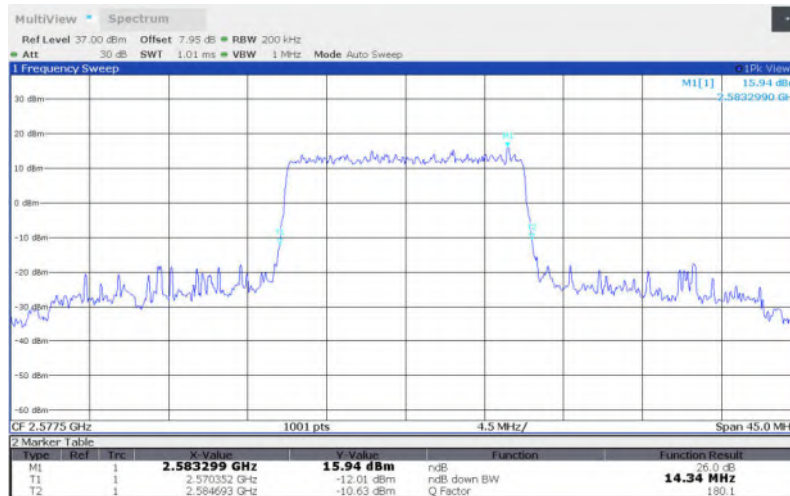
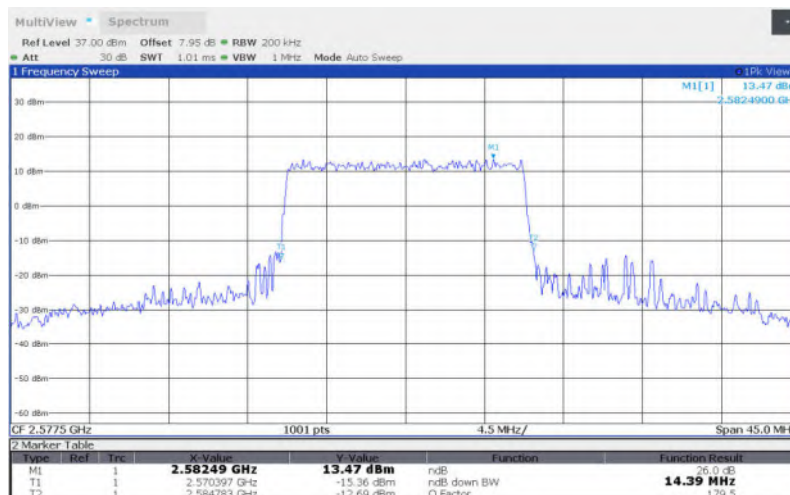
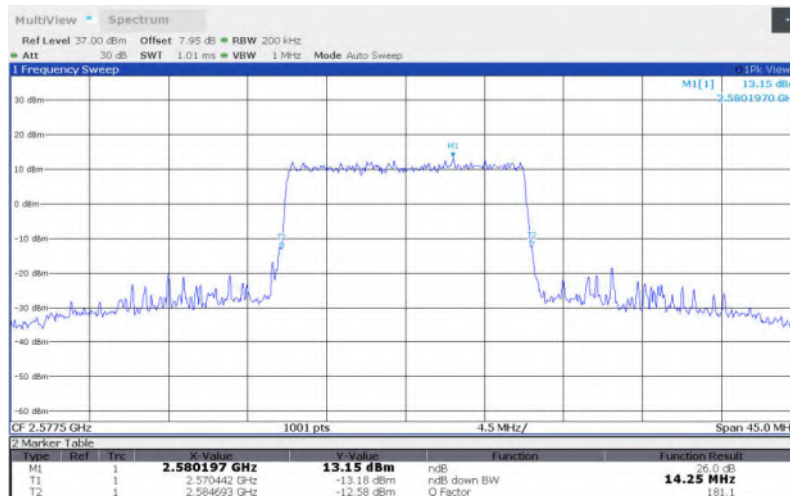


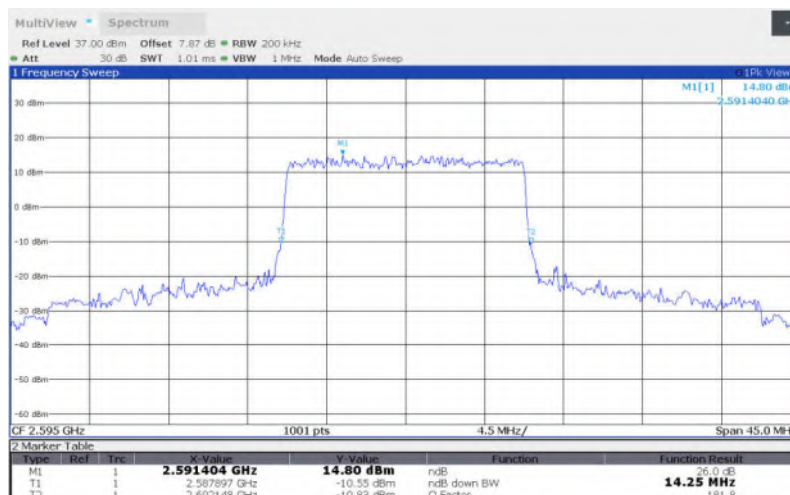
**LTE Band 38,15MHz(-26dBc BW)**

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
	QPSK	16QAM	64QAM
2577.5	14.341	14.386	14.251
2595	14.251	14.341	14.251
2612.5	14.431	14.341	14.251

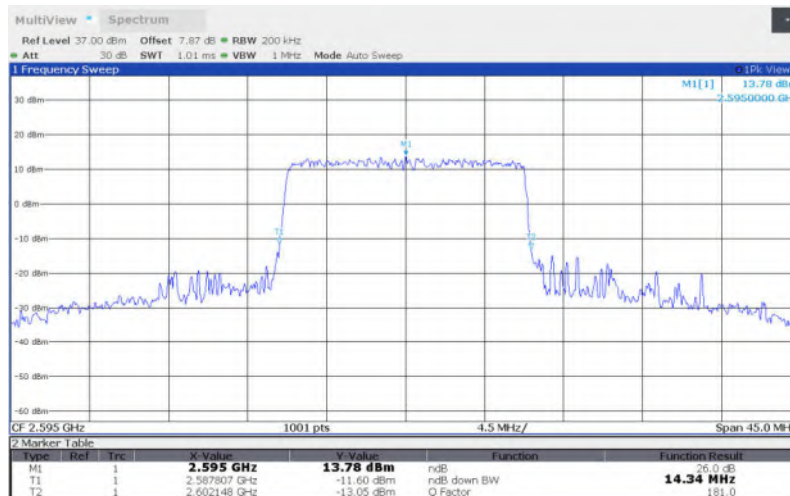
LTE Band 38 , 15MHz Bandwidth,LOW,QPSK (-26dBc BW)**LTE Band 38 , 15MHz Bandwidth,LOW,16QAM (-26dBc BW)****LTE Band 38 , 15MHz Bandwidth,LOW,64QAM (-26dBc BW)**



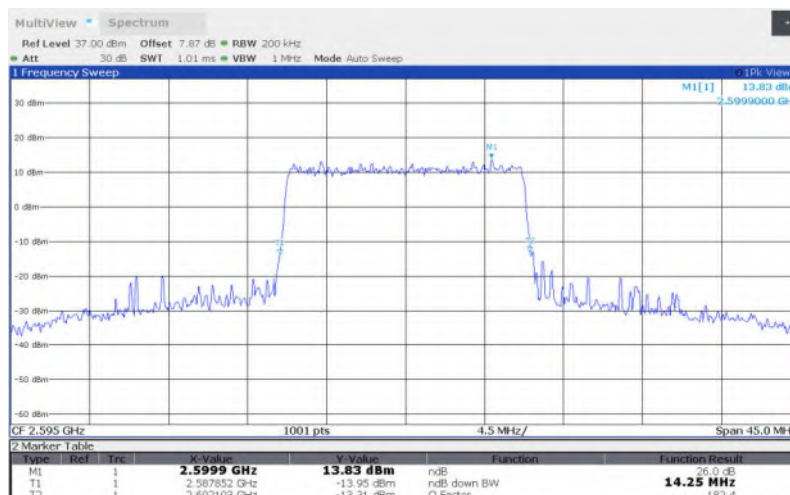
LTE Band 38 , 15MHz Bandwidth,MID,QPSK (-26dBc BW)



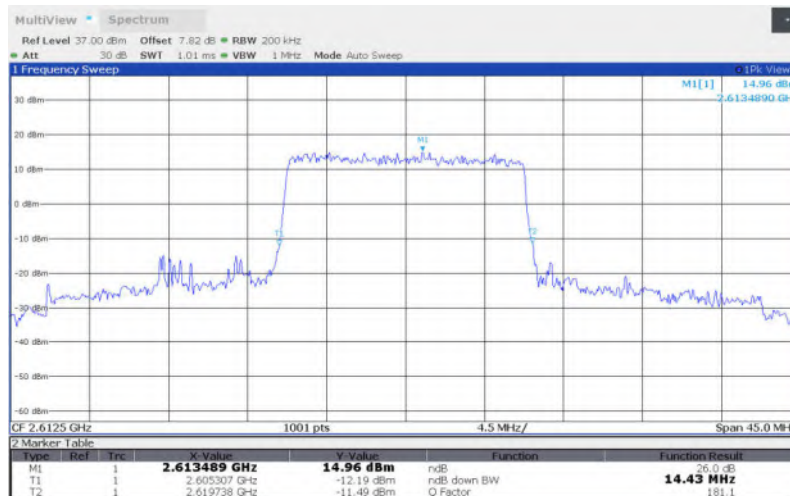
LTE Band 38 , 15MHz Bandwidth,MID,16QAM (-26dBc BW)



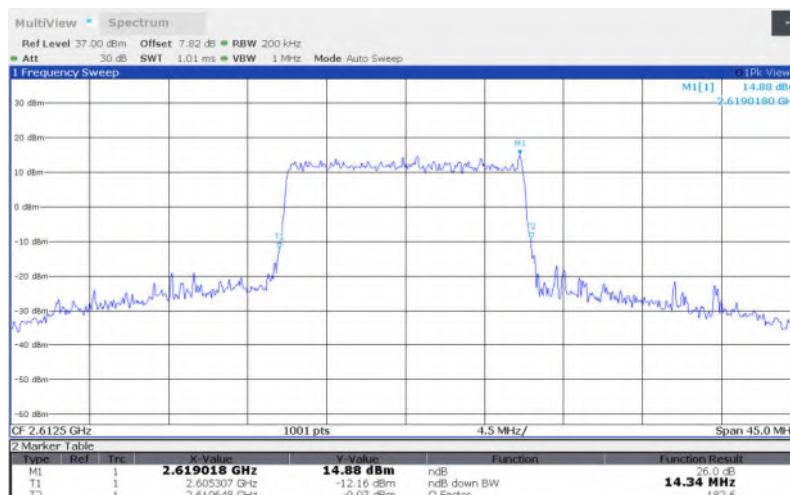
LTE Band 38 , 15MHz Bandwidth,MID,64QAM (-26dBc BW)



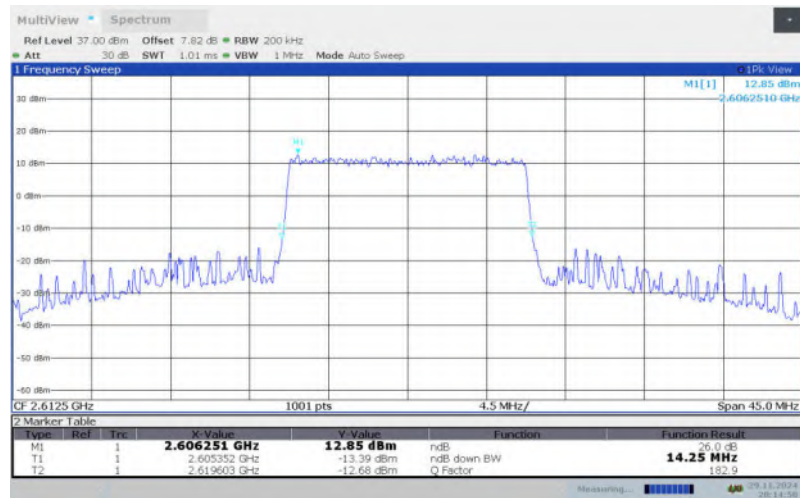
LTE Band 38 , 15MHz Bandwidth,HIGH,QPSK (-26dBc BW)



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

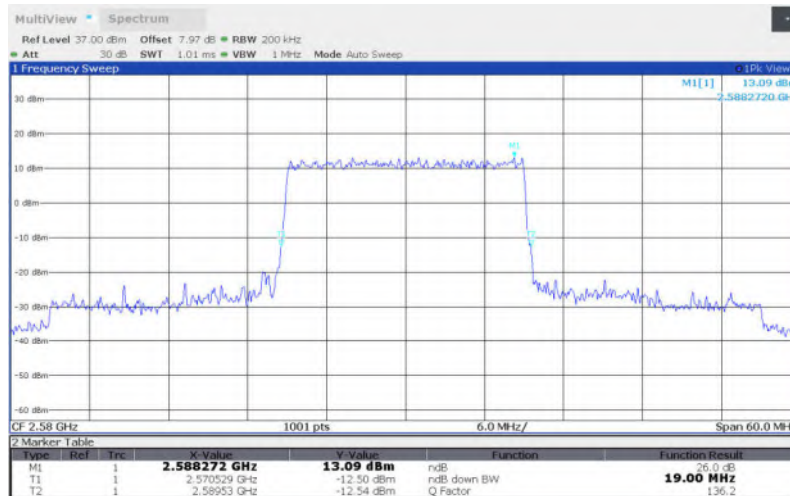
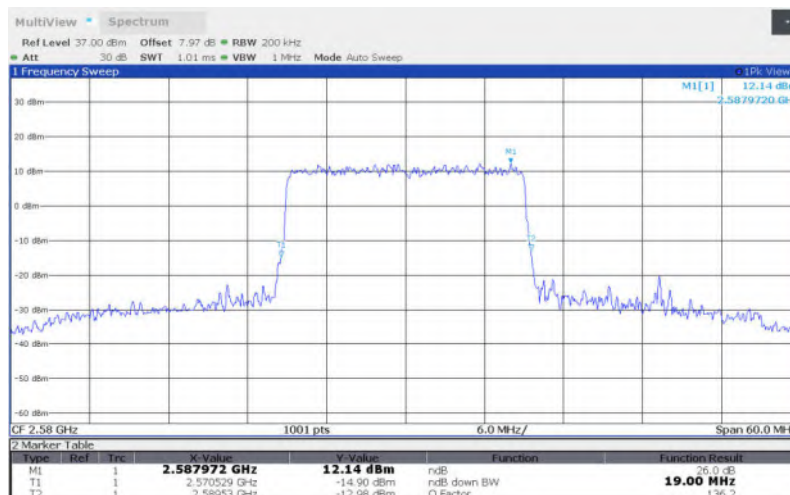


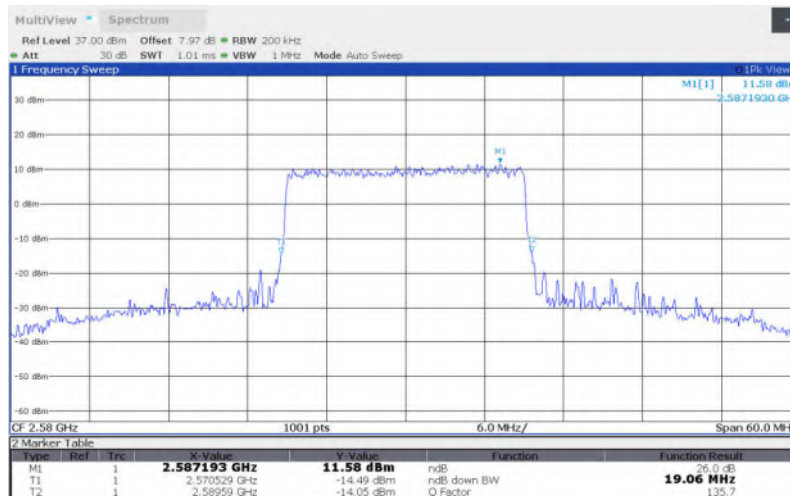
LTE Band 38 , 15MHz Bandwidth,HIGH,64QAM (-26dBc BW)



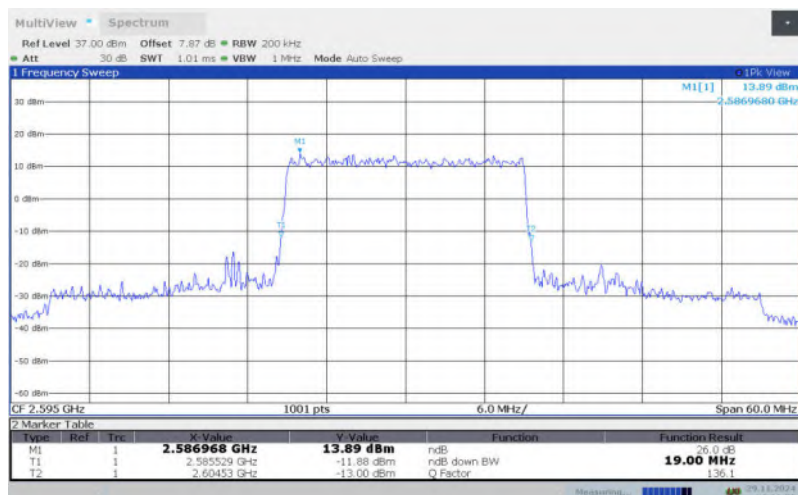
**LTE Band 38,20MHz(-26dBc BW)**

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
	QPSK	16QAM	64QAM
2580	19.001	19.001	19.061
2595	19.001	19.001	19.001
2610	19.001	19.061	19.001

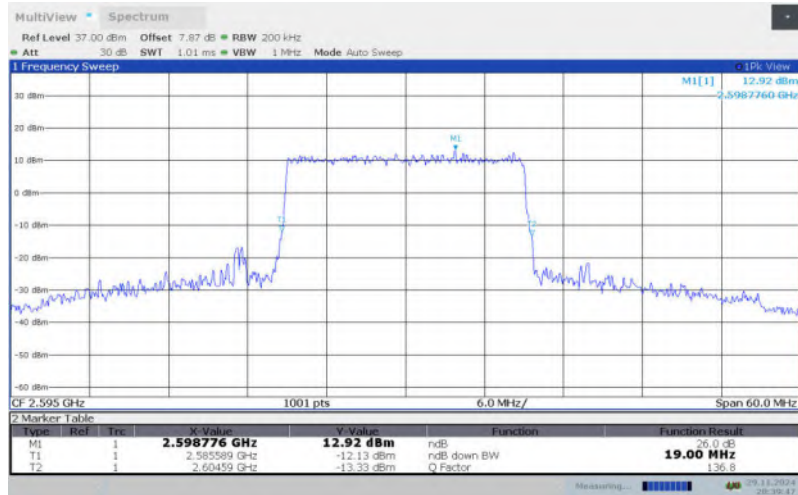
LTE Band 38 , 20MHz Bandwidth,LOW,QPSK (-26dBc BW)**LTE Band 38 , 20MHz Bandwidth,LOW,16QAM (-26dBc BW)****LTE Band 38 , 20MHz Bandwidth,LOW,64QAM (-26dBc BW)**



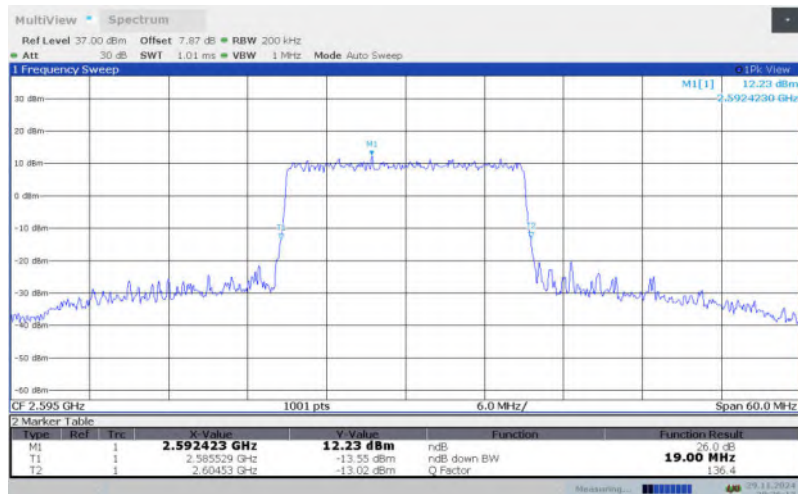
LTE Band 38 , 20MHz Bandwidth,MID,QPSK (-26dBc BW)



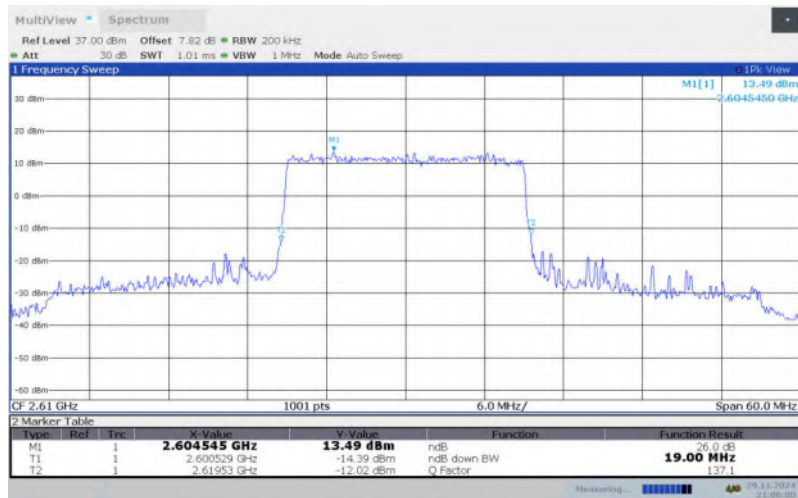
LTE Band 38 , 20MHz Bandwidth,MID,16QAM (-26dBc BW)



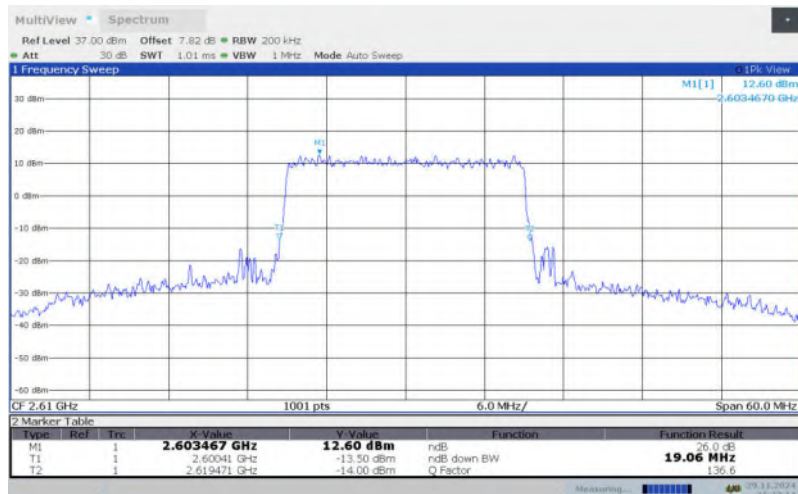
LTE Band 38 , 20MHz Bandwidth,MID,64QAM (-26dBc BW)



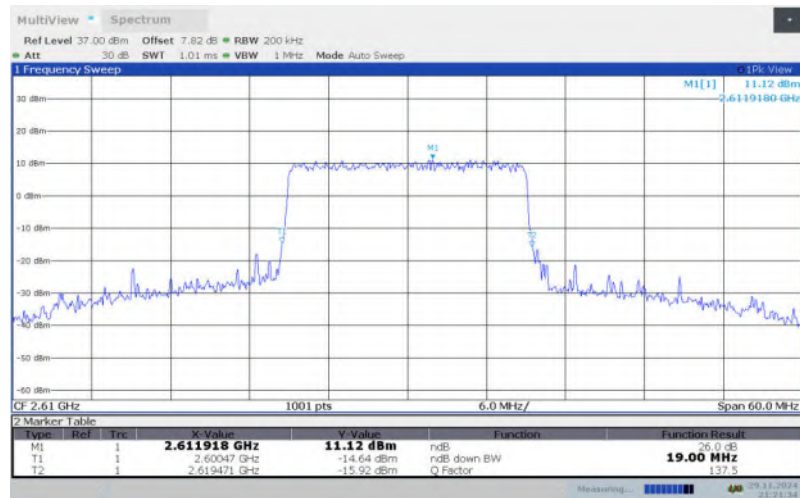
LTE Band 38 , 20MHz Bandwidth,HIGH,QPSK (-26dBc BW)



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

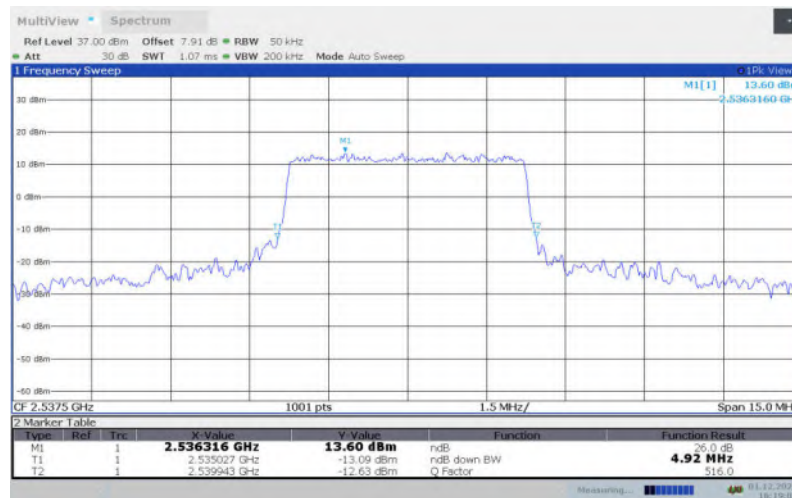
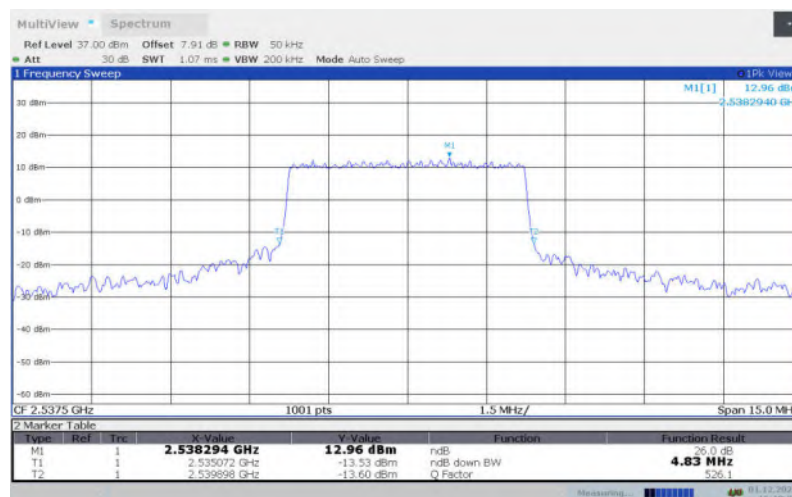


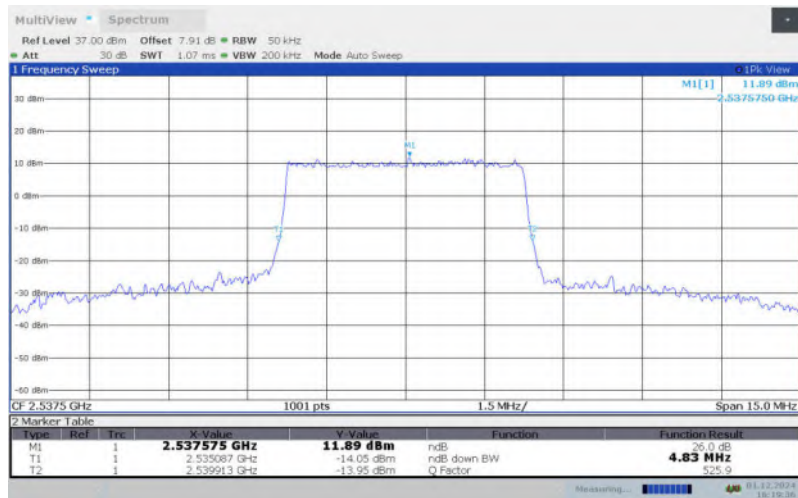
LTE Band 38 , 20MHz Bandwidth,HIGH,64QAM (-26dBc BW)



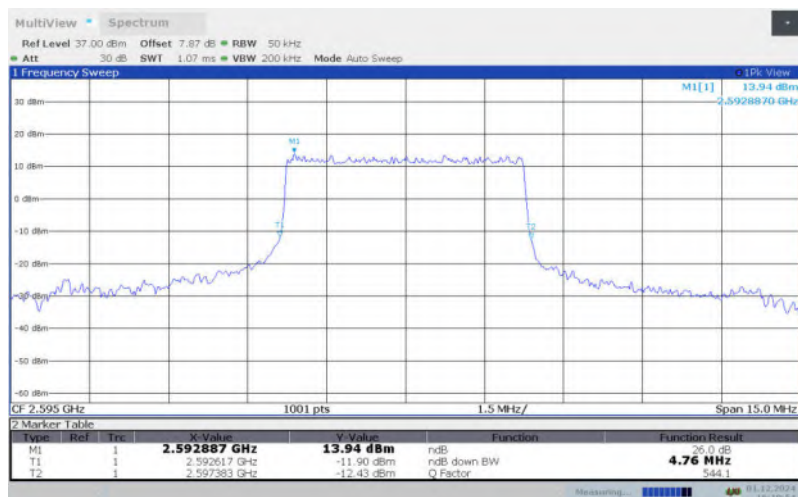
**LTE Band 41,5MHz(-26dBc BW)**

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
	QPSK	16QAM	64QAM
2498.5	4.915	4.825	4.825
2593	4.765	4.855	4.855
2687.5	4.810	4.840	4.795

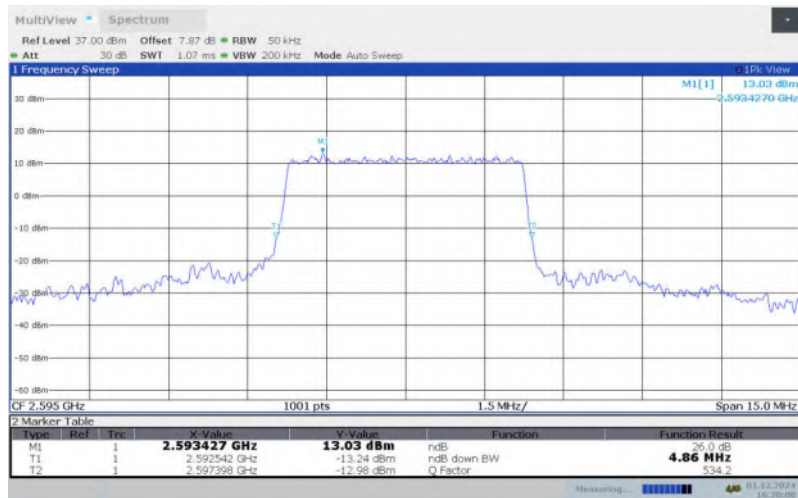
LTE Band 41 , 5MHz Bandwidth,LOW,QPSK (-26dBc BW)**LTE Band 41 , 5MHz Bandwidth,LOW,16QAM (-26dBc BW)****LTE Band 41 , 5MHz Bandwidth,LOW,64QAM (-26dBc BW)**



