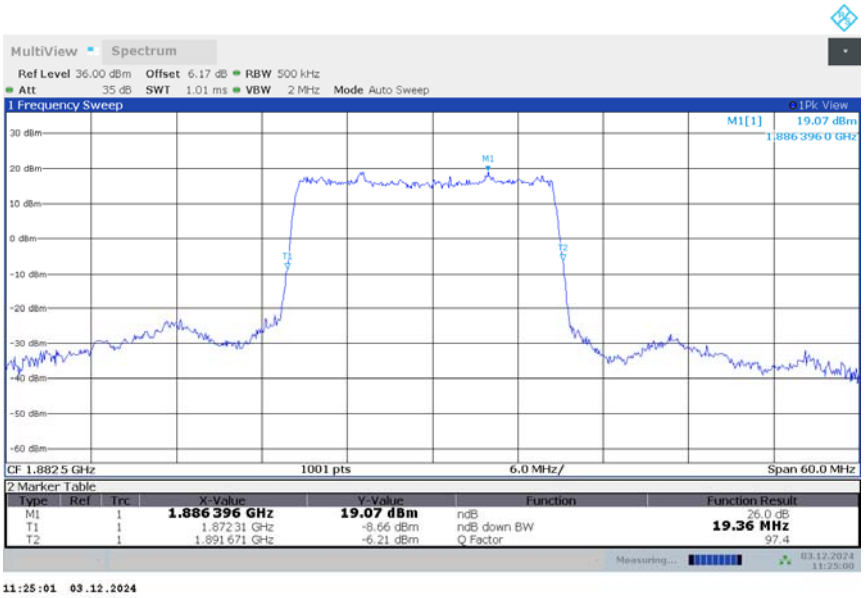
n25

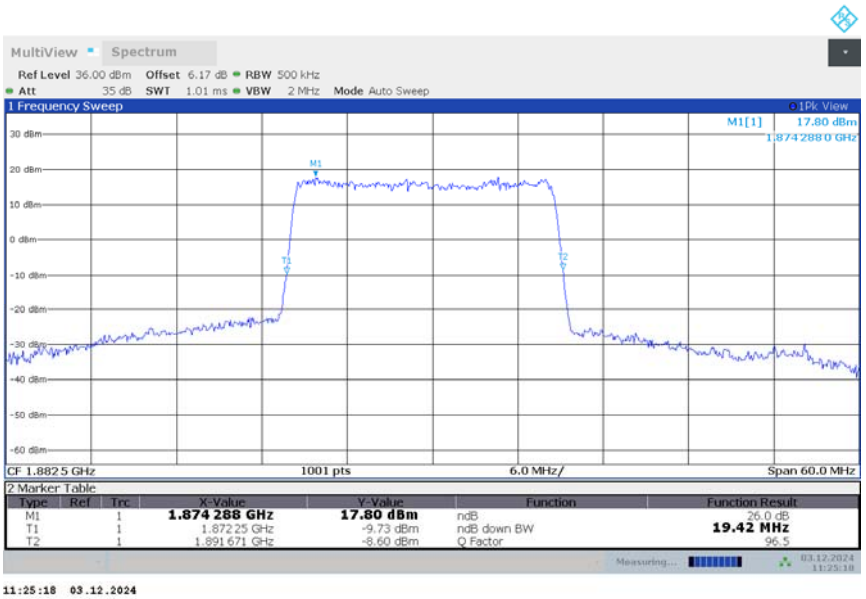
n25,20MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
1882.5	19.361	19.421	19.421

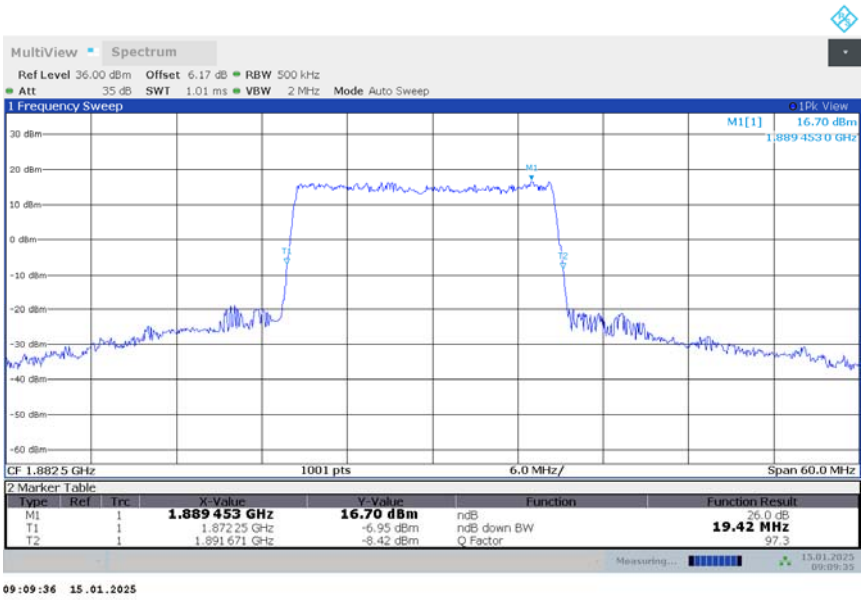
n25,20MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n25,20MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n25,20MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

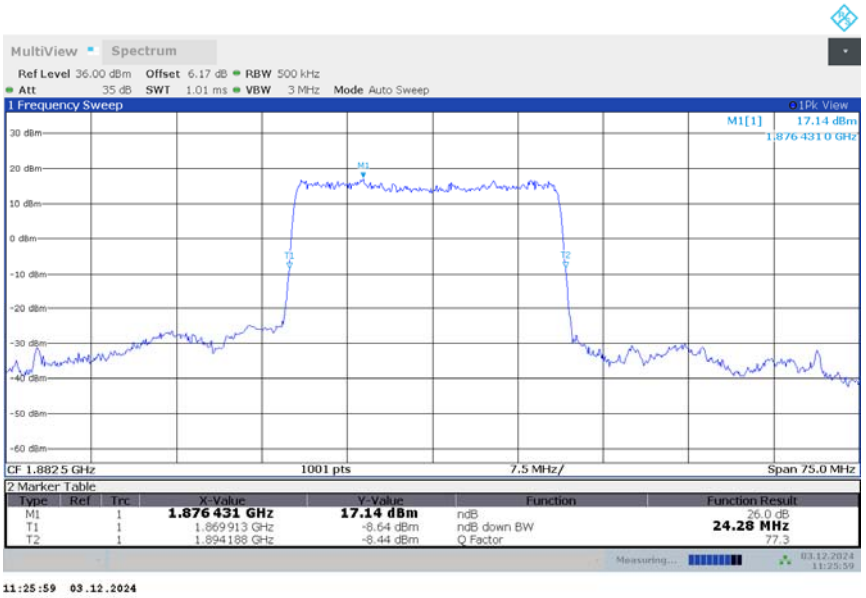


n25

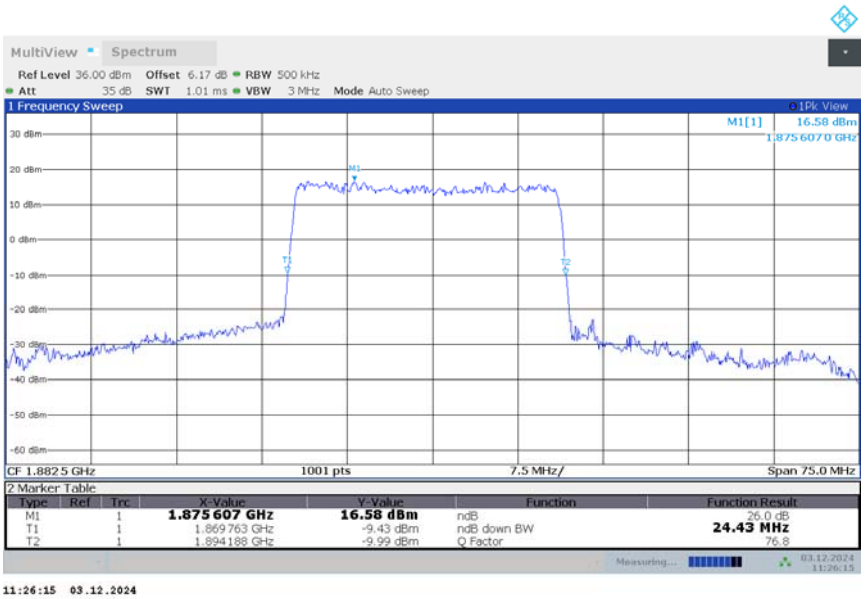
n25,25MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
1882.5	24.276	24.426	24.276

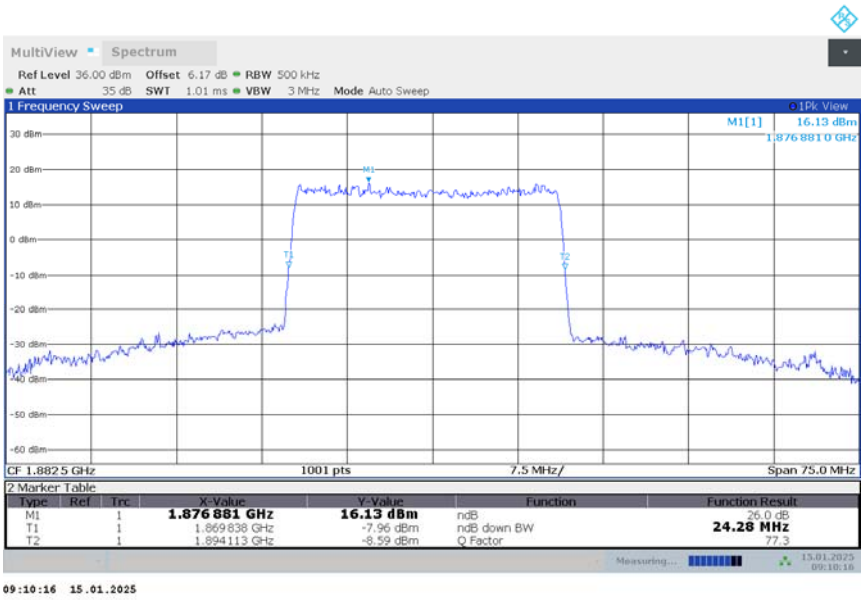
n25,25MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n25,25MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n25,25MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

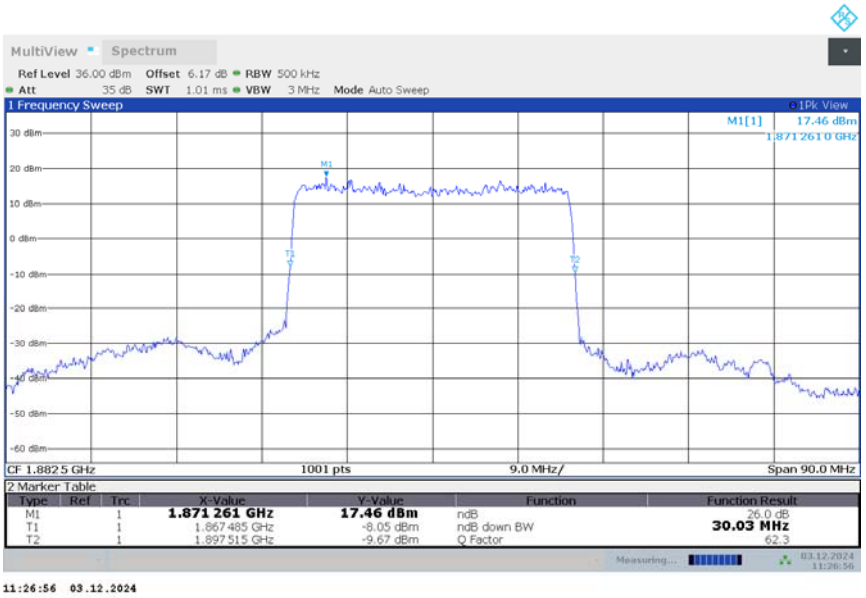


n25

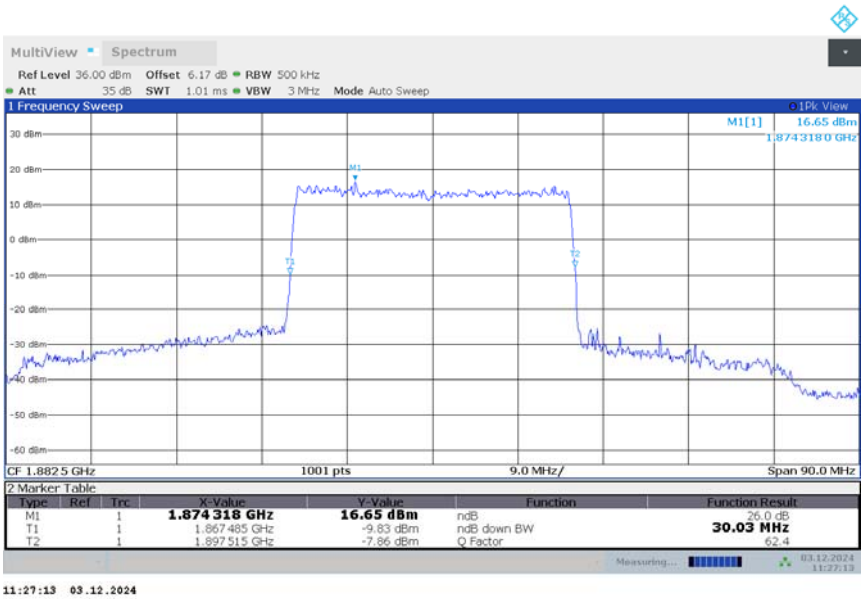
n25,30MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
1882.5	30.030	30.030	29.940

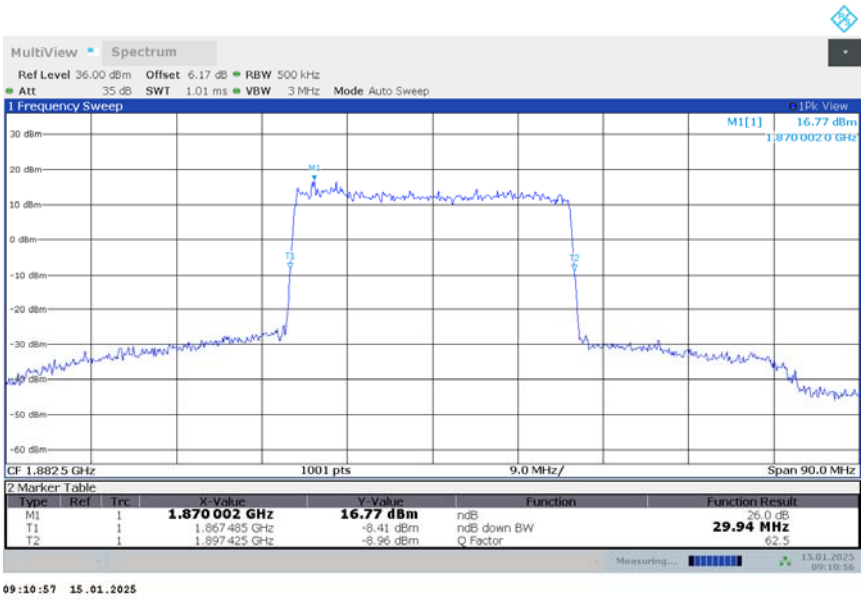
n25,30MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n25,30MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n25,30MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

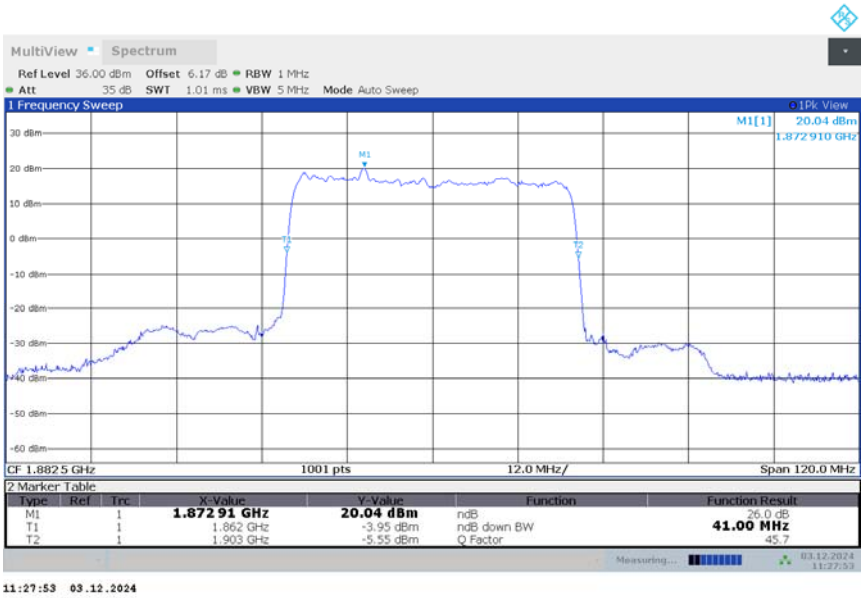


n25

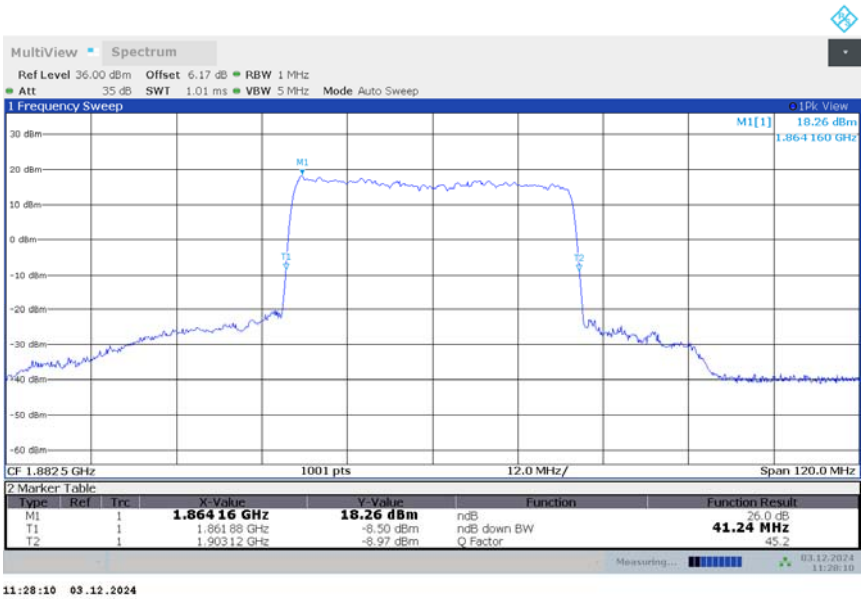
n25,40MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
1882.5	41.000	41.240	41.240

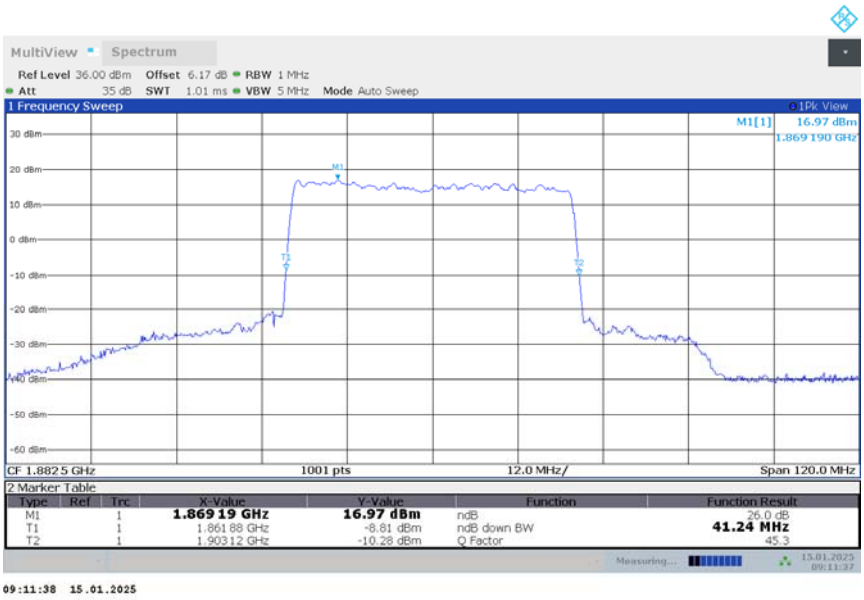
n25,40MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n25,40MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n25,40MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

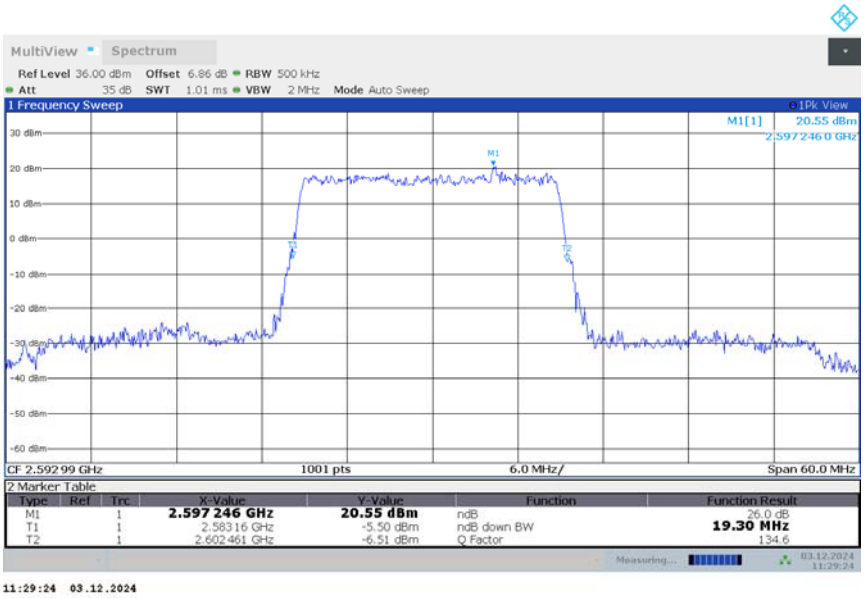


n41

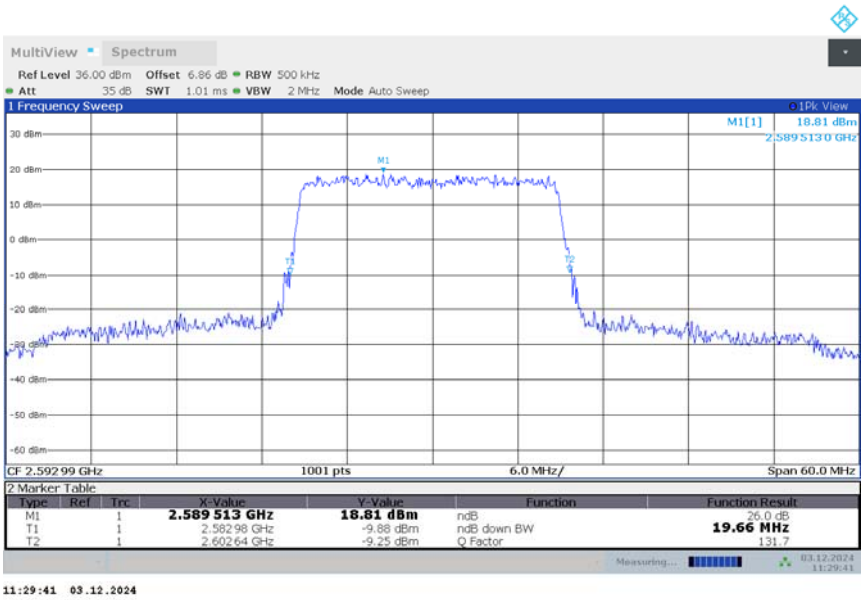
n41,20MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
2592.99	19.301	19.660	19.600

