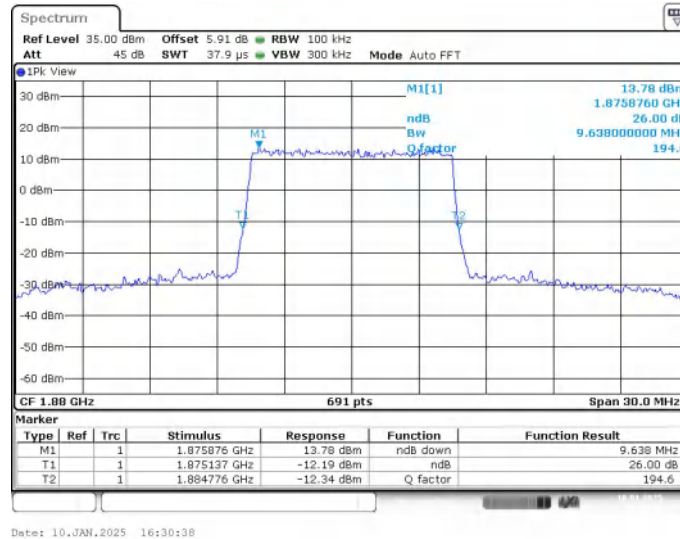


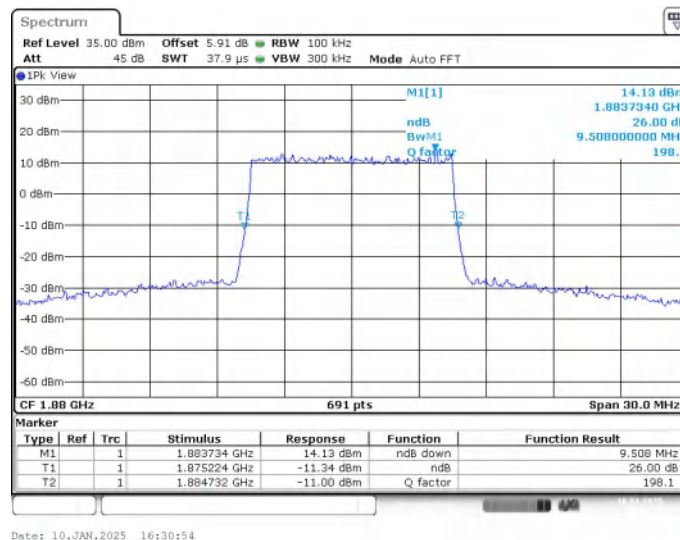
LTE band 2,10MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1880	9.638	9.508

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



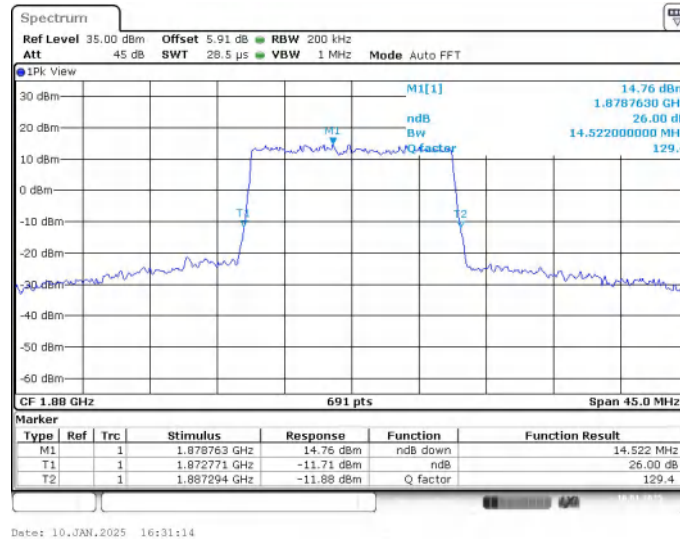
LTE band 2 , 10MHz Bandwidth,MID,16QAM (-26dBc BW)



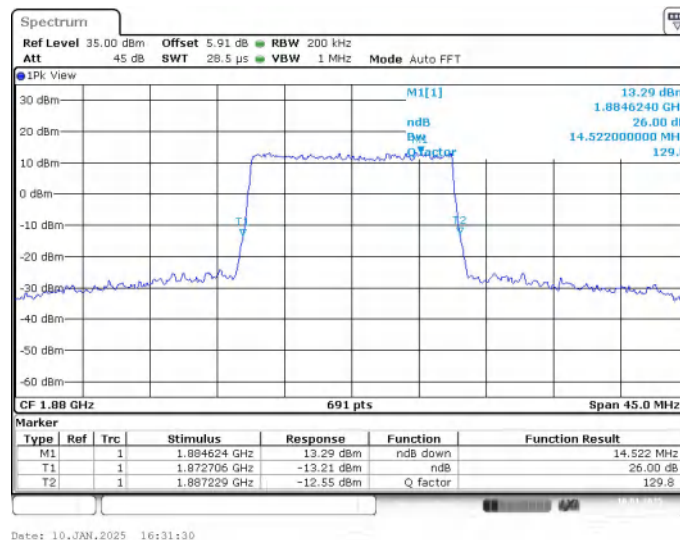
LTE band 2,15MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1880	14.522	14.522

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



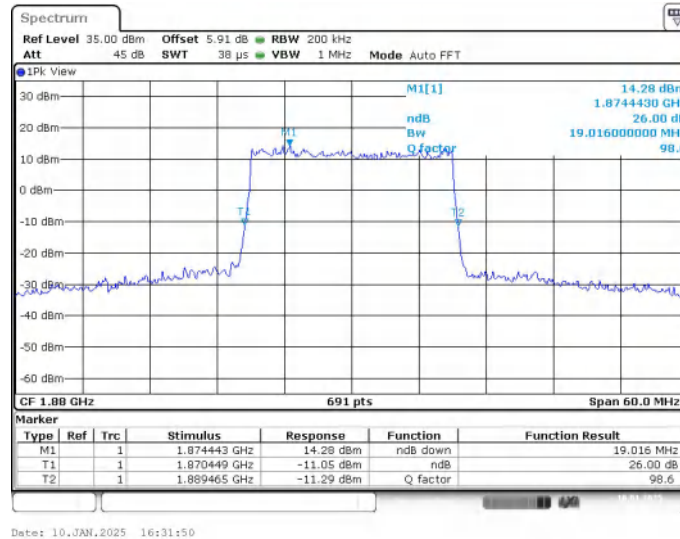
LTE band 2 , 15MHz Bandwidth,MID,16QAM (-26dBc BW)



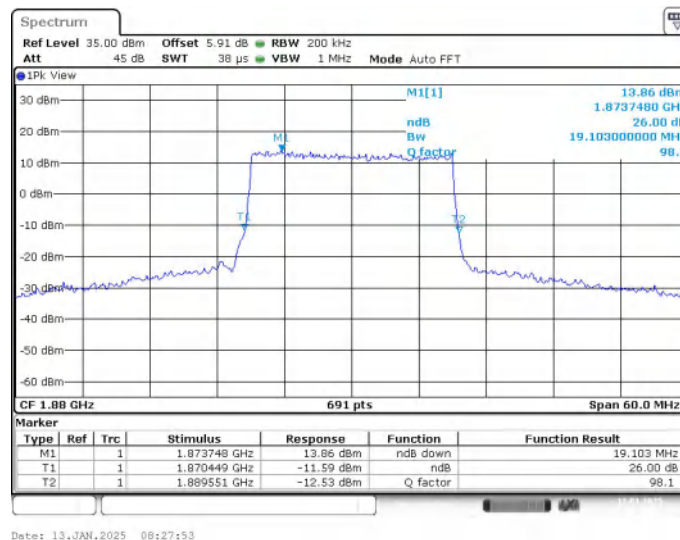
LTE band 2,20MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1880	19.016	19.103

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



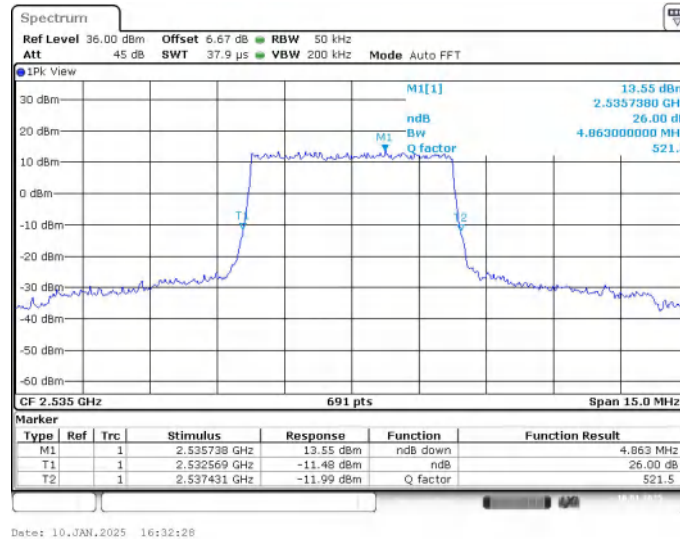
LTE band 2 , 20MHz Bandwidth,MID,16QAM (-26dBc BW)



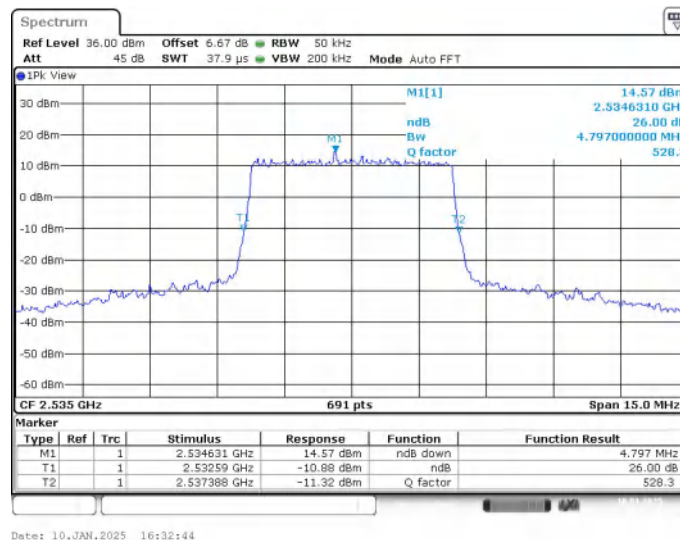
LTE band 7,5MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
2535	4.863	4.797

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



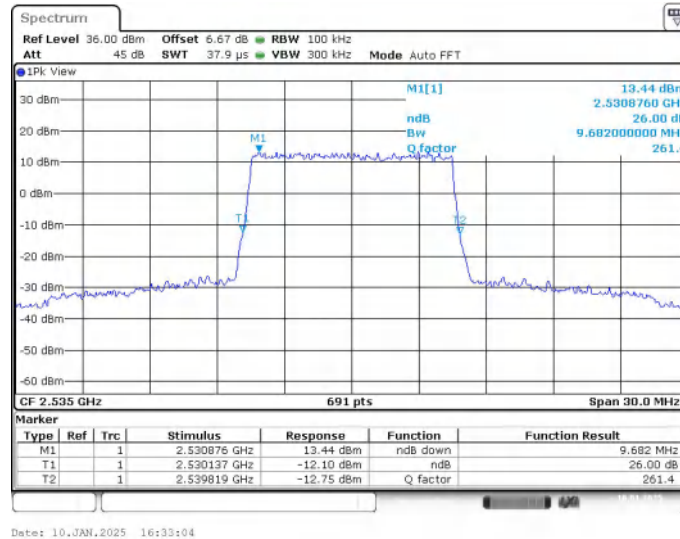
LTE band 7 , 5MHz Bandwidth,MID,16QAM (-26dBc BW)



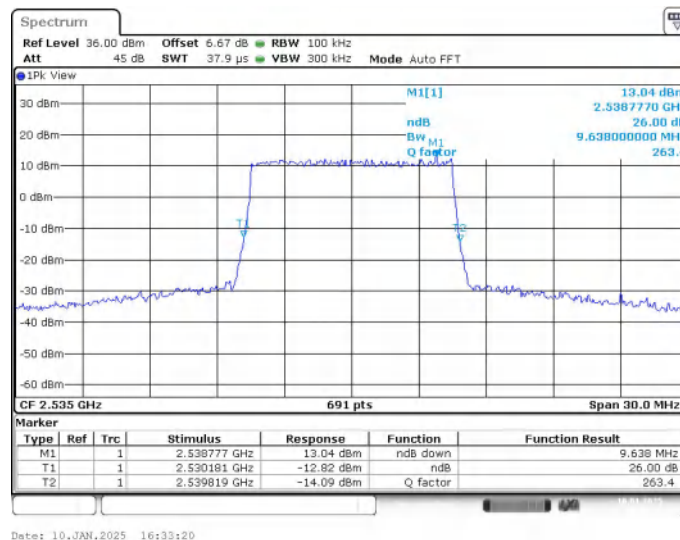
LTE band 7,10MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
2535	9.682	9.638

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



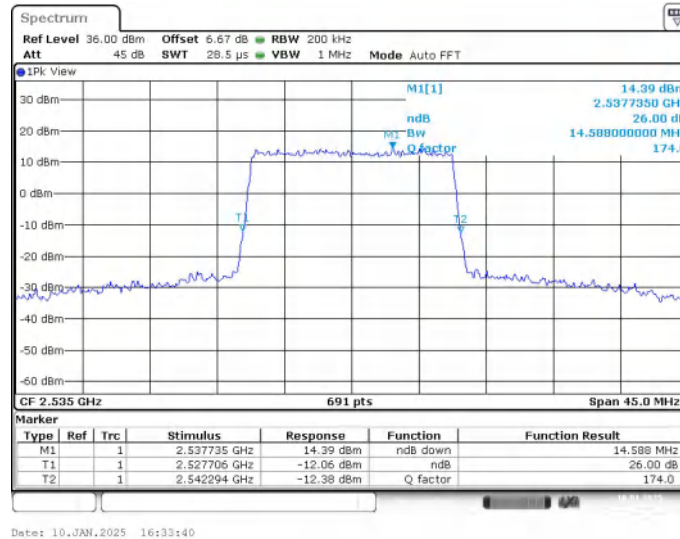
LTE band 7 , 10MHz Bandwidth,MID,16QAM (-26dBc BW)



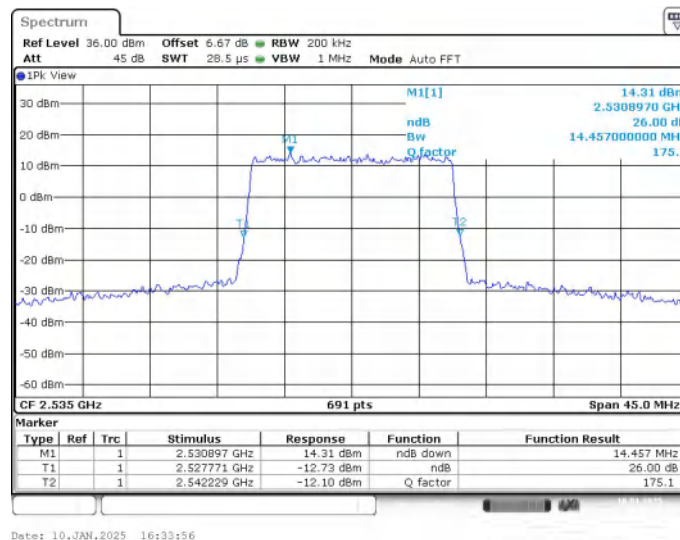
LTE band 7,15MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
2535	14.588	14.457

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



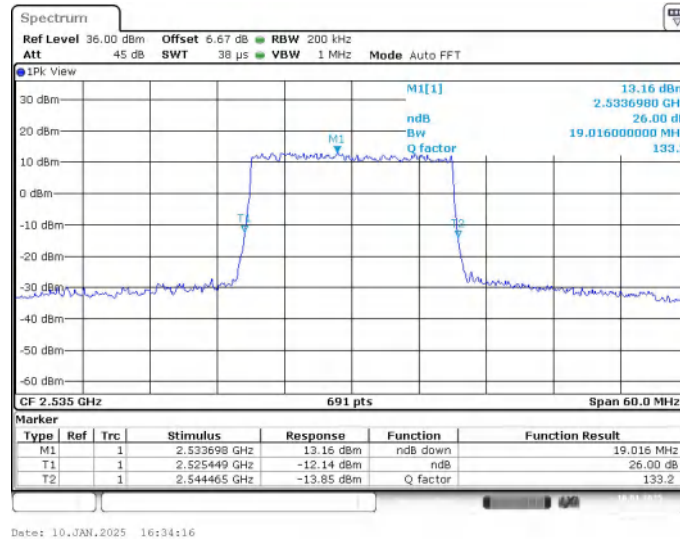
LTE band 7 , 15MHz Bandwidth,MID,16QAM (-26dBc BW)



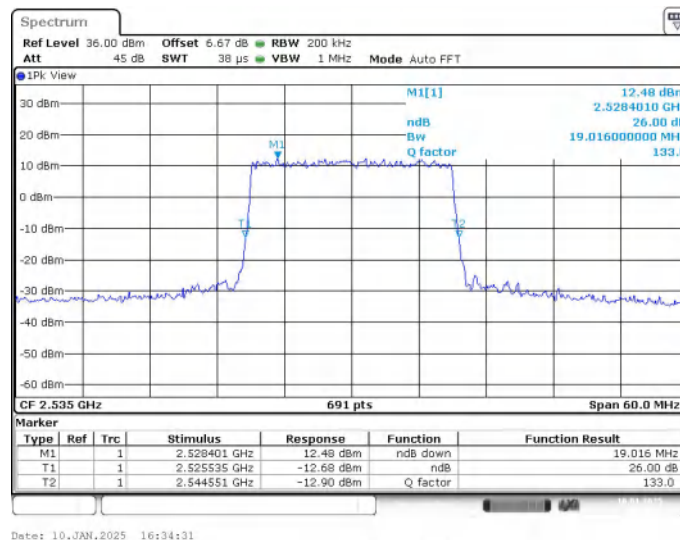
LTE band 7,20MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
2535	19.016	19.016

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



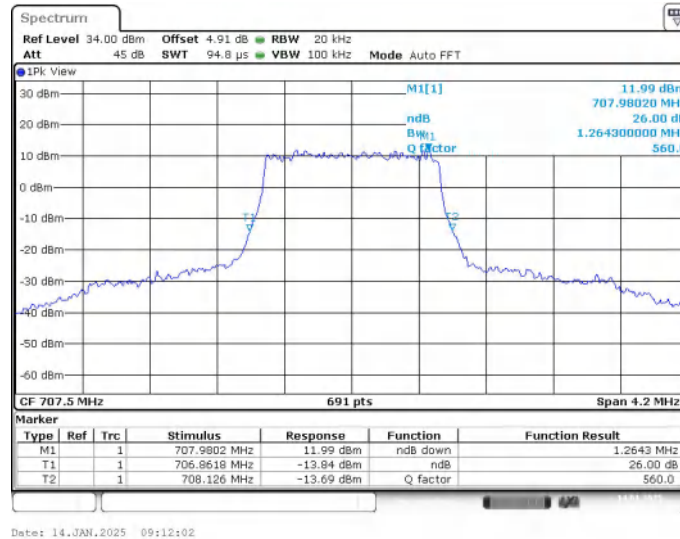
LTE band 7 , 20MHz Bandwidth,MID,16QAM (-26dBc BW)



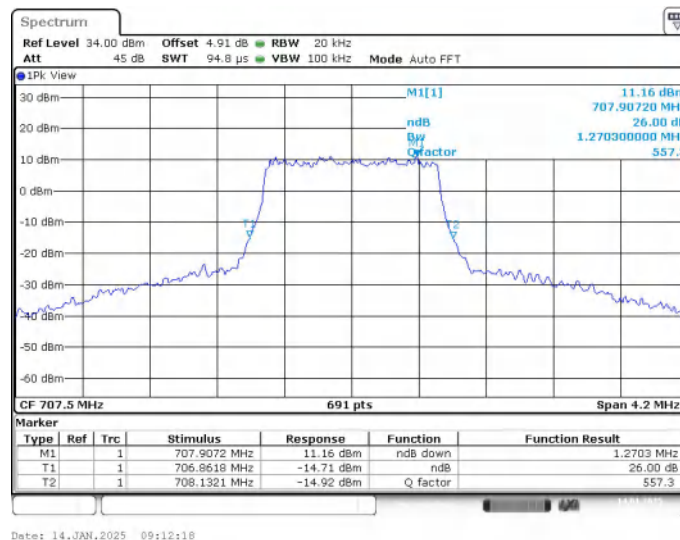
LTE band 12,1.4MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
707.5	1.264	1.270

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



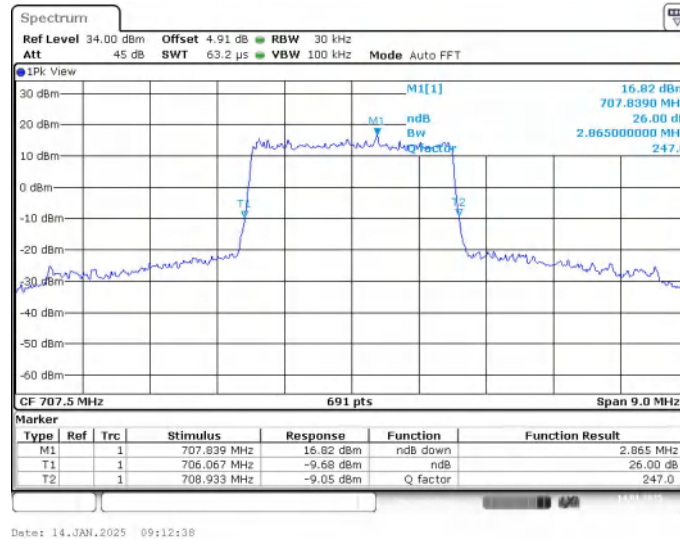
LTE band 12 , 1.4MHz Bandwidth,MID,16QAM (-26dBc BW)



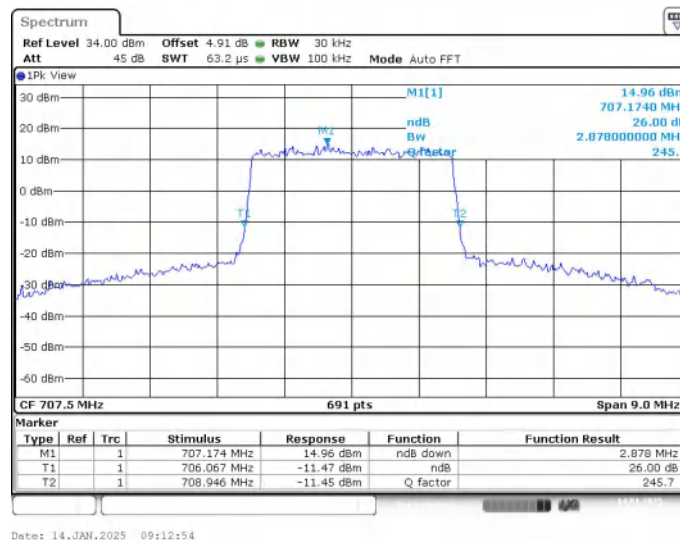
LTE band 12,3MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
707.5	2.865	2.878

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



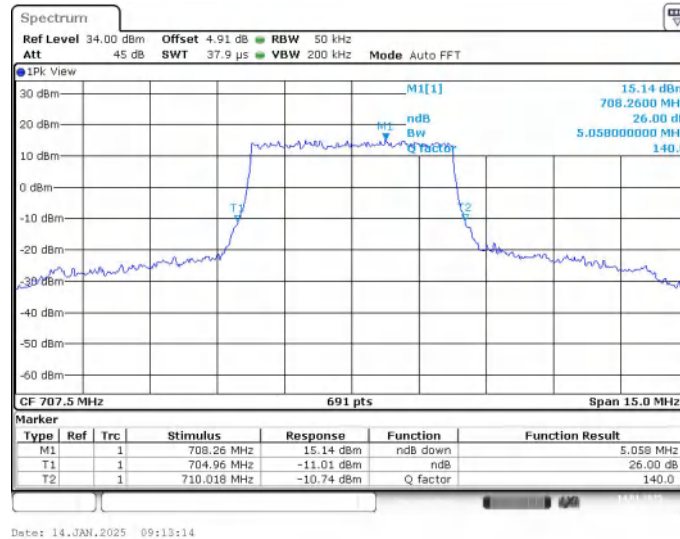
LTE band 12 , 3MHz Bandwidth,MID,16QAM (-26dBc BW)



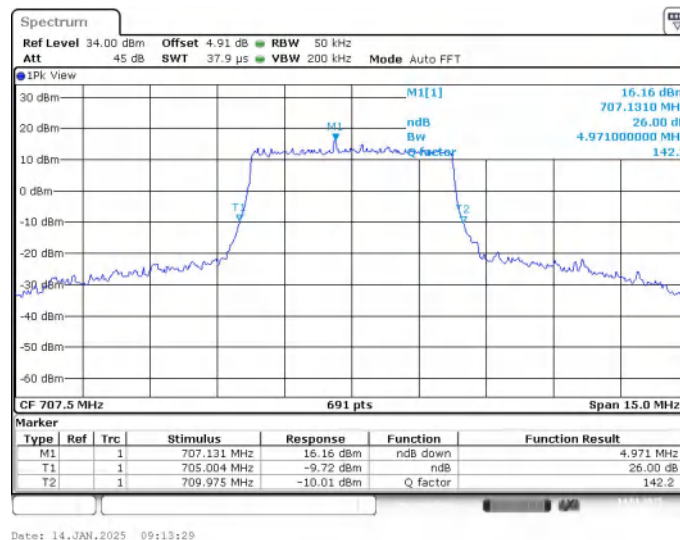
LTE band 12,5MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
707.5	5.058	4.971

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



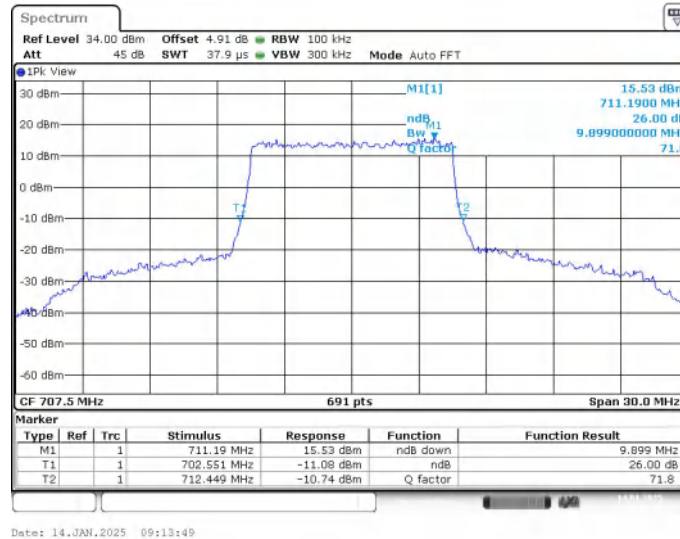
LTE band 12 , 5MHz Bandwidth,MID,16QAM (-26dBc BW)



