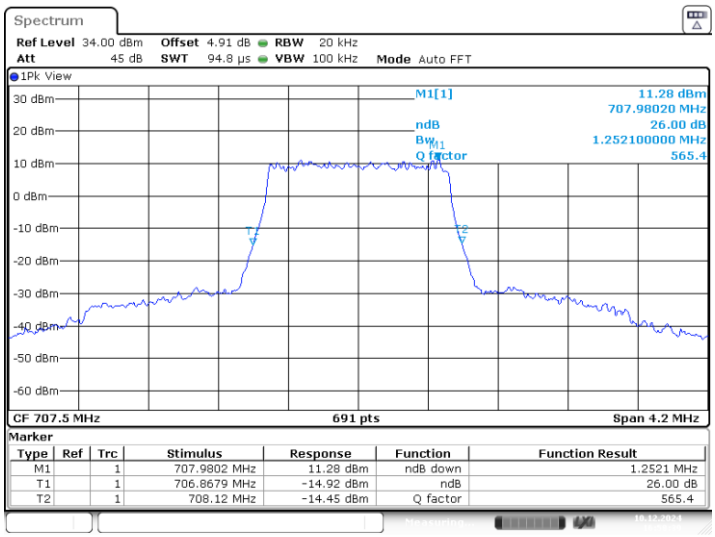
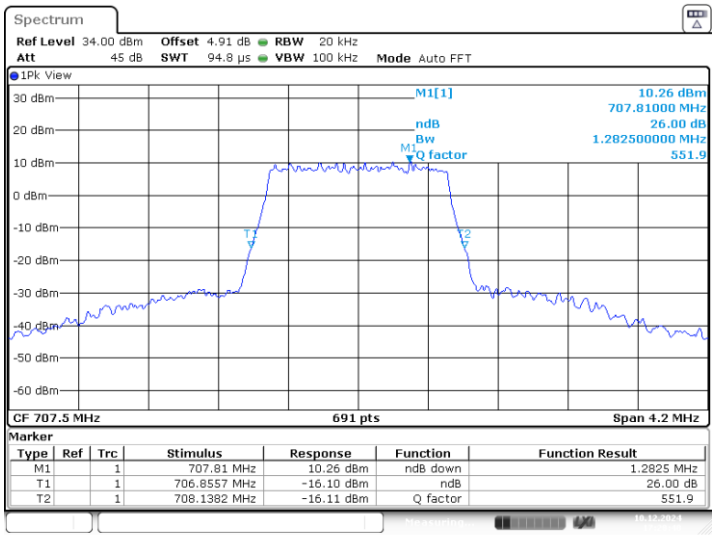
LTE band 12,1.4MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
707.5	1.252	1.282

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



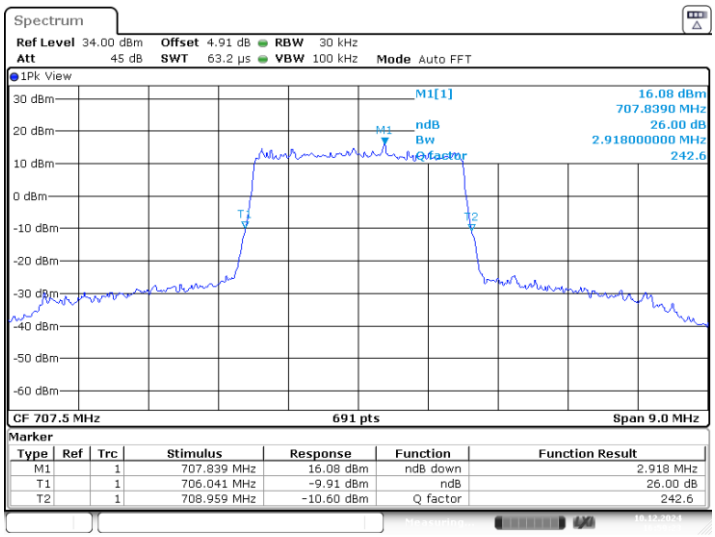
LTE band 12 , 1.4MHz Bandwidth,MID,16QAM (-26dBc BW)



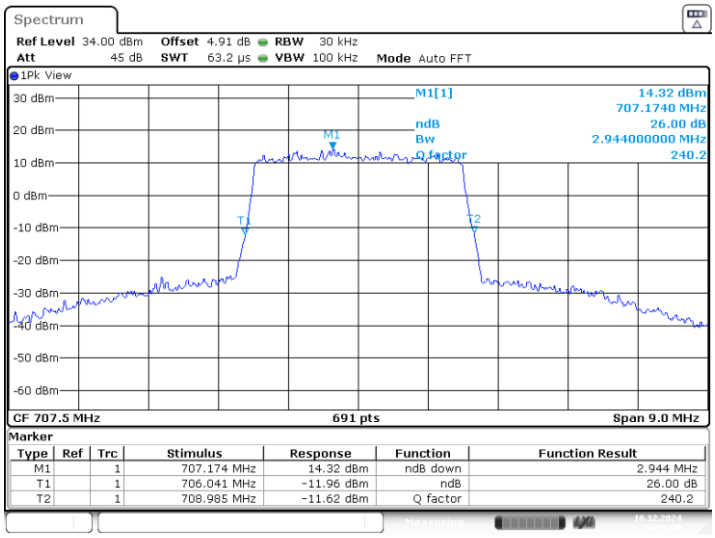
LTE band 12,3MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
707.5	2.918	2.944

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



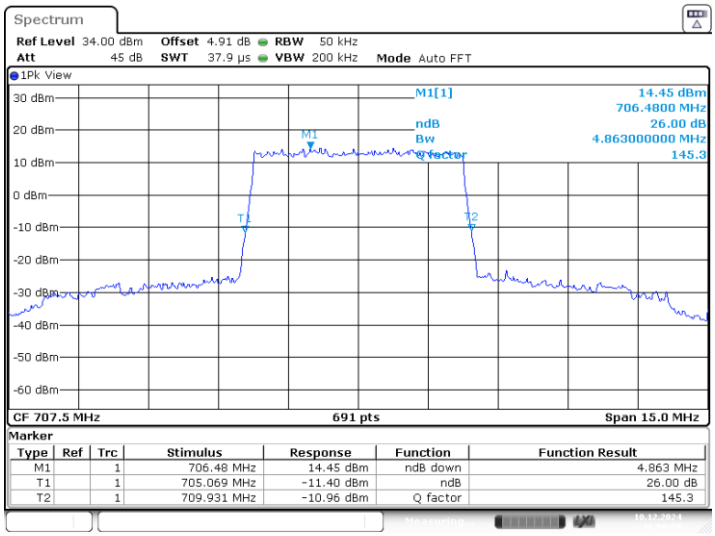
LTE band 12 , 3MHz Bandwidth,MID,16QAM (-26dBc BW)



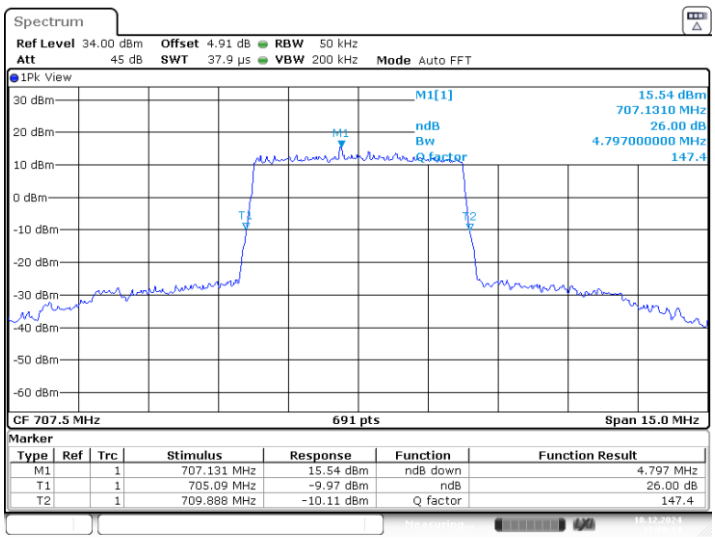
LTE band 12,5MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
707.5	4.863	4.797

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



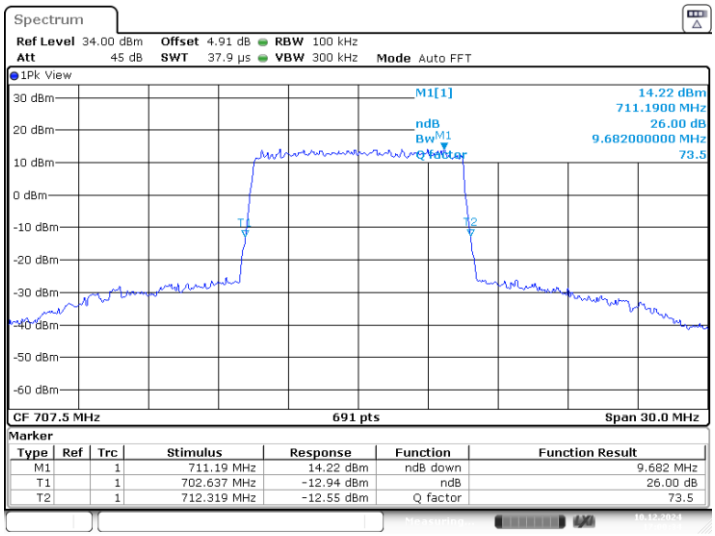
LTE band 12 , 5MHz Bandwidth,MID,16QAM (-26dBc BW)



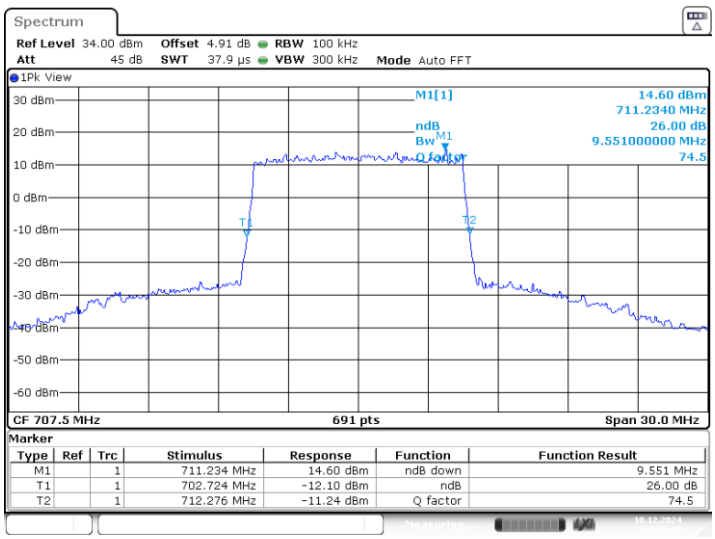
LTE band 12,10MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
707.5	9.682	9.551

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



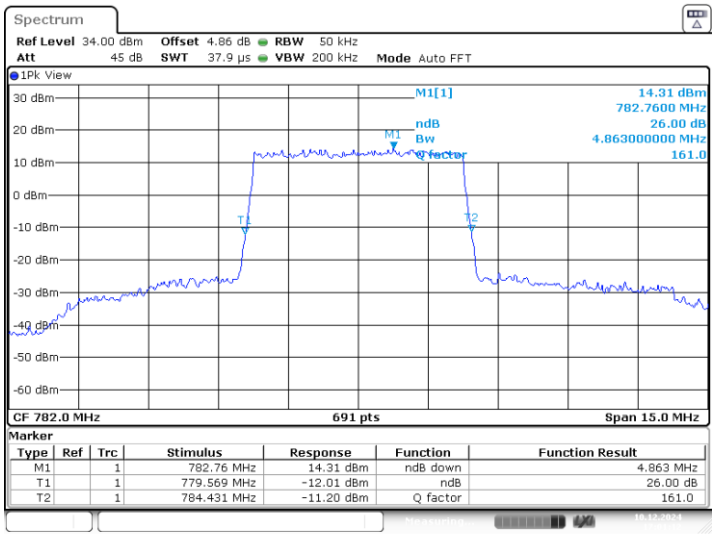
LTE band 12 , 10MHz Bandwidth,MID,16QAM (-26dBc BW)



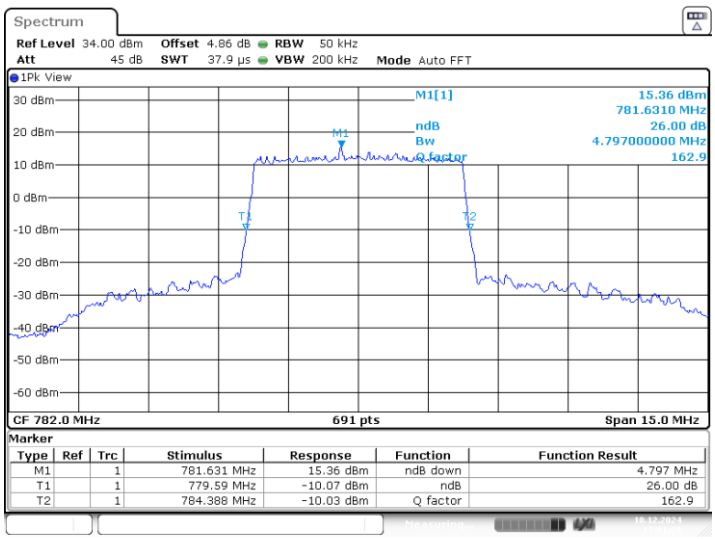
LTE band 13,5MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
782	4.863	4.797

