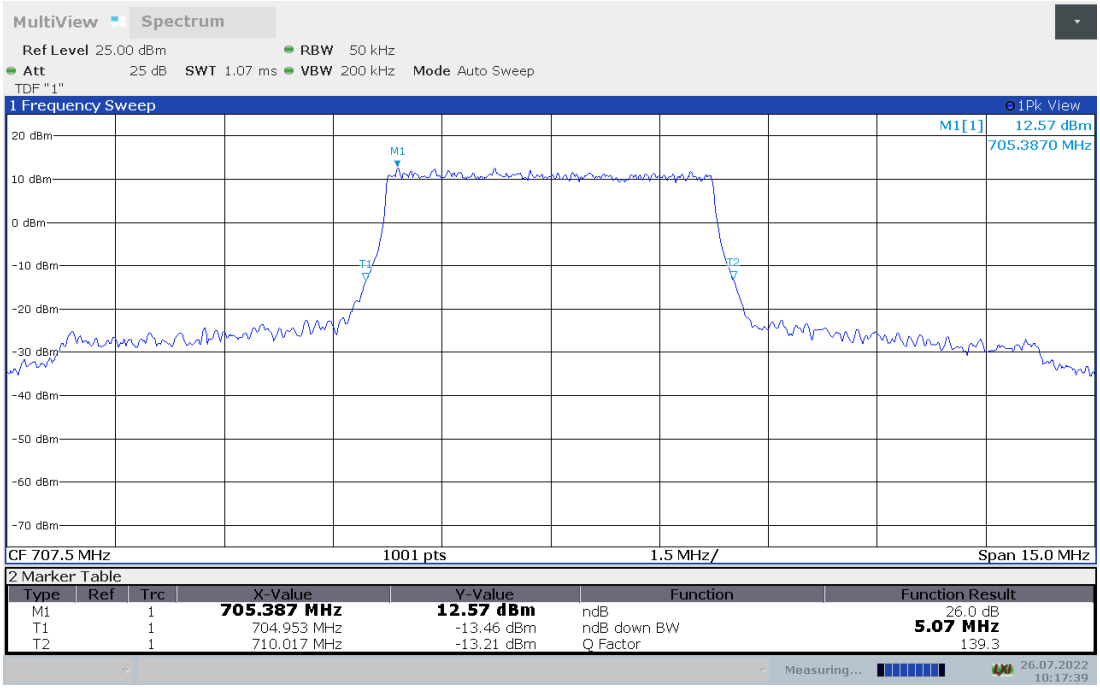
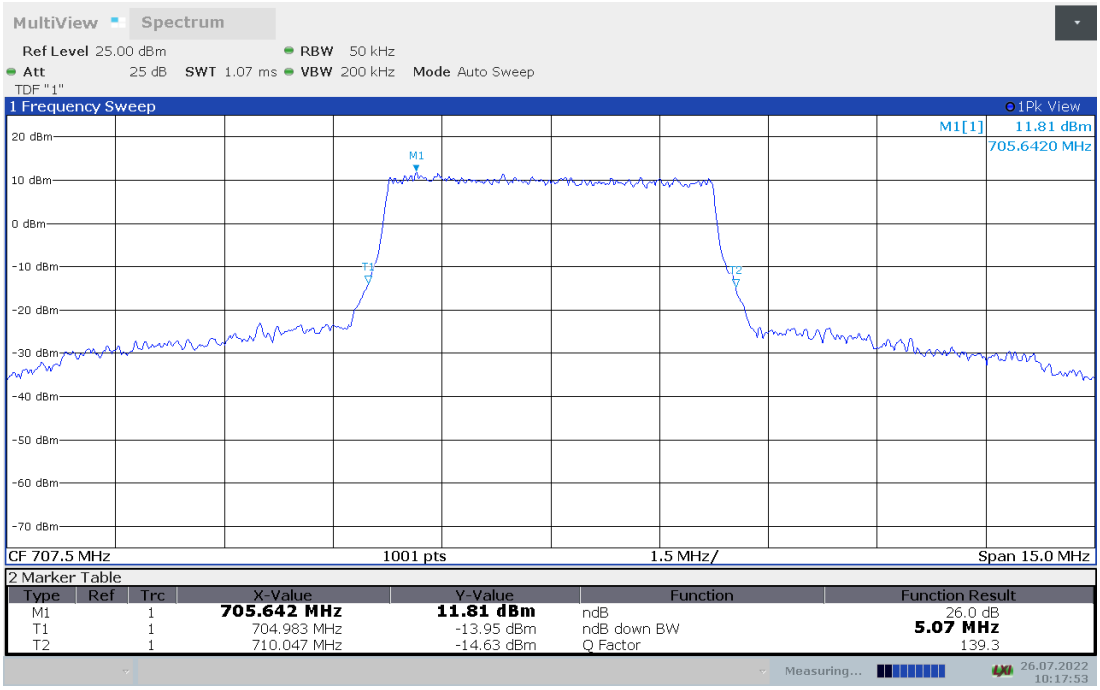
LTE band 12, 5MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
707.5	QPSK	16QAM
	5.07	5.07

LTE band 12, 5MHz Bandwidth, QPSK (-26dBc BW)



LTE band 12, 5MHz Bandwidth,16QAM (-26dBc BW)



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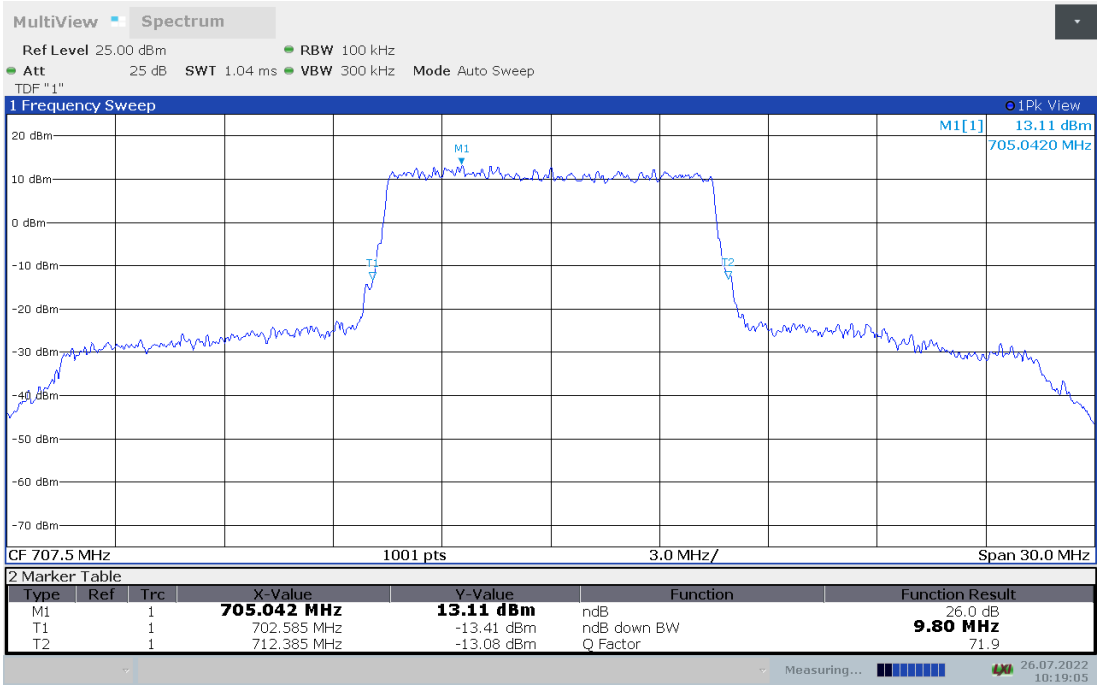
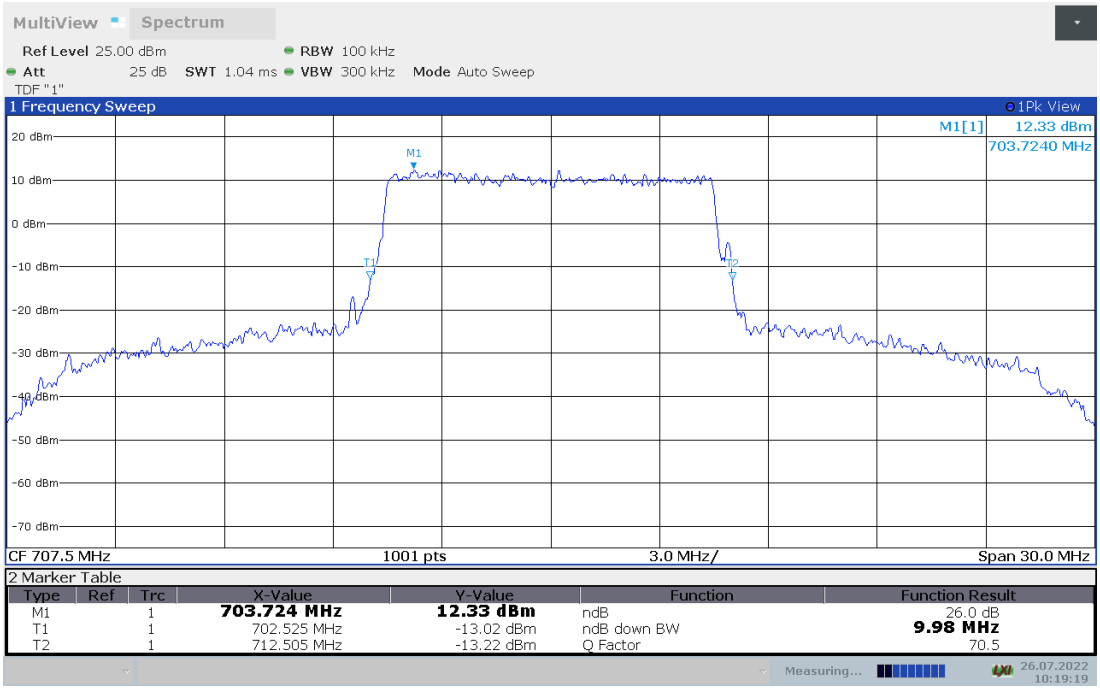
LTE band 12, 10MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
707.5	QPSK	16QAM
	9.80	9.98

LTE band 12, 10MHz Bandwidth, QPSK (-26dBc BW)



LTE band 12, 10MHz Bandwidth, 16QAM (-26dBc BW)



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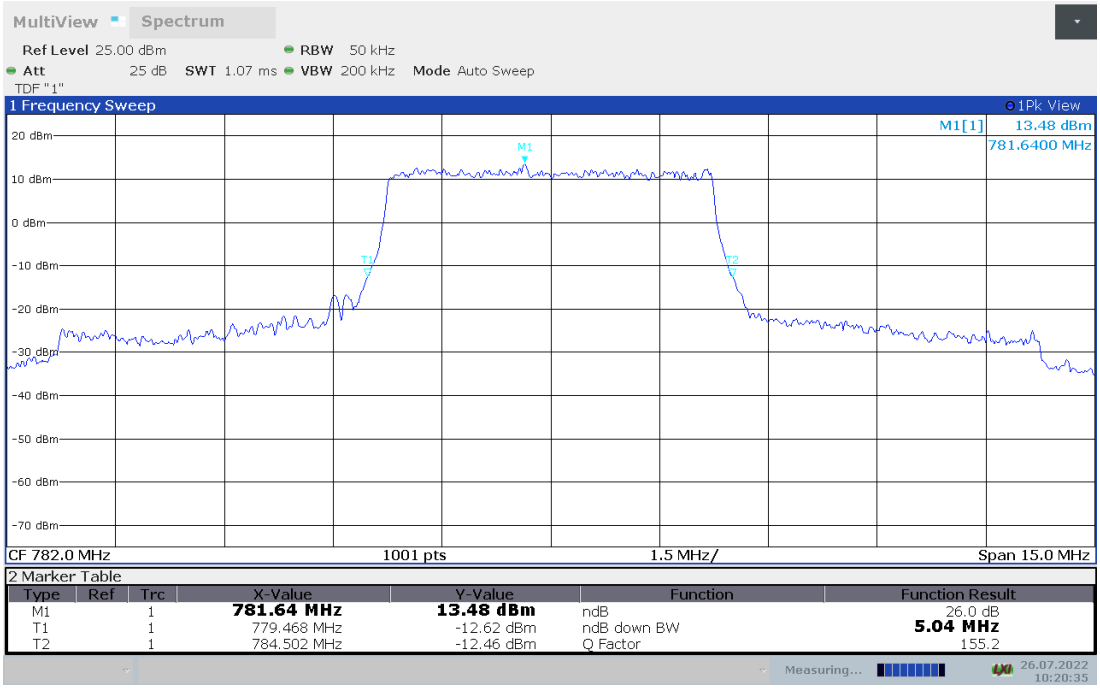
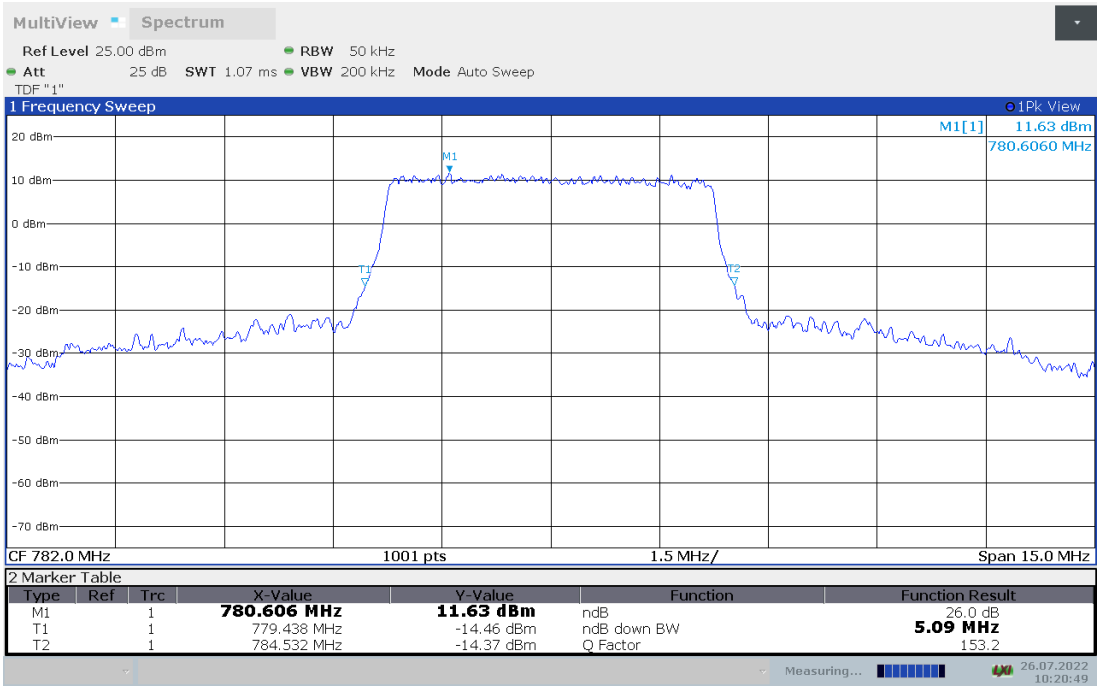
LTE band 13, 5MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
782.0	QPSK	16QAM
	5.04	5.09

LTE band 13, 5MHz Bandwidth, QPSK (-26dBc BW)



LTE band 13, 5MHz Bandwidth,16QAM (-26dBc BW)



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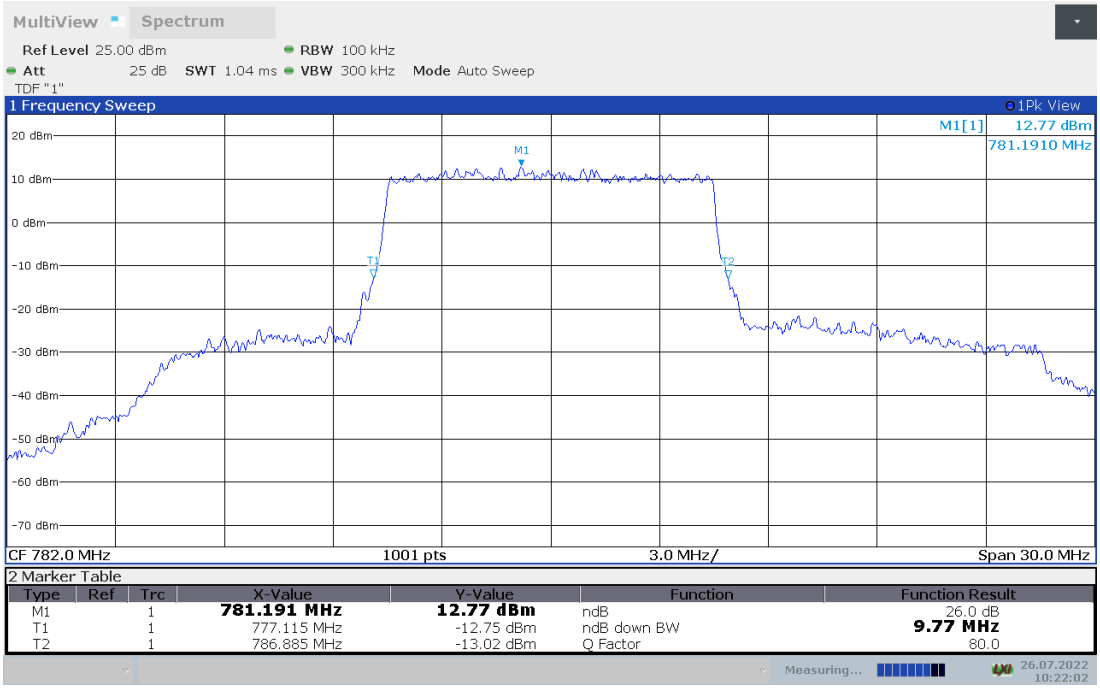
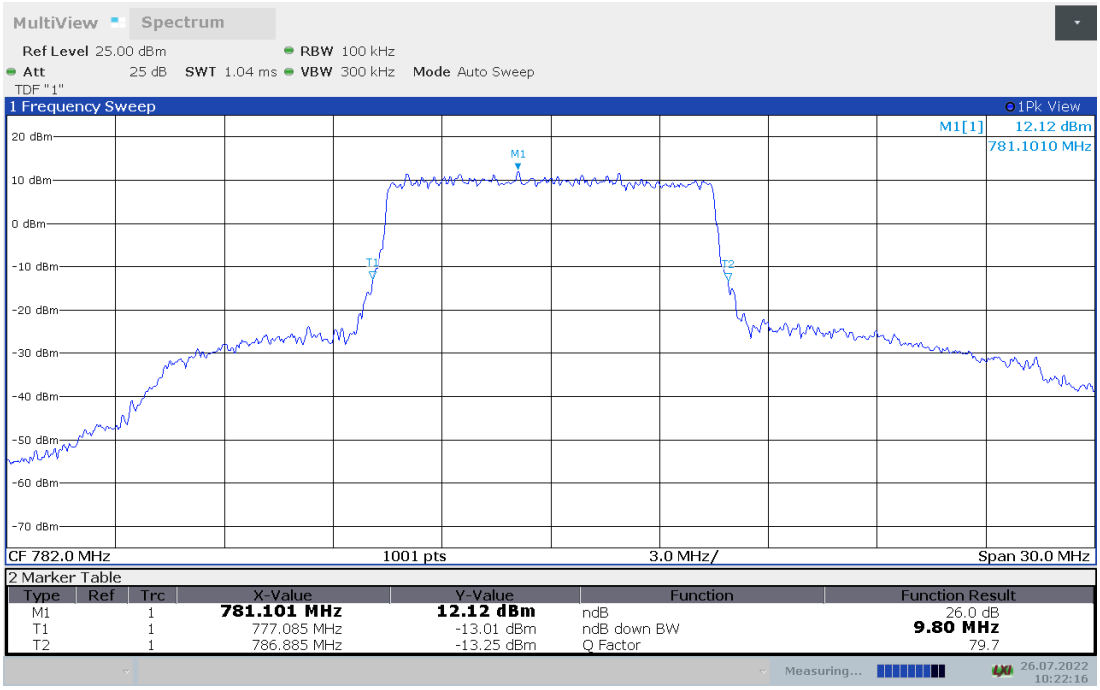
LTE band 13, 10MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
782.0	QPSK	16QAM
	9.77	9.80

LTE band 13, 10MHz Bandwidth, QPSK (-26dBc BW)



LTE band 13, 10MHz Bandwidth, 16QAM (-26dBc BW)



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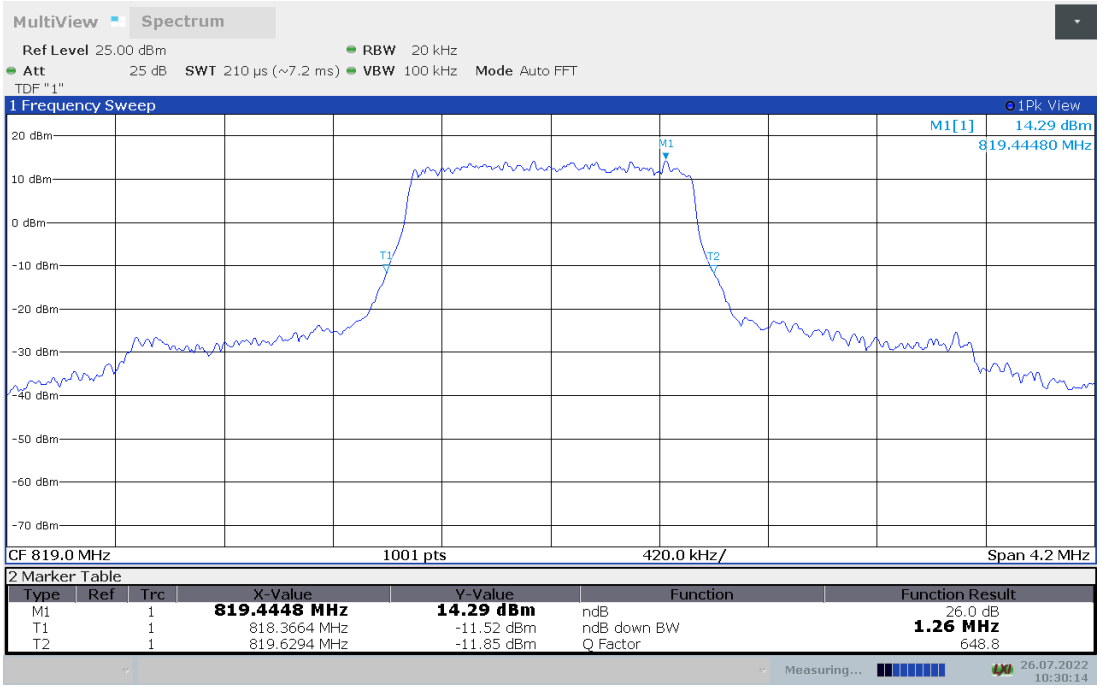
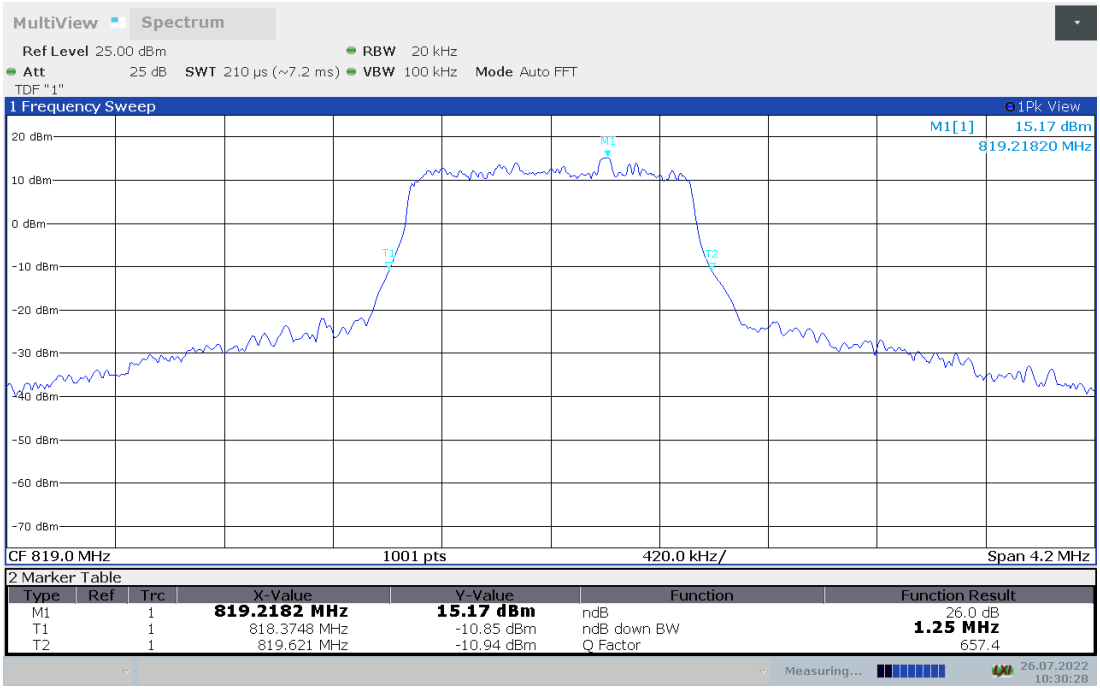
LTE band 26(814MHz-824MHz), 1.4MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
819.0	QPSK	16QAM
	1.26	1.25

LTE band 26(814MHz-824MHz), 1.4MHz Bandwidth, QPSK (-26dBc BW)



LTE band 26(814MHz-824MHz), 1.4MHz Bandwidth, 16QAM (-26dBc BW)



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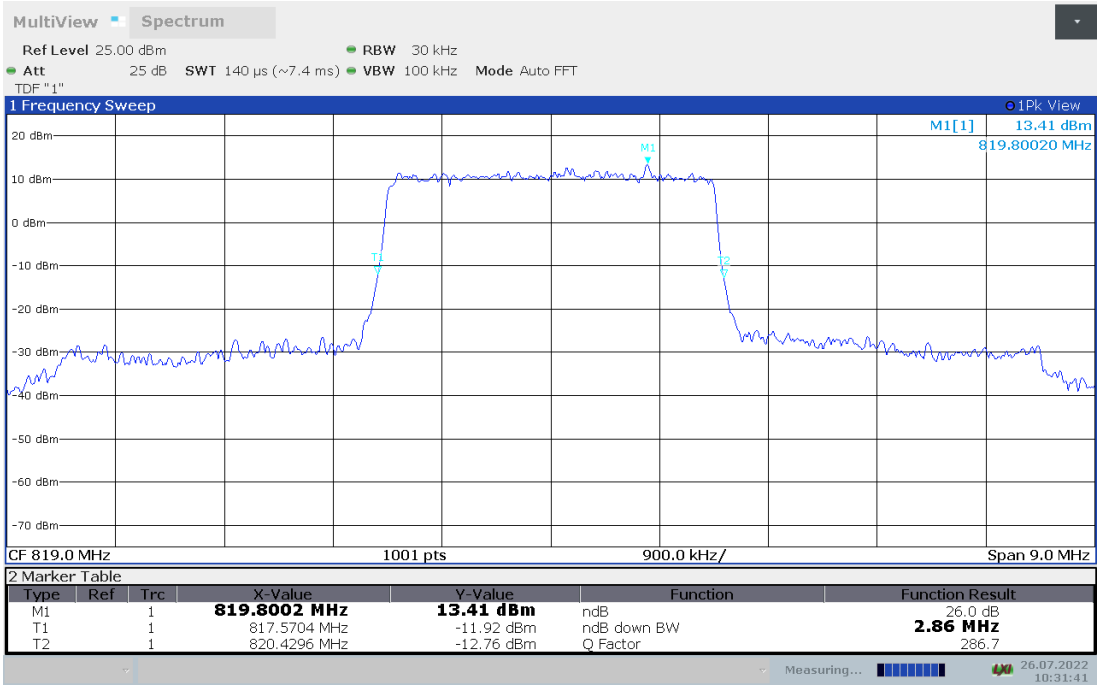
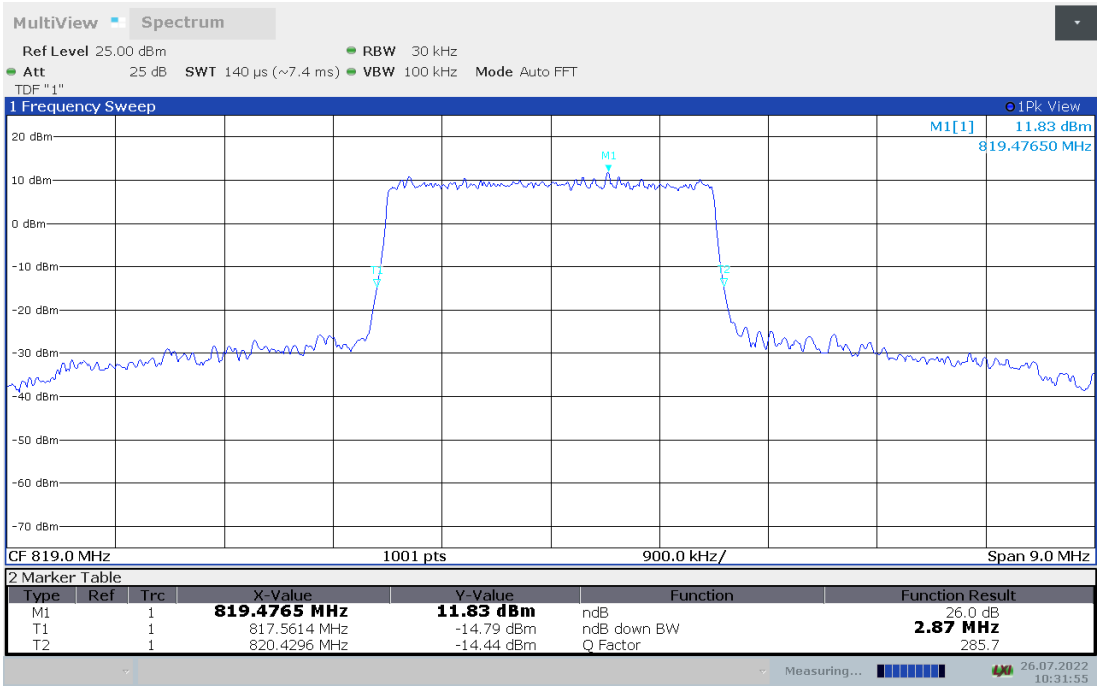
LTE band 26(814MHz-824MHz), 3MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
819.0	QPSK	16QAM
	2.86	2.8

LTE band 26(814MHz-824MHz), 3MHz Bandwidth, QPSK (-26dBc BW)



LTE band 26(814MHz-824MHz), 3MHz Bandwidth, 16QAM (-26dBc BW)



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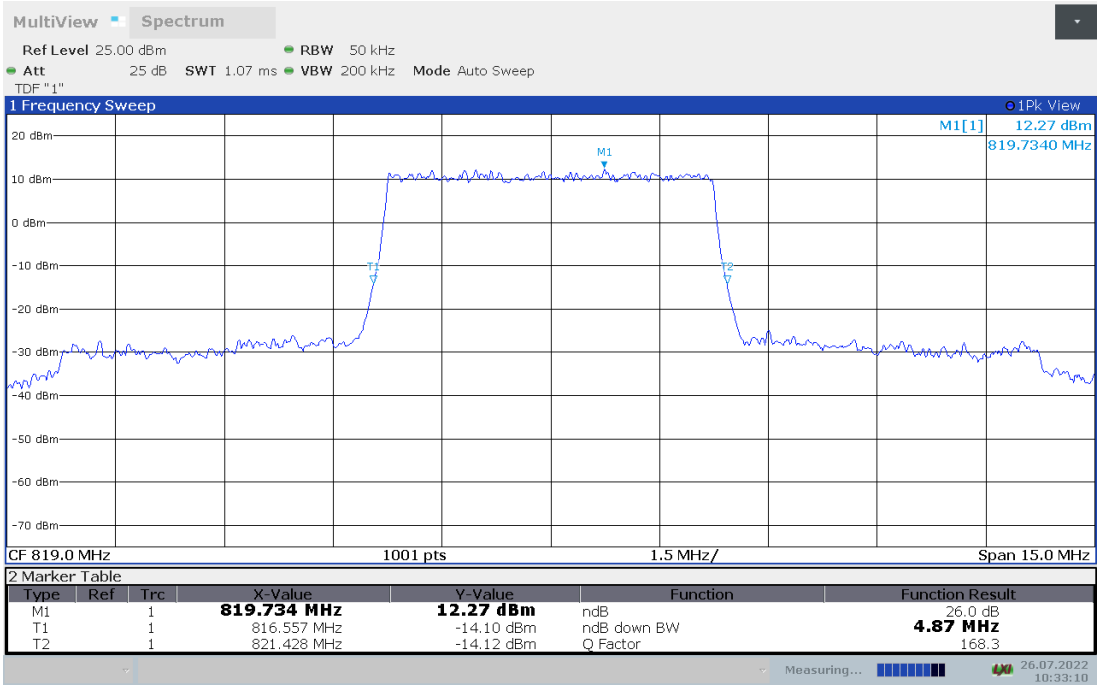
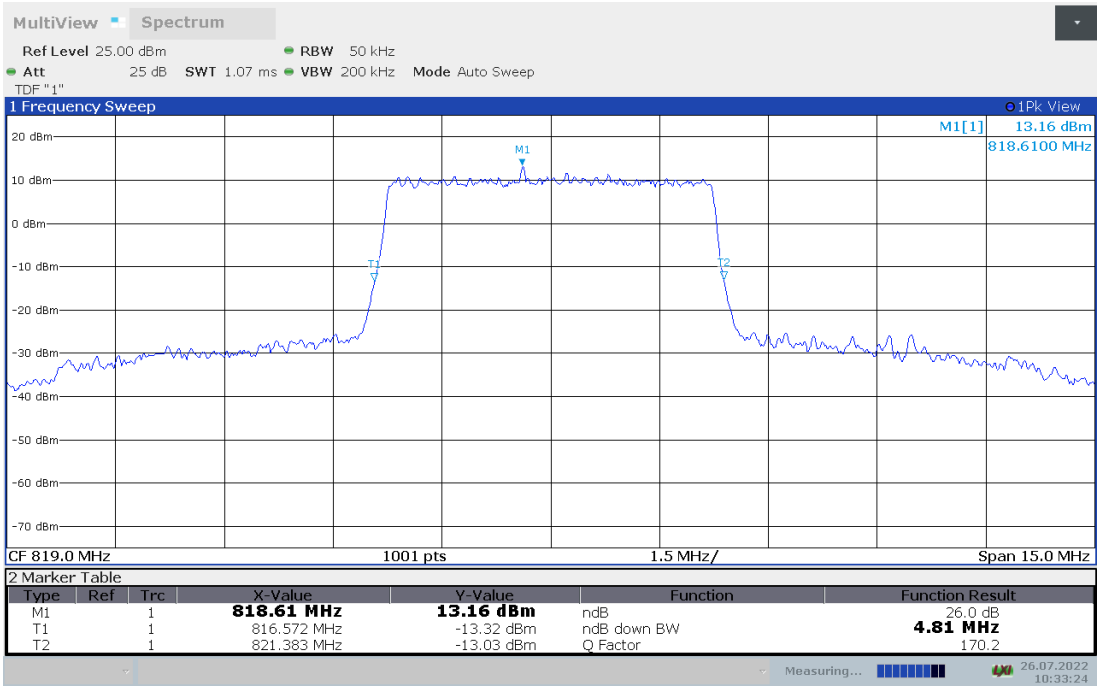
LTE band 26(814MHz-824MHz), 5MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
819.0	QPSK	16QAM
	4.87	4.81