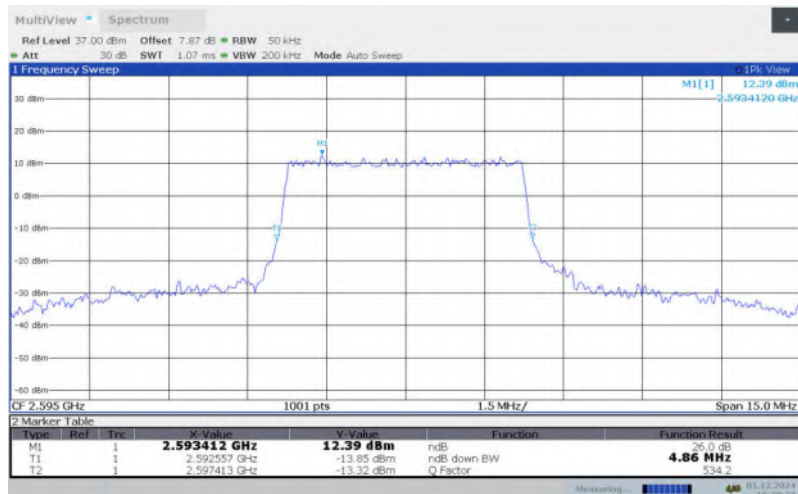
LTE Band 41 , 5MHz Bandwidth,MID,QPSK (-26dBc BW)



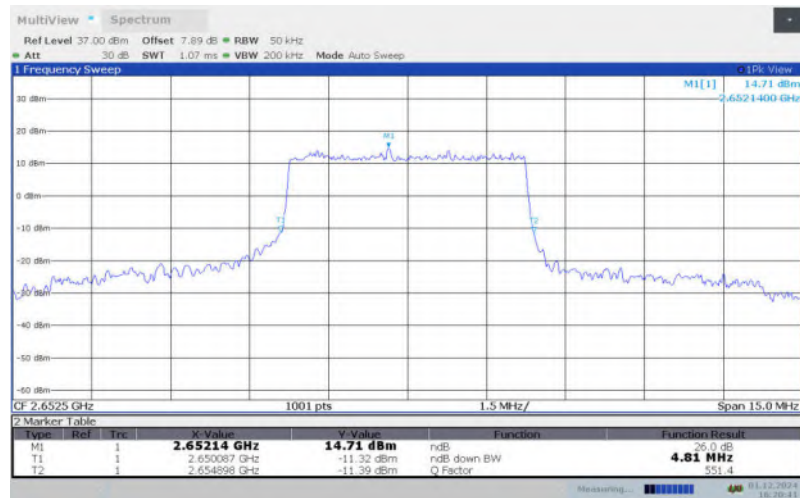
LTE Band 41 , 5MHz Bandwidth,MID,16QAM (-26dBc BW)



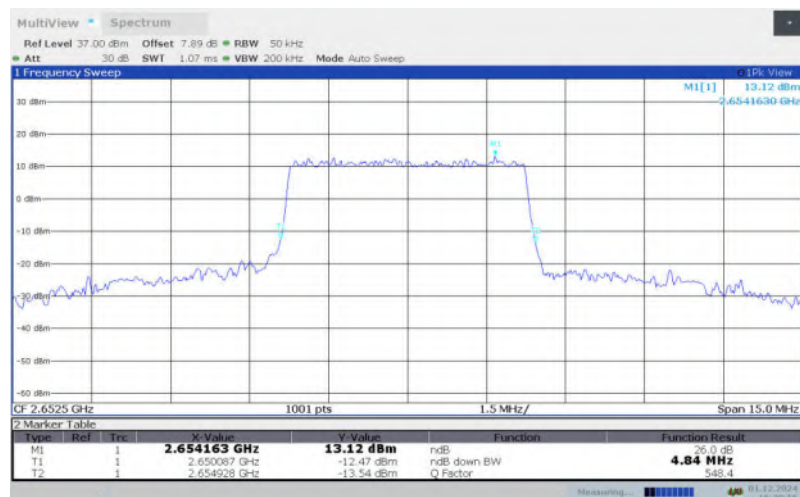
LTE Band 41 , 5MHz Bandwidth,MID,64QAM (-26dBc BW)



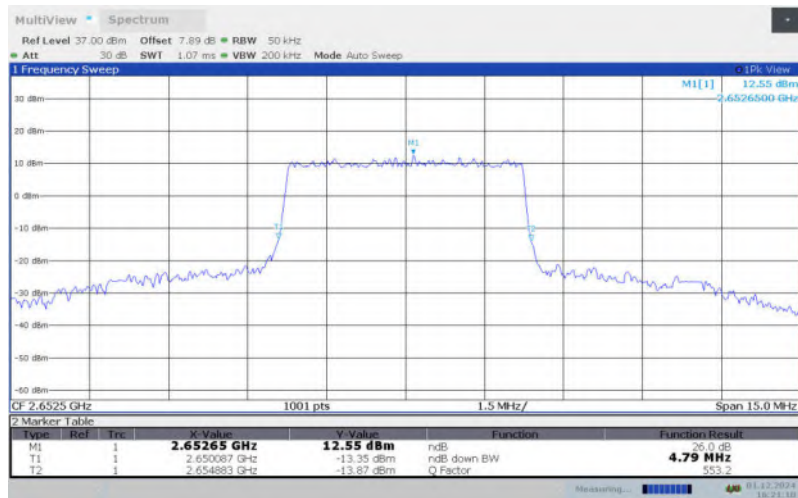
LTE Band 41 , 5MHz Bandwidth,HIGH,QPSK (-26dBc BW)



LTE Band 41 , 5MHz Bandwidth,HIGH,16QAM (-26dBc BW)

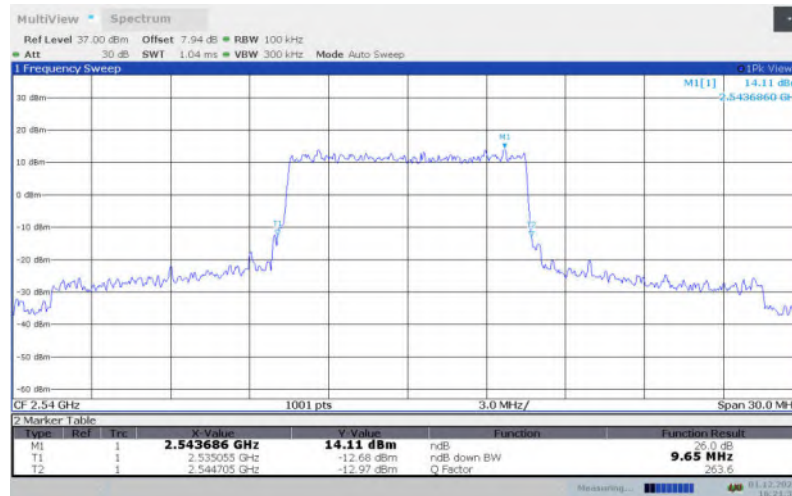
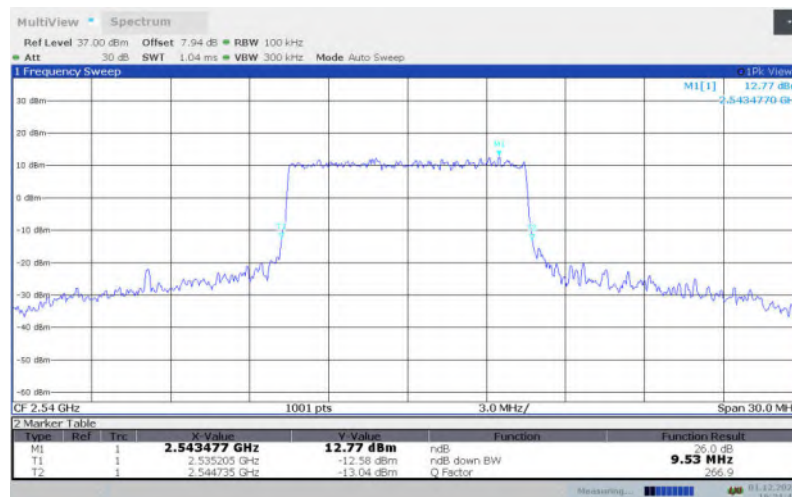


LTE Band 41 , 5MHz Bandwidth,HIGH,64QAM (-26dBc BW)



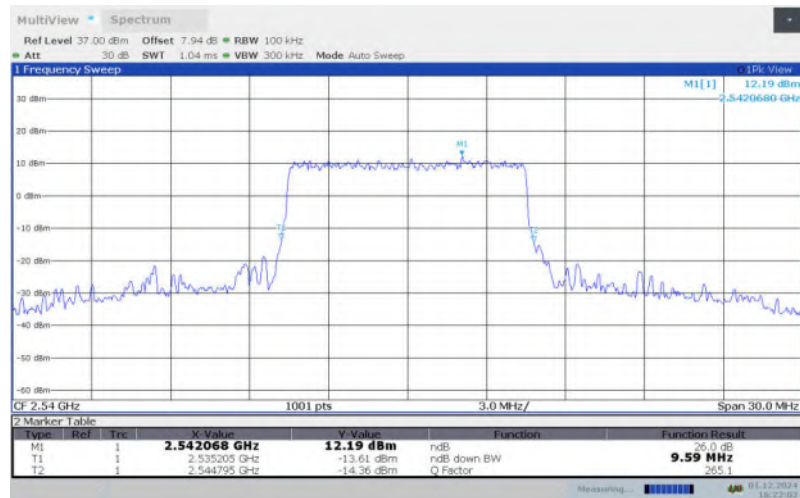
**LTE Band 41,10MHz(-26dBc BW)**

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
	QPSK	16QAM	64QAM
2501	9.650	9.530	9.590
2593	9.590	9.560	9.530
2685	9.530	9.680	9.560

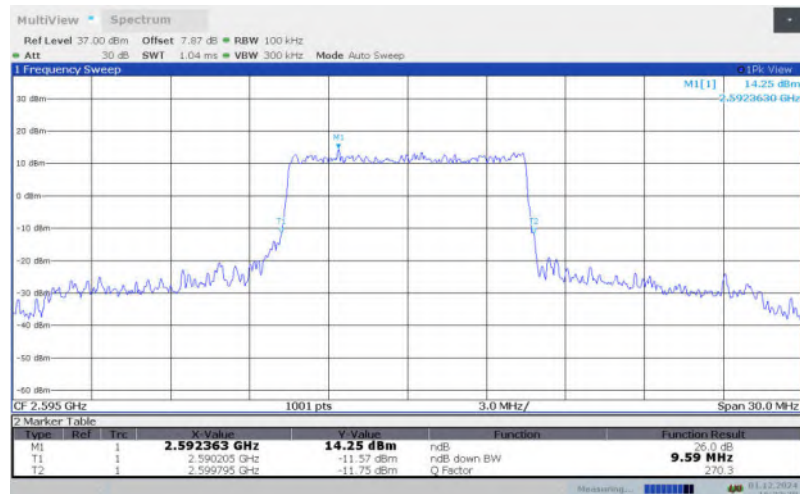
LTE Band 41 , 10MHz Bandwidth,LOW,QPSK (-26dBc BW)**LTE Band 41 , 10MHz Bandwidth,LOW,16QAM (-26dBc BW)****LTE Band 41 , 10MHz Bandwidth,LOW,64QAM (-26dBc BW)**



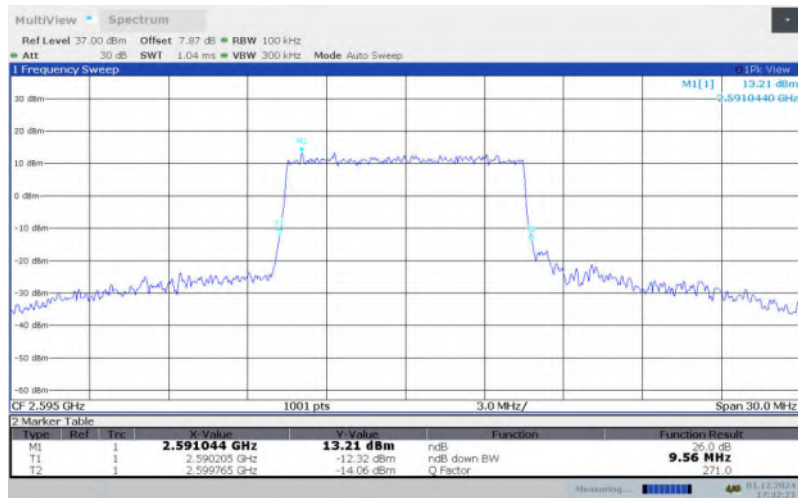
No.24T04N002827-005-RF LTE



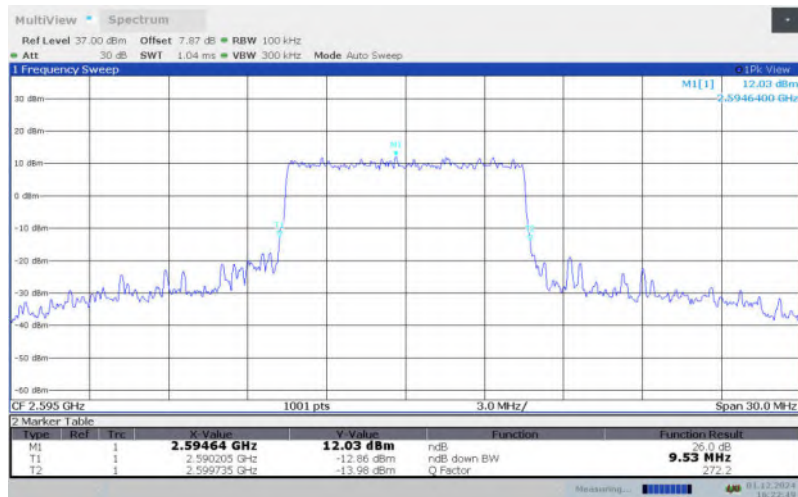
LTE Band 41 , 10MHz Bandwidth,MID,QPSK (-26dBc BW)



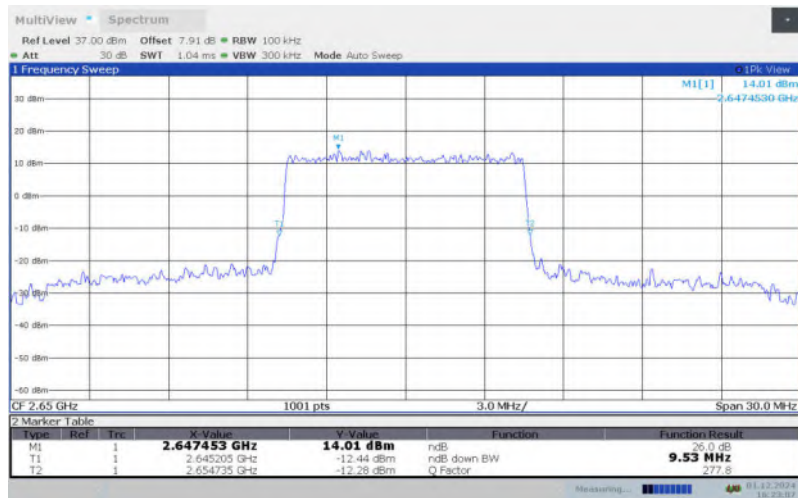
LTE Band 41 , 10MHz Bandwidth,MID,16QAM (-26dBc BW)



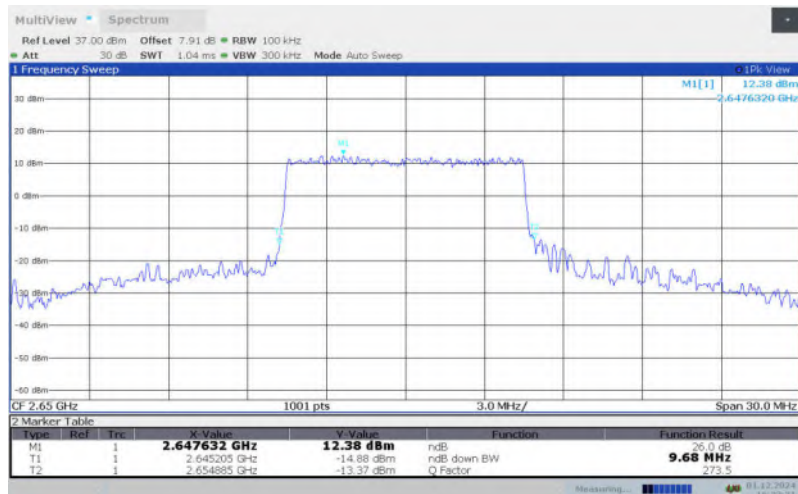
LTE Band 41 , 10MHz Bandwidth,MID,64QAM (-26dBc BW)



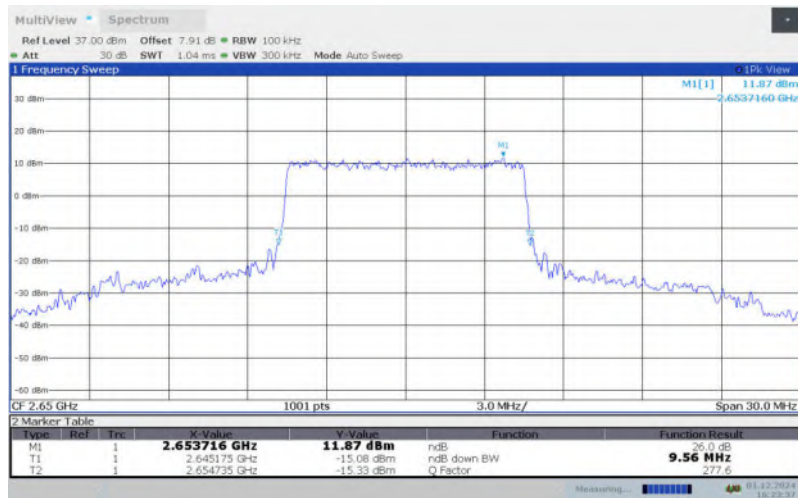
LTE Band 41 , 10MHz Bandwidth,HIGH,QPSK (-26dBc BW)



LTE Band 41 , 10MHz Bandwidth,HIGH,16QAM (-26dBc BW)

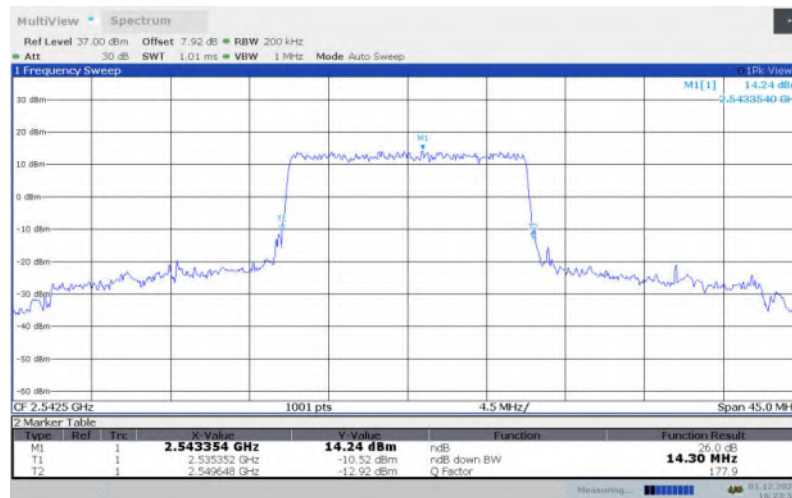
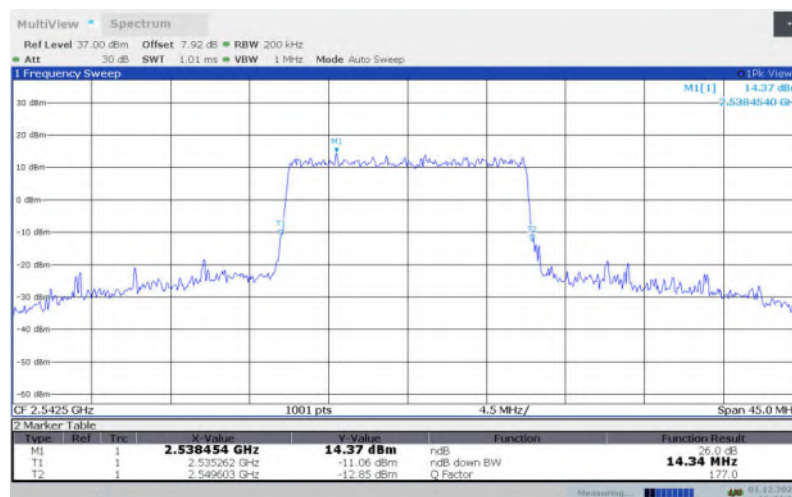


LTE Band 41 , 10MHz Bandwidth,HIGH,64QAM (-26dBc BW)



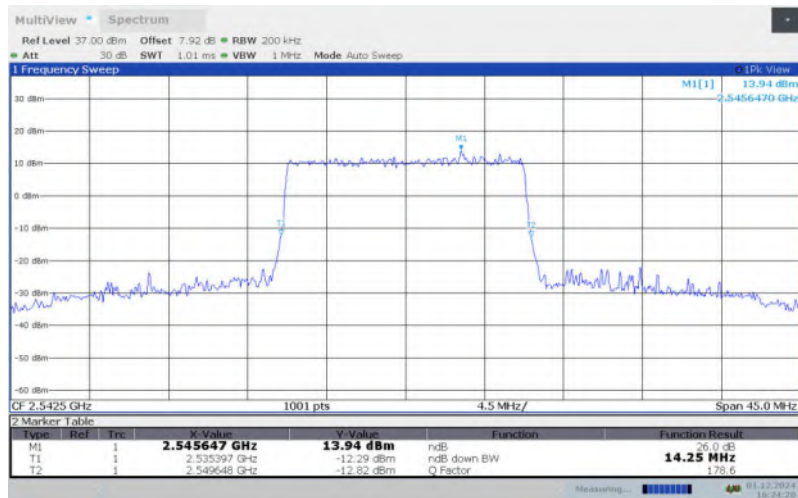
**LTE Band 41,15MHz(-26dBc BW)**

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
	QPSK	16QAM	64QAM
2503.5	14.296	14.341	14.251
2593	14.296	14.520	14.341
2682.5	14.476	14.386	14.296

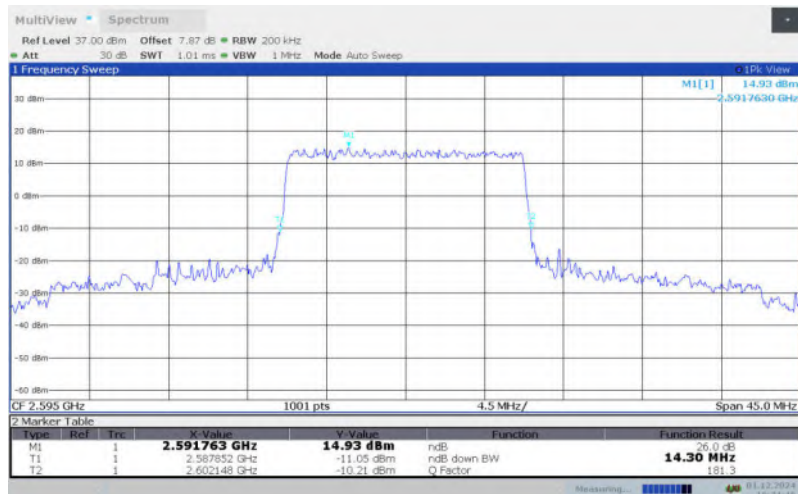
LTE Band 41 , 15MHz Bandwidth,LOW,QPSK (-26dBc BW)**LTE Band 41 , 15MHz Bandwidth,LOW,16QAM (-26dBc BW)****LTE Band 41 , 15MHz Bandwidth,LOW,64QAM (-26dBc BW)**



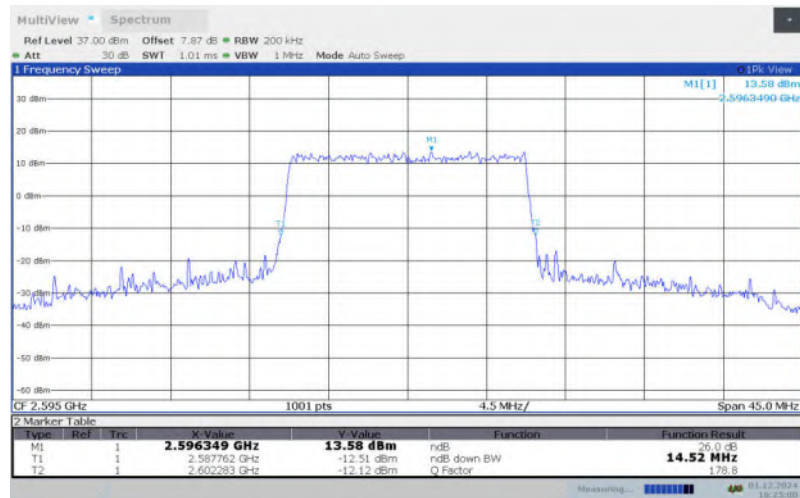
No.24T04N002827-005-RF LTE



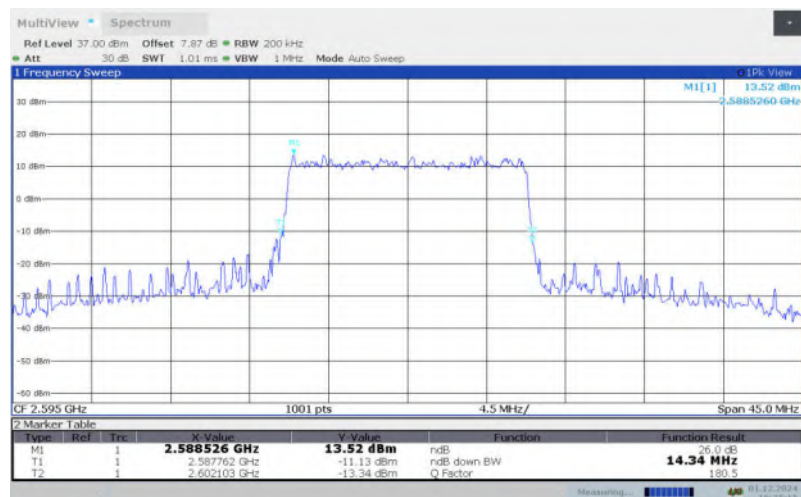
LTE Band 41 , 15MHz Bandwidth,MID,QPSK (-26dBc BW)



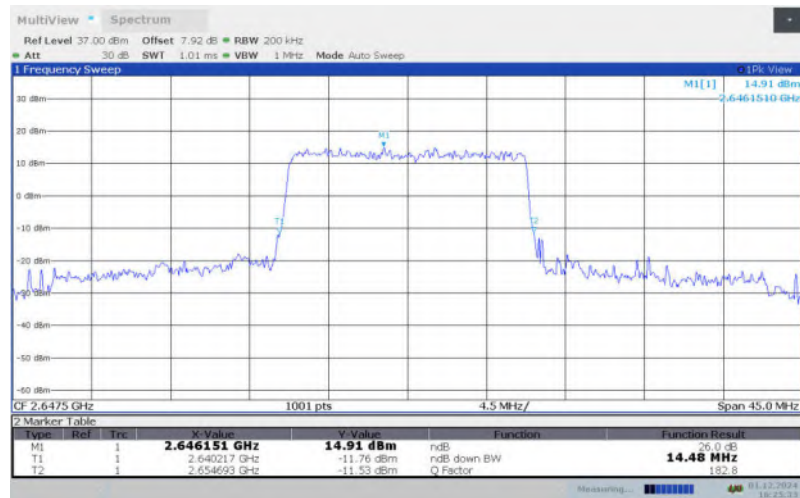
LTE Band 41 , 15MHz Bandwidth,MID,16QAM (-26dBc BW)



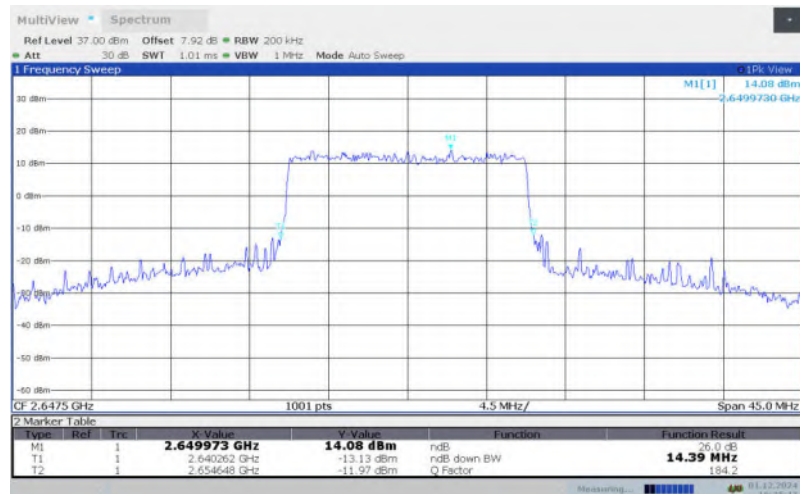
LTE Band 41 , 15MHz Bandwidth,MID,64QAM (-26dBc BW)



LTE Band 41 , 15MHz Bandwidth,HIGH,QPSK (-26dBc BW)



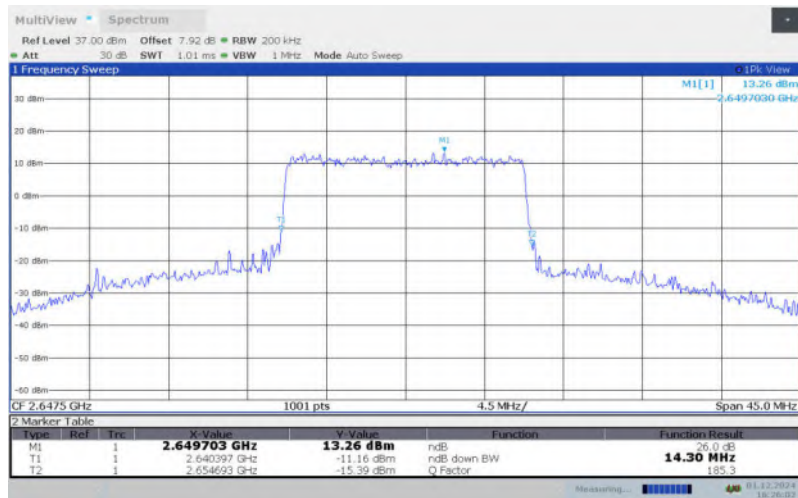
LTE Band 41 , 15MHz Bandwidth,HIGH,16QAM (-26dBc BW)



LTE Band 41 , 15MHz Bandwidth,HIGH,64QAM (-26dBc BW)

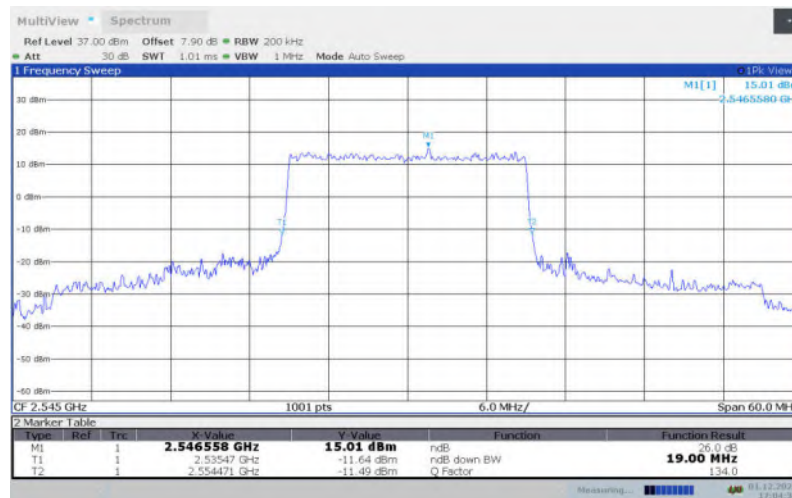
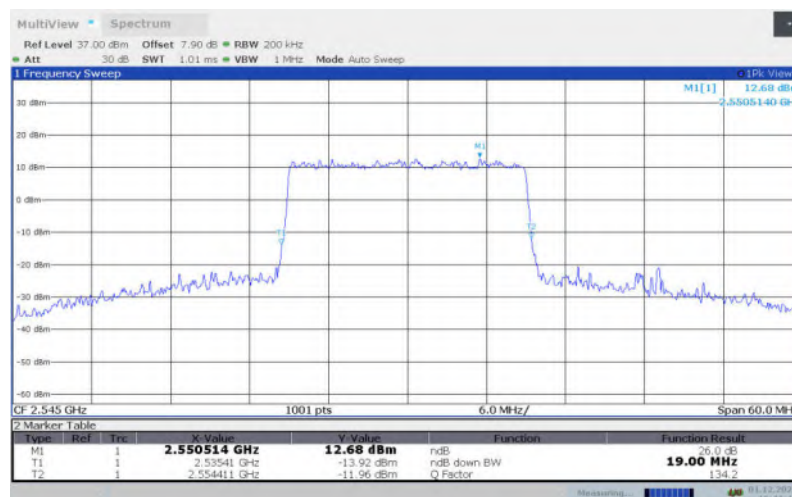


