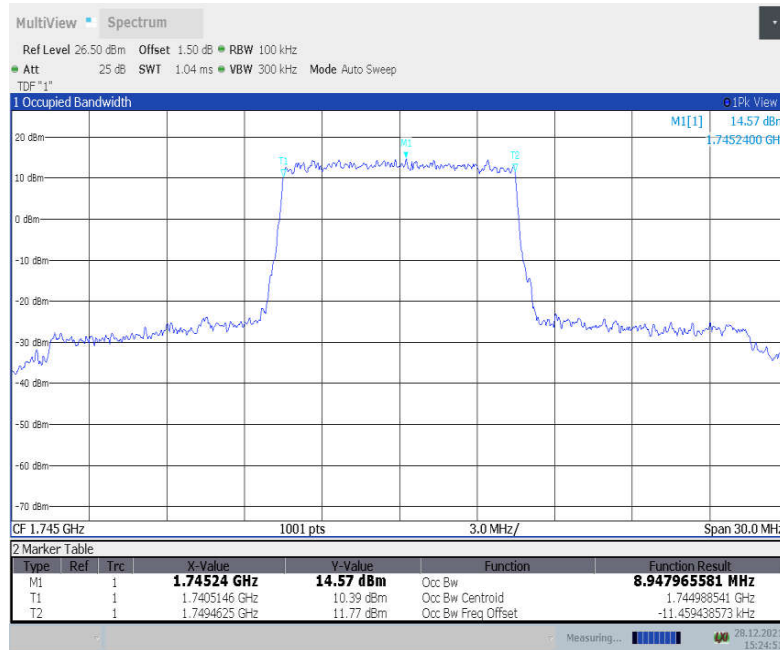




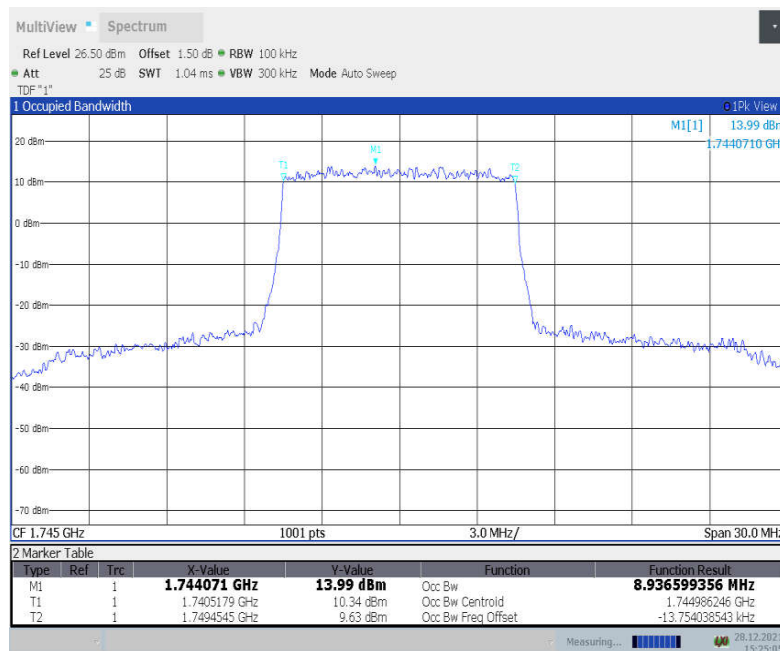
LTE band 66, 10MHz (99% BW)

Frequency(MHz)	Occupied Bandwidth (99% BW)(kHz)		
1745.0	QPSK	16QAM	64QAM
	8947.97	8936.60	8937.95

LTE band 66, 10MHz Bandwidth, QPSK (99% BW)

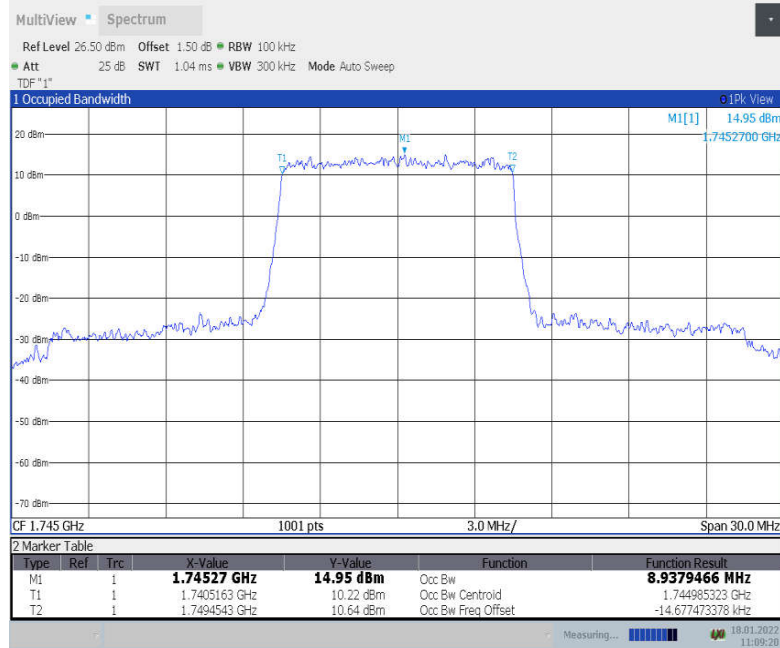


LTE band 66, 10MHz Bandwidth, 16QAM (99% BW)





LTE band 66, 10MHz Bandwidth, 64QAM (99% BW)

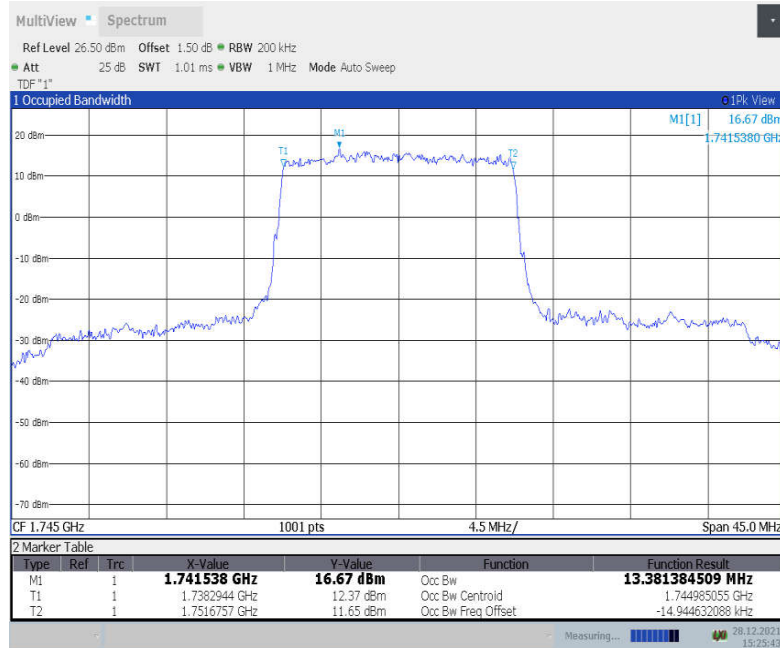




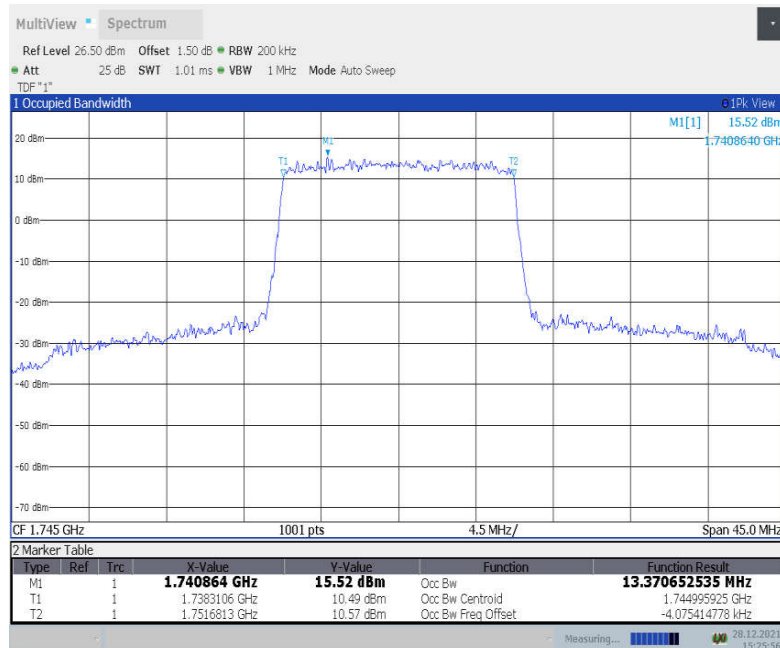
LTE band 66, 15MHz (99% BW)

Frequency(MHz)	Occupied Bandwidth (99% BW)(kHz)		
1745.0	QPSK	16QAM	64QAM
	13381.38	13370.65	13430.99

LTE band 66, 15MHz Bandwidth, QPSK (99% BW)

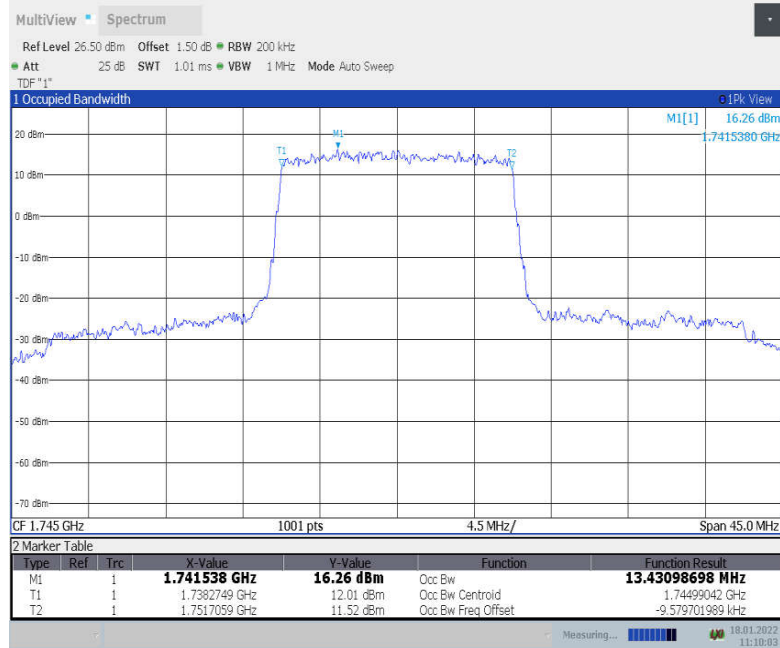


LTE band 66, 15MHz Bandwidth, 16QAM (99% BW)





LTE band 66, 15MHz Bandwidth, 64QAM (99% BW)

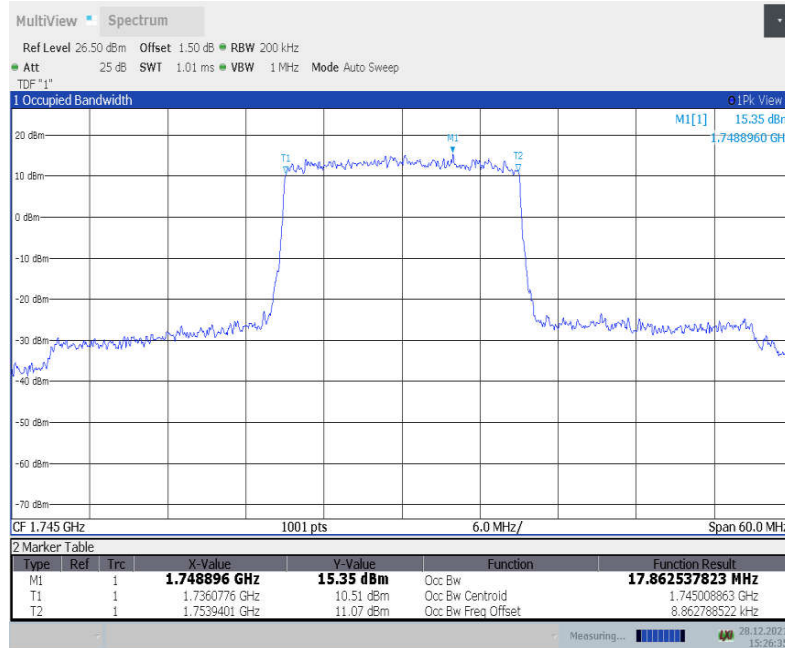




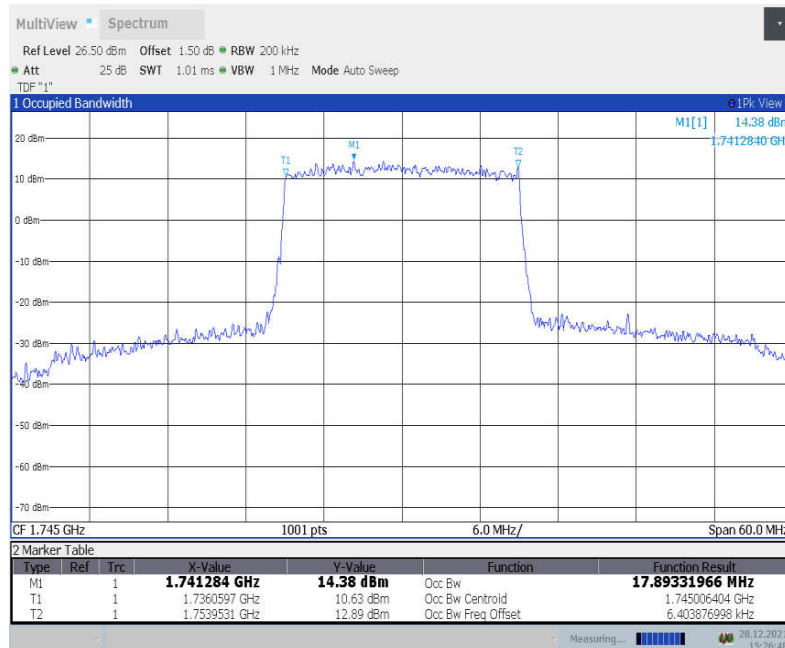
LTE band 66, 20MHz (99% BW)