LTE band 26(814MHz-824MHz), 5MHz Bandwidth, QPSK (-26dBc BW)



LTE band 26(814MHz-824MHz), 5MHz Bandwidth,16QAM (-26dBc BW)



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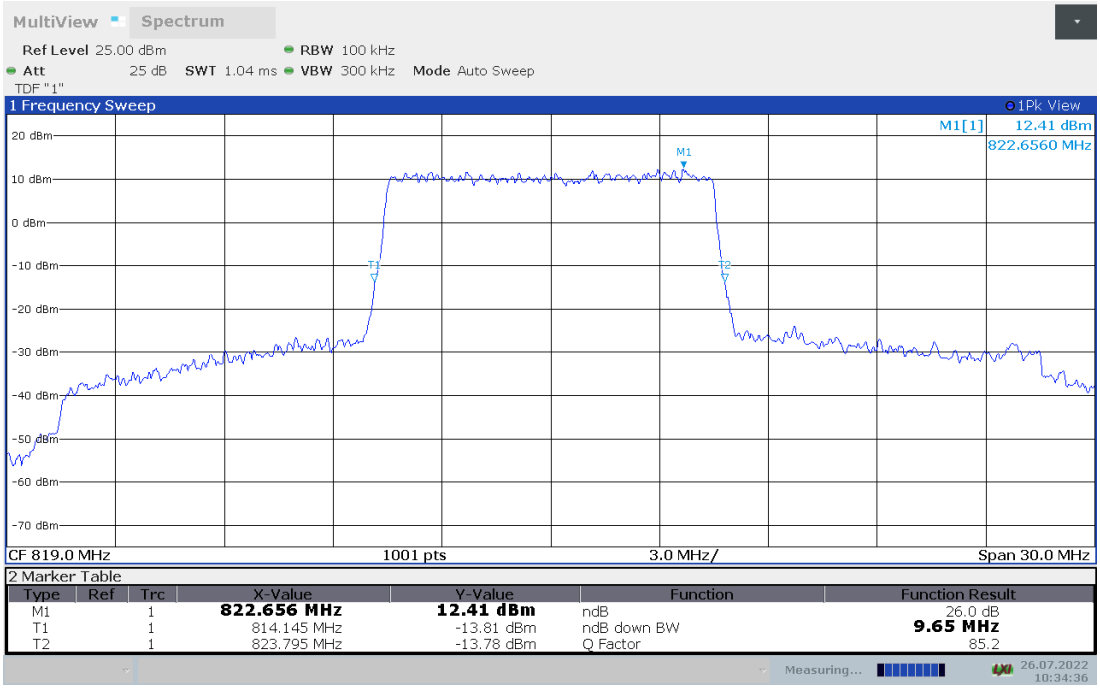
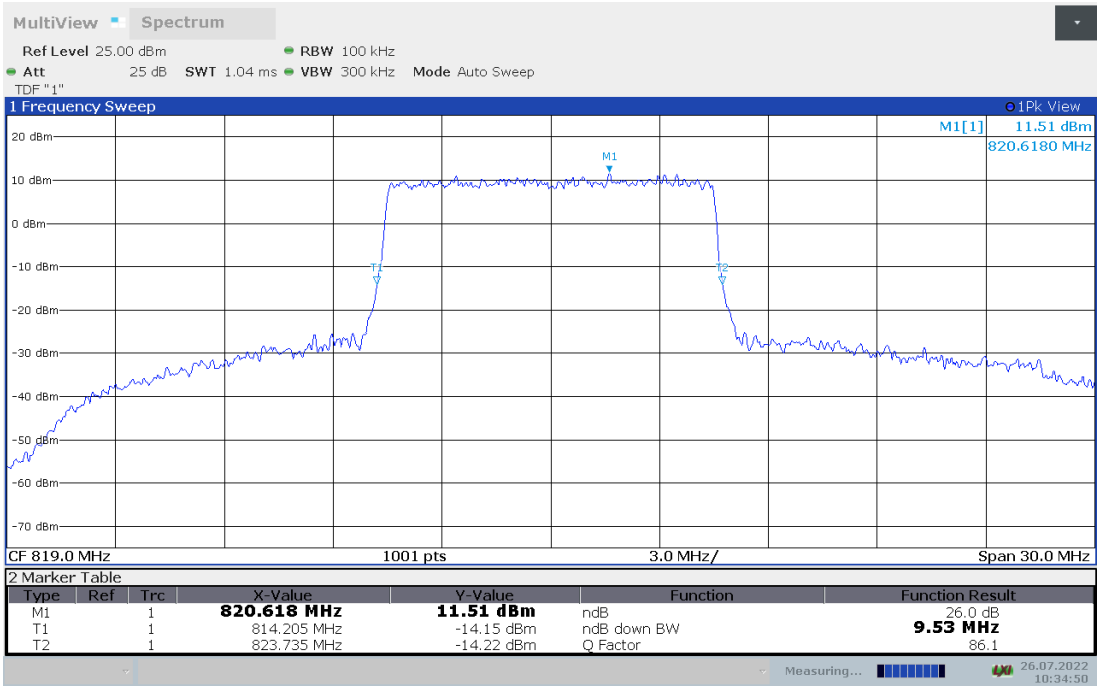
LTE band 26(814MHz-824MHz), 10MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
819.0	QPSK	16QAM
	9.65	9.53

LTE band 26(814MHz-824MHz), 10MHz Bandwidth, QPSK (-26dBc BW)



LTE band 26(814MHz-824MHz), 10MHz Bandwidth, 16QAM (-26dBc BW)



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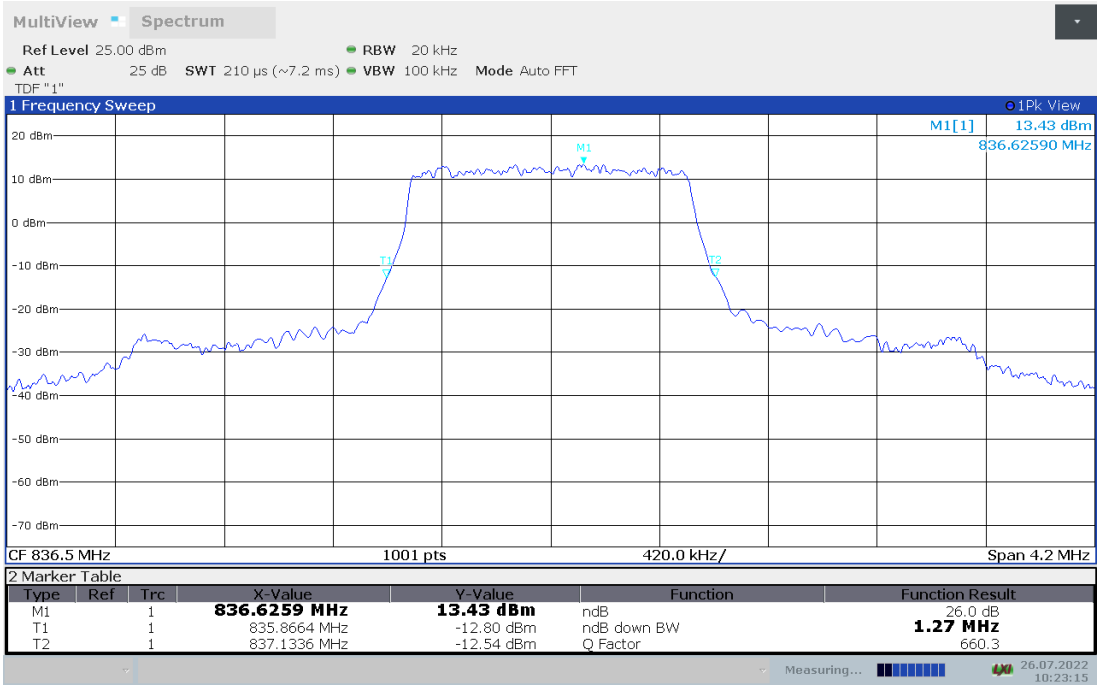
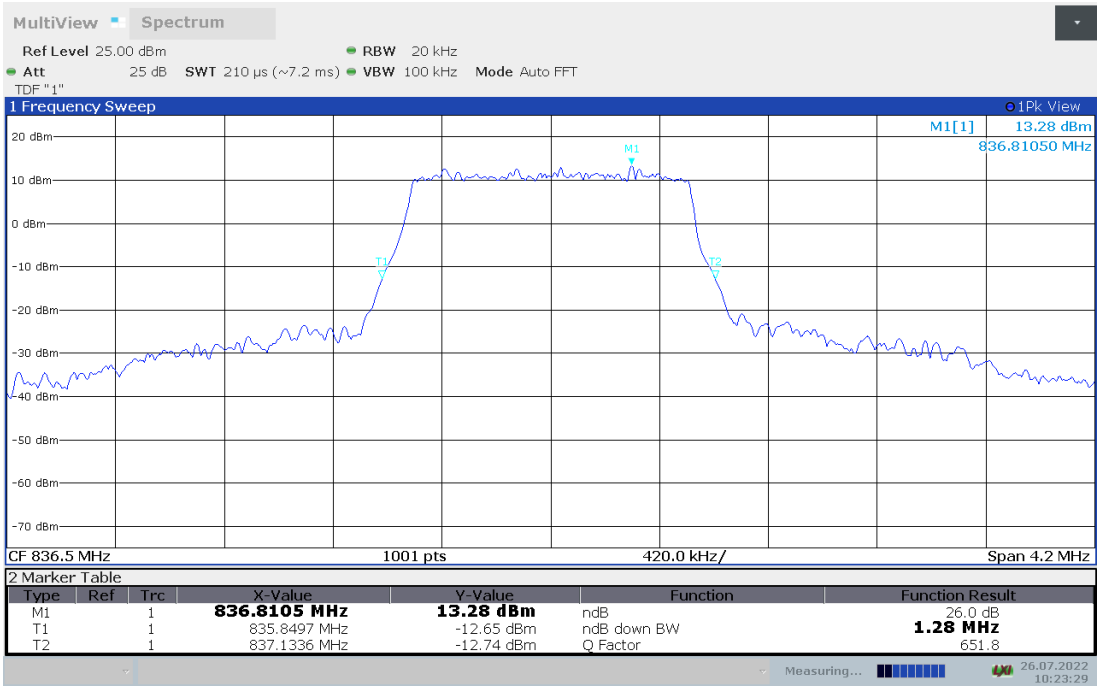
LTE band 26(824MHz-849MHz), 1.4MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
836.5	QPSK	16QAM
	1.27	1.28

LTE band 26(824MHz-849MHz), 1.4MHz Bandwidth, QPSK (-26dBc BW)



LTE band 26(824MHz-849MHz), 1.4MHz Bandwidth, 16QAM (-26dBc BW)



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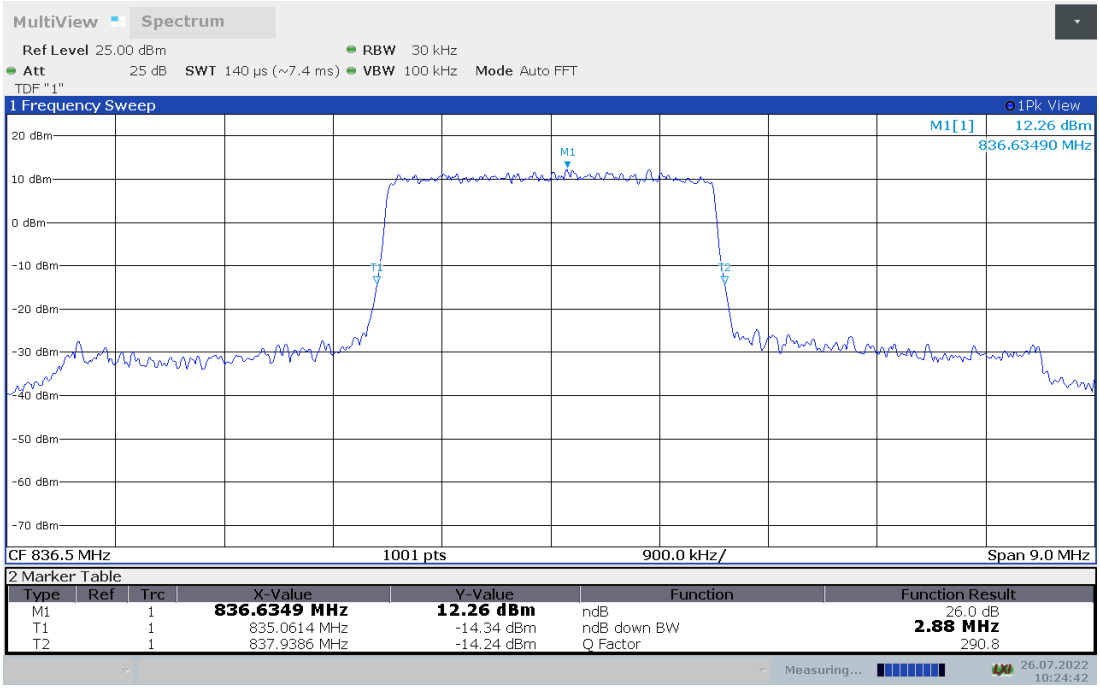
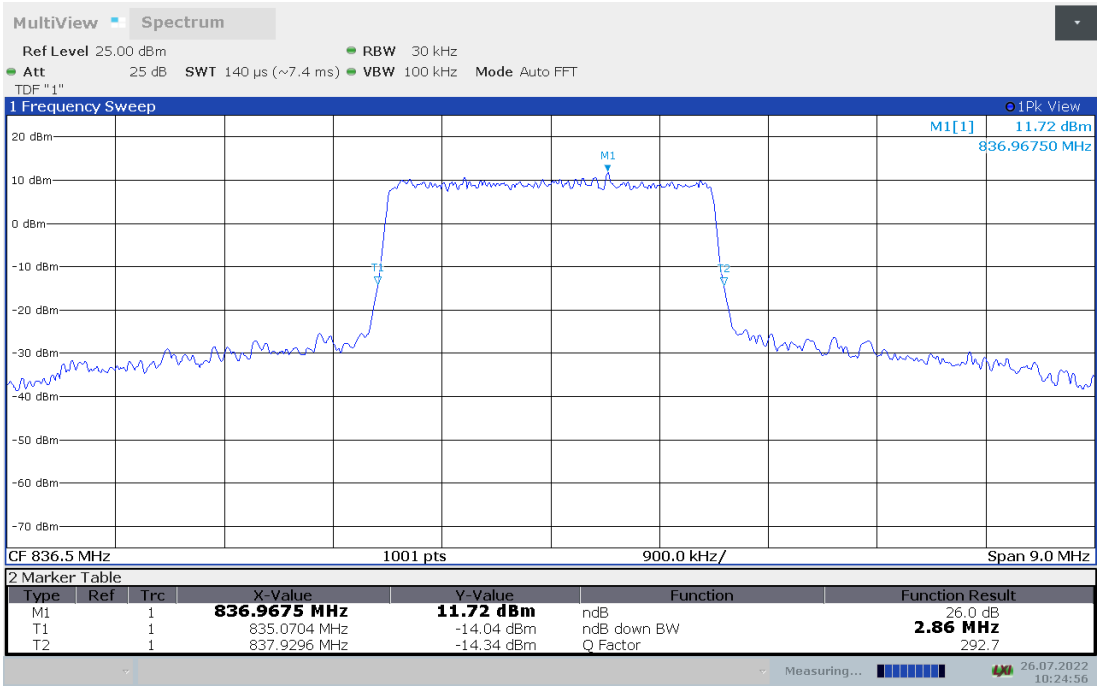
LTE band 26(824MHz-849MHz), 3MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
836.5	QPSK	16QAM
	2.88	2.86

LTE band 26(824MHz-849MHz), 3MHz Bandwidth, QPSK (-26dBc BW)



LTE band 26(824MHz-849MHz), 3MHz Bandwidth, 16QAM (-26dBc BW)



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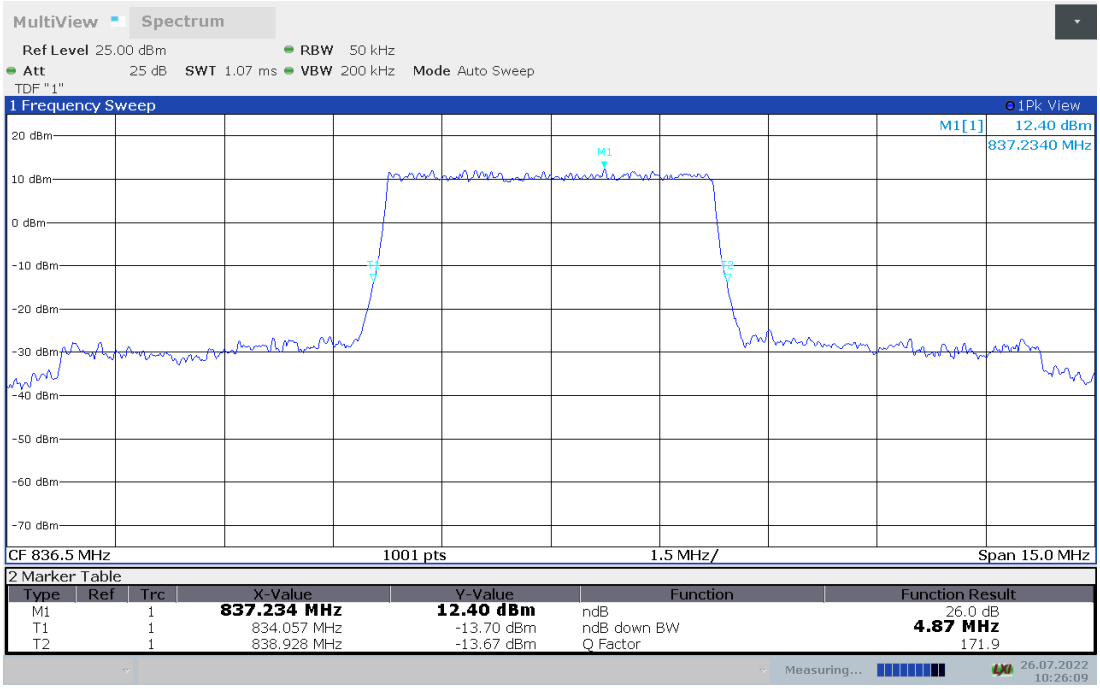
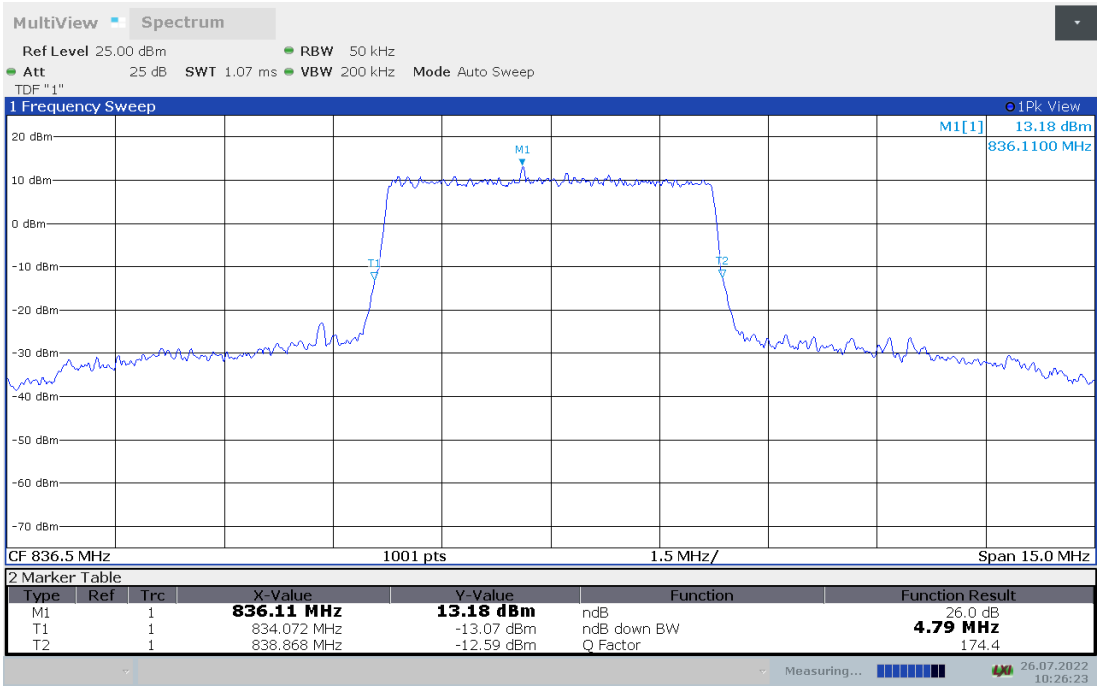
LTE band 26(824MHz-849MHz), 5MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
836.5	QPSK	16QAM
	4.87	4.79

LTE band 26(824MHz-849MHz), 5MHz Bandwidth, QPSK (-26dBc BW)



LTE band 26(824MHz-849MHz), 5MHz Bandwidth,16QAM (-26dBc BW)



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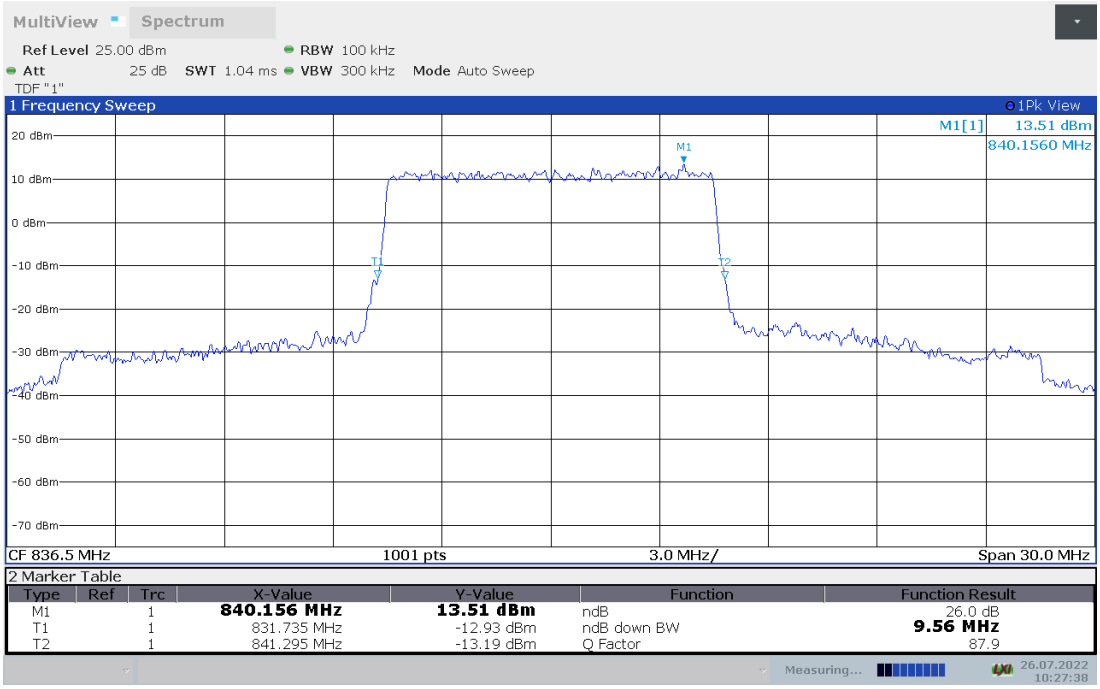
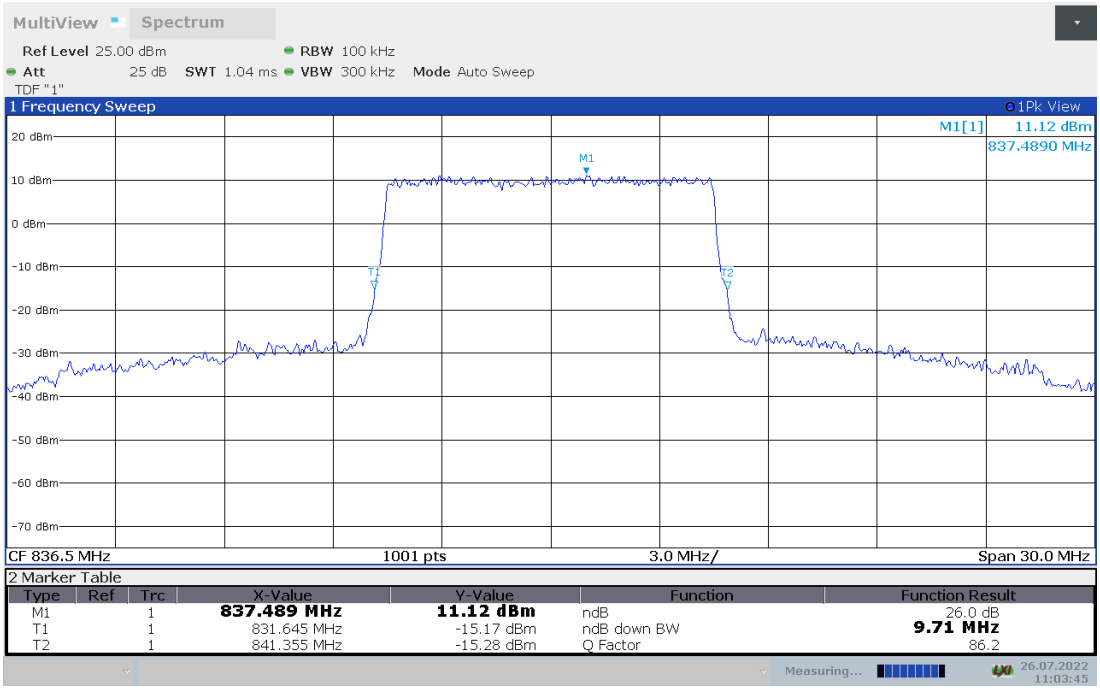
LTE band 26(824MHz-849MHz), 10MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
836.5	QPSK	16QAM
	9.56	9.71

LTE band 26(824MHz-849MHz), 10MHz Bandwidth, QPSK (-26dBc BW)



LTE band 26(824MHz-849MHz), 10MHz Bandwidth, 16QAM (-26dBc BW)



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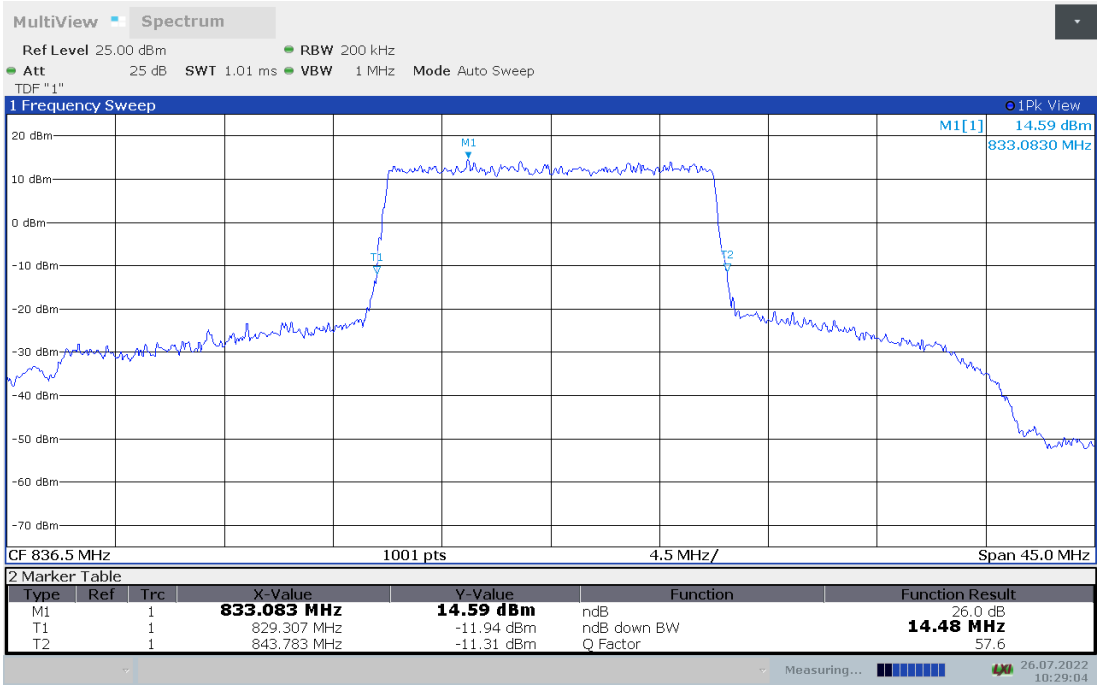
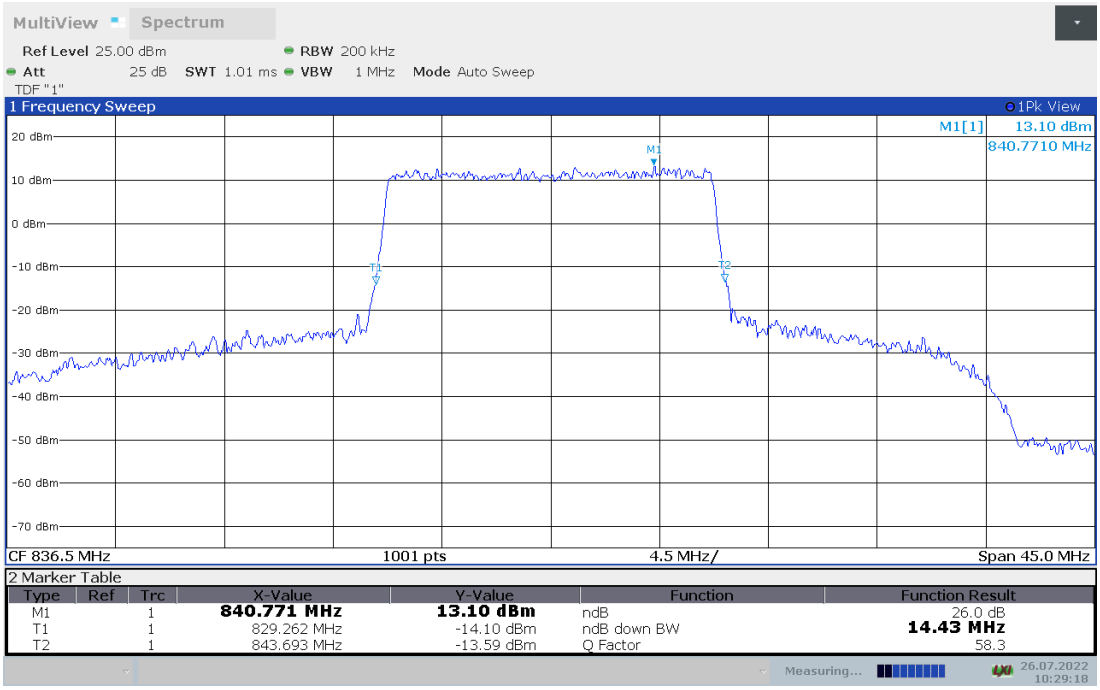
LTE band 26(824MHz-849MHz), 15MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
836.5	QPSK	16QAM
	14.48	14.43

LTE band 26(824MHz-849MHz), 15MHz Bandwidth, QPSK (-26dBc BW)



LTE band 26(824MHz-849MHz), 15MHz Bandwidth, 16QAM (-26dBc BW)