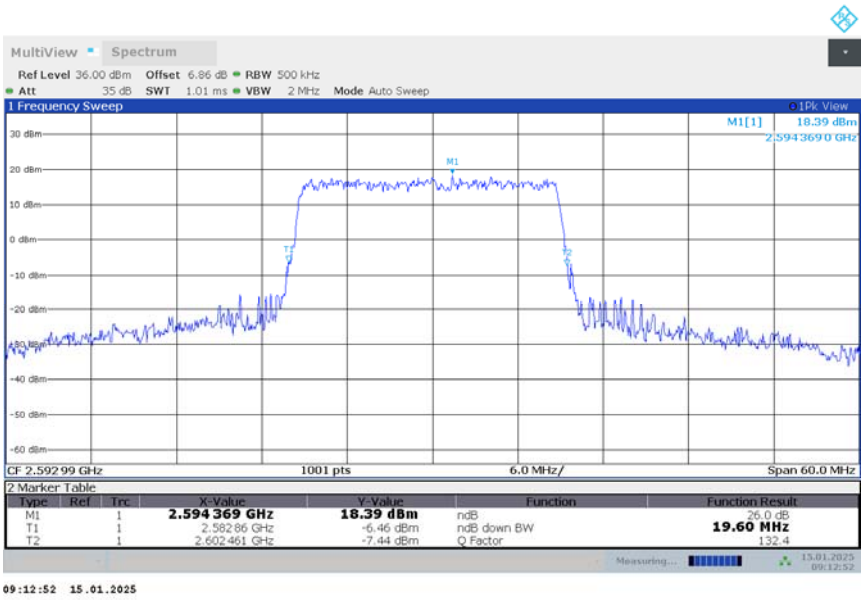
n41,20MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n41,20MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n41,20MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

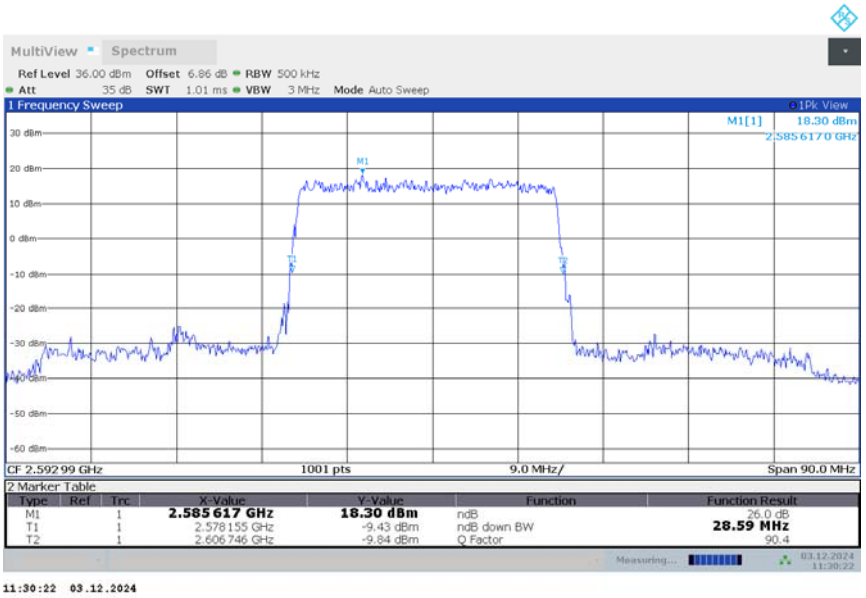


n41

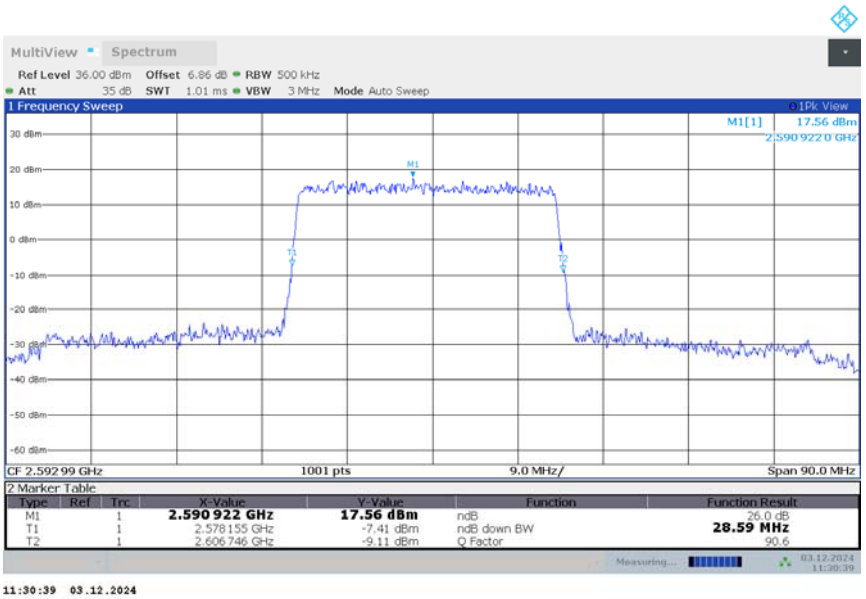
n41,30MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
2592.99	28.591	28.591	28.501

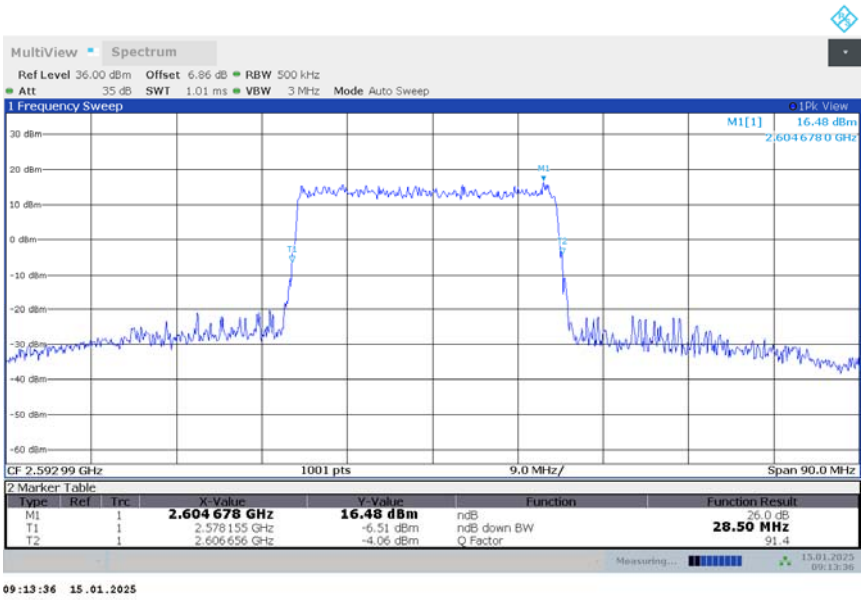
n41,30MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n41,30MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n41,30MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

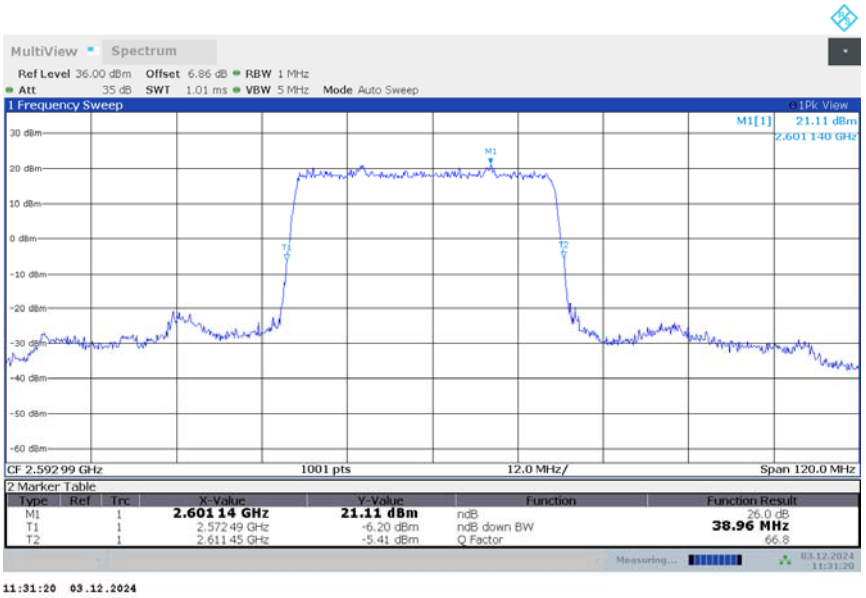


n41

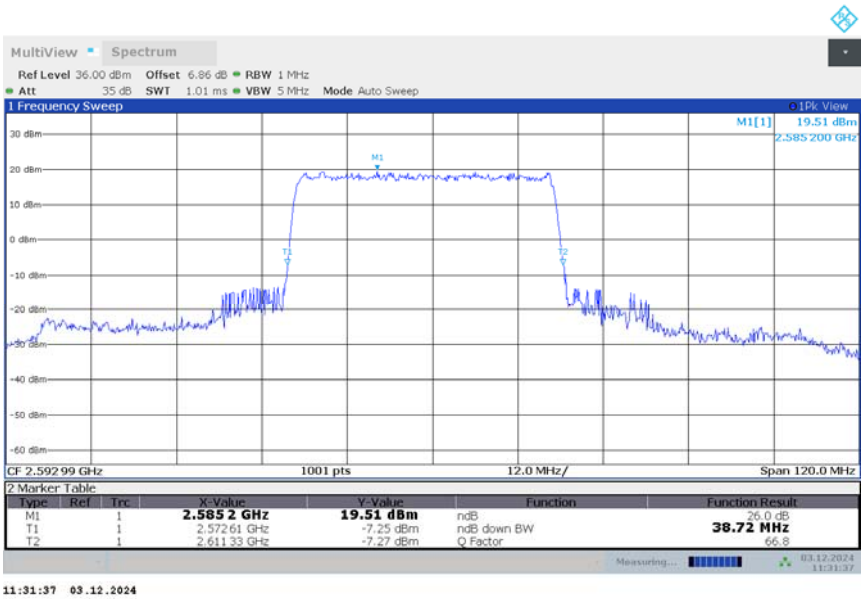
n41,40MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
2592.99	38.960	38.720	38.840

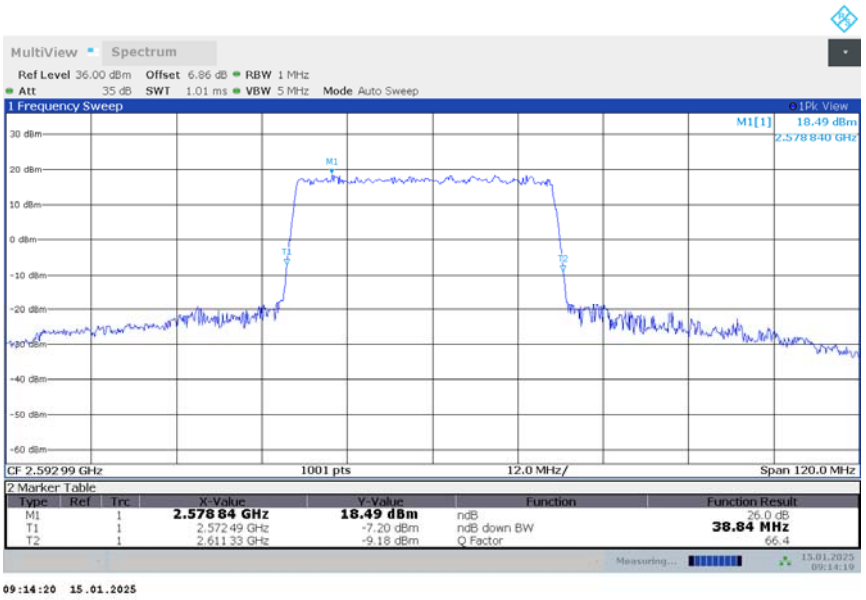
n41,40MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n41,40MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n41,40MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

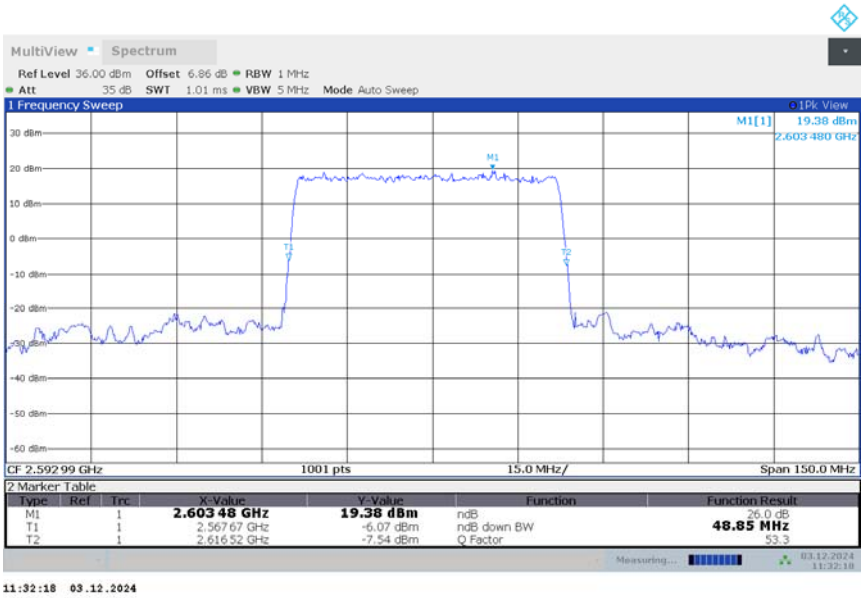


n41

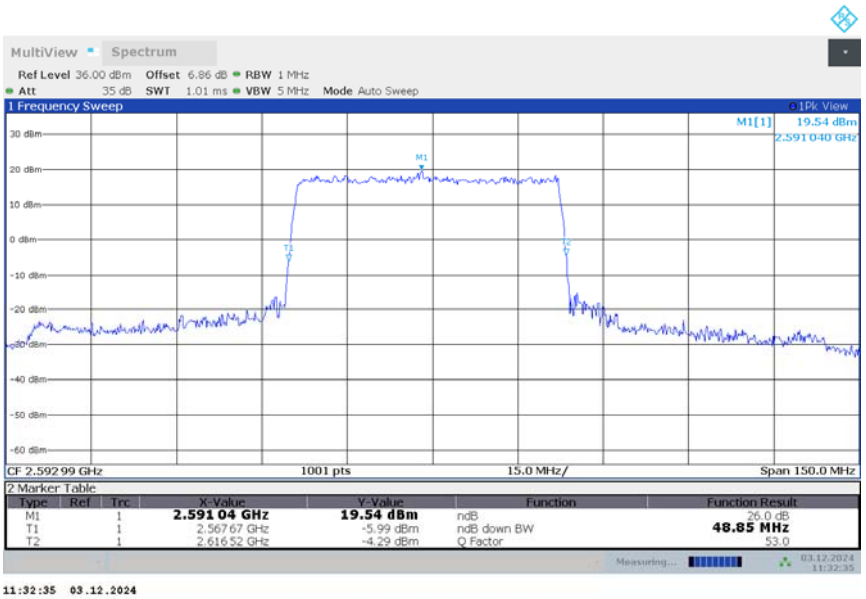
n41,50MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
2592.99	48.850	48.850	48.700

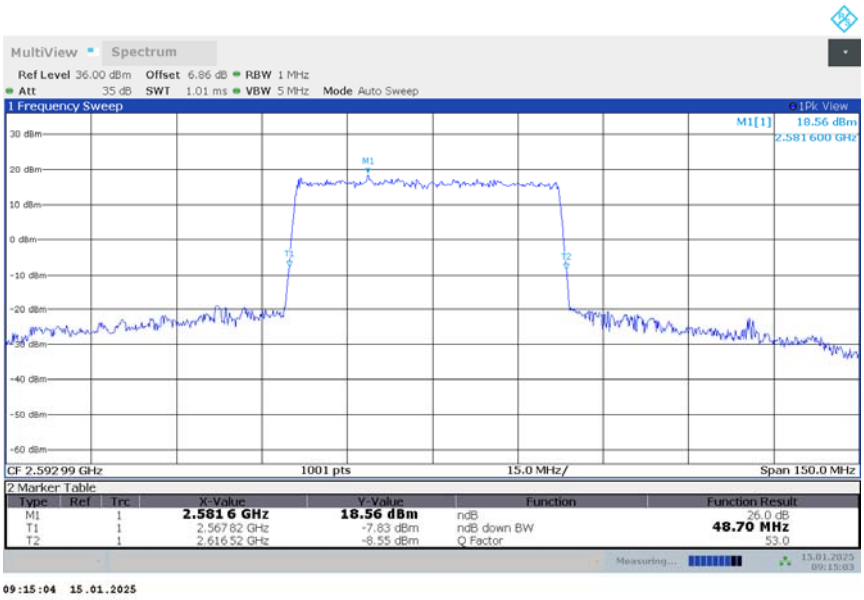
n41,50MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n41,50MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n41,50MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

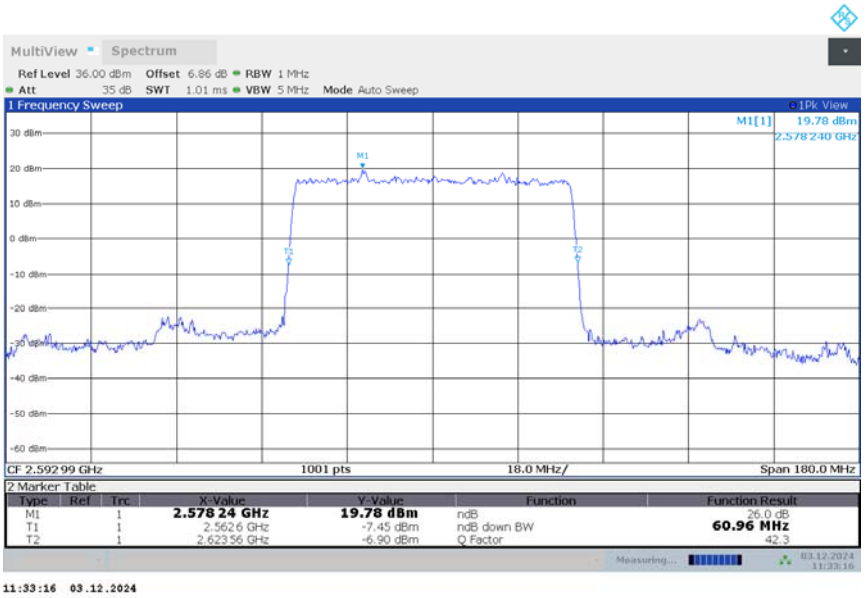


n41

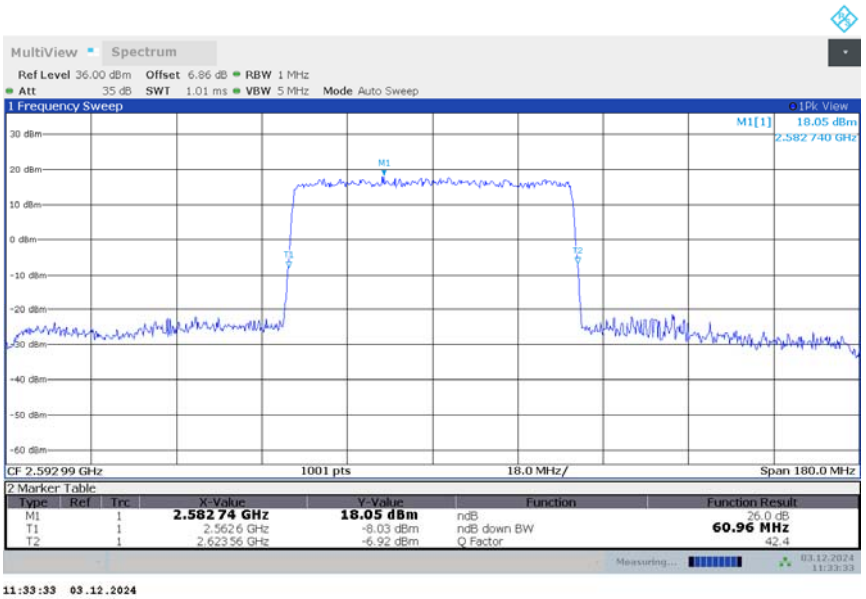
n41,60MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
2592.99	60.960	60.960	60.960

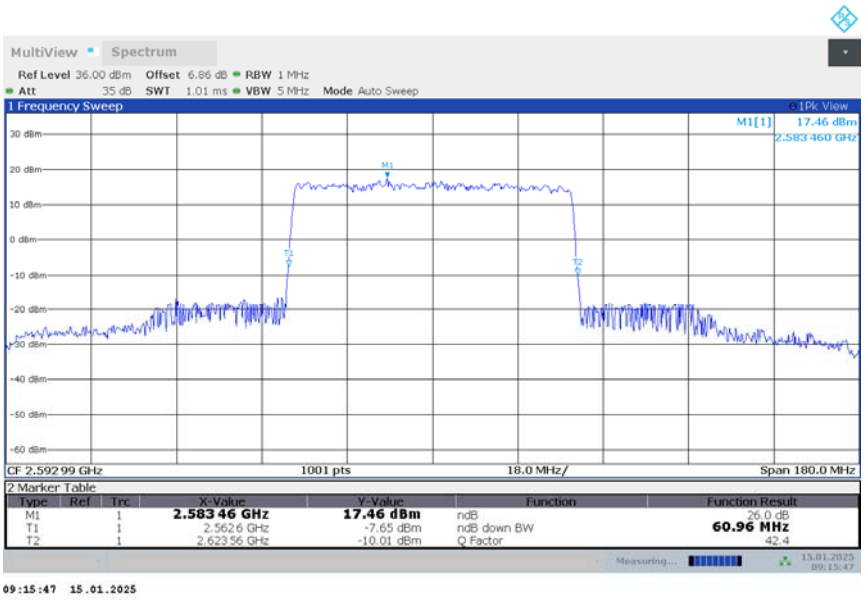
n41,60MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n41,60MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n41,60MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