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



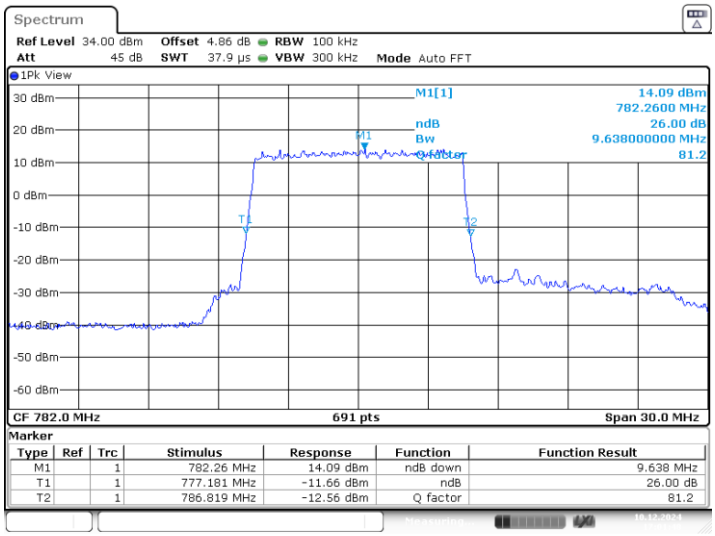
LTE band 13 , 5MHz Bandwidth,MID,16QAM (-26dBc BW)



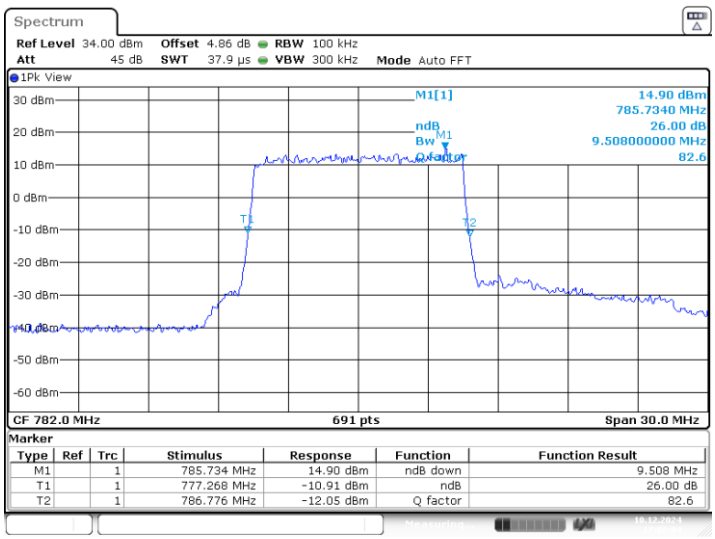
LTE band 13,10MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
782	9.638	9.508

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



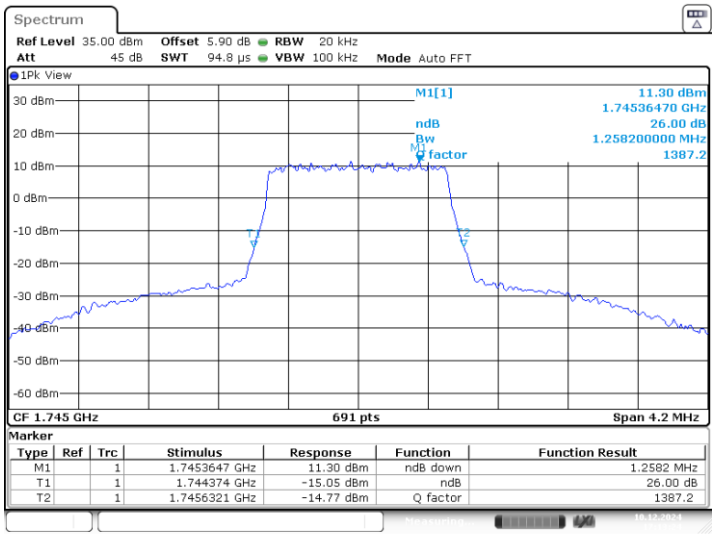
LTE band 13 , 10MHz Bandwidth,MID,16QAM (-26dBc BW)



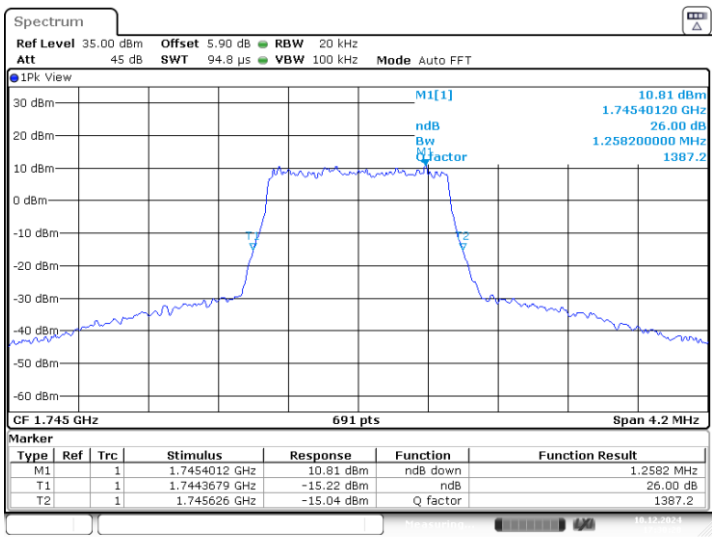
LTE band 66,1.4MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1745	1.258	1.258

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



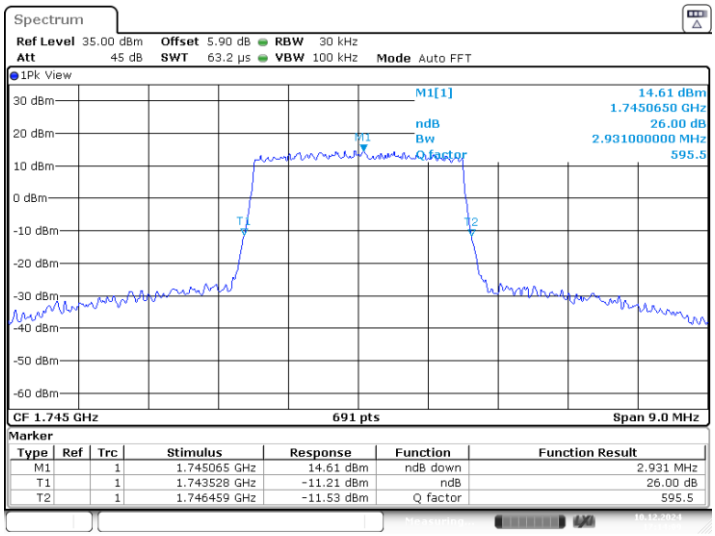
LTE band 66 , 1.4MHz Bandwidth,MID,16QAM (-26dBc BW)



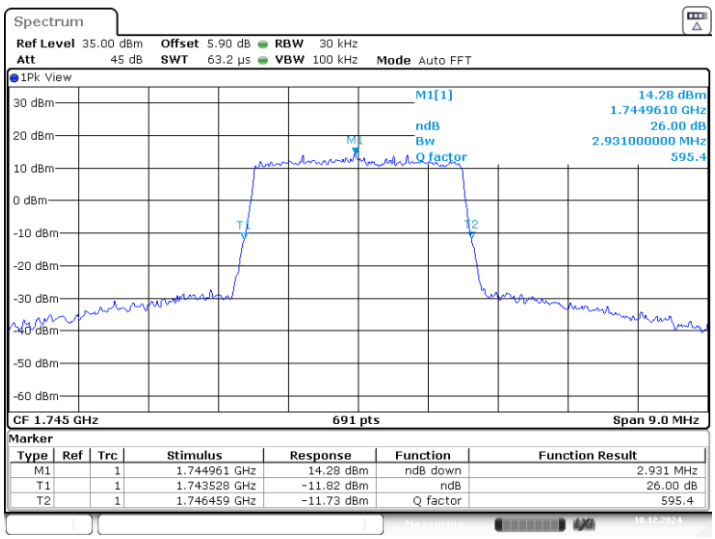
LTE band 66,3MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1745	2.931	2.931

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



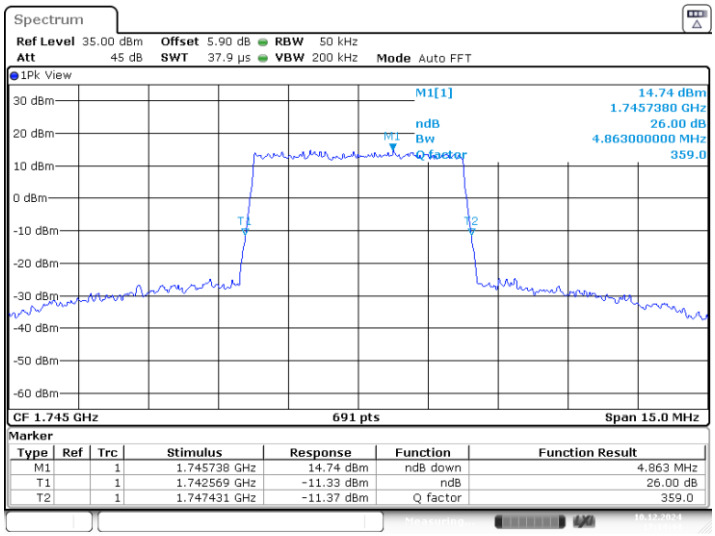
LTE band 66 , 3MHz Bandwidth,MID,16QAM (-26dBc BW)



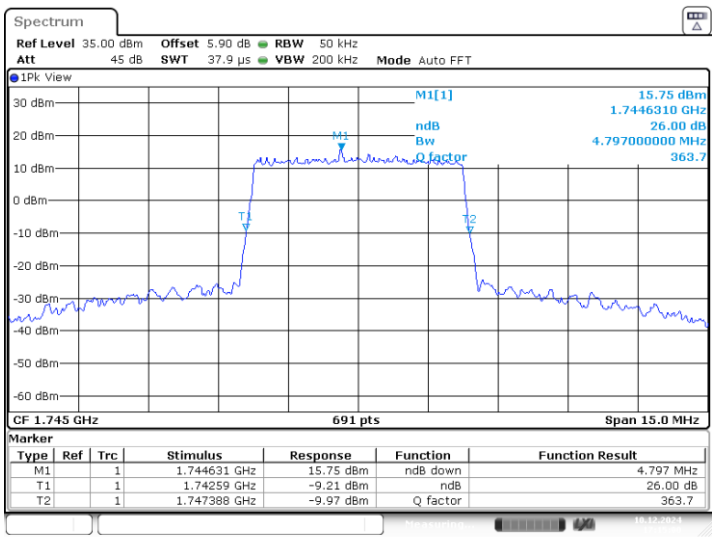
LTE band 66,5MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1745	4.863	4.797

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



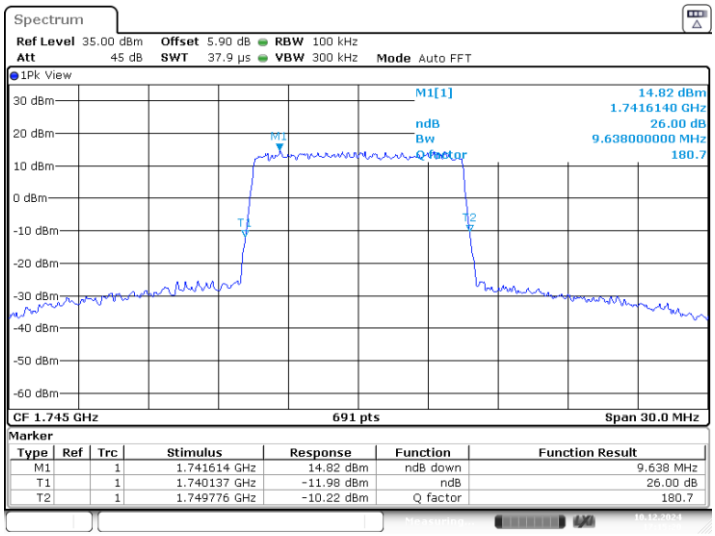
LTE band 66 , 5MHz Bandwidth,MID,16QAM (-26dBc BW)



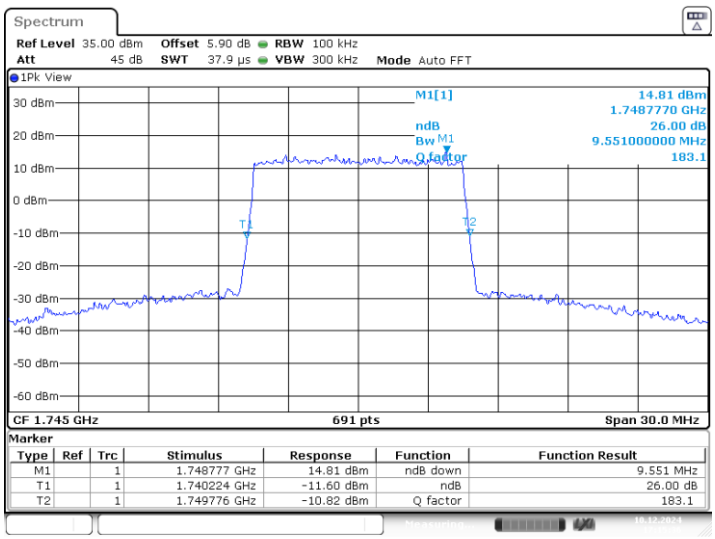
LTE band 66,10MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1745	9.638	9.551

