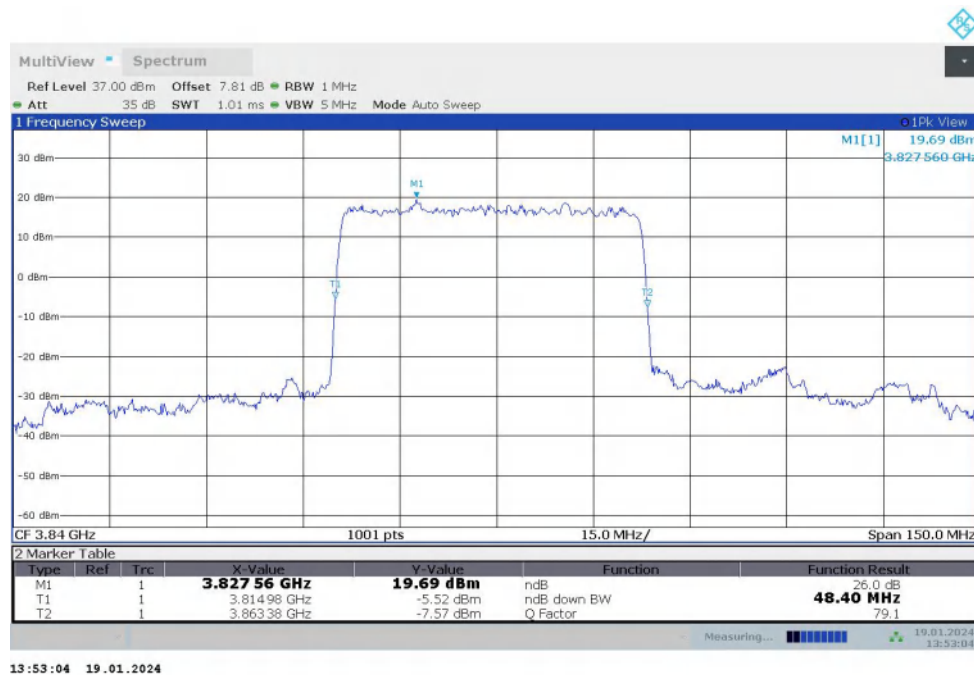


n77H

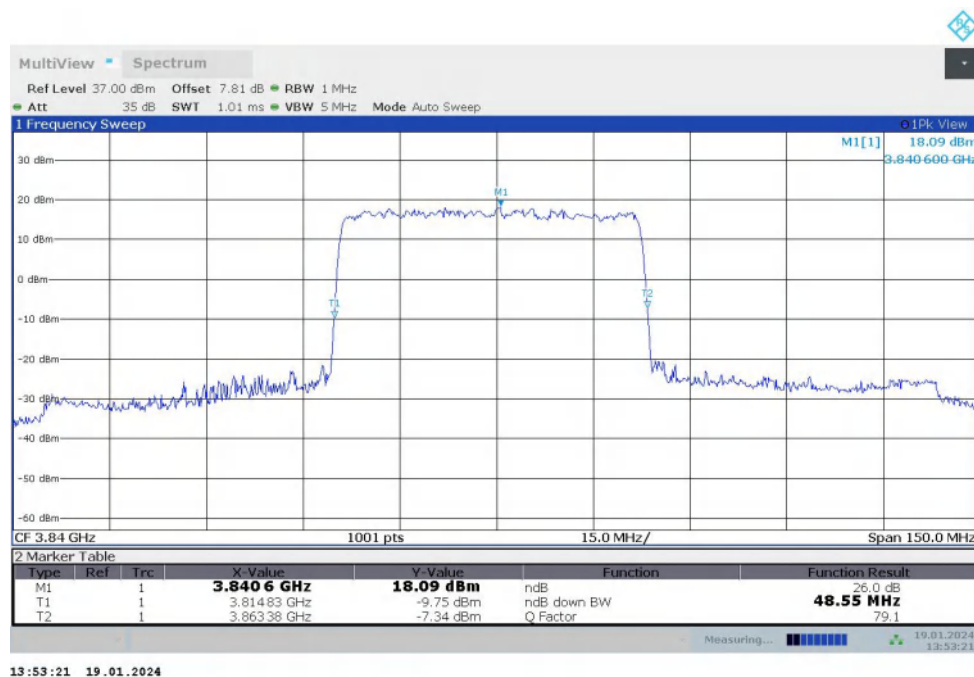
n77H,50MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3840	48.400	48.550

n77H,50MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n77H,50MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

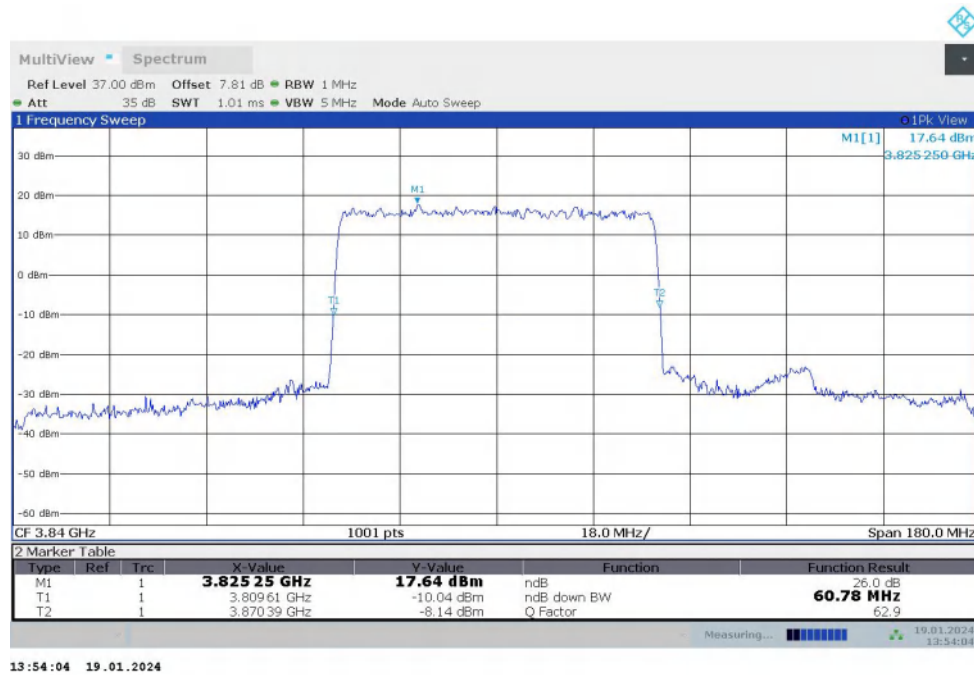


n77H

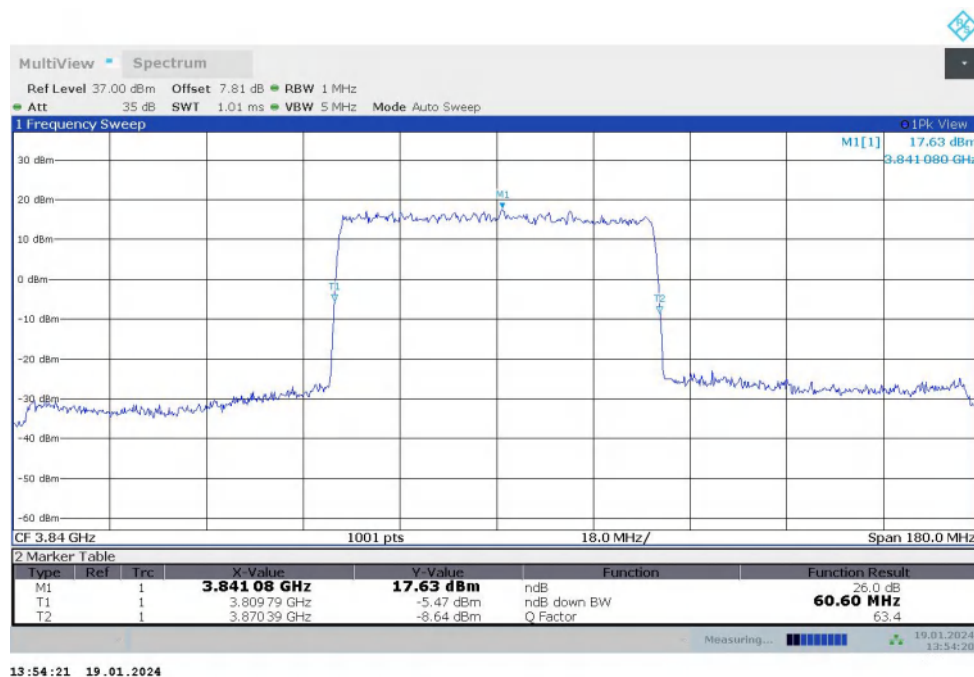
n77H,60MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3840	60.780	60.600

n77H,60MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n77H,60MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

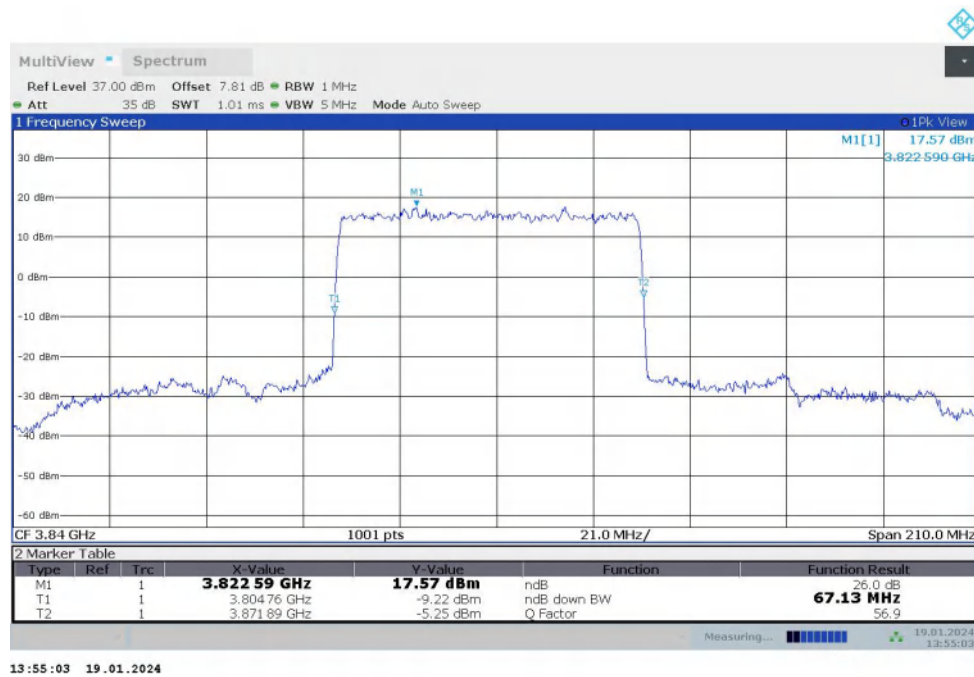


n77H

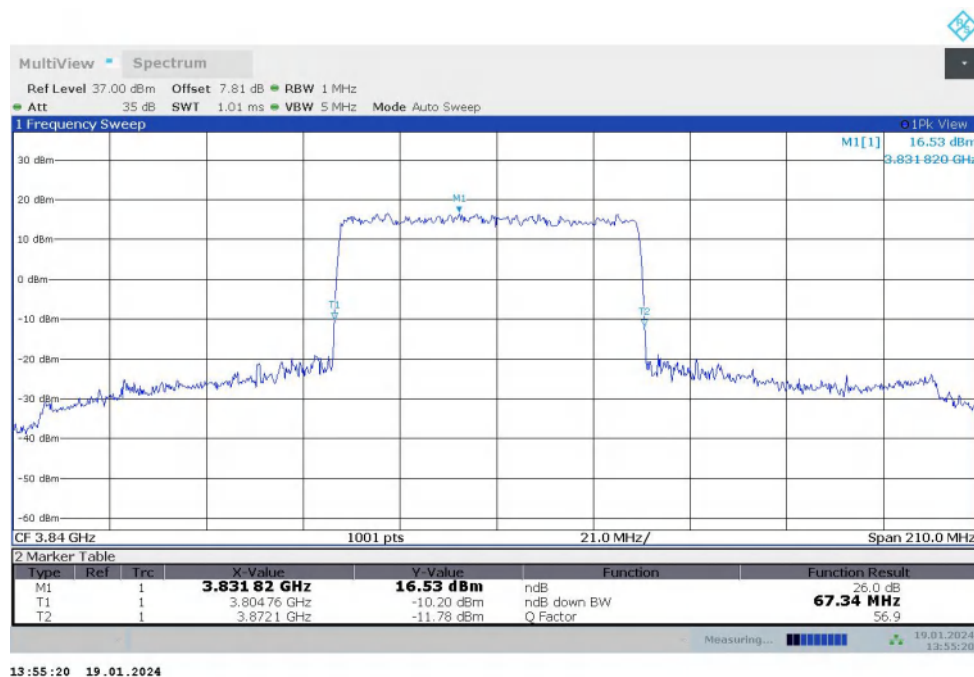
n77H,70MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3840	67.130	67.340

n77H,70MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n77H,70MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

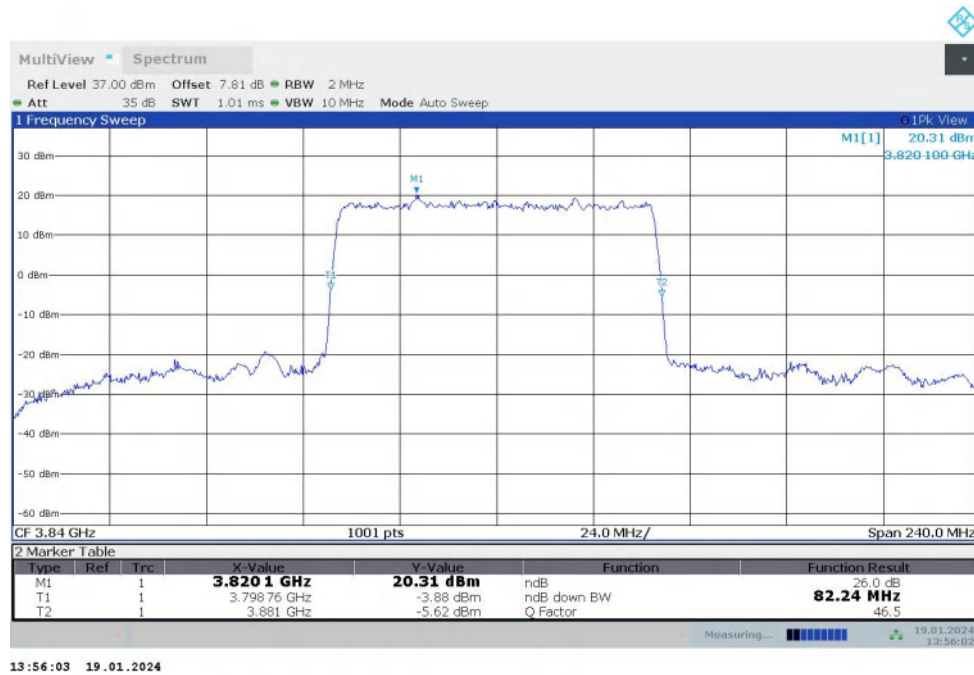


n77H

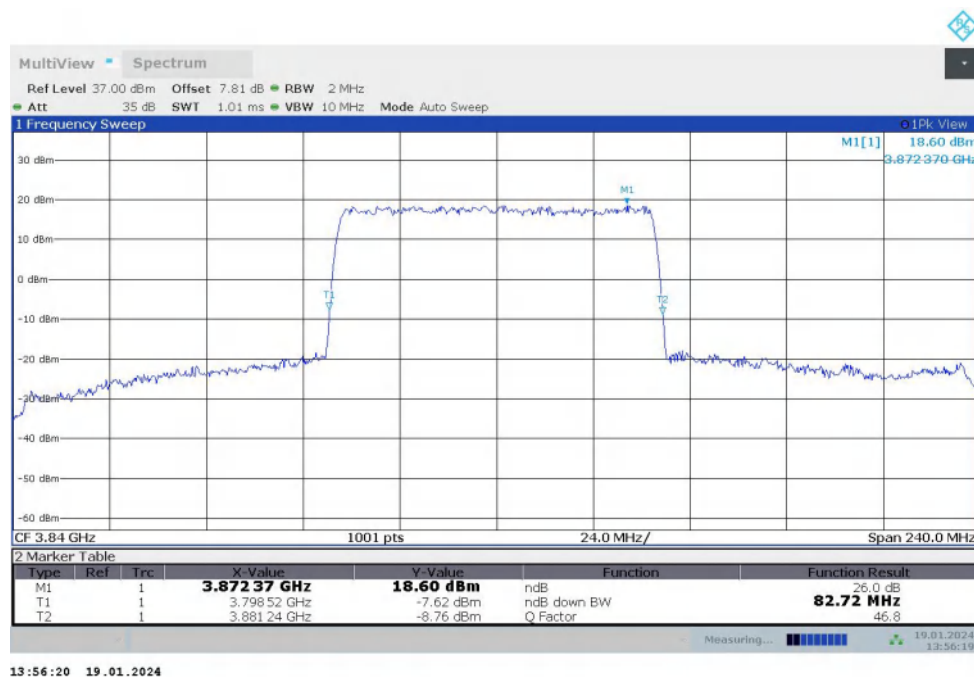
n77H,80MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3840	82.240	82.720

n77H,80MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n77H,80MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

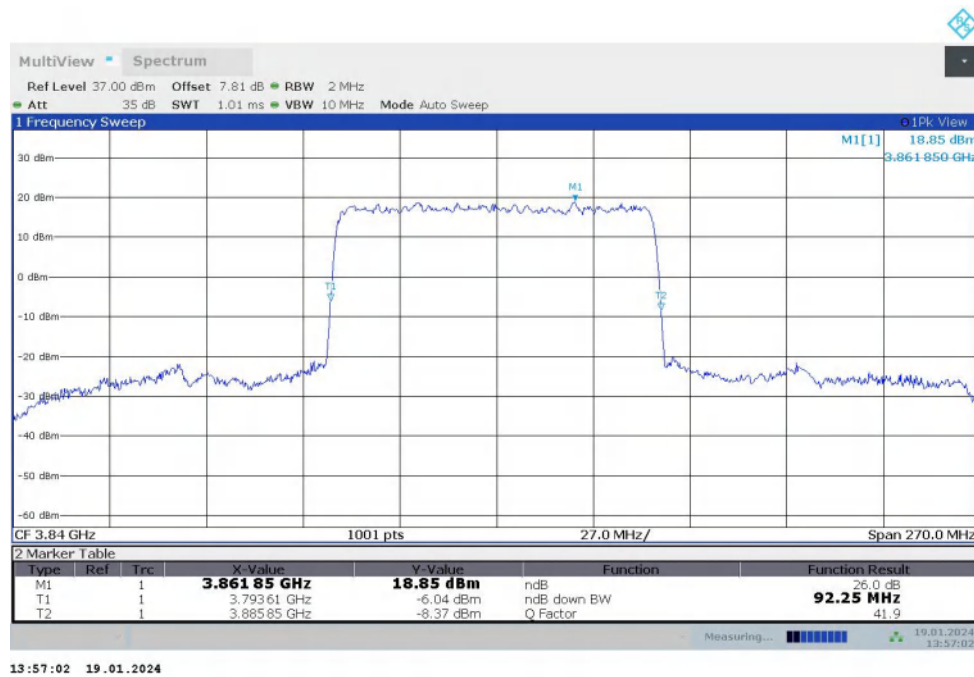


n77H

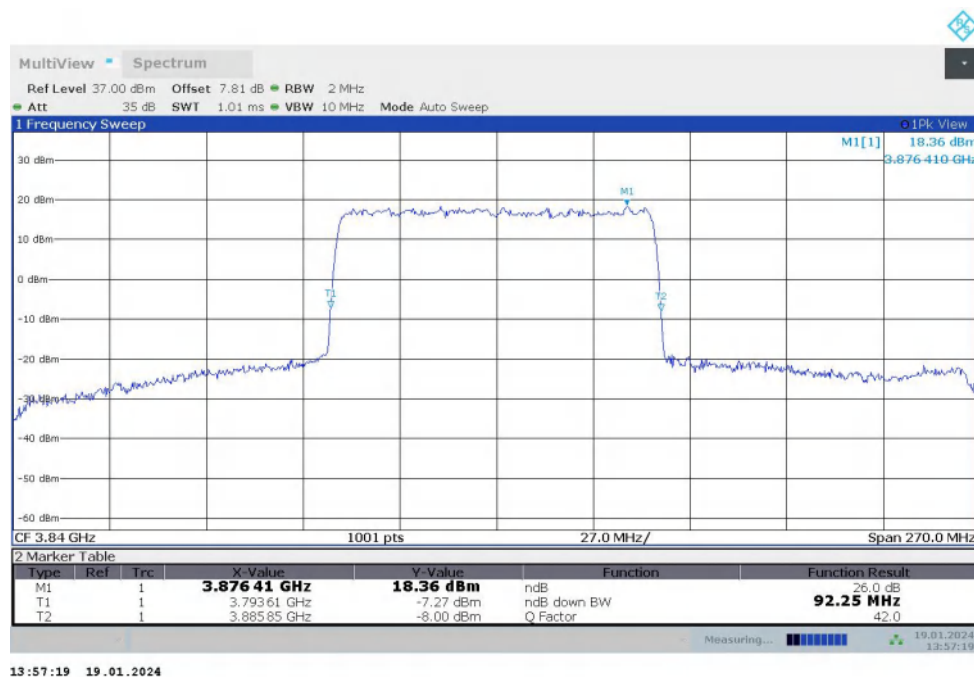
n77H,90MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3840	92.250	92.250

n77H,90MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n77H,90MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