Frequency(MHz)	Occupied Bandwidth (99% BW)(kHz)		
1745.0	QPSK	16QAM	64QAM
	17862.54	17893.32	17862.64

LTE band 66, 20MHz Bandwidth, QPSK (99% BW)

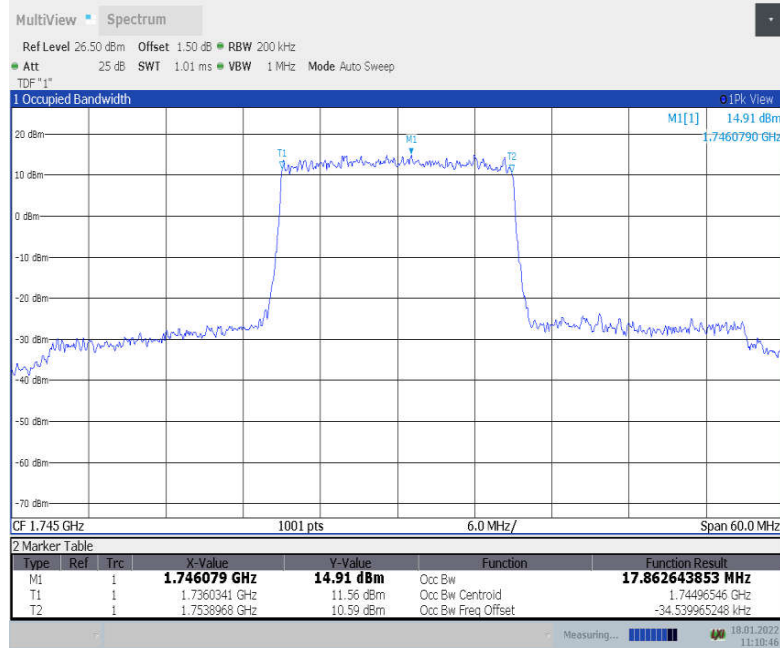


LTE band 66, 20MHz Bandwidth, 16QAM (99% BW)





LTE band 66, 20MHz Bandwidth, 64QAM (99% BW)



Note: Expanded measurement uncertainty is $U = 3428 \text{ Hz}$, $k = 2$



A.5 EMISSION BANDWIDTH

Reference

FCC: CFR Part 2.1049, 22.917, 24.238, 27.53, 90.1215.

A.5.1 Measurement Procedure

The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (i.e., two to five times the OBW).
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
- c) Set the reference level of the instrument as required to keep the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope must be at least $10\log(\text{OBW} / \text{RBW})$ below the reference level.
- d) Set the detection mode to peak, and the trace mode to max hold.
- e) Use the 26dB bandwidth function of the spectrum analyzer and report the measured bandwidth.

A.5.2 Emission Bandwidth Results

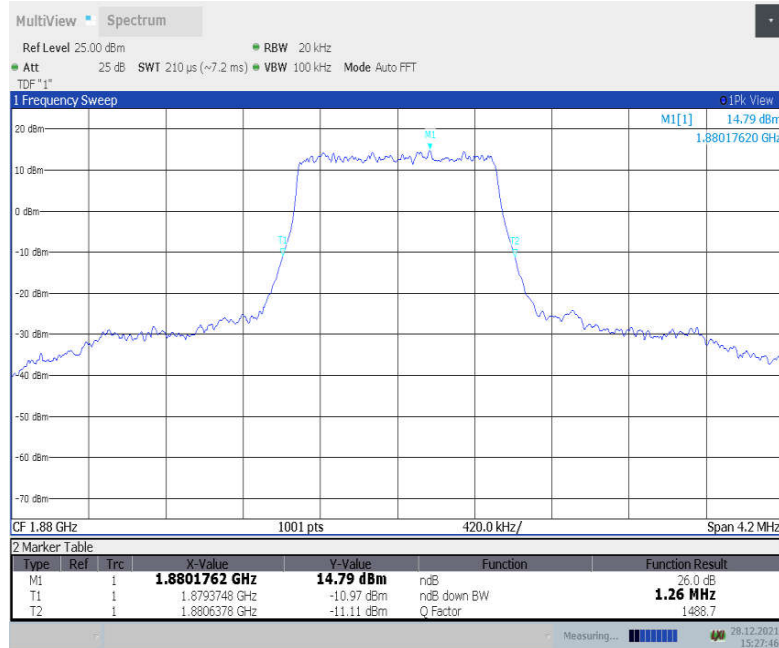
Similar to conducted emissions; Emission bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the extreme and mid frequencies. Table below lists the measured -26dBc BW. Spectrum analyzer plots are included on the following pages.



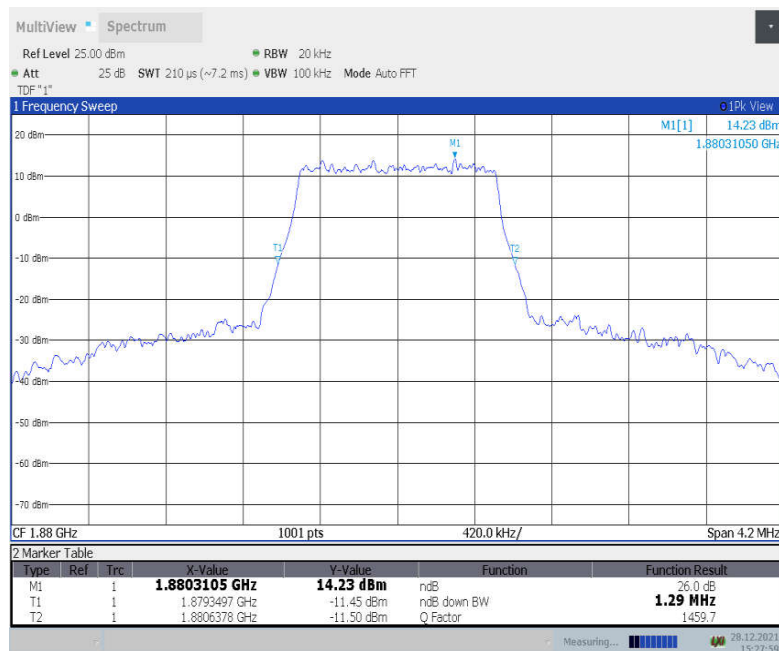
LTE band 2, 1.4MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1880.0	QPSK	16QAM	64QAM
	1.26	1.29	1.27

LTE band 2, 1.4MHz Bandwidth, QPSK (-26dBc BW)

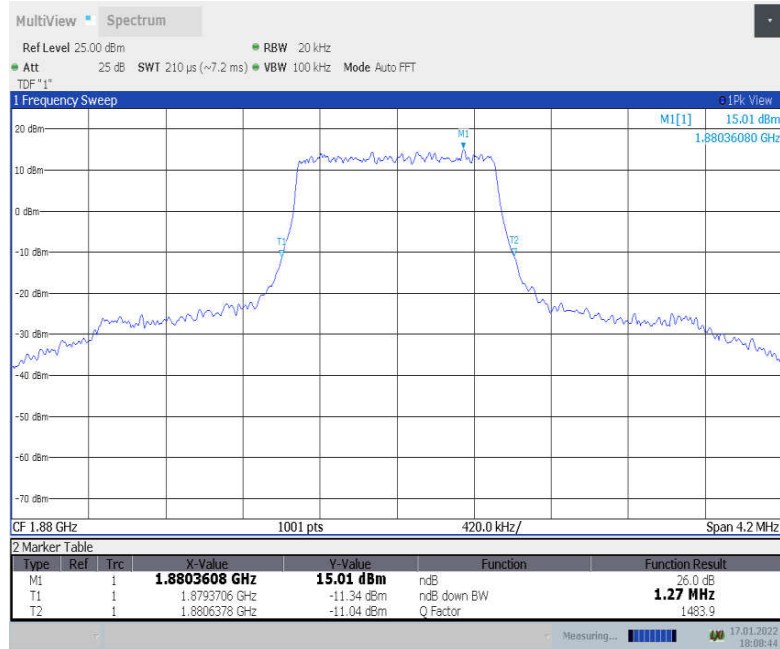


LTE band 2, 1.4MHz Bandwidth, 16QAM (-26dBc BW)





LTE band 2, 1.4MHz Bandwidth, 64QAM (-26dBc BW)

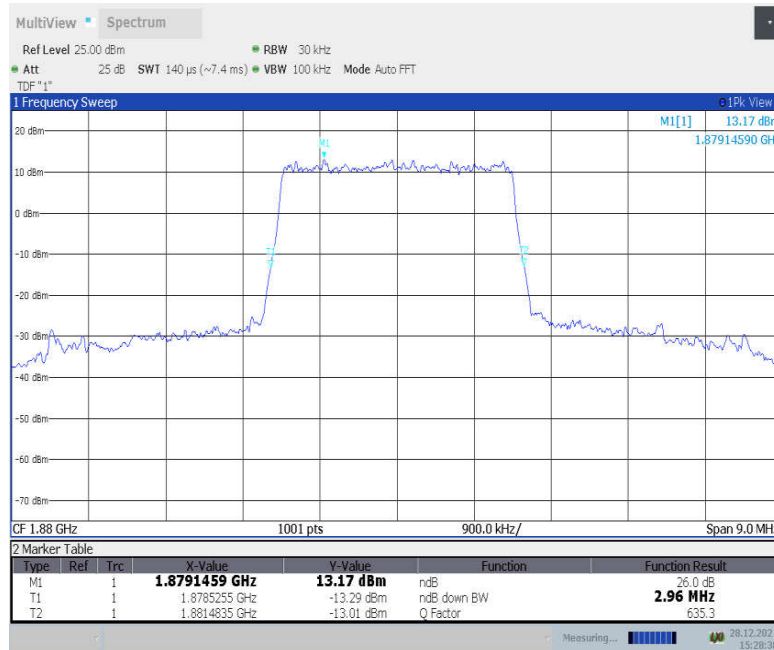




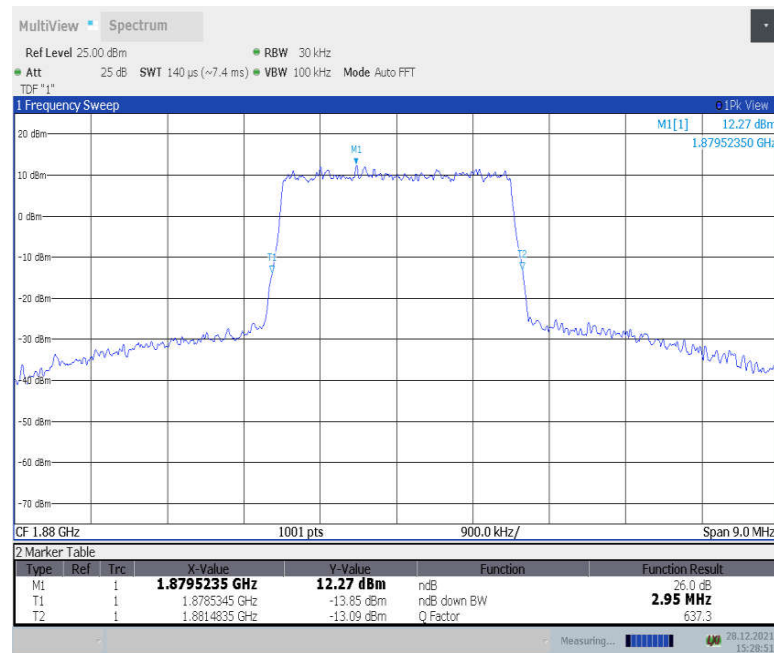
LTE band 2, 3MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1880.0	QPSK	16QAM	64QAM
	2.96	2.95	2.95

LTE band 2, 3MHz Bandwidth, QPSK (-26dBc BW)

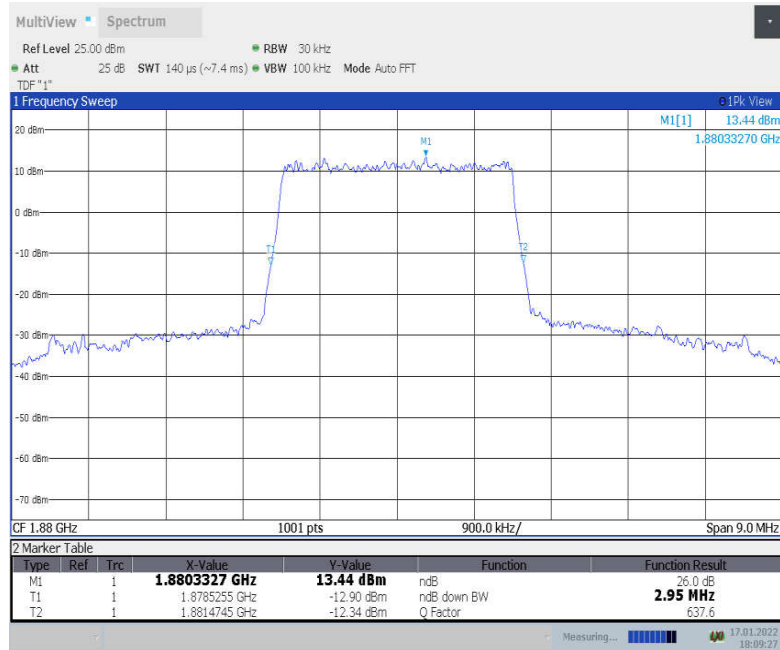


LTE band 2, 3MHz Bandwidth, 16QAM (-26dBc BW)