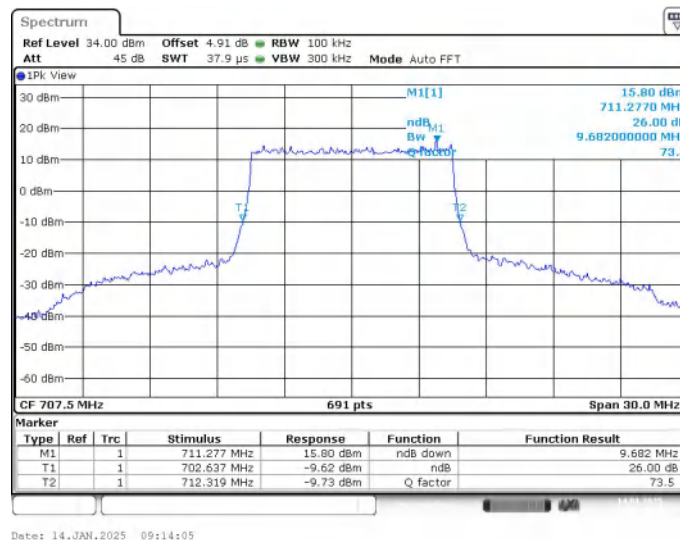
LTE band 12,10MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
707.5	9.899	9.682

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



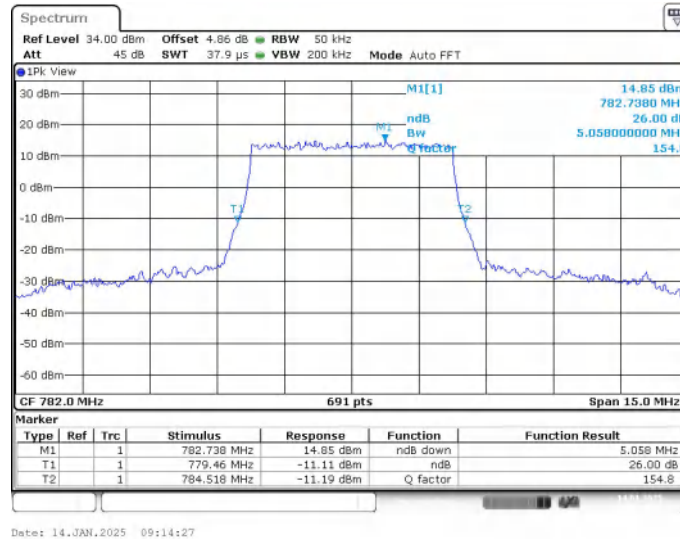
LTE band 12 , 10MHz Bandwidth,MID,16QAM (-26dBc BW)



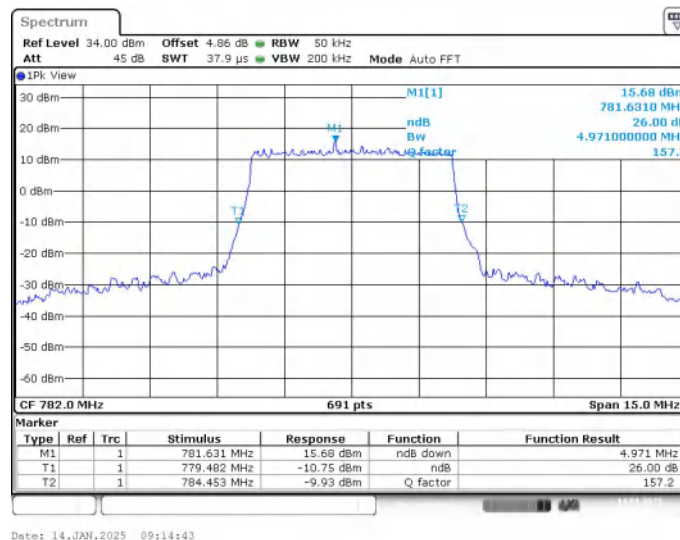
LTE band 13,5MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
782	5.058	4.971

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



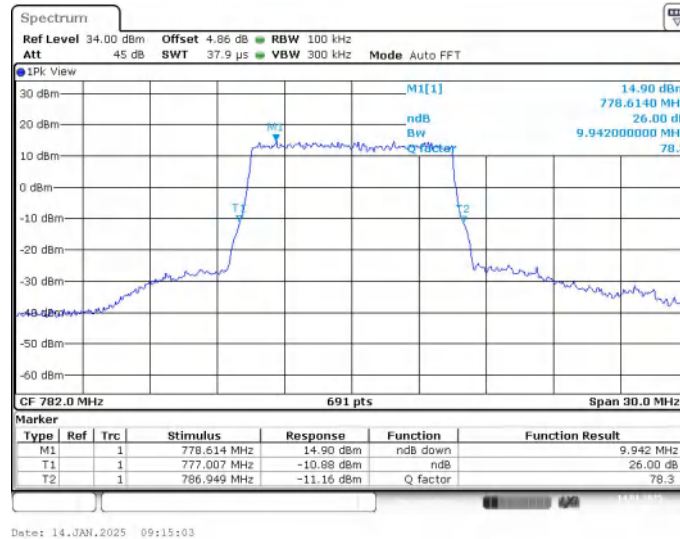
LTE band 13 , 5MHz Bandwidth,MID,16QAM (-26dBc BW)



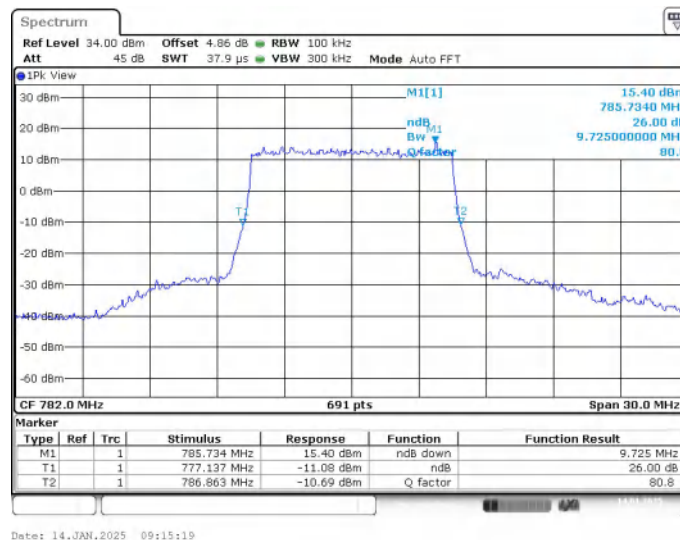
LTE band 13,10MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
782	9.942	9.725

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



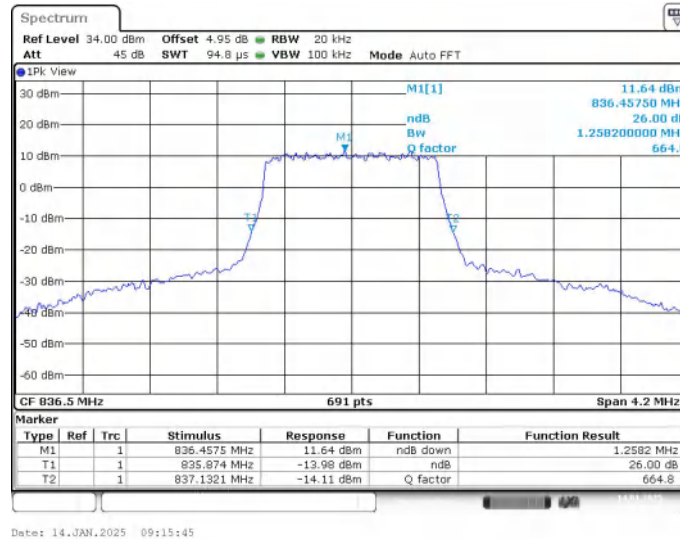
LTE band 13 , 10MHz Bandwidth,MID,16QAM (-26dBc BW)



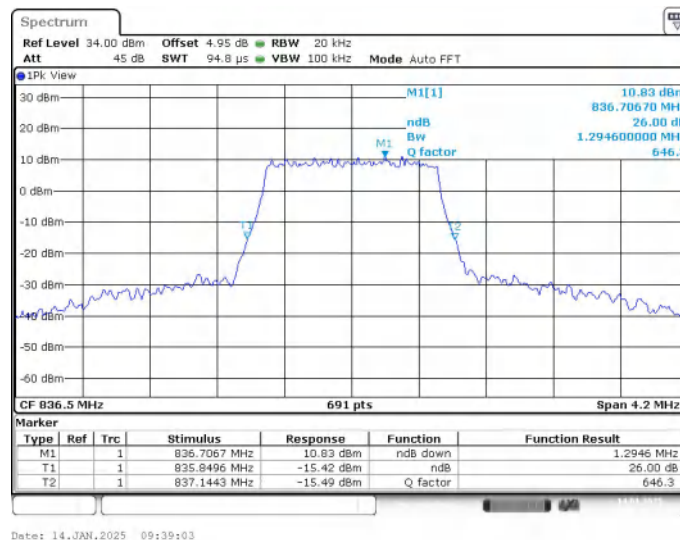
LTE band 26(824MHz~849MHz),1.4MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
836.5	1.258	1.295

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



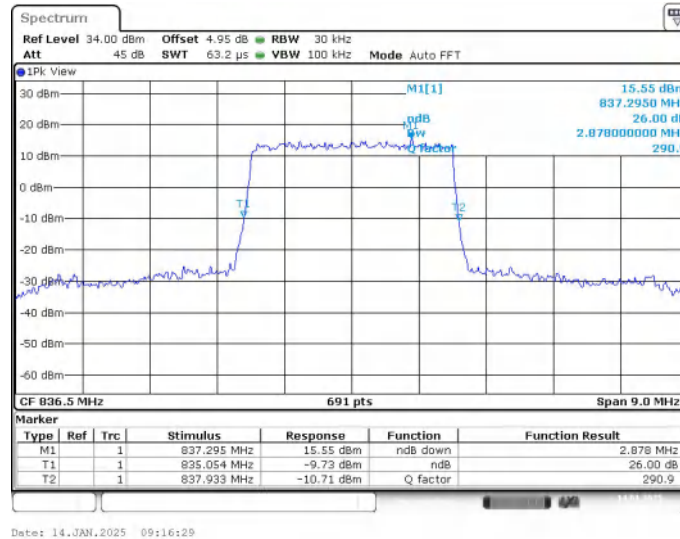
LTE band 26 , 1.4MHz Bandwidth,MID,16QAM (-26dBc BW)



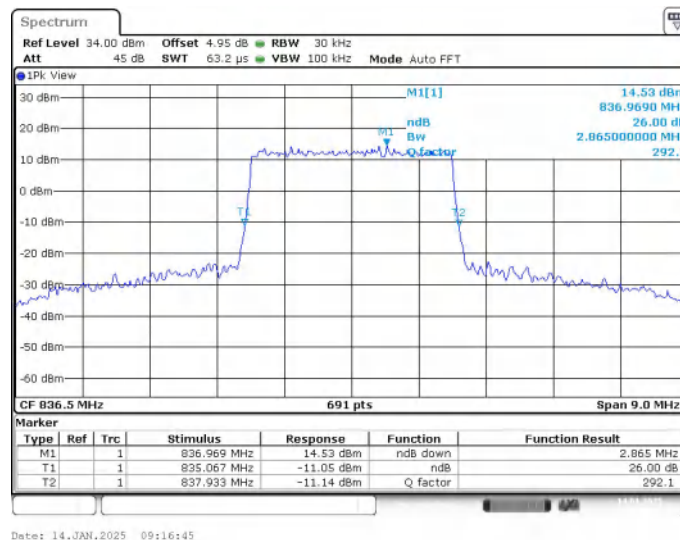
LTE band 26(824MHz~849MHz),3MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
836.5	2.878	2.865

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



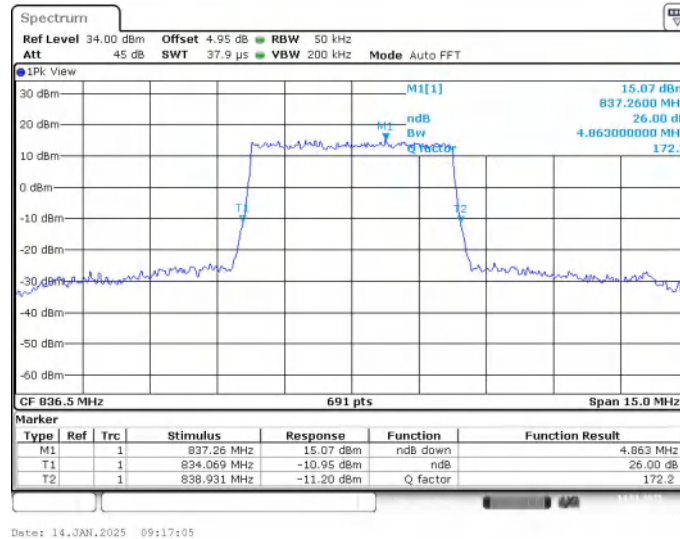
LTE band 26 , 3MHz Bandwidth,MID,16QAM (-26dBc BW)



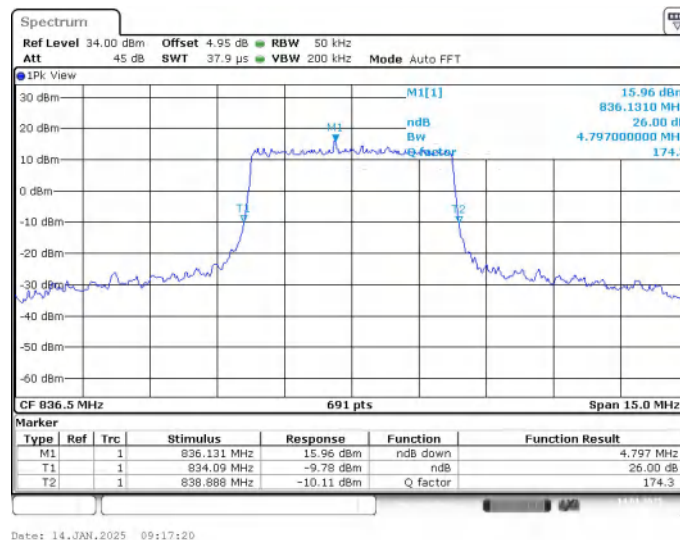
LTE band 26(824MHz~849MHz),5MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
836.5	4.863	4.797

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



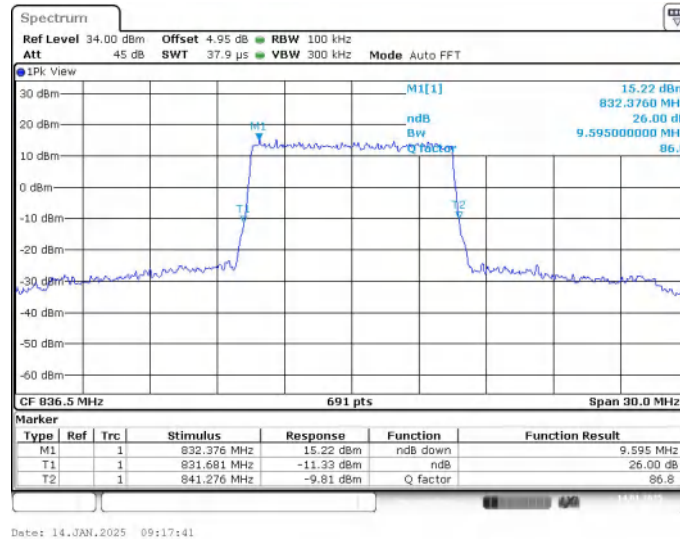
LTE band 26 , 5MHz Bandwidth,MID,16QAM (-26dBc BW)



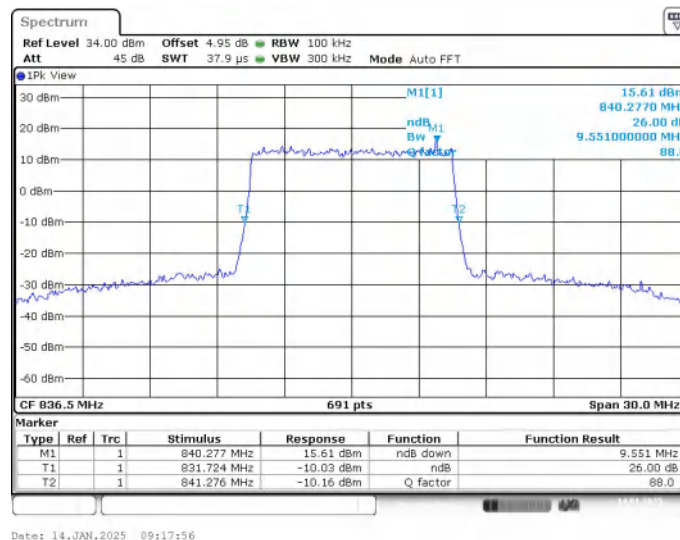
LTE band 26(824MHz~849MHz),10MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
836.5	9.595	9.551

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



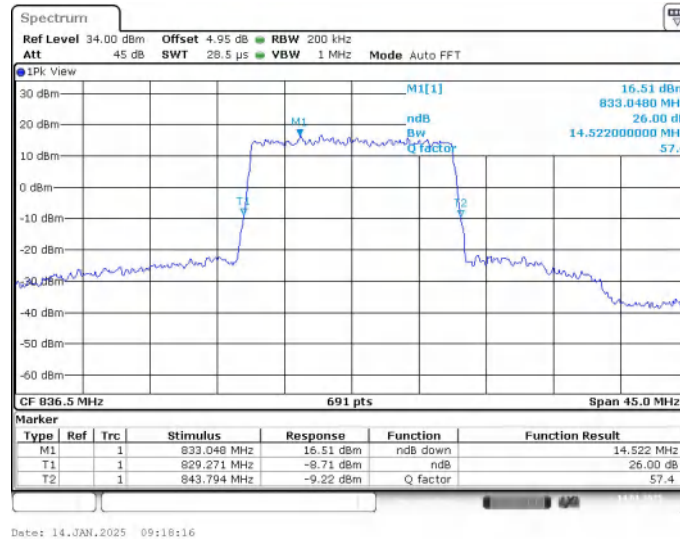
LTE band 26 , 10MHz Bandwidth,MID,16QAM (-26dBc BW)



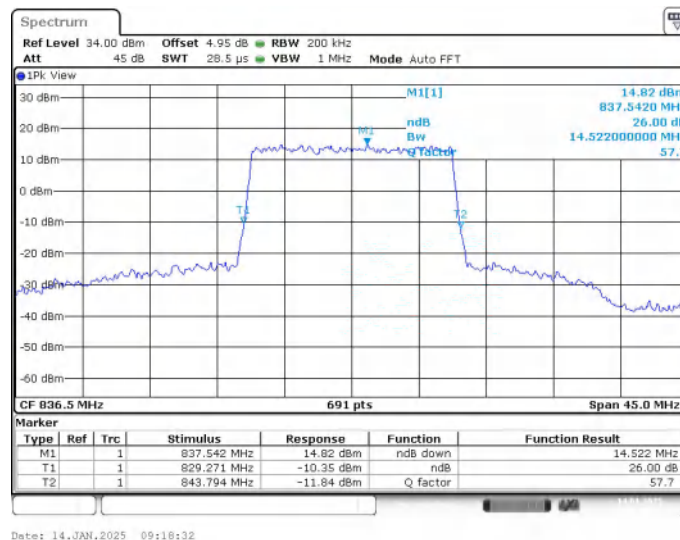
LTE band 26(824MHz~849MHz),15MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
836.5	14.522	14.522

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



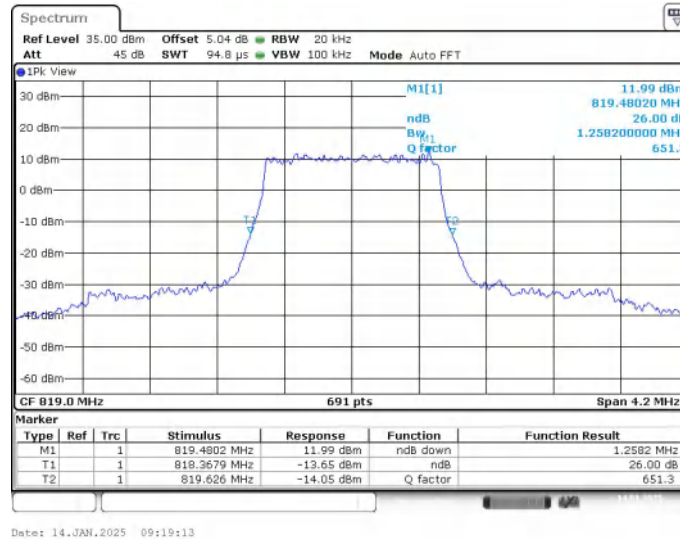
LTE band 26 , 15MHz Bandwidth,MID,16QAM (-26dBc BW)



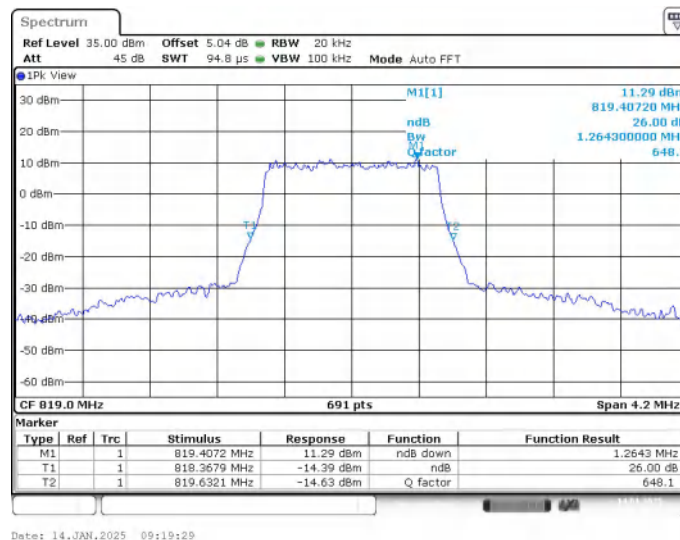
LTE band 26(814MHz~824MHz),1.4MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
819	1.258	1.264

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



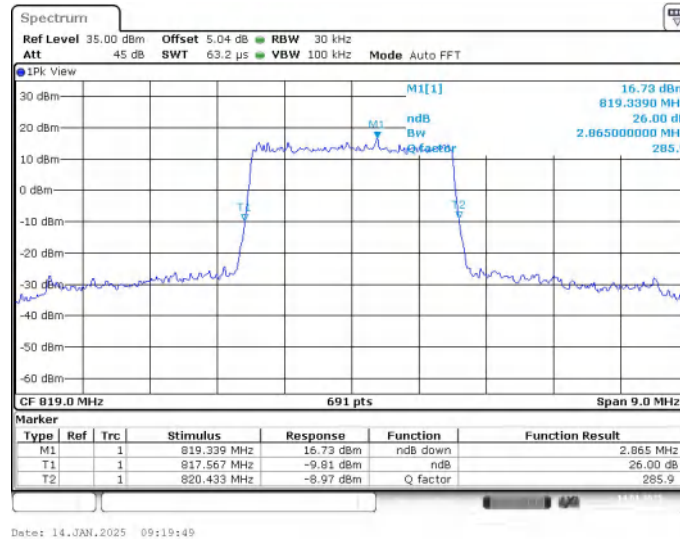
LTE band 26 , 1.4MHz Bandwidth,MID,16QAM (-26dBc BW)



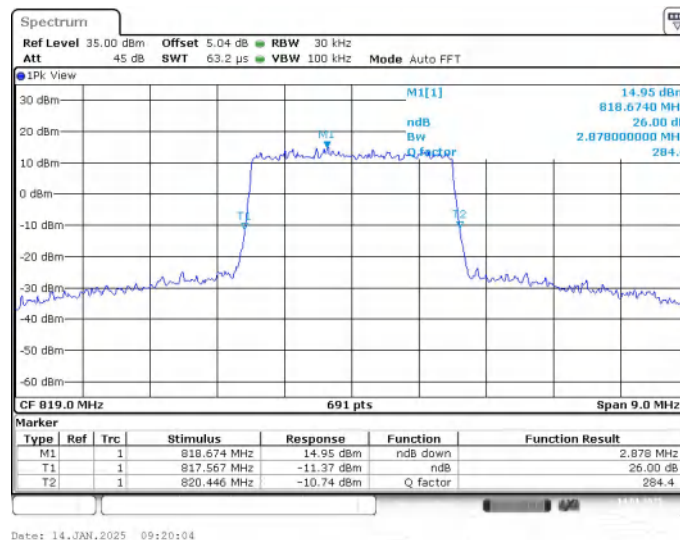
LTE band 26(814MHz~824MHz),3MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
819	2.865	2.878

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



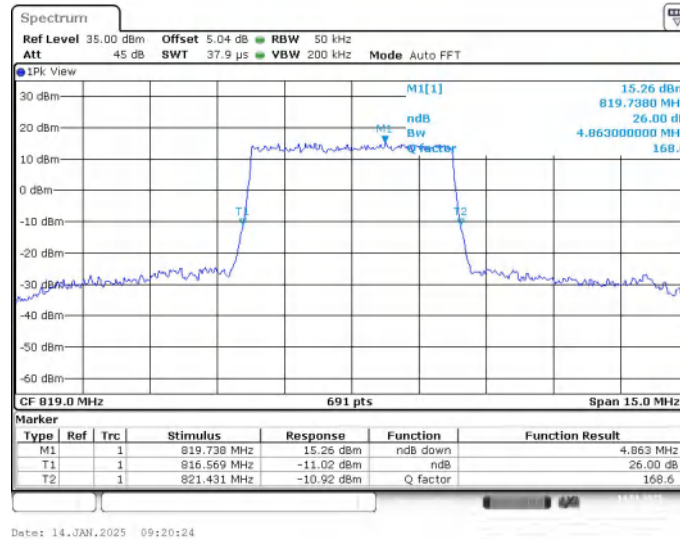
LTE band 26 , 3MHz Bandwidth,MID,16QAM (-26dBc BW)