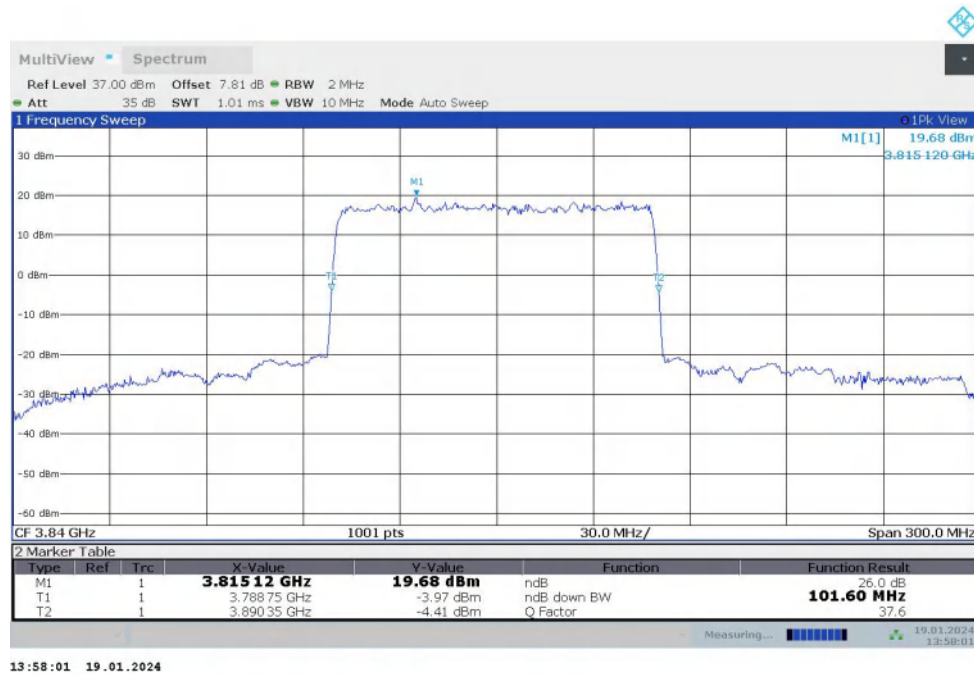


n77H

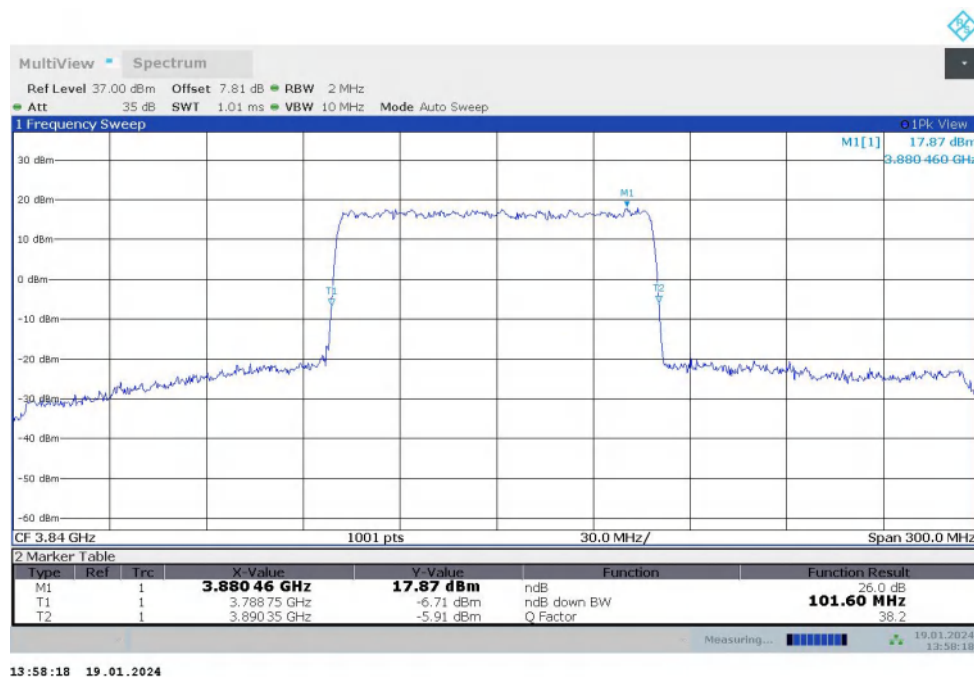
n77H,100MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3840	101.600	101.600

n77H,100MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n77H,100MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

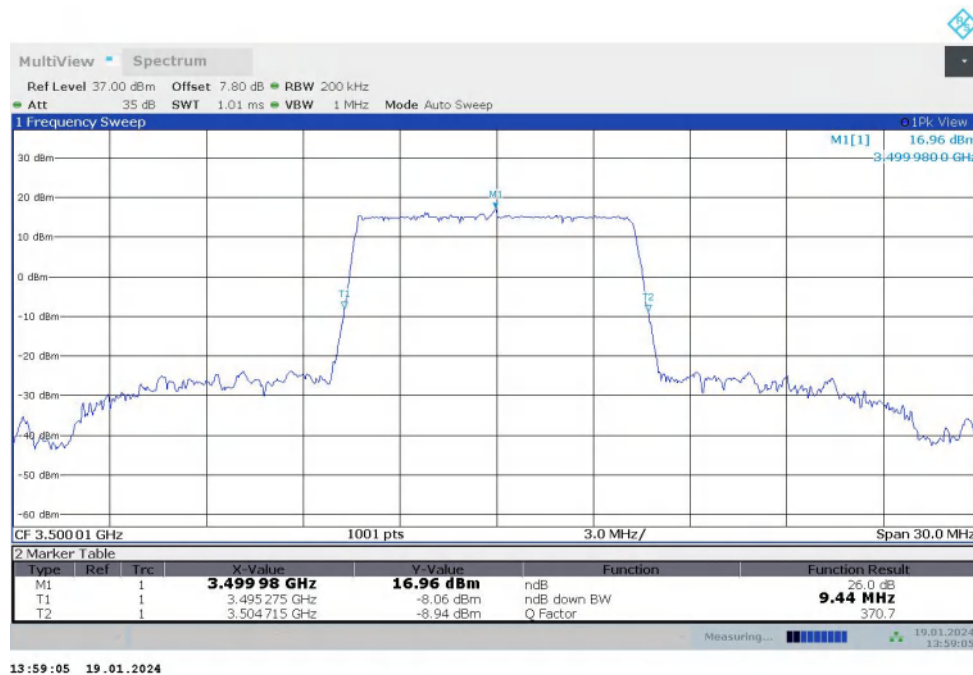


n78L

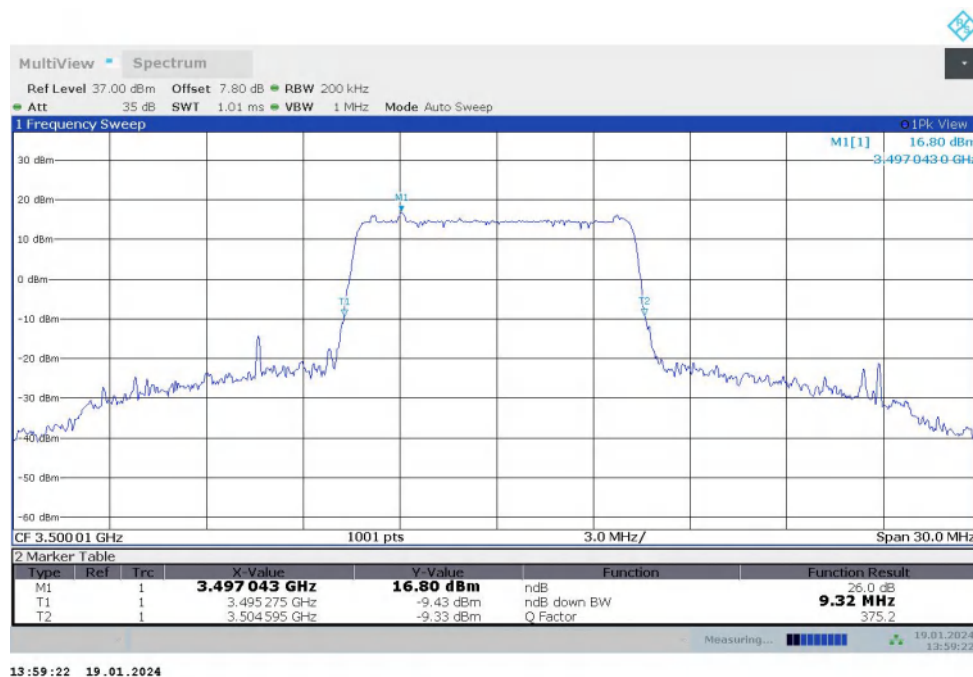
n78L,10MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3500.01	9.441	9.321

n78L,10MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n78L,10MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

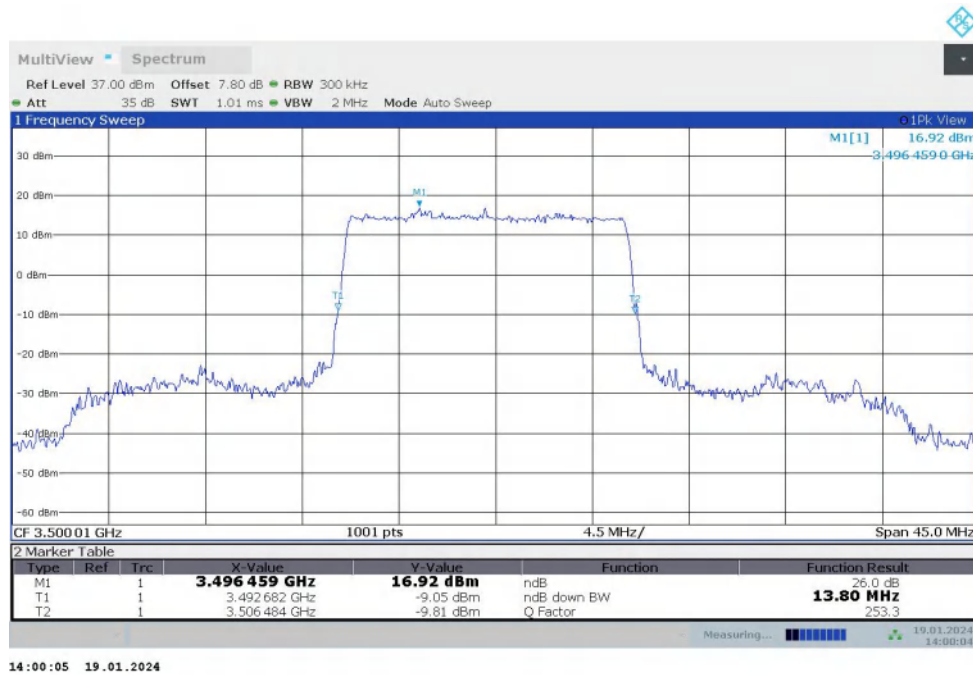


n78L

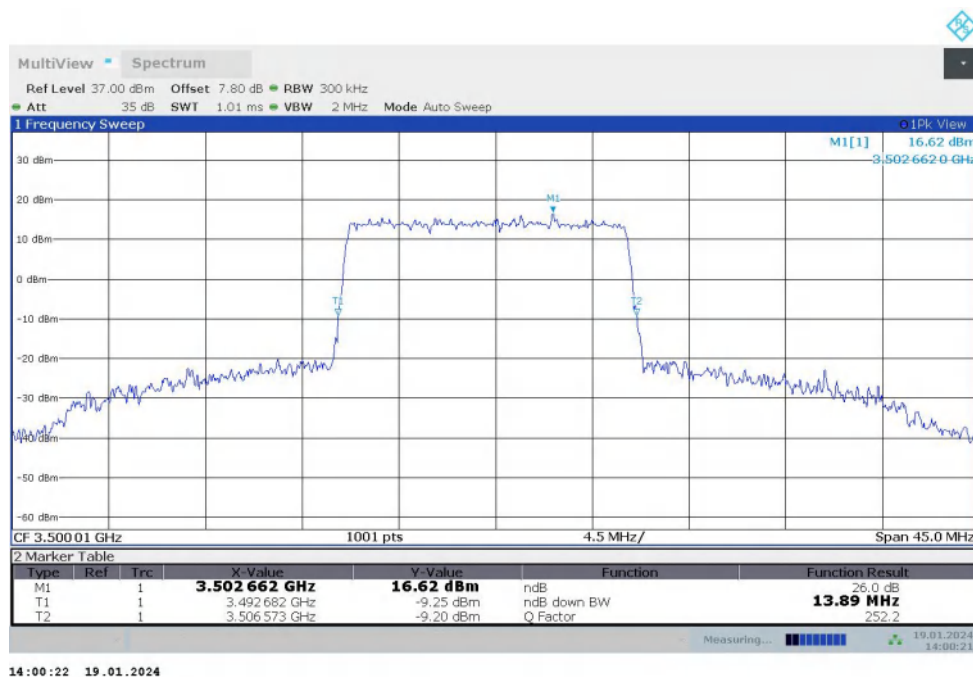
n78L,15MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3500.01	13.801	13.891

n78L,15MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n78L,15MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

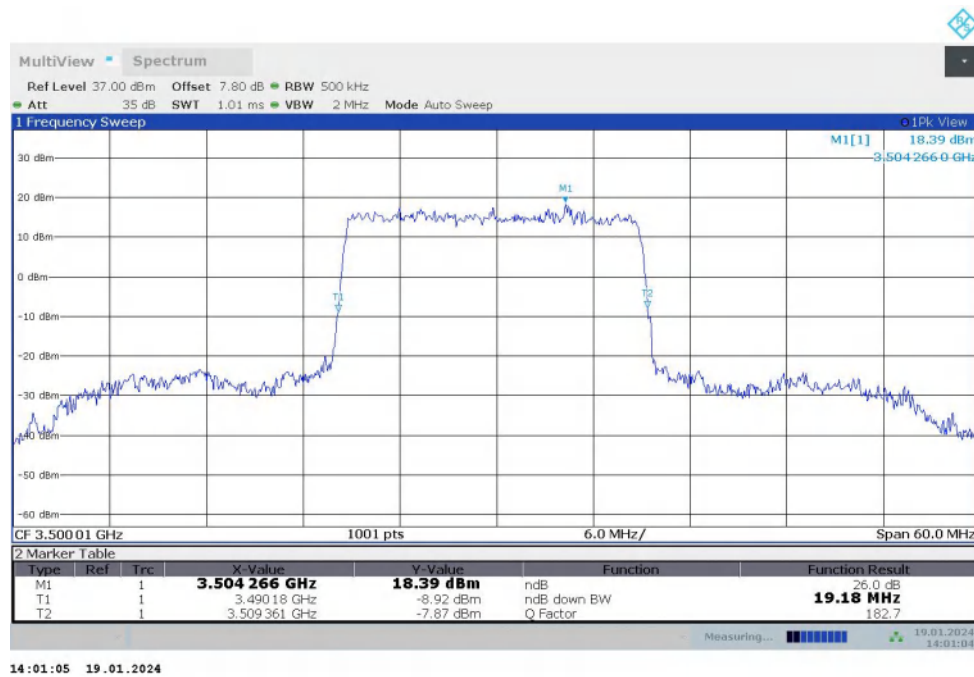


n78L

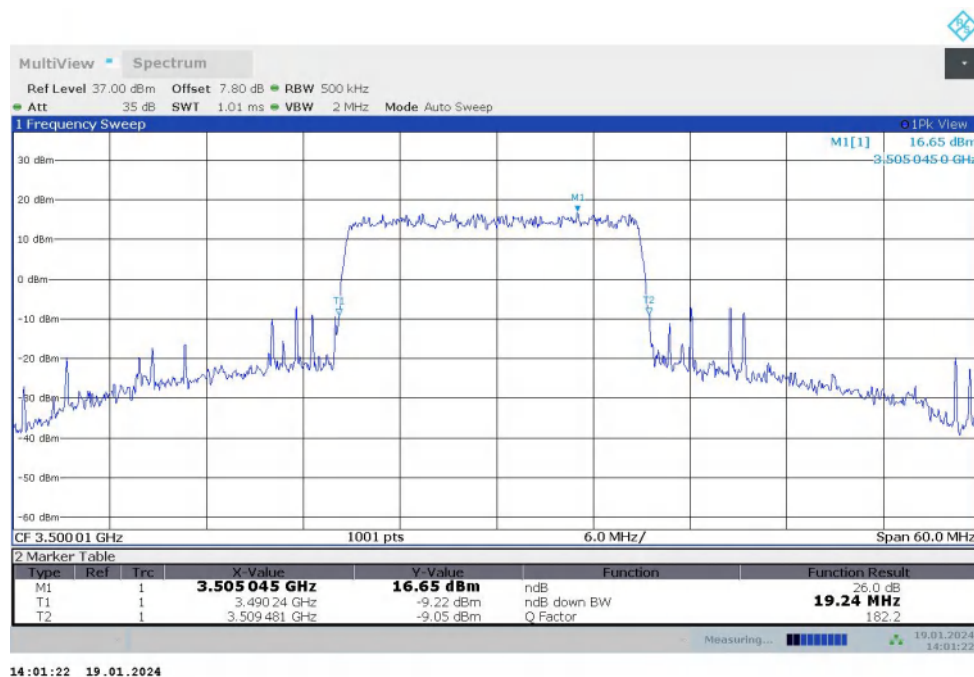
n78L,20MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3500.01	19.181	19.241

n78L,20MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n78L,20MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

