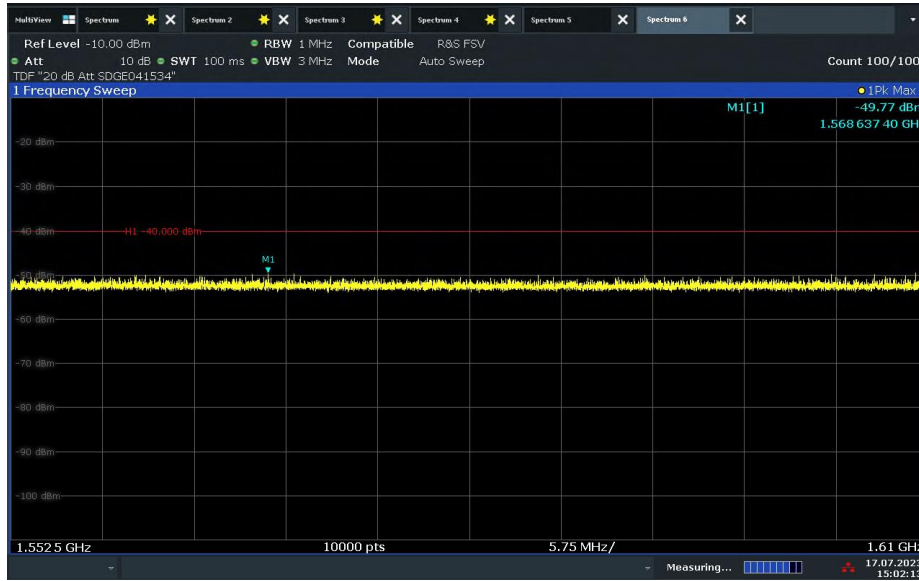




FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

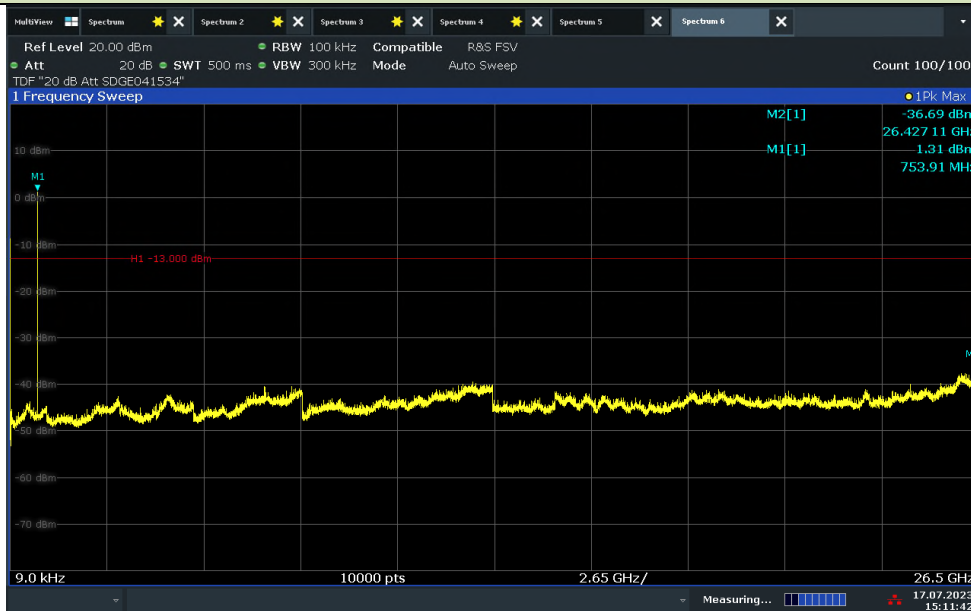
Product Service

LTE Band 13 Downlink 5MHz Bandwidth Low Channel Conducted Spurious Emissions (1559-1610 MHz)



15:02:14 17.07.2023

LTE Band 13 Downlink 5MHz Bandwidth Middle Channel Conducted Spurious Emissions

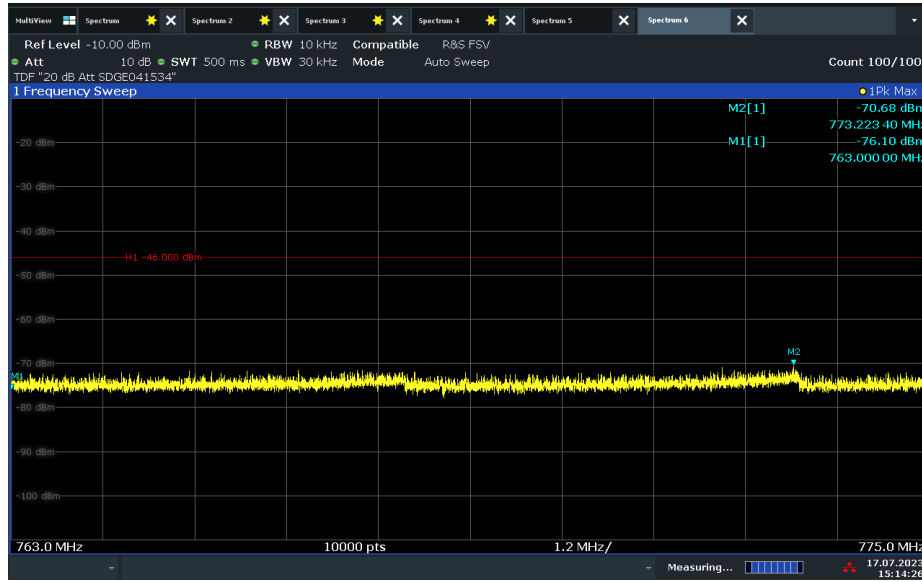


15:11:43 17.07.2023

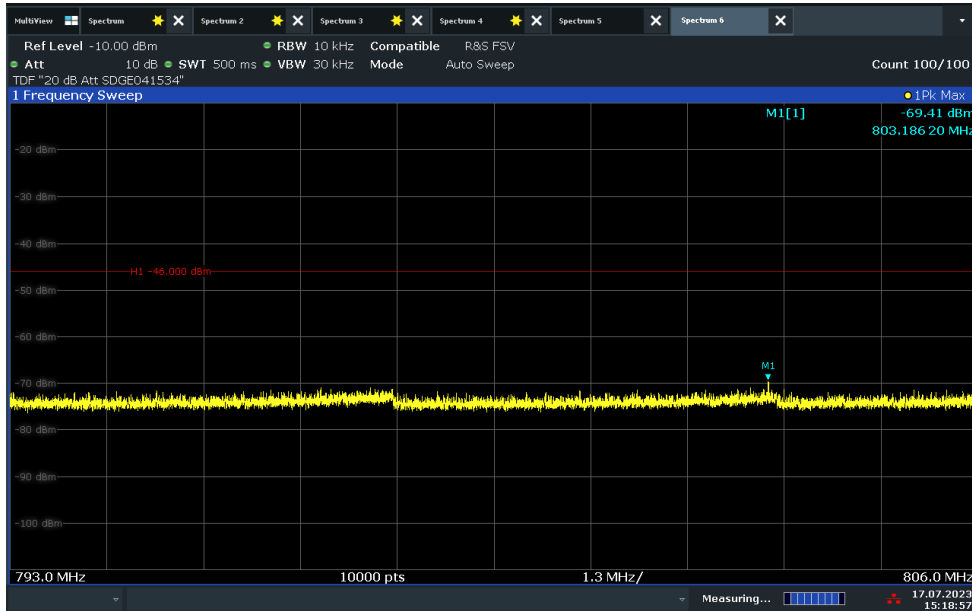


FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

LTE Band 13 Downlink 5MHz Bandwidth Middle Channel Conducted Spurious Emissions (763-775 MHz)



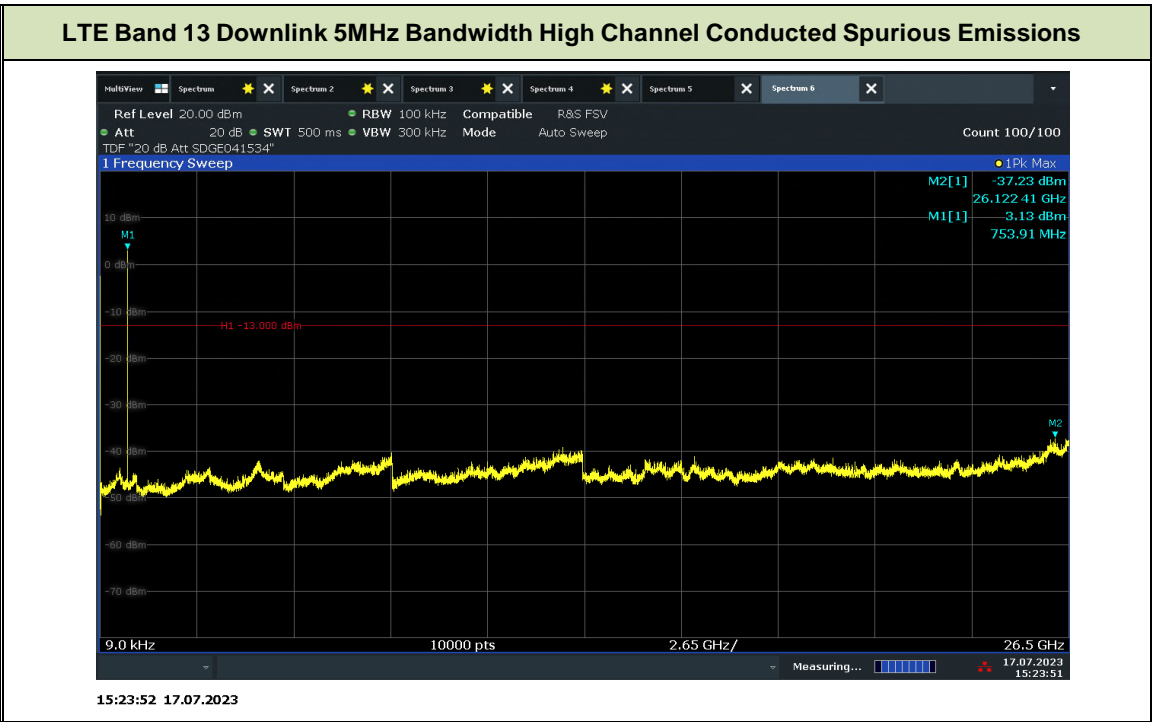
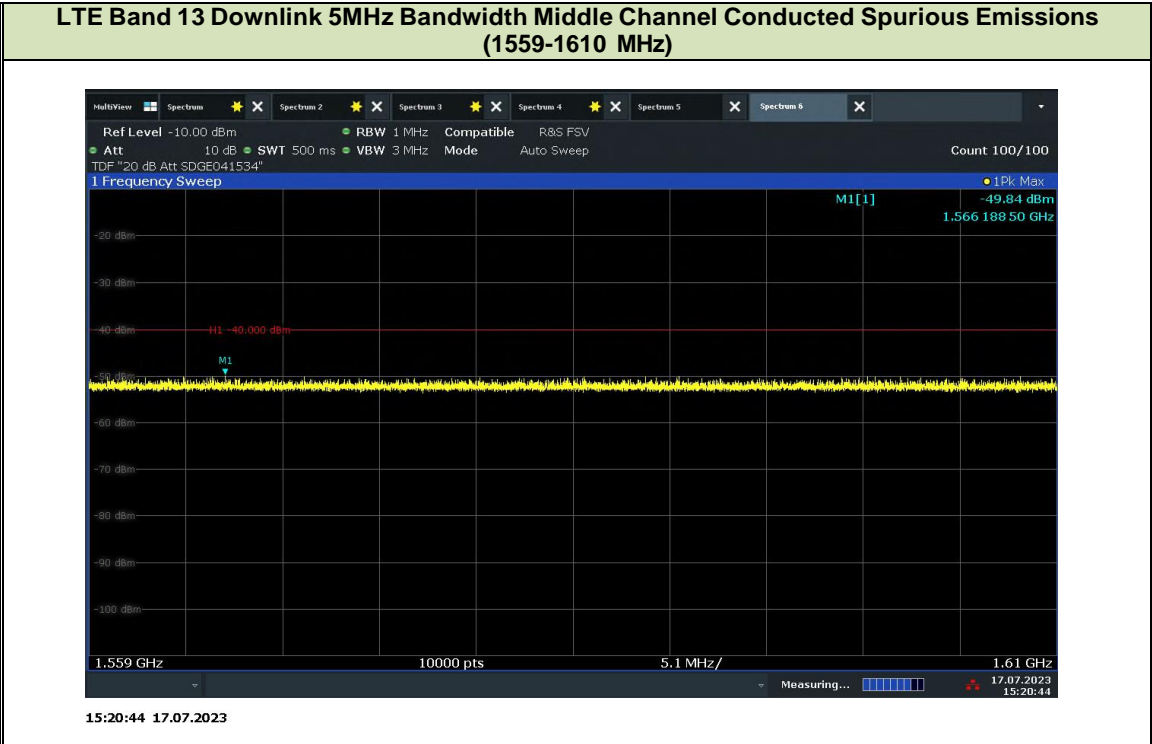
LTE Band 13 Downlink 5MHz Bandwidth Middle Channel Conducted Spurious Emissions (793-806 MHz)





FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

Product Service

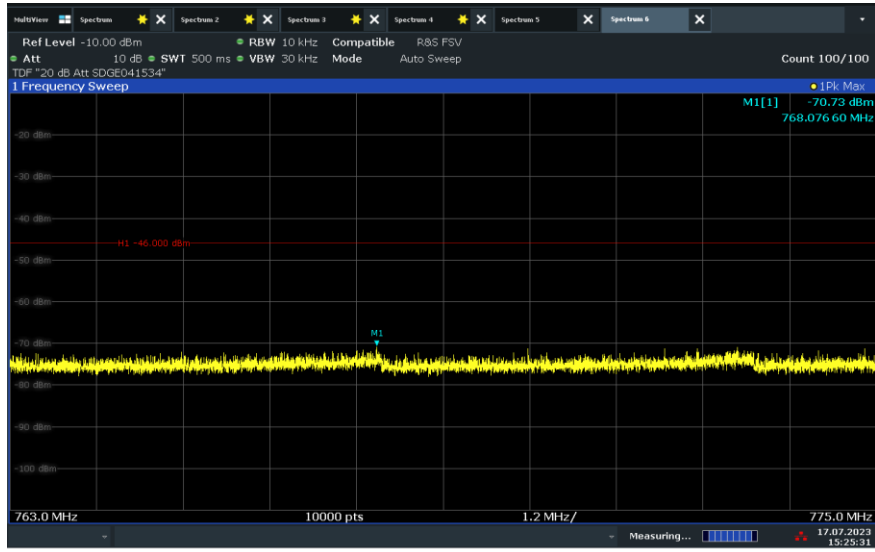




FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

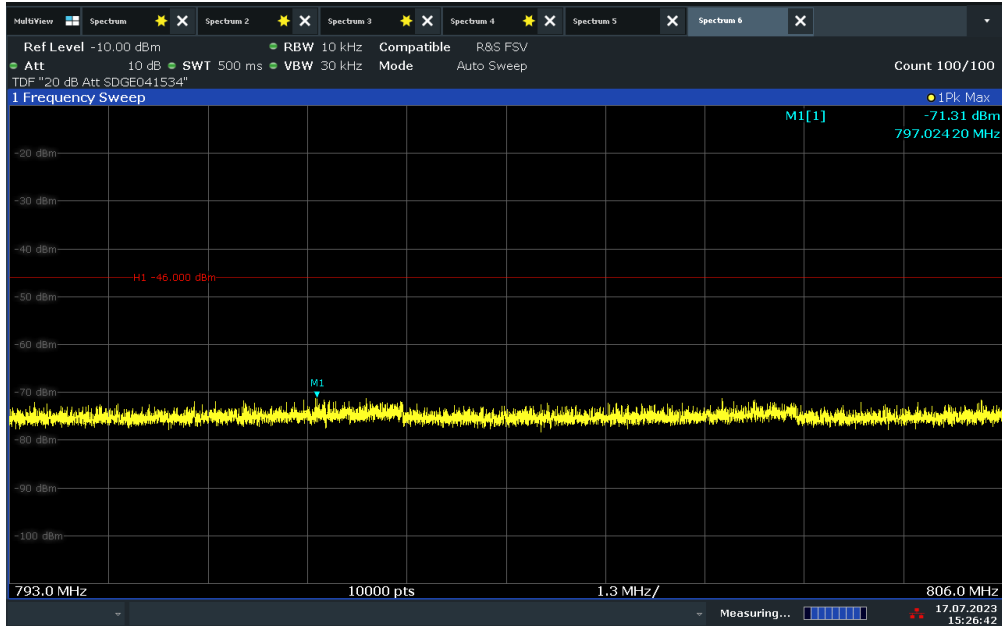
Product Service

LTE Band 13 Downlink 5MHz Bandwidth High Channel Conducted Spurious Emissions (763-775 MHz)



15:25:31 17.07.2023

LTE Band 13 Downlink 5MHz Bandwidth High Channel Conducted Spurious Emissions (793-806 MHz)

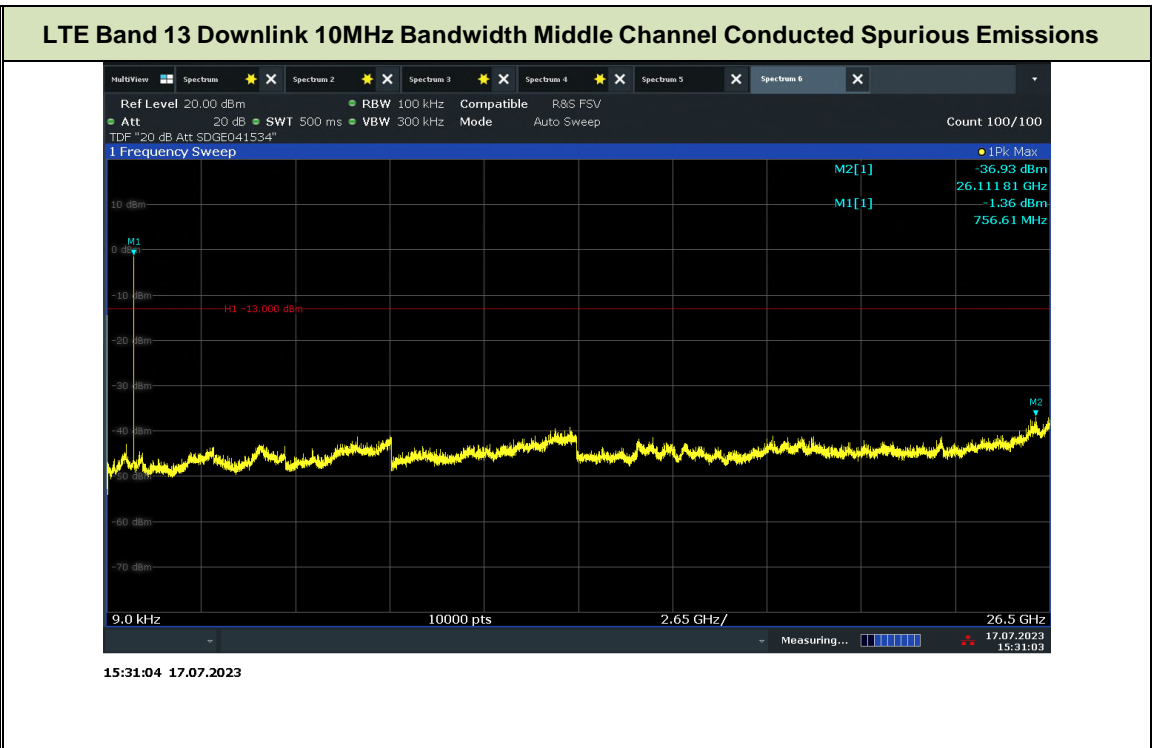
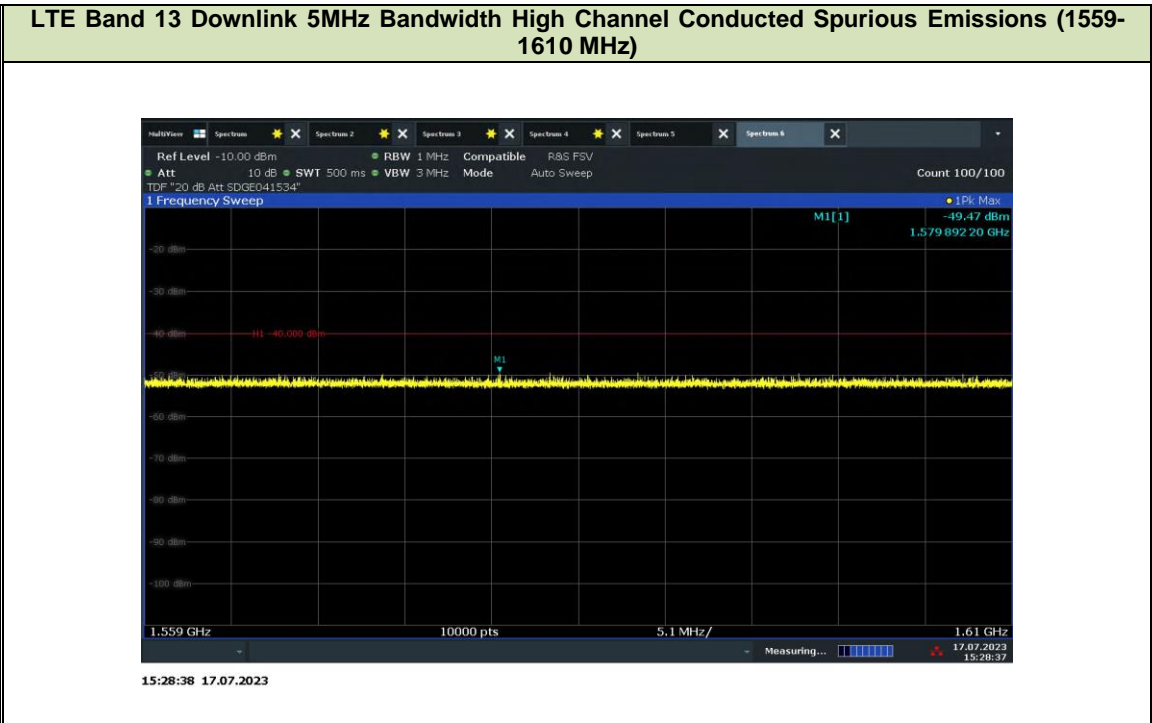


15:26:42 17.07.2023



FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

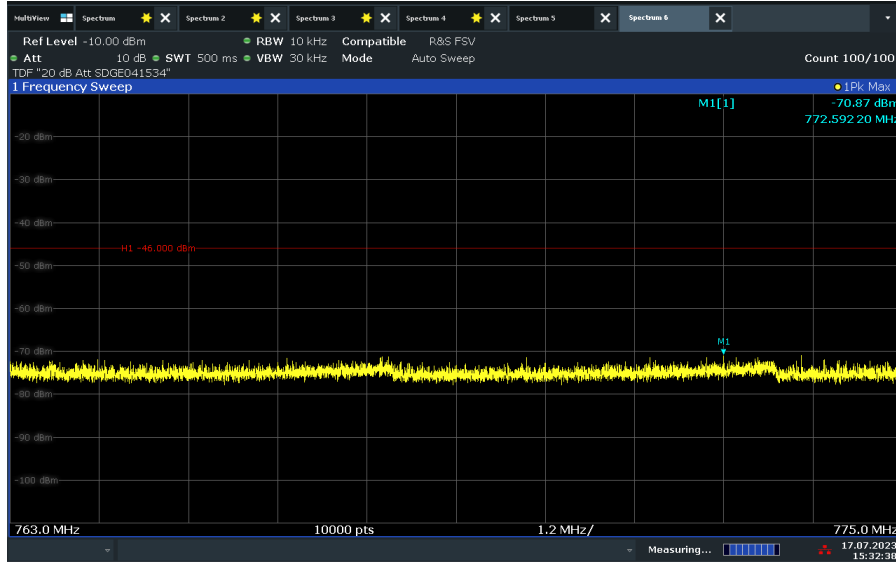
Product Service





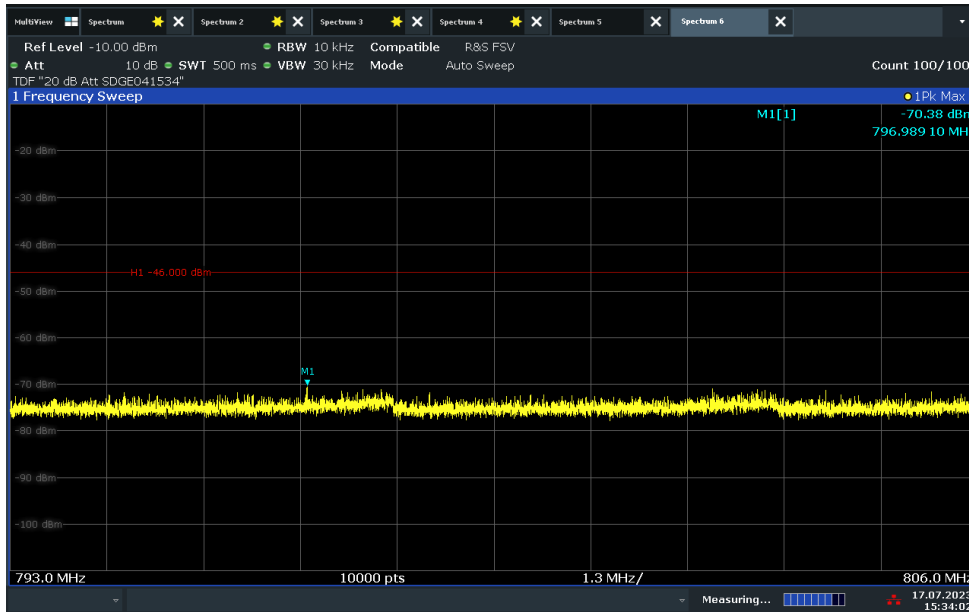
FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

