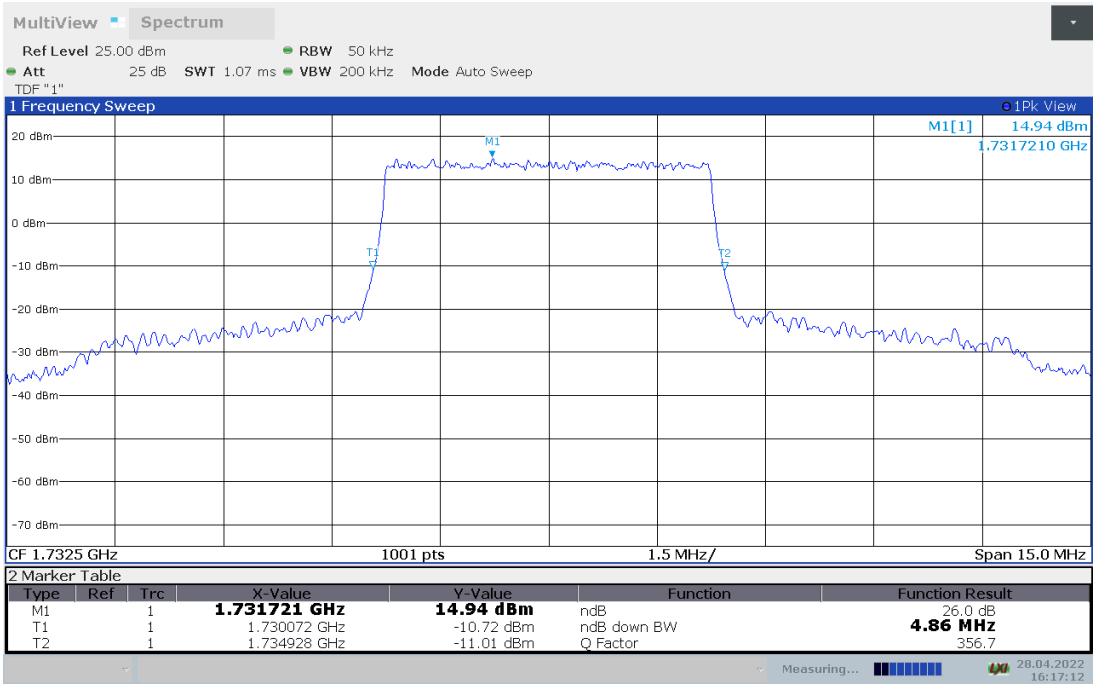
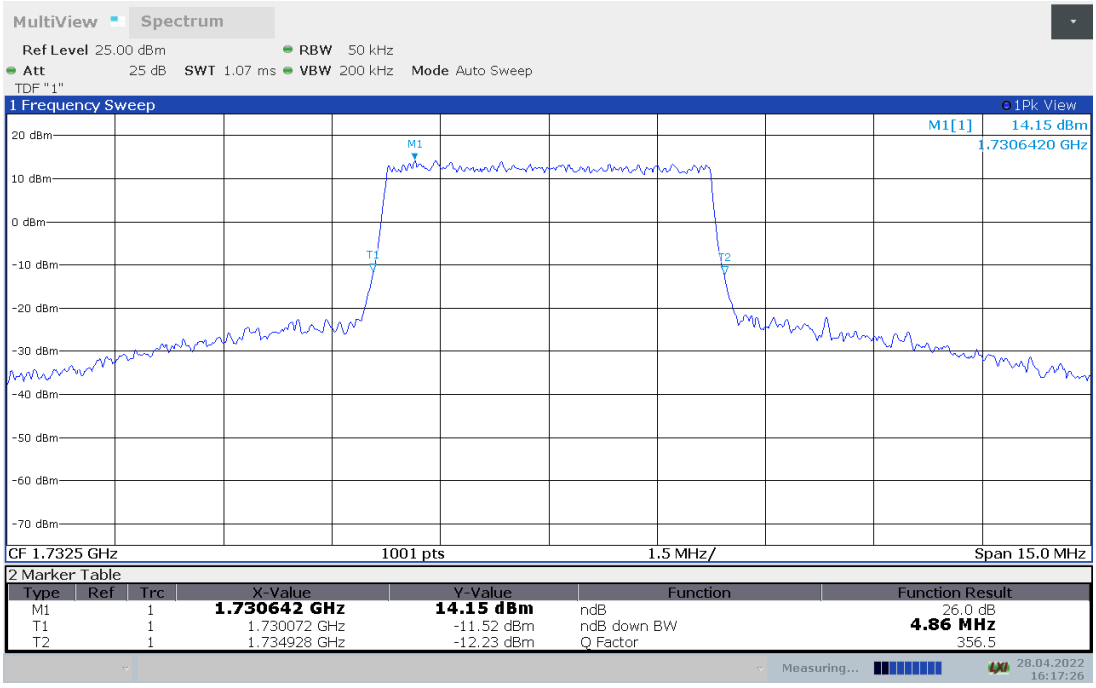
LTE band 4, 5MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1732.5	QPSK	16QAM	64QAM
	4.86	4.86	4.84

LTE band 4, 5MHz Bandwidth, QPSK (-26dBc BW)



LTE band 4, 5MHz Bandwidth,16QAM (-26dBc BW)



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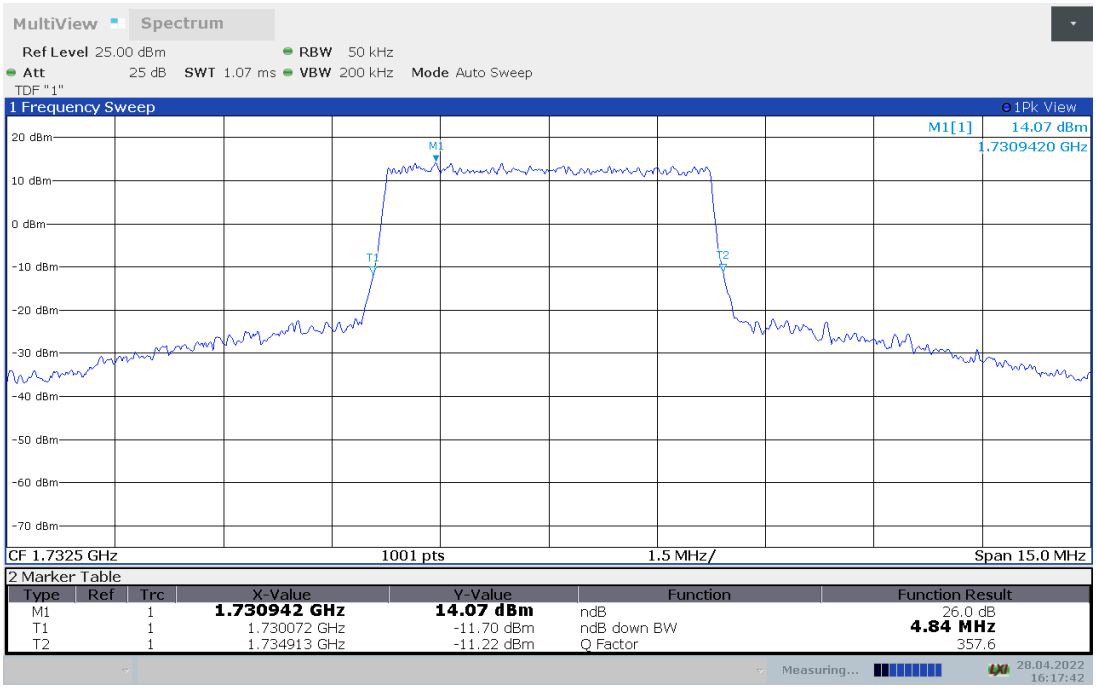
LTE band 4, 5MHz Bandwidth,64QAM (-26dBc BW)



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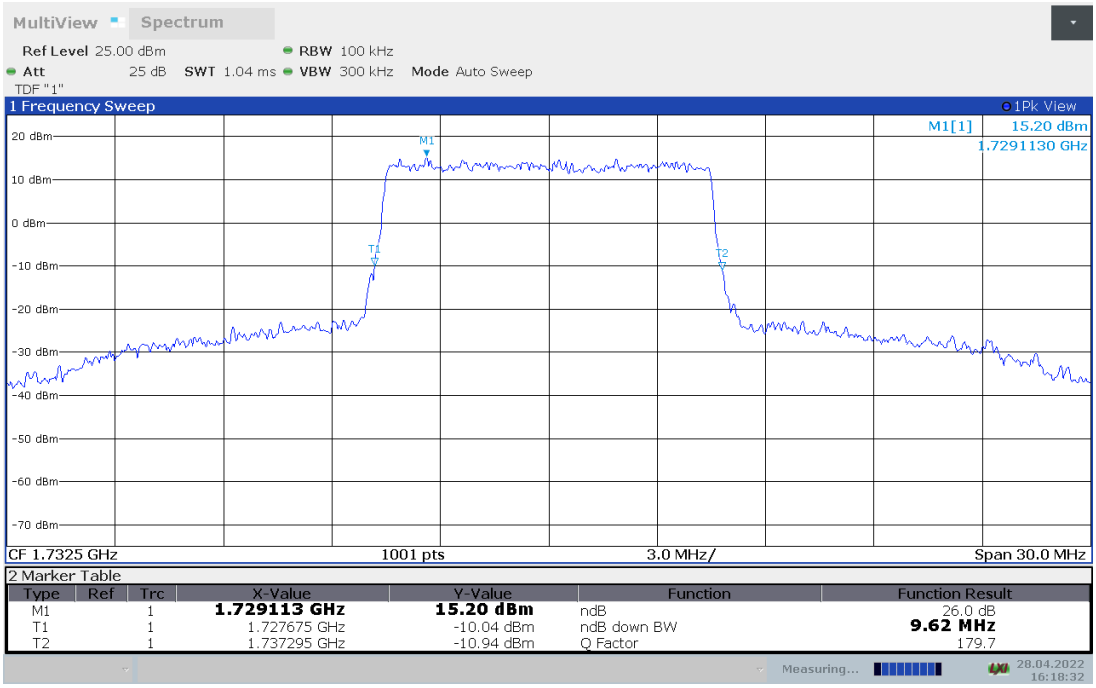
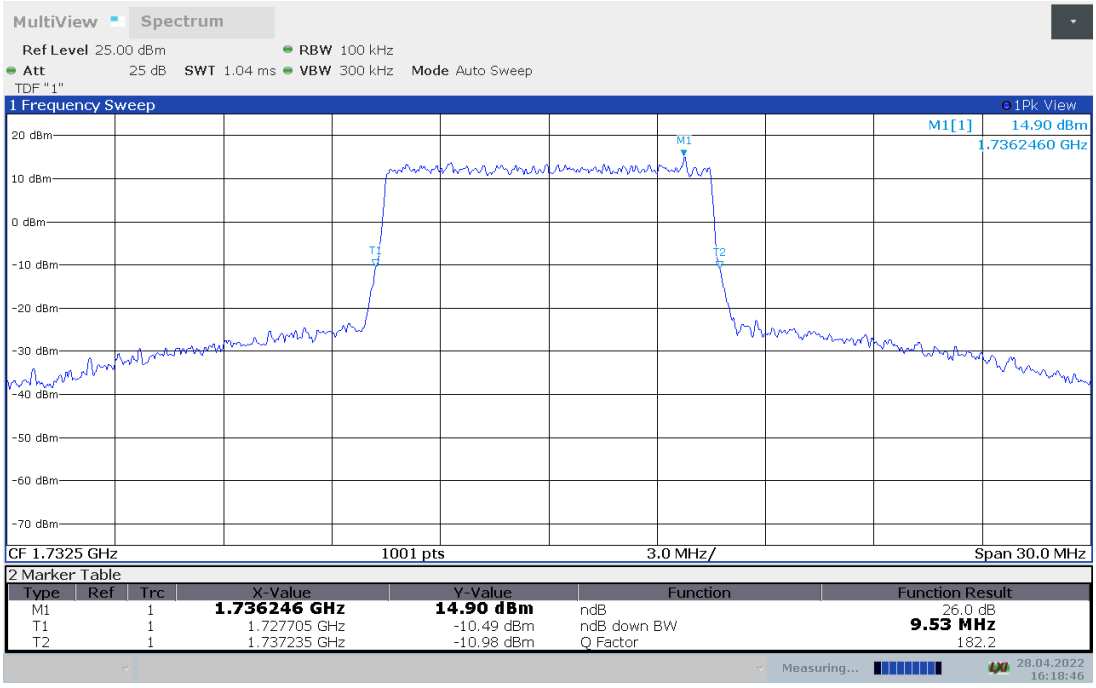
LTE band 4, 10MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1732.5	QPSK	16QAM	64QAM
	9.62	9.53	9.59

LTE band 4, 10MHz Bandwidth, QPSK (-26dBc BW)



LTE band 4, 10MHz Bandwidth, 16QAM (-26dBc BW)



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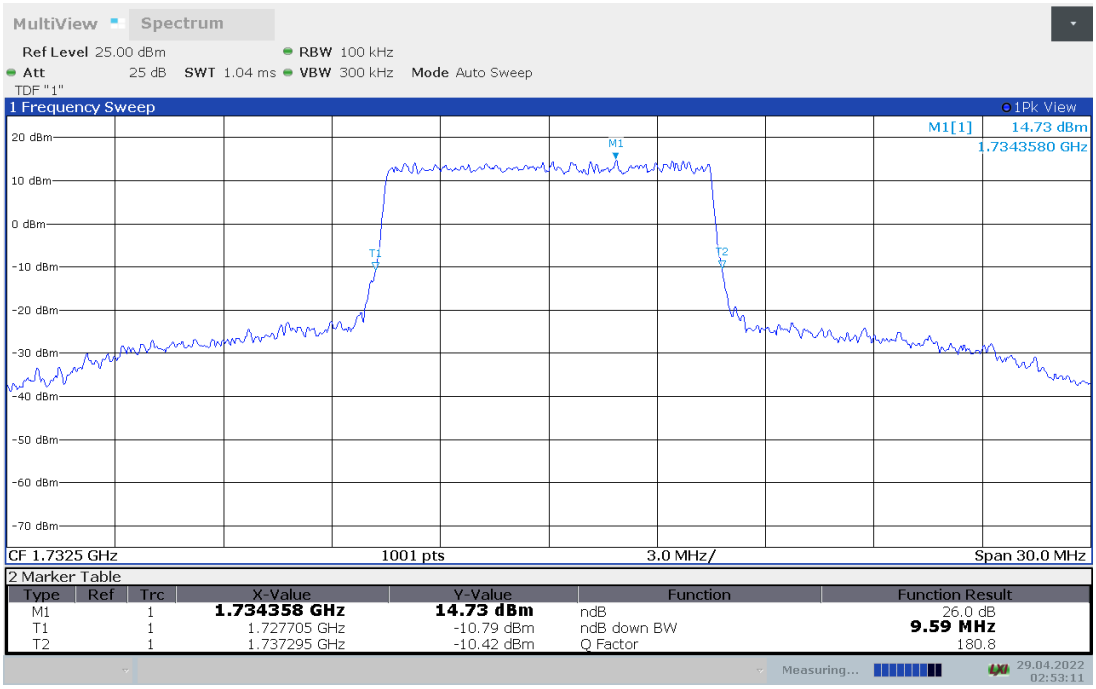
LTE band 4, 10MHz Bandwidth, 64QAM (-26dBc BW)



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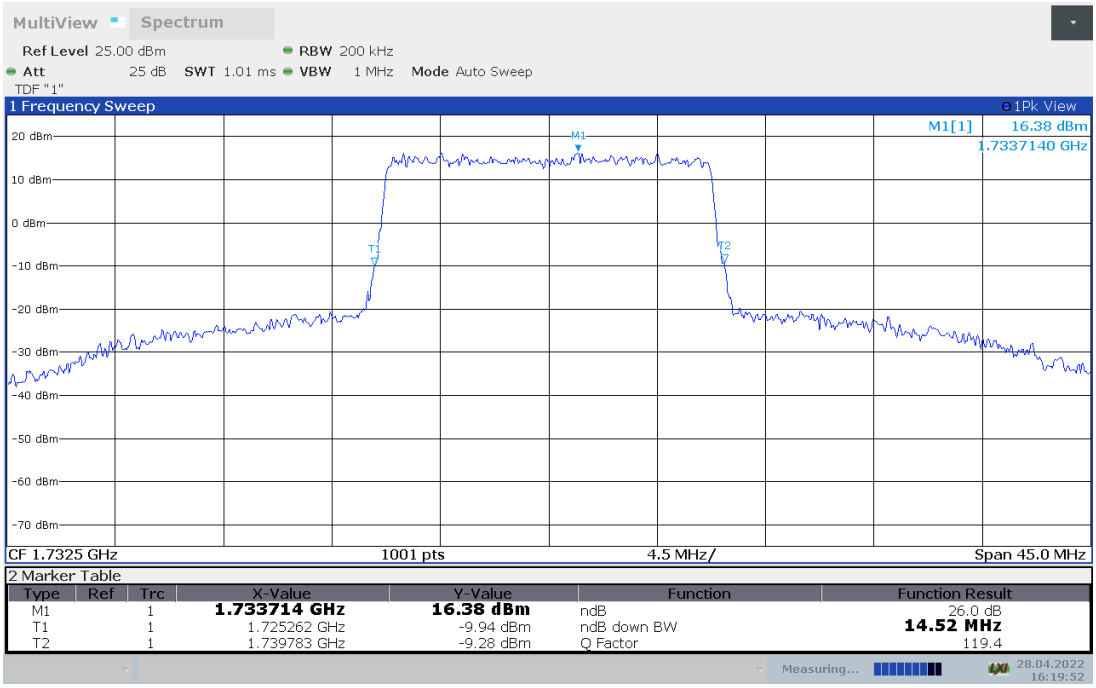
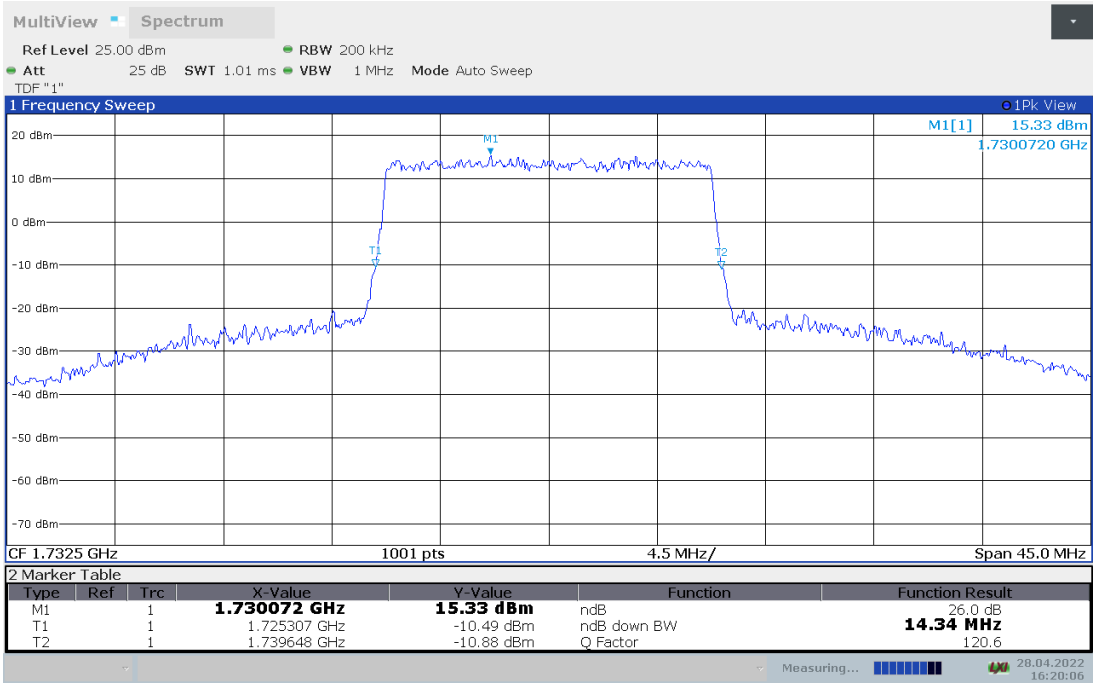
LTE band 4, 15MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1732.5	QPSK	16QAM	64QAM
	14.52	14.34	14.34

LTE band 4, 15MHz Bandwidth, QPSK (-26dBc BW)



LTE band 4, 15MHz Bandwidth, 16QAM (-26dBc BW)



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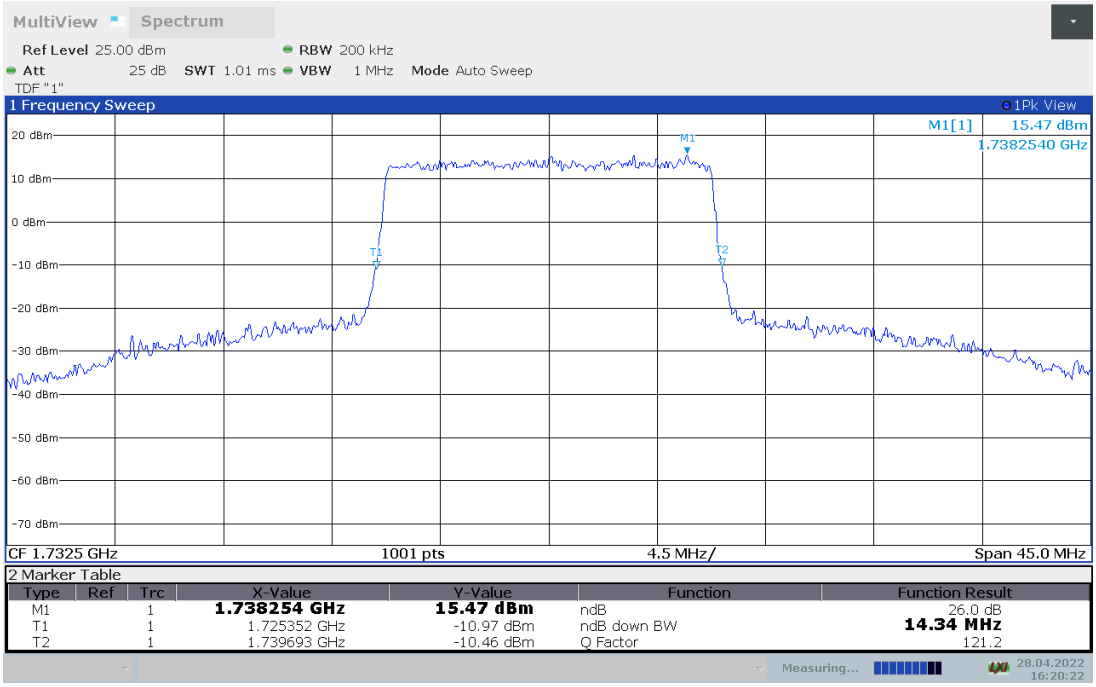
LTE band 4, 15MHz Bandwidth, 64QAM (-26dBc BW)



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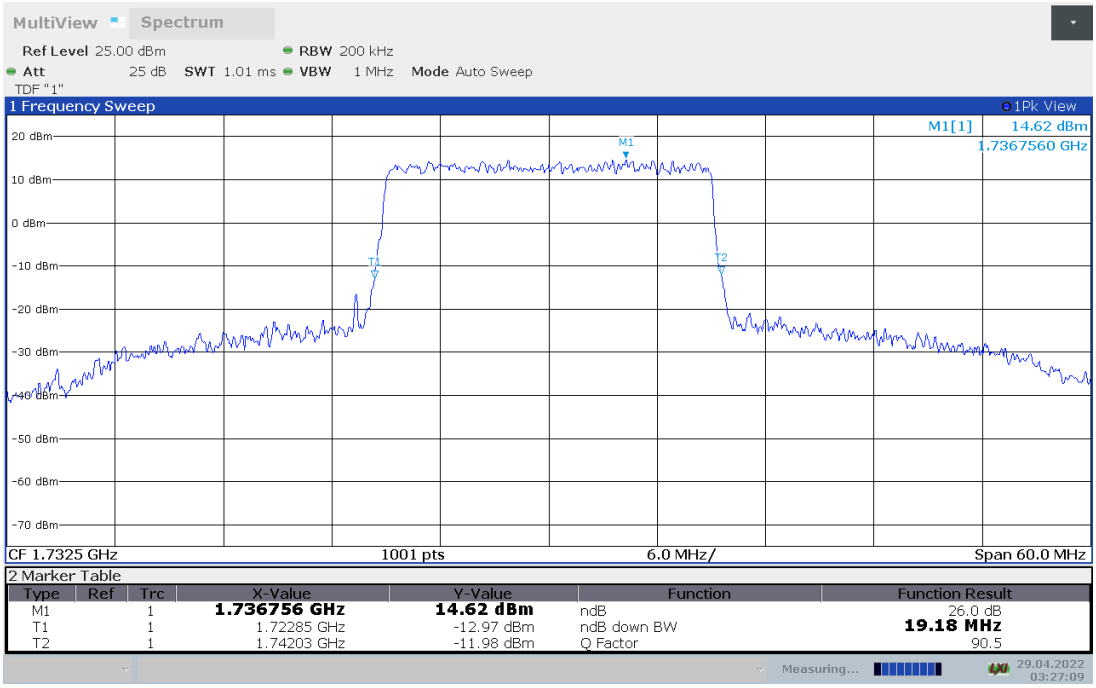
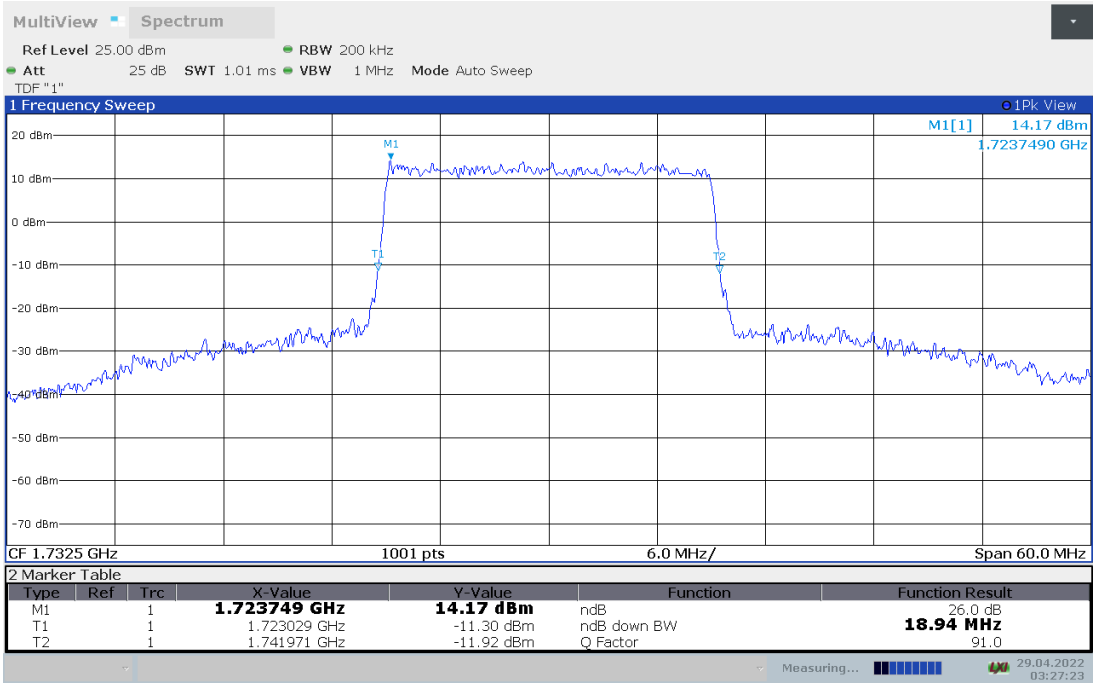
LTE band 4, 20MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1732.5	QPSK	16QAM	64QAM
	19.18	18.94	19.00

LTE band 4, 20MHz Bandwidth, QPSK (-26dBc BW)



LTE band 4, 20MHz Bandwidth, 16QAM (-26dBc BW)



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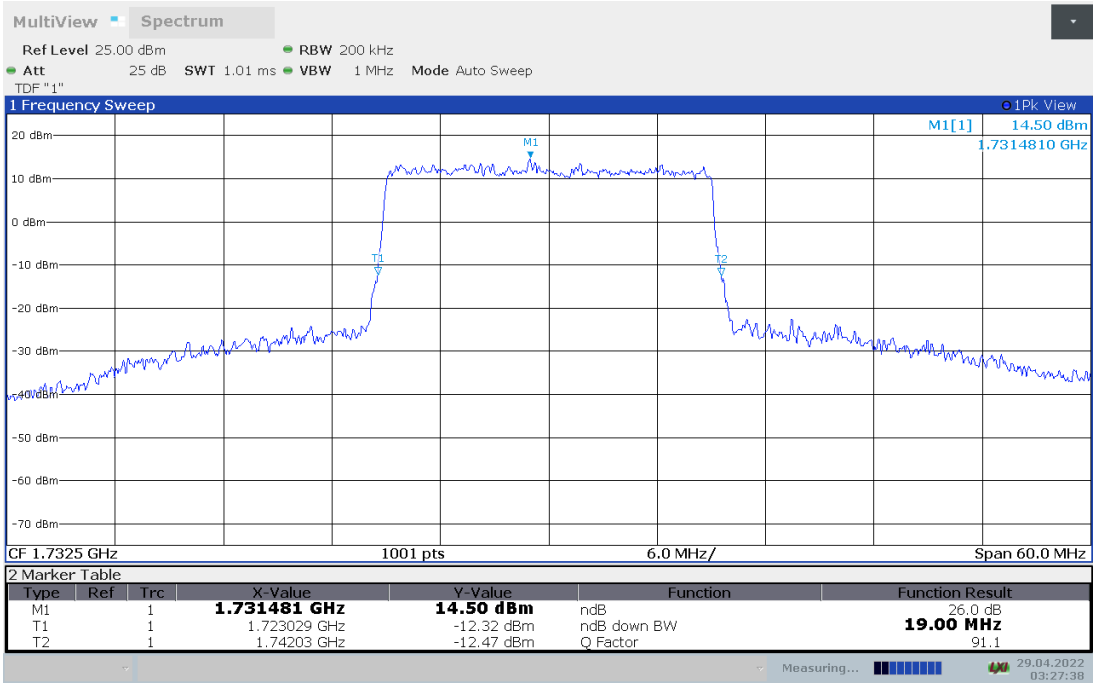
LTE band 4, 20MHz Bandwidth, 64QAM (-26dBc BW)



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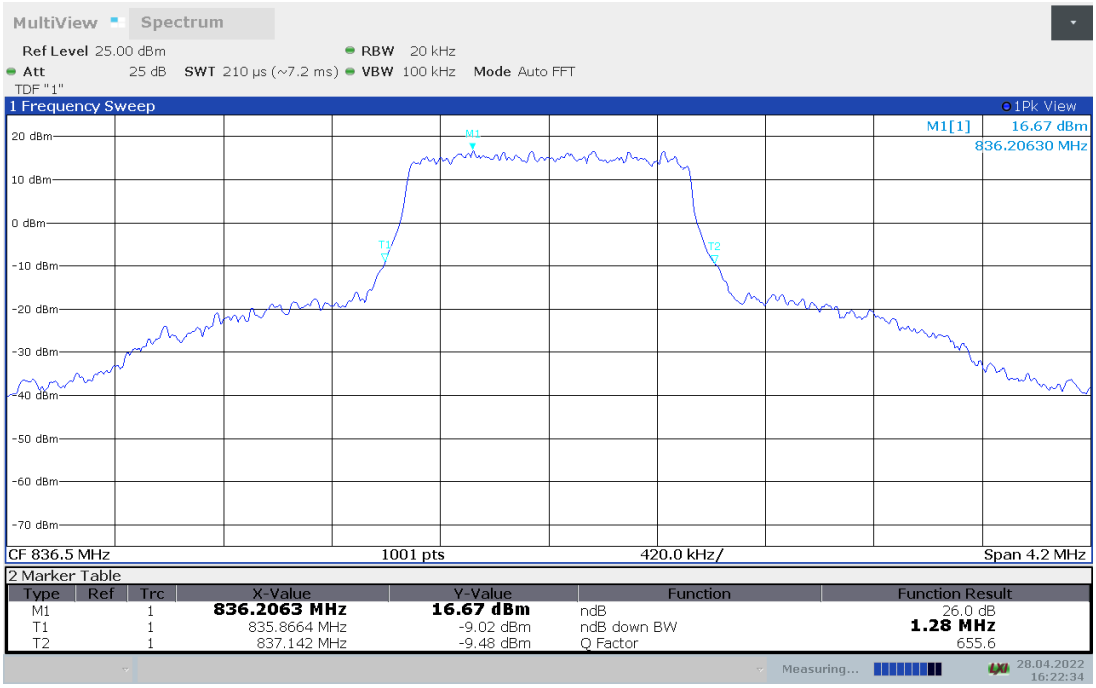
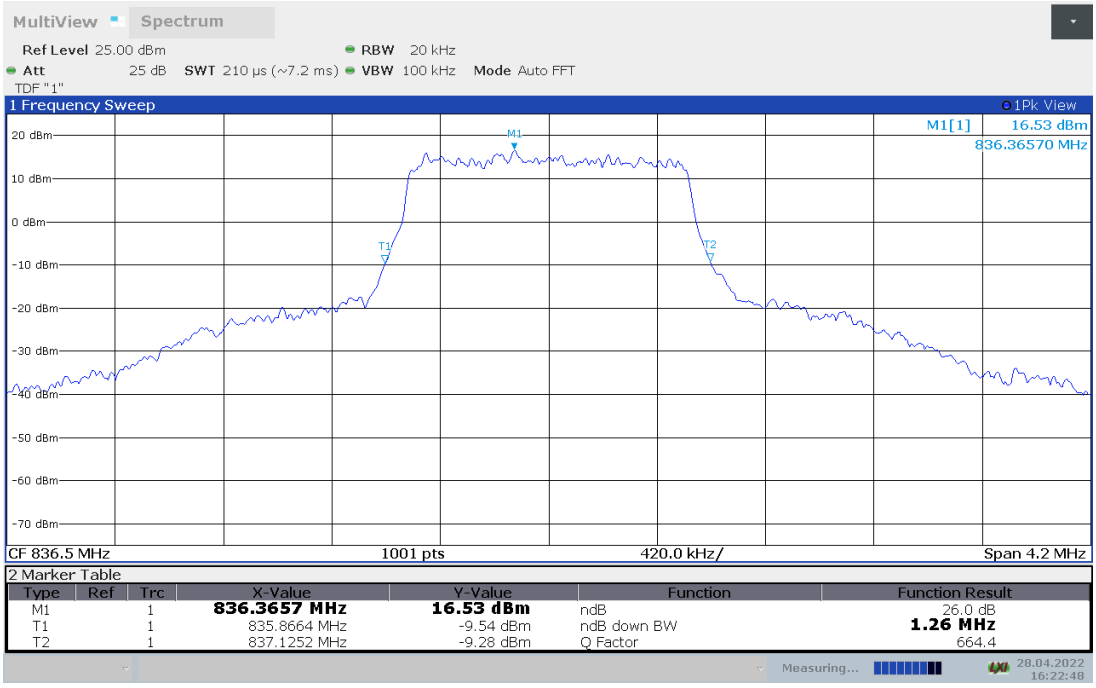
LTE band 5, 1.4MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
836.5	QPSK	16QAM	64QAM
	1.28	1.26	1.26

LTE band 5, 1.4MHz Bandwidth, QPSK (-26dBc BW)



LTE band 5, 1.4MHz Bandwidth, 16QAM (-26dBc BW)



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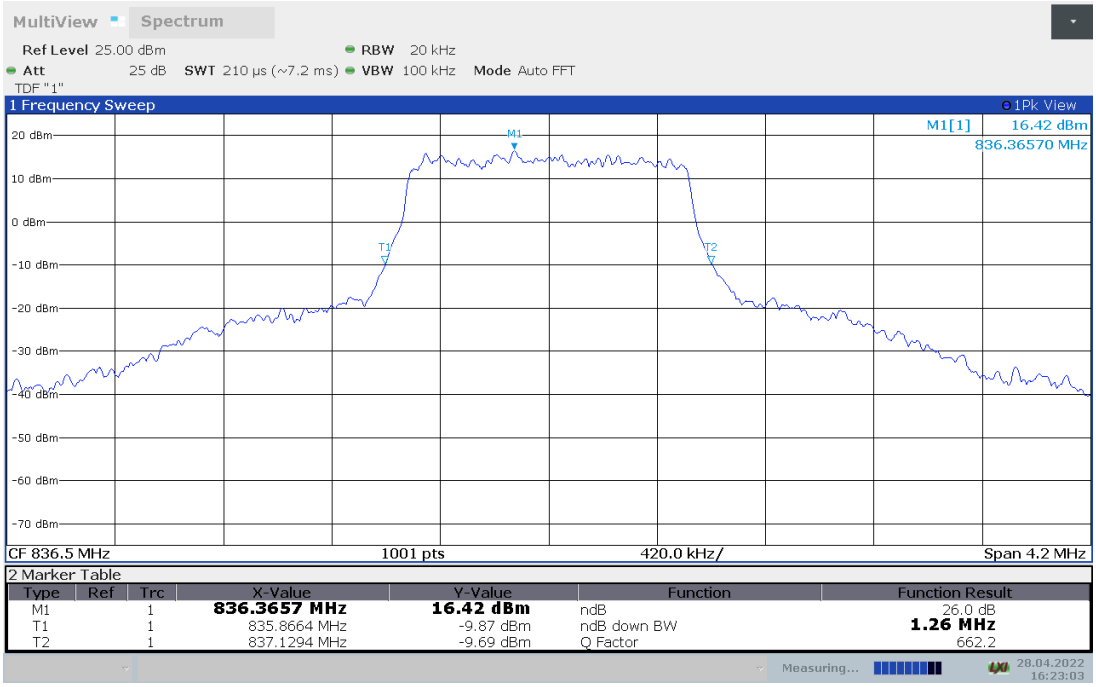
LTE band 5, 1.4MHz Bandwidth, 64QAM (-26dBc BW)



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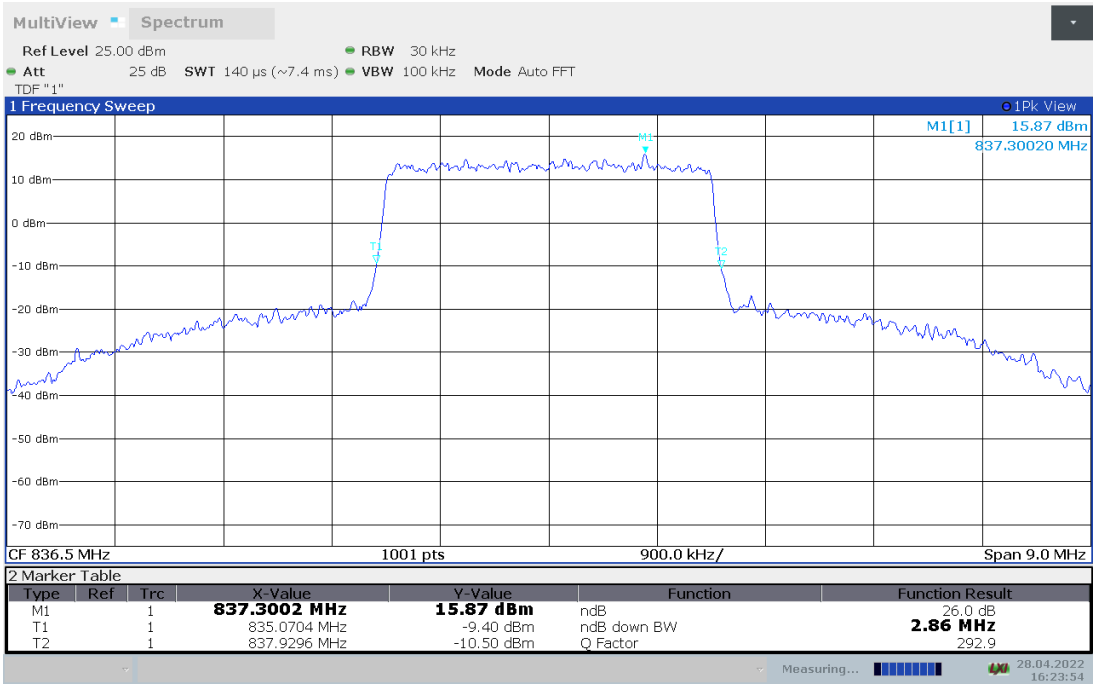
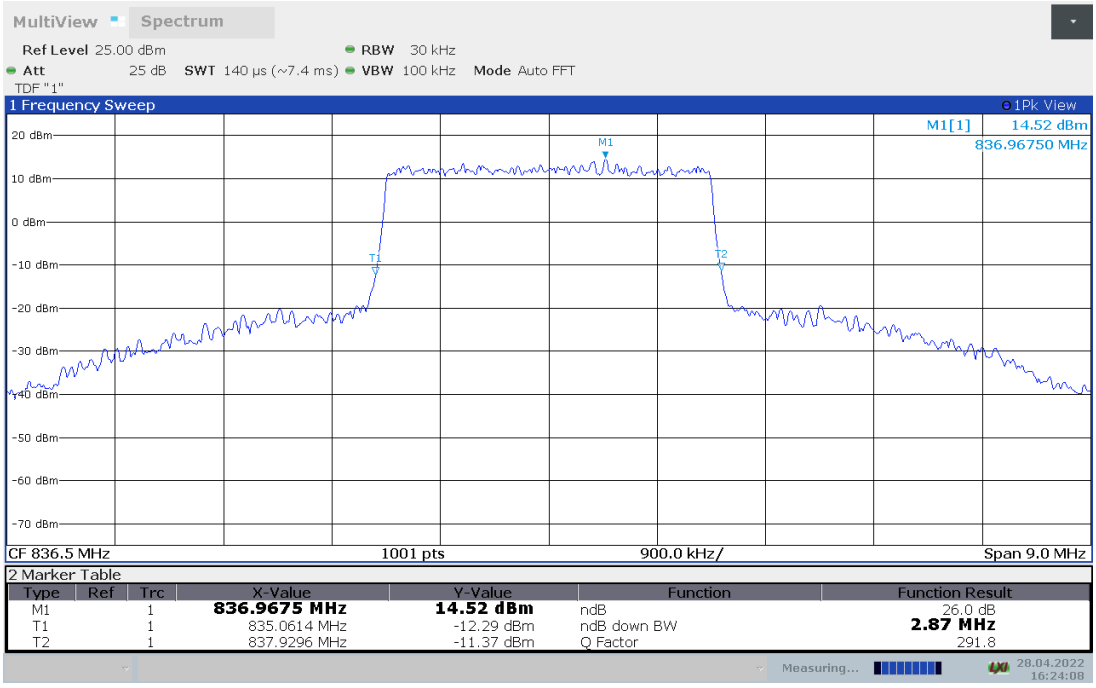
LTE band 5, 3MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
836.5	QPSK	16QAM	64QAM
	2.86	2.87	2.86