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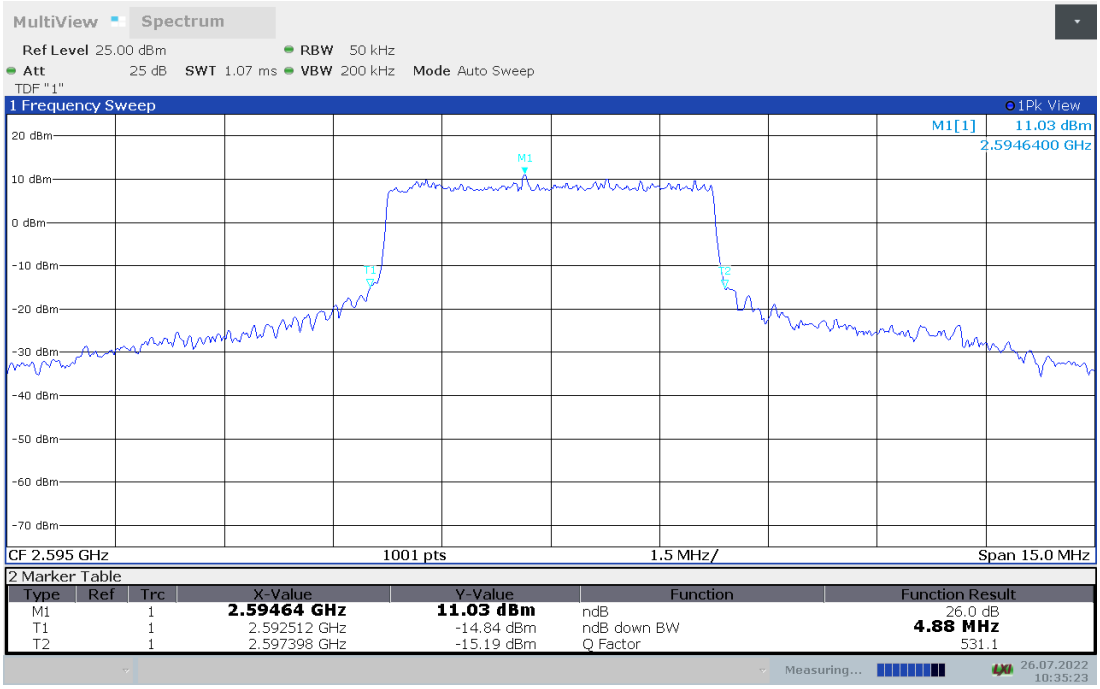
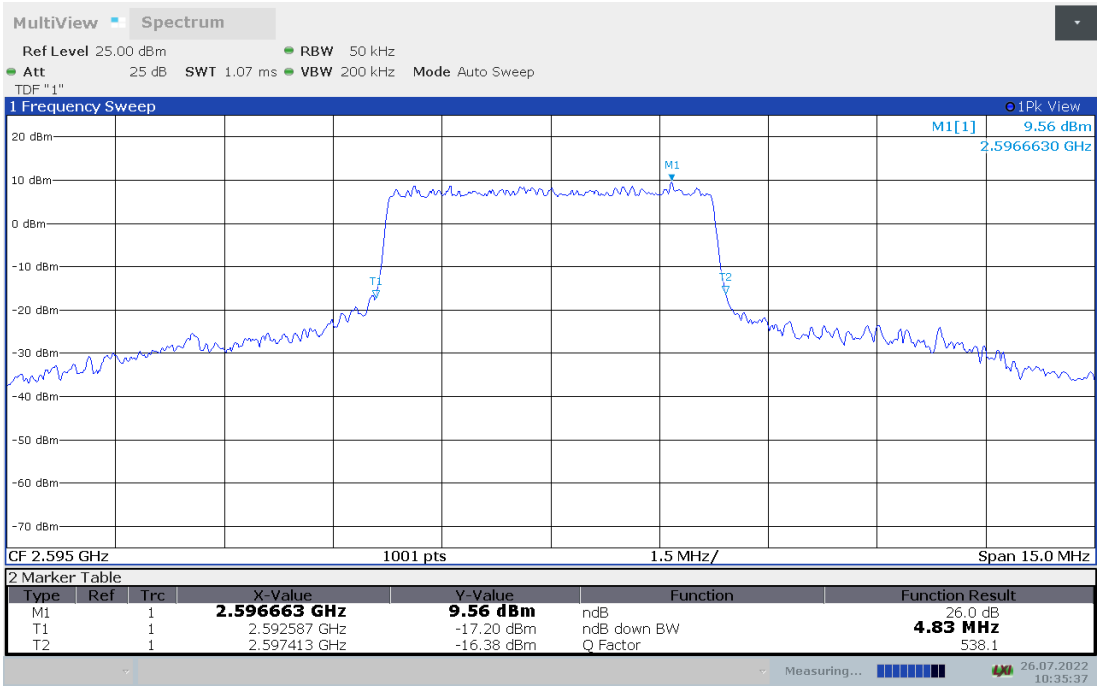
LTE band 38, 5MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
2595.0	QPSK	16QAM
	4.88	4.83

LTE band 38, 5MHz Bandwidth, QPSK (-26dBc BW)



LTE band 38, 5MHz Bandwidth,16QAM (-26dBc BW)



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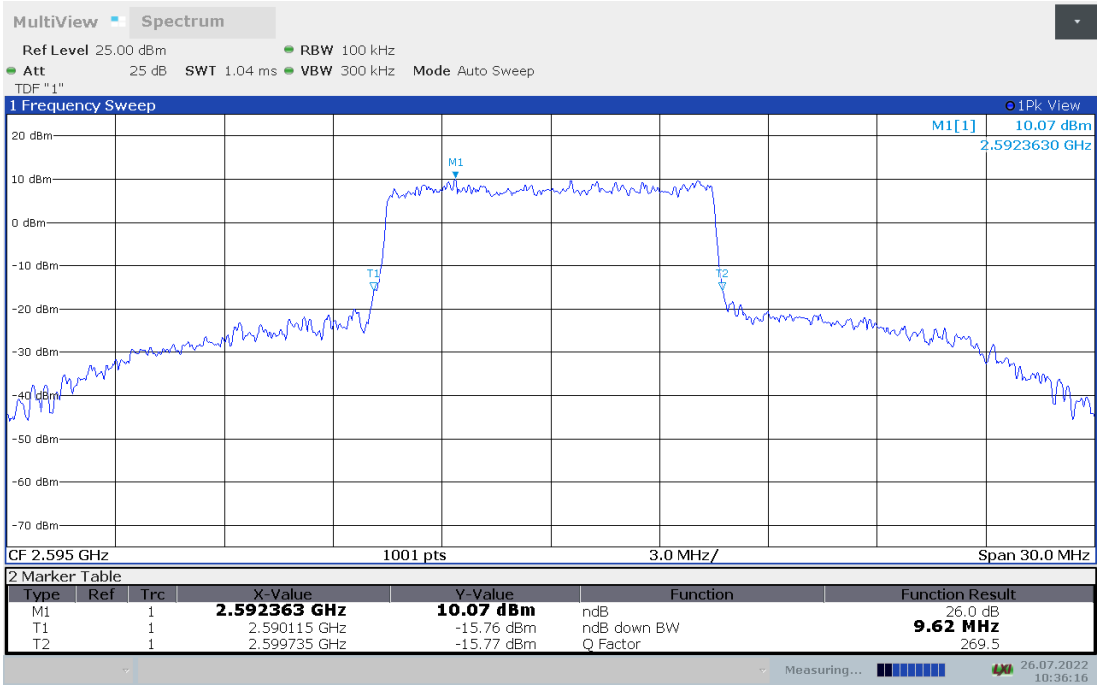
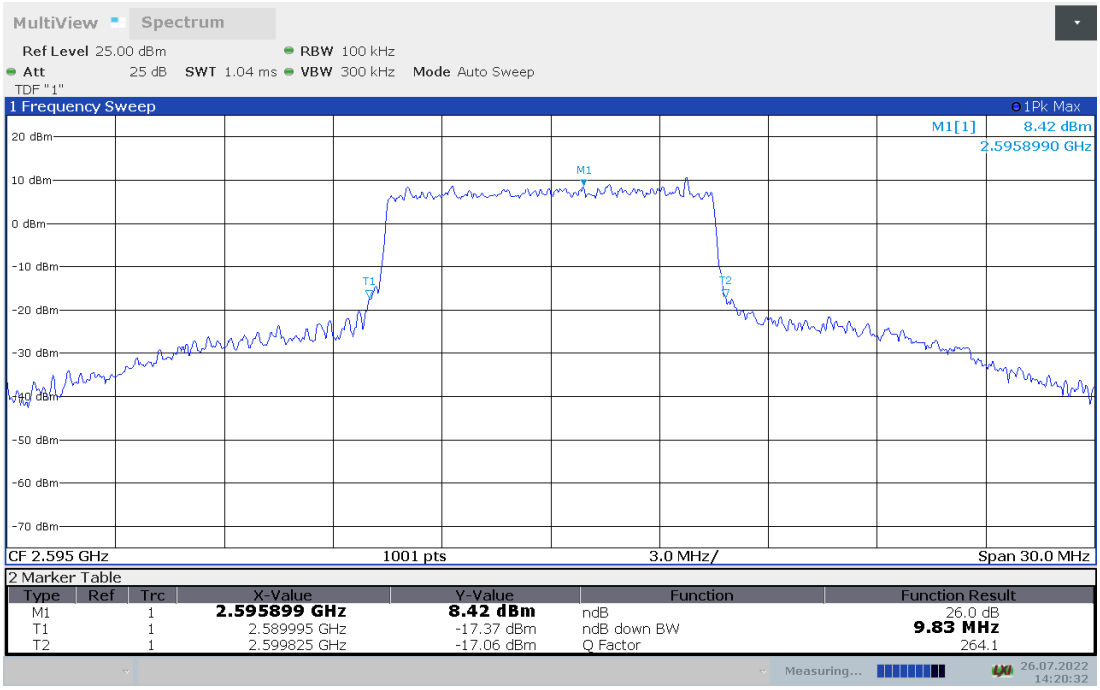
LTE band 38, 10MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
2595.0	QPSK	16QAM
	9.62	9.83

LTE band 38, 10MHz Bandwidth, QPSK (-26dBc BW)



LTE band 38, 10MHz Bandwidth, 16QAM (-26dBc BW)



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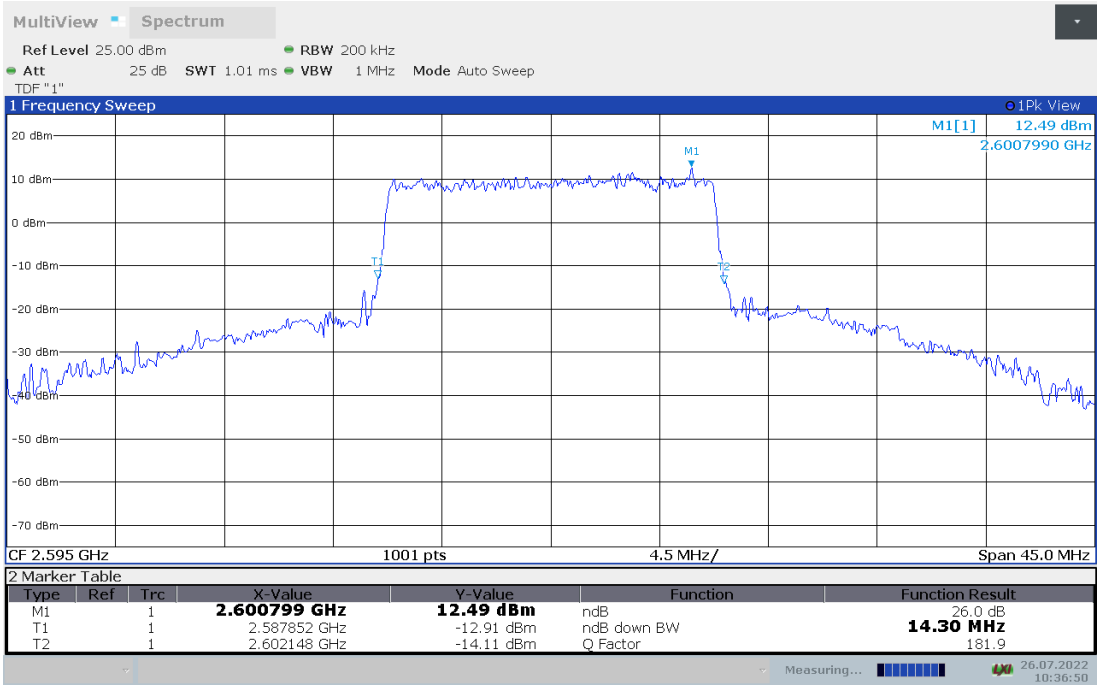
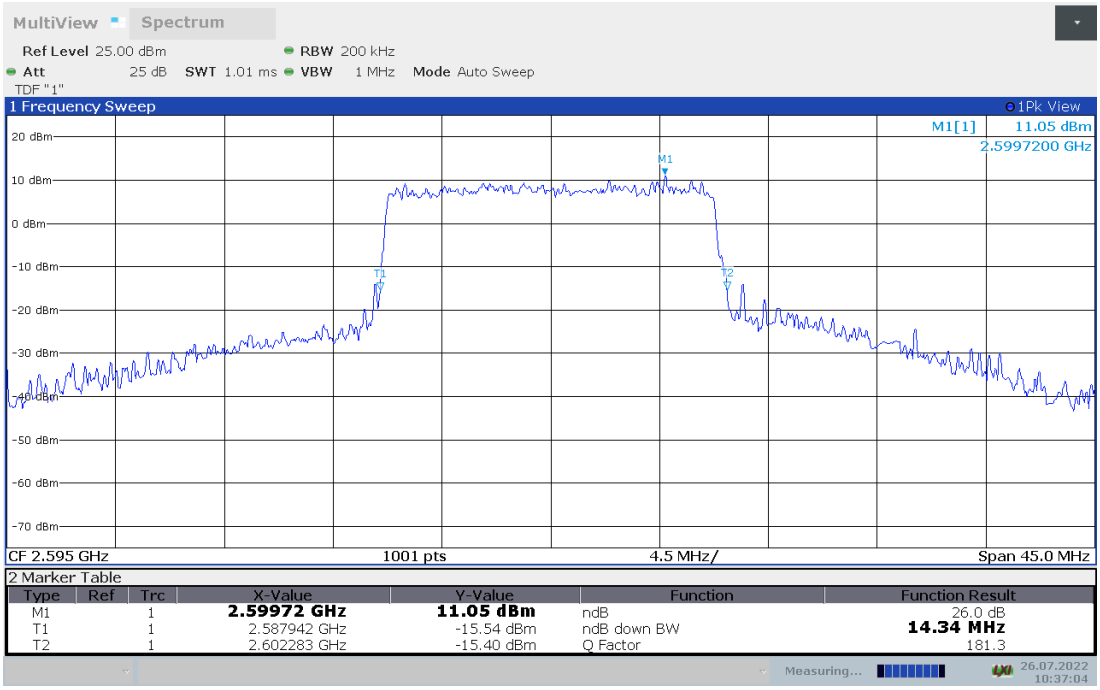
LTE band 38, 15MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
2595.0	QPSK	16QAM
	14.30	14.34

LTE band 38, 15MHz Bandwidth, QPSK (-26dBc BW)



LTE band 38, 15MHz Bandwidth, 16QAM (-26dBc BW)



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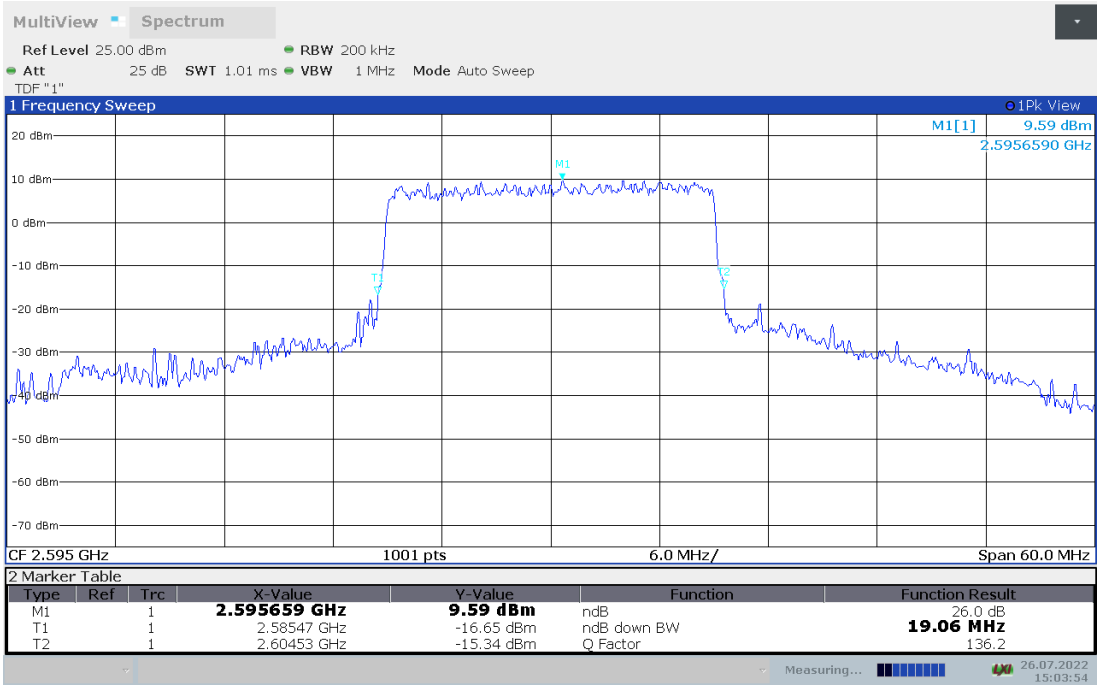
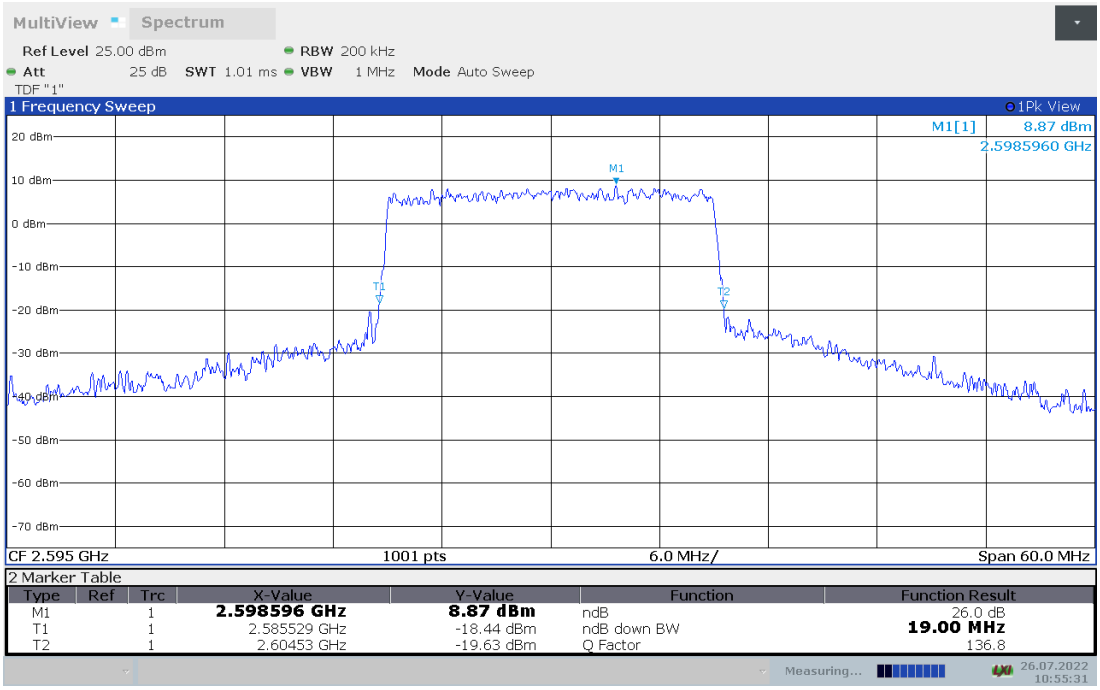
LTE band 38, 20MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
2595.0	QPSK	16QAM
	19.06	19.00

LTE band 38, 20MHz Bandwidth, QPSK (-26dBc BW)



LTE band 38, 20MHz Bandwidth, 16QAM (-26dBc BW)



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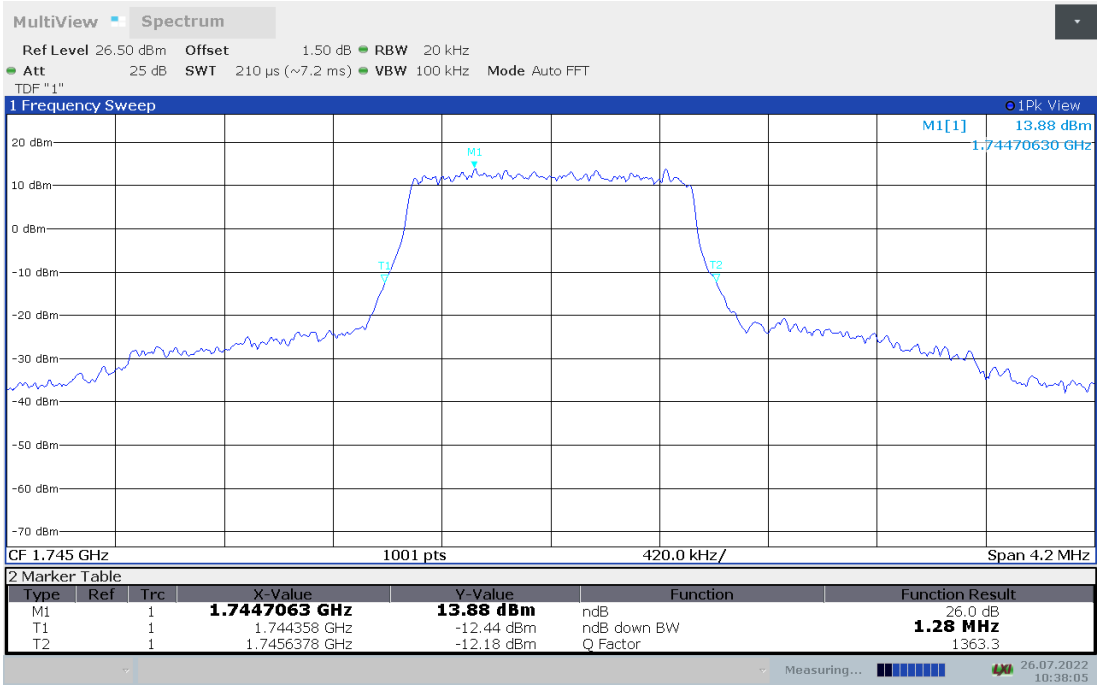
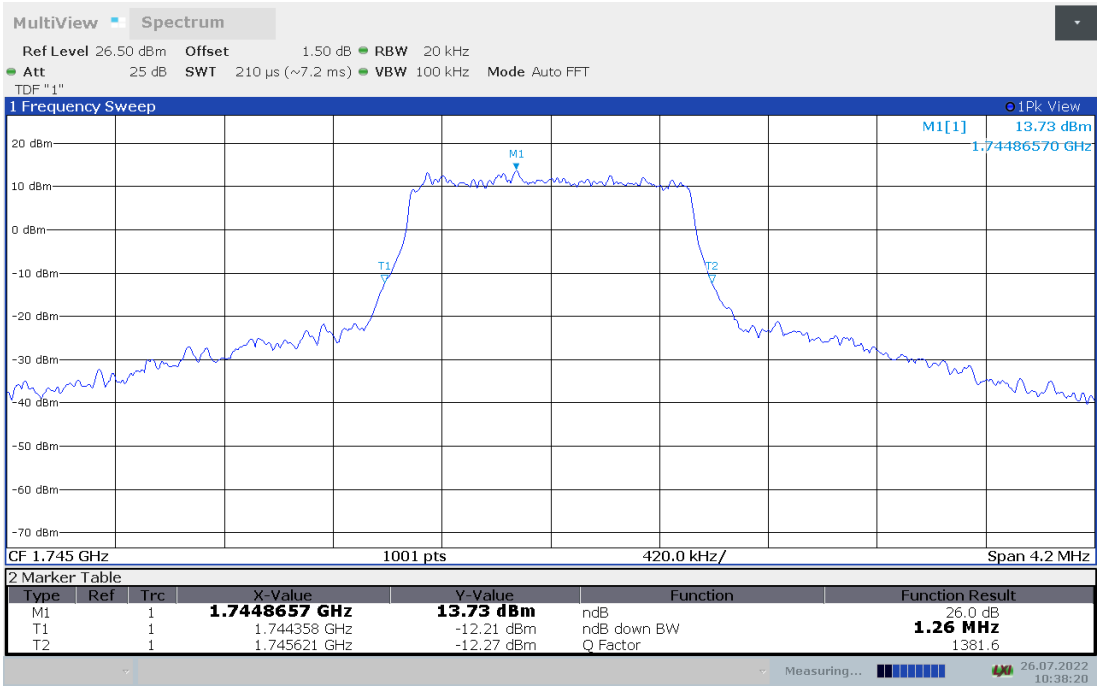
LTE band 66, 1.4MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
1745.0	QPSK	16QAM
	1.28	1.26

LTE band 66, 1.4MHz Bandwidth, QPSK (-26dBc BW)



LTE band 66, 1.4MHz Bandwidth, 16QAM (-26dBc BW)



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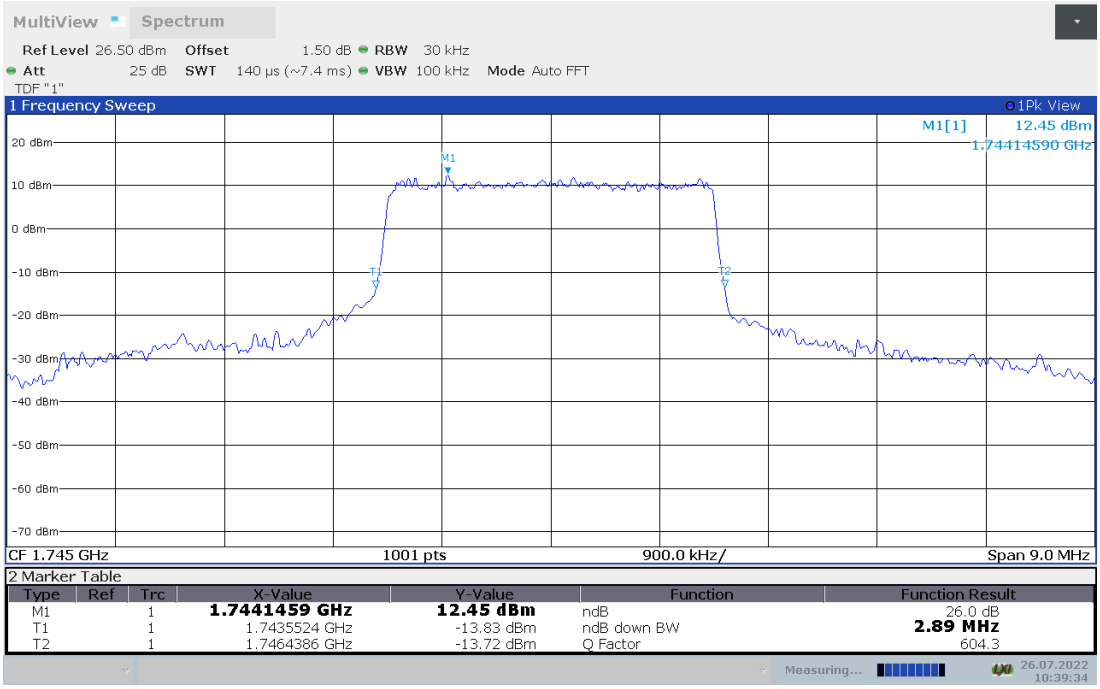
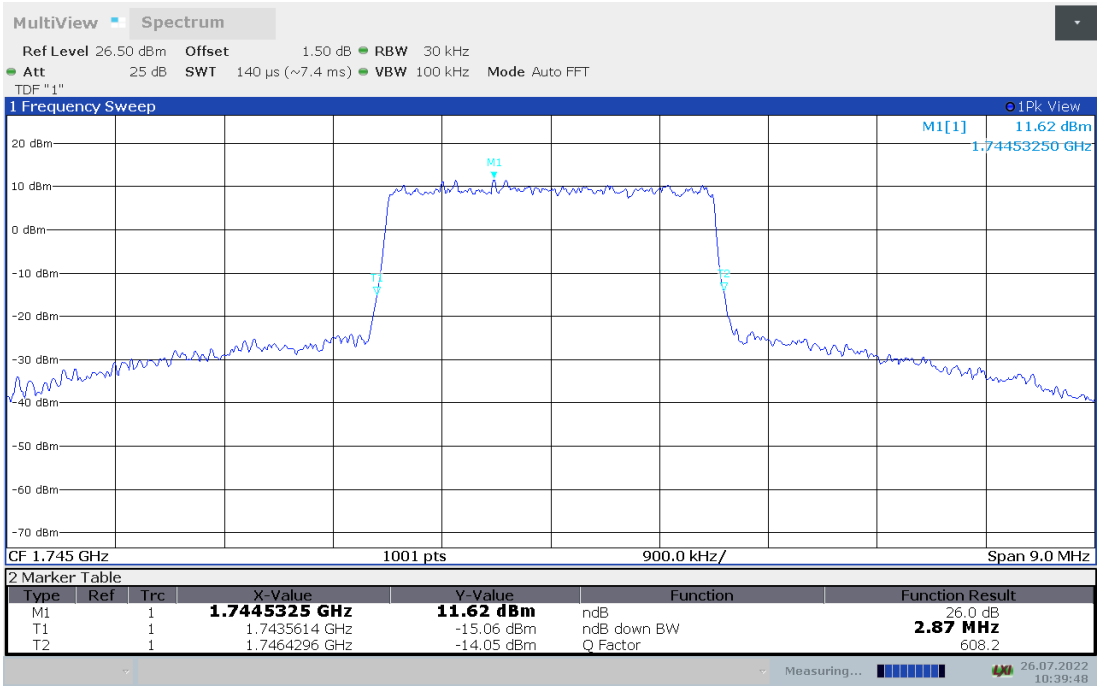
LTE band 66, 3MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
1745.0	QPSK	16QAM
	2.89	2.87

LTE band 66, 3MHz Bandwidth, QPSK (-26dBc BW)



LTE band 66, 3MHz Bandwidth, 16QAM (-26dBc BW)



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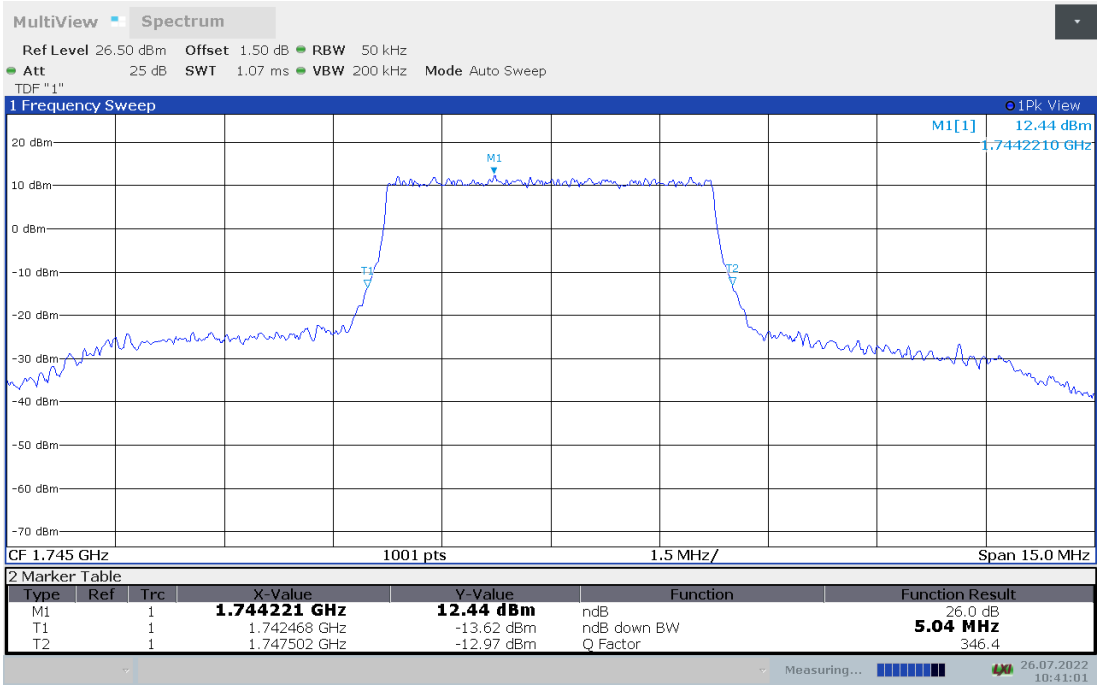
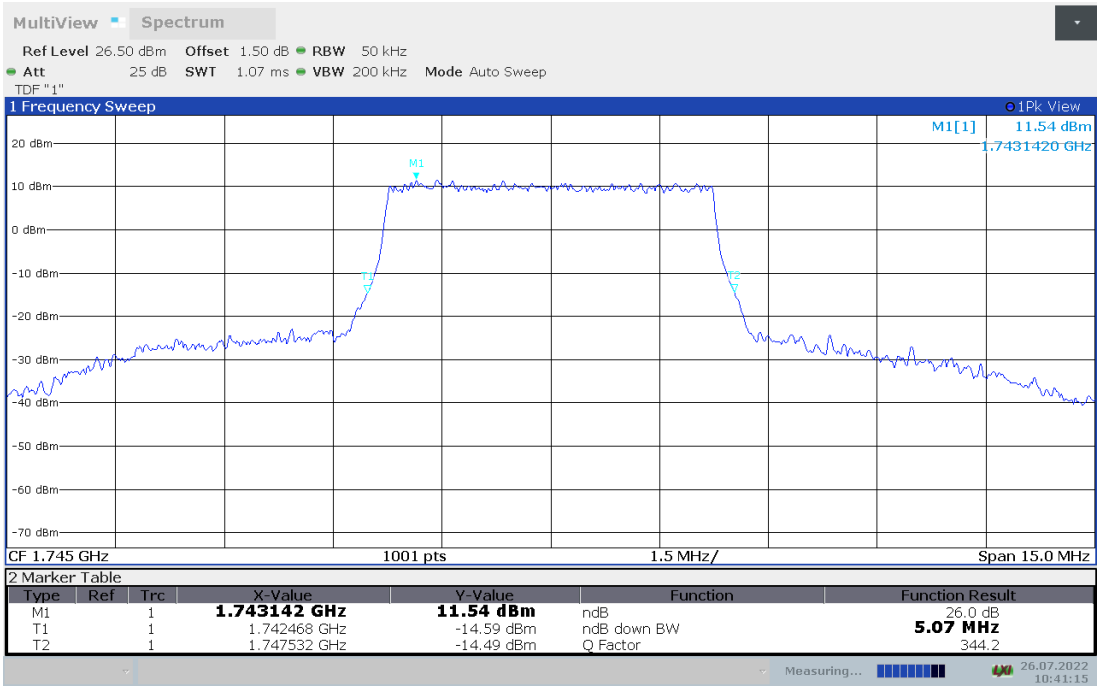
LTE band 66, 5MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
1745.0	QPSK	16QAM
	5.04	5.07