LTE Band 13 Downlink 10MHz Bandwidth Middle Channel Conducted Spurious Emissions (763-775 MHz)



15:32:38 17.07.2023

LTE Band 13 Downlink 10MHz Bandwidth Middle Channel Conducted Spurious Emissions (793-806 MHz)



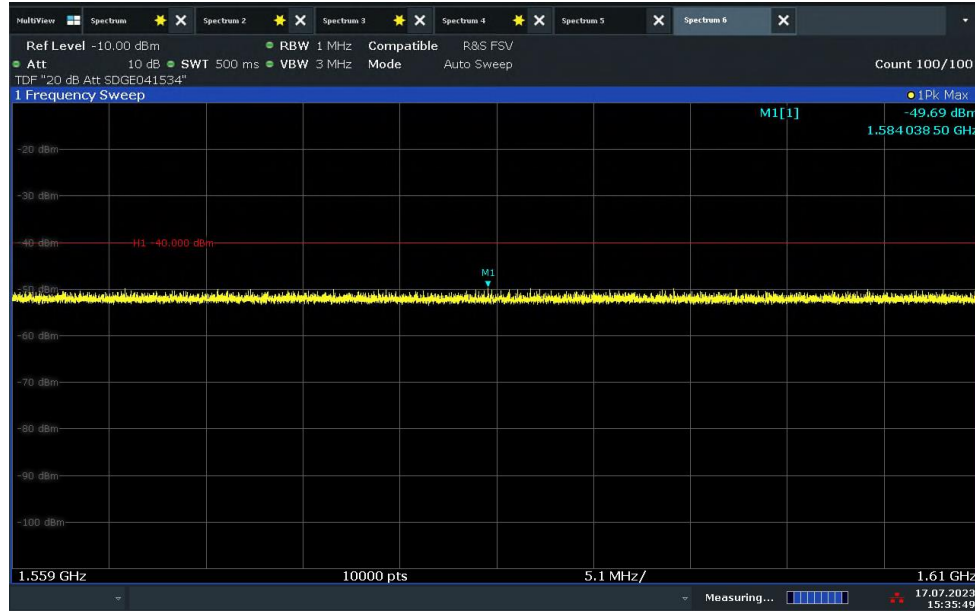
15:34:03 17.07.2023



FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

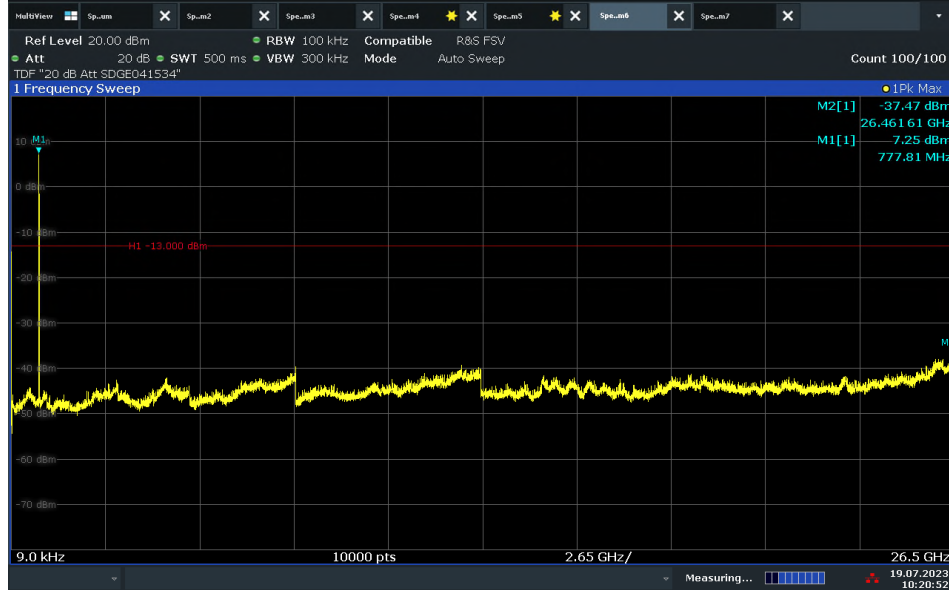
Product Service

LTE Band 13 Downlink 10MHz Bandwidth Middle Channel Conducted Spurious Emissions (1559-1610 MHz)



15:35:49 17.07.2023

LTE Band 13 Uplink 5MHz Bandwidth Low Channel Conducted Spurious Emissions

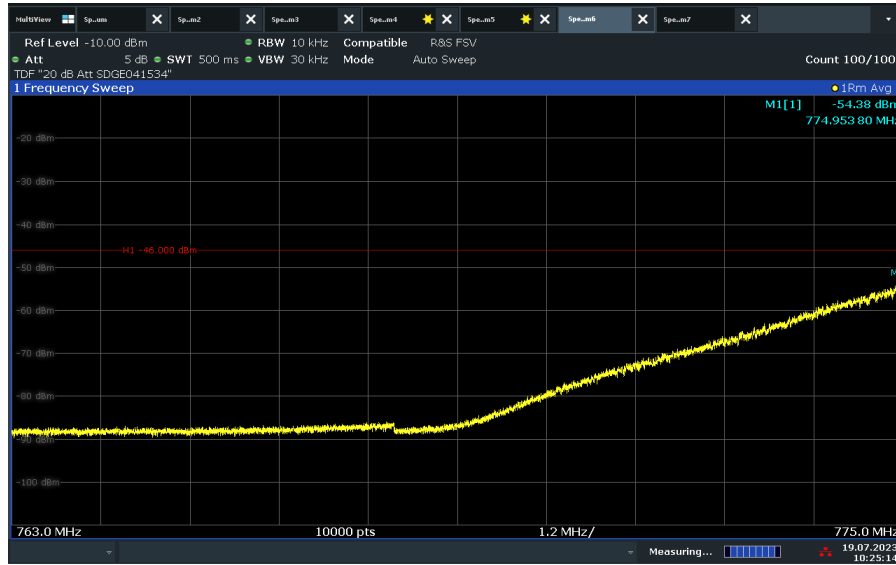


10:20:53 19.07.2023

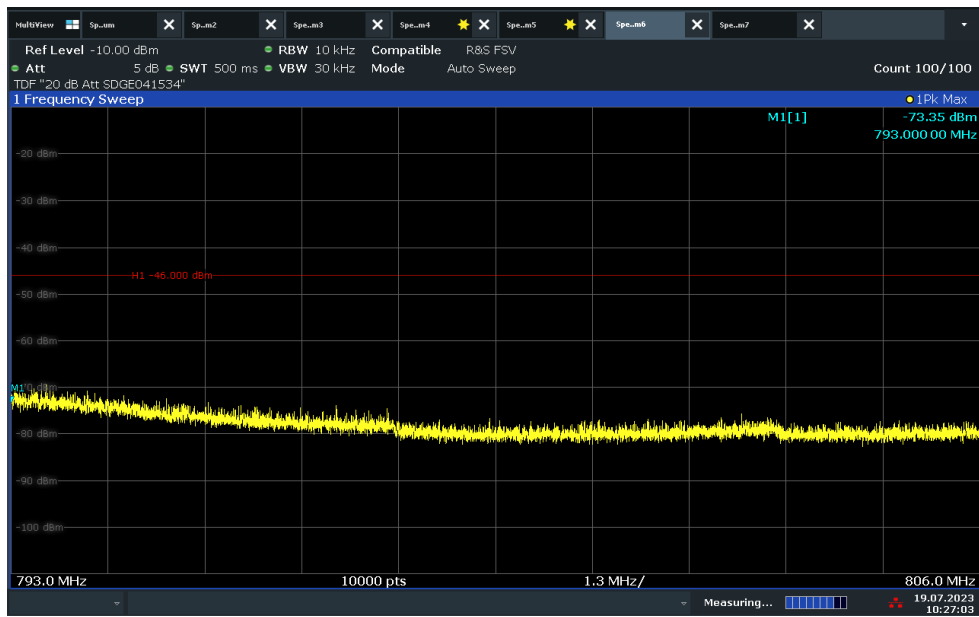


FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

LTE Band 13 Uplink 5MHz Bandwidth Low Channel Conducted Spurious Emissions (763-775 MHz)



LTE Band 13 Uplink 5MHz Bandwidth Low Channel Conducted Spurious Emissions (793-806 MHz)

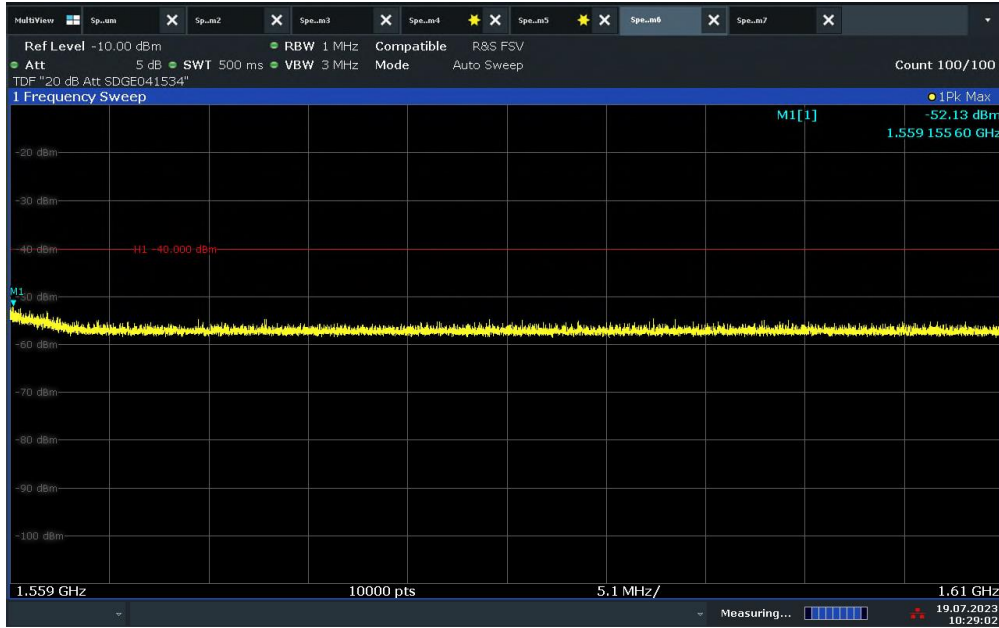




FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

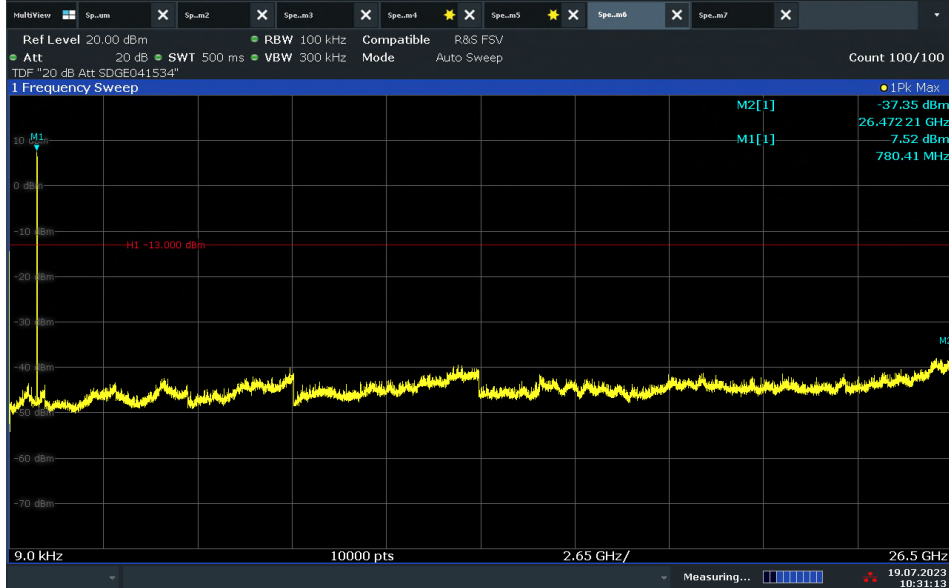
Product Service

LTE Band 13 Uplink 5MHz Bandwidth Low Channel Conducted Spurious Emissions (1559-1610 MHz)