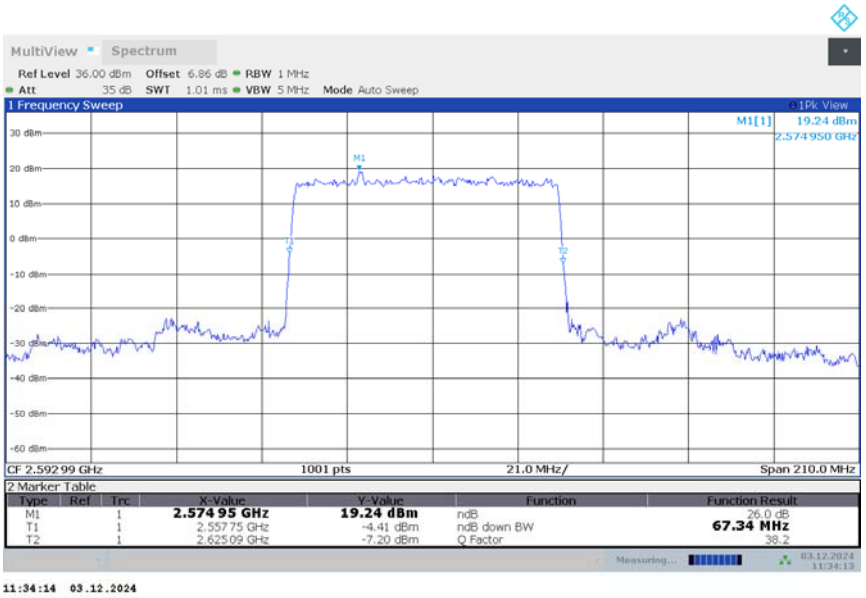


n41

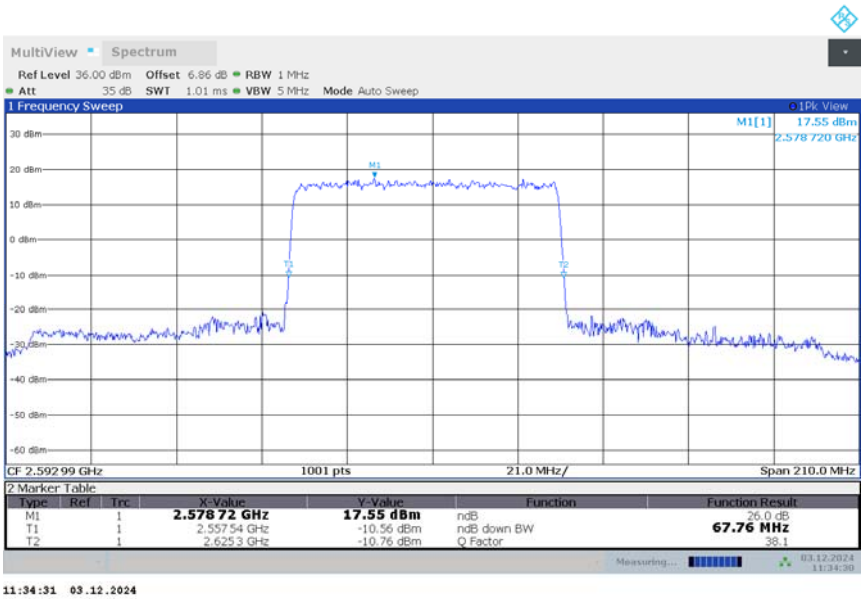
n41,70MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
2592.99	67.340	67.760	67.340

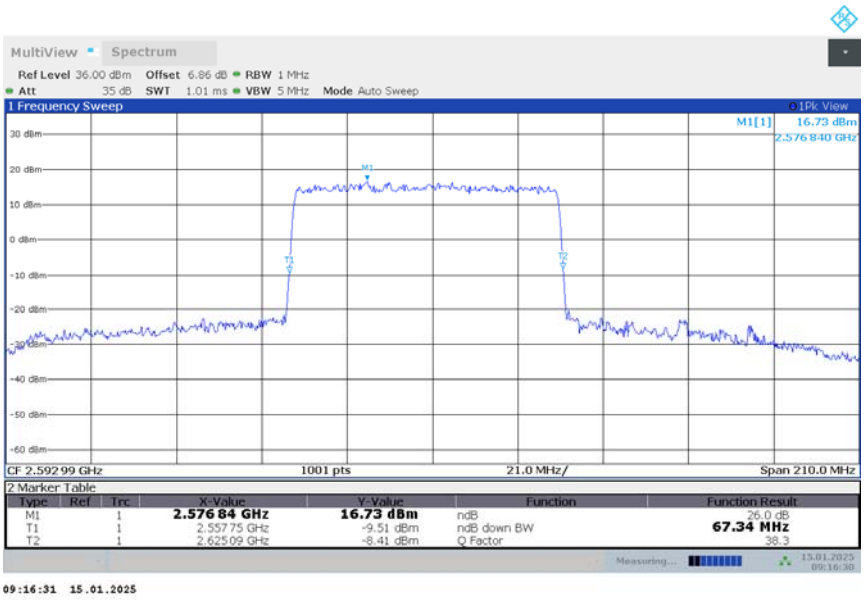
n41,70MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n41,70MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n41,70MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

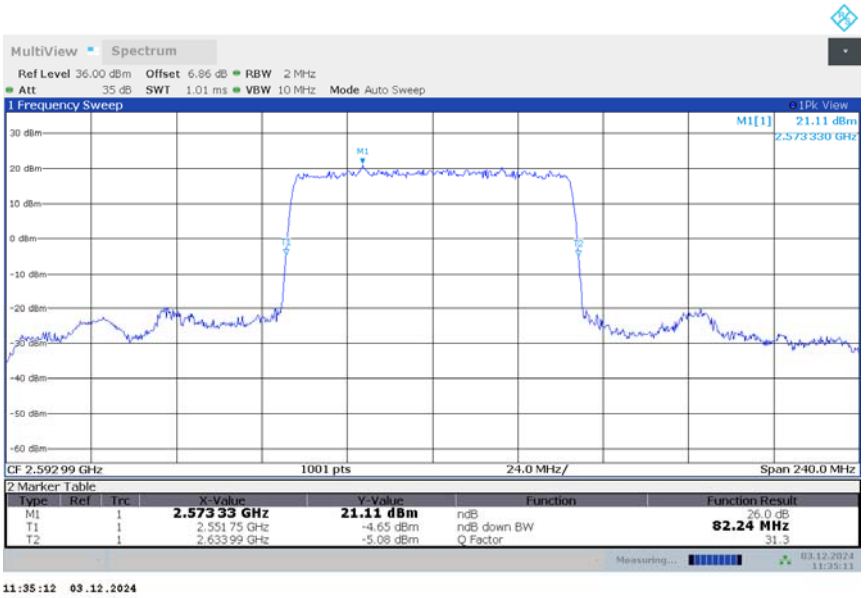


n41

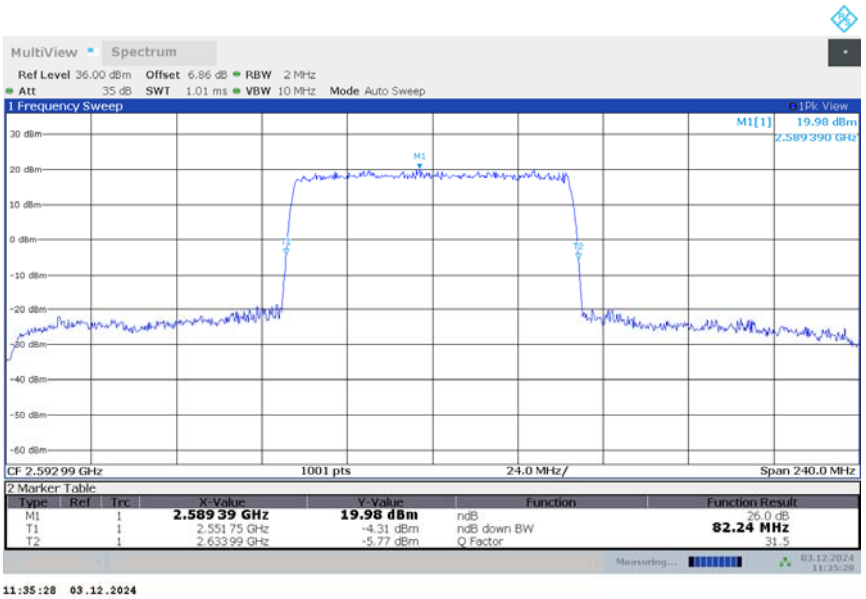
n41,80MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
2592.99	82.240	82.240	82.240

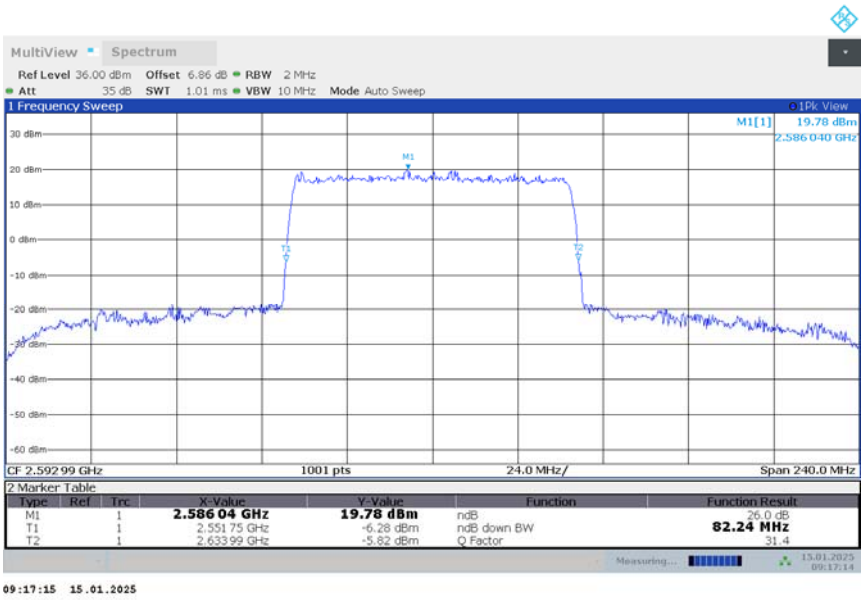
n41,80MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n41,80MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n41,80MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

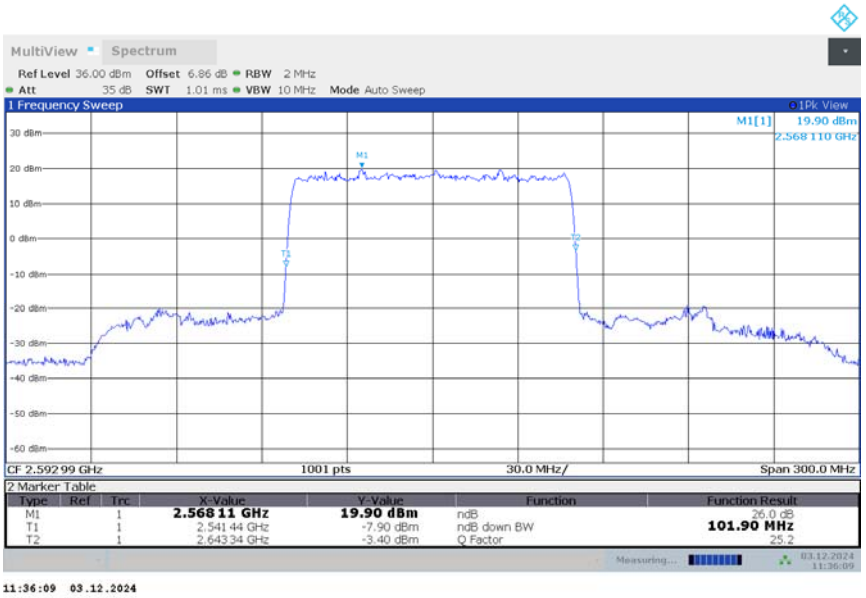


n41

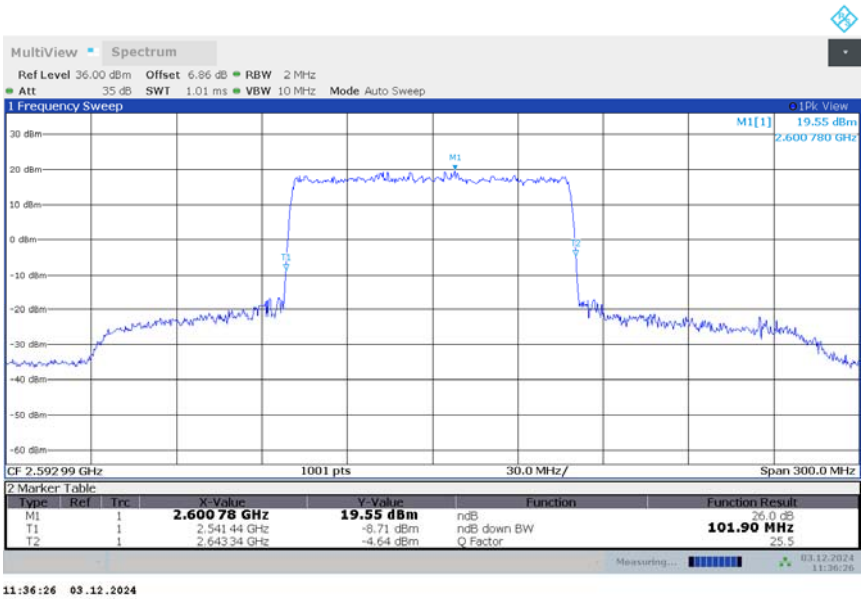
n41,100MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
2592.99	101.900	101.900	101.600

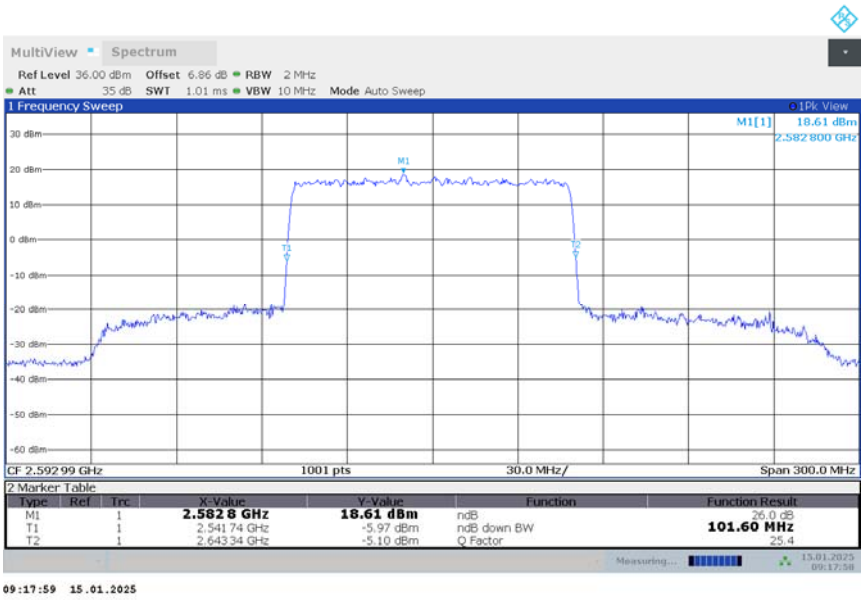
n41,100MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n41,100MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n41,100MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

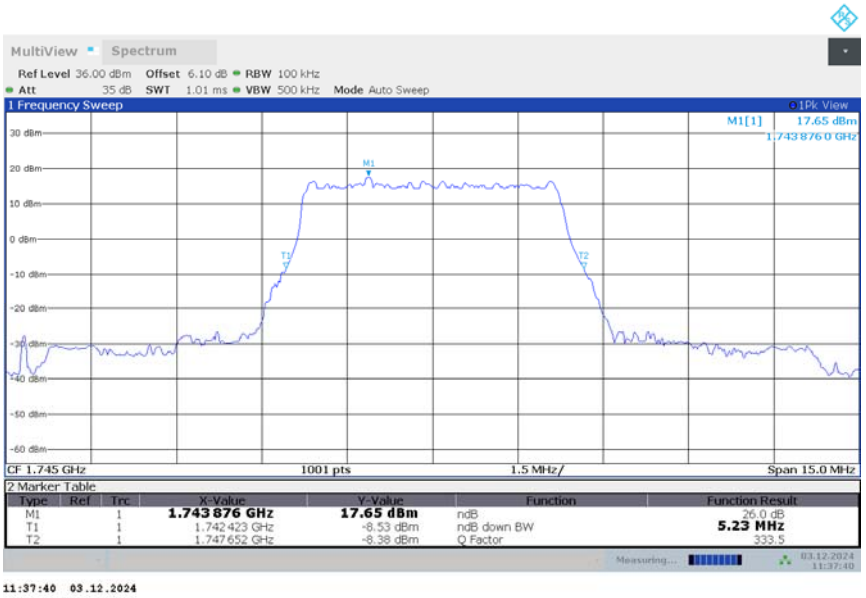


n66

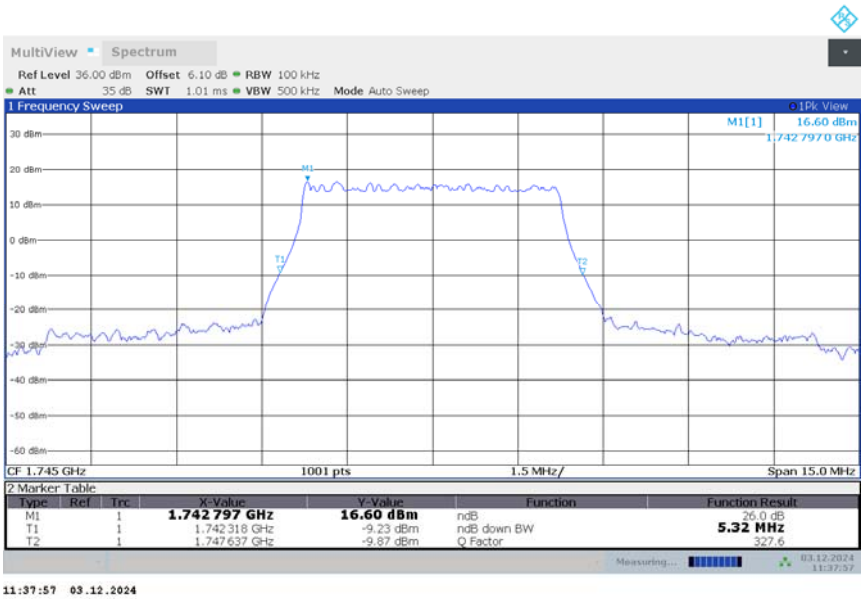
n66,5MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
1745	5.230	5.320	5.215

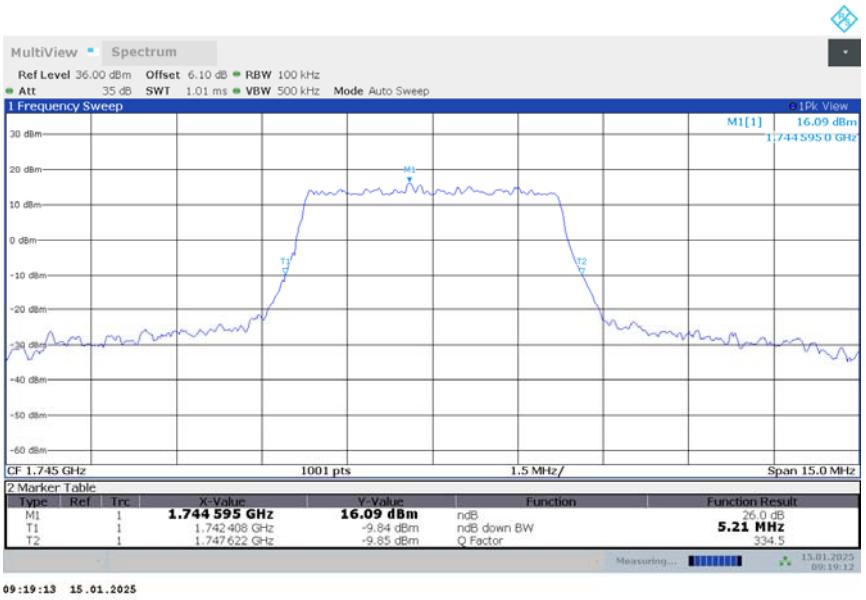
n66,5MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n66,5MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n66,5MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