LTE band 5, 3MHz Bandwidth, QPSK (-26dBc BW)



LTE band 5, 3MHz Bandwidth, 16QAM (-26dBc BW)



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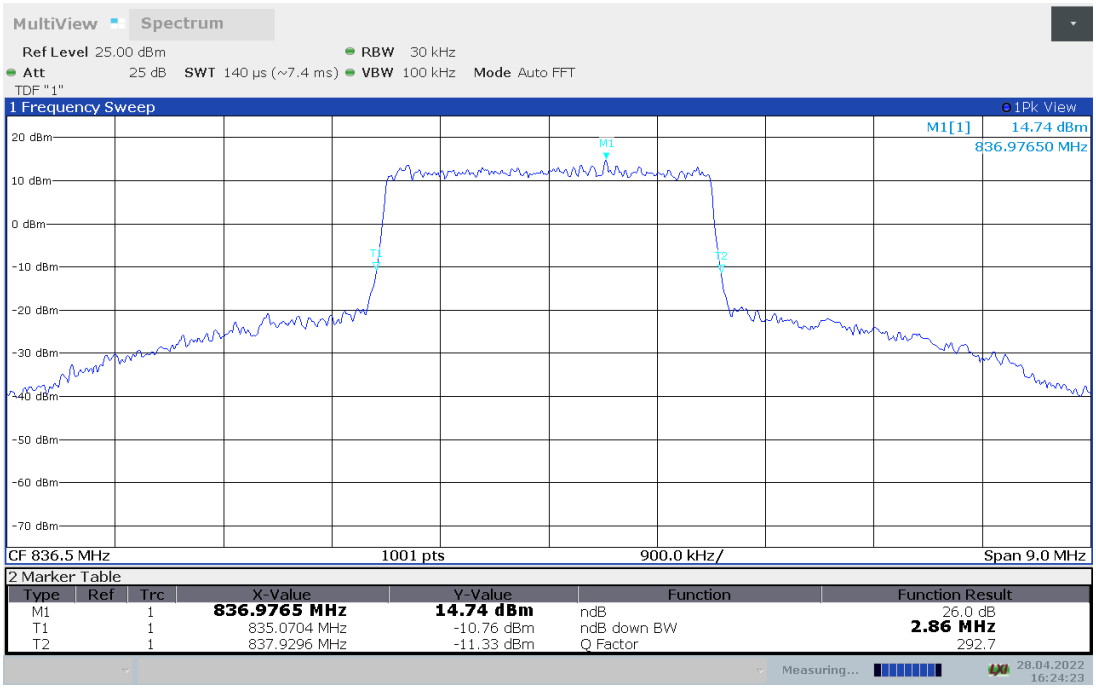
LTE band 5, 3MHz Bandwidth, 64QAM (-26dBc BW)



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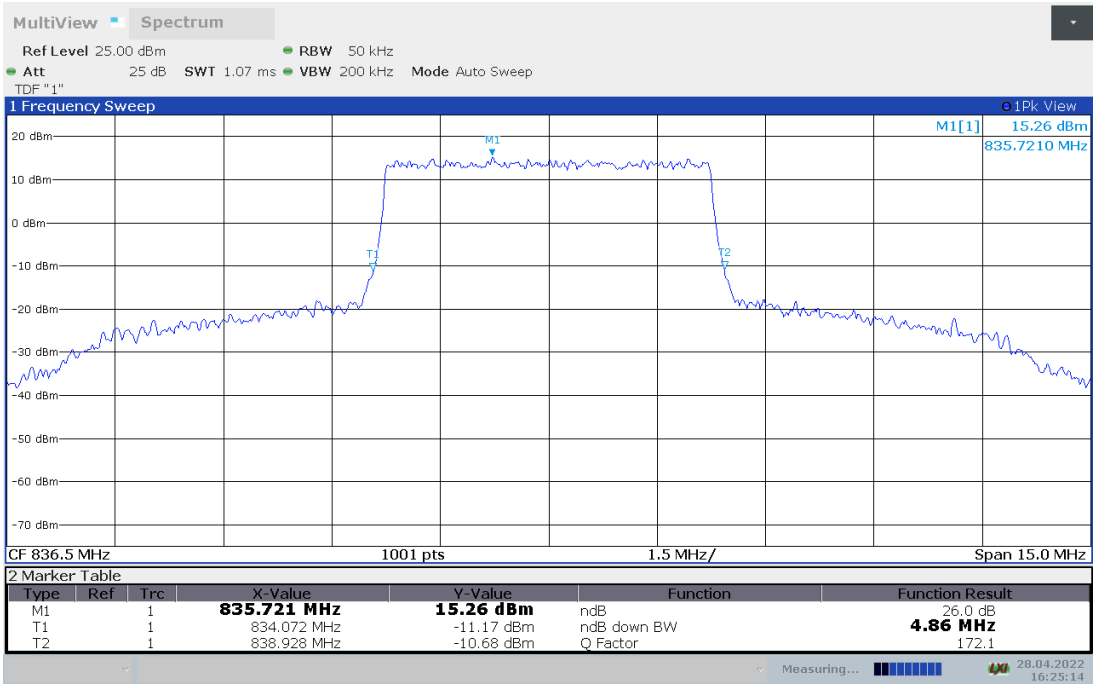
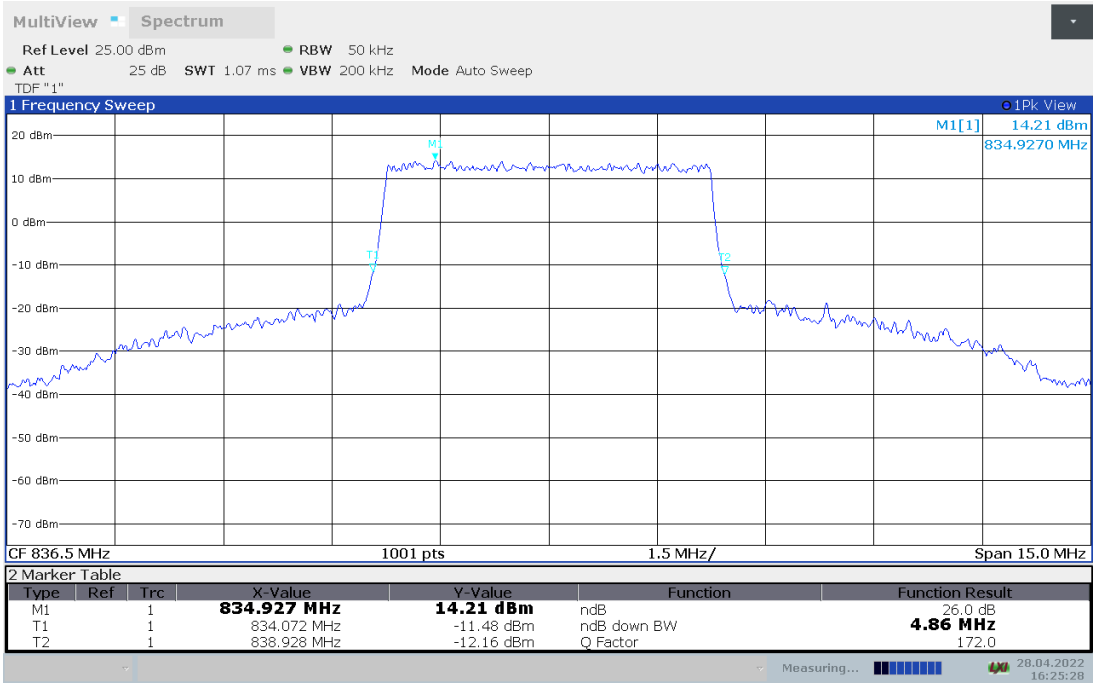
LTE band 5, 5MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
836.5	QPSK	16QAM	64QAM
	4.86	4.86	4.86

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



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



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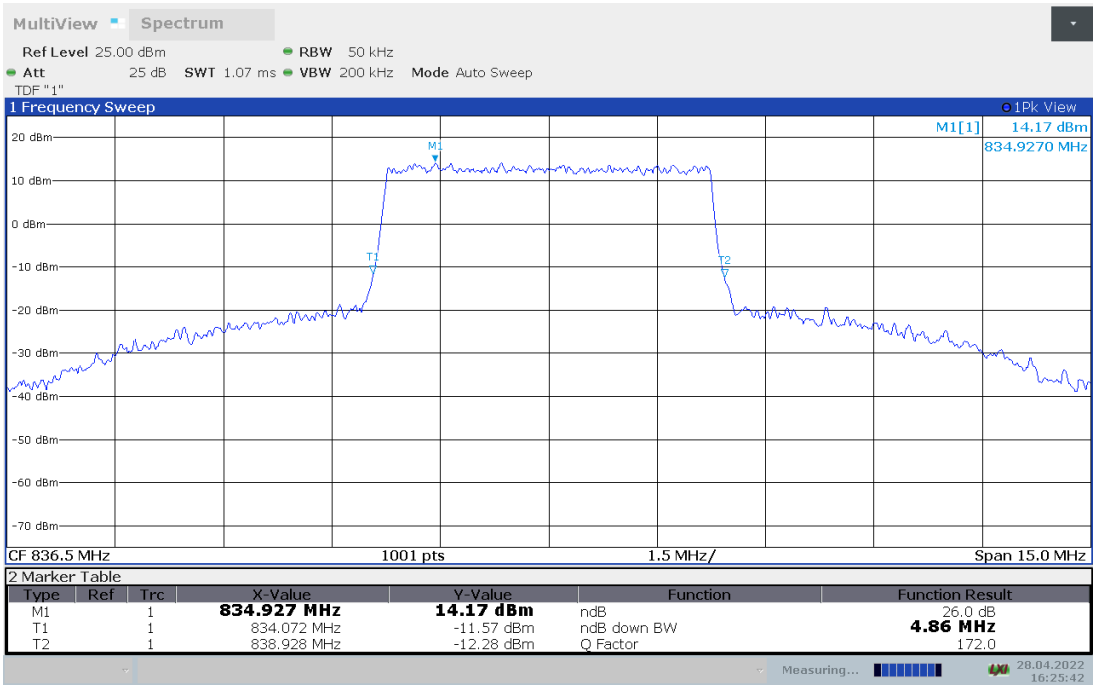
LTE band 5, 5MHz Bandwidth,64QAM (-26dBc BW)



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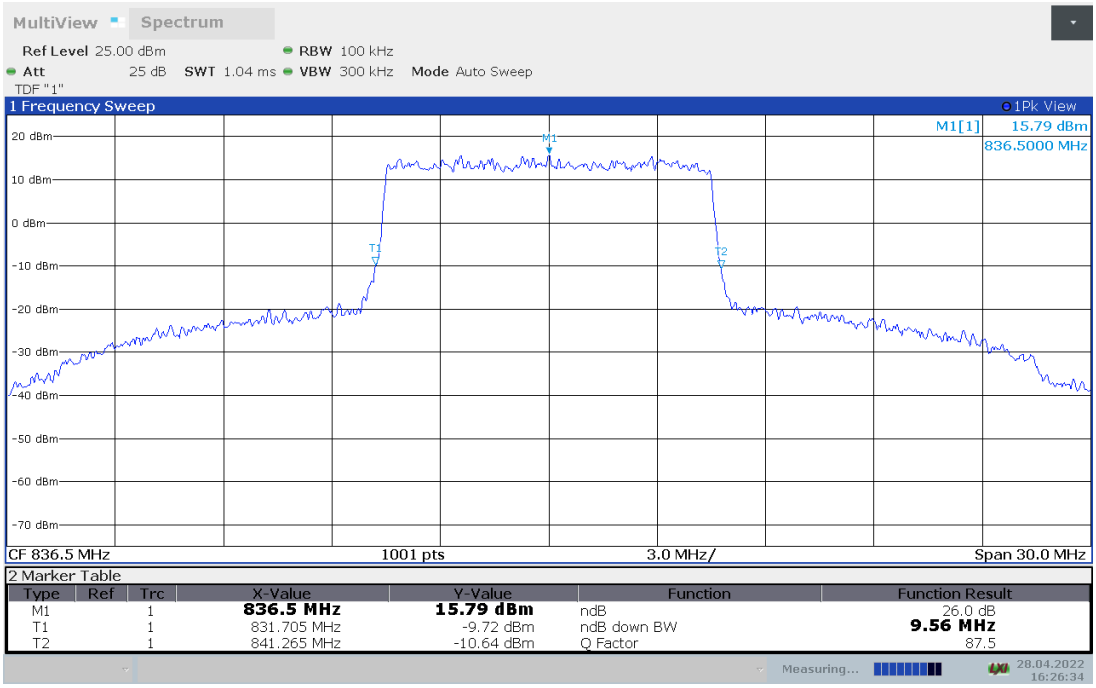
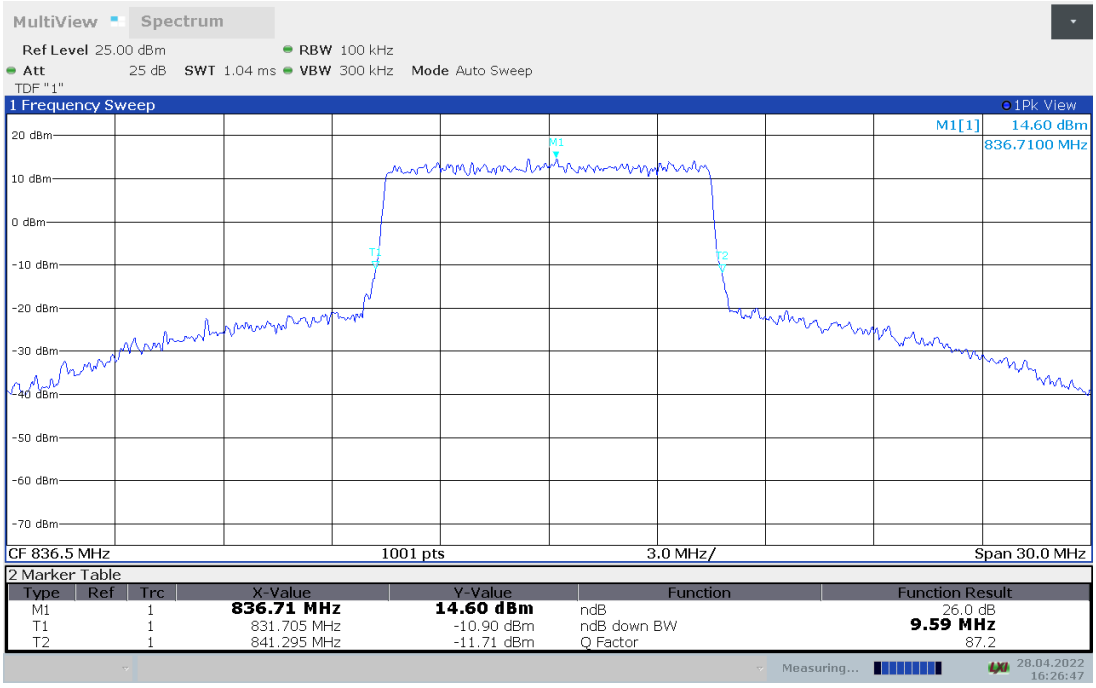
LTE band 5, 10MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
836.5	QPSK	16QAM	64QAM
	9.56	9.59	9.53

LTE band 5, 10MHz Bandwidth, QPSK (-26dBc BW)



LTE band 5, 10MHz Bandwidth, 16QAM (-26dBc BW)



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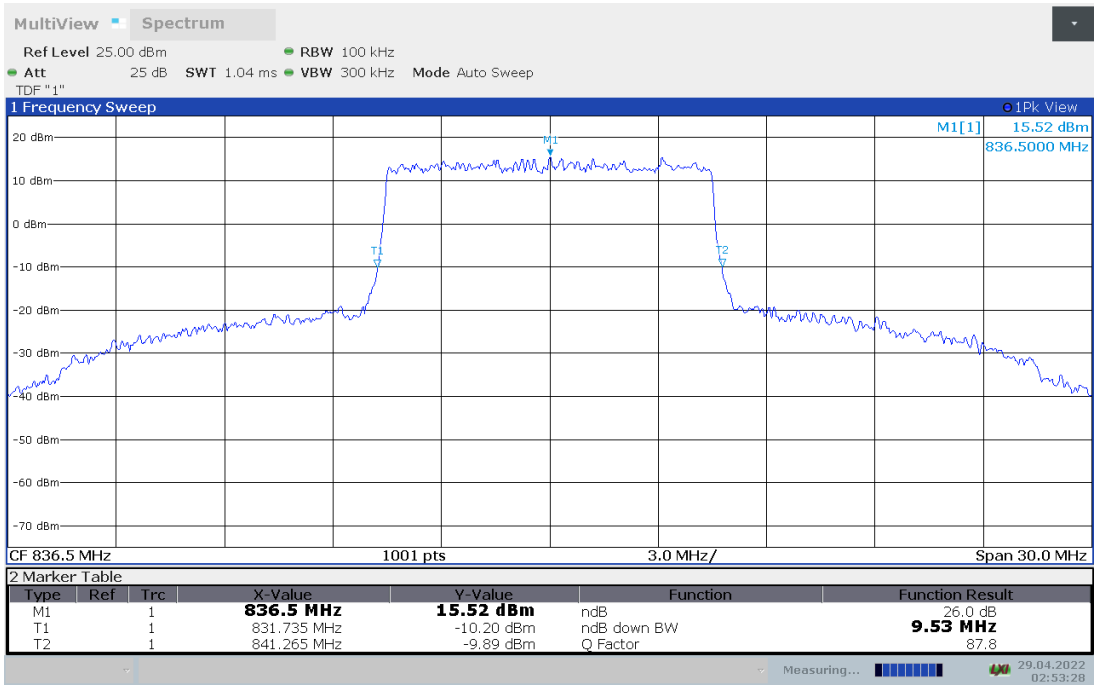
LTE band 5, 10MHz Bandwidth, 64QAM (-26dBc BW)



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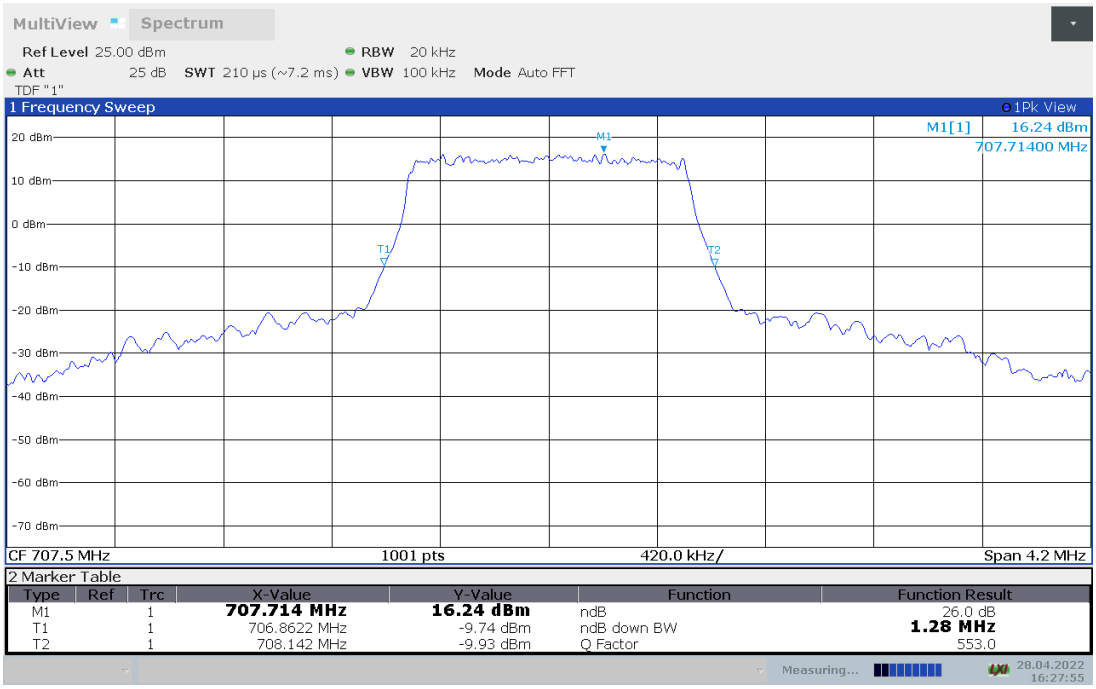
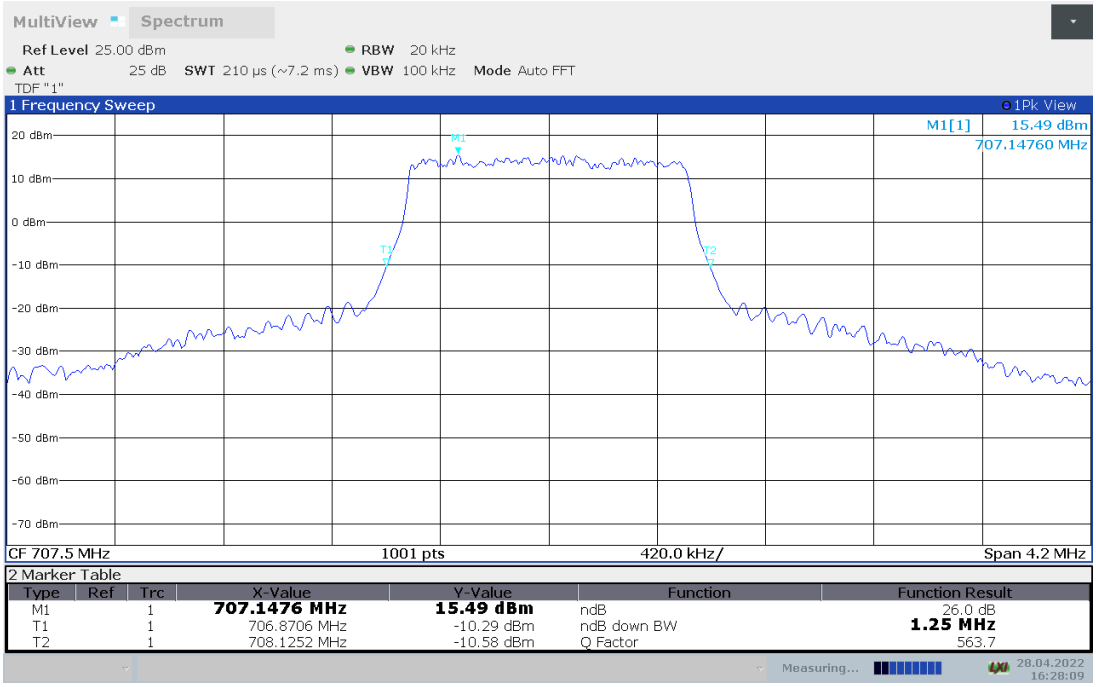
LTE band 12, 1.4MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
707.5	QPSK	16QAM	64QAM
	1.28	1.25	1.26

LTE band 12, 1.4MHz Bandwidth, QPSK (-26dBc BW)



LTE band 12, 1.4MHz Bandwidth, 16QAM (-26dBc BW)



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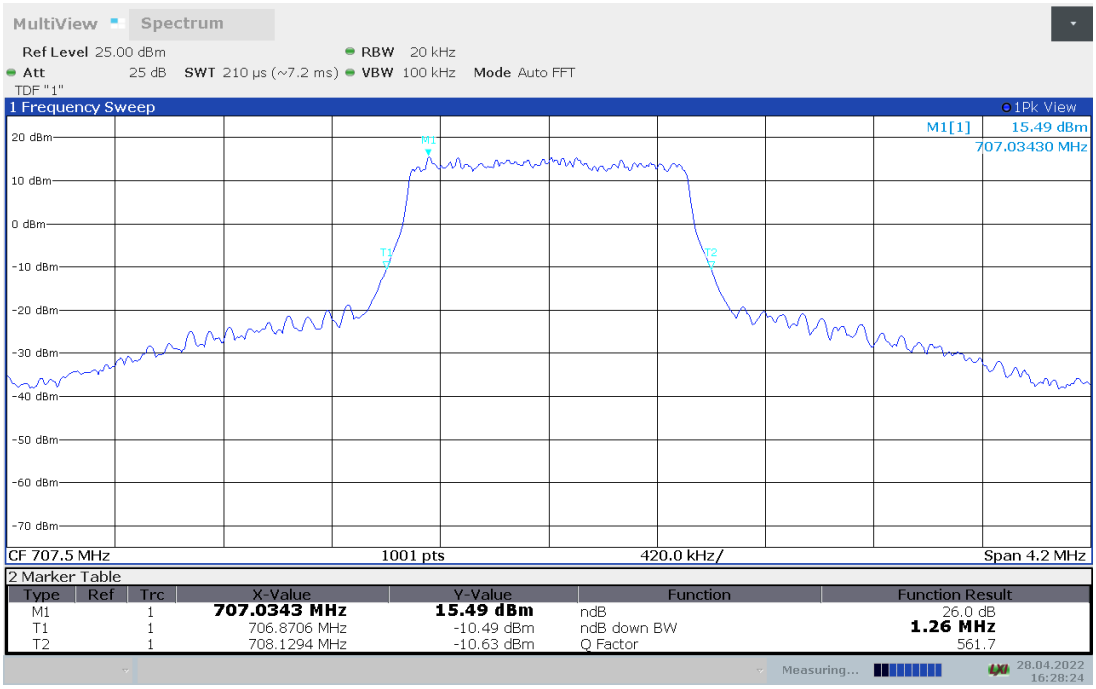
LTE band 12, 1.4MHz Bandwidth, 64QAM (-26dBc BW)



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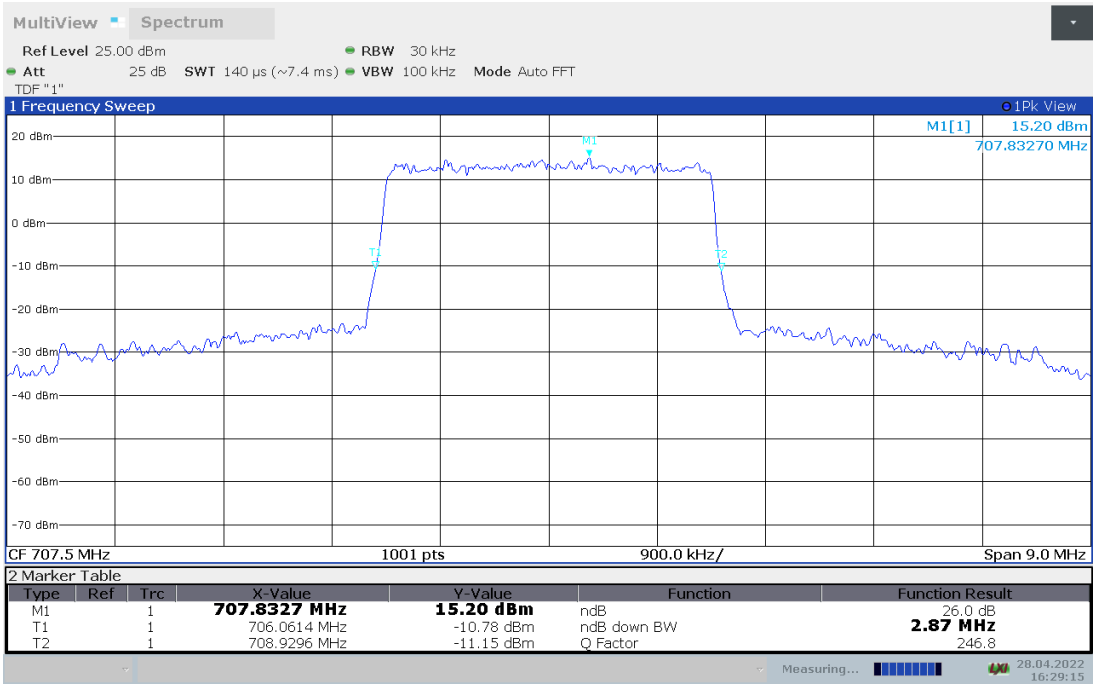
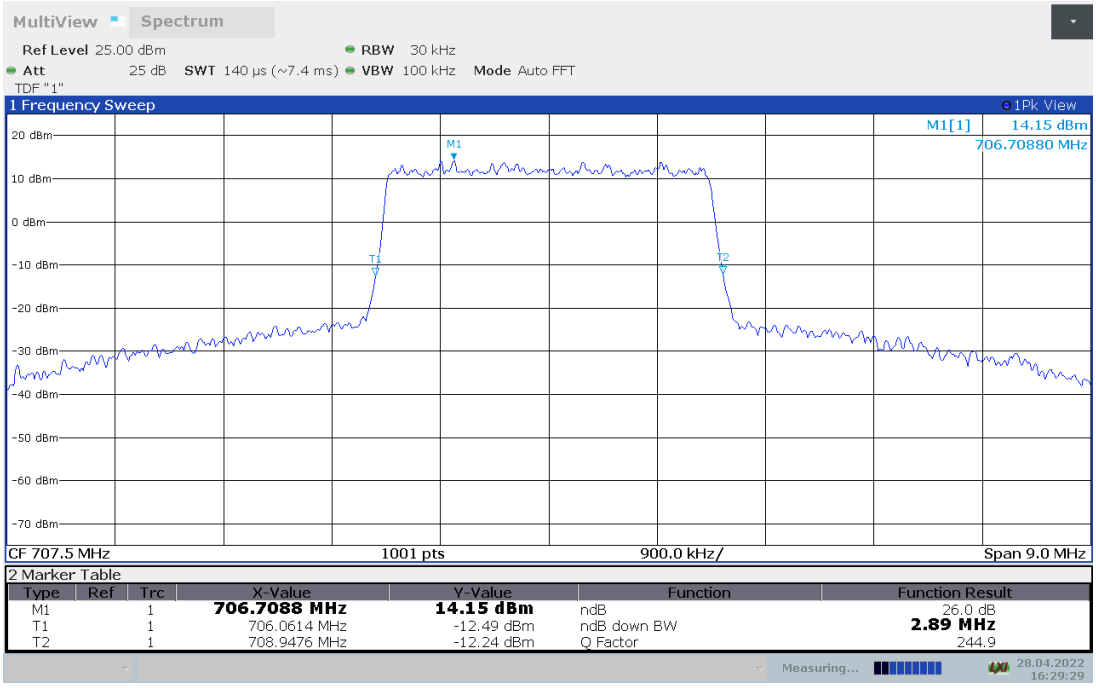
LTE band 12, 3MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
707.5	QPSK	16QAM	64QAM
	2.87	2.89	2.88

LTE band 12, 3MHz Bandwidth, QPSK (-26dBc BW)



LTE band 12, 3MHz Bandwidth, 16QAM (-26dBc BW)



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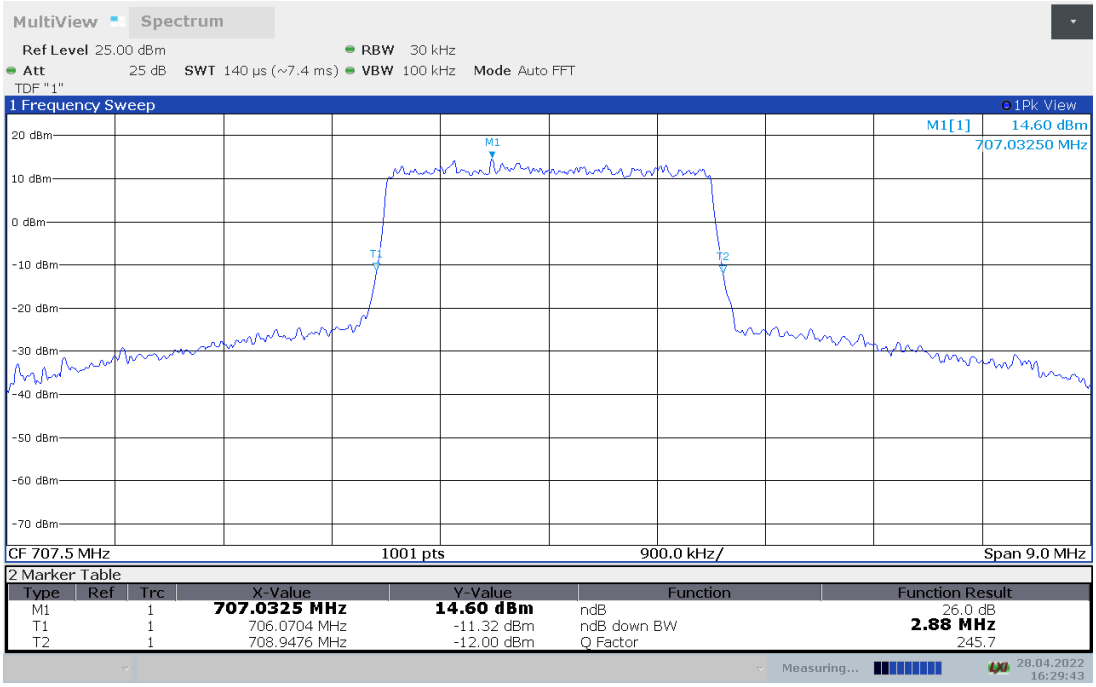
LTE band 12, 3MHz Bandwidth, 64QAM (-26dBc BW)



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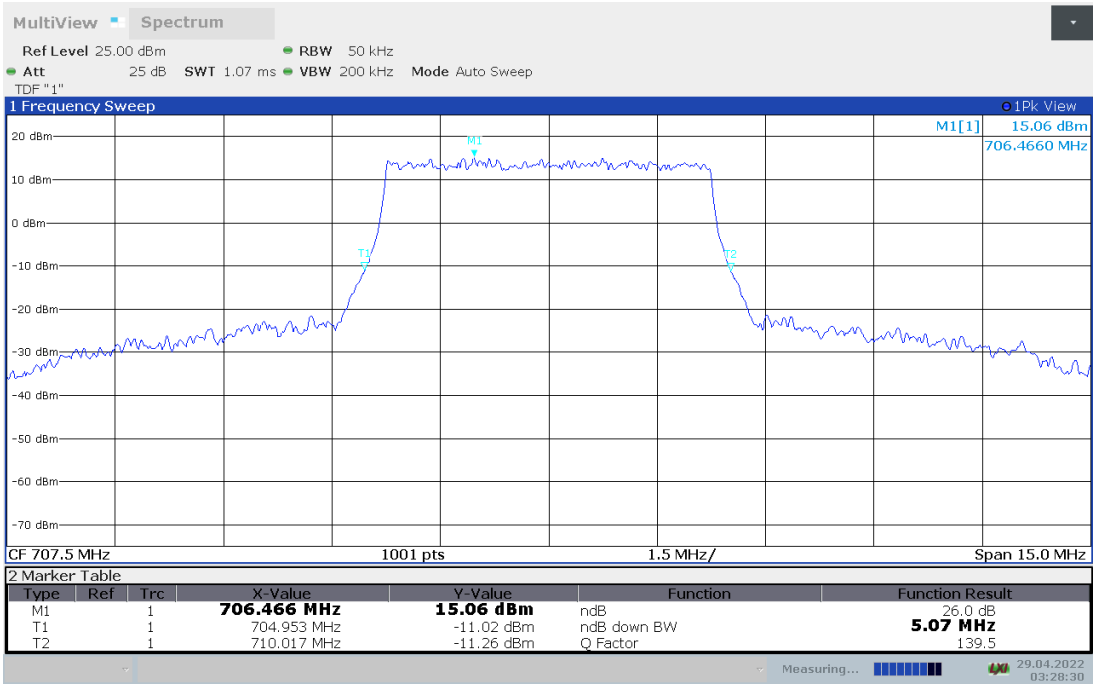
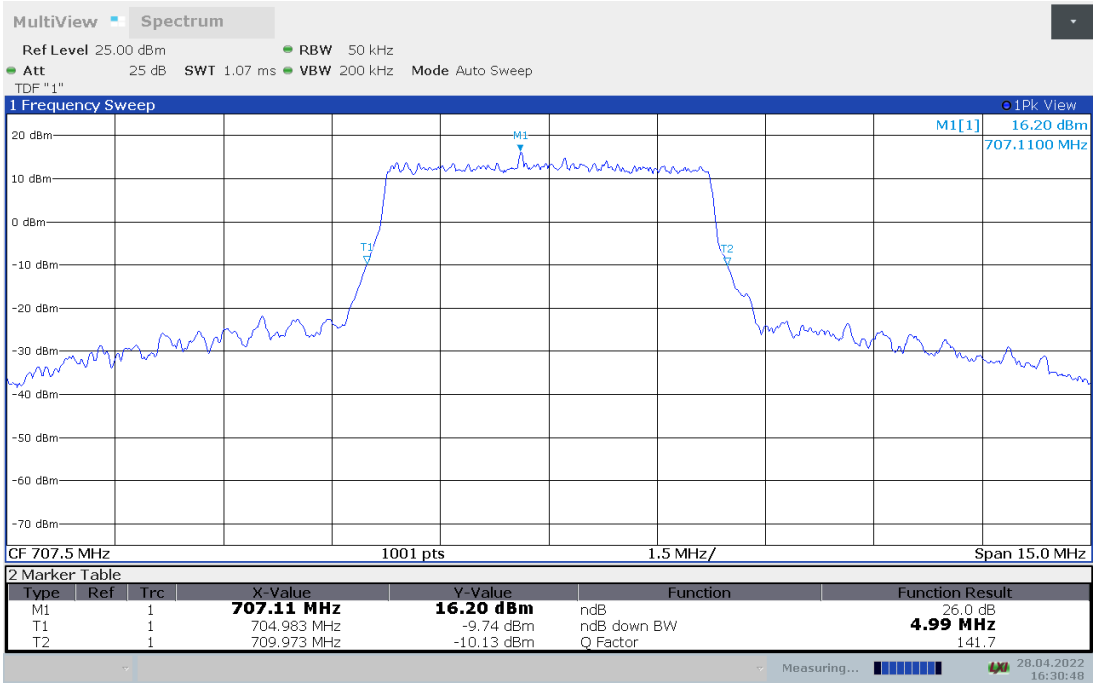
LTE band 12, 5MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
707.5	QPSK	16QAM	64QAM
	5.07	4.99	4.96