10:29:03 19.07.2023

LTE Band 13 Uplink 5MHz Bandwidth Middle Channel Conducted Spurious Emissions

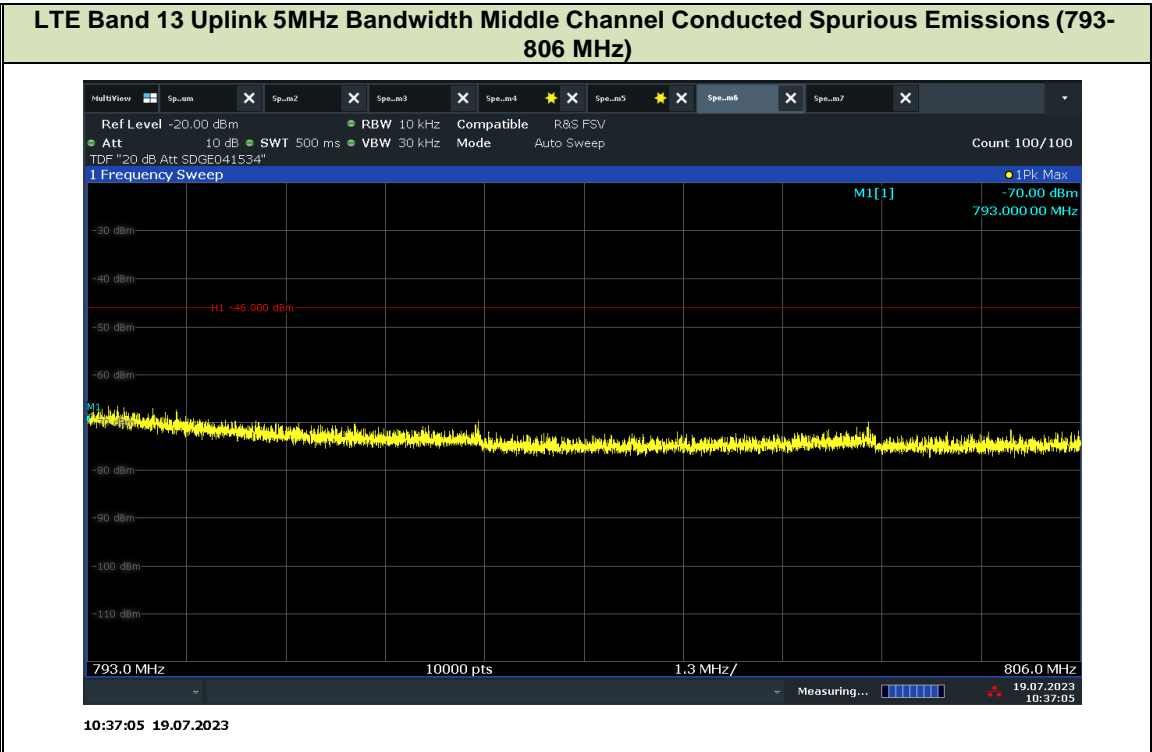
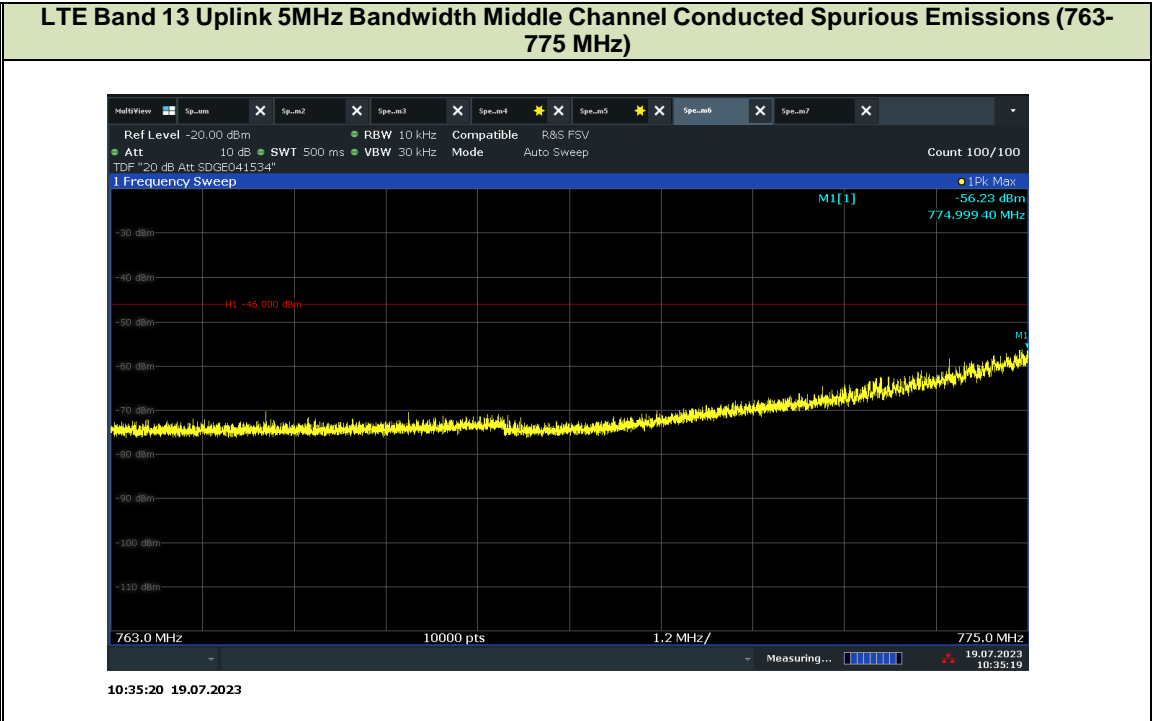


10:31:14 19.07.2023



FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

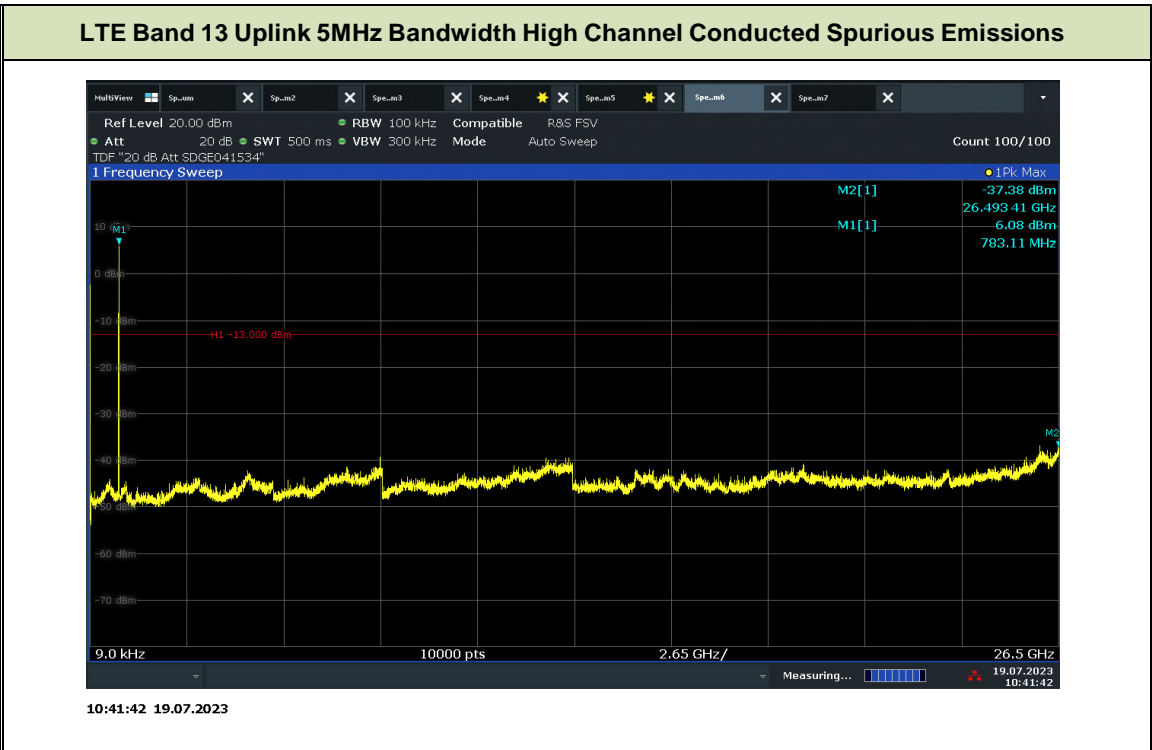
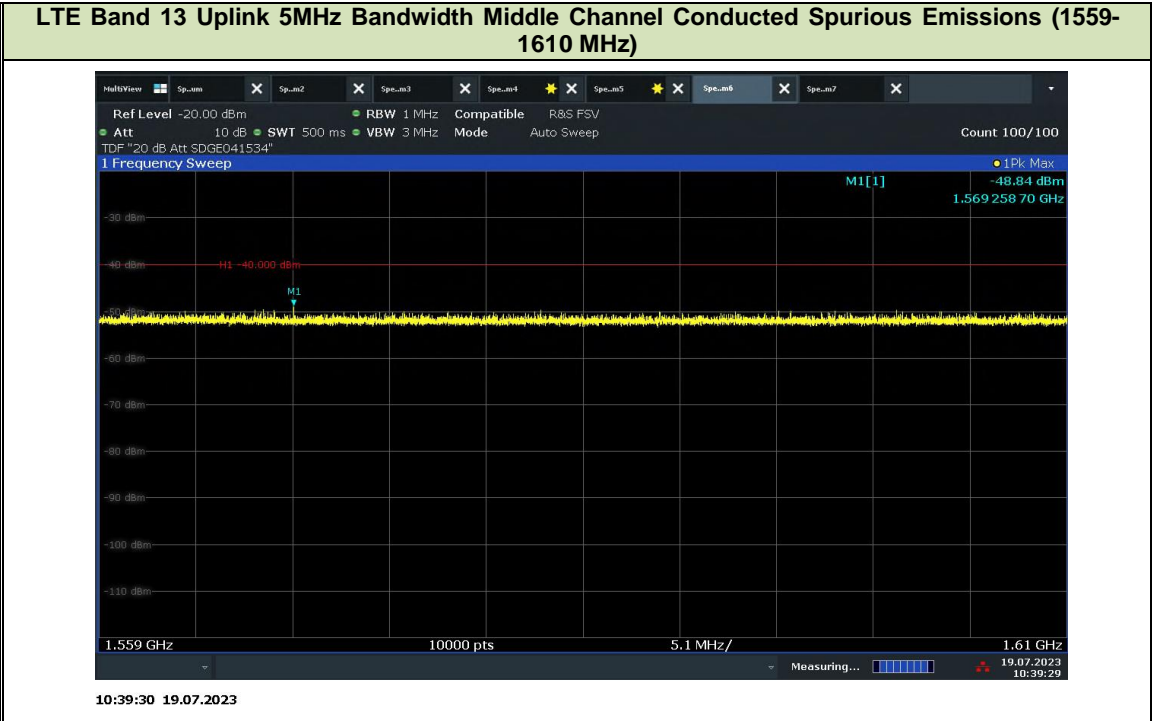
Product Service





FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

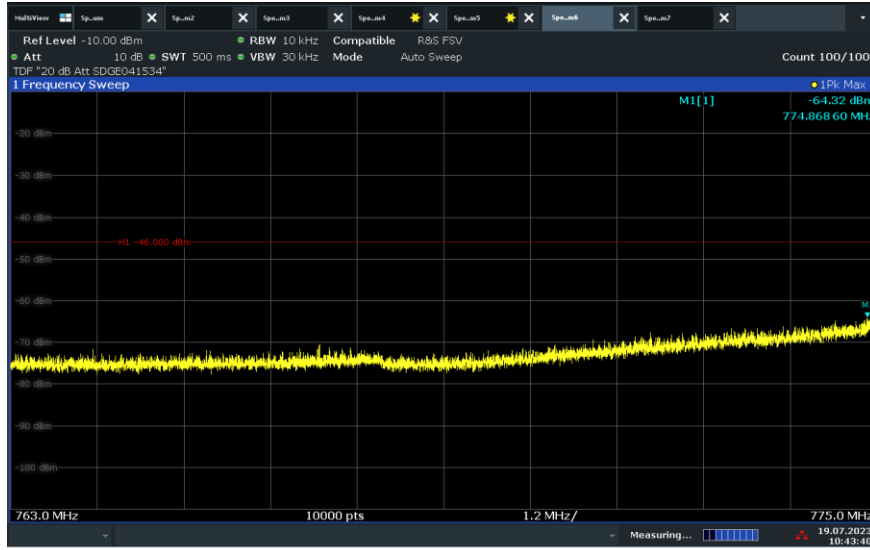
Product Service





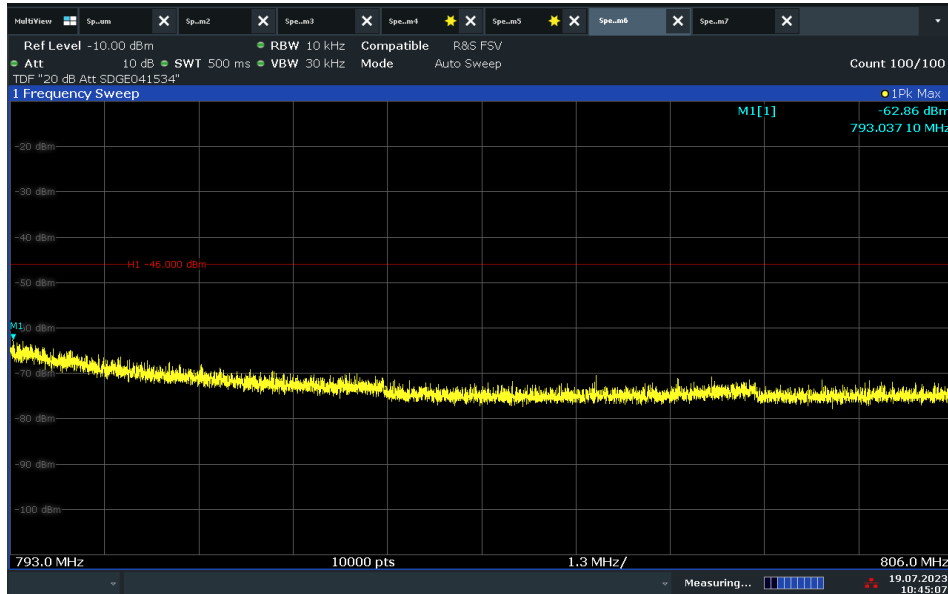
FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

LTE Band 13 Uplink 5MHz Bandwidth High Channel Conducted Spurious Emissions (763-775 MHz)



10:43:40 19.07.2023

LTE Band 13 Uplink 5MHz Bandwidth High Channel Conducted Spurious Emissions (793-806 MHz)

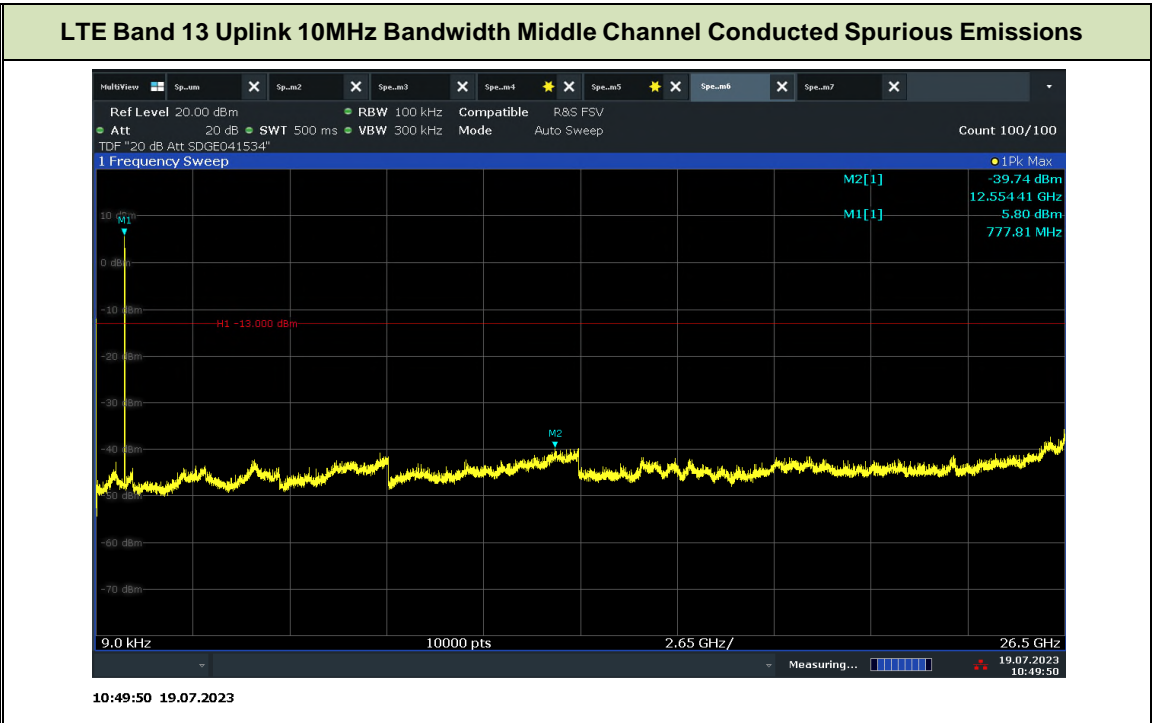
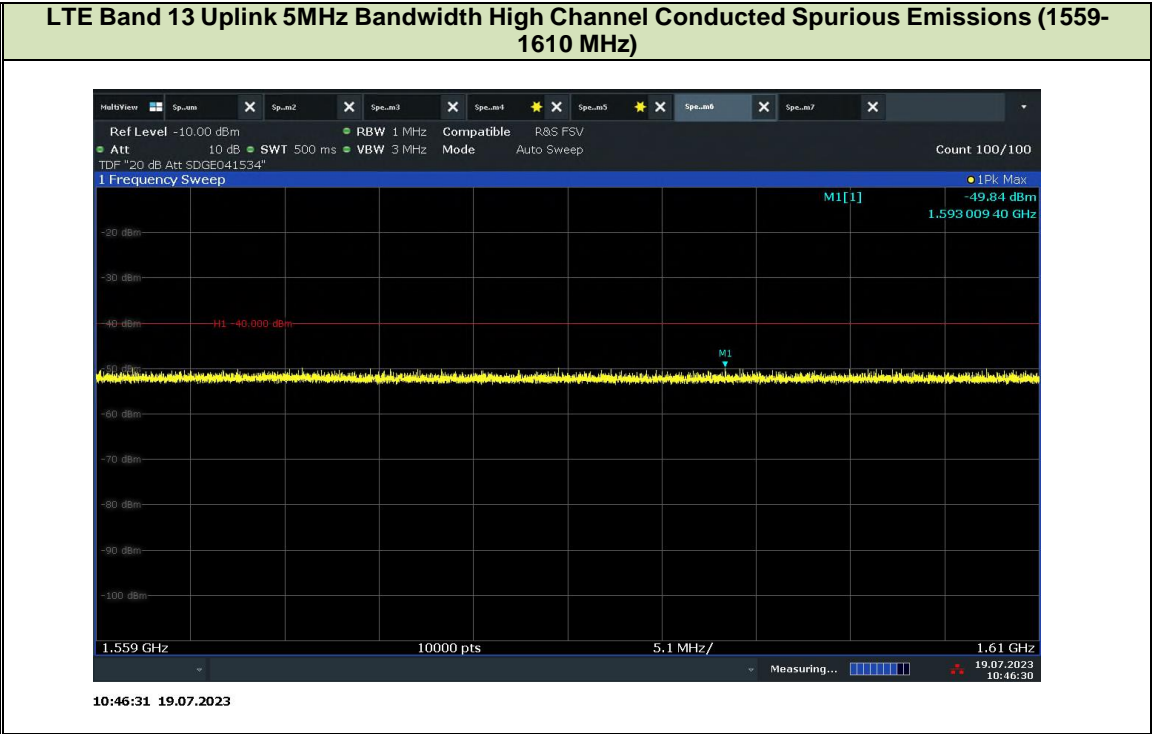


10:45:08 19.07.2023



FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

Product Service

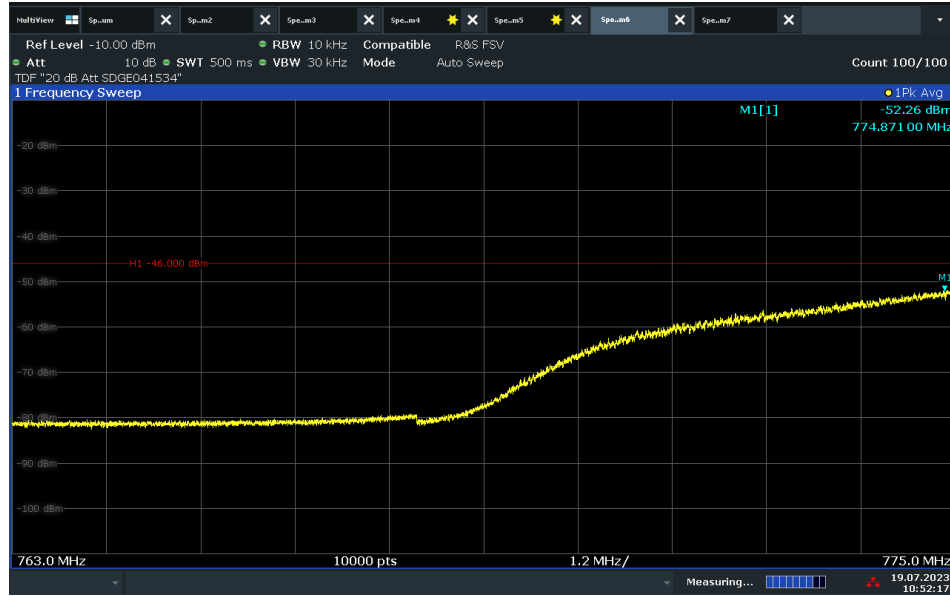




FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

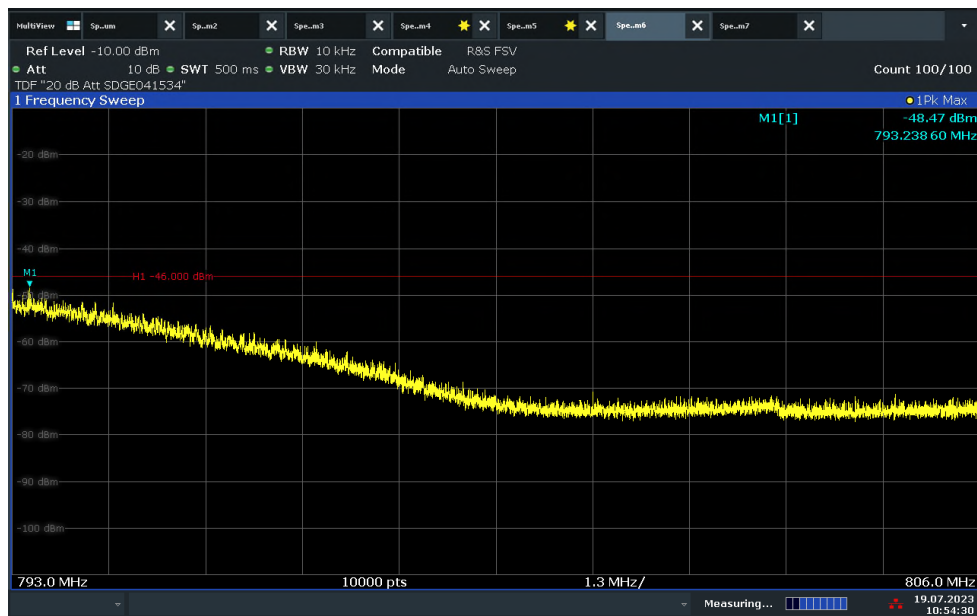
Product Service

LTE Band 13 Uplink 10MHz Bandwidth Middle Channel Conducted Spurious Emissions (763-775 MHz)