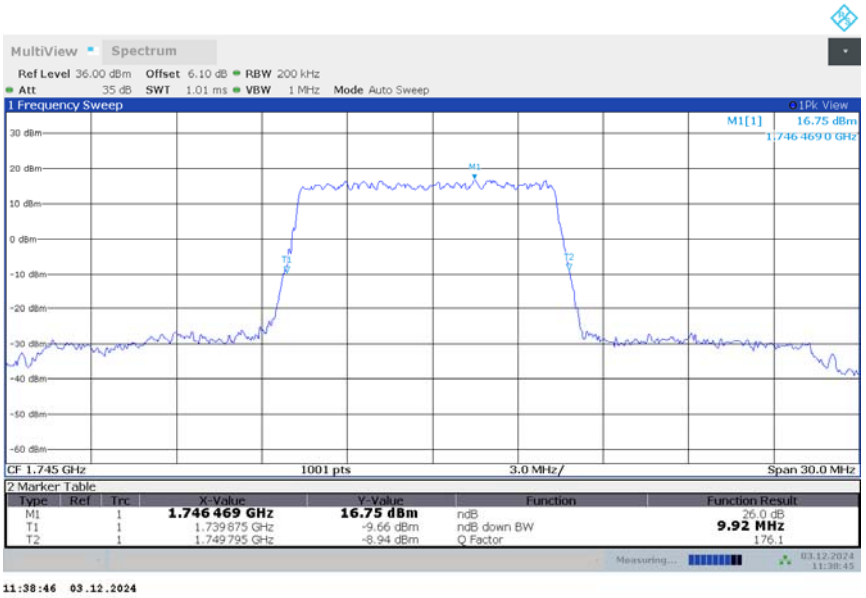


n66

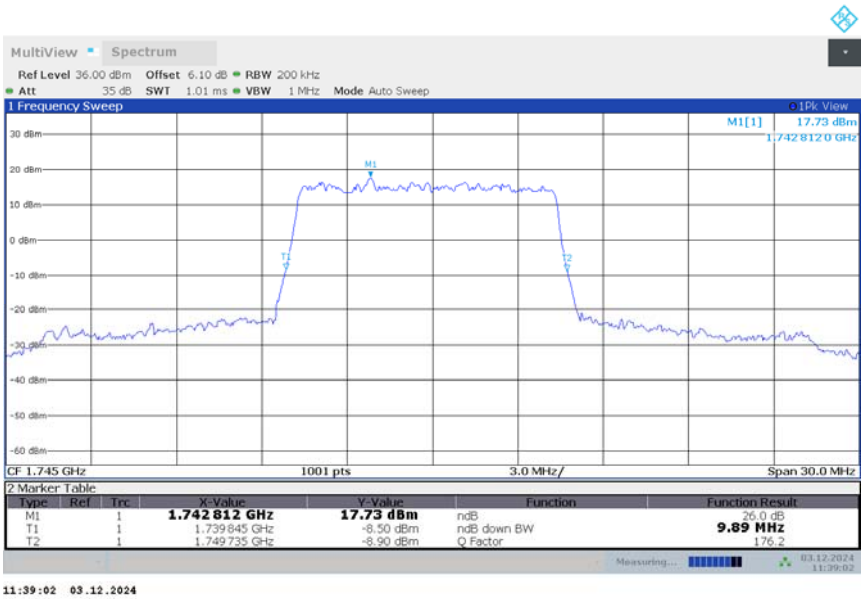
n66,10MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
1745	9.920	9.890	9.830

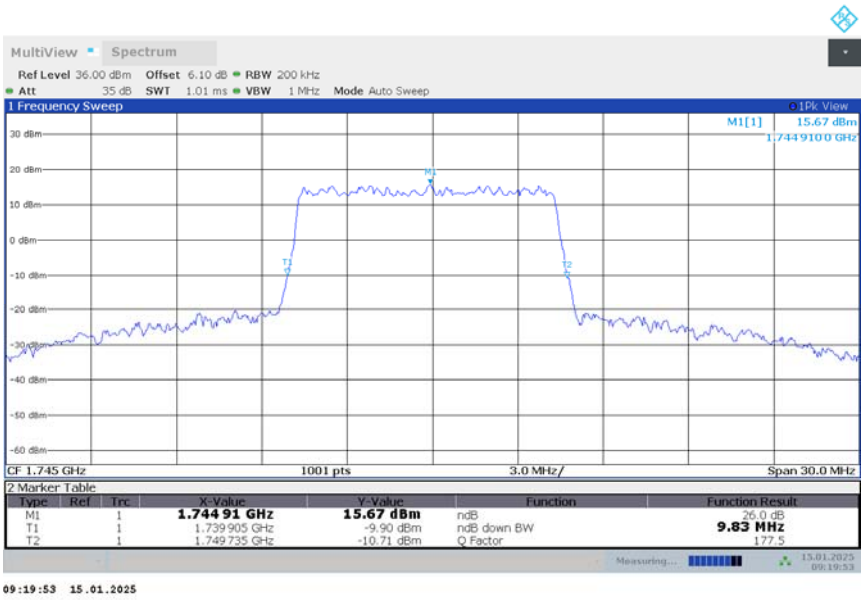
n66,10MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n66,10MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n66,10MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

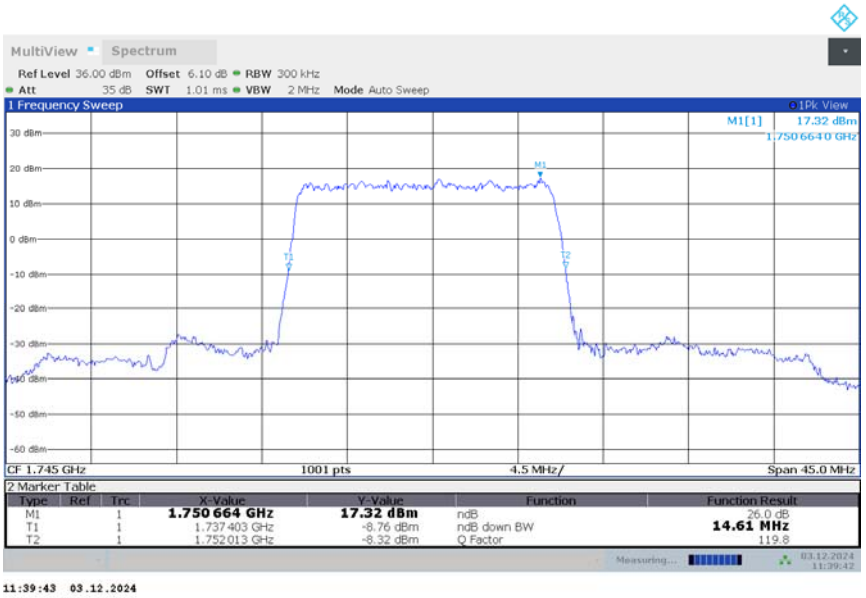


n66

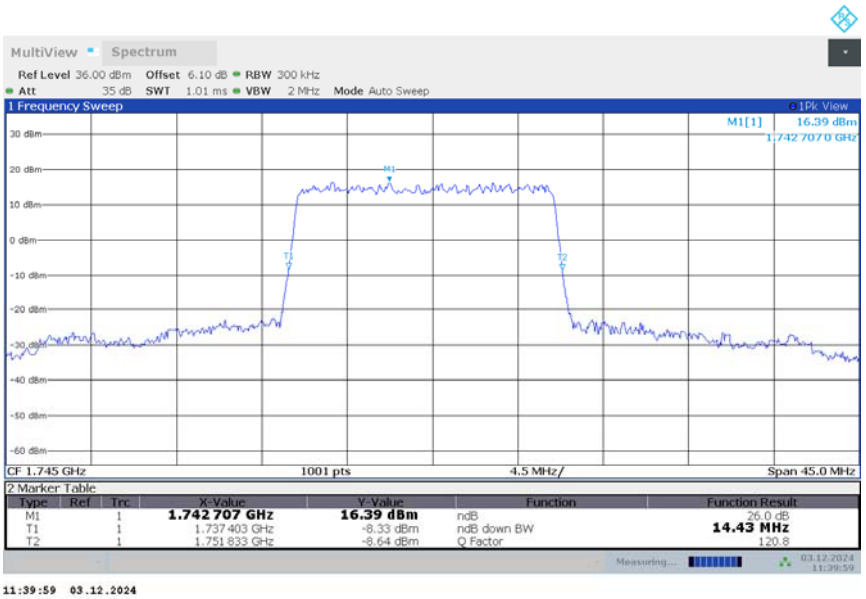
n66,15MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
1745	14.610	14.431	14.610

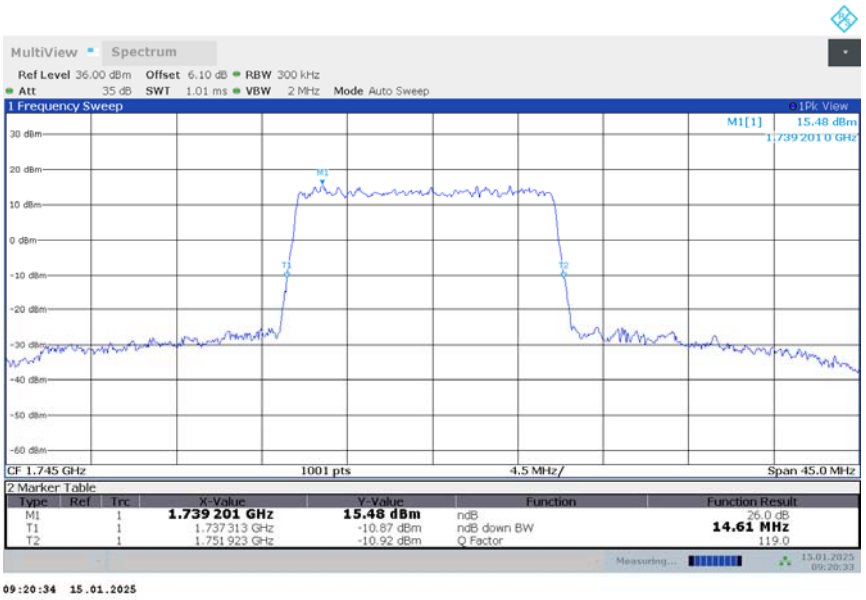
n66,15MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n66,15MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n66,15MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

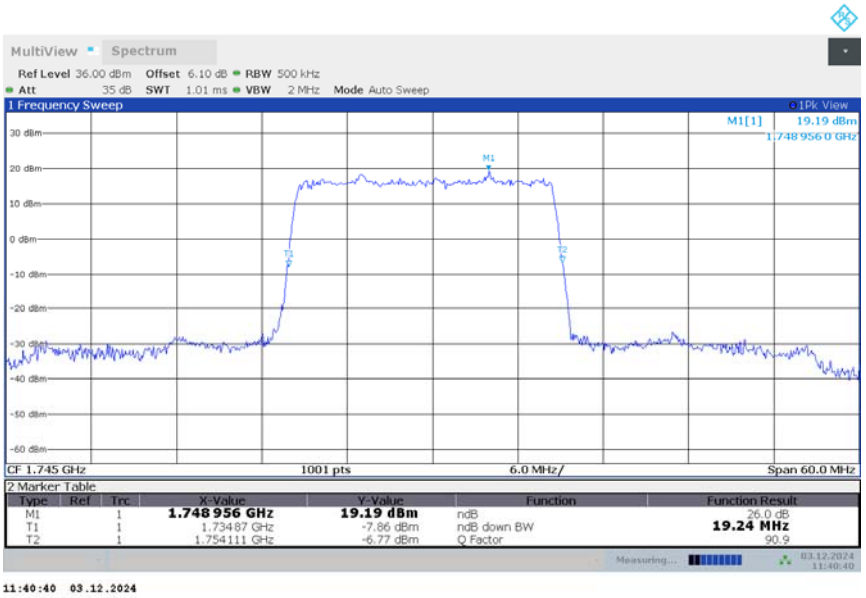


n66

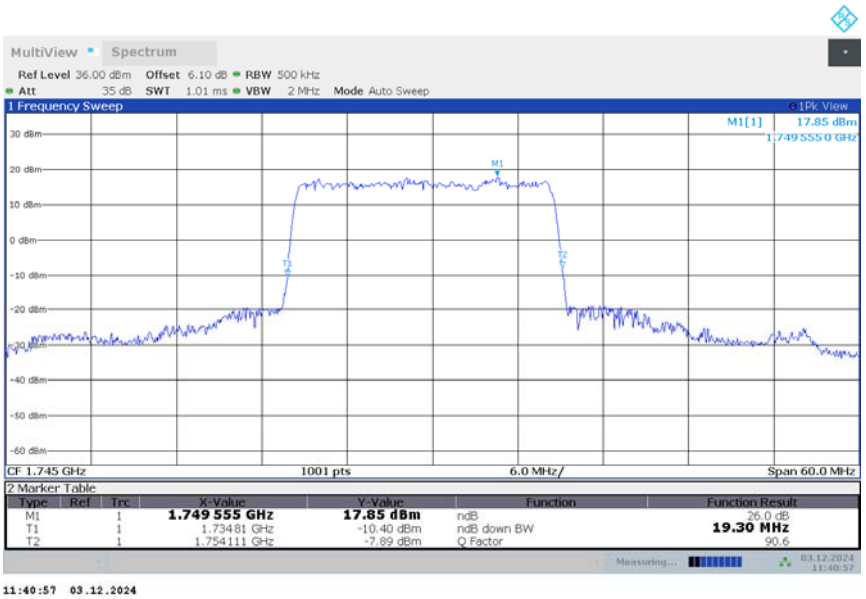
n66,20MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
1745	19.241	19.301	19.361

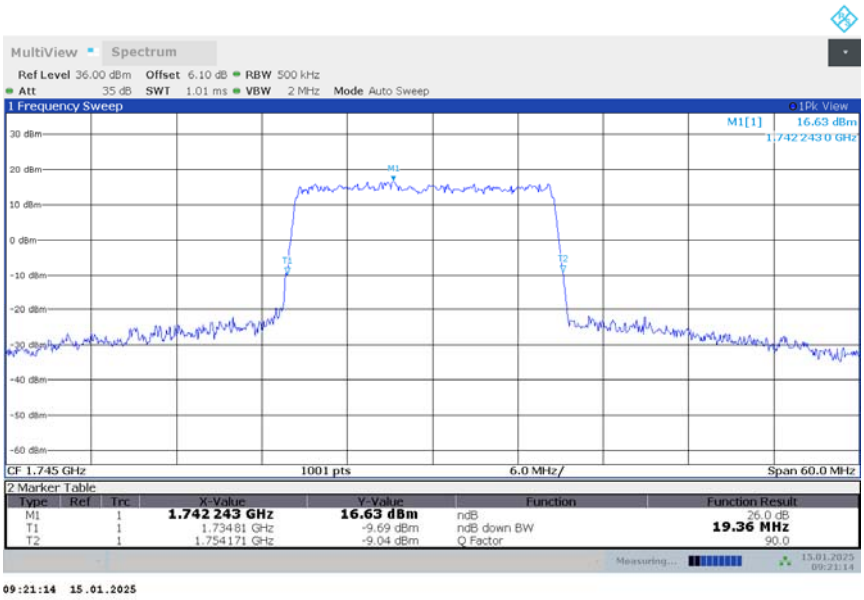
n66,20MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n66,20MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n66,20MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

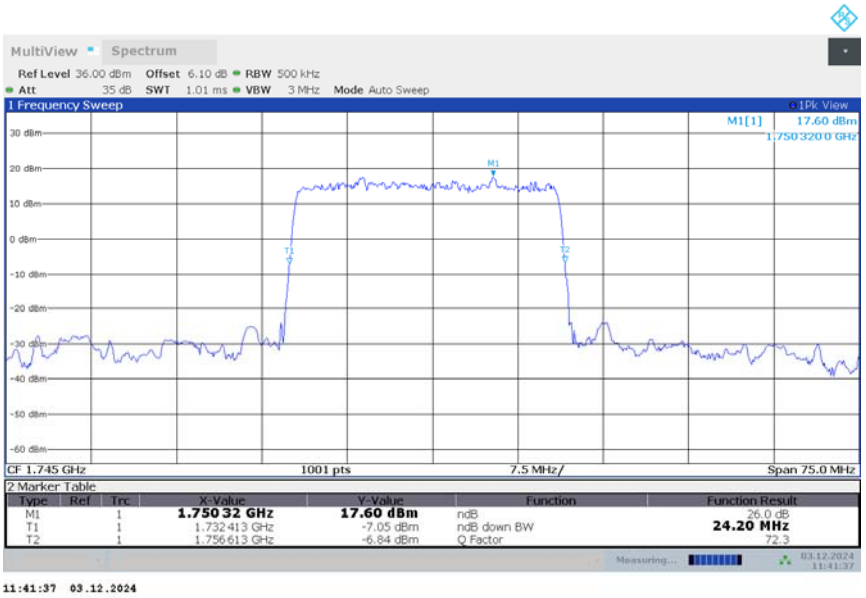


n66

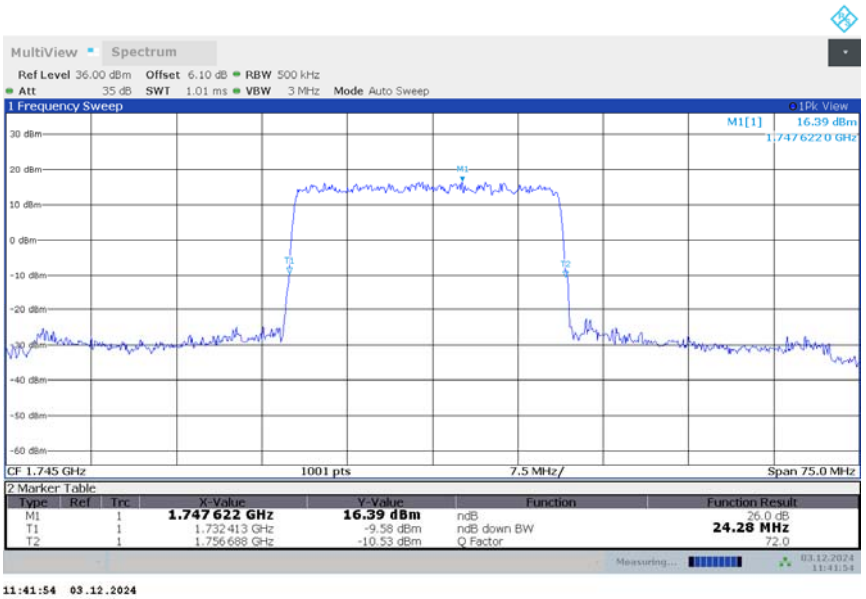
n66,25MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
1745	24.201	24.276	24.201

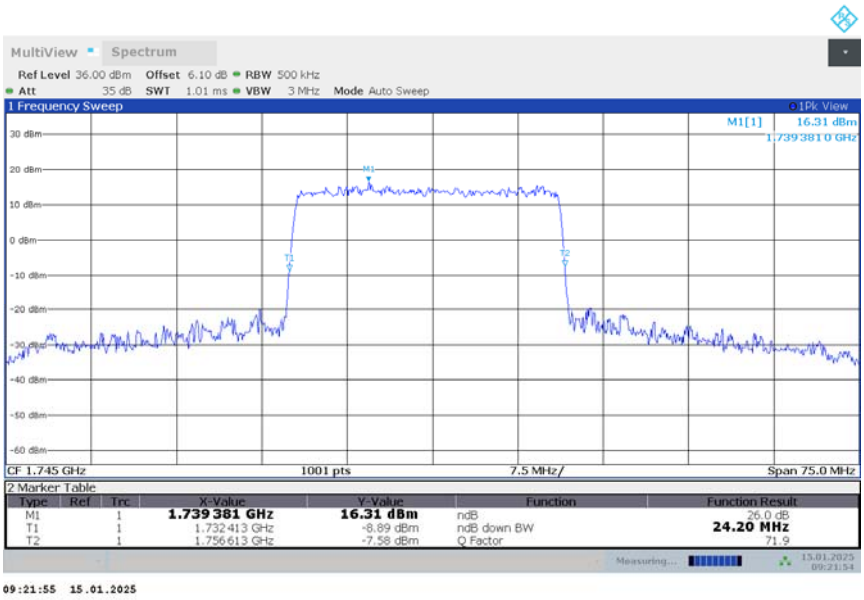
n66,25MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n66,25MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n66,25MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

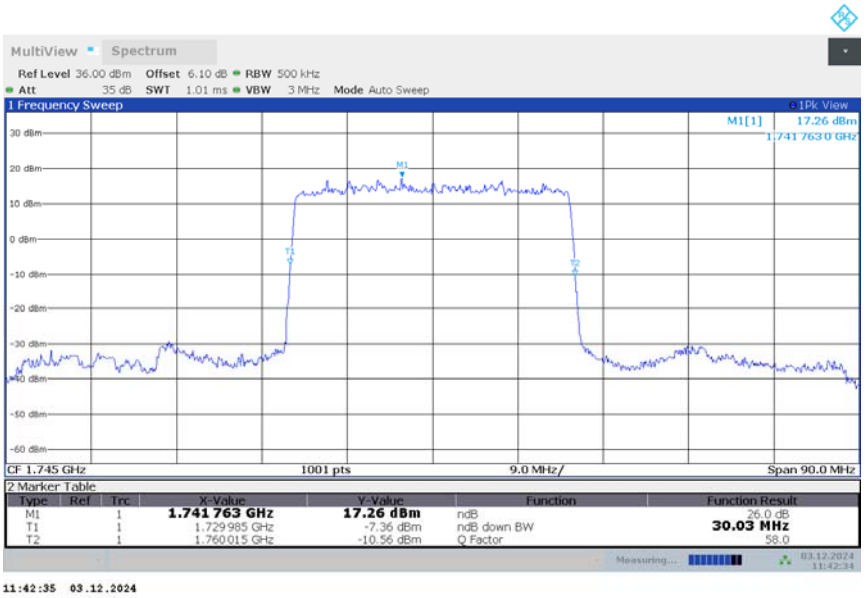


n66

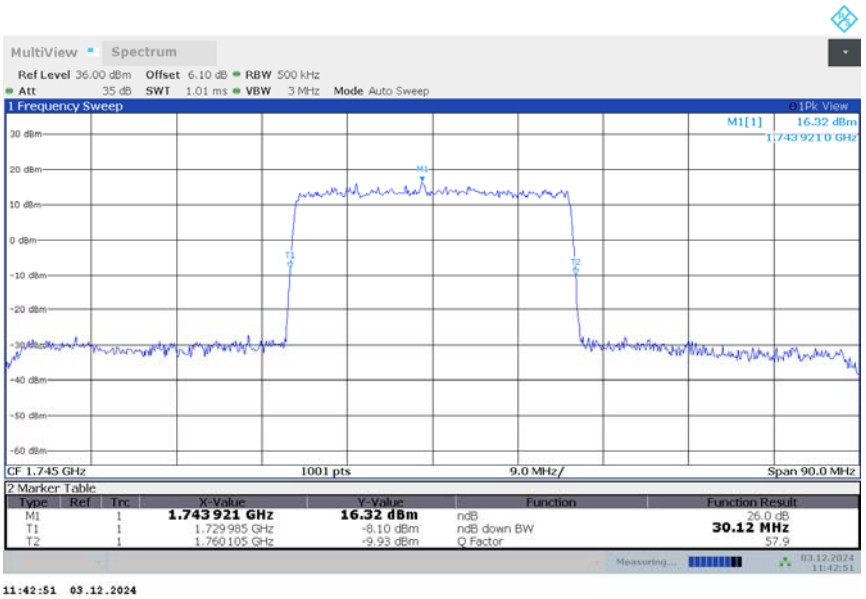
n66,30MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
1745	30.030	30.120	30.030