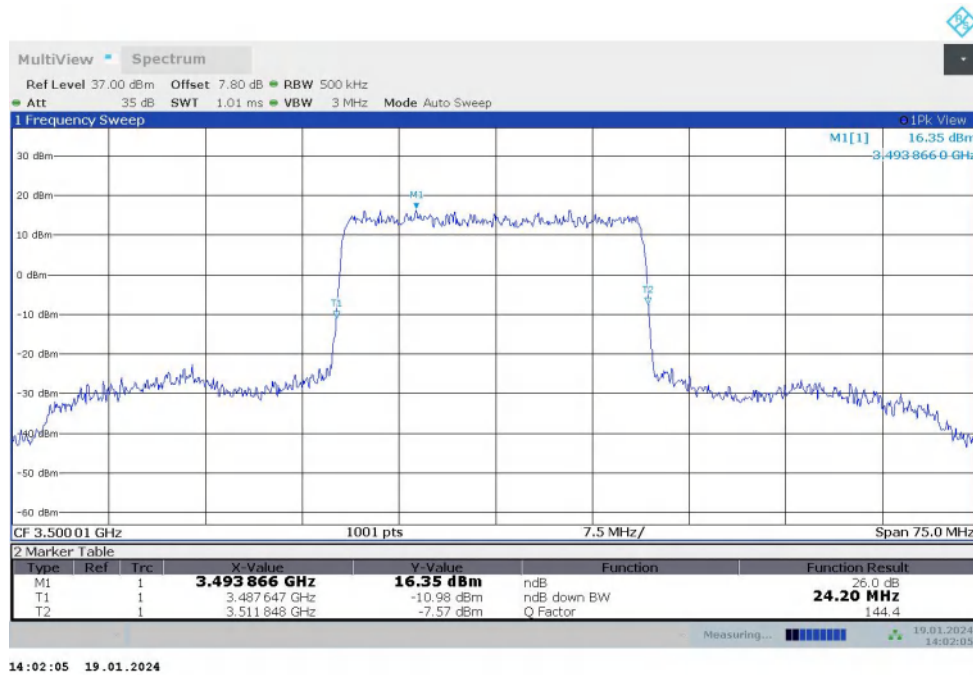


n78L

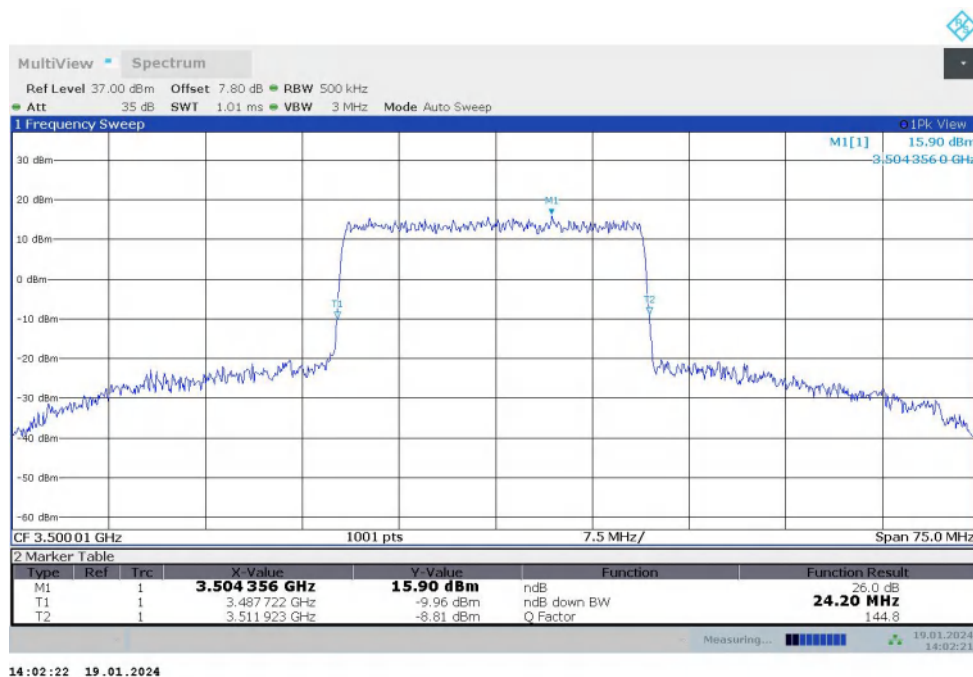
n78L,25MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3500.01	24.201	24.201

n78L,25MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n78L,25MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

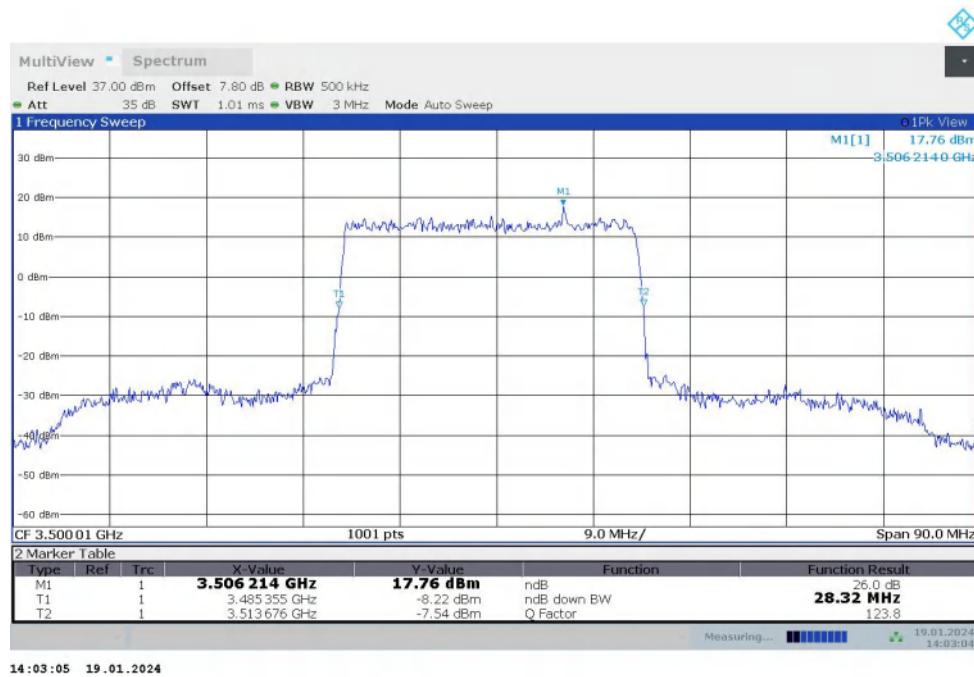


n78L

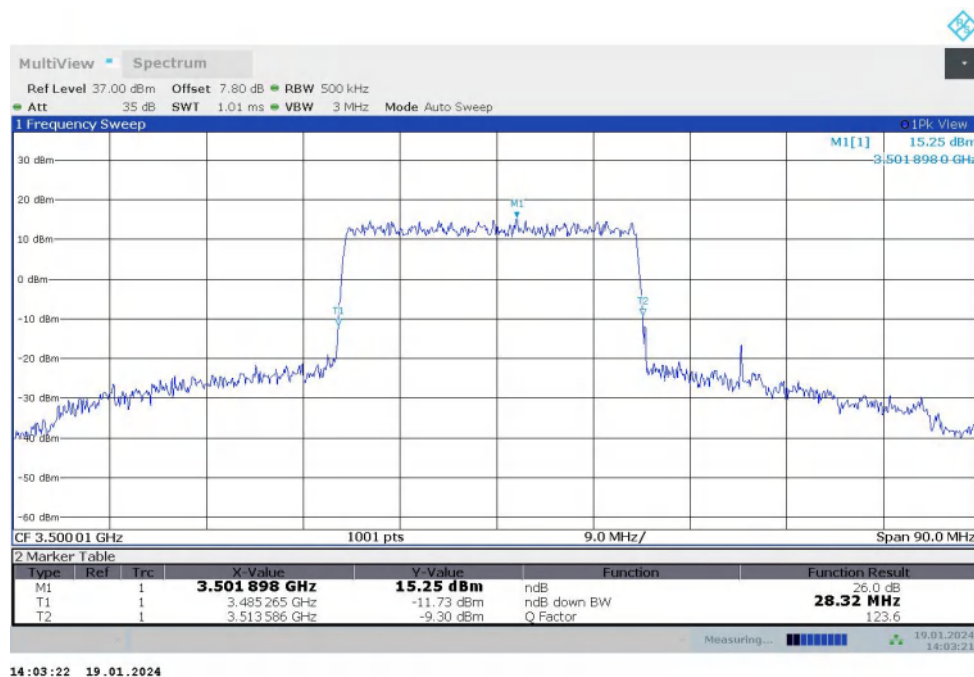
n78L,30MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3500.01	28.322	28.322

n78L,30MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n78L,30MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

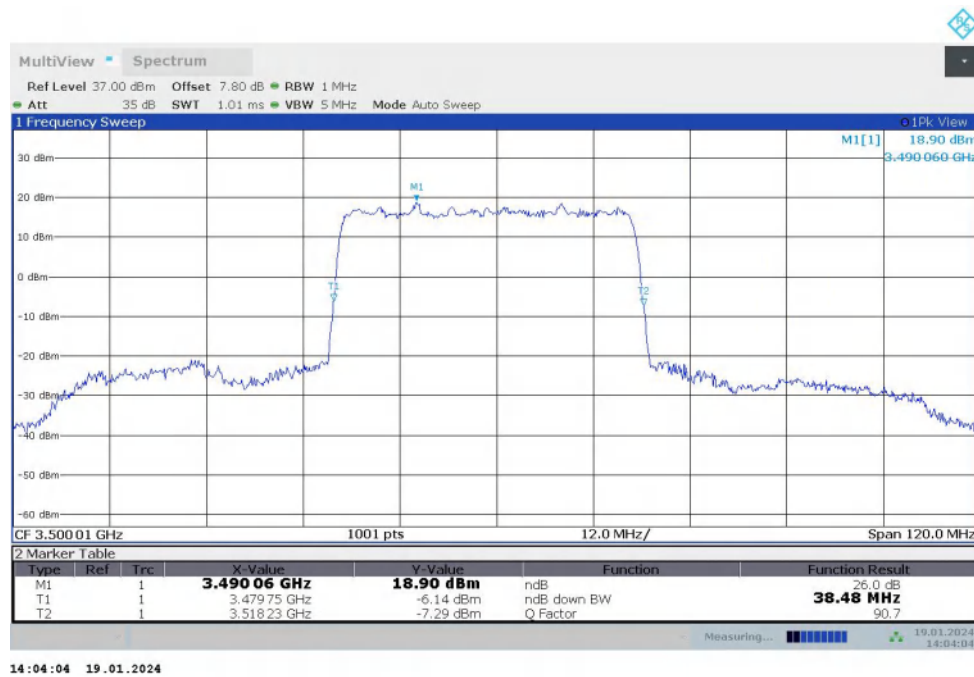


n78L

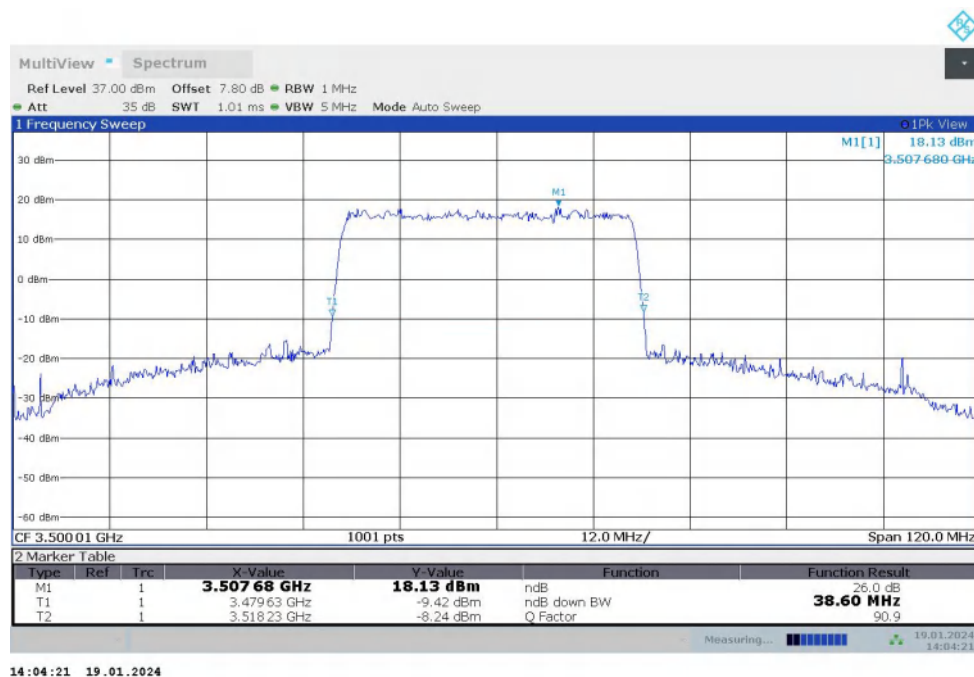
n78L,40MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3500.01	38.480	38.600

n78L,40MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n78L,40MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

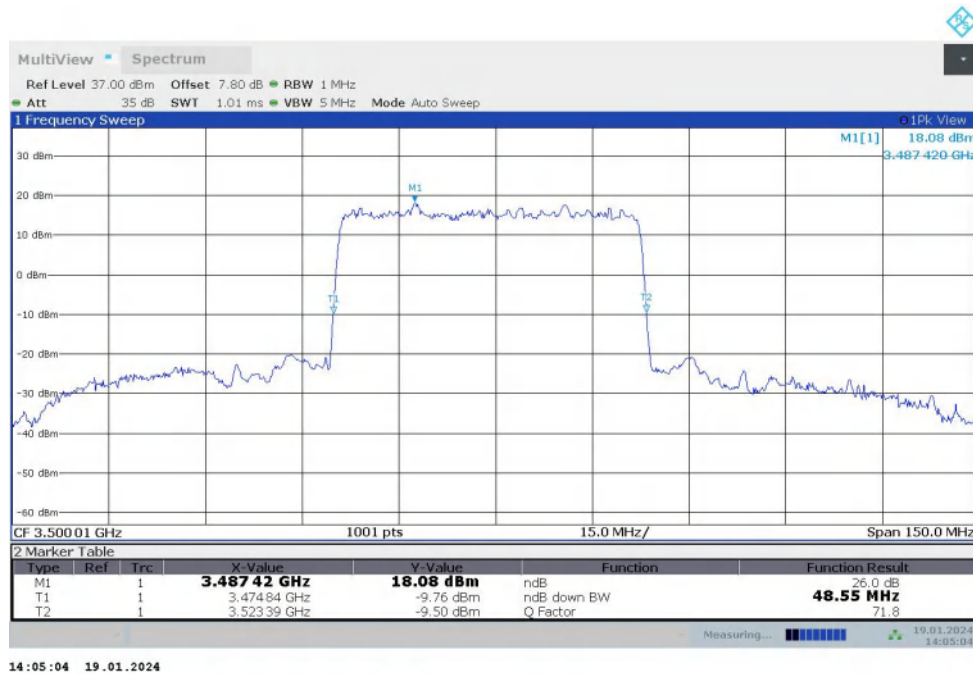


n78L

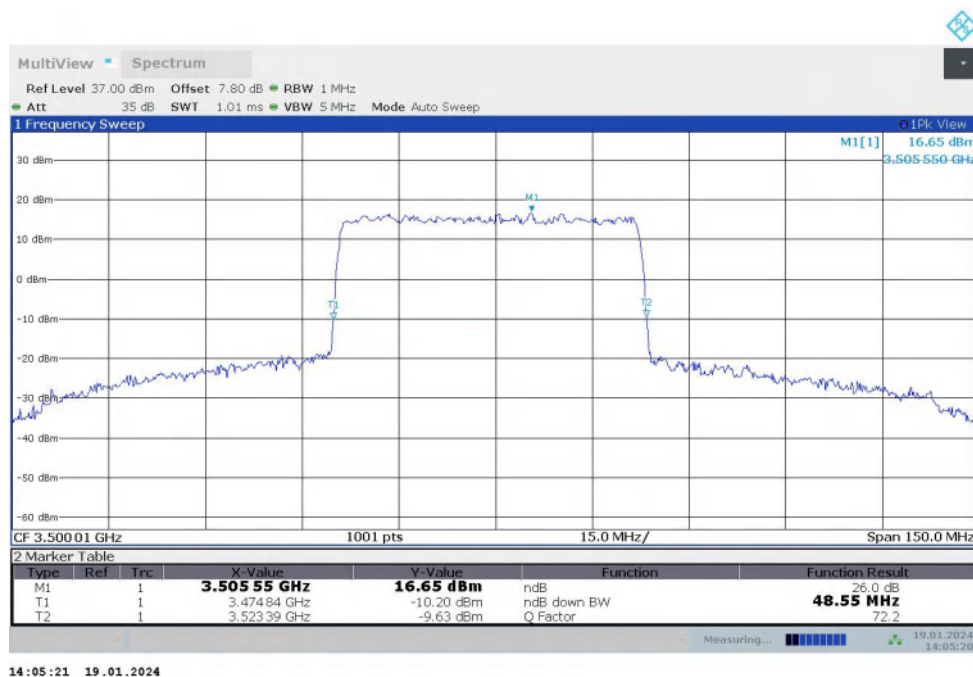
n78L,50MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3500.01	48.550	48.550

n78L,50MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n78L,50MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

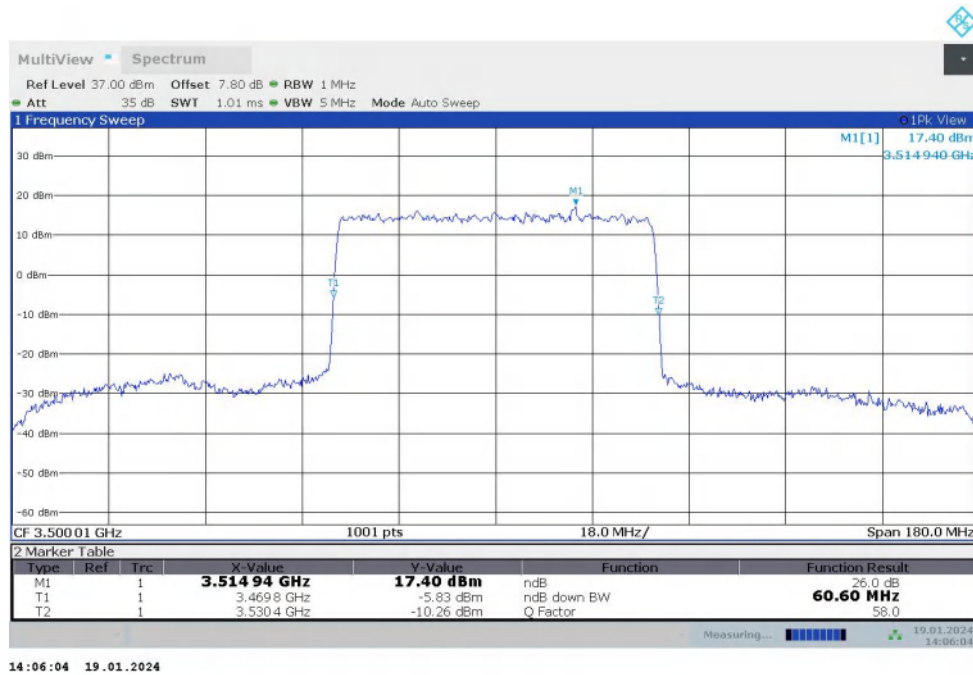


n78L

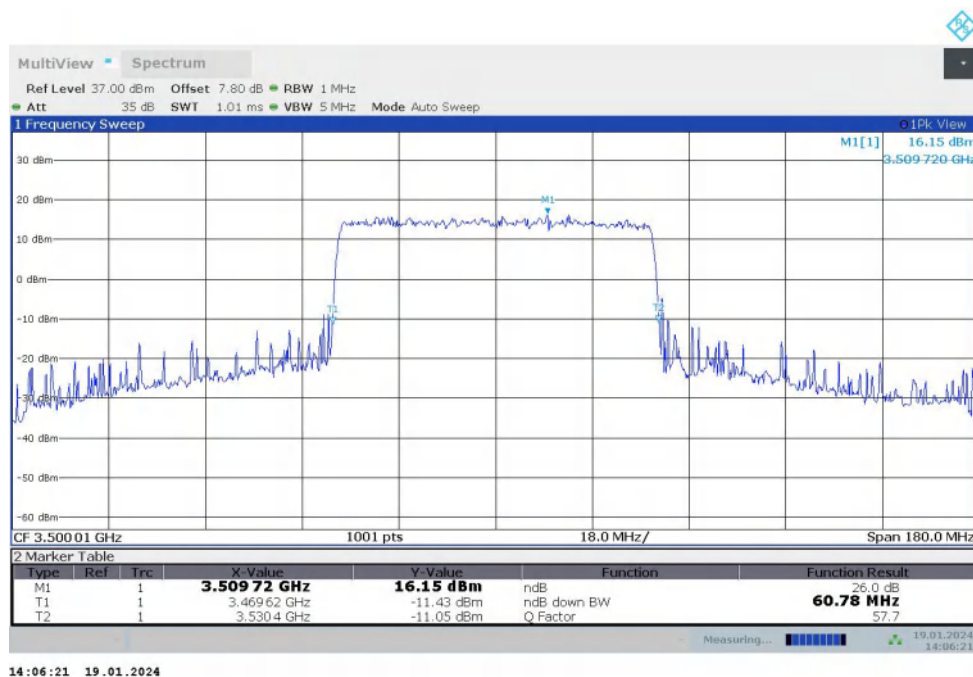
n78L,60MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3500.01	60.600	60.780

n78L,60MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n78L,60MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