No.24T04N002827-005-RF LTE



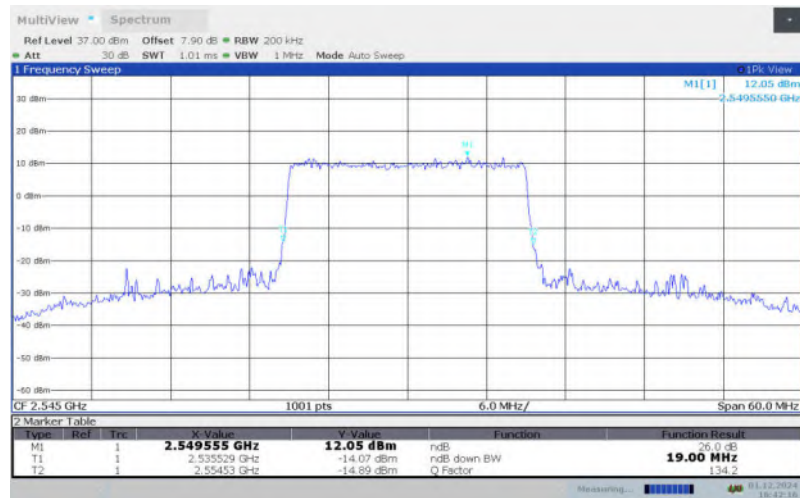
**LTE Band 41,20MHz(-26dBc BW)**

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
	QPSK	16QAM	64QAM
2506	19.001	19.001	19.001
2593	19.061	19.001	19.061
2680	19.121	19.361	19.181

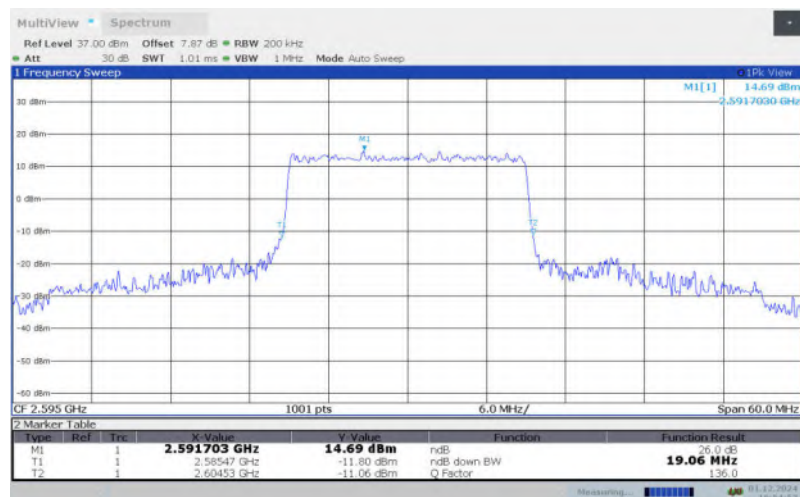
LTE Band 41 , 20MHz Bandwidth,LOW,QPSK (-26dBc BW)**LTE Band 41 , 20MHz Bandwidth,LOW,16QAM (-26dBc BW)****LTE Band 41 , 20MHz Bandwidth,LOW,64QAM (-26dBc BW)**



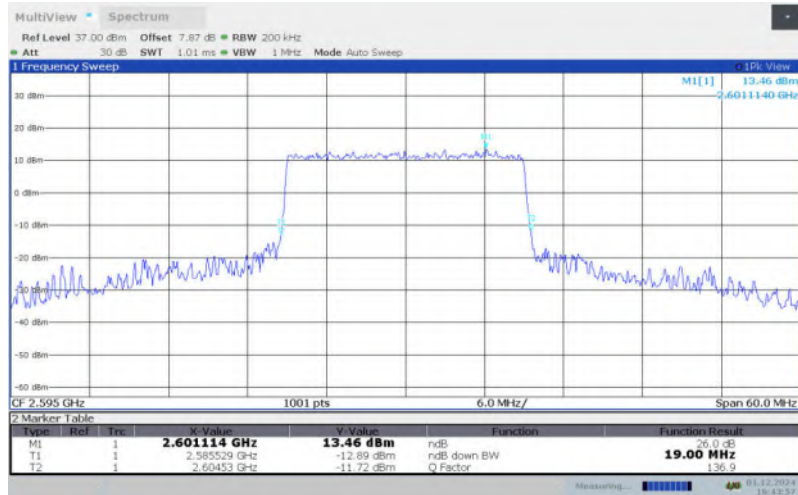
No.24T04N002827-005-RF LTE



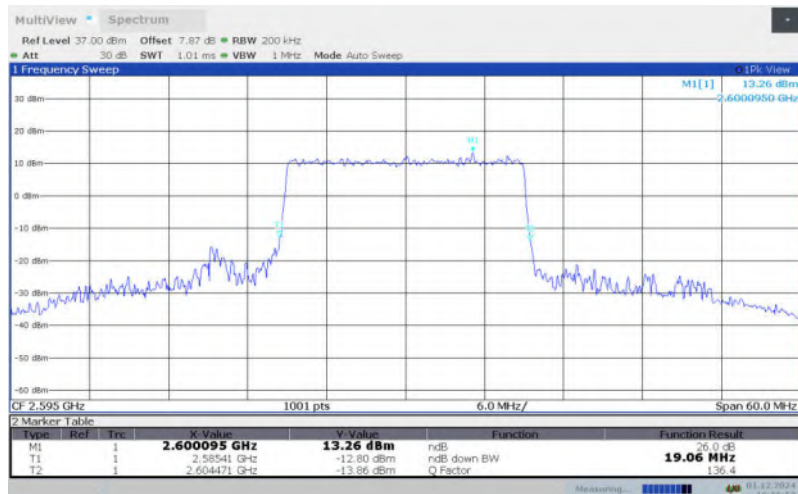
LTE Band 41 , 20MHz Bandwidth,MID,QPSK (-26dBc BW)



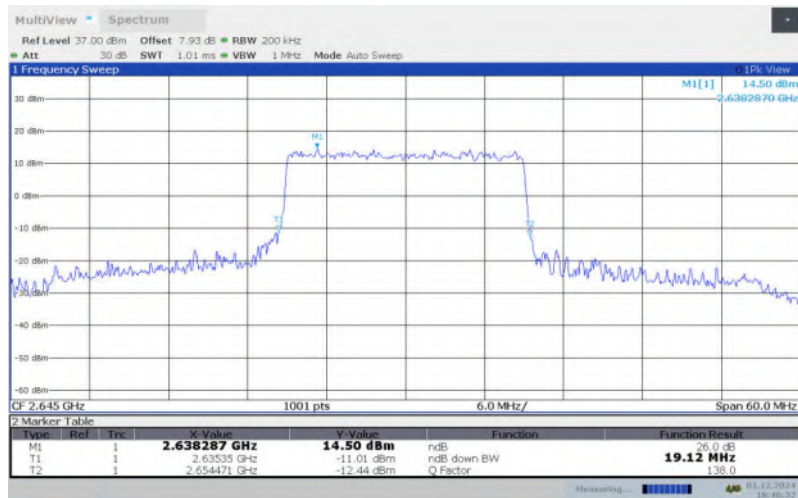
LTE Band 41 , 20MHz Bandwidth,MID,16QAM (-26dBc BW)



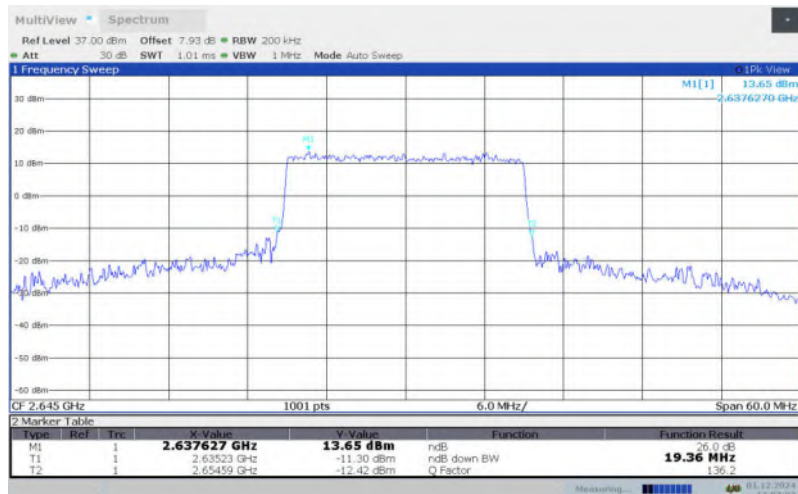
LTE Band 41 , 20MHz Bandwidth,MID,64QAM (-26dBc BW)



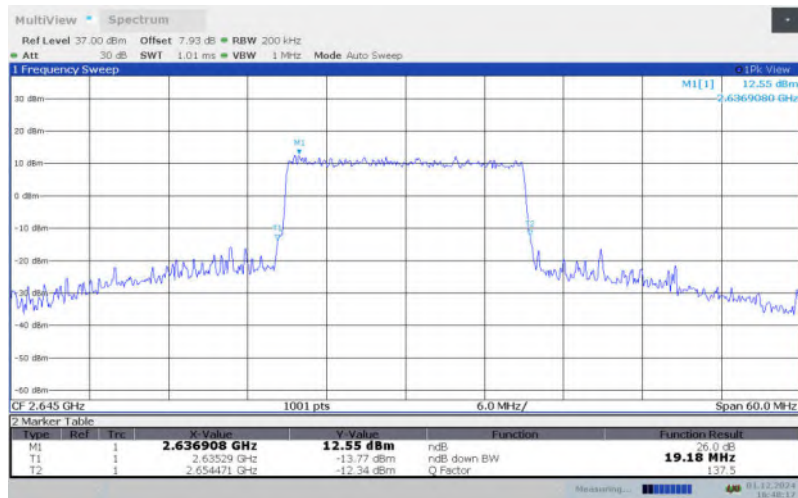
LTE Band 41 , 20MHz Bandwidth,HIGH,QPSK (-26dBc BW)



LTE Band 41 , 20MHz Bandwidth,HIGH,16QAM (-26dBc BW)



LTE Band 41 , 20MHz Bandwidth,HIGH,64QAM (-26dBc BW)

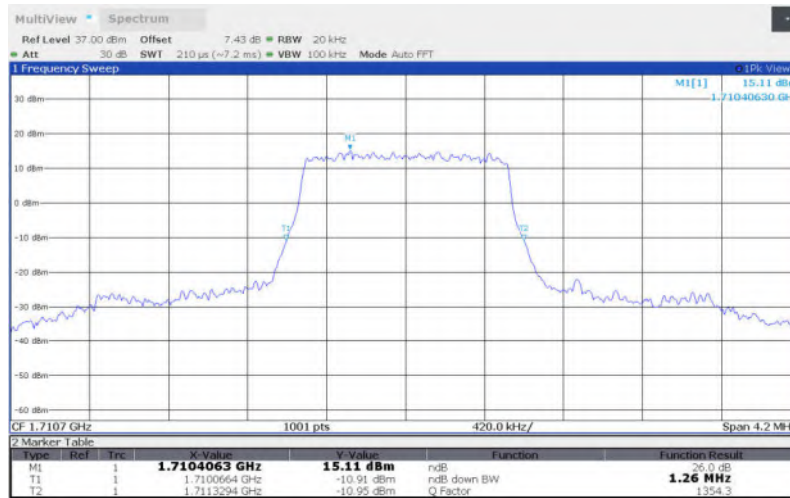




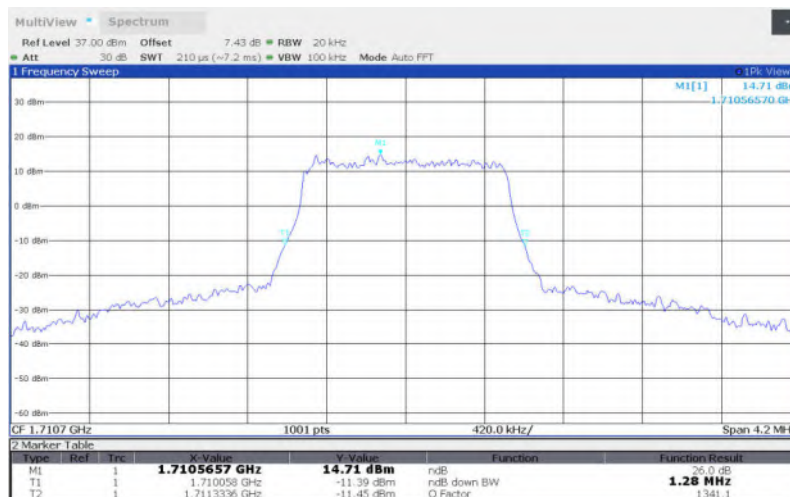
LTE Band 66,1.4MHz(-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
	QPSK	16QAM	64QAM
1710.7	1.263	1.276	1.259
1745	1.259	1.288	1.276
1779.3	1.280	1.254	1.292

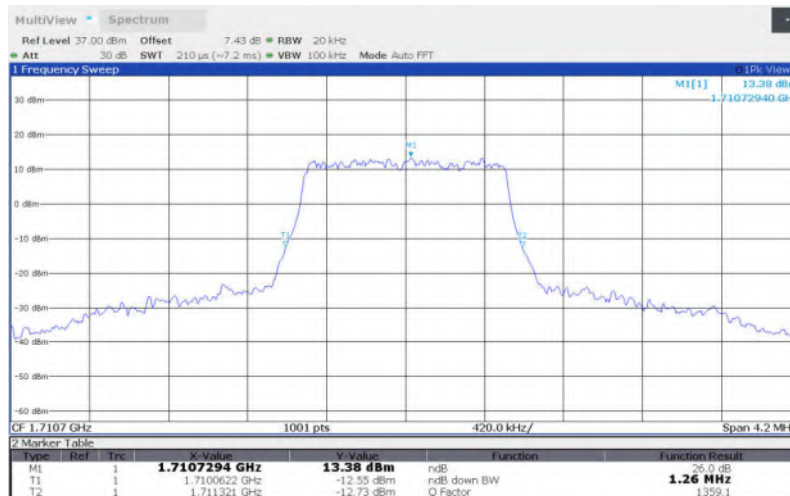
LTE Band 66 , 1.4MHz Bandwidth,LOW,QPSK (-26dBc BW)



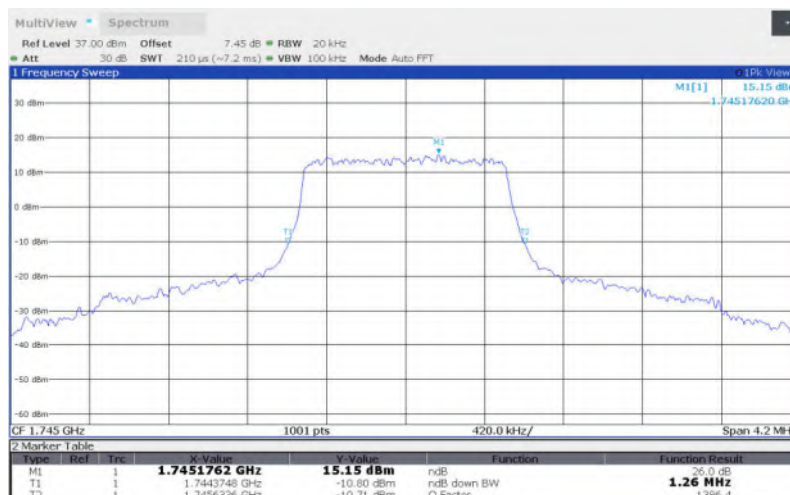
LTE Band 66 , 1.4MHz Bandwidth,LOW,16QAM (-26dBc BW)



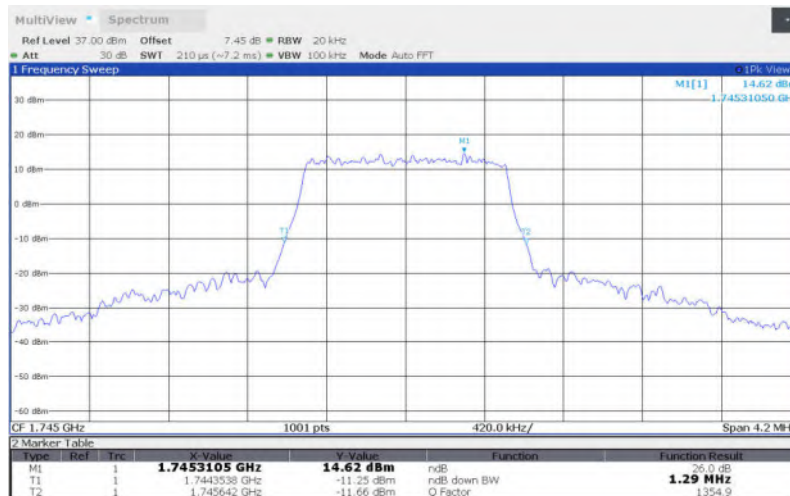
LTE Band 66 , 1.4MHz Bandwidth,LOW,64QAM (-26dBc BW)



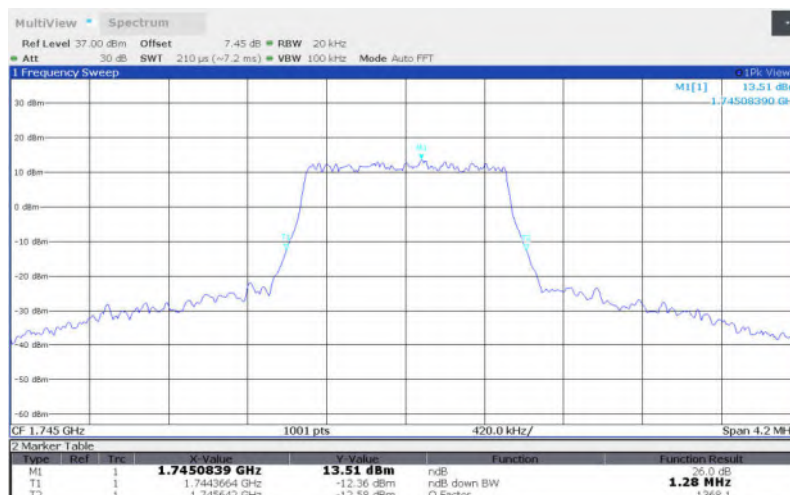
LTE Band 66 , 1.4MHz Bandwidth,MID,QPSK (-26dBc BW)



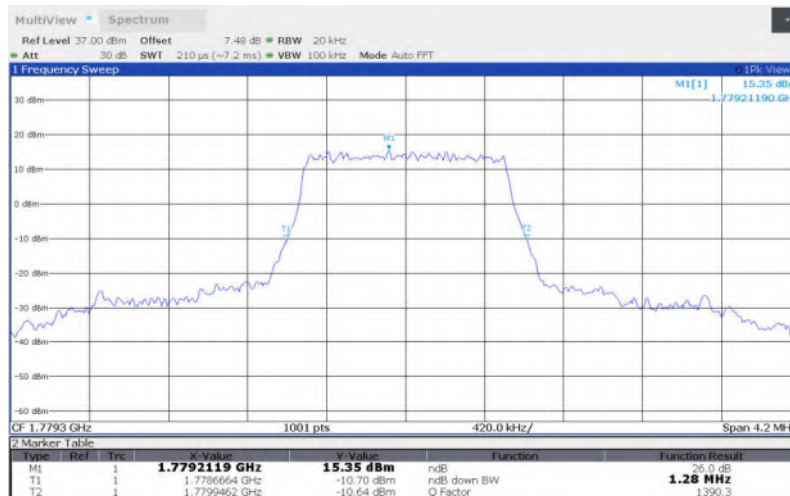
LTE Band 66 , 1.4MHz Bandwidth,MID,16QAM (-26dBc BW)



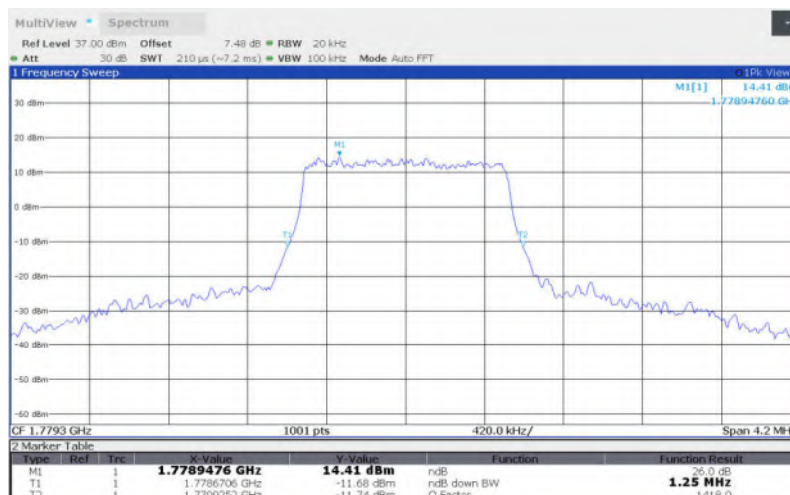
LTE Band 66 , 1.4MHz Bandwidth,MID,64QAM (-26dBc BW)



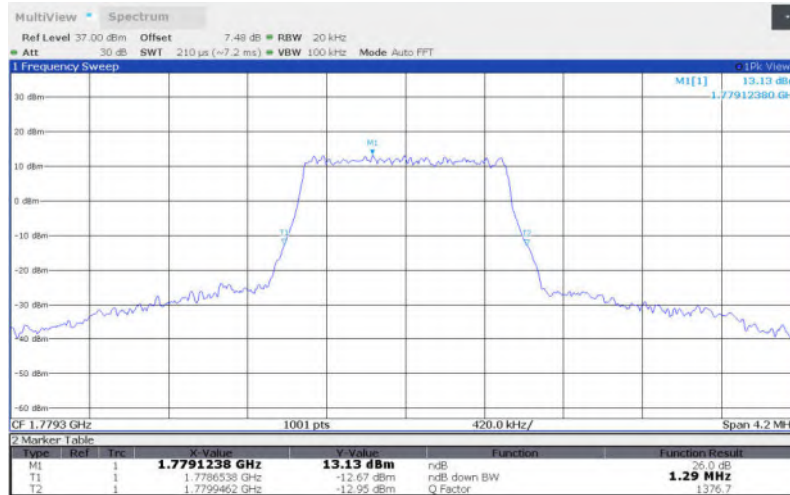
LTE Band 66 , 1.4MHz Bandwidth,HIGH,QPSK (-26dBc BW)



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



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

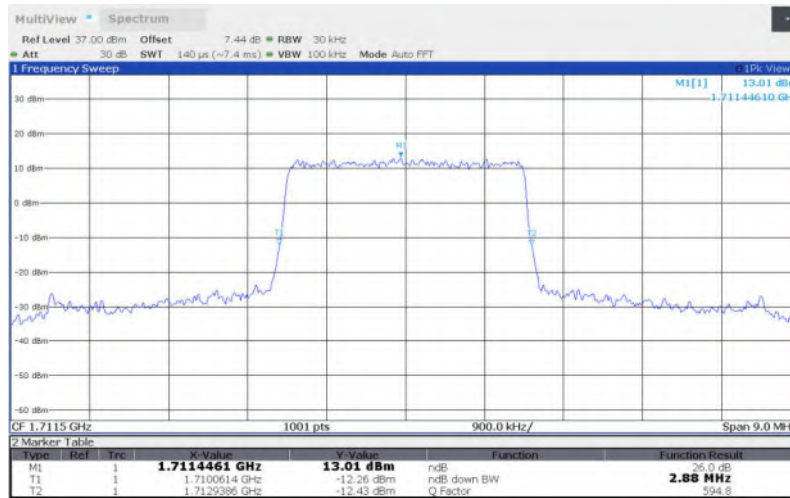




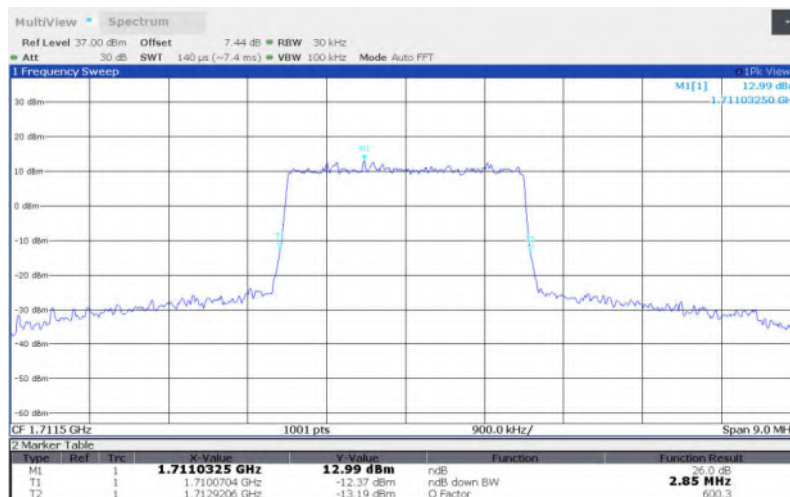
LTE Band 66,3MHz(-26dBc BW)

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
	QPSK	16QAM	64QAM
1711.5	2.877	2.850	2.886
1745	2.877	2.868	2.868
1778.5	2.868	2.868	2.868

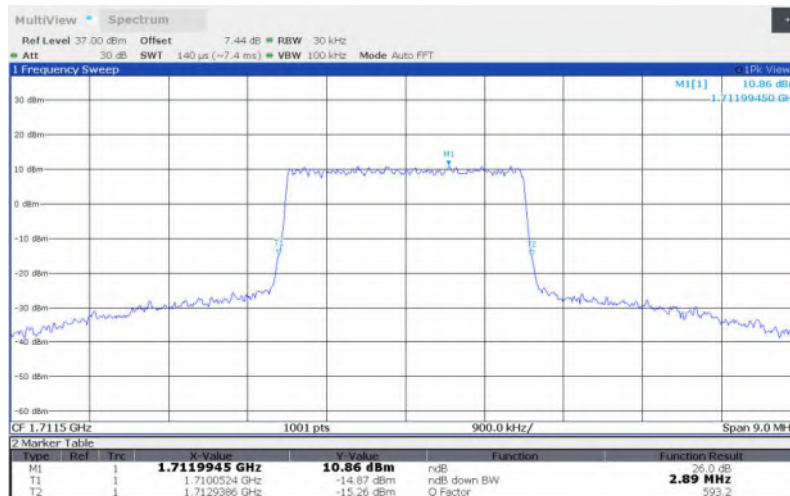
LTE Band 66 , 3MHz Bandwidth,LOW,QPSK (-26dBc BW)



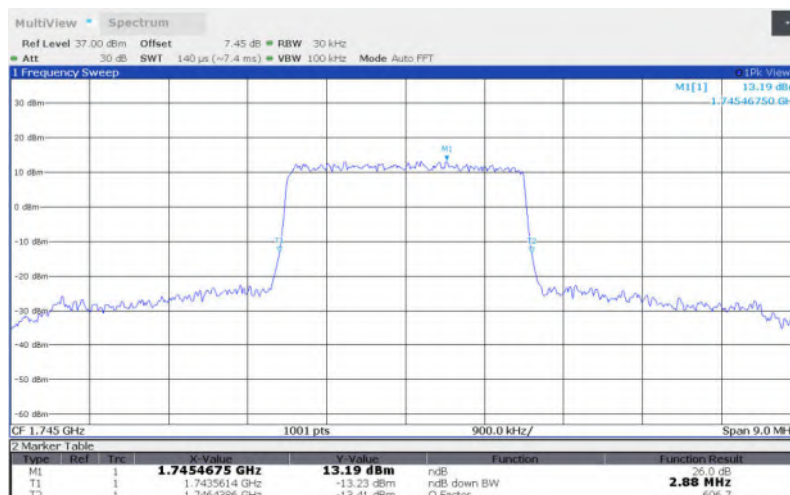
LTE Band 66 , 3MHz Bandwidth,LOW,16QAM (-26dBc BW)



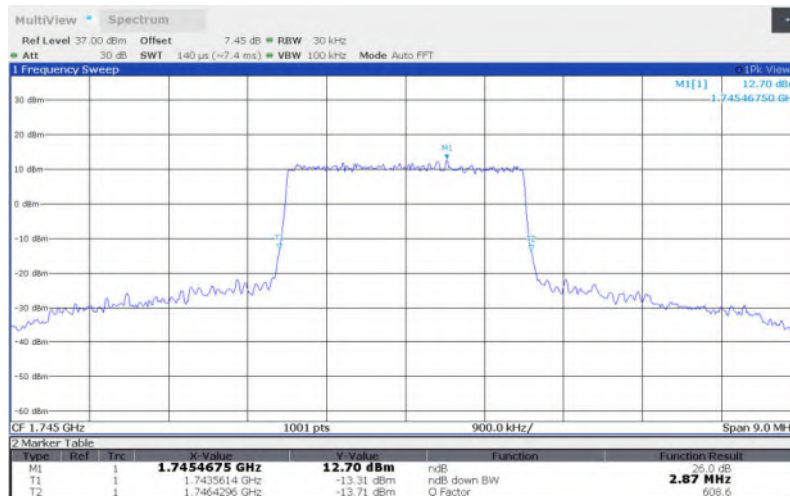
LTE Band 66 , 3MHz Bandwidth,LOW,64QAM (-26dBc BW)



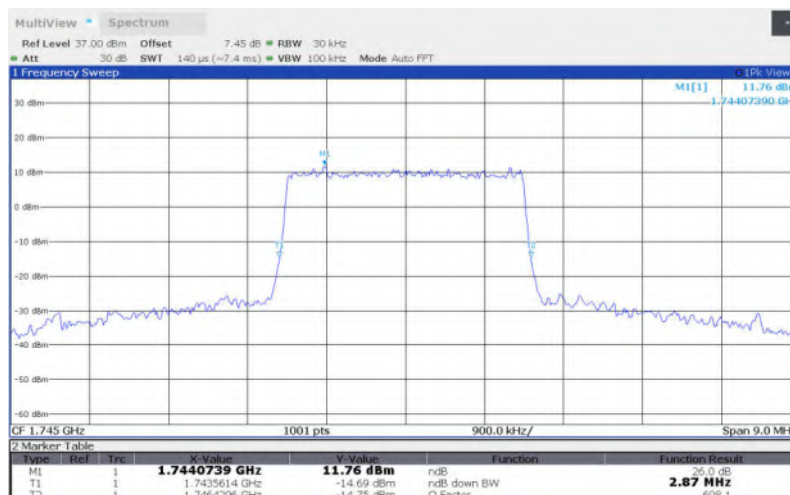
LTE Band 66 , 3MHz Bandwidth,MID,QPSK (-26dBc BW)