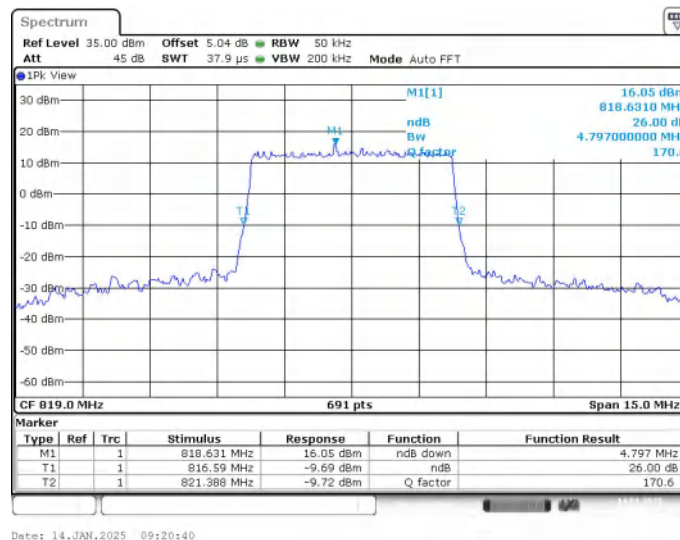
LTE band 26(814MHz~824MHz),5MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
819	4.863	4.797

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



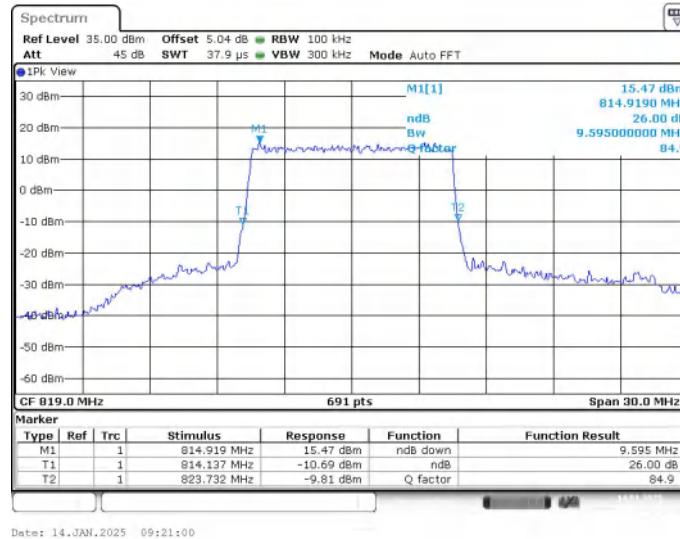
LTE band 26 , 5MHz Bandwidth,MID,16QAM (-26dBc BW)



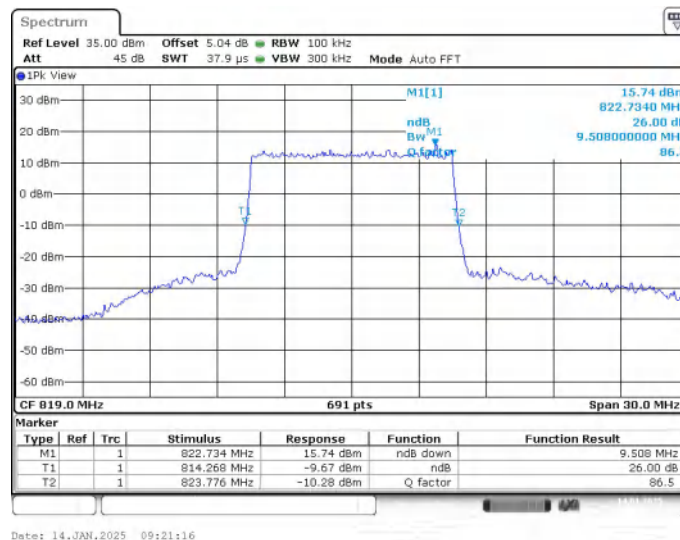
LTE band 26(814MHz~824MHz),10MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
819	9.595	9.508

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



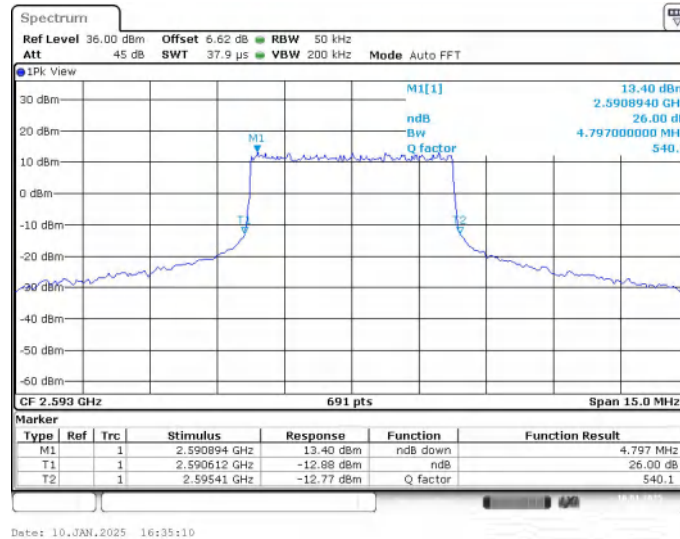
LTE band 26 , 10MHz Bandwidth,MID,16QAM (-26dBc BW)



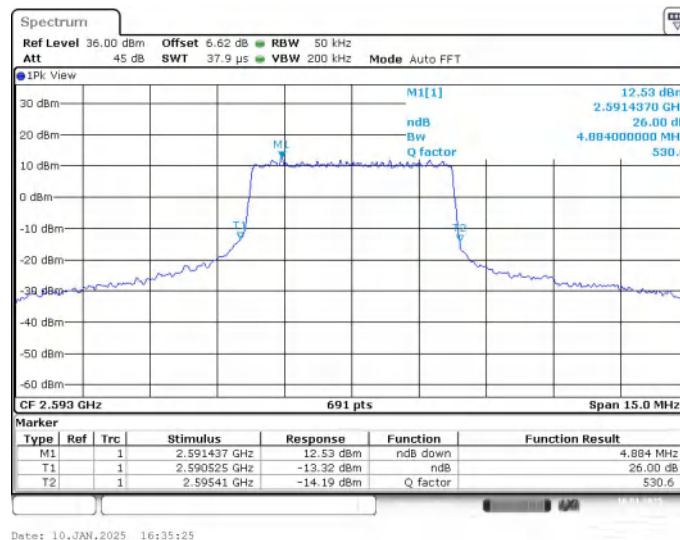
LTE band 41,5MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
2593	4.797	4.884

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



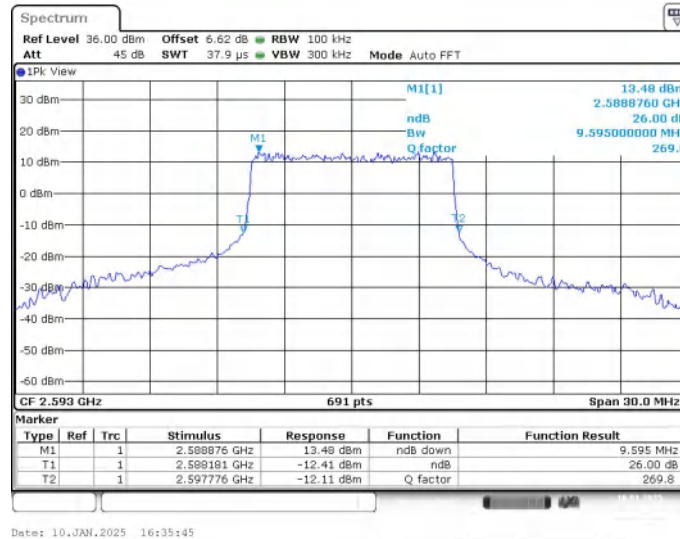
LTE band 41 , 5MHz Bandwidth,MID,16QAM (-26dBc BW)



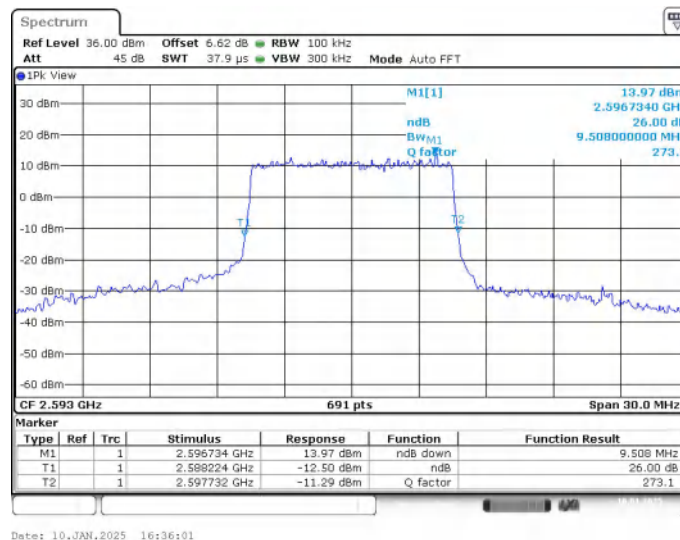
LTE band 41,10MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
2593	9.595	9.508

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



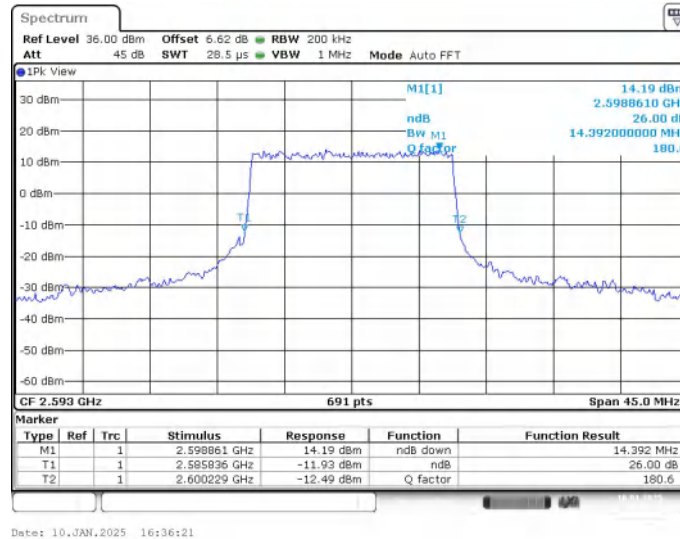
LTE band 41 , 10MHz Bandwidth,MID,16QAM (-26dBc BW)



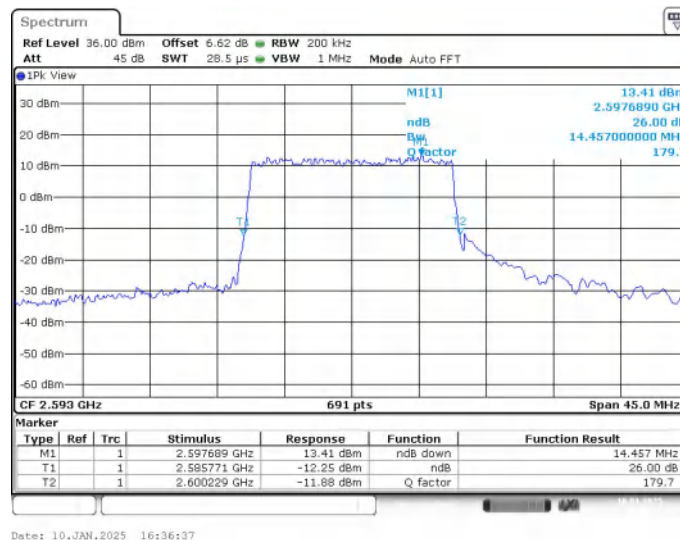
LTE band 41,15MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
2593	14.392	14.457

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



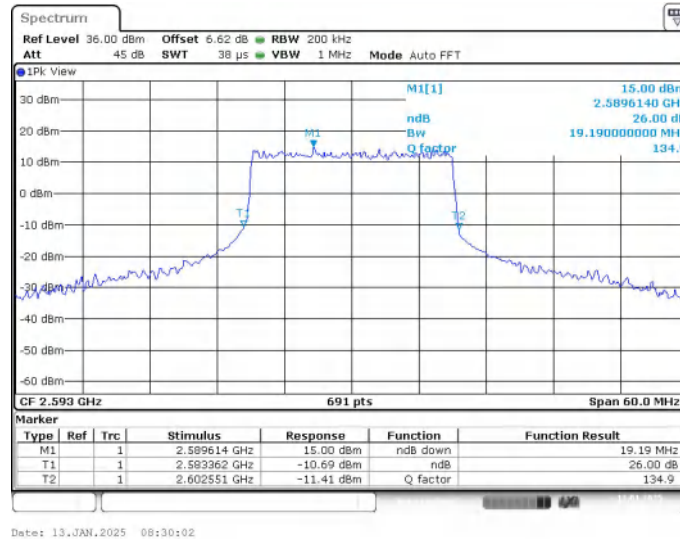
LTE band 41 , 15MHz Bandwidth,MID,16QAM (-26dBc BW)



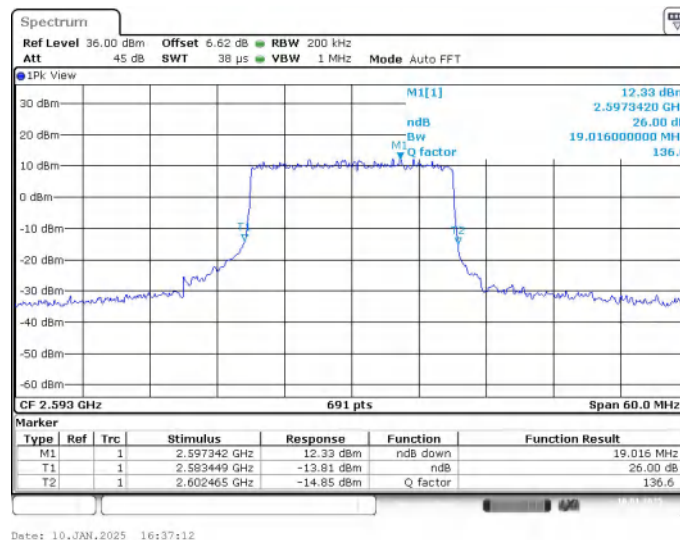
LTE band 41,20MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
2593	19.190	19.016

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



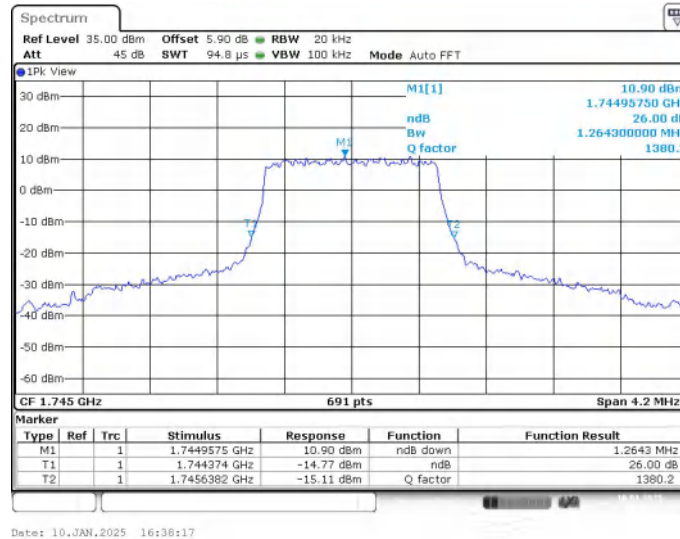
LTE band 41 , 20MHz Bandwidth,MID,16QAM (-26dBc BW)



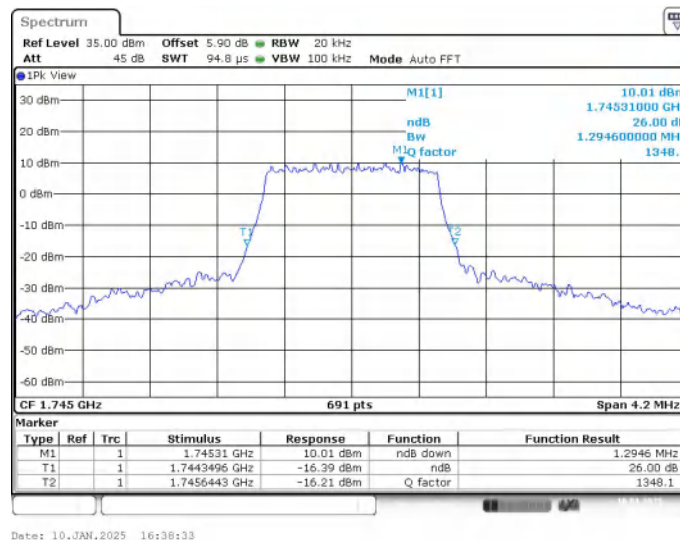
LTE band 66,1.4MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1745	1.264	1.295

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



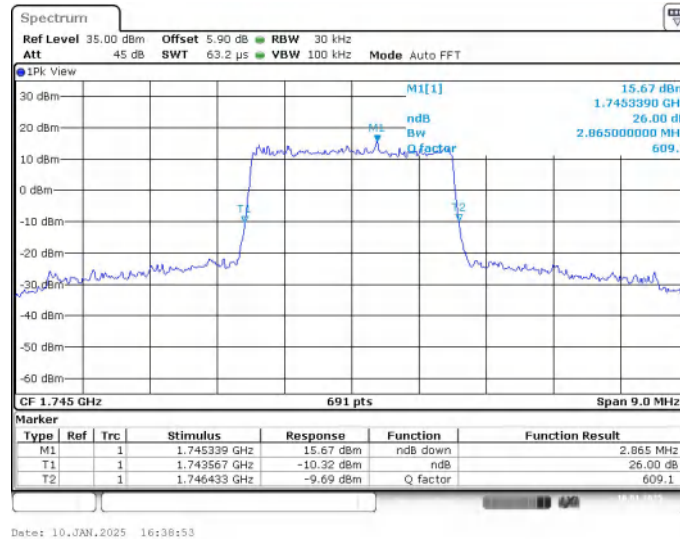
LTE band 66 , 1.4MHz Bandwidth,MID,16QAM (-26dBc BW)



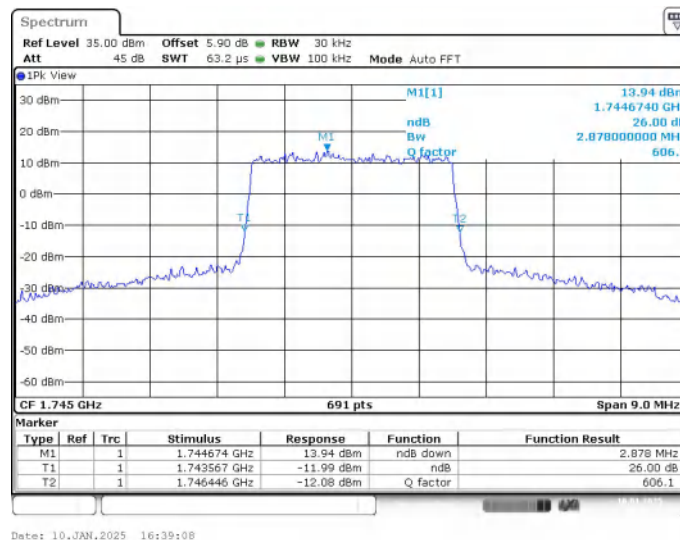
LTE band 66,3MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1745	2.865	2.878

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



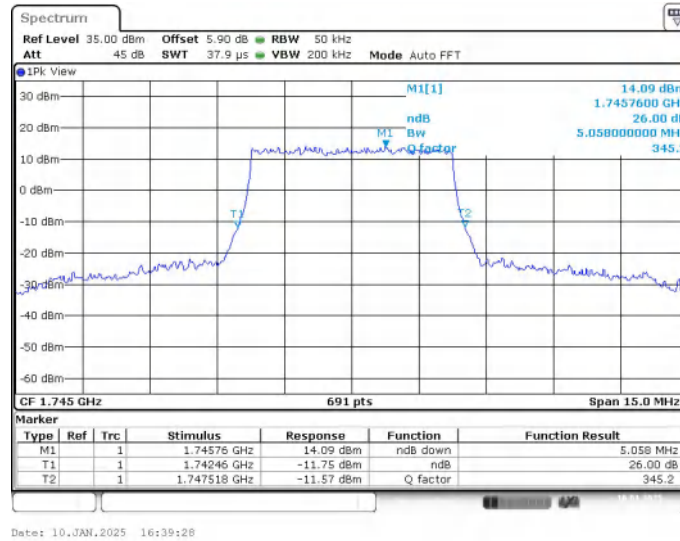
LTE band 66 , 3MHz Bandwidth,MID,16QAM (-26dBc BW)



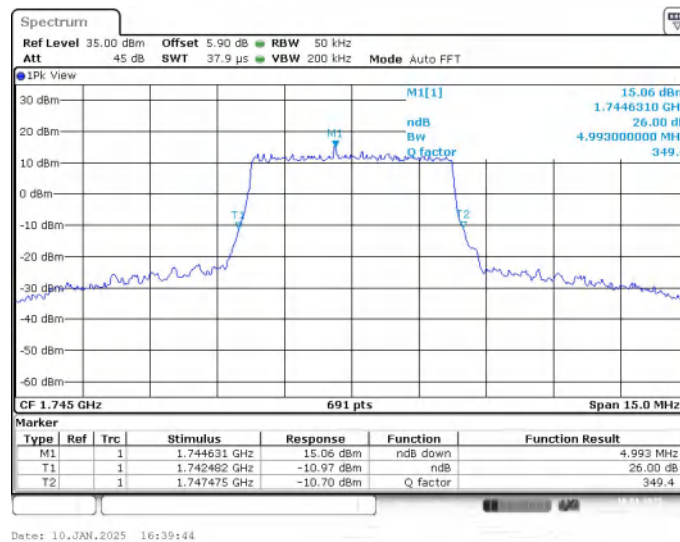
LTE band 66,5MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1745	5.058	4.993

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



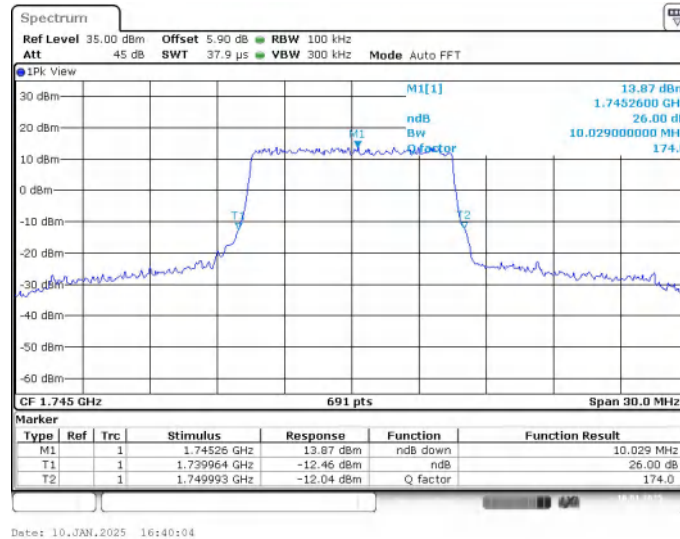
LTE band 66 , 5MHz Bandwidth,MID,16QAM (-26dBc BW)



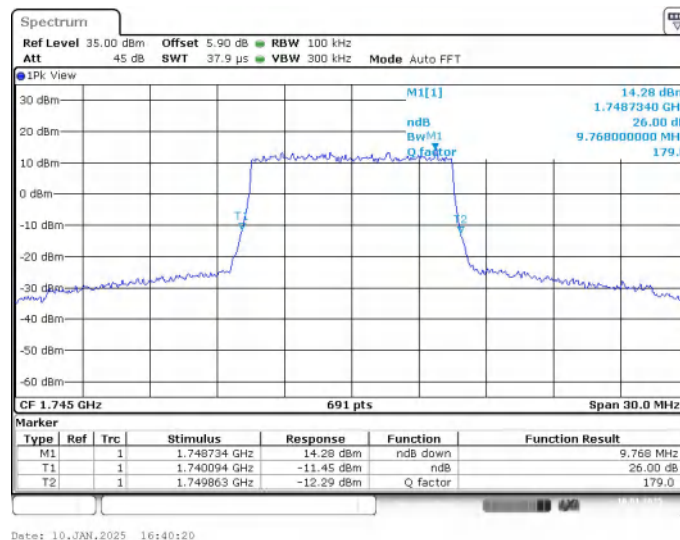
LTE band 66,10MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1745	10.029	9.768

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



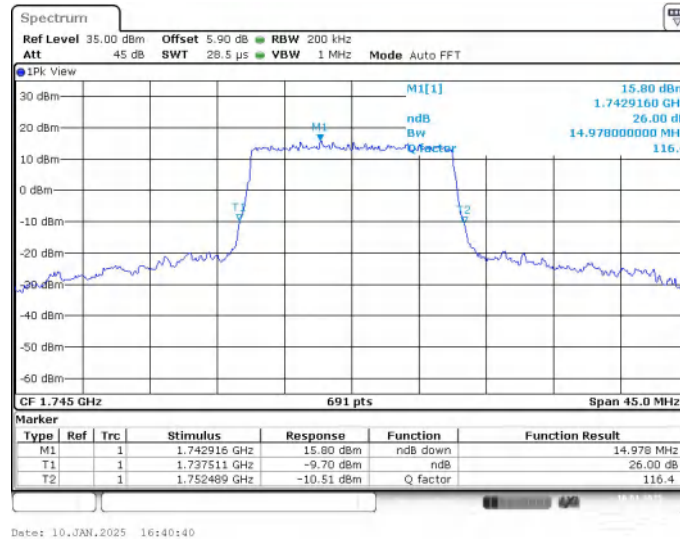
LTE band 66 , 10MHz Bandwidth,MID,16QAM (-26dBc BW)



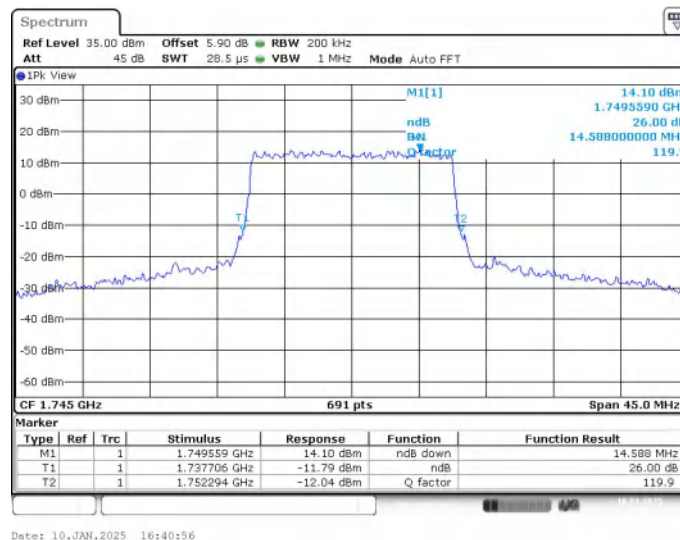
LTE band 66,15MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1745	14.978	14.588

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



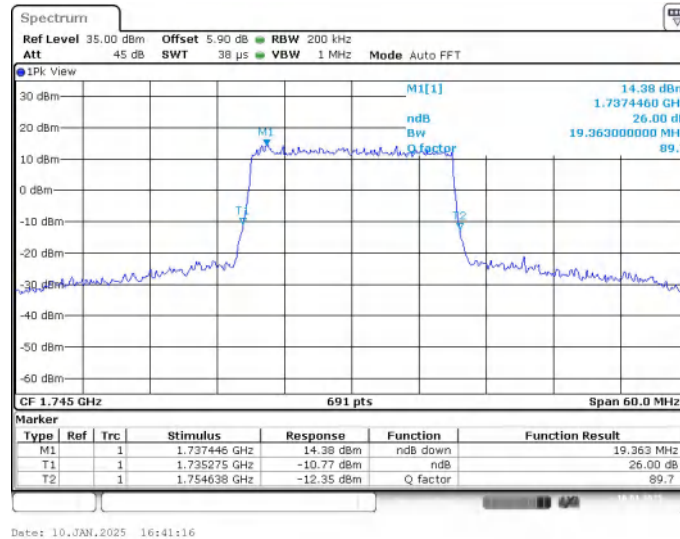
LTE band 66 , 15MHz Bandwidth,MID,16QAM (-26dBc BW)



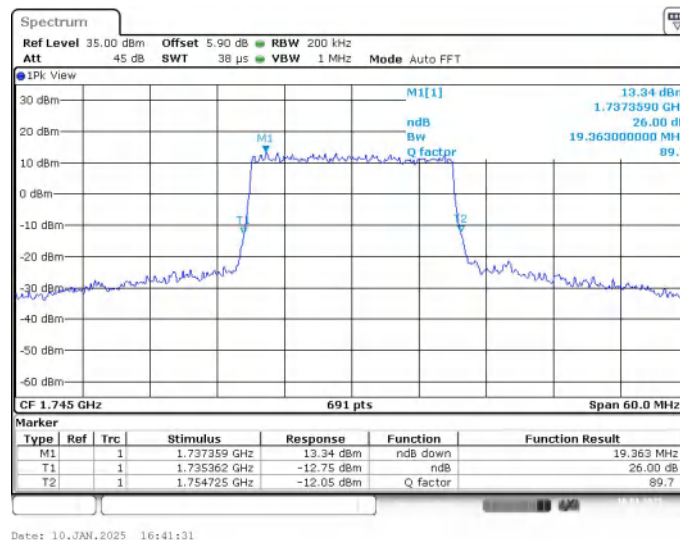
LTE band 66,20MHz(-26dBc)

Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)	
	QPSK	16QAM
1745	19.363	19.363

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 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 2490.5 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.

