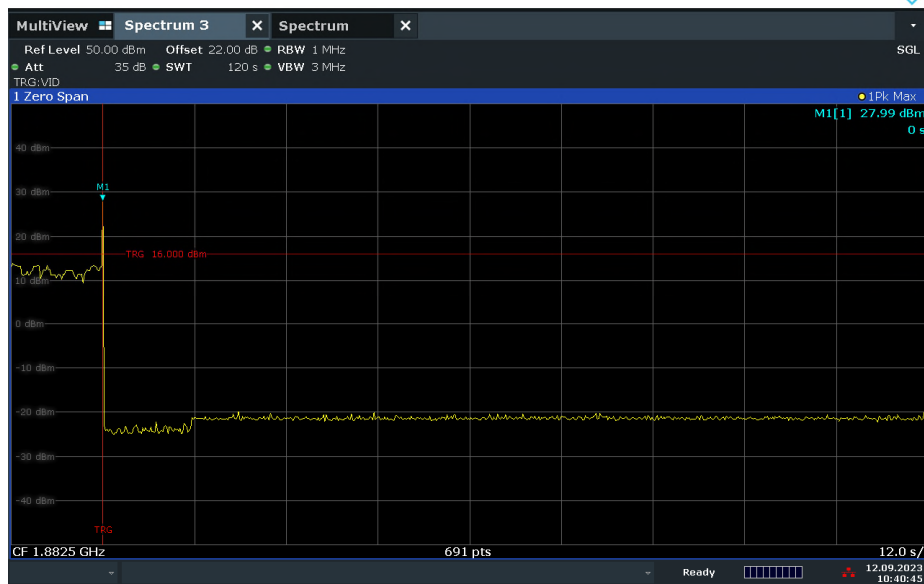
FCC ID: YETG41-BE
IC: 9298A-G41BE

Retry Event - LTE Band 25 Downlink 5MHz Bandwidth Mid Channel – Server Port.



16:20:34 11.09.2023

Retry Event - LTE Band 25 Uplink 5MHz Bandwidth Mid Channel – Donnor Port.



10:40:46 12.09.2023



FCC ID: YETG41-BE
IC: 9298A-G41BE

2.12 Out Of Band Gain Limit

2.12.1 Specification Reference

FCC 47 CFR Part 20. Clause 20.21(e)(9)(i)(E)
KDB935210 D04, Clause 7.15

2.12.2 Standard Applicable

FCC 47 CFR Part 20. Clause 20.21(e)(9)(i)(E) Out of Band Gain Limits:

(1) A frequency selective booster shall have the following minimum attenuation referenced to the gain in the center of the pass band of the booster:

- (i) -20 dB at the band edge, where band edge is the end of the licensee's allocated spectrum,
- (ii) -30 dB at 1 MHz offset from band edge,
- (iii) -40 dB at 5 MHz offset from band edge.

(2) A frequency selective booster having maximum gain greater than 80 dB (referenced to the center of the pass band) shall limit the out of band gain to 60 dB at 0.2 MHz offset from the band edge, and 45 dB at 1 MHz offset from the band edge, where band edge is the end of the licensee's allocated spectrum.

2.12.3 Equipment Under Test and Modification State

Serial No: 560311000026 / Test Configuration A and B

2.12.4 Date of Test/Initial of test personnel who performed the test.

September 11, 2023/MARG

2.12.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.12.6 Environmental Conditions

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility.

Ambient Temperature	26.4°C
Relative Humidity	53.7%
ATM Pressure	99.1kPa

2.12.7 Additional Observations

- This is conducted Test. Test procedure is per Section 7.15 of KDB935210 (D04 Provider Specific Booster Measurements v02r03). Appropriate offset (line losses) applied.
- The test procedure is according to 7.15.1 of KDB935210. The signal generator was set to transmit a CW signal with output power level set to that as determined in clause 7.2.2 of KDB935210.



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- The EUT operated in Test Mode with the gain set to the maximum gain and a minimum bandwidth setting (5MHz).
- Setup the EUT according to Figure 2 or 3 of Section 6.3.3 of KDB935210 D04 as appropriate.
- Evaluations are conducted at Server and Donnor ports.
- Operational uplink and downlink bands for LTE Band 2, 4, 5, 12, 13, 25 were tested.

2.12.8 Test Results

Out of Band Gain Limit – LTE Band 2 Downlink (1930 – 1990 MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-83.71	10.29	94	-
0 (Low Band Edge)	-83.94	-41.22	42.72	74
-0.2	-83.69	-39.07	44.62	60
-1	-83.69	-46.28	37.41	45
-5	-83.45	-65.49	17.96	54
0 (High Band Edge)	-83.81	-41.84	41.97	74
+0.2	-83.41	-41.66	41.75	60
+1	-83.48	-49.16	34.32	45
+5	-83.83	-62.49	21.34	54

Out of Band Gain Limit – LTE Band 2 Uplink (1930 – 1990 MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-78.47	13.10	91.57	-
0 (Low Band Edge)	-78.70	-38.79	39.91	71.57
-0.2	-78.61	-37.79	40.82	60
-1	-78.43	-45.30	33.13	45
-5	-78.63	-59.12	19.51	51.57



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0 (High Band Edge)	-78.58	-39.35	39.23	71.57
+0.2	-78.33	-37.92	40.41	60
+1	-78.80	-45.12	33.68	45
+5	-78.96	-58.90	20.06	51.57

Out of Band Gain Limit – LTE Band 4 Downlink (2110 – 2155 MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-83.9	5.48	89.38	-
0 (Low Band Edge)	-83.38	-39.54	43.84	69.38
-0.2	-83.26	-39.70	43.56	60
-1	-83.29	-49.97	33.32	45
-5	-83.26	-58.35	24.91	49.38
0 (High Band Edge)	-83.42	-39.32	44.1	69.38
+0.2	-83.66	-40.45	43.21	60
+1	-83.57	-47.39	36.18	45
+5	-83.52	-56.44	27.08	49.38