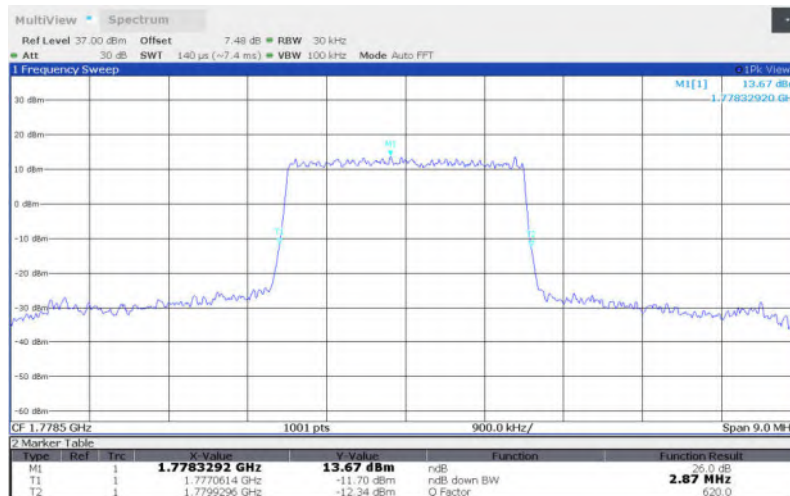
LTE Band 66 , 3MHz Bandwidth,MID,16QAM (-26dBc BW)



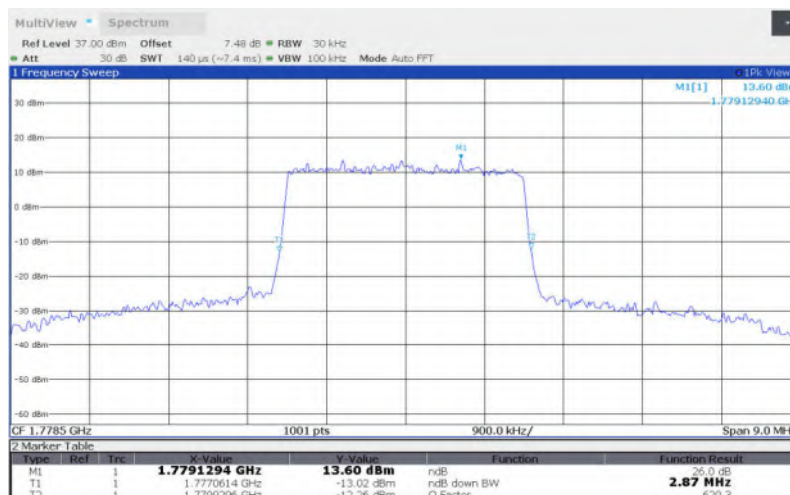
LTE Band 66 , 3MHz Bandwidth,MID,64QAM (-26dBc BW)



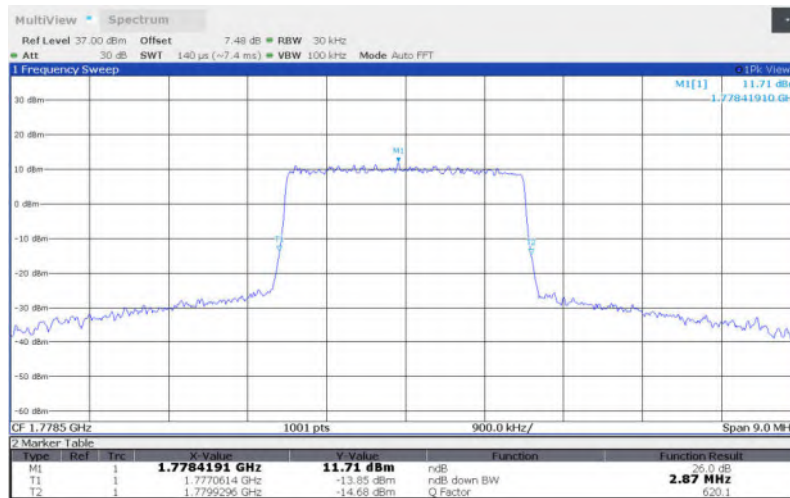
LTE Band 66 , 3MHz Bandwidth,HIGH,QPSK (-26dBc BW)



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

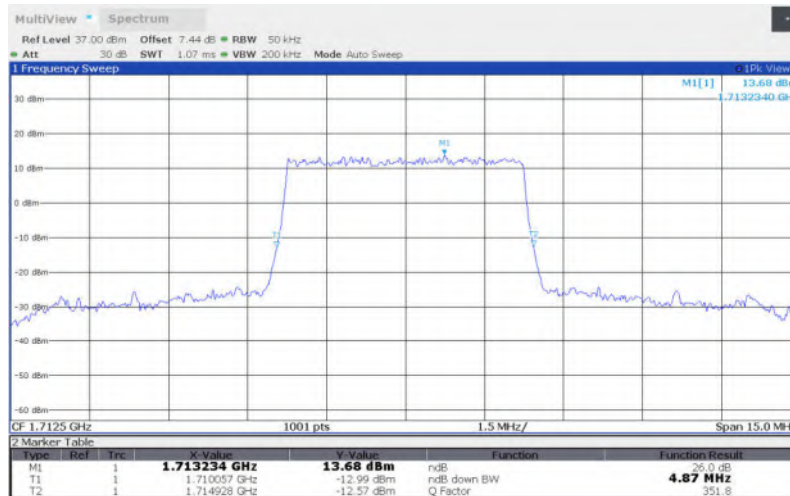
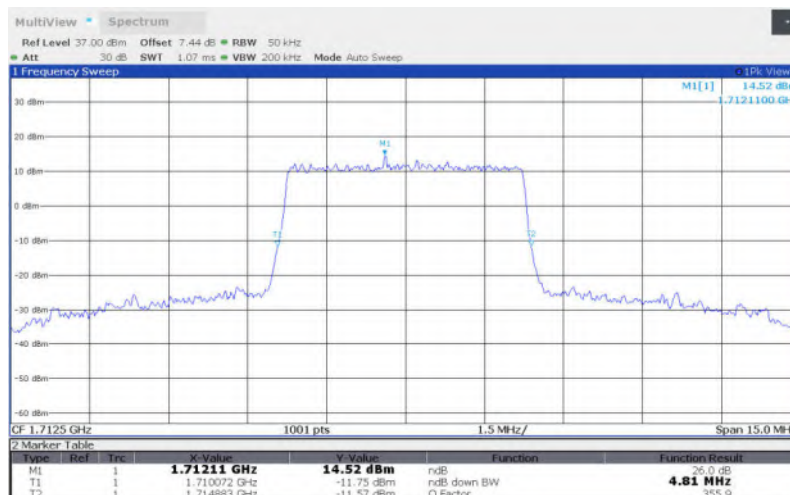


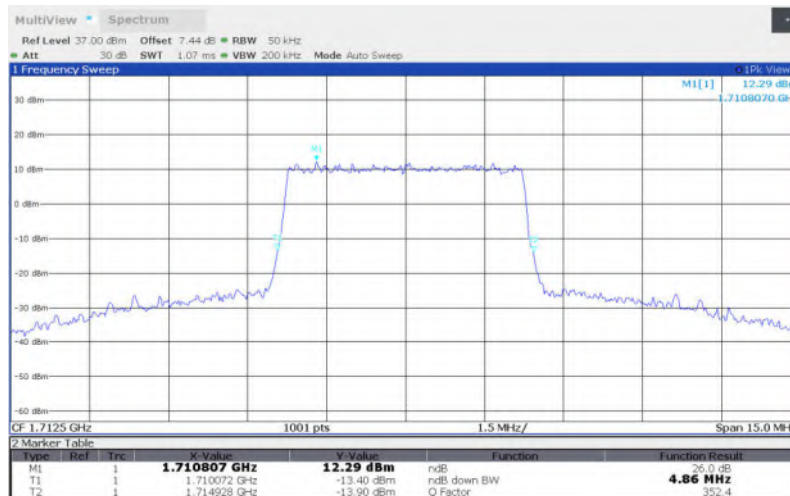
LTE Band 66 , 3MHz Bandwidth,HIGH,64QAM (-26dBc BW)



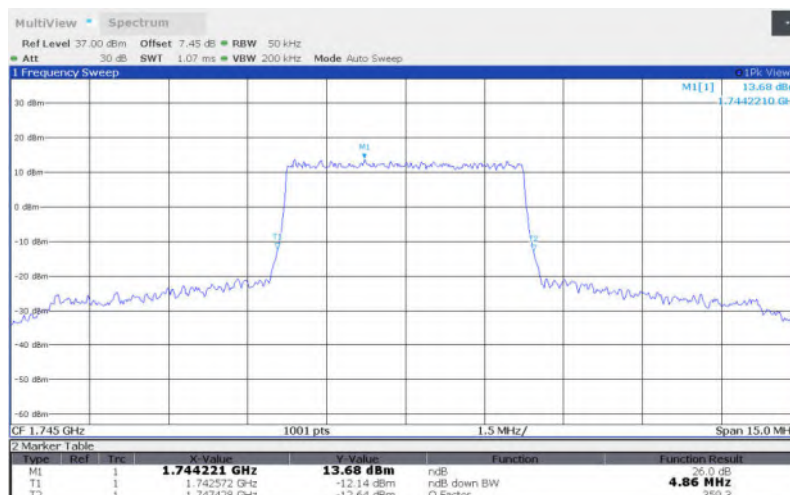
**LTE Band 66,5MHz(-26dBc BW)**

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
	QPSK	16QAM	64QAM
1712.5	4.870	4.810	4.855
1745	4.855	4.870	4.915
1777.5	4.840	4.870	4.810

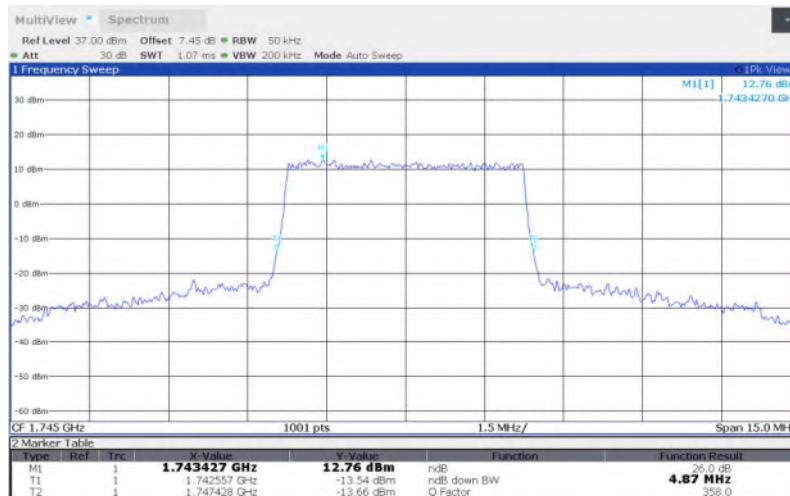
LTE Band 66 , 5MHz Bandwidth,LOW,QPSK (-26dBc BW)**LTE Band 66 , 5MHz Bandwidth,LOW,16QAM (-26dBc BW)****LTE Band 66 , 5MHz Bandwidth,LOW,64QAM (-26dBc BW)**



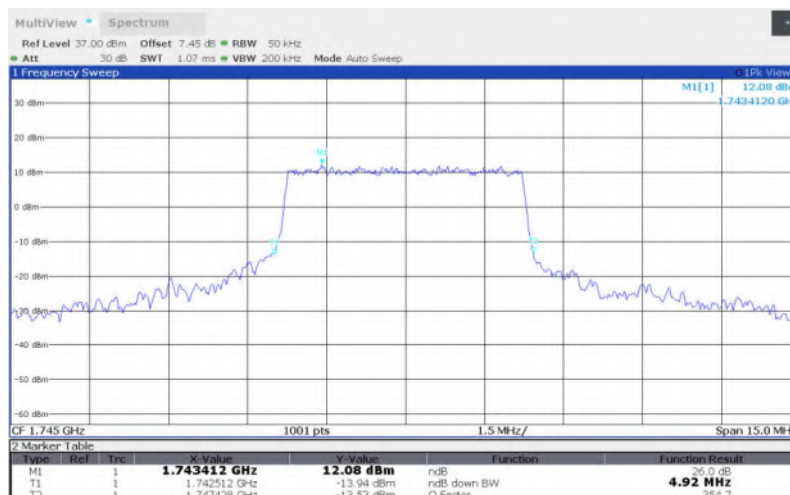
LTE Band 66 , 5MHz Bandwidth,MID,QPSK (-26dBc BW)



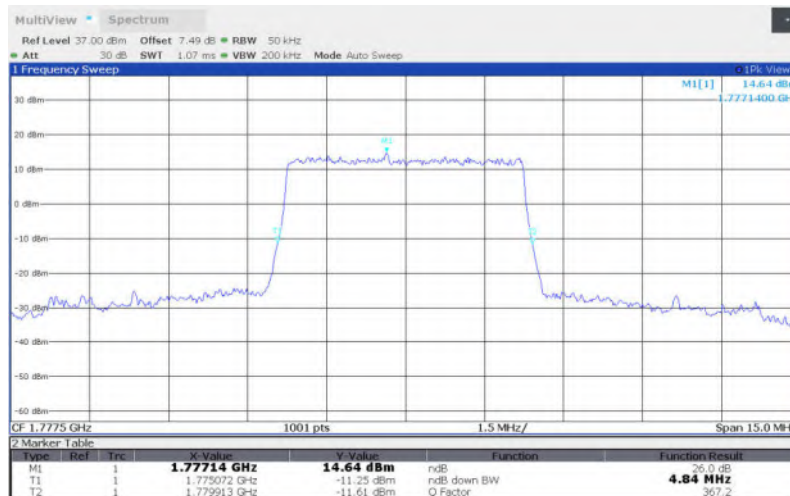
LTE Band 66 , 5MHz Bandwidth,MID,16QAM (-26dBc BW)



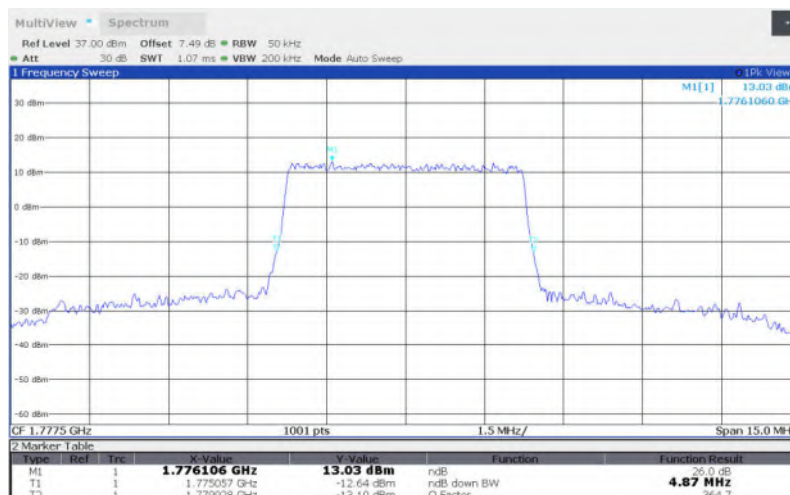
LTE Band 66 , 5MHz Bandwidth,MID,64QAM (-26dBc BW)



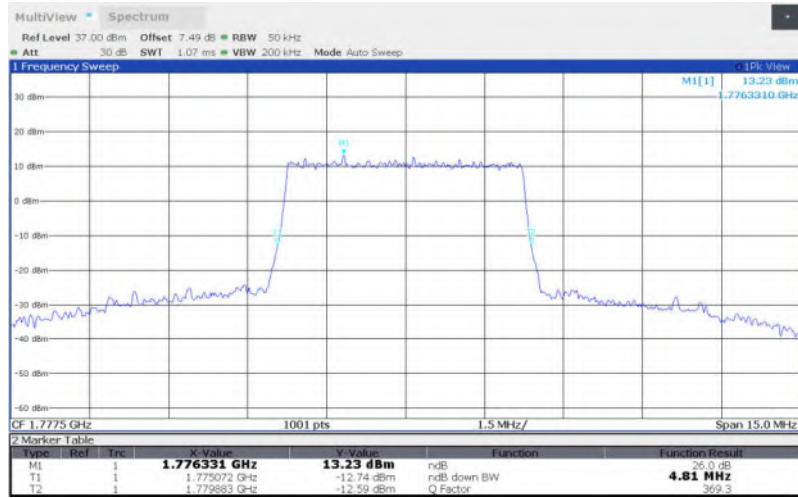
LTE Band 66 , 5MHz Bandwidth,HIGH,QPSK (-26dBc BW)



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

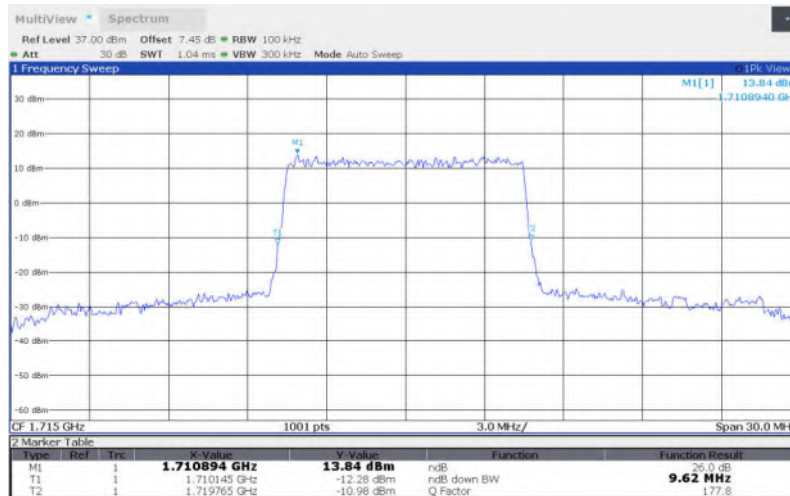
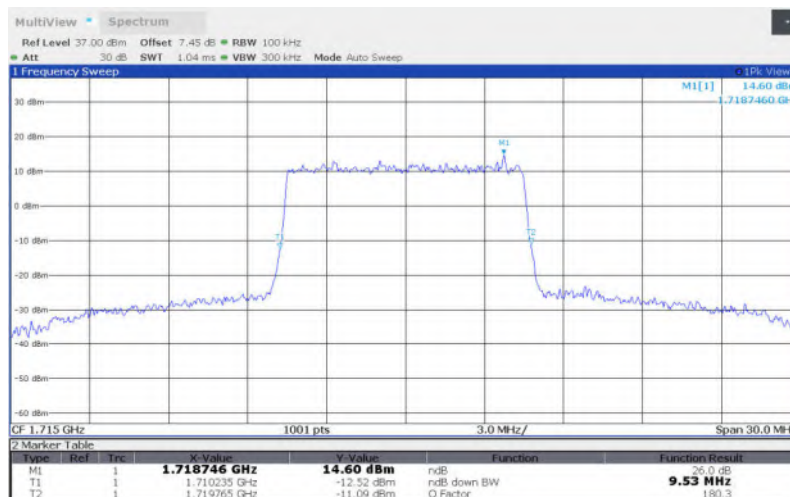


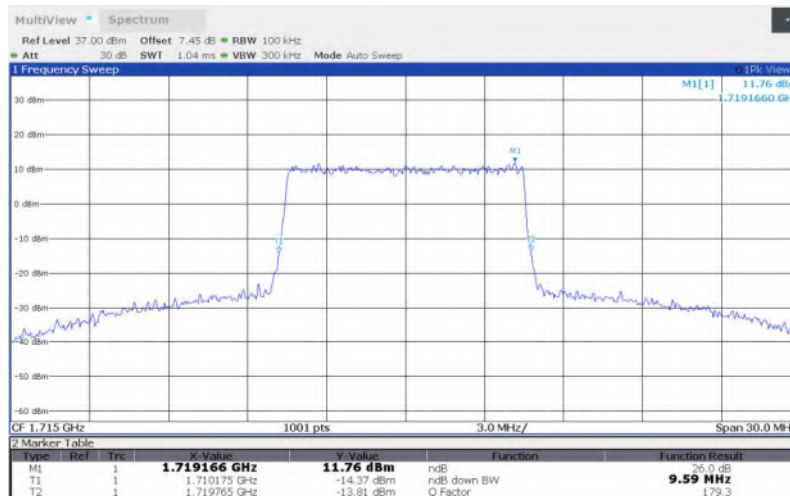
LTE Band 66 , 5MHz Bandwidth,HIGH,64QAM (-26dBc BW)



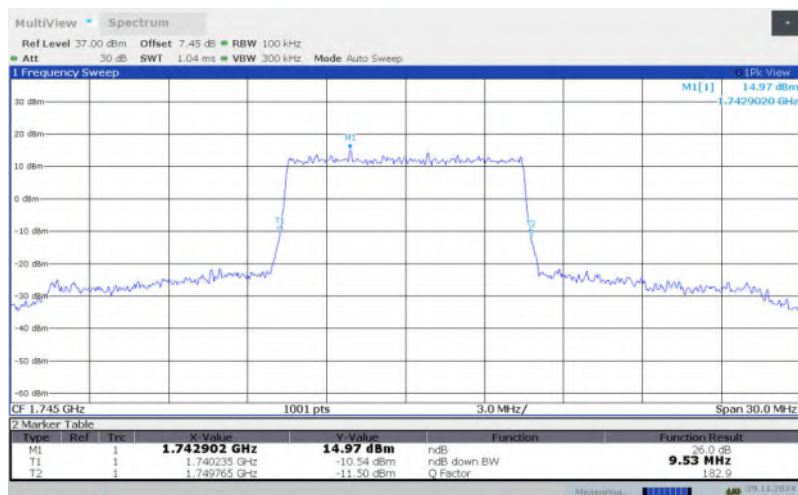
**LTE Band 66,10MHz(-26dBc BW)**

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
	QPSK	16QAM	64QAM
1715	9.620	9.530	9.590
1745	9.530	9.530	9.530
1775	9.560	9.590	9.560

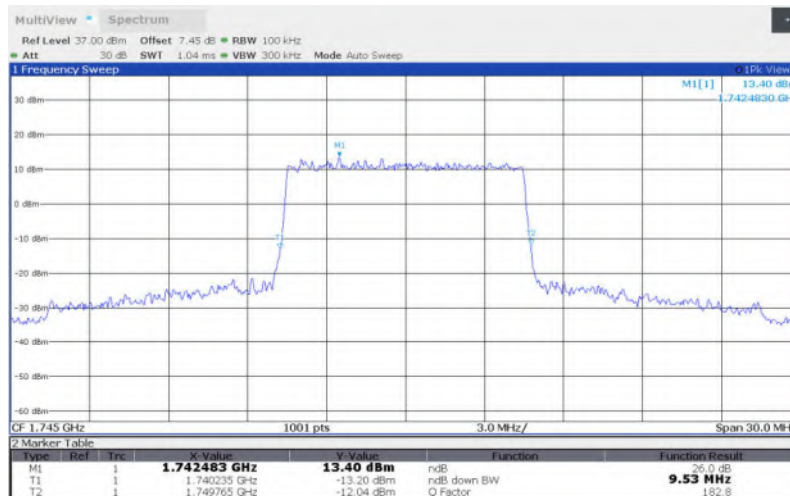
LTE Band 66 , 10MHz Bandwidth,LOW,QPSK (-26dBc BW)**LTE Band 66 , 10MHz Bandwidth,LOW,16QAM (-26dBc BW)****LTE Band 66 , 10MHz Bandwidth,LOW,64QAM (-26dBc BW)**



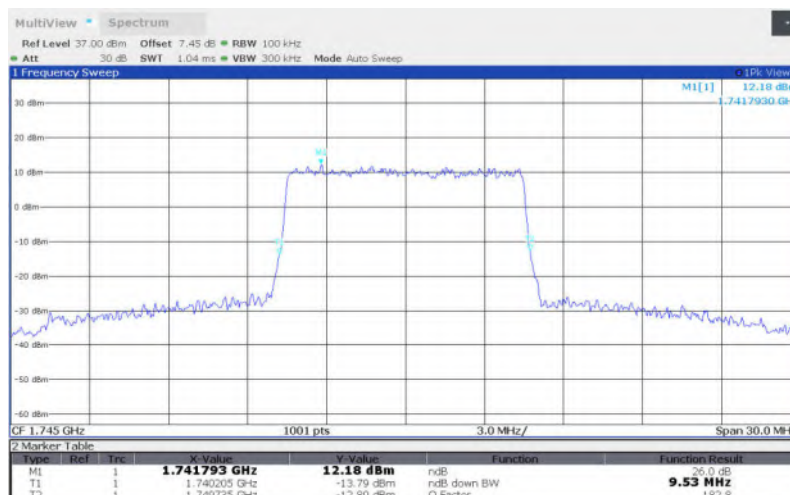
LTE Band 66 , 10MHz Bandwidth,MID,QPSK (-26dBc BW)



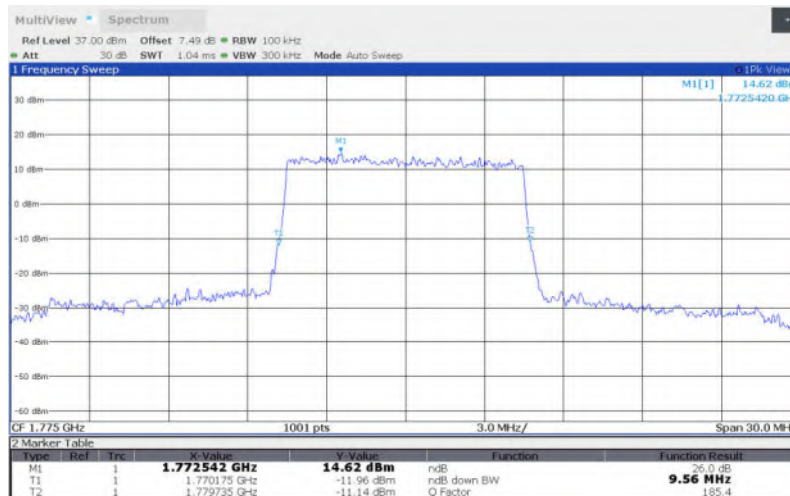
LTE Band 66 , 10MHz Bandwidth,MID,16QAM (-26dBc BW)



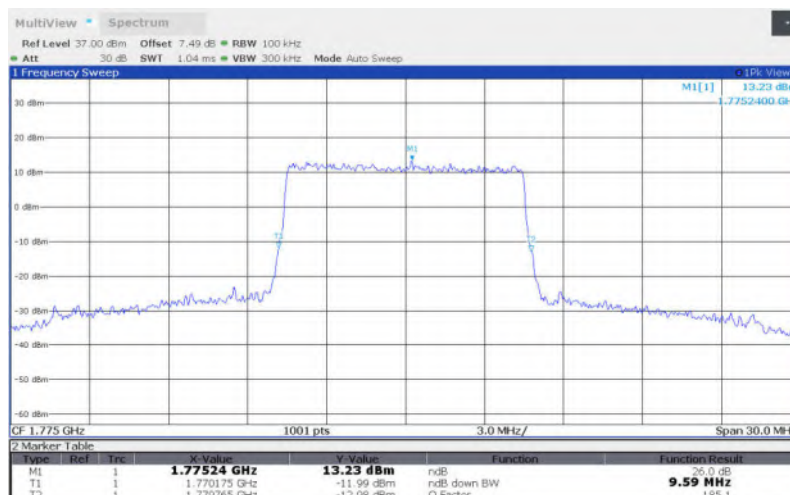
LTE Band 66 , 10MHz Bandwidth,MID,64QAM (-26dBc BW)



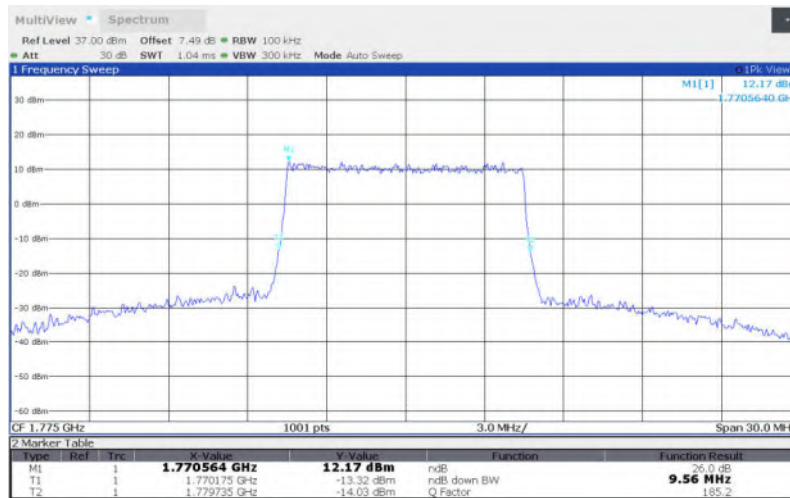
LTE Band 66 , 10MHz Bandwidth,HIGH,QPSK (-26dBc BW)



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

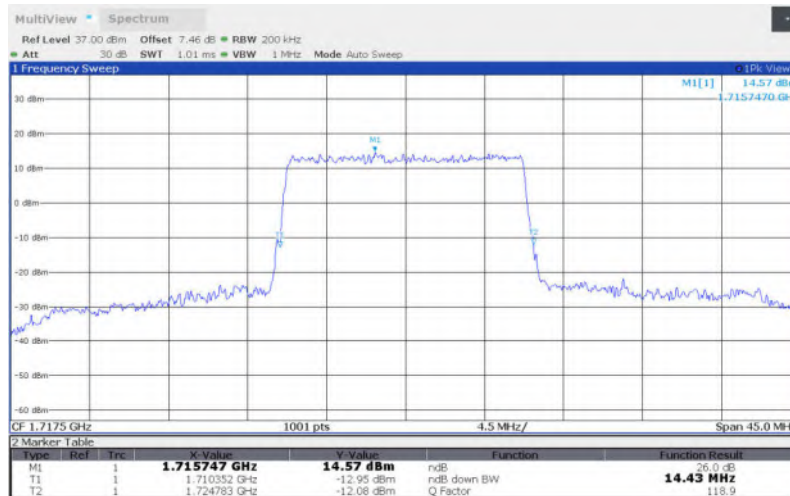
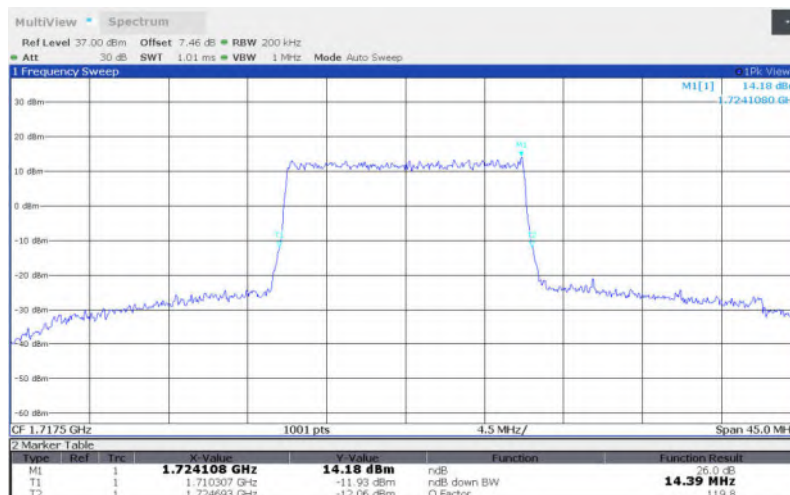


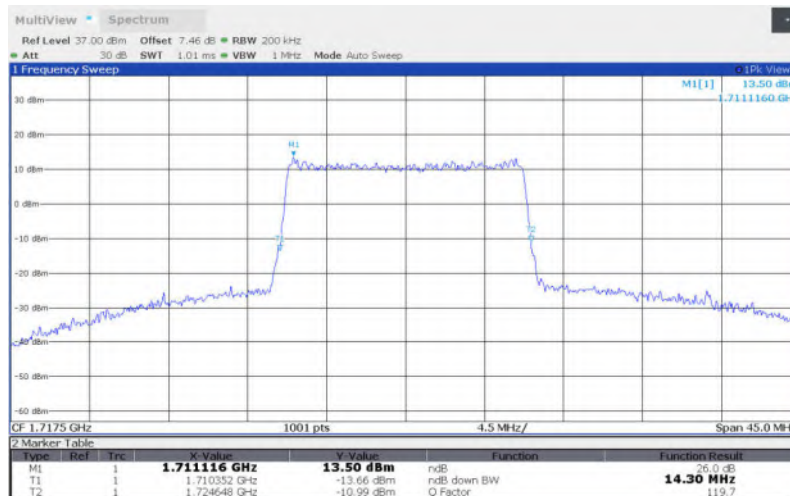
LTE Band 66 , 10MHz Bandwidth,HIGH,64QAM (-26dBc BW)