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



No.24T04Z103042-003

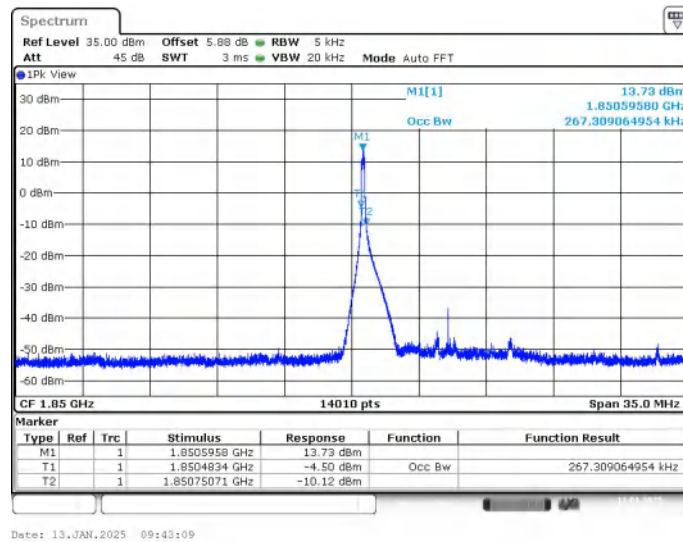
removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

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

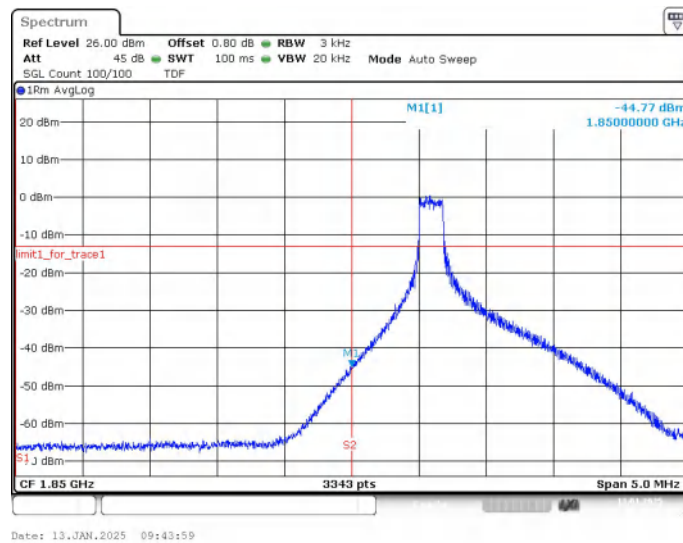
A.6.2 Measurement result

LTE band 2

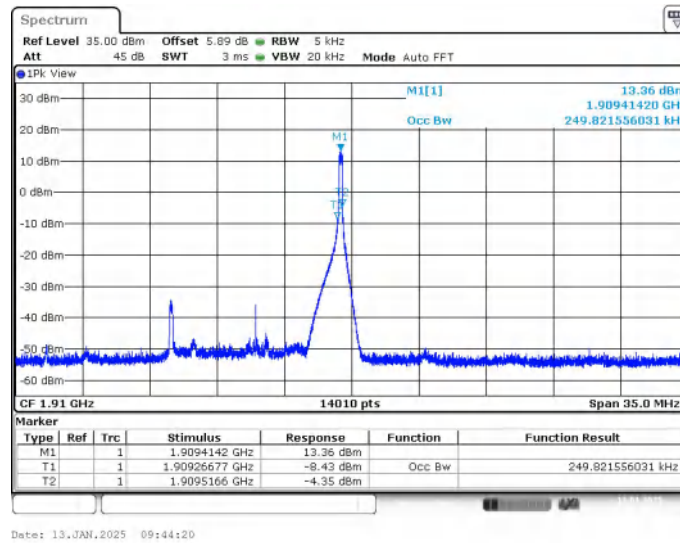
OBW: 1RB-LOW_offset



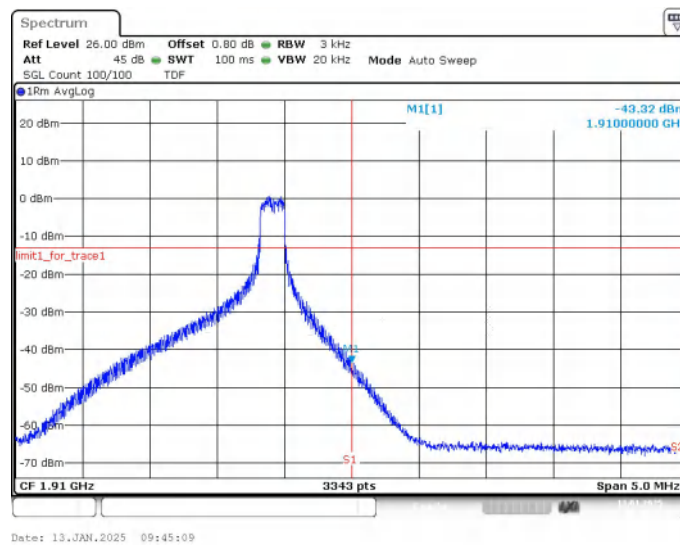
LOW BAND EDGE BLOCK-1RB-LOW_offset



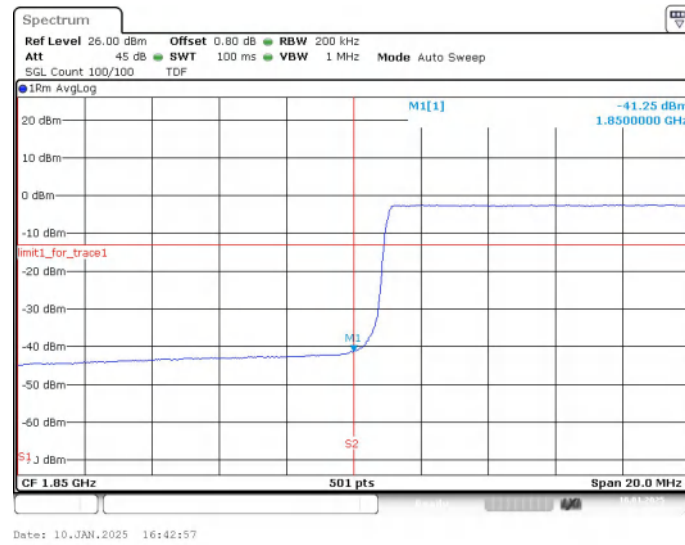
OBW: 1RB-HIGH_offset



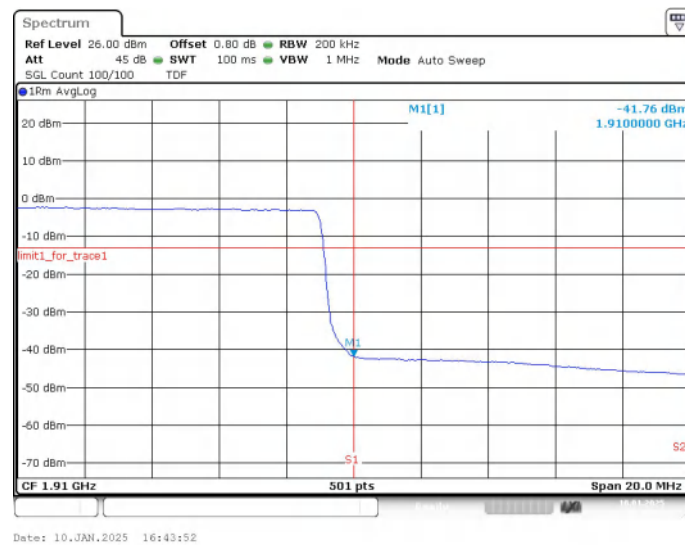
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-20MHz-100%RB

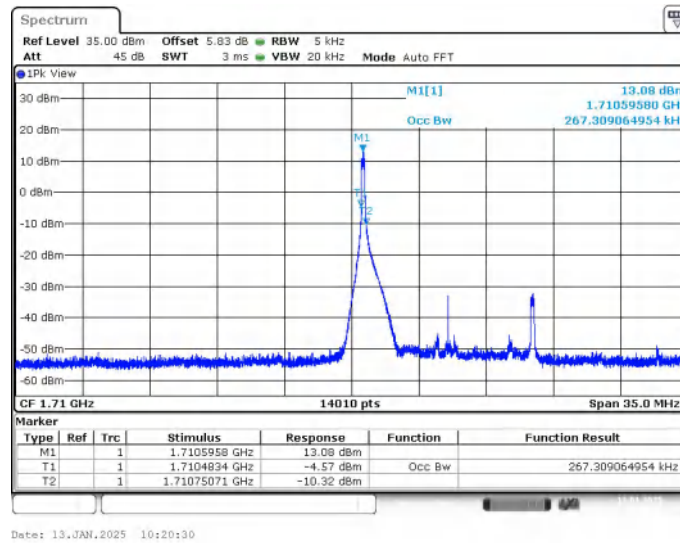


HIGH BAND EDGE BLOCK-20MHz-100%RB

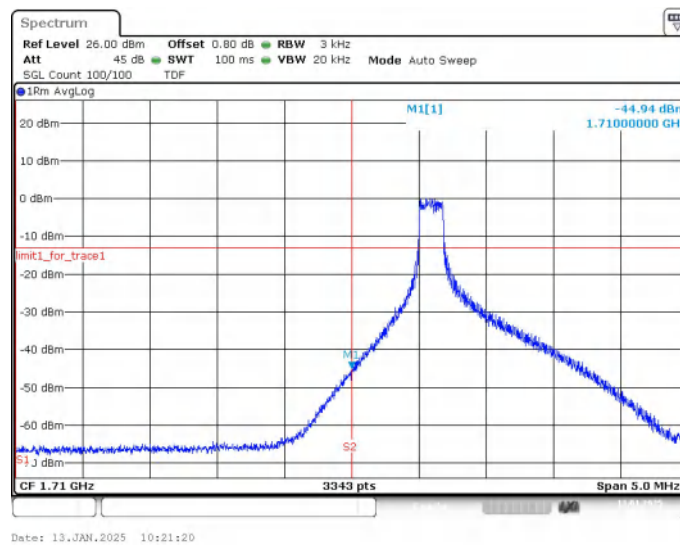


LTE band 4

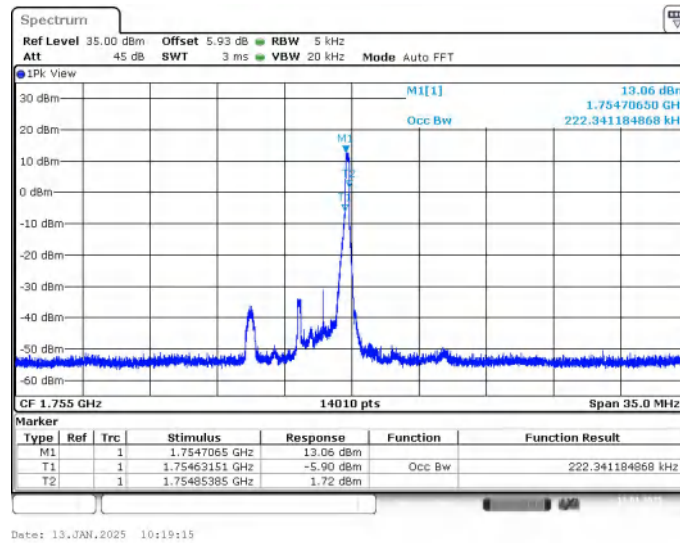
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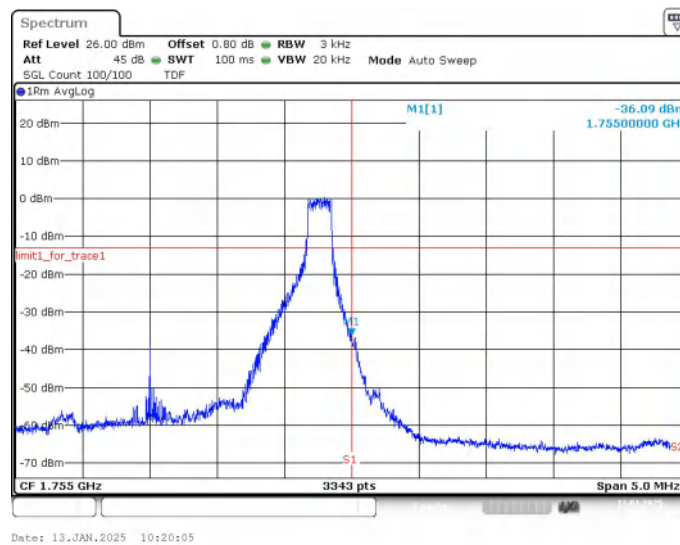
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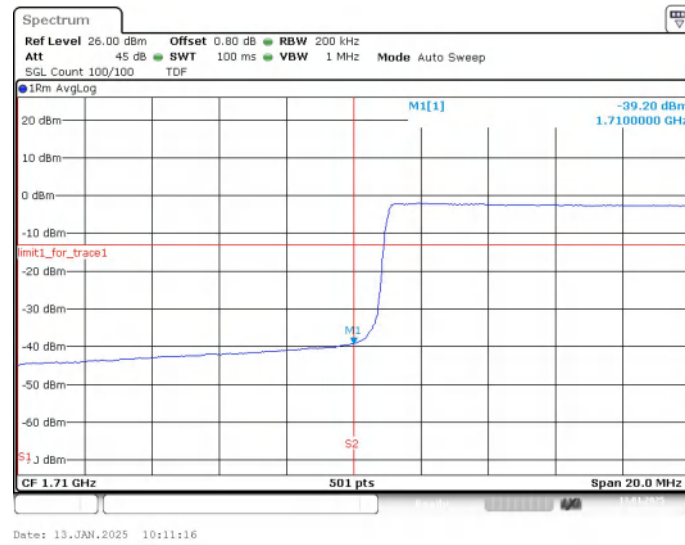
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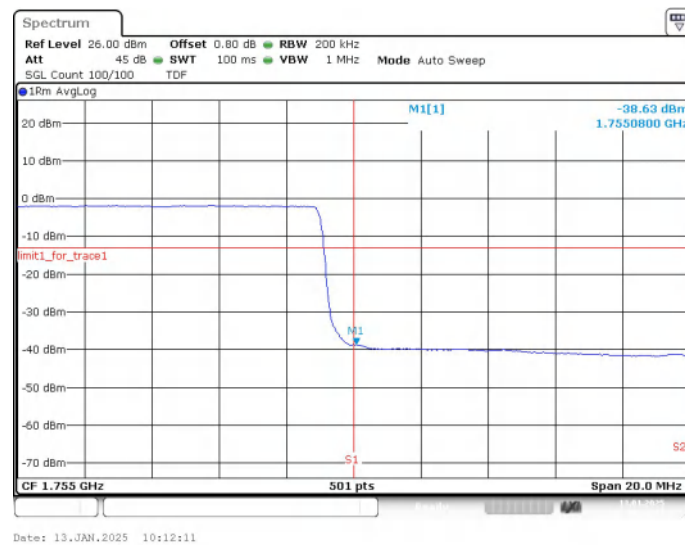
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-20MHz-100%RB

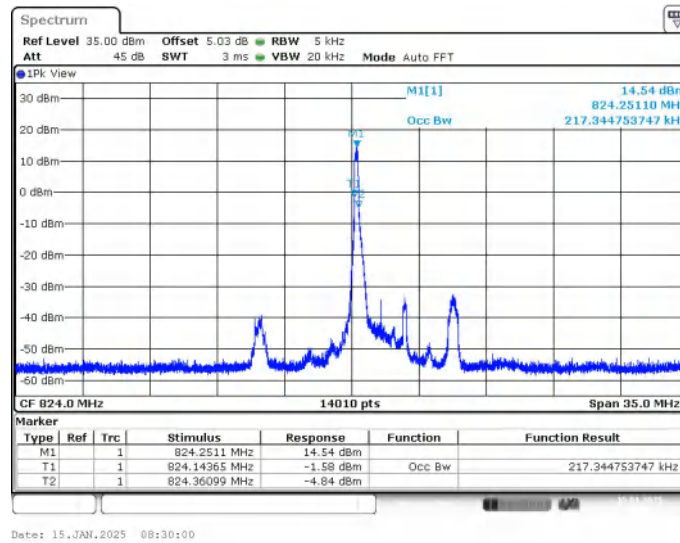


HIGH BAND EDGE BLOCK-20MHz-100%RB

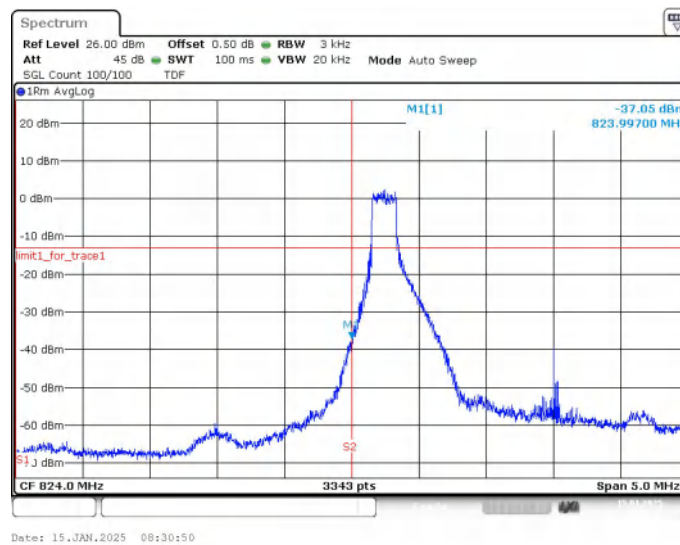


LTE band 5

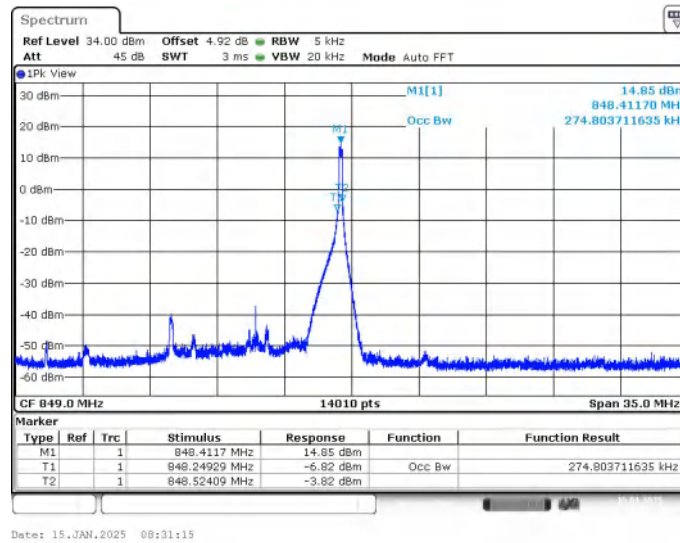
OBW: 1RB-LOW_offset



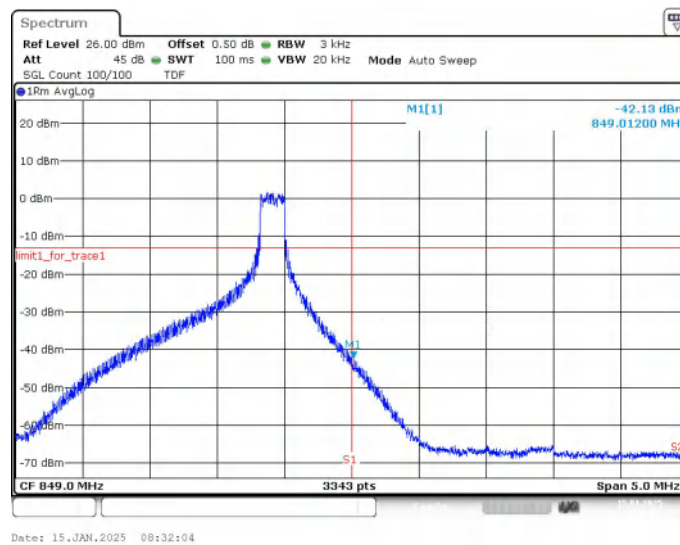
LOW BAND EDGE BLOCK-1RB-LOW_offset



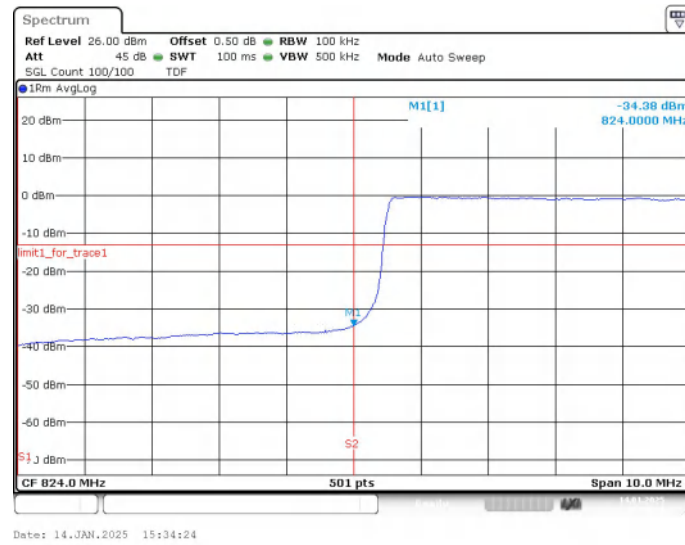
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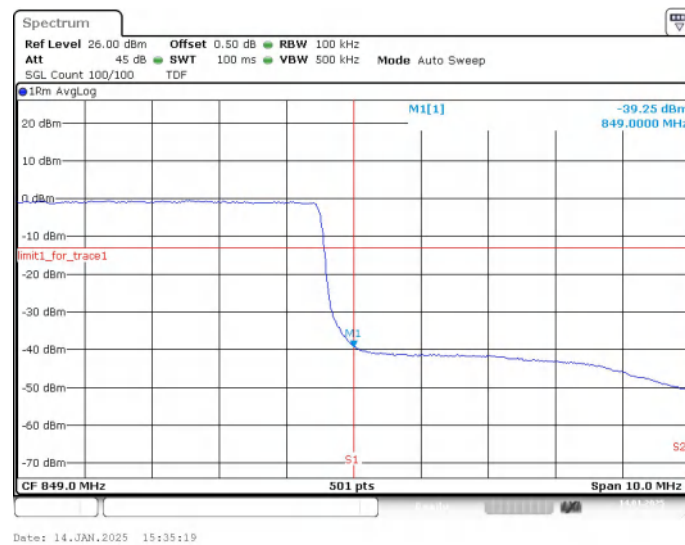
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-10MHz-100%RB