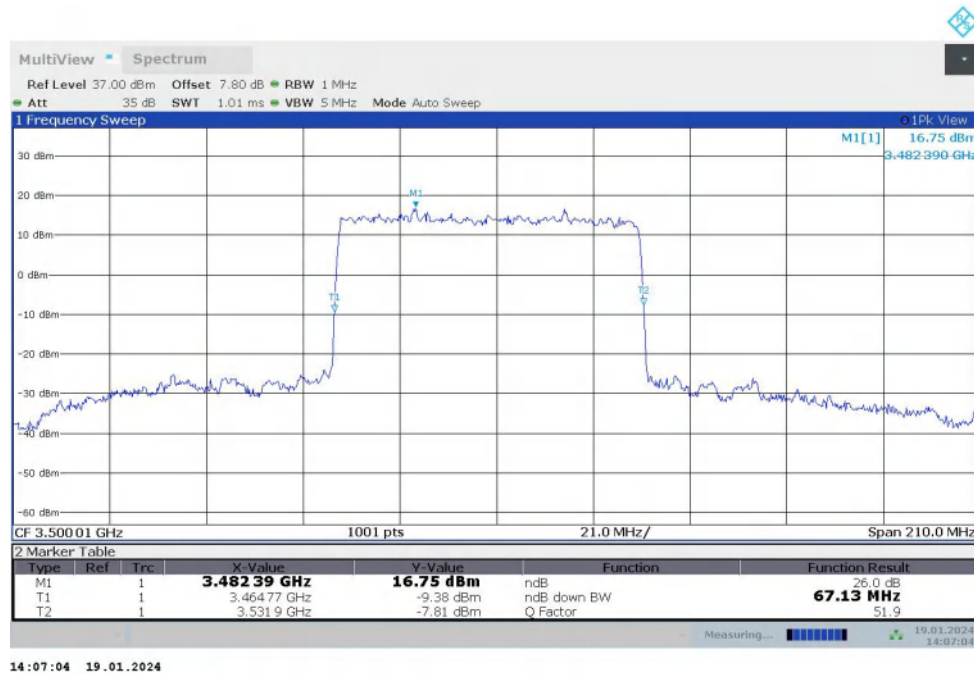


n78L

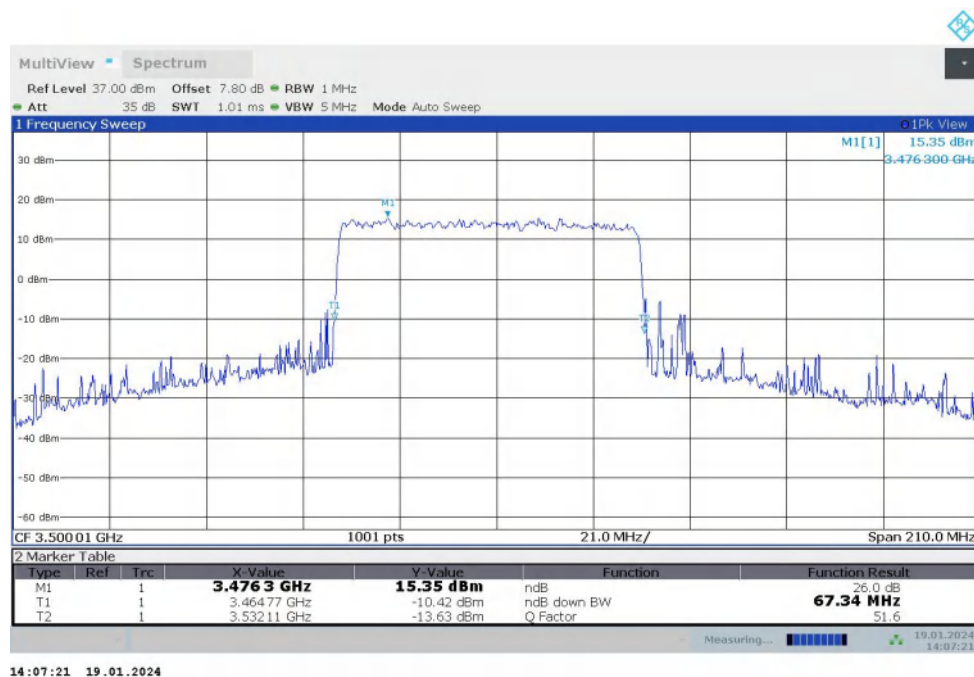
n78L,70MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3500.01	67.130	67.340

n78L,70MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n78L,70MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

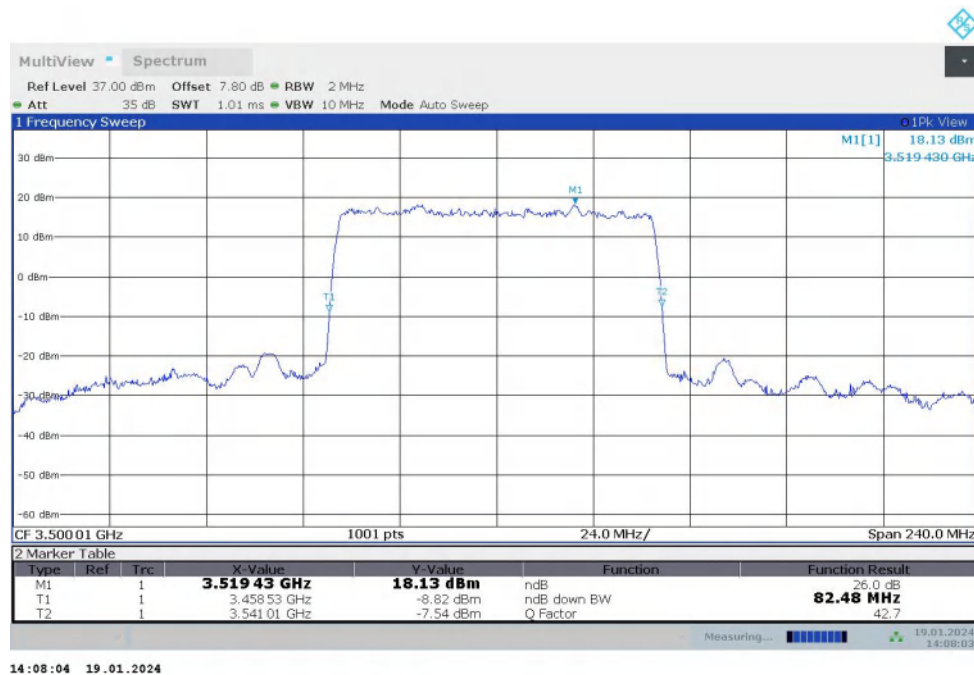


n78L

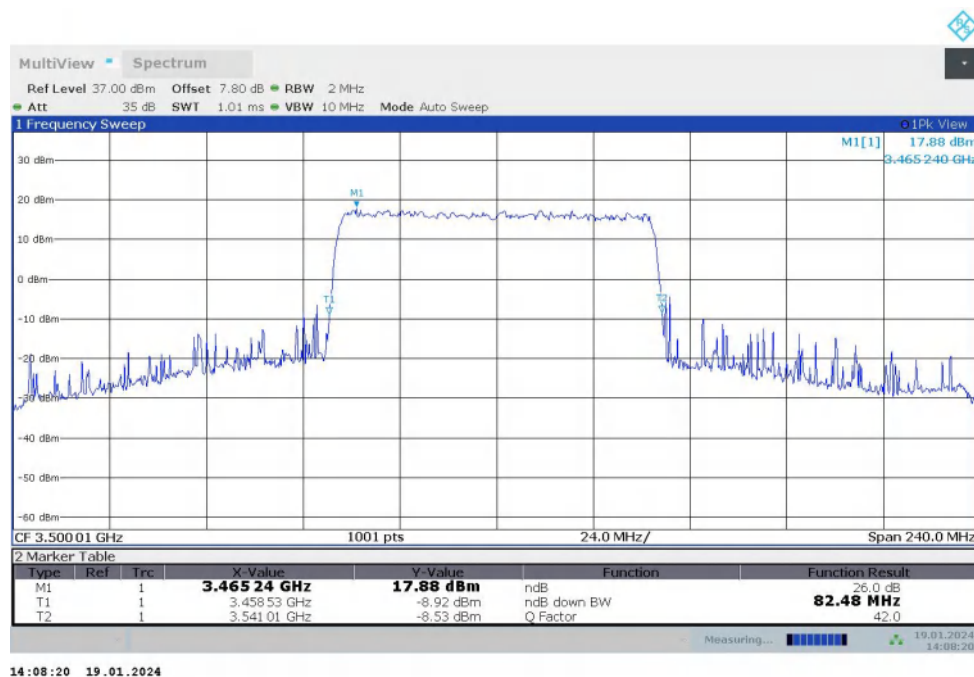
n78L,80MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3500.01	82.480	82.480

n78L,80MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n78L,80MHz Bandwidth,DFT-s-QPSK (-26dBc BW)

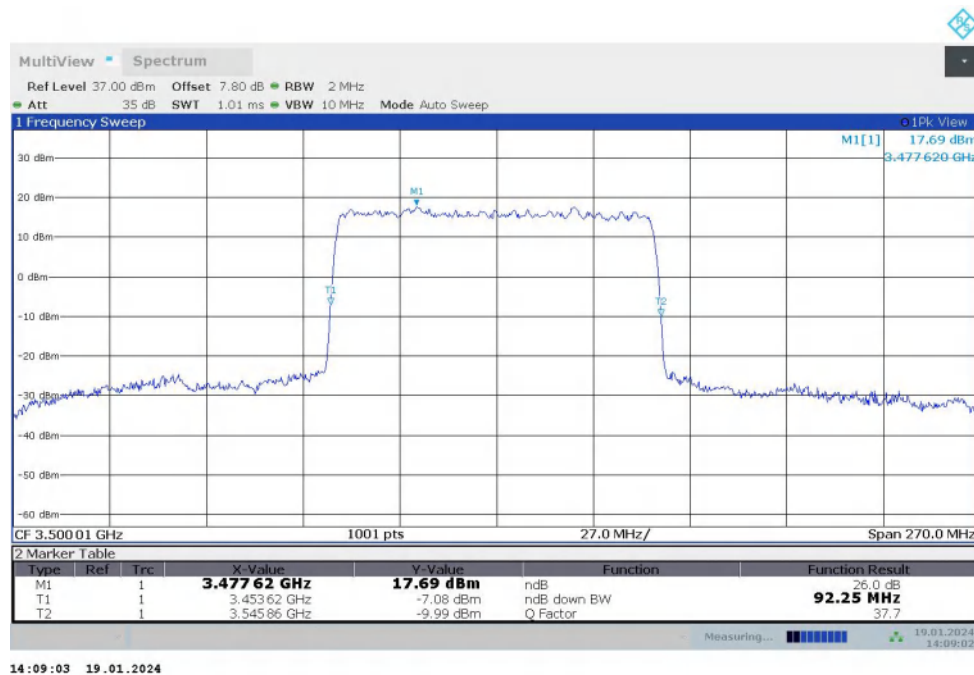


n78L

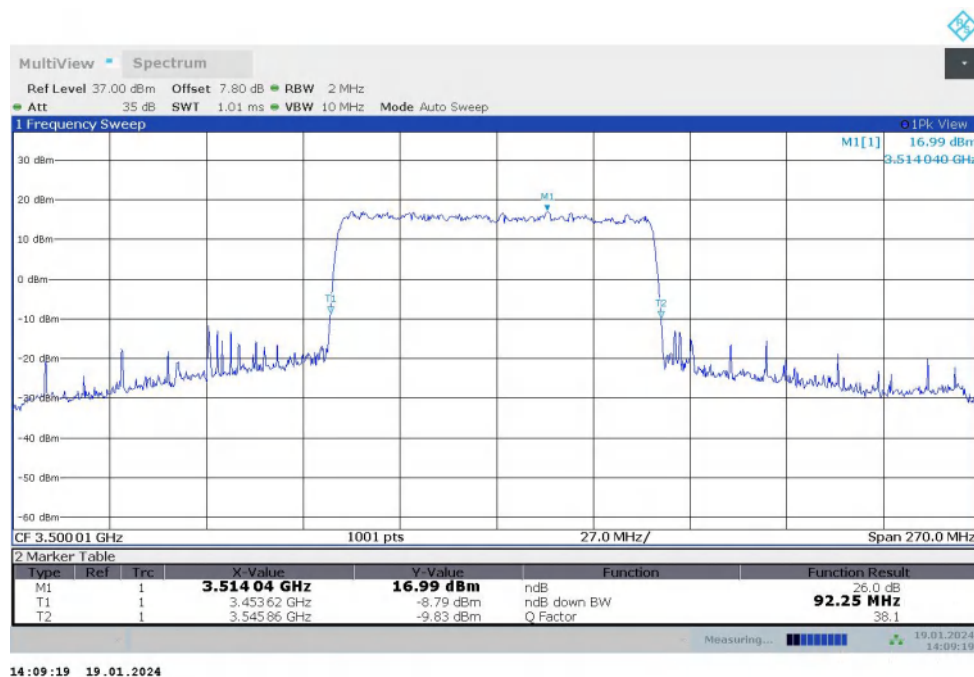
n78L,90MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3500.01	92.250	92.250

n78L,90MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)



n78L,90MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



Note: The maximum value of expanded measurement uncertainty for this test item is U = 0.626 kHz, k = 2.

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 96.41(e) states for channel and frequency assignments made by a CBSD to End User Devices, the conducted power of any End User Device emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed -13 dBm/MHz within 0 to B megahertz (where B is the bandwidth in megahertz of the assigned channel or multiple contiguous channels of the End User Device) above the upper CBSD-assigned channel edge and within 0 to B megahertz below the lower CBSD-assigned channel edge. At all frequencies greater than B megahertz above the upper CBSD assigned channel edge and less than B megahertz below the lower CBSD-assigned channel edge, the conducted power of any End User Device emission shall not exceed -25 dBm/MHz. Notwithstanding the emission limits in this paragraph, the Adjacent Channel Leakage Ratio for End User Devices shall be at least 30 dB.

Part 27.53(n) states for mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

Compliance with this paragraph (n)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

Part 27.53(l) states for mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

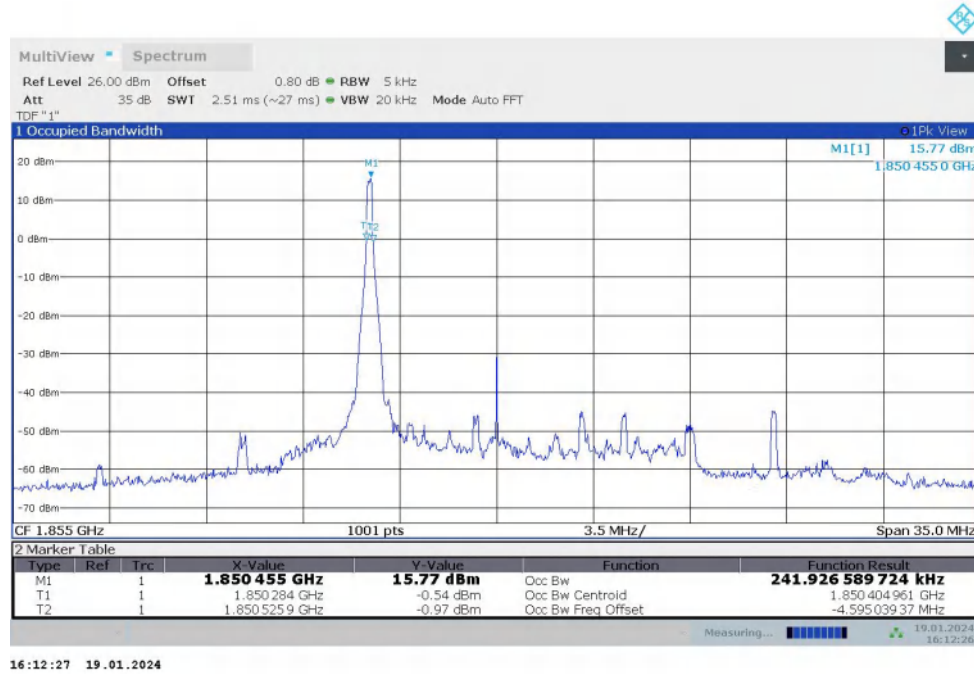
Compliance with this paragraph (l)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