LTE band 2, 3MHz Bandwidth, 64QAM (-26dBc BW)

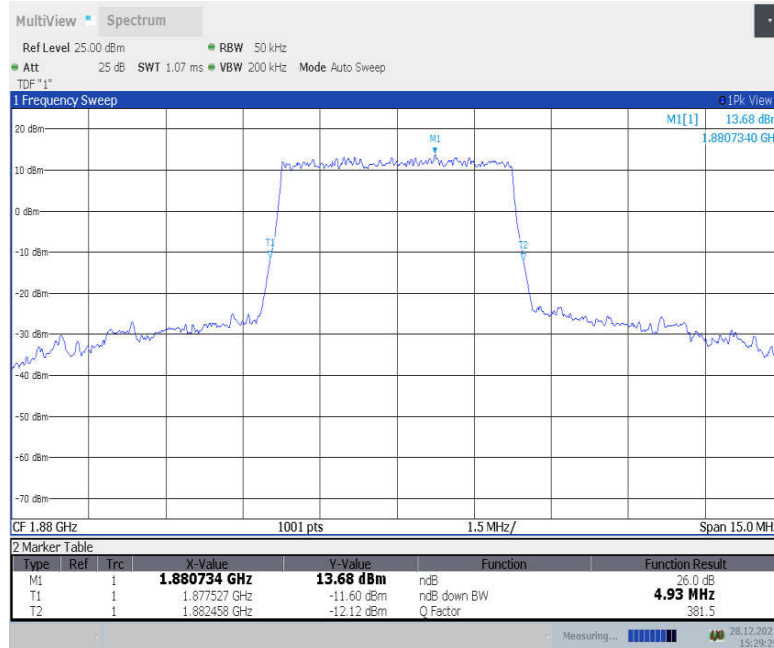




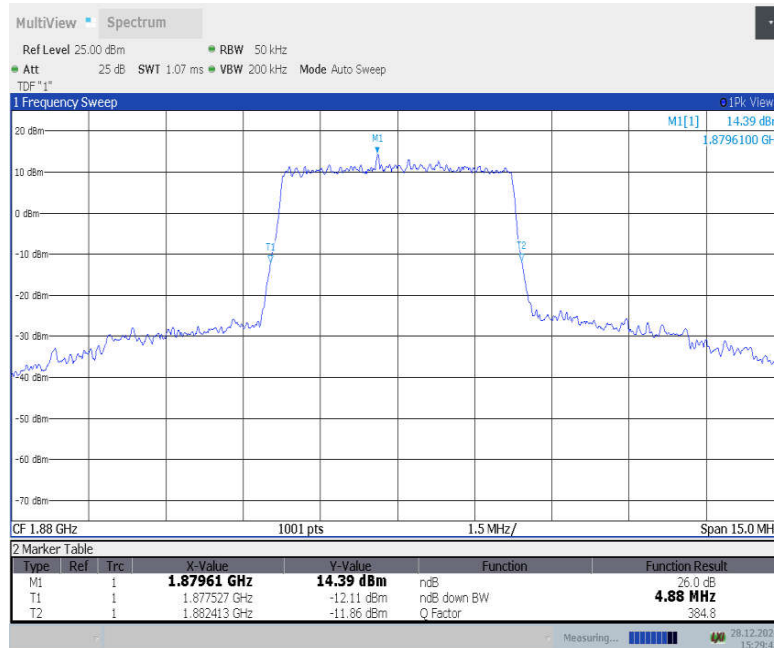
LTE band 2, 5MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1880.0	QPSK	16QAM	64QAM
	4.93	4.88	4.93

LTE band 2, 5MHz Bandwidth, QPSK (-26dBc BW)

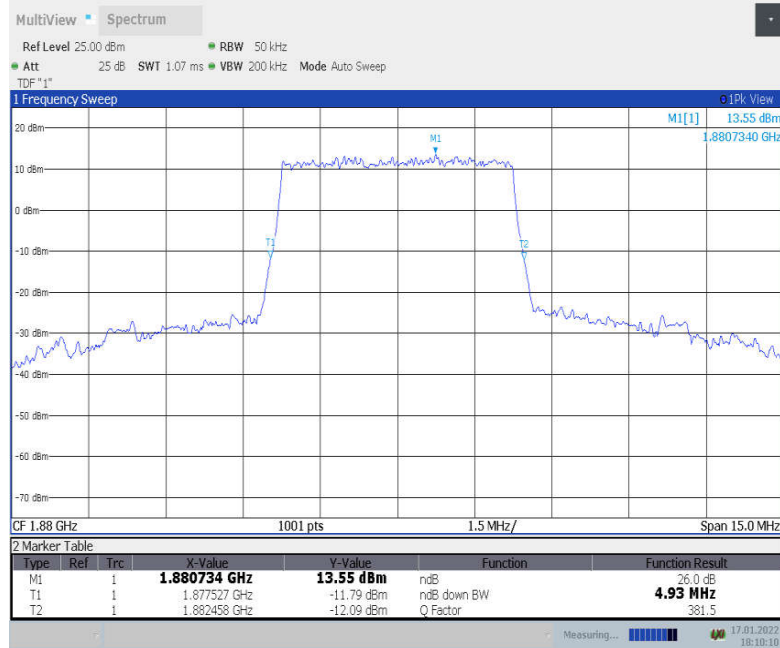


LTE band 2, 5MHz Bandwidth,16QAM (-26dBc BW)





LTE band 2, 5MHz Bandwidth, 64QAM (-26dBc BW)

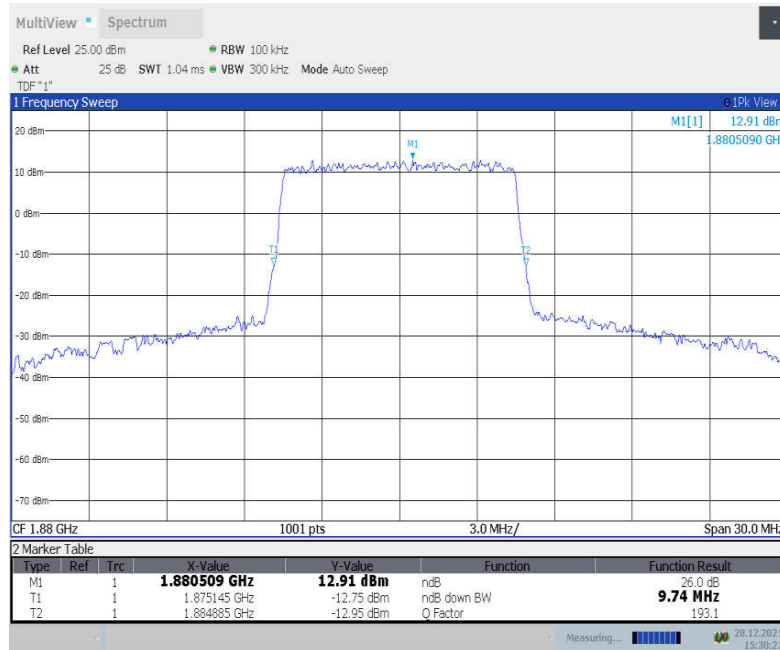




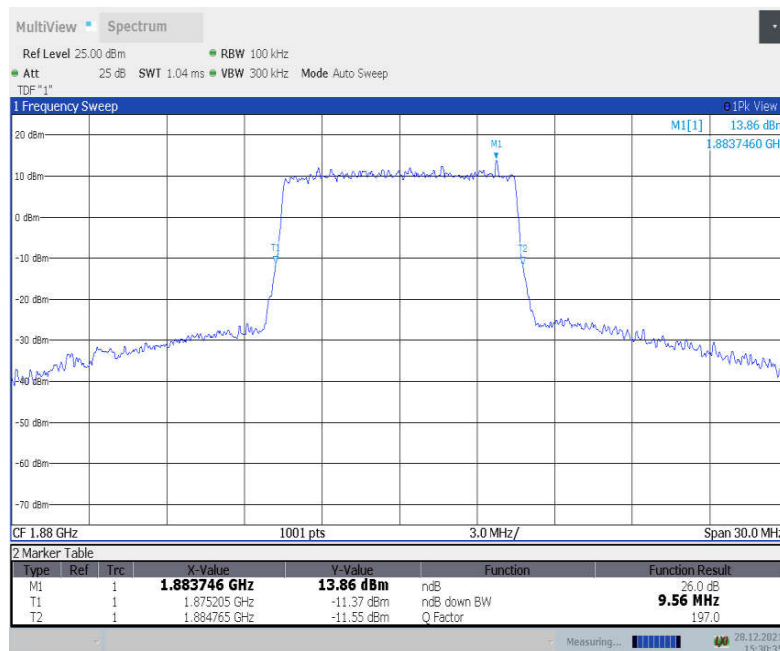
LTE band 2, 10MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1880.0	QPSK	16QAM	64QAM
	9.74	9.56	9.71

LTE band 2, 10MHz Bandwidth, QPSK (-26dBc BW)

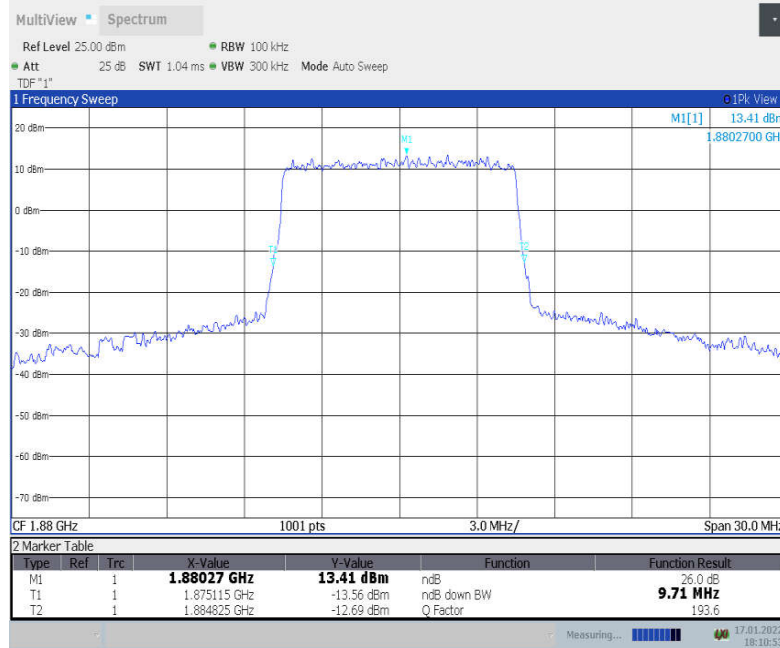


LTE band 2, 10MHz Bandwidth, 16QAM (-26dBc BW)





LTE band 2, 10MHz Bandwidth, 64QAM (-26dBc BW)

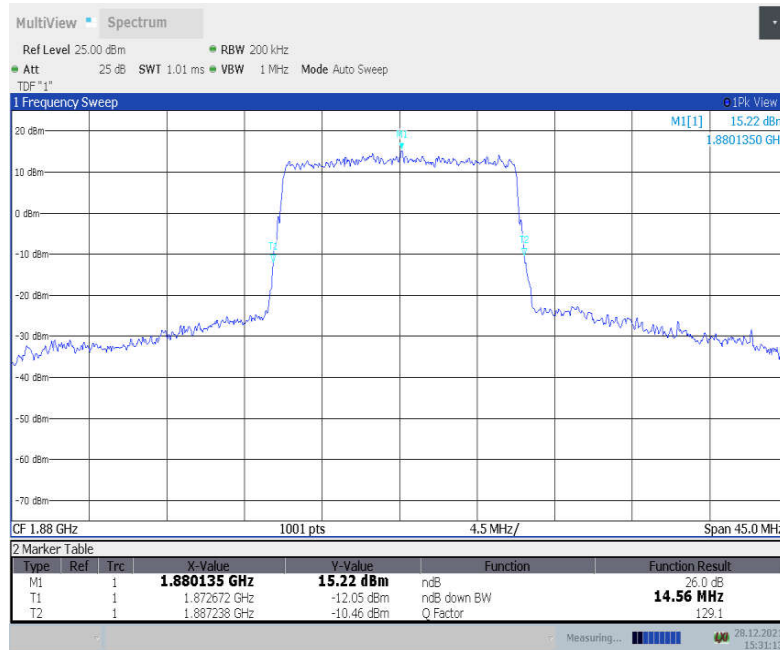




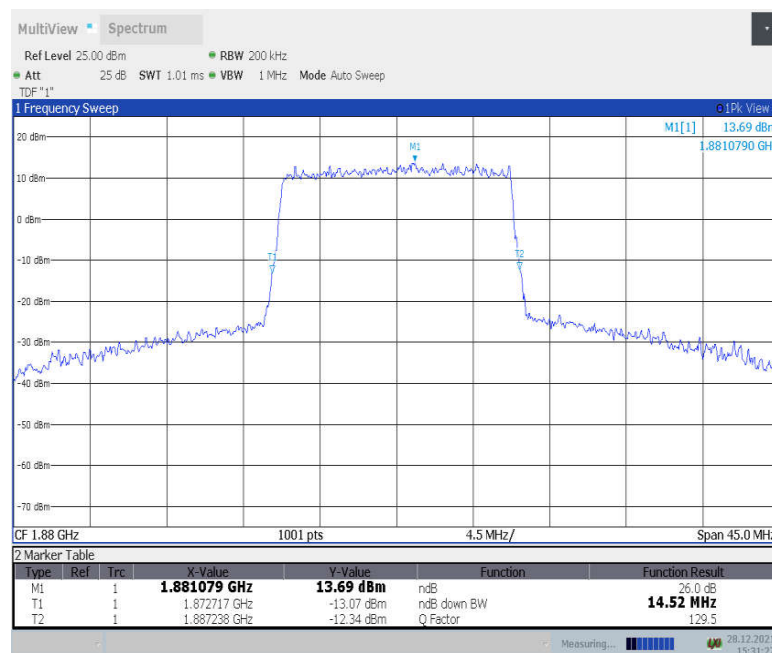
LTE band 2, 15MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1880.0	QPSK	16QAM	64QAM
	14.56	14.52	14.48