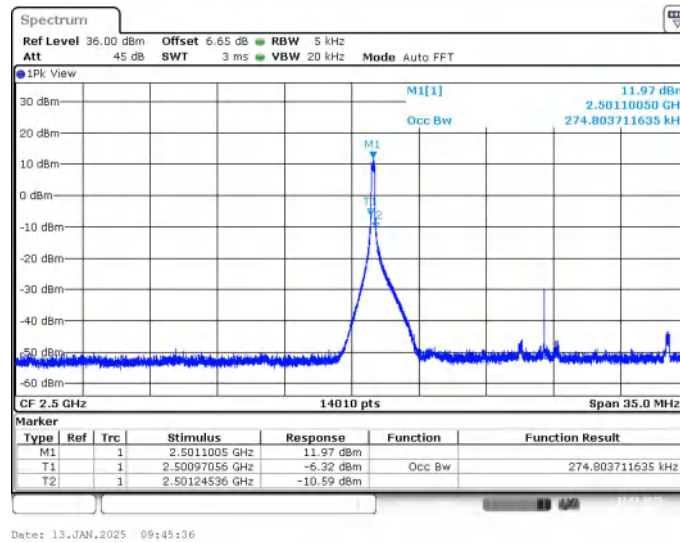


HIGH BAND EDGE BLOCK-10MHz-100%RB

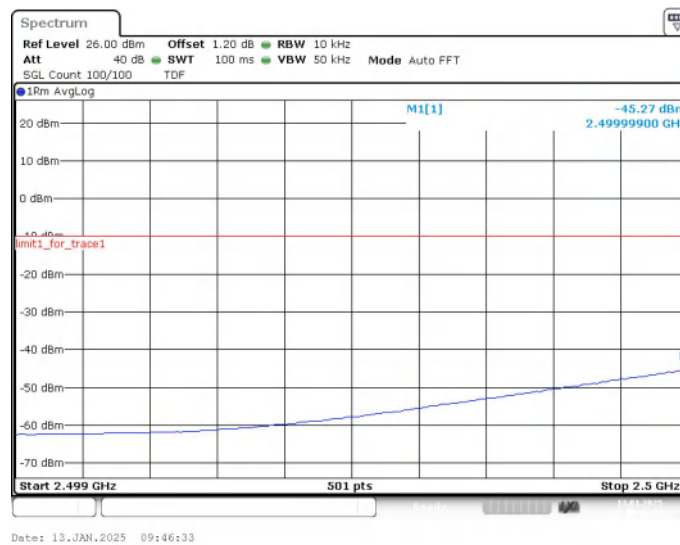


LTE band 7

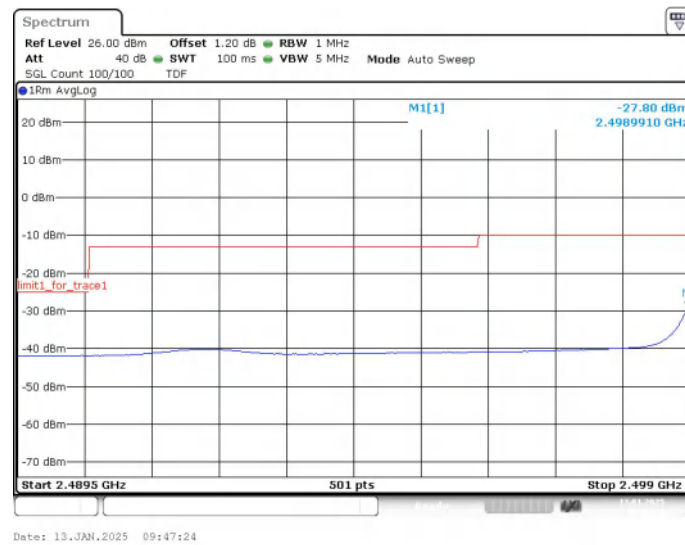
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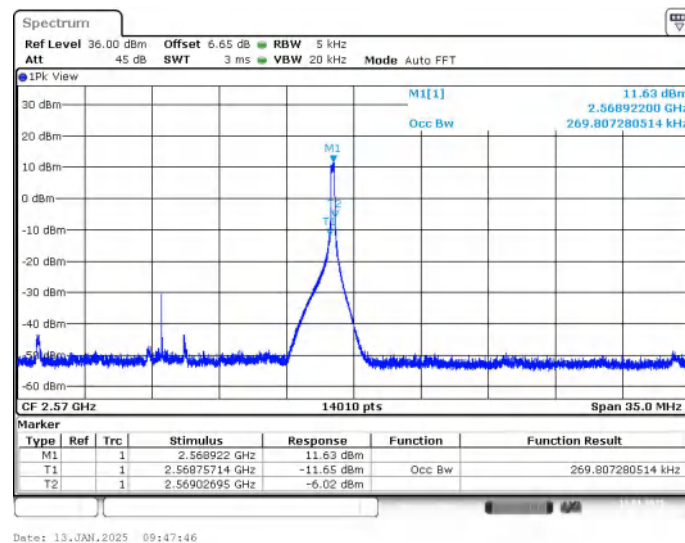
LOW BAND EDGE BLOCK-1RB-LOW_offset



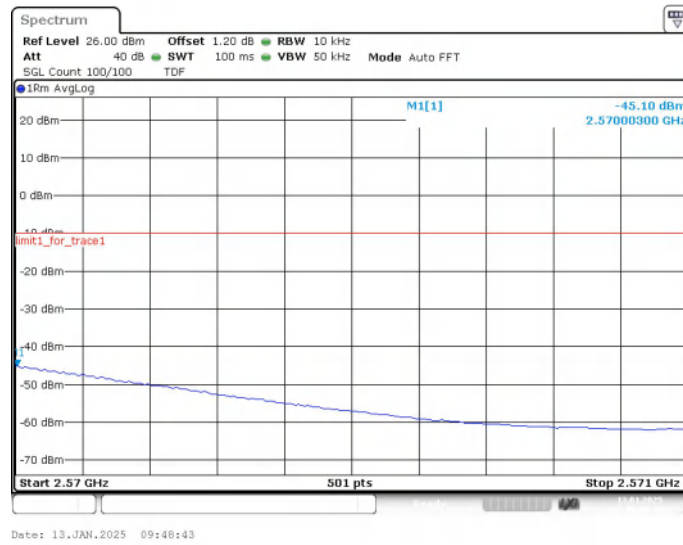
LOW BAND EDGE BLOCK-1RB-LOW_offset



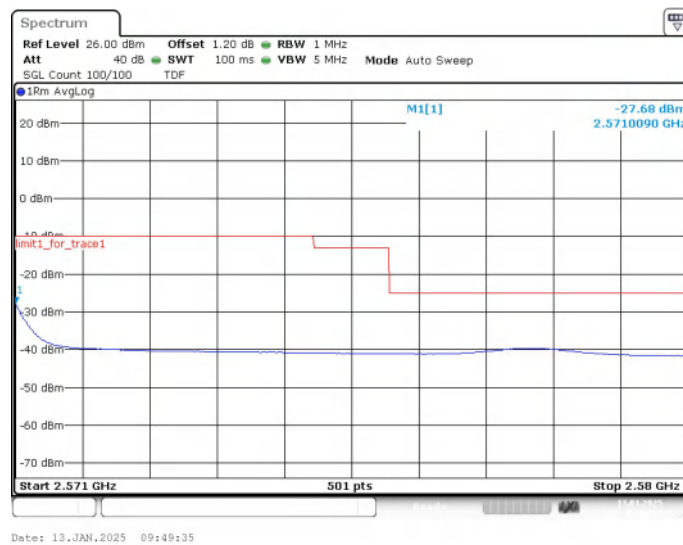
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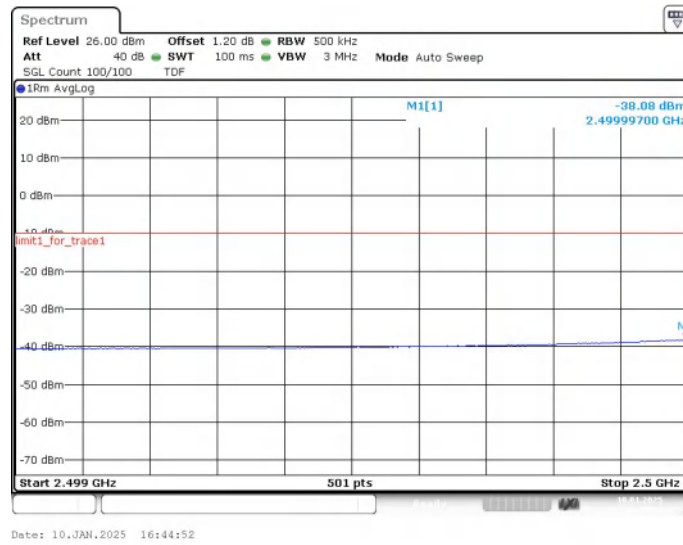
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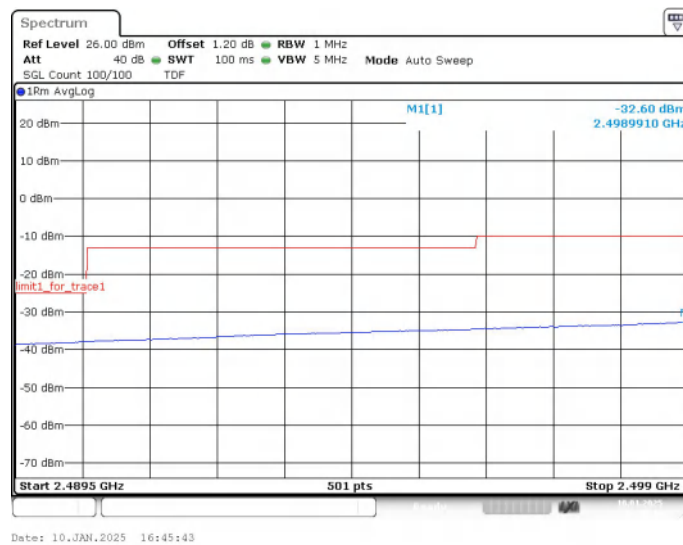
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



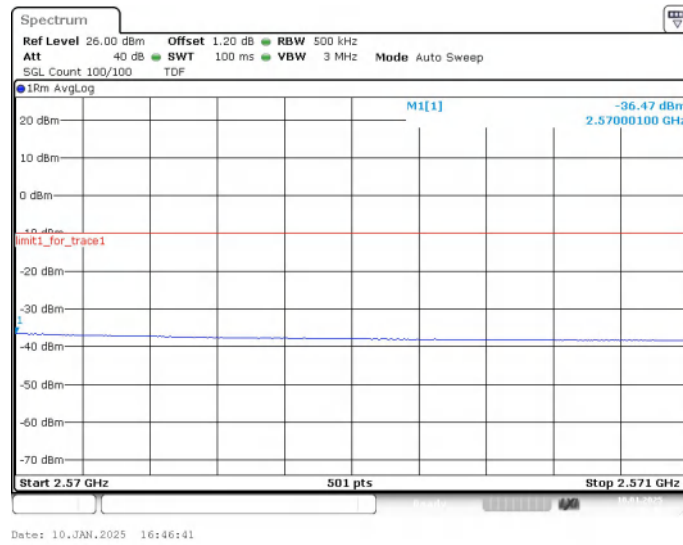
LOW BAND EDGE BLOCK-20MHz-100%RB



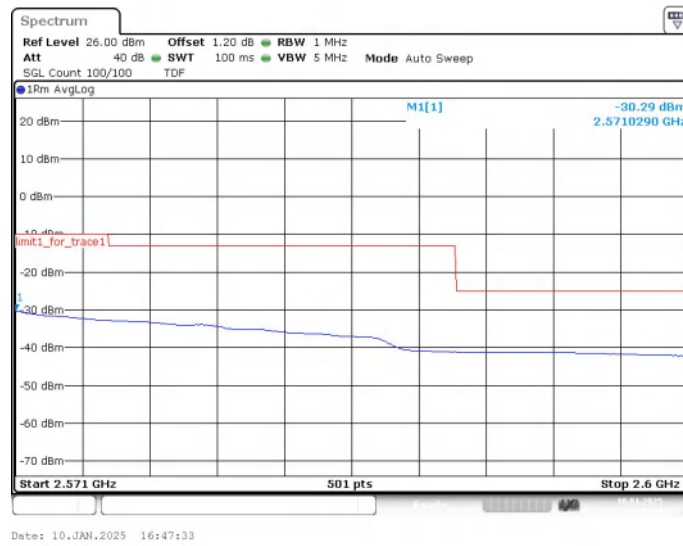
LOW BAND EDGE BLOCK-20MHz-100%RB



HIGH BAND EDGE BLOCK-20MHz-100%RB

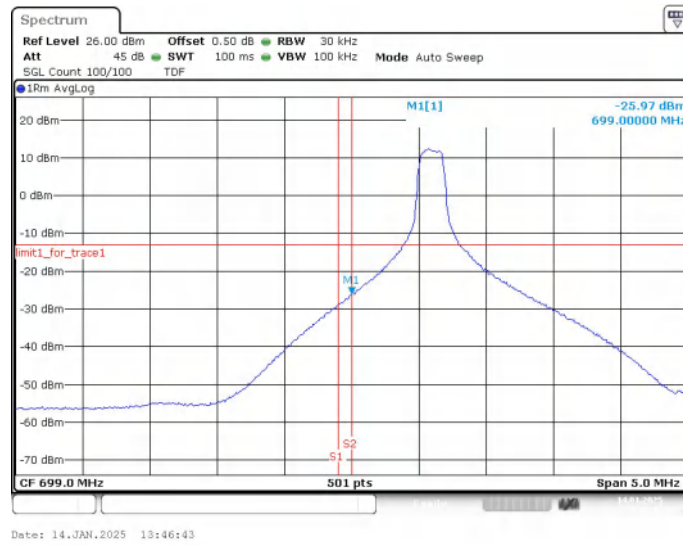


HIGH BAND EDGE BLOCK-20MHz-100%RB

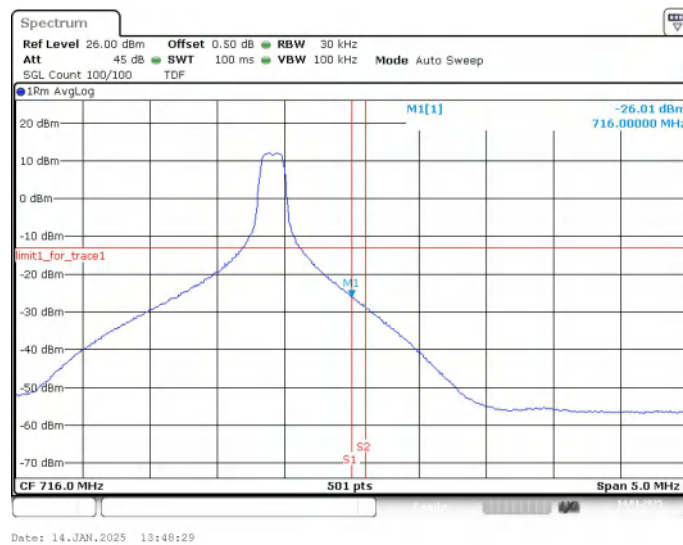


LTE band 12

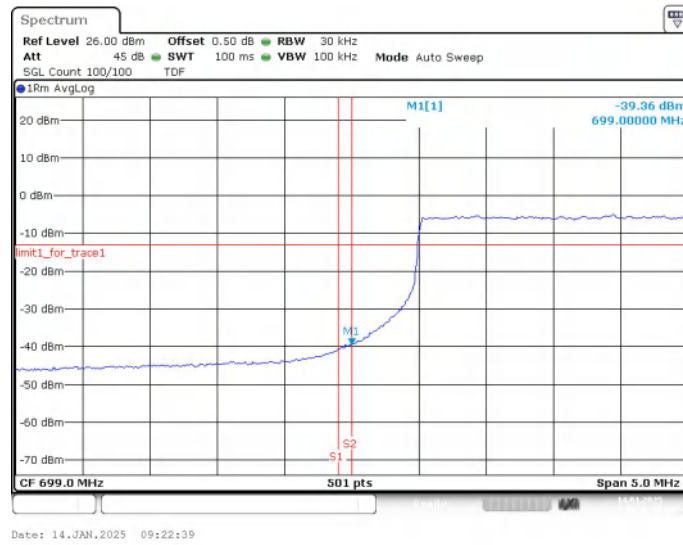
LOW BAND EDGE BLOCK-1RB-LOW_offset



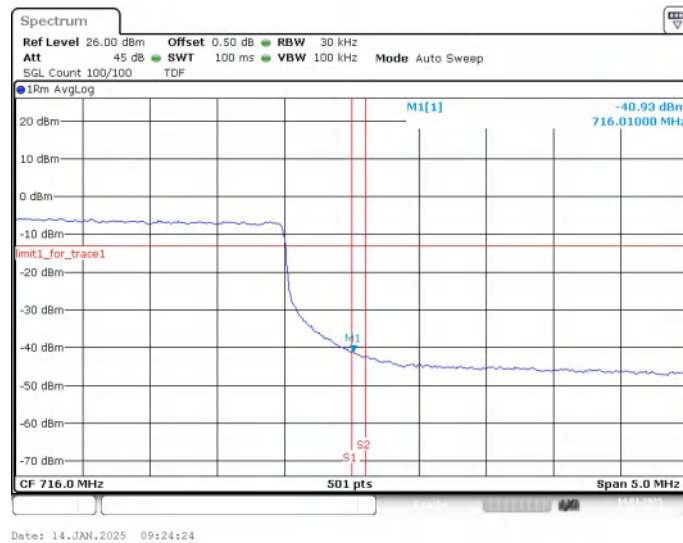
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-10MHz-100%RB

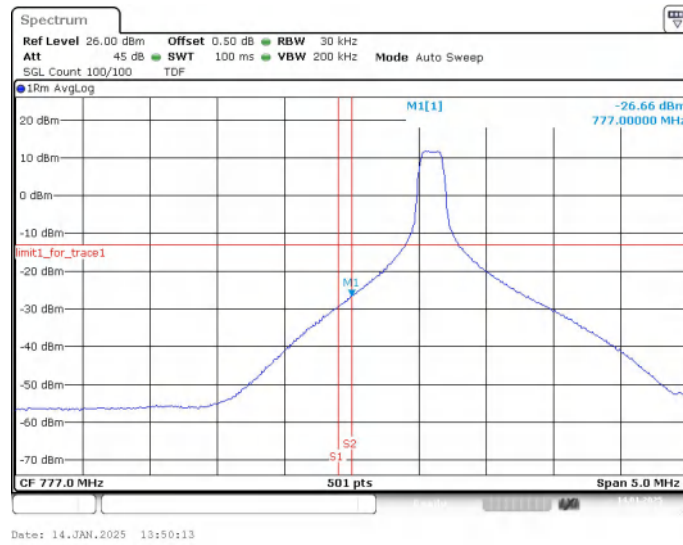


HIGH BAND EDGE BLOCK-10MHz-100%RB

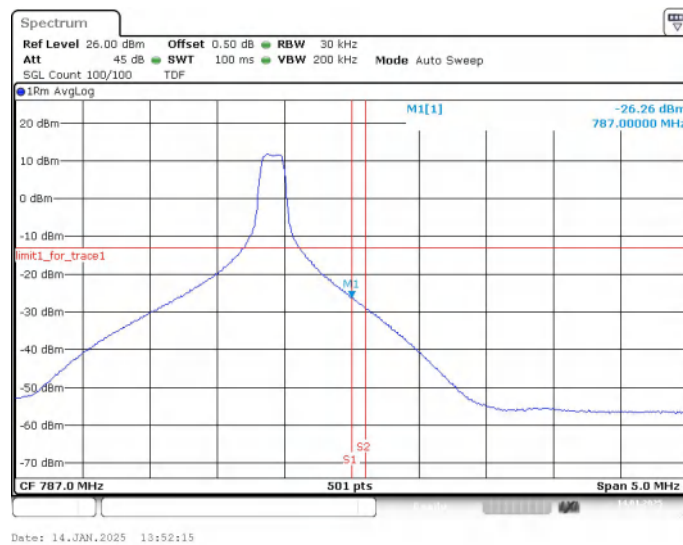


LTE band 13

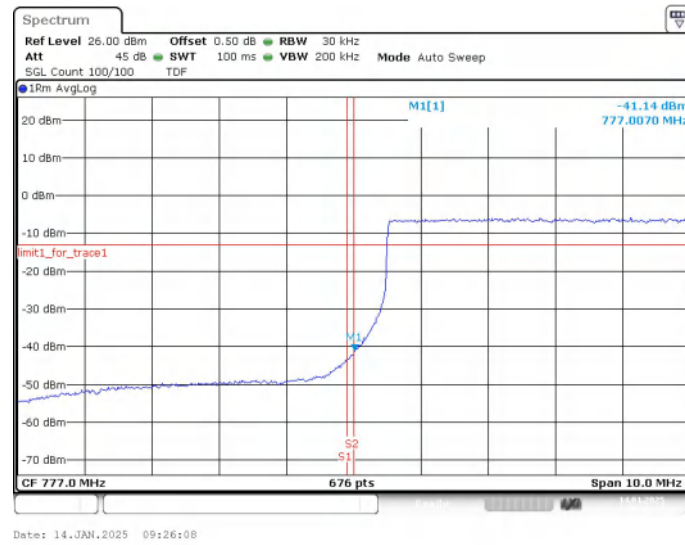
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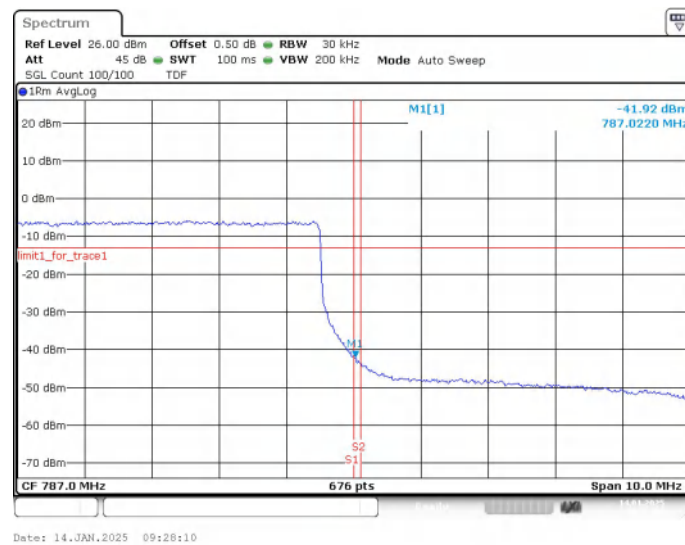
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LOW BAND EDGE BLOCK-10MHz-100%RB

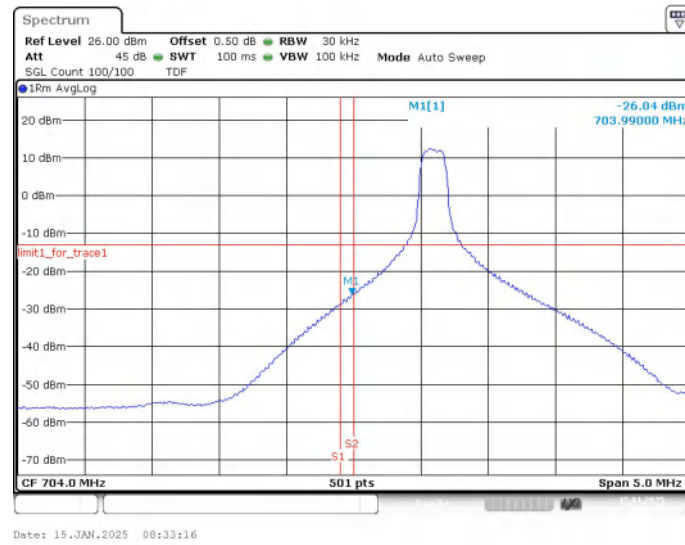


HIGH BAND EDGE BLOCK-10MHz-100%RB

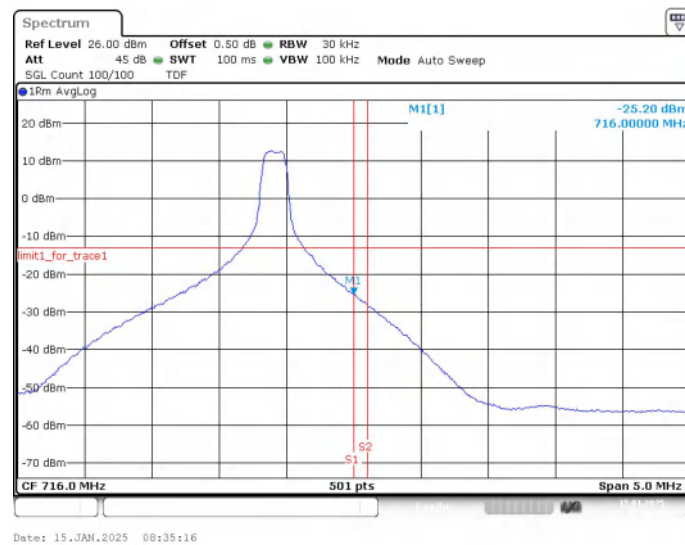


LTE band 17

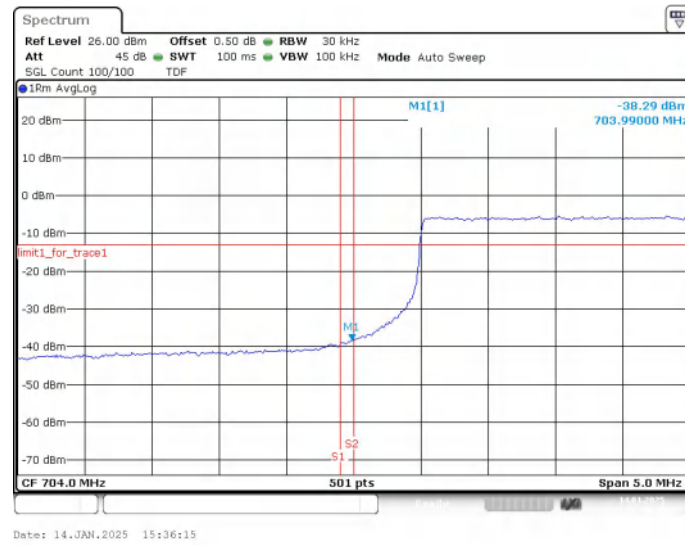
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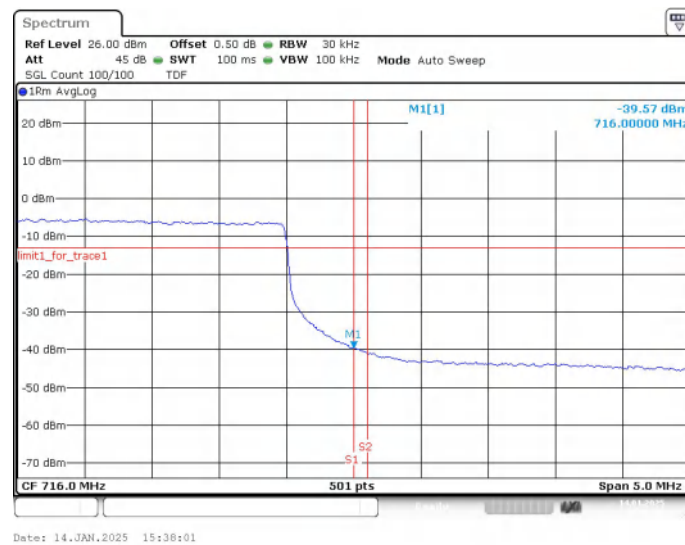
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-10MHz-100%RB