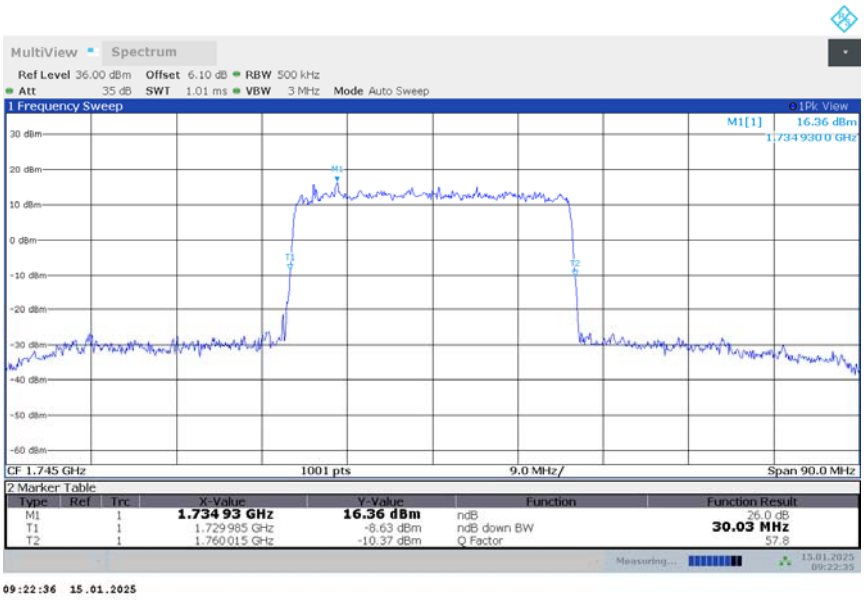
n66,30MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n66,30MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n66,30MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

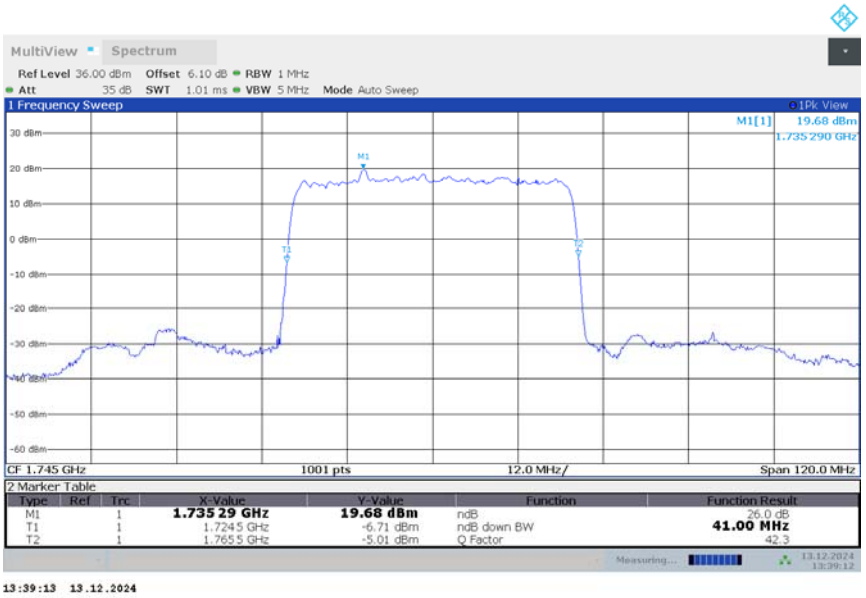


n66

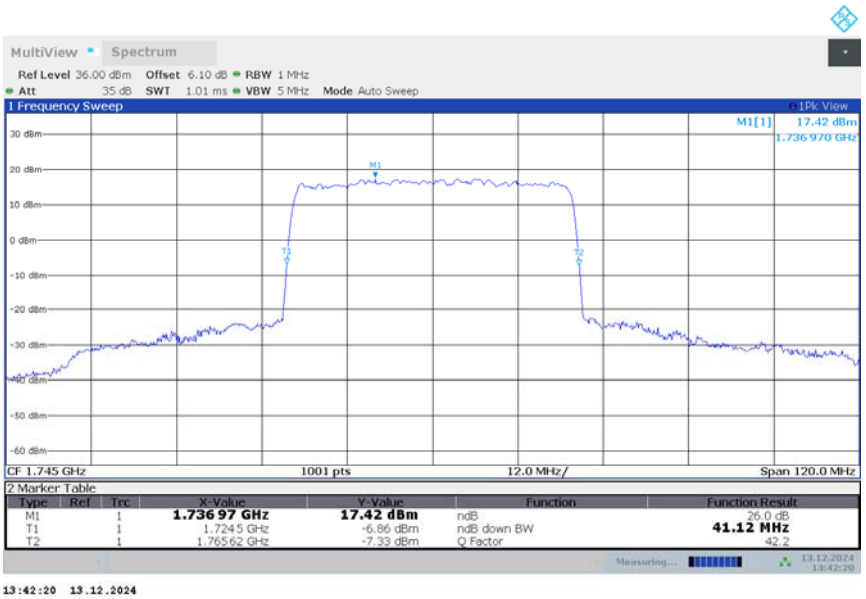
n66,40MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
1745	41.000	41.120	41.120

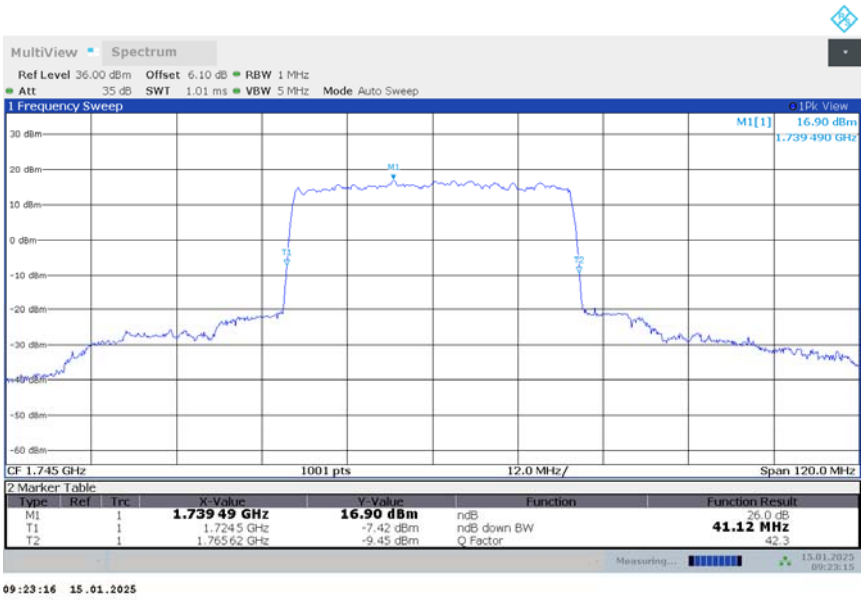
n66,40MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n66,40MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n66,40MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

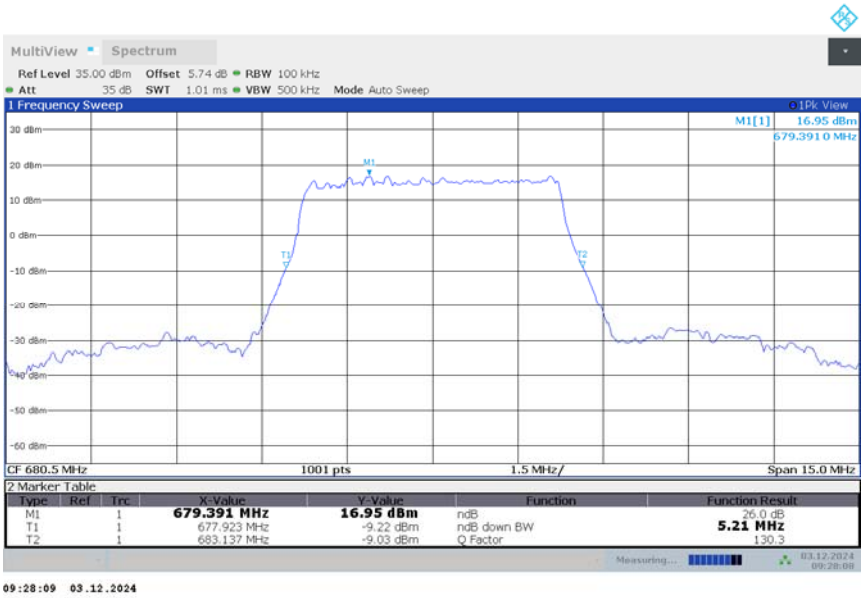


n71

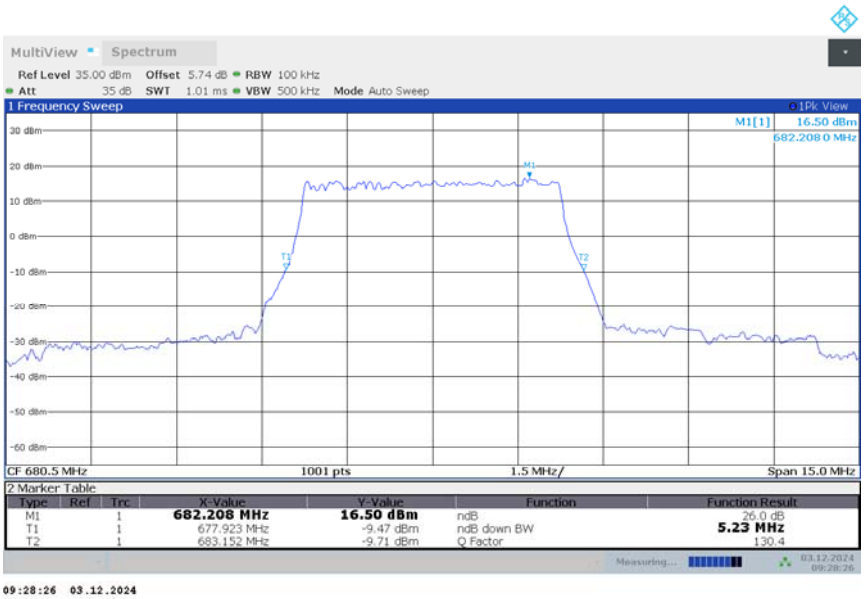
n71,5MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
680.5	5.215	5.230	5.185

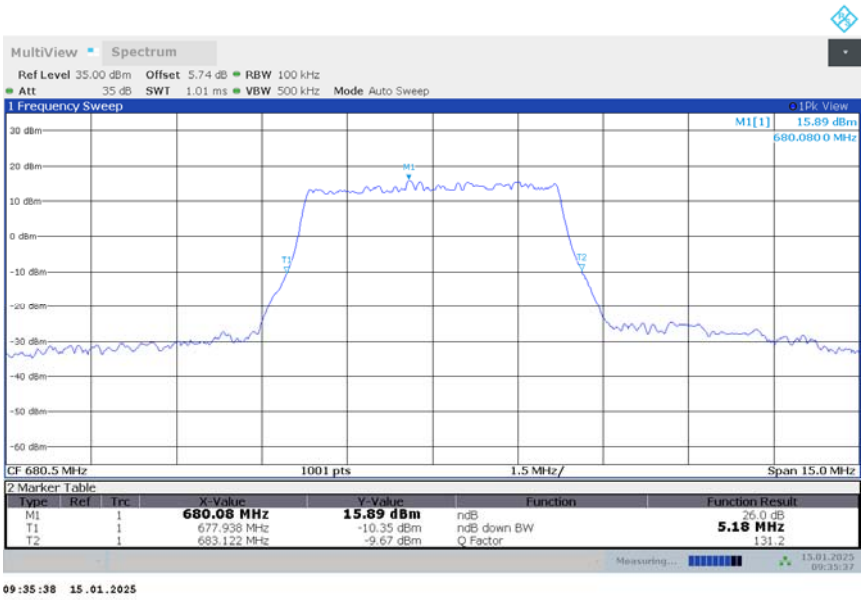
n71,5MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n71,5MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n71,5MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

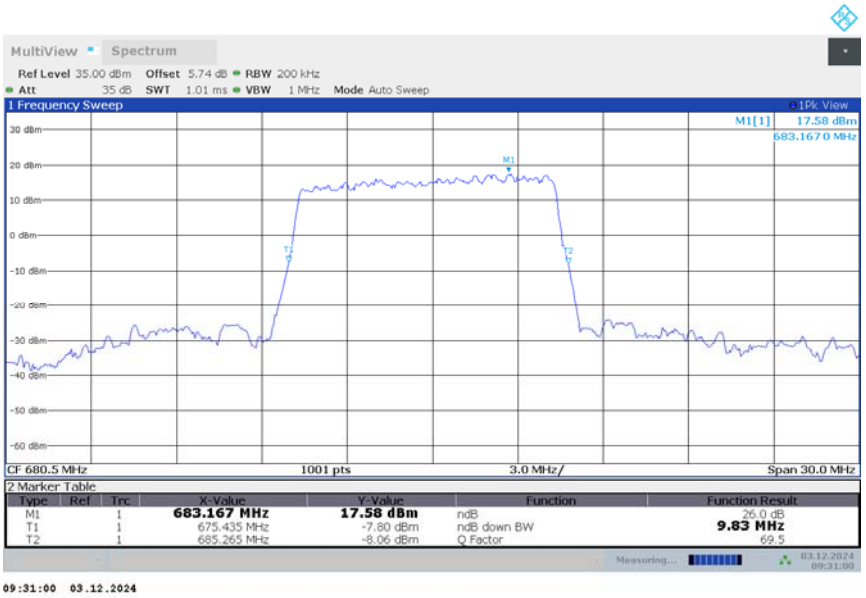


n71

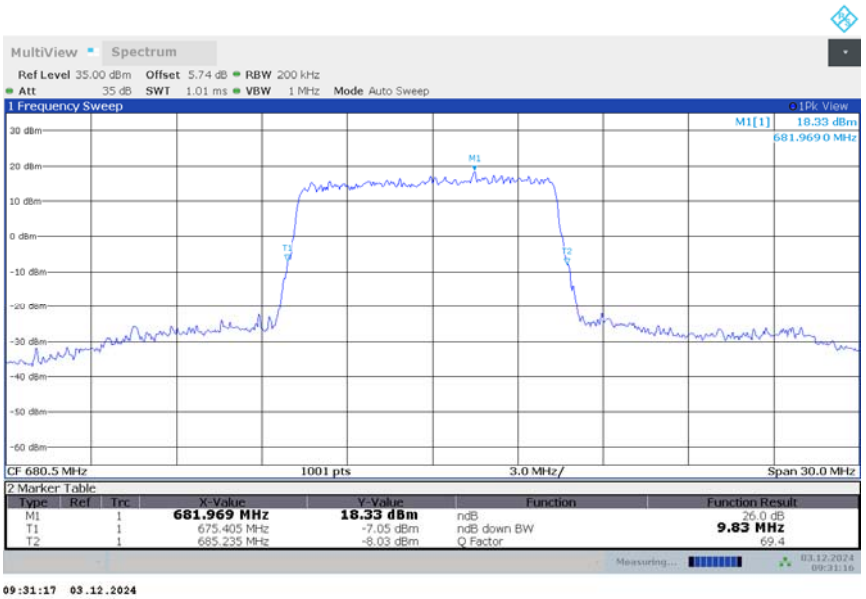
n71,10MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
680.5	9.830	9.830	9.830

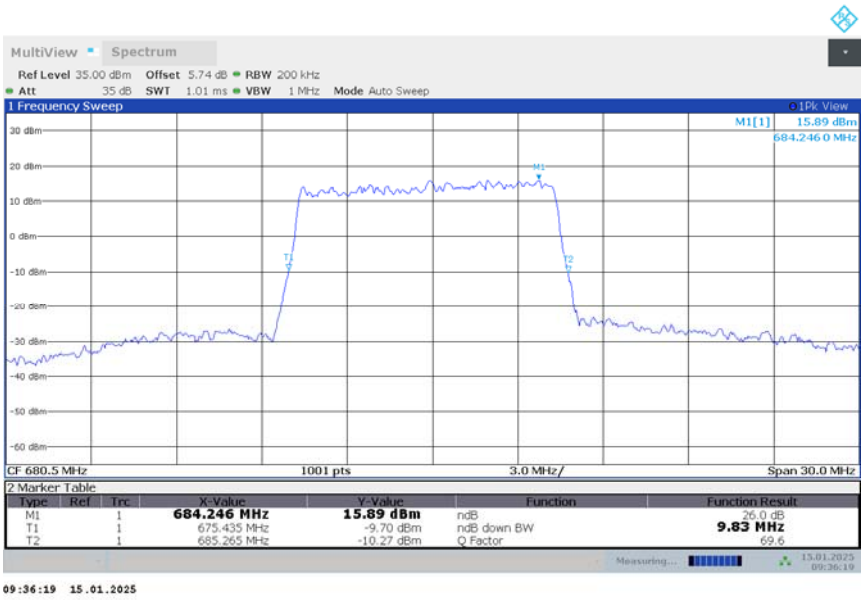
n71,10MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n71,10MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n71,10MHz Bandwidth,DFT-s-16QAM (-26dBc BW)

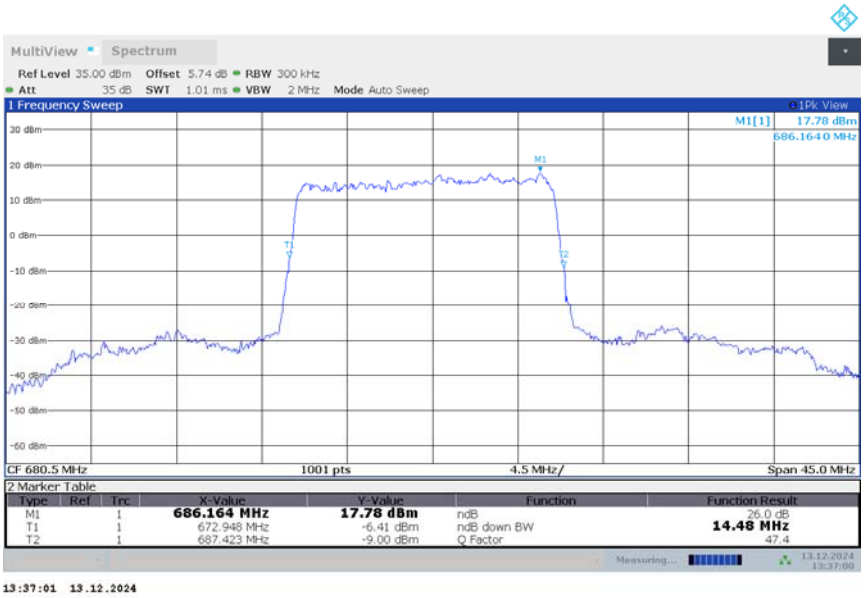


n71

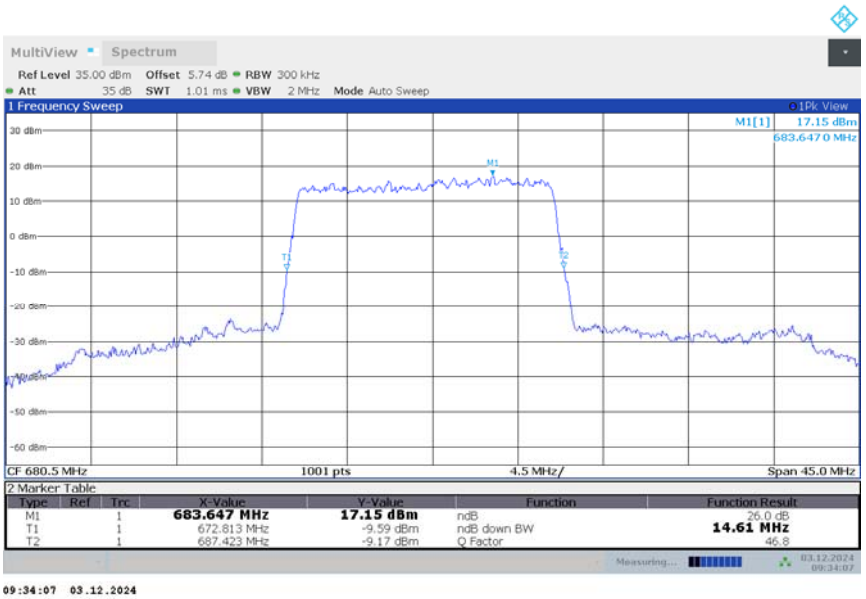
n71,15MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
680.5	14.476	14.610	14.431

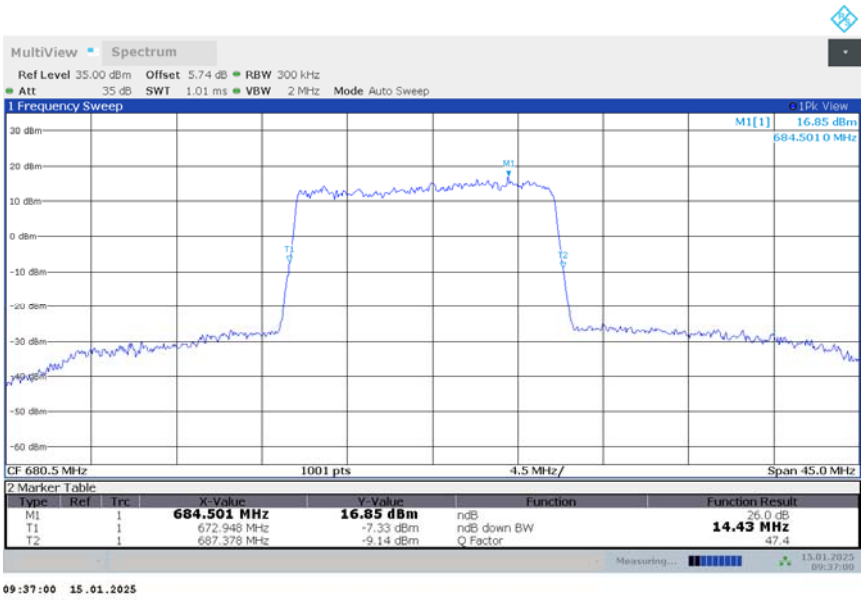
n71,15MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n71,15MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



n71,15MHz Bandwidth,DFT-s-16QAM (-26dBc BW)



n71

n71,20MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
680.5	19.241	19.361	19.421

n71,20MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)

n71,20MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

n71,20MHz Bandwidth,DFT-s-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.