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



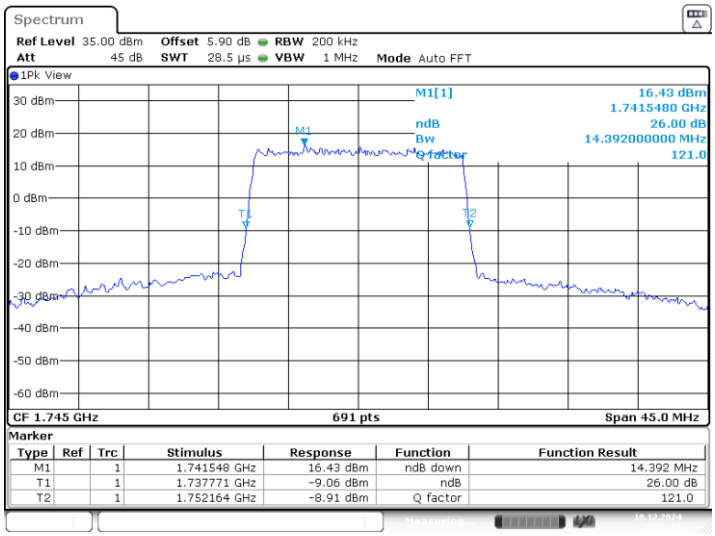
LTE band 66 , 10MHz Bandwidth,MID,16QAM (-26dBc BW)



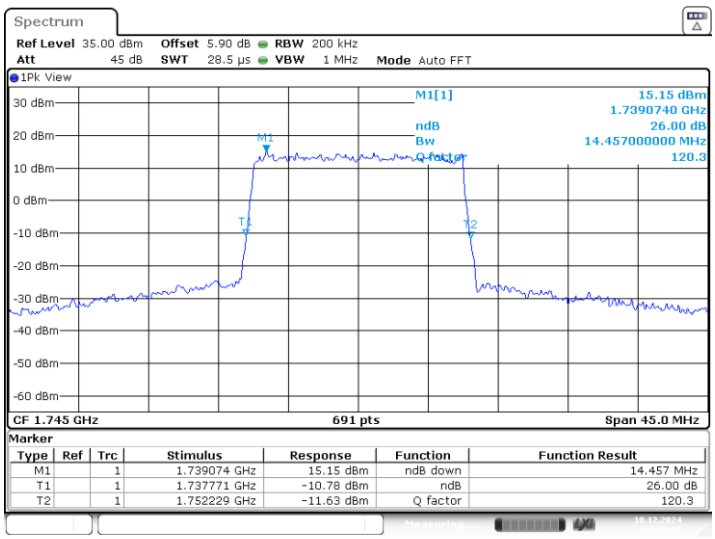
LTE band 66,15MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1745	14.392	14.457

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



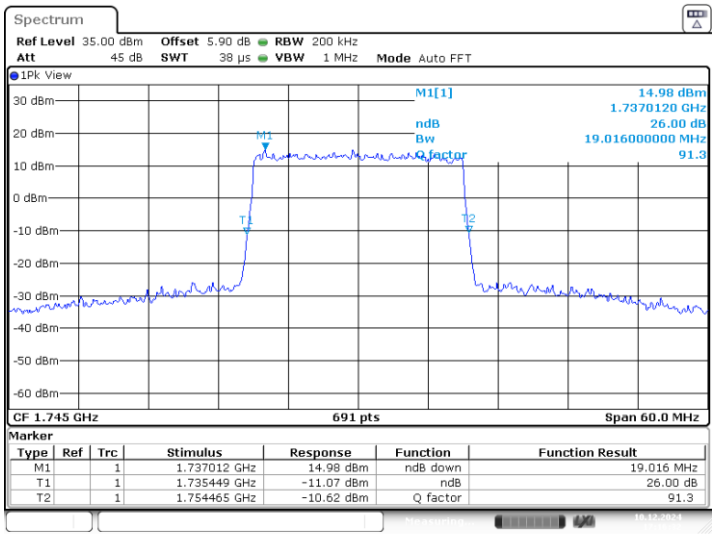
LTE band 66 , 15MHz Bandwidth,MID,16QAM (-26dBc BW)



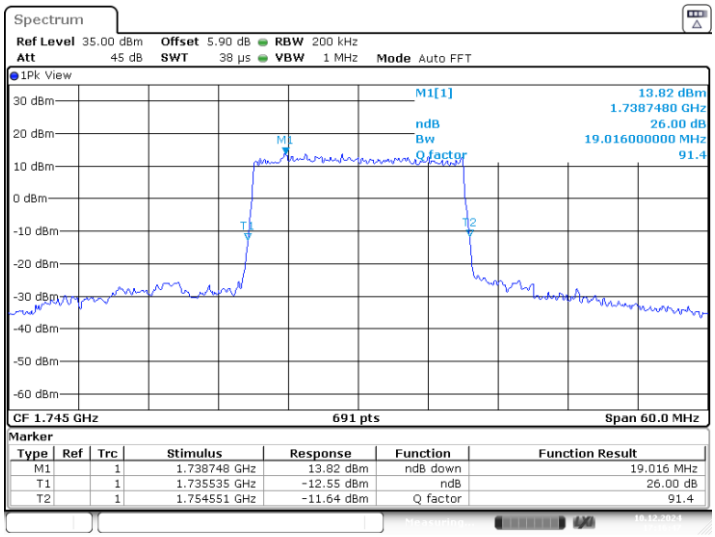
LTE band 66,20MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1745	19.016	19.016

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



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



A.6 Band Edge Compliance

A.6.1 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.

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 + 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.

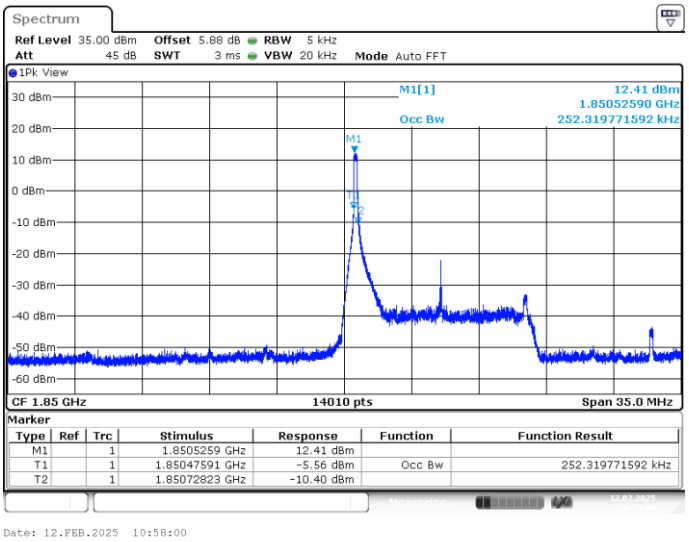
Part 27.53(c) states for operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

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.

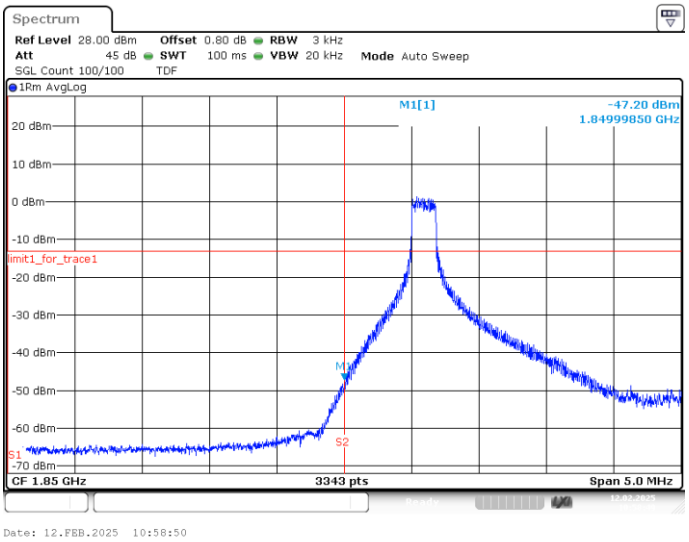
A.6.2 Measurement result

LTE band 2

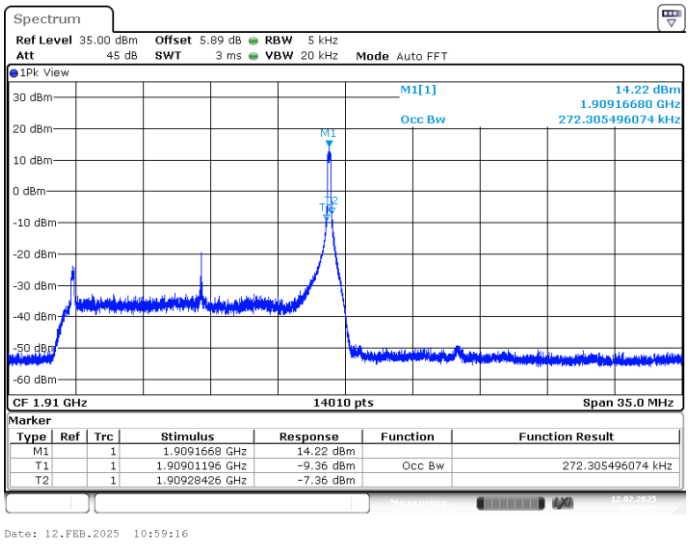
OBW: 1RB-LOW_offset



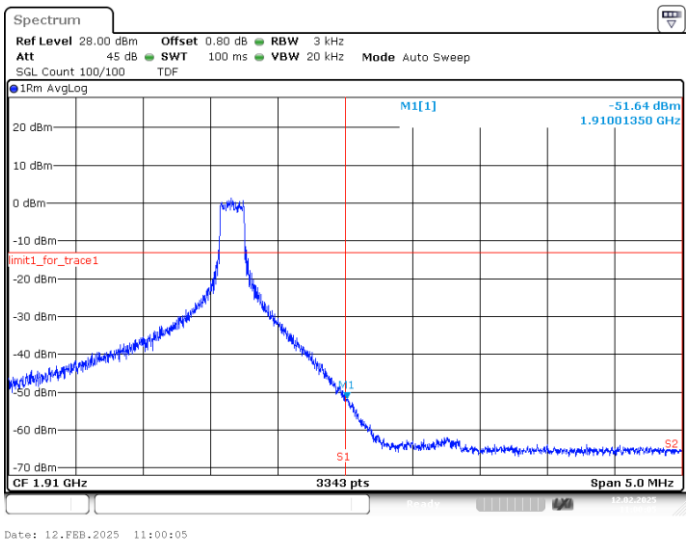
LOW BAND EDGE BLOCK-1RB-LOW_offset



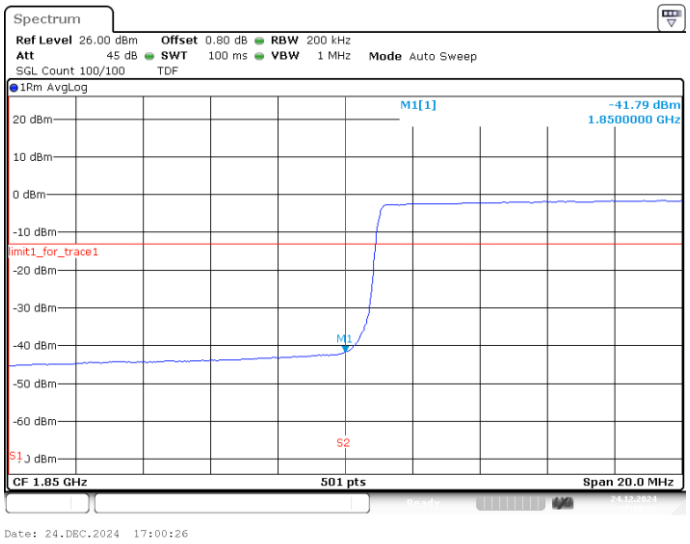
OBW: 1RB-HIGH_offset



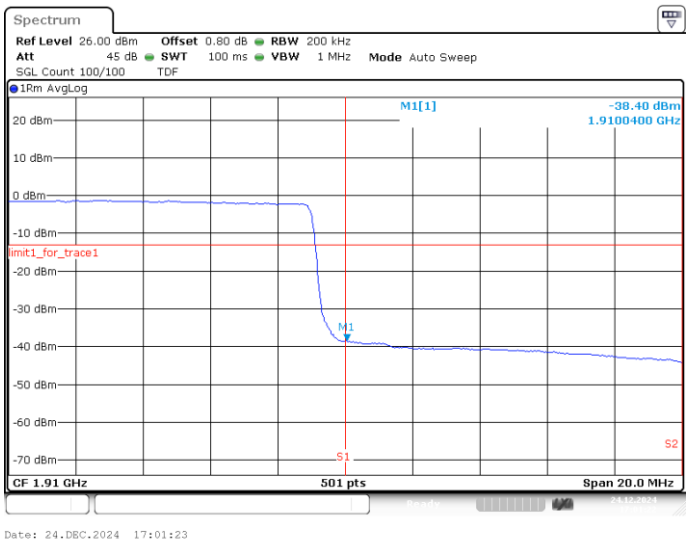
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-20MHz-100%RB