Out of Band Gain Limit – LTE Band 4 Uplink (1710 – 1755 MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-78.38	15.34	93.72	-
0 (Low Band Edge)	-78.37	-37.69	40.68	73.72
-0.2	-78.93	-36.95	41.98	60
-1	-78.11	-44.65	33.46	45
-5	-78.34	-58.56	19.78	53.72
0 (High Band Edge)	-78.72	-37.57	41.15	73.72



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+0.2	-78.47	-36.09	42.38	60
+1	-78.73	-43.39	35.34	45
+5	-78.37	-58.38	19.99	53.72

Out of Band Gain Limit – LTE Band 5 Downlink (869 – 894 MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-83.81	12.33	96.14	-
0 (Low Band Edge)	-83.97	-50.34	33.63	76.14
-0.2	-83.63	-46.78	36.85	60
-1	-83.05	-53.27	29.78	45
-5	-83.94	-61.21	22.73	56.14
0 (High Band Edge)	-83.72	-47.46	36.26	76.14
+0.2	-83.03	-47.04	35.99	60
+1	-83.45	-53.23	30.22	45
+5	-83.10	-60.17	22.93	56.14

Out of Band Gain Limit – LTE Band 5 Uplink (824 – 849 MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-75.15	11.26	86.41	-
0 (Low Band Edge)	-75.56	-42.53	33.03	66.41
-0.2	-75.32	-40.97	34.35	60
-1	-75.14	-49.09	26.05	45
-5	-75.94	-60.98	14.96	46.41
0 (High Band Edge)	-75.317	-42.96	32.357	66.41
+0.2	-75.25	-40.95	34.3	60
+1	-75.11	-78.79	-3.68	45



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+5	-75.95	-60.25	15.7	46.41
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Out of Band Gain Limit – LTE Band 12 Downlink (729 – 746MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-79.49	8.30	87.79	-
0 (Low Band Edge)	-79.75	-49.26	30.49	67.79
-0.2	-79.61	-44.41	35.2	60
-1	-80.81	-51.74	29.07	45
-5	-80.09	-60.61	19.48	47.79
0 (High Band Edge)	-80.04	-50.83	29.21	67.79
+0.2	-79.99	-58.69	21.3	60
+1	-79.17	-58.96	20.21	45
+5	-80.12	-60.16	19.96	47.79

Out of Band Gain Limit - LTE Band 12 Uplink (699 – 716MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-78.28	10.52	88.8	
0 (Low Band Edge)	-78	-43.33	34.67	68.8
-0.2	-78.70	-42.29	36.41	60
-1	-78.26	-49.39	28.87	45
-5	-78.32	-62.49	15.83	48.8
0 (High Band Edge)	-78.52	-45.56	32.96	68.8
+0.2	-78.29	-43.90	34.39	60
+1	-78.15	-52.56	25.59	45
+5	-78.38	-66.51	11.87	48.8



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Out of Band Gain Limit – LTE Band 13 Downlink (746 – 756MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-80.20	11.33	91.53	-
0 (Low Band Edge)	-80.91	-44.25	36.66	71.53
-0.2	-79.31	-43.01	36.3	60
-1	-80.85	-49.75	31.1	45
-5	-80.84	-60.97	19.87	51.53
0 (High Band Edge)	-80	-44.26	35.74	71.53
+0.2	-80.04	-42.76	37.28	60
+1	-80.84	-49.66	31.18	45
+5	-79.27	-56.64	22.63	51.53

Out of Band Gain Limit – LTE Band 13 Uplink (777 – 787 MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-75.85	15.35	91.2	-
0 (Low Band Edge)	-75.28	-49.43	25.85	71.2
-0.2	-75.38	-59.63	15.75	60
-1	-75.63	-61.52	14.11	45
-5	-75.81	-60.96	14.85	51.2
0 (High Band Edge)	-75.25	-50.52	24.73	71.2
+0.2	-75.92	-60.55	15.37	60
+1	-75.44	-59.32	16.12	45
+5	-75.48	-61.43	14.05	51.2



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Out of Band Gain Limit – LTE Band 25 Downlink (1930 – 1995 MHz)				
	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-82.93	9.05	91.98	
0 (Low Band Edge)	-83.05	-37.77	45.28	71.98
-0.2	-82.49	-36.95	45.54	60
-1	-82.93	-57.74	25.19	45
-5	-83.70	-58.32	25.38	51.98
0 (High Band Edge)	-83.39	-40.29	43.1	71.98
+0.2	-83.26	-39.18	44.08	60
+1	-83.70	-46.47	37.23	45
+5	-82.49	-57.61	24.88	51.98

Out of Band Gain Limit - LTE Band 25 Uplink (1850 – 1915 MHz)				
Offset (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Gain Limit (dB)
Centre Frequency	-78.77	14.32	93.09	-
0 (Low Band Edge)	-78.39	-38.11	40.28	73.09
-0.2	-77.99	-37.41	40.58	60
-1	-78.75	-45.12	33.63	45
-5	-78.50	-59.73	18.77	53.09
0 (High Band Edge)	-78.20	-39.14	39.06	73.09
+0.2	-78.98	-37.46	41.52	60
+1	-78.49	-44.87	33.62	45
+5	-78.80	-58.31	20.49	53.09



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2.13 Frequency Stability

2.13.1 Specification Reference

- FCC 47 CFR Part 2, Clause 2.1055
- FCC 47 CFR Part 22, Clause 22.355
- FCC 47 CFR Part 24, Clause 24.235
- RSS-132, Clause 5.3
- RSS-133, Clause 6.3
- FCC 47 CFR Part 27, Clause 27.54
- RSS-139, Clause 6.4
- RSS-130, Clause 4.5
- RSS-195, Clause 5.4

2.13.2 Standard Applicable

FCC Part 22.355:

The carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table C–1 of this section.