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

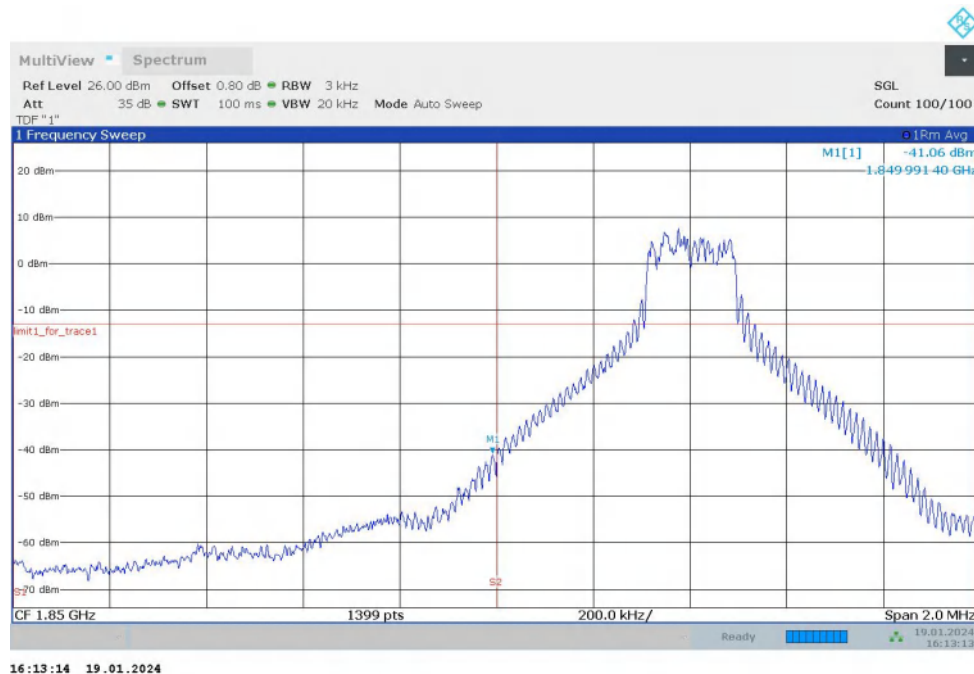
A.6.2 Measurement result

NR n2

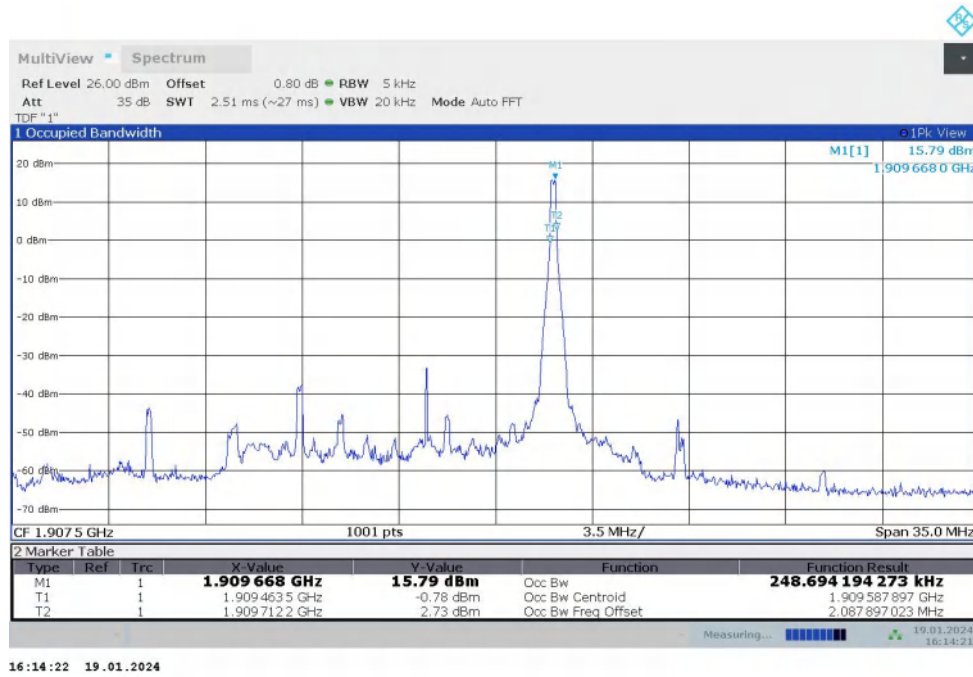
OBW: 1RB-LOW_offset



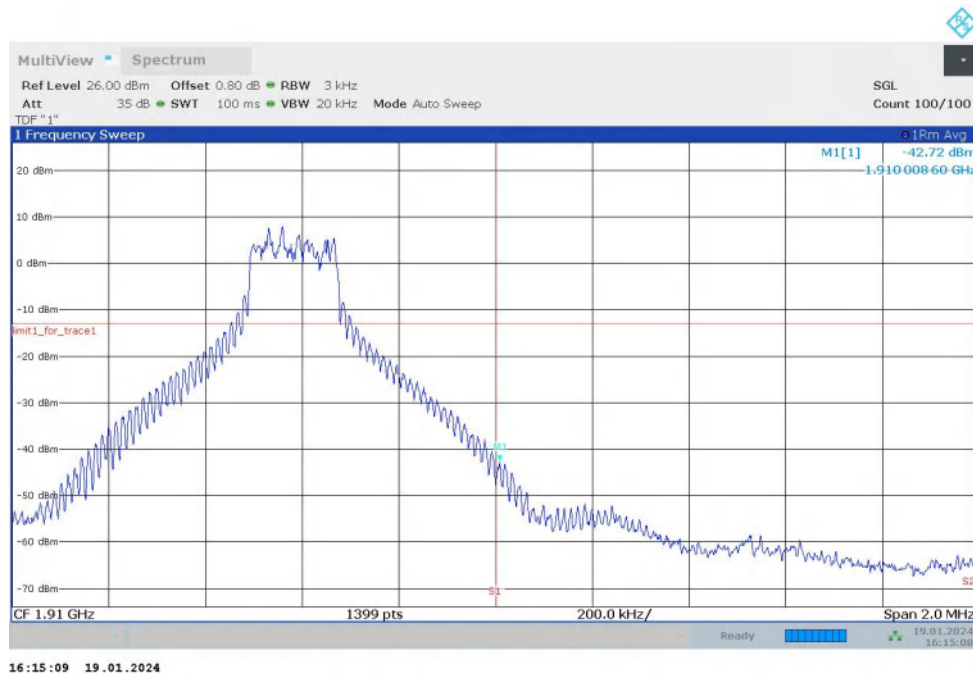
LOW BAND EDGE BLOCK-1RB-LOW_offset



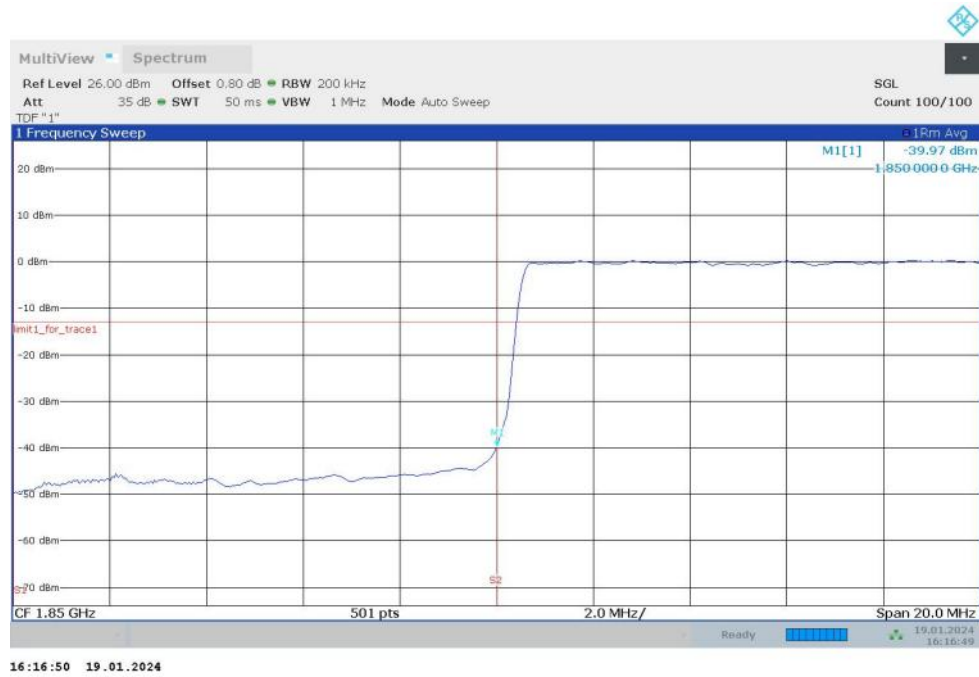
OBW: 1RB-HIGH_offset



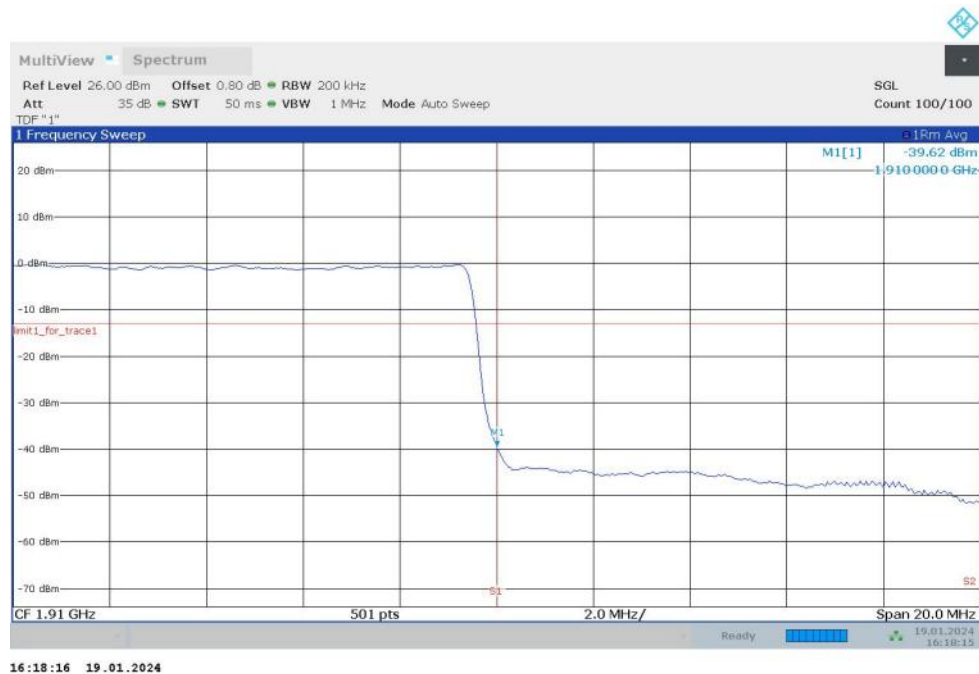
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-40M-100%RB

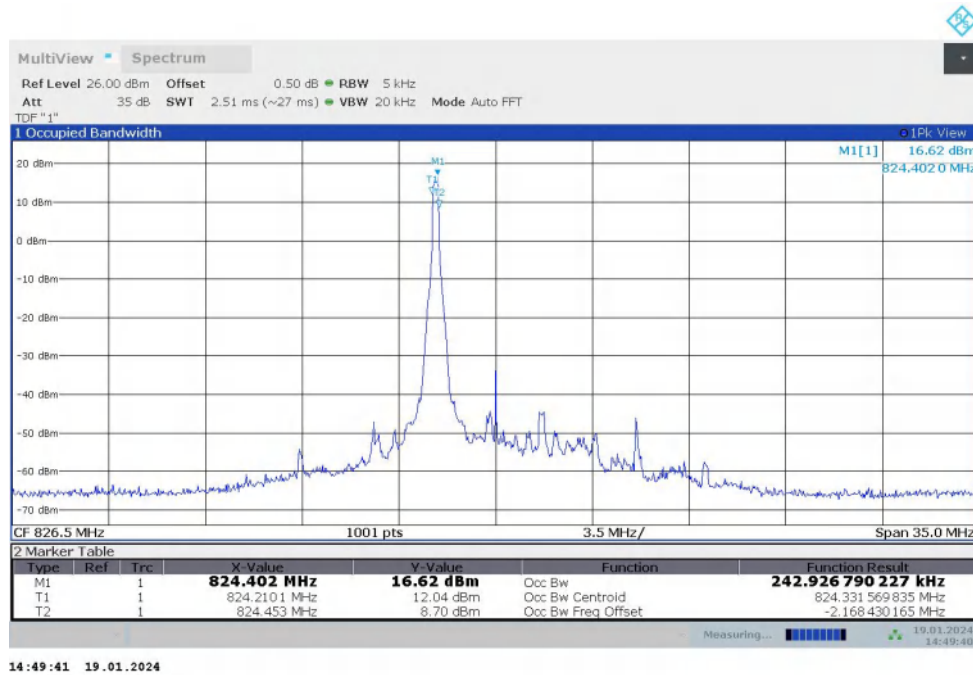


HIGH BAND EDGE BLOCK-40M-100%RB

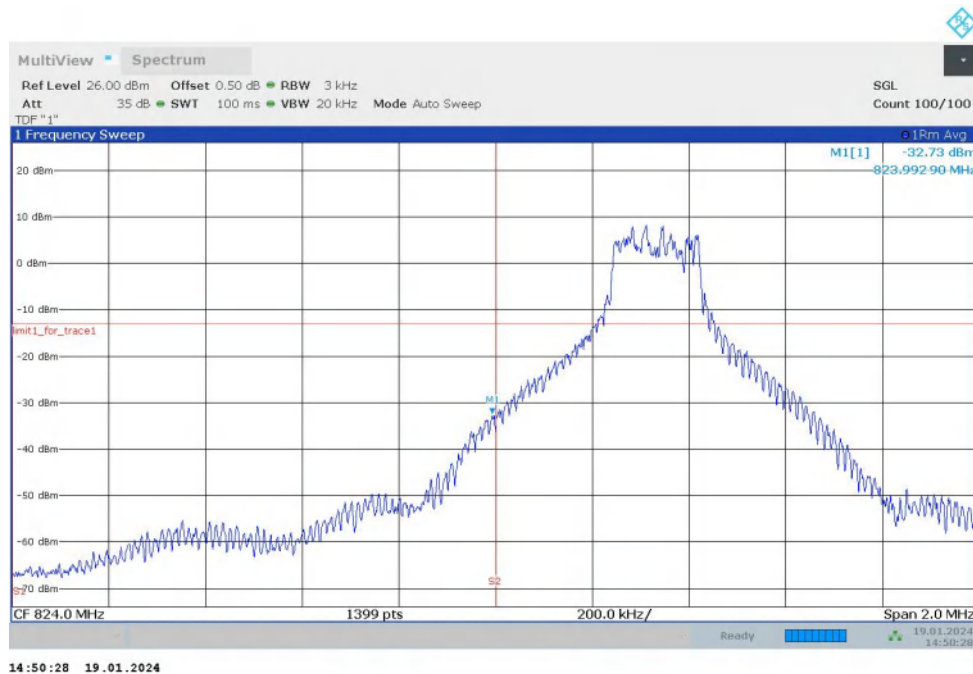


NR n5

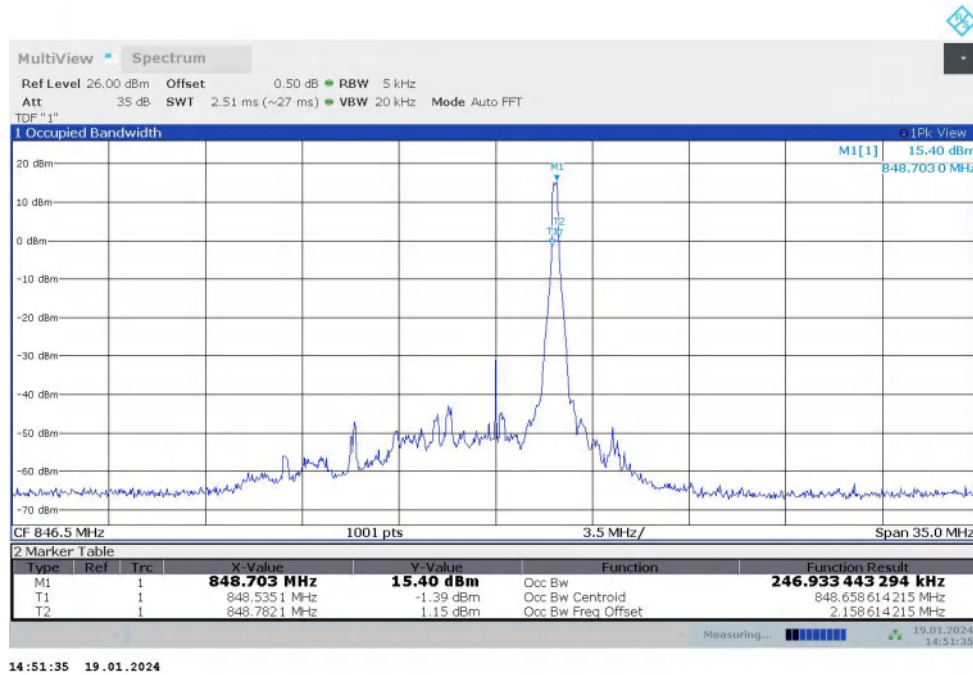
OBW: 1RB-LOW_offset



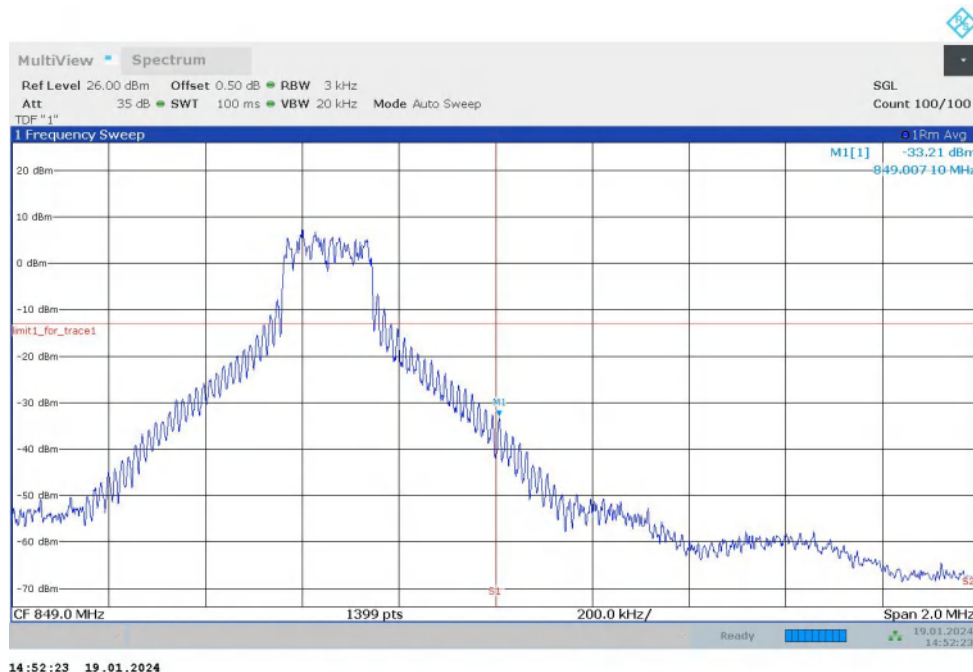
LOW BAND EDGE BLOCK-1RB-LOW_offset



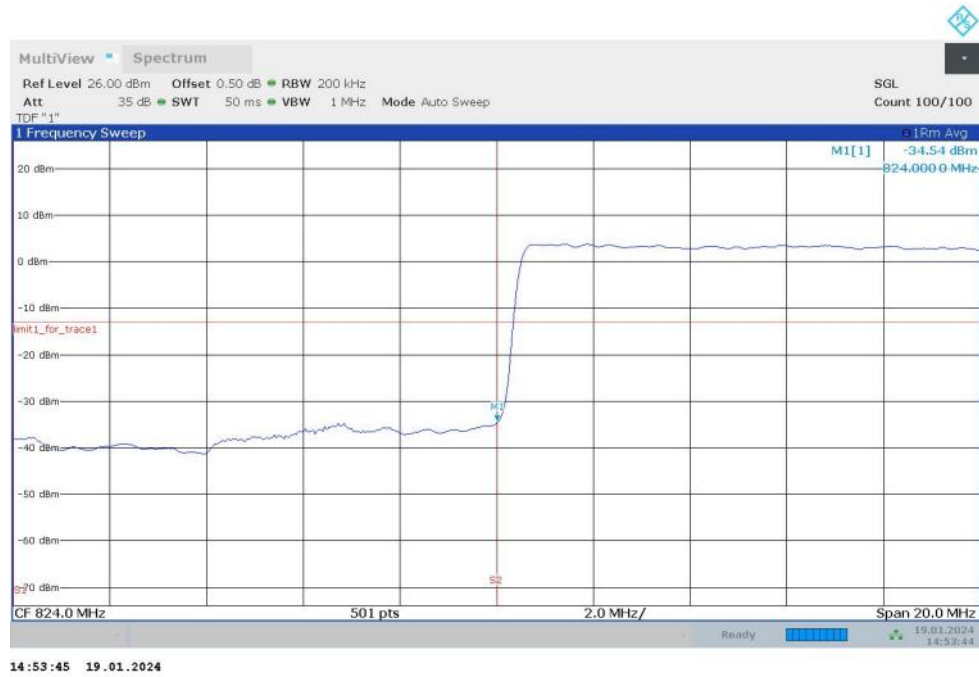
OBW: 1RB-HIGH_offset



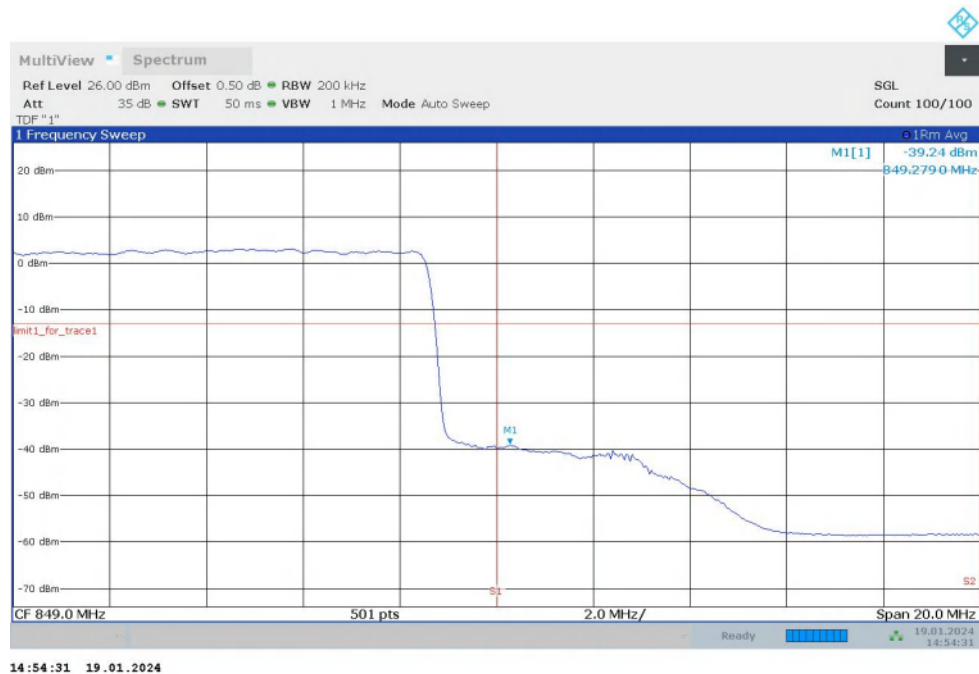
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-25M-100%RB