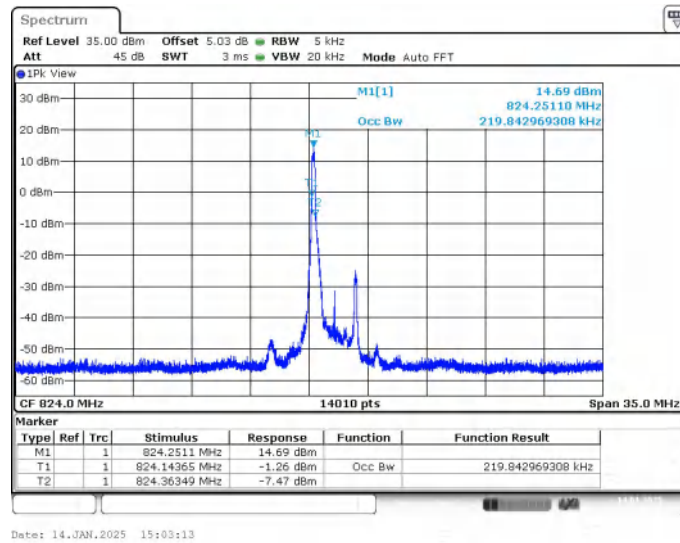


HIGH BAND EDGE BLOCK-10MHz-100%RB

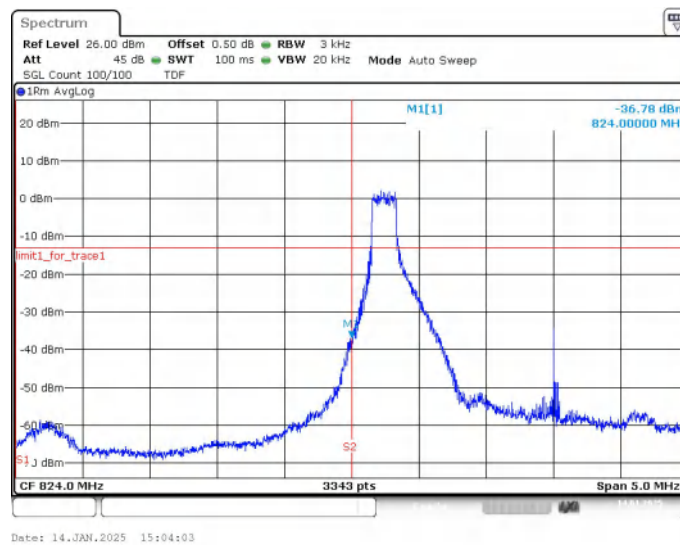


LTE band 26(824MHz~849MHz)

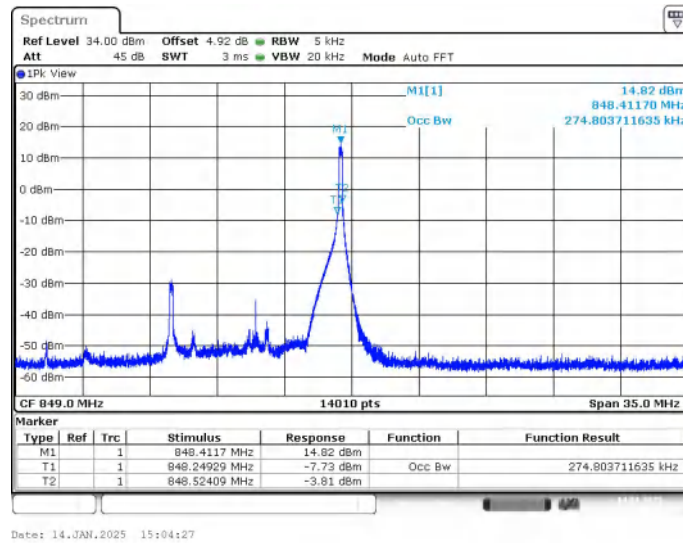
OBW: 1RB-LOW_offset



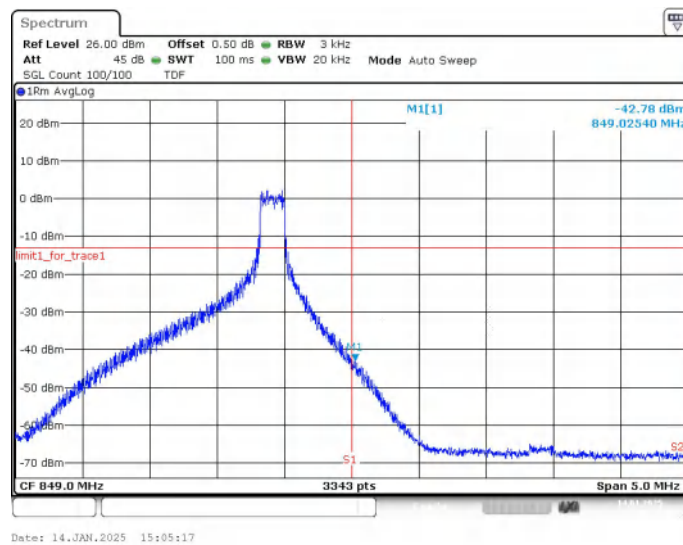
LOW BAND EDGE BLOCK-1RB-LOW_offset



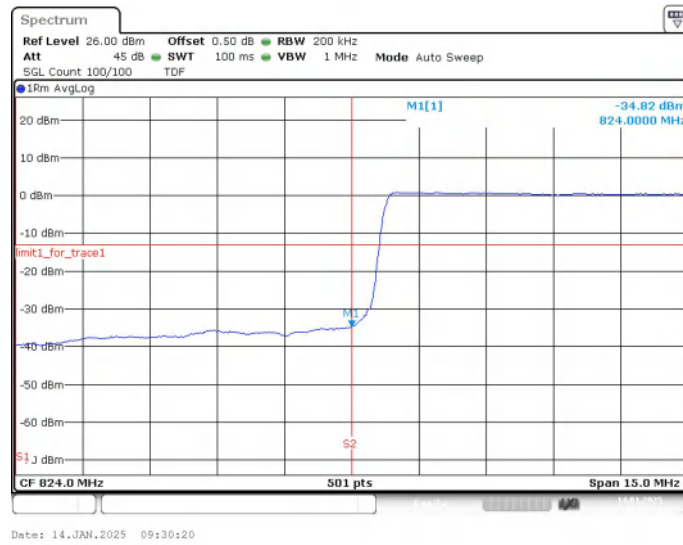
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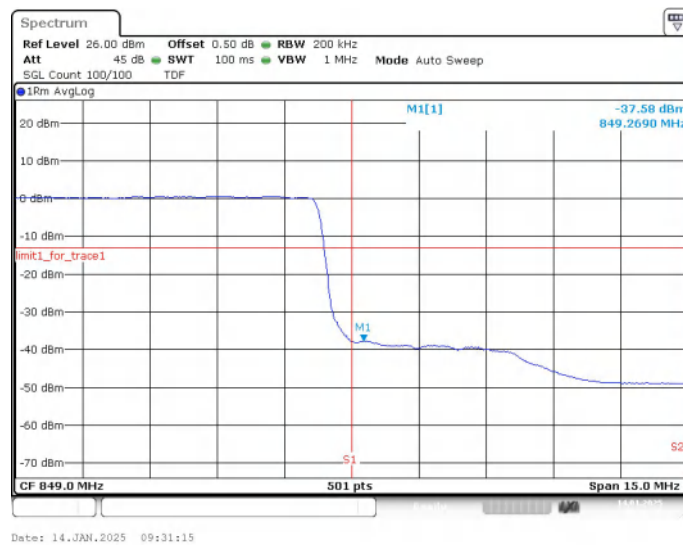
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-15MHz-100%RB

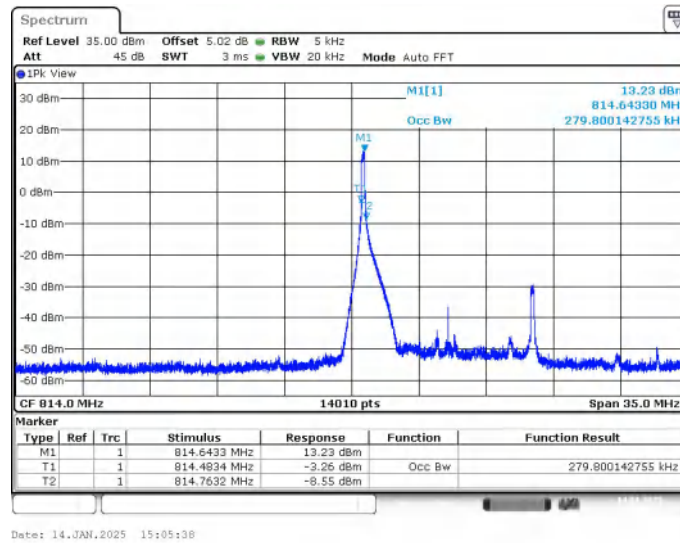


HIGH BAND EDGE BLOCK-15MHz-100%RB

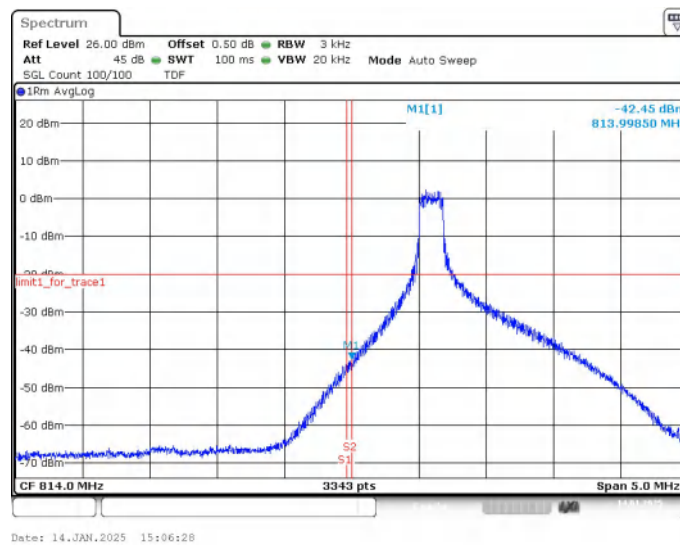


LTE band 26(814MHz~824MHz)

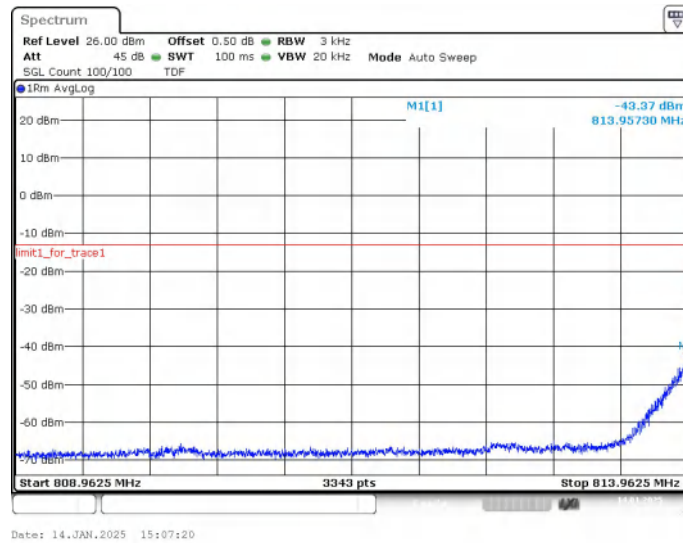
OBW: 1RB-LOW_offset



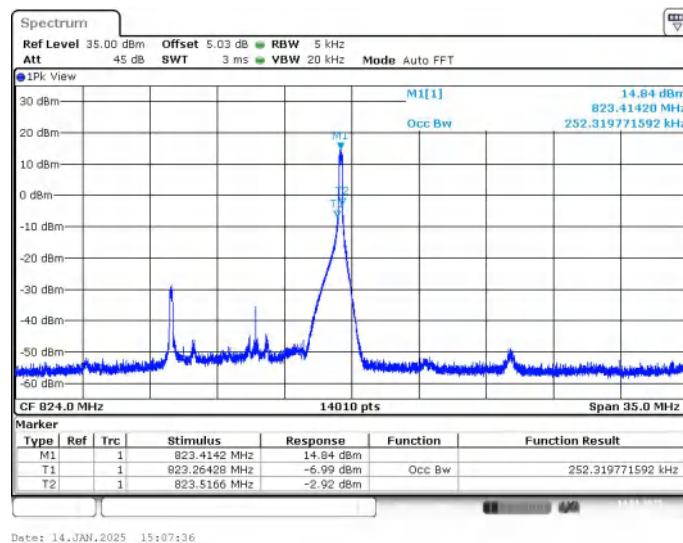
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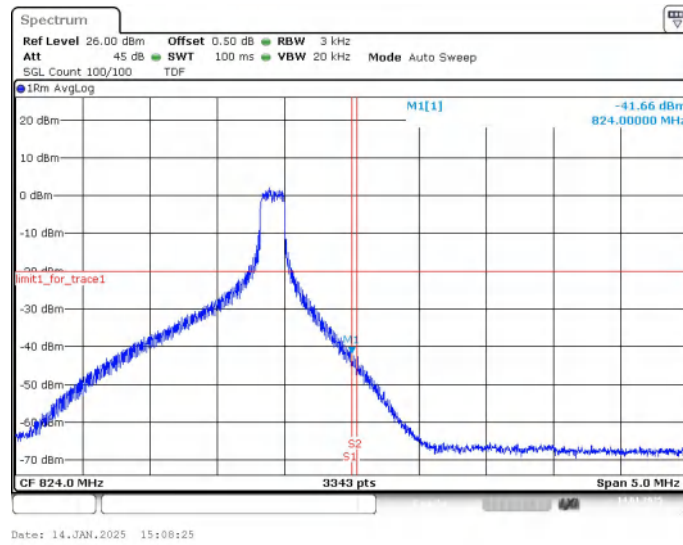
LOW BAND EDGE BLOCK-1RB-LOW_offset



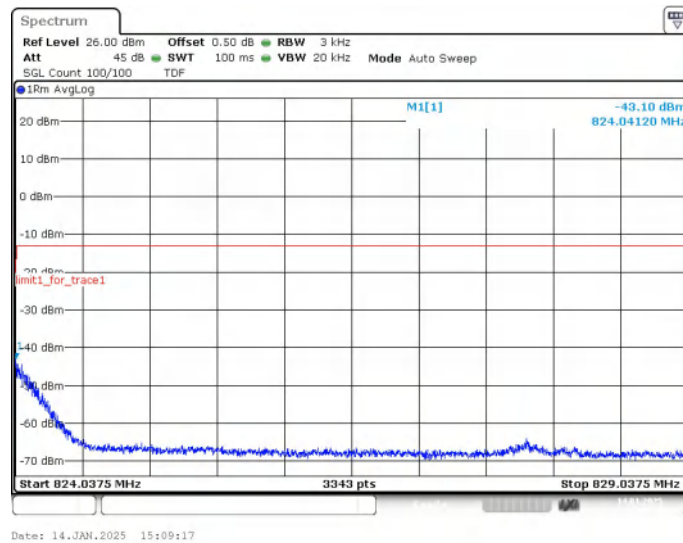
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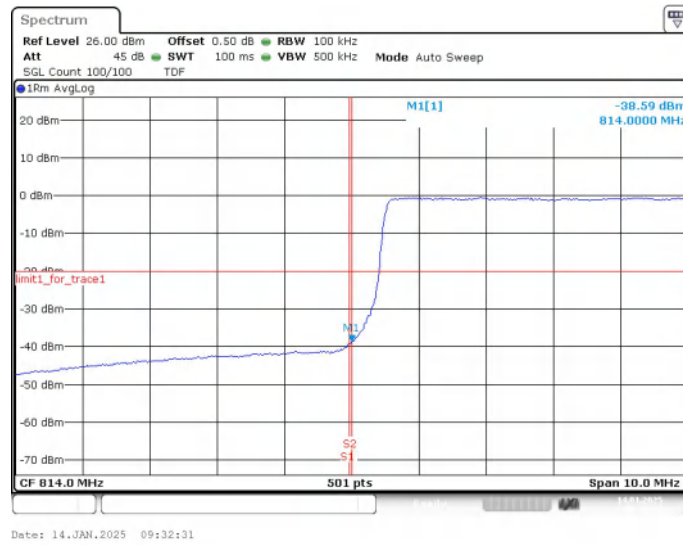
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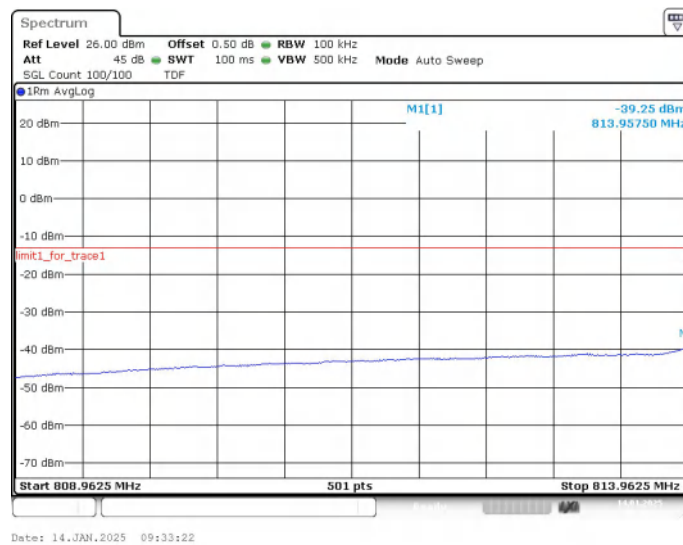
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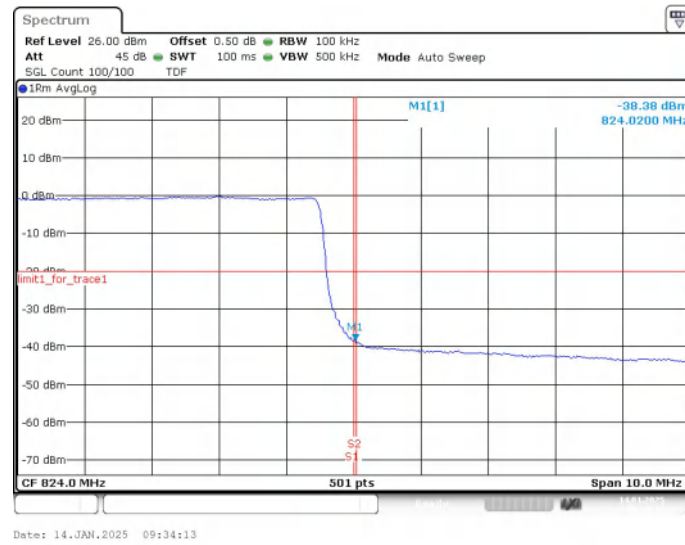
LOW BAND EDGE BLOCK-10MHz-100%RB



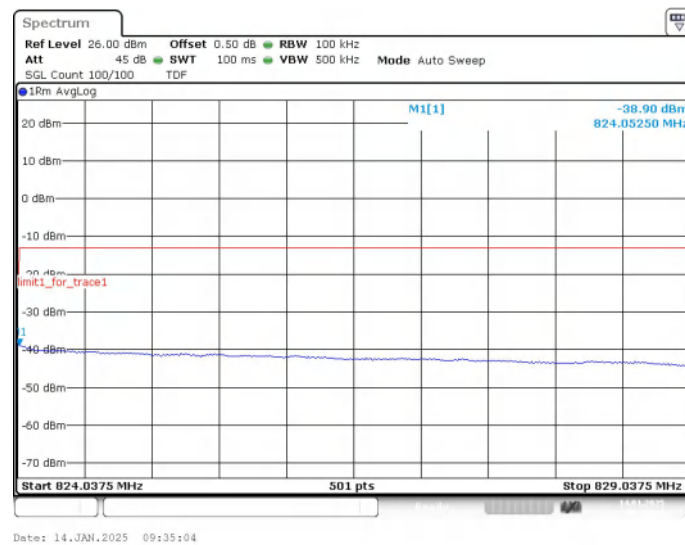
LOW BAND EDGE BLOCK-10MHz-100%RB



HIGH BAND EDGE BLOCK-10MHz-100%RB

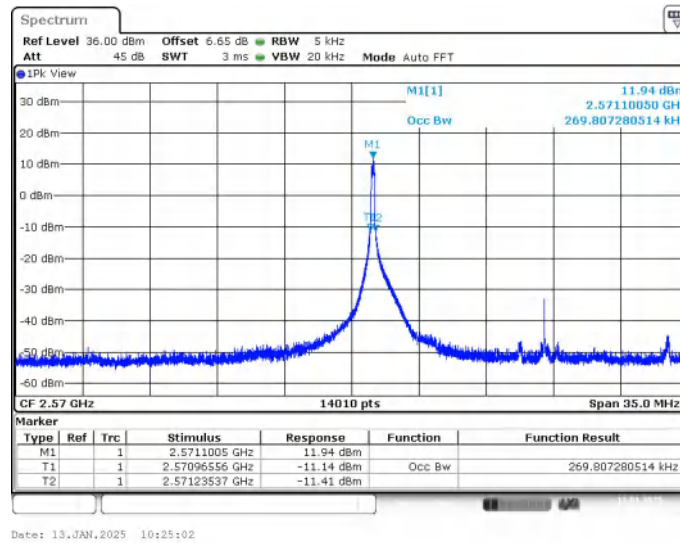


HIGH BAND EDGE BLOCK-10MHz-100%RB

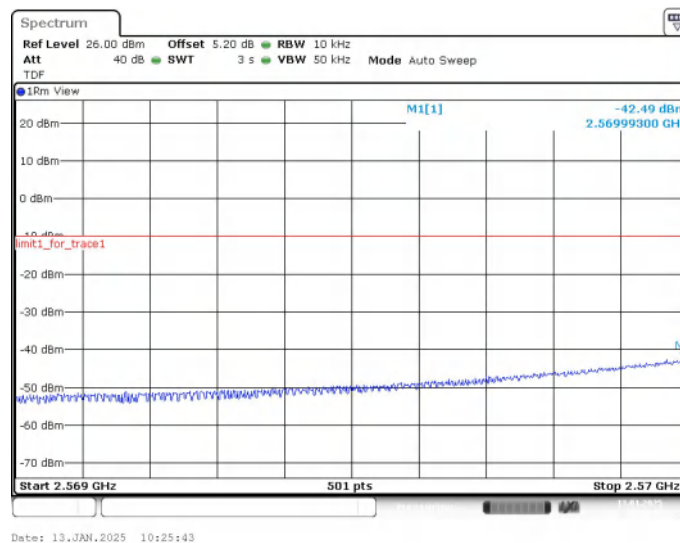


LTE band 38

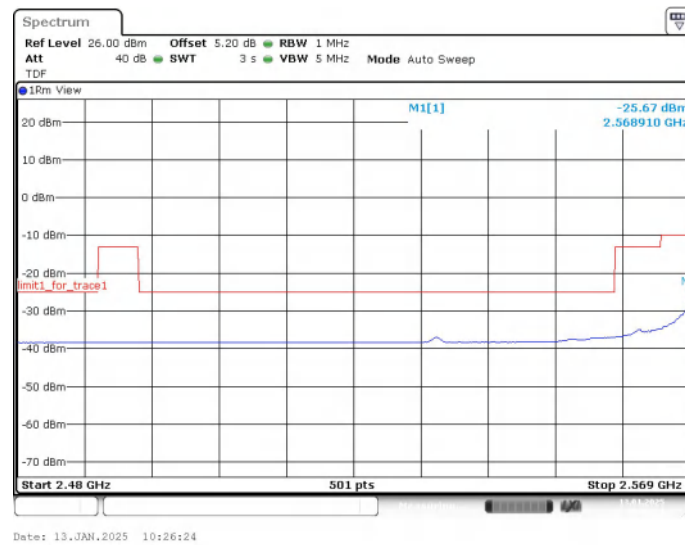
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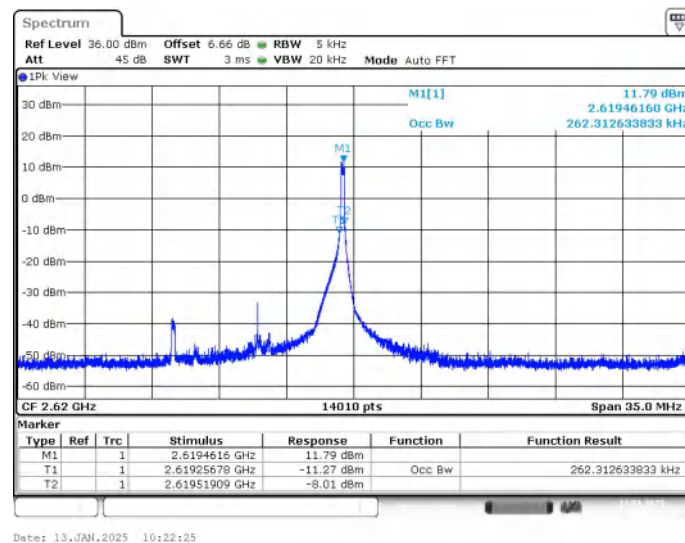
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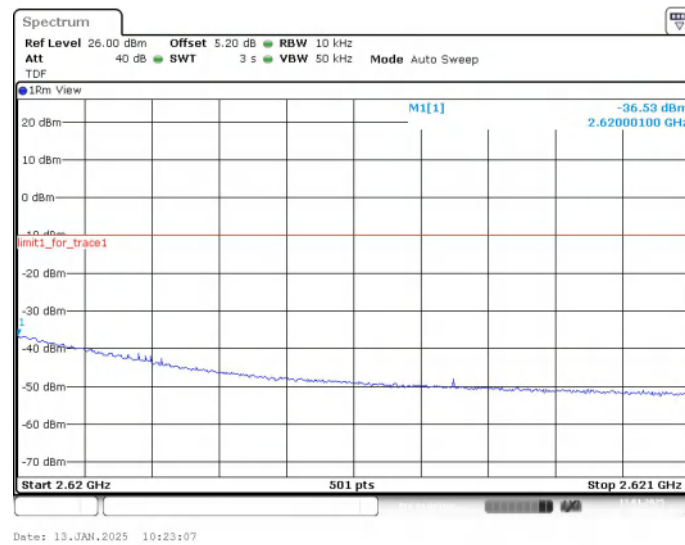
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OBW: 1RB-HIGH_offset