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



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



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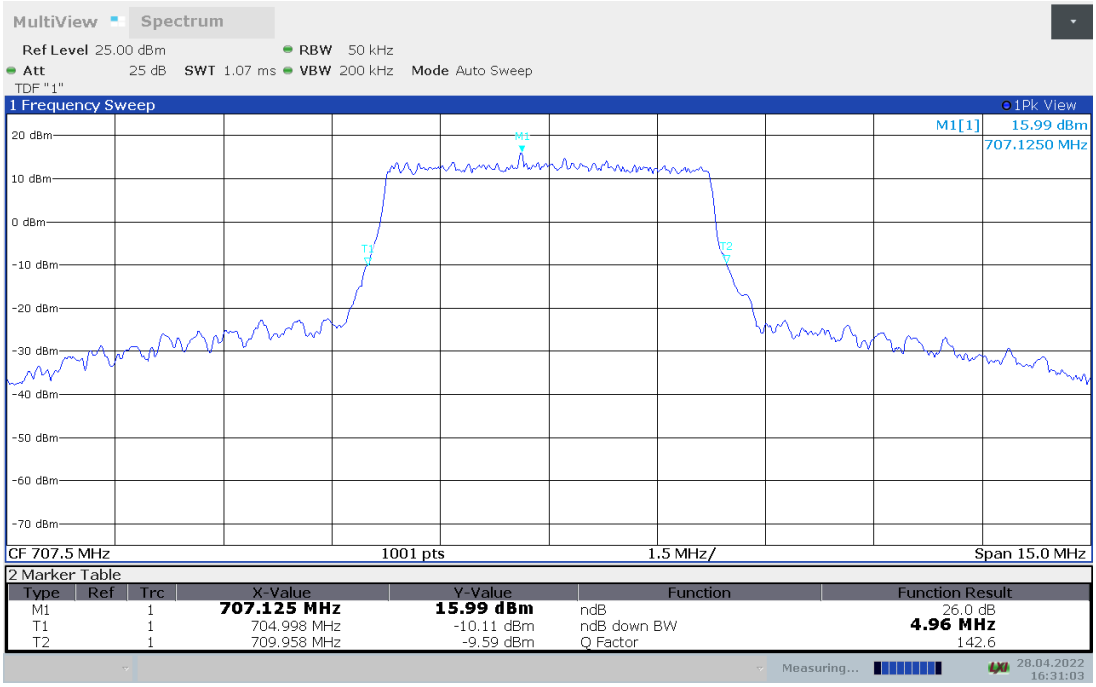
LTE band 12, 5MHz Bandwidth,64QAM (-26dBc BW)



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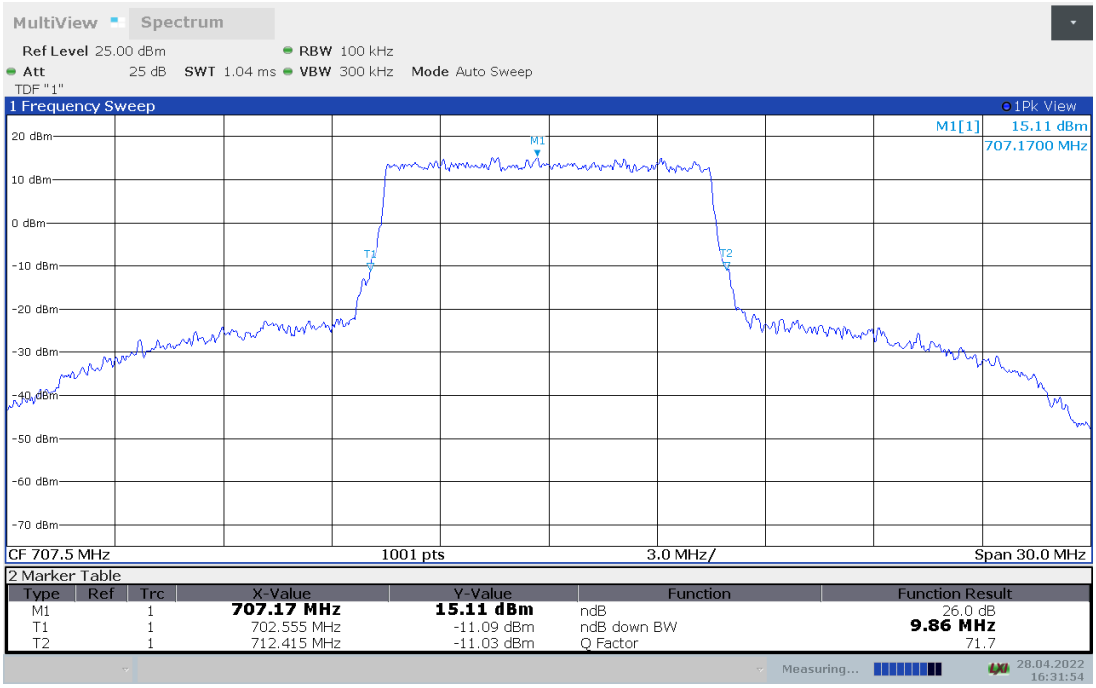
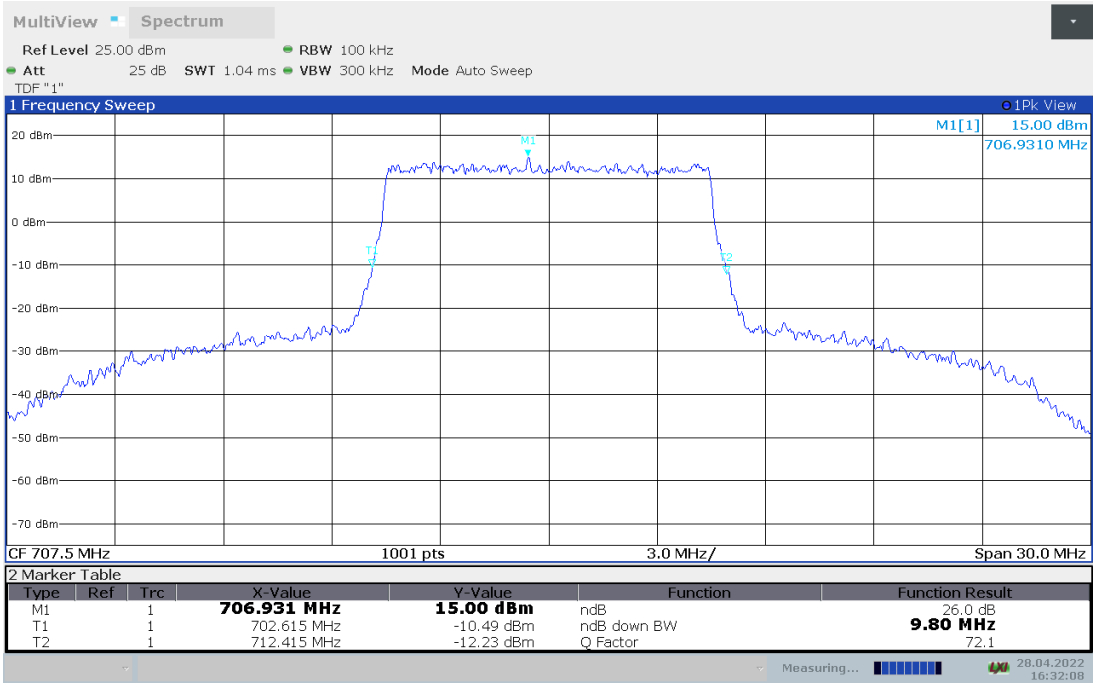
LTE band 12, 10MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
707.5	QPSK	16QAM	64QAM
	9.86	9.80	9.89

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



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



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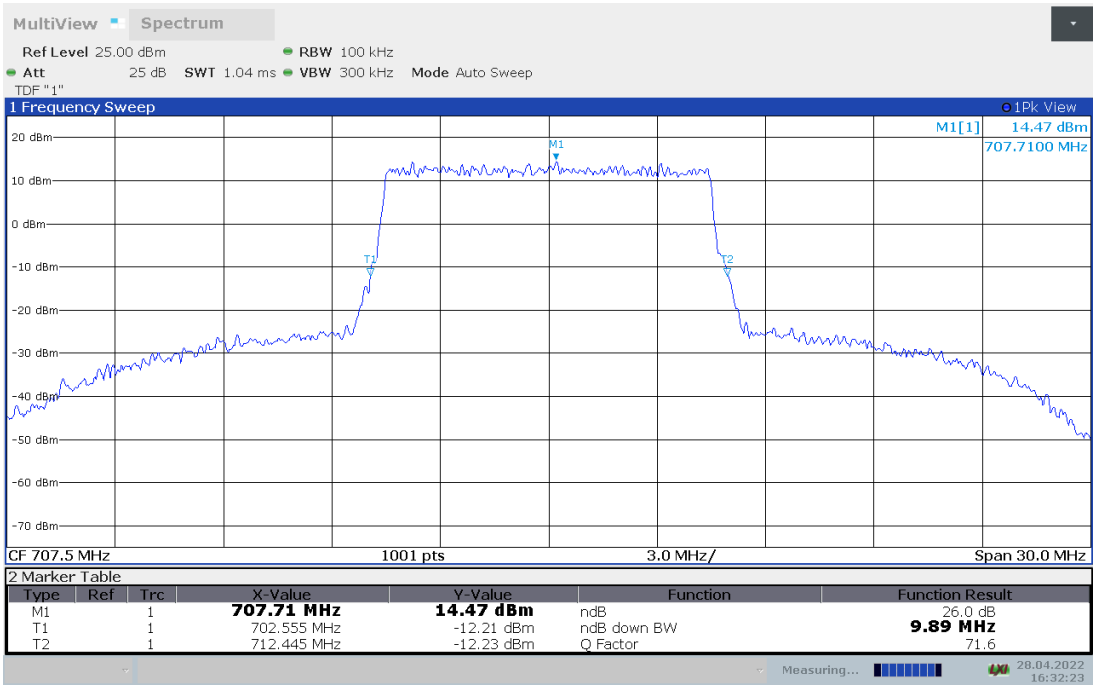
LTE band 12, 10MHz Bandwidth, 64QAM (-26dBc BW)



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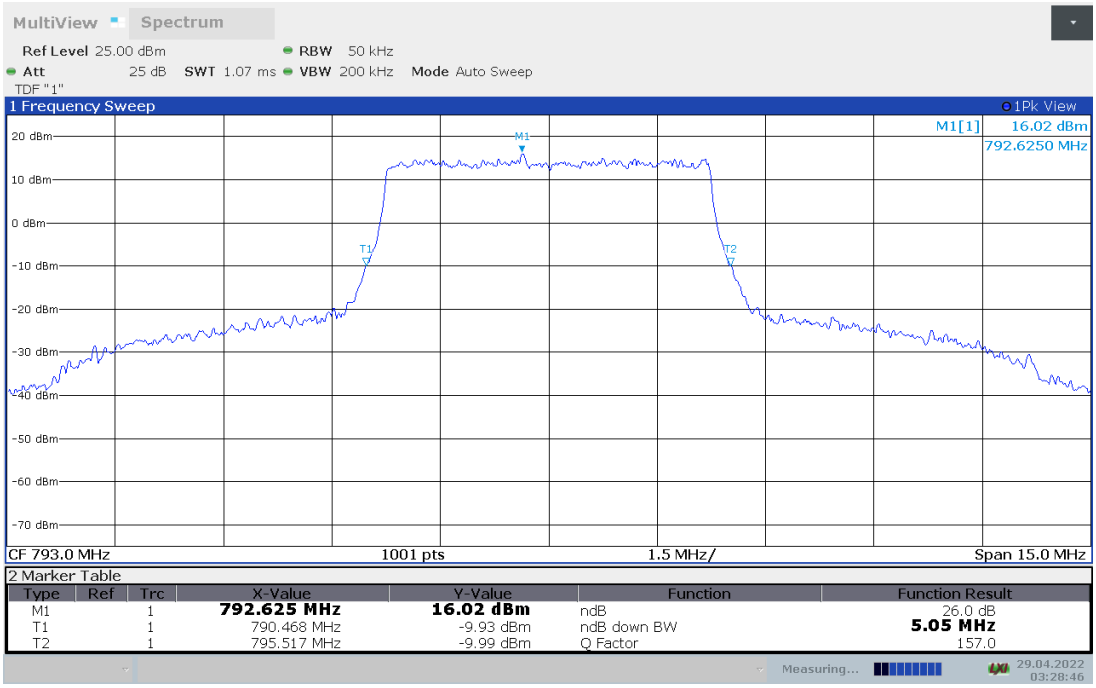
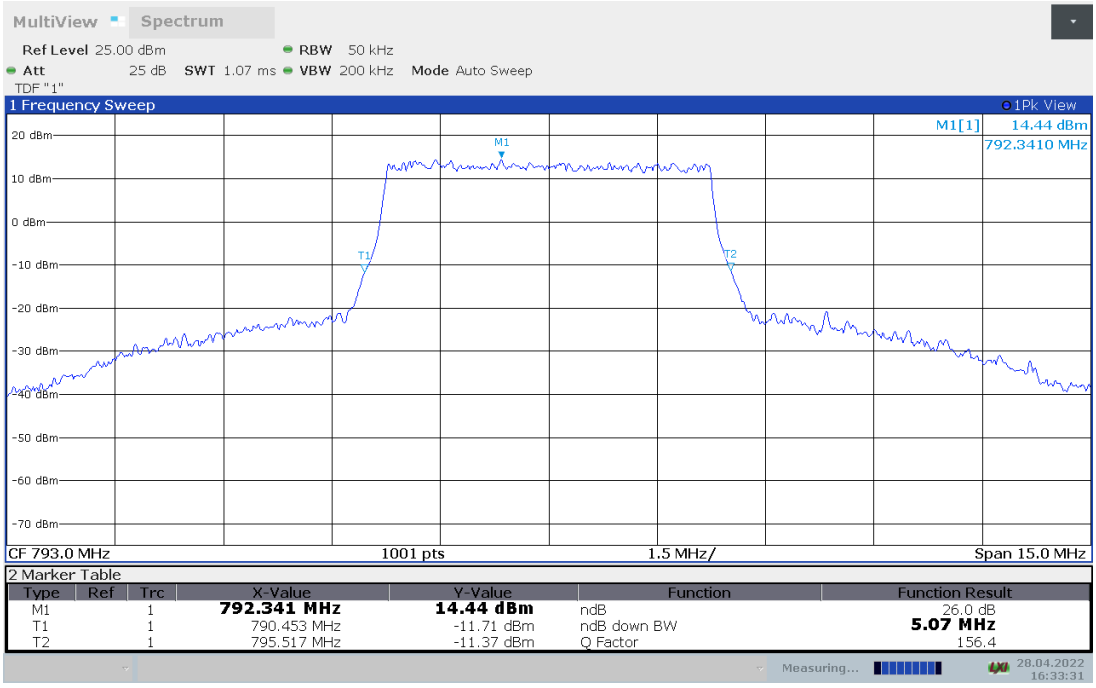
LTE band 14, 5MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
793.0	QPSK	16QAM	64QAM
	5.05	5.07	5.07

LTE band 14, 5MHz Bandwidth, QPSK (-26dBc BW)



LTE band 14, 5MHz Bandwidth,16QAM (-26dBc BW)



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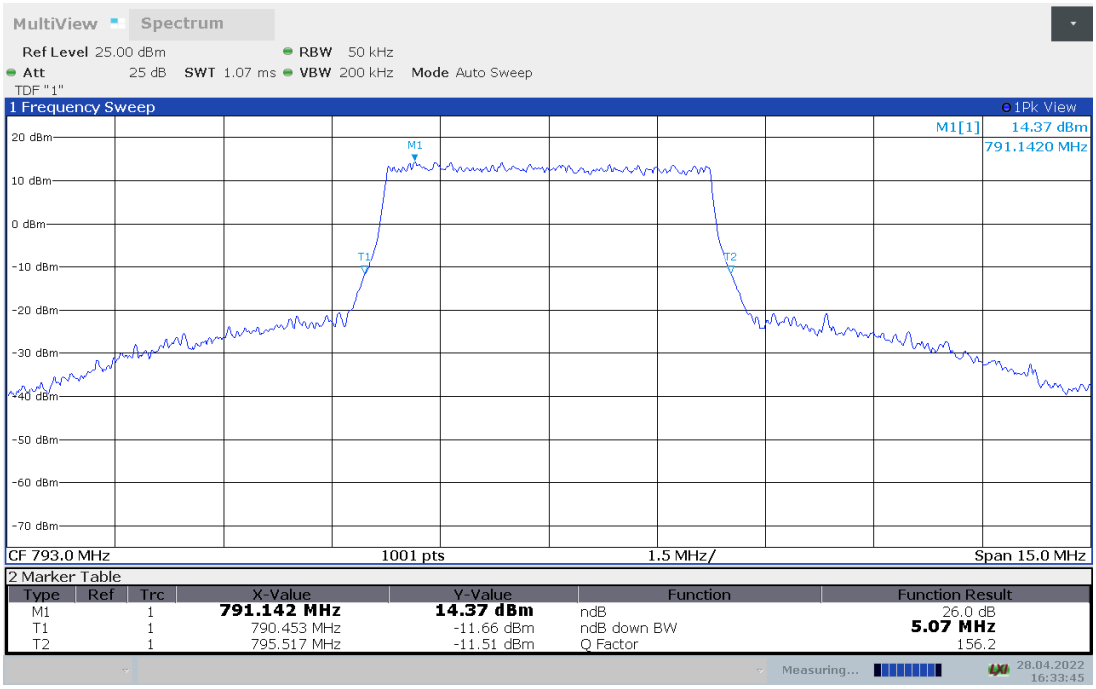
LTE band 14, 5MHz Bandwidth,64QAM (-26dBc BW)



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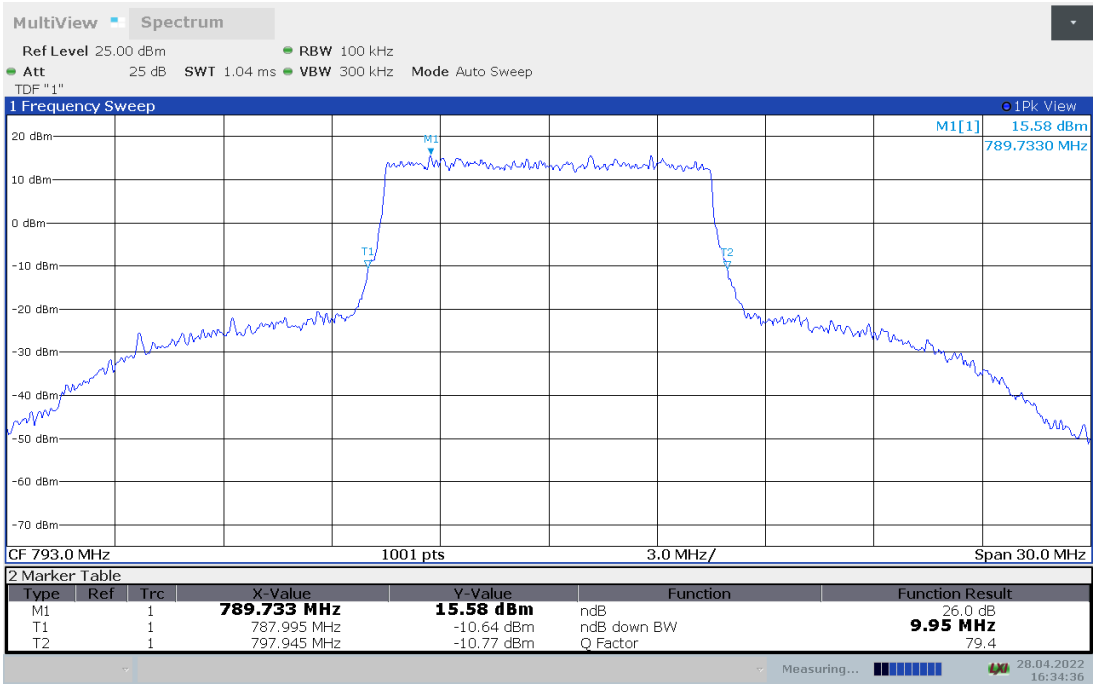
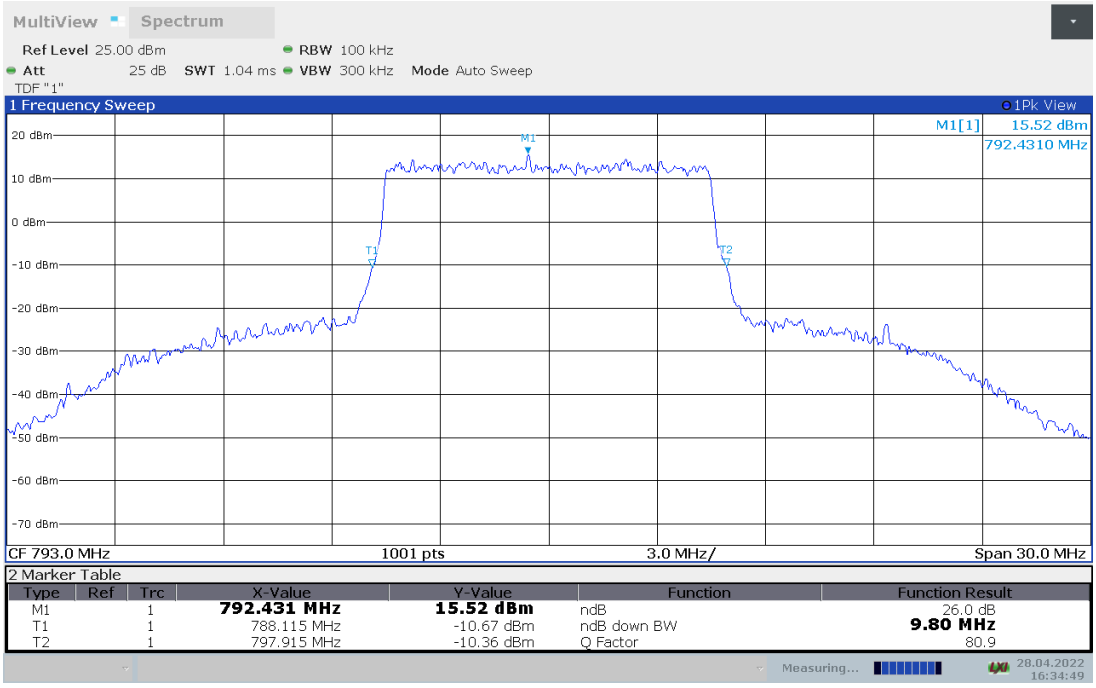
LTE band 14, 10MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
793.0	QPSK	16QAM	64QAM
	9.95	9.80	9.92

LTE band 14, 10MHz Bandwidth, QPSK (-26dBc BW)



LTE band 14, 10MHz Bandwidth, 16QAM (-26dBc BW)



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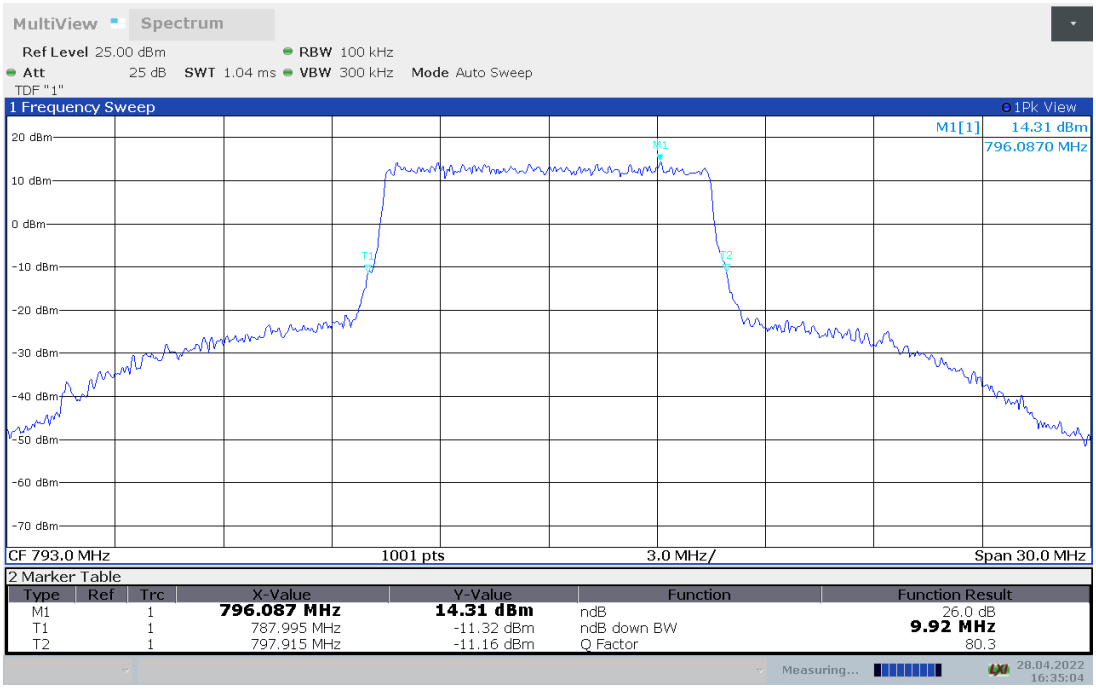
LTE band 14, 10MHz Bandwidth, 64QAM (-26dBc BW)



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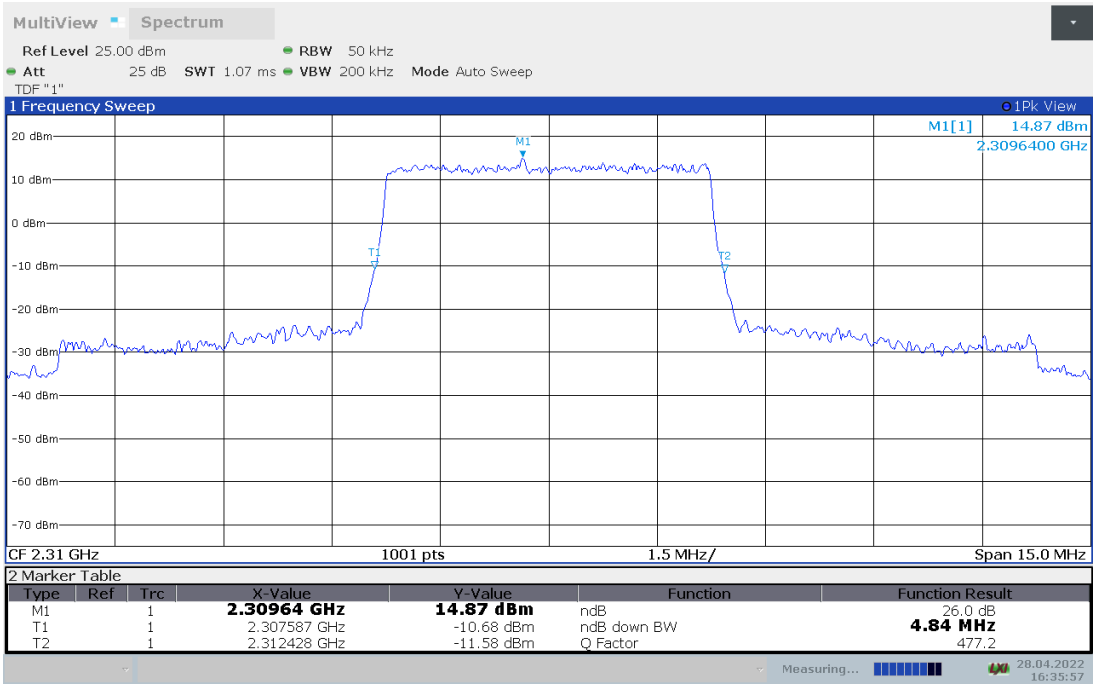
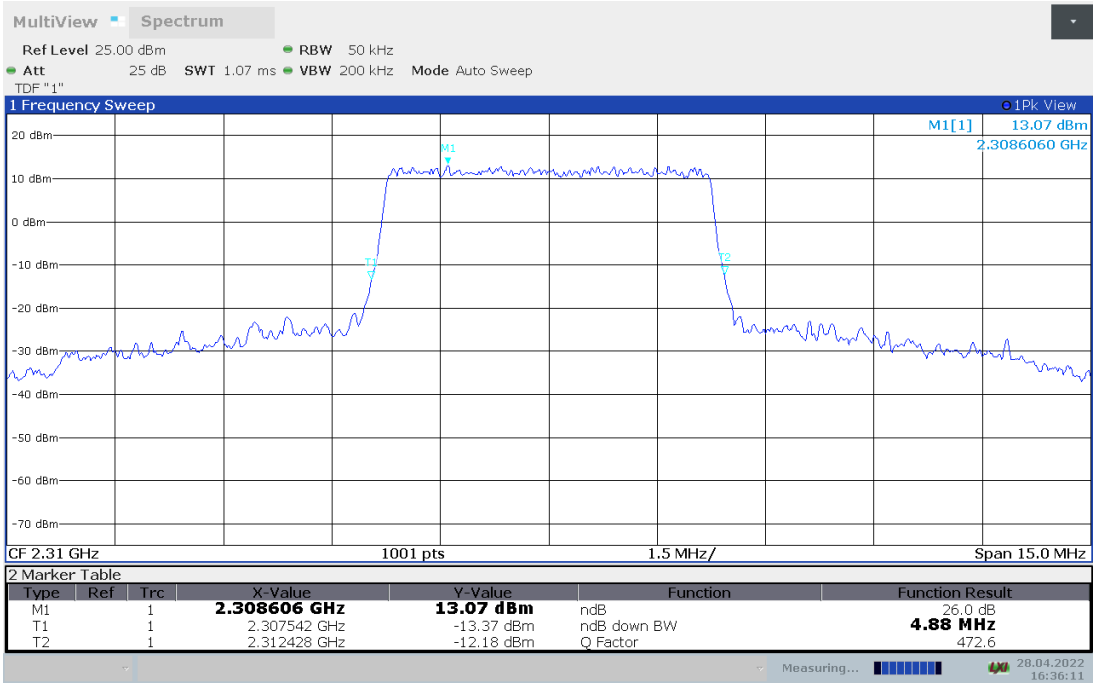
LTE band 30, 5MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
2310.0	QPSK	16QAM	64QAM
	4.84	4.88	4.88

LTE band 30, 5MHz Bandwidth, QPSK (-26dBc BW)



LTE band 30, 5MHz Bandwidth,16QAM (-26dBc BW)



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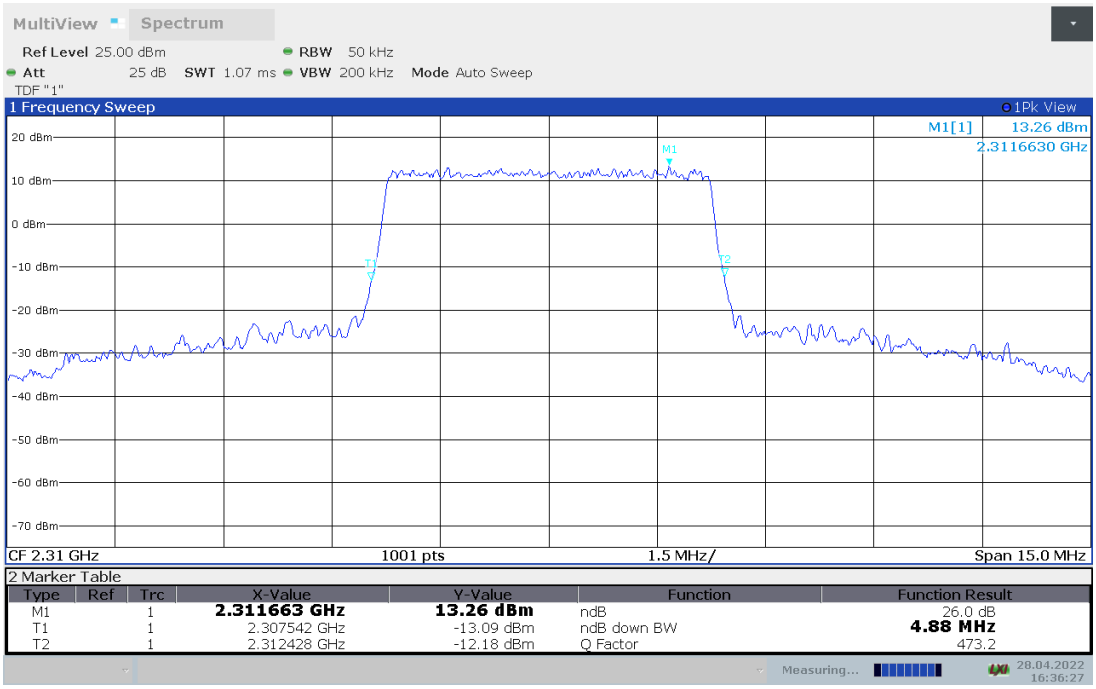
LTE band 30, 5MHz Bandwidth,64QAM (-26dBc BW)



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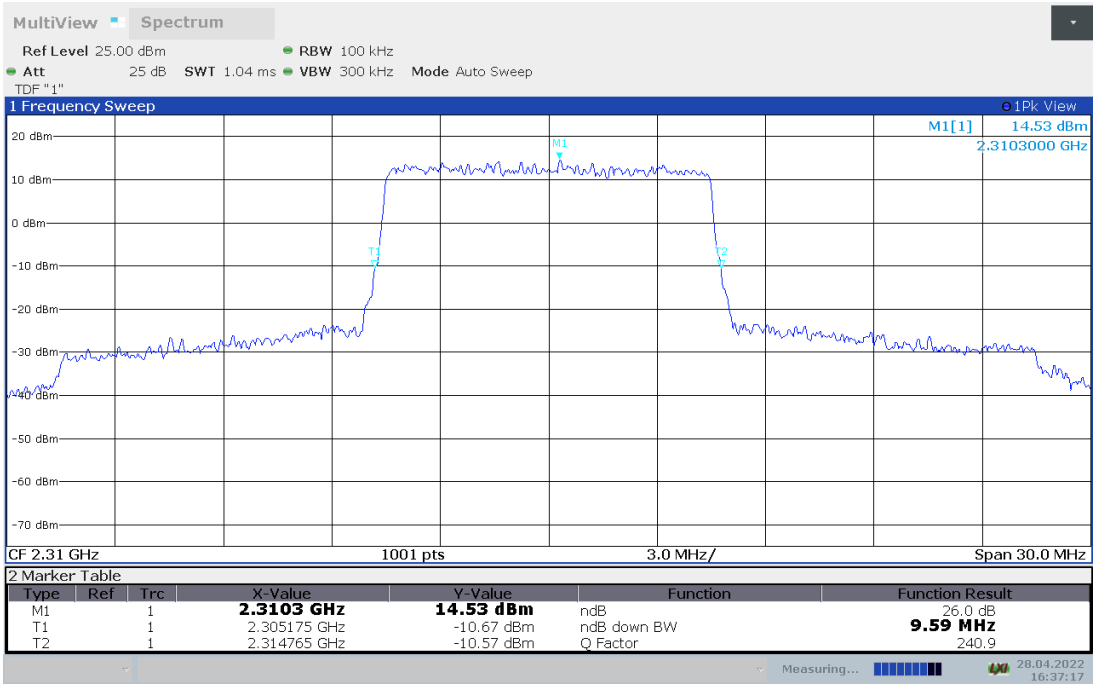
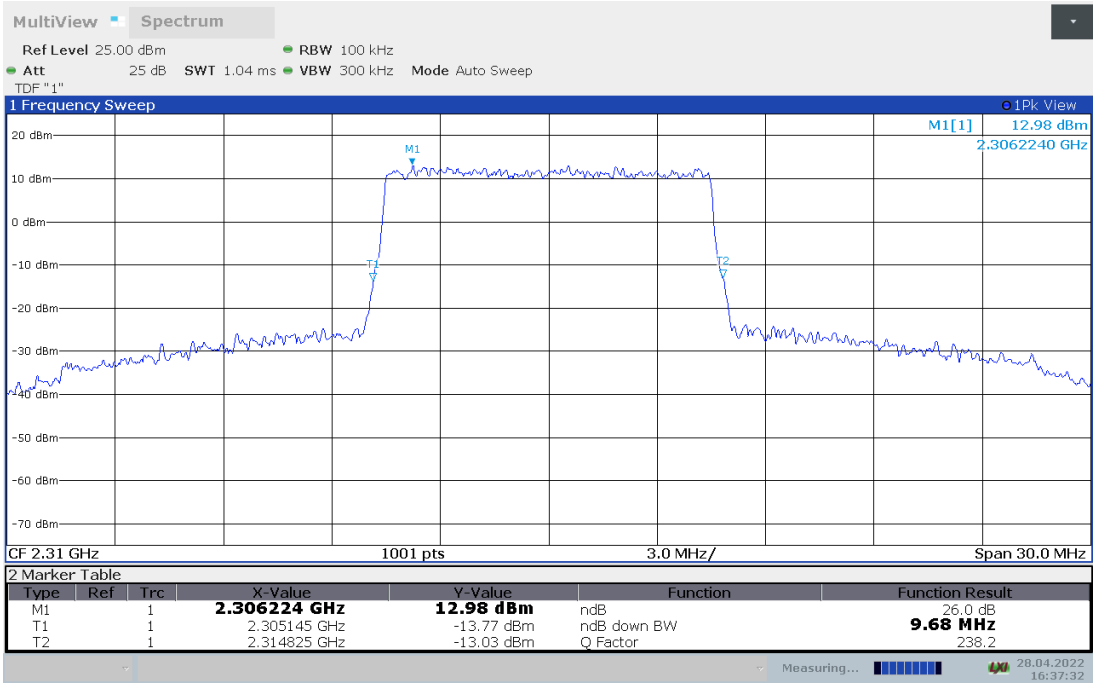
LTE band 30, 10MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
2310.0	QPSK	16QAM	64QAM
	9.59	9.68	9.56

LTE band 30, 10MHz Bandwidth, QPSK (-26dBc BW)



LTE band 30, 10MHz Bandwidth, 16QAM (-26dBc BW)



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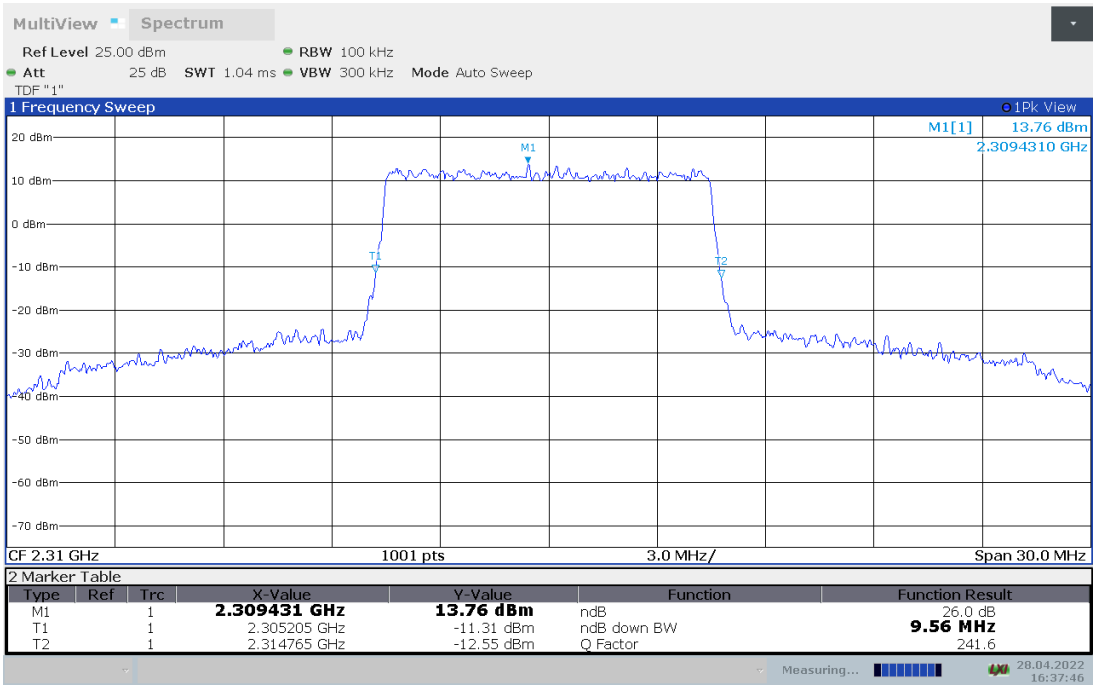
LTE band 30, 10MHz Bandwidth, 64QAM (-26dBc BW)