LTE band 66, 5MHz Bandwidth, QPSK (-26dBc BW)



LTE band 66, 5MHz Bandwidth,16QAM (-26dBc BW)



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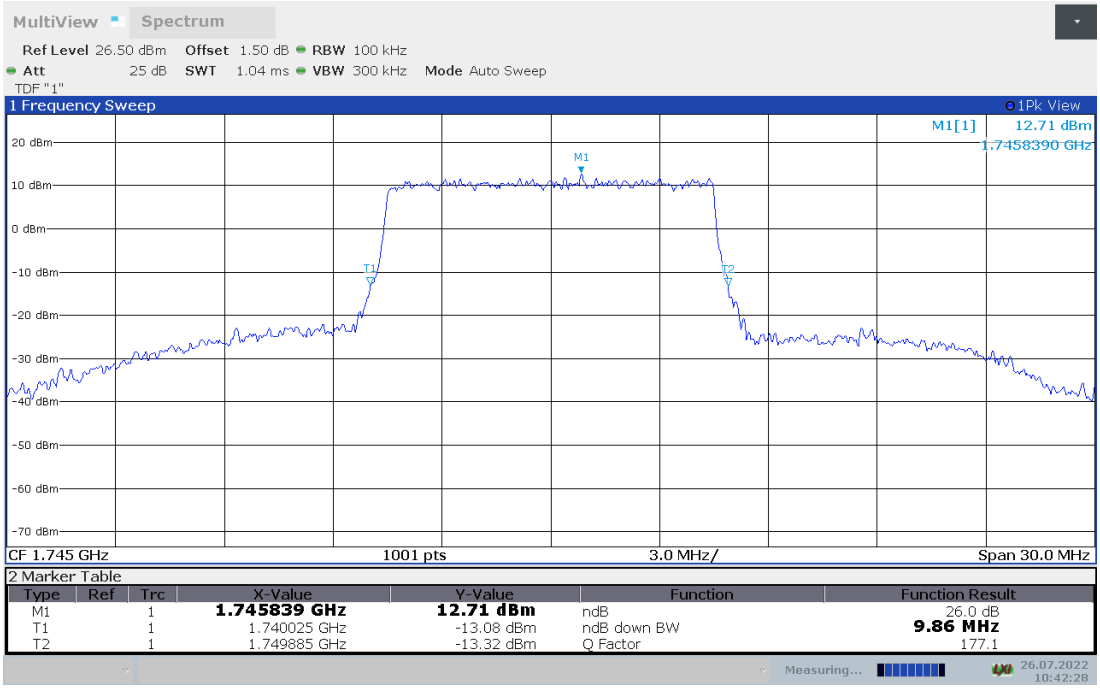
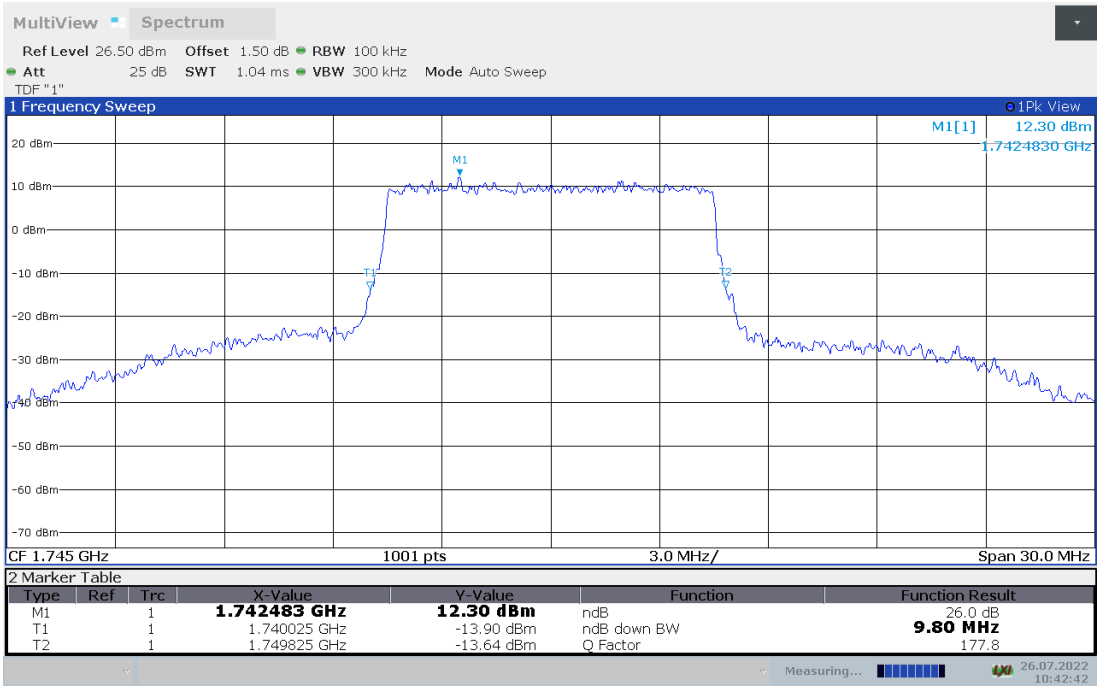
LTE band 66, 10MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
1745.0	QPSK	16QAM
	9.86	9.80

LTE band 66, 10MHz Bandwidth, QPSK (-26dBc BW)



LTE band 66, 10MHz Bandwidth, 16QAM (-26dBc BW)



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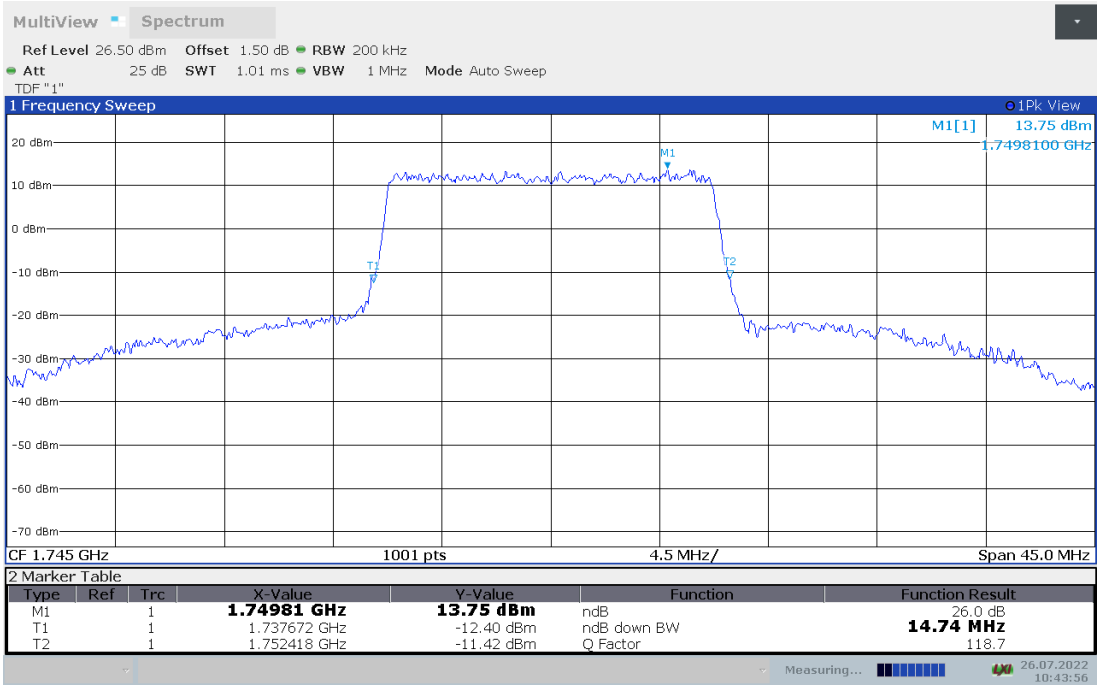
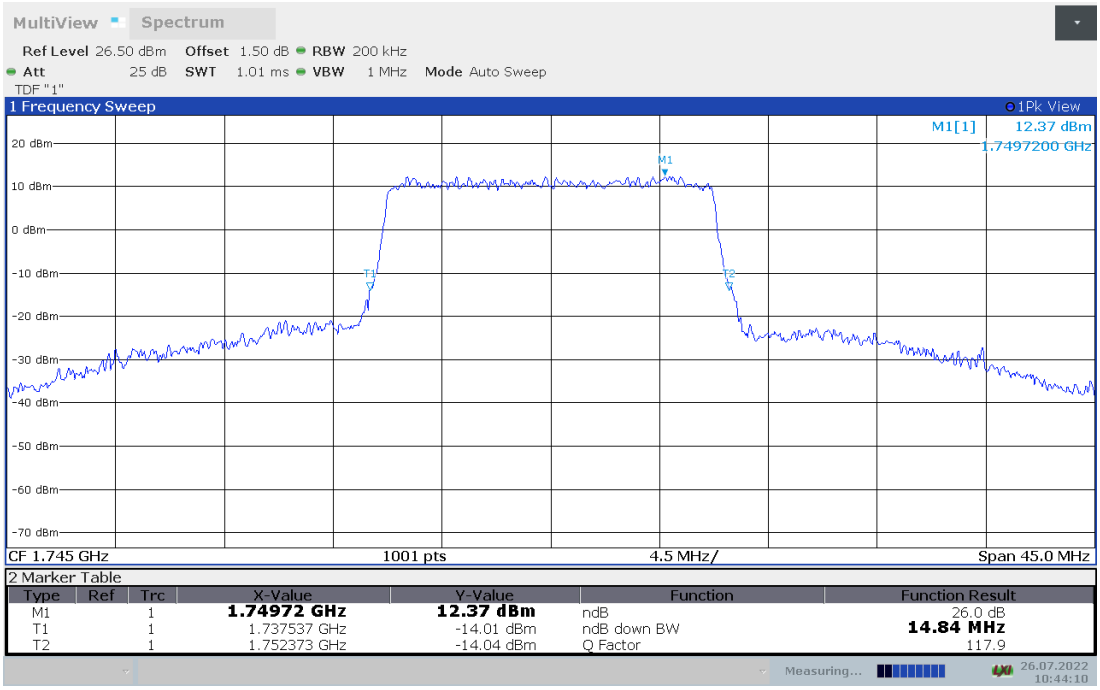
LTE band 66, 15MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
1745.0	QPSK	16QAM
	14.74	14.84

LTE band 66, 15MHz Bandwidth, QPSK (-26dBc BW)



LTE band 66, 15MHz Bandwidth, 16QAM (-26dBc BW)



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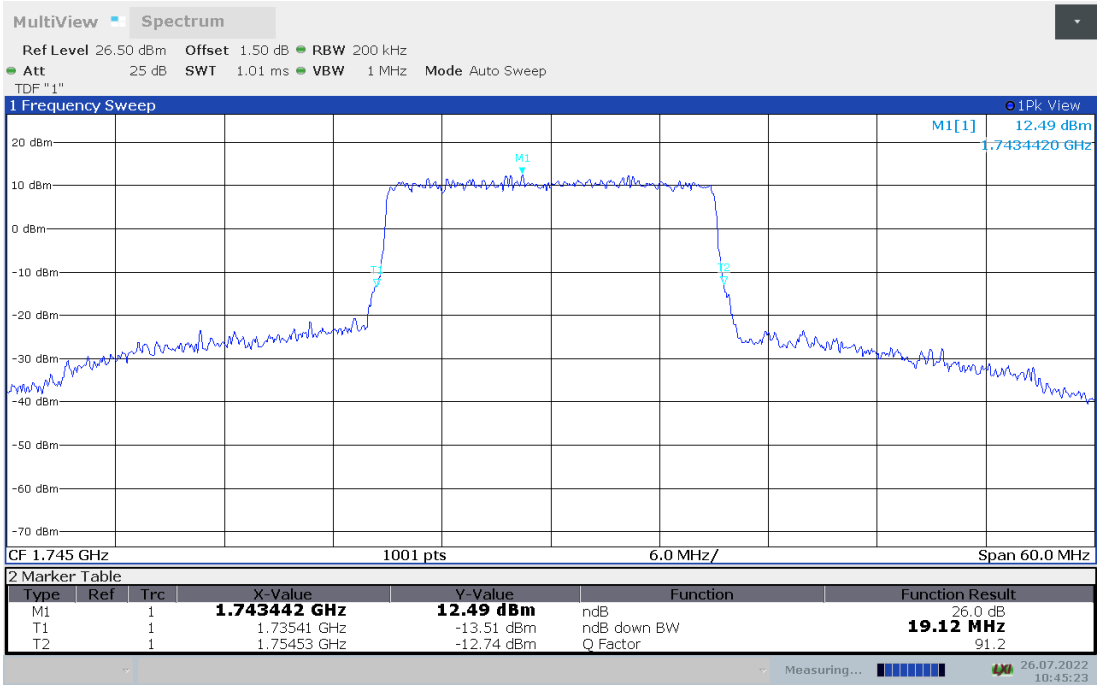
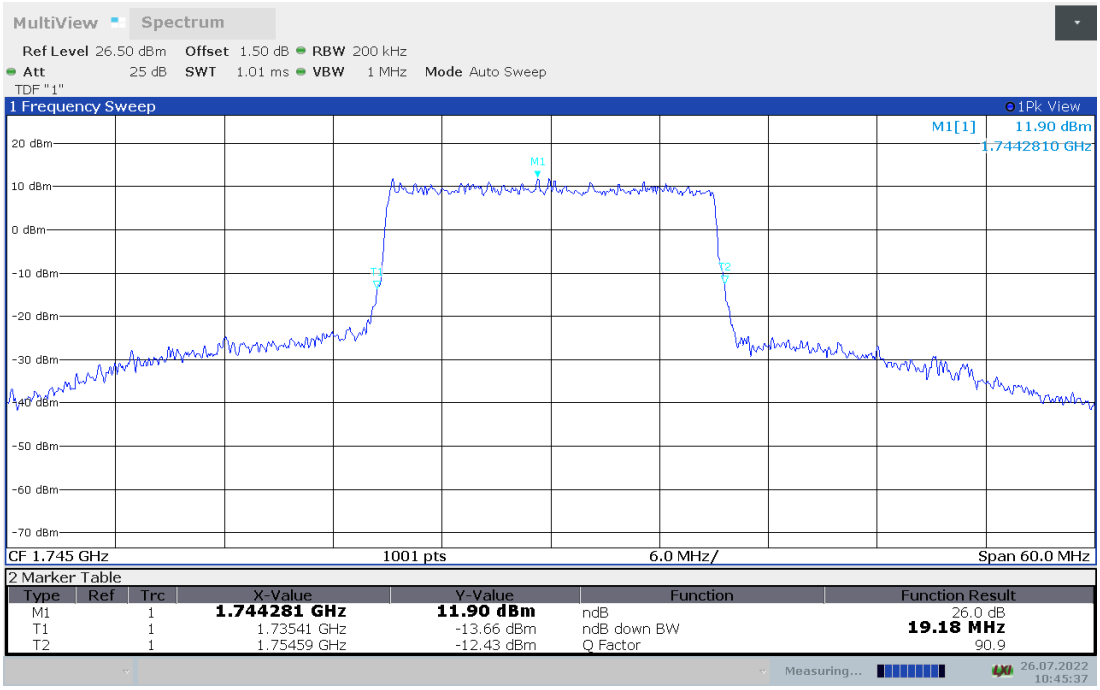
LTE band 66, 20MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(kHz)	
1745.0	QPSK	16QAM
	19.12	19.18

LTE band 66, 20MHz Bandwidth, QPSK (-26dBc BW)



LTE band 66, 20MHz Bandwidth, 16QAM (-26dBc BW)



Note: Expanded measurement uncertainty is U = 3428 Hz, k = 2

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A.6 BAND EDGE COMPLIANCE

Reference

FCC: CFR Part 2.1051, 22.917, 24.238, 27.53, 90.691.

A.6.1 Measurement limit

Part 22.917 For operations in the 824–849MHz band, the FCC limit is 43 +10 log (P)dB below the transmitter power(P) in a 100kHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

Part 24.238 and Part 27.53(h) specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

Part 27.53(m) specifies for mobile digital stations, the attenuation factor shall be not less than 40+ 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Part 27.53(g) states for operations in the 600 MHz band and the 698–746 MHz band, the power of any emission outside a licensee’s frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 +10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee’s frequency block, a resolution bandwidth of at least 30 kHz may be employed.

Part 90.691 states that out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

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A.6.2Measurement Procedure

The testing follows ANSI C63.26

a) The EUT was connected to spectrum analyzer and system simulator via a power divider.

b) The band edges of low and high channels for the highest RF powers were measured.

c) Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.

d) Set spectrum analyzer with RMS detector.

e) The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

f) Checked that all the results comply with the emission limit line.

A.6.3 Measurement result

Only worst case result is given below

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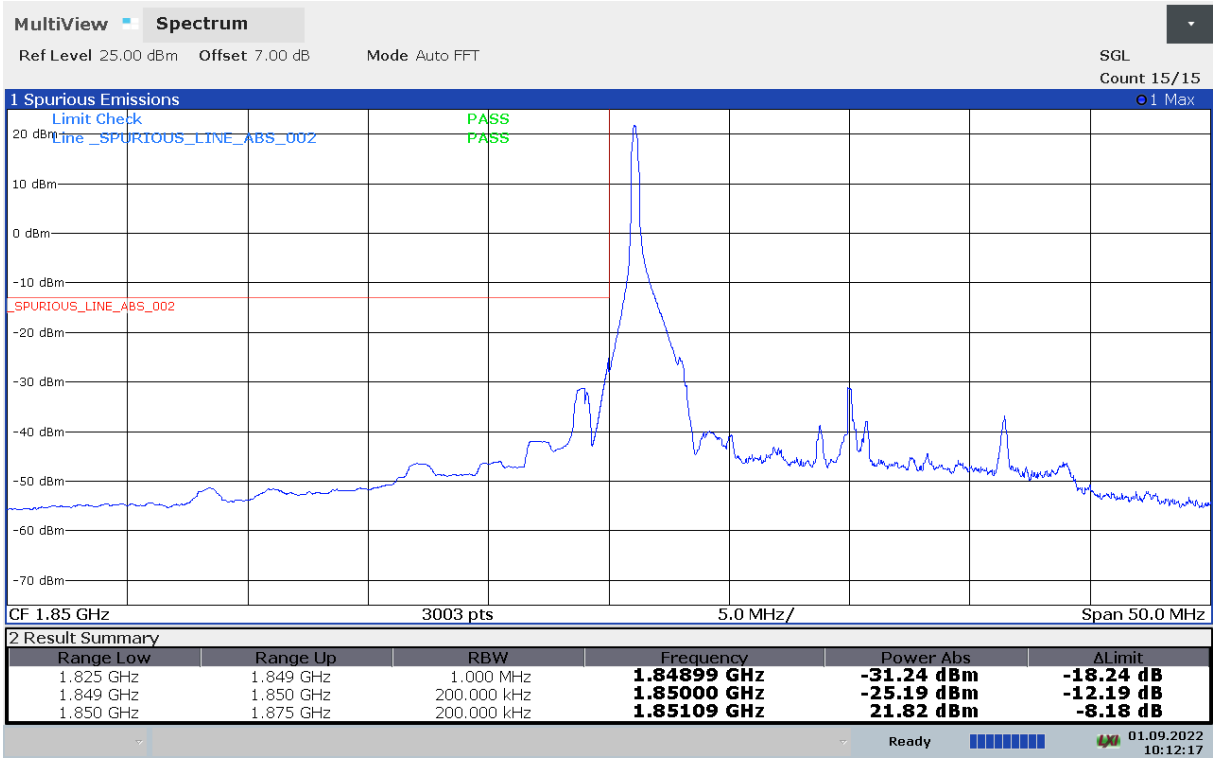
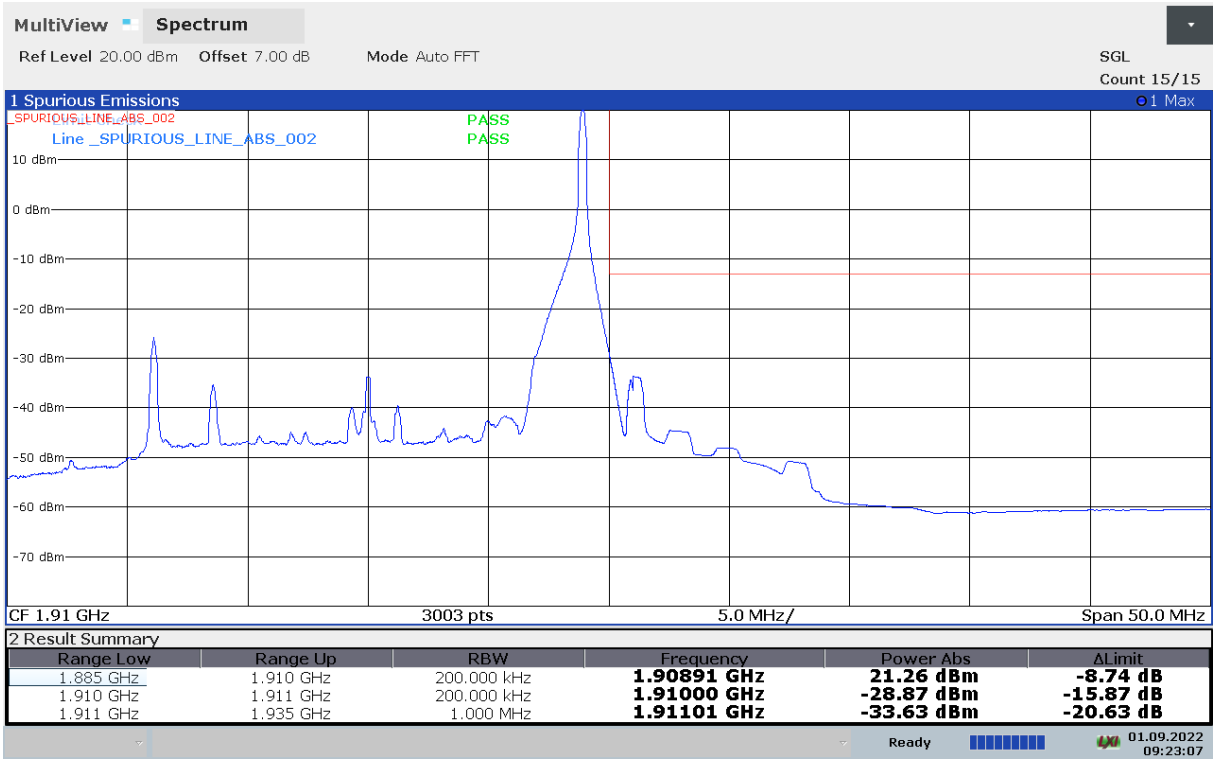
LTE band 2

LOW BAND EDGE BLOCK-1RB-low_offset



HIGH BAND EDGE BLOCK-1RB-high_offset



LOW BAND EDGE BLOCK-20MHz-100%RB

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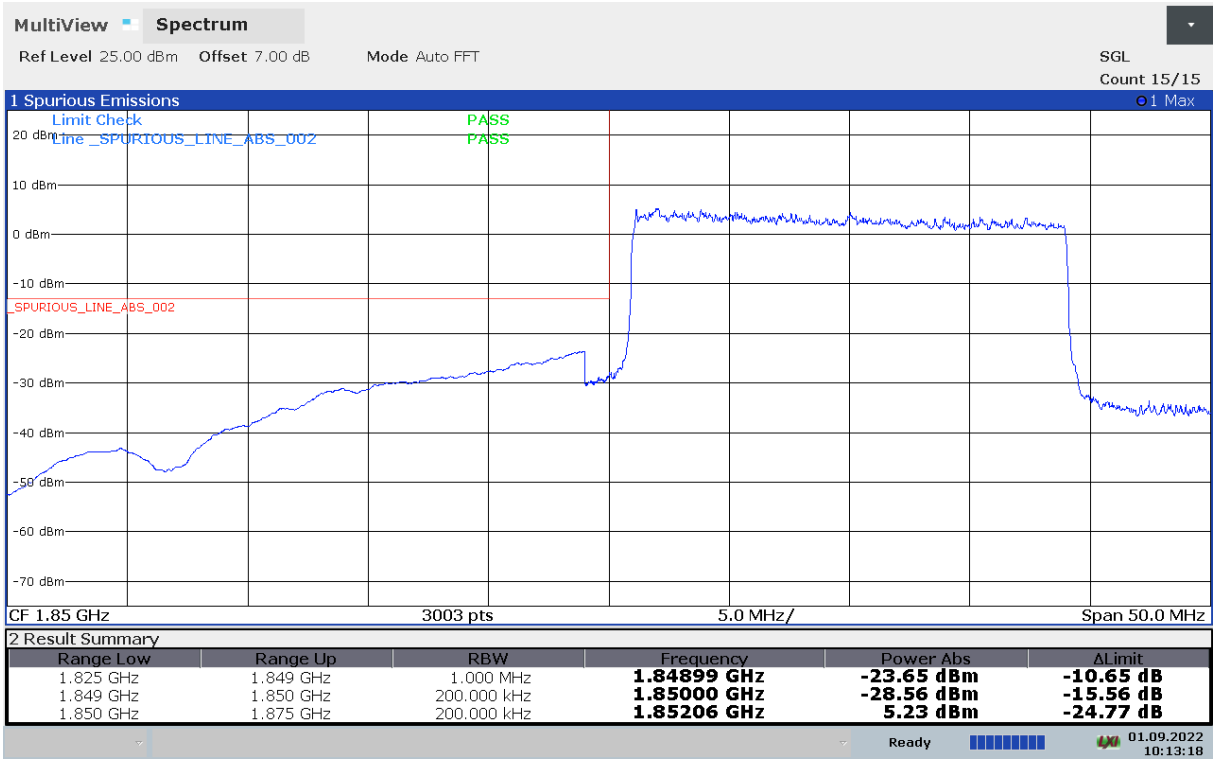

HIGH BAND EDGE BLOCK-20MHz-100%RB

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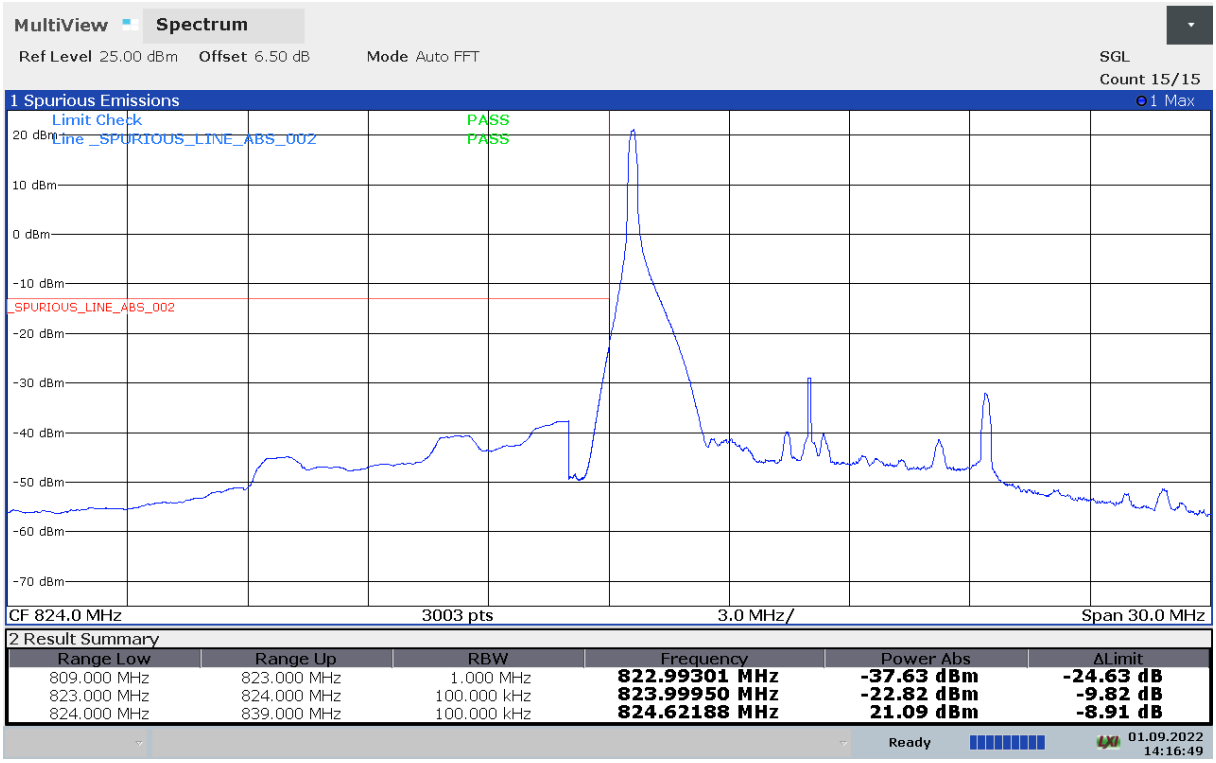
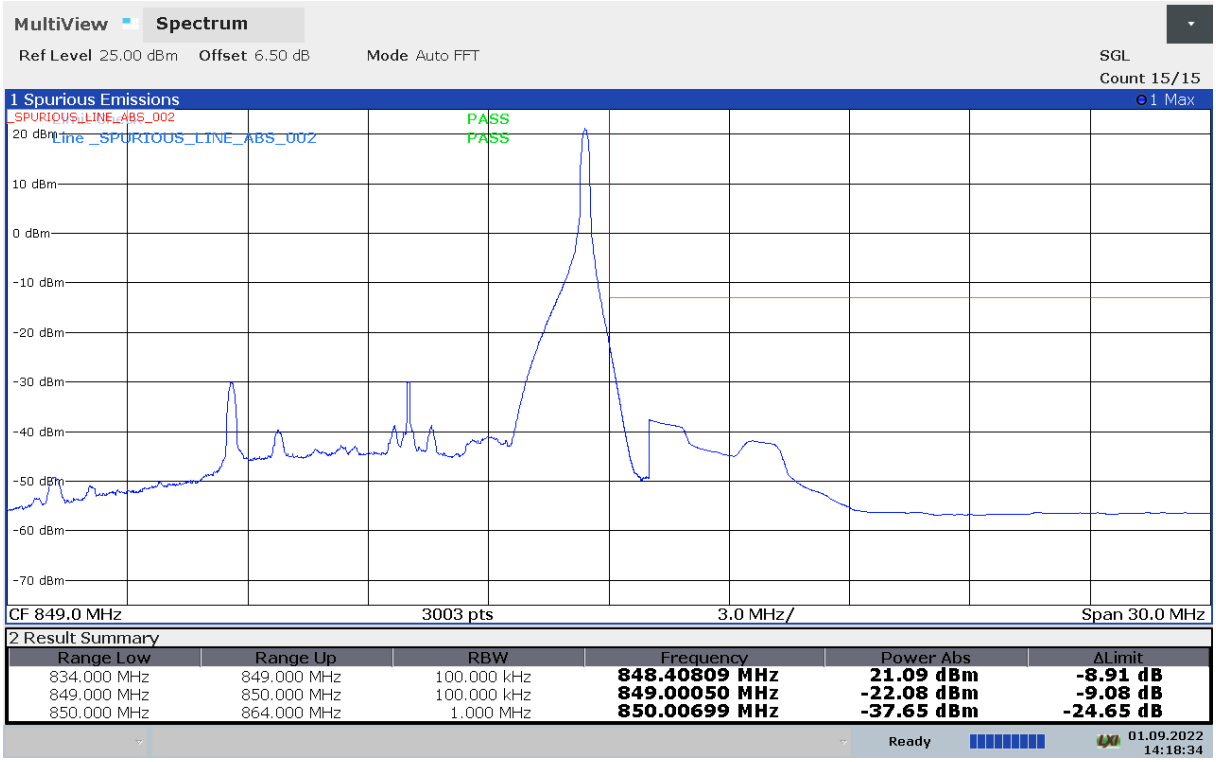
LTE Band 5