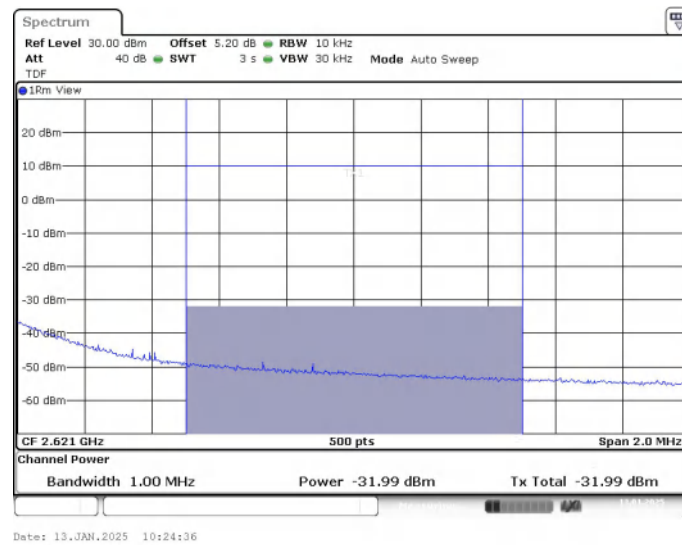
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



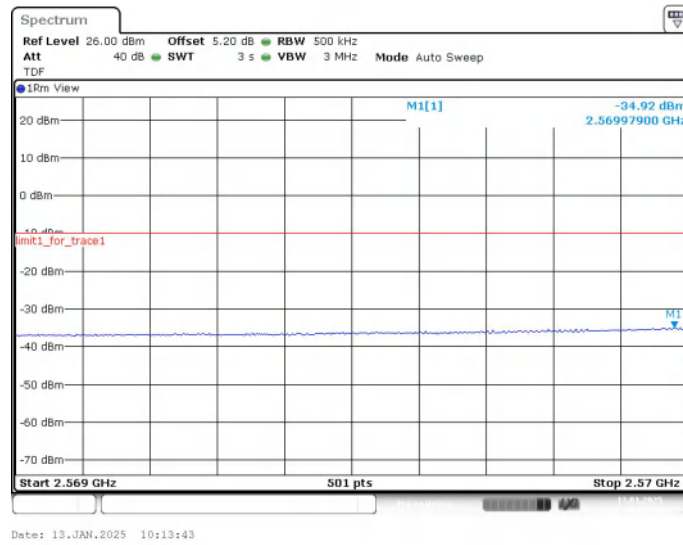
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



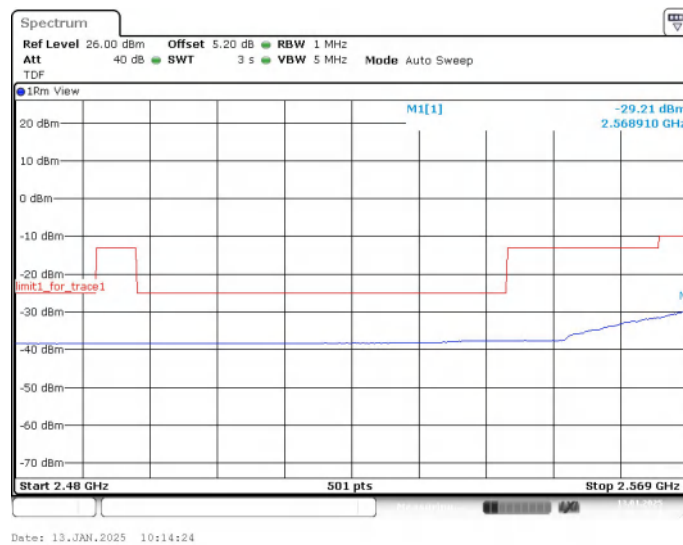
Channel power



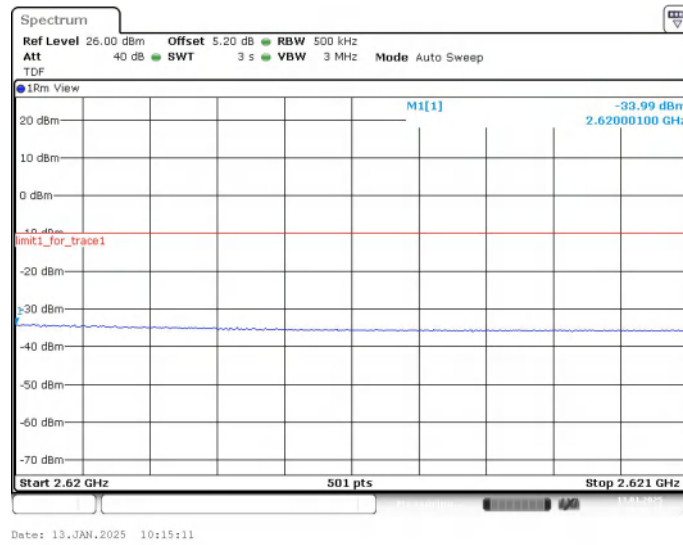
LOW BAND EDGE BLOCK-20MHz-100%RB



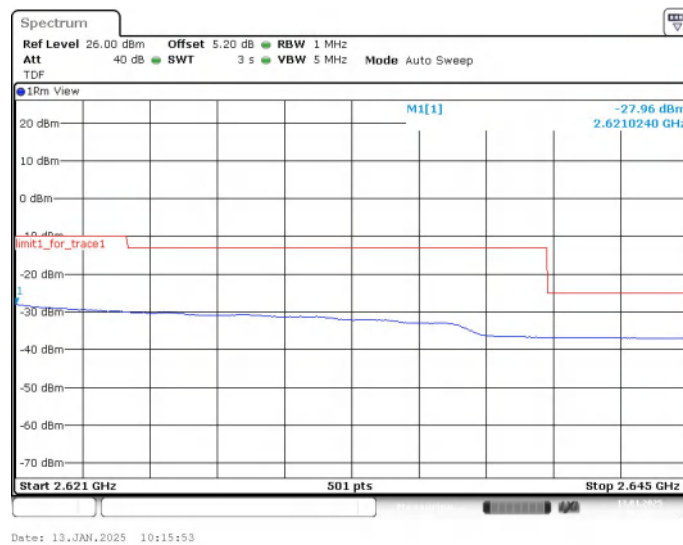
LOW BAND EDGE BLOCK-20MHz-100%RB



HIGH BAND EDGE BLOCK-20MHz-100%RB

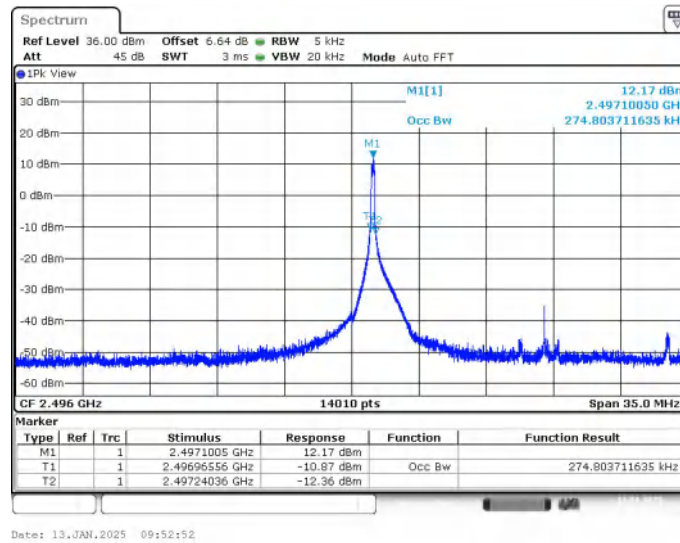


HIGH BAND EDGE BLOCK-20MHz-100%RB

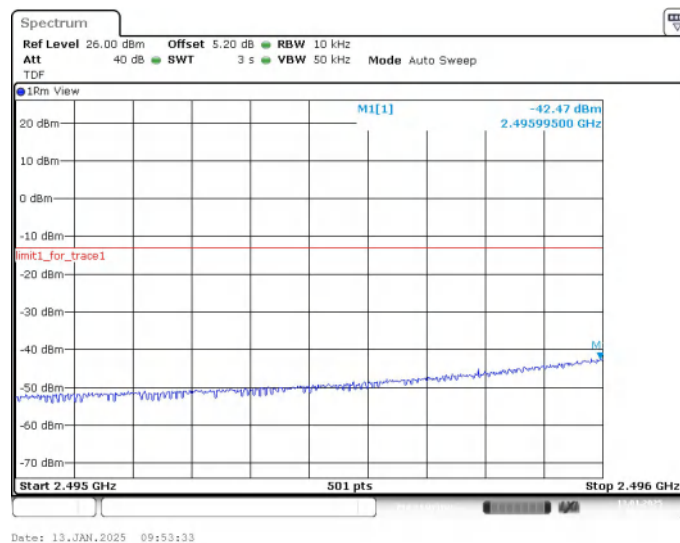


LTE band 41

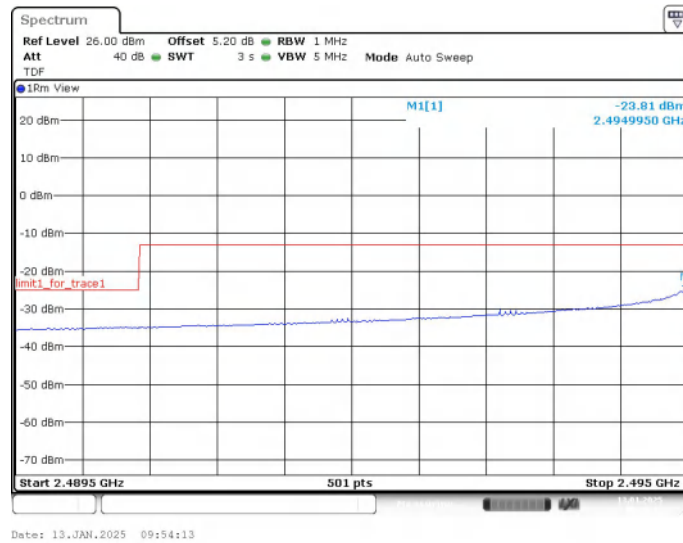
OBW: 1RB-LOW_offset



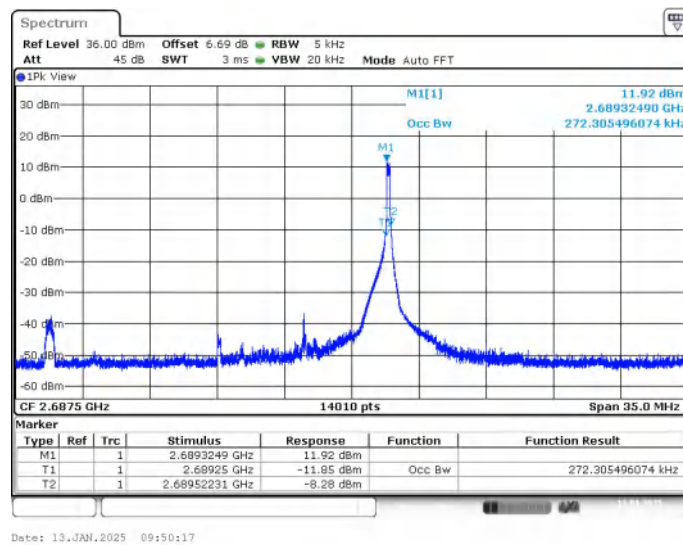
LOW BAND EDGE BLOCK-1RB-LOW_offset



LOW BAND EDGE BLOCK-1RB-LOW_offset



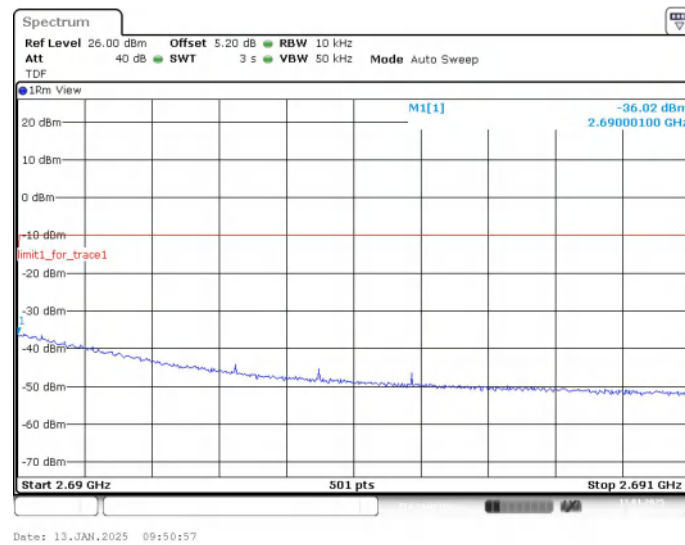
OBW: 1RB-HIGH_offset



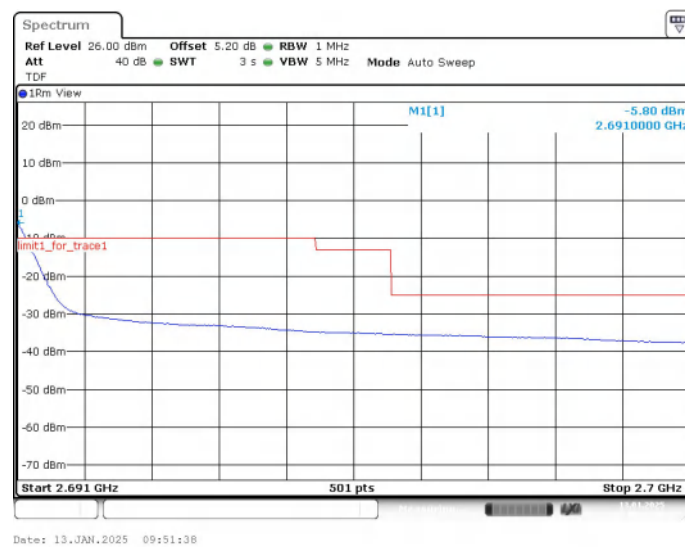


No.24T04Z103042-003

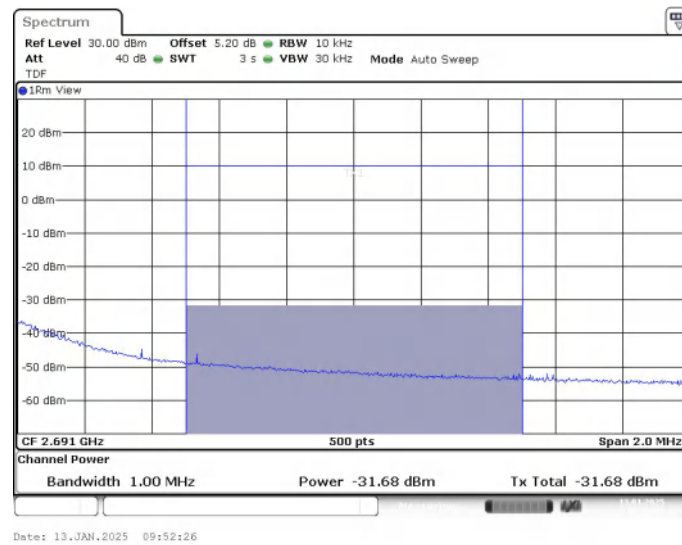
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



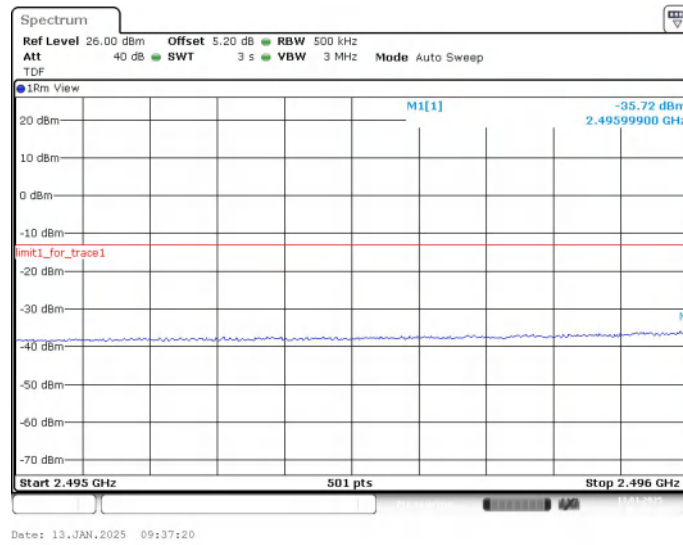
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



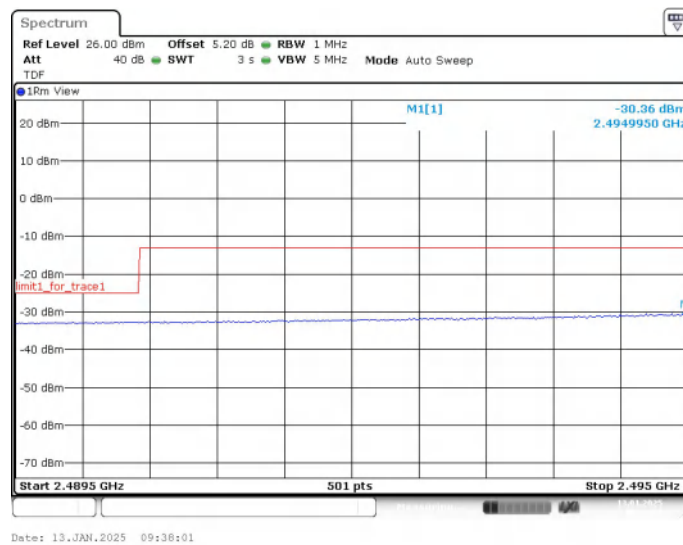
Channel power



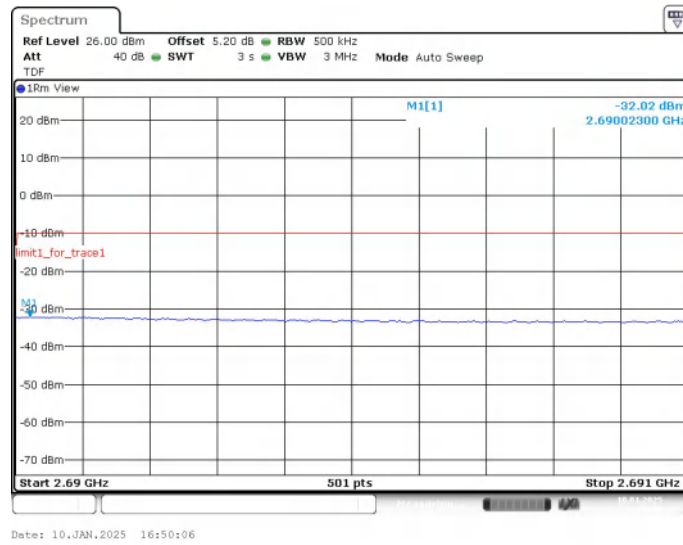
LOW BAND EDGE BLOCK-20MHz-100%RB



LOW BAND EDGE BLOCK-20MHz-100%RB



HIGH BAND EDGE BLOCK-20MHz-100%RB

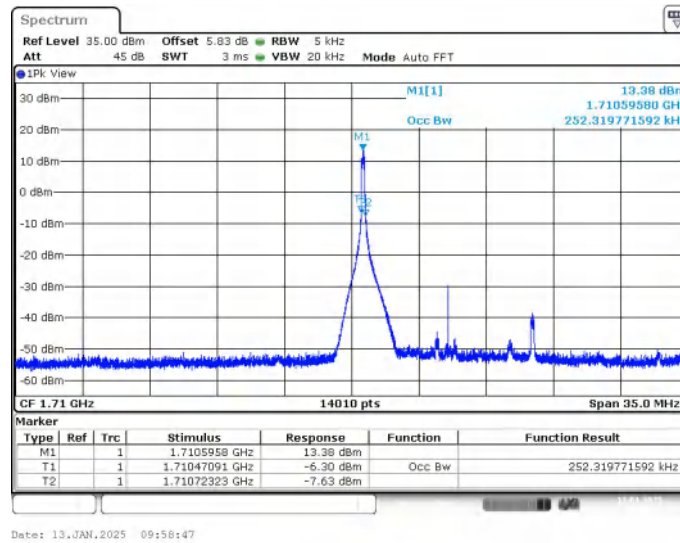


HIGH BAND EDGE BLOCK-20MHz-100%RB

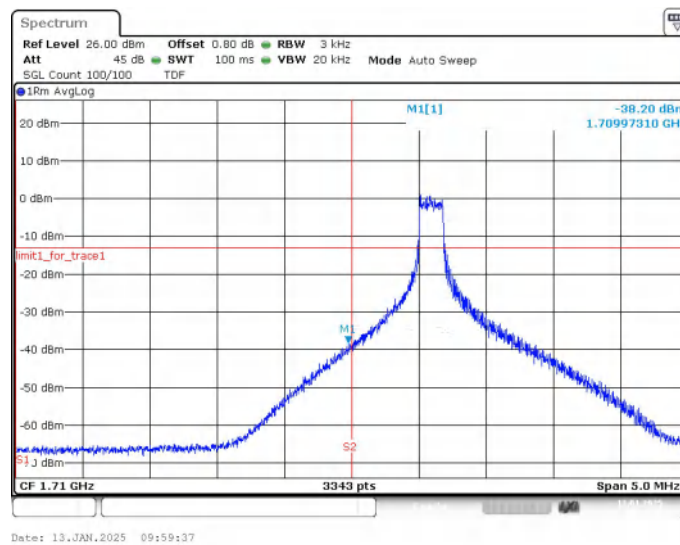


LTE band 66

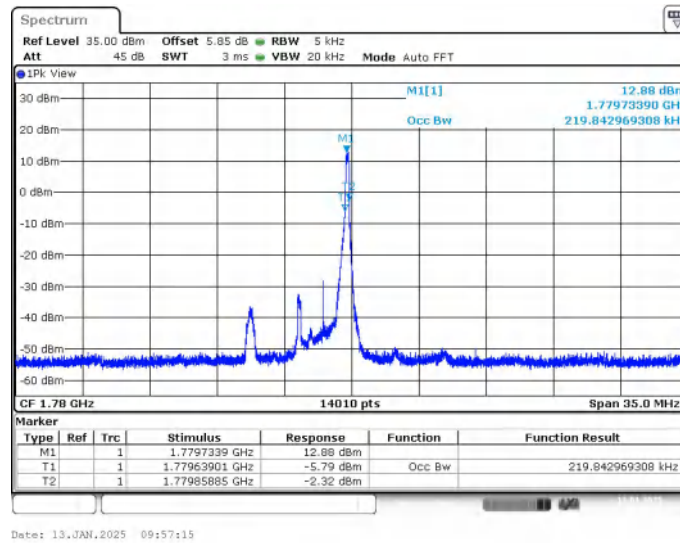
OBW: 1RB-LOW_offset



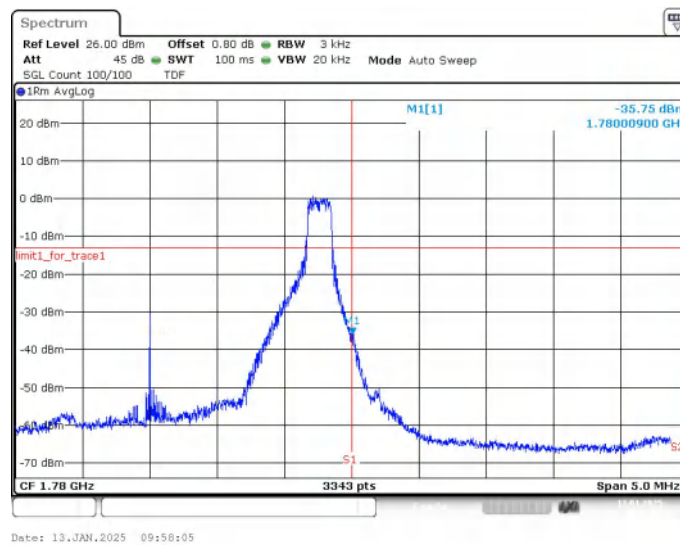
LOW BAND EDGE BLOCK-1RB-LOW_offset



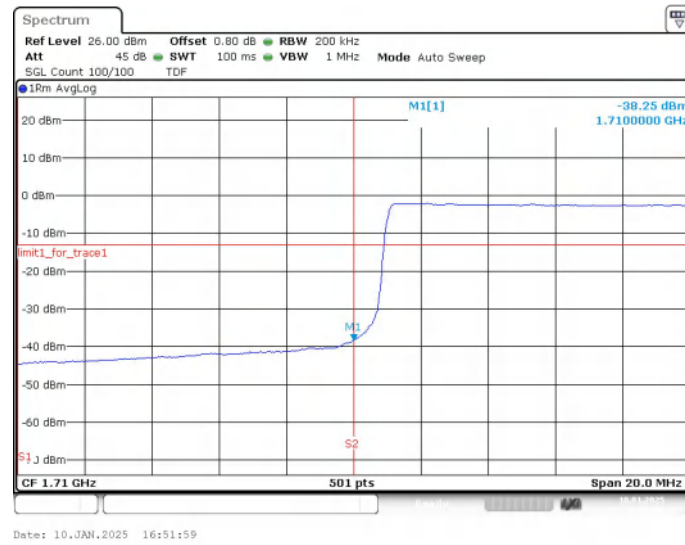
OBW: 1RB-HIGH_offset



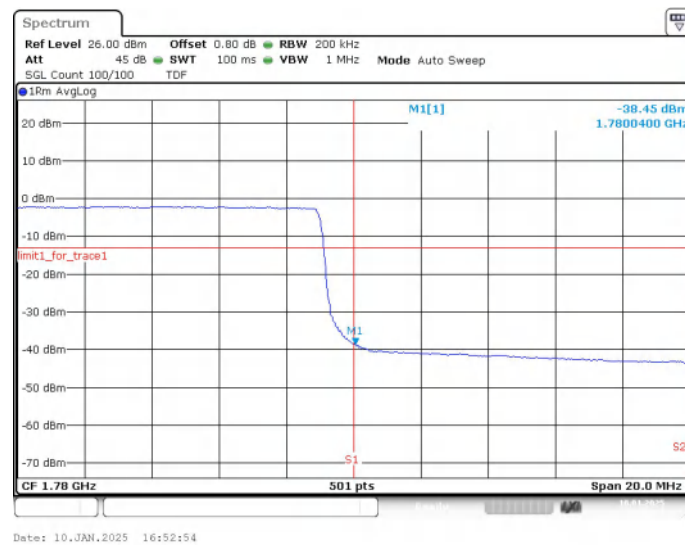
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



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 $2 \times \text{span} / \text{RBW}$.

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 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 2490.5 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.