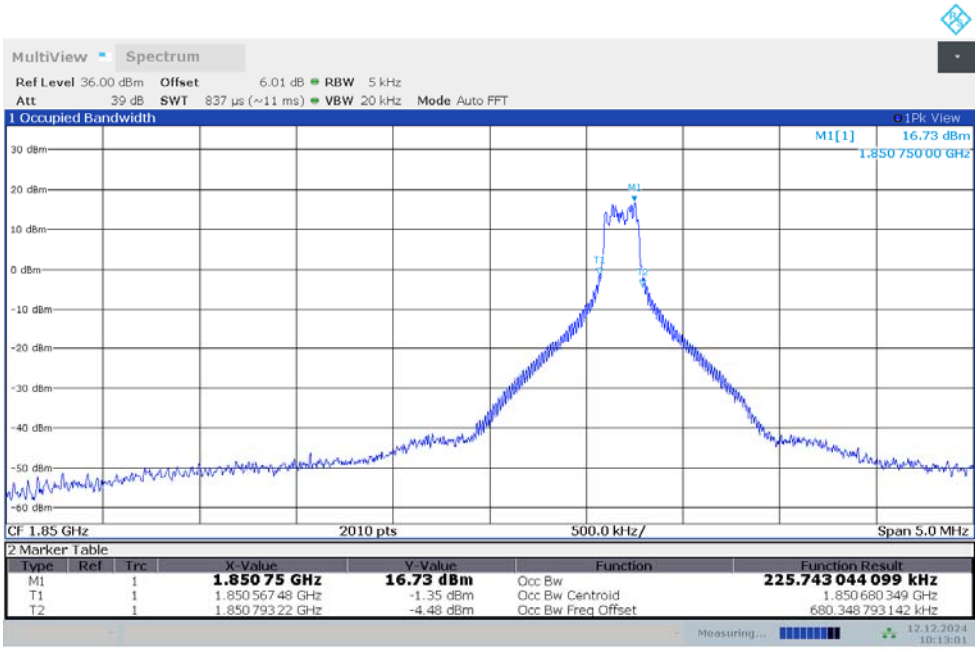
Part 27.53(g) states for operations in the 600 MHz band and the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P)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