LOW BAND EDGE BLOCK-1RB-low_offset



HIGH BAND EDGE BLOCK-1RB-high_offset



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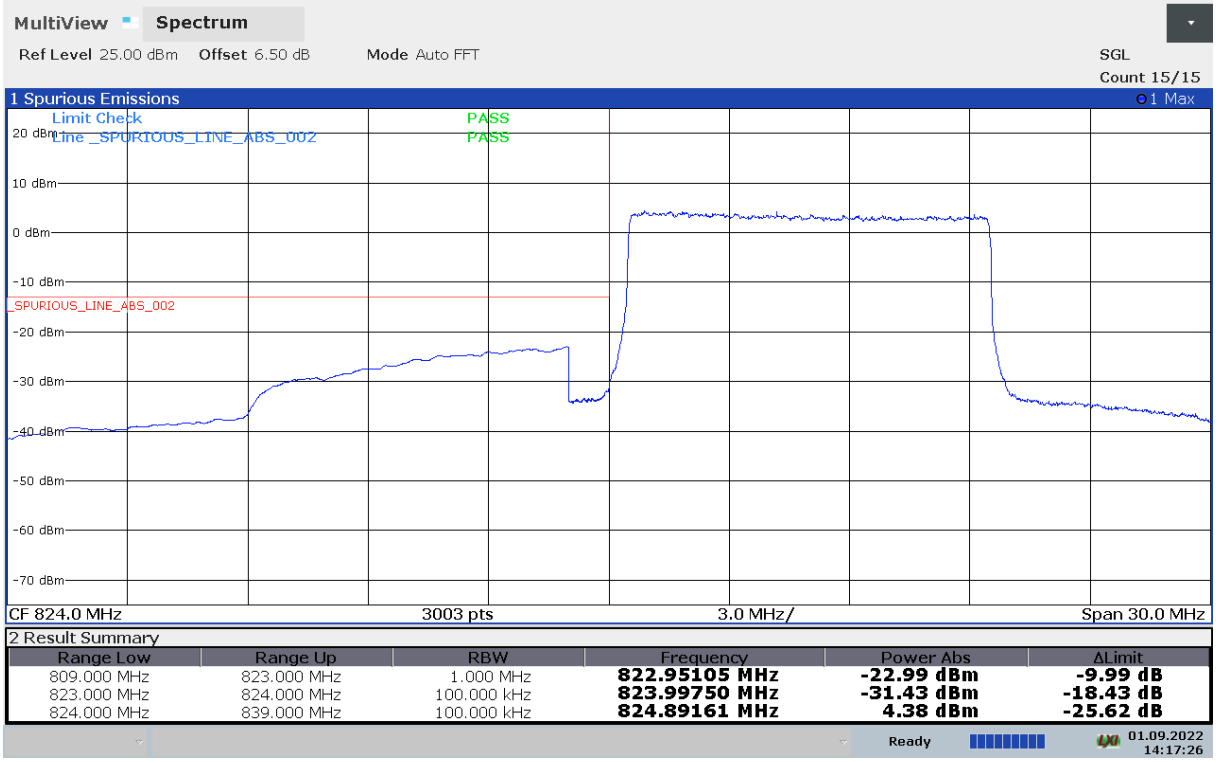
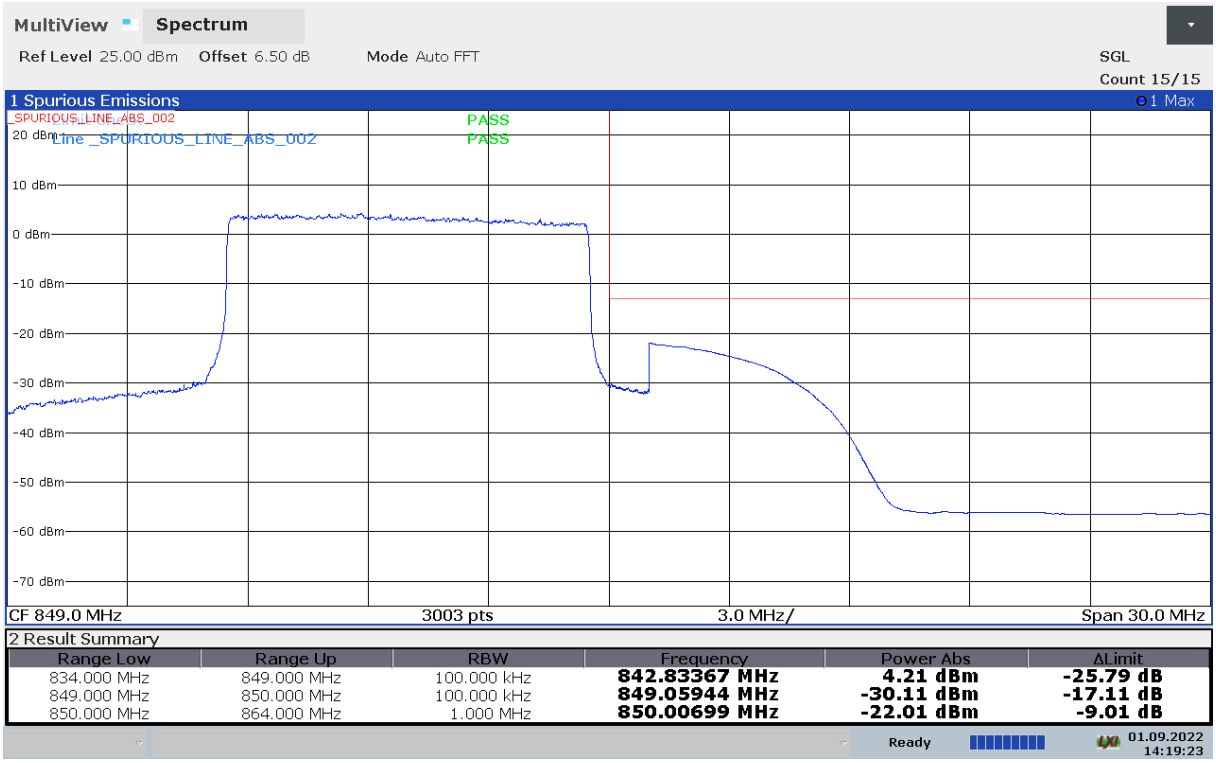
LOW BAND EDGE BLOCK-10MHz-100%RB



HIGH BAND EDGE BLOCK-10MHz-100%RB



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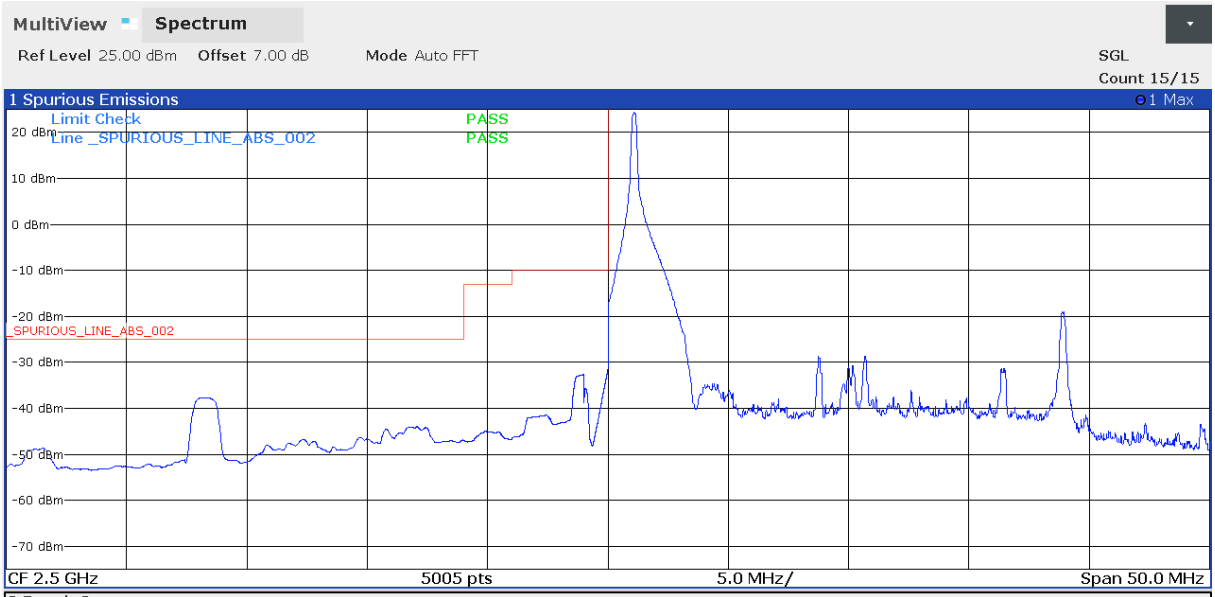
LTE band 7

LOW BAND EDGE BLOCK-1RB-low_offset

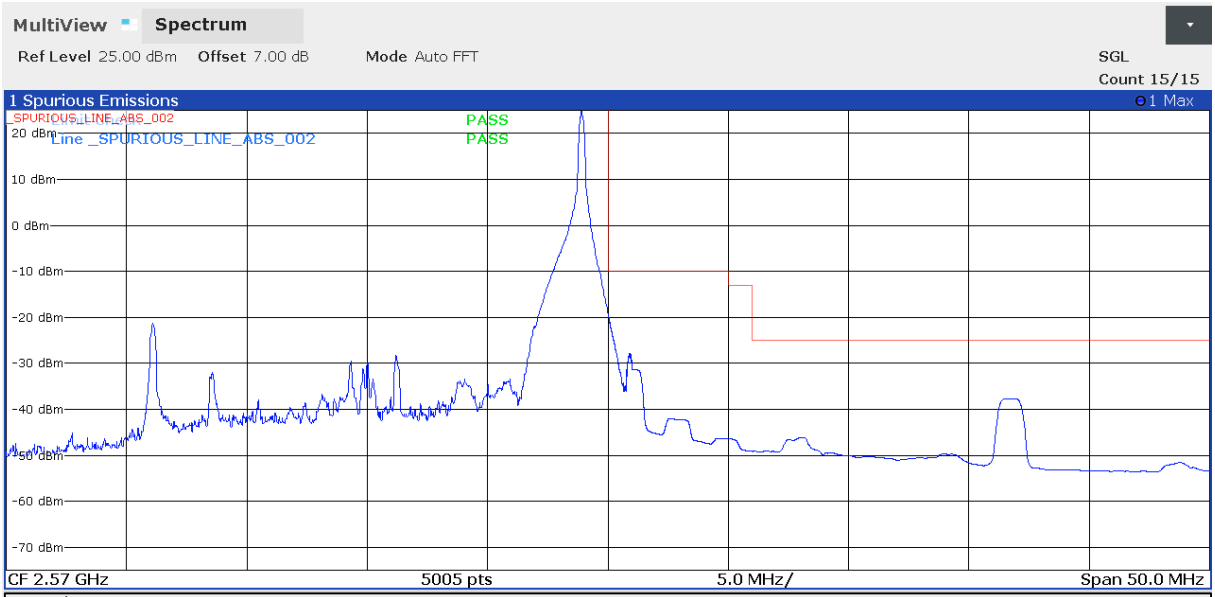


2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.494 GHz	1.000 MHz	**2.48313 GHz**	**-37.74 dBm**	**-12.74 dB**
2.494 GHz	2.496 GHz	1.000 MHz	**2.49492 GHz**	**-44.98 dBm**	**-31.98 dB**
2.496 GHz	2.499 GHz	1.000 MHz	**2.49900 GHz**	**-32.62 dBm**	**-22.62 dB**
2.499 GHz	2.500 GHz	100.000 kHz	**2.50000 GHz**	**-31.64 dBm**	**-21.64 dB**
2.500 GHz	2.525 GHz	100.000 kHz	**2.50106 GHz**	**24.29 dBm**	**-5.71 dB**

Ready 01.09.2022 10:37:10

HIGH BAND EDGE BLOCK-1RB-high_offset



2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.545 GHz	2.570 GHz	100.000 kHz	**2.56889 GHz**	**24.83 dBm**	**-5.17 dB**
2.570 GHz	2.571 GHz	100.000 kHz	**2.57000 GHz**	**-19.29 dBm**	**-9.29 dB**
2.571 GHz	2.575 GHz	1.000 MHz	**2.57100 GHz**	**-31.28 dBm**	**-21.28 dB**
2.575 GHz	2.576 GHz	1.000 MHz	**2.57500 GHz**	**-46.42 dBm**	**-33.42 dB**
2.576 GHz	2.595 GHz	1.000 MHz	**2.58664 GHz**	**-37.70 dBm**	**-12.70 dB**

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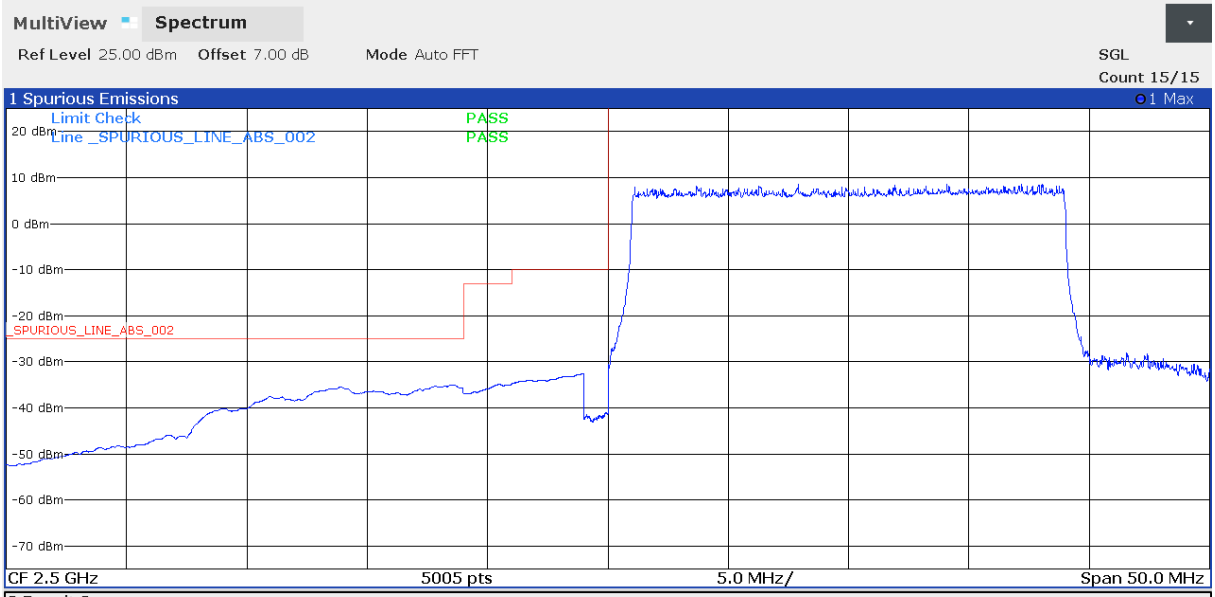
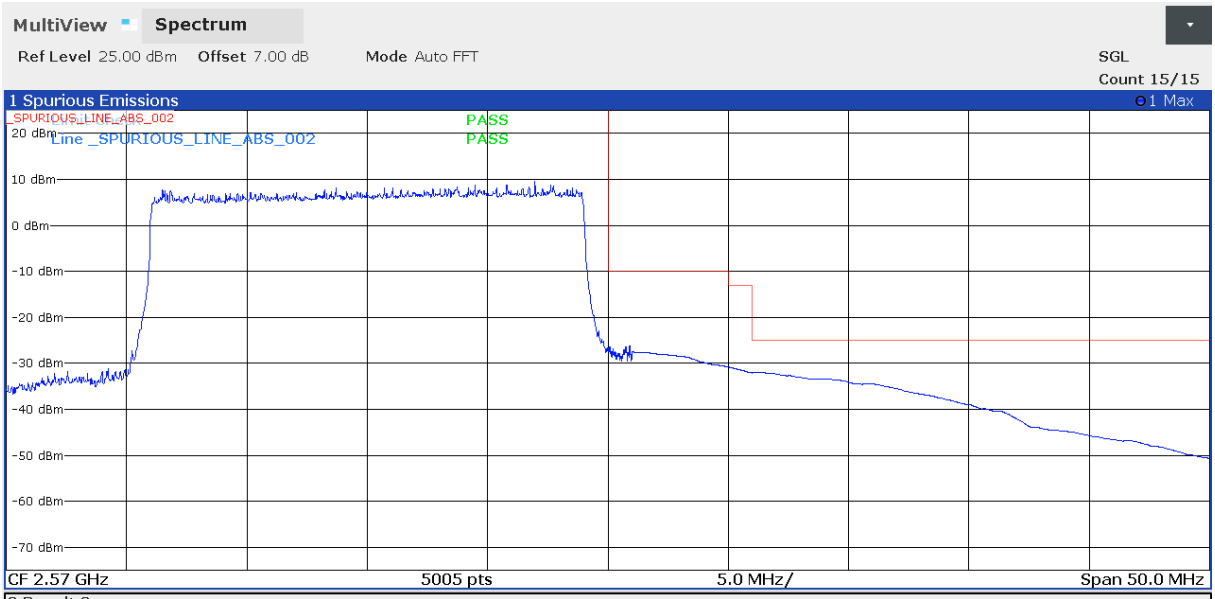
LOW BAND EDGE BLOCK-20MHz-100%RB



2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.475 GHz	2.494 GHz	1.000 MHz	**2.49357 GHz**	**-35.02 dBm**	**-10.02 dB**
2.494 GHz	2.496 GHz	1.000 MHz	**2.49600 GHz**	**-34.88 dBm**	**-21.88 dB**
2.496 GHz	2.499 GHz	1.000 MHz	**2.49900 GHz**	**-32.55 dBm**	**-22.55 dB**
2.499 GHz	2.500 GHz	100.000 kHz	**2.49992 GHz**	**-41.01 dBm**	**-31.01 dB**
2.500 GHz	2.525 GHz	100.000 kHz	**2.50790 GHz**	**8.59 dBm**	**-21.41 dB**

HIGH BAND EDGE BLOCK-20MHz-100%RB



2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.545 GHz	2.570 GHz	100.000 kHz	**2.56697 GHz**	**9.63 dBm**	**-20.37 dB**
2.570 GHz	2.571 GHz	100.000 kHz	**2.57091 GHz**	**-26.25 dBm**	**-16.25 dB**
2.571 GHz	2.575 GHz	1.000 MHz	**2.57100 GHz**	**-27.51 dBm**	**-17.51 dB**
2.575 GHz	2.576 GHz	1.000 MHz	**2.57500 GHz**	**-30.82 dBm**	**-17.82 dB**
2.576 GHz	2.595 GHz	1.000 MHz	**2.57622 GHz**	**-31.97 dBm**	**-6.97 dB**

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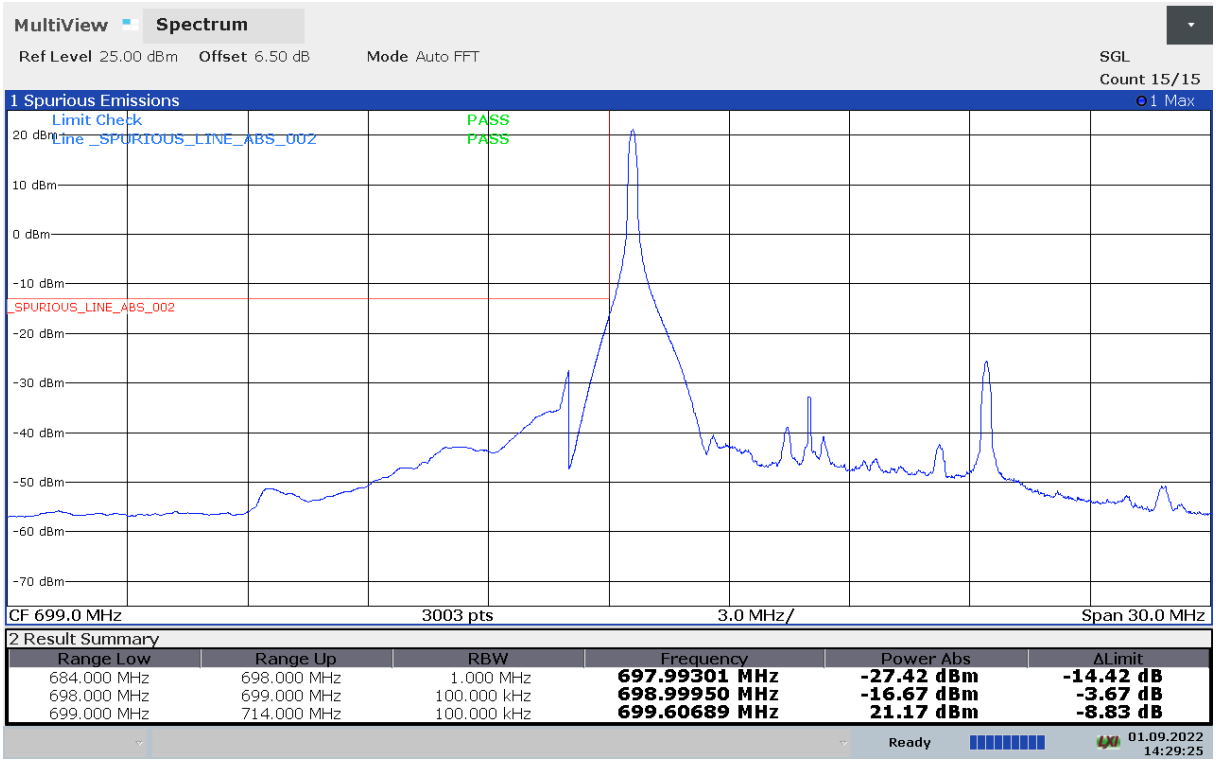
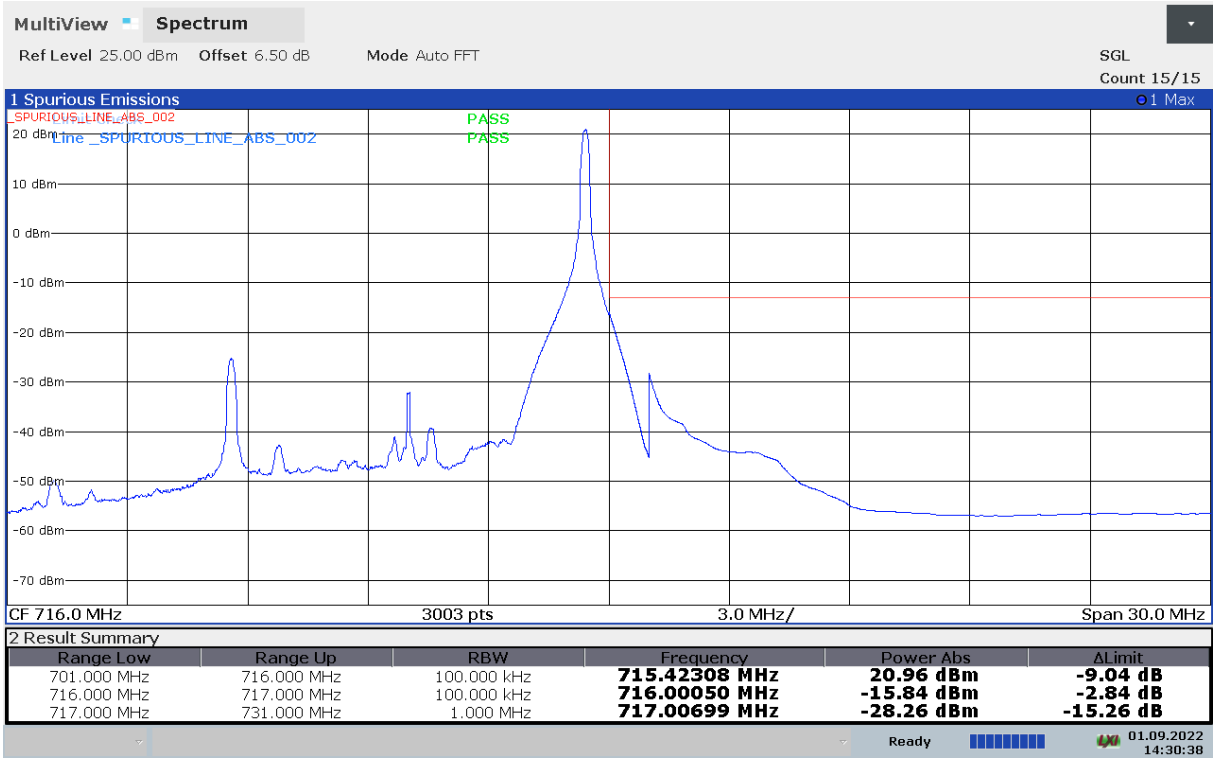
LTE band 12

LOW BAND EDGE BLOCK-1RB-low_offset



HIGH BAND EDGE BLOCK-1RB-high_offset



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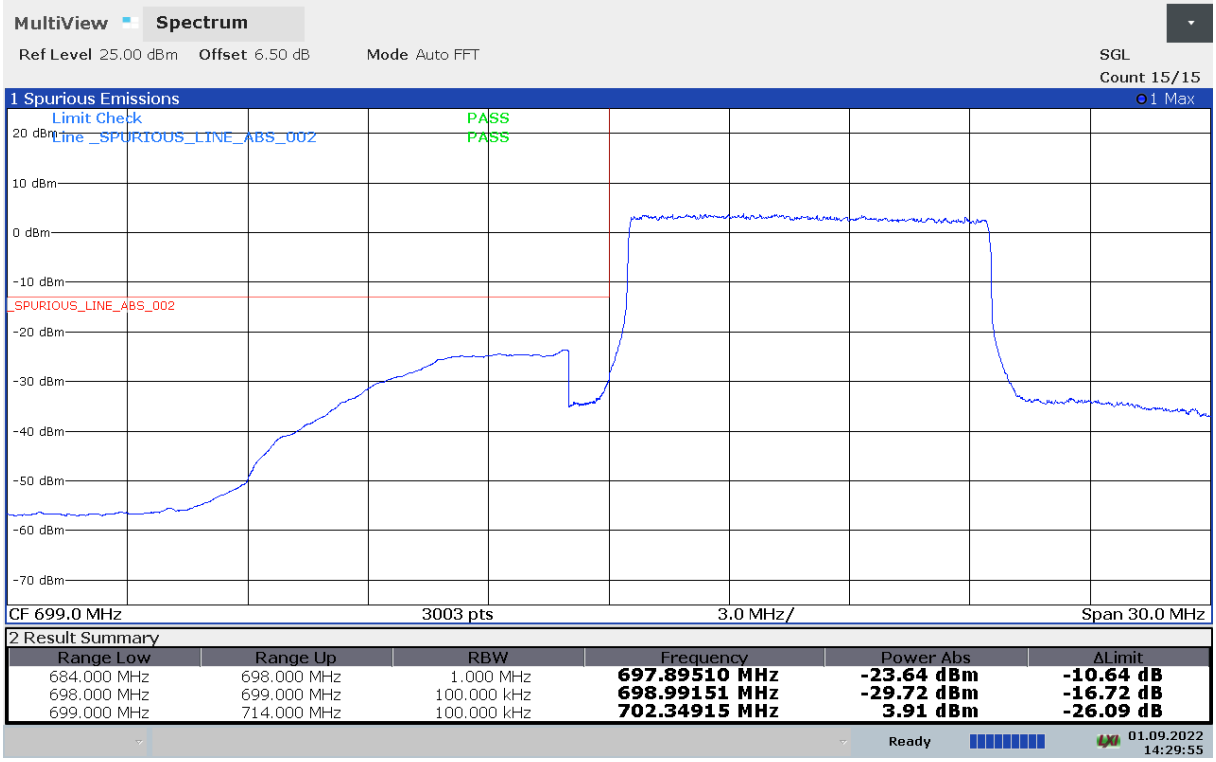
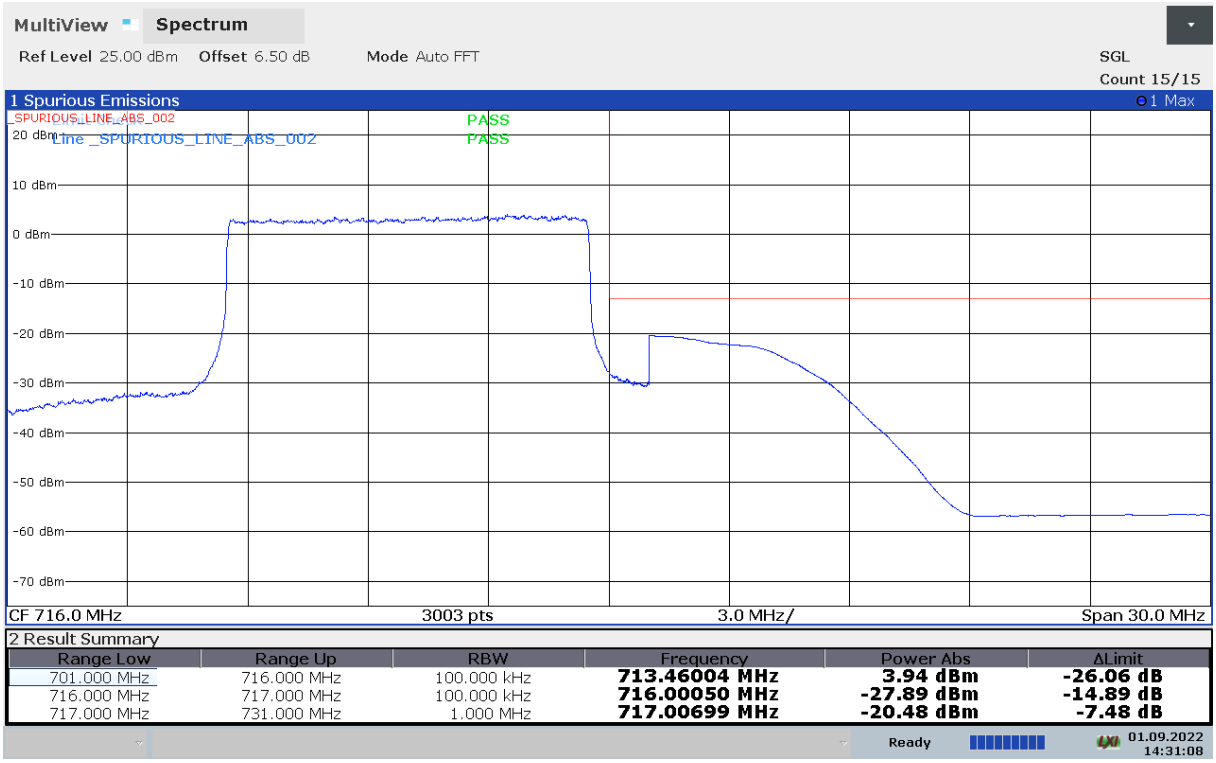
LOW BAND EDGE BLOCK-10MHz-100%RB



HIGH BAND EDGE BLOCK-10MHz-100%RB



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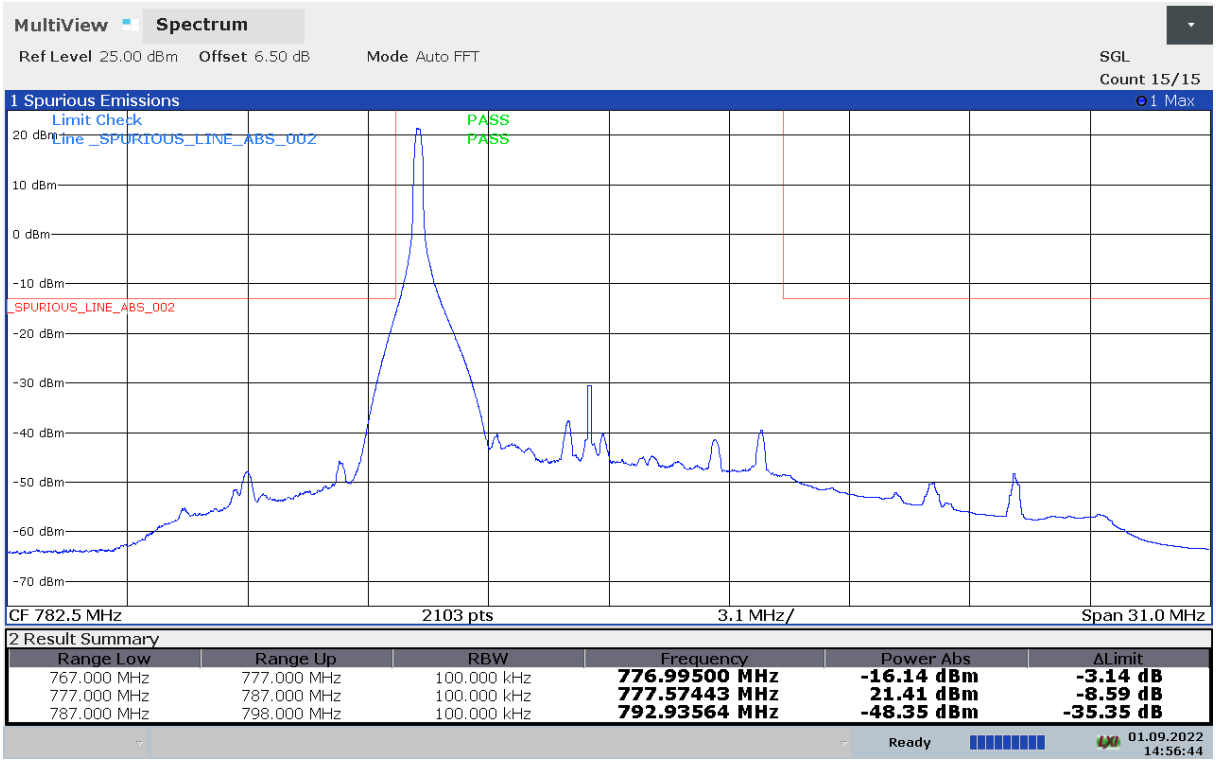
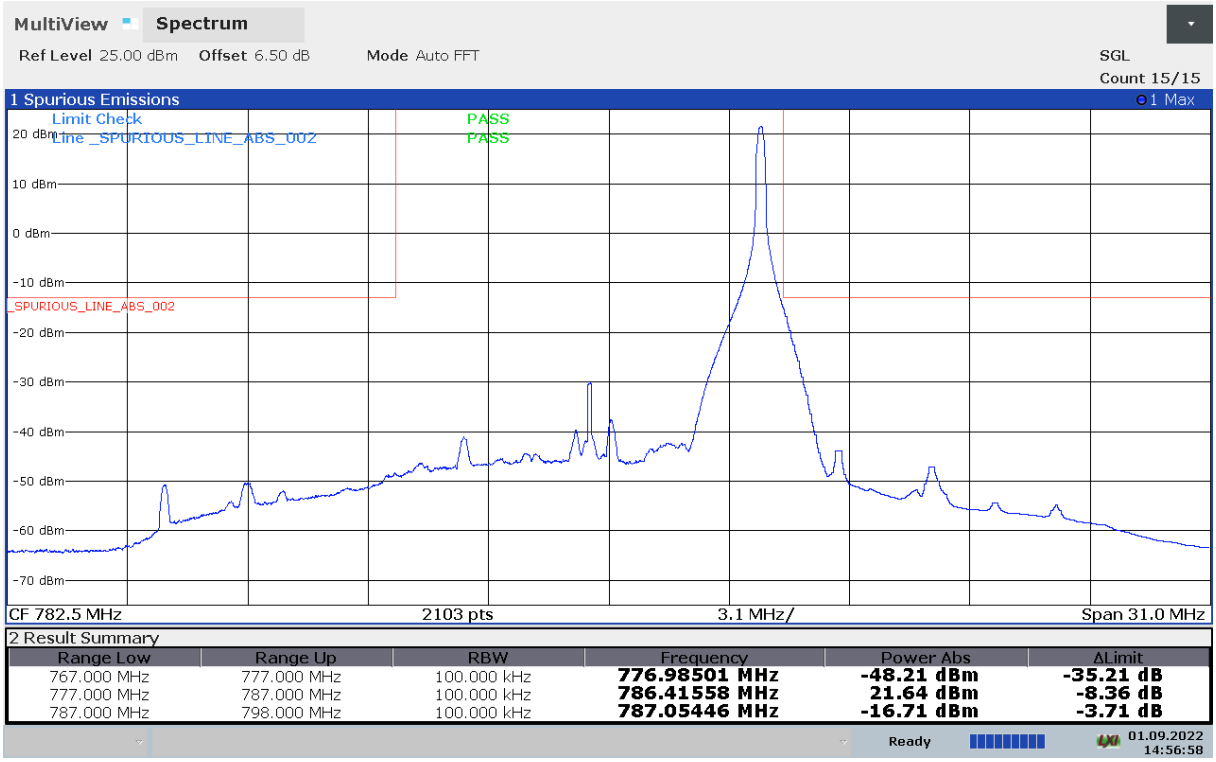
LTE band 13