10:52:18 19.07.2023

LTE Band 13 Uplink 10MHz Bandwidth Middle Channel Conducted Spurious Emissions (793-806 MHz)

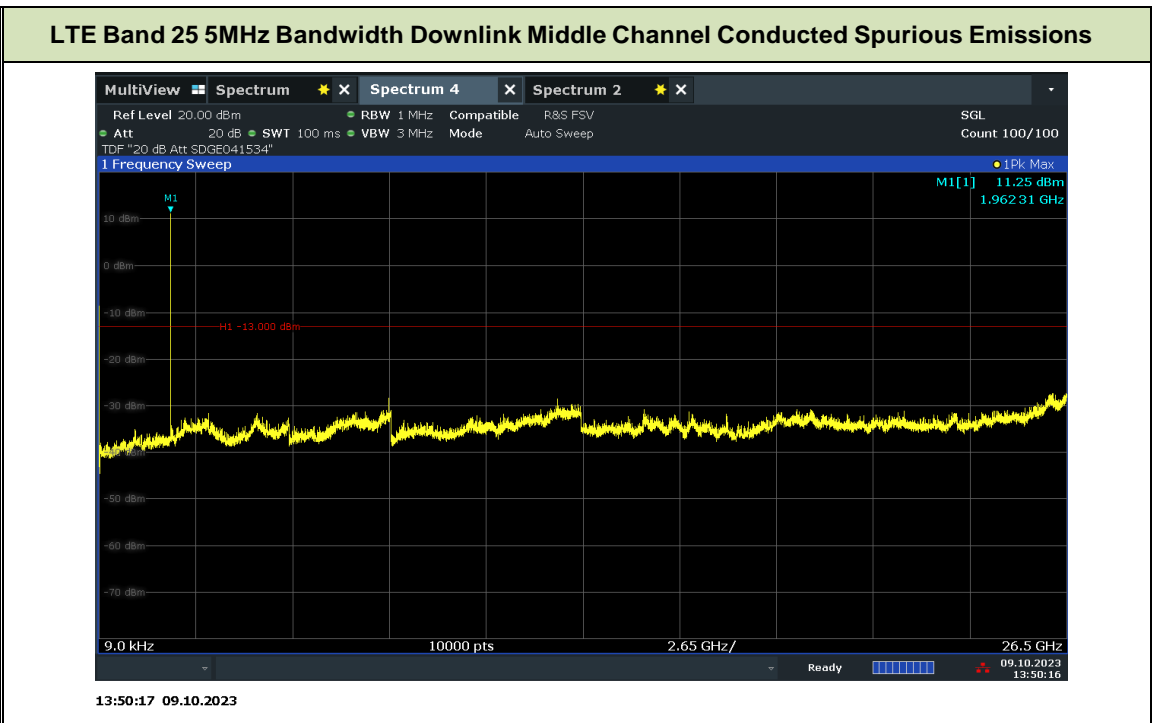
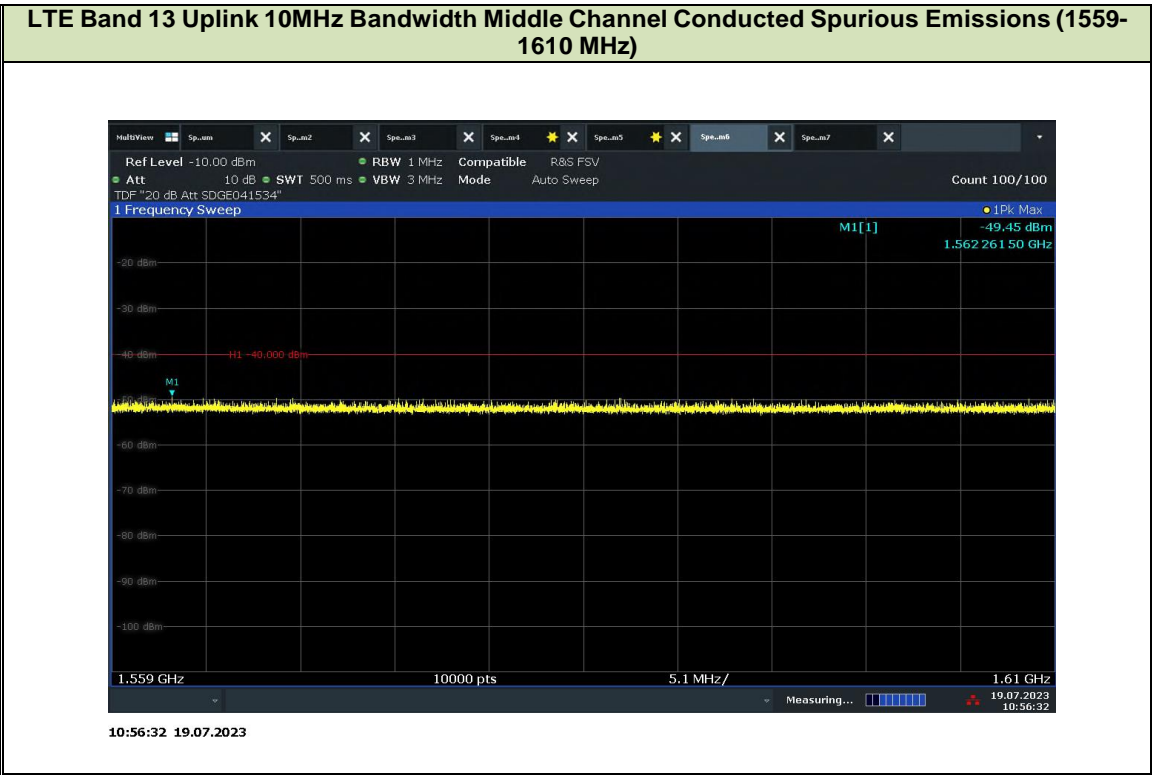


10:54:31 19.07.2023



FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

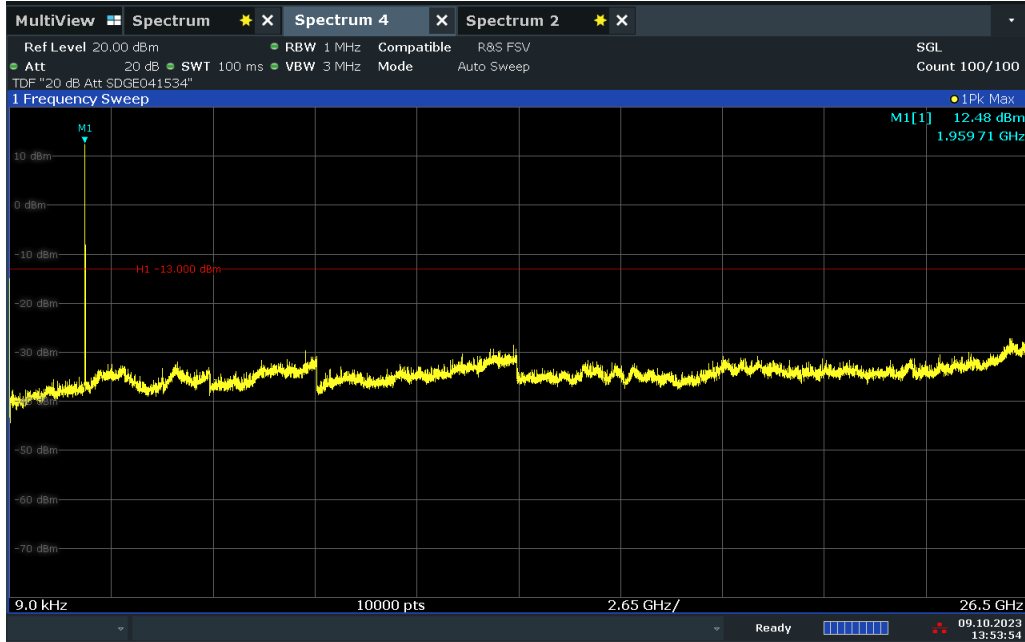
Product Service





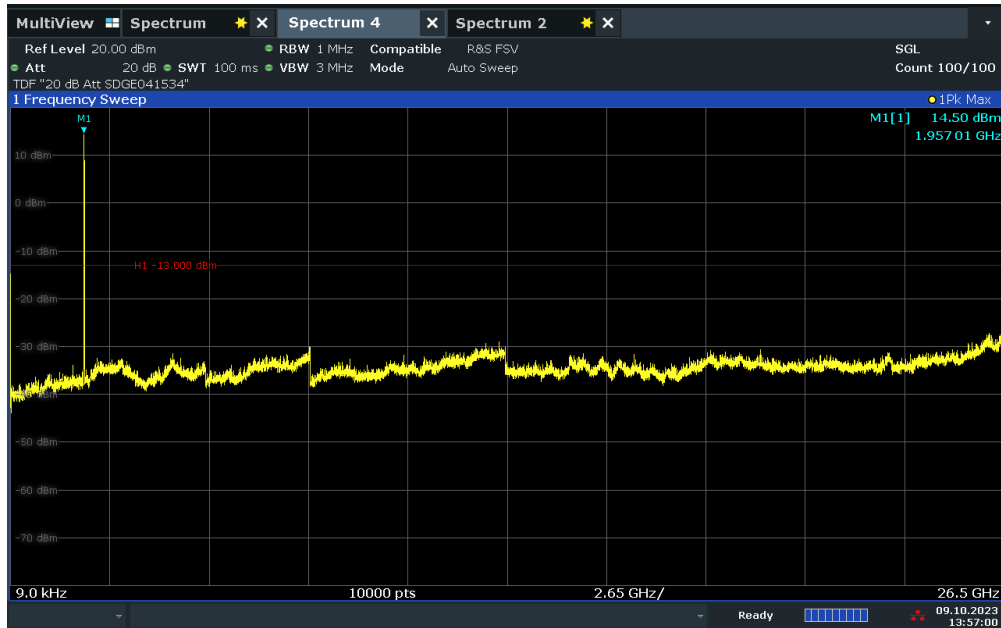
FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