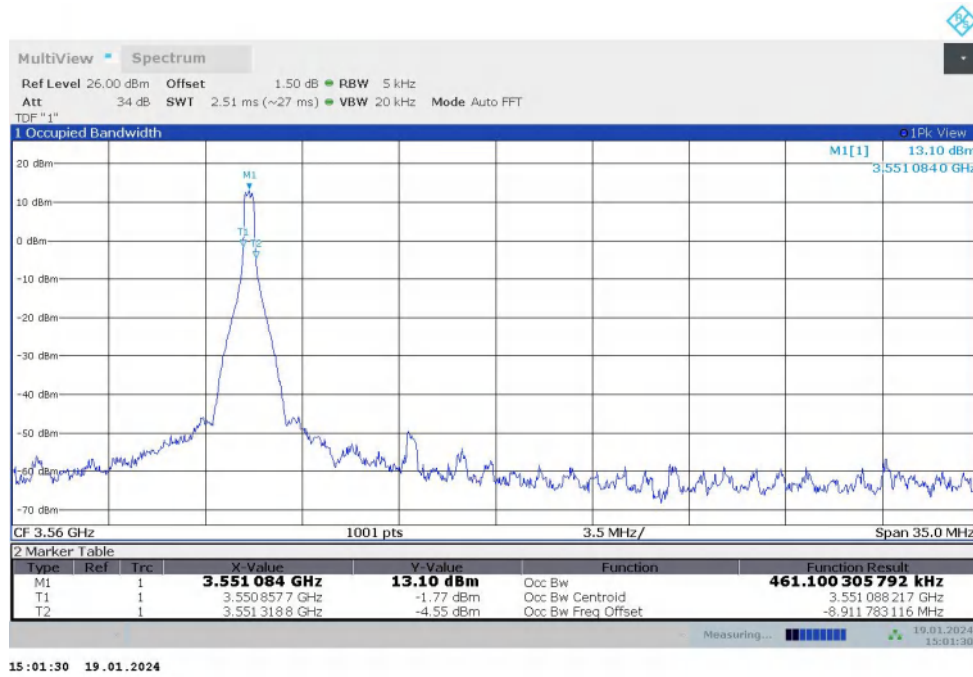


HIGH BAND EDGE BLOCK-25M-100%RB

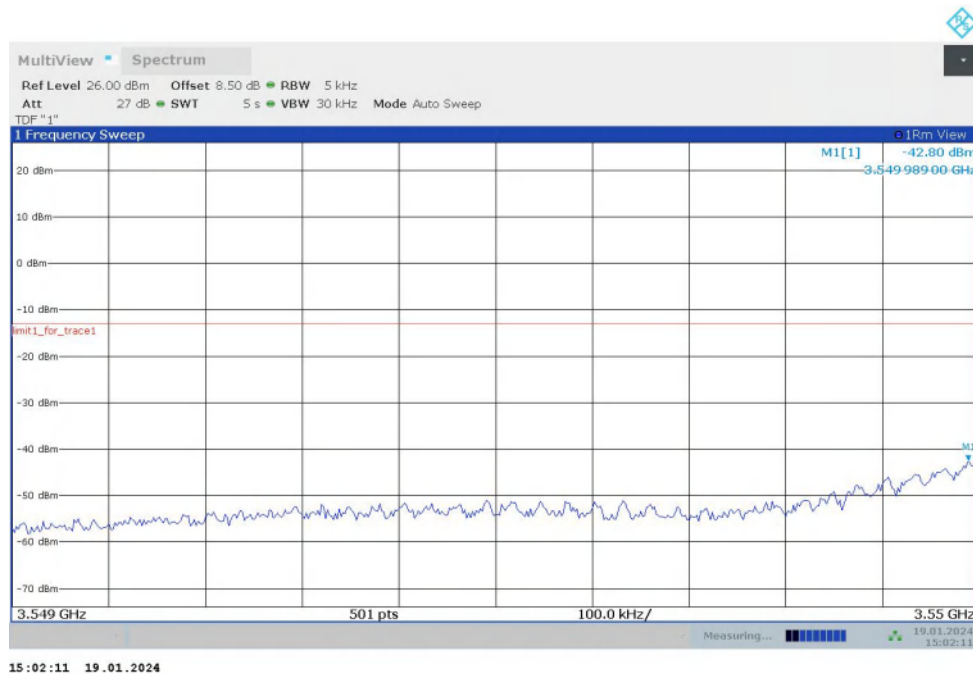


NR n48

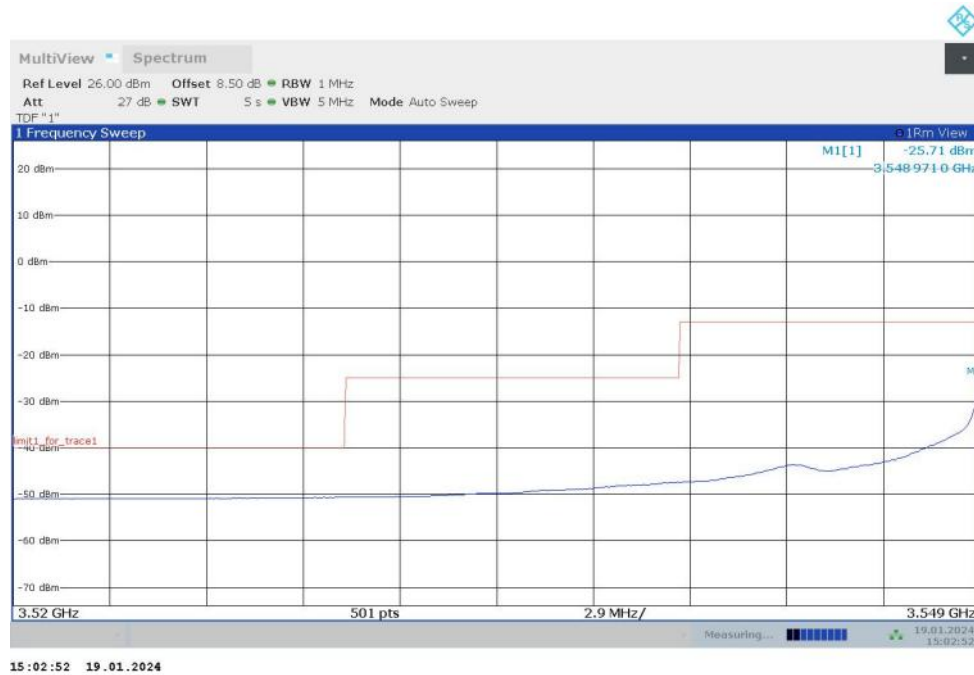
OBW: 1RB-LOW_offset



LOW BAND EDGE BLOCK-1RB-LOW_offset



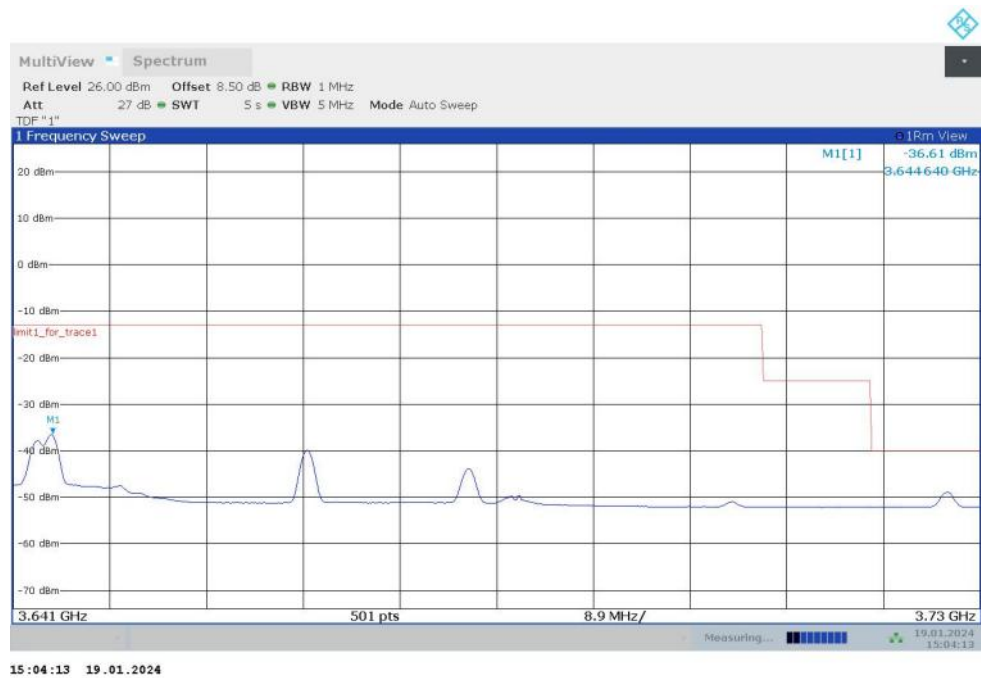
LOW BAND EDGE BLOCK-1RB-LOW_offset



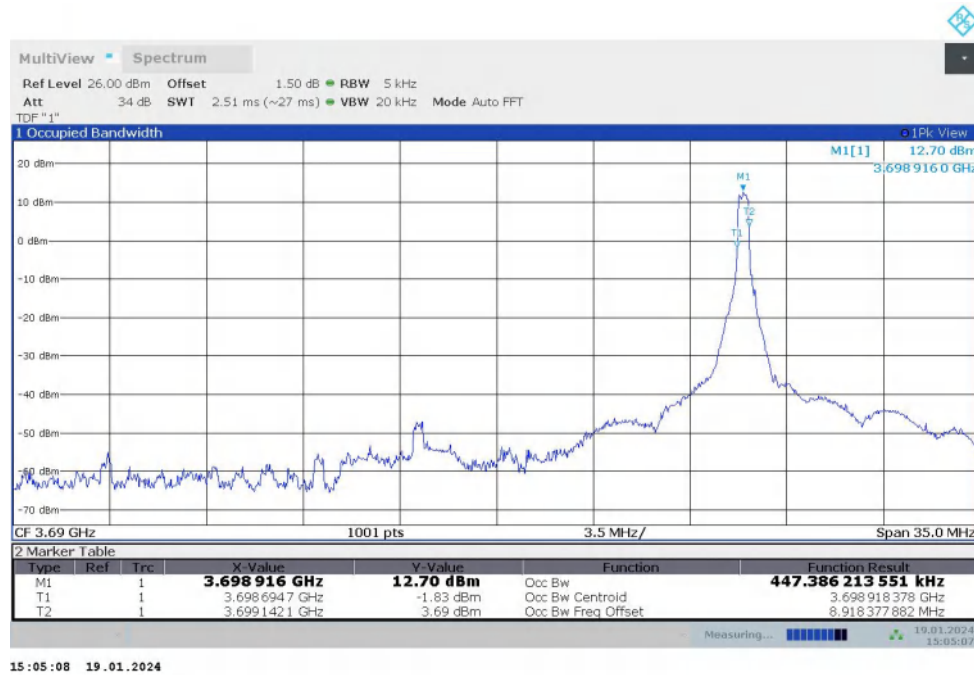
LOW BAND EDGE BLOCK-1RB-LOW_offset



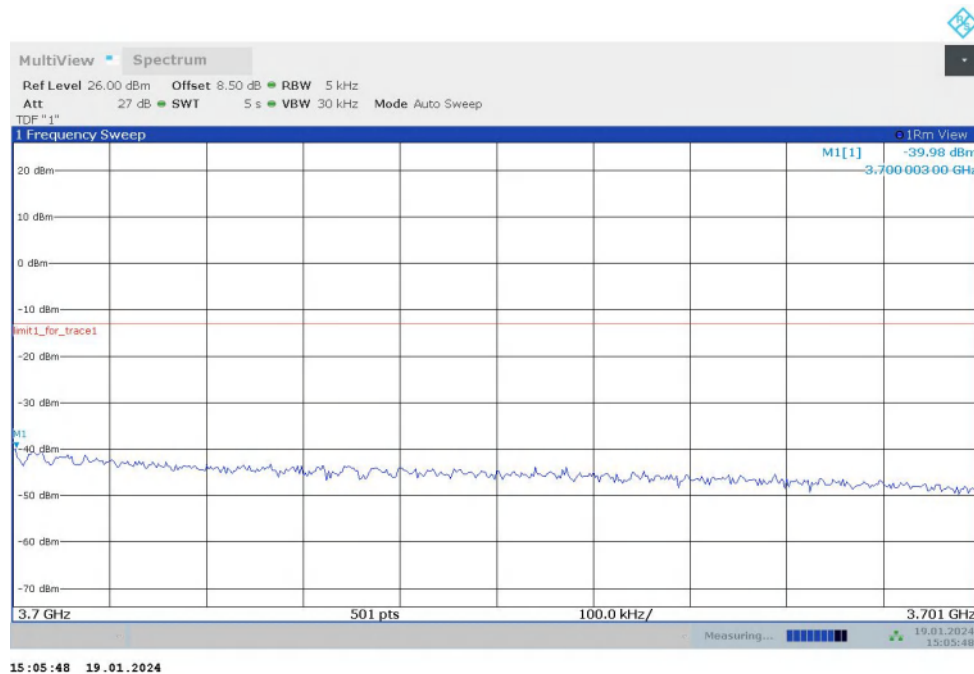
LOW BAND EDGE BLOCK-1RB-LOW_offset



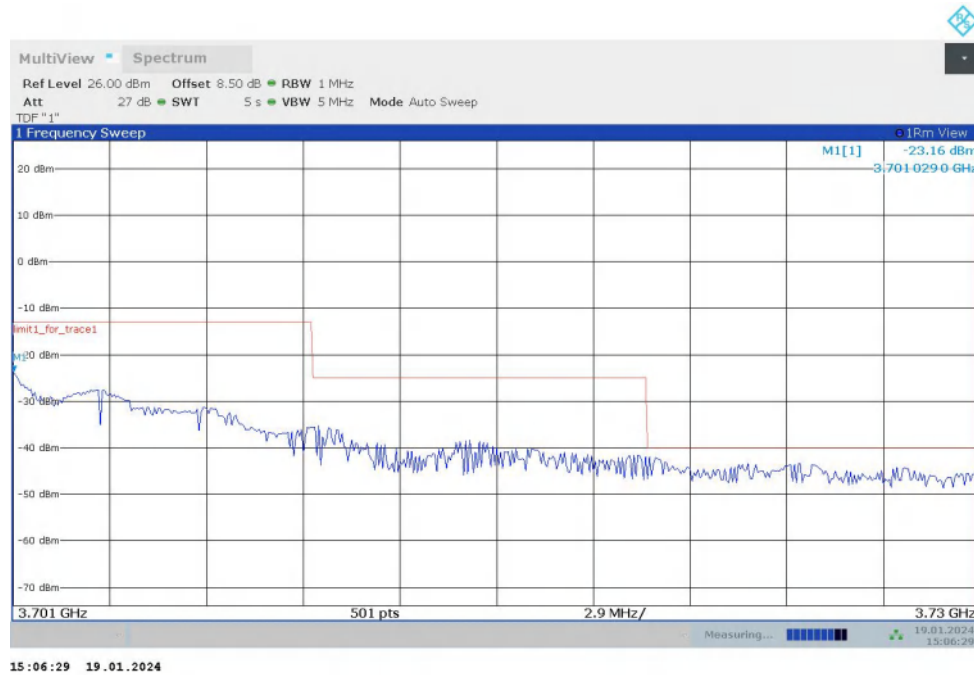
OBW: 1RB-HIGH_offset



HIGH BAND EDGE BLOCK-1RB-HIGH_offset



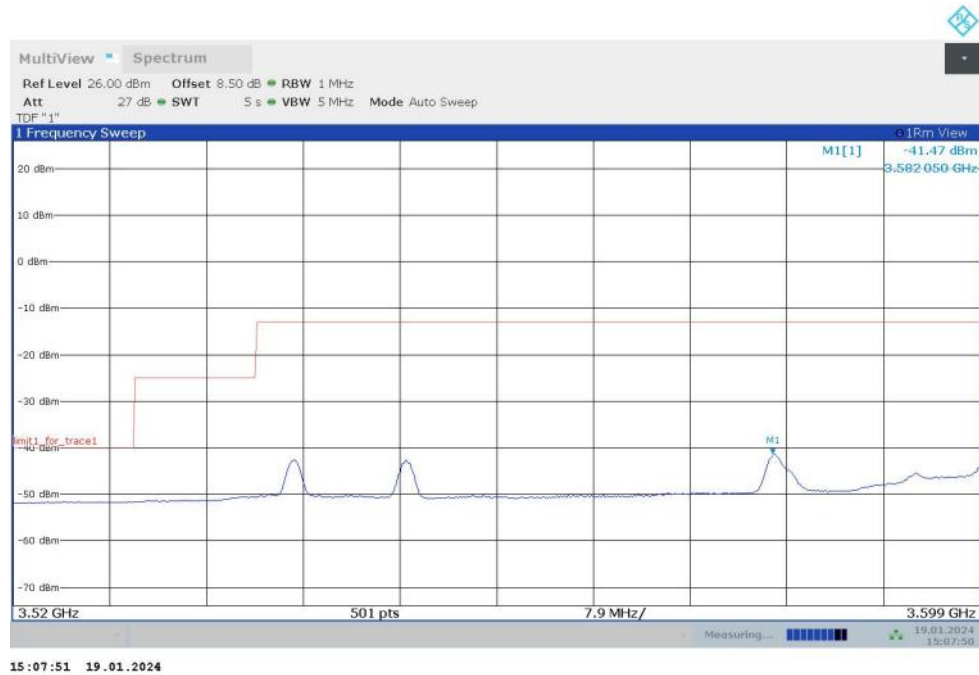
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



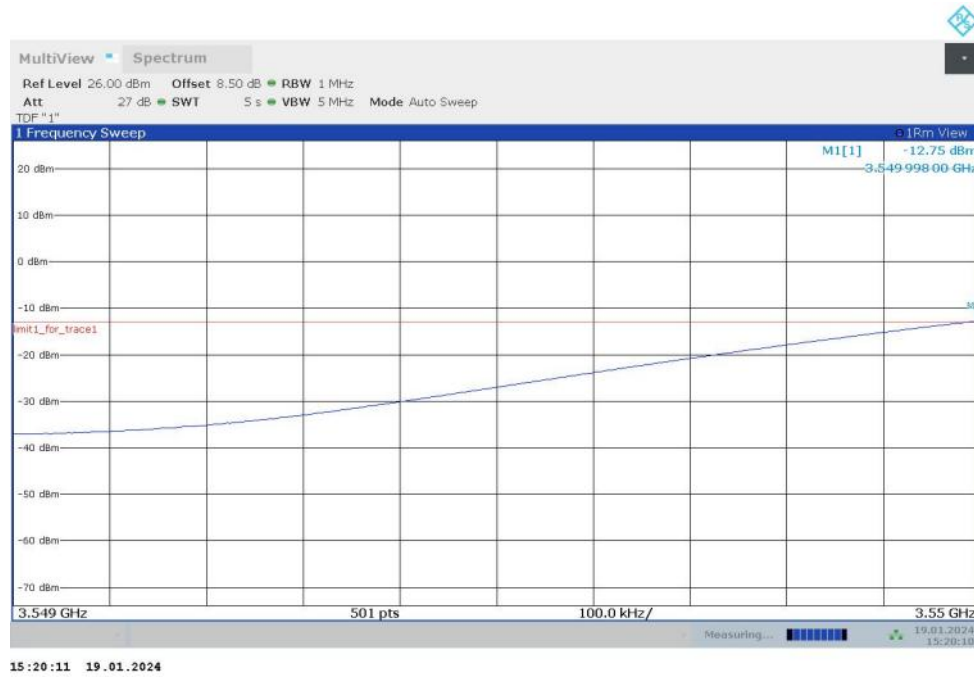
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