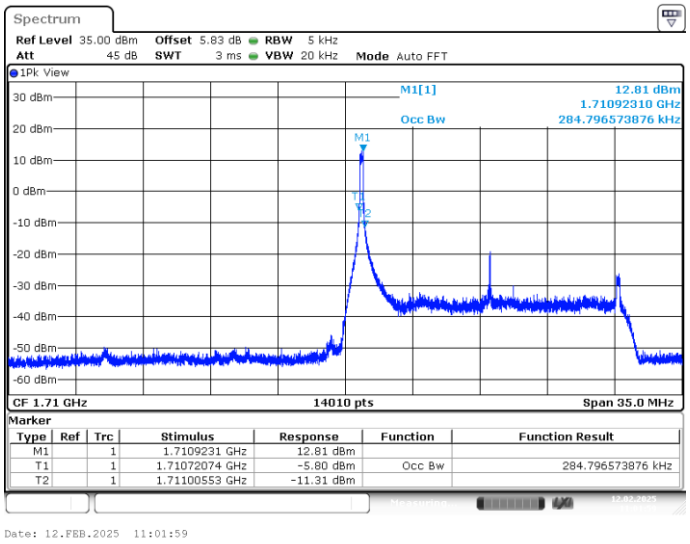


HIGH BAND EDGE BLOCK-20MHz-100%RB

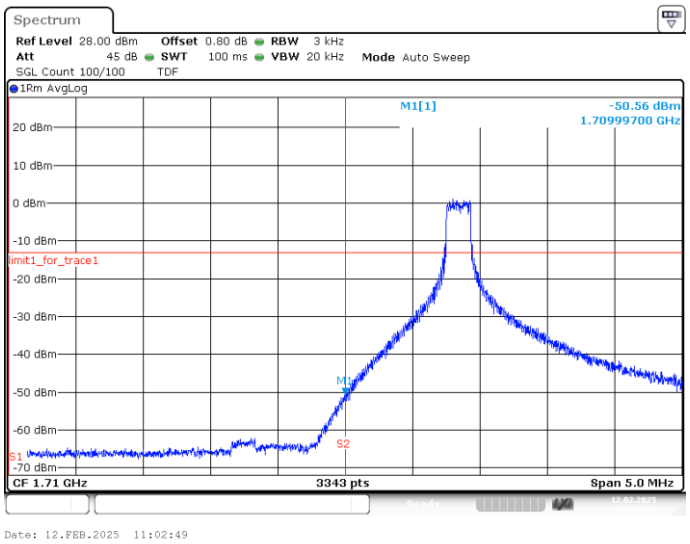


LTE band 4

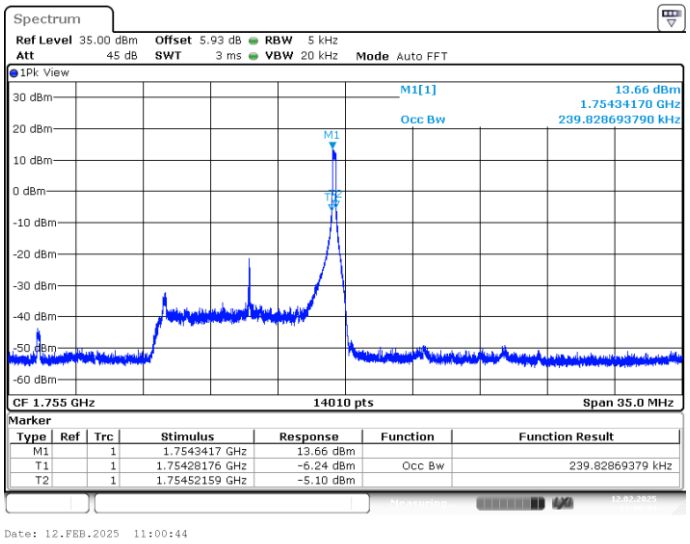
OBW: 1RB-LOW_offset



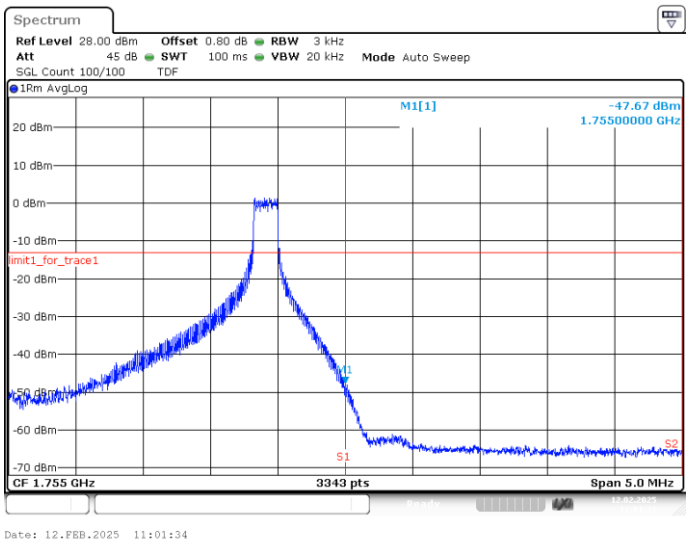
LOW BAND EDGE BLOCK-1RB-LOW_offset



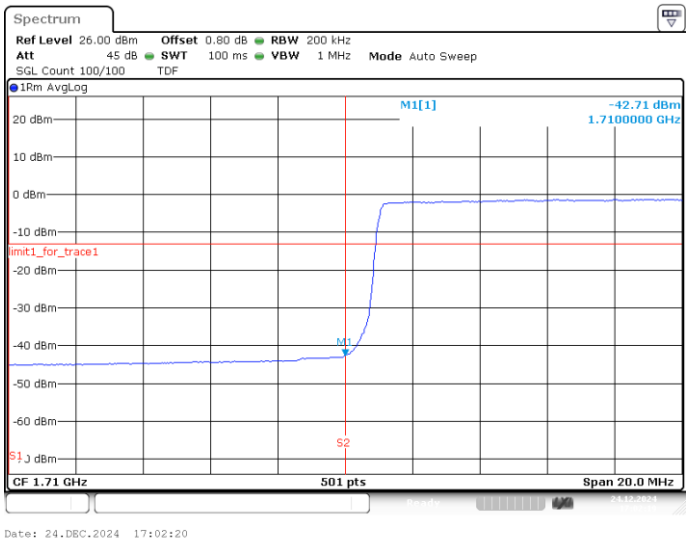
OBW: 1RB-HIGH_offset



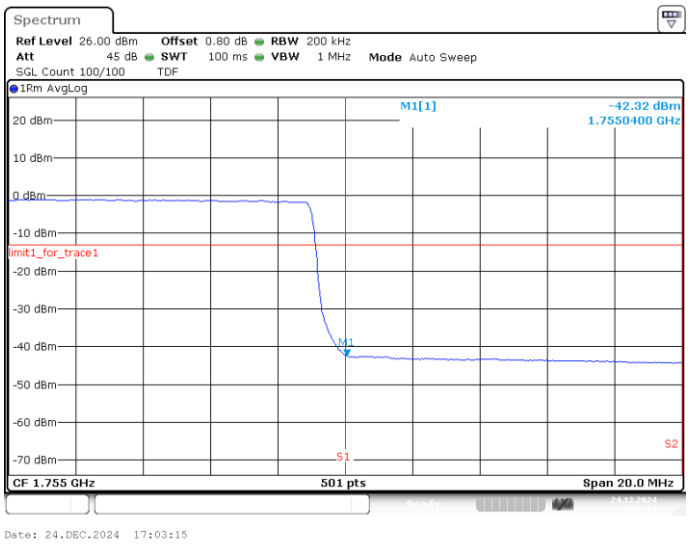
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-20MHz-100%RB

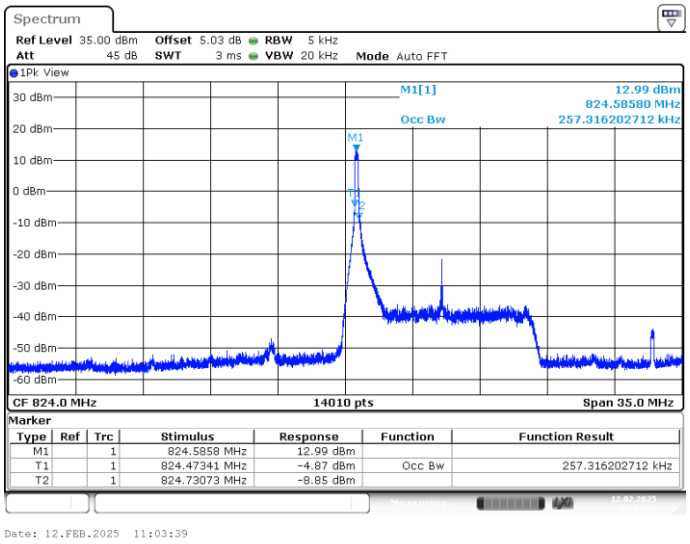


HIGH BAND EDGE BLOCK-20MHz-100%RB

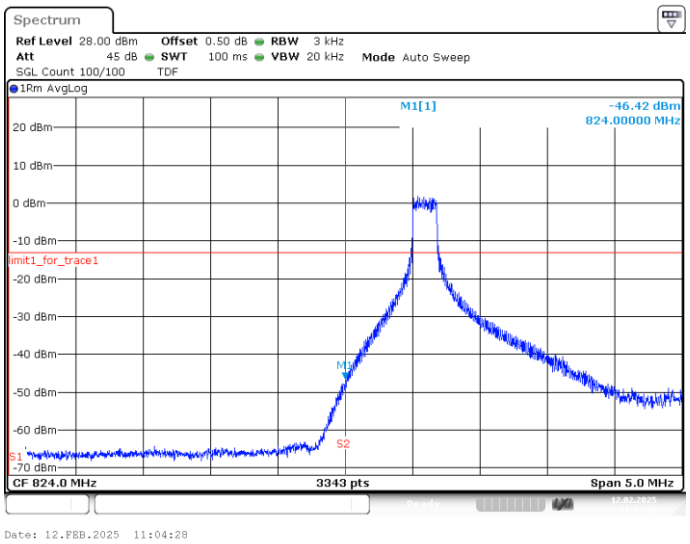


LTE band 5

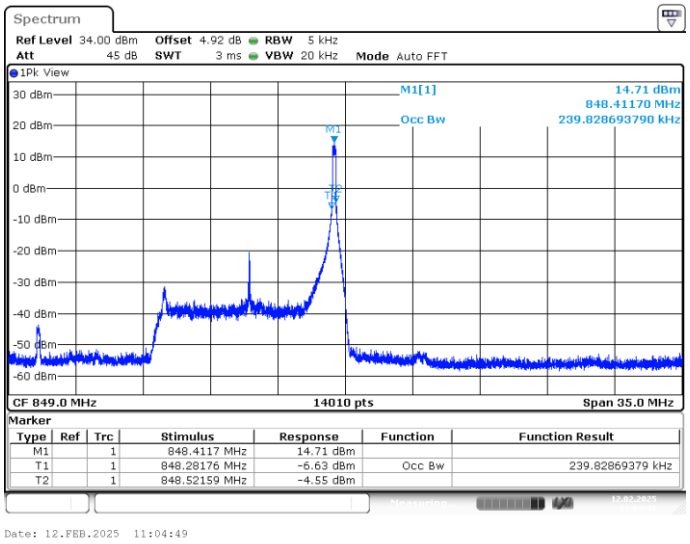
OBW: 1RB-LOW_offset



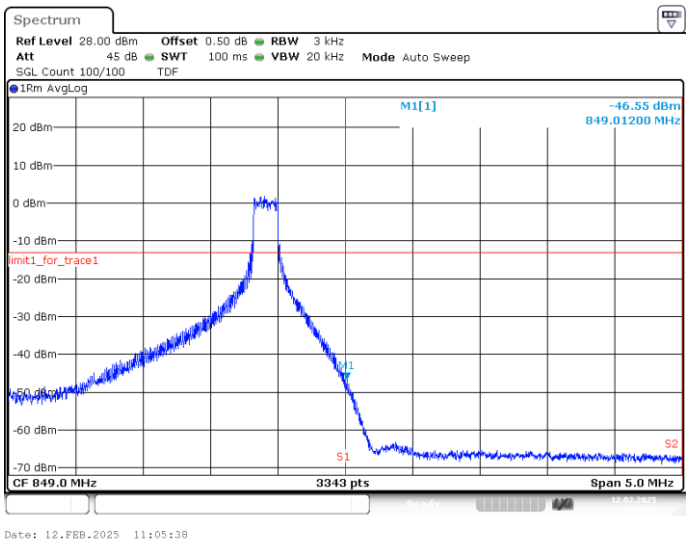
LOW BAND EDGE BLOCK-1RB-LOW_offset



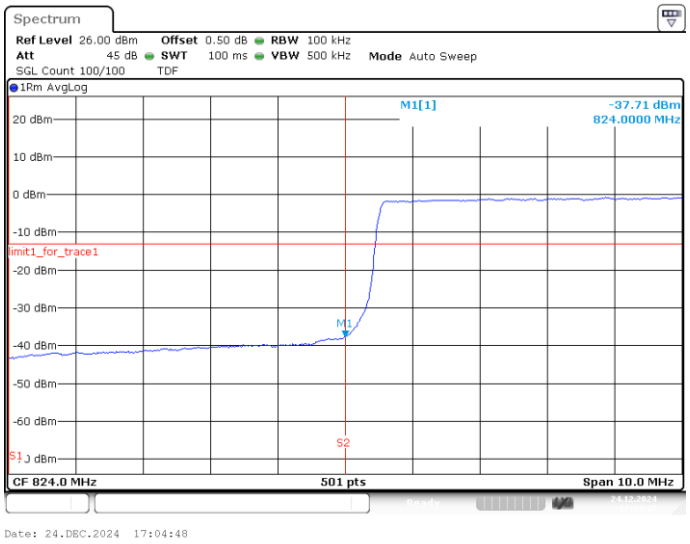
OBW: 1RB-HIGH_offset



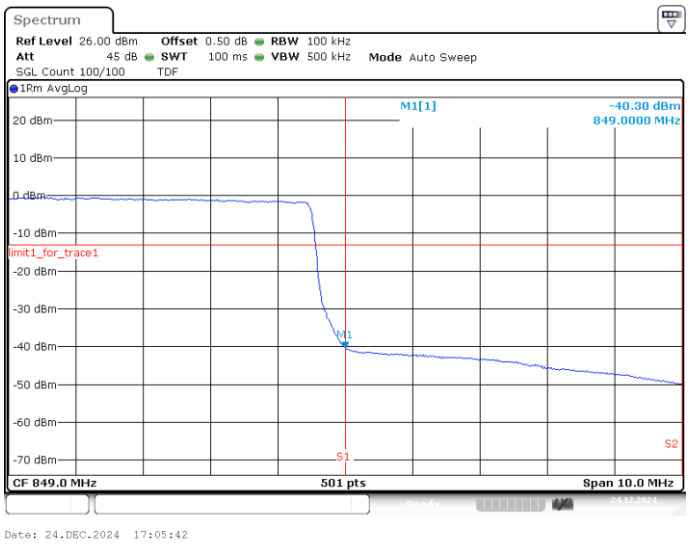
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-10MHz-100%RB