Table C-1 Frequency Tolerance for Transmitters in the Public Mobile Services			
Frequency Range (MHz)	Base, fixed (ppm)	Mobile >3 watts (ppm)	Mobile ≤3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929	5.0	N/A	N/A
929 to 960	1.5	N/A	N/A
2110 to 2220	10.0	N/A	N/A

FCC Part 24.235:

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

RSS-132:

The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations and ±1.5 ppm for base stations.

RSS-133

The carrier frequency shall not depart from the reference frequency, in excess of ±2.5 ppm for mobile stations and ±1.0 ppm for base stations.

FCC 47 CFR Part 27, Clause 27.54:

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

RSS-139, Clause 6.4, RSS-130, Clause 4.5 and RSS-195, Clause 5.4:

The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.



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2.13.3 Equipment Under Test and Modification State

Serial No: 560311000026 / Test Configuration A and B

2.13.4 Date of Test/Initial of test personnel who performed the test

August 14, 15, 16, 17,18 and October 12, 2023 / MARG

2.13.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.13.6 Environmental Conditions

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility.

Ambient Temperature	22.4 °C	22.5 °C
Relative Humidity	42.7 %	44.2 %
ATM Pressure	100.7 kPa	100.8 kPa

2.13.7 Additional Observations

- This is a conducted test.
- The EUT was operated at 120 VAC nominal voltage and was placed in the temperature chamber for the series of temperature variation evaluations performed starting at ambient (20°C) temperature. Voltage variation is performed at 85% and 115% of the nominal voltage at 20 °C only.
- The Temperature is then set to 50°C and allowed to sit for 1 hour to allow the equipment and chamber temperature to stabilize. The measurements on both downlink and uplink were then performed. The temperature was then decreased by 10°C steps and allowed to settle before taking the next set of measurements.
- EUT was injected a CW signal from a Signal Generator and maximum frequency error was monitored using the spectrum analyser.
- 5MHz bandwidth Middle Channel was tested as the representative configuration.



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2.13.8 Test Results Summary

LTE B2 Downlink			
<i>Voltage (VAC)</i>	<i>Temperature (°C)</i>	<i>Frequency Deviation (ppm)</i>	<i>Limit (ppm)</i>
120	-30	-0.01	1.0
	-20	-0.01	1.0
	-10	-0.01	1.0
	0	-0.01	1.0
	+10	-0.01	1.0
	+20	-0.01	1.0
	+30	-0.01	1.0
	+40	-0.01	1.0
	+50	-0.01	1.0
102	+20	-0.01	1.0
138		-0.01	1.0

LTE Band 2 Downlink			
<i>Temperature (°C)</i>	<i>Voltage (VAC)</i>	<i>Frequency Deviation (ppm)</i>	<i>Limit (ppm)</i>
20	102	-0.01	1.0
	138	-0.01	1.0

LTE B2 Uplink			
<i>Voltage (VAC)</i>	<i>Temperature (°C)</i>	<i>Frequency Deviation (ppm)</i>	<i>Limit (ppm)</i>
120	-30	-0.01	1.0
	-20	-0.01	1.0
	-10	-0.01	1.0
	0	-0.01	1.0
	+10	-0.01	1.0
	+20	-0.01	1.0
	+30	-0.01	1.0
	+40	-0.01	1.0
	+50	-0.01	1.0
102	+20	-0.01	1.0
138		-0.01	1.0



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LTE Band 2 Uplink			
Temperature (°C)	Voltage (VAC)	Frequency Deviation (ppm)	Limit (ppm)
20	102	-0.01	1.0
	138	-0.01	1.0
LTE Band 5 Downlink			
Voltage (VAC)	Temperature (°C)	Frequency Deviation (ppm)	Limit (ppm)
120	-30	-0.01	1.5
	-20	-0.01	1.5
	-10	-0.01	1.5
	0	-0.01	1.5
	+10	-0.01	1.5
	+20	-0.01	1.5
	+30	-0.01	1.5
	+40	-0.01	1.5
	+50	-0.01	1.5
LTE Band 5 Downlink			
Temperature (°C)	Voltage (VAC)	Frequency Deviation (ppm)	Limit (ppm)
20	102	-0.01	1.5
	138	-0.01	1.5
LTE Band 5 Uplink			
Voltage (VAC)	Temperature (°C)	Frequency Deviation (ppm)	Limit (ppm)
120	-30	-0.01	1.5
	-20	-0.01	1.5
	-10	-0.01	1.5
	0	-0.01	1.5
	+10	-0.01	1.5
	+20	-0.01	1.5
	+30	-0.01	1.5
	+40	-0.01	1.5
	+50	-0.01	1.5



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LTE Band 5 Uplink			
Temperature (°C)	Voltage (VAC)	Frequency Deviation (ppm)	Limit (ppm)
20	102	-0.01	1.5
	138	-0.01	1.5

LTE Band 25 Downlink			
Voltage (VAC)	Temperature (°C)	Frequency Deviation (ppm)	Limit (ppm)
120	-30	-0.01	1.0
	-20	-0.01	1.0
	-10	-0.01	1.0
	0	-0.01	1.0
	+10	-0.01	1.0
	+20	-0.01	1.0
	+30	-0.01	1.0
	+40	-0.01	1.0
	+50	-0.01	1.0

LTE Band 25 Downlink			
Temperature (°C)	Voltage (VAC)	Frequency Deviation (ppm)	Limit (ppm)
20	102	-0.01	1.0
	138	-0.01	1.0