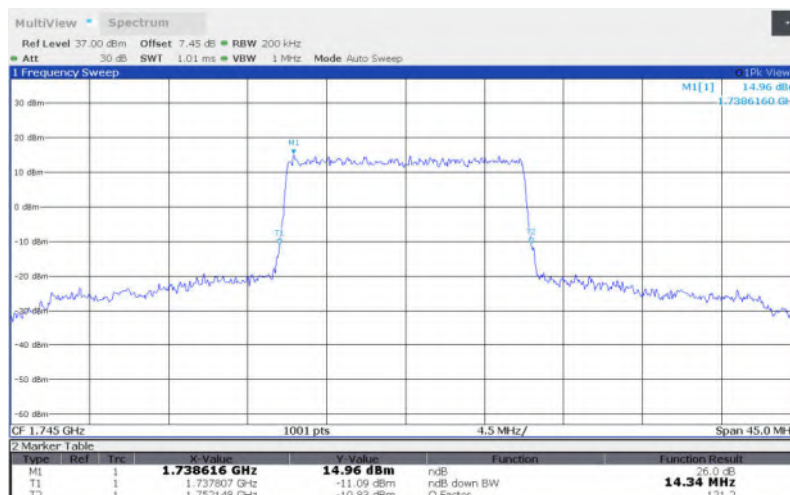
**LTE Band 66,15MHz(-26dBc BW)**

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
	QPSK	16QAM	64QAM
1717.5	14.431	14.386	14.296
1745	14.341	14.386	14.520
1772.5	14.386	14.386	14.386

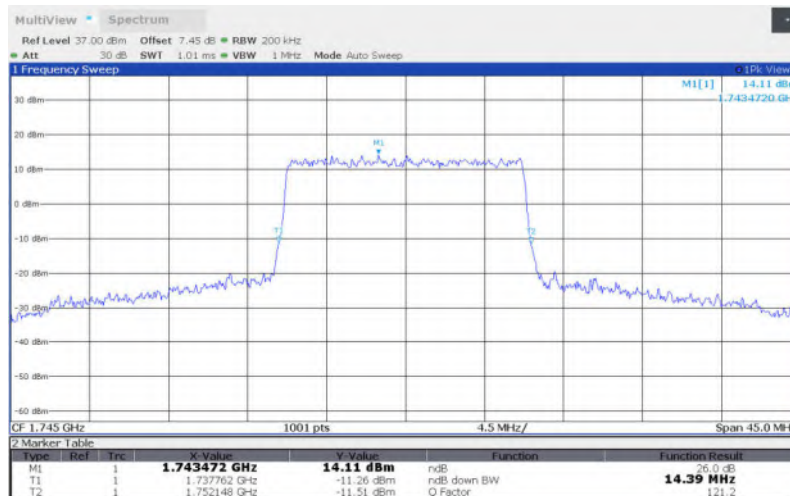
LTE Band 66 , 15MHz Bandwidth,LOW,QPSK (-26dBc BW)**LTE Band 66 , 15MHz Bandwidth,LOW,16QAM (-26dBc BW)****LTE Band 66 , 15MHz Bandwidth,LOW,64QAM (-26dBc BW)**



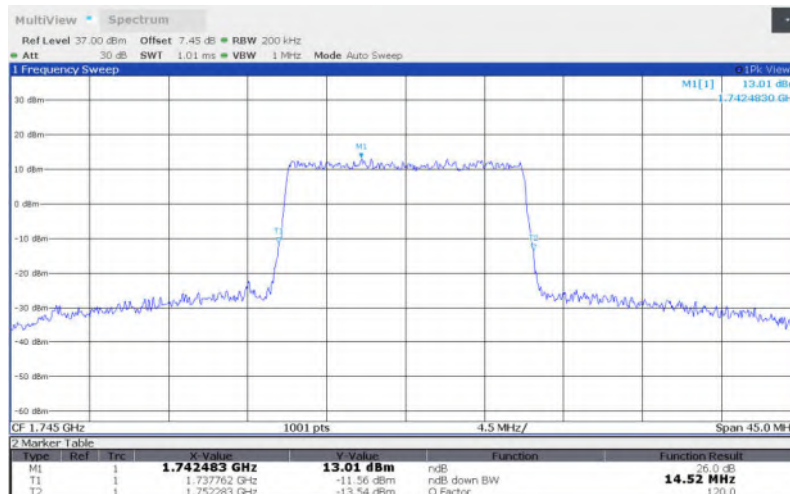
LTE Band 66 , 15MHz Bandwidth,MID,QPSK (-26dBc BW)



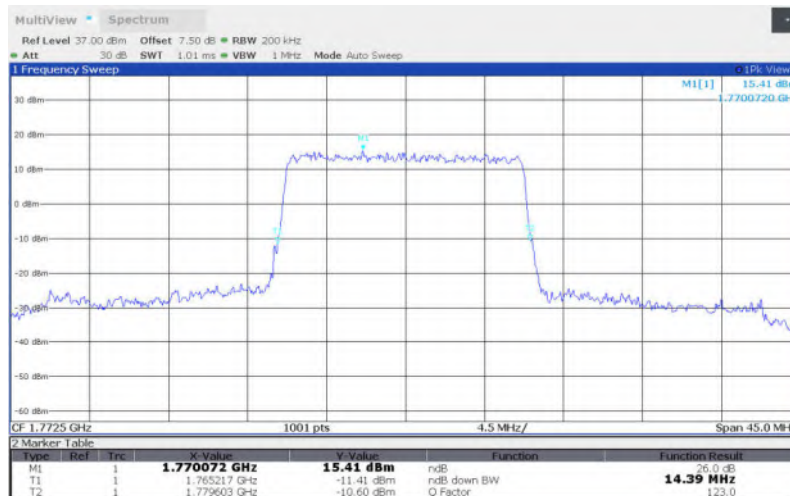
LTE Band 66 , 15MHz Bandwidth,MID,16QAM (-26dBc BW)



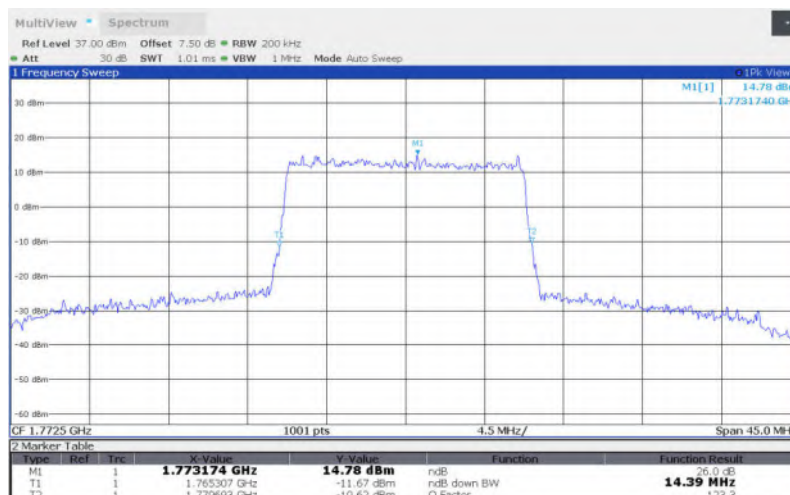
LTE Band 66 , 15MHz Bandwidth,MID,64QAM (-26dBc BW)



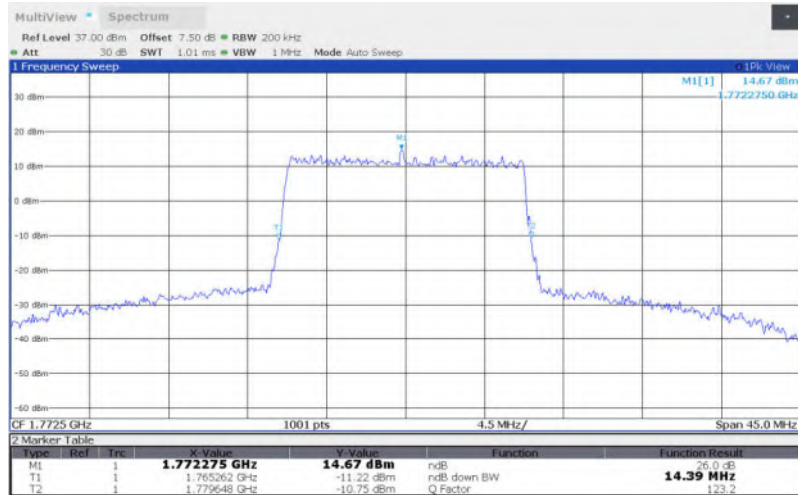
LTE Band 66 , 15MHz Bandwidth,HIGH,QPSK (-26dBc BW)



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

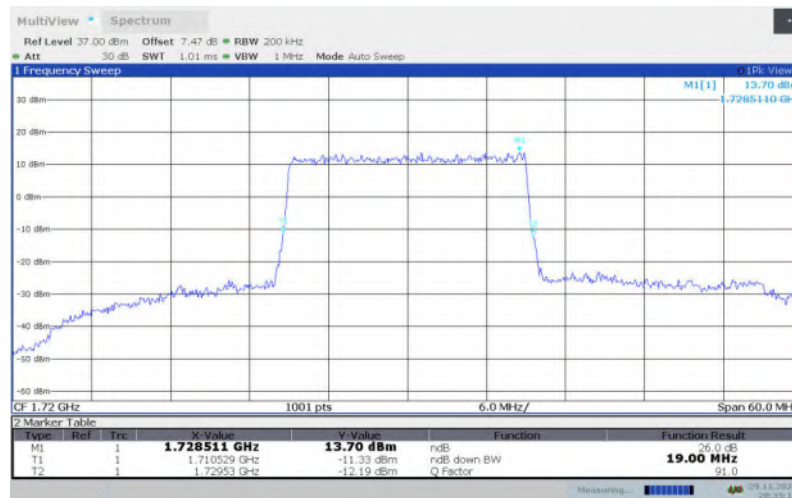
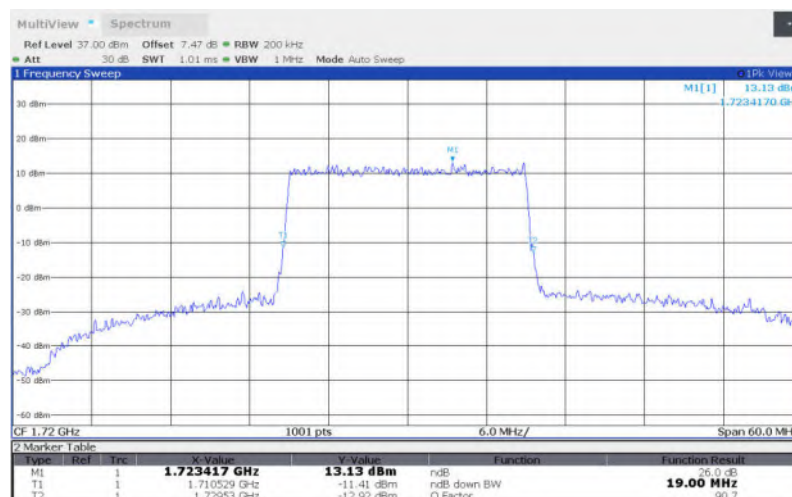


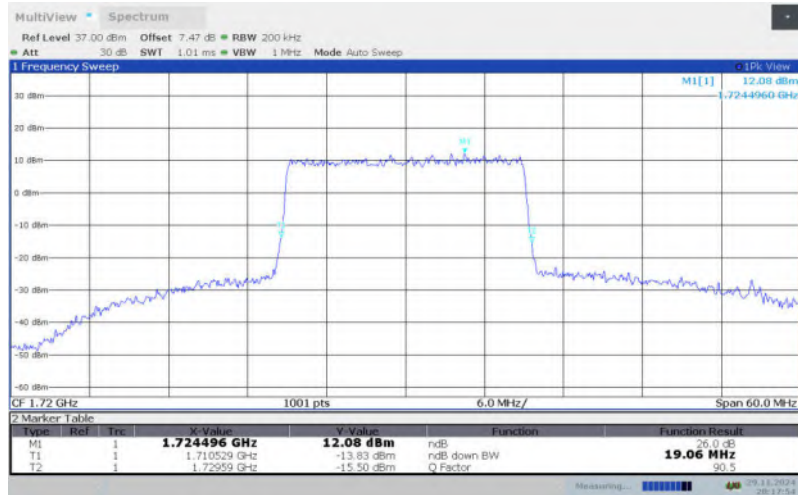
LTE Band 66 , 15MHz Bandwidth,HIGH,64QAM (-26dBc BW)



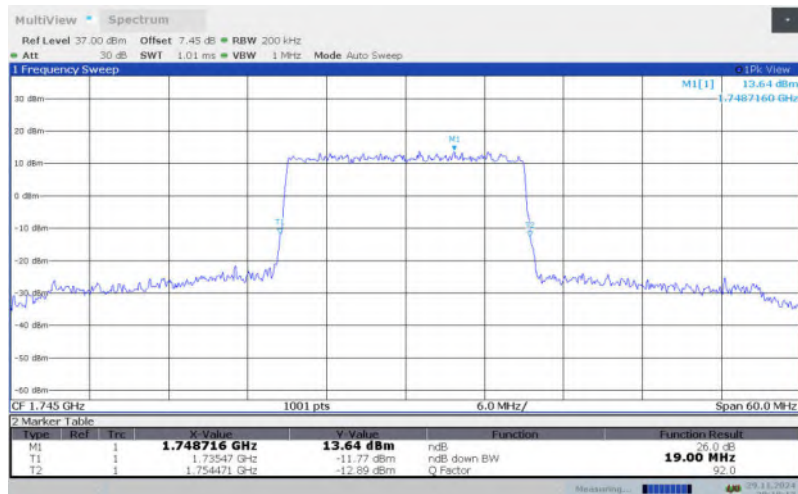
**LTE Band 66,20MHz(-26dBc BW)**

Frequency(MHz)	Emission Bandwidth (-26dBc BW)(MHz)		
	QPSK	16QAM	64QAM
1720	19.001	19.001	19.061
1745	19.001	19.061	19.181
1770	19.001	19.061	19.001

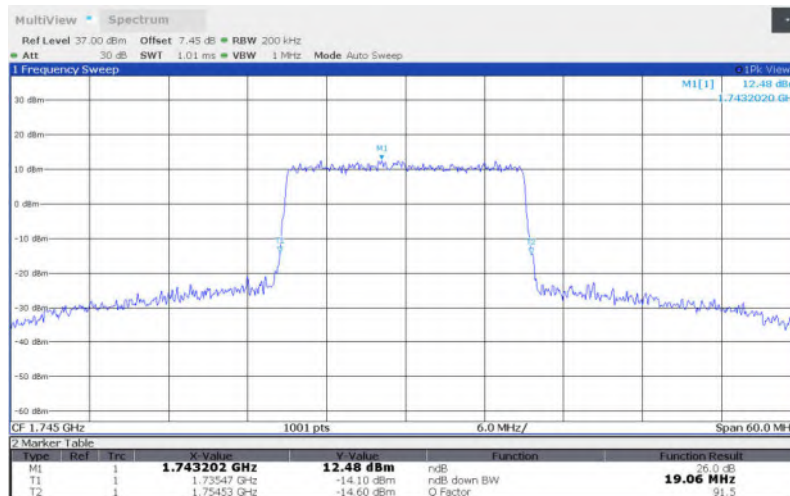
LTE Band 66 , 20MHz Bandwidth,LOW,QPSK (-26dBc BW)**LTE Band 66 , 20MHz Bandwidth,LOW,16QAM (-26dBc BW)****LTE Band 66 , 20MHz Bandwidth,LOW,64QAM (-26dBc BW)**



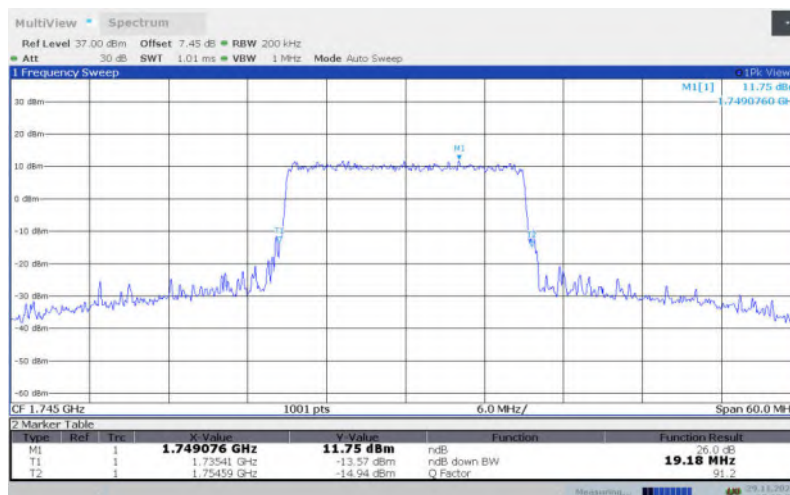
LTE Band 66 , 20MHz Bandwidth,MID,QPSK (-26dBc BW)



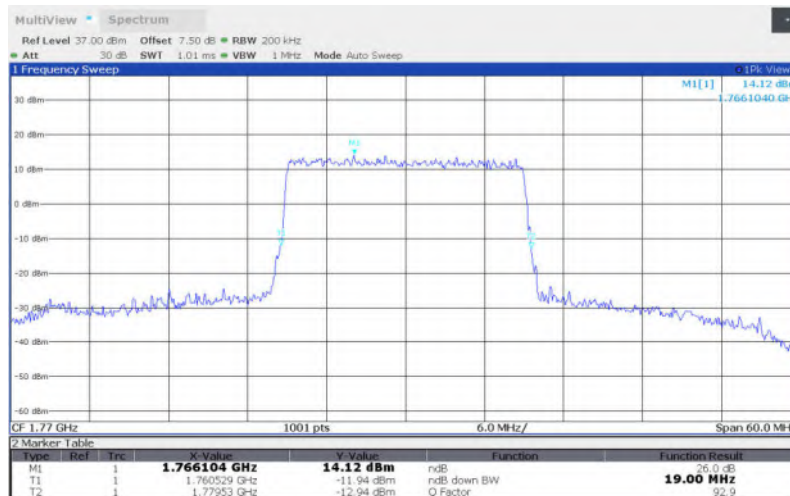
LTE Band 66 , 20MHz Bandwidth,MID,16QAM (-26dBc BW)



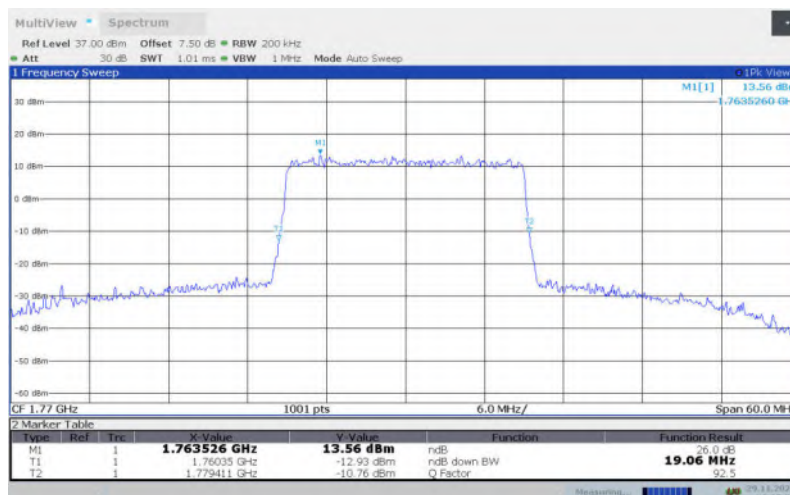
LTE Band 66 , 20MHz Bandwidth,MID,64QAM (-26dBc BW)



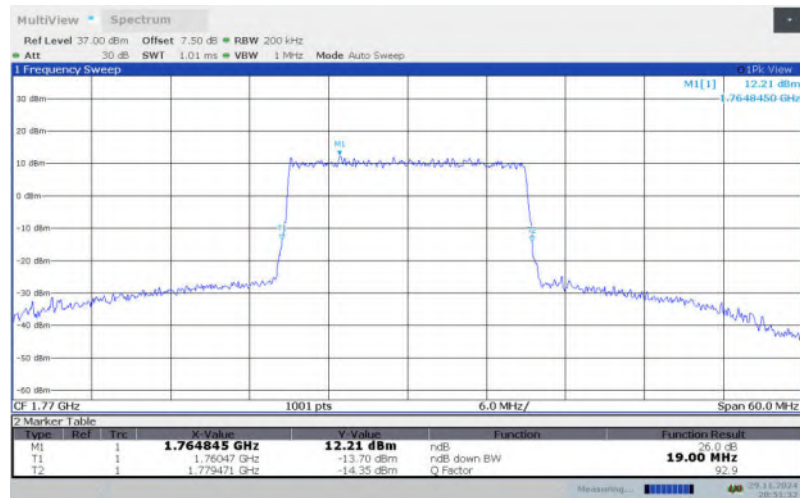
LTE Band 66 , 20MHz Bandwidth,HIGH,QPSK (-26dBc BW)



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



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



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

A.6 BAND EDGE COMPLIANCE

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 than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5MHz. 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 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 $116 \log_{10}(f/6.1)$ decibels or $50 + 10 \log_{10}(P)$ 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 $43 + 10 \log_{10}(P)$ 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.

The spectrum analyzer readings are corrected by $[10 \log (1/\text{duty cycle})]$ for the non-continuous transmitting scenario.

A.6.2 Measurement 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 $\geq 1\%$ 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.