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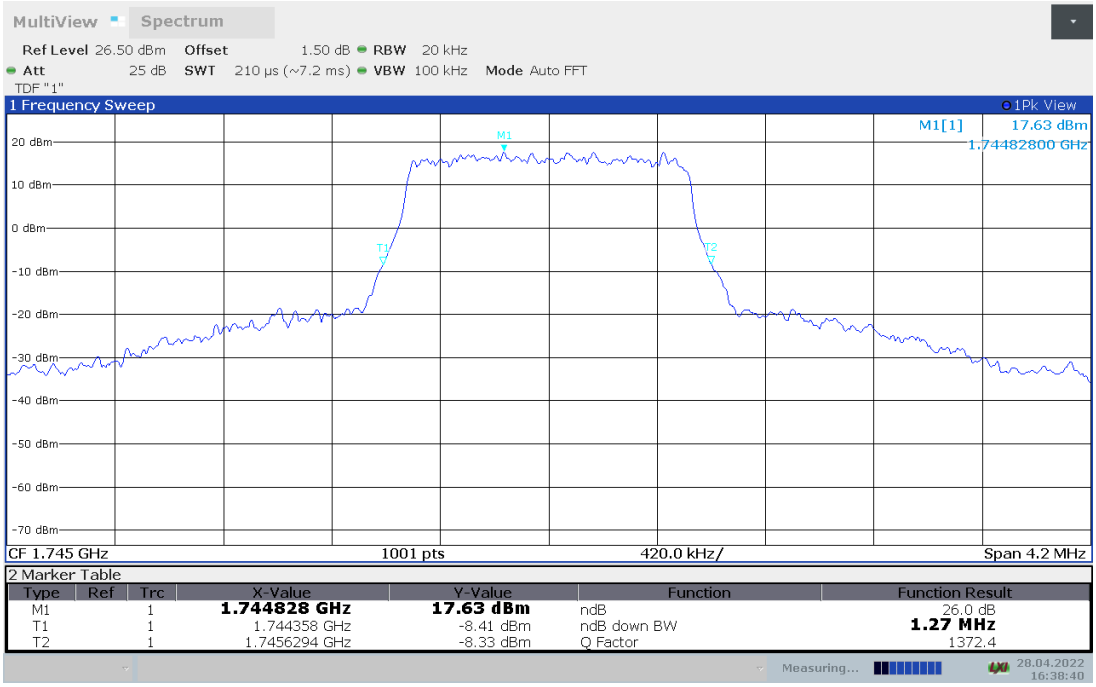
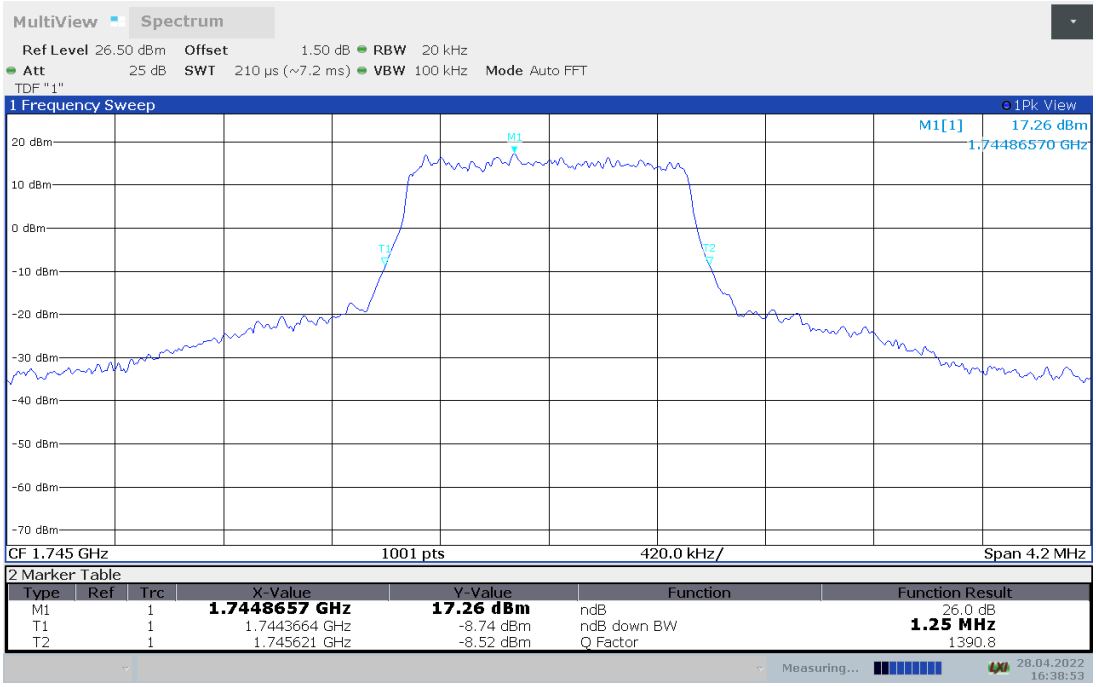
LTE band 66, 1.4MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1745.0	QPSK	16QAM	64QAM
	1.27	1.25	1.25

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



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



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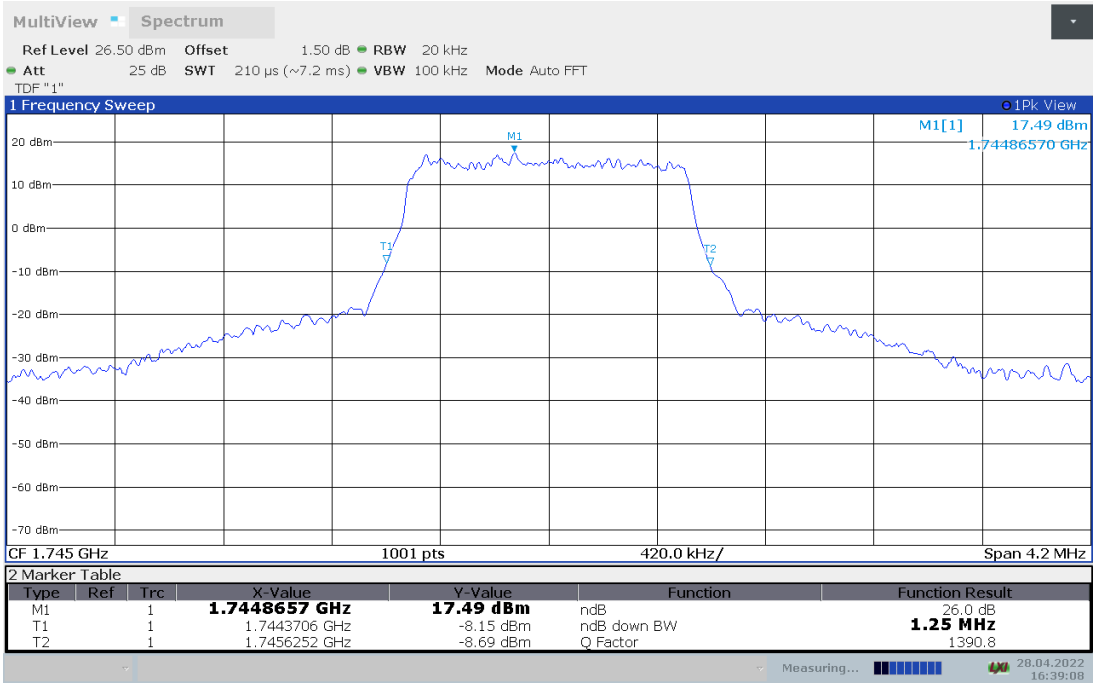
LTE band 66, 1.4MHz Bandwidth, 64QAM (-26dBc BW)



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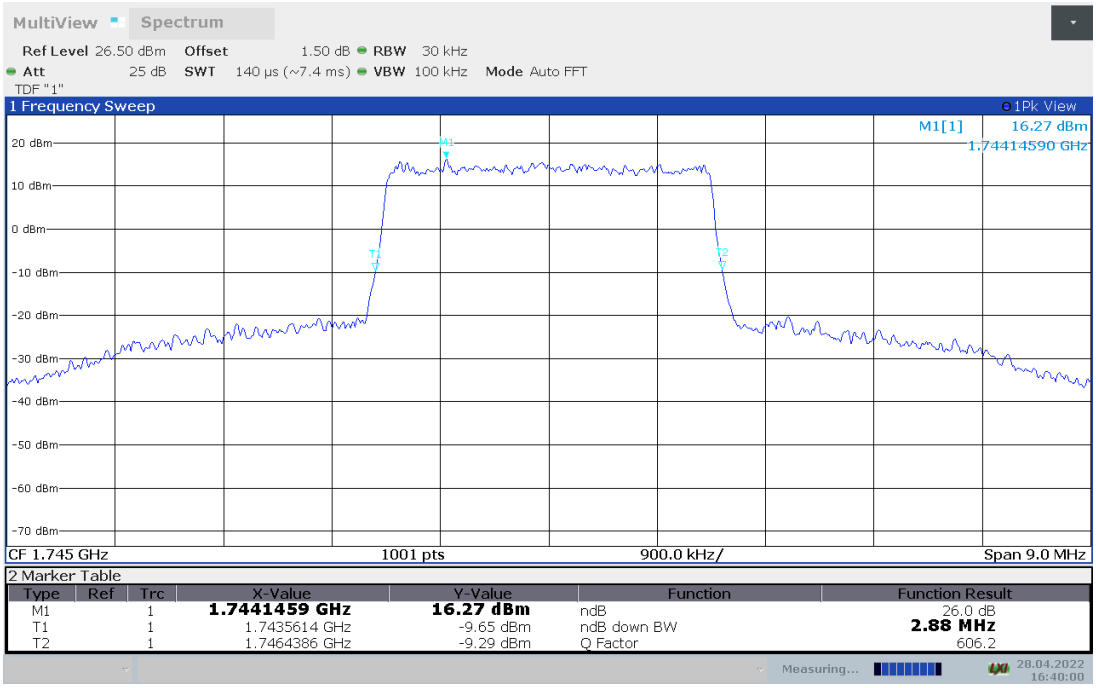
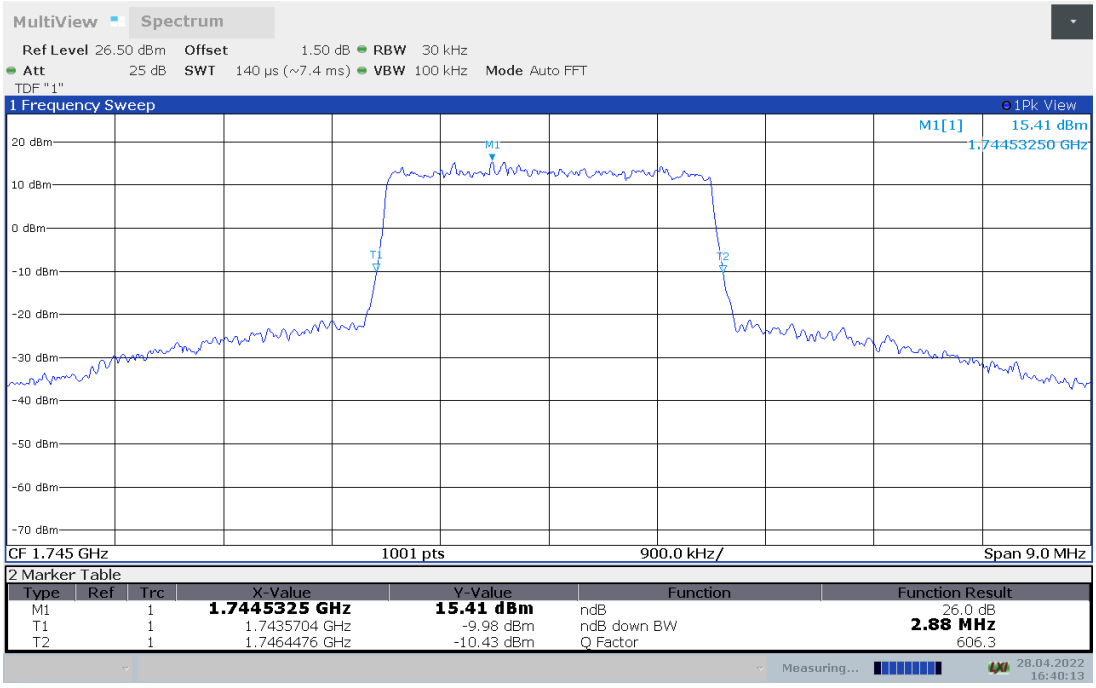
LTE band 66, 3MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1745.0	QPSK	16QAM	64QAM
	2.88	2.88	2.88

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



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



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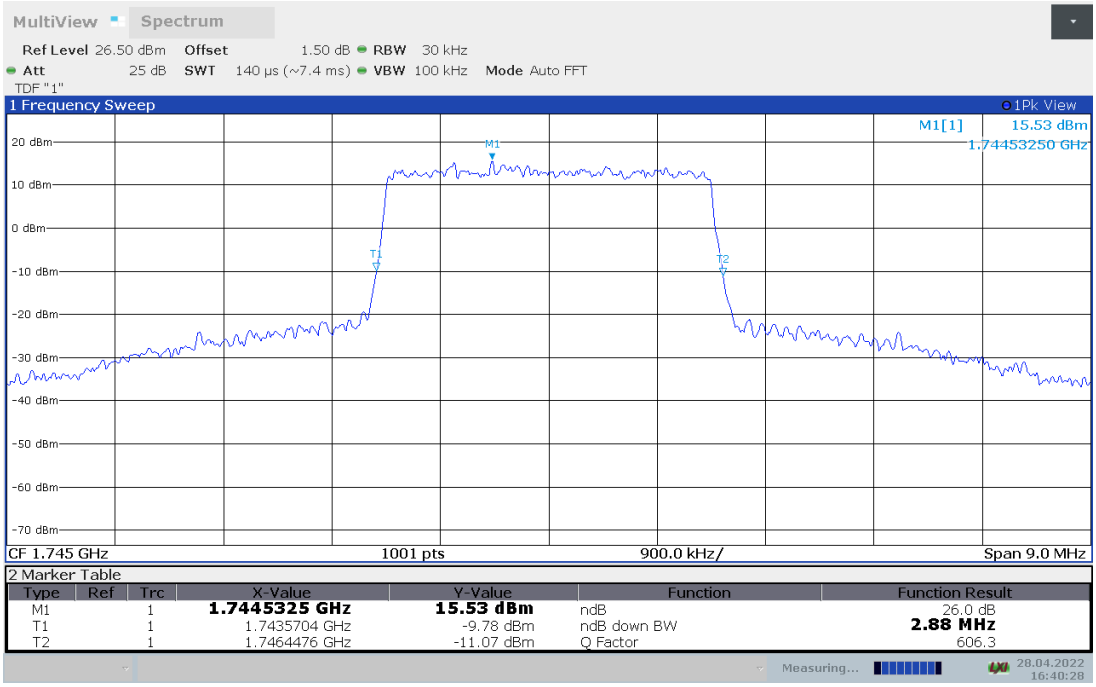
LTE band 66, 3MHz Bandwidth, 64QAM (-26dBc BW)



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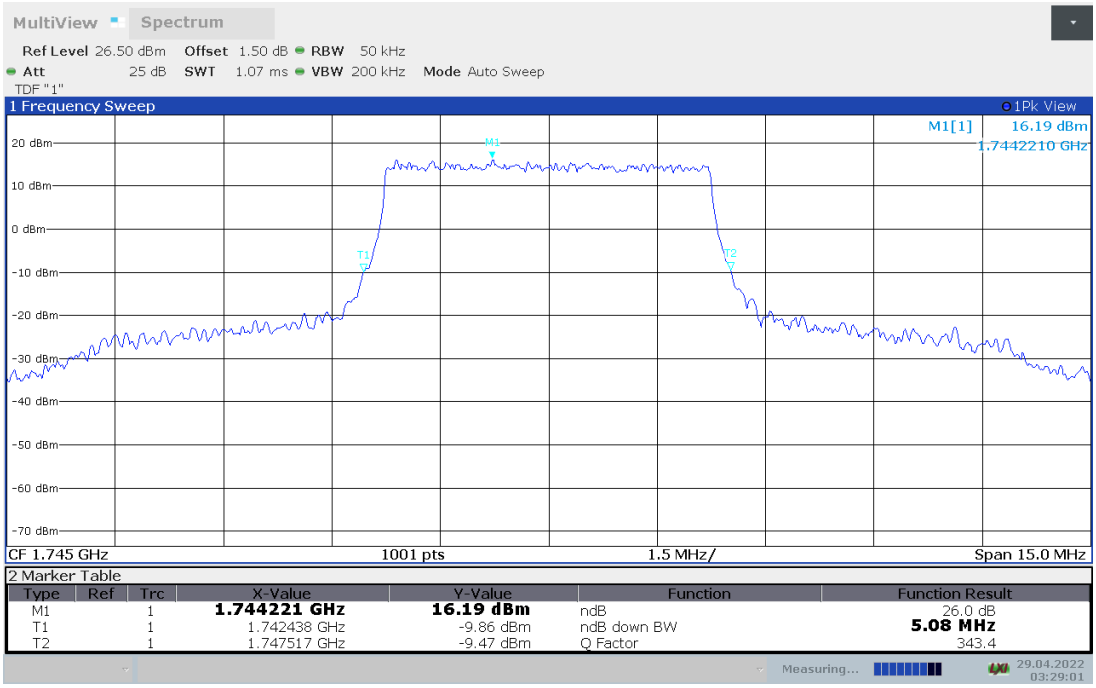
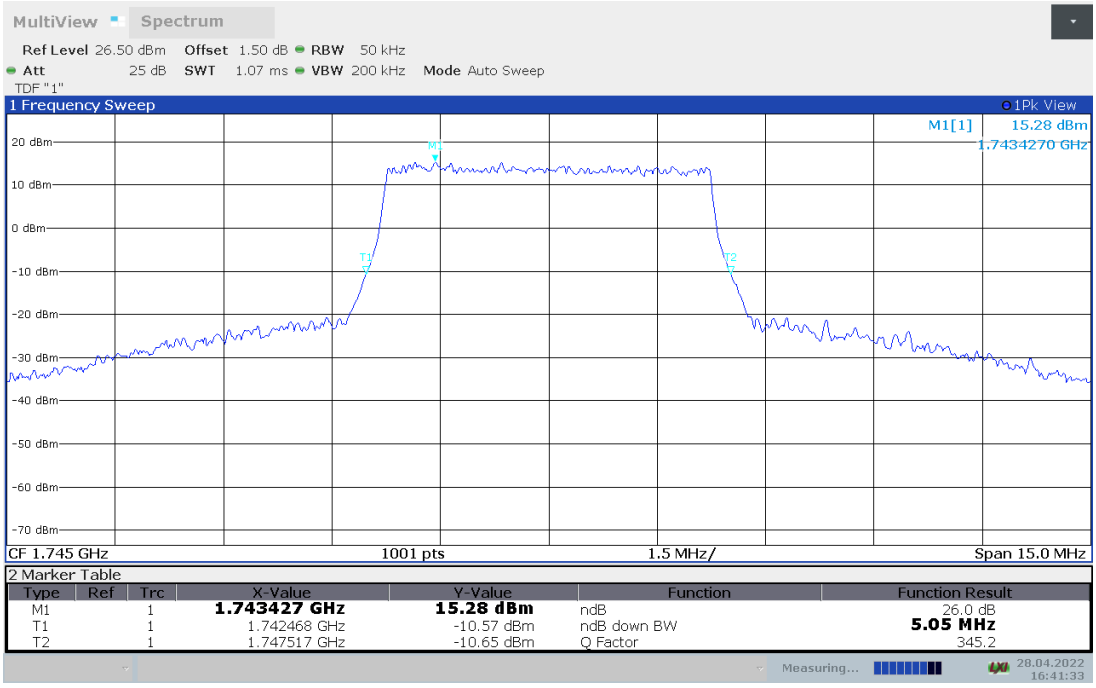
LTE band 66, 5MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1745.0	QPSK	16QAM	64QAM
	5.08	5.05	5.05

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



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



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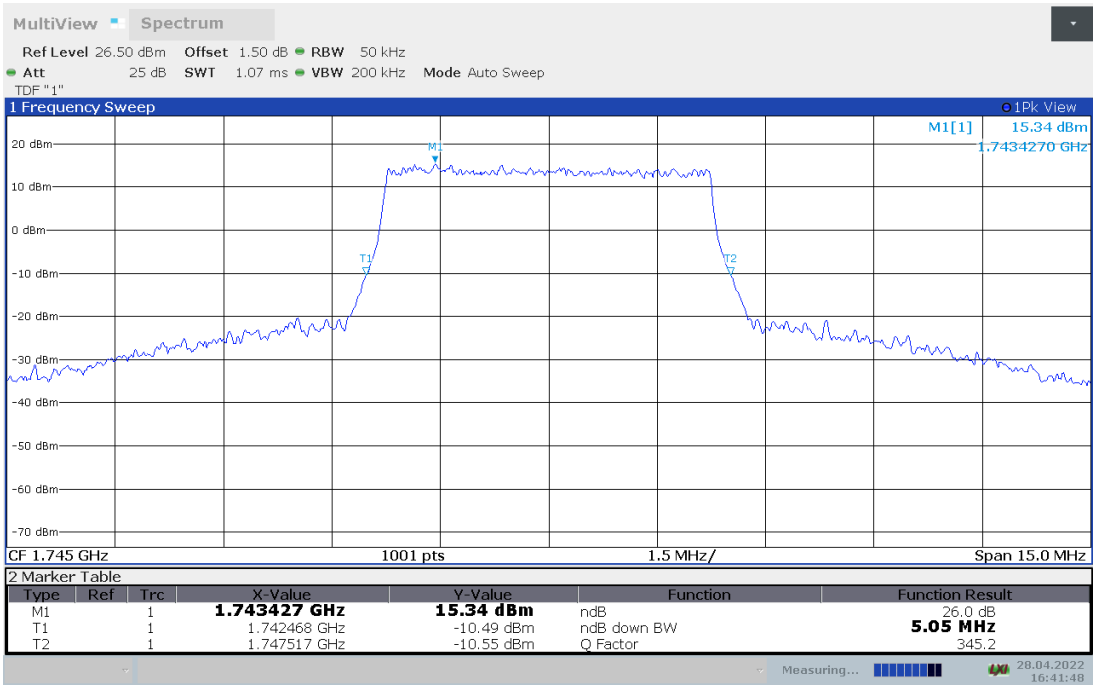
LTE band 66, 5MHz Bandwidth,64QAM (-26dBc BW)



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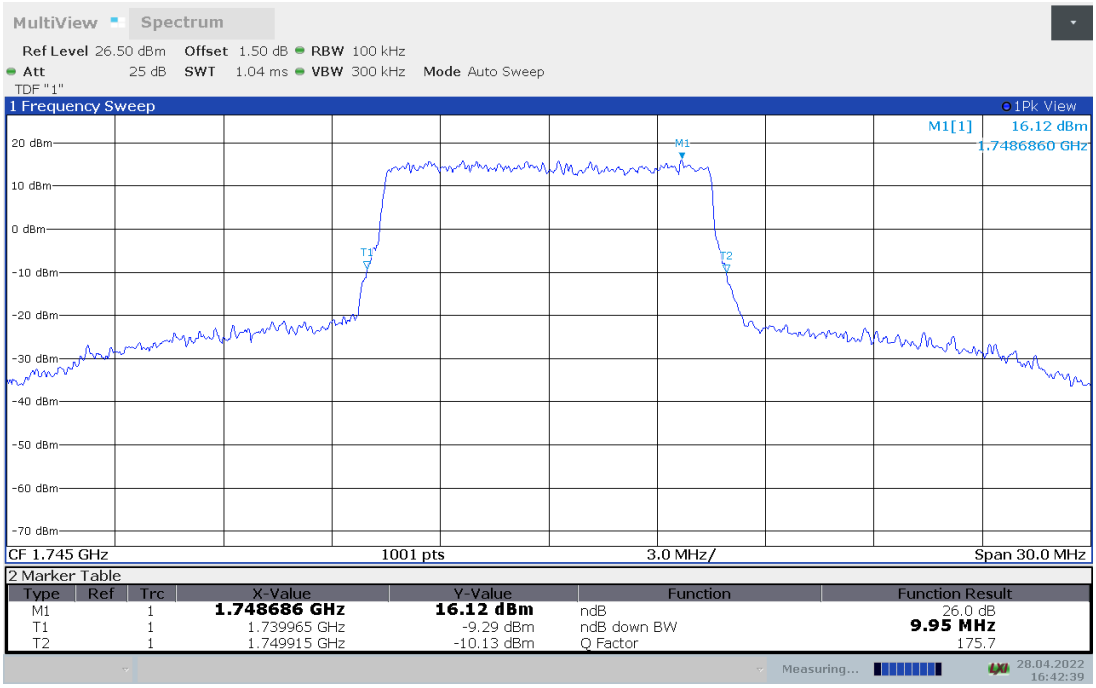
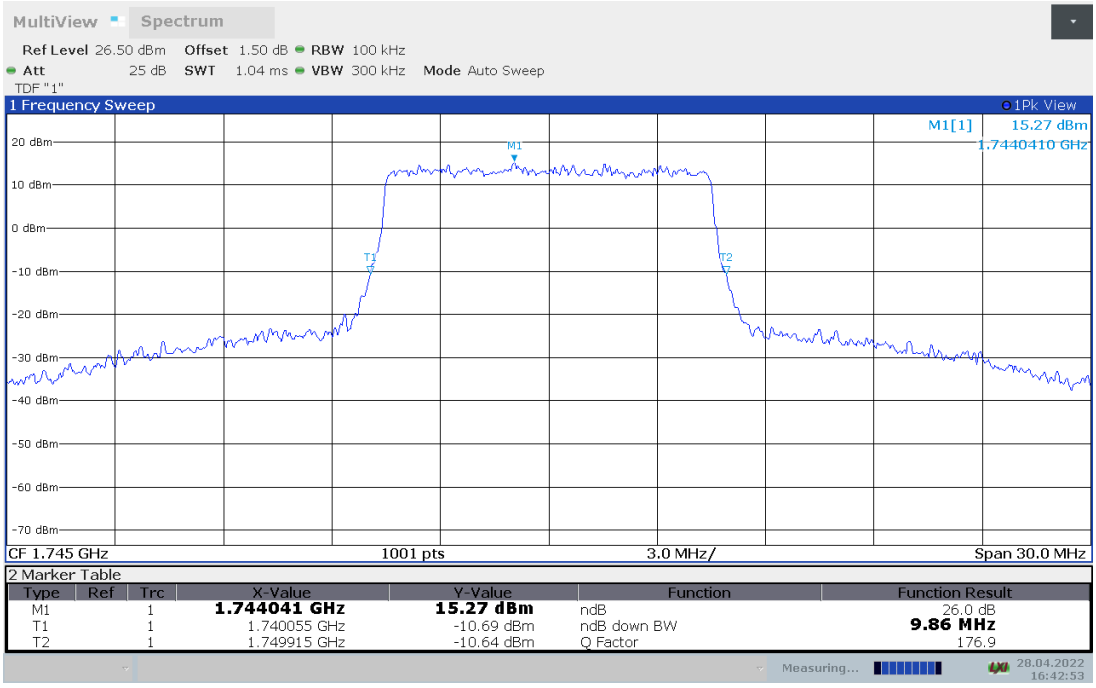
LTE band 66, 10MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
	QPSK	16QAM	64QAM
1745.0	9.95	9.86	9.68

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



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



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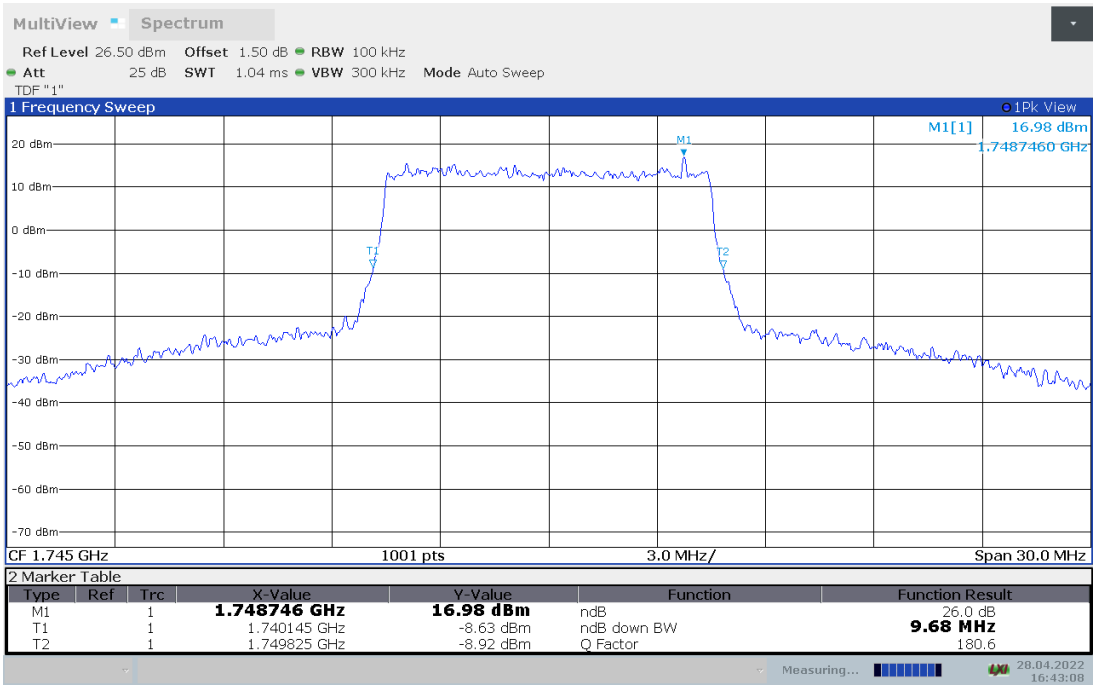
LTE band 66, 10MHz Bandwidth, 64QAM (-26dBc BW)



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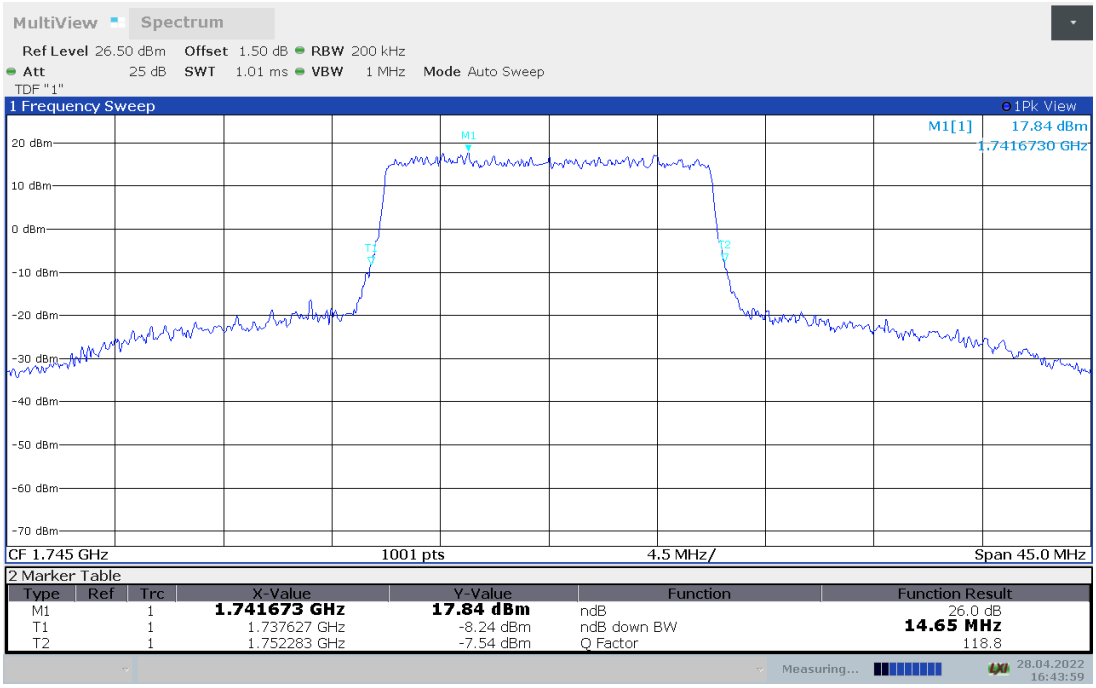
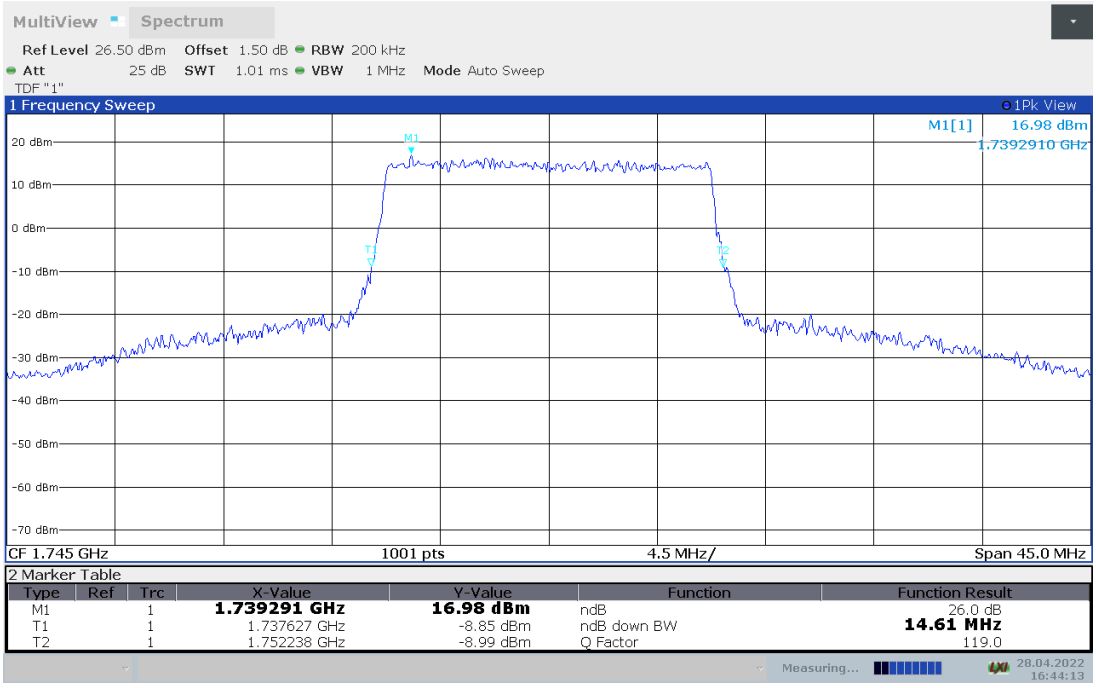
LTE band 66, 15MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1745.0	QPSK	16QAM	64QAM
	14.65	14.61	14.70

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



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



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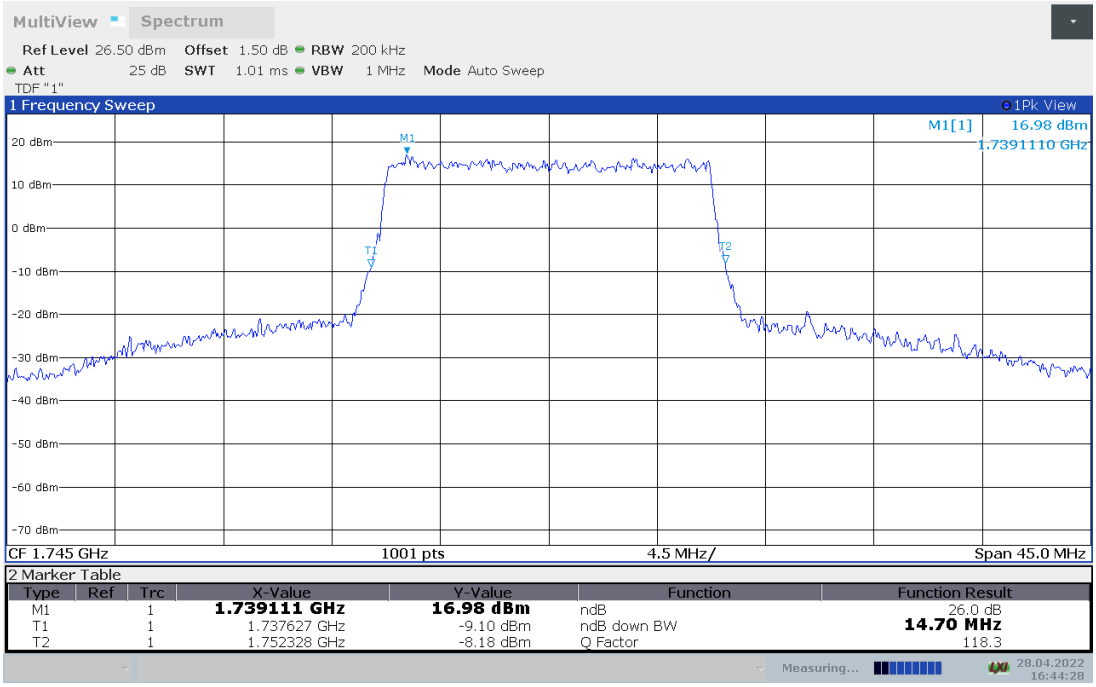
LTE band 66, 15MHz Bandwidth, 64QAM (-26dBc BW)



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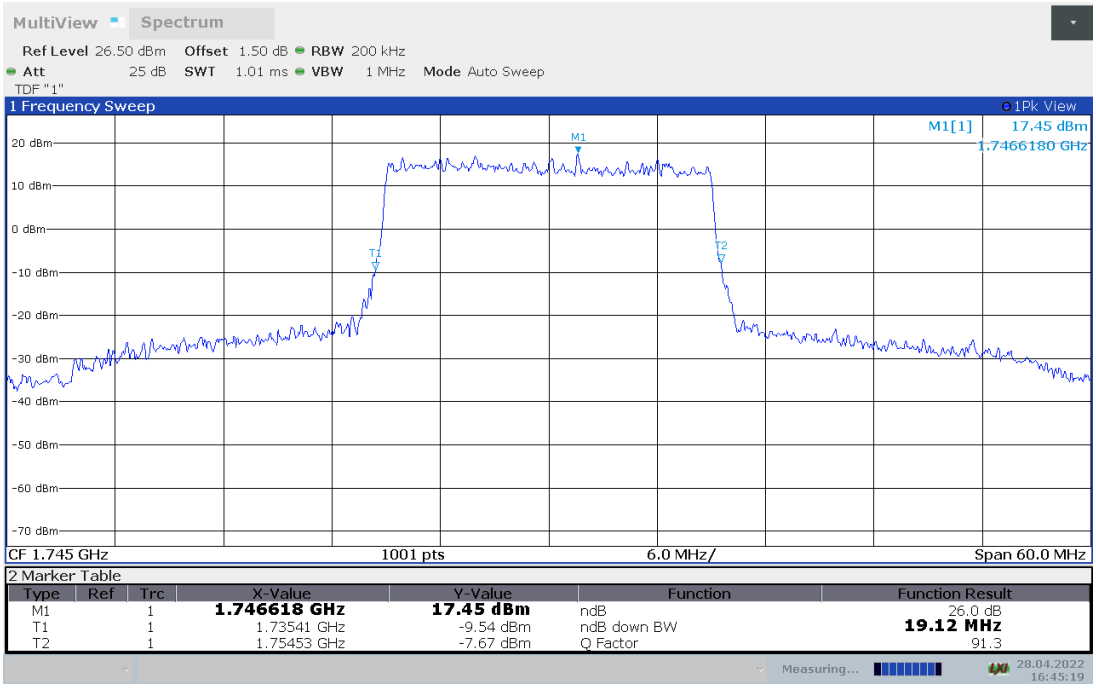
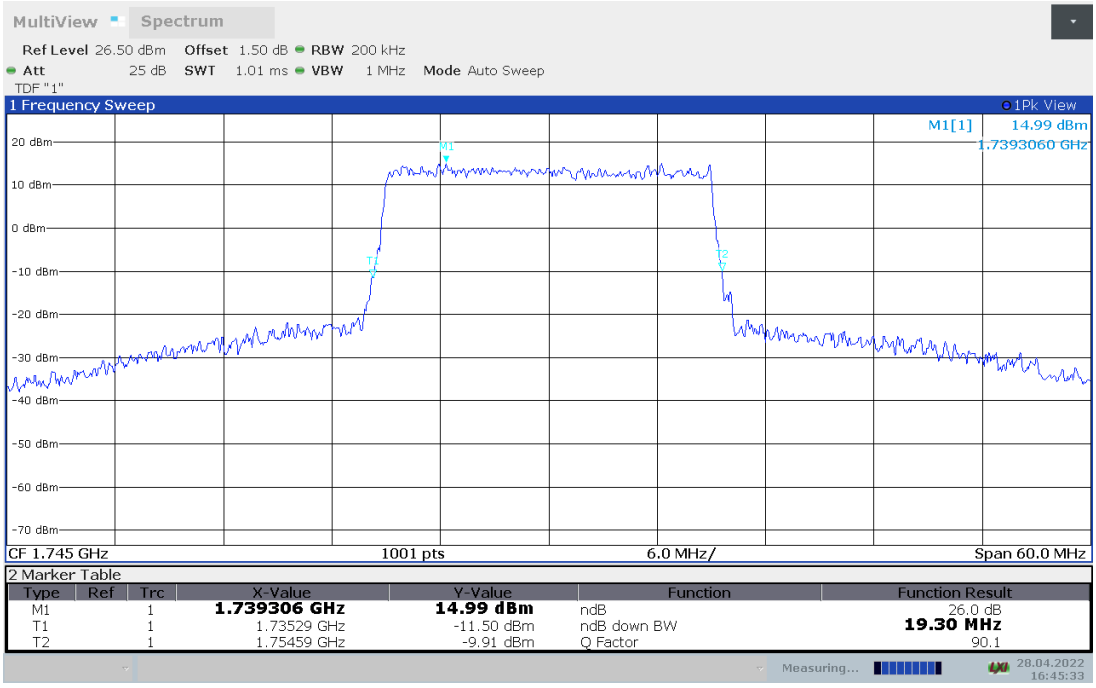
LTE band 66, 20MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1745.0	QPSK	16QAM	64QAM
	19.12	19.30	19.12

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



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



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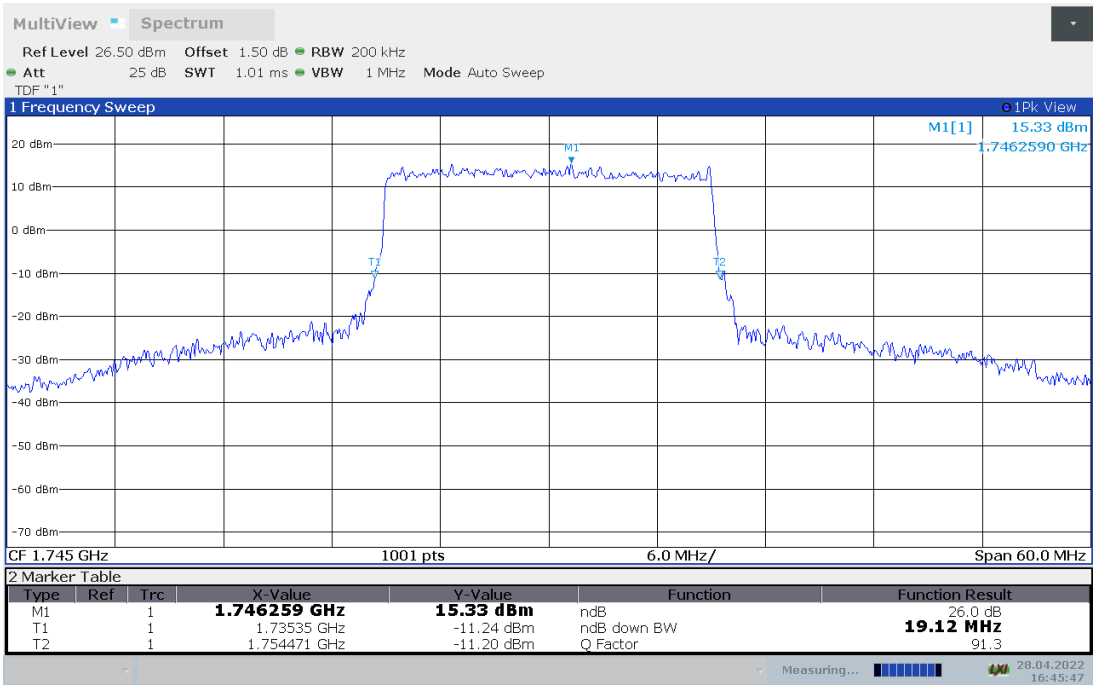
LTE band 66, 20MHz Bandwidth, 64QAM (-26dBc BW)



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.