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

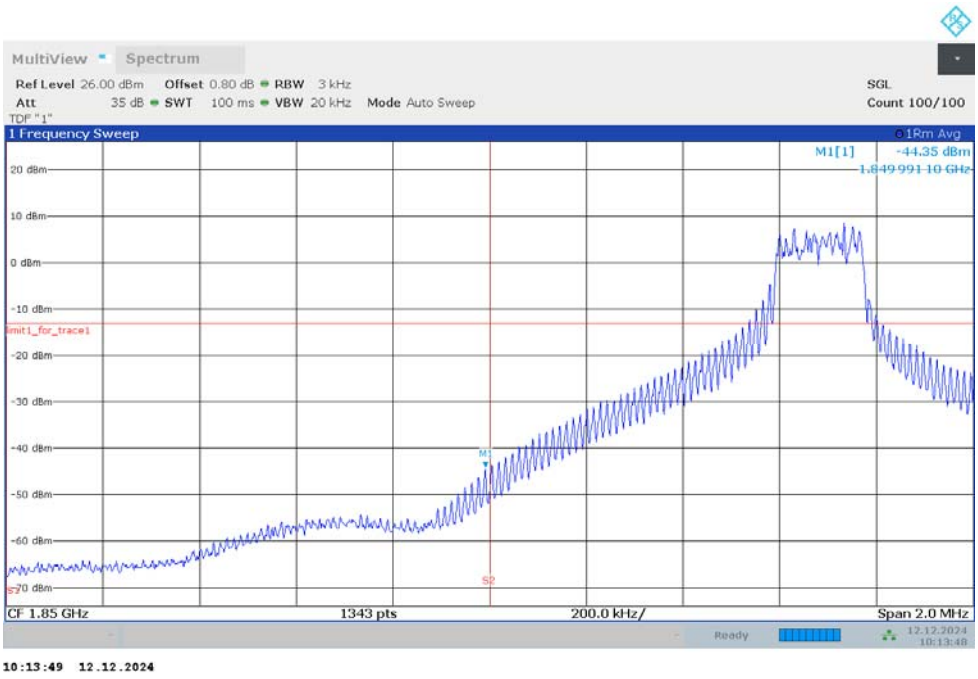
A.6.2 Measurement result

NR n25

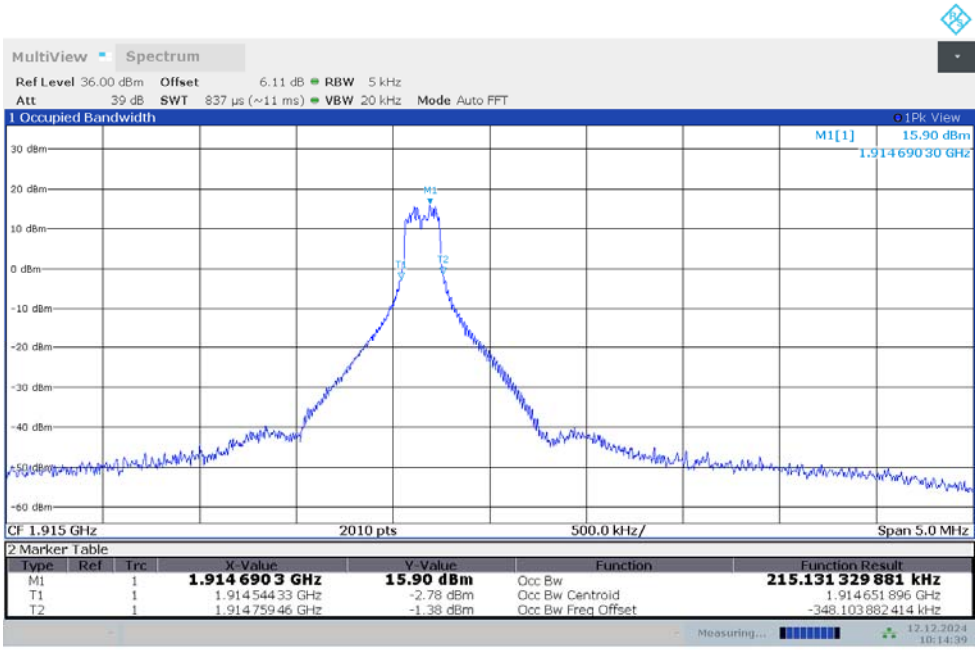
OBW: 1RB-LOW_offset



LOW BAND EDGE BLOCK-1RB-LOW_offset

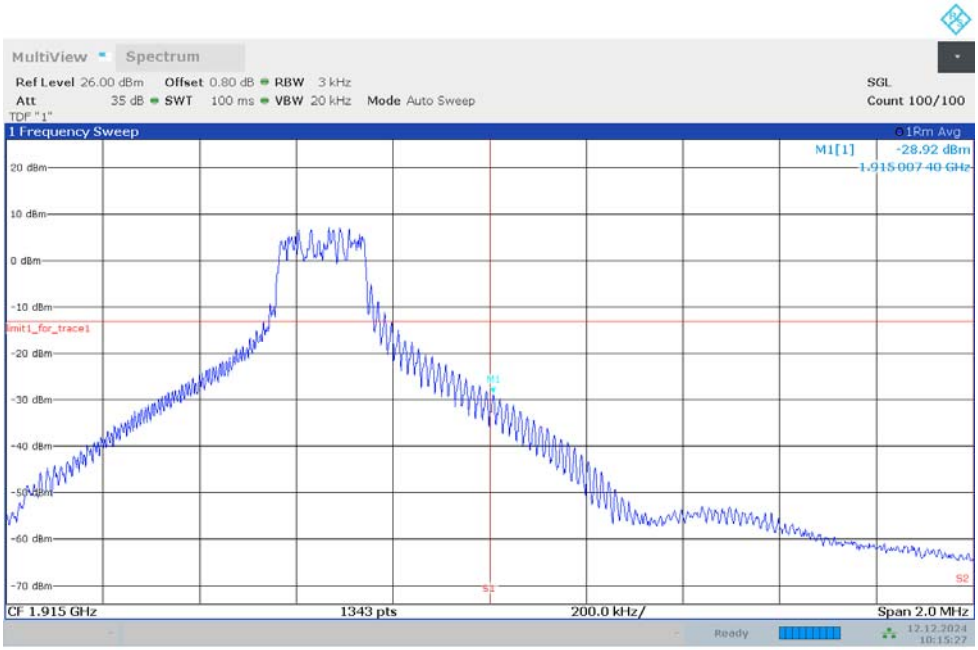


OBW: 1RB-HIGH_offset



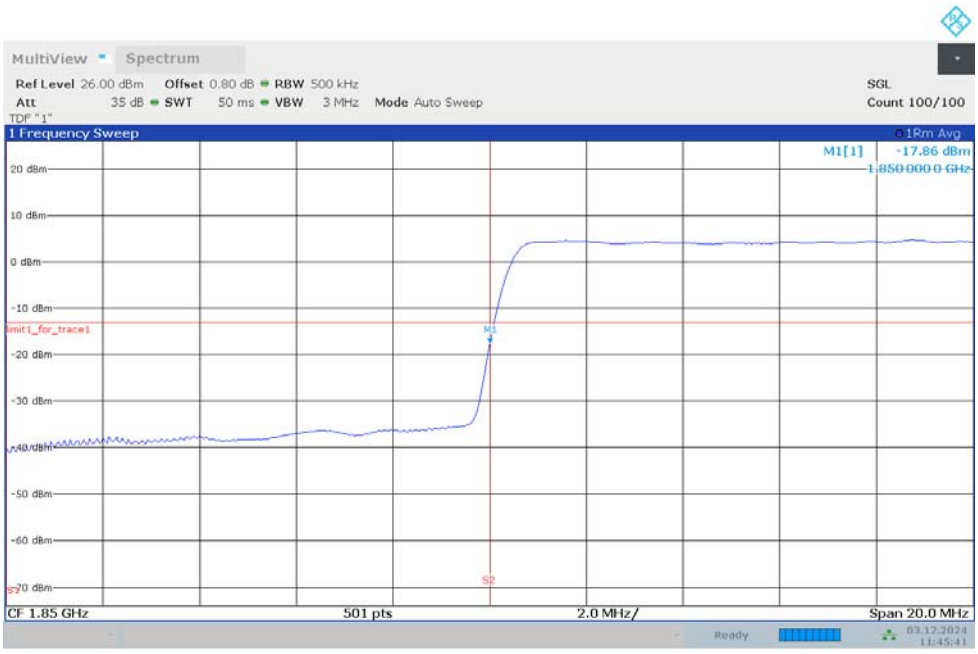
10:14:40 12.12.2024

HIGH BAND EDGE BLOCK-1RB-HIGH_offset



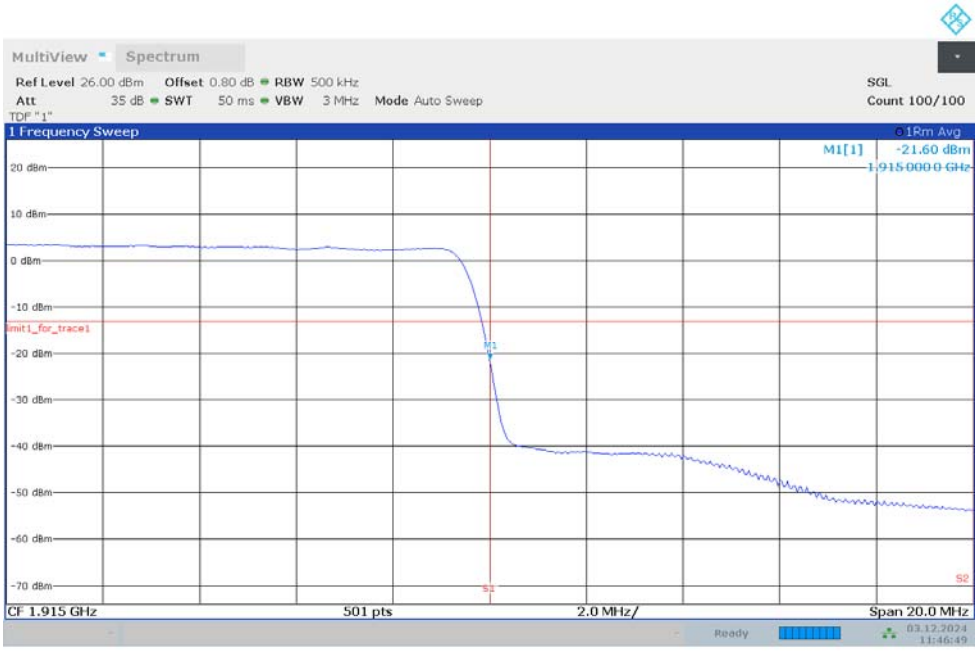
10:15:27 12.12.2024

LOW BAND EDGE BLOCK-40MHz-100%RB



11:45:41 03.12.2024

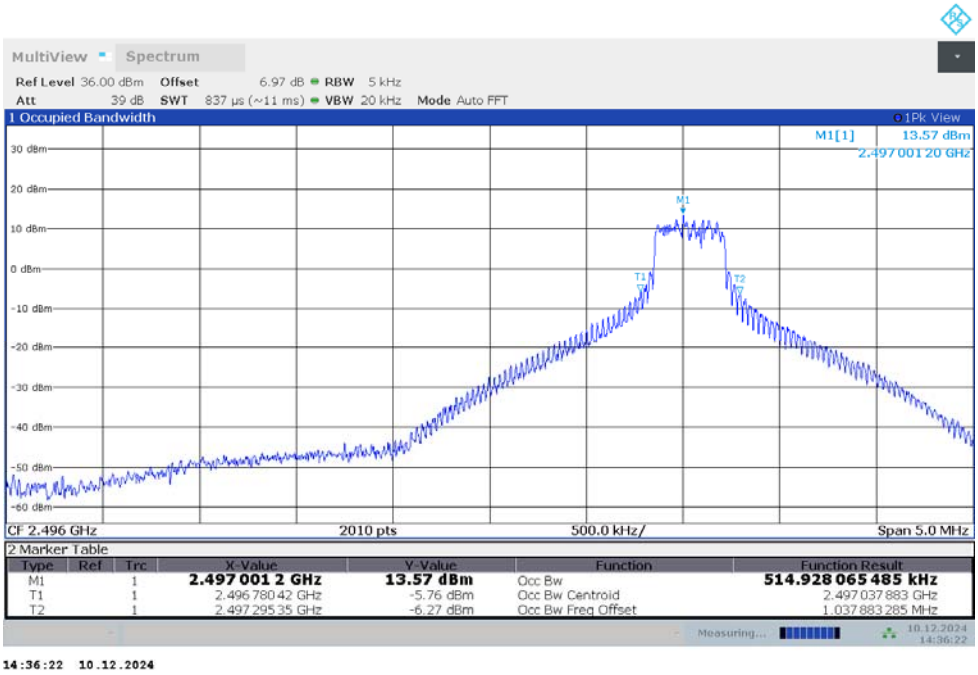
HIGH BAND EDGE BLOCK-40MHz-100%RB



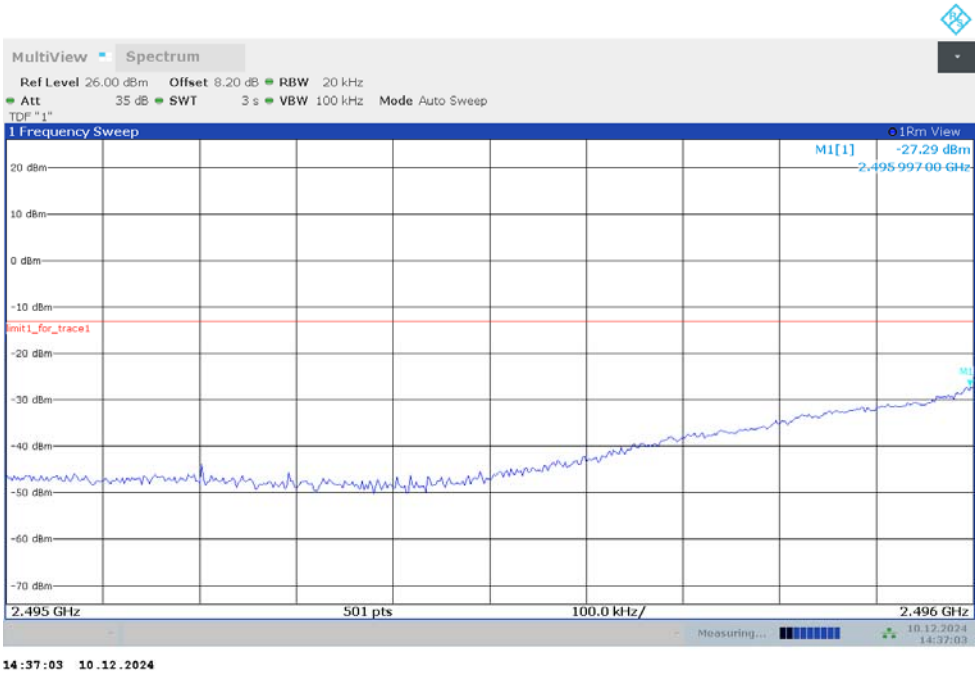
11:46:50 03.12.2024

NR n41

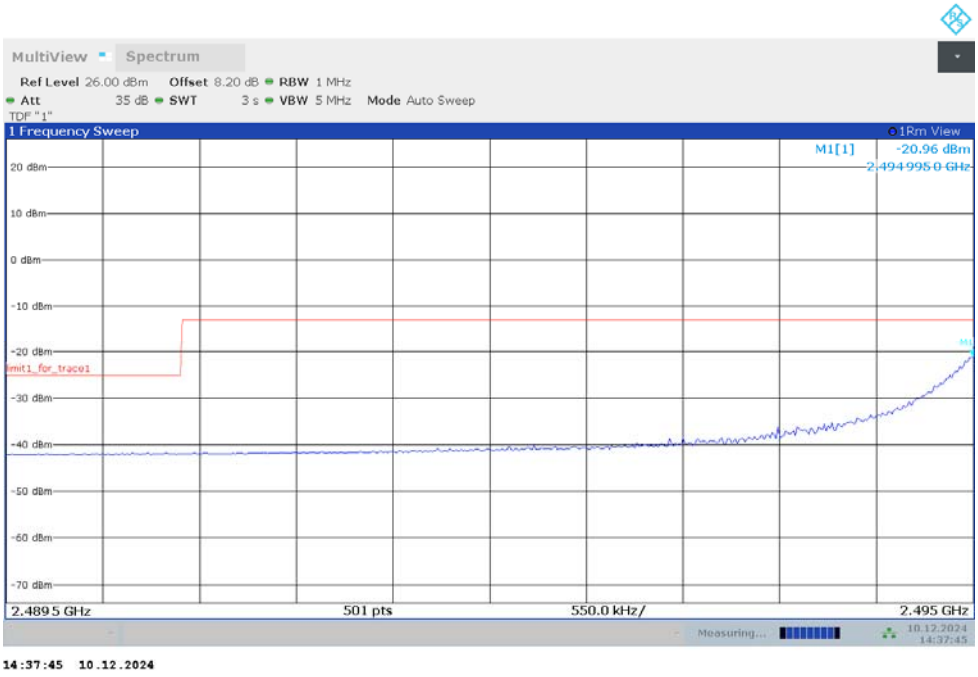
OBW: 1RB-LOW_offset



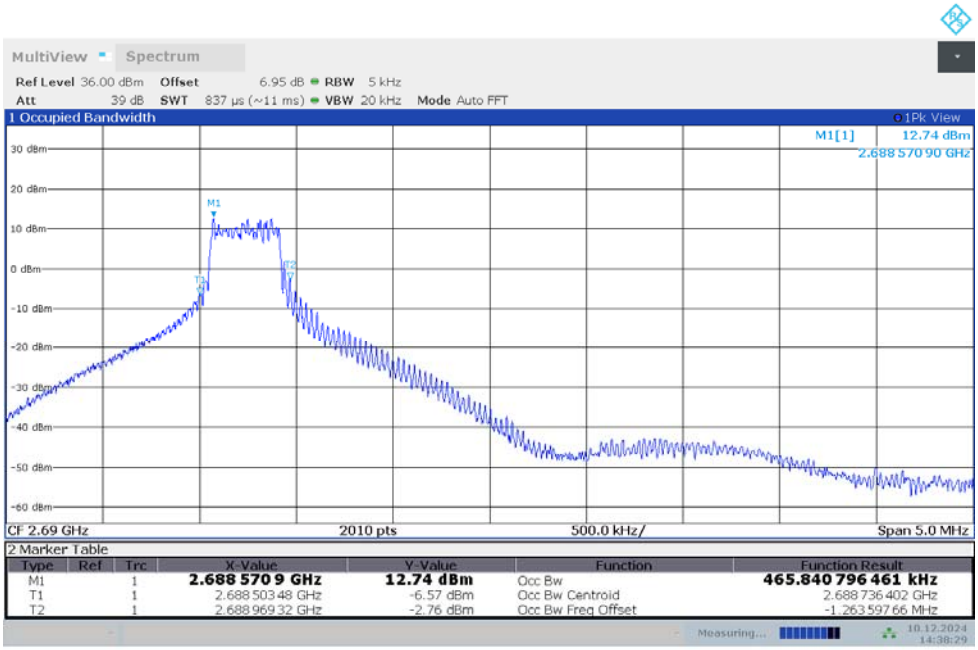
LOW BAND EDGE BLOCK-1RB-LOW_offset



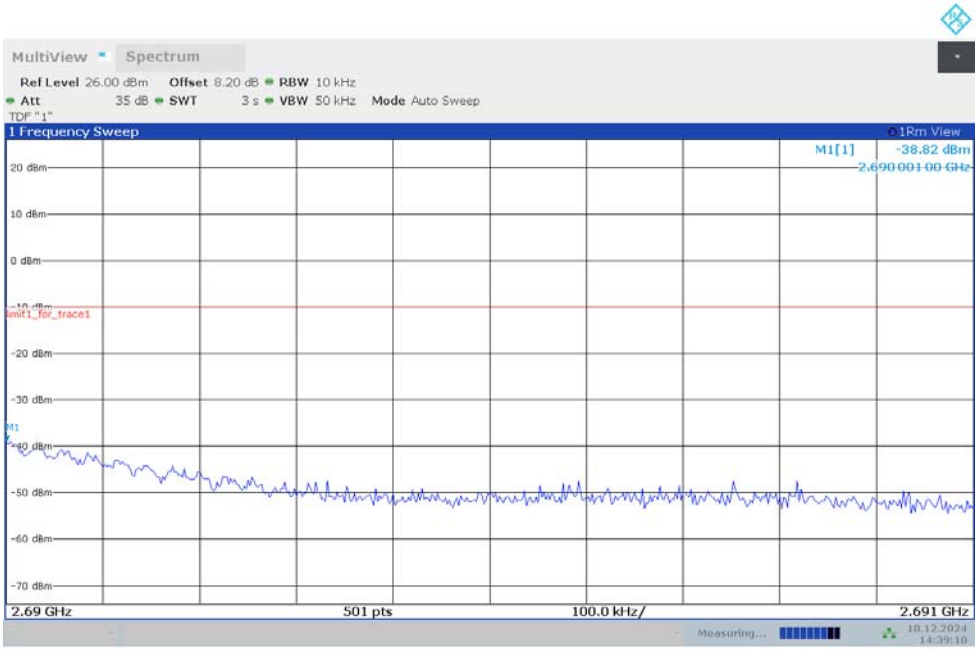
LOW BAND EDGE BLOCK-1RB-LOW_offset



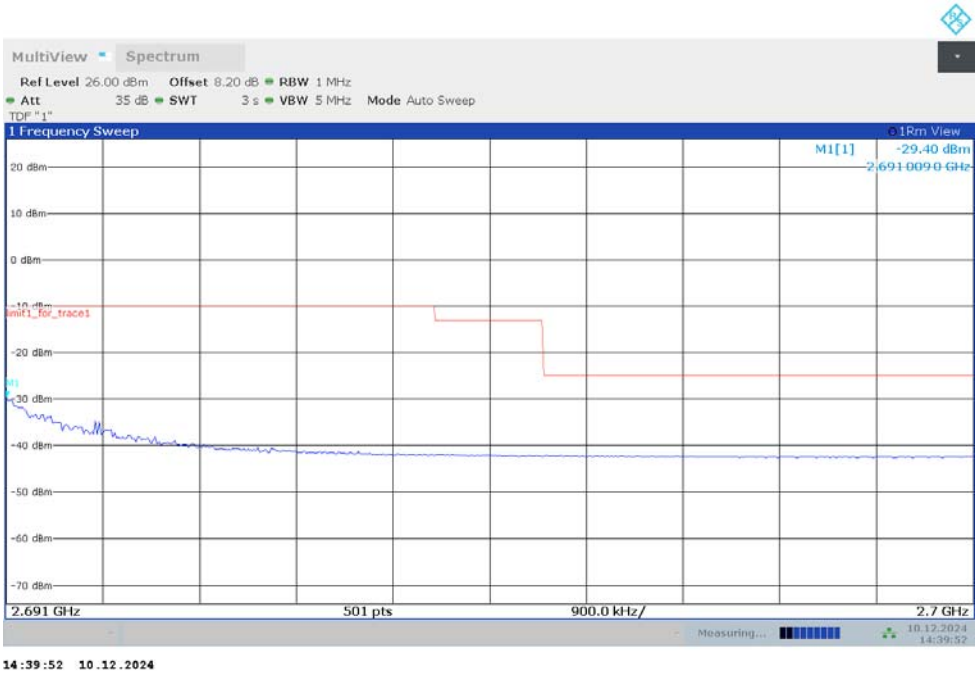
OBW: 1RB-HIGH_offset



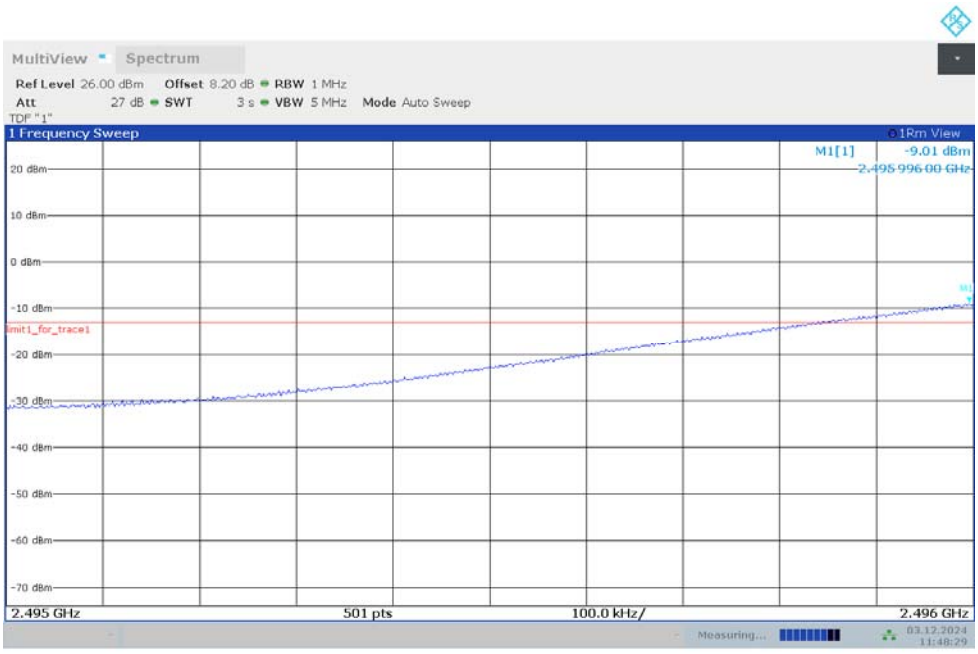
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