LTE Band 25 10MHz Bandwidth Downlink Middle Channel Conducted Spurious Emissions



13:53:55 09.10.2023

LTE Band 25 15MHz Bandwidth Downlink Middle Channel Conducted Spurious Emissions



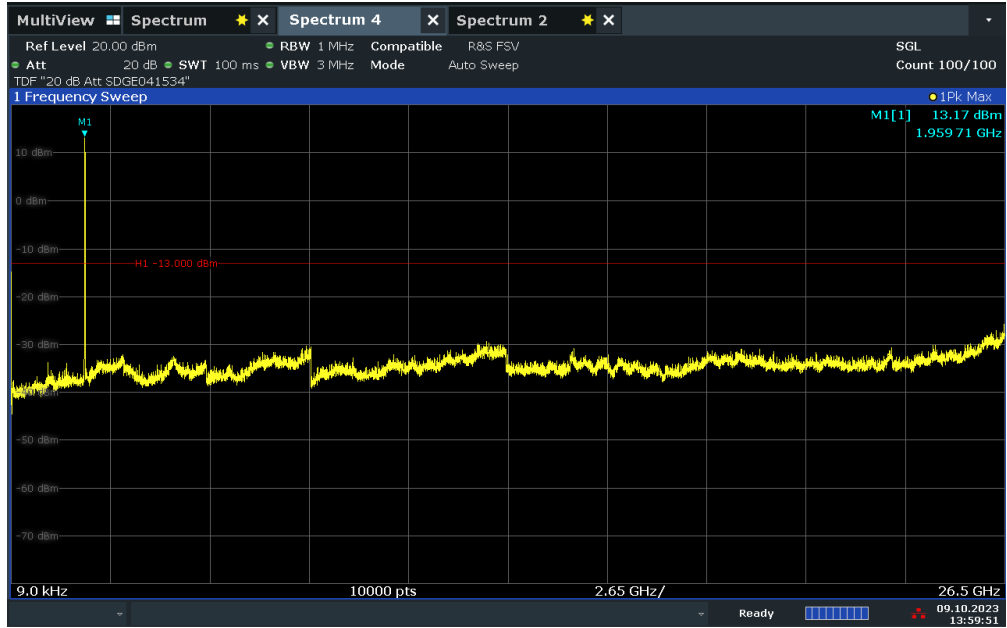
13:57:00 09.10.2023



FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

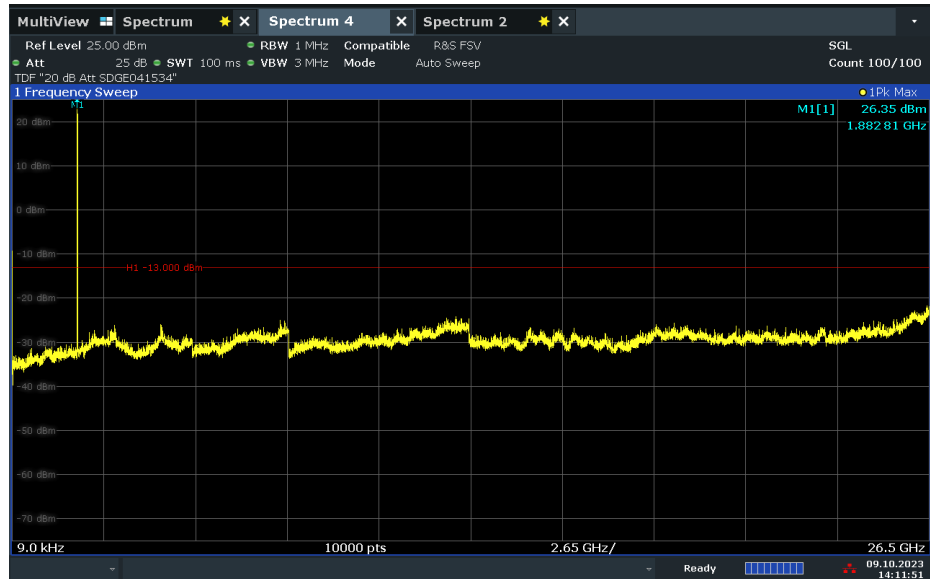
Product Service

LTE Band 25 20MHz Bandwidth Downlink Middle Channel Conducted Spurious Emissions



13:59:51 09.10.2023

LTE Band 25 5MHz Bandwidth Uplink Middle Channel Conducted Spurious Emissions

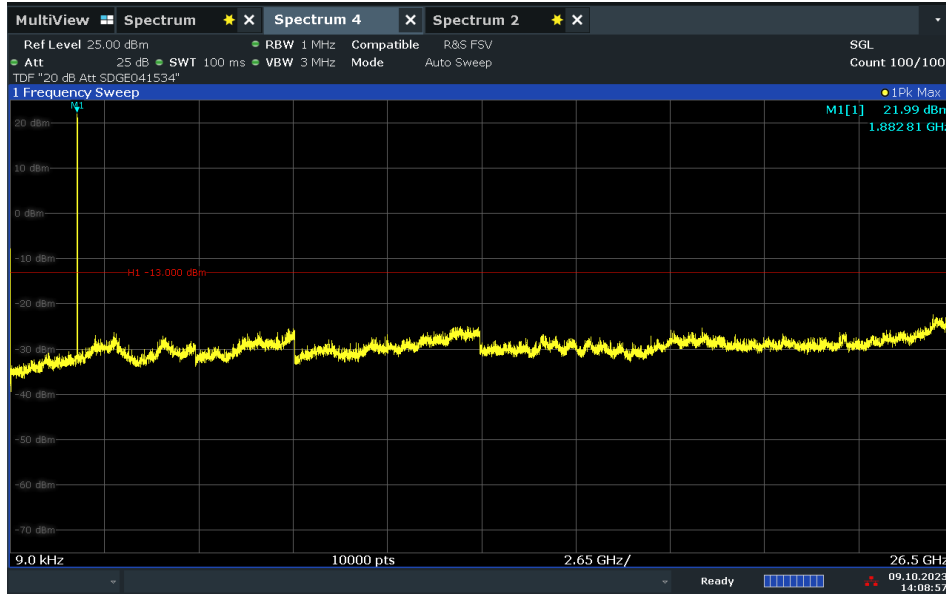


14:11:52 09.10.2023



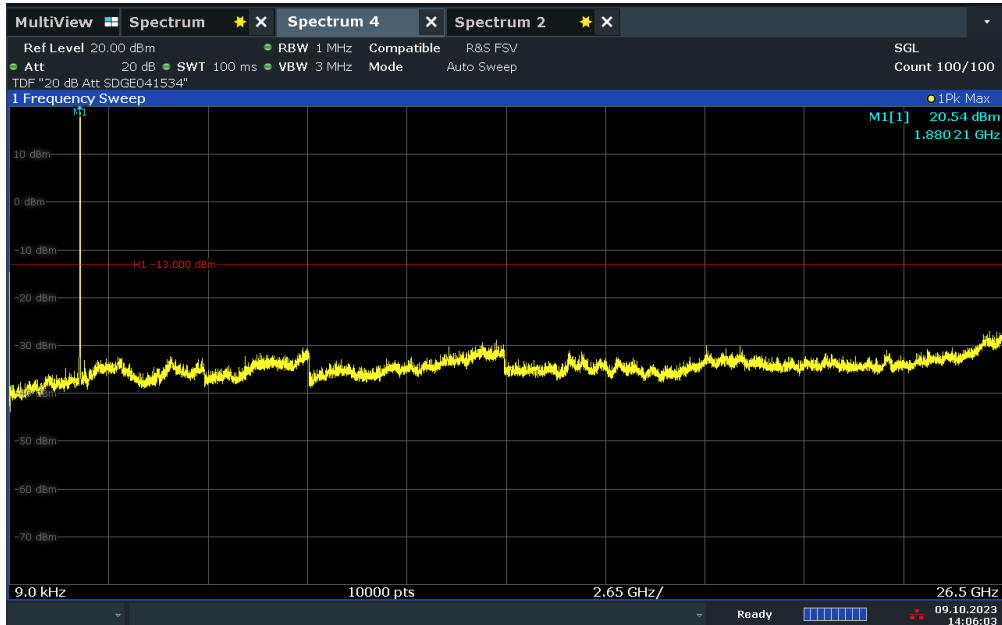
FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

LTE Band 25 10MHz Bandwidth Uplink Middle Channel Conducted Spurious Emissions



14:08:58 09.10.2023

LTE Band 25 15MHz Bandwidth Uplink Middle Channel Conducted Spurious Emissions



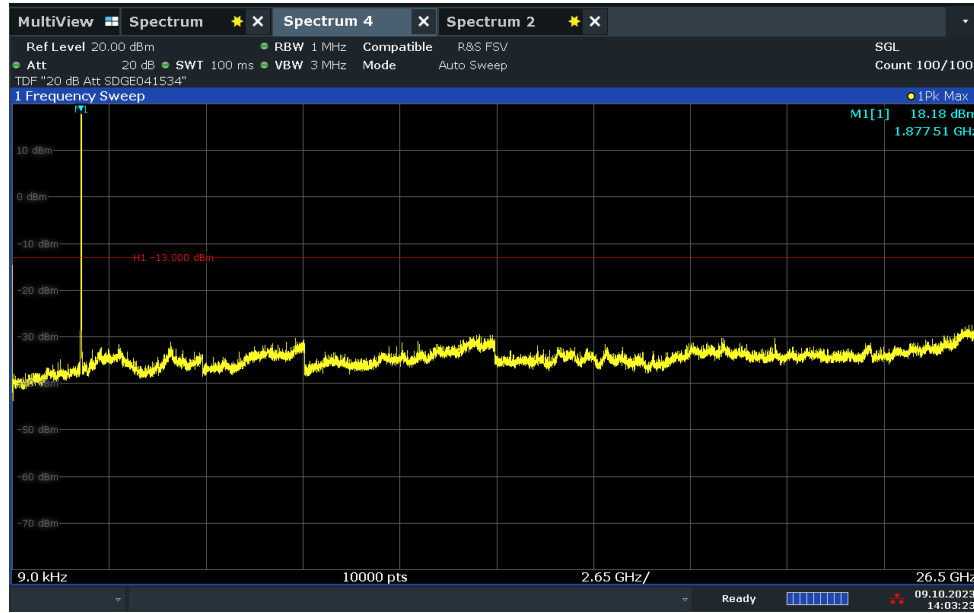
14:06:04 09.10.2023



FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

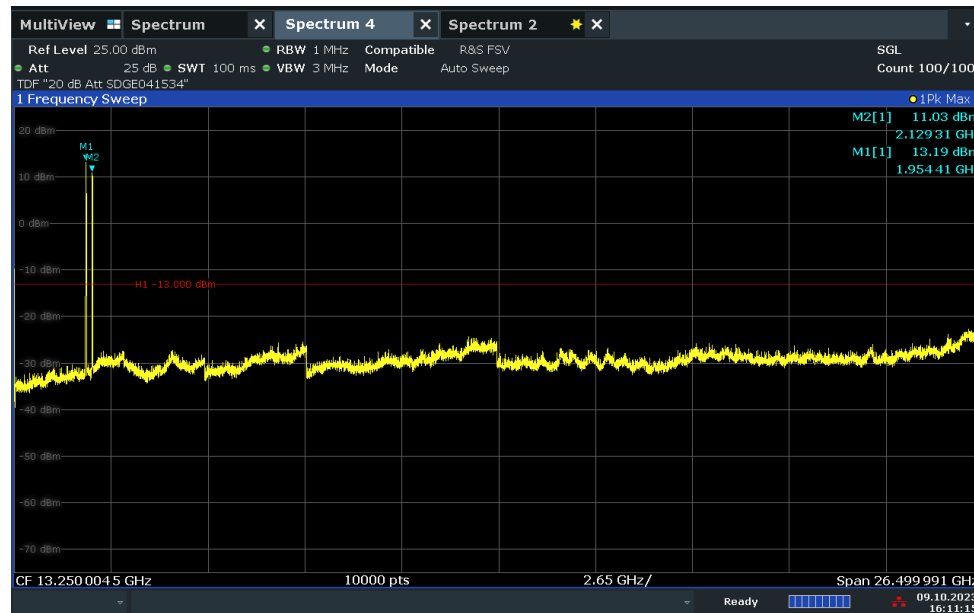
Product Service

LTE Band 25 20MHz Bandwidth Uplink Middle Channel Conducted Spurious Emissions



14:03:24 09.10.2023

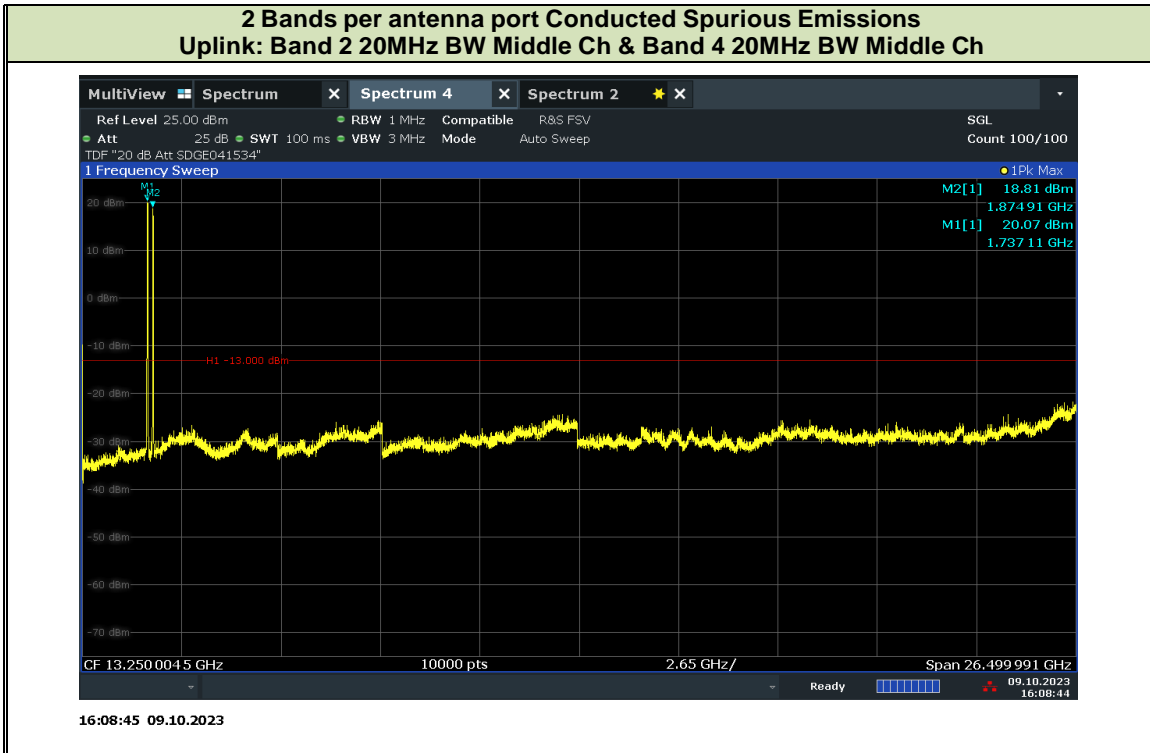
2 Bands per antenna port Conducted Spurious Emissions Downlink: Band 2 20MHz BW Middle Ch & Band 4 20MHz BW Middle Ch