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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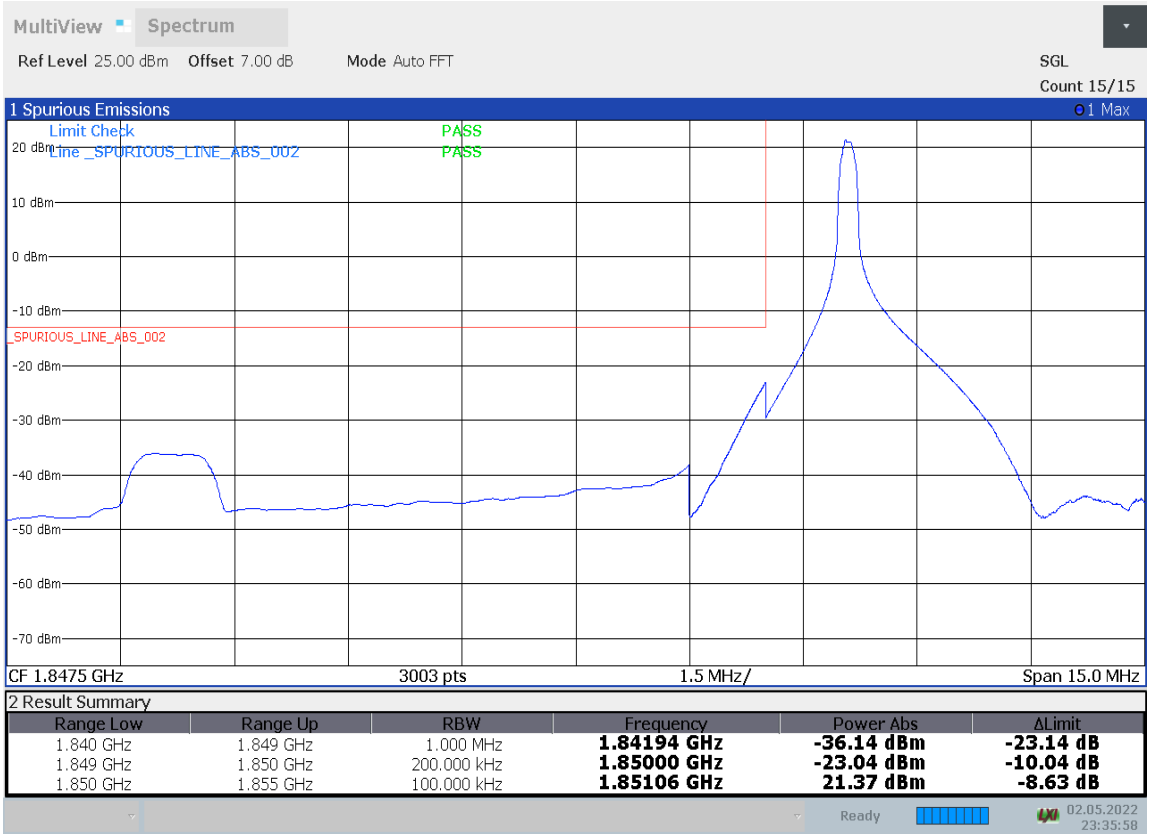
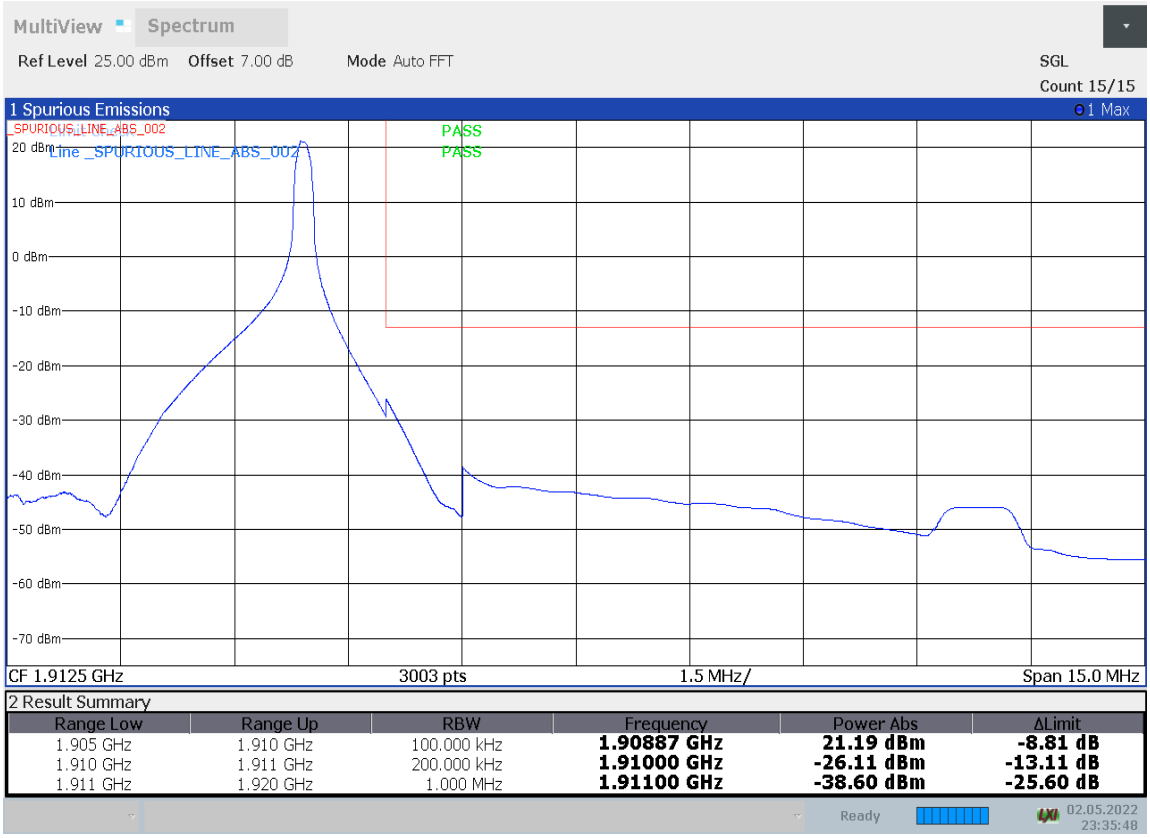
LTE band 2

LOW BAND EDGE BLOCK-1RB-low



HIGH BAND EDGE BLOCK-1RB-high



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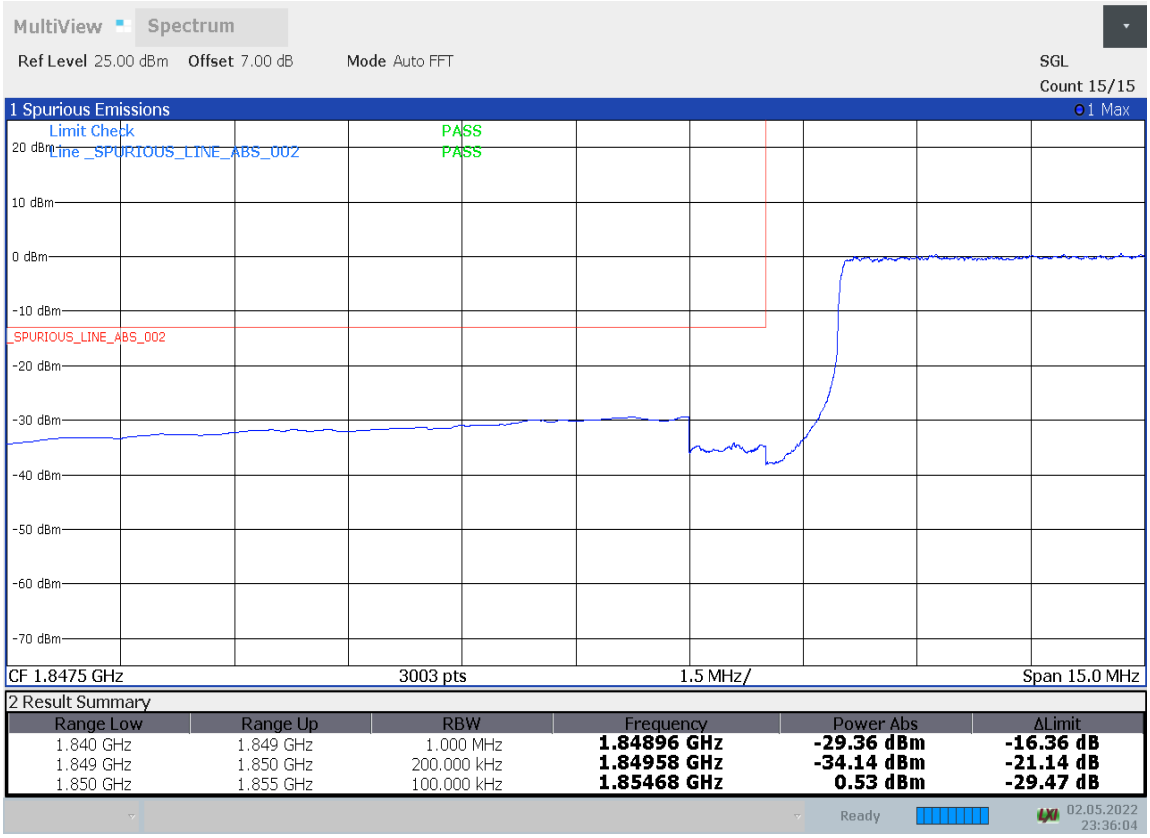
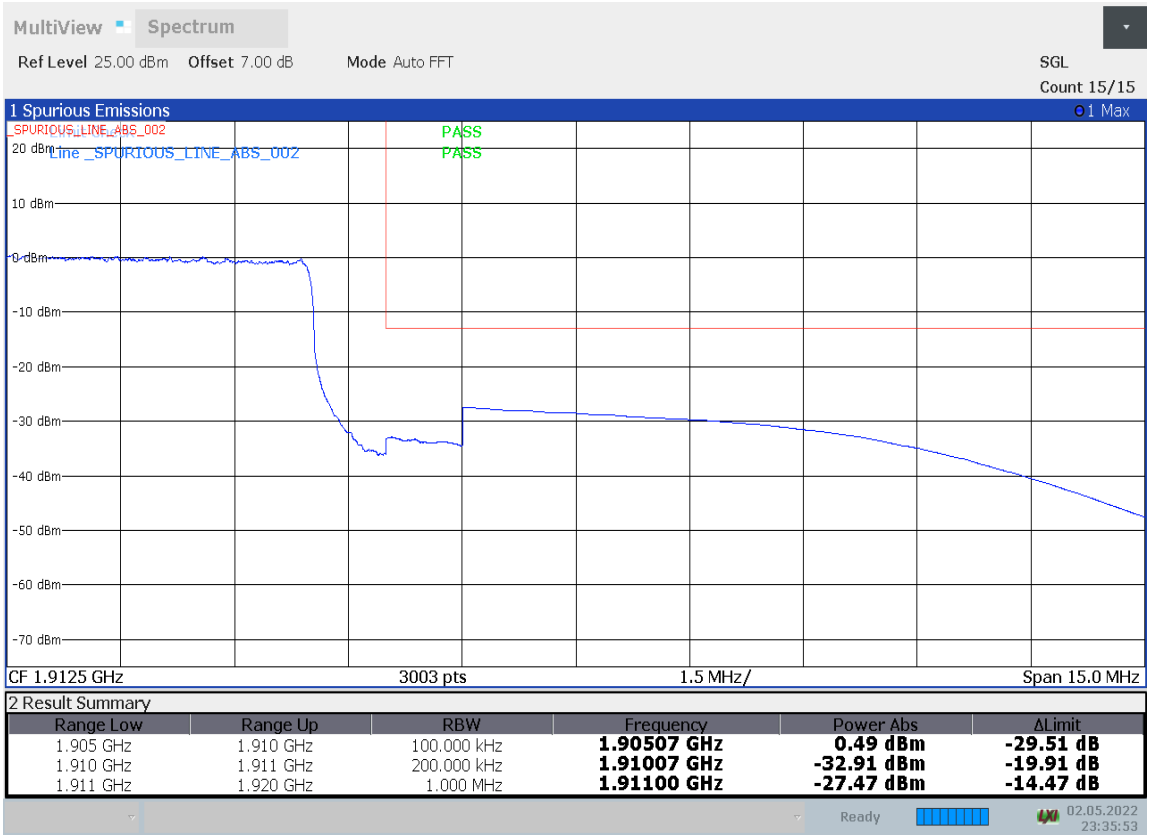
LOW BAND EDGE BLOCK-20MHz-100%RB



HIGH BAND EDGE BLOCK-20MHz-100%RB



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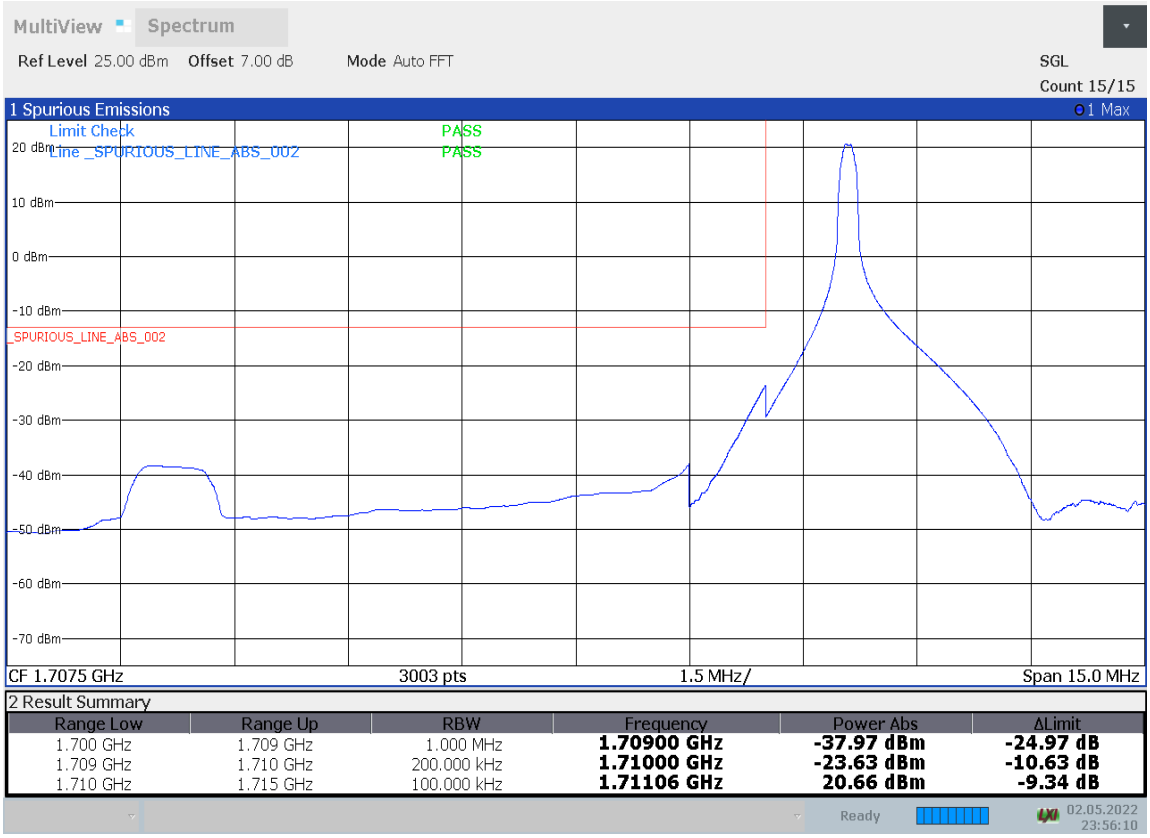
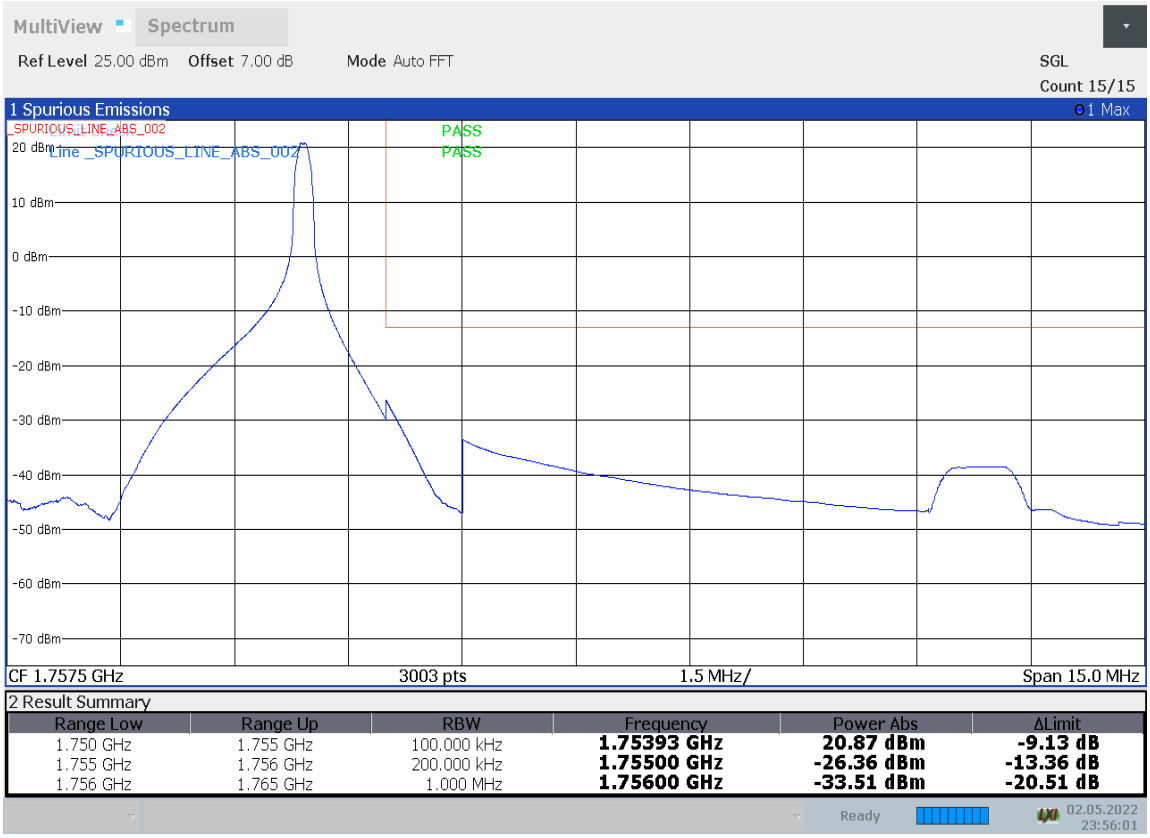
LTE band 4

LOW BAND EDGE BLOCK-1RB-low



HIGH BAND EDGE BLOCK-1RB-high



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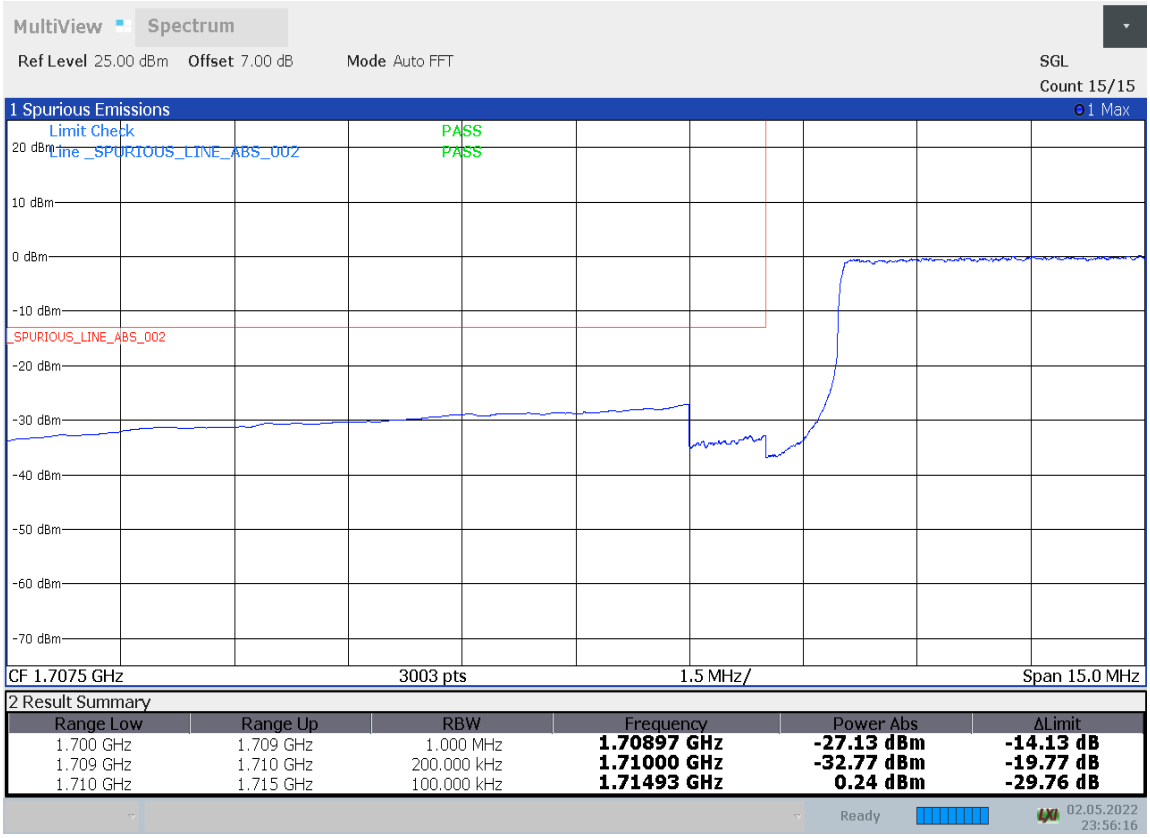
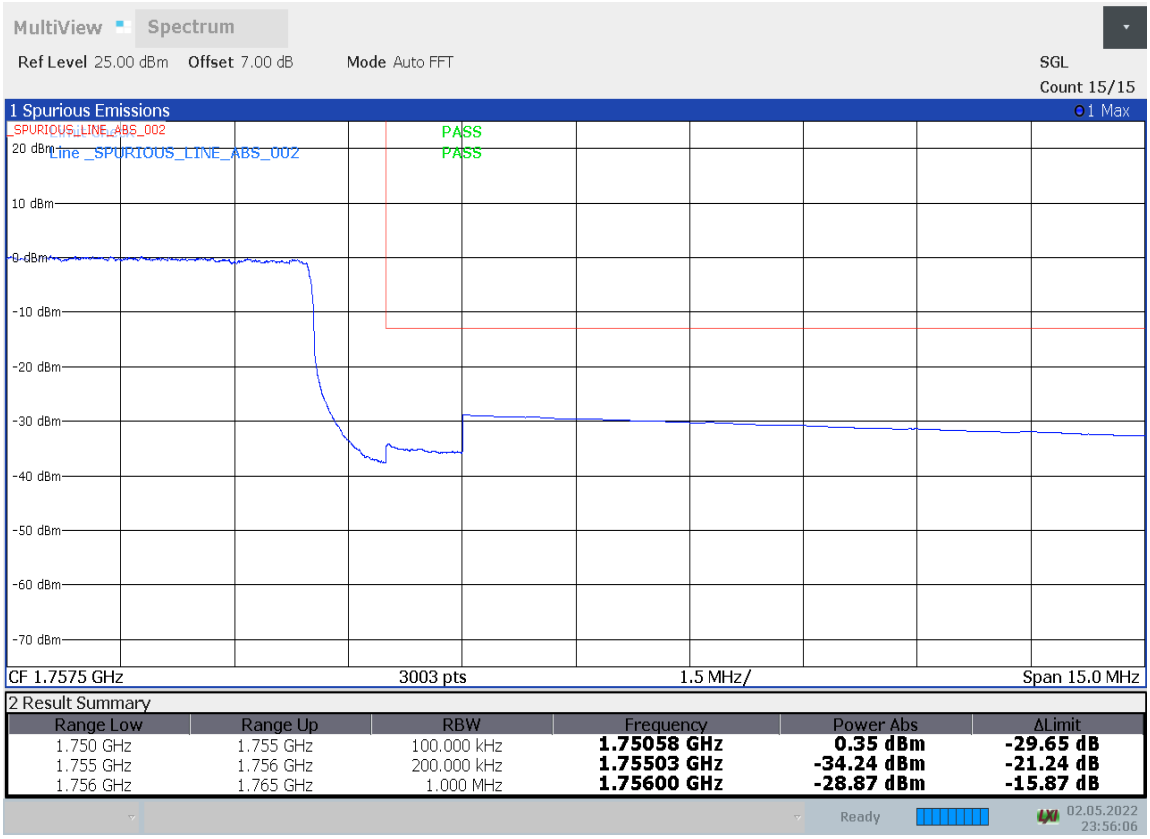
LOW BAND EDGE BLOCK-20MHz-100%RB



2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	**1.70897 GHz**	**-27.13 dBm**	**-14.13 dB**
1.709 GHz	1.710 GHz	200.000 kHz	**1.71000 GHz**	**-32.77 dBm**	**-19.77 dB**
1.710 GHz	1.715 GHz	100.000 kHz	**1.71493 GHz**	**0.24 dBm**	**-29.76 dB**

HIGH BAND EDGE BLOCK-20MHz-100%RB



2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.750 GHz	1.755 GHz	100.000 kHz	**1.75058 GHz**	**0.35 dBm**	**-29.65 dB**
1.755 GHz	1.756 GHz	200.000 kHz	**1.75503 GHz**	**-34.24 dBm**	**-21.24 dB**
1.756 GHz	1.765 GHz	1.000 MHz	**1.75600 GHz**	**-28.87 dBm**	**-15.87 dB**

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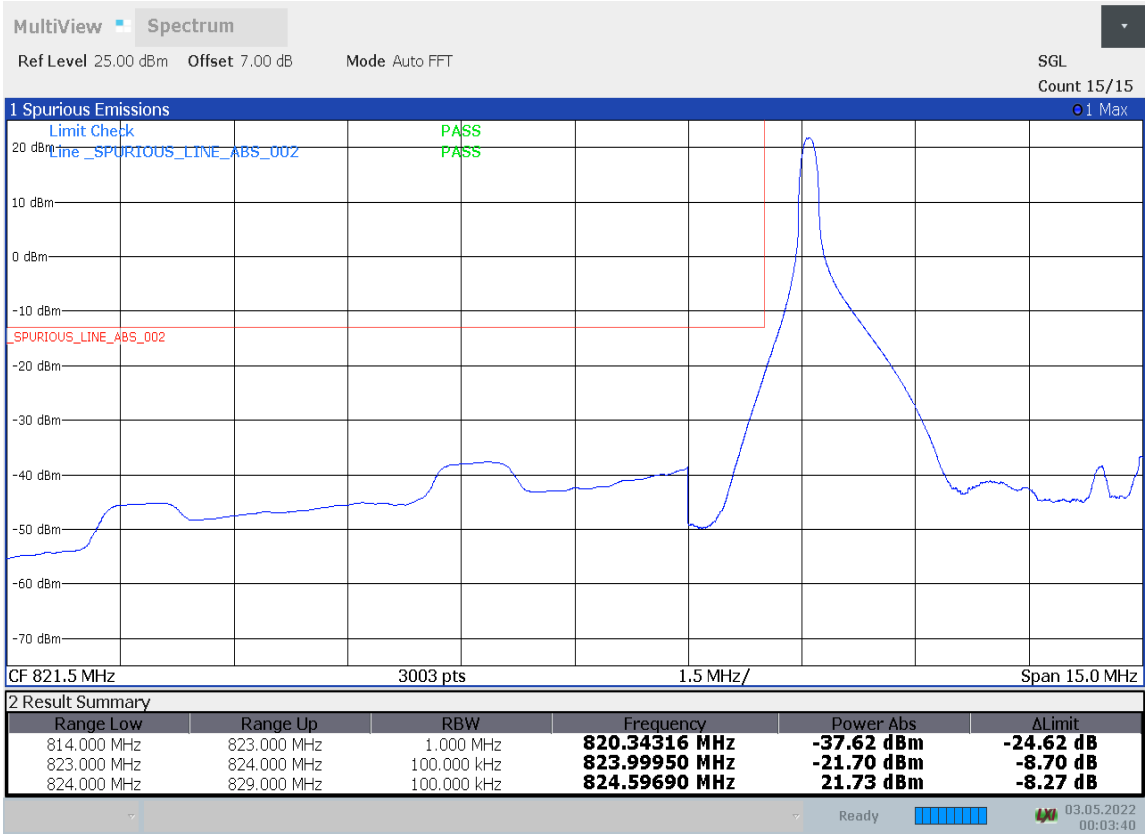
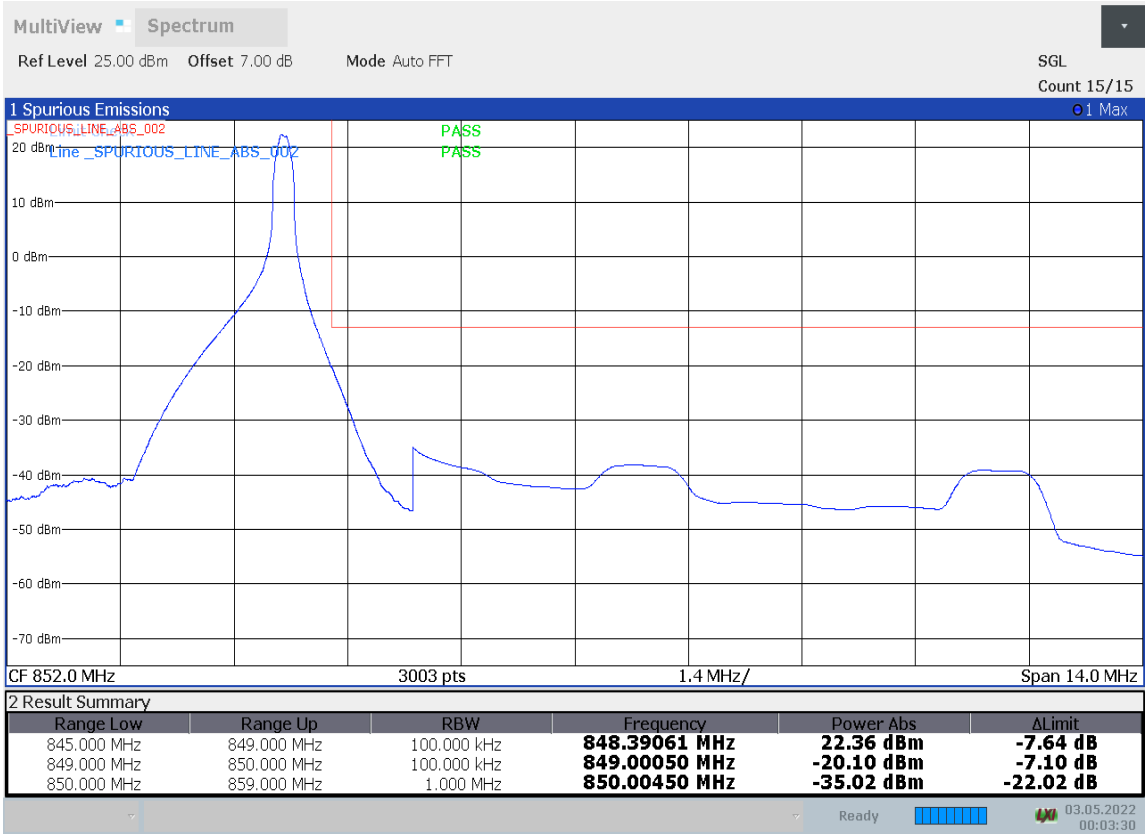
LTE band 5

LOW BAND EDGE BLOCK-1RB-low



HIGH BAND EDGE BLOCK-1RB-high



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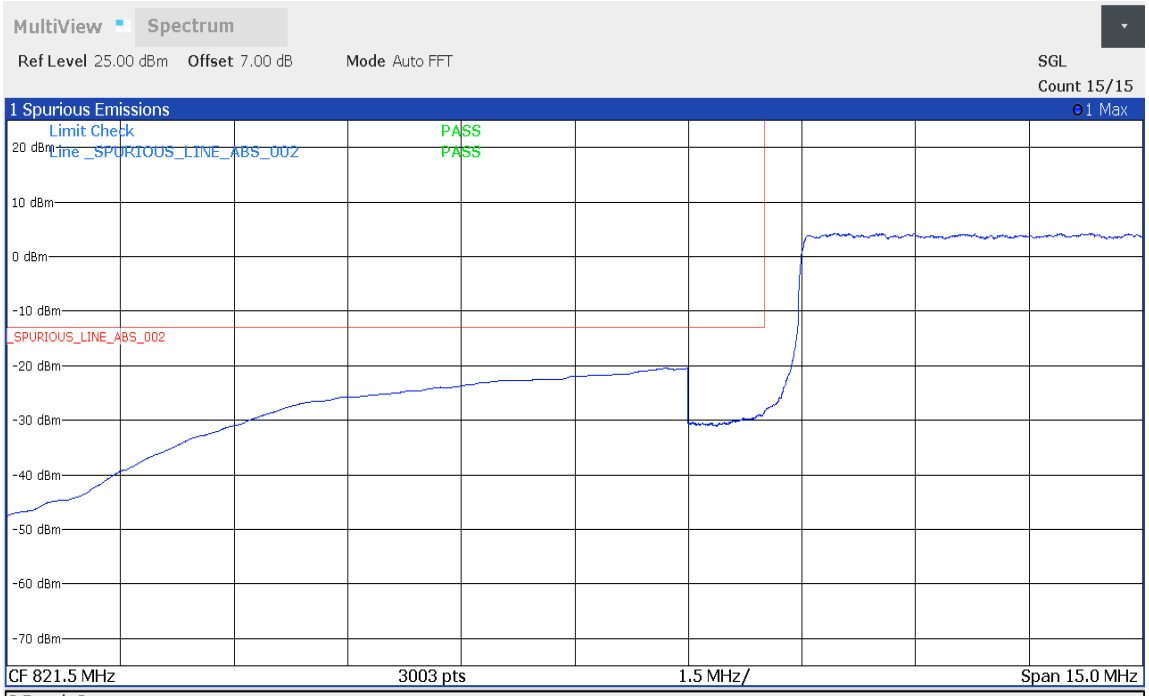
LOW BAND EDGE BLOCK-20MHz-100%RB

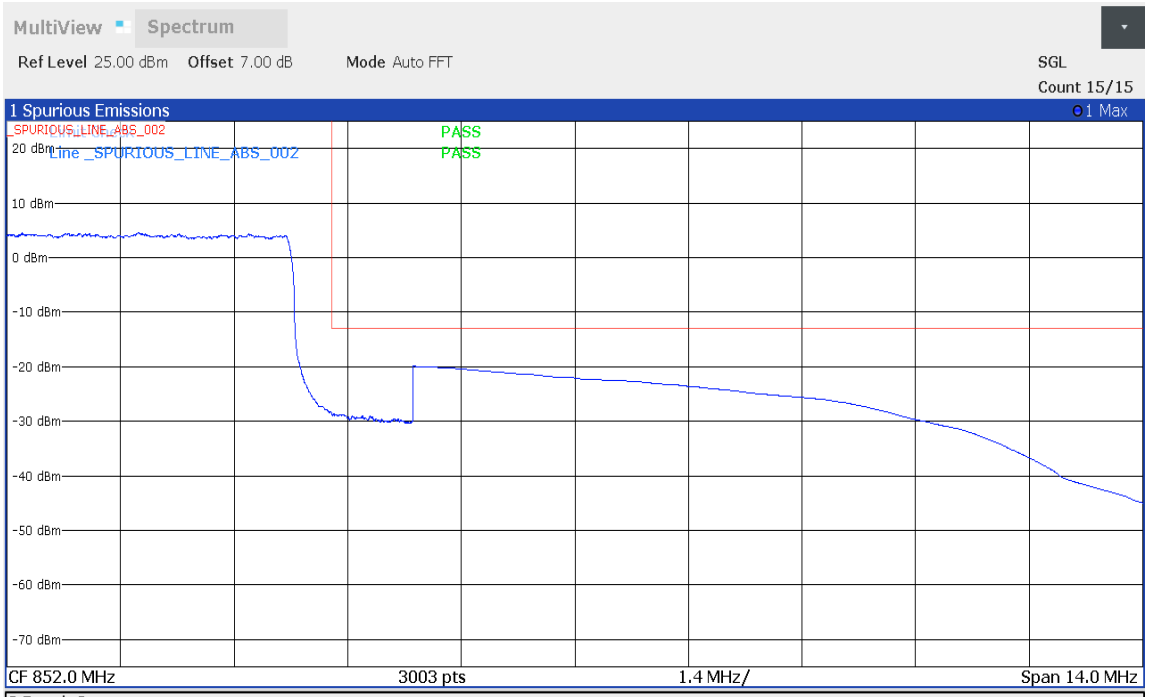


2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
814.000 MHz	823.000 MHz	1.000 MHz	**822.69880 MHz**	**-20.49 dBm**	**-7.49 dB**
823.000 MHz	824.000 MHz	100.000 kHz	**823.99950 MHz**	**-28.65 dBm**	**-15.65 dB**
824.000 MHz	829.000 MHz	100.000 kHz	**825.47602 MHz**	**4.28 dBm**	**-25.72 dB**