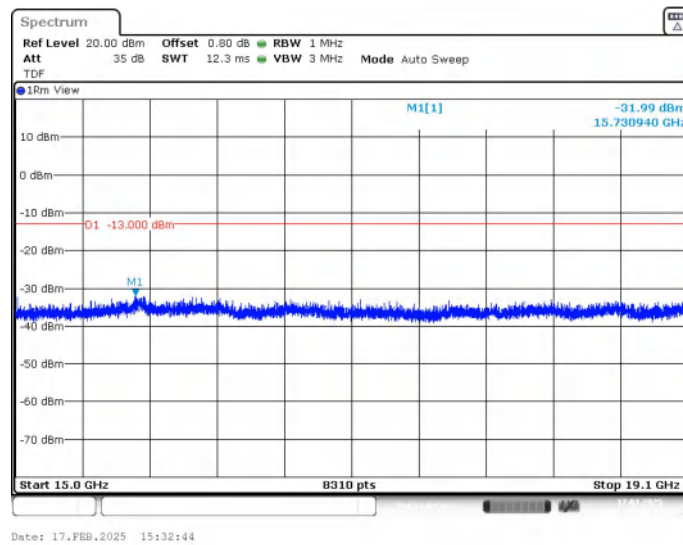
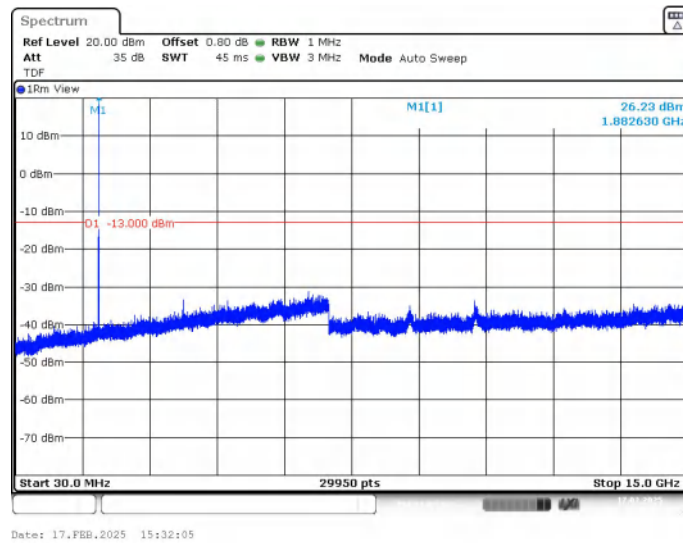
Part 27.53(g) states for operations in the 600 MHz band and the 698–746 MHz band, the power of any emission outside a licensee’s frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ 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.

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

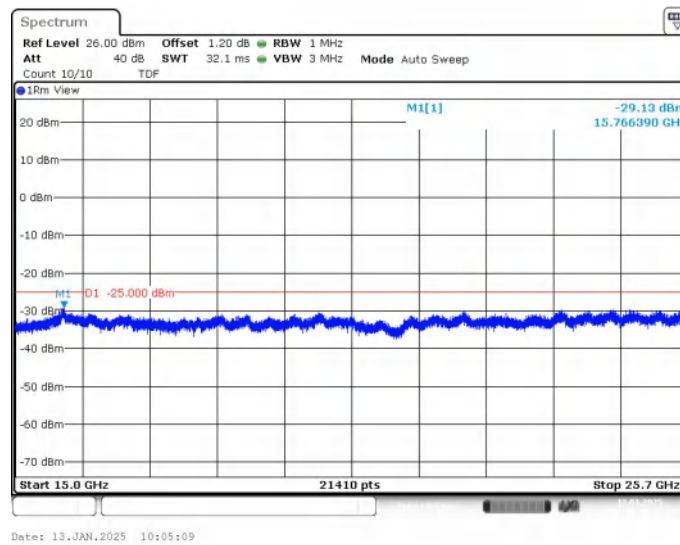
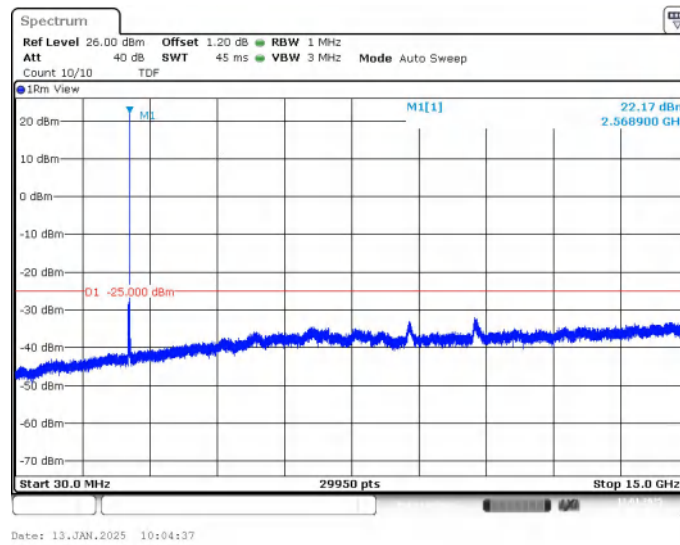
LTE band 2

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



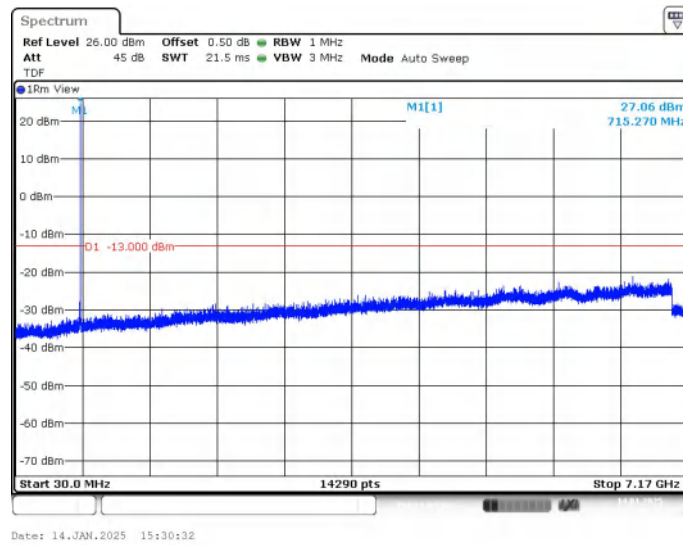
LTE band 7

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



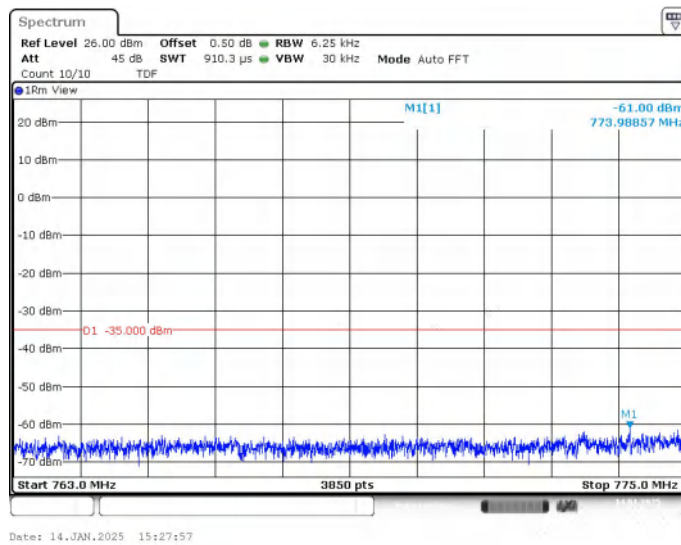
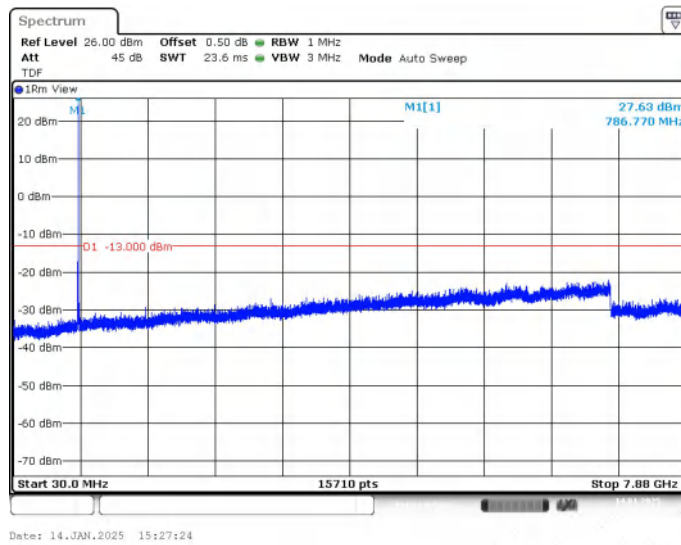
LTE band 12

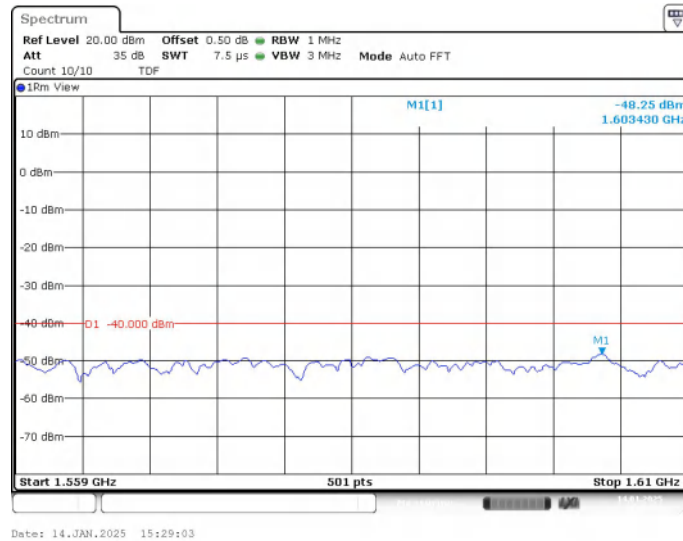
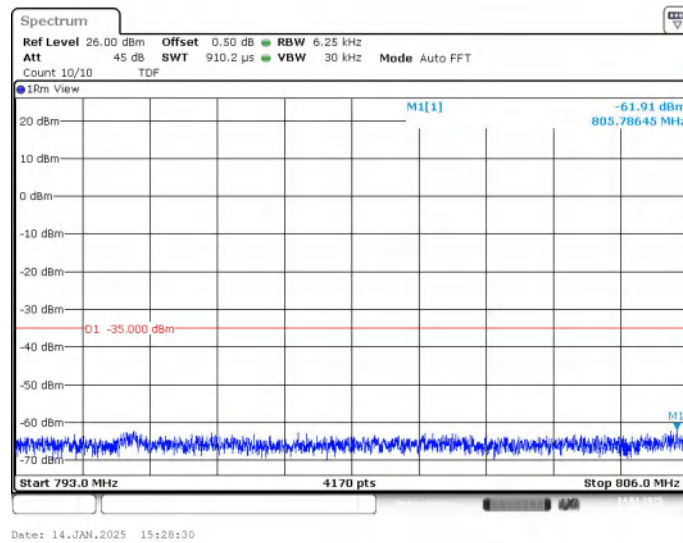
NOTE: peak above the limit line is the carrier frequency.



LTE band 13

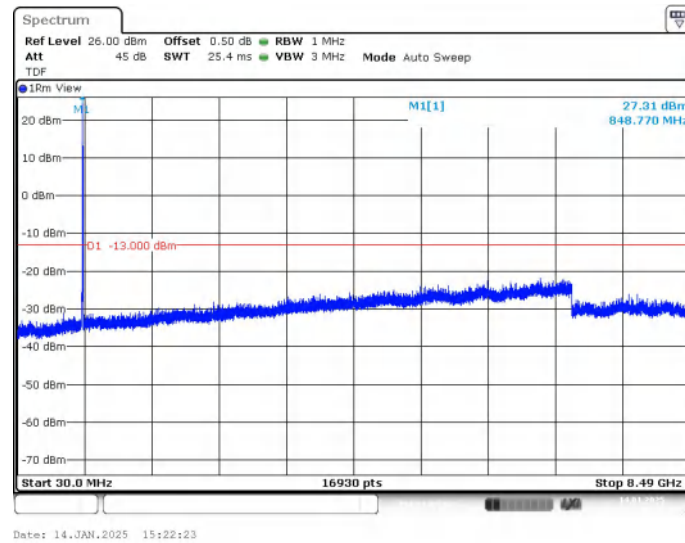
NOTE: peak above the limit line is the carrier frequency.





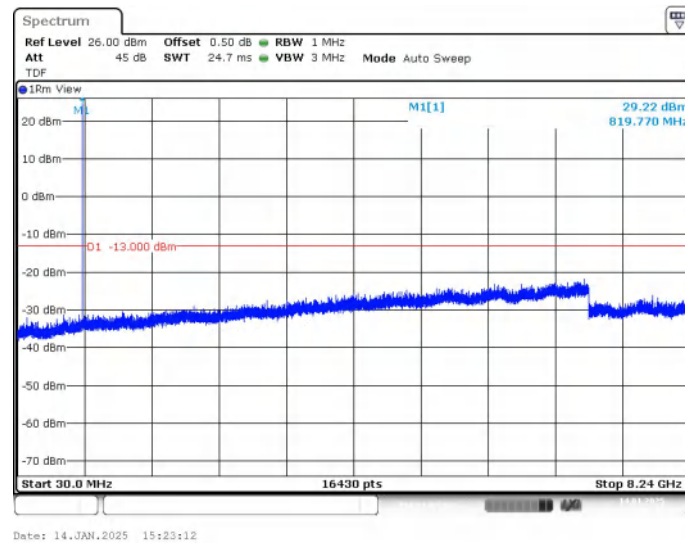
LTE band 26(824MHz~849MHz)

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



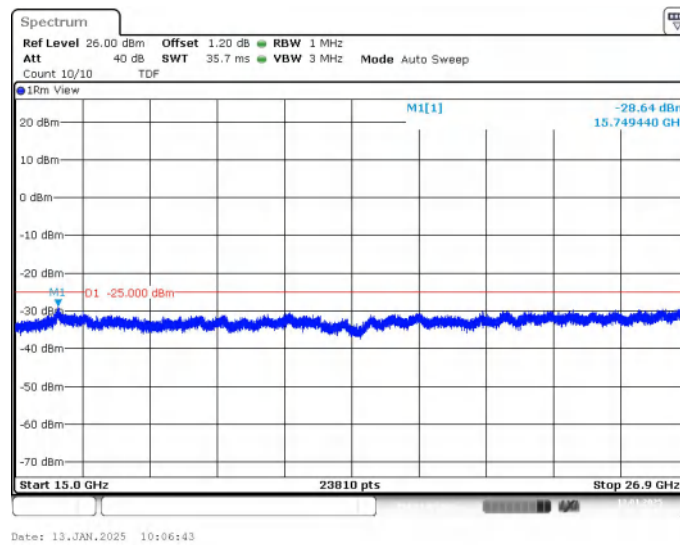
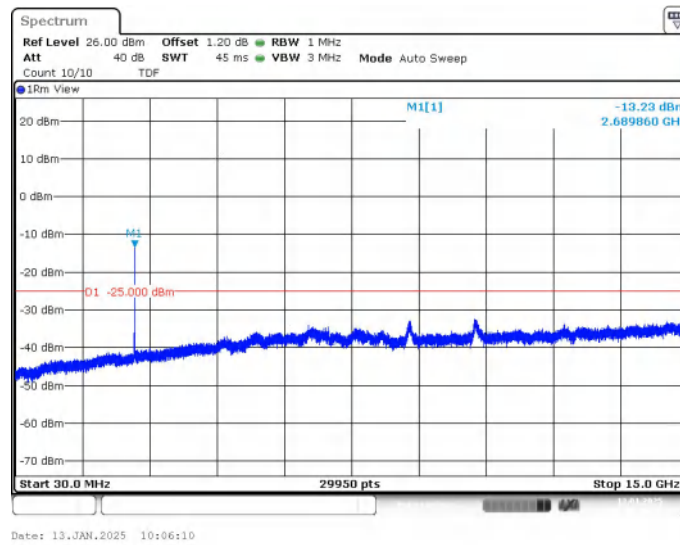
LTE band 26(814MHz~824MHz)

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



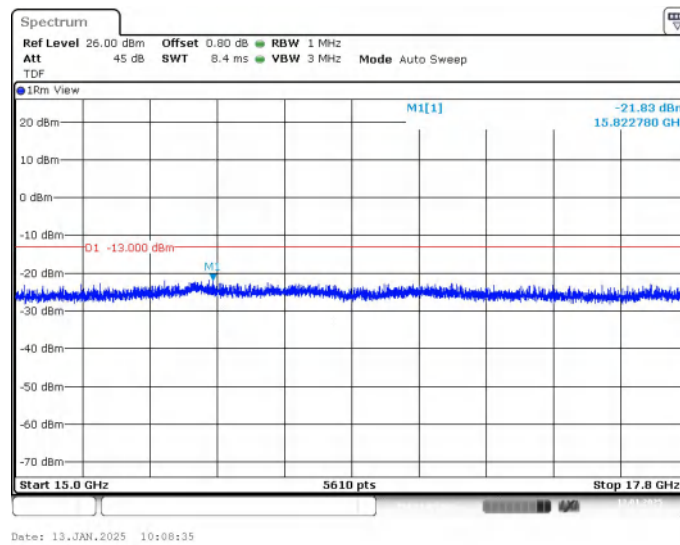
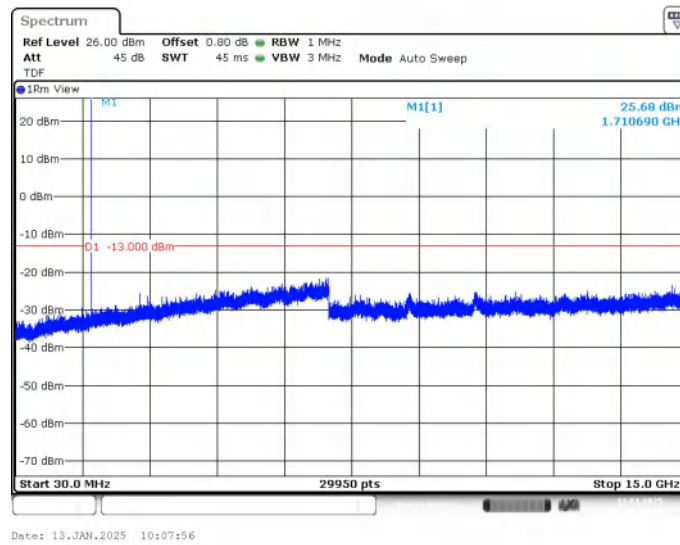
LTE band 41

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

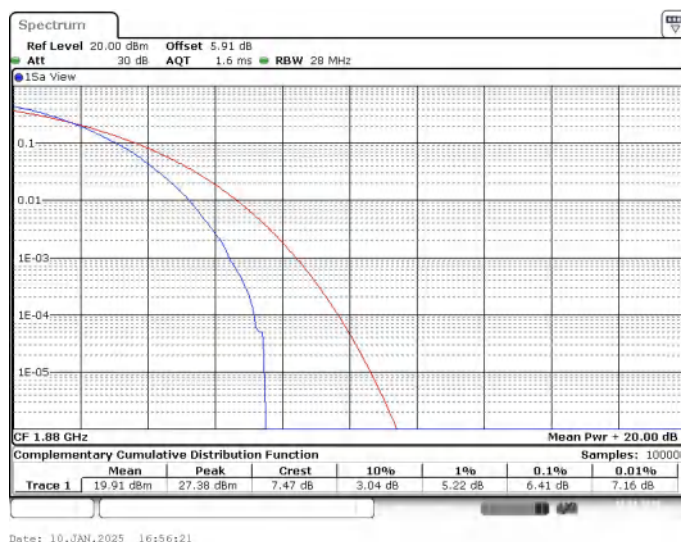
The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB

- 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;
- Record the maximum PAPR level associated with a probability of 0.1%.

Measurement results

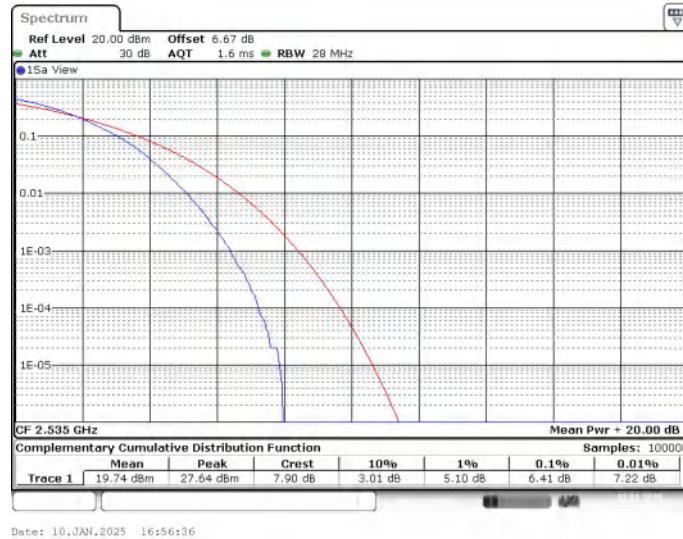
LTE Band 2, 20MHz

Frequency (MHz)	RB	PAPR (dB)		
		QPSK	16QAM	64QAM
1880	100%,0	5.16	6.03	6.41



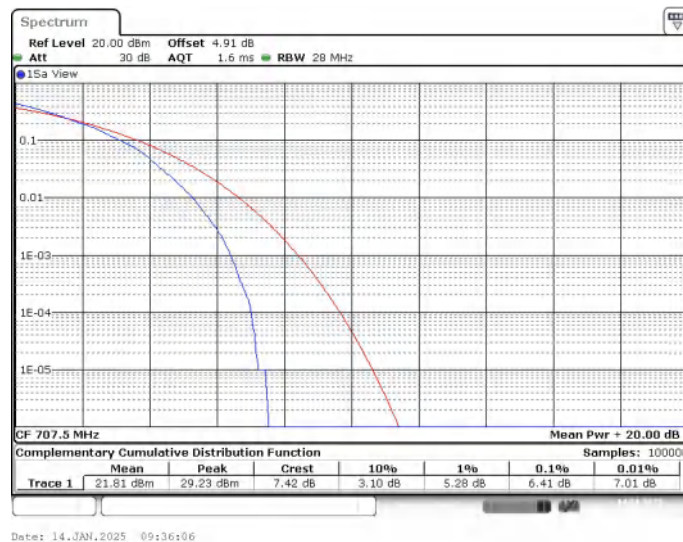
LTE Band 7, 20MHz

Frequency (MHz)	RB	PAPR (dB)		
		QPSK	16QAM	64QAM
2535	100%,0	5.33	6.06	6.41



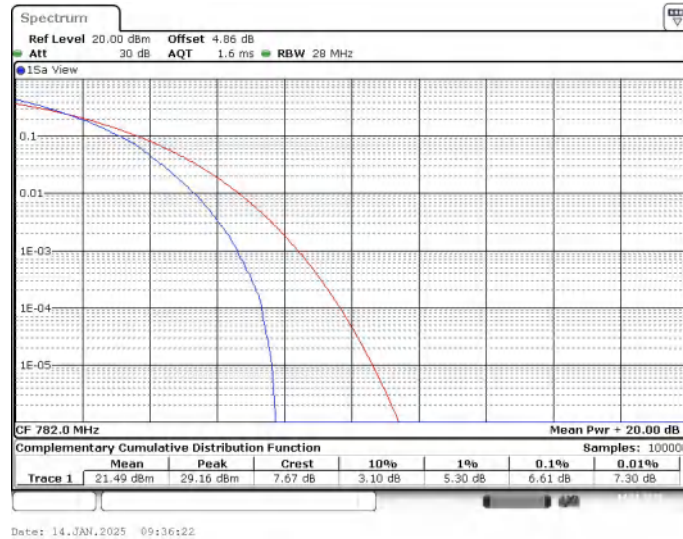
LTE Band 12, 10MHz

Frequency (MHz)	RB	PAPR (dB)		
		QPSK	16QAM	64QAM
707.5	100%,0	5.01	5.91	6.41



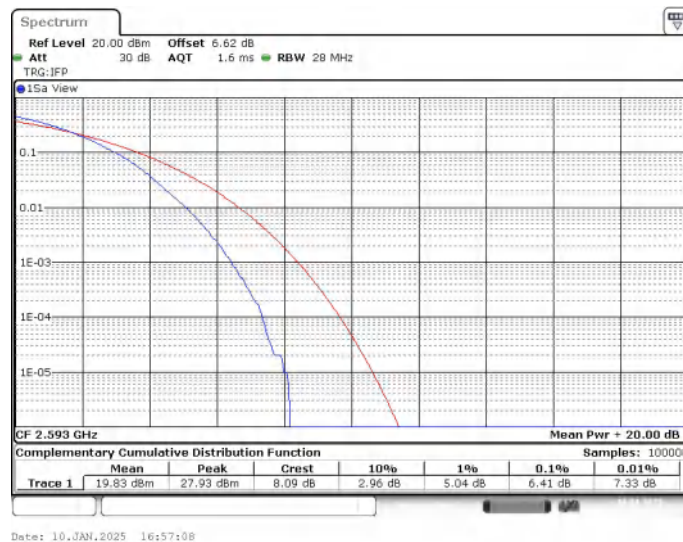
LTE Band 13, 10MHz

Frequency (MHz)	RB	PAPR (dB)		
		QPSK	16QAM	64QAM
782	100%,0	5.22	6.06	6.61



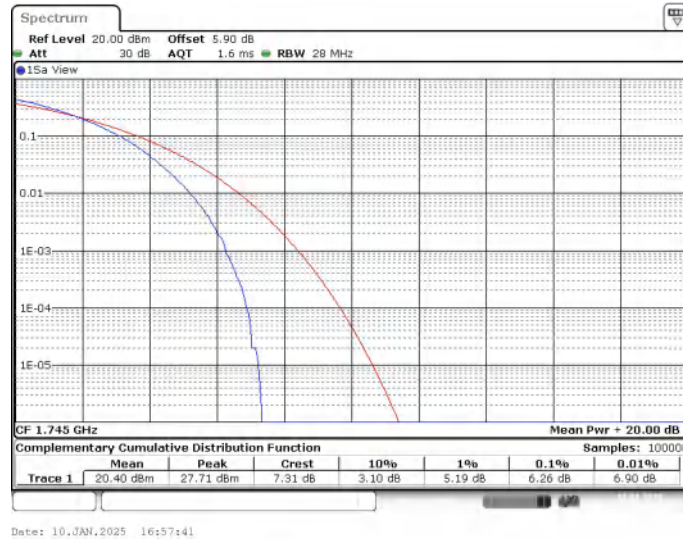
LTE Band 41, 20MHz

Frequency (MHz)	RB	PAPR (dB)		
		QPSK	16QAM	64QAM
2593	100%,0	5.39	6.12	6.41



LTE Band 66, 20MHz

Frequency (MHz)	RB	PAPR (dB)		
		QPSK	16QAM	64QAM
1745	100%,0	4.93	5.77	6.26



Annex B: Accreditation Certificate



END OF REPORT