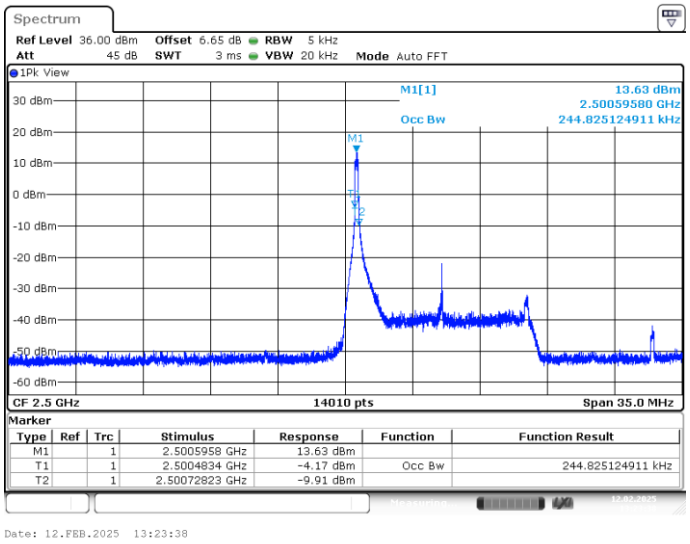


HIGH BAND EDGE BLOCK-10MHz-100%RB

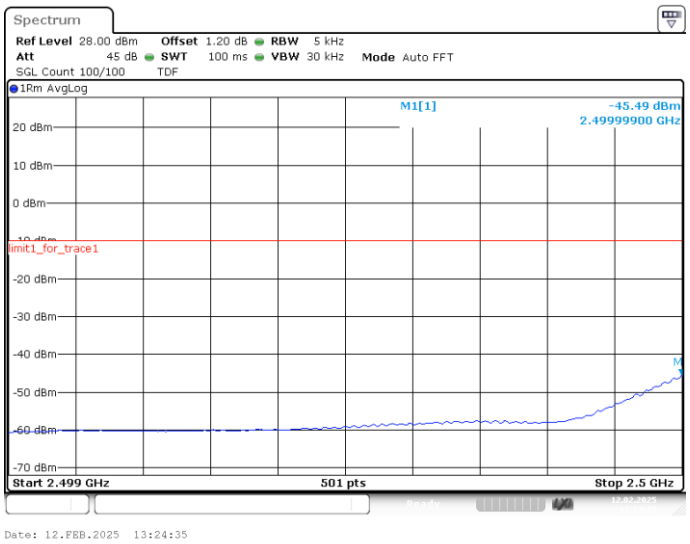


LTE band 7

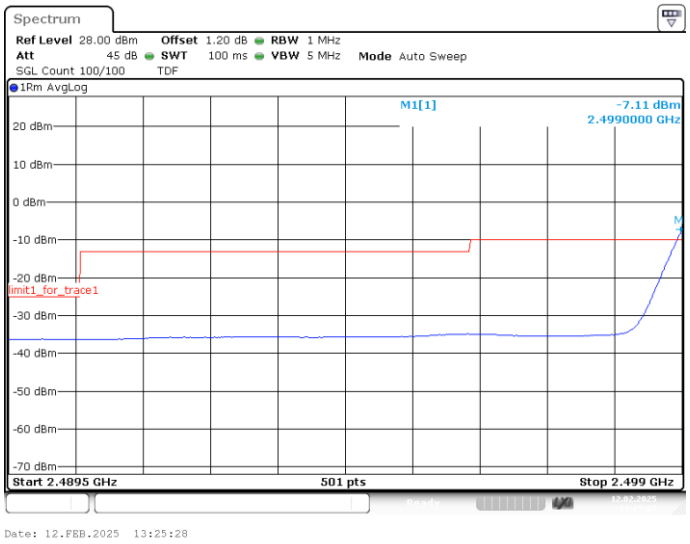
OBW: 1RB-LOW_offset



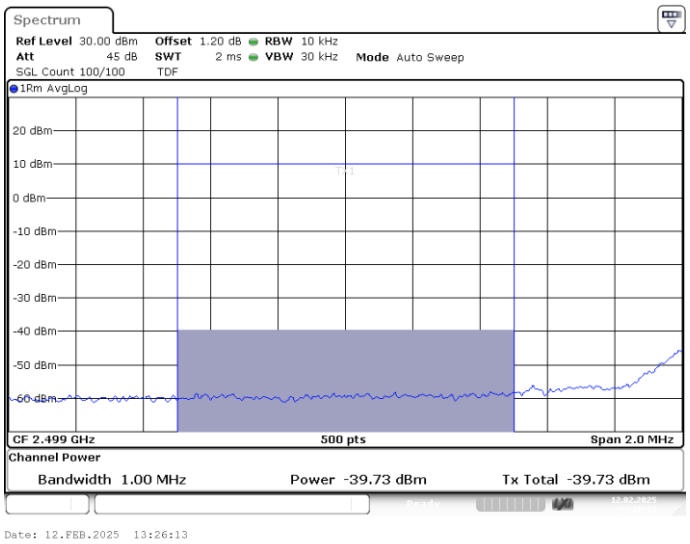
LOW BAND EDGE BLOCK-1RB-LOW_offset



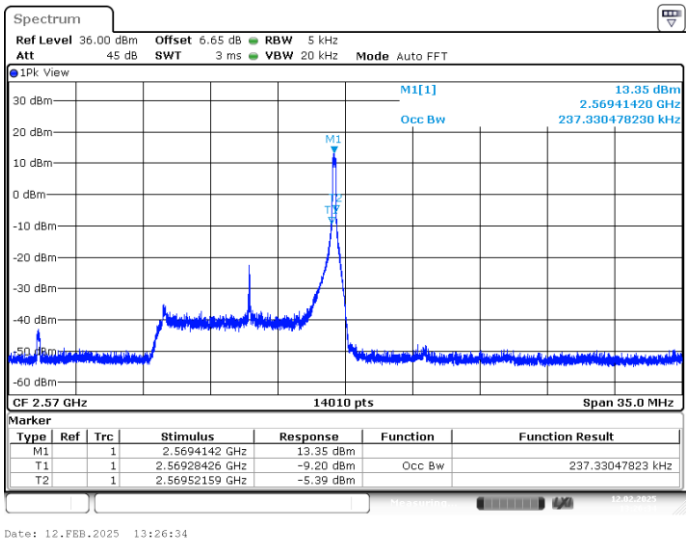
LOW BAND EDGE BLOCK-1RB-LOW_offset



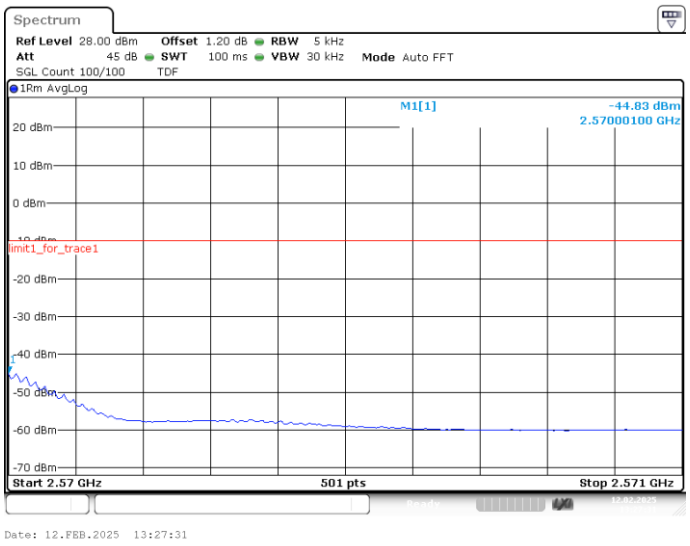
Channel power



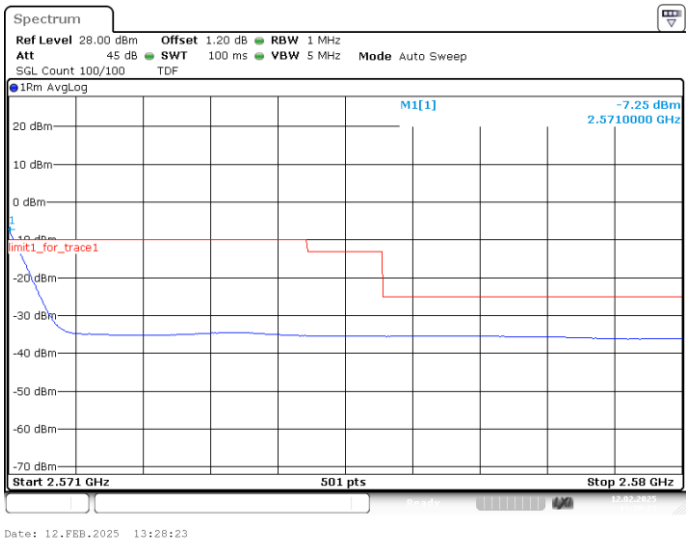
OBW: 1RB-HIGH_offset



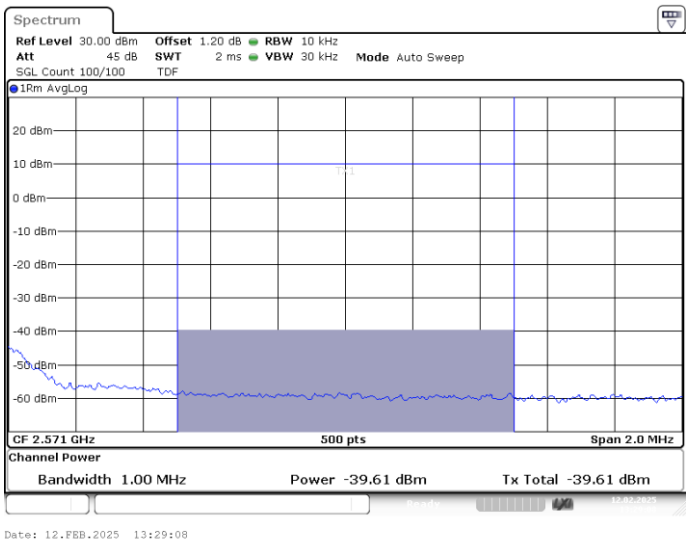
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



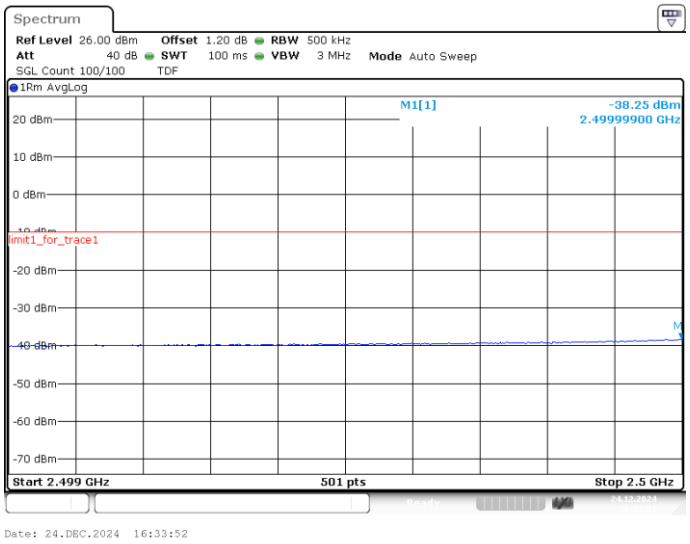
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