LTE Band 25 Uplink			
Voltage (VAC)	Temperature (°C)	Frequency Deviation (ppm)	Limit (ppm)
120	-30	-0.01	1.0
	-20	-0.01	1.0
	-10	-0.01	1.0
	0	-0.01	1.0
	+10	-0.01	1.0
	+20	-0.01	1.0
	+30	-0.01	1.0
	+40	-0.01	1.0
	+50	-0.01	1.0



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LTE Band 25 Uplink					
Temperature (°C)	Voltage (VAC)	Frequency Deviation (ppm)	Limit (ppm)		
20	102	-0.01	1.0		
	138	-0.01	1.0		
LTE B4 Downlink – 5 MHz BW Middle Channel 2132.5 MHz					
Voltage (VAC)	Temperature (°C)	Frequency Deviation (ppm)	Limit (ppm)		
120	-30	-0.01	-		
	-20	-0.01	-		
	-10	-0.01	-		
	0	-0.01	-		
	+10	-0.01	-		
	+20	-0.01	-		
	+30	-0.01	-		
	+40	-0.01	-		
+50	-0.01	-			
102	+20	-0.01	-		
138		-0.01	-		
LTE B4 Downlink – 5 MHz BW					
Channel	Temperature (°C)	Voltage (VAC)	F _L (MHz)	F _H (MHz)	Limit (MHz)
Low Channel	-30	120	2110.2925	-	>2110
	+20	102	2110.2852	-	
		120	2110.2861	-	
		138	2110.2882	-	
	+50	120	2110.2844	-	
High Channel	-30	120	-	2154.7243	<2155
	+20	102	-	2154.7919	
		120	-	2154.7819	
		138	-	2154.7865	
	+50	120	-	2154.7308	

The frequency stability of the EUT is sufficient to keep it within the authorized frequency ranges at any temperature interval and voltage variations across the measured range.



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LTE B4 Uplink – 5 MHz BW Middle Channel 1732.5 MHz			
Voltage (VAC)	Temperature (°C)	Frequency Deviation (ppm)	Limit (ppm)
120	-30	-0.01	-
	-20	-0.01	-
	-10	-0.01	-
	0	-0.01	-
	+10	-0.01	-
	+20	-0.01	-
	+30	-0.01	-
	+40	-0.01	-
	+50	-0.01	-
102	+20	-0.01	-
138		-0.01	-

LTE B4 Uplink – 5 MHz BW					
Channel	Temperature (°C)	Voltage (VAC)	F _L (MHz)	F _H (MHz)	Limit (MHz)
Low Channel	-30	120	1710.2942	-	>1710
	+20	102	1710.2912	-	
		120	1710.2891	-	
		138	1710.292	-	
	+50	120	1710.2857	-	
High Channel	-30	120	-	1754.7231	<1755
	+20	102	-	1754.7196	
		120	-	1754.7206	
		138	-	1754.7205	
	+50	120	-	1754.7131	

The frequency stability of the EUT is sufficient to keep it within the authorized frequency ranges at any temperature interval and voltage variations across the measured range.



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 IC: 9298A-G41BE

LTE B12 Downlink – 5 MHz BW Middle Channel 737.5 MHz			
Voltage (VAC)	Temperature (°C)	Frequency Deviation (ppm)	Limit (ppm)
120	-30	-0.01	-
	-20	-0.01	-
	-10	-0.01	-
	0	-0.01	-
	+10	-0.01	-
	+20	-0.01	-
	+30	-0.01	-
	+40	-0.01	-
102	+20	-0.01	-
138		-0.01	-

LTE B12 Downlink Frequency Range – 5 MHz BW					
Channel	Temperature (°C)	Voltage (VAC)	F _L (MHz)	F _H (MHz)	Limit (MHz)
Low Channel	-30	120	729.2875	-	>729
	+20	102	729.2819	-	
		120	729.2810	-	
		138	729.2843	-	
	+50	120	729.2798	-	
High Channel	-30	120	-	745.7239	<746
	+20	102	-	745.7165	
		120	-	745.7196	
		138	-	745.7190	
	+50	120	-	745.7186	

The frequency stability of the EUT is sufficient to keep it within the authorized frequency ranges at any temperature interval and voltage variations across the measured range.



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LTE B12 Uplink – 5 MHz BW Middle Channel 707.5 MHz			
Voltage (VAC)	Temperature (°C)	Frequency Deviation (ppm)	Limit (ppm)
120	-30	-0.01	-
	-20	-0.01	-
	-10	-0.01	-
	0	-0.01	-
	+10	-0.01	-
	+20	-0.01	-
	+30	-0.01	-
	+40	-0.01	-
	+50	-0.01	-
102	+20	-0.01	-
138		-0.01	-

LTE B12 Uplink Frequency Range – 5 MHz BW					
Channel	Temperature (°C)	Voltage (VAC)	F _L (MHz)	F _H (MHz)	Limit (MHz)
Low Channel	-30	120	699.3006	-	>699
	+20	102	699.2648	-	
		120	699.3785	-	
		138	699.7894	-	
	+50	120	699.2953	-	
High Channel	-30	120	-	715.7030	<716
	+20	102	-	715.7247	
		120	-	715.7284	
		138	-	715.7290	
	+50	120	-	715.7221	

The frequency stability of the EUT is sufficient to keep it within the authorized frequency ranges at any temperature interval and voltage variations across the measured range.