LTE band 2, 15MHz Bandwidth, QPSK (-26dBc BW)

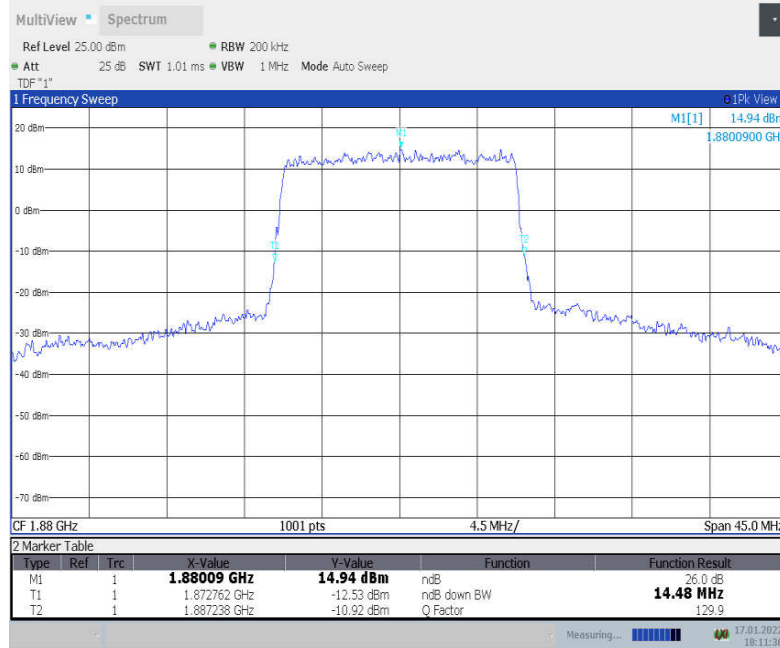


LTE band 2, 15MHz Bandwidth, 16QAM (-26dBc BW)





LTE band 2, 15MHz Bandwidth, 64QAM (-26dBc BW)

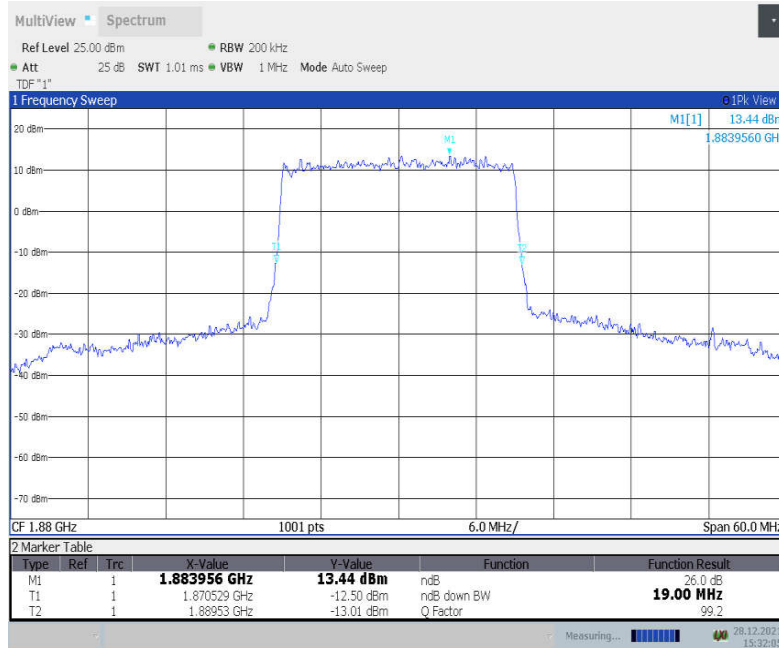




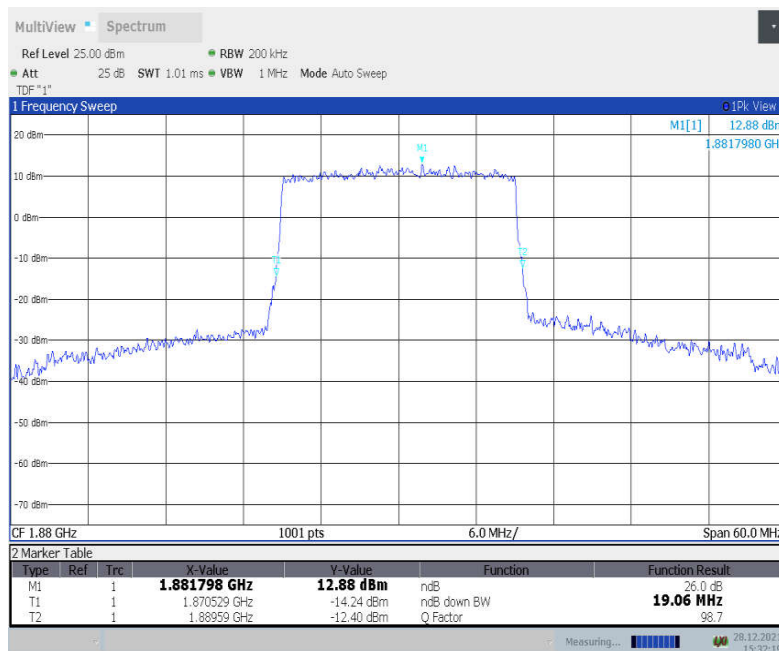
LTE band 2, 20MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1880.0	QPSK	16QAM	64QAM
	19.00	19.06	19.06

LTE band 2, 20MHz Bandwidth, QPSK (-26dBc BW)

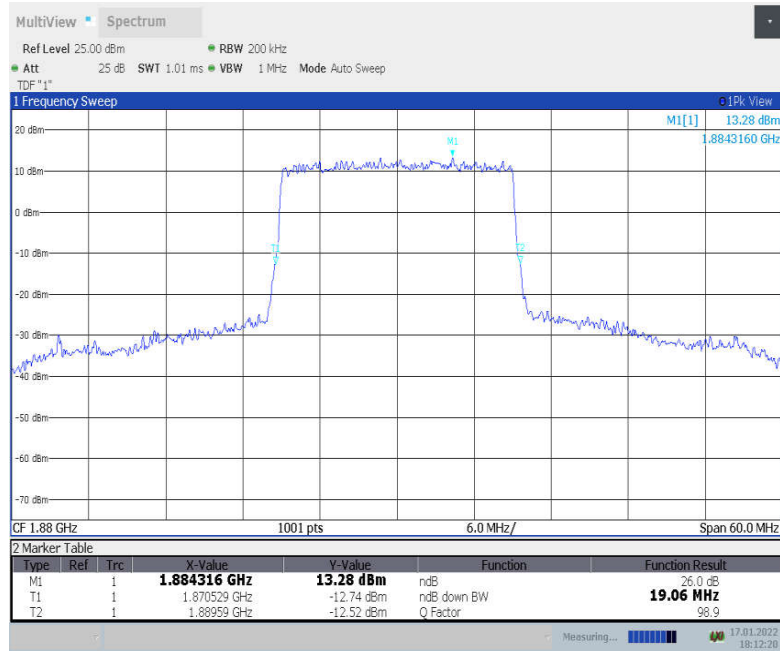


LTE band 2, 20MHz Bandwidth, 16QAM (-26dBc BW)





LTE band 2, 20MHz Bandwidth, 64QAM (-26dBc BW)

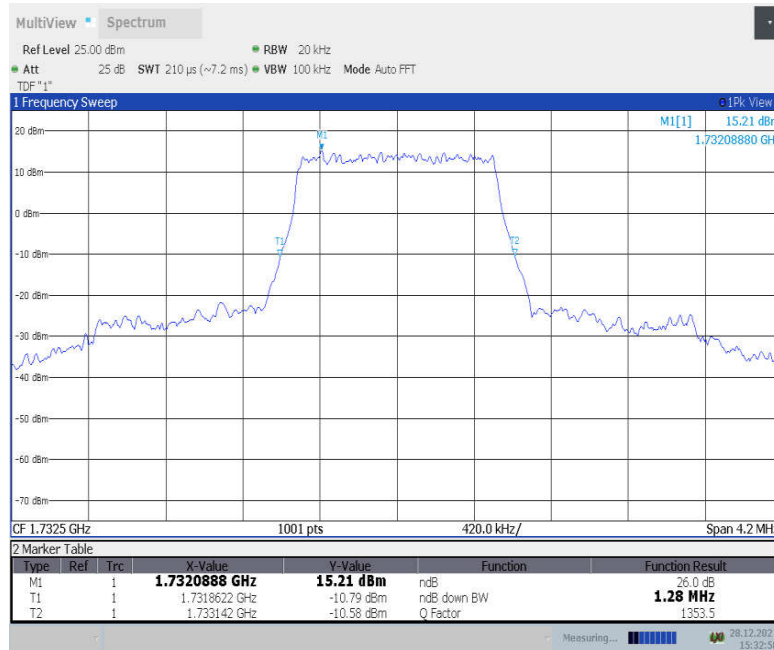




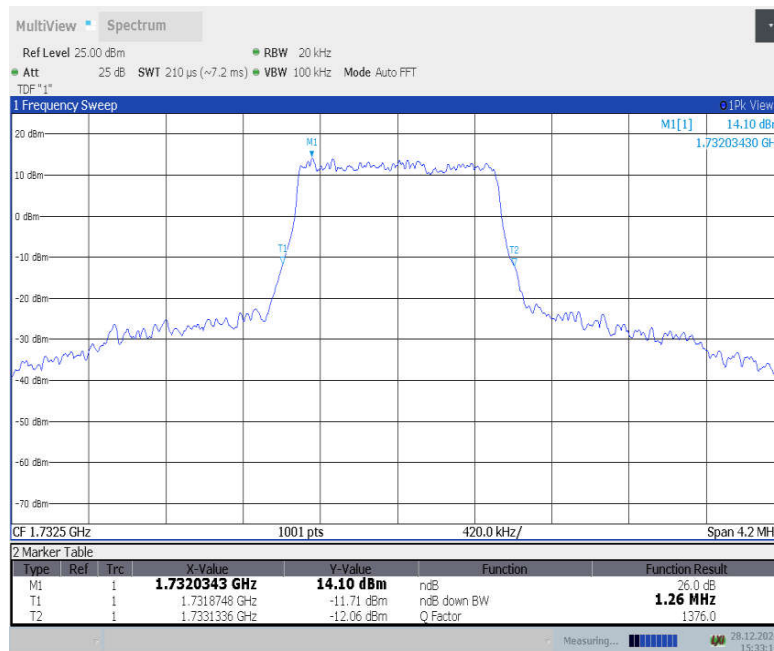
LTE band 4, 1.4MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1732.5	QPSK	16QAM	64QAM
	1.28	1.26	1.25

LTE band 4, 1.4MHz Bandwidth, QPSK (-26dBc BW)

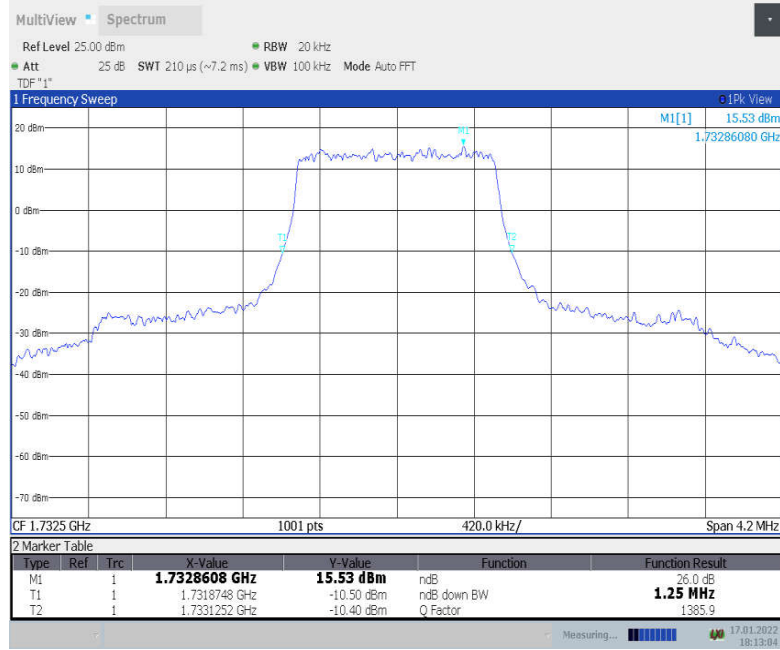


LTE band 4, 1.4MHz Bandwidth, 16QAM (-26dBc BW)





LTE band 4, 1.4MHz Bandwidth, 64QAM (-26dBc BW)