Ready 03.05.2022 00:03:47

HIGH BAND EDGE BLOCK-20MHz-100%RB



2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
845.000 MHz	849.000 MHz	100.000 kHz	**846.61638 MHz**	**4.60 dBm**	**-25.40 dB**
849.000 MHz	850.000 MHz	100.000 kHz	**849.02947 MHz**	**-28.65 dBm**	**-15.65 dB**
850.000 MHz	859.000 MHz	1.000 MHz	**850.00450 MHz**	**-19.92 dBm**	**-6.92 dB**

Ready 03.05.2022 00:03:35

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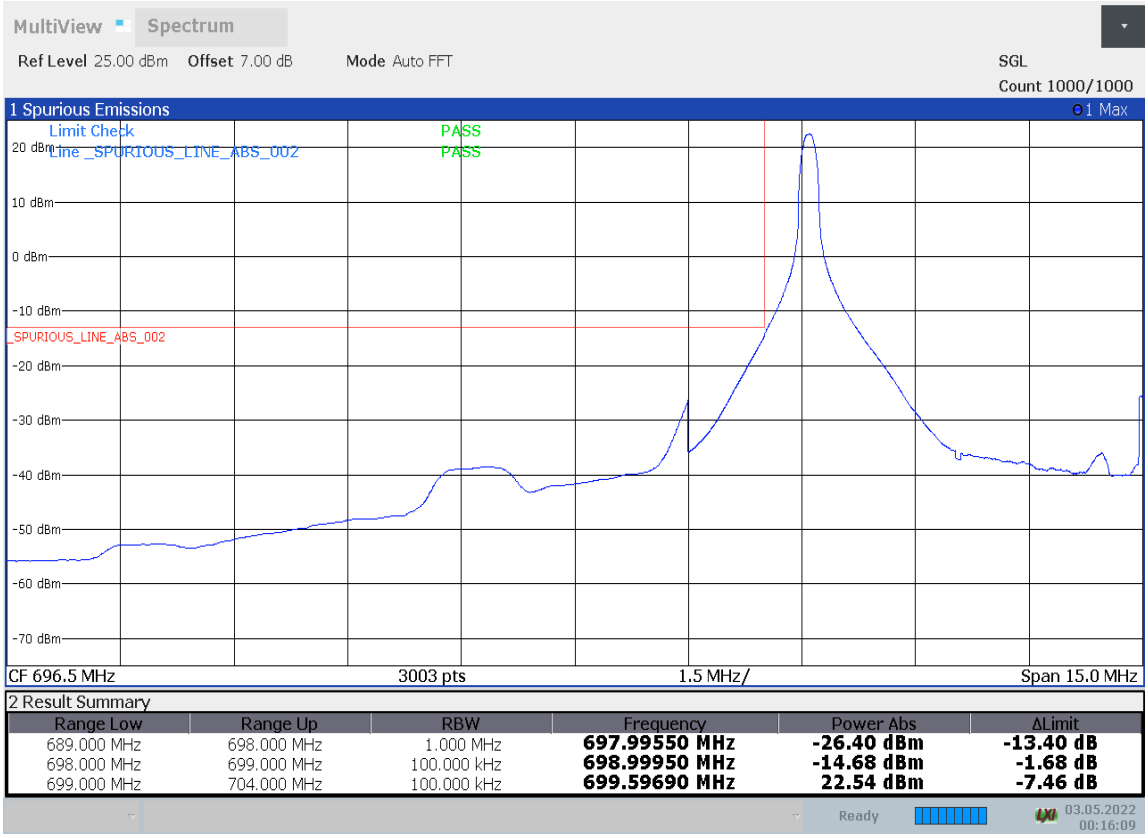
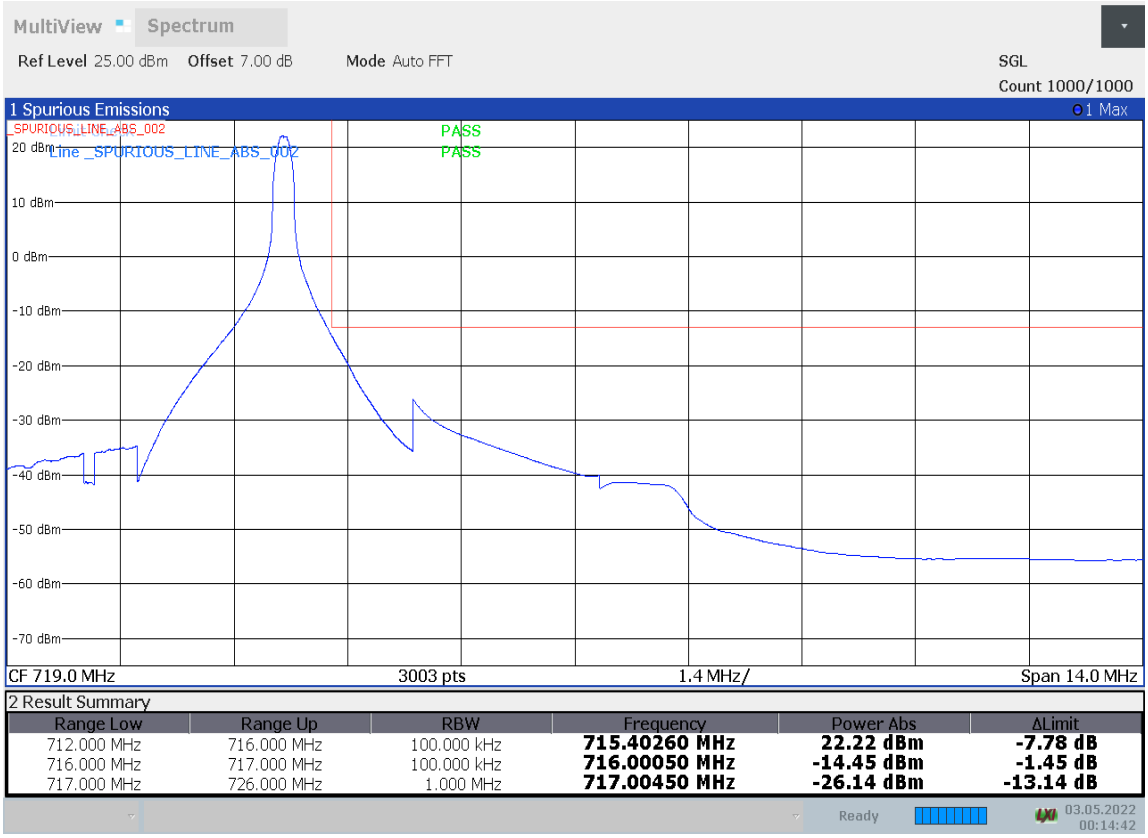
LTE band 12

LOW BAND EDGE BLOCK-1RB-low



Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
689.000 MHz	698.000 MHz	1.000 MHz	**697.99550 MHz**	**-26.40 dBm**	**-13.40 dB**
698.000 MHz	699.000 MHz	100.000 kHz	**698.99950 MHz**	**-14.68 dBm**	**-1.68 dB**
699.000 MHz	704.000 MHz	100.000 kHz	**699.59690 MHz**	**22.54 dBm**	**-7.46 dB**

HIGH BAND EDGE BLOCK-1RB-high



Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
712.000 MHz	716.000 MHz	100.000 kHz	**715.40260 MHz**	**22.22 dBm**	**-7.78 dB**
716.000 MHz	717.000 MHz	100.000 kHz	**716.00050 MHz**	**-14.45 dBm**	**-1.45 dB**
717.000 MHz	726.000 MHz	1.000 MHz	**717.00450 MHz**	**-26.14 dBm**	**-13.14 dB**

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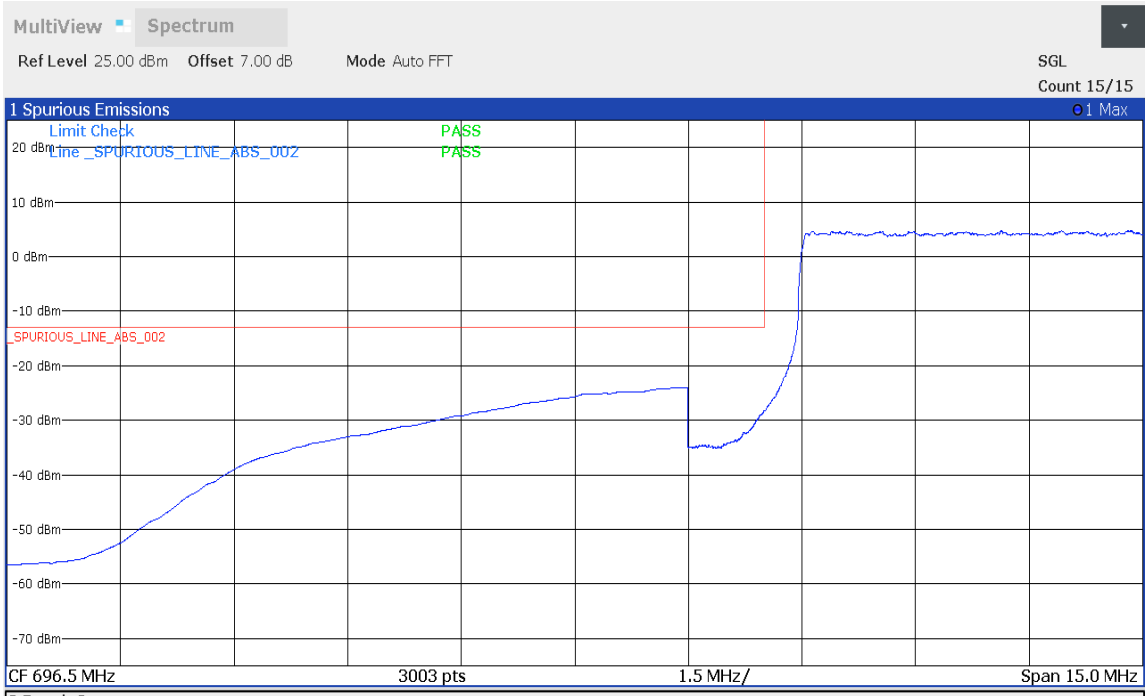
LOW BAND EDGE BLOCK-20MHz-100%RB

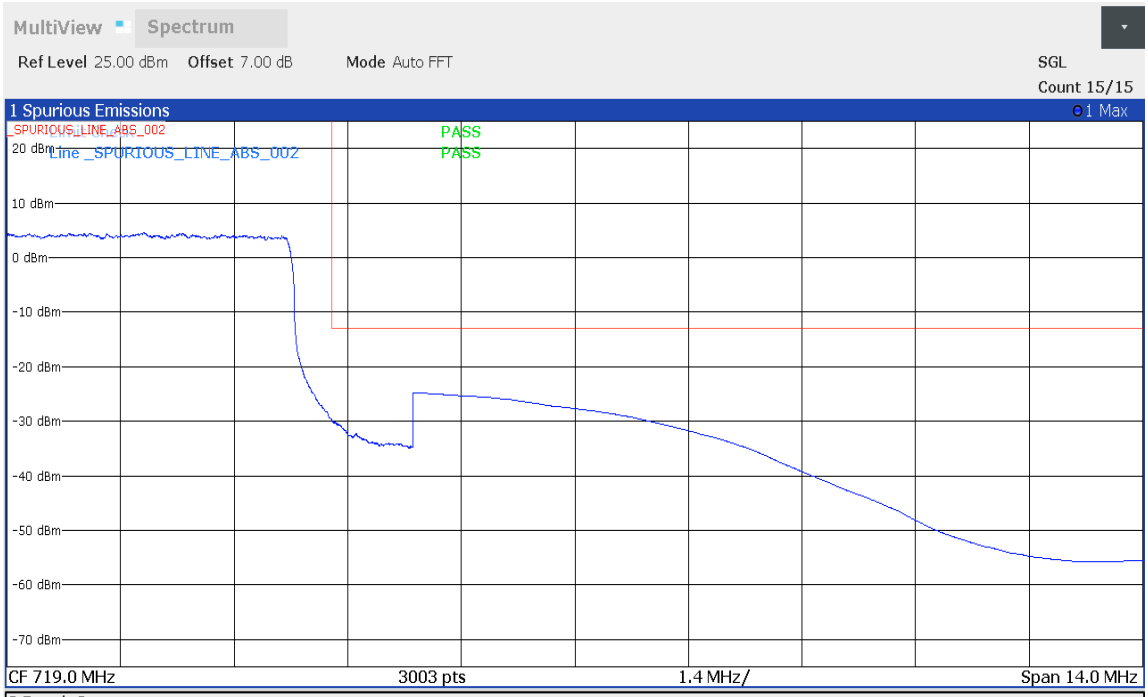


2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
689.000 MHz	698.000 MHz	1.000 MHz	**697.95954 MHz**	**-23.96 dBm**	**-10.96 dB**
698.000 MHz	699.000 MHz	100.000 kHz	**698.99950 MHz**	**-28.24 dBm**	**-15.24 dB**
699.000 MHz	704.000 MHz	100.000 kHz	**702.13437 MHz**	**4.82 dBm**	**-25.18 dB**

Ready 03.05.2022 00:16:18

HIGH BAND EDGE BLOCK-20MHz-100%RB



2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
712.000 MHz	716.000 MHz	100.000 kHz	**713.68831 MHz**	**4.56 dBm**	**-25.44 dB**
716.000 MHz	717.000 MHz	100.000 kHz	**716.00050 MHz**	**-29.74 dBm**	**-16.74 dB**
717.000 MHz	726.000 MHz	1.000 MHz	**717.00450 MHz**	**-24.77 dBm**	**-11.77 dB**

Ready 03.05.2022 00:14:49

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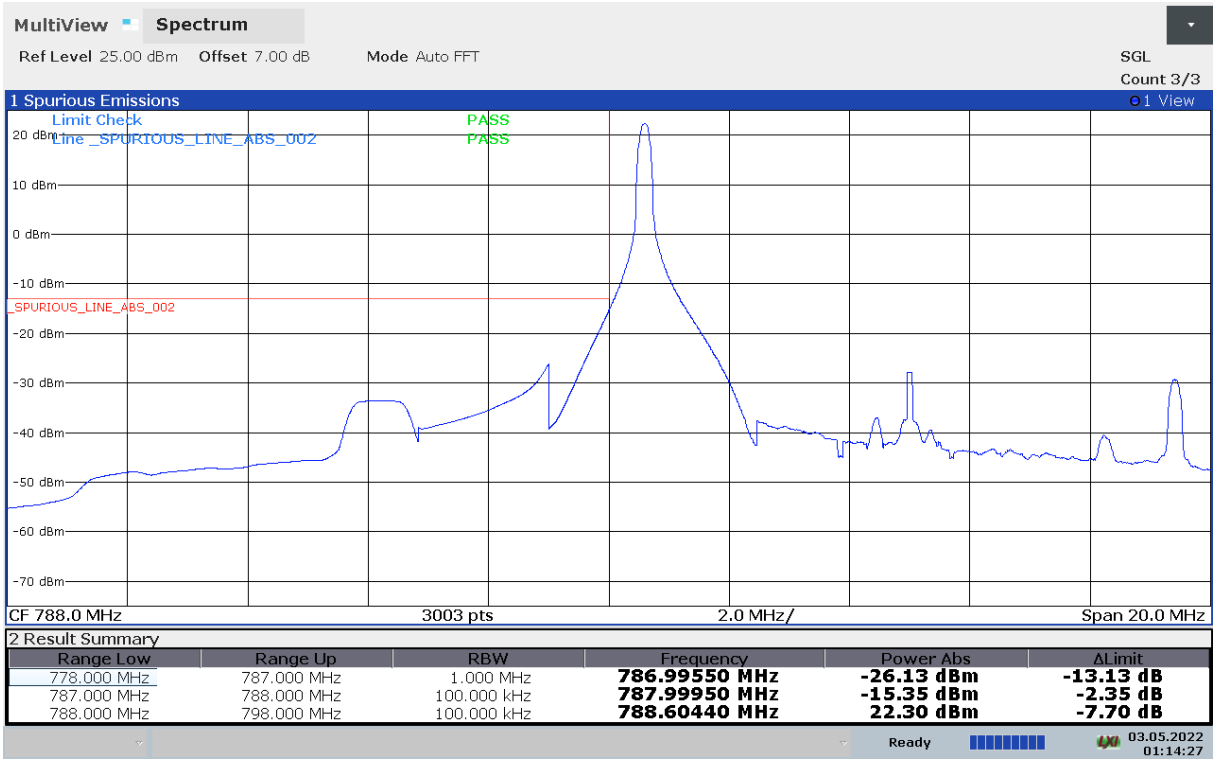
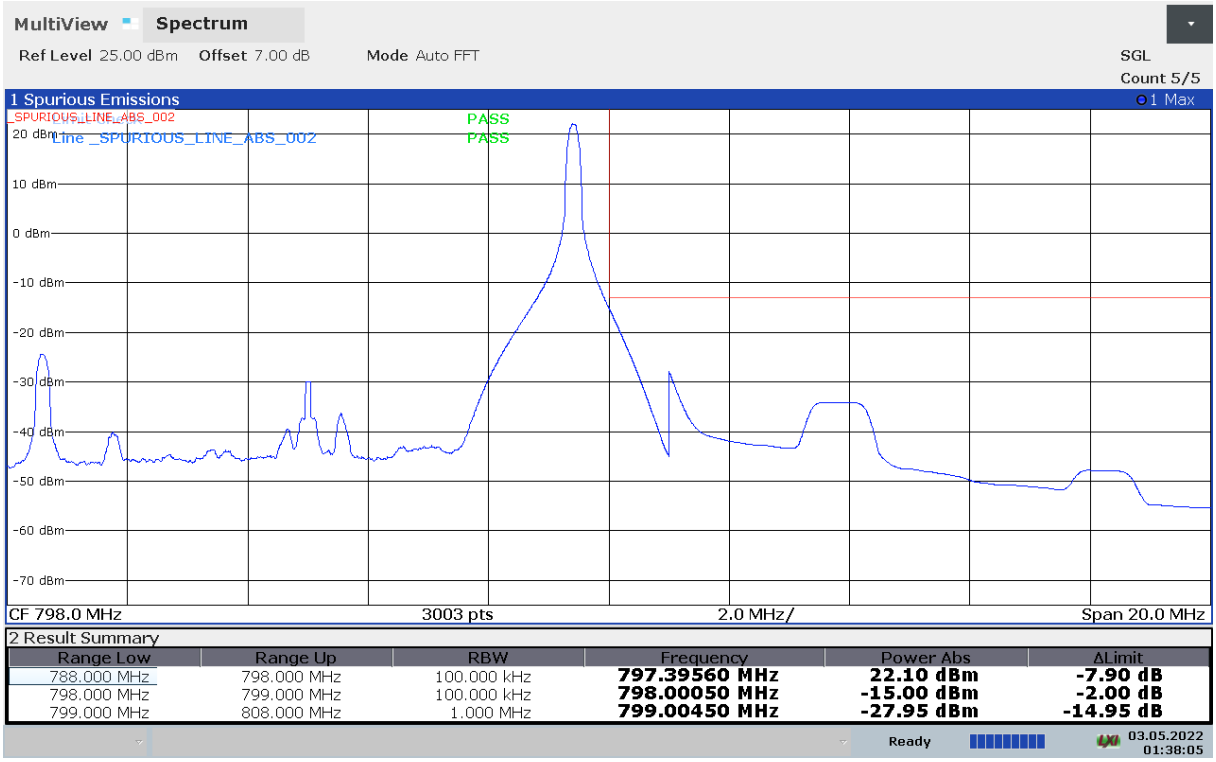
LTE band 14

LOW BAND EDGE BLOCK-1RB-low



HIGH BAND EDGE BLOCK-1RB-high



LOW BAND EDGE BLOCK-20MHz-100%RB

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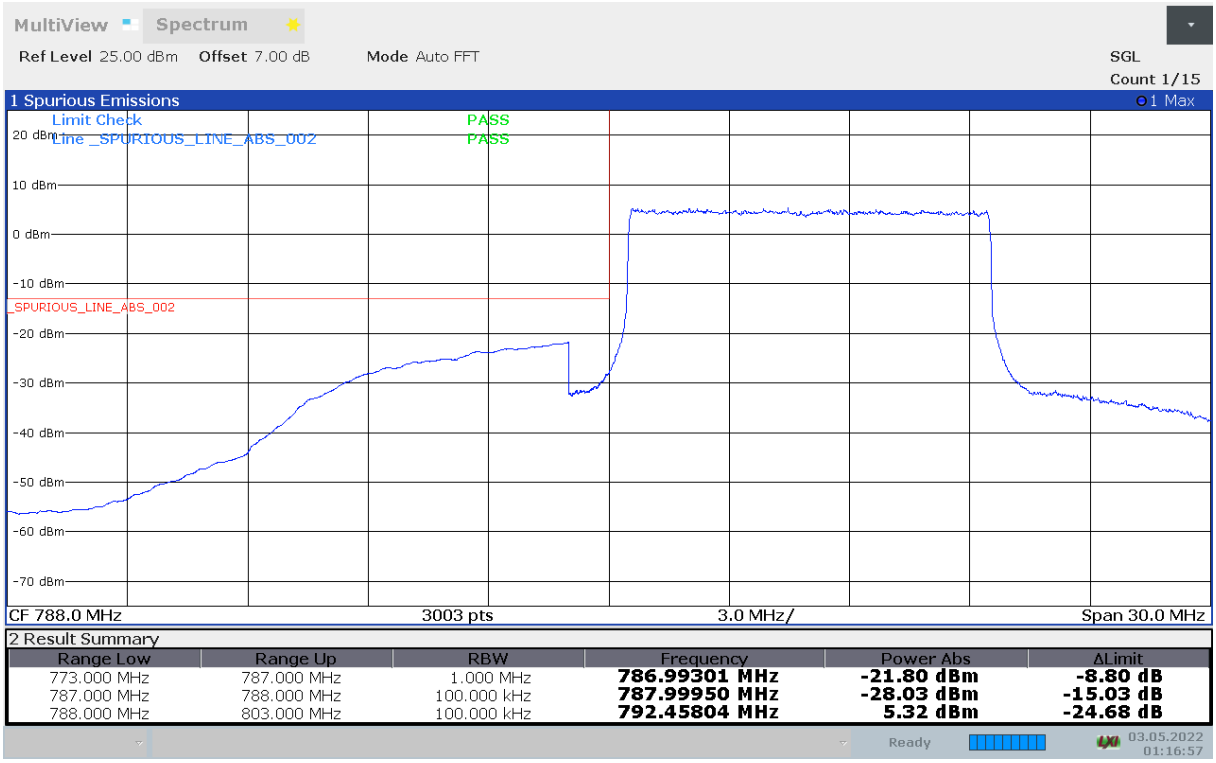
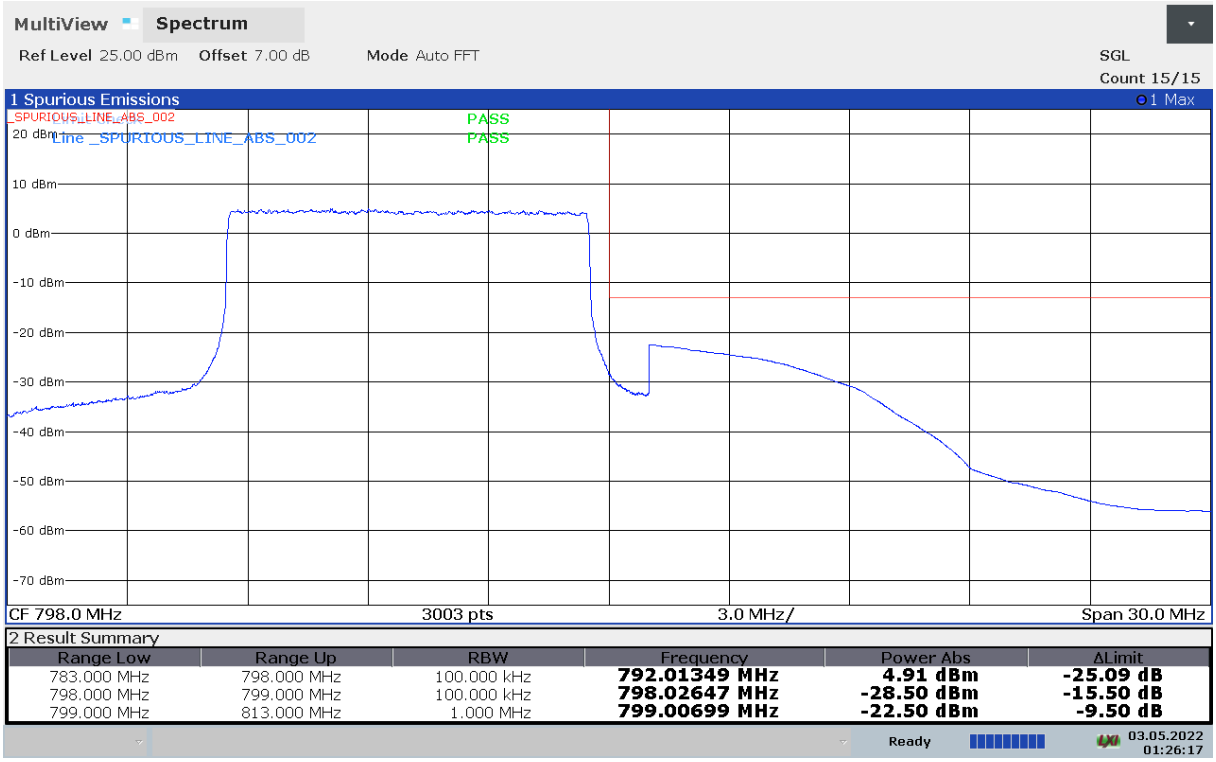


HIGH BAND EDGE BLOCK-20MHz-100%RB



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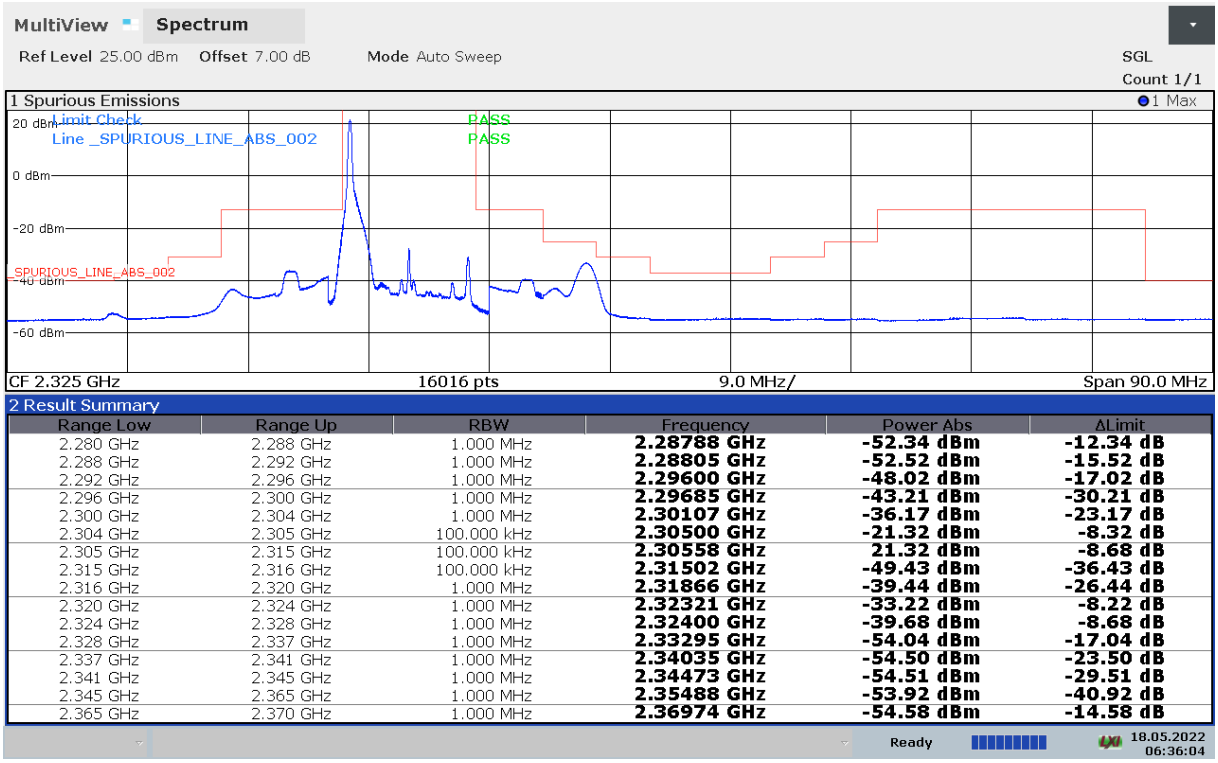
LTE band 30

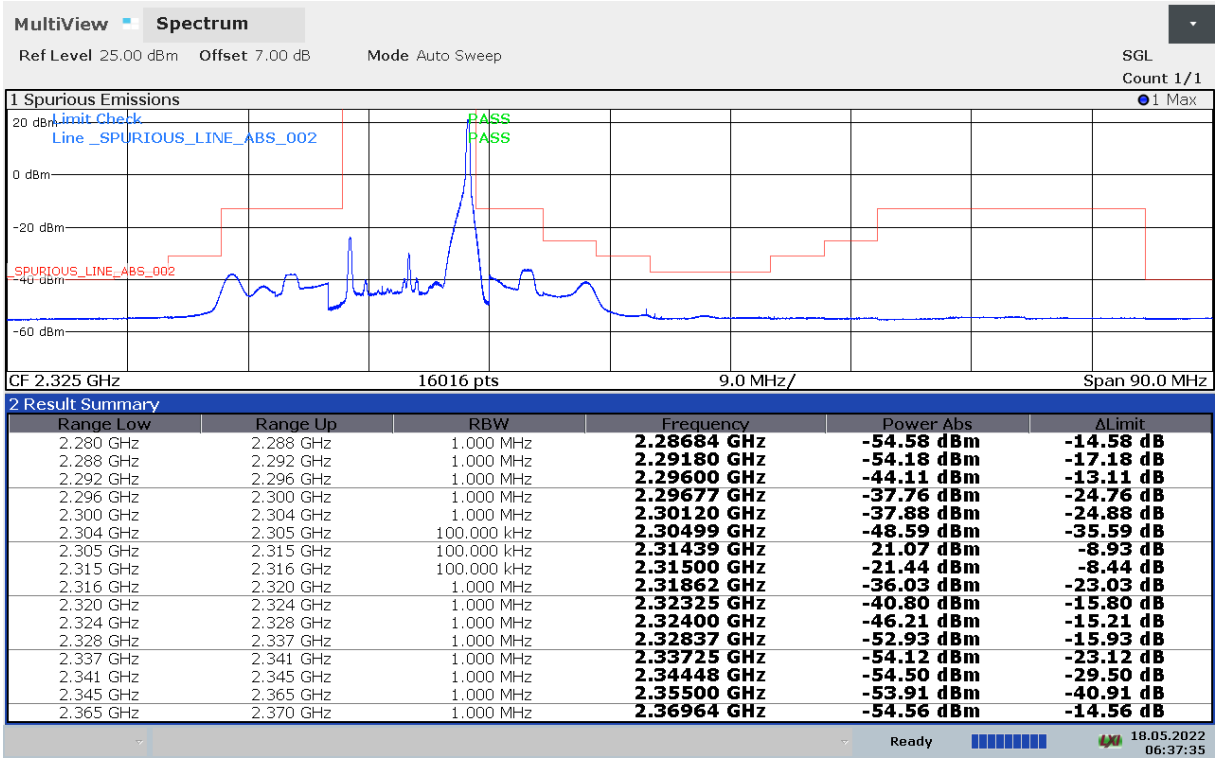
LOW BAND EDGE BLOCK-1RB-low



2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.280 GHz	2.288 GHz	1.000 MHz	**2.28788 GHz**	**-52.34 dBm**	**-12.34 dB**
2.288 GHz	2.292 GHz	1.000 MHz	**2.28805 GHz**	**-52.52 dBm**	**-15.52 dB**
2.292 GHz	2.296 GHz	1.000 MHz	**2.29600 GHz**	**-48.02 dBm**	**-17.02 dB**
2.296 GHz	2.300 GHz	1.000 MHz	**2.29685 GHz**	**-43.21 dBm**	**-30.21 dB**
2.300 GHz	2.304 GHz	1.000 MHz	**2.30107 GHz**	**-36.17 dBm**	**-23.17 dB**
2.304 GHz	2.305 GHz	100.000 kHz	**2.30500 GHz**	**-21.32 dBm**	**-8.32 dB**
2.305 GHz	2.315 GHz	100.000 kHz	**2.30558 GHz**	**21.32 dBm**	**-8.68 dB**
2.315 GHz	2.316 GHz	100.000 kHz	**2.31502 GHz**	**-49.43 dBm**	**-36.43 dB**
2.316 GHz	2.320 GHz	1.000 MHz	**2.31866 GHz**	**-39.44 dBm**	**-26.44 dB**
2.320 GHz	2.324 GHz	1.000 MHz	**2.32321 GHz**	**-33.22 dBm**	**-8.22 dB**
2.324 GHz	2.328 GHz	1.000 MHz	**2.32400 GHz**	**-39.68 dBm**	**-8.68 dB**
2.328 GHz	2.337 GHz	1.000 MHz	**2.33295 GHz**	**-54.04 dBm**	**-17.04 dB**
2.337 GHz	2.341 GHz	1.000 MHz	**2.34035 GHz**	**-54.50 dBm**	**-23.50 dB**
2.341 GHz	2.345 GHz	1.000 MHz	**2.34473 GHz**	**-54.51 dBm**	**-29.51 dB**
2.345 GHz	2.365 GHz	1.000 MHz	**2.35488 GHz**	**-53.92 dBm**	**-40.92 dB**
2.365 GHz	2.370 GHz	1.000 MHz	**2.36974 GHz**	**-54.58 dBm**	**-14.58 dB**

HIGH BAND EDGE BLOCK-1RB-high



2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.280 GHz	2.288 GHz	1.000 MHz	**2.28684 GHz**	**-54.58 dBm**	**-14.58 dB**
2.288 GHz	2.292 GHz	1.000 MHz	**2.29180 GHz**	**-54.18 dBm**	**-17.18 dB**
2.292 GHz	2.296 GHz	1.000 MHz	**2.29600 GHz**	**-44.11 dBm**	**-13.11 dB**
2.296 GHz	2.300 GHz	1.000 MHz	**2.29677 GHz**	**-37.76 dBm**	**-24.76 dB**
2.300 GHz	2.304 GHz	1.000 MHz	**2.30120 GHz**	**-37.88 dBm**	**-24.88 dB**
2.304 GHz	2.305 GHz	100.000 kHz	**2.30499 GHz**	**-48.59 dBm**	**-35.59 dB**
2.305 GHz	2.315 GHz	100.000 kHz	**2.31439 GHz**	**21.07 dBm**	**-8.93 dB**
2.315 GHz	2.316 GHz	100.000 kHz	**2.31500 GHz**	**-21.44 dBm**	**-8.44 dB**
2.316 GHz	2.320 GHz	1.000 MHz	**2.31862 GHz**	**-36.03 dBm**	**-23.03 dB**
2.320 GHz	2.324 GHz	1.000 MHz	**2.32325 GHz**	**-40.80 dBm**	**-15.80 dB**
2.324 GHz	2.328 GHz	1.000 MHz	**2.32400 GHz**	**-46.21 dBm**	**-15.21 dB**
2.328 GHz	2.337 GHz	1.000 MHz	**2.32837 GHz**	**-52.93 dBm**	**-15.93 dB**
2.337 GHz	2.341 GHz	1.000 MHz	**2.33725 GHz**	**-54.12 dBm**	**-23.12 dB**
2.341 GHz	2.345 GHz	1.000 MHz	**2.34448 GHz**	**-54.50 dBm**	**-29.50 dB**
2.345 GHz	2.365 GHz	1.000 MHz	**2.35500 GHz**	**-53.91 dBm**	**-40.91 dB**
2.365 GHz	2.370 GHz	1.000 MHz	**2.36964 GHz**	**-54.56 dBm**	**-14.56 dB**

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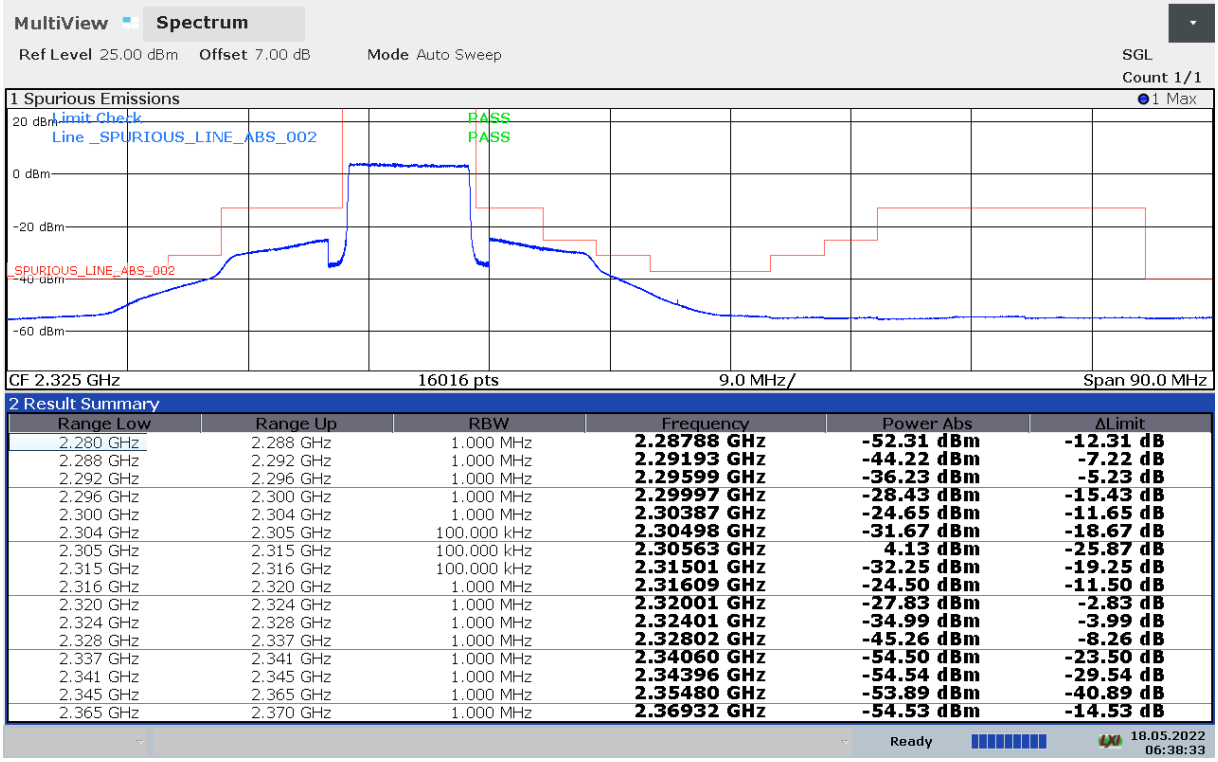
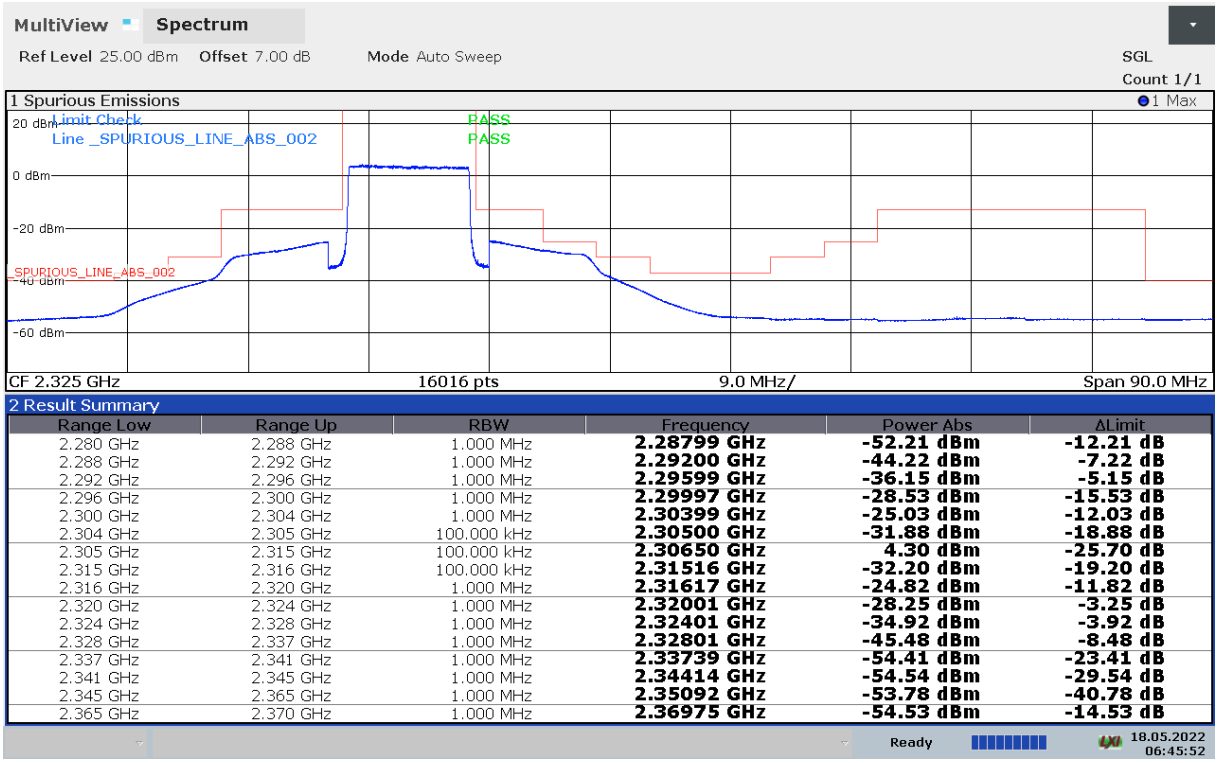
LOW BAND EDGE BLOCK-20MHz-100%RB