LOW BAND EDGE BLOCK-1RB-low_offset



HIGH BAND EDGE BLOCK-1RB-high_offset



EDGE BLOCK-10MHz-100%RB

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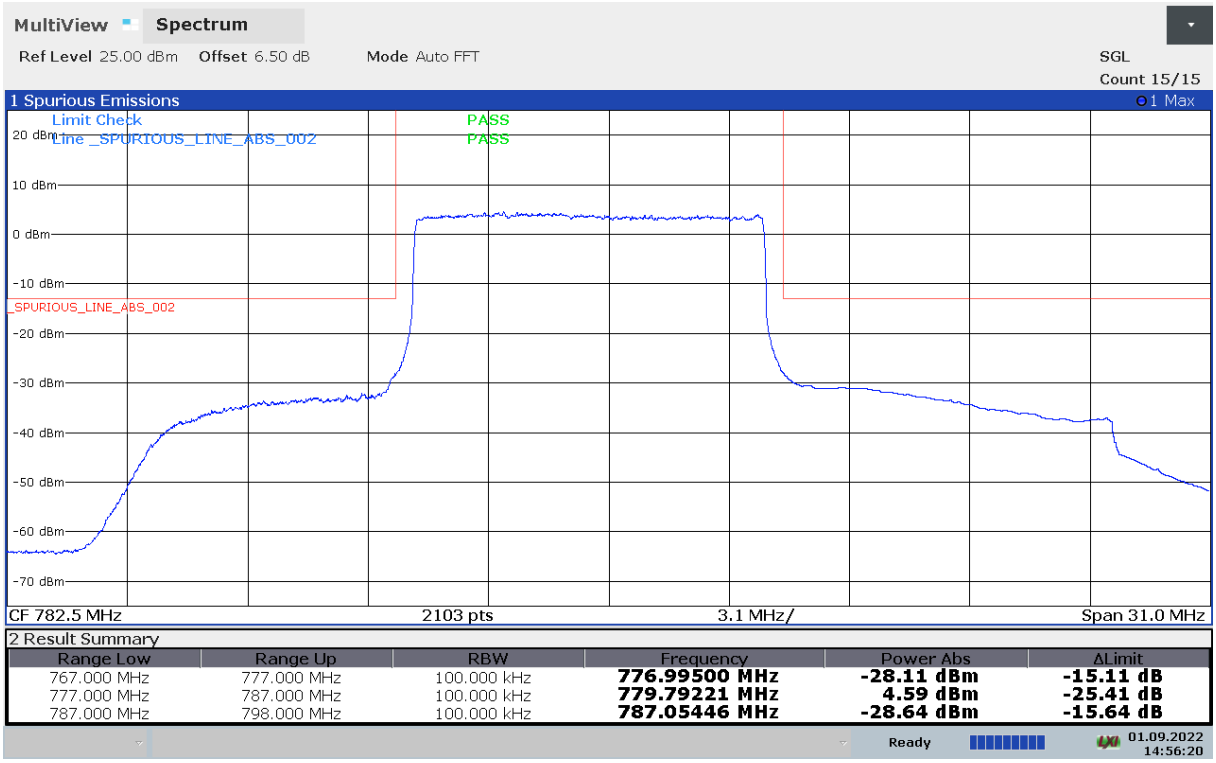

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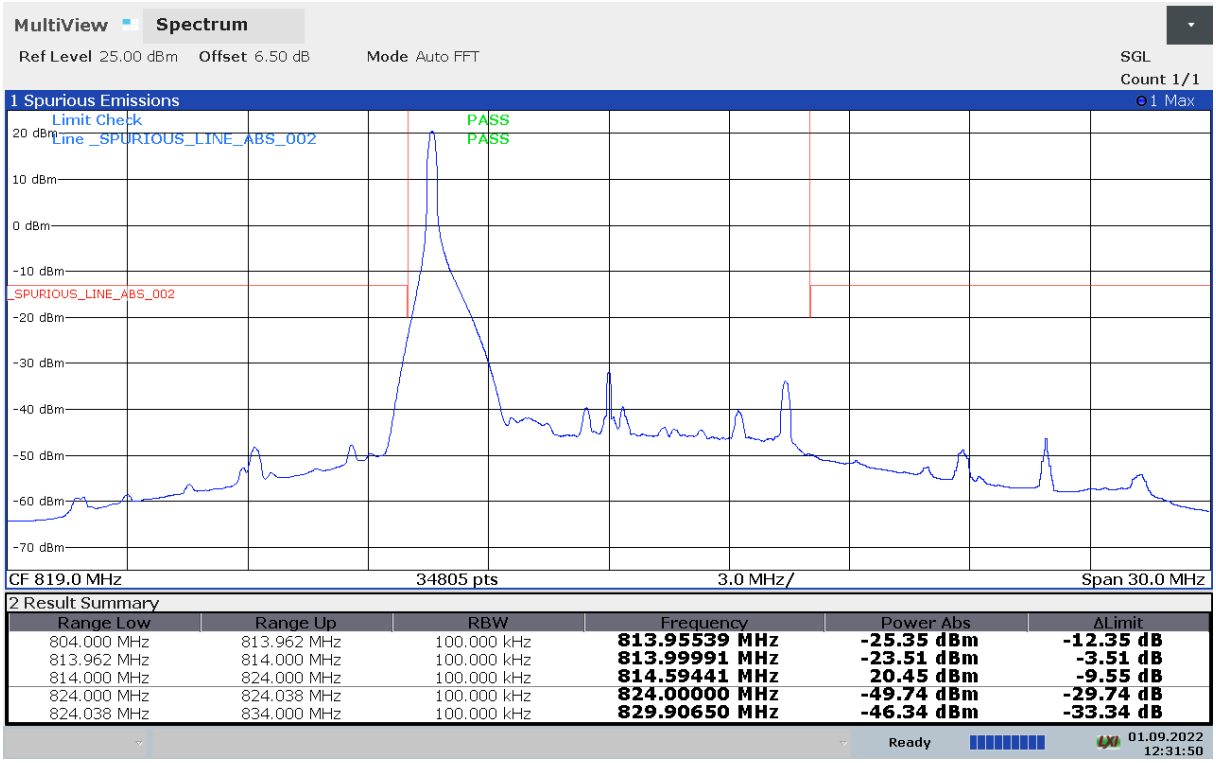
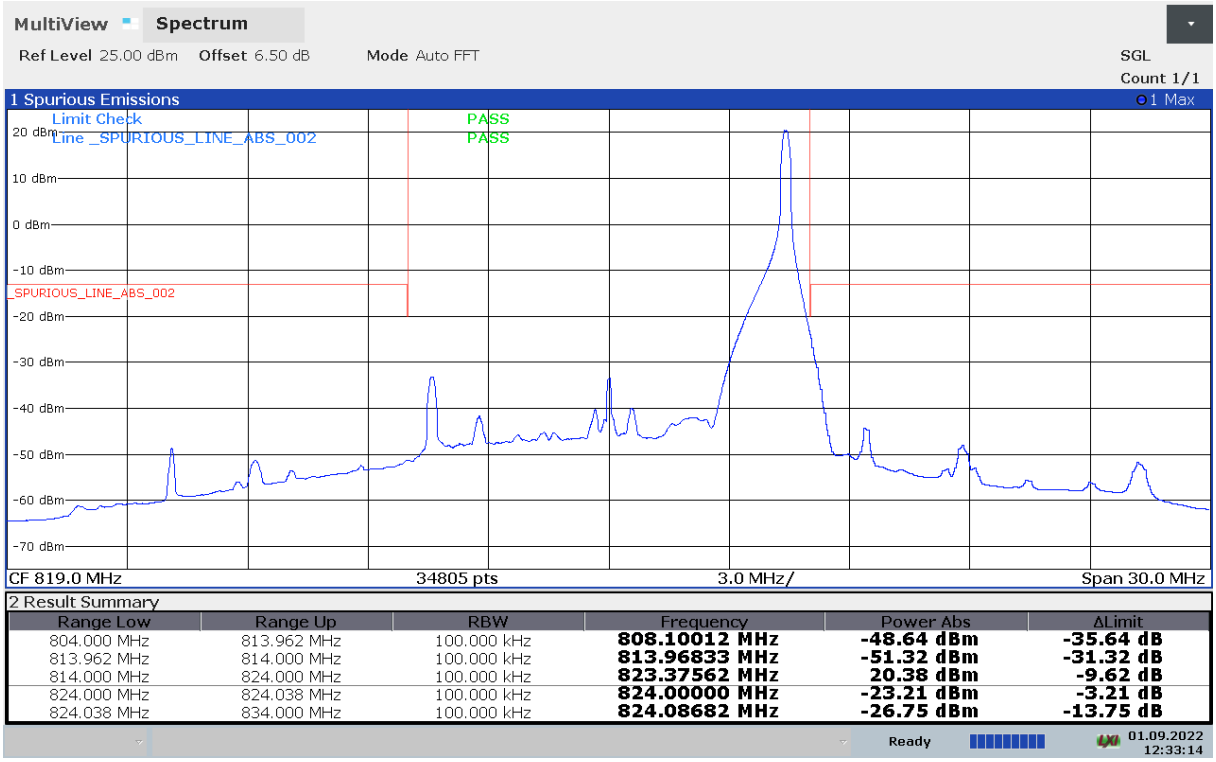
LTE band 26(814MHz-824MHz)

LOW BAND EDGE BLOCK-1RB-low_offset



HIGH BAND EDGE BLOCK-1RB-high_offset



BAND EDGE BLOCK-10MHz-100%RB

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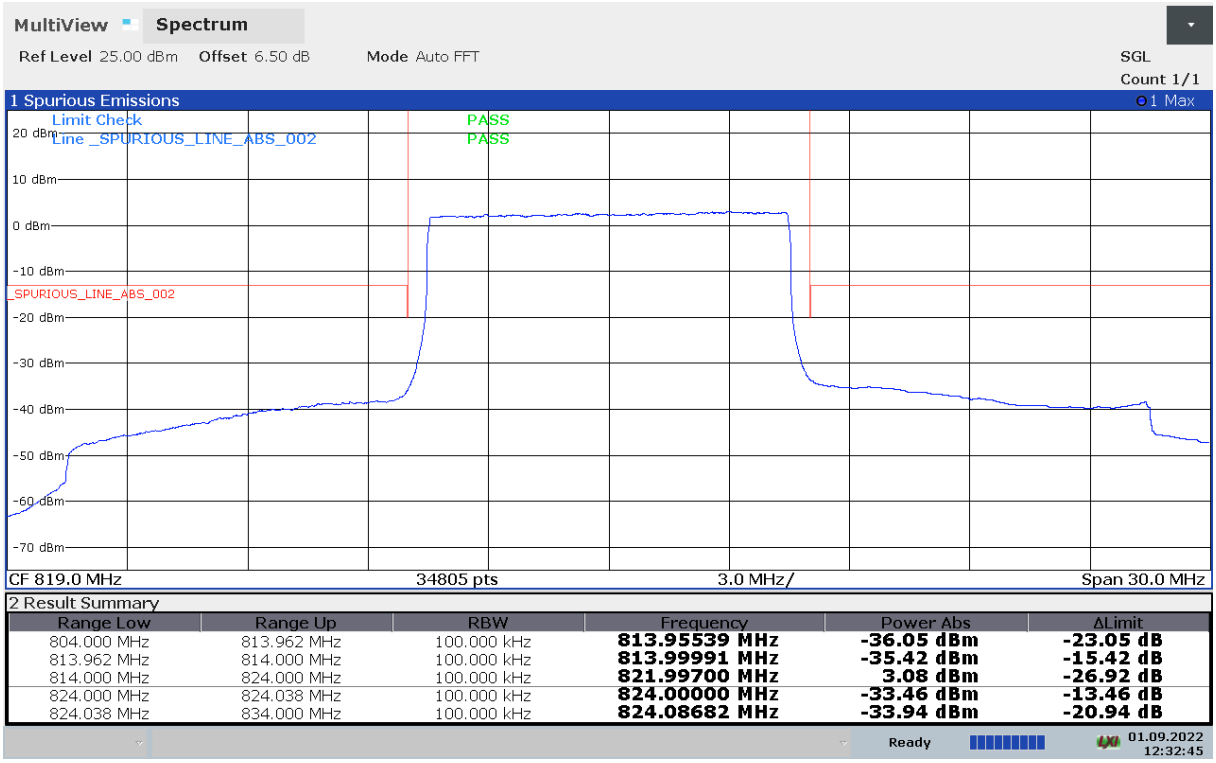

2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
804.000 MHz	813.962 MHz	100.000 kHz	**813.95539 MHz**	**-36.05 dBm**	**-23.05 dB**
813.962 MHz	814.000 MHz	100.000 kHz	**813.99991 MHz**	**-35.42 dBm**	**-15.42 dB**
814.000 MHz	824.000 MHz	100.000 kHz	**821.99700 MHz**	**3.08 dBm**	**-26.92 dB**
824.000 MHz	824.038 MHz	100.000 kHz	**824.00000 MHz**	**-33.46 dBm**	**-13.46 dB**
824.038 MHz	834.000 MHz	100.000 kHz	**824.08682 MHz**	**-33.94 dBm**	**-20.94 dB**

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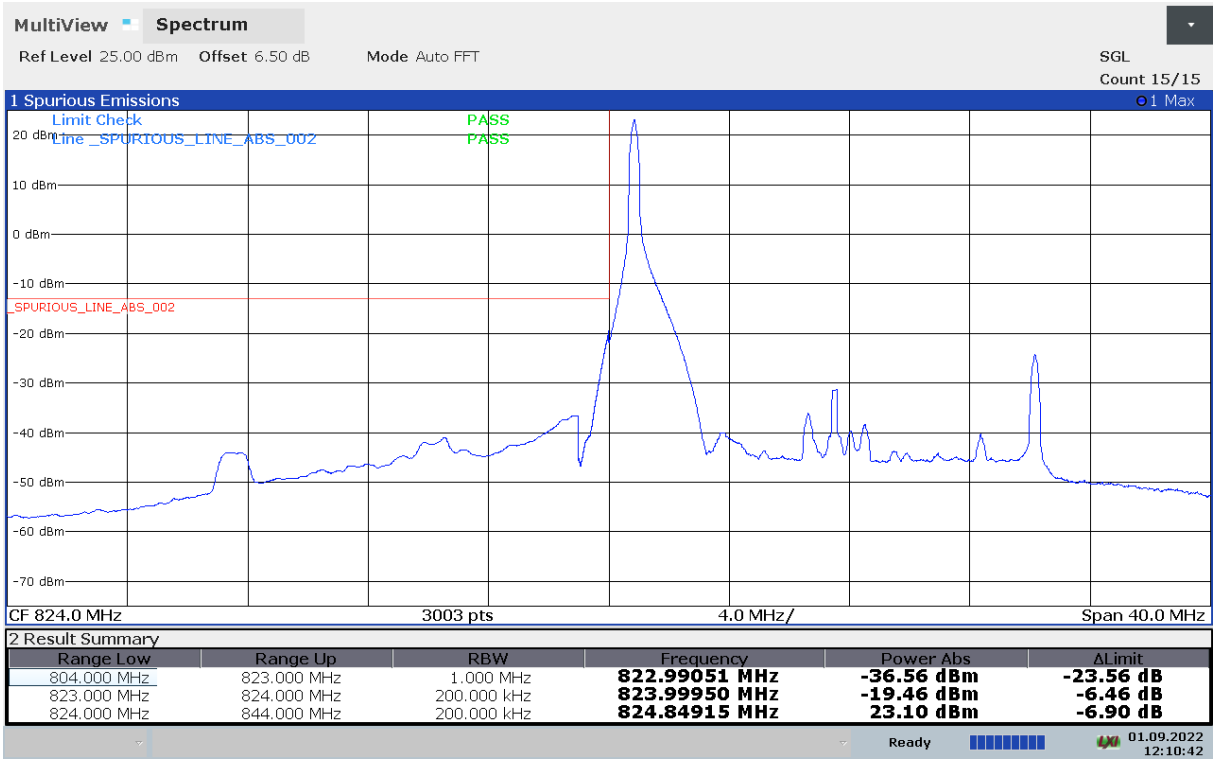
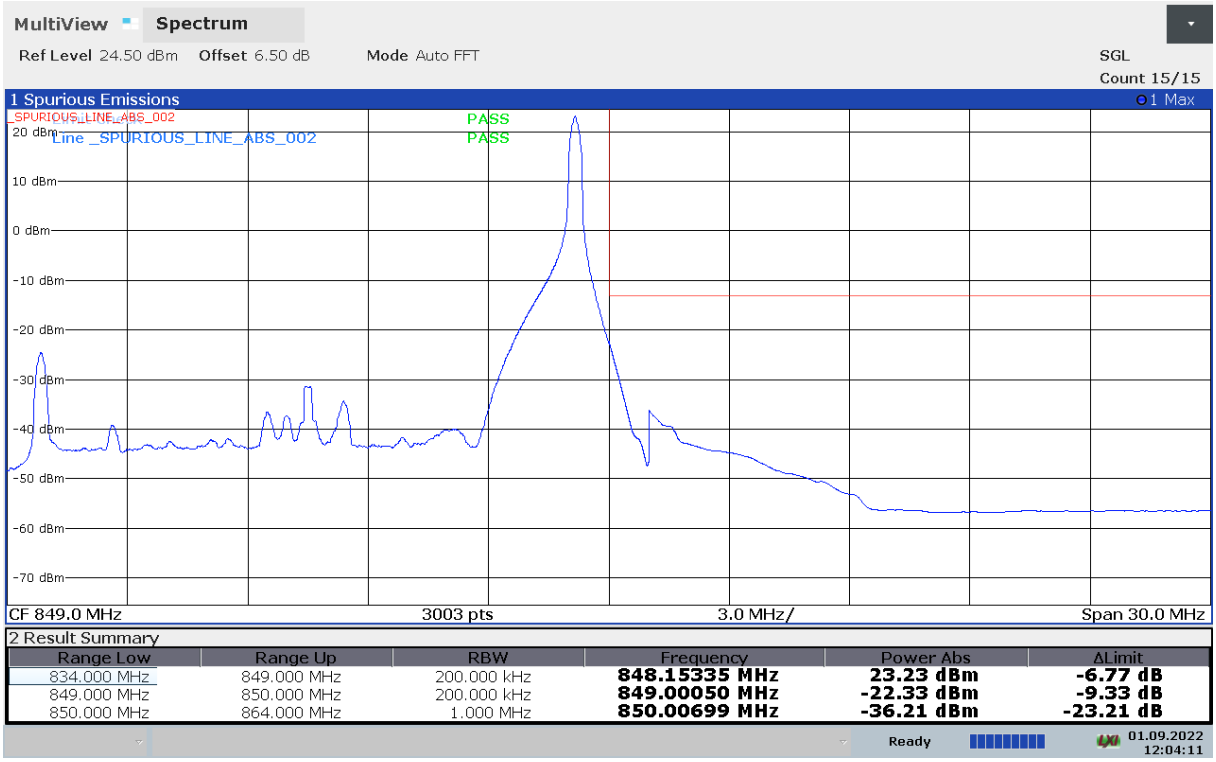
LTE band 26(824MHz-849MHz)

LOW BAND EDGE BLOCK-1RB-low_offset



HIGH BAND EDGE BLOCK-1RB-high_offset



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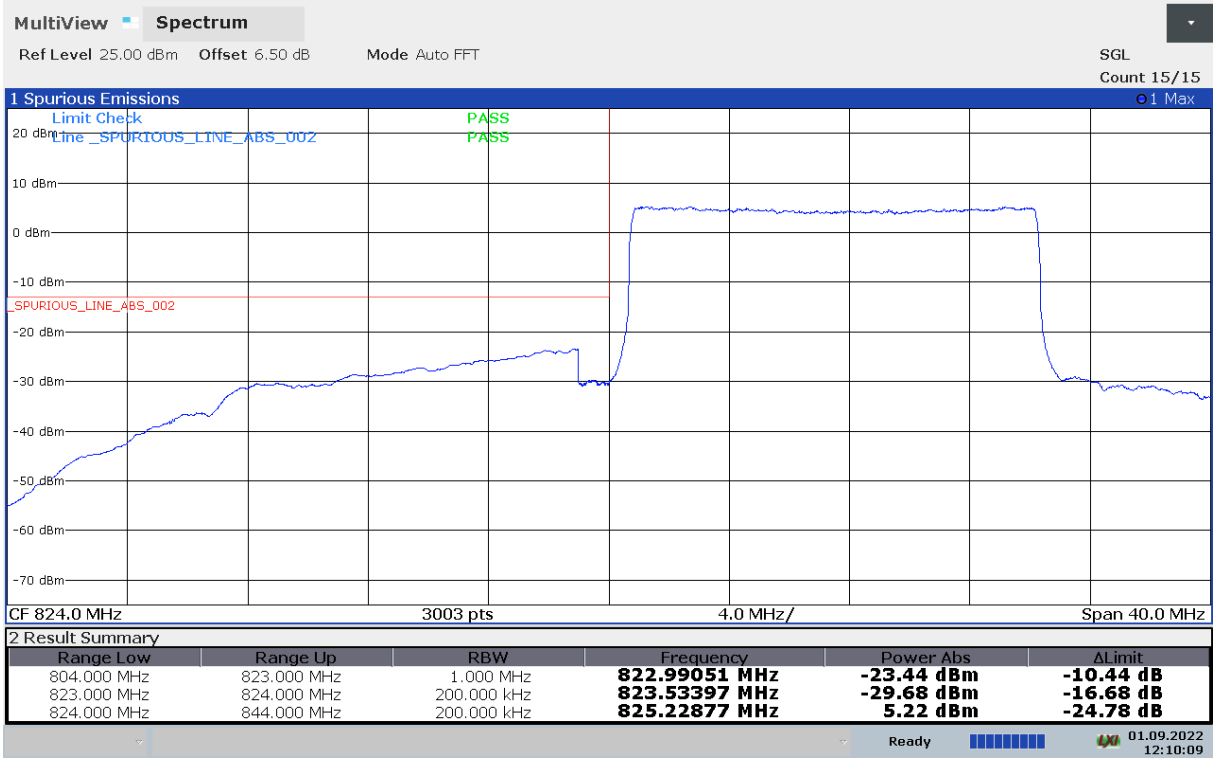
LOW BAND EDGE BLOCK-15MHz-100%RB



HIGH BAND EDGE BLOCK-15MHz-100%RB

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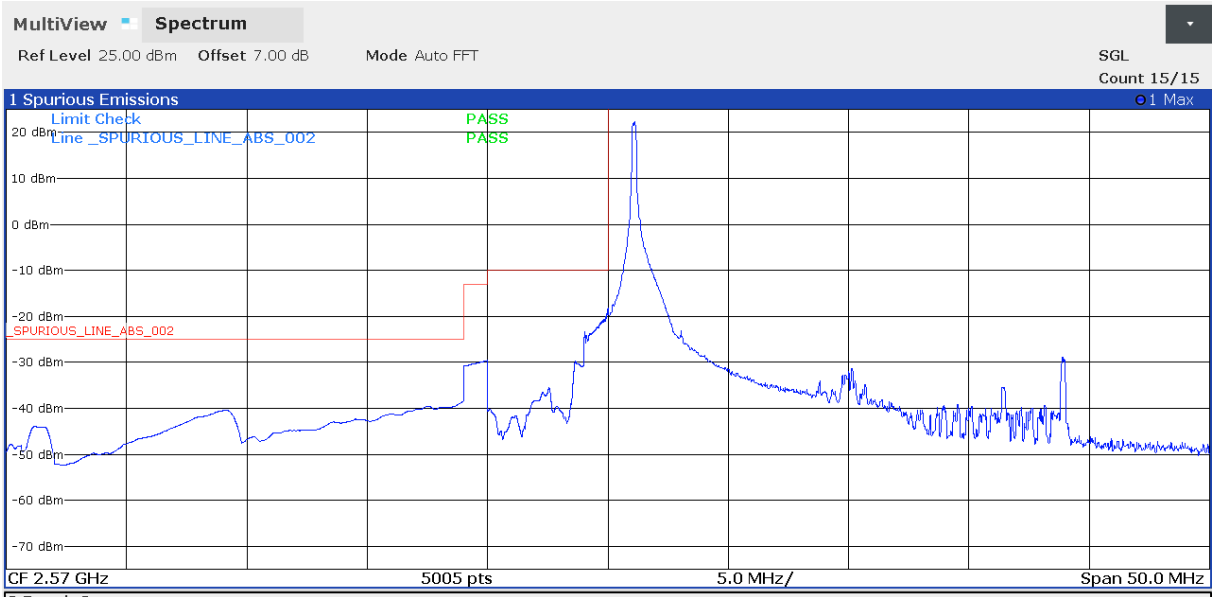
LTE band 38

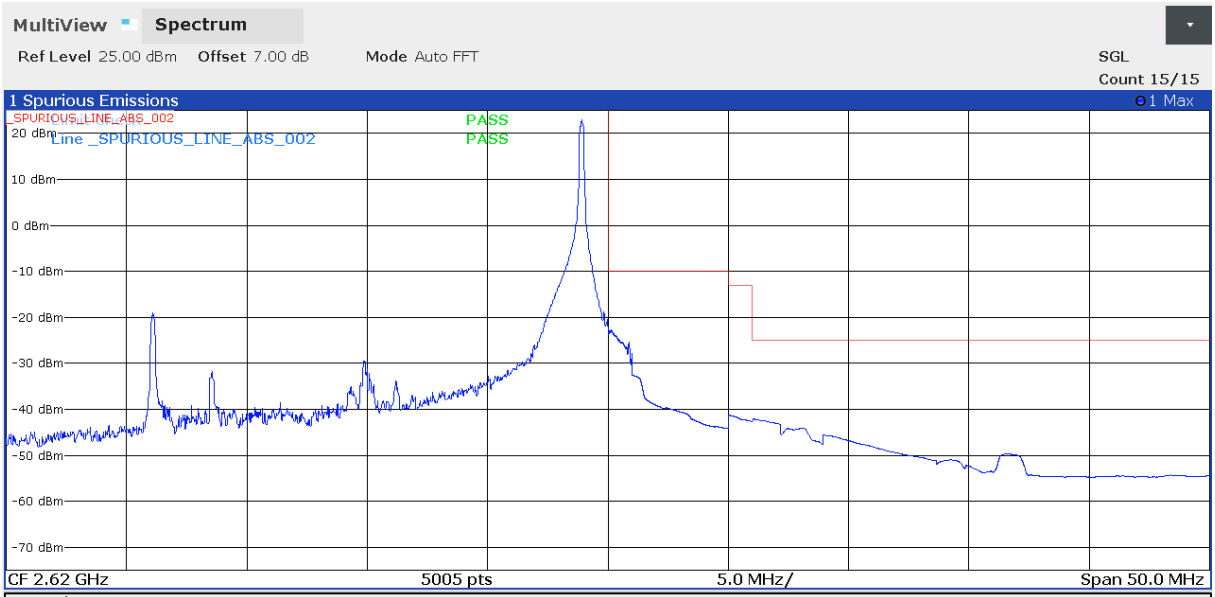
LOW BAND EDGE BLOCK-1RB-low_offset



2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.545 GHz	2.564 GHz	1.000 MHz	**2.56397 GHz**	**-38.62 dBm**	**-13.62 dB**
2.564 GHz	2.565 GHz	1.000 MHz	**2.56500 GHz**	**-29.60 dBm**	**-16.60 dB**
2.565 GHz	2.569 GHz	1.000 MHz	**2.56865 GHz**	**-29.83 dBm**	**-19.83 dB**
2.569 GHz	2.570 GHz	50.000 kHz	**2.57000 GHz**	**-18.34 dBm**	**-8.34 dB**
2.570 GHz	2.595 GHz	50.000 kHz	**2.57111 GHz**	**22.41 dBm**	**-7.59 dB**

HIGH BAND EDGE BLOCK-1RB-high_offset



2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.595 GHz	2.620 GHz	50.000 kHz	**2.61894 GHz**	**22.93 dBm**	**-7.07 dB**
2.620 GHz	2.621 GHz	50.000 kHz	**2.62000 GHz**	**-22.11 dBm**	**-12.11 dB**
2.621 GHz	2.625 GHz	1.000 MHz	**2.62100 GHz**	**-32.52 dBm**	**-22.52 dB**
2.625 GHz	2.626 GHz	1.000 MHz	**2.62500 GHz**	**-41.25 dBm**	**-28.25 dB**
2.626 GHz	2.645 GHz	1.000 MHz	**2.62601 GHz**	**-42.04 dBm**	**-17.04 dB**

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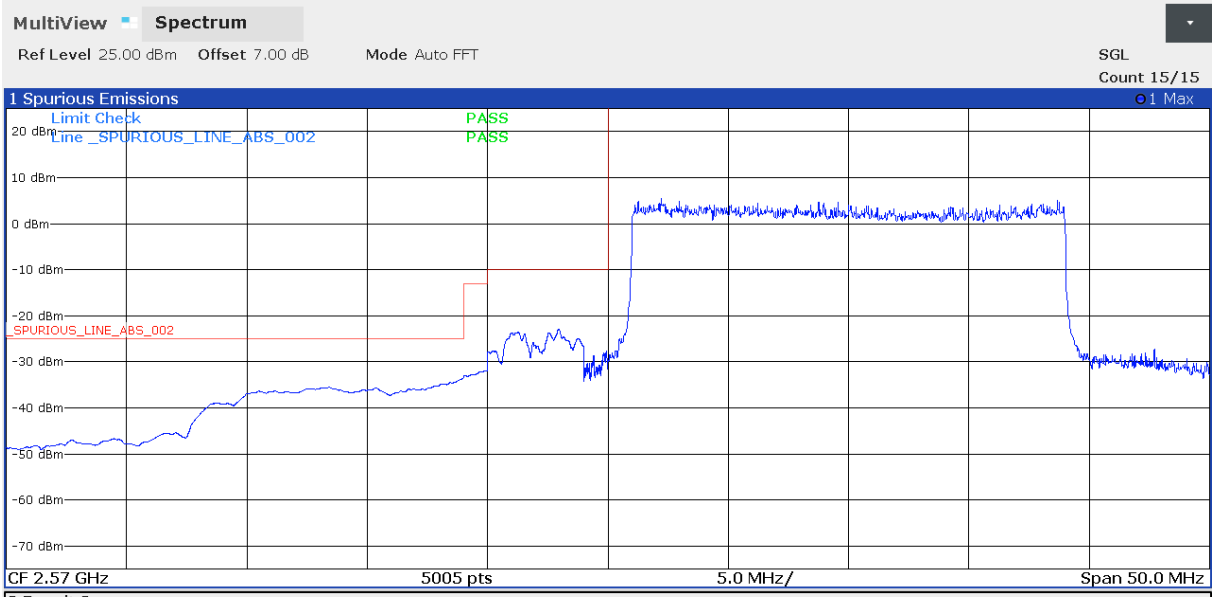
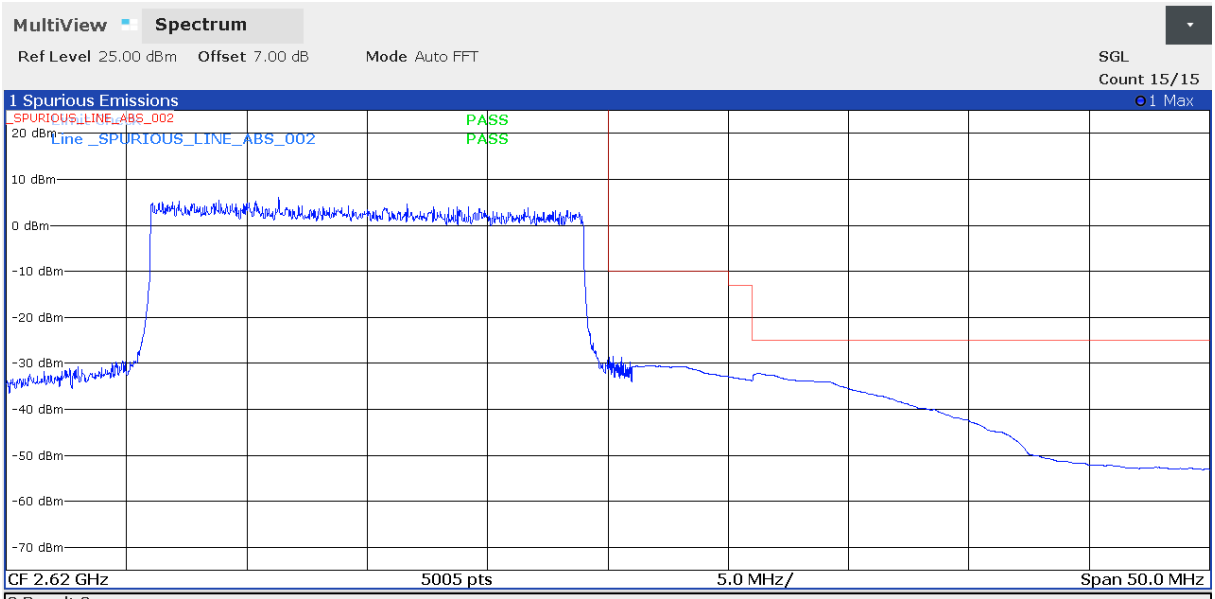
LOW BAND EDGE BLOCK-20MHz-100%RB