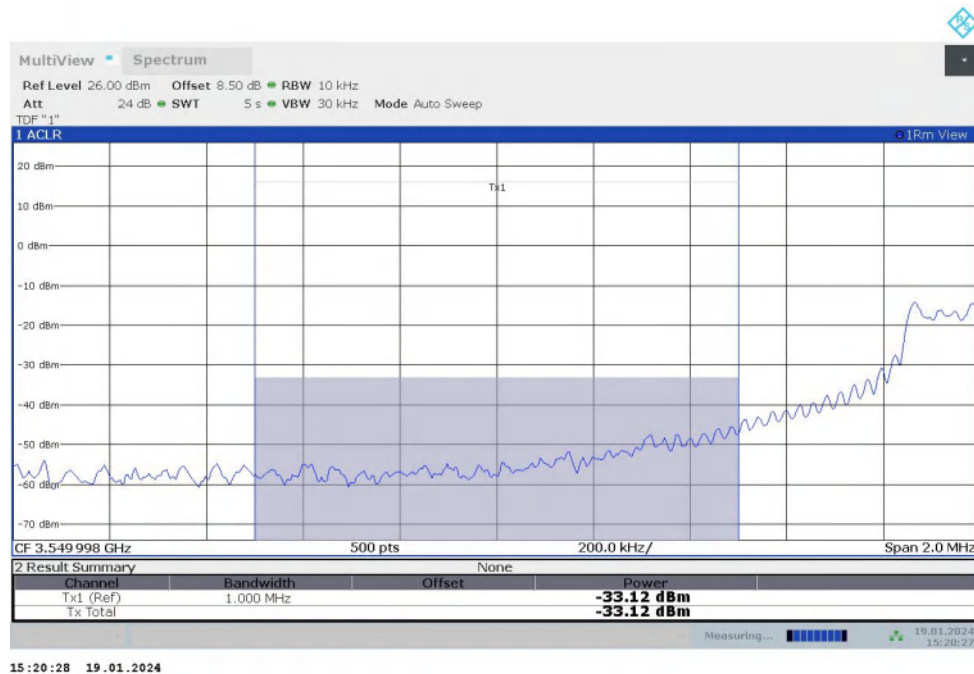
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