2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.280 GHz	2.288 GHz	1.000 MHz	**2.28788 GHz**	**-52.31 dBm**	**-12.31 dB**
2.288 GHz	2.292 GHz	1.000 MHz	**2.29193 GHz**	**-44.22 dBm**	**-7.22 dB**
2.292 GHz	2.296 GHz	1.000 MHz	**2.29599 GHz**	**-36.23 dBm**	**-5.23 dB**
2.296 GHz	2.300 GHz	1.000 MHz	**2.29997 GHz**	**-28.43 dBm**	**-15.43 dB**
2.300 GHz	2.304 GHz	1.000 MHz	**2.30387 GHz**	**-24.65 dBm**	**-11.65 dB**
2.304 GHz	2.305 GHz	100.000 kHz	**2.30498 GHz**	**-31.67 dBm**	**-18.67 dB**
2.305 GHz	2.315 GHz	100.000 kHz	**2.30563 GHz**	**4.13 dBm**	**-25.87 dB**
2.315 GHz	2.316 GHz	100.000 kHz	**2.31501 GHz**	**-32.25 dBm**	**-19.25 dB**
2.316 GHz	2.320 GHz	1.000 MHz	**2.31609 GHz**	**-24.50 dBm**	**-11.50 dB**
2.320 GHz	2.324 GHz	1.000 MHz	**2.32001 GHz**	**-27.83 dBm**	**-2.83 dB**
2.324 GHz	2.328 GHz	1.000 MHz	**2.32401 GHz**	**-34.99 dBm**	**-3.99 dB**
2.328 GHz	2.337 GHz	1.000 MHz	**2.32802 GHz**	**-45.26 dBm**	**-8.26 dB**
2.337 GHz	2.341 GHz	1.000 MHz	**2.34060 GHz**	**-54.50 dBm**	**-23.50 dB**
2.341 GHz	2.345 GHz	1.000 MHz	**2.34396 GHz**	**-54.54 dBm**	**-29.54 dB**
2.345 GHz	2.365 GHz	1.000 MHz	**2.35480 GHz**	**-53.89 dBm**	**-40.89 dB**
2.365 GHz	2.370 GHz	1.000 MHz	**2.36932 GHz**	**-54.53 dBm**	**-14.53 dB**

HIGH BAND EDGE BLOCK-20MHz-100%RB



2 Result Summary

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.280 GHz	2.288 GHz	1.000 MHz	**2.28799 GHz**	**-52.21 dBm**	**-12.21 dB**
2.288 GHz	2.292 GHz	1.000 MHz	**2.29200 GHz**	**-44.22 dBm**	**-7.22 dB**
2.292 GHz	2.296 GHz	1.000 MHz	**2.29599 GHz**	**-36.15 dBm**	**-5.15 dB**
2.296 GHz	2.300 GHz	1.000 MHz	**2.29997 GHz**	**-28.53 dBm**	**-15.53 dB**
2.300 GHz	2.304 GHz	1.000 MHz	**2.30399 GHz**	**-25.03 dBm**	**-12.03 dB**
2.304 GHz	2.305 GHz	100.000 kHz	**2.30500 GHz**	**-31.88 dBm**	**-18.88 dB**
2.305 GHz	2.315 GHz	100.000 kHz	**2.30650 GHz**	**4.30 dBm**	**-25.70 dB**
2.315 GHz	2.316 GHz	100.000 kHz	**2.31516 GHz**	**-32.20 dBm**	**-19.20 dB**
2.316 GHz	2.320 GHz	1.000 MHz	**2.31617 GHz**	**-24.82 dBm**	**-11.82 dB**
2.320 GHz	2.324 GHz	1.000 MHz	**2.32001 GHz**	**-28.25 dBm**	**-3.25 dB**
2.324 GHz	2.328 GHz	1.000 MHz	**2.32401 GHz**	**-34.92 dBm**	**-3.92 dB**
2.328 GHz	2.337 GHz	1.000 MHz	**2.32801 GHz**	**-45.48 dBm**	**-8.48 dB**
2.337 GHz	2.341 GHz	1.000 MHz	**2.33739 GHz**	**-54.41 dBm**	**-23.41 dB**
2.341 GHz	2.345 GHz	1.000 MHz	**2.34414 GHz**	**-54.54 dBm**	**-29.54 dB**
2.345 GHz	2.365 GHz	1.000 MHz	**2.35092 GHz**	**-53.78 dBm**	**-40.78 dB**
2.365 GHz	2.370 GHz	1.000 MHz	**2.36975 GHz**	**-54.53 dBm**	**-14.53 dB**

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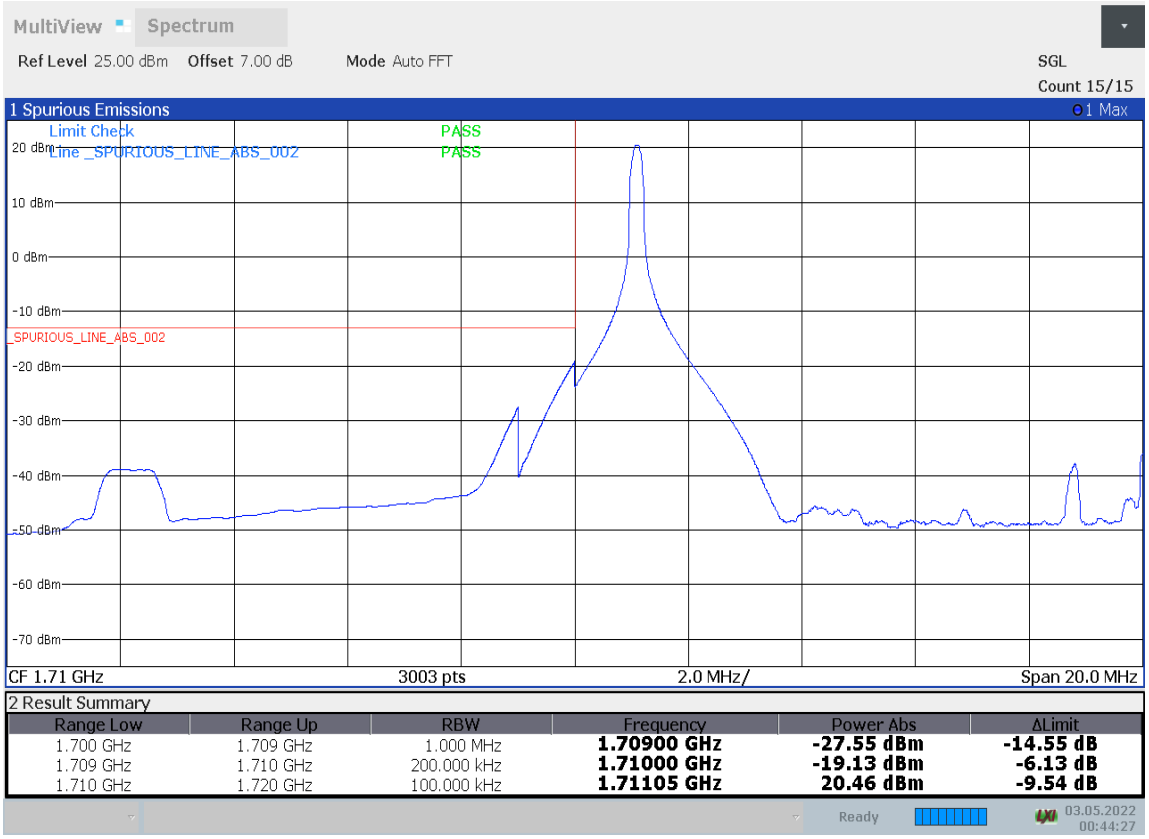
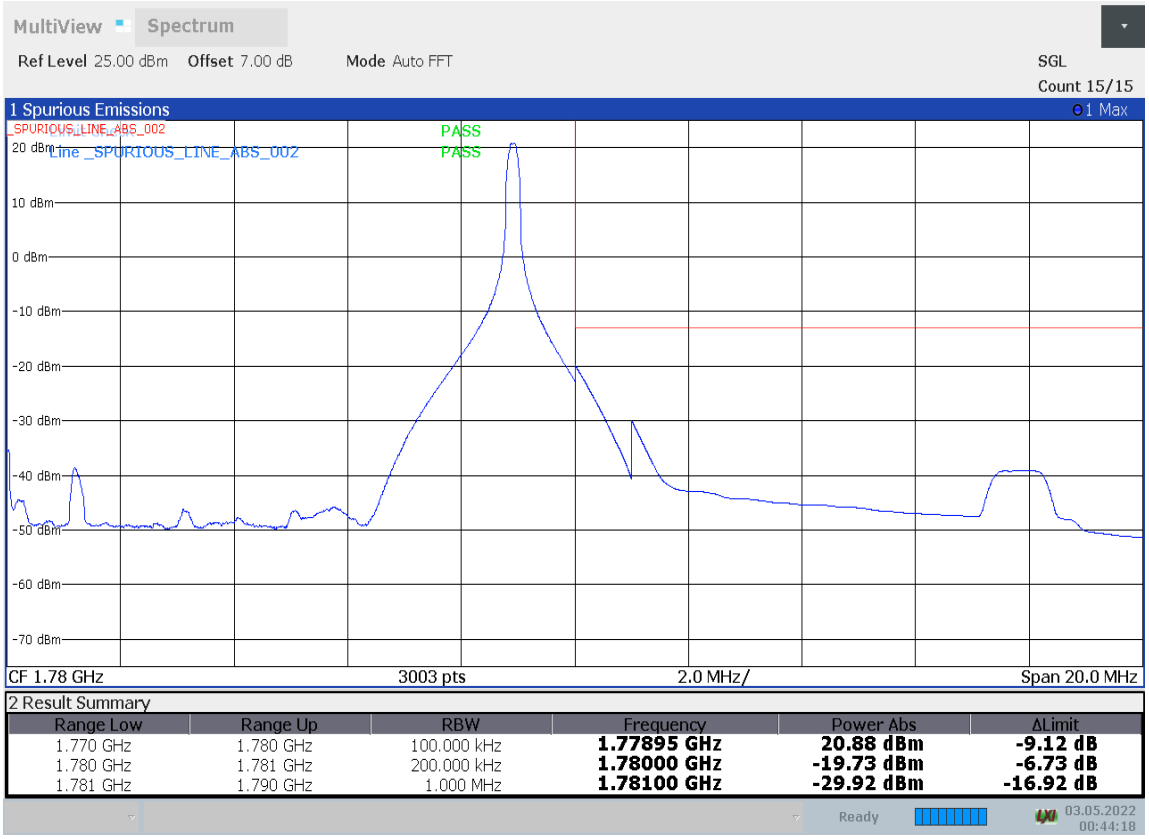
LTE band 66

LOW BAND EDGE BLOCK-1RB-low



HIGH BAND EDGE BLOCK-1RB-high



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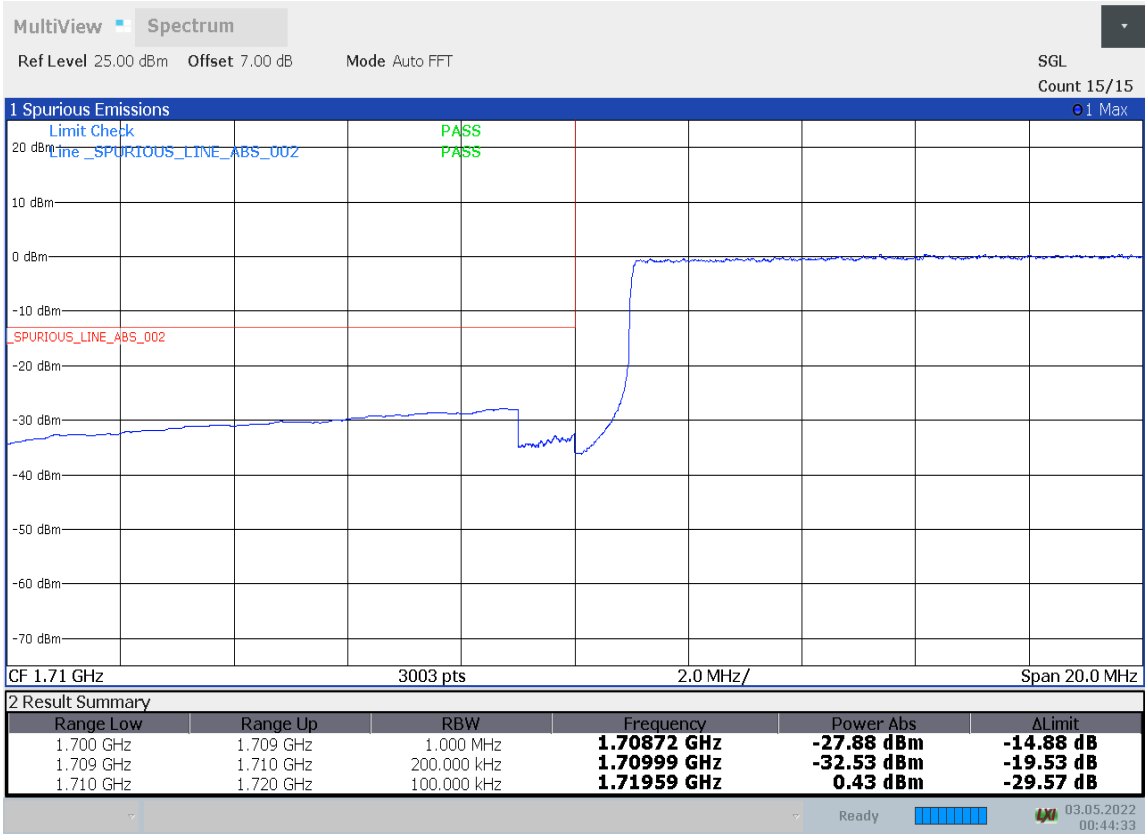
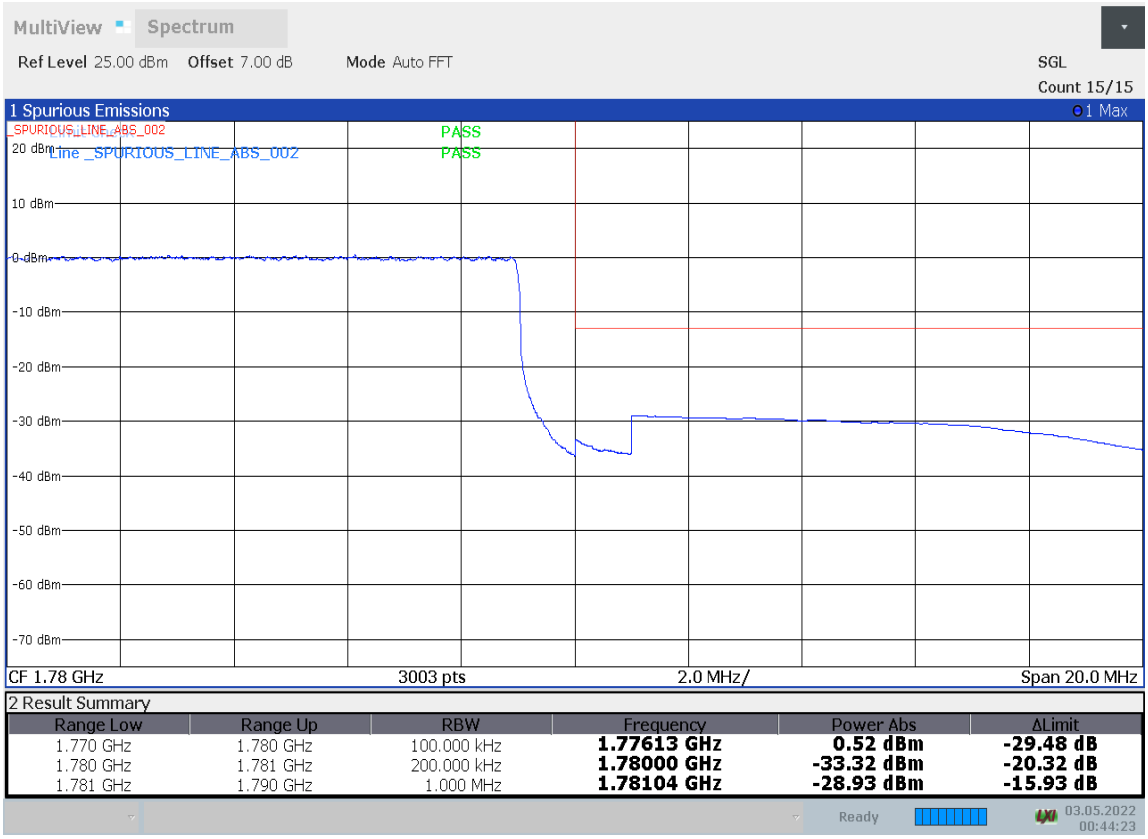
LOW BAND EDGE BLOCK-20MHz-100%RB



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 2341 MHz, and not less than 67 + 10 log (P) dB onall frequencies between 2328 and 2337MHz;

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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.

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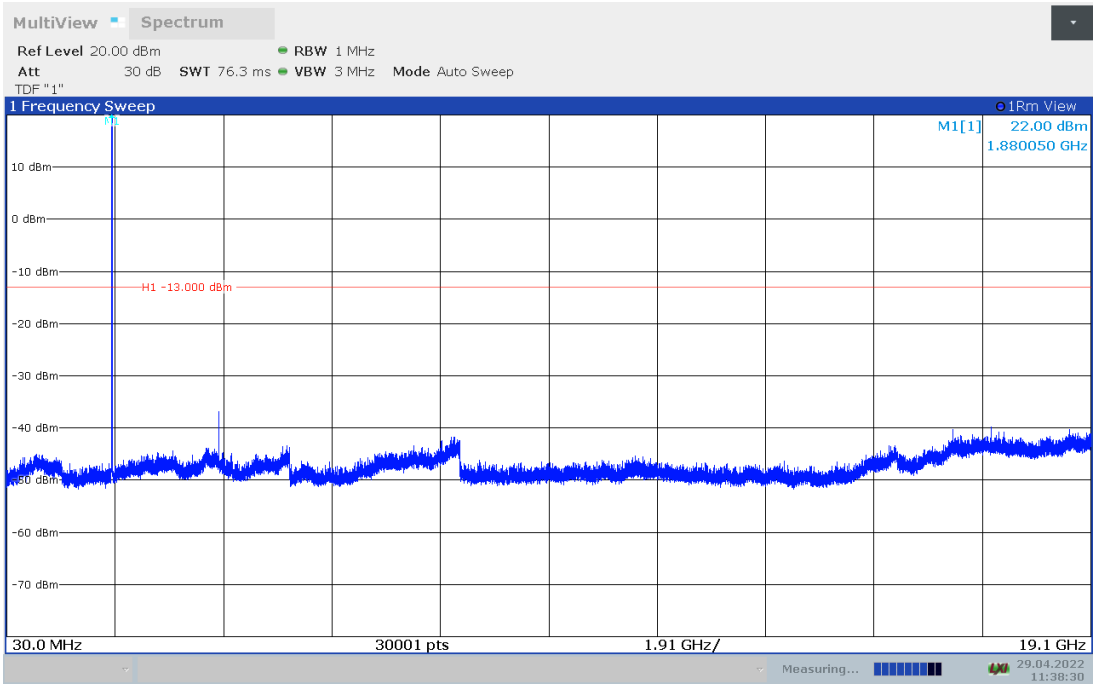
A. 7.3 Measurement result

Only worst case result is given below

LTE band 2 : 30MHz – 19.1GHz

Spurious emission limit –13dBm.

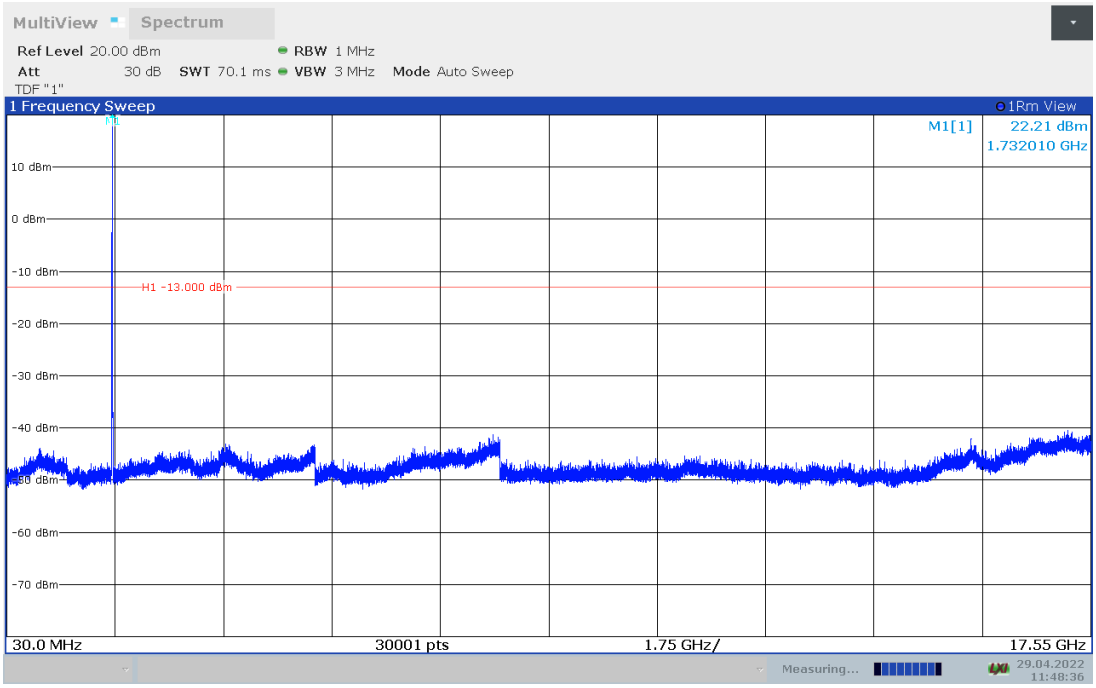
NOTE: peak above the limit line is the carrier frequency.



LTE band 4 : 30MHz – 17.55GHz

Spurious emission limit –13dBm.

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



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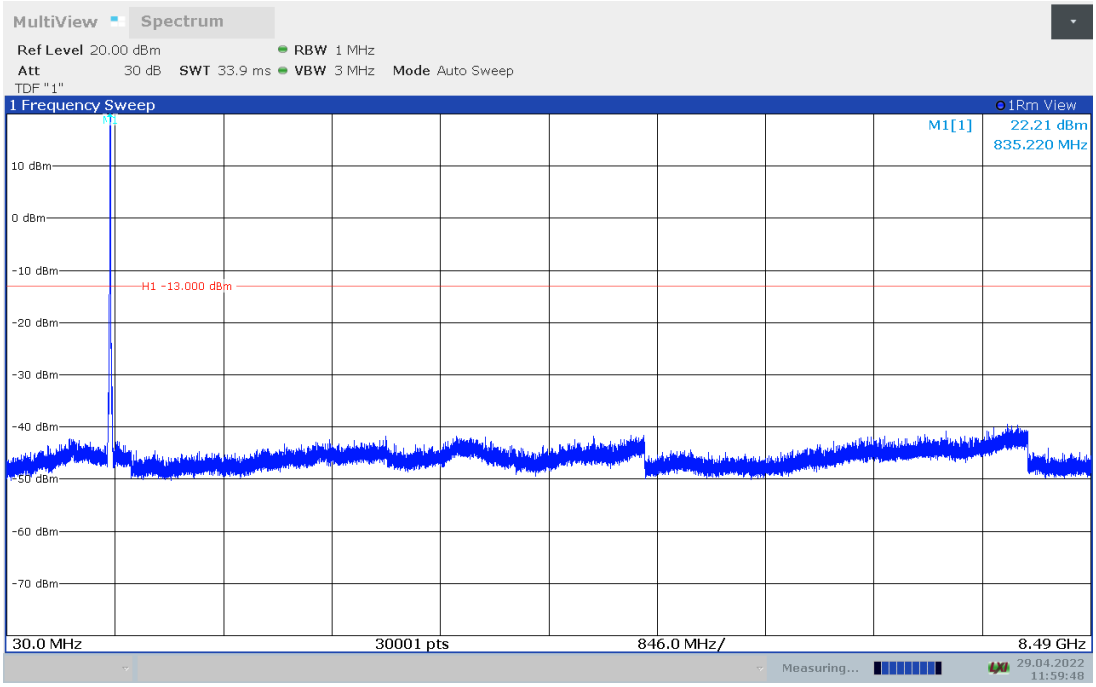
LTE band 5 : 30MHz – 8.49GHz

Spurious emission limit –13dBm.

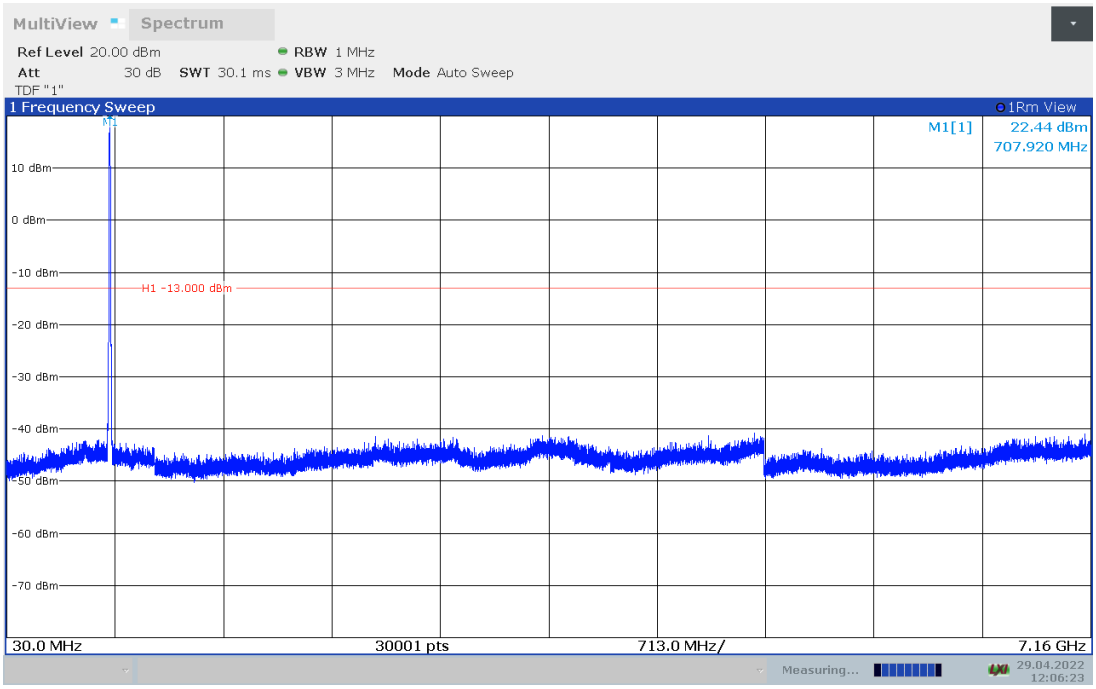
NOTE: peak above the limit line is the carrier frequency.



LTE band 12: 30MHz – 7.16GHz

Spurious emission limit –13dBm.

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



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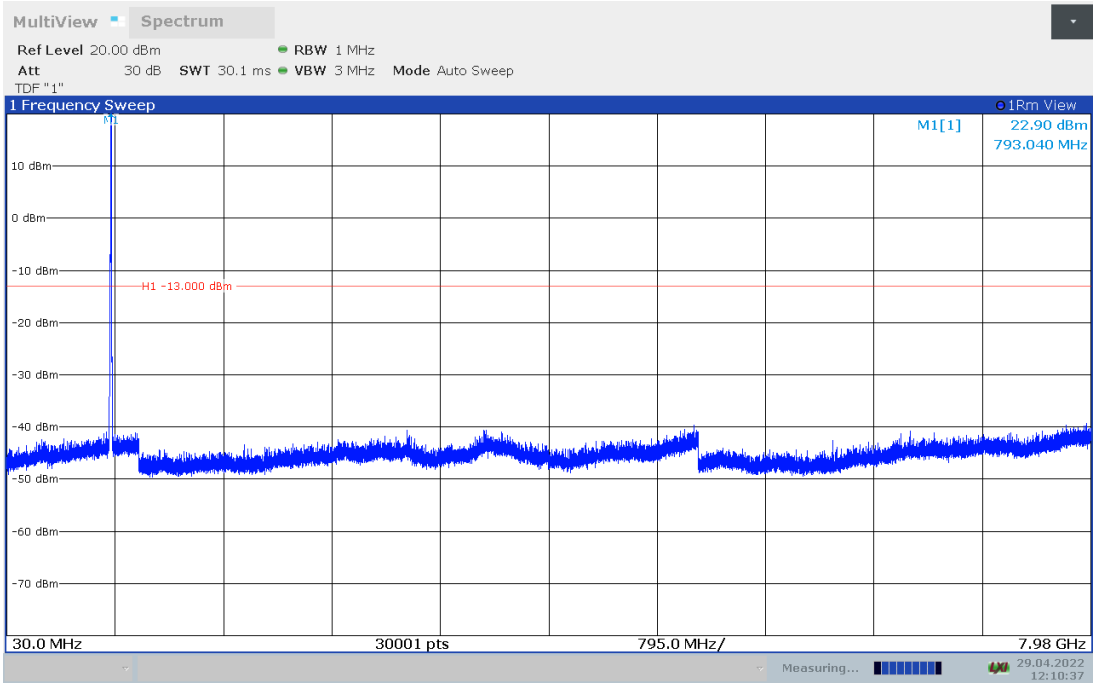
LTE band 14: 30MHz – 7.98GHz

Spurious emission limit –13dBm.

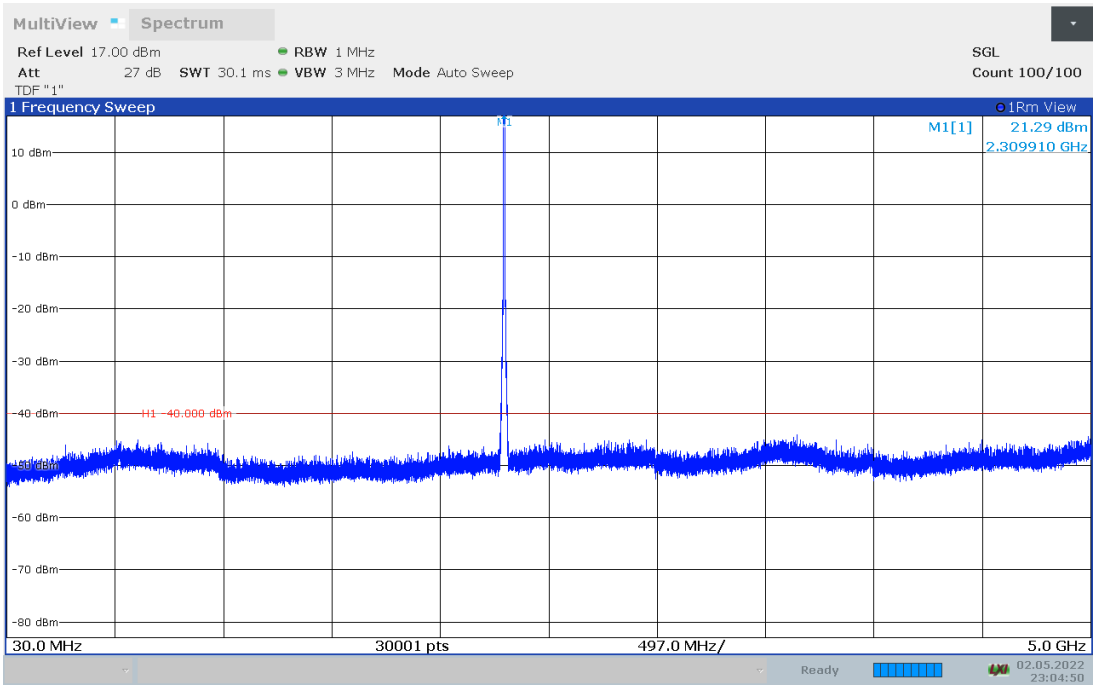
NOTE: peak above the limit line is the carrier frequency.



LTE band 30: 30MHz – 23.15GHz

Spurious emission limit –40dBm.

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



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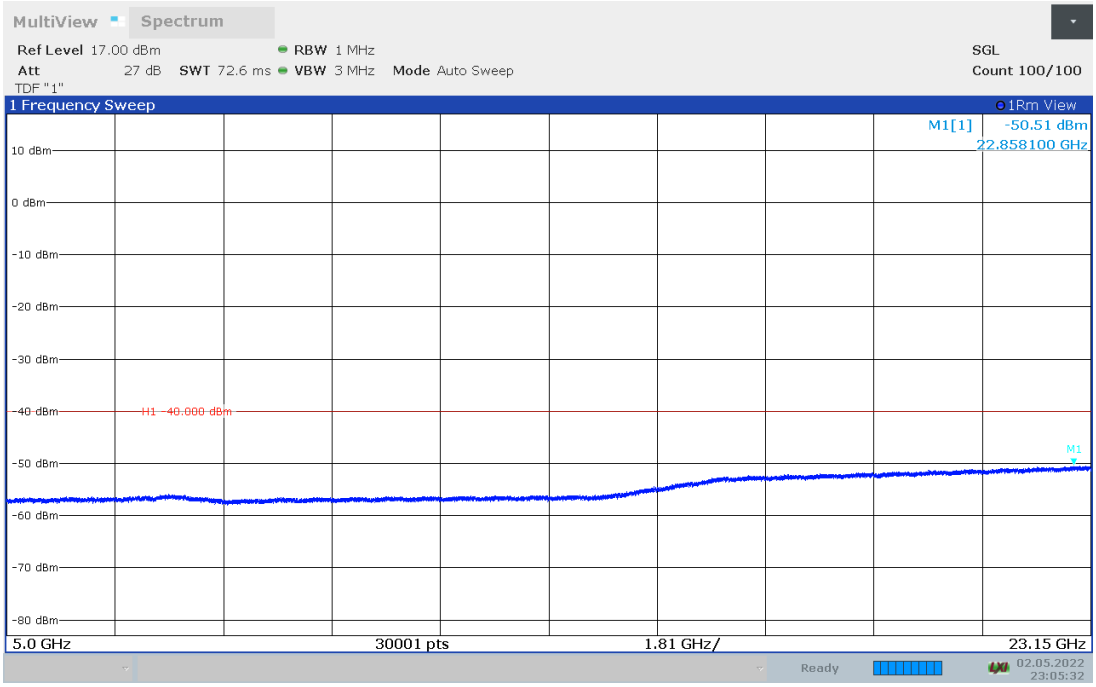
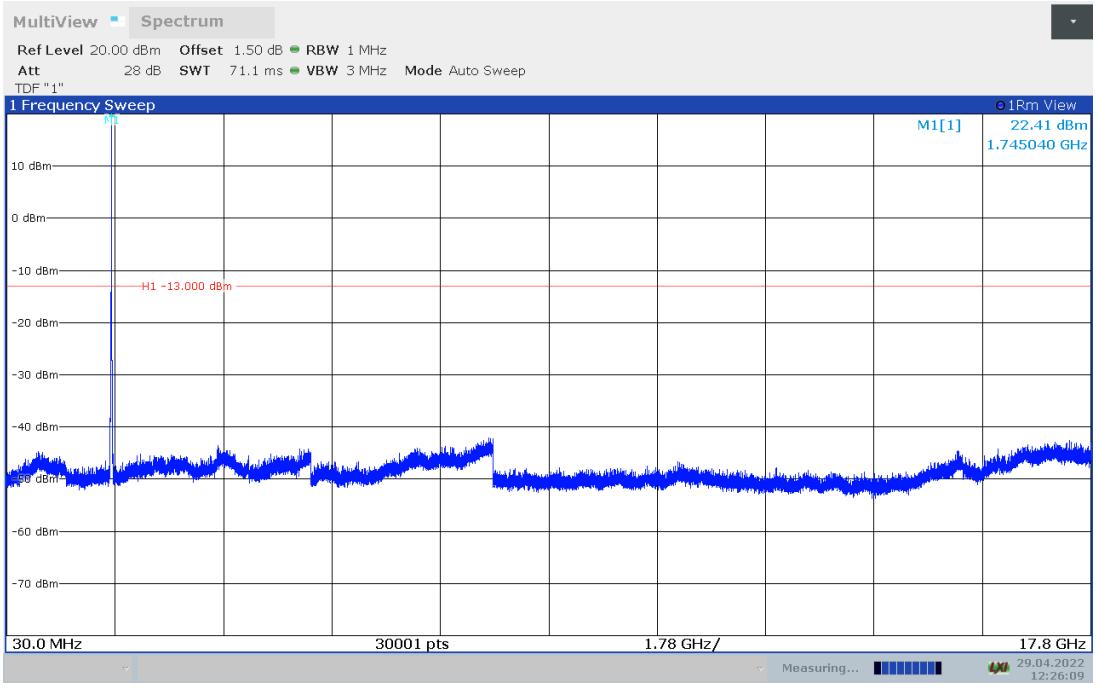


LTE band 66: 30MHz – 17.80GHz

Spurious emission limit –13dBm.