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LTE B13 Downlink – 5 MHz BW Middle Channel 751 MHz			
Voltage (VAC)	Temperature (°C)	Frequency Deviation (ppm)	Limit (ppm)
120	-30	-0.01	-
	-20	-0.01	-
	-10	-0.01	-
	0	-0.01	-
	+10	-0.01	-
	+20	-0.01	-
	+30	-0.01	-
	+40	-0.01	-
	+50	-0.01	-
102	+20	-0.01	-
138		-0.01	-

LTE B13 Downlink Frequency Range – 5 MHz BW					
Channel	Temperature (°C)	Voltage (VAC)	F _L (MHz)	F _H (MHz)	Limit (MHz)
Low Channel	-30	120	746.2884	-	>746
	+20	102	746.2805	-	
		120	746.2809	-	
		138	746.2813	-	
	+50	120	746.2738	-	
High Channel	-30	120	-	755.7297	<756
	+20	102	-	755.7274	
		120	-	755.7244	
		138	-	755.7255	
	+50	120	-	755.7107	

The frequency stability of the EUT is sufficient to keep it within the authorized frequency ranges at any temperature interval and voltage variations across the measured range.



FCC ID: YETG41-BE
 IC: 9298A-G41BE

LTE B13 Uplink – 5 MHz BW Middle Channel 782 MHz				
Voltage (VAC)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
120	-30	4.8	-0.01	-
	-20	4.8	-0.01	-
	-10	4.7	-0.01	-
	0	5.0	-0.01	-
	+10	5.0	-0.01	-
	+20	5.0	-0.01	-
	+30	5.0	-0.01	-
	+40	7.0	-0.01	-
	+50	4.0	-0.01	-
102	+20	5.0	-0.01	-
138		5.2	-0.01	-

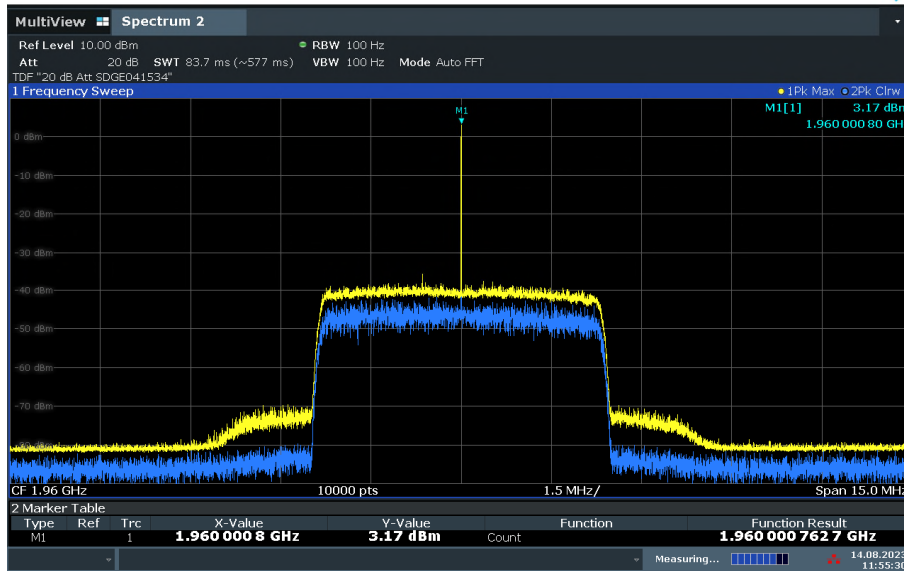
LTE B13 Uplink Frequency Range – 5 MHz BW					
Channel	Temperature (°C)	Voltage (VAC)	F _L (MHz)	F _H (MHz)	Limit (MHz)
Low Channel	-30	120	777.2753	-	>777
	+20	102	777.2719	-	
		120	777.2739	-	
		138	777.2723	-	
	+50	120	777.2735	-	
High Channel	-30	120	-	786.7158	<787
	+20	102	-	786.7242	
		120	-	786.7212	
		138	-	786.7242	
	+50	120	-	786.7218	

The frequency stability of the EUT is sufficient to keep it within the authorized frequency ranges at any temperature interval and voltage variations across the measured range.