2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.545 GHz	2.564 GHz	1.000 MHz	**2.56399 GHz**	**-33.65 dBm**	**-8.65 dB**
2.564 GHz	2.565 GHz	1.000 MHz	**2.56500 GHz**	**-31.95 dBm**	**-18.95 dB**
2.565 GHz	2.569 GHz	1.000 MHz	**2.56796 GHz**	**-22.89 dBm**	**-12.89 dB**
2.569 GHz	2.570 GHz	50.000 kHz	**2.56993 GHz**	**-27.69 dBm**	**-17.69 dB**
2.570 GHz	2.595 GHz	50.000 kHz	**2.57221 GHz**	**5.40 dBm**	**-24.60 dB**

HIGH BAND EDGE BLOCK-20MHz-100%RB



2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.595 GHz	2.620 GHz	50.000 kHz	**2.60633 GHz**	**6.14 dBm**	**-23.86 dB**
2.620 GHz	2.621 GHz	50.000 kHz	**2.62022 GHz**	**-28.46 dBm**	**-18.46 dB**
2.621 GHz	2.625 GHz	1.000 MHz	**2.62183 GHz**	**-30.53 dBm**	**-20.53 dB**
2.625 GHz	2.626 GHz	1.000 MHz	**2.62500 GHz**	**-32.87 dBm**	**-19.87 dB**
2.626 GHz	2.645 GHz	1.000 MHz	**2.62631 GHz**	**-32.27 dBm**	**-7.27 dB**

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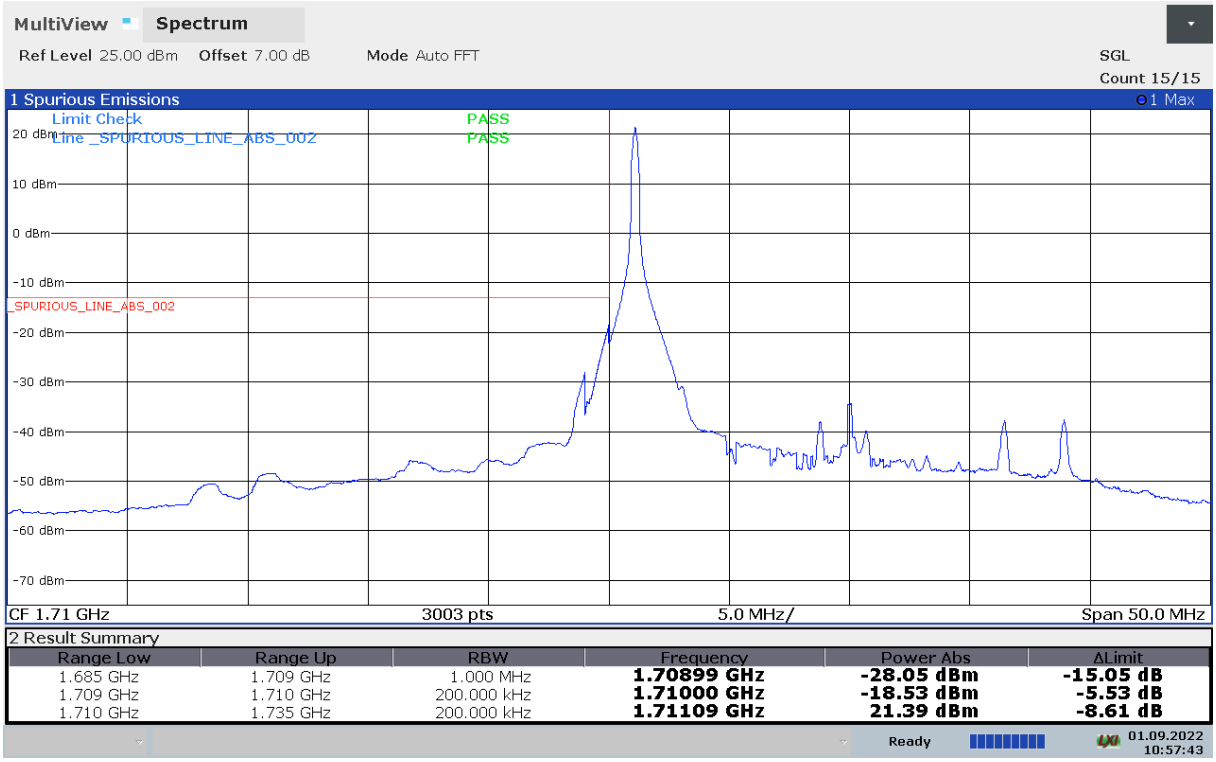
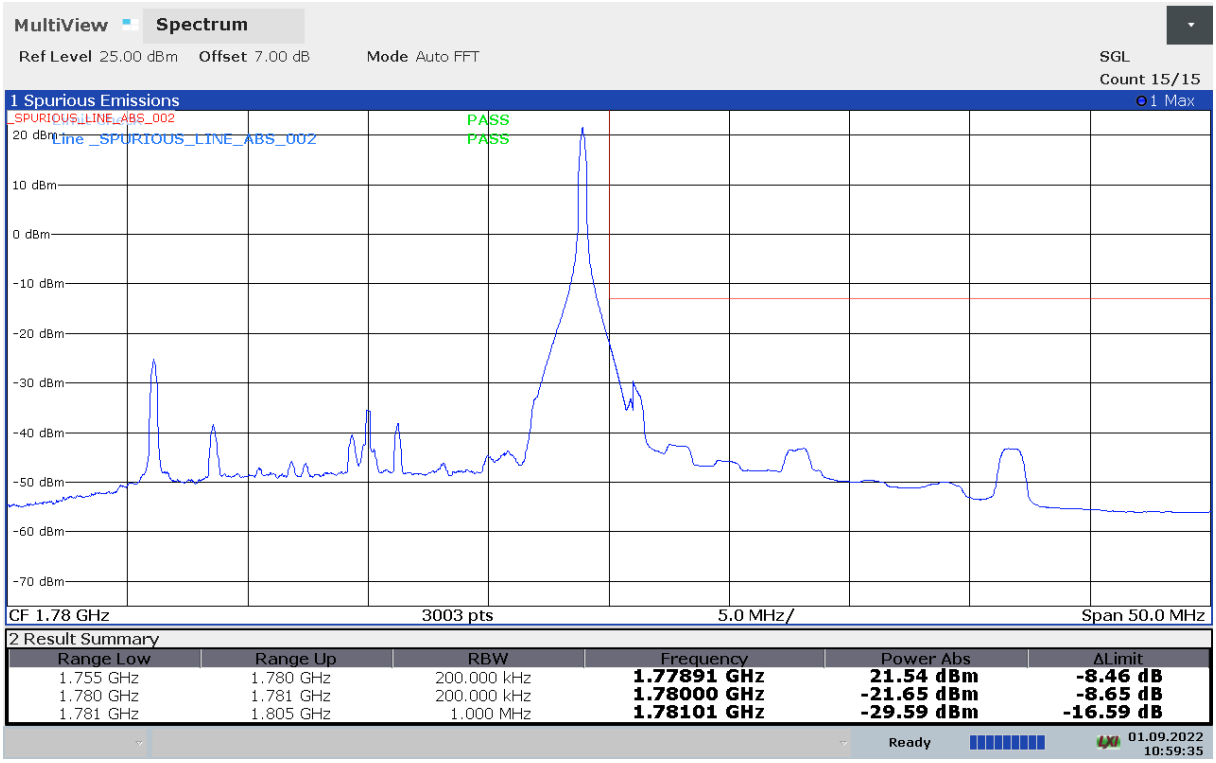
LTE band 66

LOW BAND EDGE BLOCK-1RB-low_offset



HIGH BAND EDGE BLOCK-1RB-high_offset



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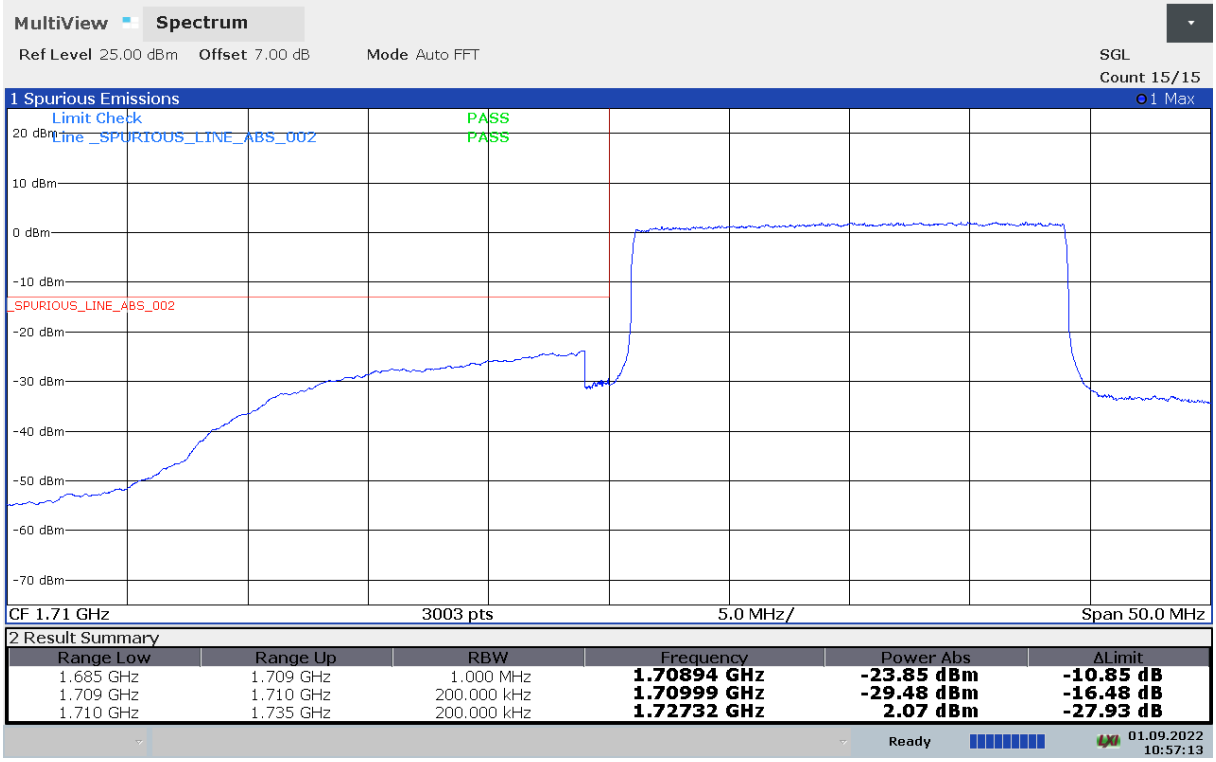
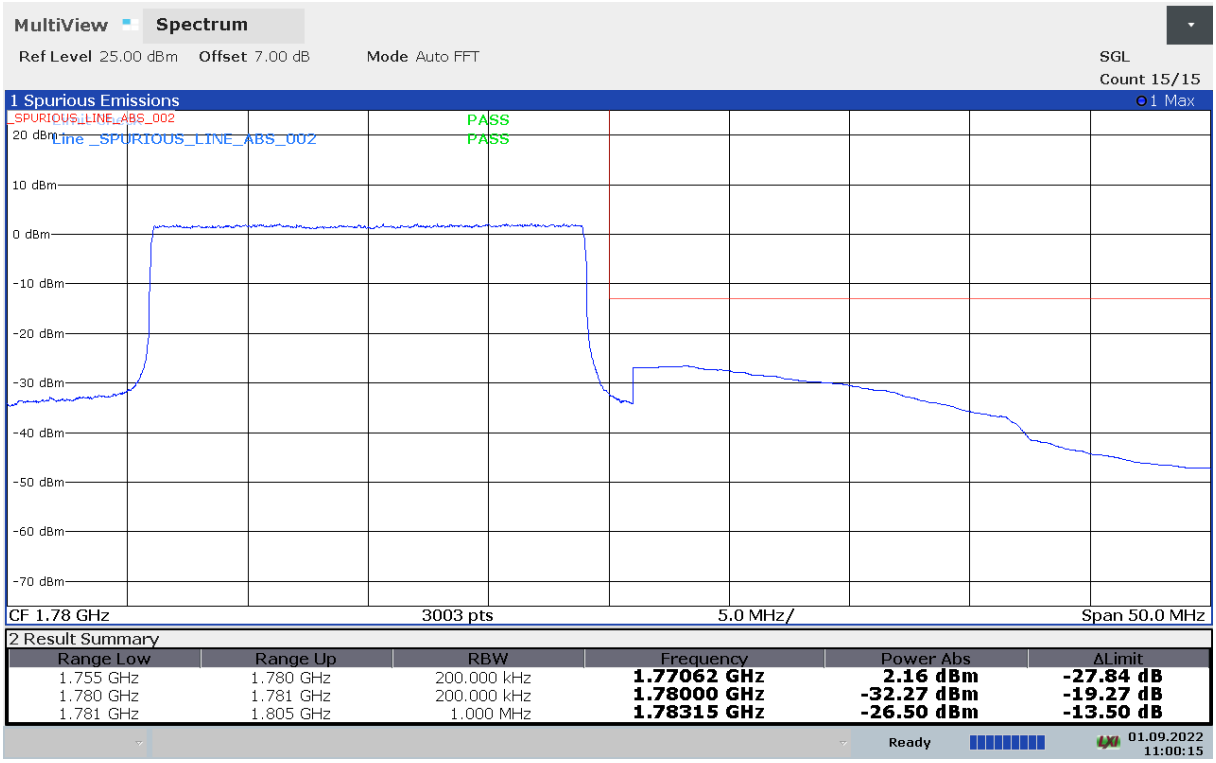
LOW BAND EDGE BLOCK-20MHz-100%RB



HIGH BAND EDGE BLOCK-20MHz-100%RB



Note: Expanded measurement uncertainty is U = 0.49dB(100KHz-2GHz)/1.21dB(2GHz-26.5GHz), k = 1.96

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A.7 CONDUCTED SPURIOUS EMISSION

Reference

FCC: CFR Part 2.1051, 22.917, 24.238, 27.53, 90.691.

A.7.1 Measurement Method

The following steps outline the procedure used to measure the conducted emissions from the EUT.

1. Determine frequency range for measurements: From CFR 2.1051 the spectrum should be investigated from the lowest radio frequency generated in the equipment up to at least the 10th harmonic of the carrier frequency. For the mobile station equipment tested, this equates to a frequency range of 13 MHz to 9 GHz, data taken from 10 MHz to 25 GHz.
2. Determine EUT transmit frequencies: below outlines the band edge frequencies pertinent to conducted emissions testing.
3. The number of sweep points of spectrum analyzer is set to 30001 which is greater than span/RBW.

A. 7.2 Measurement Limit

Part 22.917, Part 24.238 and Part 27.53(h) specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

Part 27.53(m)(4) specifies for mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Part 27.53(a) states for mobile and portable stations operating in the 2305–2315 MHz and 2350–2360 MHz bands: By a factor of not less than: 43 +10 log (P) dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and

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2341 MHz, and not less than 67 + 10 log (P) dB onall frequencies between 2328 and 2337MHz; By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305 MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296 MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292 MHz, and 70 + 10 log (P) dB below 2288 MHz; By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

Part 90.691 states that out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

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A. 7.3 Measurement result

Only worst case result is given below

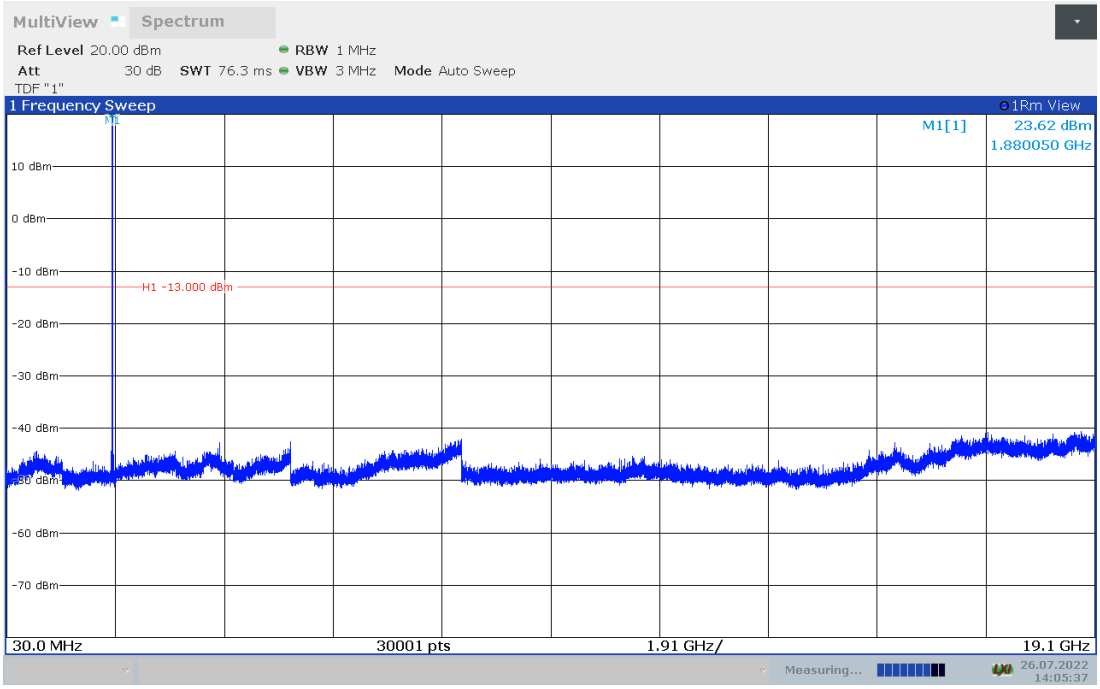
A. 7.3 Measurement result

Only worst case result is given below

LTE band 2 : 30MHz – 19.1GHz

Spurious emission limit –13dBm.

NOTE: peak above the limit line is the carrier frequency.



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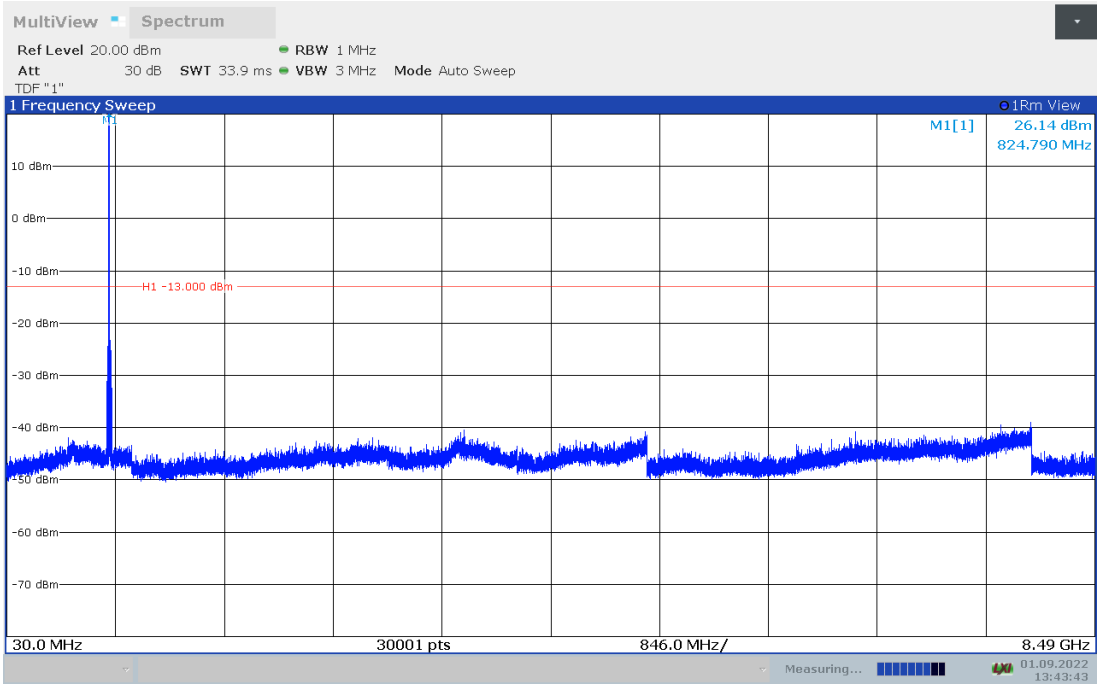
LTE Band 5: 30MHz – 8.49GHz

Spurious emission limit –13dBm.

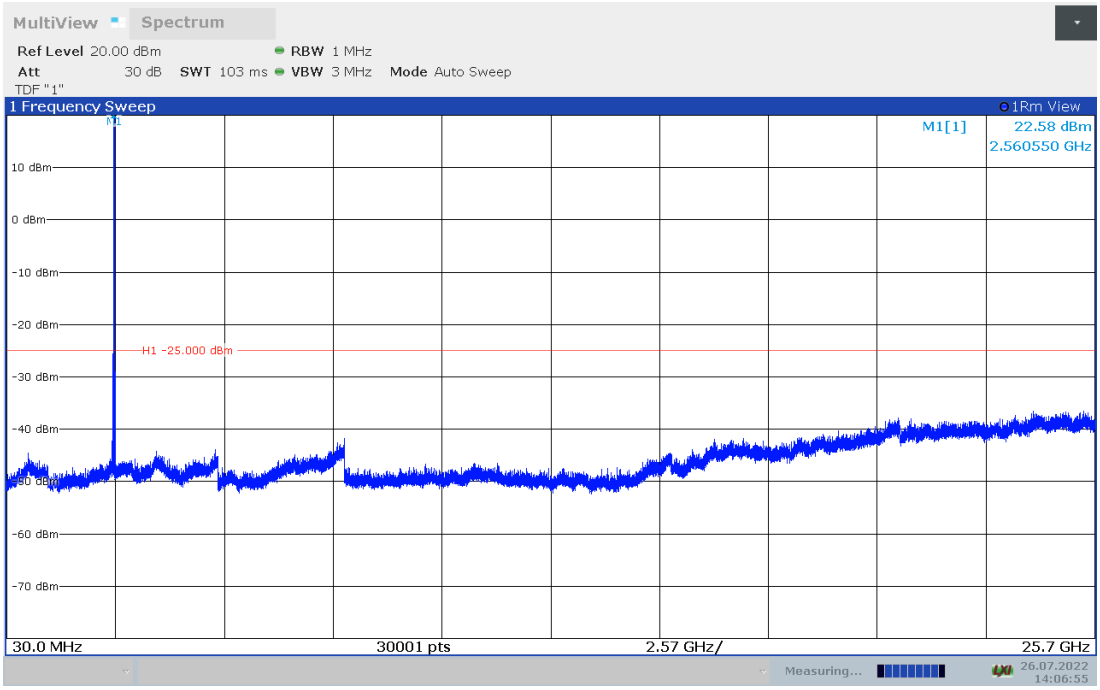
NOTE: peak above the limit line is the carrier frequency.



LTE band 7 20MHz QPSK: 30MHz – 25.7GHz

Spurious emission limit –25dBm.

NOTE: peak above the limit line is the carrier frequency.



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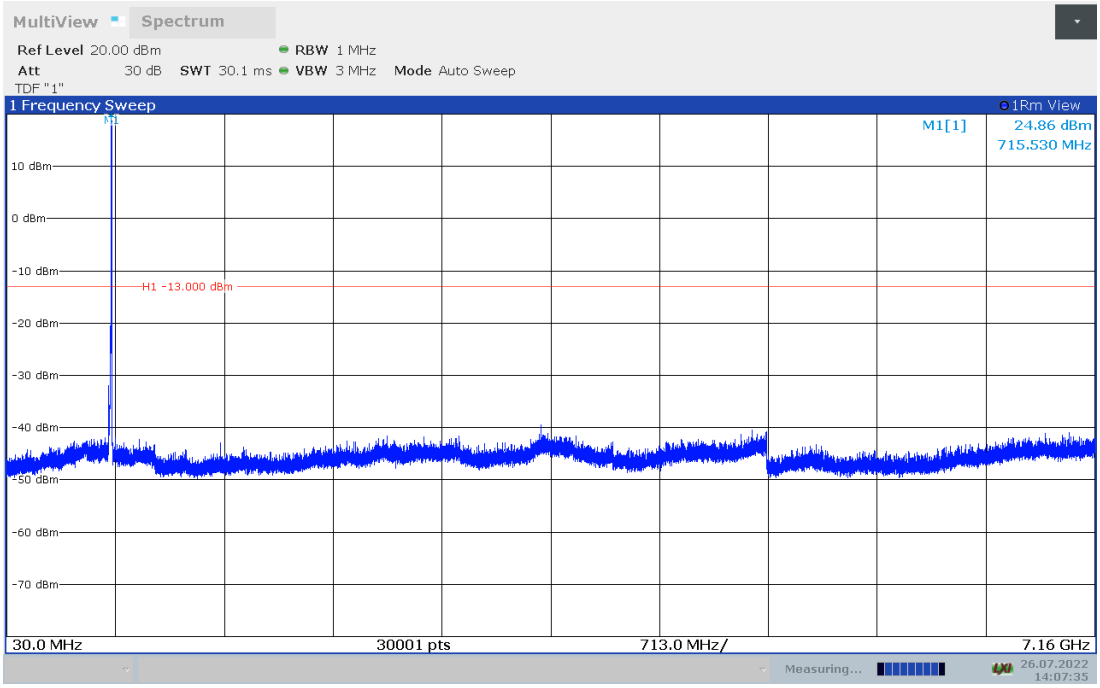
LTE band 12: 30MHz – 7.16GHz

Spurious emission limit –13dBm.

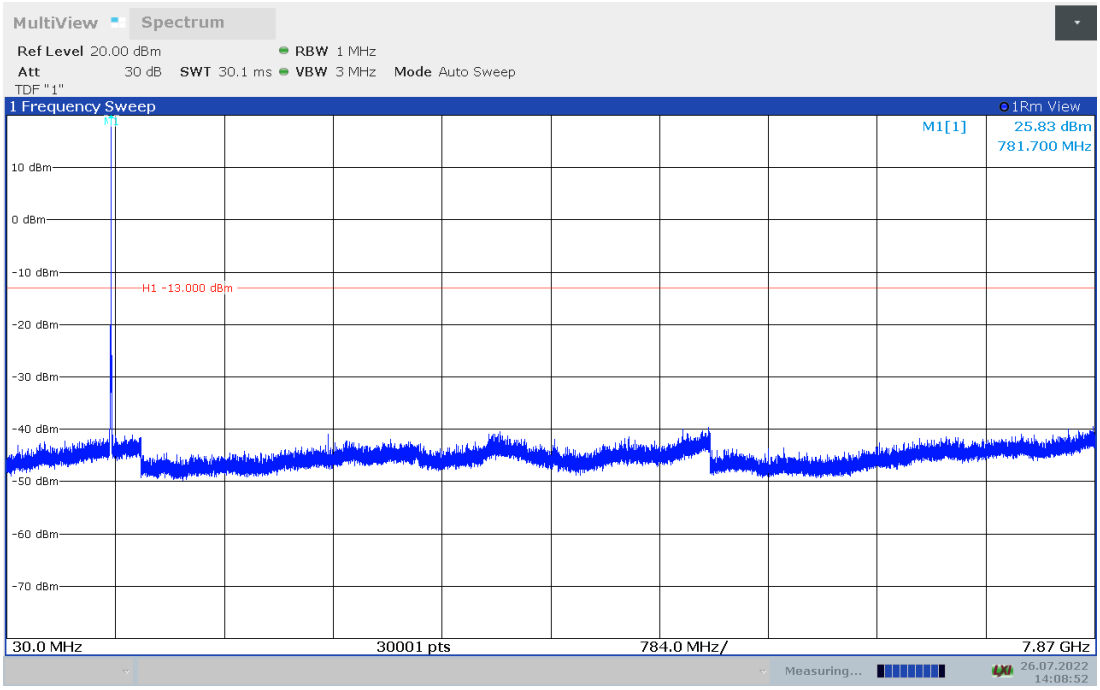
NOTE: peak above the limit line is the carrier frequency.



LTE band 13: 30MHz – 7.87GHz

Spurious emission limit –13dBm.

NOTE: peak above the limit line is the carrier frequency.



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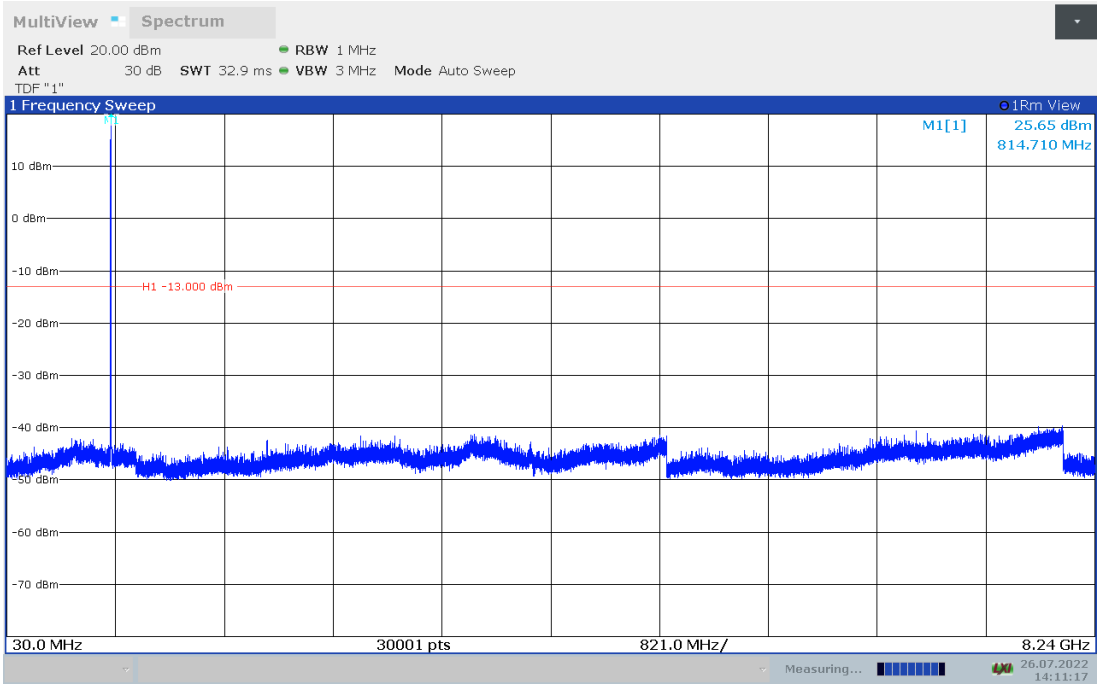
LTE band 26(814MHz-824MHz): 30MHz – 8.24GHz

Spurious emission limit –13dBm.