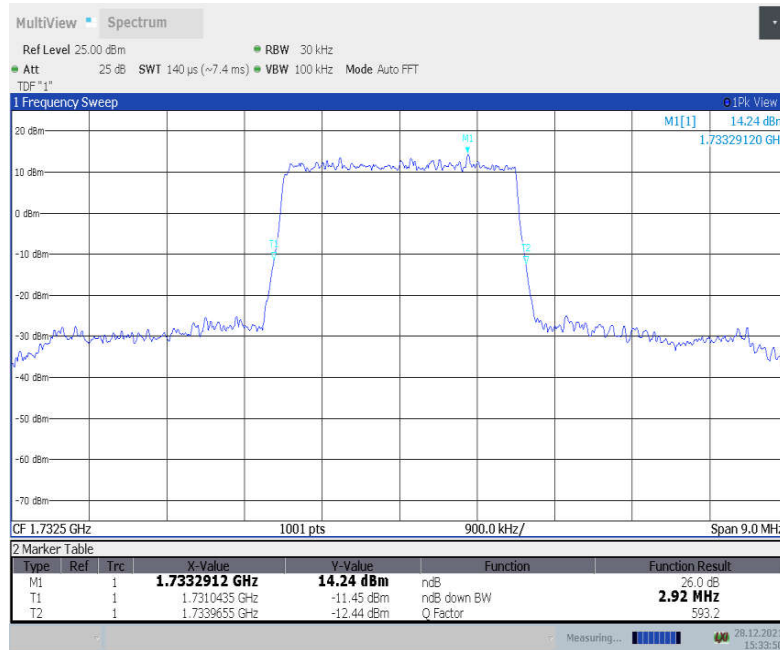




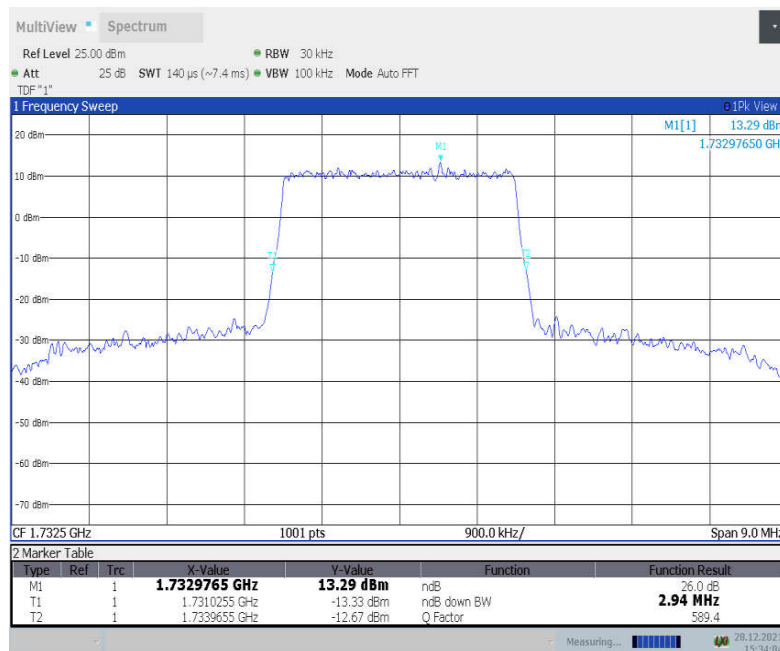
LTE band 4, 3MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1732.5	QPSK	16QAM	64QAM
	2.92	2.94	2.94

LTE band 4, 3MHz Bandwidth, QPSK (-26dBc BW)

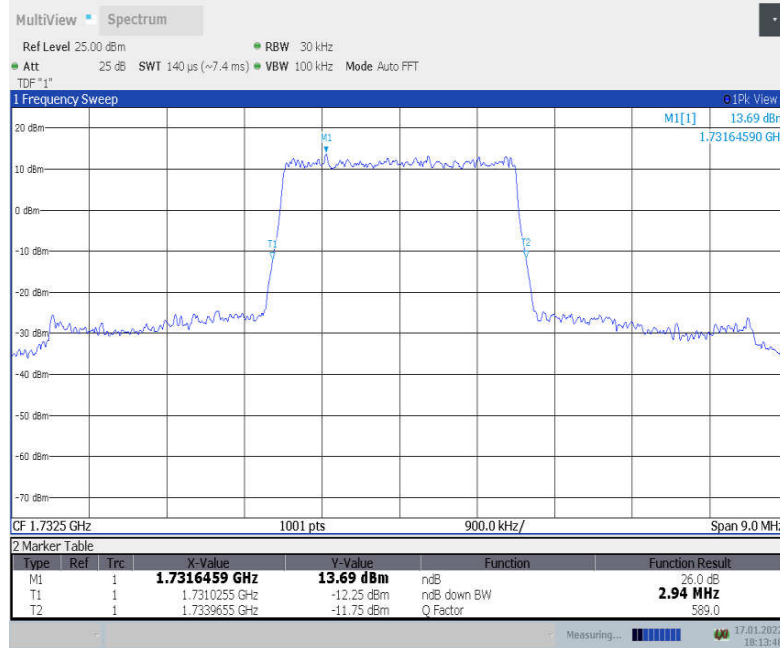


LTE band 4, 3MHz Bandwidth, 16QAM (-26dBc BW)





LTE band 4, 3MHz Bandwidth, 64QAM (-26dBc BW)

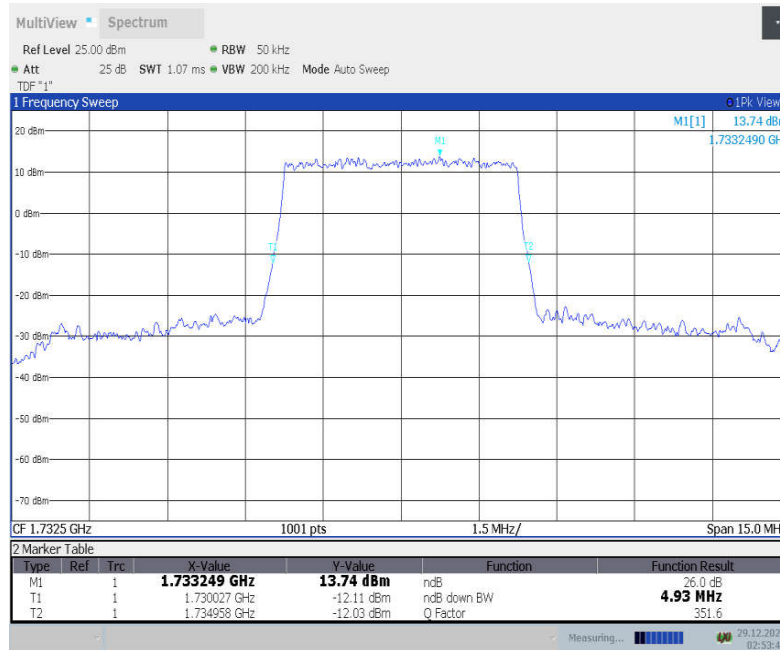




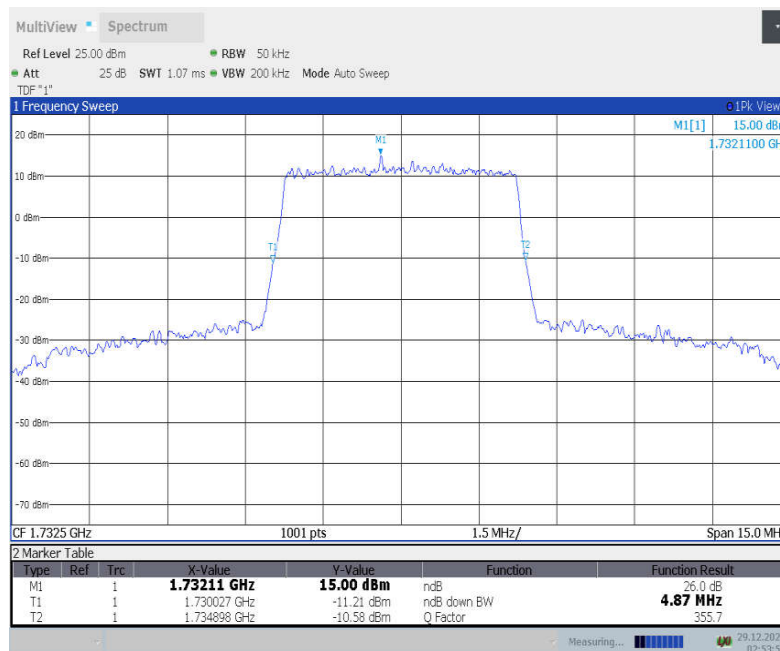
LTE band 4, 5MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1732.5	QPSK	16QAM	64QAM
	4.93	4.87	4.93

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

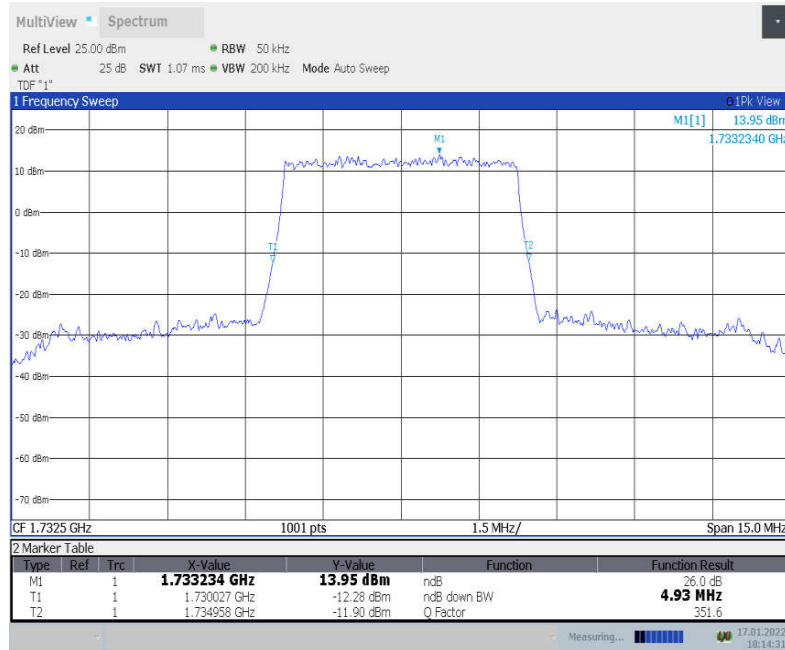


LTE band 4, 5MHz Bandwidth,16QAM (-26dBc BW)





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

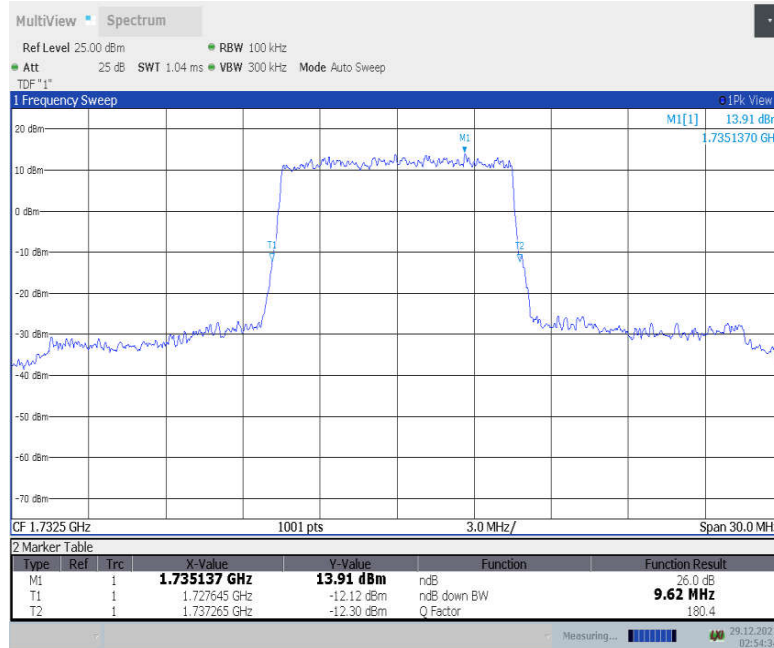




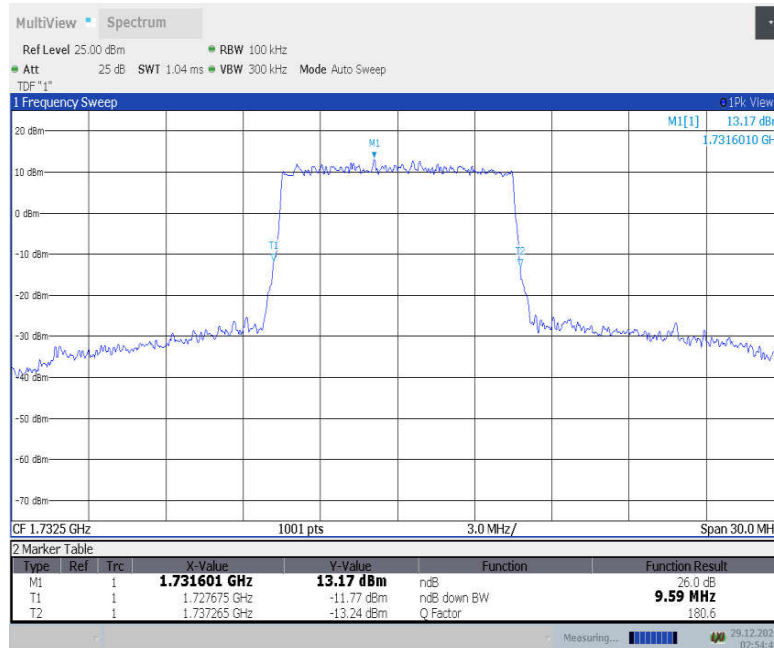
LTE band 4, 10MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1732.5	QPSK	16QAM	64QAM
	9.62	9.59	9.71