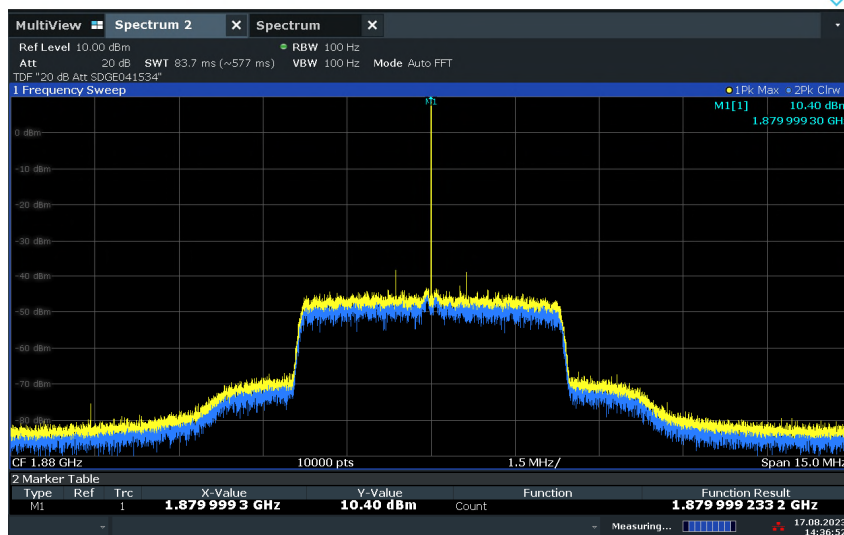
FCC ID: YETG41-BE
 IC: 9298A-G41BE

2.13.9 Sample Test Plots



11:55:31 14.08.2023

LTE B2 Downlink Middle Channel 120VAC @ 20°C

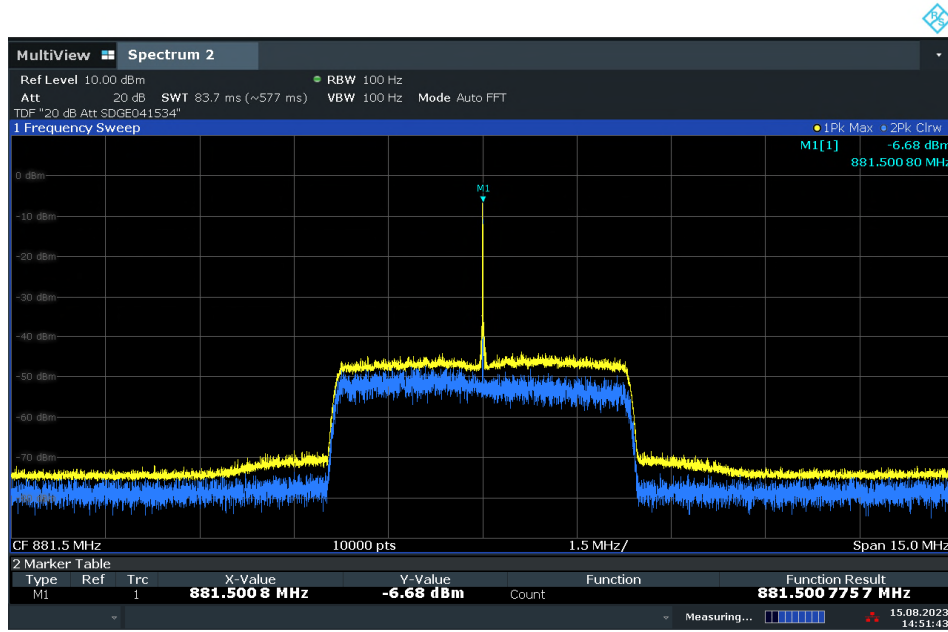


14:36:53 17.08.2023

LTE B2 Uplink Middle Channel 120VAC @ -30°C

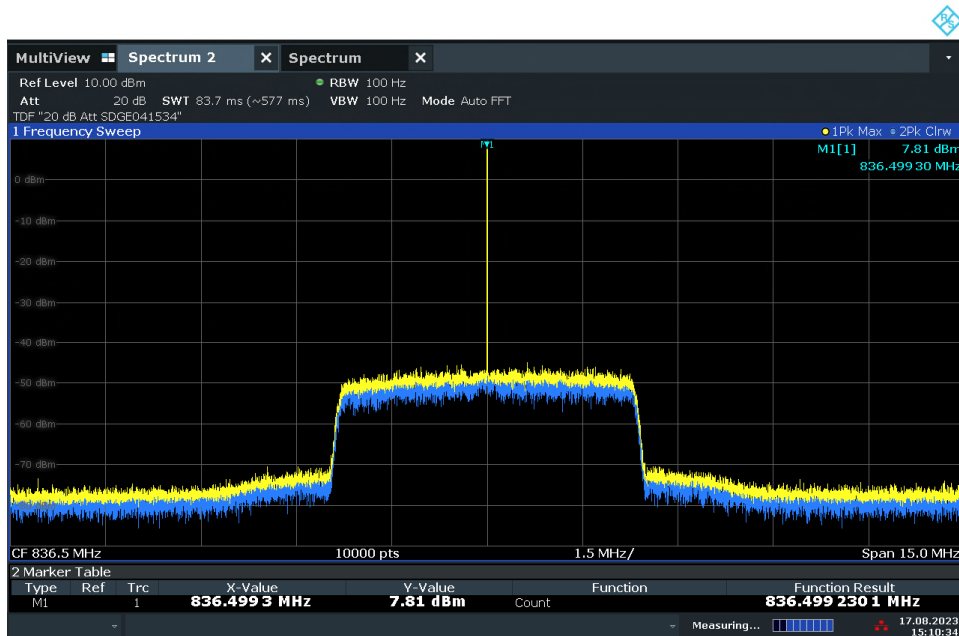


FCC ID: YETG41-BE
IC: 9298A-G41BE



14:51:43 15.08.2023

LTE B5 Downlink Middle Channel 120VAC @ 20°C

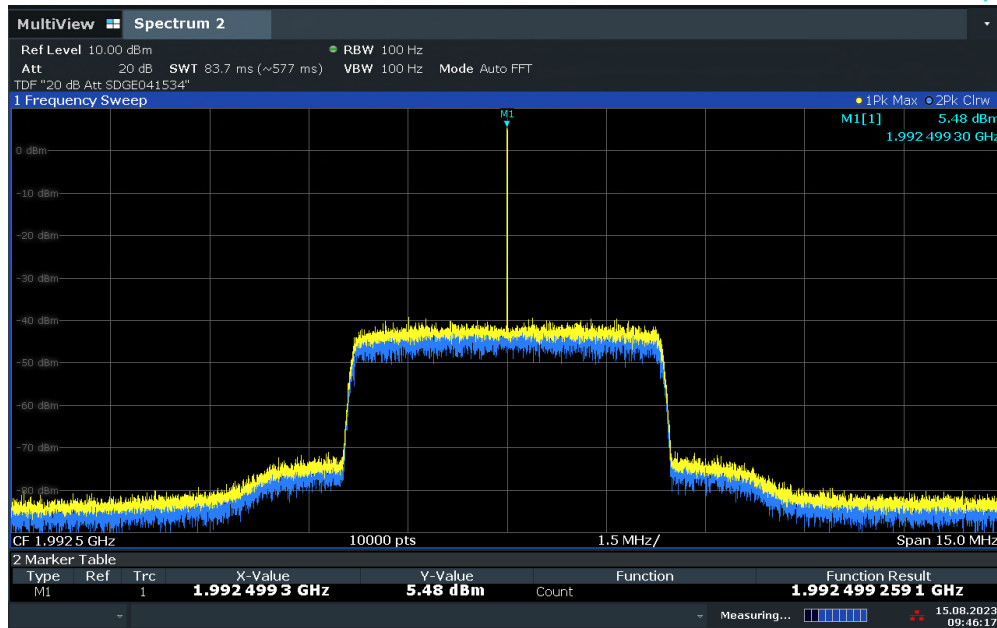


15:10:35 17.08.2023

LTE B5 Uplink Middle Channel 120VAC @ -30°C

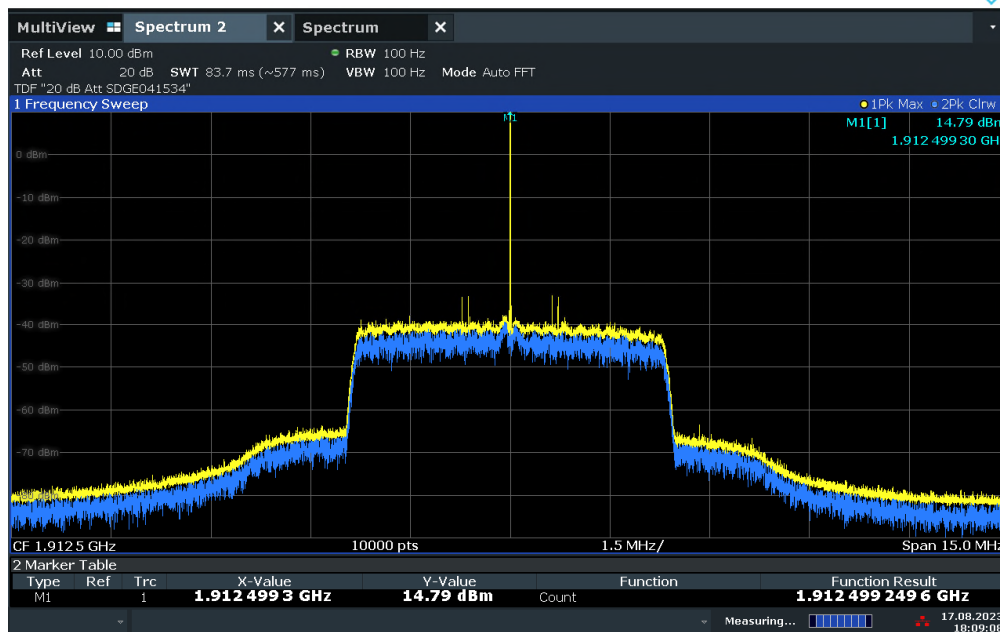


FCC ID: YETG41-BE
IC: 9298A-G41BE



09:46:18 15.08.2023

LTE B25 Downlink Middle Channel 120VAC @ 20°C

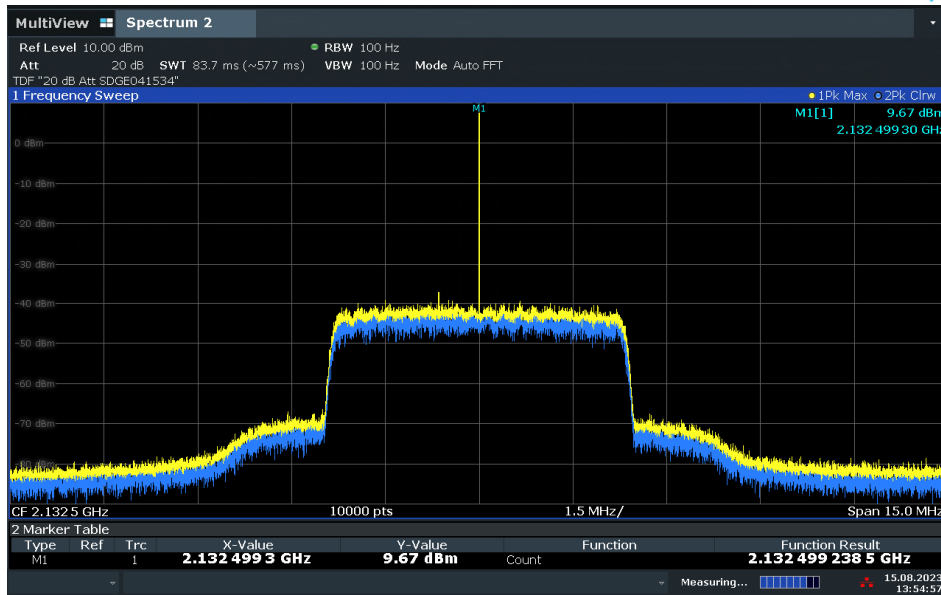


18:09:09 17.08.2023

LTE B25 Uplink Middle Channel 120VAC @ -30°C

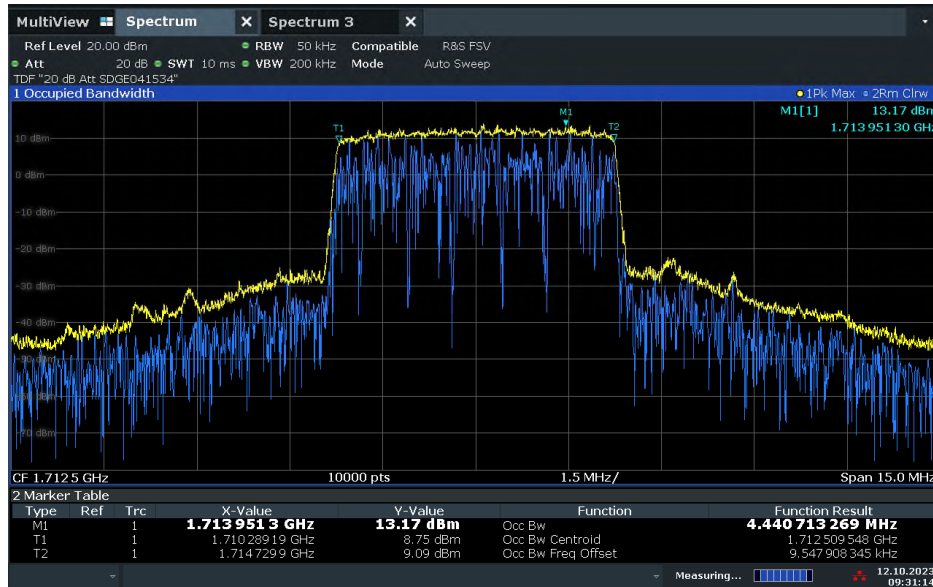


FCC ID: YETG41-BE
 IC: 9298A-G41BE



13:54:57 15.08.2023

LTE Band 4 Downlink Middle Channel 120VAC @ 20°C



09:31:15 12.10.2023

LTE Band 4 Uplink Low Channel OBW 120VAC @ 20°C

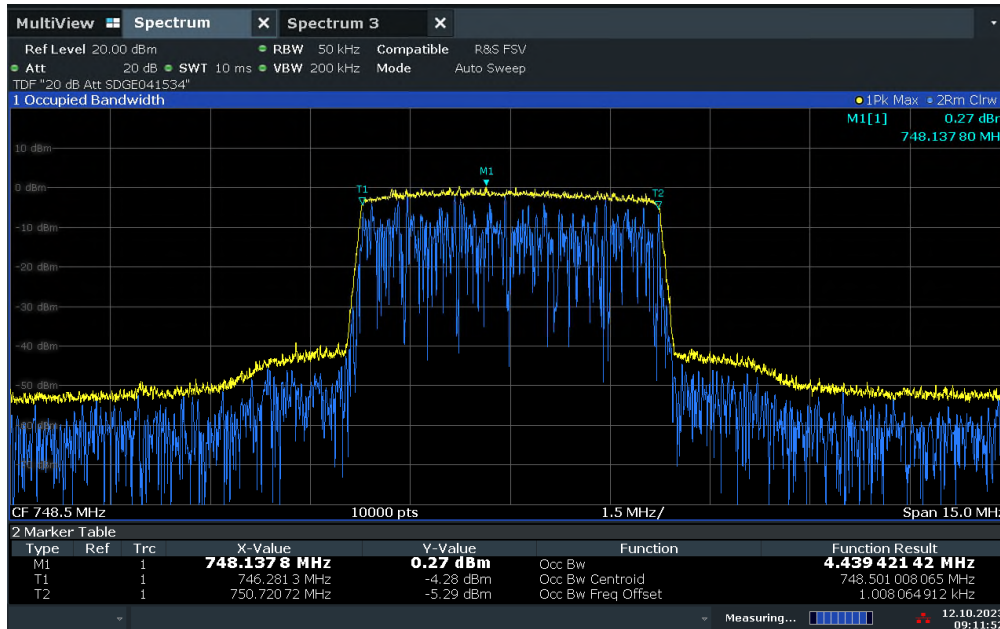