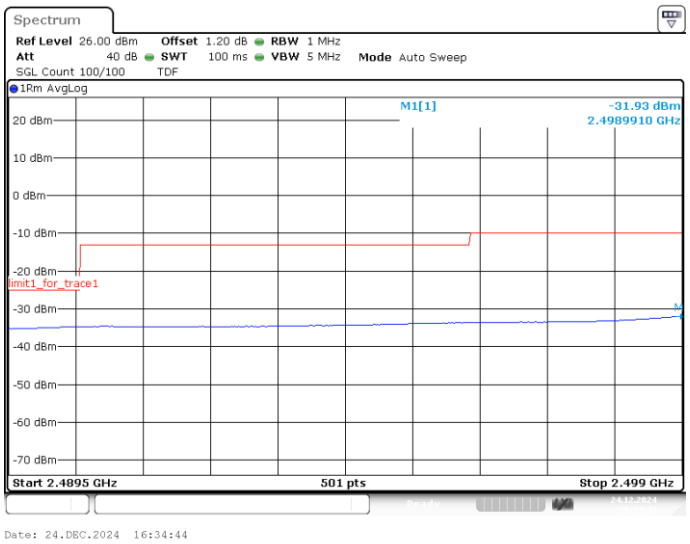
Channel power



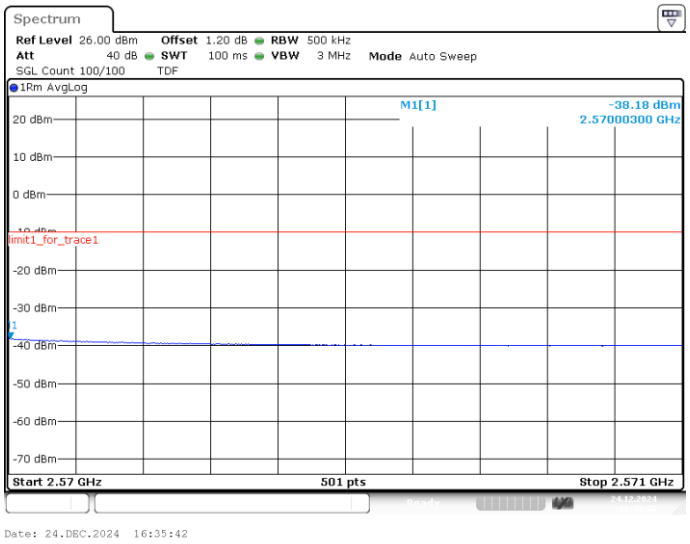
LOW BAND EDGE BLOCK-20MHz-100%RB



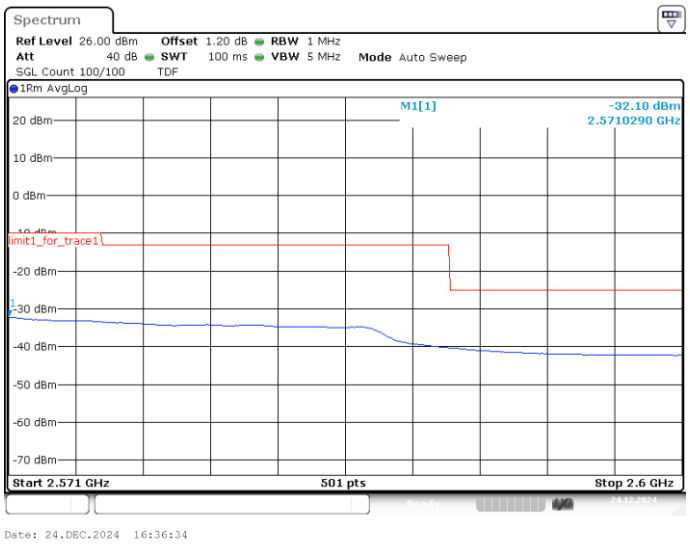
LOW BAND EDGE BLOCK-20MHz-100%RB



HIGH BAND EDGE BLOCK-20MHz-100%RB

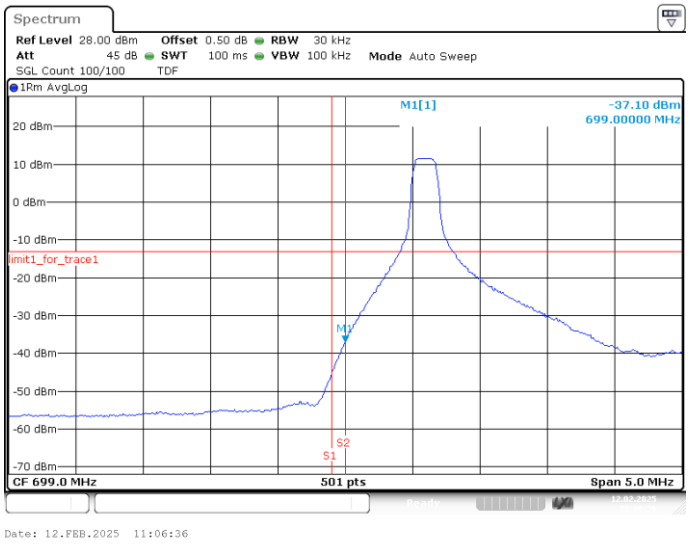


HIGH BAND EDGE BLOCK-20MHz-100%RB

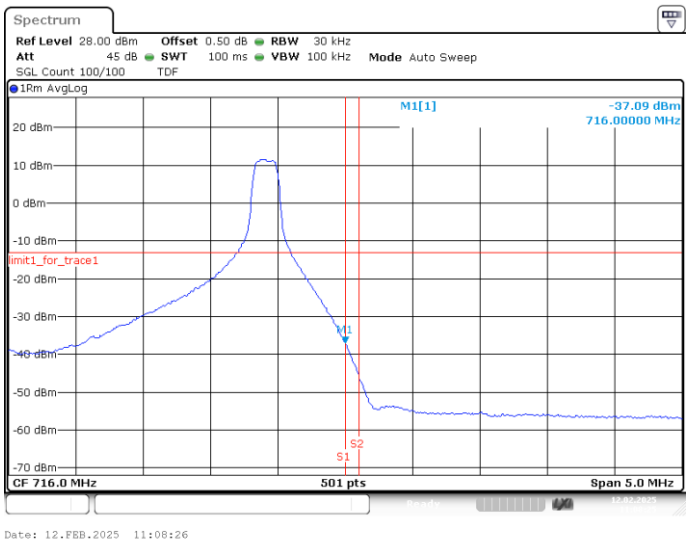


LTE band 12

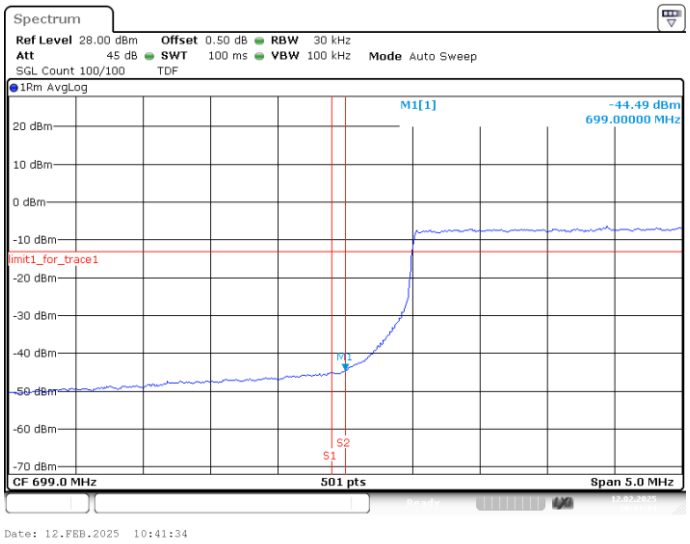
LOW BAND EDGE BLOCK-1RB-LOW_offset



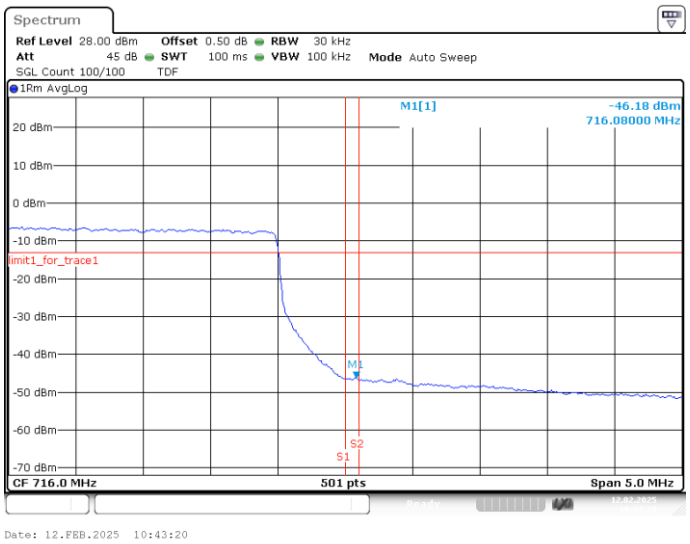
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-10MHz-100%RB

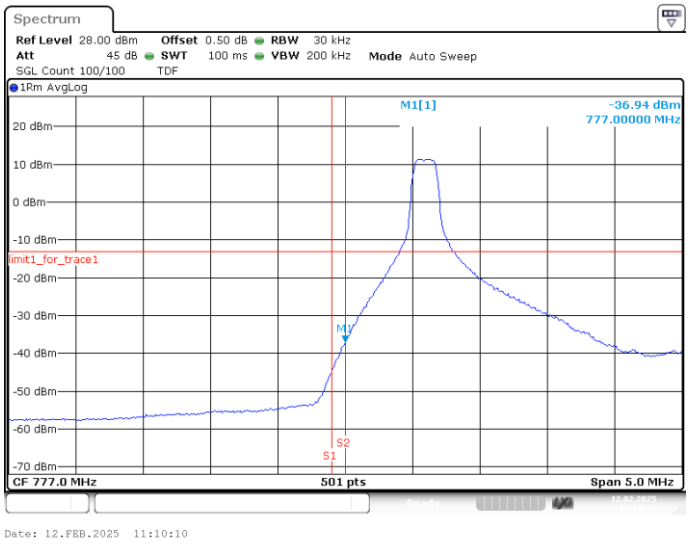


HIGH BAND EDGE BLOCK-10MHz-100%RB

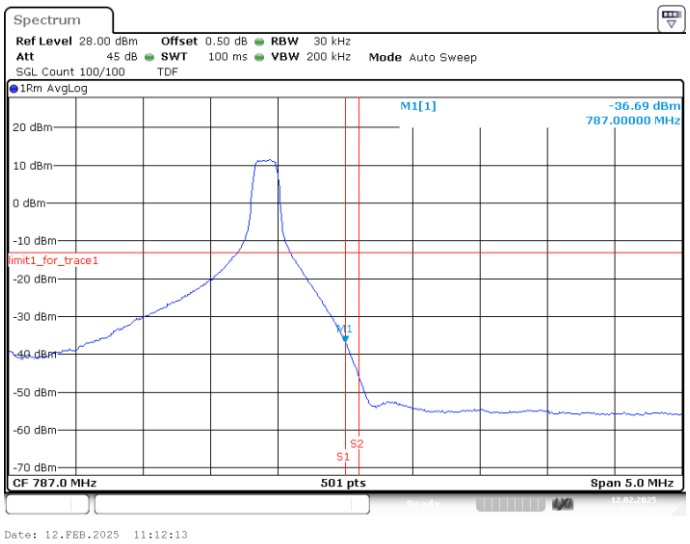


LTE band 13

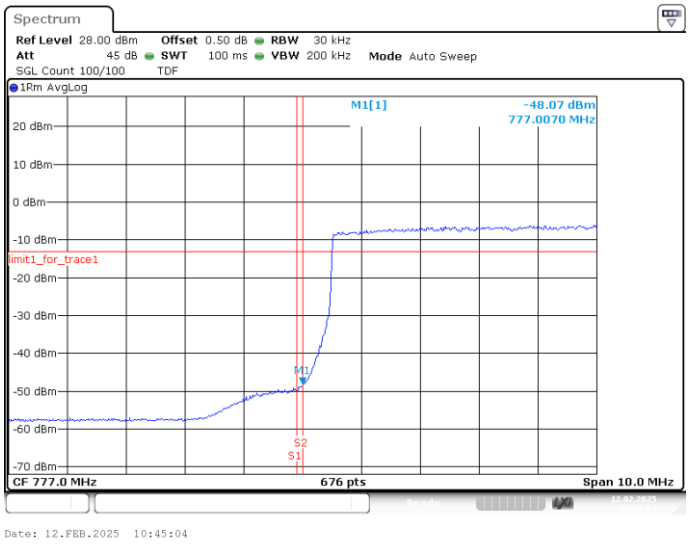
LOW BAND EDGE BLOCK-1RB-LOW_offset



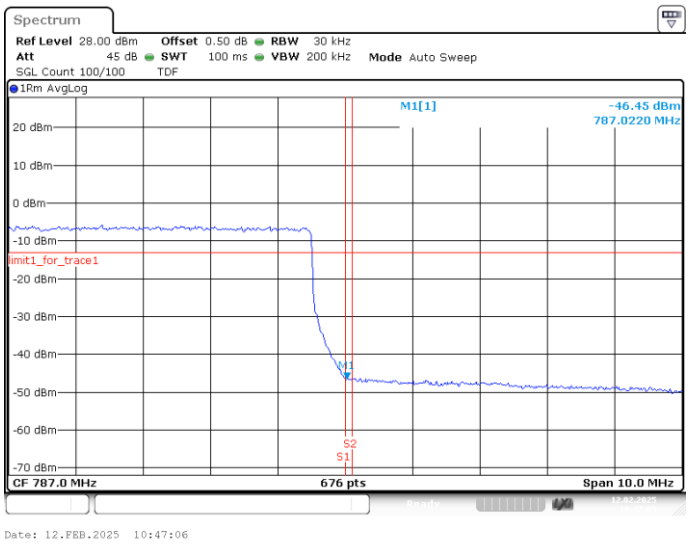
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-10MHz-100%RB