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

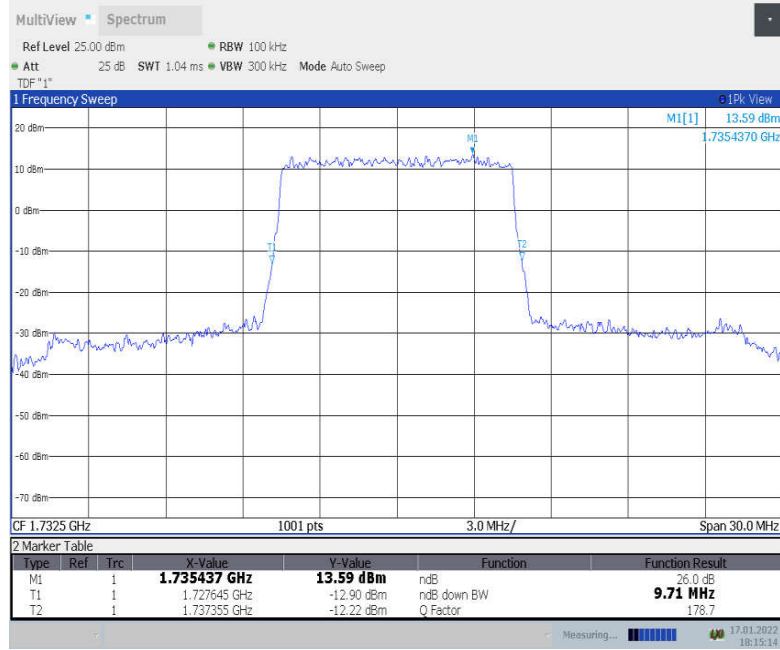


LTE band 4, 10MHz Bandwidth, 16QAM (-26dBc BW)





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

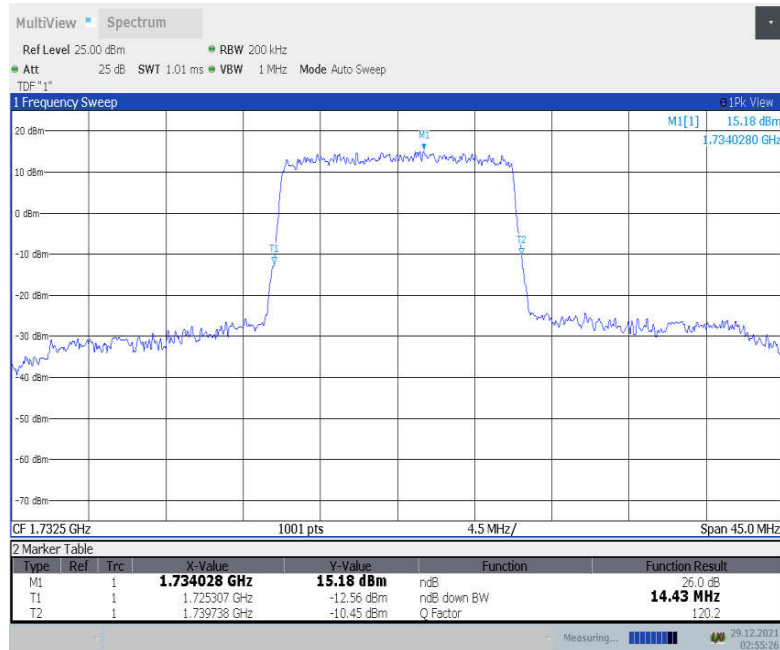




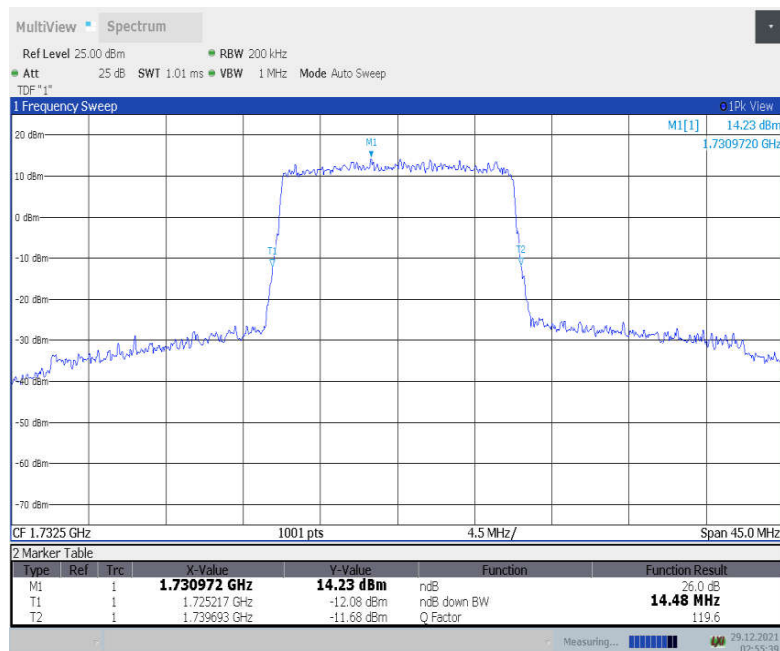
LTE band 4, 15MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1732.5	QPSK	16QAM	64QAM
	14.43	14.48	14.61

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

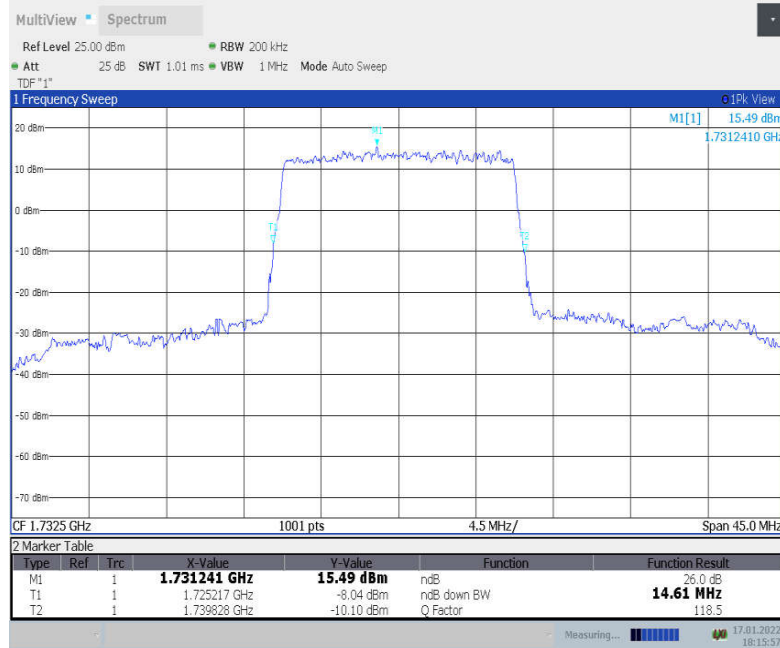


LTE band 4, 15MHz Bandwidth, 16QAM (-26dBc BW)





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

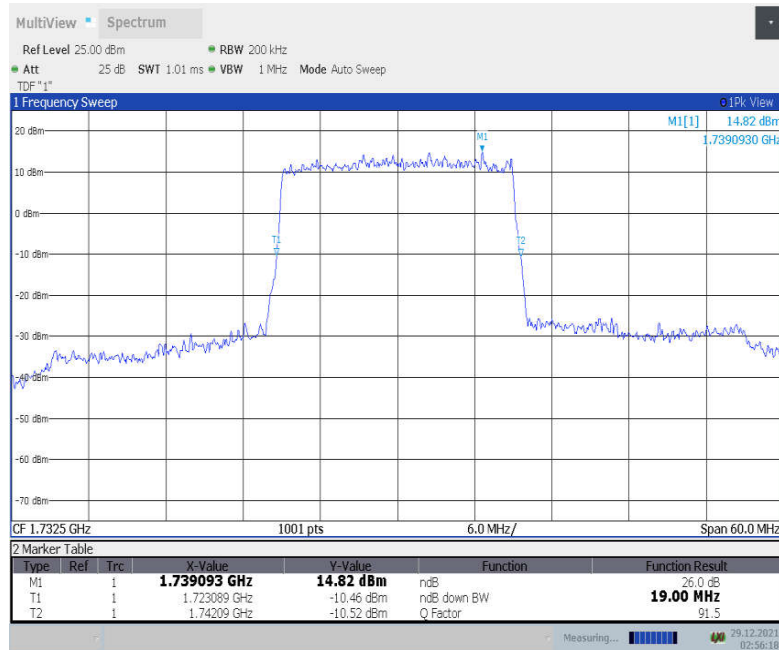




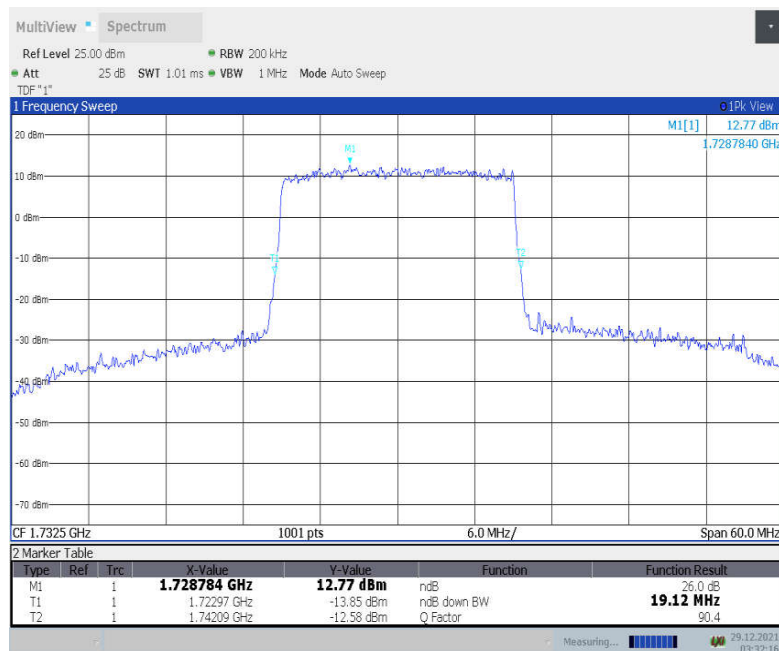
LTE band 4, 20MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
1732.5	QPSK	16QAM	64QAM
	19.00	19.12	18.94

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

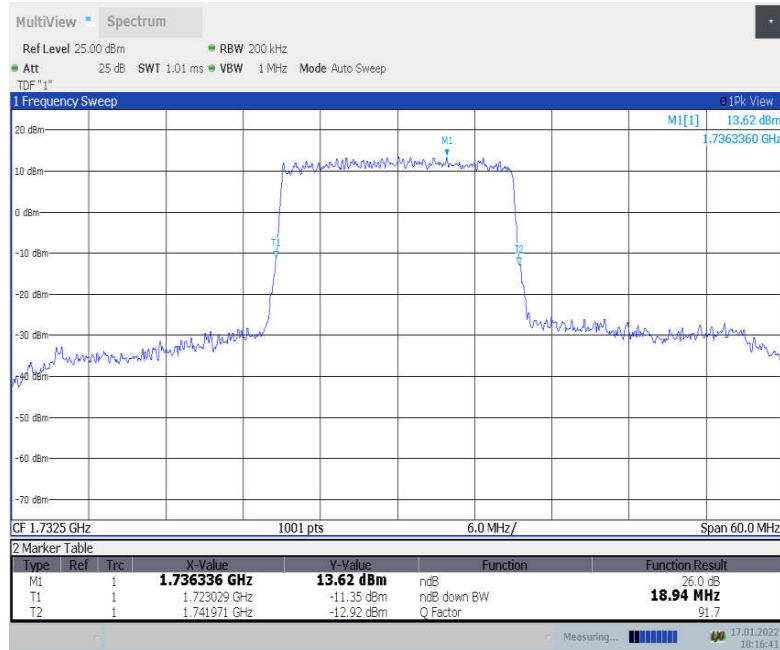


LTE band 4, 20MHz Bandwidth, 16QAM (-26dBc BW)





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

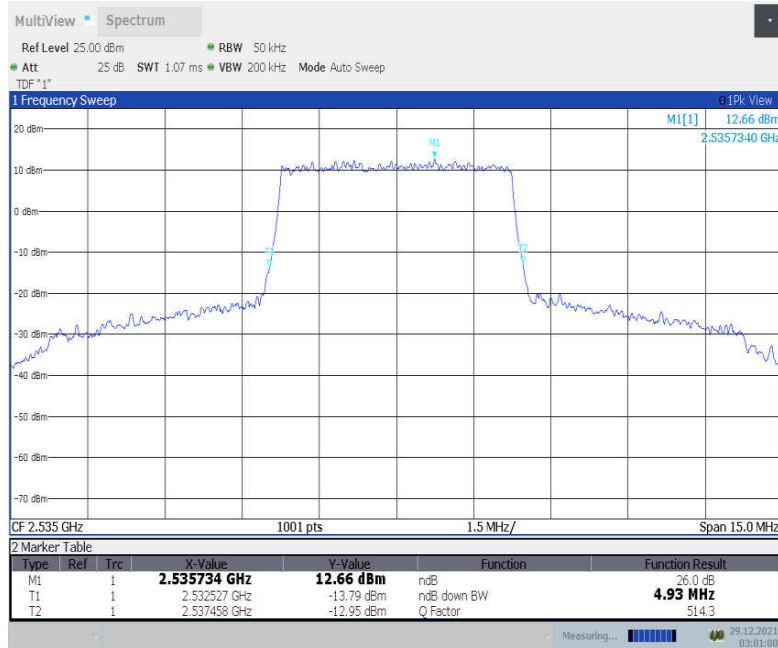




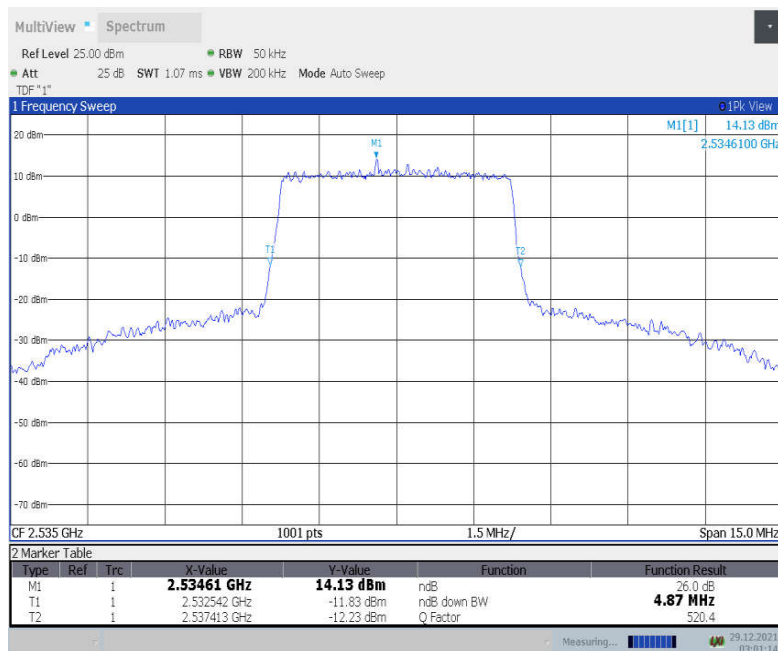
LTE band 7, 5MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
2535.0	QPSK	16QAM	64QAM
	4.93	4.87	4.93