FCC ID: YETG41-BE
 IC: 9298A-G41BE



09:29:38 12.10.2023

LTE B12 Uplink High Channel OBW @ 20°C Nominal Voltage



09:11:53 12.10.2023

LTE B13 Downlink Low Channel OBW @ 20°C Nominal Voltage



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3 Test Equipment Used

3.1 List of absolute measuring and other principal items of test equipment

Asset ID Number	Test Equipment	Type	Serial Number	Manufacturer	Cal Due Date
Antenna Conducted Port Setup					
7608	Vector Signal Generator	SMBV100A	259021	Rhode & Schwarz	10-03-2025
7582	Signal/Spectrum Analyzer	FSW26	101614	Rohde & Schwarz	12-21-2023
-	Power Splitter	ZN2PD2-50-S+	SUU27701207	Mini Circuits	Verified with (7608) and (7582)
7610	DFS Radar Simulator and Analyzer*	Aeroflex 3005	30050A/09L	Aeroflex	NCR (for signaling purposes only)
-	20dB Attenuator	5W DC-18GHz 20dB (ATX3518-20)	N/A	MCL	Verified by 7608 and 7582
7662	Power Meter	N1911A	MY451000951	Agilent	04-04-2024
7605	Wideband Power Meter	N1921A	MY51100054	Agilent	04-14-2024
8848	Step Attenuator	RSP	834500/009	Rhode & Schwarz	Verified by 7608 and 7582