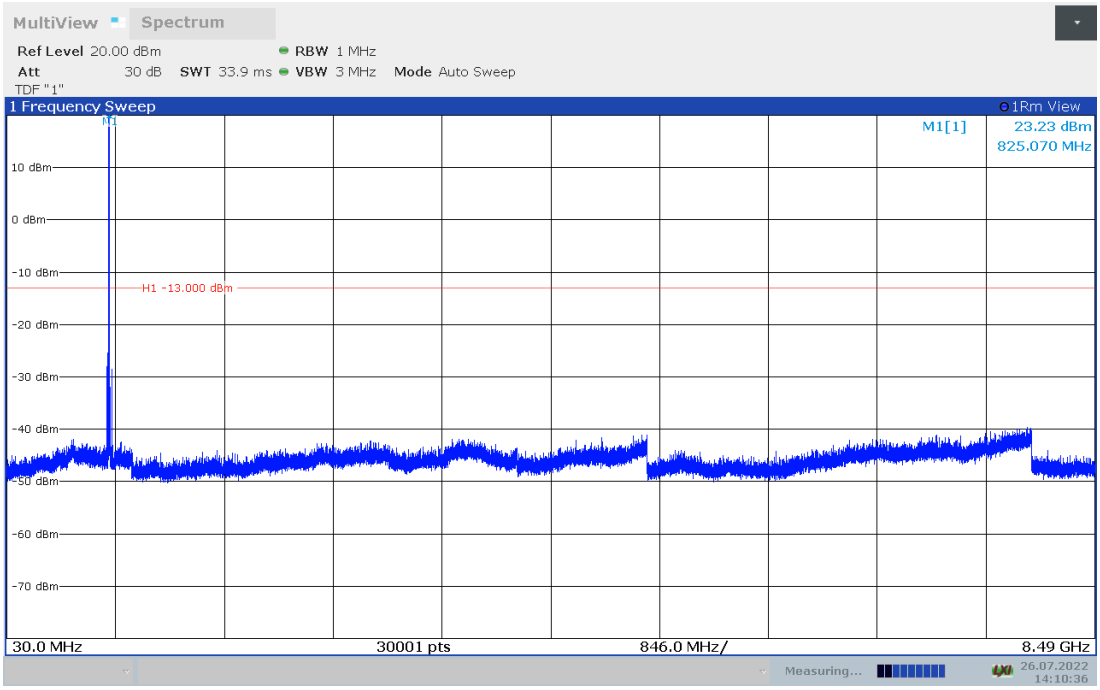
NOTE: peak above the limit line is the carrier frequency.



LTE band 26(824MHz-849MHz): 30MHz – 8.49GHz

Spurious emission limit –13dBm.

NOTE: peak above the limit line is the carrier frequency.



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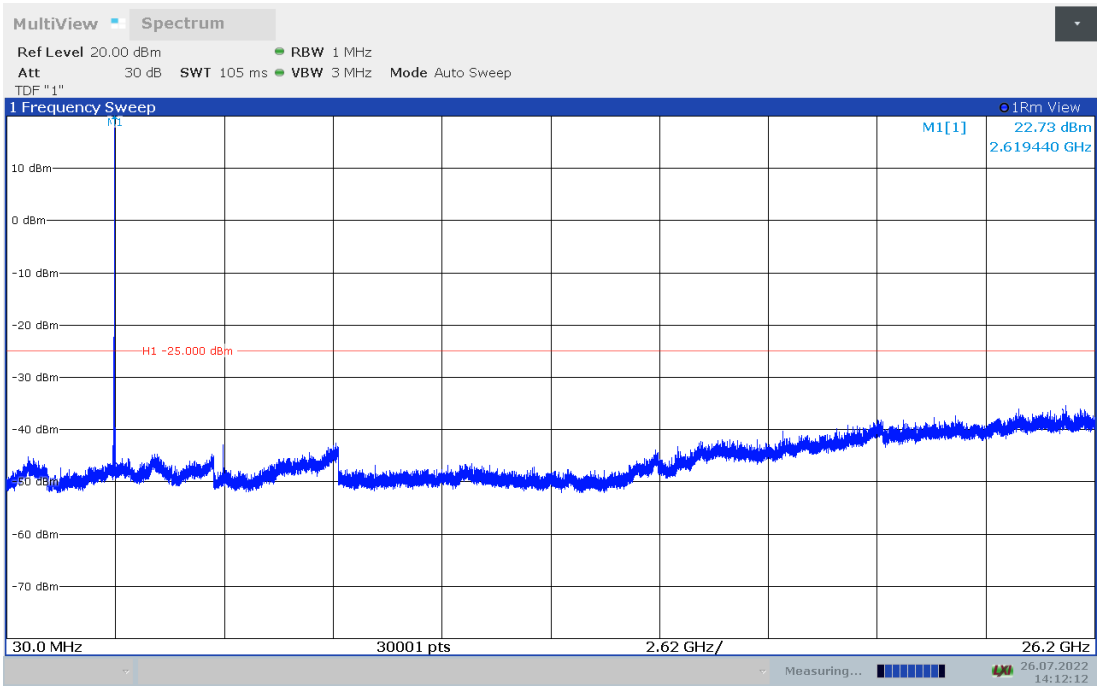
LTE band 38: 30MHz – 26.2GHz

Spurious emission limit –25dBm.

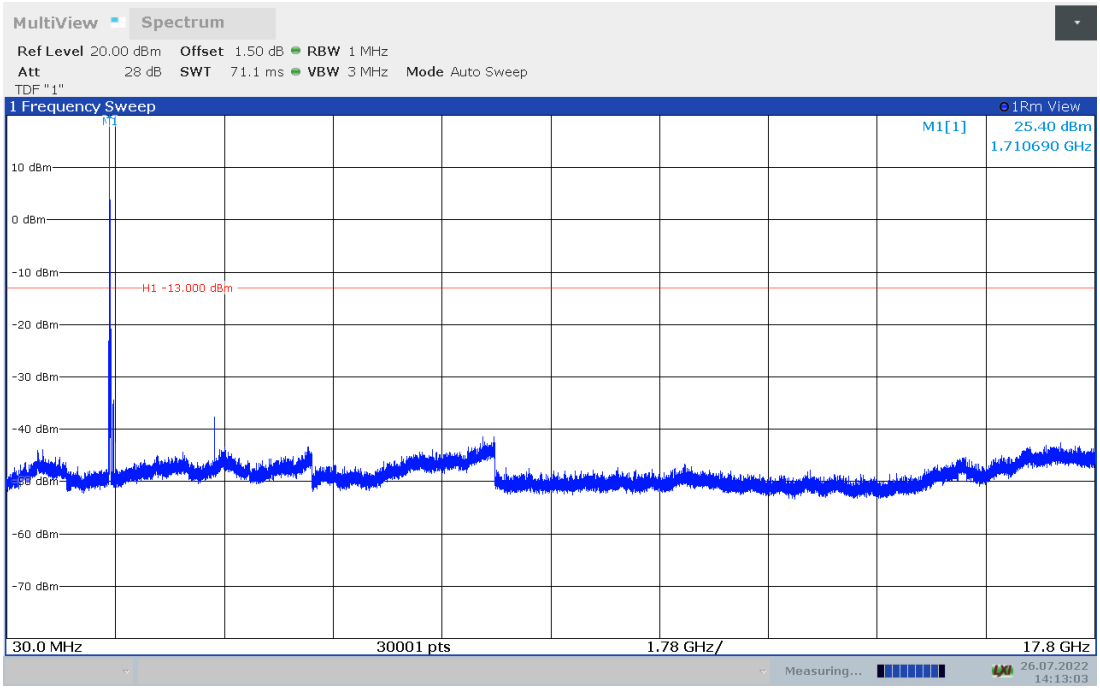
NOTE: peak above the limit line is the carrier frequency.



LTE band 66: 30MHz – 17.8GHz

Spurious emission limit –13dBm.

NOTE: peak above the limit line is the carrier frequency.



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A.8 PEAK-TO-AVERAGE POWER RATIO

Reference

FCC: CFR Part 24.232, 27.50(d), KDB971168 D01(5.7).

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

a)Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;

b) Set resolution/measurement bandwidth ⩾ signal' s occupied bandwidth;

c) Set the number of counts to a value that stabilizes the measured CCDF curve;

d) Set the measurement interval to 1 ms

e)Record the maximum PAPR level associated with a probability of 0.1%

A.8.1 Measurement limit

not exceed 13 dB

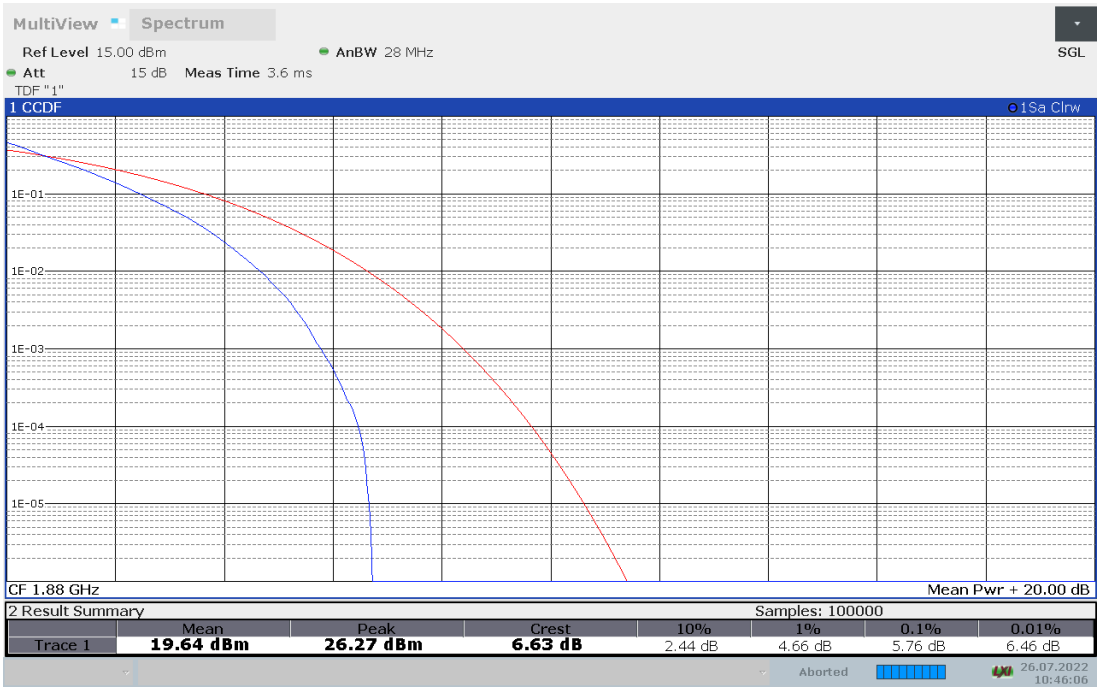
A.8.2 Measurement results

Only worst case result is given below

LTE band 2

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)	
		QPSK	16QAM
1880.0	20	5.76	6.54

LTE band 2, 20MHz Bandwidth, QPSK (PAPR)



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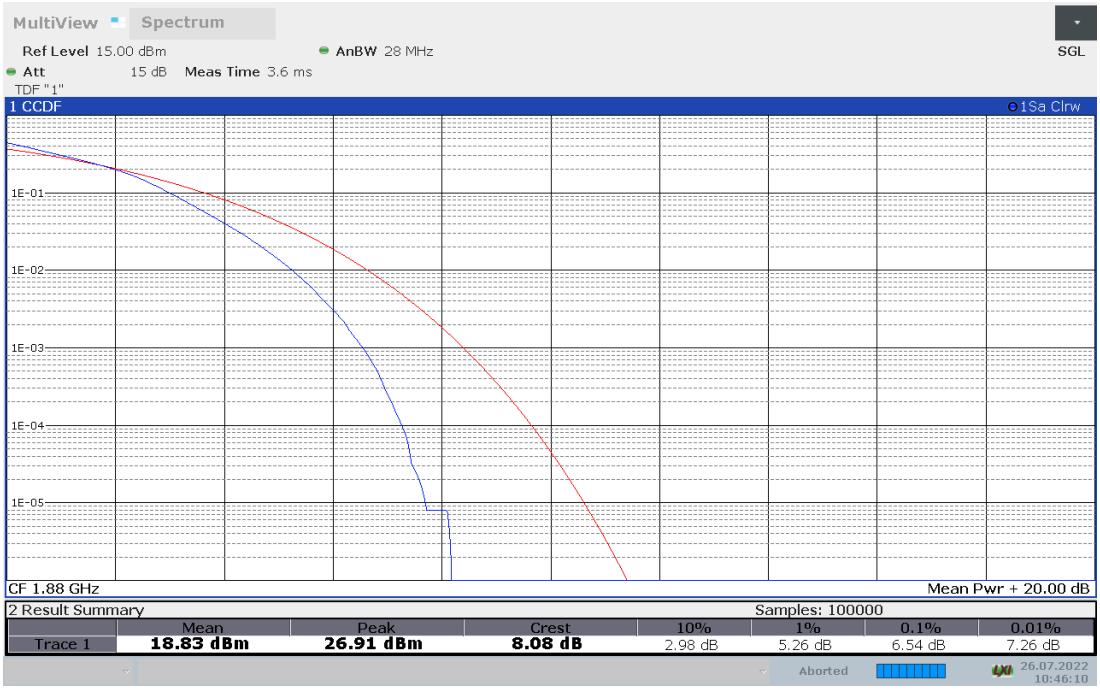
LTE band 2, 20MHz Bandwidth, 16QAM (PAPR)



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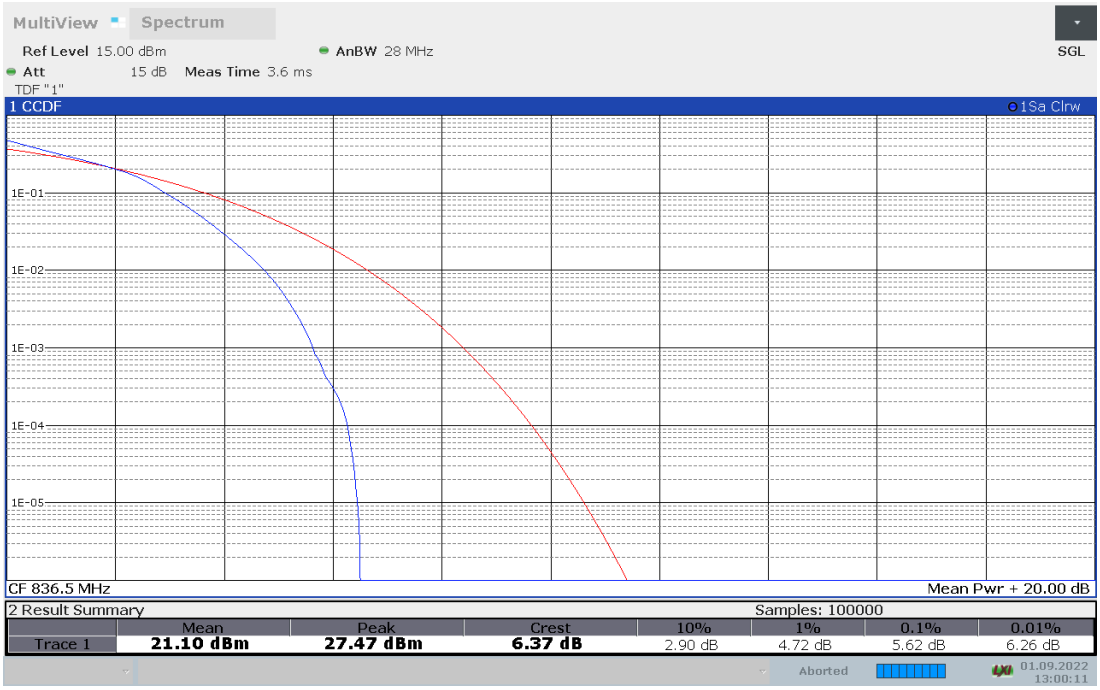
LTE Band 5

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)	
		QPSK	16QAM
836.5	10	4.84	5.62

LTE Band 5, 15MHz Bandwidth, QPSK (PAPR)

LTE Band 5, 15MHz Bandwidth, 16QAM (PAPR)



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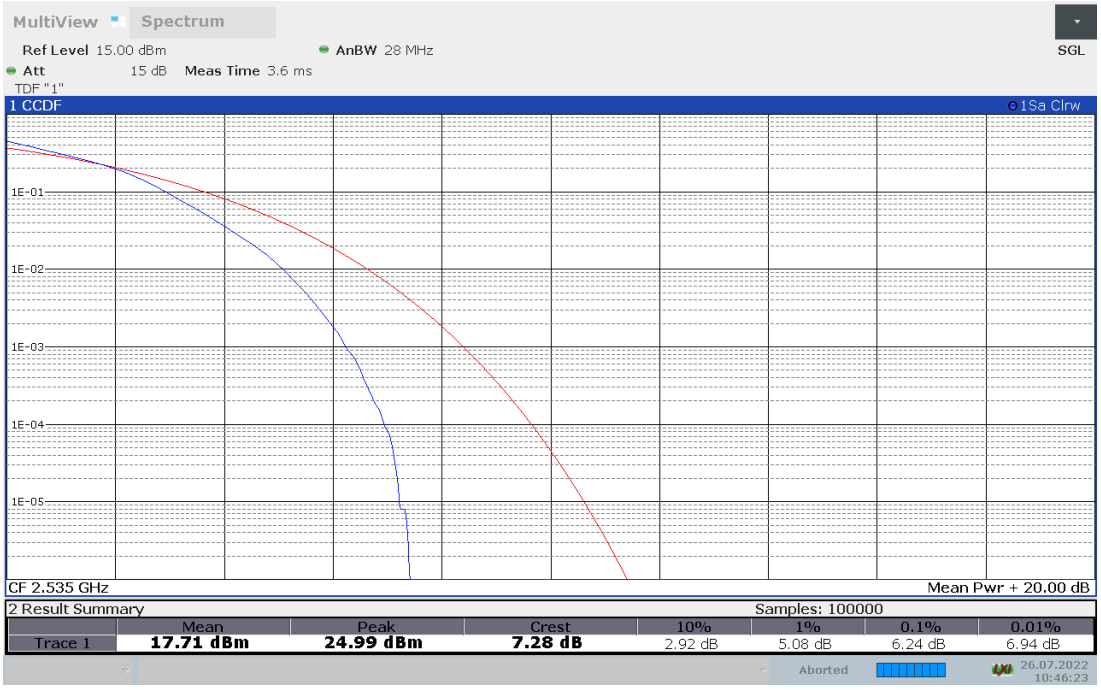
LTE band 7

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)	
		QPSK	16QAM
2535.0	20	5.48	6.24

LTE band 7, 20MHz Bandwidth, QPSK (PAPR)

LTE band 7, 20MHz Bandwidth, 16QAM (PAPR)



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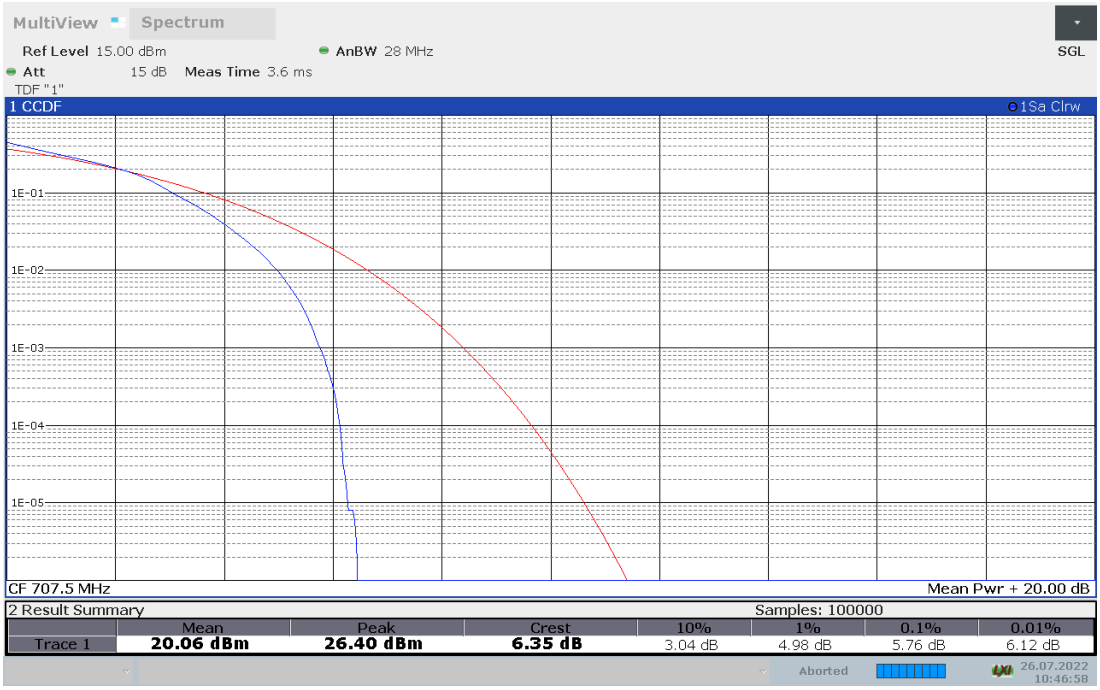
LTE band 12

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)	
		QPSK	16QAM
707.5	10	4.96	5.76

LTE band 12, 10MHz Bandwidth, QPSK (PAPR)

LTE band 12, 10MHz Bandwidth, 16QAM (PAPR)



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LTE band 13

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)	
		QPSK	16QAM
782.0	10	4.74	5.56

LTE band 13, 10MHz Bandwidth, QPSK (PAPR)

LTE band 13, 10MHz Bandwidth, 16QAM (PAPR)

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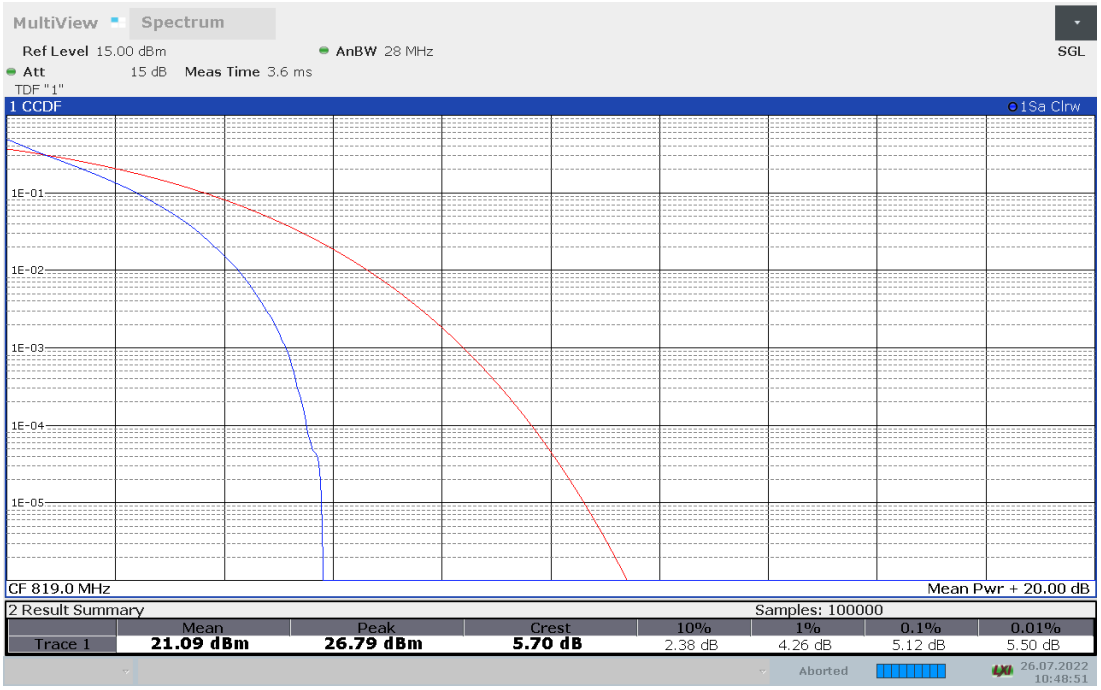
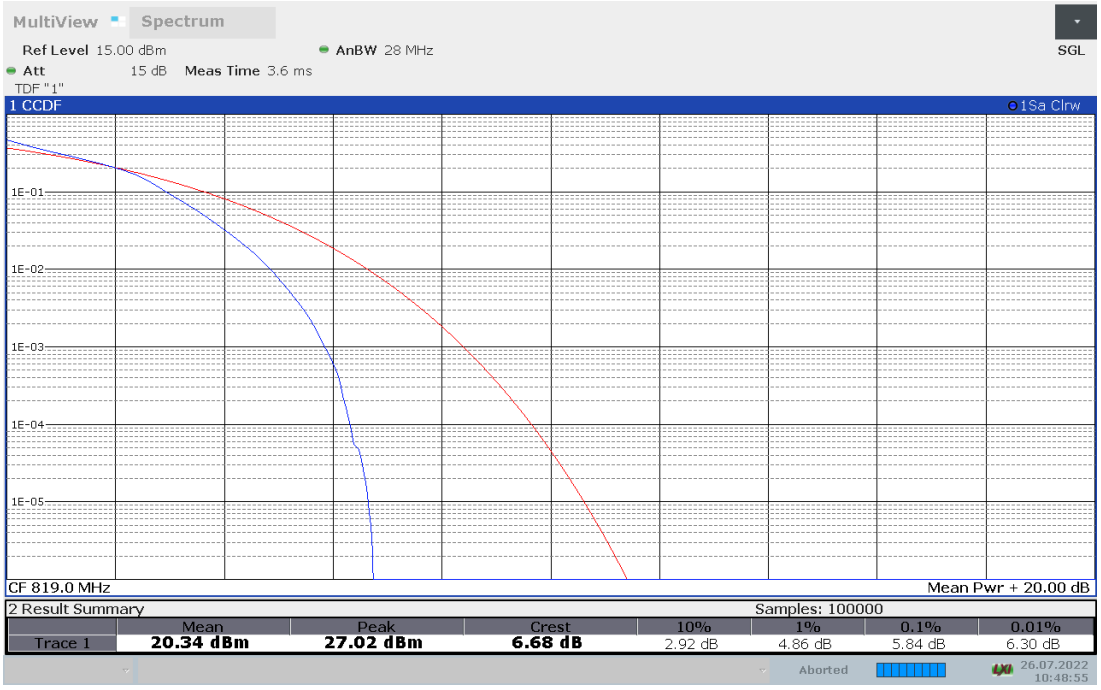
LTE band 26(814MHz -824MHz)

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)	
		QPSK	16QAM
819.0	10	5.12	5.84

LTE band 26(814MHz -824MHz), 10MHz Bandwidth, QPSK (PAPR)



LTE band 26(814MHz -824MHz), 10MHz Bandwidth, 16QAM (PAPR)



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LTE band 26(824MHz -849MHz)

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)	
		QPSK	16QAM
836.5	10	5.32	5.92

LTE band 26(824MHz -849MHz), 15MHz Bandwidth, QPSK (PAPR)

LTE band 26(824MHz -849MHz), 15MHz Bandwidth, 16QAM (PAPR)

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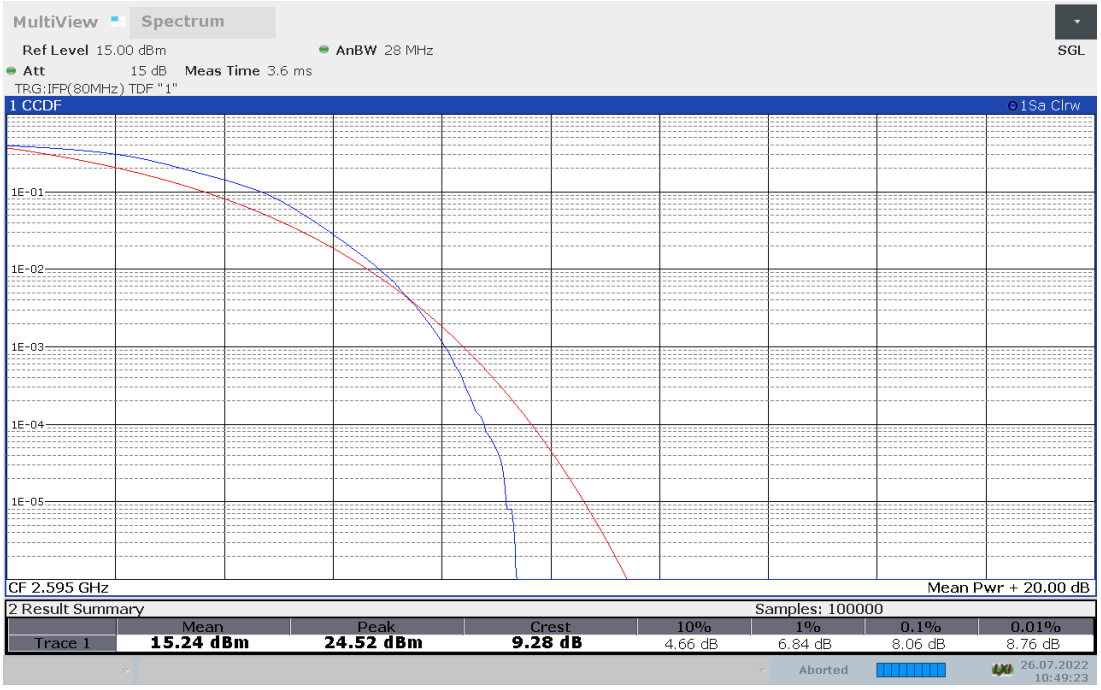
LTE band 38

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)	
		QPSK	16QAM
2595.0	20	7.38	8.06

LTE band 38, 20MHz Bandwidth, QPSK (PAPR)

LTE band 38, 20MHz Bandwidth, 16QAM (PAPR)



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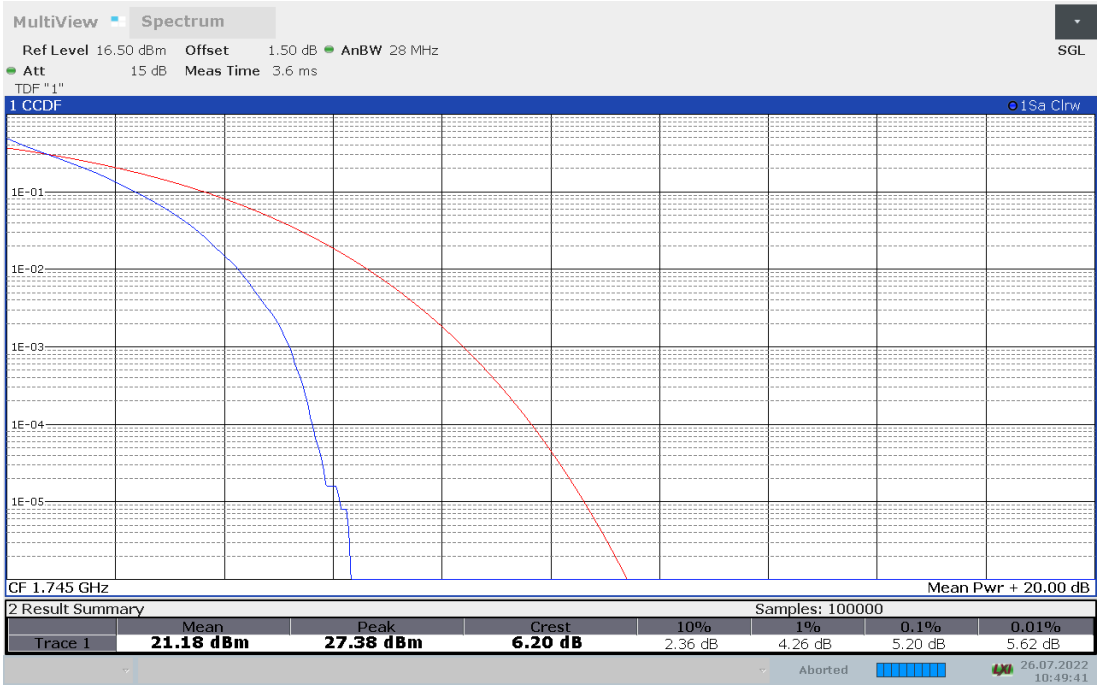
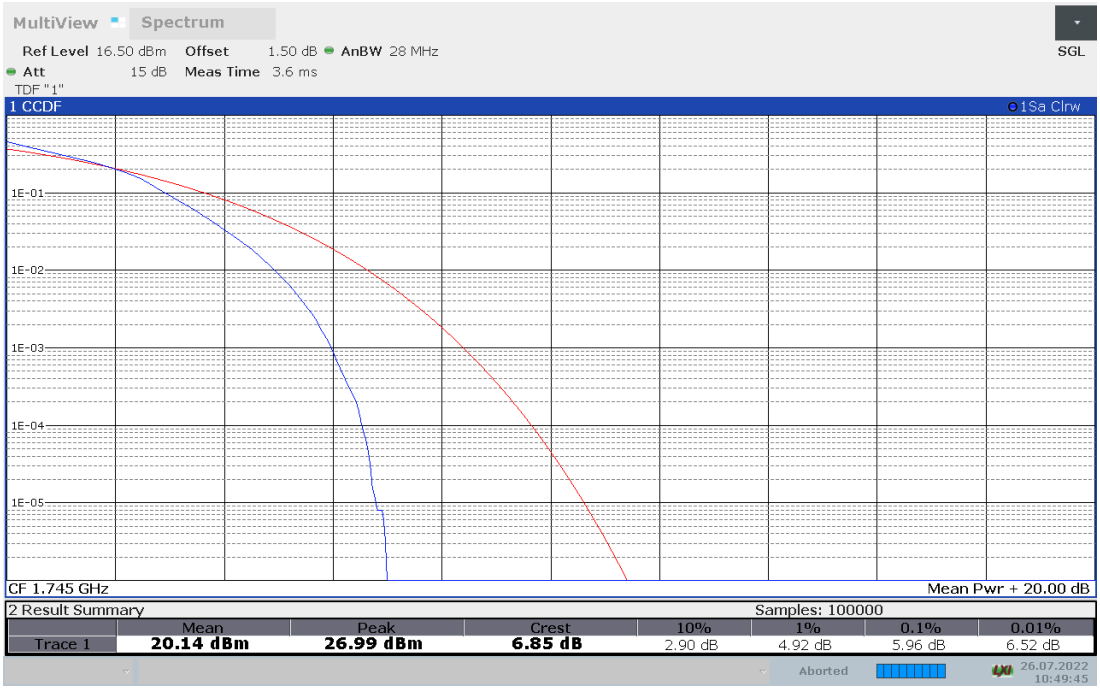
LTE band 66

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)	
		QPSK	16QAM
1745.0	20	5.20	5.96

LTE band 66, 20MHz Bandwidth, QPSK (PAPR)



LTE band 66, 20MHz Bandwidth, 16QAM (PAPR)



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