LTE band 7, 5MHz Bandwidth, QPSK (-26dBc BW)

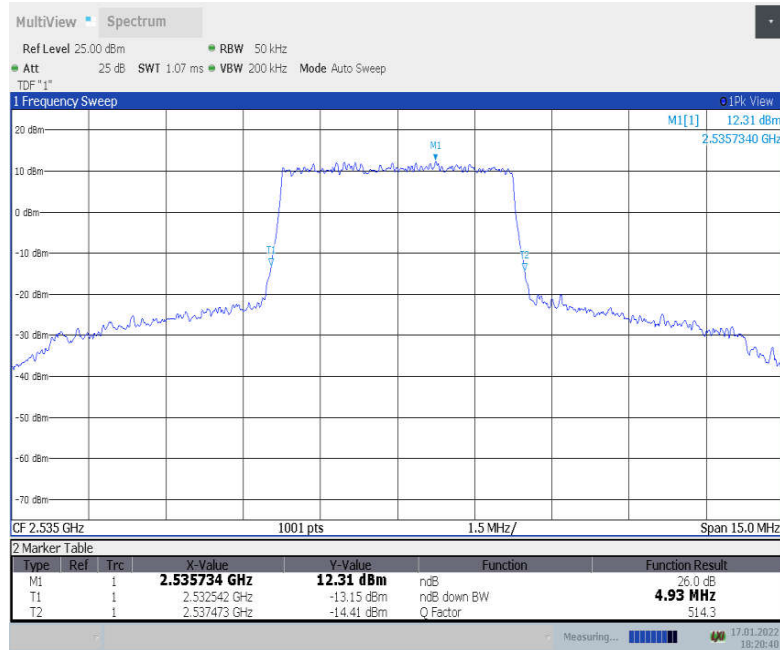


LTE band 7, 5MHz Bandwidth,16QAM (-26dBc BW)





LTE band 7, 5MHz Bandwidth, 64QAM (-26dBc BW)

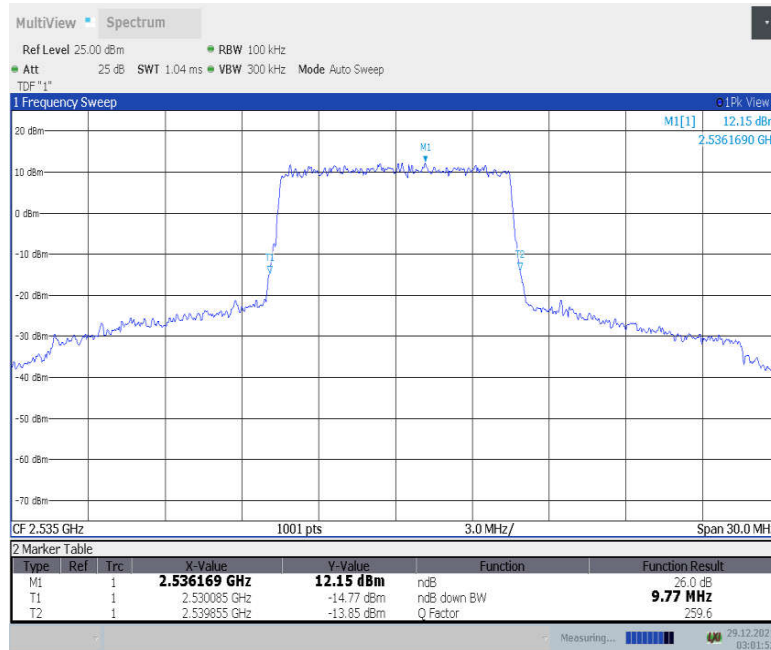




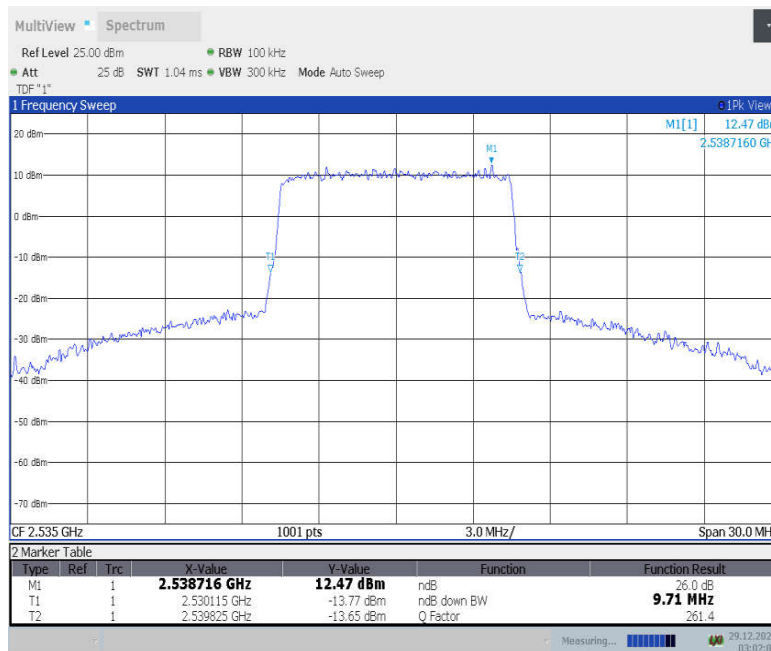
LTE band 7, 10MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
2535.0	QPSK	16QAM	64QAM
	9.77	9.71	9.74

LTE band 7, 10MHz Bandwidth, QPSK (-26dBc BW)

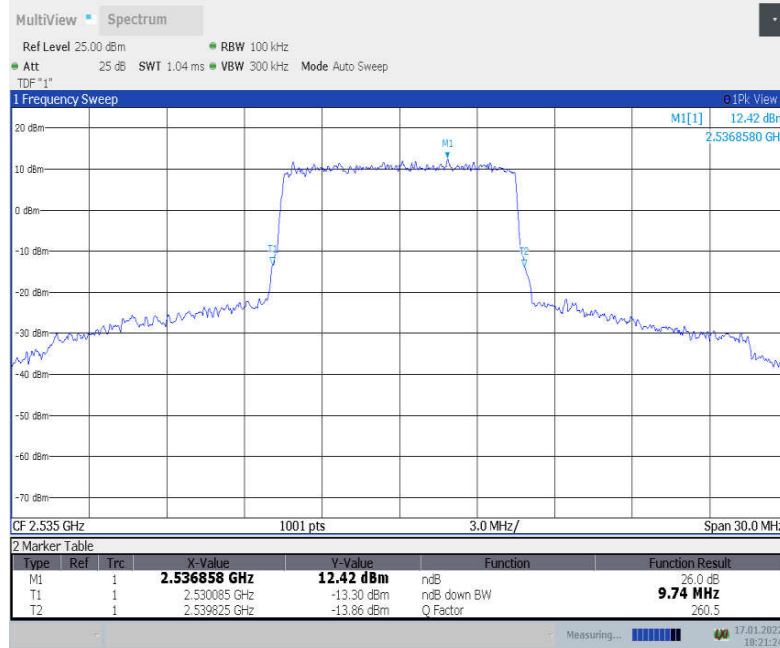


LTE band 7, 10MHz Bandwidth, 16QAM (-26dBc BW)





LTE band 7, 10MHz Bandwidth, 64QAM (-26dBc BW)

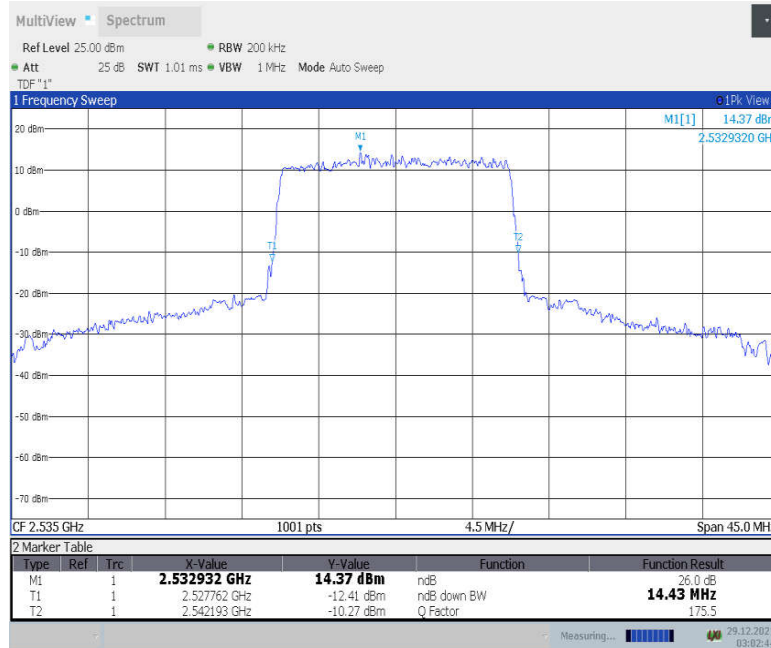




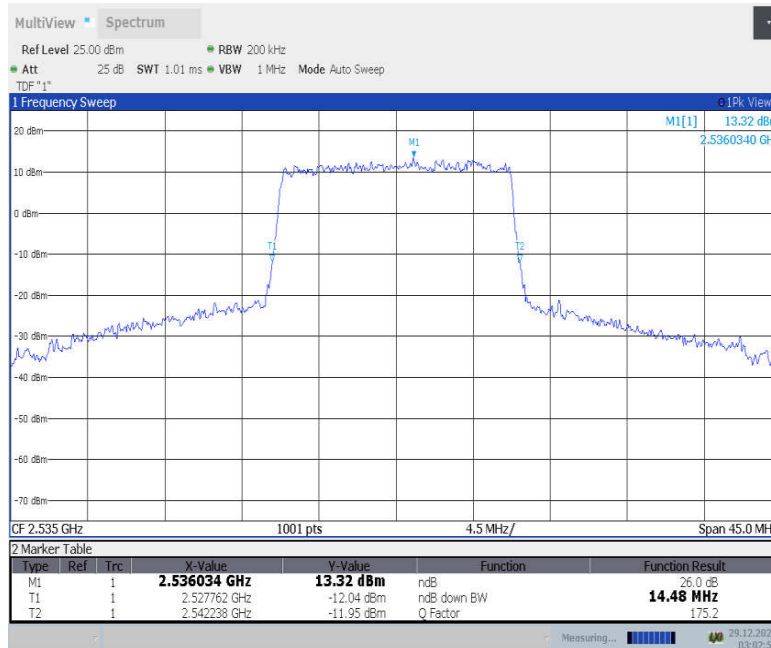
LTE band 7, 15MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
2535.0	QPSK	16QAM	64QAM
	14.43	14.48	14.52

LTE band 7, 15MHz Bandwidth, QPSK (-26dBc BW)

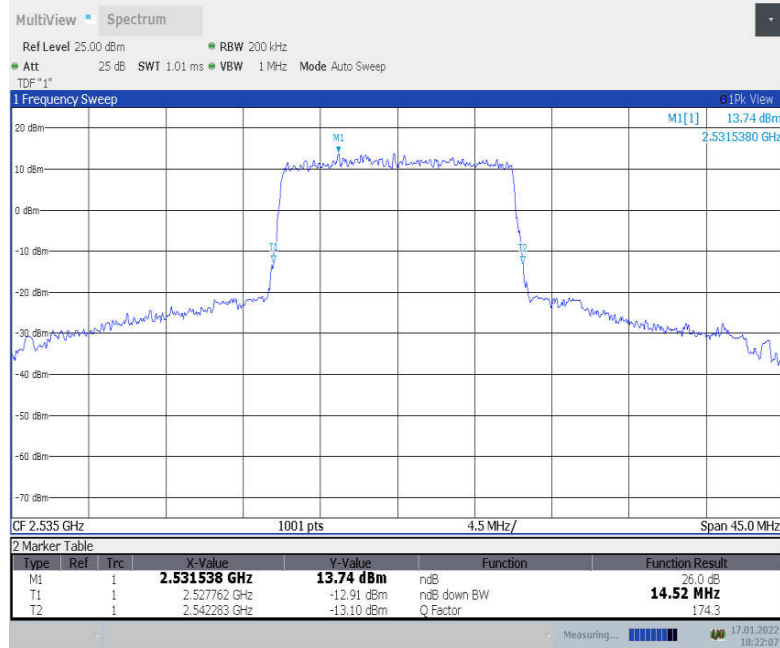


LTE band 7, 15MHz Bandwidth, 16QAM (-26dBc BW)





LTE band 7, 15MHz Bandwidth, 64QAM (-26dBc BW)