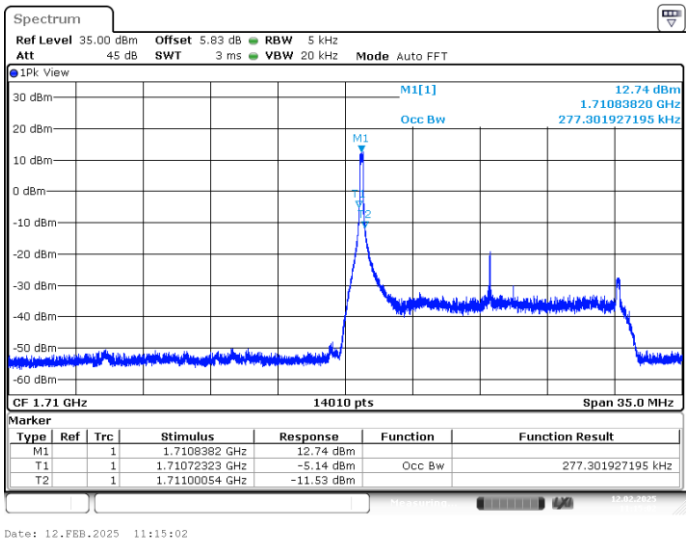


HIGH BAND EDGE BLOCK-10MHz-100%RB

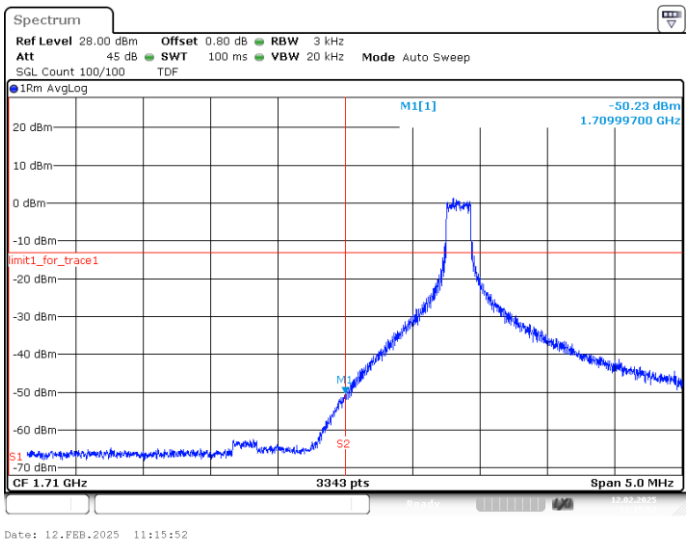


LTE band 66

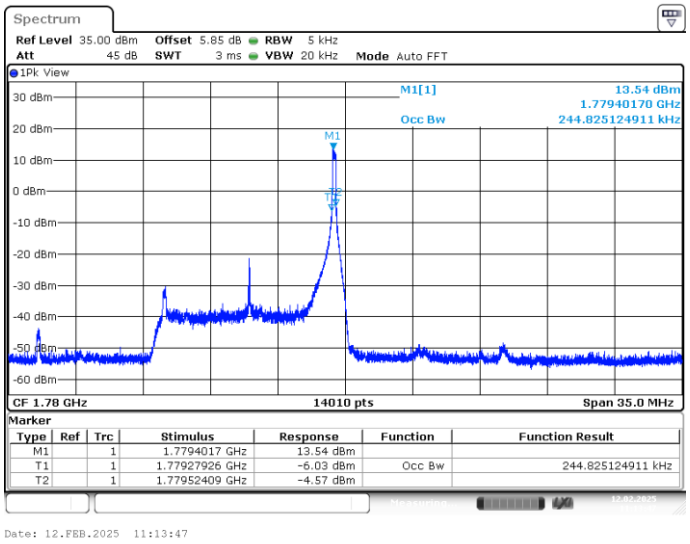
OBW: 1RB-LOW_offset



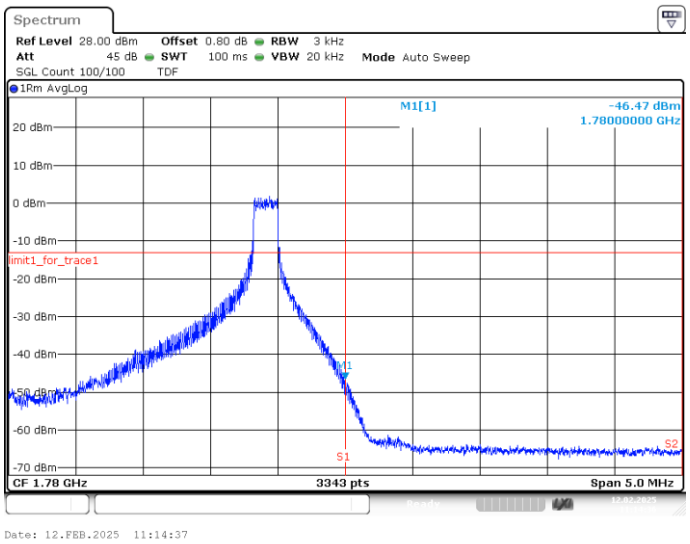
LOW BAND EDGE BLOCK-1RB-LOW_offset



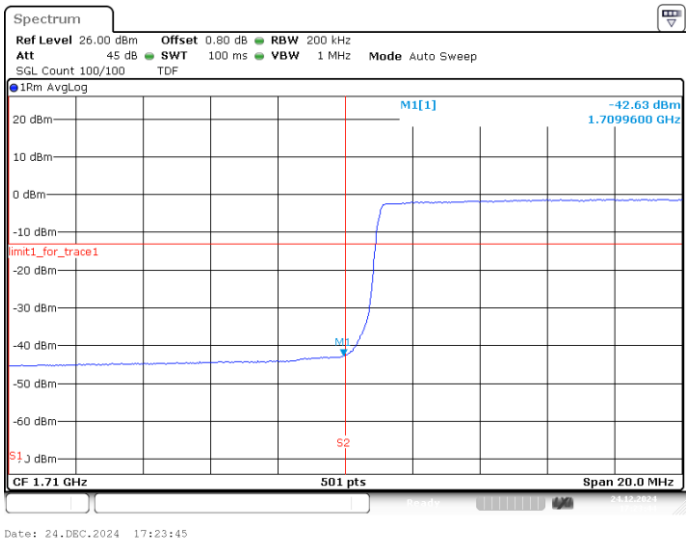
OBW: 1RB-HIGH_offset



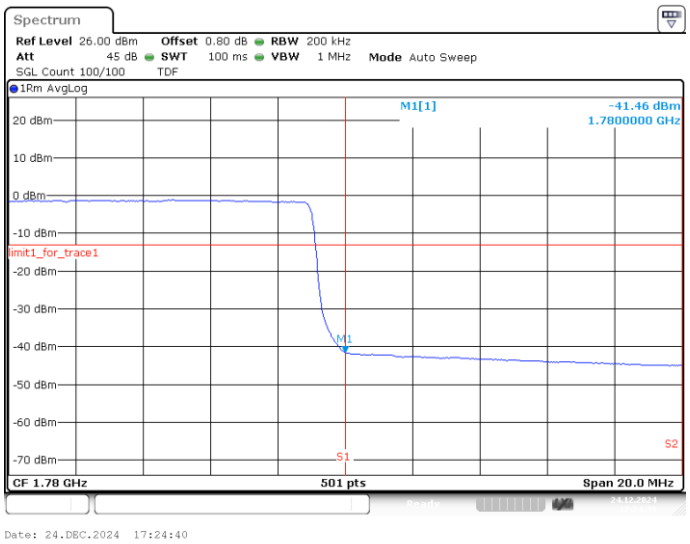
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-20MHz-100%RB



HIGH BAND EDGE BLOCK-20MHz-100%RB



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×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.

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 + 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(c) states for operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the 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, in accordance with the following:(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

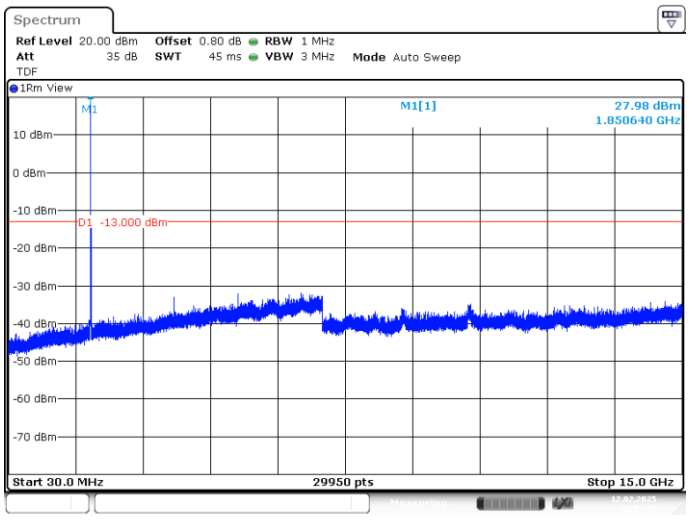
Part 27.53(f) states for operations in the 746–758 MHz,775–788 MHz, and 805–806 MHz bands, emissions in the band 1559–1610 MHz shall be limited to -70dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals.

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.

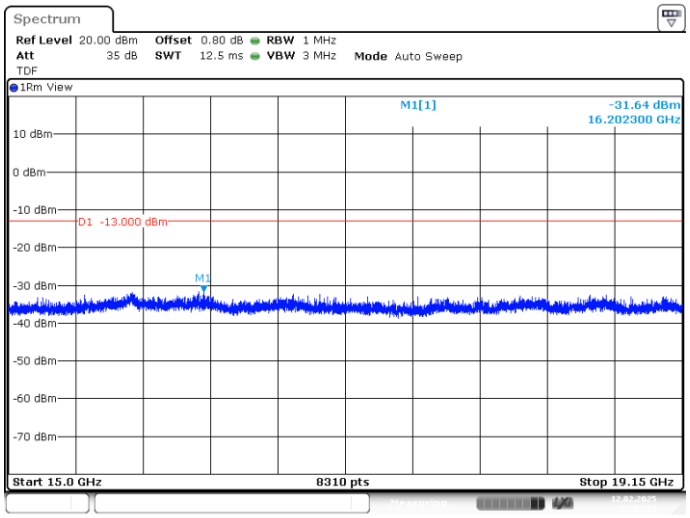
A.7.3 Measurement result

LTE band 2

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



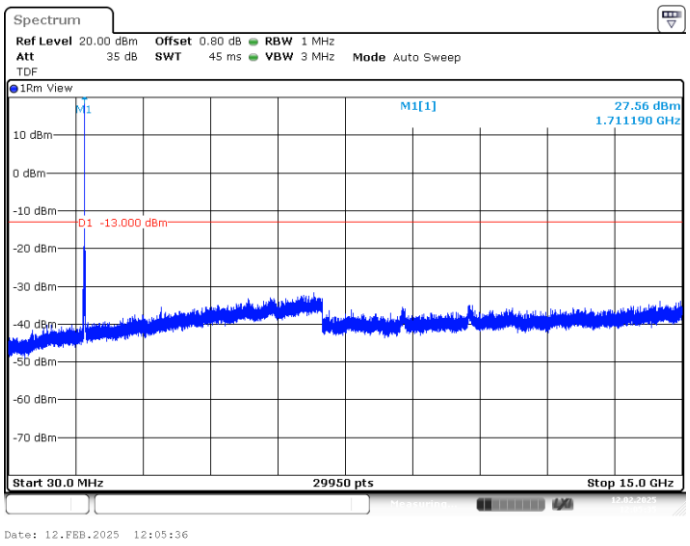
Date: 12.FEB.2025 12:17:38

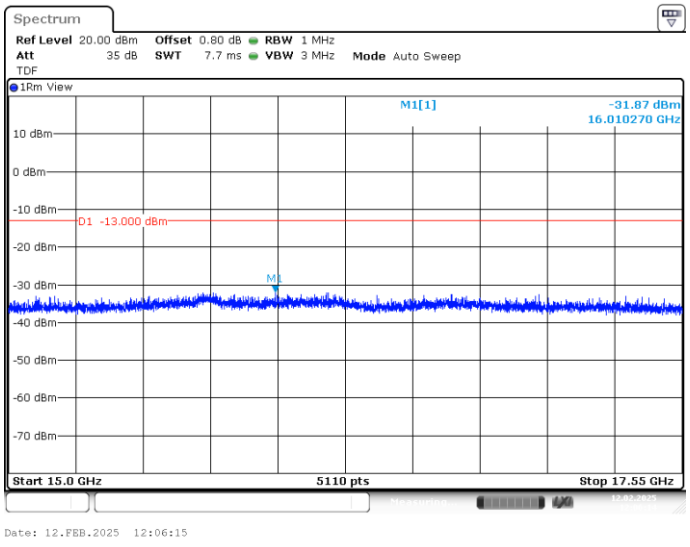


Date: 12.FEB.2025 12:18:17

LTE band 4

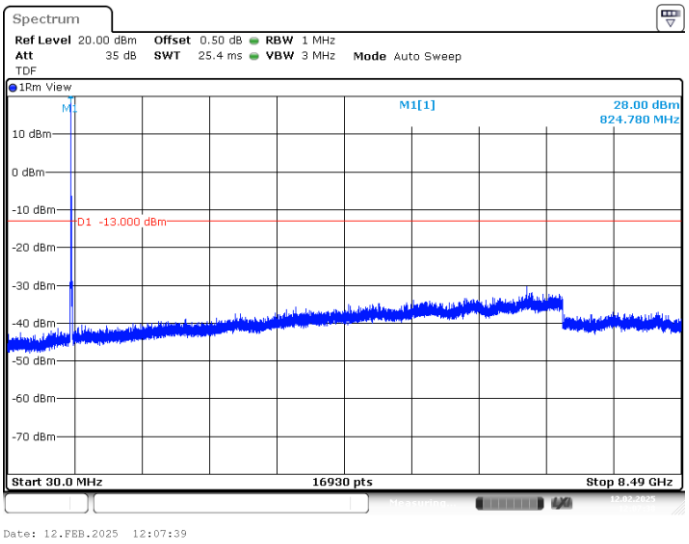
NOTE: peak above the limit line is the carrier frequency.