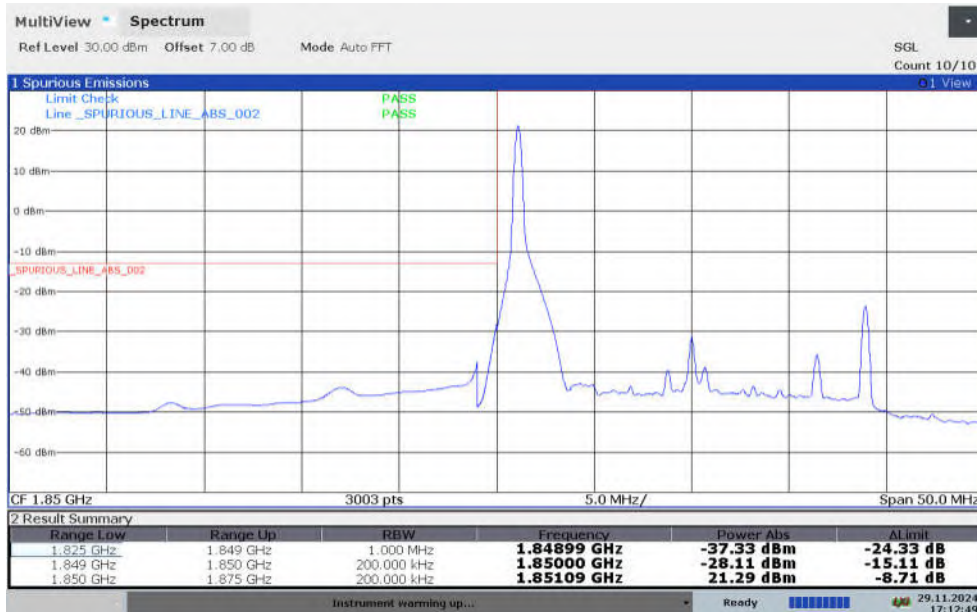
A.6.3 Measurement result



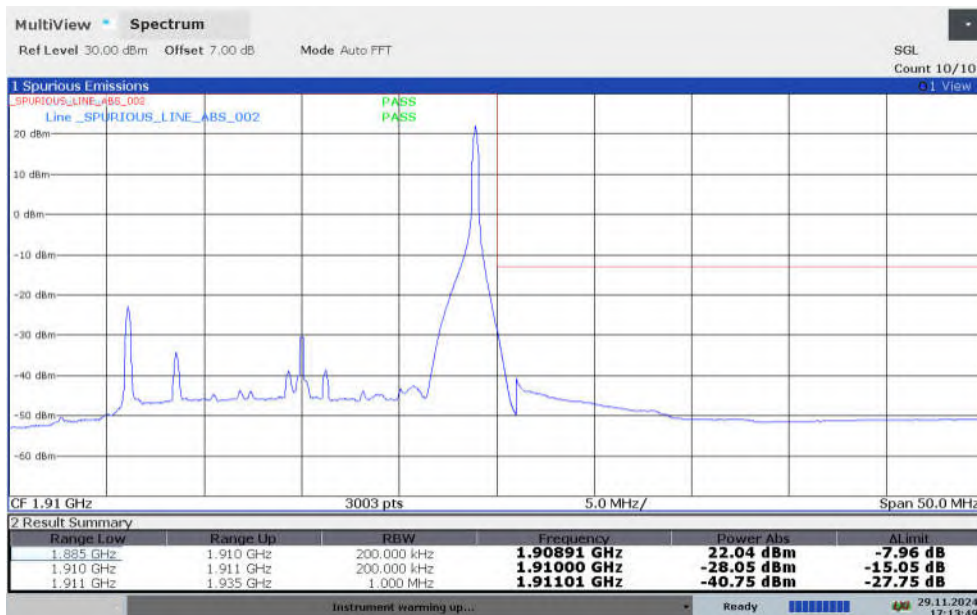
Only worst case result is given below

LTE Band 2

LOW BAND EDGE BLOCK-1RB-low_offset



HIGH BAND EDGE BLOCK-1RB-high_offset



LOW BAND EDGE BLOCK-20MHz-100%RB



No.24T04N002827-005-RF LTE



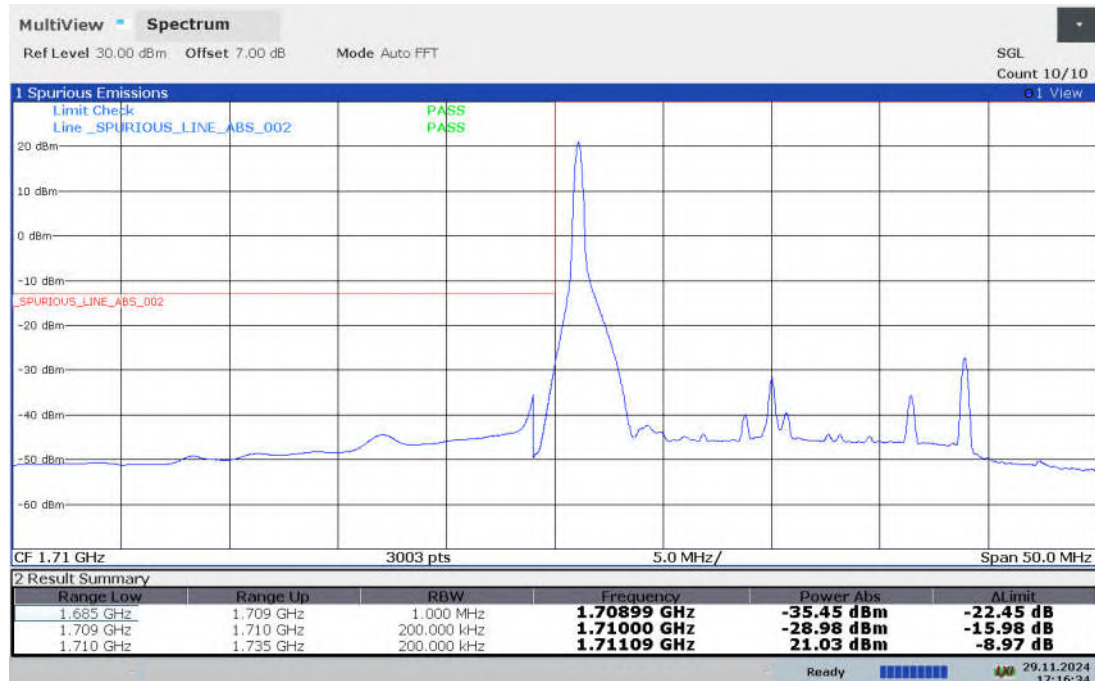
HIGH BAND EDGE BLOCK-20MHz-100%RB



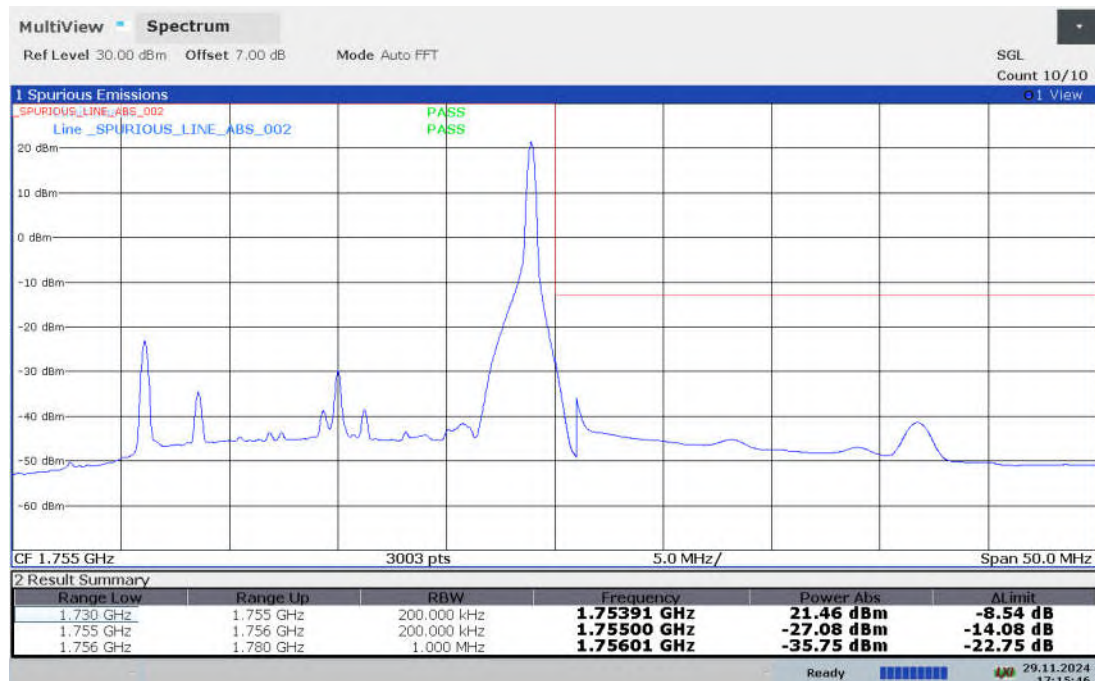


LTE Band 4

LOW BAND EDGE BLOCK-1RB-low_offset



HIGH BAND EDGE BLOCK-1RB-high_offset

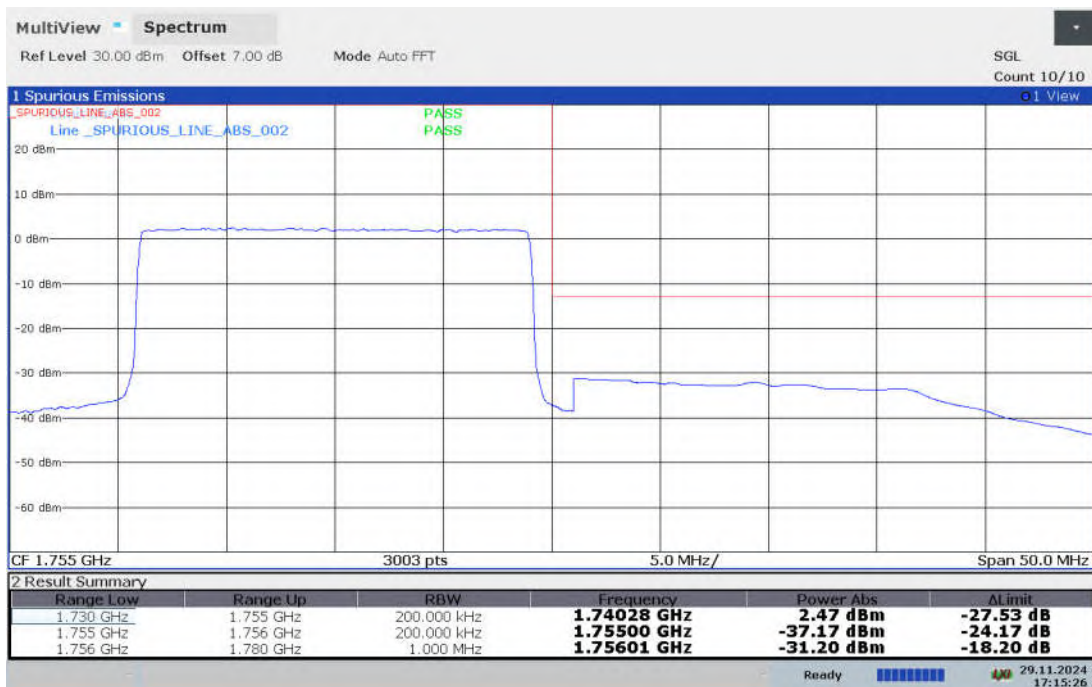




LOW BAND EDGE BLOCK-20MHz-100%RB



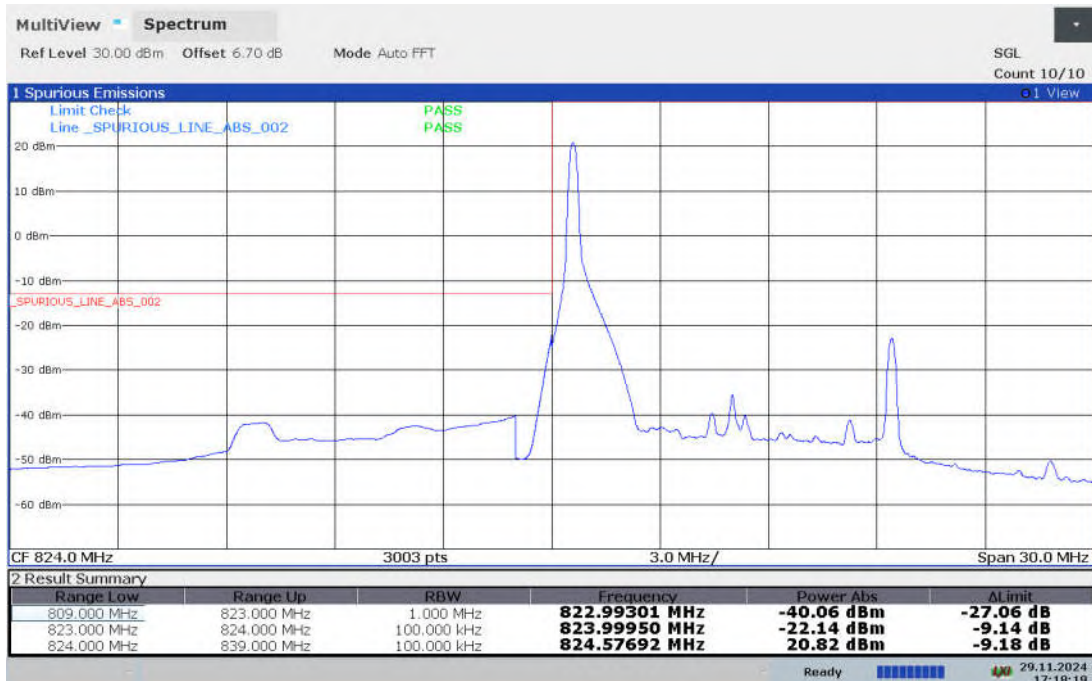
HIGH BAND EDGE BLOCK-20MHz-100%RB



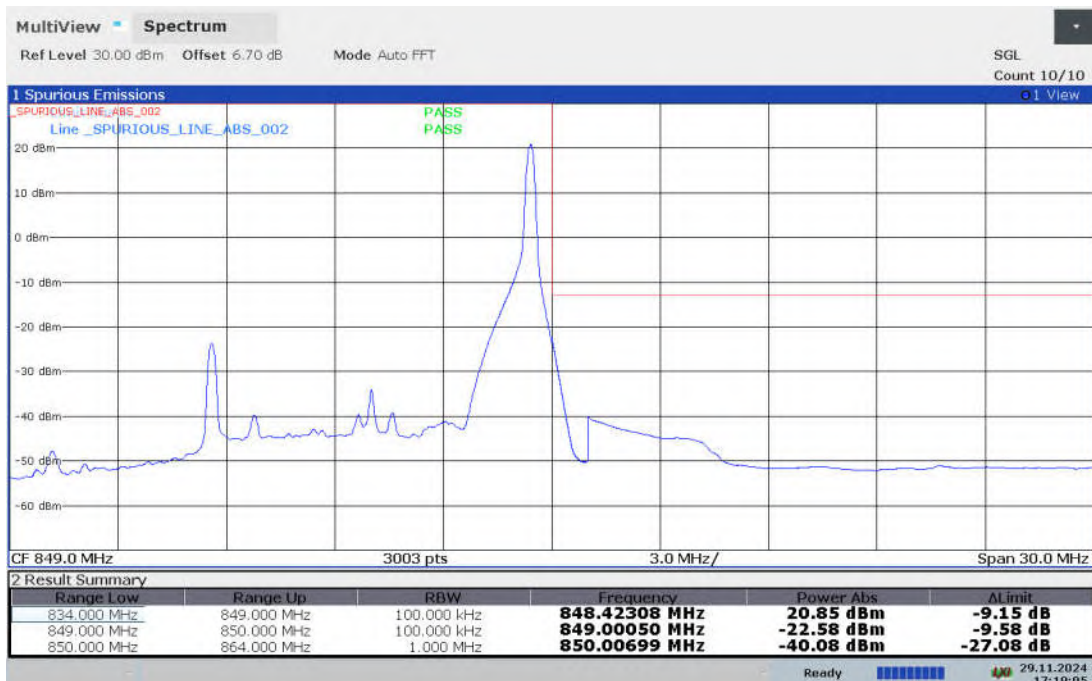


LTE Band 5

LOW BAND EDGE BLOCK-1RB-low_offset

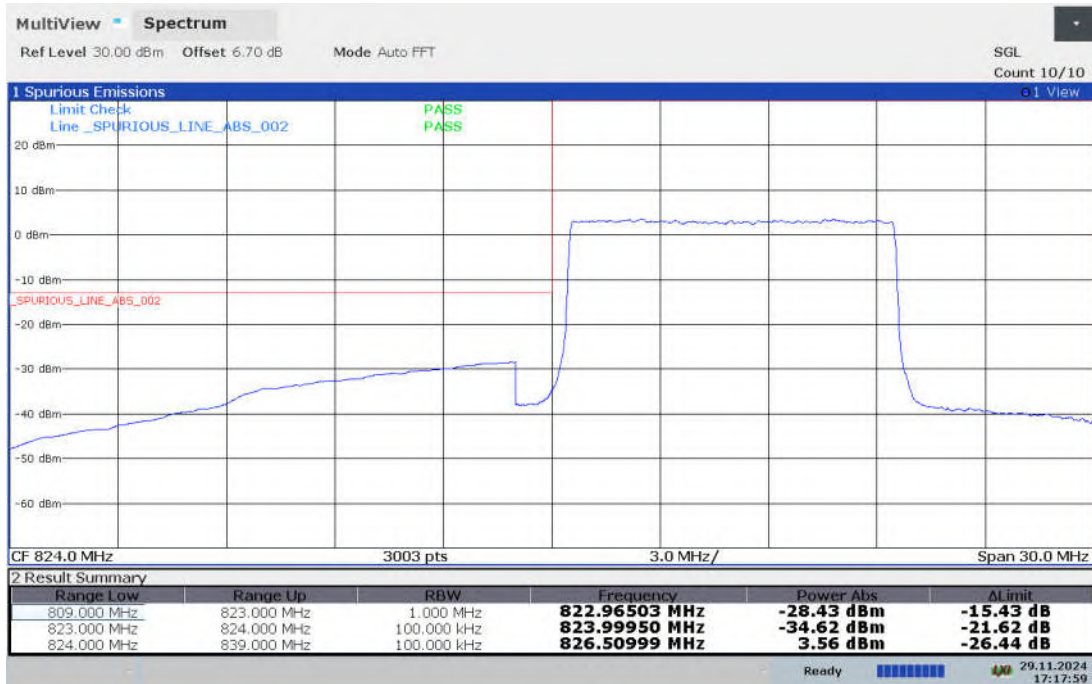


HIGH BAND EDGE BLOCK-1RB-high_offset





LOW BAND EDGE BLOCK-10MHz-100%RB



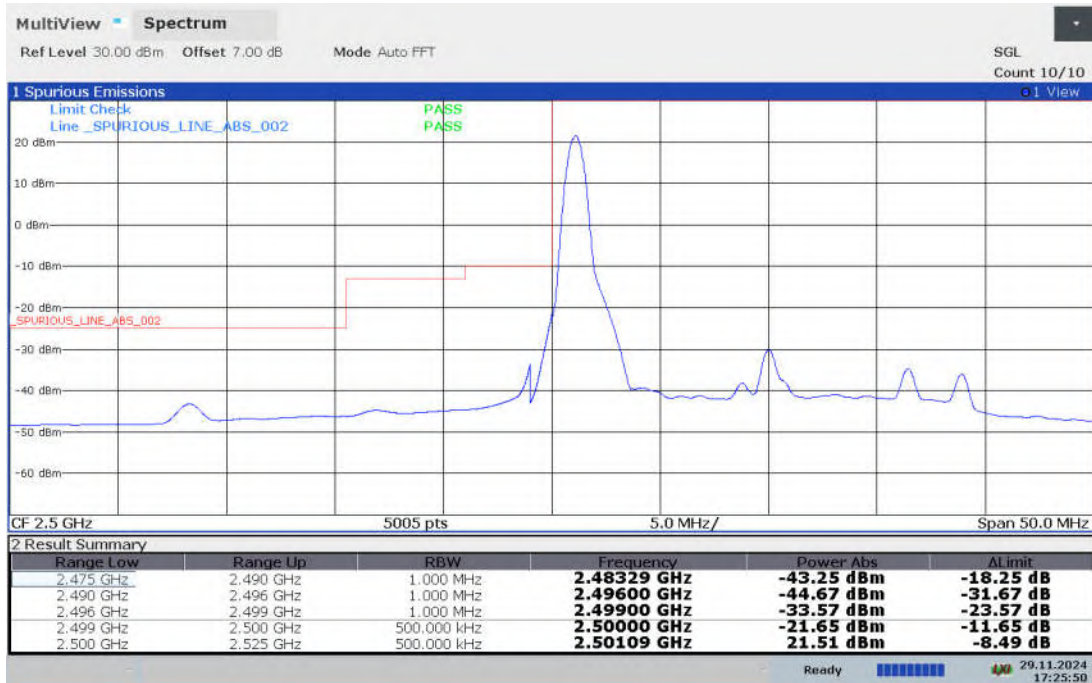
HIGH BAND EDGE BLOCK-10MHz-100%RB



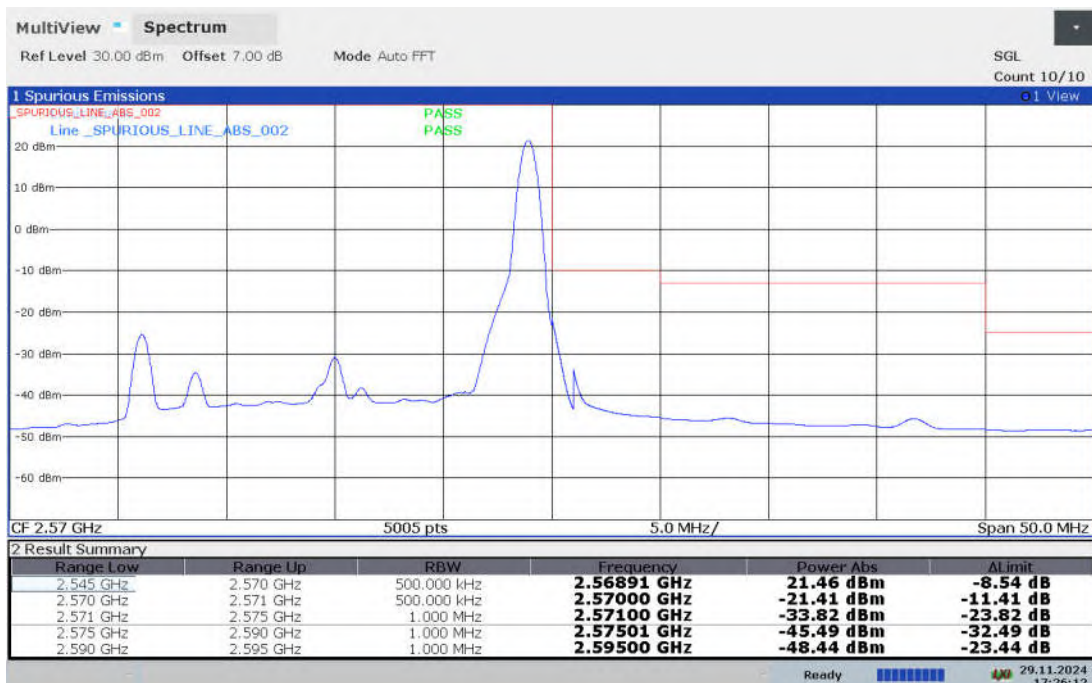


LTE Band 7

LOW BAND EDGE BLOCK-1RB-low_offset

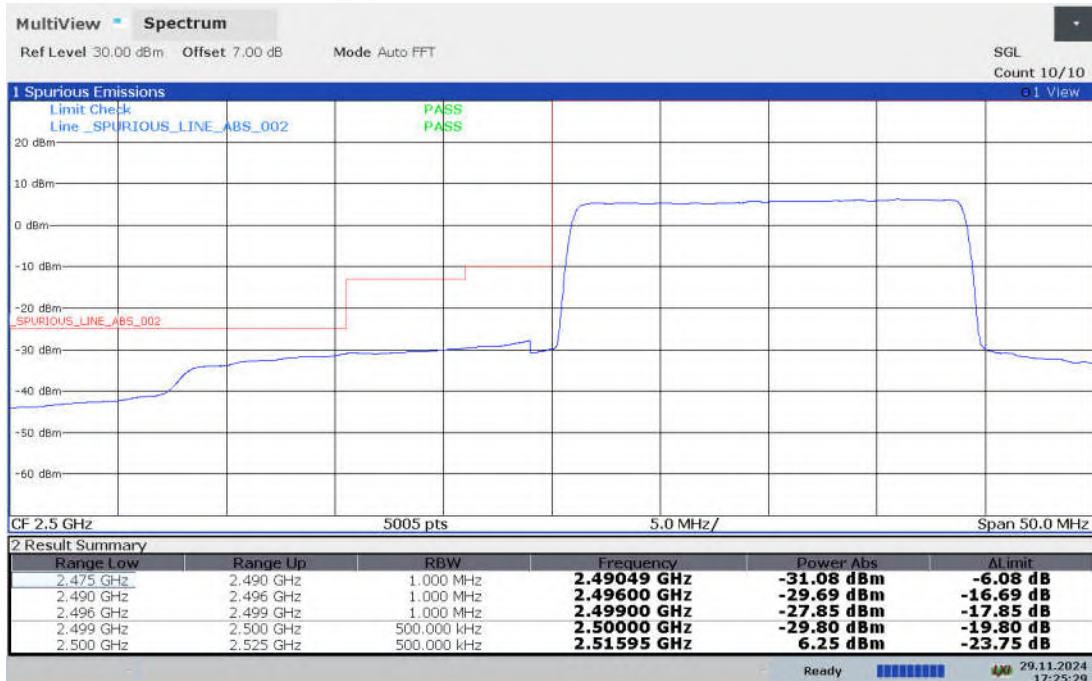


HIGH BAND EDGE BLOCK-1RB-high_offset

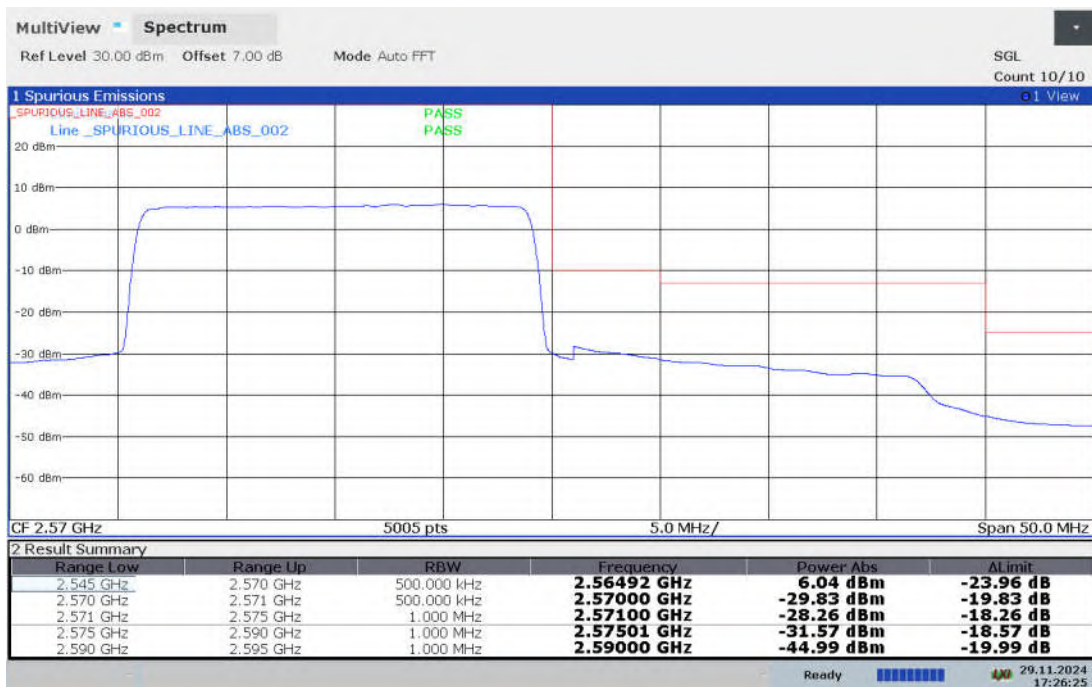




LOW BAND EDGE BLOCK-20MHz-100%RB



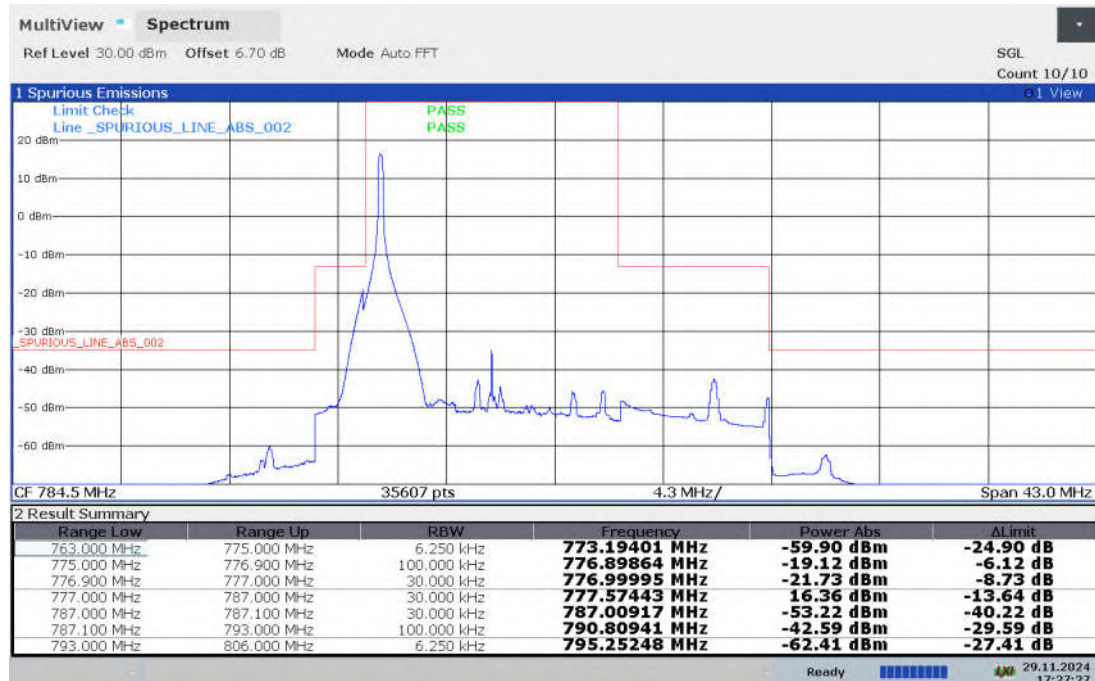
HIGH BAND EDGE BLOCK-20MHz-100%RB



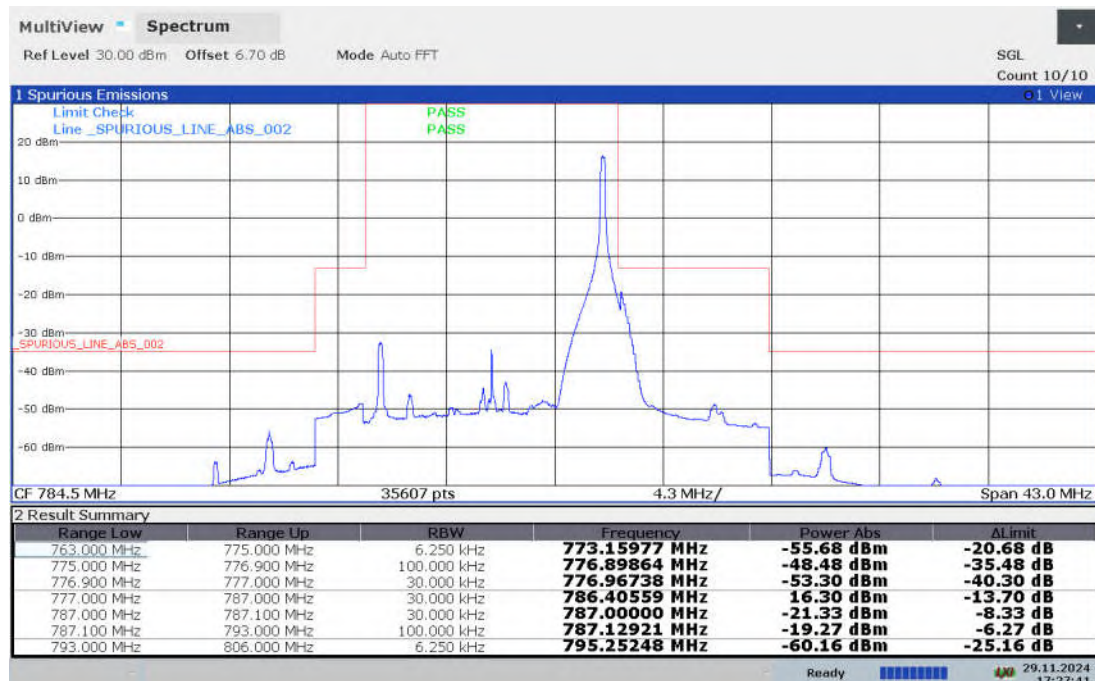


LTE Band 13

LOW BAND EDGE BLOCK-1RB-low_offset

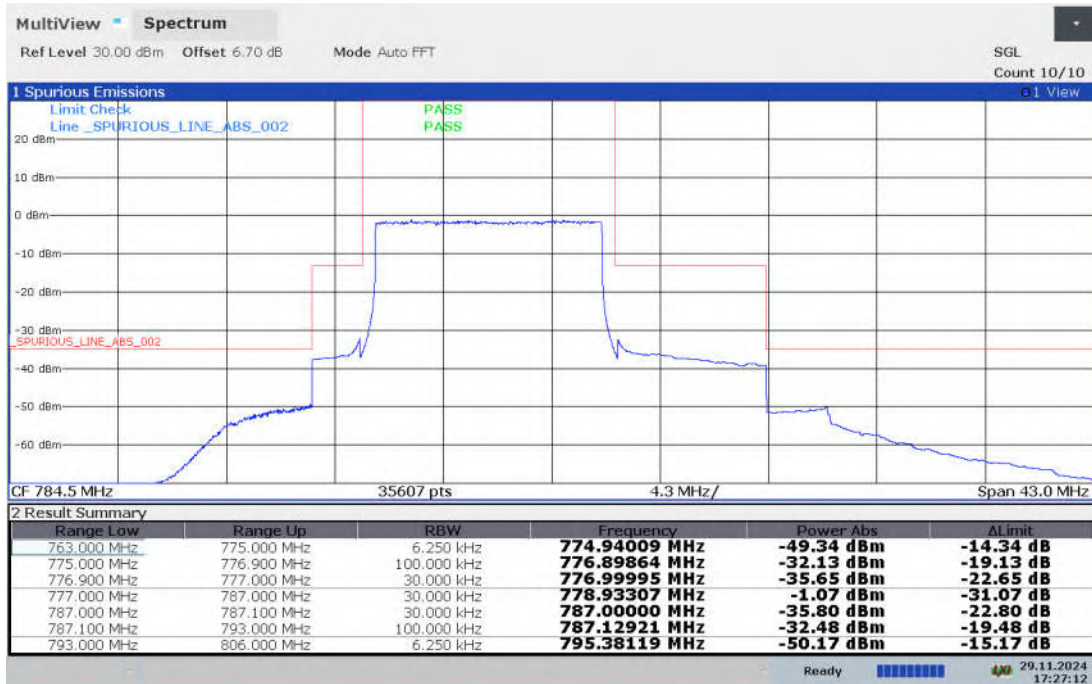


HIGH BAND EDGE BLOCK-1RB-high_offset



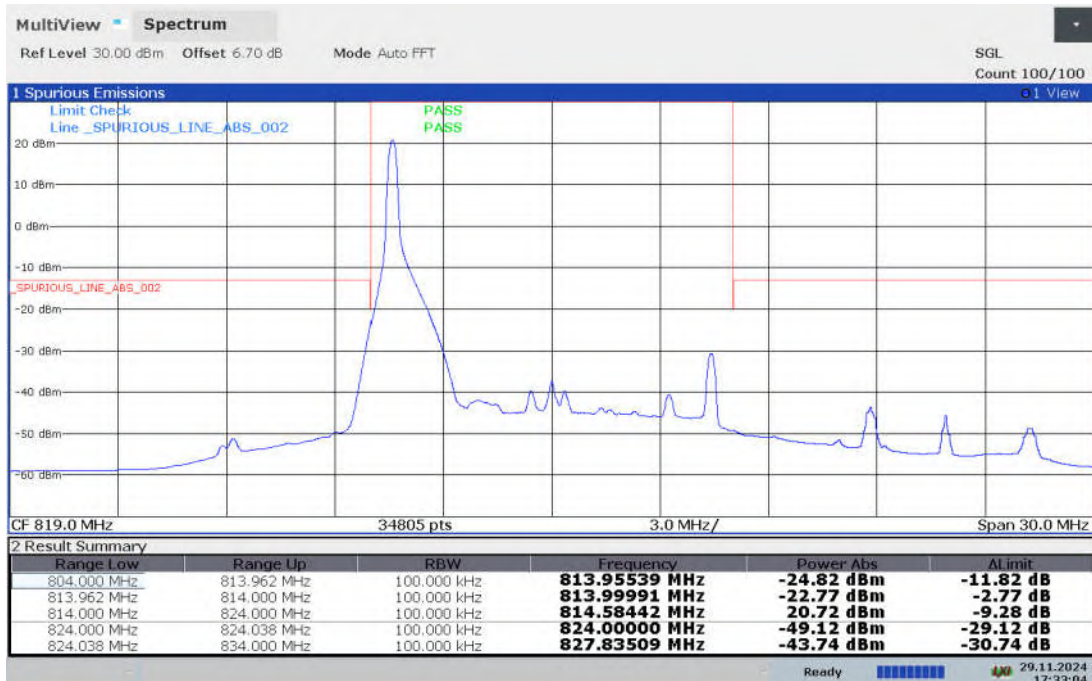


EDGE BLOCK-10MHz-100%RB

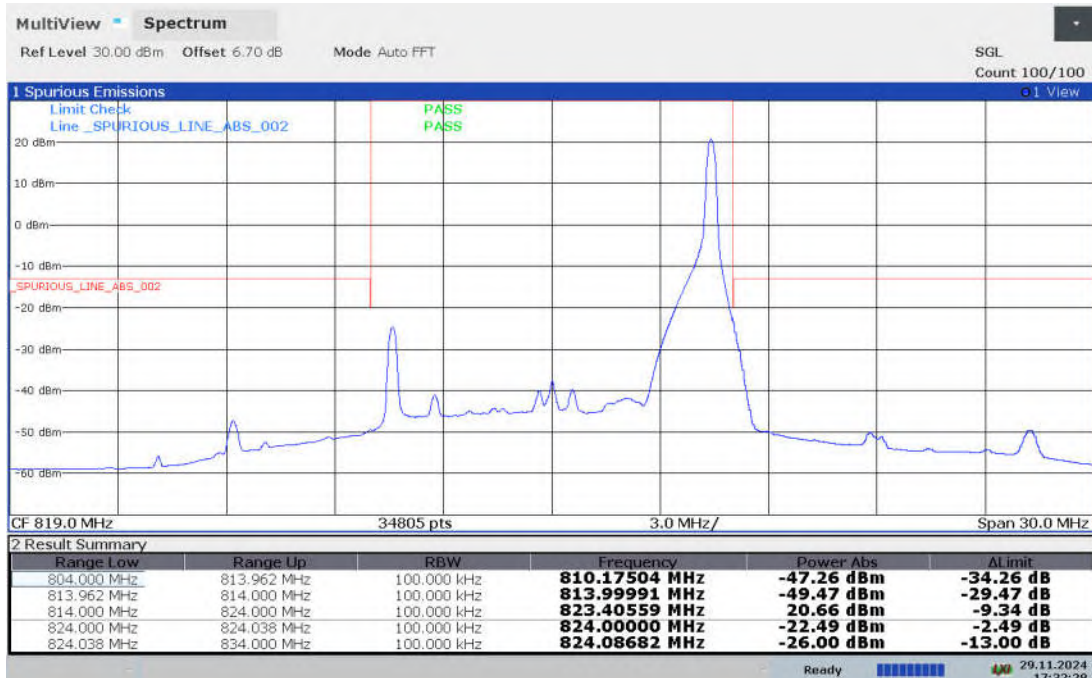