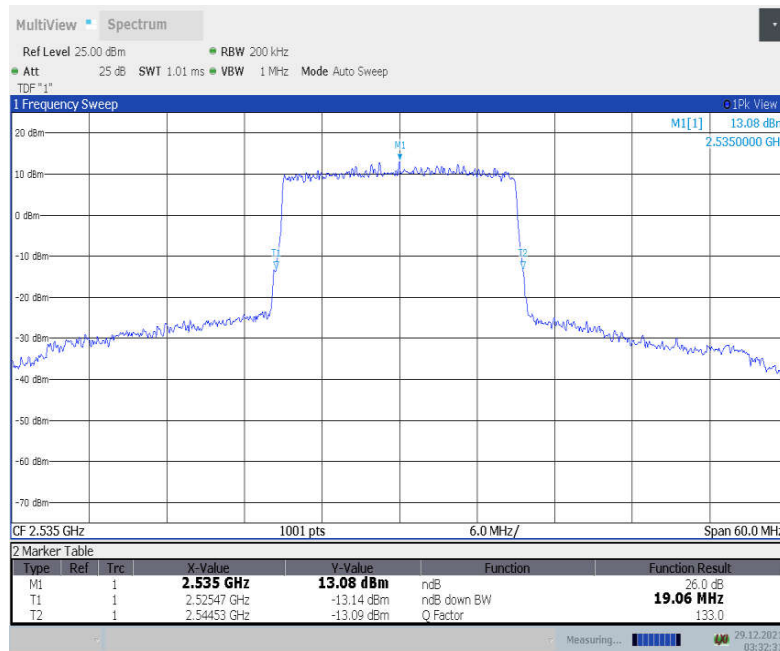




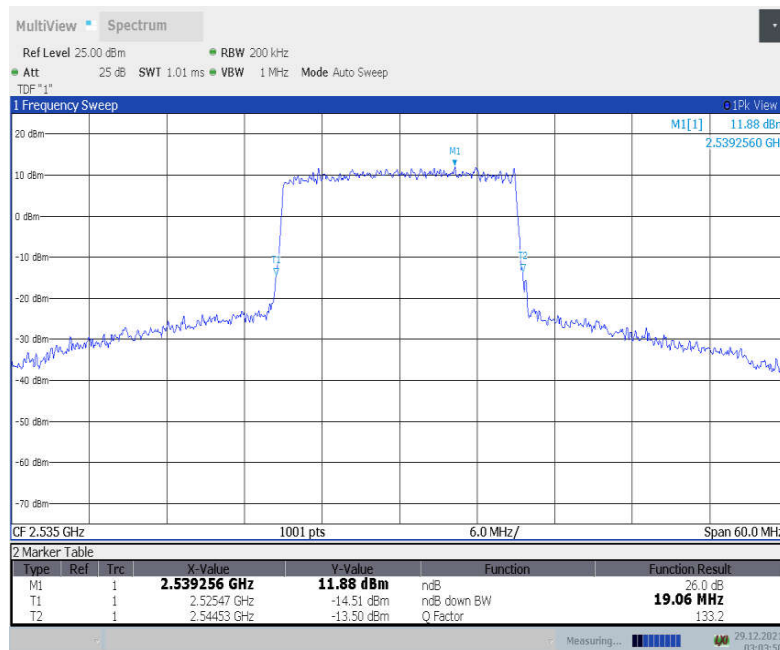
LTE band 7, 20MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
2535.0	QPSK	16QAM	64QAM
	19.06	19.06	19.00

LTE band 7, 20MHz Bandwidth, QPSK (-26dBc BW)

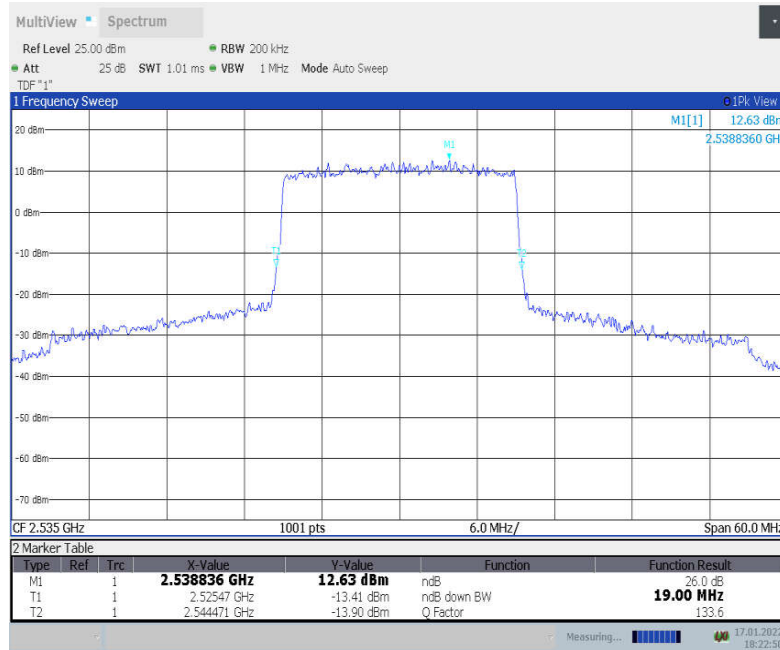


LTE band 7, 20MHz Bandwidth, 16QAM (-26dBc BW)





LTE band 7, 20MHz Bandwidth, 64QAM (-26dBc BW)



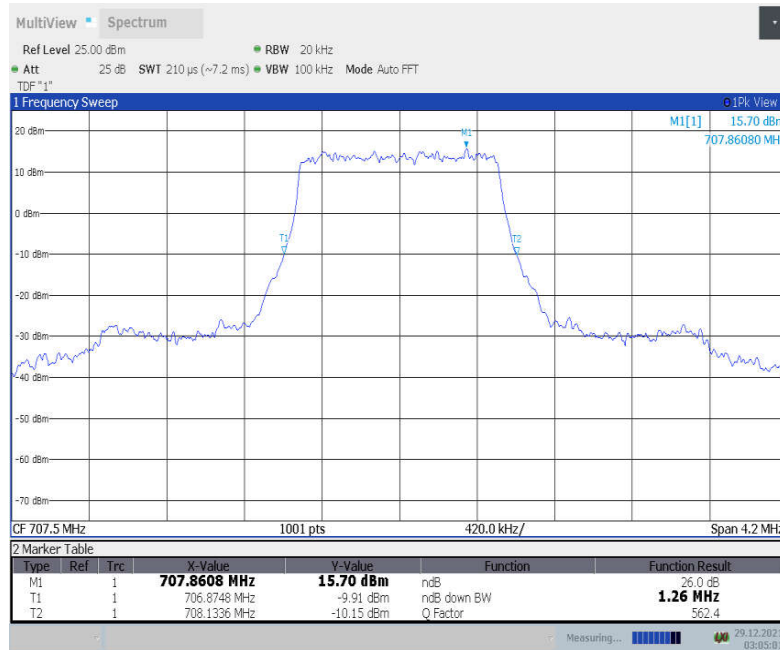
Note: Expanded measurement uncertainty is $U = 3428\text{Hz}$, $k = 2$



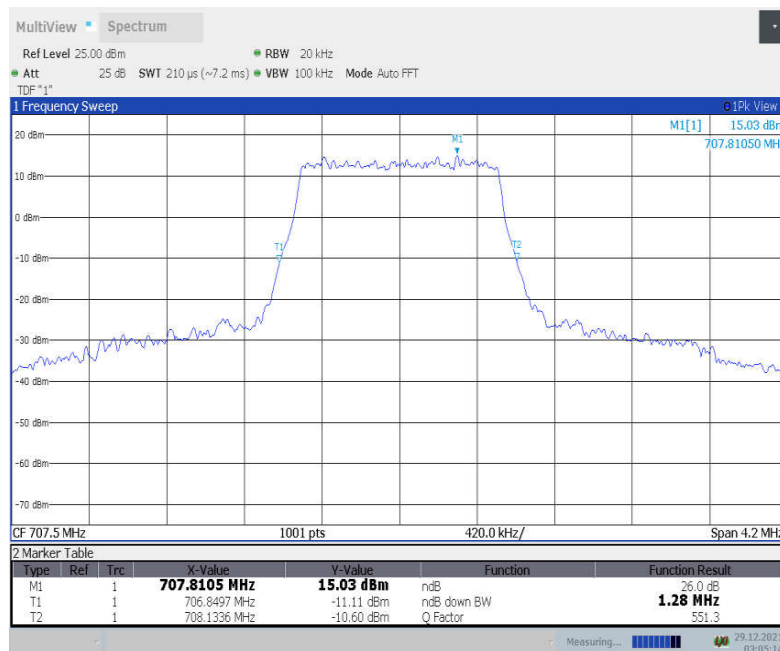
LTE band 12, 1.4MHz (-26dBc BW)

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

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

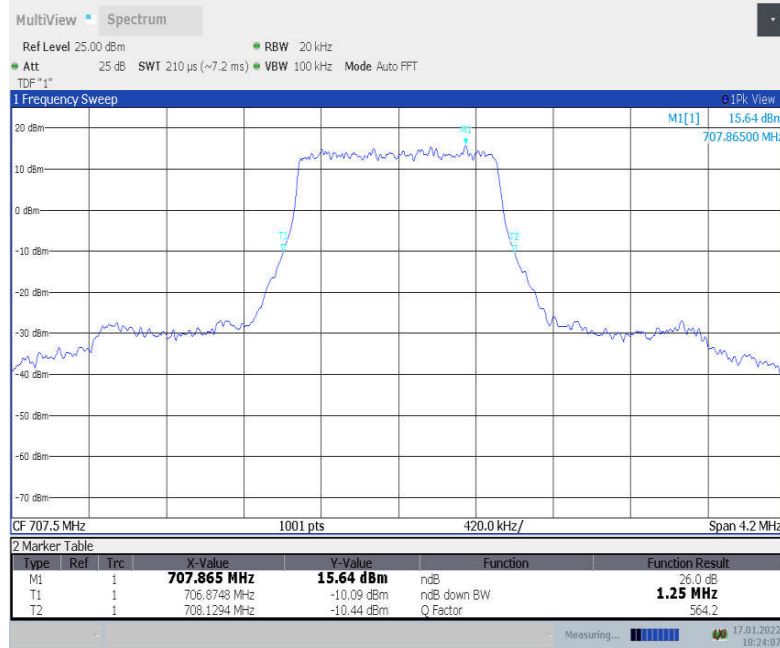


LTE band 12, 1.4MHz Bandwidth, 16QAM (-26dBc BW)





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

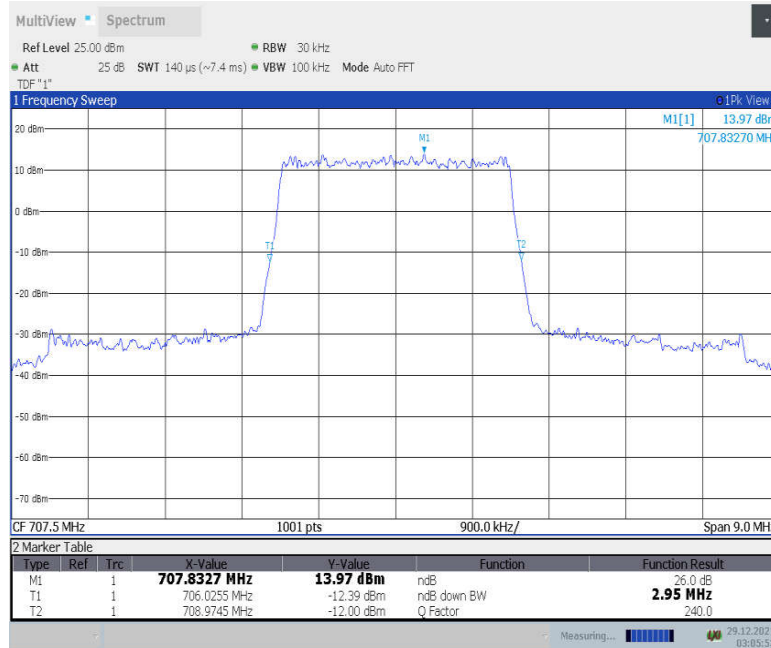




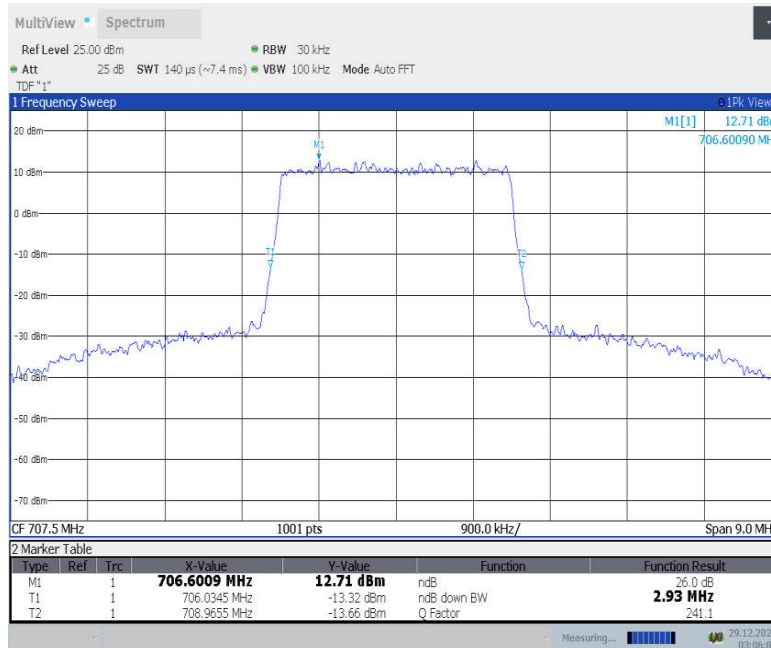
LTE band 12, 3MHz (-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
707.5	QPSK	16QAM	64QAM
	2.95	2.93	2.95

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



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





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