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



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

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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

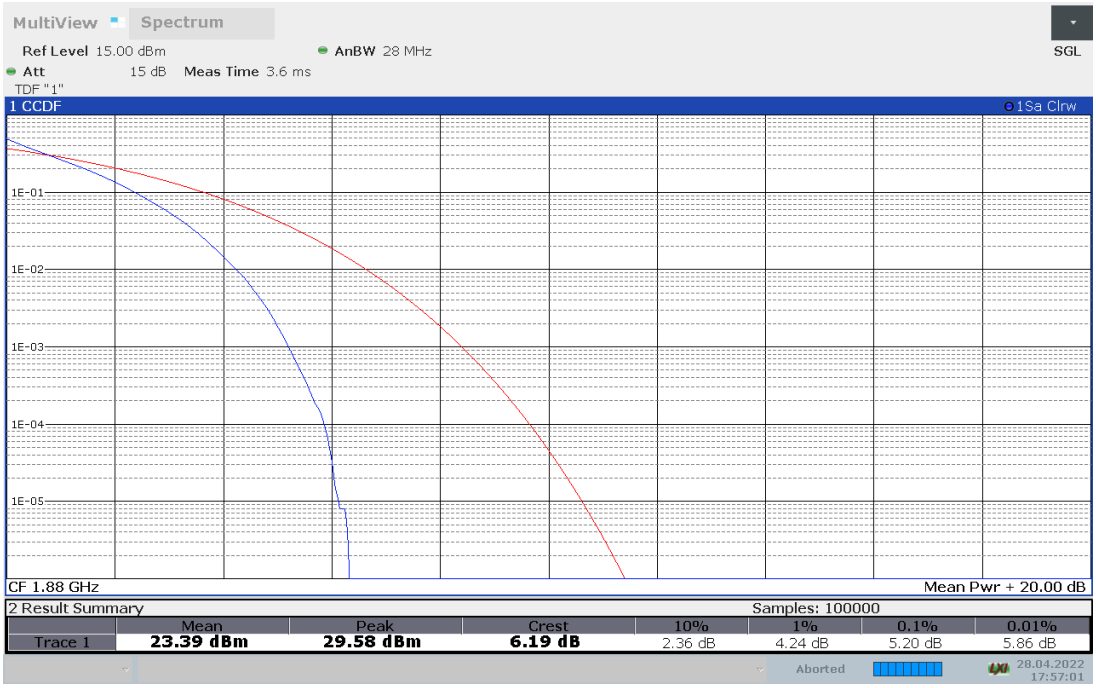
A.8.2 Measurement results

Only worst case result is given below

LTE band 2

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)		
		QPSK	16QAM	64QAM
1880.0	20	5.20	5.92	5.92

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



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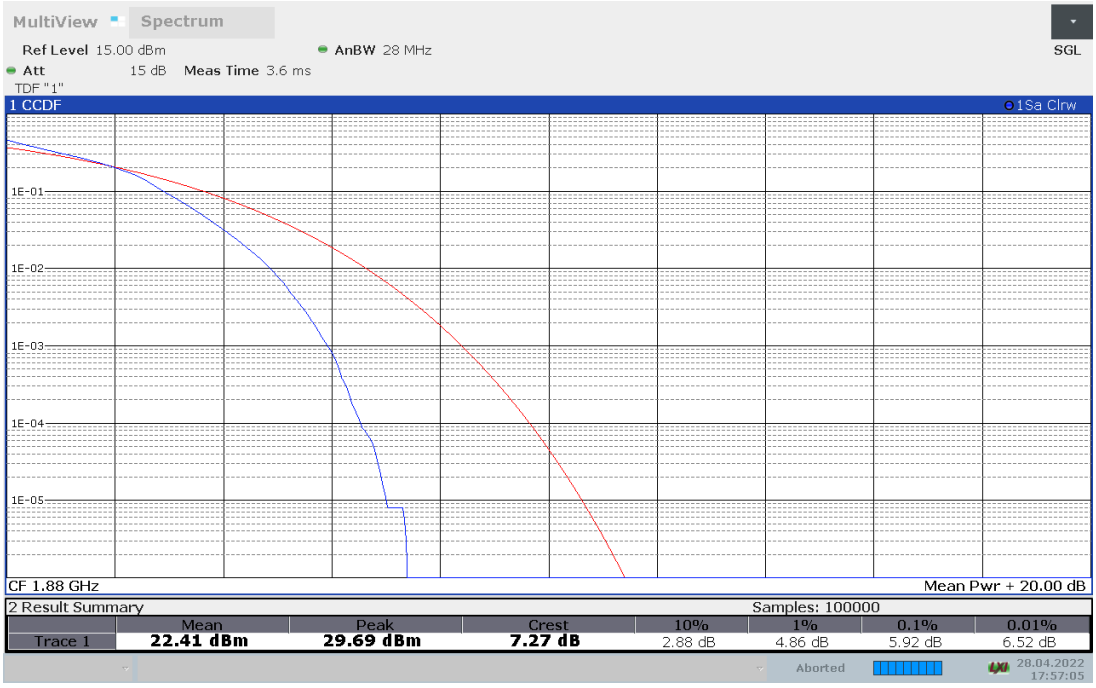
LTE band 2, 20MHz Bandwidth, 16QAM (PAPR)



LTE band 2, 20MHz Bandwidth, 64QAM (PAPR)

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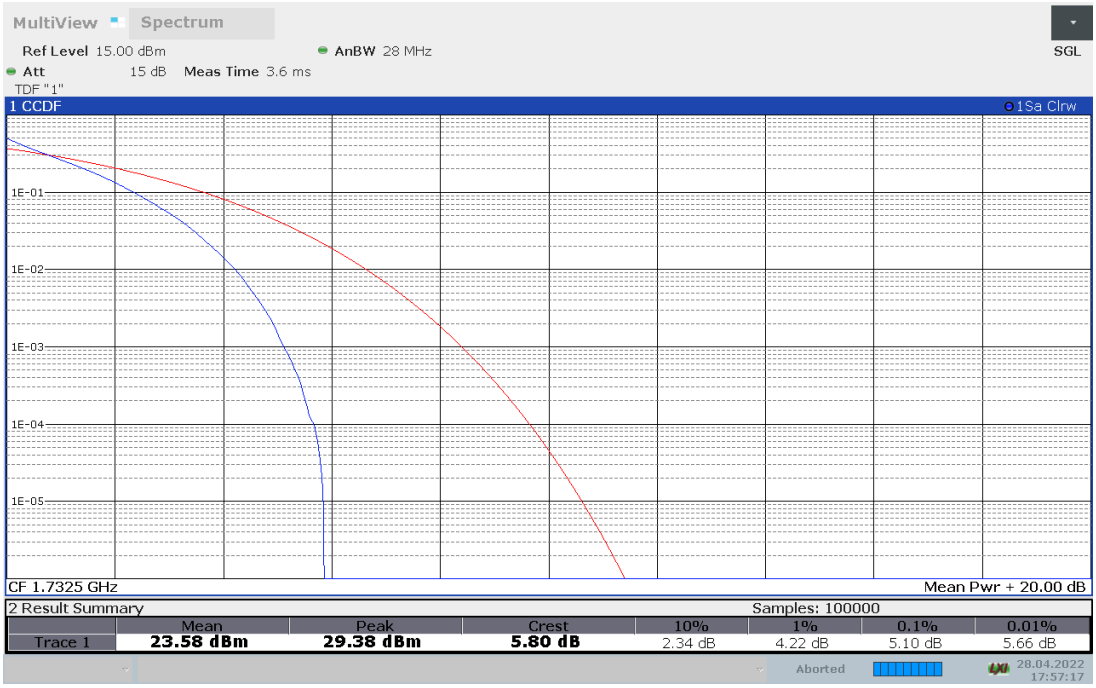
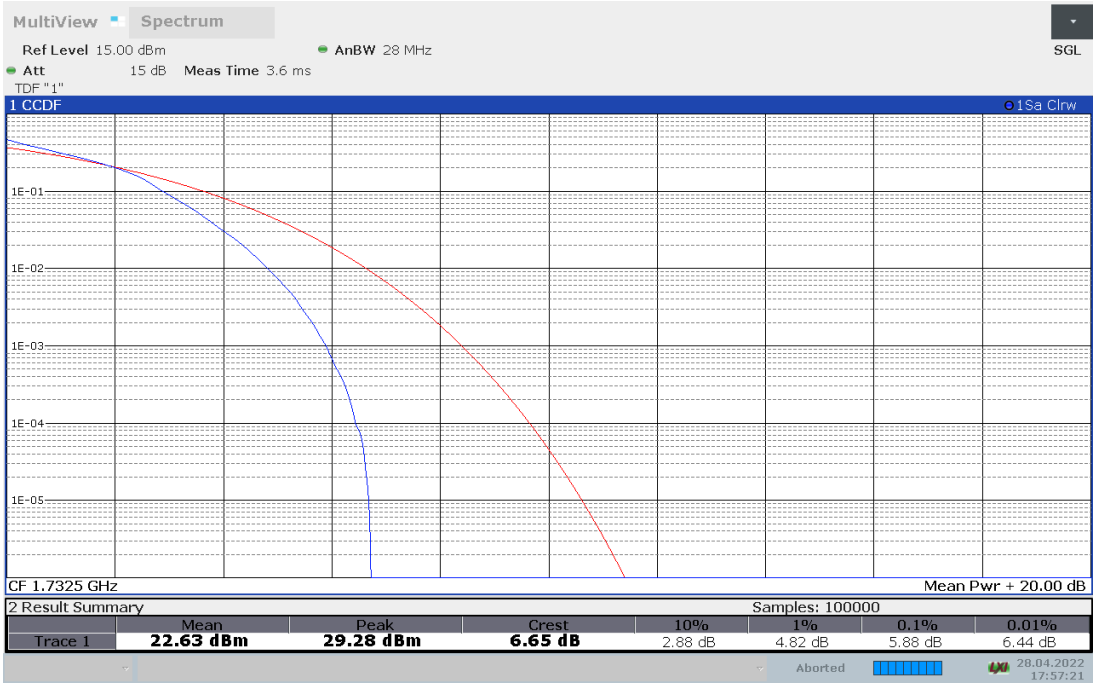
LTE band 4

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)		
		QPSK	16QAM	64QAM
1732.5	20	5.10	5.88	5.88

LTE band 4, 20MHz Bandwidth, QPSK (PAPR)



LTE band 4, 20MHz Bandwidth, 16QAM (PAPR)



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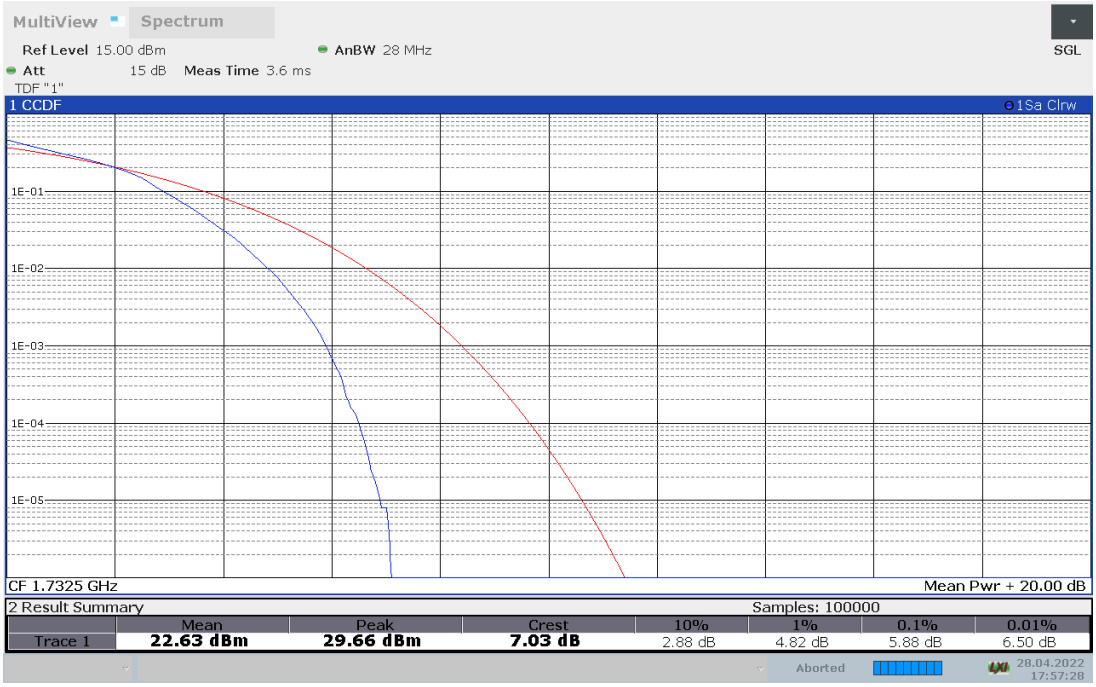
LTE band 4, 20MHz Bandwidth, 64QAM (PAPR)



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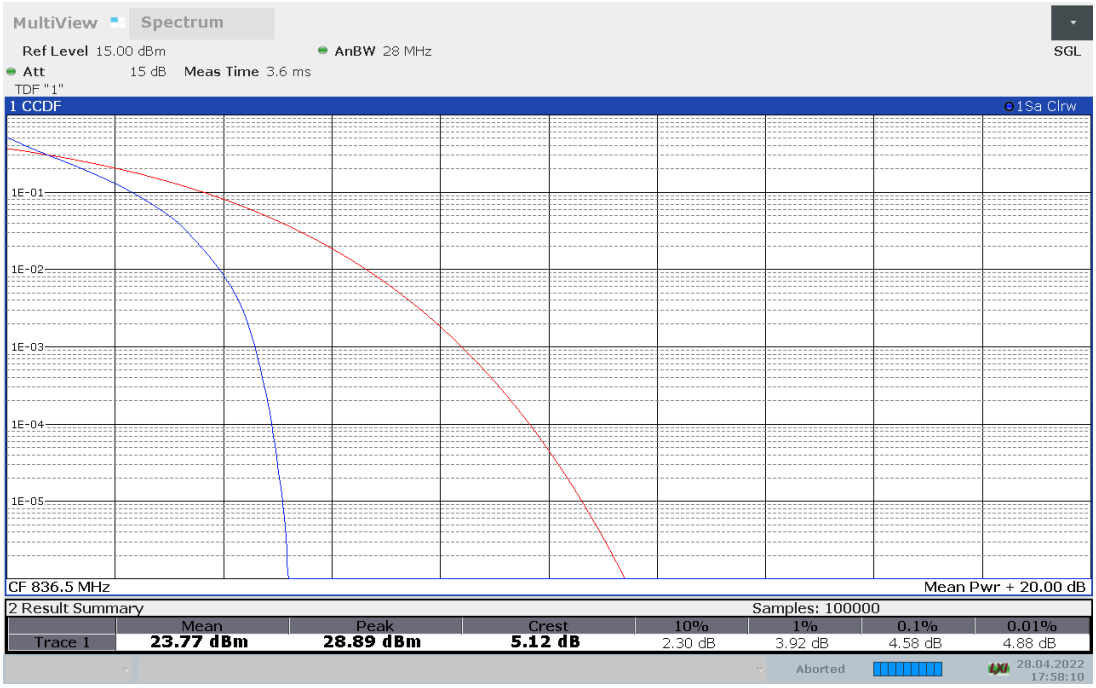
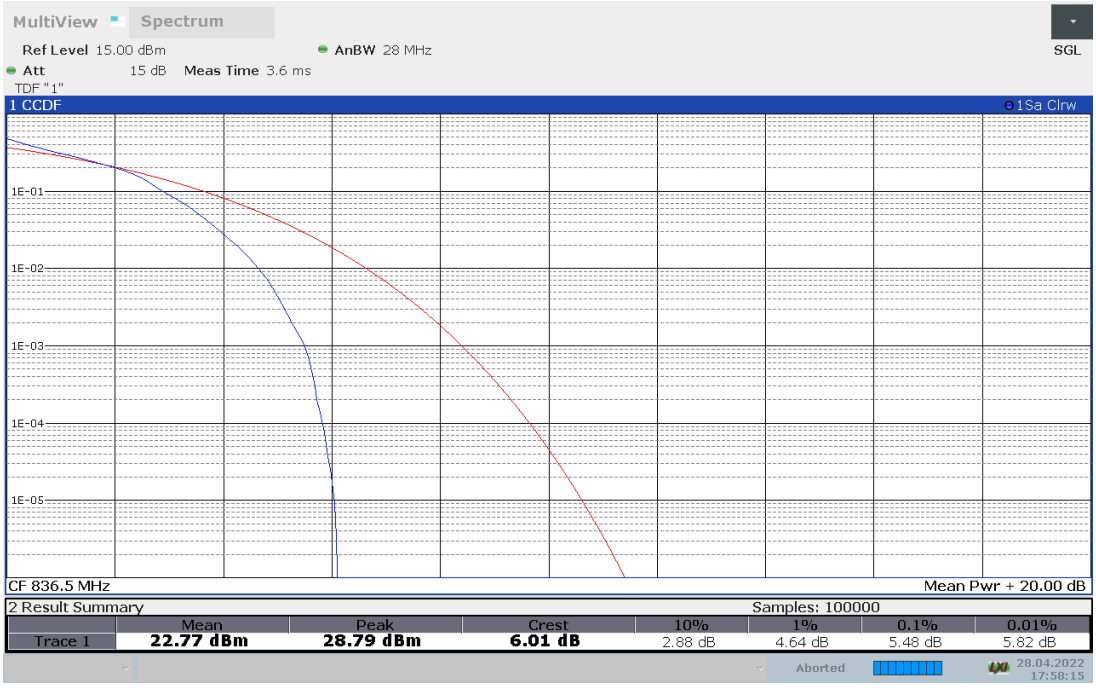
LTE band 5

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)		
		QPSK	16QAM	64QAM
836.5	10	4.58	5.48	5.44

LTE band 5, 10MHz Bandwidth, QPSK (PAPR)



LTE band 5, 10MHz Bandwidth, 16QAM (PAPR)



LTE band 5, 10MHz Bandwidth, 64QAM (PAPR)

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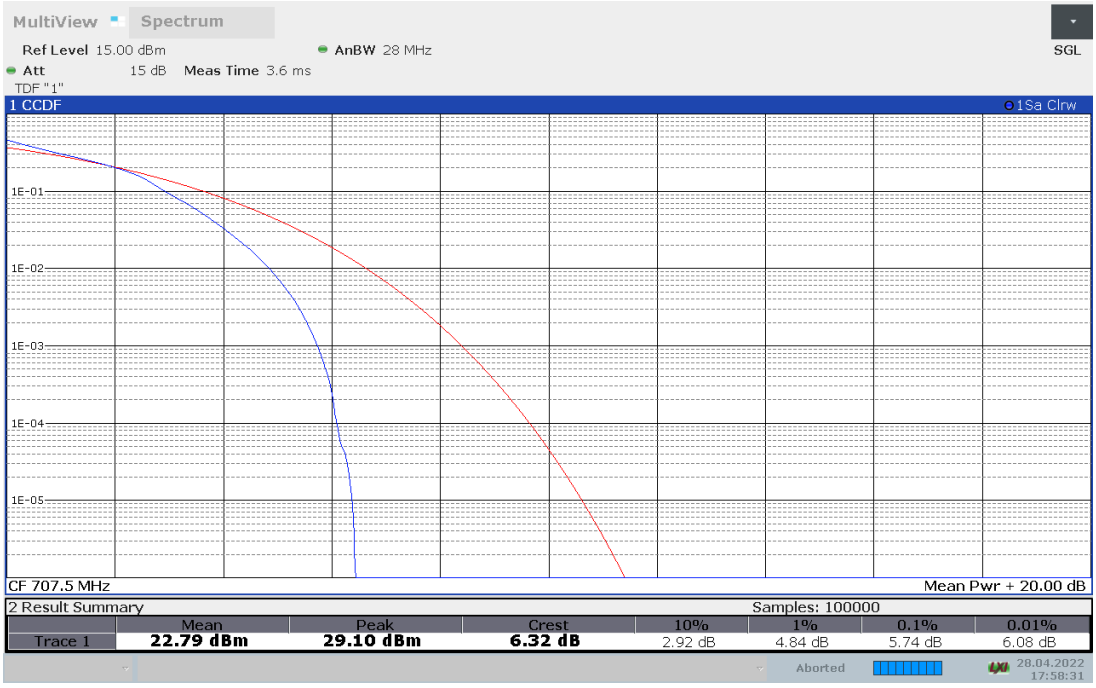
LTE band 12

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)		
		QPSK	16QAM	64QAM
707.5	10	4.84	5.74	5.70

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

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



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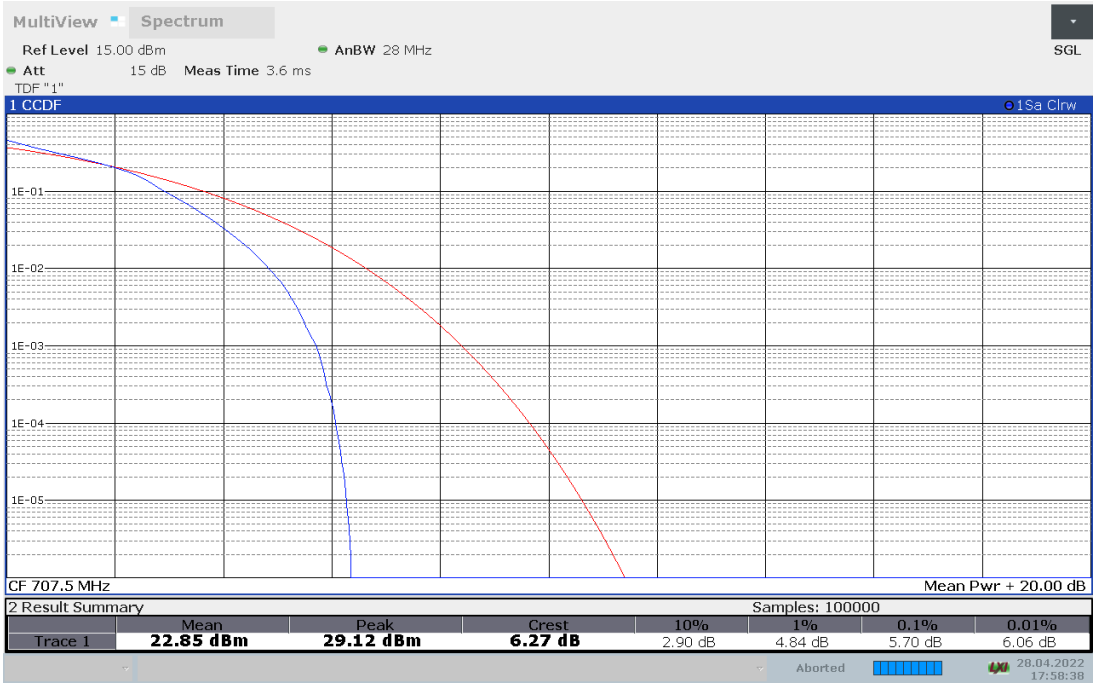
LTE band 12, 10MHz Bandwidth, 64QAM (PAPR)



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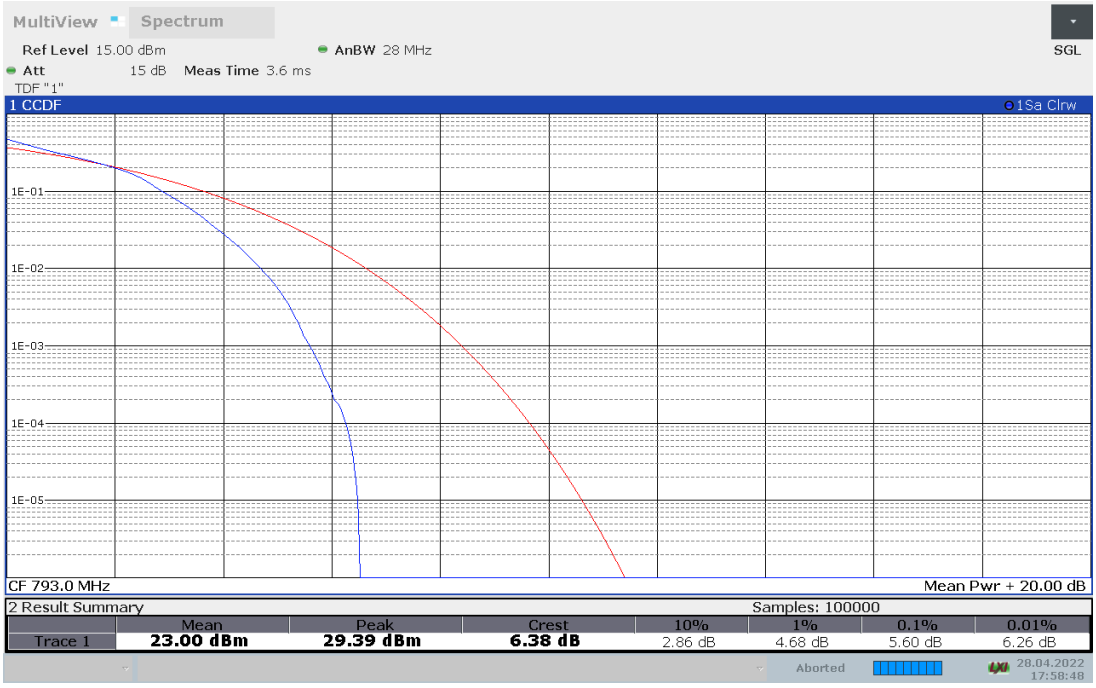
LTE band 14

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)		
		QPSK	16QAM	64QAM
793.0	10	4.80	5.60	5.60

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

LTE band 14, 10MHz Bandwidth, 16QAM (PAPR)



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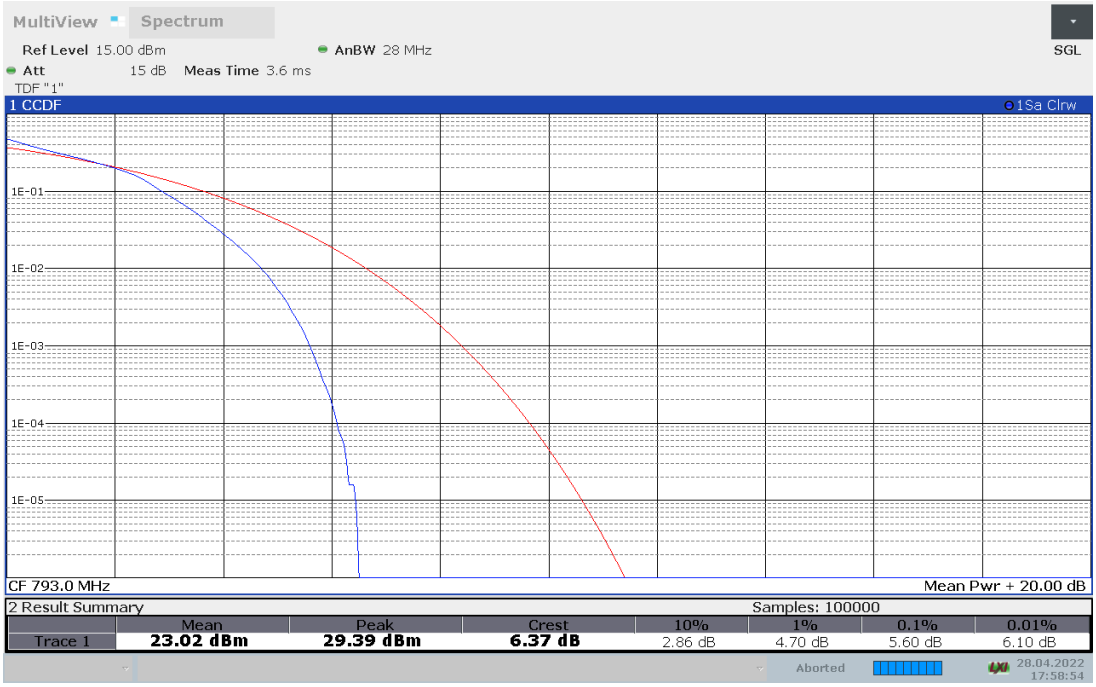
LTE band 14, 10MHz Bandwidth, 64QAM (PAPR)



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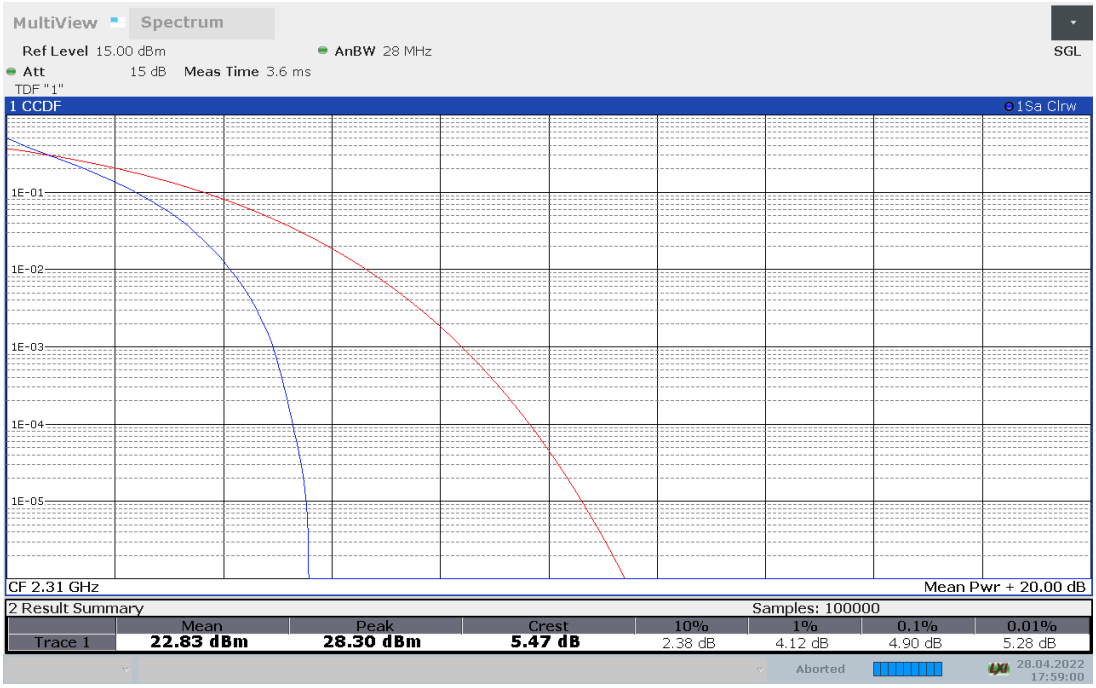
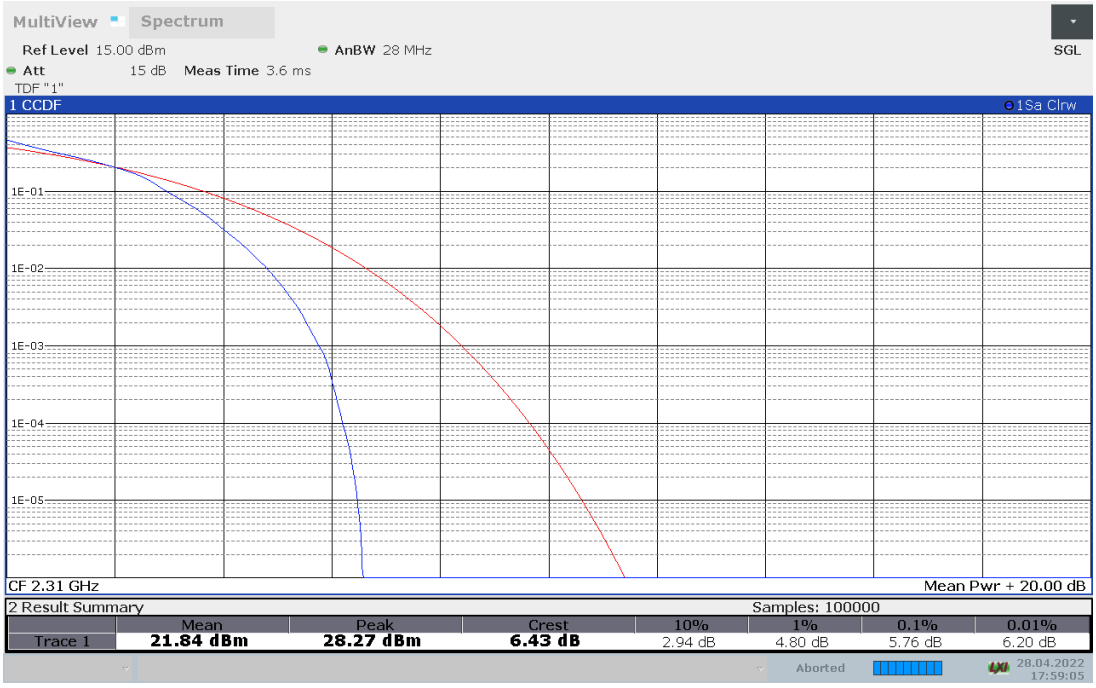
LTE band 30

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)		
		QPSK	16QAM	64QAM
2310.0	10	4.90	5.76	5.76

LTE band 30, 10MHz Bandwidth, QPSK (PAPR)



LTE band 30, 10MHz Bandwidth, 16QAM (PAPR)



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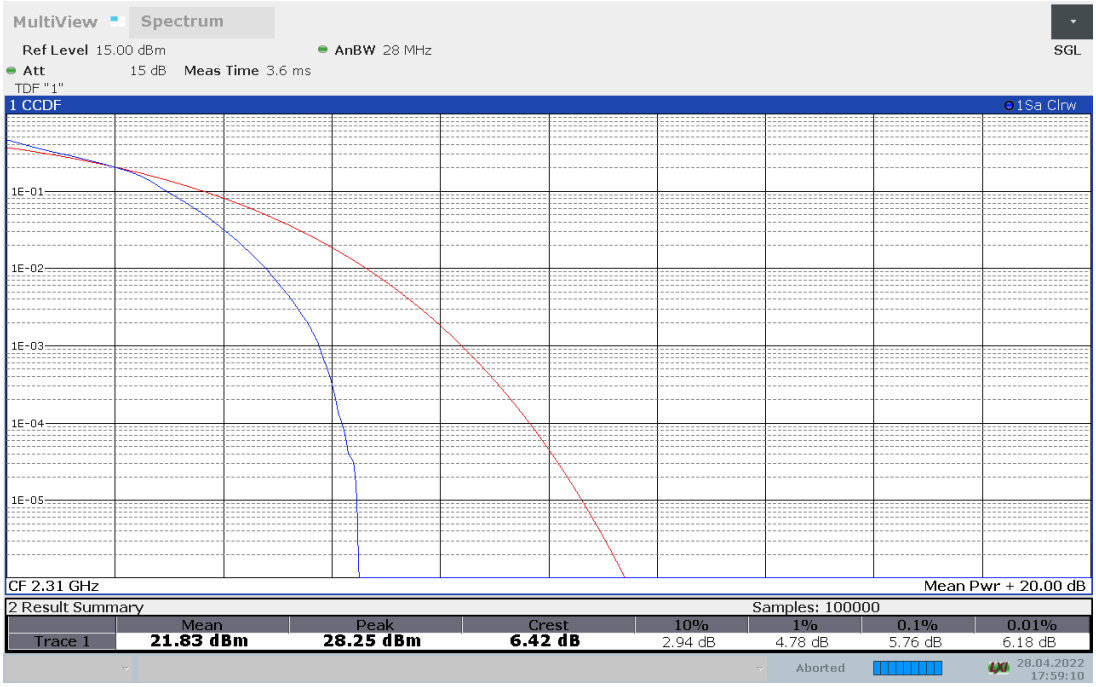
LTE band 30, 10MHz Bandwidth, 64QAM (PAPR)



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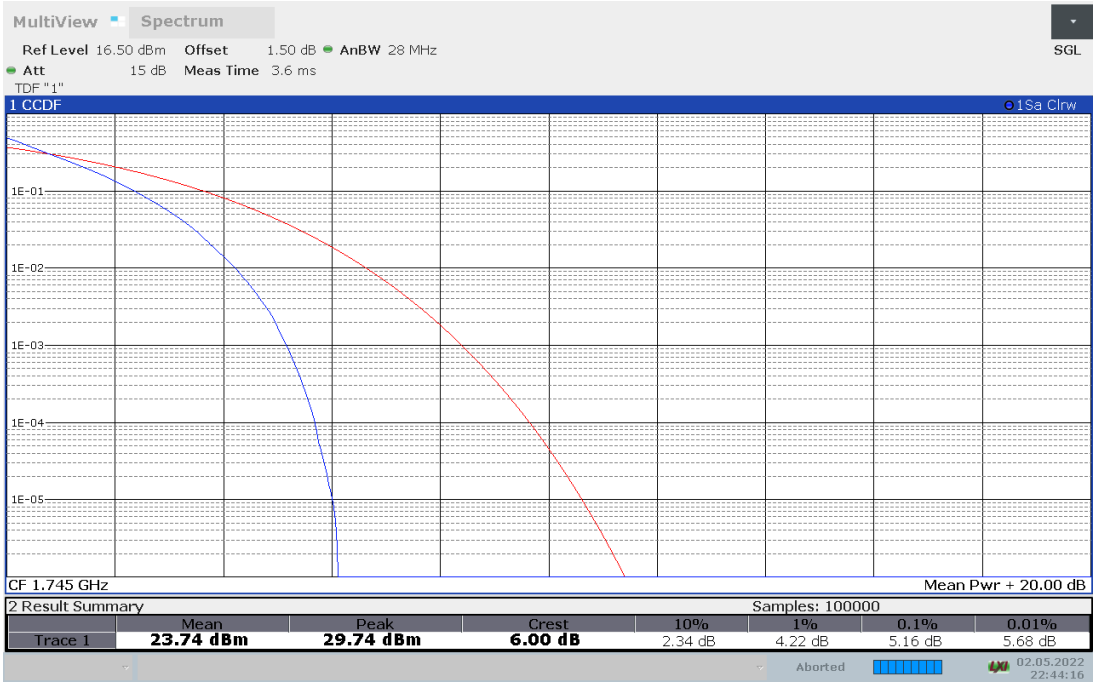
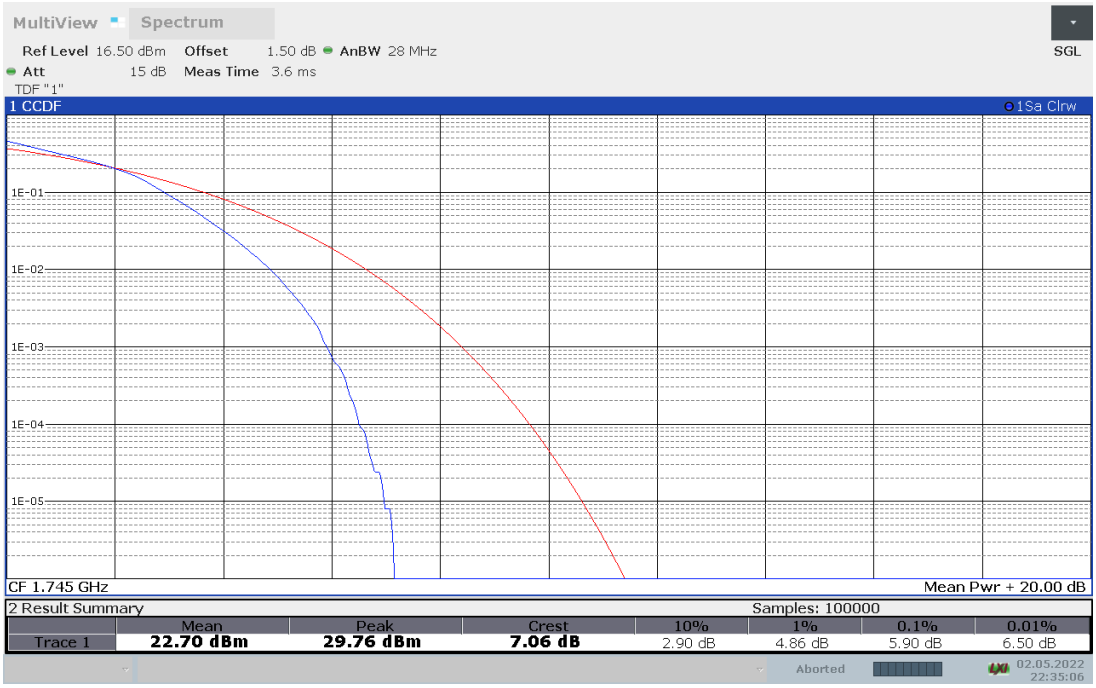
LTE band 66

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)		
		QPSK	16QAM	64QAM
1745.0	20	5.16	5.90	5.90

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



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



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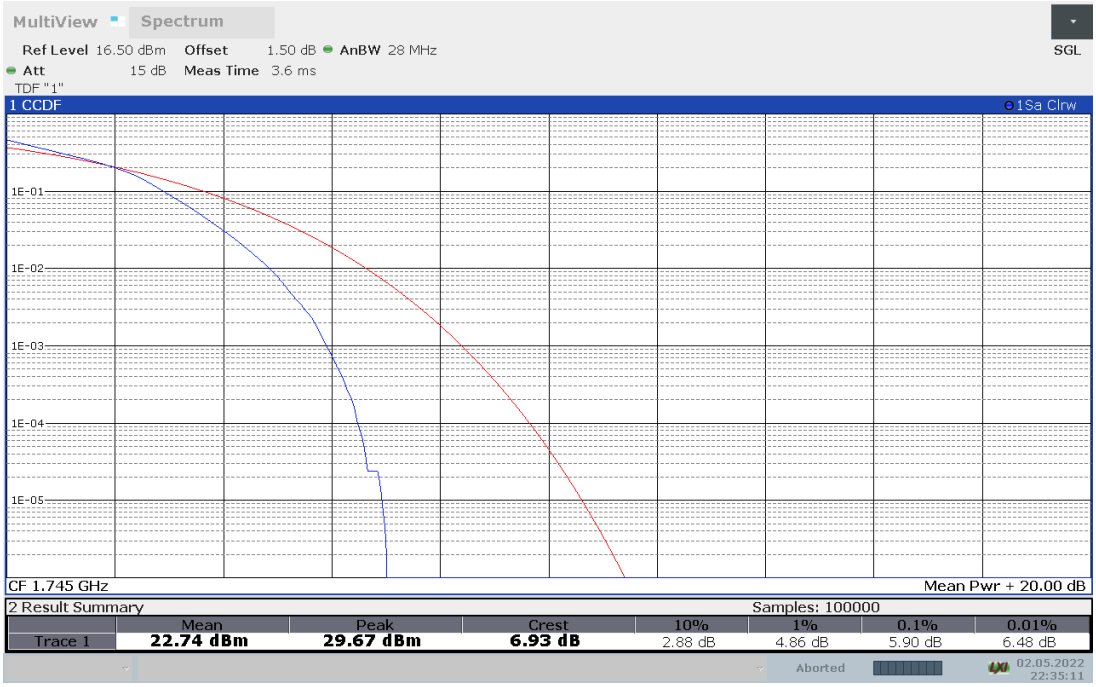
LTE band 66, 20MHz Bandwidth, 64QAM (PAPR)



Note: Expanded measurement uncertainty is U = 0.48, k = 2

*****END OF REPORT*****

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