-	Directional Coupler	4226-20	N/A	Narda	Verified by 7608 and 7582
Miscellaneous					
43003	True RMS Multimeter	85 III	96880143	Fluke	01-09-2024
7579	Temperature Chamber	115	151617	TestQuity	12-21-23



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4 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

4.1 Conducted Antenna Port Measurement

	Input Quantity (Contribution) X_i	Value	Prob. Dist.	Divisor	$u_i(x)$	$u_i(x)^2$
1	Receiver reading	0.10 dB	Normal, k=1	1.000	0.10	0.01
2	Cable attenuation	1.00 dB	Normal, k=2	2.000	0.50	0.25
3	Receiver sinewave accuracy	0.08 dB	Normal, k=2	2.000	0.04	0.00
4	Receiver pulse amplitude	0.00 dB	Rectangular	1.732	0.00	0.00
5	Receiver pulse repetition rate	0.00 dB	Rectangular	1.732	0.00	0.00
6	Noise floor proximity	0.00 dB	Rectangular	1.732	0.00	0.00
7	Frequency interpolation	0.10 dB	Rectangular	1.732	0.06	0.00
8	Mismatch	0.07 dB	U-shaped	1.414	0.05	0.00
Combined standard uncertainty				Normal	0.52 dB	
Expanded uncertainty				Normal, k=2	1.03 dB	



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