LTE Band 26(814MHz-824MHz)
LOW BAND EDGE BLOCK-1RB-low_offset

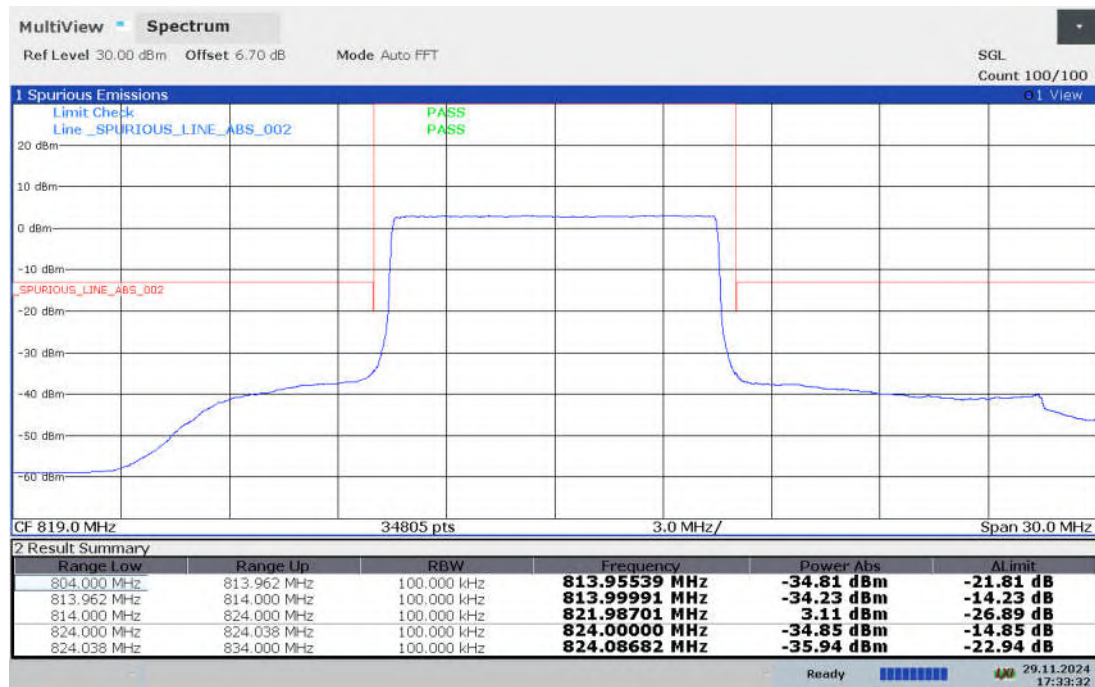


HIGH BAND EDGE BLOCK-1RB-high_offset





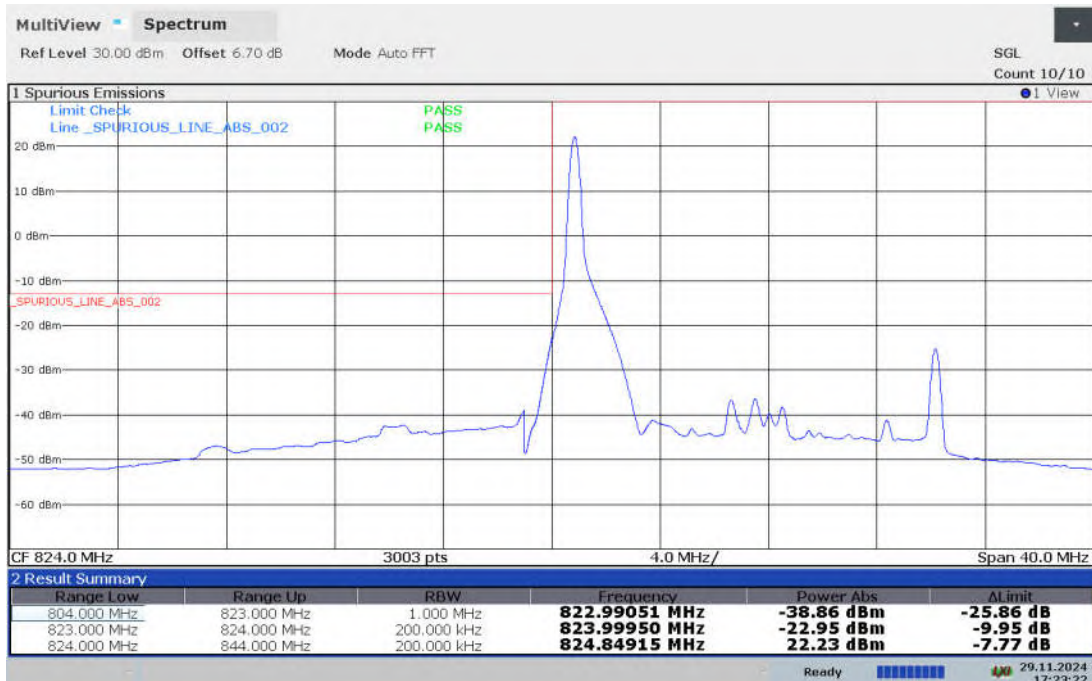
BAND EDGE BLOCK-10MHz-100%RB



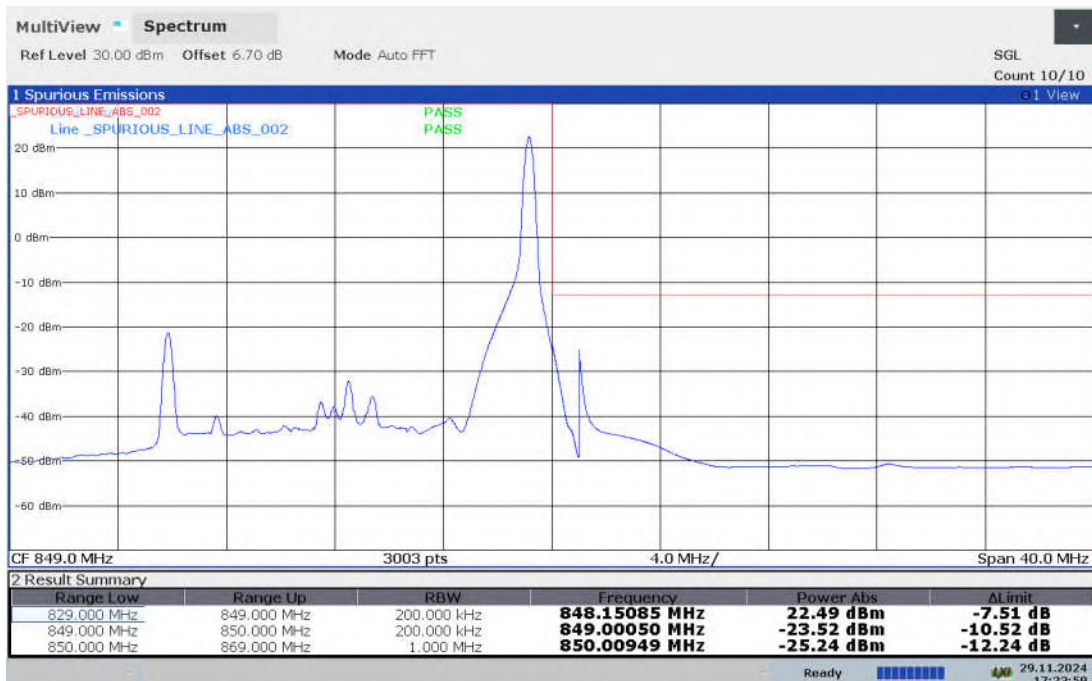


LTE Band 26(824MHz-849MHz)

LOW BAND EDGE BLOCK-1RB-low_offset

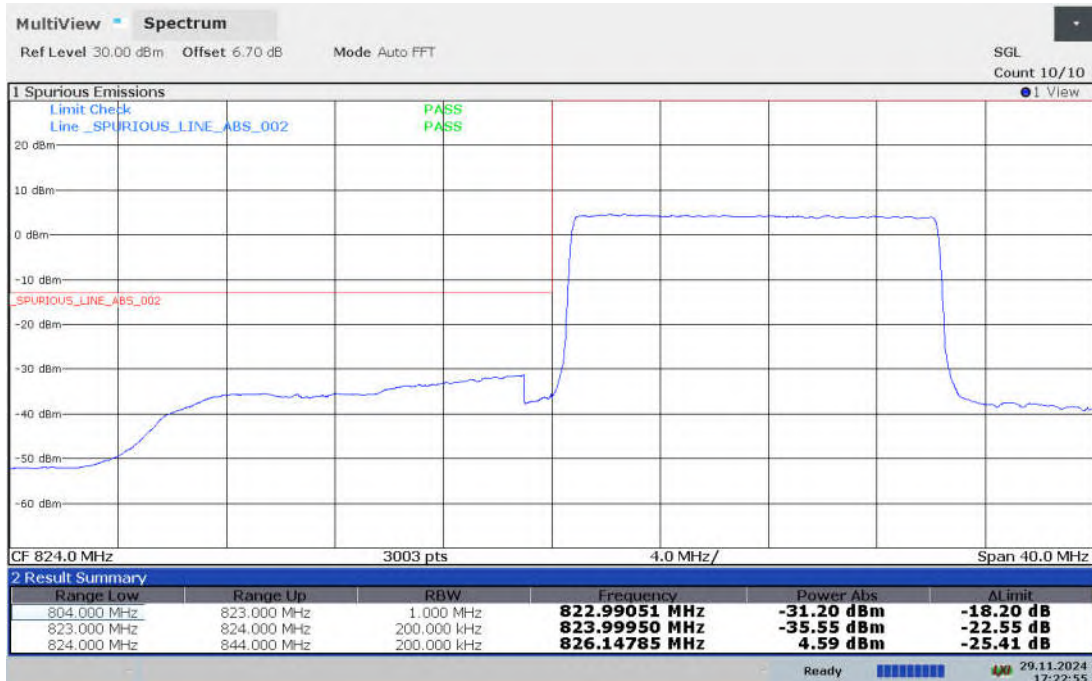


HIGH BAND EDGE BLOCK-1RB-high_offset





LOW BAND EDGE BLOCK-15MHz-100%RB



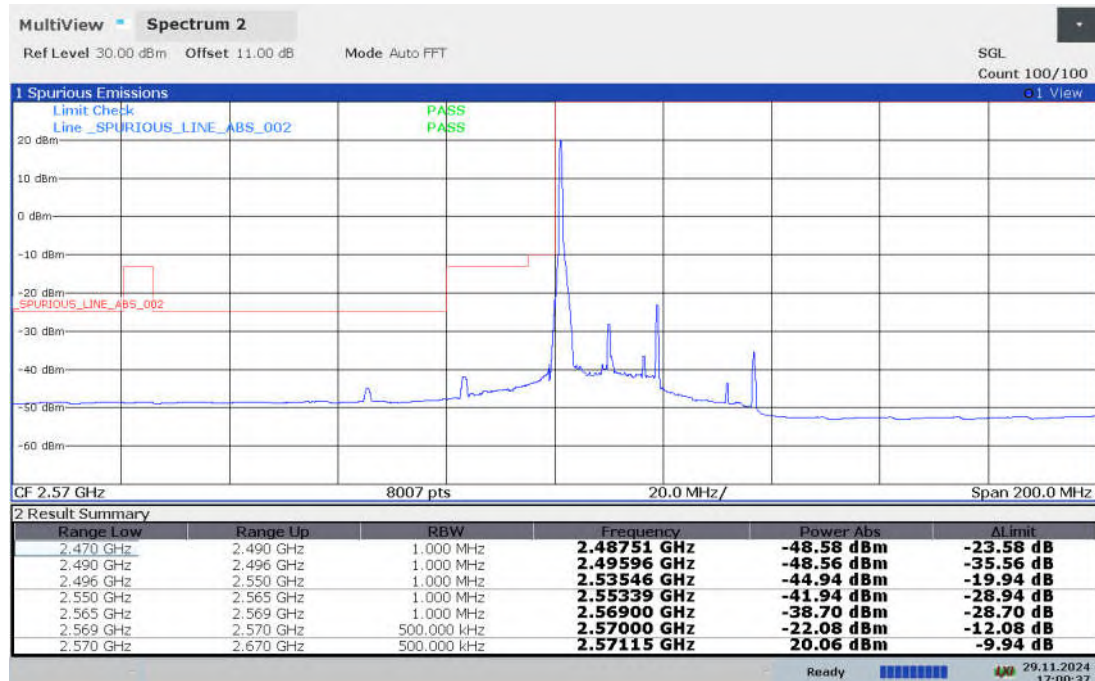
HIGH BAND EDGE BLOCK-15MHz-100%RB



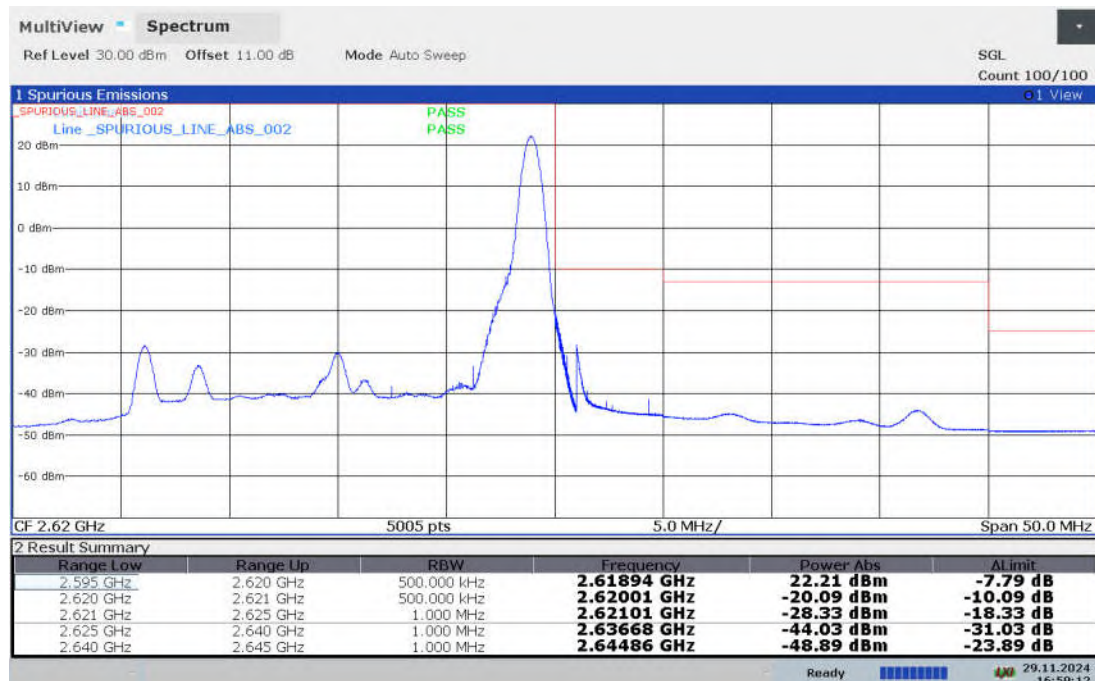


LTE Band 38

LOW BAND EDGE BLOCK-1RB-low_offset

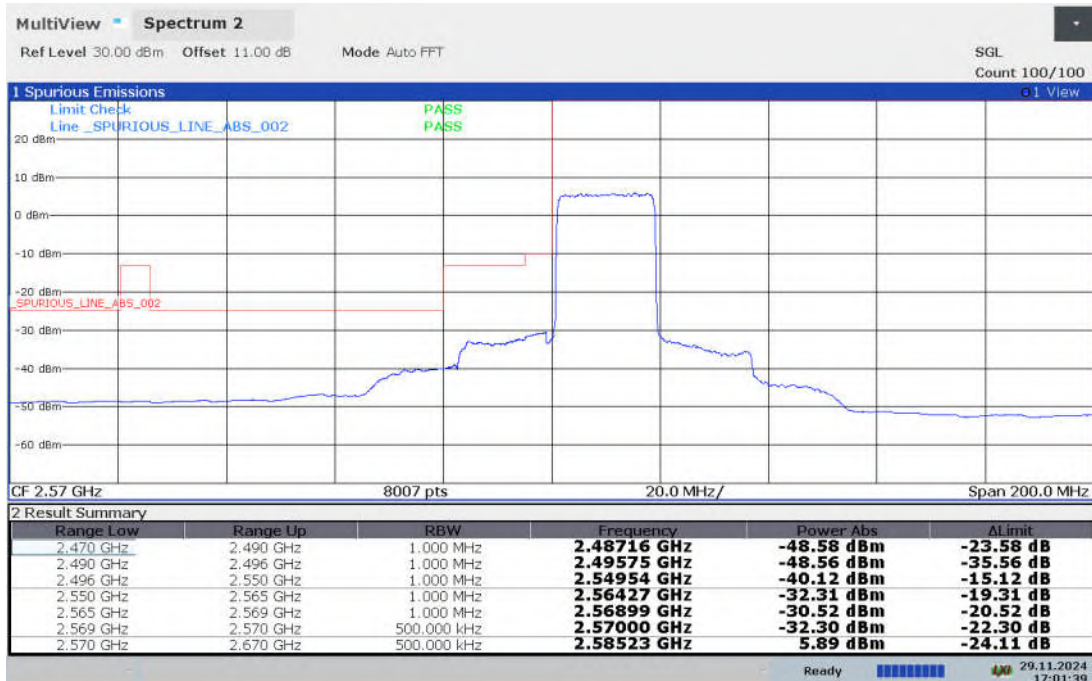


HIGH BAND EDGE BLOCK-1RB-high_offset

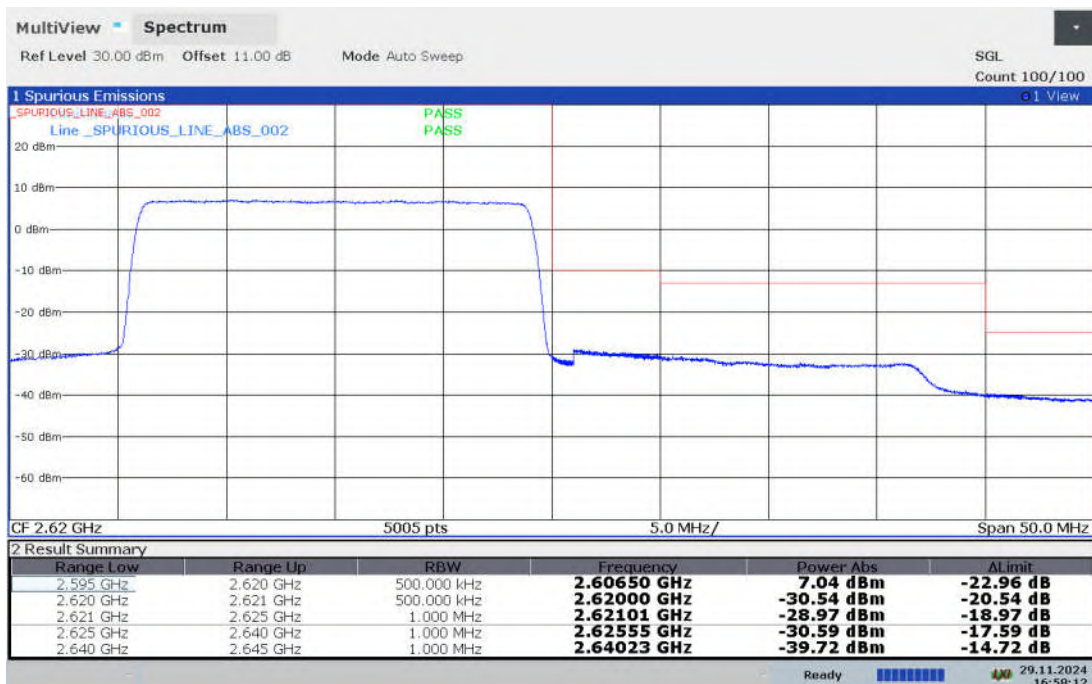




LOW BAND EDGE BLOCK-20MHz-100%RB



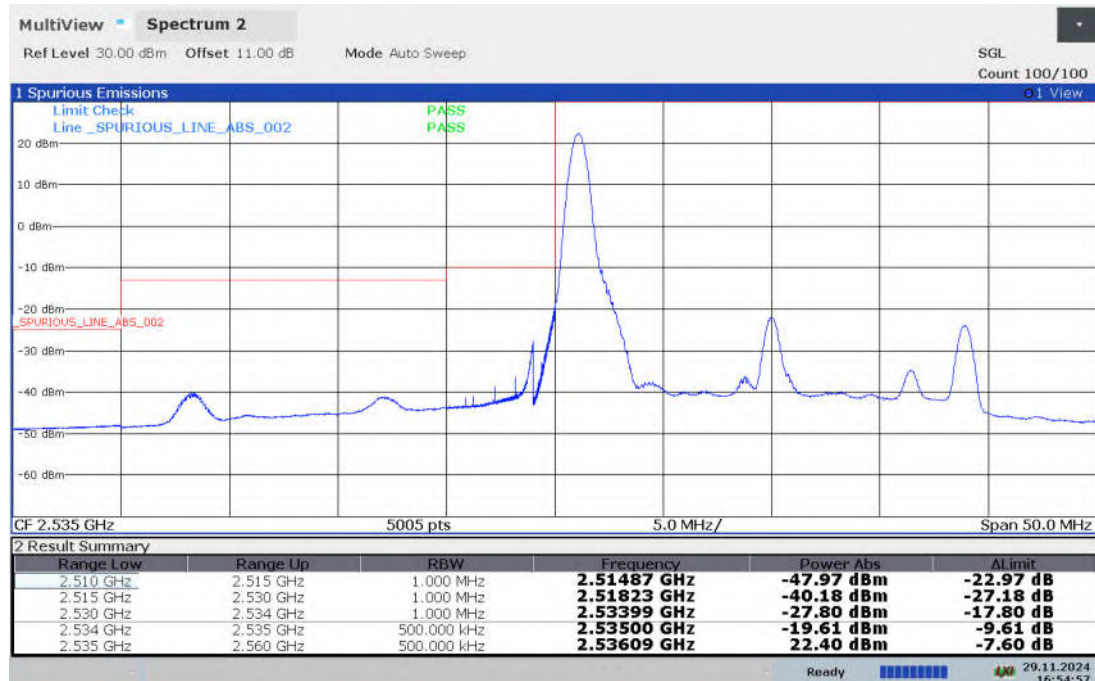
HIGH BAND EDGE BLOCK-20MHz-100%RB



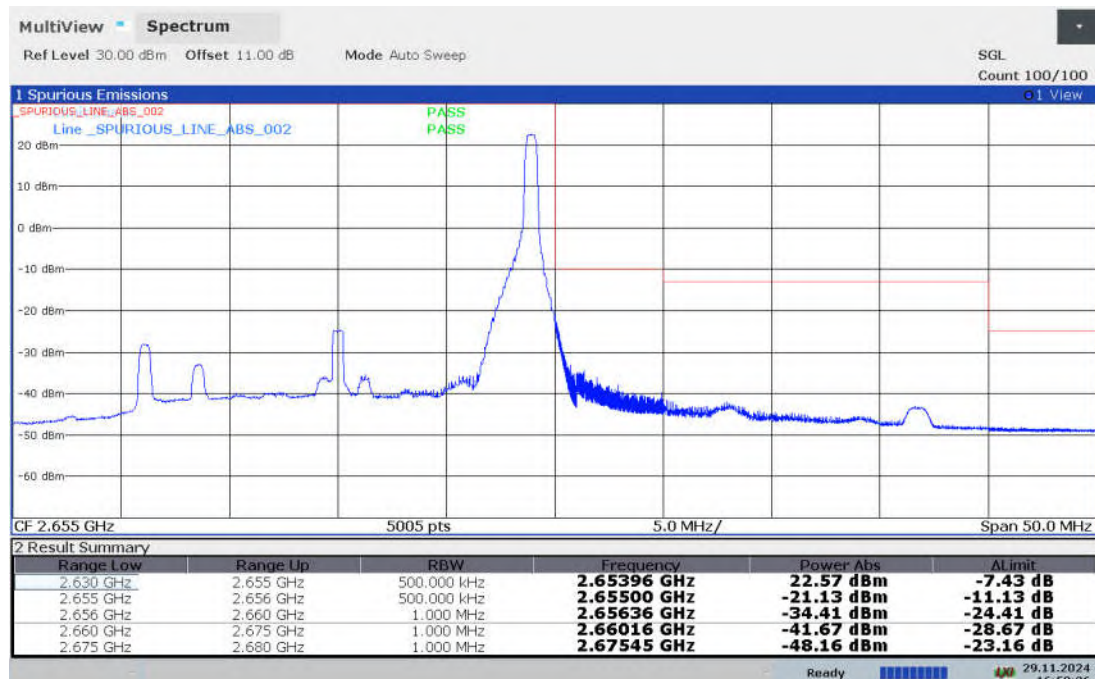


LTE Band 41

LOW BAND EDGE BLOCK-1RB-low_offset

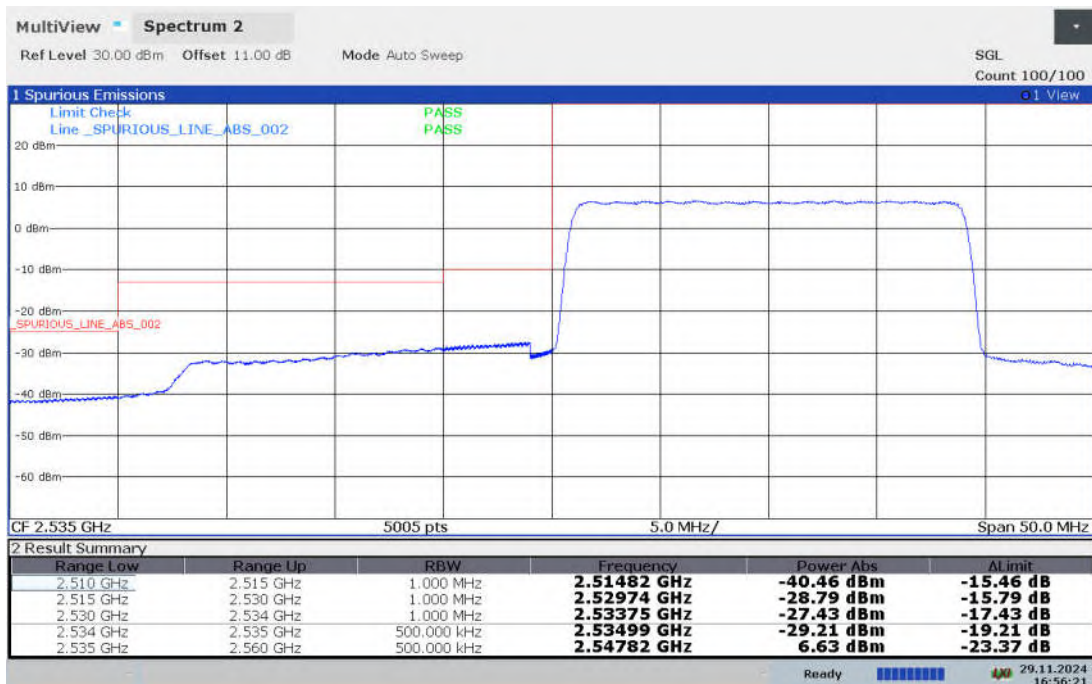


HIGH BAND EDGE BLOCK-1RB-high_offset

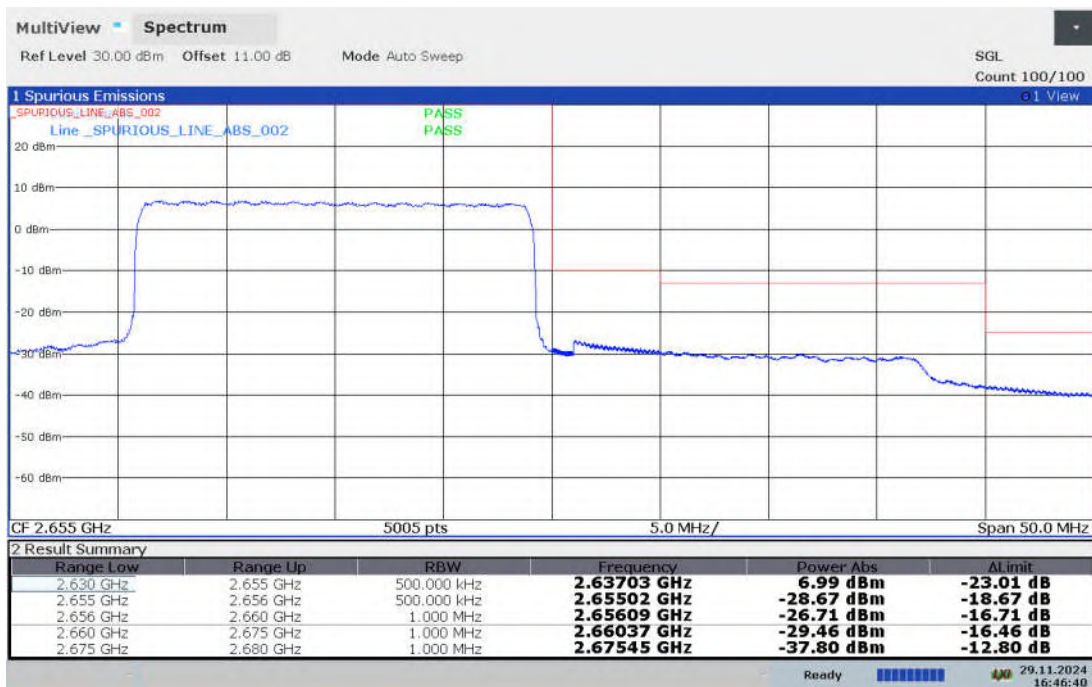




LOW BAND EDGE BLOCK-20MHz-100%RB



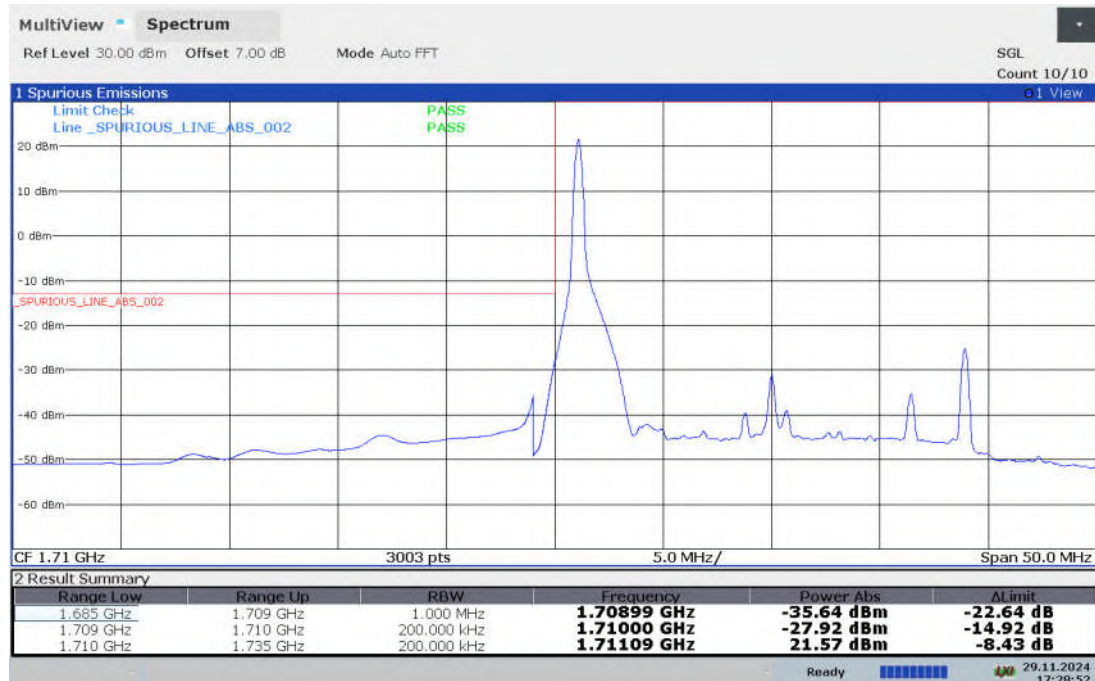
HIGH BAND EDGE BLOCK-20MHz-100%RB



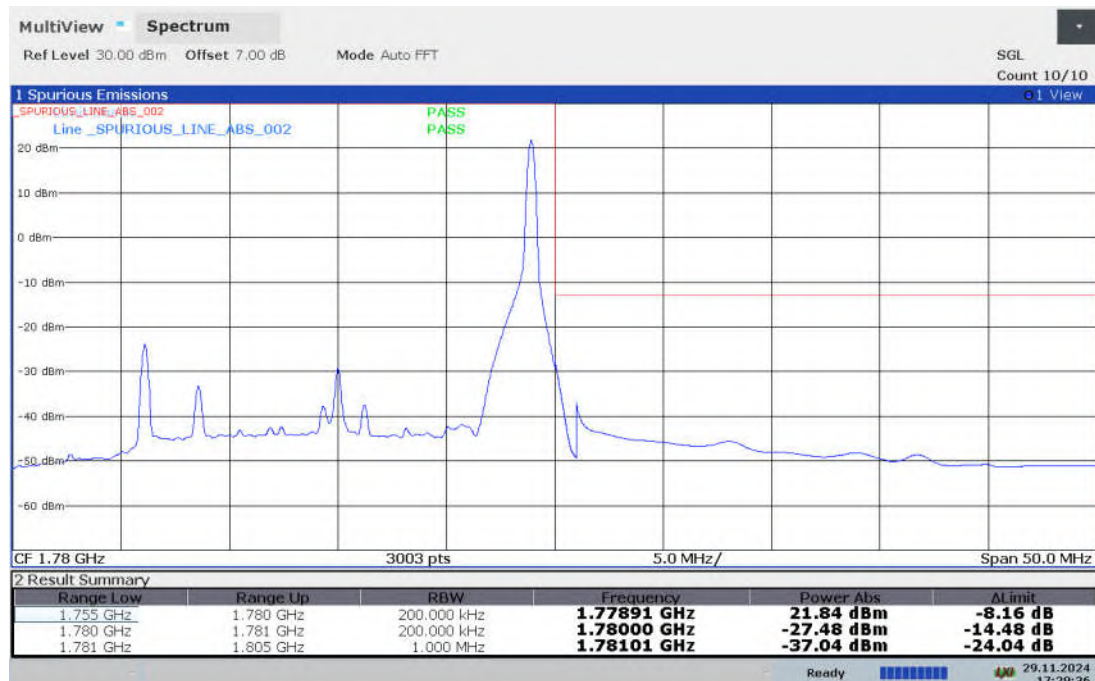


LTE Band 66

LOW BAND EDGE BLOCK-1RB-low_offset

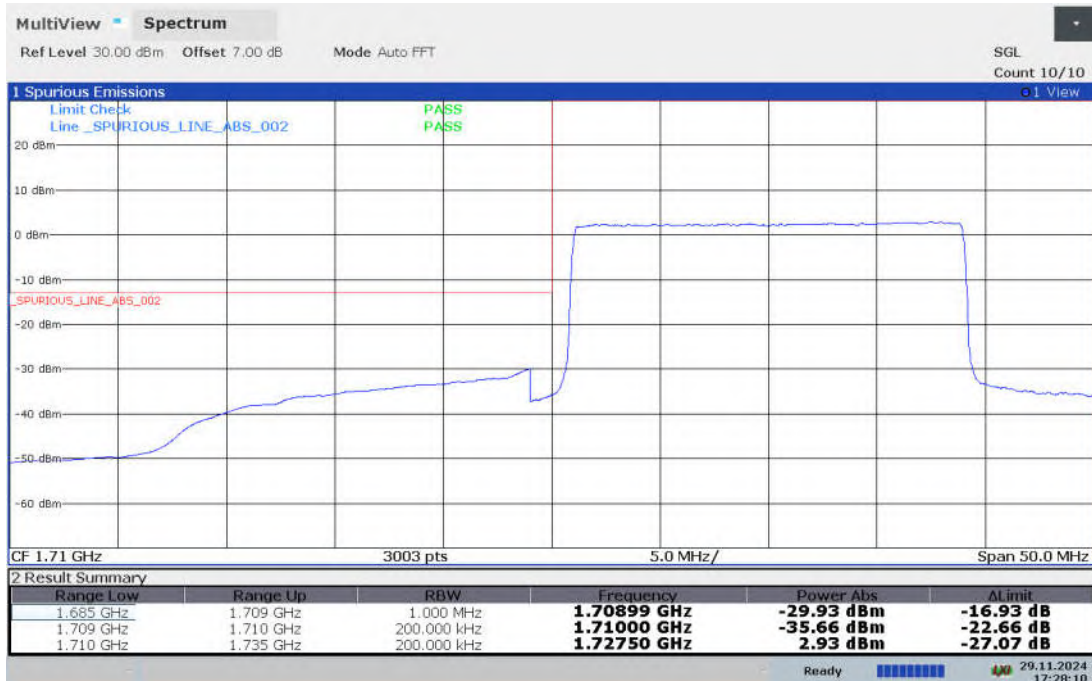


HIGH BAND EDGE BLOCK-1RB-high_offset





LOW BAND EDGE BLOCK-20MHz-100%RB



HIGH BAND EDGE BLOCK-20MHz-100%RB



Note: Expanded measurement uncertainty is $U = 0.49\text{dB}(100\text{kHz}-2\text{GHz})/1.21\text{dB}(2\text{GHz}-26.5\text{GHz})$, $k = 1.96$