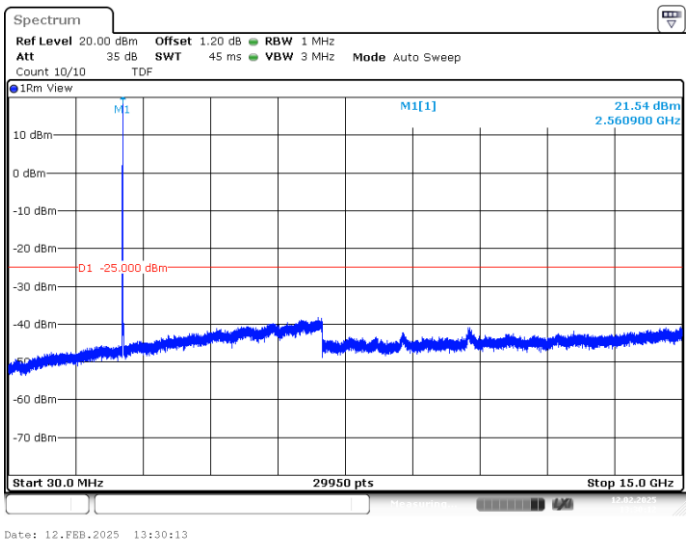
LTE band 5

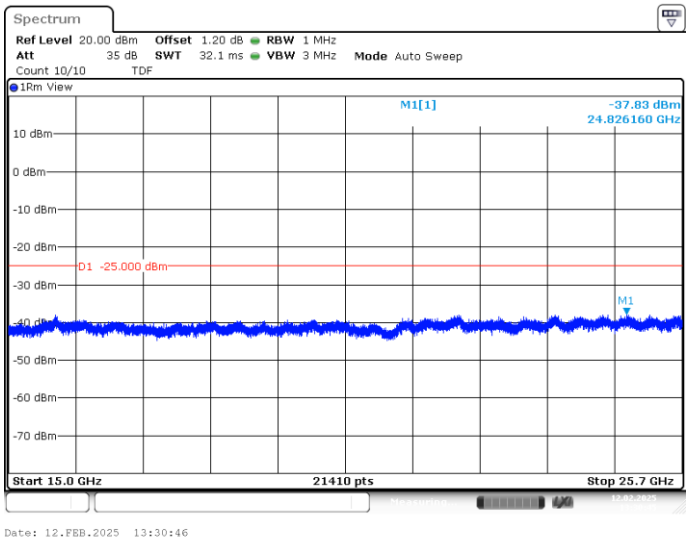
NOTE: peak above the limit line is the carrier frequency.



LTE band 7

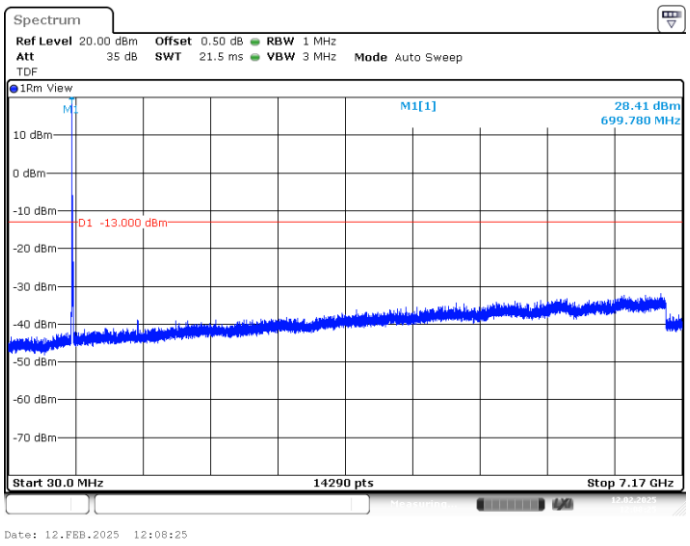
NOTE: peak above the limit line is the carrier frequency.





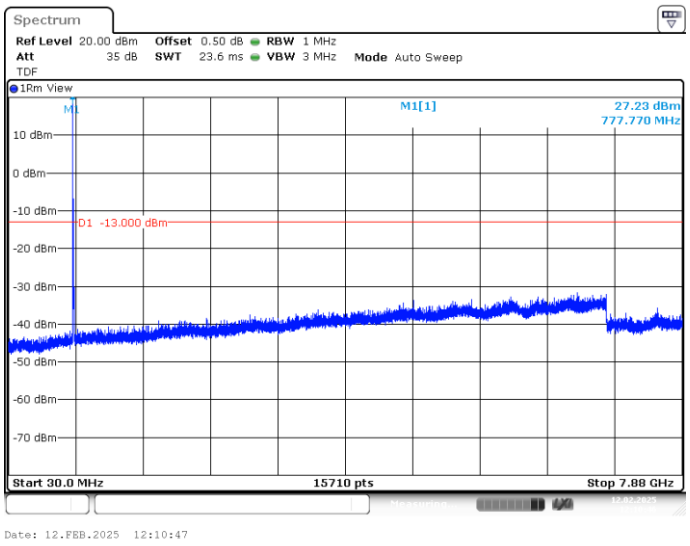
LTE band 12

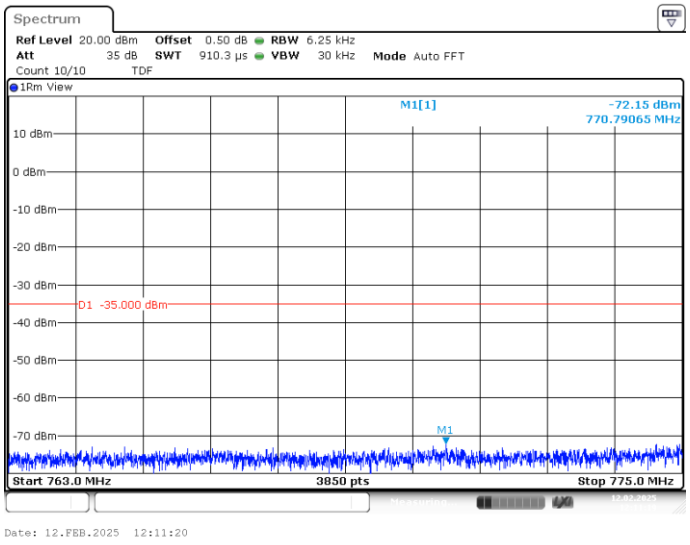
NOTE: peak above the limit line is the carrier frequency.

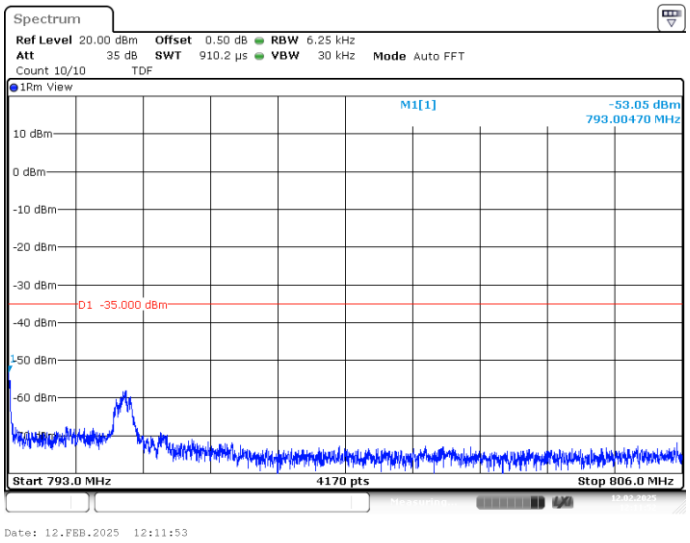


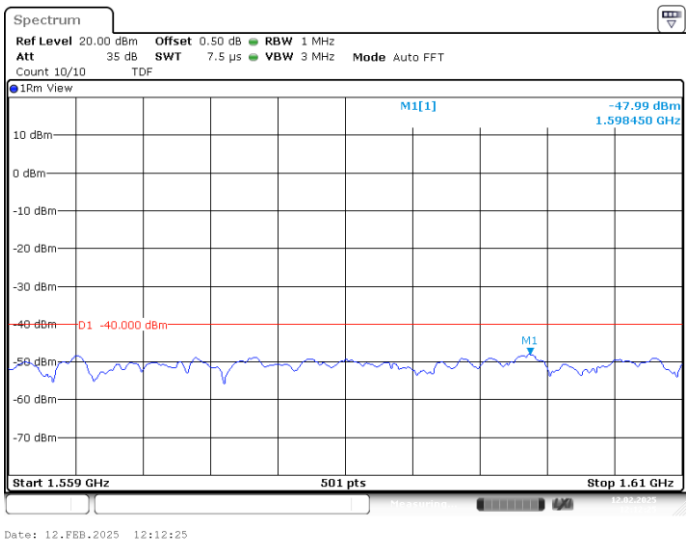
LTE band 13

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



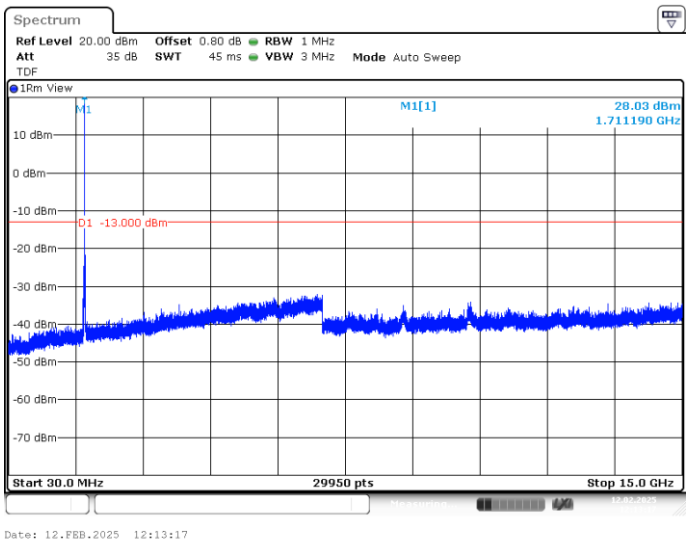


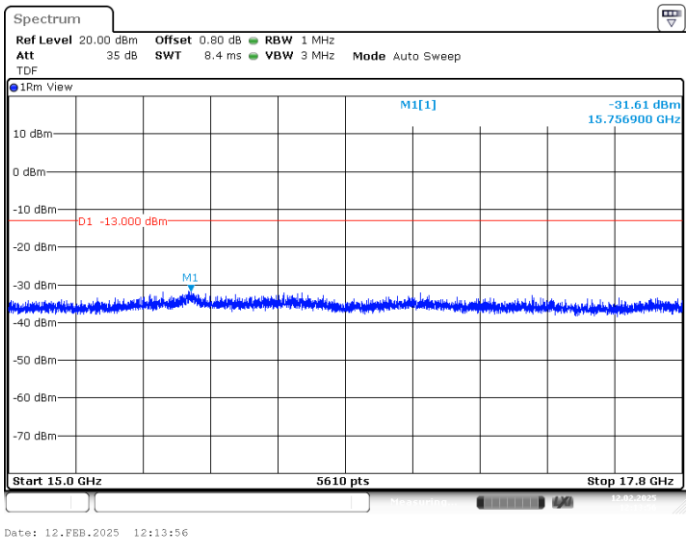




LTE band 66

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





A.8 Peak-to-Average Power Ratio

The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB
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) Record the maximum PAPR level associated with a probability of 0.1%.

Measurement results

LTE Band 2, 20MHz

Frequency (MHz)	RB	PAPR (dB)		
		QPSK	16QAM	64QAM
1880	100%,0	5.33	6.17	6.43

LTE Band 4, 20MHz

Frequency (MHz)	RB	PAPR (dB)		
		QPSK	16QAM	64QAM
1732.5	100%,0	5.33	6.17	6.46

LTE Band 7, 20MHz

Frequency (MHz)	RB	PAPR (dB)		
		QPSK	16QAM	64QAM
2535	100%,0	5.42	6.41	6.67

LTE Band 12, 10MHz

Frequency (MHz)	RB	PAPR (dB)		
		QPSK	16QAM	64QAM
707.5	100%,0	5.42	6.26	6.55

LTE Band 13, 10MHz

Frequency (MHz)	RB	PAPR (dB)		
		QPSK	16QAM	64QAM
782	100%,0	5.48	6.23	6.55

LTE Band 66, 20MHz

Frequency (MHz)	RB	PAPR (dB)		
		QPSK	16QAM	64QAM
1745	100%,0	5.16	6.09	6.38

Annex B: Accreditation Certificate

Accredited Laboratory

A2LA has accredited

TELECOMMUNICATION TECHNOLOGY LABS, CAICT

Beijing, People's Republic of China

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 23rd day of July 2024.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 7049.01
Valid to July 31, 2026

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

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