16:11:15 09.10.2023



FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE





FCC ID: YETG43-BBBE
IC No.: 9298A-G43BBBE

2.7 Noise Limit

2.7.1 Specification Reference

FCC 47 CFR Part 20. Clause 20.21(e)(9)(i)(A)
FCC 47 CFR Part 20. Clause 20.21(e)(9)(i)(I)
KDB935210 D04, Clause 7.7

2.7.2 Standard Applicable

FCC 47 CFR Part 20. Clause 20.21(e)(9)(i)(A) Noise Limits.:

The transmitted noise power in dBm/MHz of frequency selective consumer boosters outside the licensee's spectrum blocks at their uplink and downlink ports shall not exceed the following limits:

(1) -103 dBm/MHz - RSSI

(i) Where RSSI is the downlink composite signal power received in dBm for frequencies in the band of operation outside the licensee's spectrum block as measured after spectrum block filtering is applied and is referenced to the booster's donor port for each band of operation. RSSI is expressed in negative dB units relative to 1 mW.

(ii) Boosters with MSCL less than 40 dB, shall reduce the Noise output in (A) by 40 dB - MSCL, where MSCL is the minimum coupling loss in dB between the wireless device and booster's server port. MSCL must be calculated or measured for each band of operation and provided in compliance test reports.

(2)(i) Maximum downlink noise power shall not exceed $-102.5 \text{ dBm/MHz} + 20 \text{ Log}_{10}(\text{Frequency})$, where Frequency is the uplink mid-band frequency of the supported spectrum bands in MHz.

(ii) Compliance with Noise limits will use instrumentation calibrated in terms of RMS equivalent voltage, and with booster input ports terminated or without input signals applied within the band of measurement.

FCC 47 CFR Part 20. Clause 20.21(e)(9)(i)(I) Transmit Power Off Mode.

When the consumer booster cannot otherwise meet the noise and gain limits defined herein it must operate in "Transmit Power OFF Mode." In this mode of operation, the uplink and downlink noise power shall not exceed -70 dBm/MHz and uplink gain shall not exceed the lesser of 23 dB or MSCL.

2.7.3 Equipment Under Test and Modification State

Serial No: 560311000026 / Test Configuration A and B

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

August 29 and September 29, 2023/MARG

2.7.5 Test Equipment Used

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



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2.7.6 Environmental Conditions

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

Ambient Temperature 24.5 - 26.7°C
 Relative Humidity 45.0 - 49.6%
 ATM Pressure 98.9 - 99.0kPa

2.7.7 Additional Observations

- This is conducted Test. Test procedure is per Section 7.7 of KDB935210 (D04 Provider Specific Booster Measurements v02r03). Appropriate offset (line losses) applied.
- The EUT operated in Test Mode with the gain set to the maximum gain and a minimum bandwidth setting (5MHz).
- For Maximum Noise (frequency Dependent) testing, setup the EUT according to Figure 6 of Section 7.7 of KDB935210.
- Maximum Noise (frequency Dependent) evaluations are conducted at Server Port. Operational downlink band for LTE Band 2, 4, 5, 12, 13 and 25 were tested.
- For Maximum Noise (RSSI Dependent and Transmit Power off mode) and Noise Response Time tests, set up the EUT according to Figure 7 or 8 of Section 7.7 of KDB935210 as appropriate.
- Maximum Noise (RSSI Dependent and Transmit Power off mode) and Noise Response Time evaluations are conducted at Donor Port and Server Port. Operational uplink and downlink bands for LTE Band 2, 4, 5, 12, 13 and 25 were tested. The signal generator was configured to transmit: 4.1 MHz AWGN.

2.7.8 Test Results

Maximum Noise (Frequency Dependent)				
Band	Frequency Range (MHz)	Max Noise (dBm/MHz)	Limit* (dBm/MHz)	Margin (dB)
LTE Band 2 Downlink	1930-1990	-54.33	-37.01	17.32
LTE Band 4 Downlink	2110 - 2155	-53.72	-37.72	16
LTE Band 5 Downlink	869 - 894	-53.59	-44.05	9.54
LTE Band 12 Downlink	729 - 746	-53.82	-45.50	8.32
LTE Band 13 Downlink	746 - 756	-54.35	-44.65	9.7
LTE Band 25 Downlink	1930 - 1995	-53.93	-37	16.93

*: $-102.5 \text{ dBm/MHz} + 20 \text{ Log}_{10}(\text{Frequency})$, where Frequency is the uplink mid-band frequency of the supported spectrum bands in MHz. (Downlink only)



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Maximum Noise (RSSI Dependent and Transmit Power off mode)					
Band	Frequency (MHz)	RRSI level (dBm)	Max Noise (dBm/MHz)	Limit (dBm/MHz)	Margin (dB)
LTE Band 2 Downlink	1930 - 1990	-57.11	-55.9	-51	4.9
		-56.82	-56.86	-51.8	5.06
		-56.92	-57.1	-51.9	5.2
		-56.89	-57.29	-51.8	5.49
		-57.12	-57.26	-51	6.26
		-56.84	-57.27	-51.8	5.47
LTE Band 2 Uplink	1850 - 1910	-57.84	-56.83	-50.3	6.53
		-57.51	-56.87	-50.5	6.37
		-57.3	-56.87	-50.6	6.27
		-57.67	-56.9	-50.4	6.5
		-57.67	-56.85	-50.4	6.45
LTE Band 4 Downlink	2110 - 2155	-57.29	-56.89	-50.6	6.29
		-56.42	-55.75	-51.5	4.25
		-56.03	-56.17	-51.9	4.27
		-56.67	-56.15	-50.4	5.75
		-56.44	-56.6	-51.5	5.1
		-56.32	-56.62	-51.5	5.12
LTE Band 4 Uplink	1710 - 1755	-56.11	-56.55	-51.9	4.65
		-57.22	-56.43	-51.1	5.33
		-57.22	-56.51	-51.1	5.41
		-57.37	-57.1	-50.8	6.3
		-57.13	-57.19	-51	6.19
		-57.31	-57.3	-50.8	6.5
LTE Band 5 Downlink	869 - 894	-56.97	-57.31	-51	6.31
		-56.38	-56.36	-51	5.36
		-56.34	-56.32	-51	5.32
		-56.19	-56.22	-50.8	5.42
		-56.16	-56.18	-50.8	5.38
		-56.24	-56.23	-51	5.23
LTE Band 5 Uplink	824 - 849	-56.46	-56.46	-51.2	5.26
		-54.12	-54.04	-54	0.04
		-54.29	-54.14	-54.1	0.04
		-54.13	-54.06	-54	0.06



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		-54.11	-54.03	-54	0.03
		-54.14	-54.35	-54	0.35
		-54.18	-54.28	-54	0.28
LTE Band 12 Downlink	729 - 746	-56.64	-56.65	-51.3	5.35
		-56.94	-56.92	-52	4.92
		-56.17	-56.18	-50.8	5.38
		-56.37	-56.67	-51	5.67
		-56.64	-56.66	-51.3	5.36
		-56.46	-56.48	-51.2	5.28
LTE Band 12 Uplink	699 - 716	-54.15	-54.04	-54	0.04
		-54.27	-54.14	-54.1	0.04
		-54.16	-54.06	-54	0.06
		-54.1	-54.03	-54	0.03
		-54.13	-54.35	-54	0.35
		-54.18	-54.28	-54	0.28
LTE Band 13 Downlink	746 - 756	-56.46	-56.43	-51.2	5.23
		-56.43	-56.45	-51.2	5.25
		-56.92	-56.87	-52	4.87
		-56.78	-56.75	-51.5	5.25
		-56.28	-56.32	-50.9	5.42
		-56.92	-56.9	-52	4.9
LTE Band 13 Uplink	777 - 787	-54.1	-54.04	-54	0.04
		-54.25	-54.14	-54.1	0.04
		-54.1	-54.06	-54	0.06
		-54.1	-54.03	-54	0.03
		-54.11	-54.35	-54	0.35
		-54.16	-54.28	-54	0.28
LTE Band 25 Downlink	1930 - 1995	-57.11	-55.65	-50.9	4.75
		-57.19	-55.84	-50.9	4.94
		56.9	-56.92	-50.8	6.12
		-57.29	-57.24	-51	6.24
		-56.94	-57.29	-50.8	6.49
		-56.62	-57.35	-51	6.35
LTE Band 25 Uplink	1850 - 1915	-57.49	-56.56	-50.09	6.47
		-57.73	-57.05	-50.5	6.55
		-57.66	-57.33	-50.4	6.93
		-57.4	-57.43	-50.3	7.13
		-57.43	-57.4	-50.3	7.1



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		-57.35	-57.37	-50.2	7.17
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Noise Response Time				
Band	Frequency (MHz)	Noise Response Time (Sec)	Limit (Sec)	Margin (Sec)
LTE Band 2 Downlink	1930-1990	0.422	3	2.575
LTE Band 2 Uplink	1850-1910	0.762	3	2.238
LTE Band 4 Downlink	2110 - 2155	0.442	3	2.558
LTE Band 4 Uplink	1710 - 1755	0.788	3	2.212
LTE Band 5 Downlink	869 - 894	0.462	3	2.538
LTE Band 5 Uplink	824 - 849	0.918	3	2.082
LTE Band 12 Downlink	729 - 746	0.496	3	2.504
LTE Band 12 Uplink	699 - 716	0.576	3	2.424
LTE Band 13 Downlink	746 - 756	0.473	3	2.527
LTE Band 13 Uplink	777 - 787	0.678	3	2.322
LTE Band 25 Downlink	1930 - 1995	0.427	3	2.573
LTE Band 25 Uplink	1850 - 1915	0.718	3	2.282

N/A*: Not Applicable. Maximum Noise always complies with Noise Limit requirement. There is no noise limit change during testing.



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2.8 Uplink Inactivity

2.8.1 Specification Reference

FCC 47 CFR Part 20. Clause 20.21(e)(9)(i)(J)
KDB935210 D04, Clause 7.8

2.8.2 Standard Applicable

FCC 47 CFR Part 20. Clause 20.21(e)(9)(i)(J) Uplink Inactivity:

Uplink Inactivity. When a consumer booster is not serving an active device connection after 5 seconds the uplink noise power shall not exceed -70 dBm/MHz.

2.8.3 Equipment Under Test and Modification State

Serial No: 560311000026 / Test Configuration C and D

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

August 31, 2023/MARG

2.8.5 Test Equipment Used

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

2.8.6 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

2.8.7 Additional Observations

- This is conducted Test.
- Test procedure is per Section 7.8 of KDB935210 (D04 Provider Specific Booster Measurements v02r03). Appropriate offset (line losses) applied.
- The EUT operated in Normal Mode with a minimum bandwidth setting (5MHz).
- Setup the EUT according to Figure 1 of Section 6.3.2 of KDB935210.
- Evaluations are conducted at NU antenna ports.
- Operational uplink bands for LTE Band 2, 4, 5, 12, 13, 25 were tested.
- Signal: 5MHz LTE.



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2.8.8 Test Results

Uplink Inactivity				
Band	Frequency (MHz)	UL Inactive Time (Sec)	Limit (Sec)	Margin (Sec)
LTE Band 2	1880	1.51	5.0	3.49
LTE Band 4	1732.5	1.52	5.0	3.48
LTE Band 5	836.6	1.49	5.0	3.51
LTE Band 12	707.5	1.53	5.0	3.47
LTE Band 13	782	1.54	5.0	3.46
LTE Band 25	1882.5	1.50	5.0	3.5



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2.8.9 Sample test Plots