A.7 CONDUCTED SPURIOUS EMISSION

A.7.1 Measurement Method

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

1. In measuring unwanted emissions, the spectrum shall be investigated from 30 MHz or the lowest radio frequency signal generated in the equipment, whichever is lower, without going below 9 kHz, up to at least the frequency given below:
 - a) If the equipment operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
 - b) If the equipment operates at or above 10 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
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 greater than $2 \times \text{span/RBW}$

A. 7.2 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 than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5MHz. 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 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 $116 \log_{10}(f/6.1)$ decibels or $50 + 10 \log_{10}(P)$ 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 $43 + 10 \log_{10}(P)$ 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.



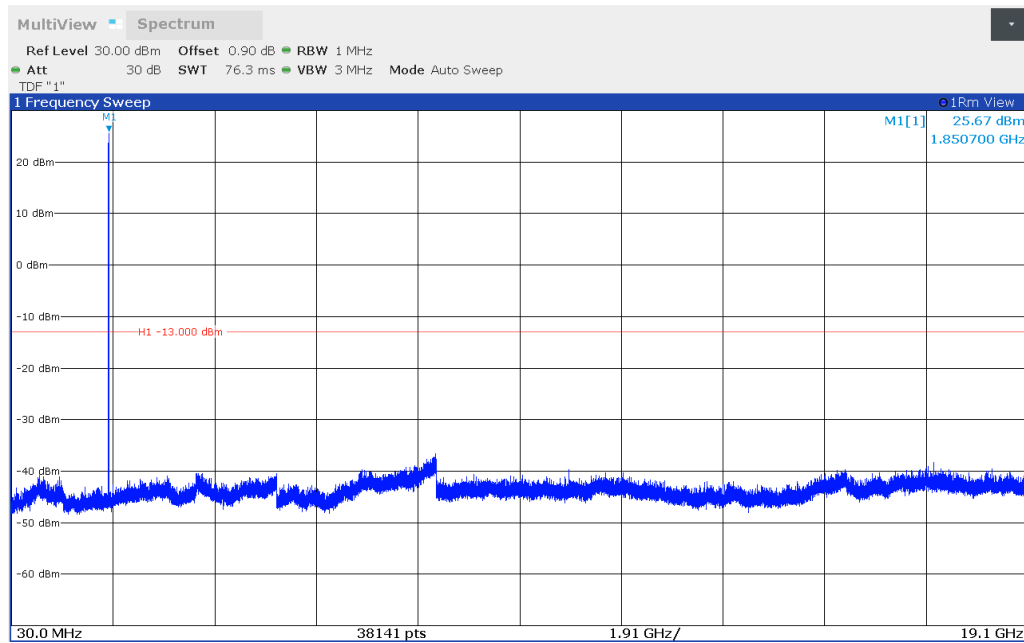
A. 7.3 Measurement result

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.

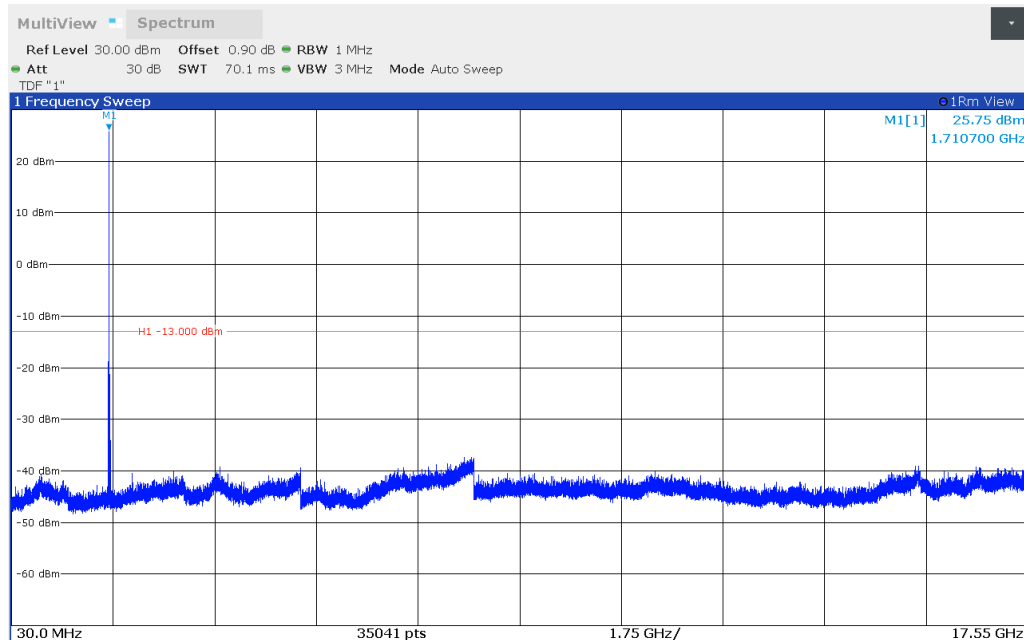




LTE Band 4 : 30MHz – 17.55GHz

Spurious emission limit –13dBm.

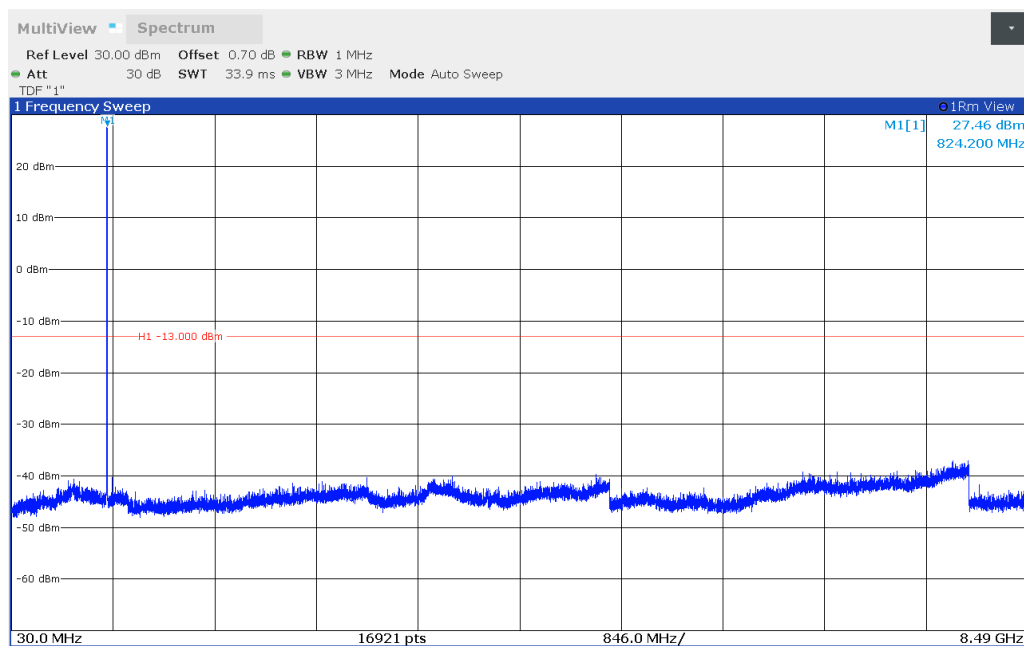
NOTE: peak above the limit line is the carrier frequency.



LTE Band 5 20MHz QPSK: 30MHz – 8.49GHz

Spurious emission limit –25dBm.

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

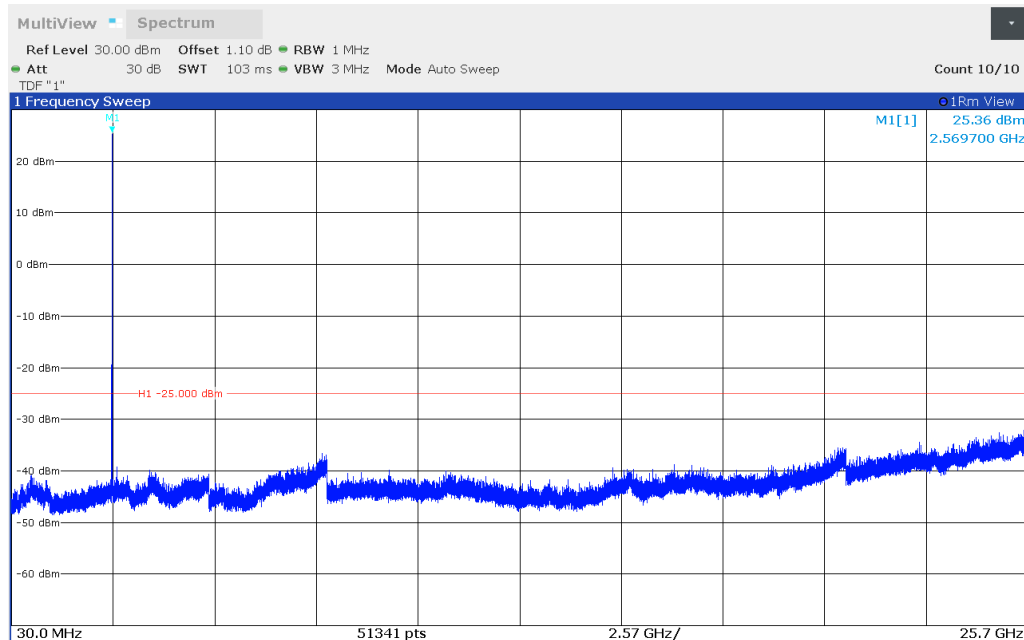




LTE Band 7 20MHz QPSK: 30MHz – 25.7GHz

Spurious emission limit –25dBm.

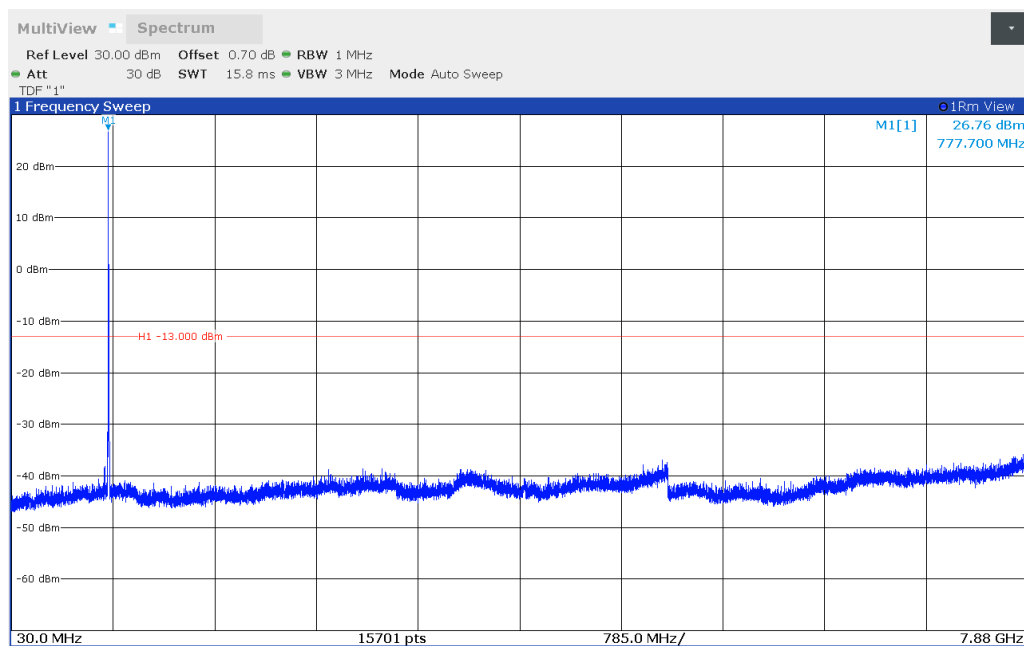
NOTE: peak above the limit line is the carrier frequency.



LTE Band 13: 30MHz – 7.87GHz

Spurious emission limit –13dBm.

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

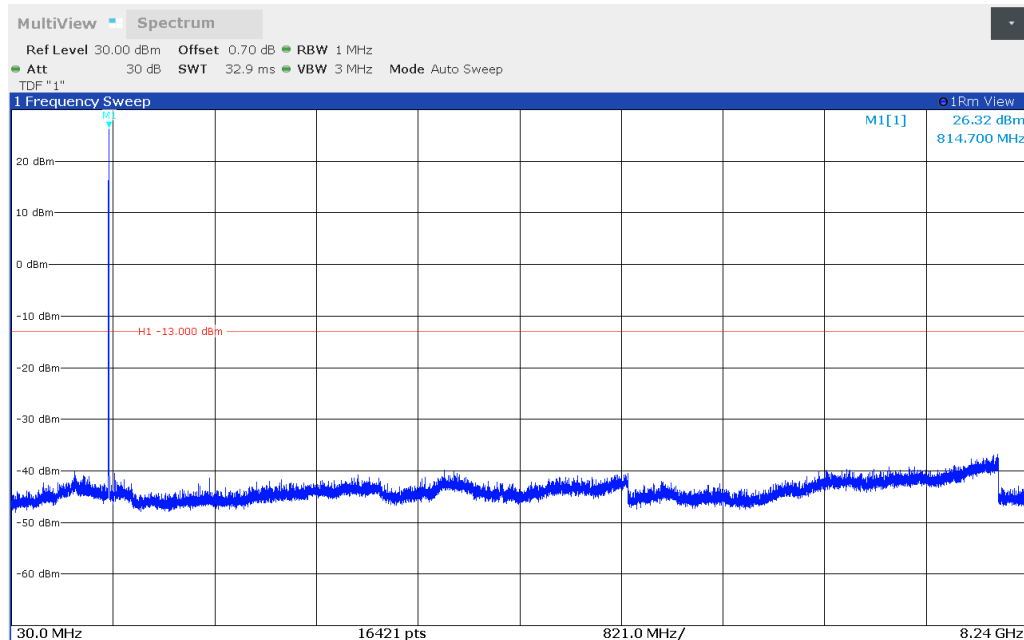




LTE Band 26(814MHz-824MHz): 30MHz – 8.24GHz

Spurious emission limit –13dBm.

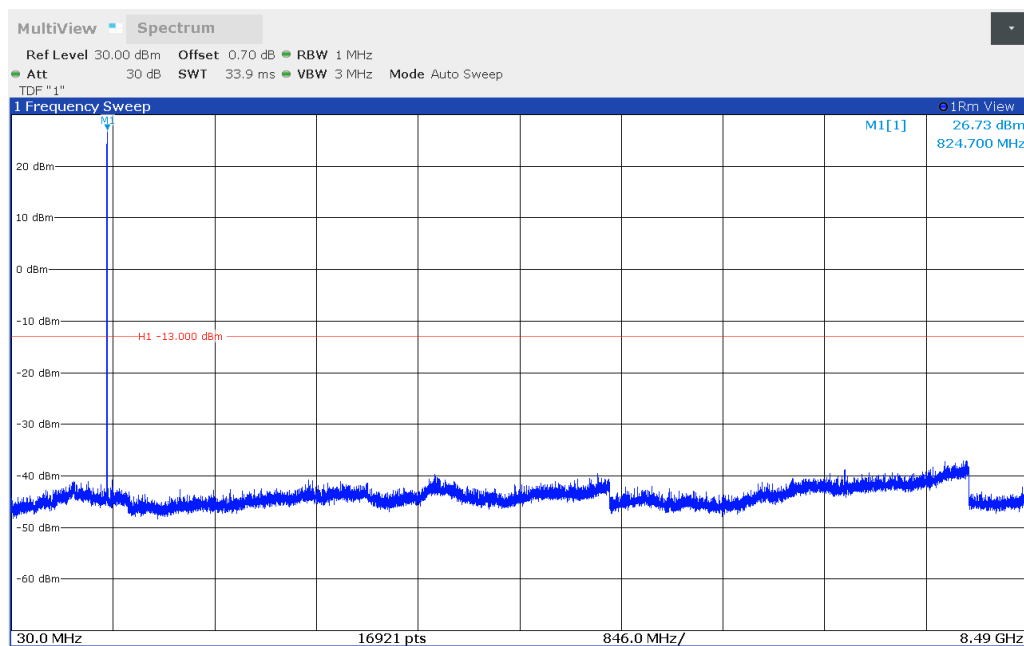
NOTE: peak above the limit line is the carrier frequency.



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

Spurious emission limit –13dBm.

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

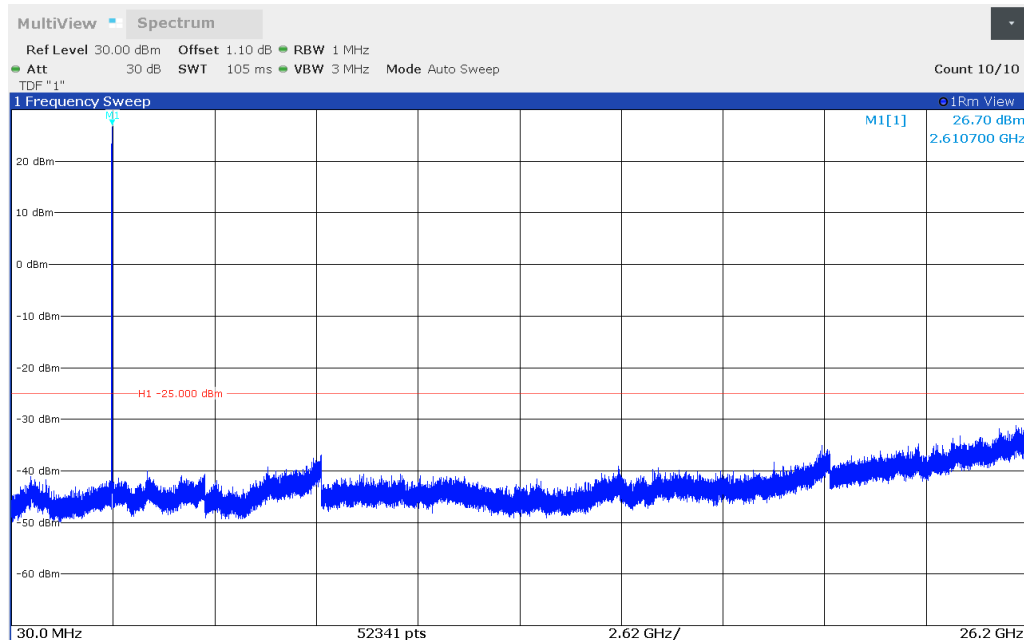




LTE Band 38: 30MHz – 26.2GHz

Spurious emission limit –25dBm.

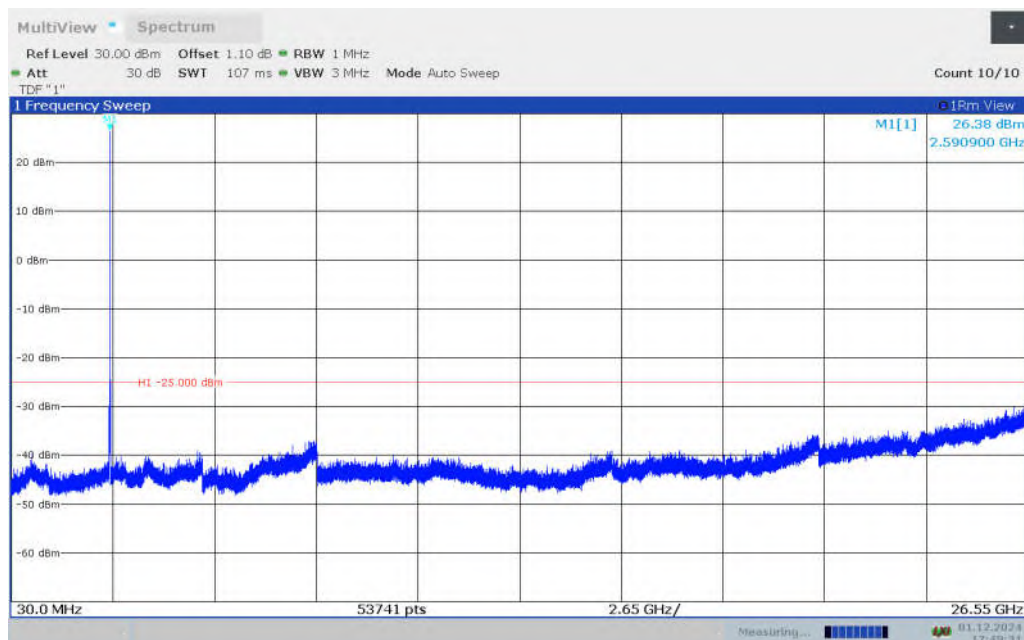
NOTE: peak above the limit line is the carrier frequency.



LTE Band 41: 30MHz – 26.9GHz

Spurious emission limit –25dBm.

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

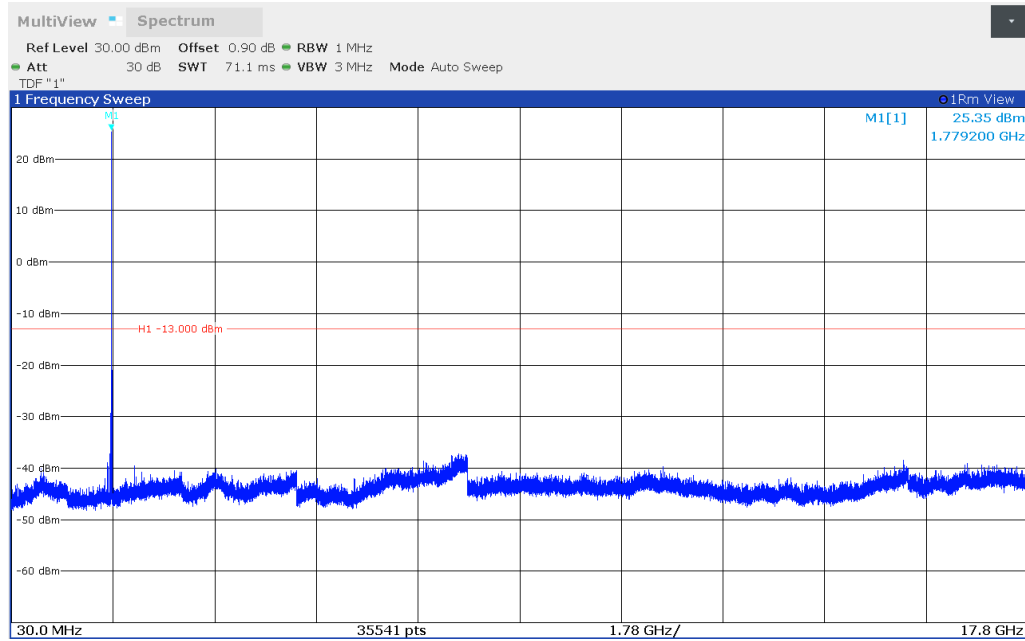




LTE Band 66: 30MHz – 17.8GHz

Spurious emission limit –13dBm.

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



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.

- Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
- Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth;
- Set the number of counts to a value that stabilizes the measured CCDF curve;
- Set the measurement interval to 1 ms
- 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

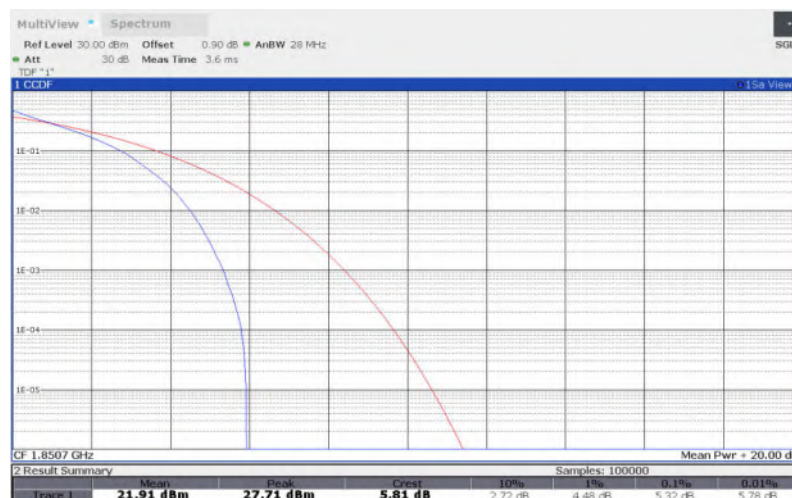
Only worst case result is given below

LTE Band 2

LTE Band 2, 1.4MHz

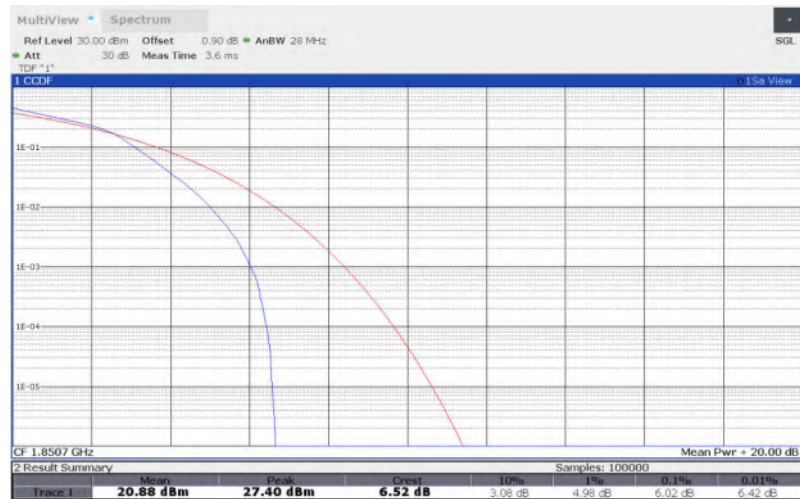
Frequency(MHz)	RB	PAPR(dB)		
		QPSK	16QAM	64QAM
1850.7	100%,0	5.32	6.02	5.62
1880	100%,0	5.58	6.28	6.14
1909.3	100%,0	4.86	5.64	5.24

LTE Band 2 , 1.4MHz Bandwidth,QPSK

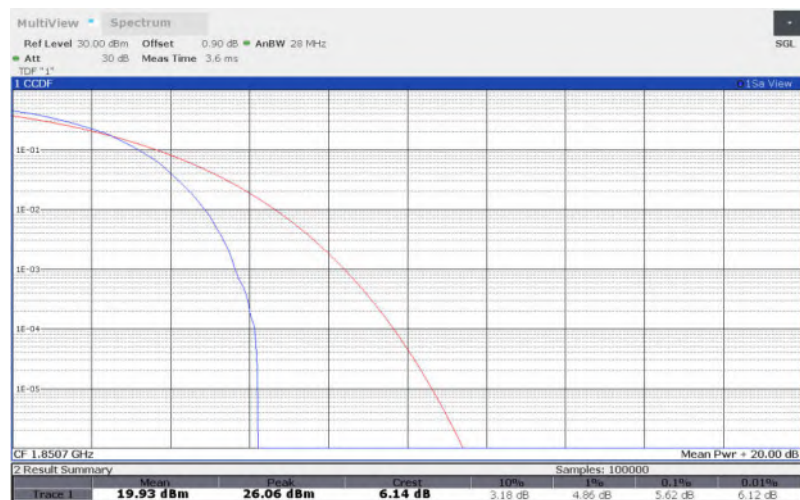




LTE Band 2 , 1.4MHz Bandwidth,16QAM



LTE Band 2 , 1.4MHz Bandwidth,64QAM



LTE Band 2 , 1.4MHz Bandwidth,QPSK