HIGH BAND EDGE BLOCK-1RB-HIGH_offset

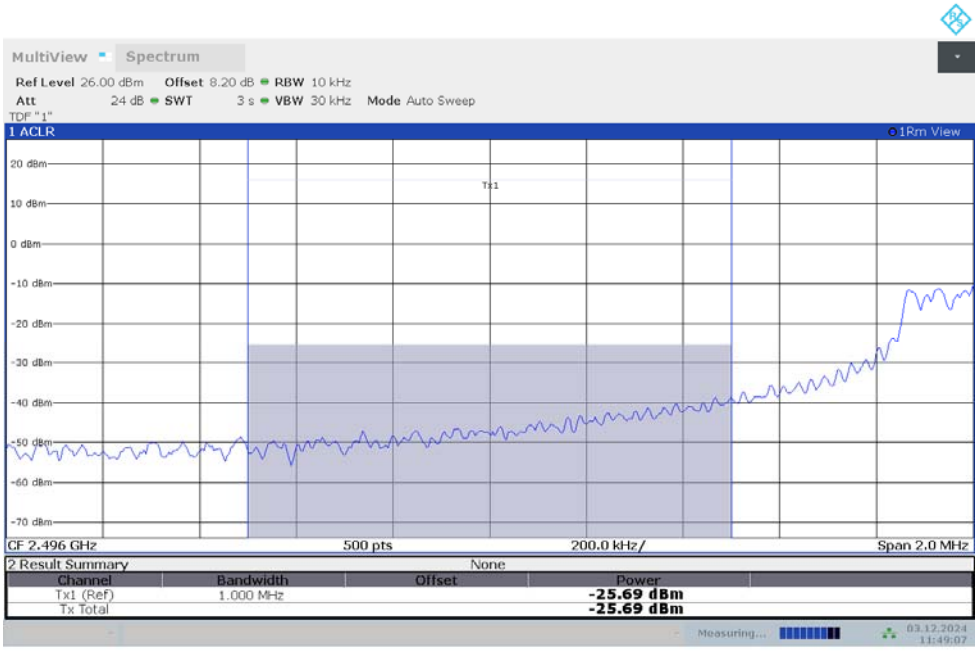


LOW BAND EDGE BLOCK-100MHz-100%RB



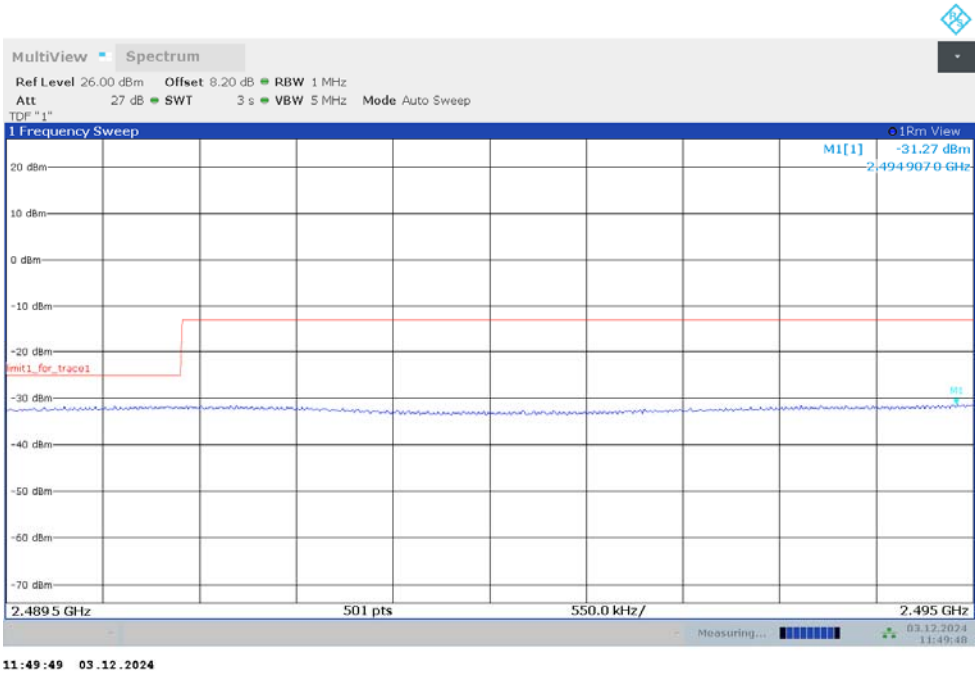
11:48:30 03.12.2024

Channel power

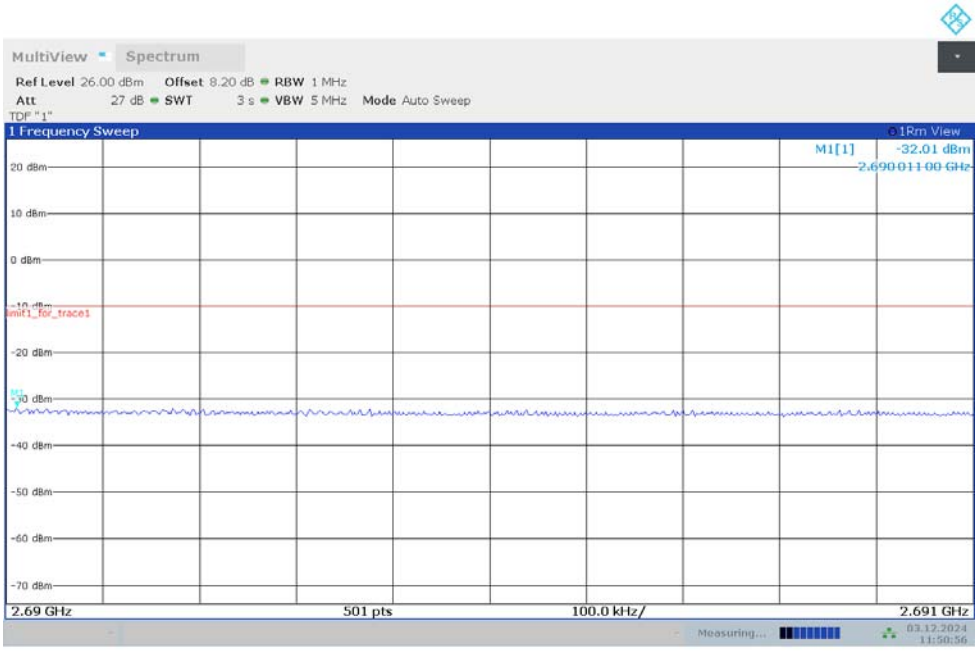


11:49:08 03.12.2024

LOW BAND EDGE BLOCK-100MHz-100%RB

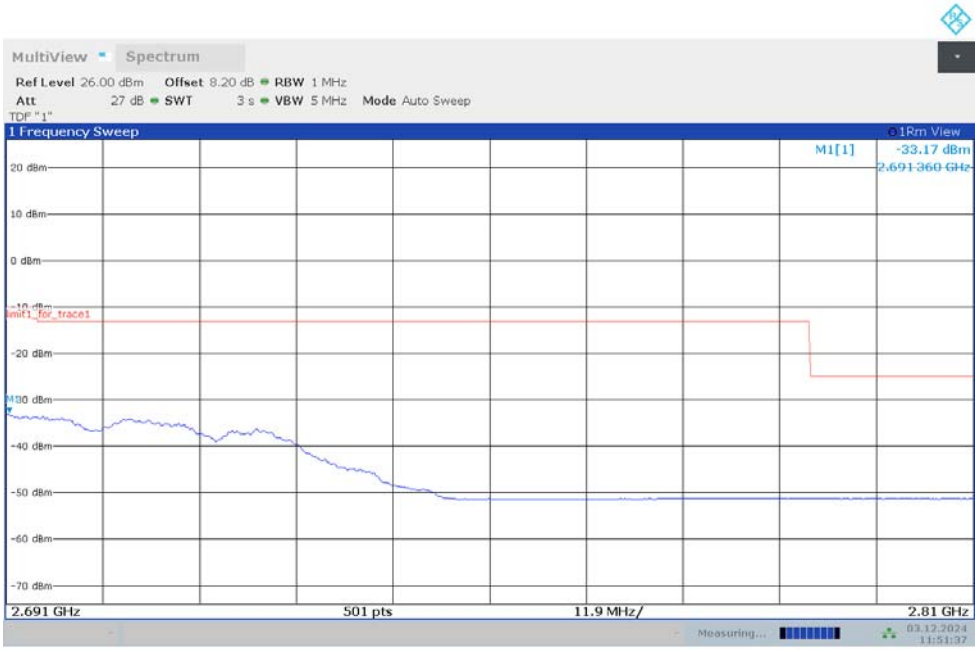


HIGH BAND EDGE BLOCK-100MHz-100%RB



11:50:57 03.12.2024

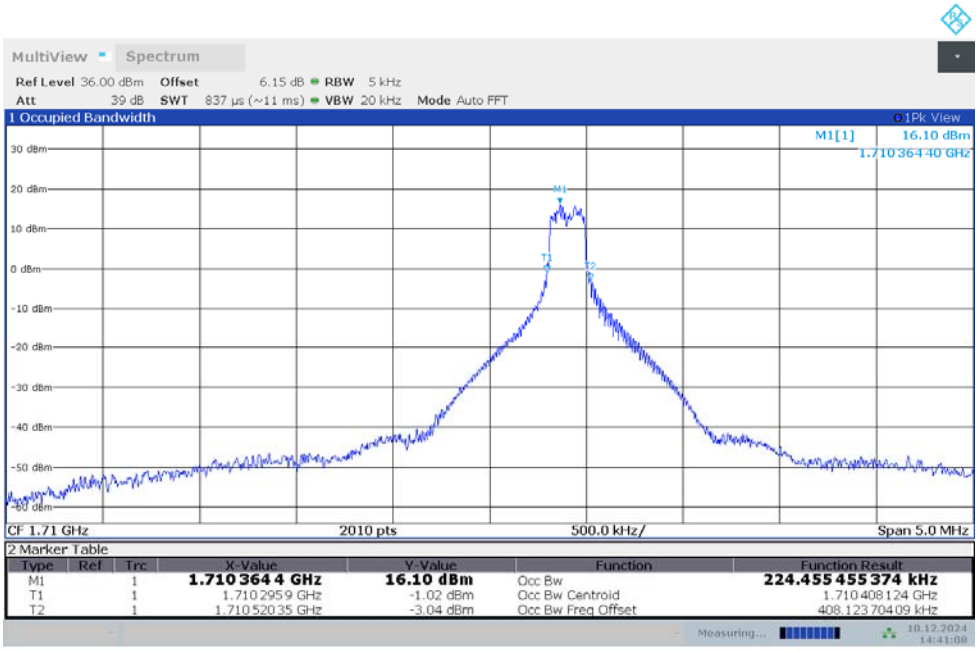
HIGH BAND EDGE BLOCK-100MHz-100%RB



11:51:38 03.12.2024

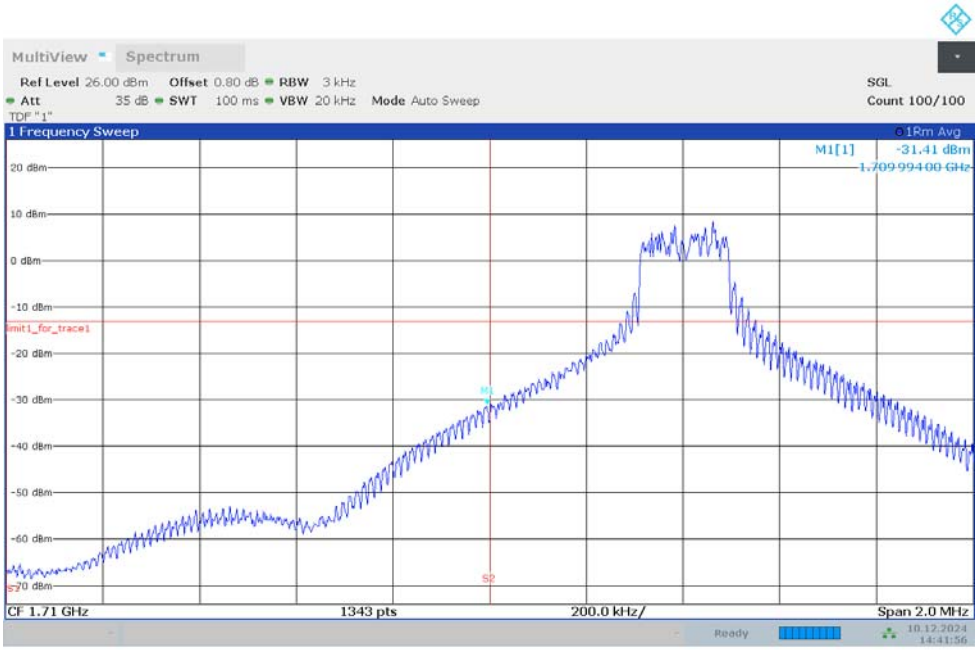
NR n66

OBW: 1RB-LOW_offset



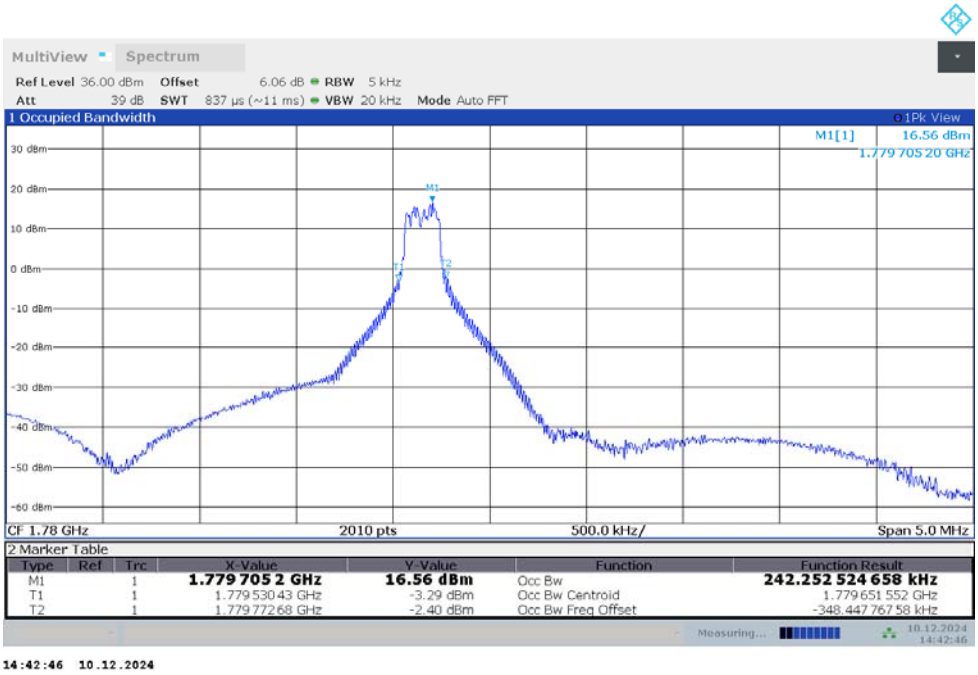
14:41:08 10.12.2024

LOW BAND EDGE BLOCK-1RB-LOW_offset



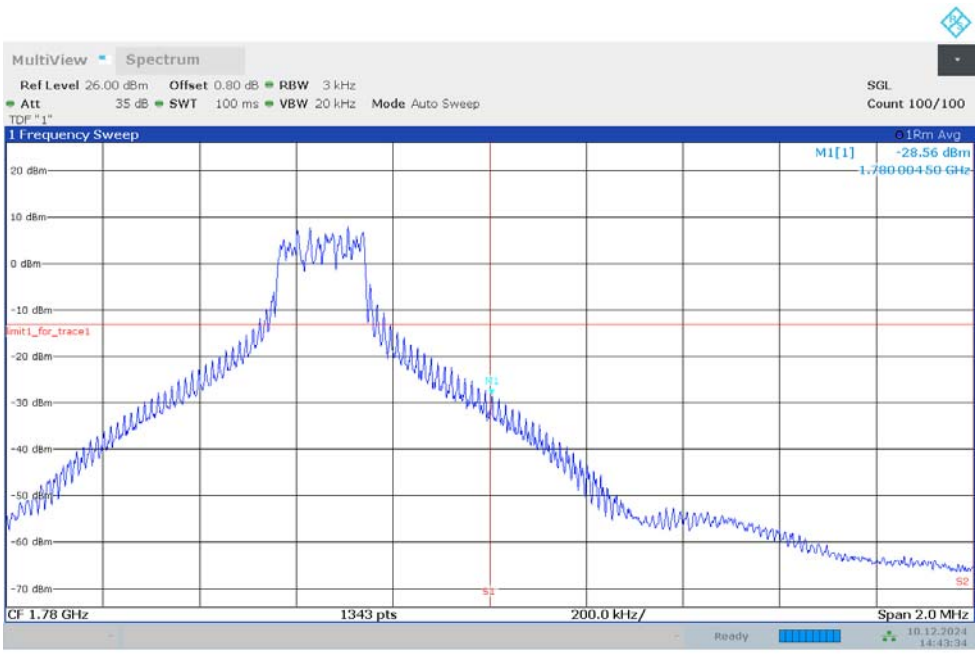
14:41:56 10.12.2024

OBW: 1RB-HIGH_offset



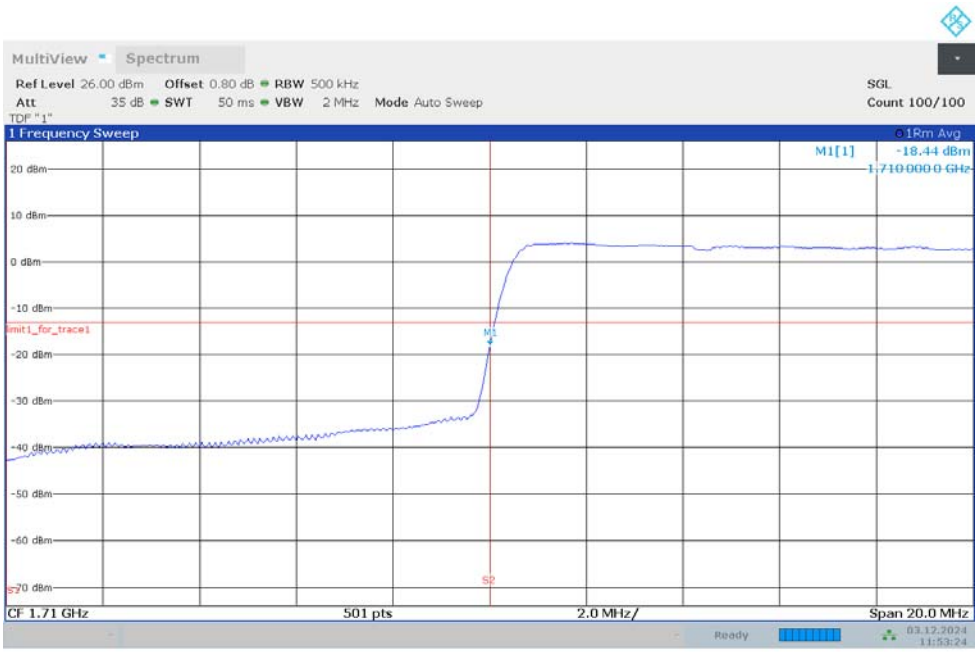
14:42:46 10.12.2024

HIGH BAND EDGE BLOCK-1RB-HIGH_offset



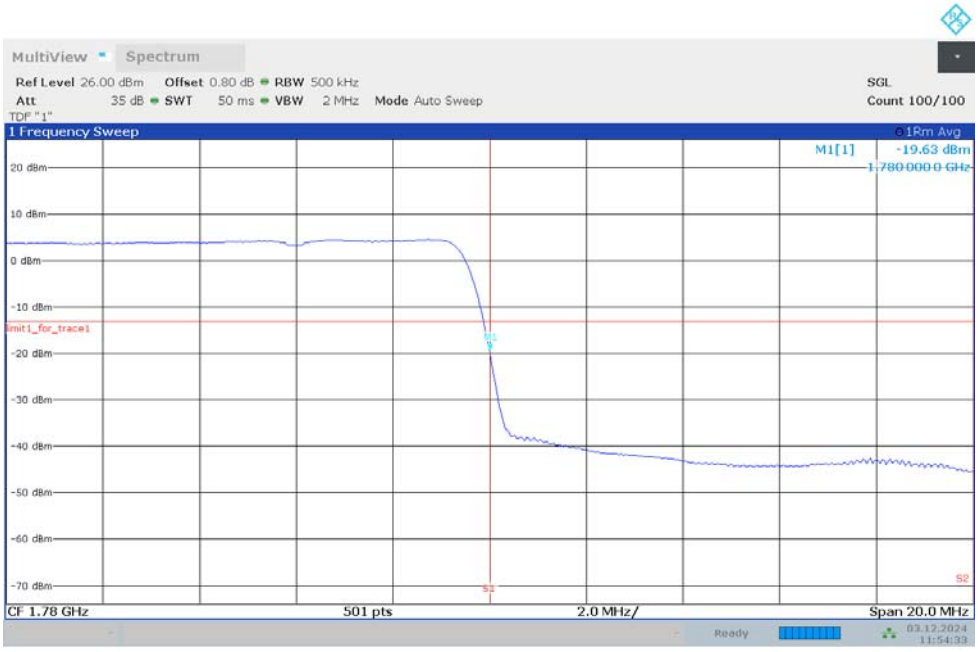
14:43:34 10.12.2024

LOW BAND EDGE BLOCK-40MHz-100%RB



11:53:24 03.12.2024

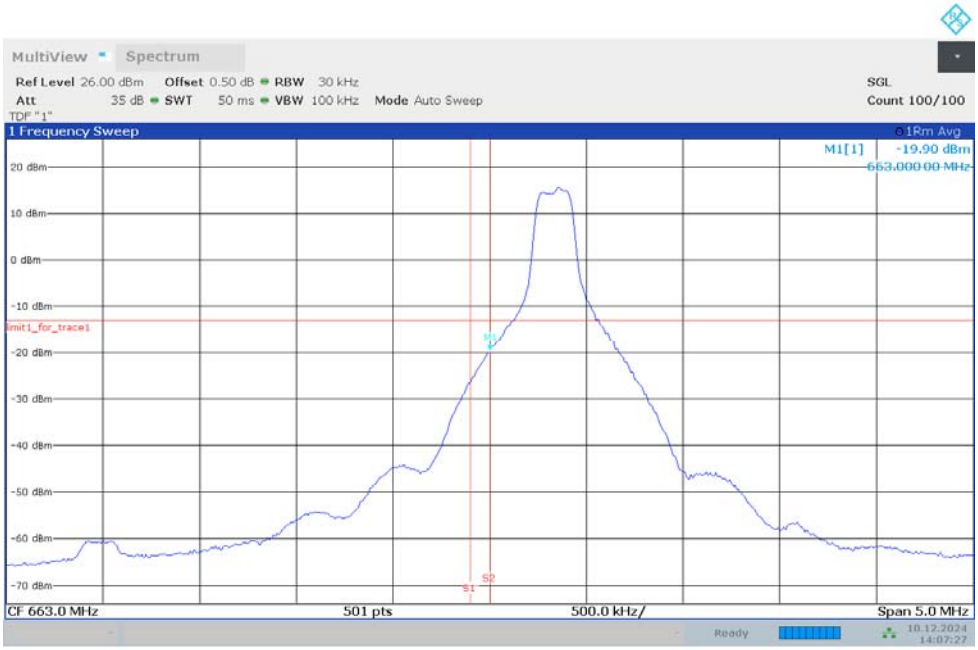
HIGH BAND EDGE BLOCK-40MHz-100%RB



11:54:33 03.12.2024

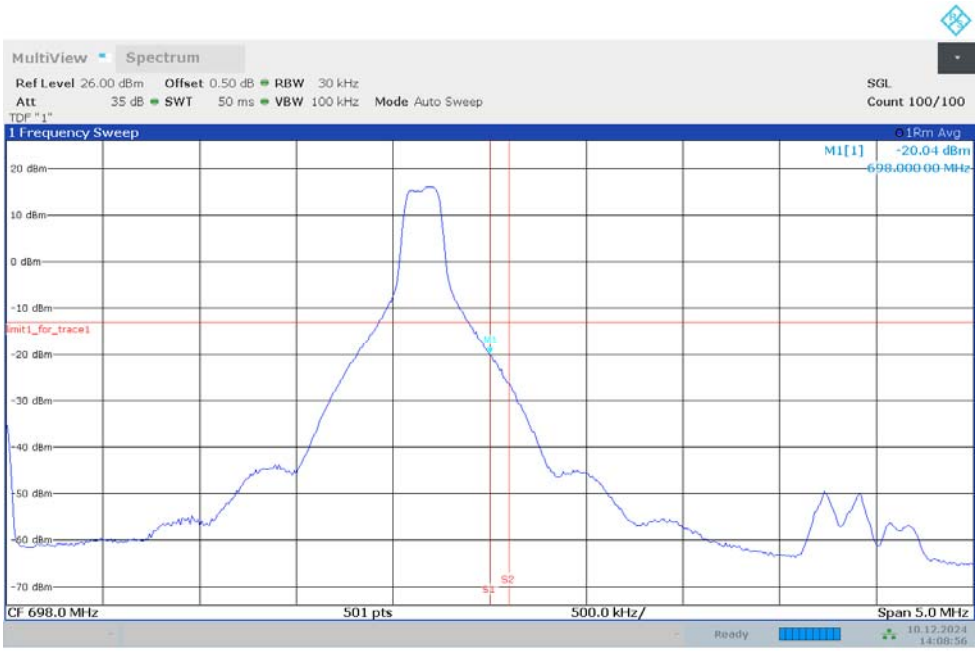
NR n71

LOW BAND EDGE BLOCK-1RB-LOW_offset



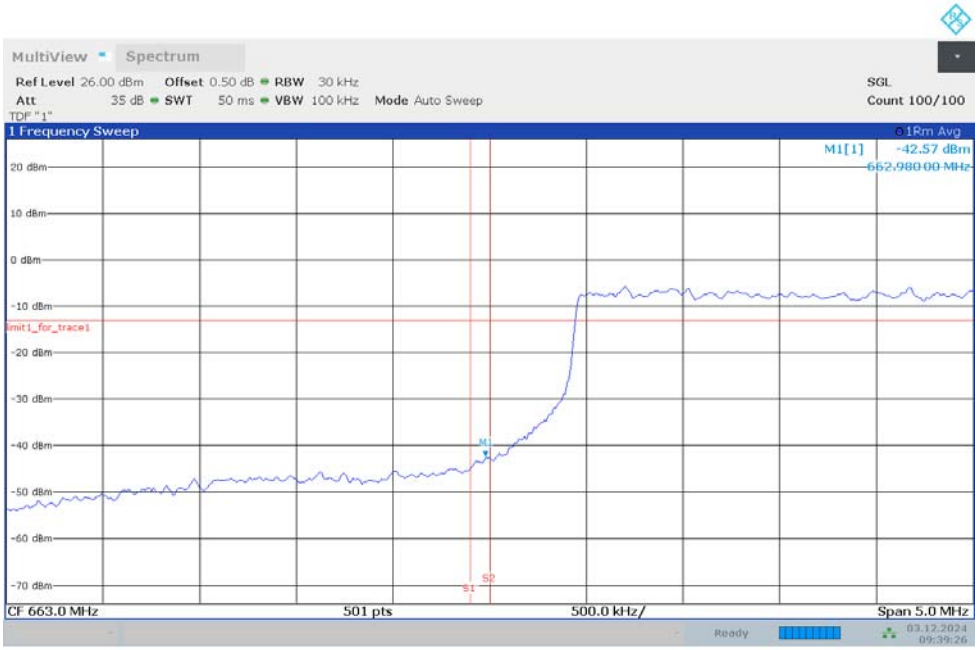
14:07:27 10.12.2024

HIGH BAND EDGE BLOCK-1RB-HIGH_offset



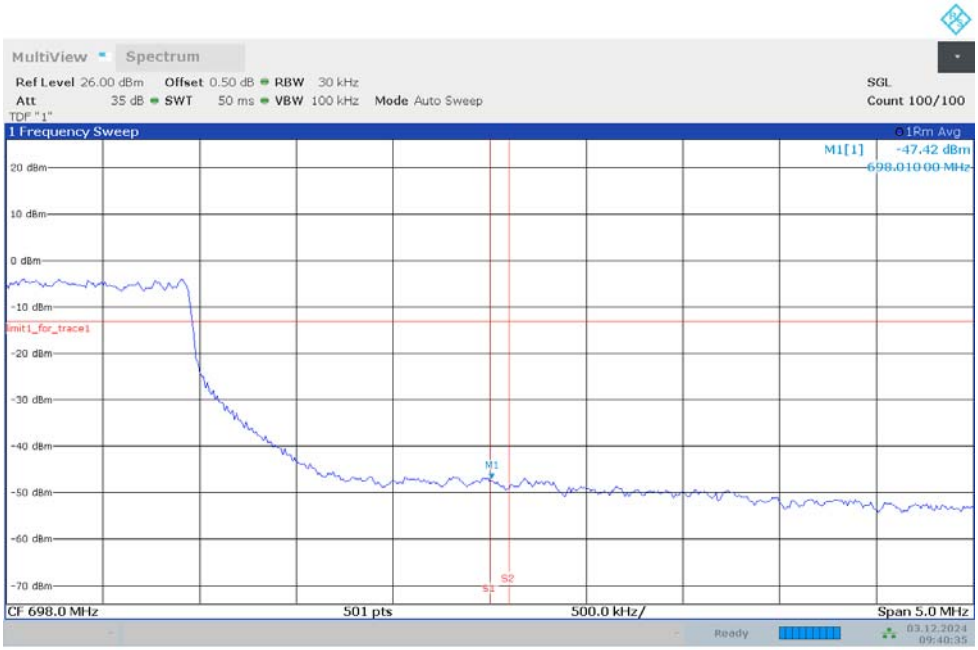
14:08:57 10.12.2024

LOW BAND EDGE BLOCK-20MHz-100%RB



09:39:27 03.12.2024

HIGH BAND EDGE BLOCK-20MHz-100%RB



09:40:35 03.12.2024

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.

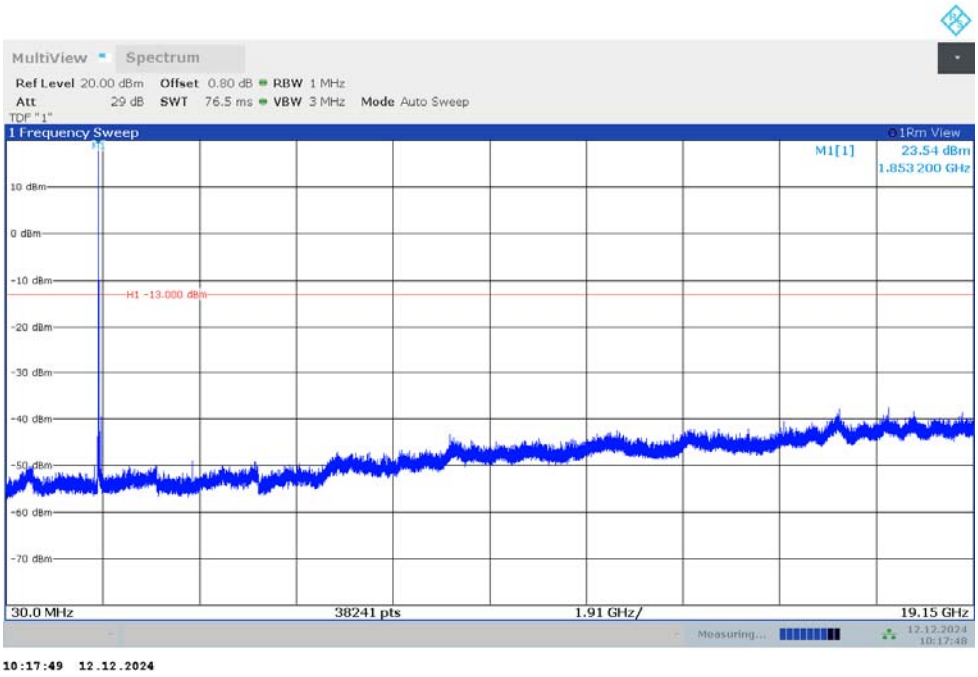
Part 27.53(m) specifies for mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 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(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

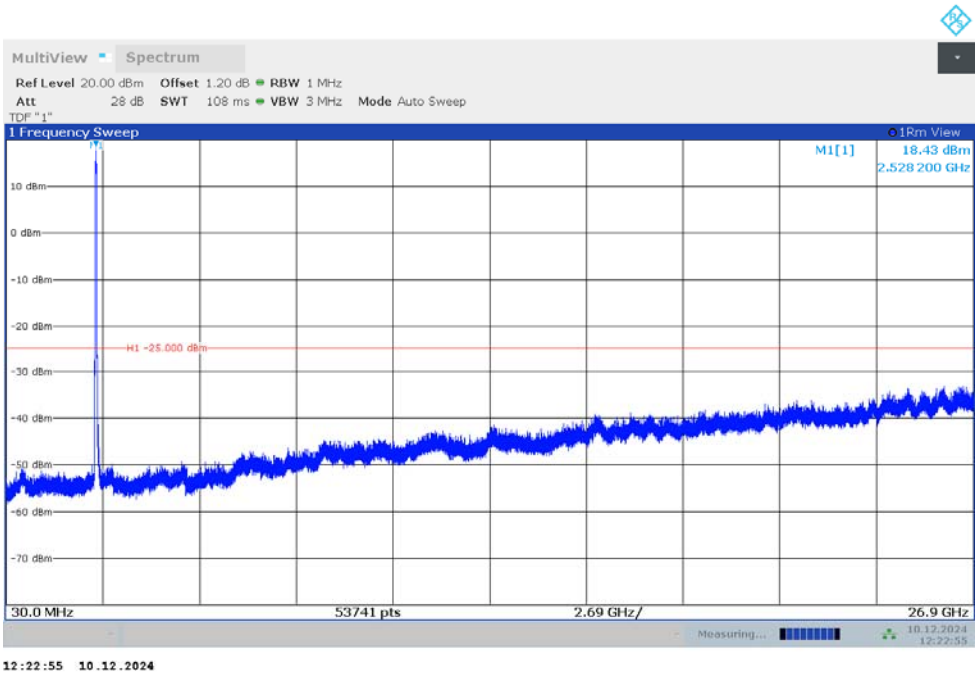
n25

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



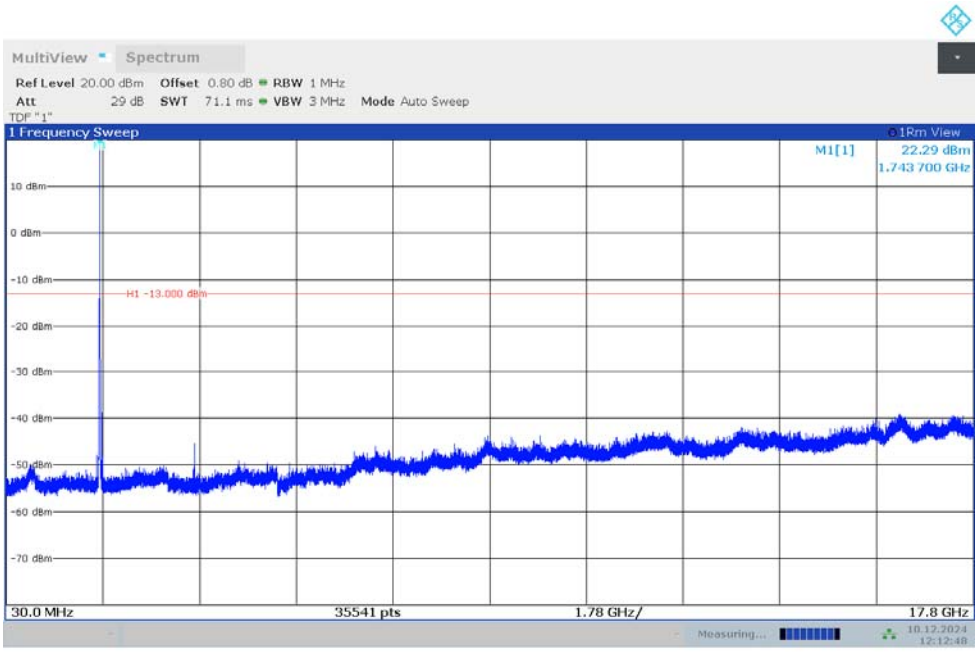
n41

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



n66

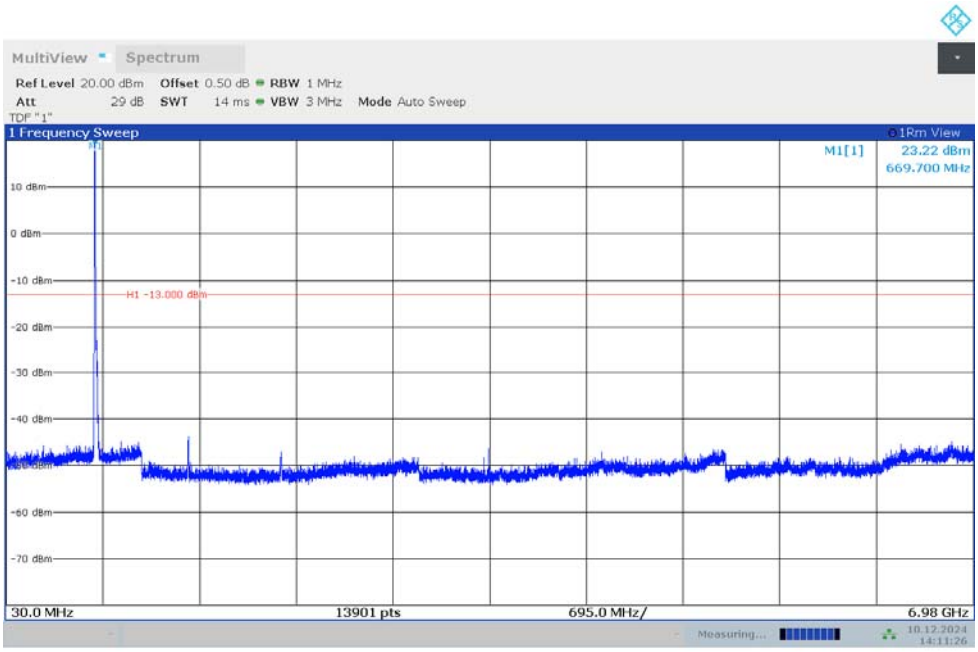
NOTE: peak above the limit line is the carrier frequency.



12:12:48 10.12.2024

n71

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



14:11:27 10.12.2024

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

n25,40MHz

Frequency (MHz)	PAPR (dB)								
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM	DFT-s-64QAM	DFT-s-256QAM	CP-QPSK	CP-16QAM	CP-64QAM	CP-256QAM
1882.5	4.70	5.54	6.28	6.60	6.93	7.70	7.75	8.05	8.68

n41,100MHz

Frequency (MHz)	PAPR (dB)								
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM	DFT-s-64QAM	DFT-s-256QAM	CP-QPSK	CP-16QAM	CP-64QAM	CP-256QAM
2592.99	4.55	5.44	6.18	6.53	6.67	7.64	7.54	7.76	8.47

n66,40MHz

Frequency (MHz)	PAPR (dB)								
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM	DFT-s-64QAM	DFT-s-256QAM	CP-QPSK	CP-16QAM	CP-64QAM	CP-256QAM
1745	4.73	5.43	5.97	6.30	6.64	7.39	7.41	7.22	8.58

n71,20MHz

Frequency (MHz)	PAPR (dB)								
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM	DFT-s-64QAM	DFT-s-256QAM	CP-QPSK	CP-16QAM	CP-64QAM	CP-256QAM
680.5	5.20	5.67	6.51	6.48	6.61	7.79	7.87	7.59	8.54

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*****