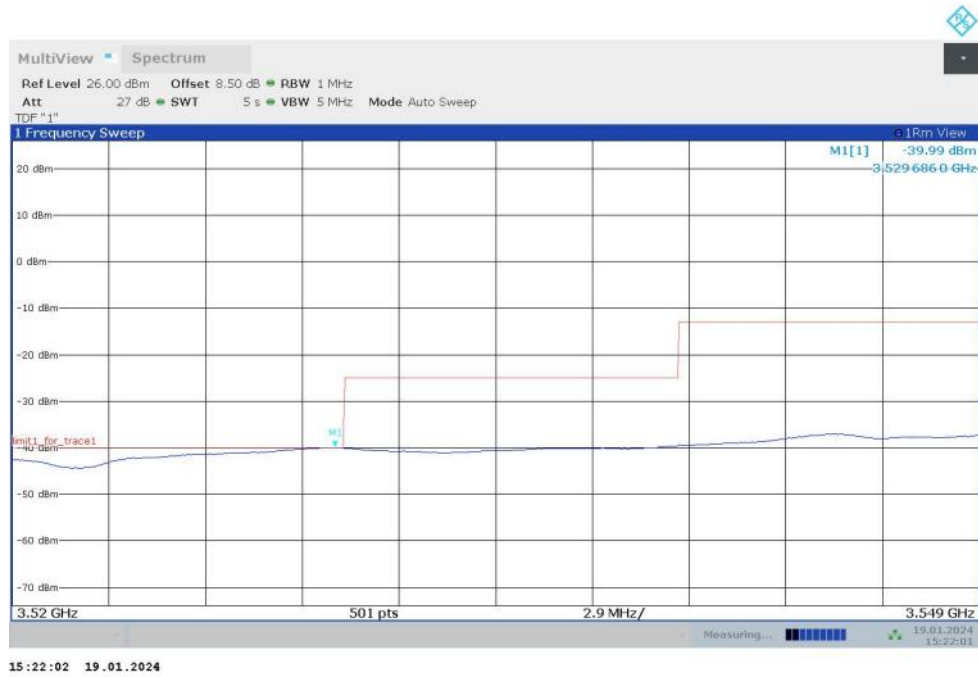
LOW BAND EDGE BLOCK-100M-100%RB



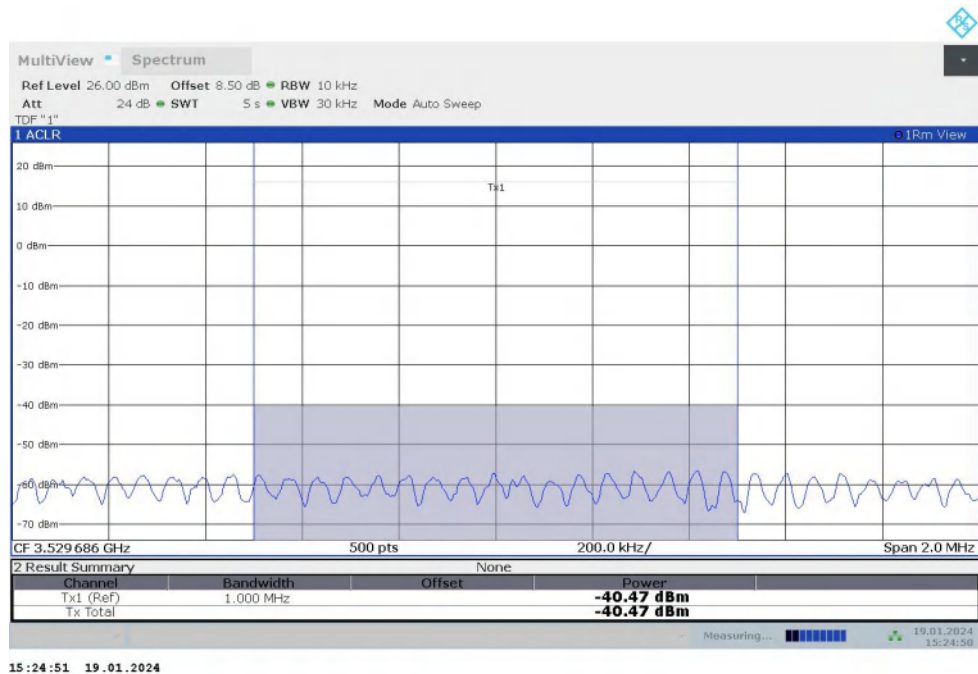
Channel power



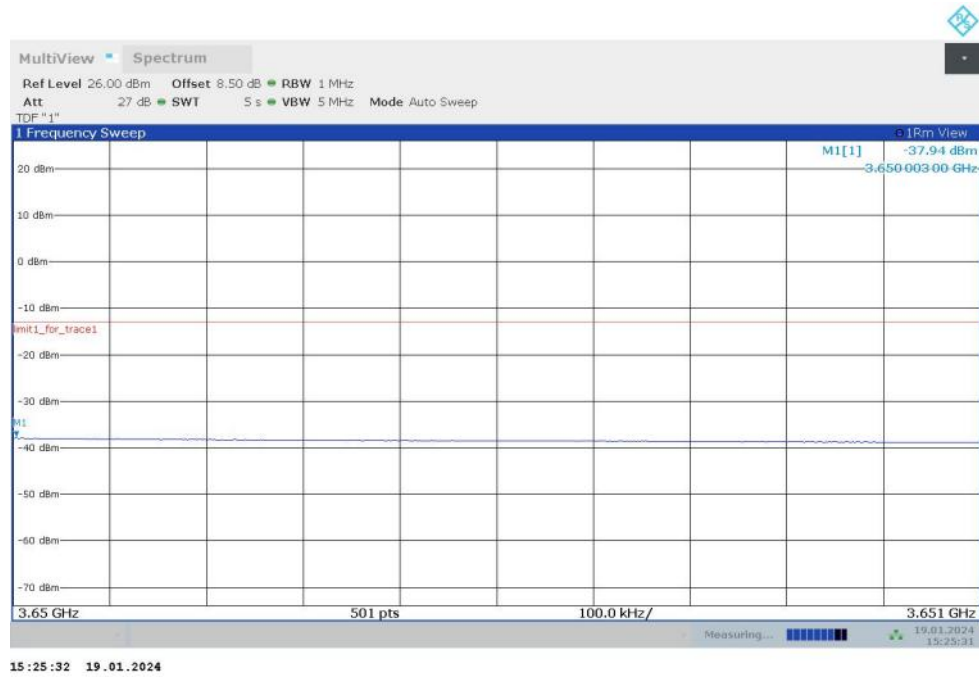
LOW BAND EDGE BLOCK-100M-100%RB



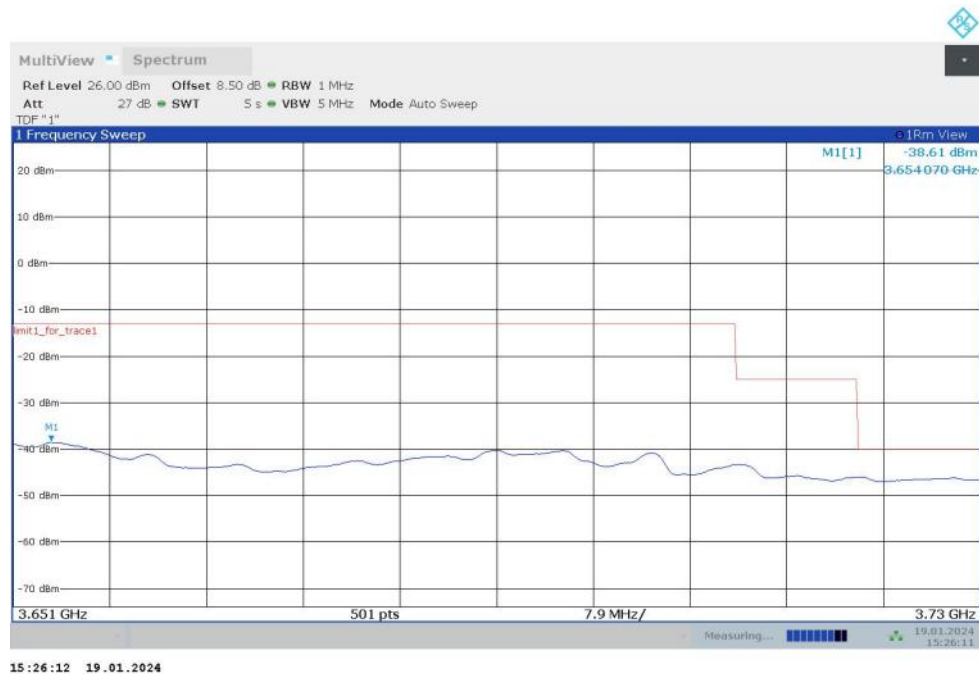
Channel power



LOW BAND EDGE BLOCK-100M-100%RB



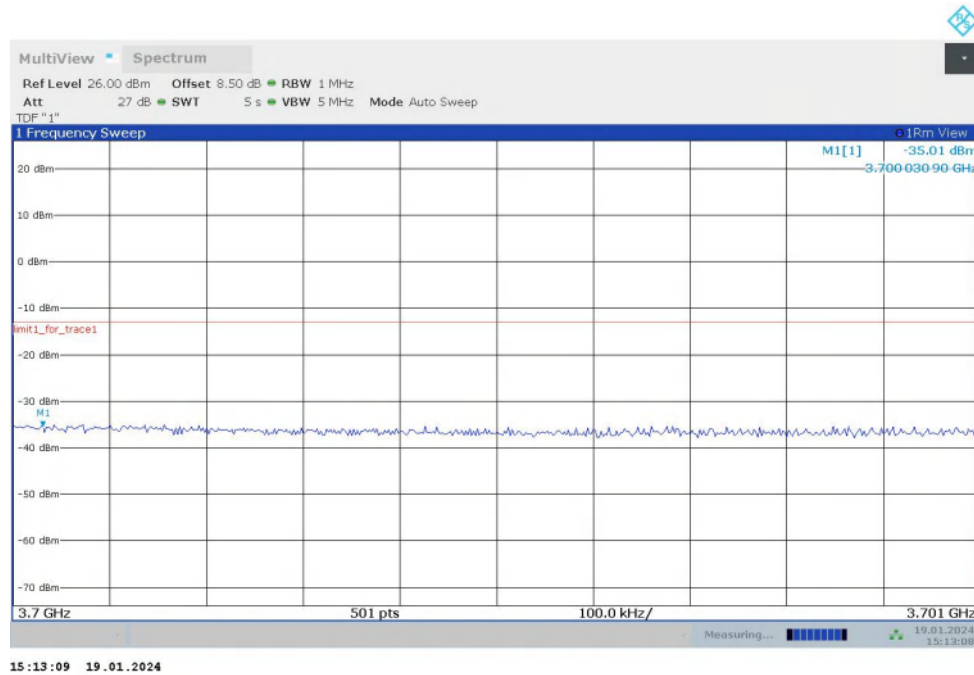
LOW BAND EDGE BLOCK-100M-100%RB



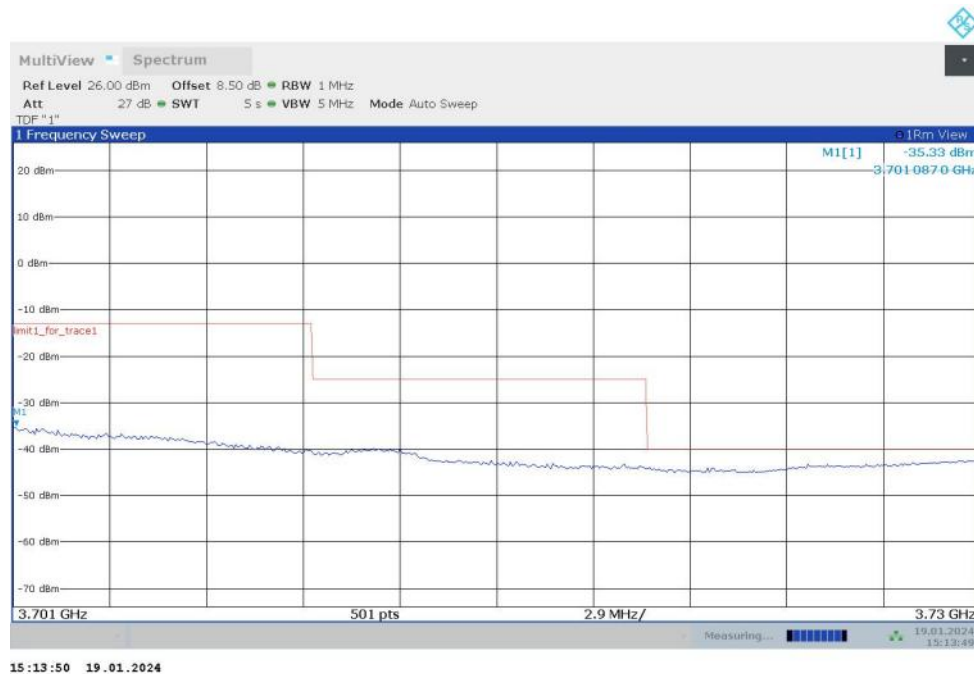
ACLR



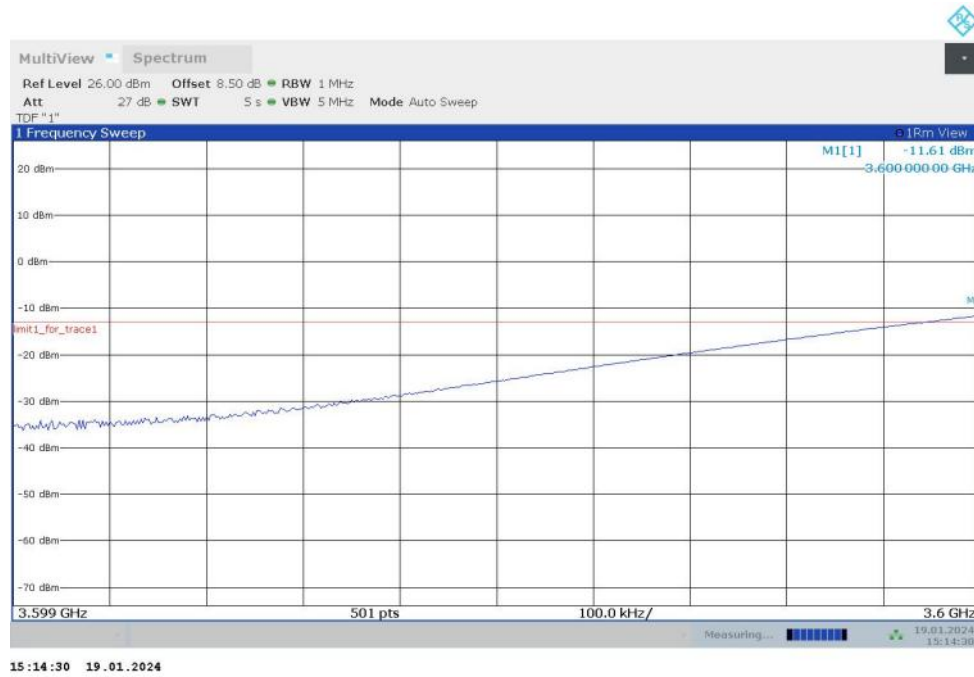
HIGH BAND EDGE BLOCK-100M-100%RB



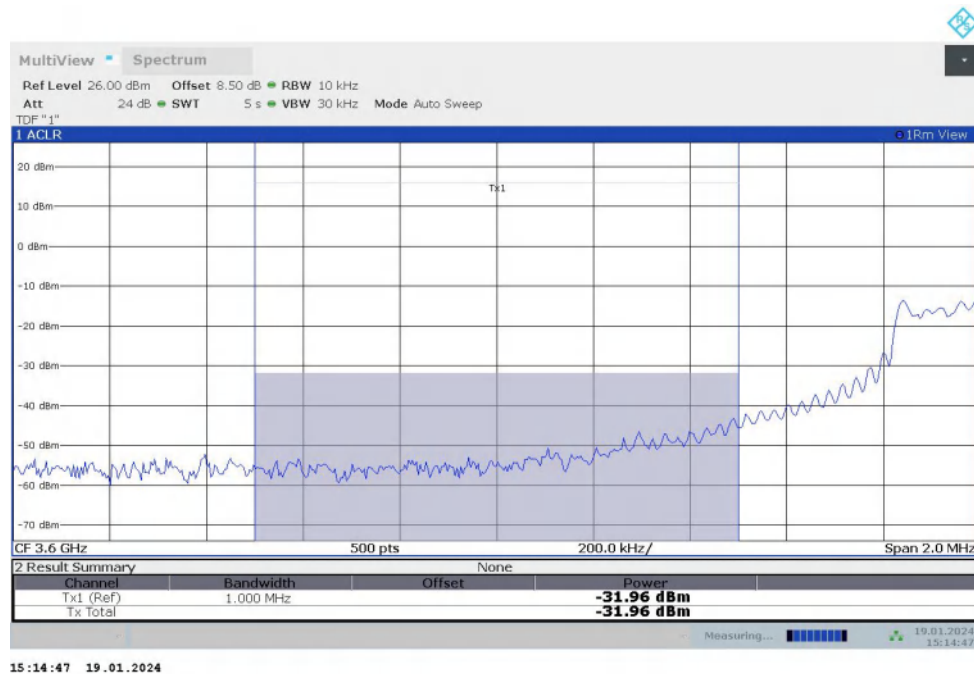
HIGH BAND EDGE BLOCK-100M-100%RB



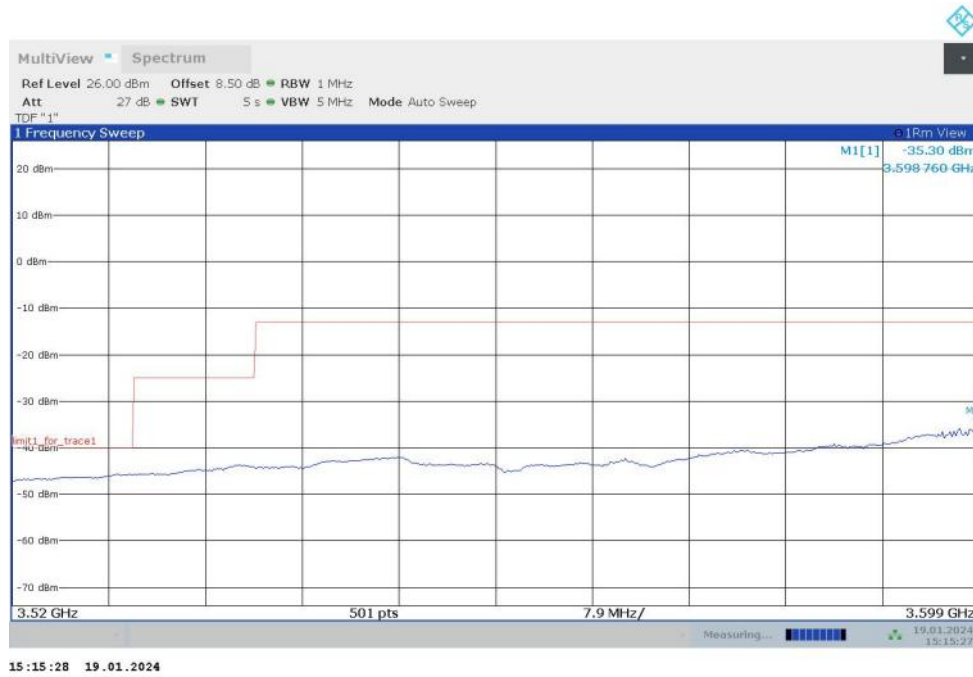
HIGH BAND EDGE BLOCK-100M-100%RB



Channel power



HIGH BAND EDGE BLOCK-100M-100%RB

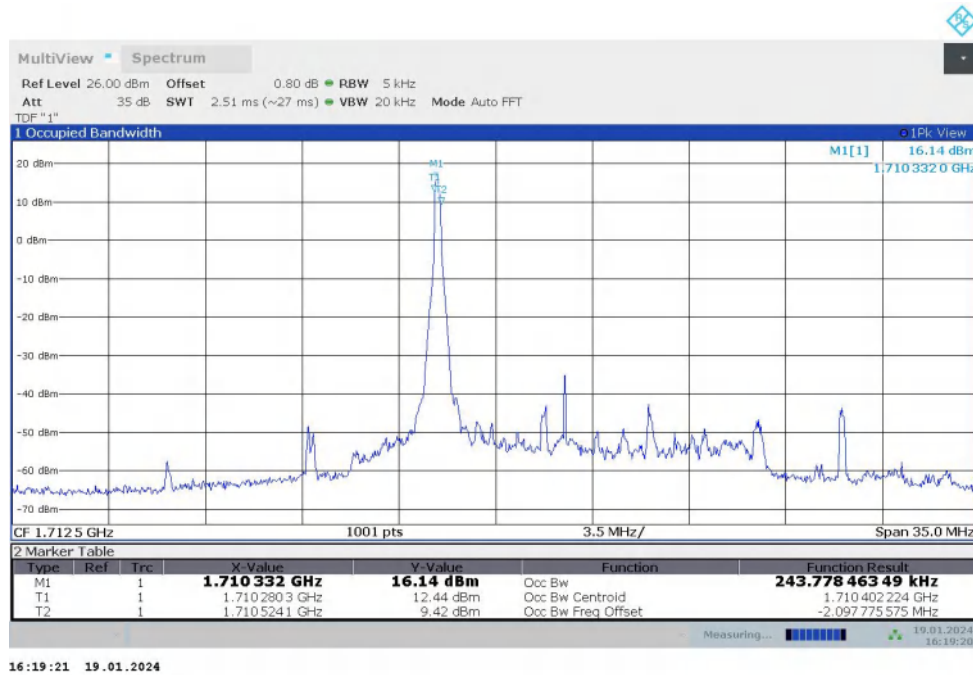


ACLR

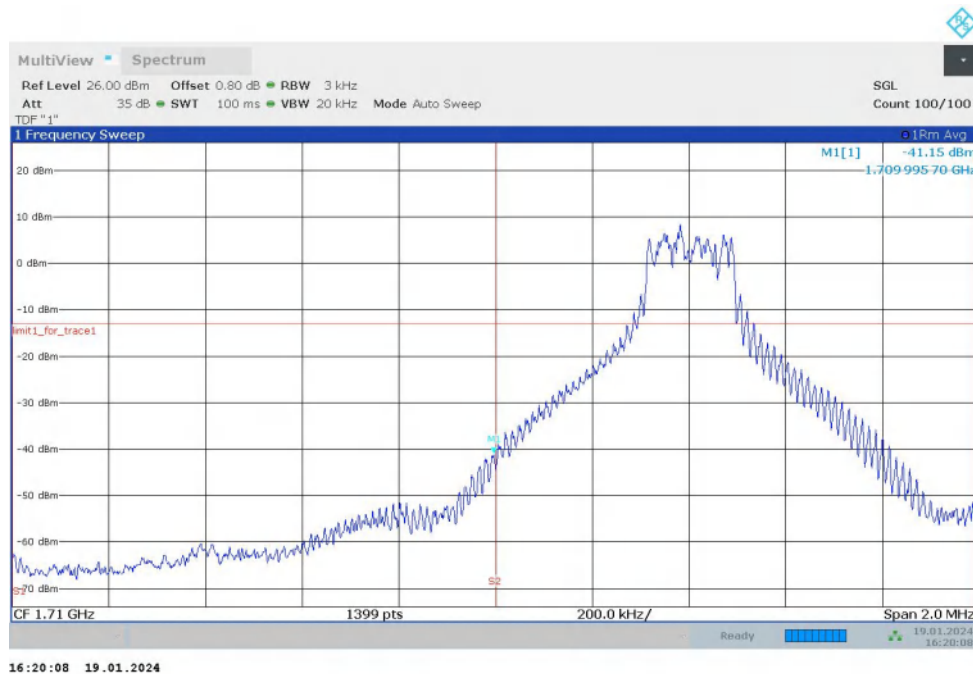


NR n66

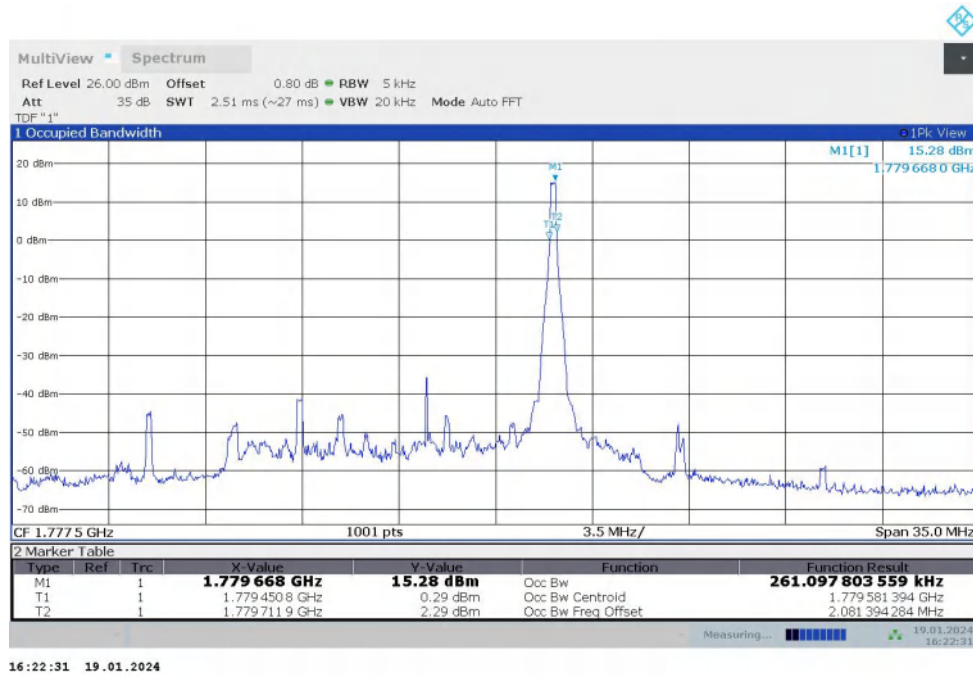
OBW: 1RB-LOW_offset



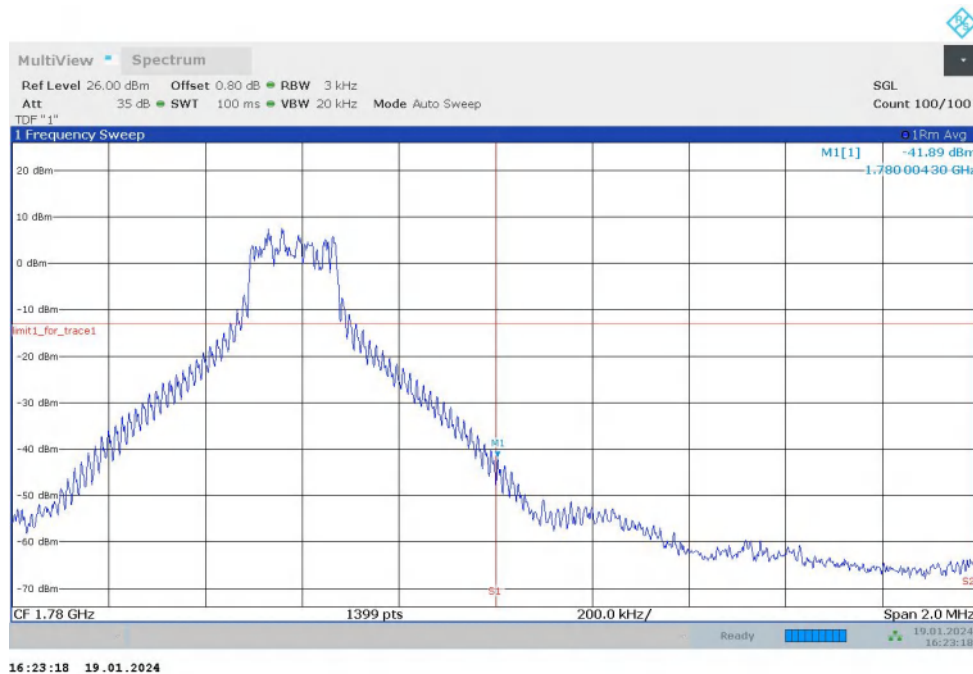
LOW BAND EDGE BLOCK-1RB-LOW_offset



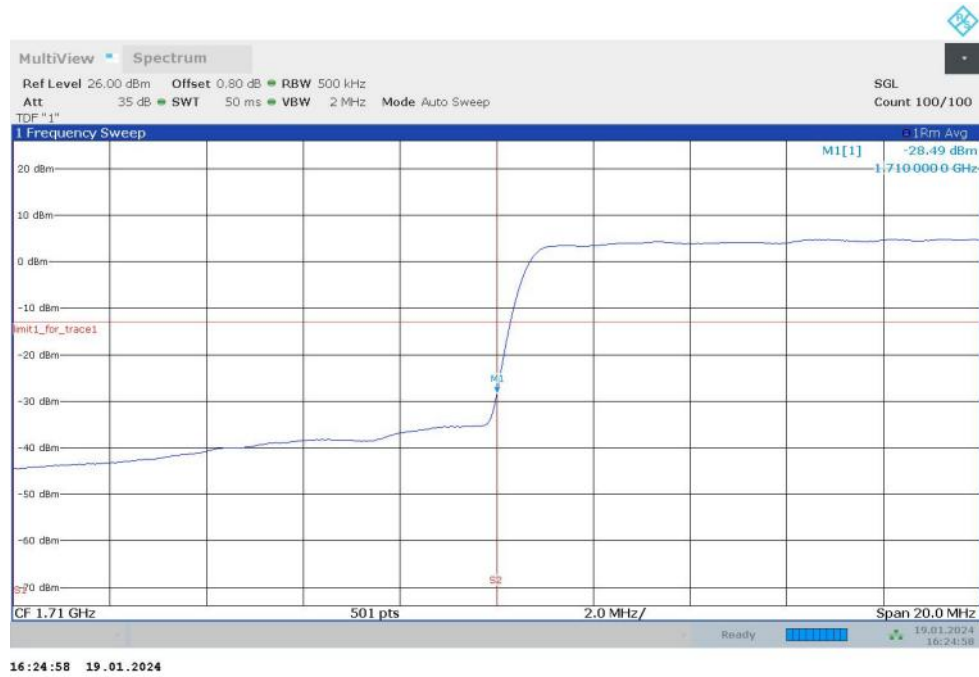
OBW: 1RB-HIGH_offset



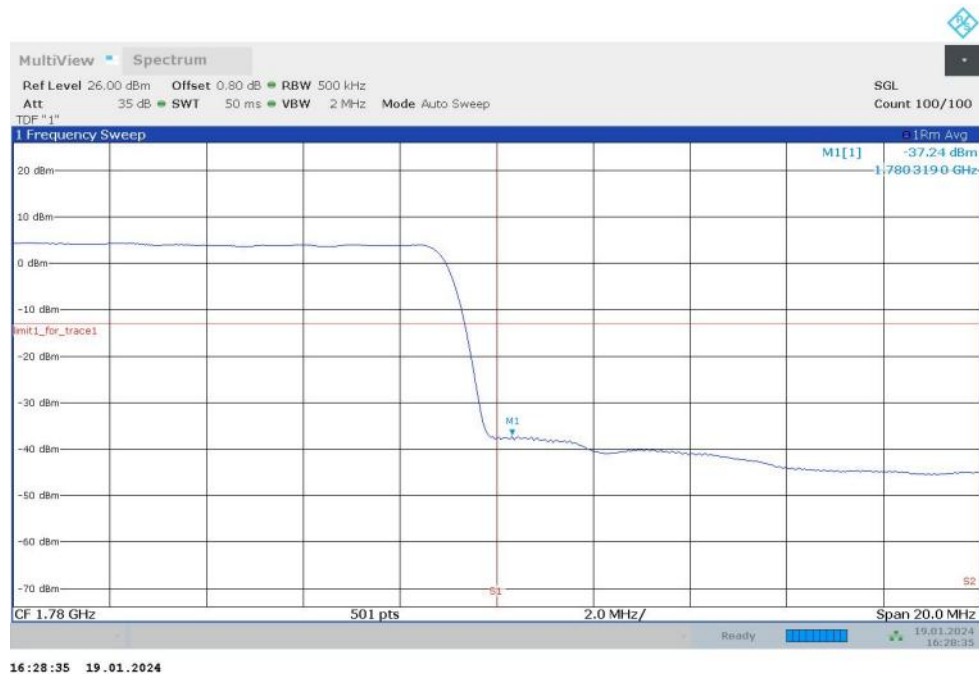
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-45M-100%RB



HIGH BAND EDGE BLOCK-45M-100%RB

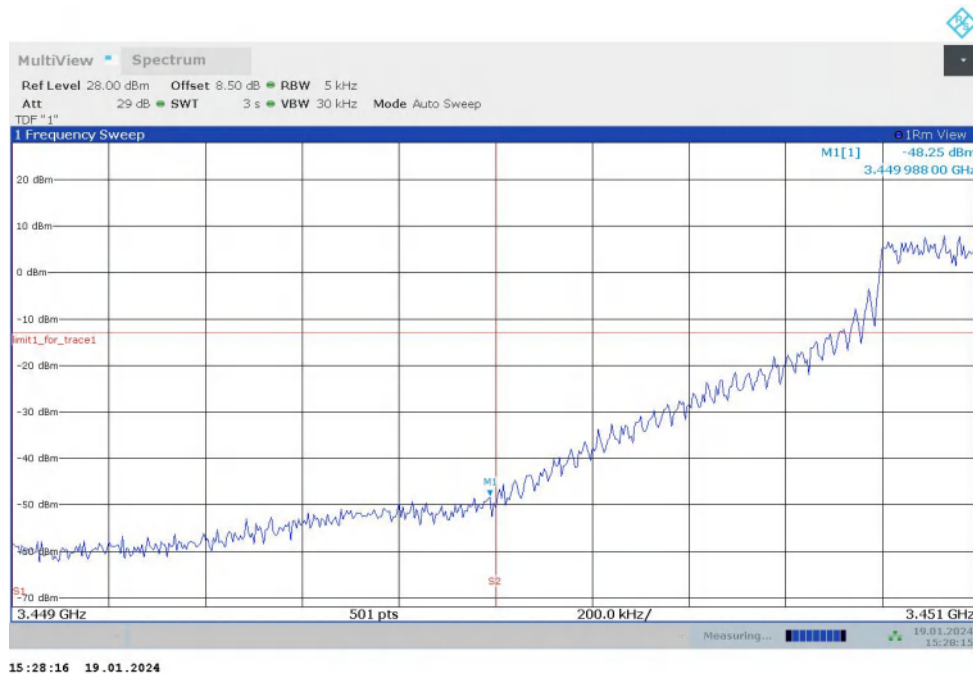


NR n77L

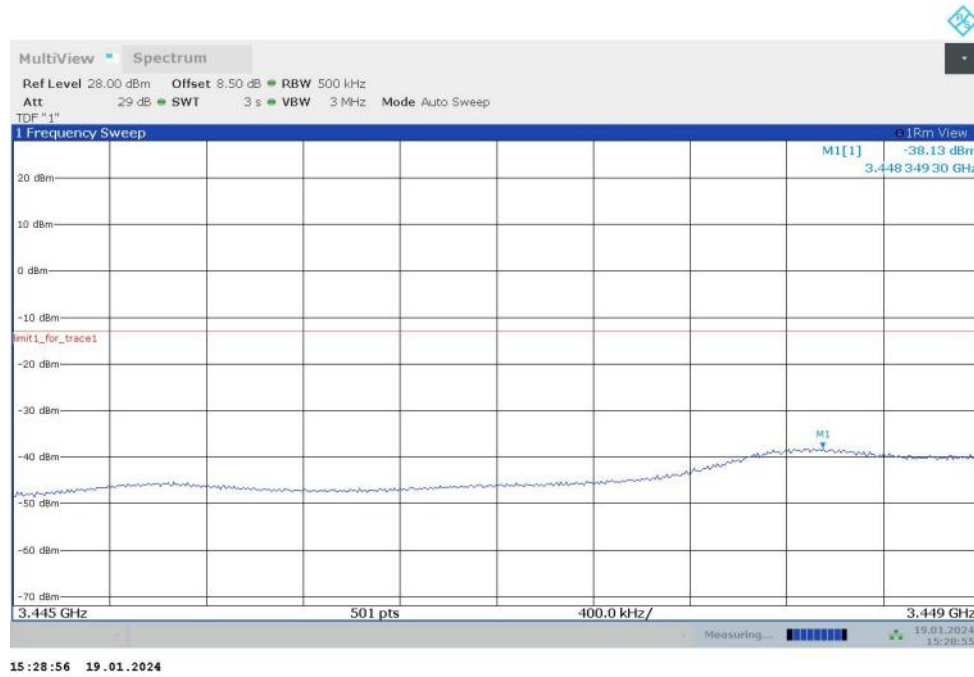
OBW: 1RB-LOW_offset



LOW BAND EDGE BLOCK-1RB-LOW_offset



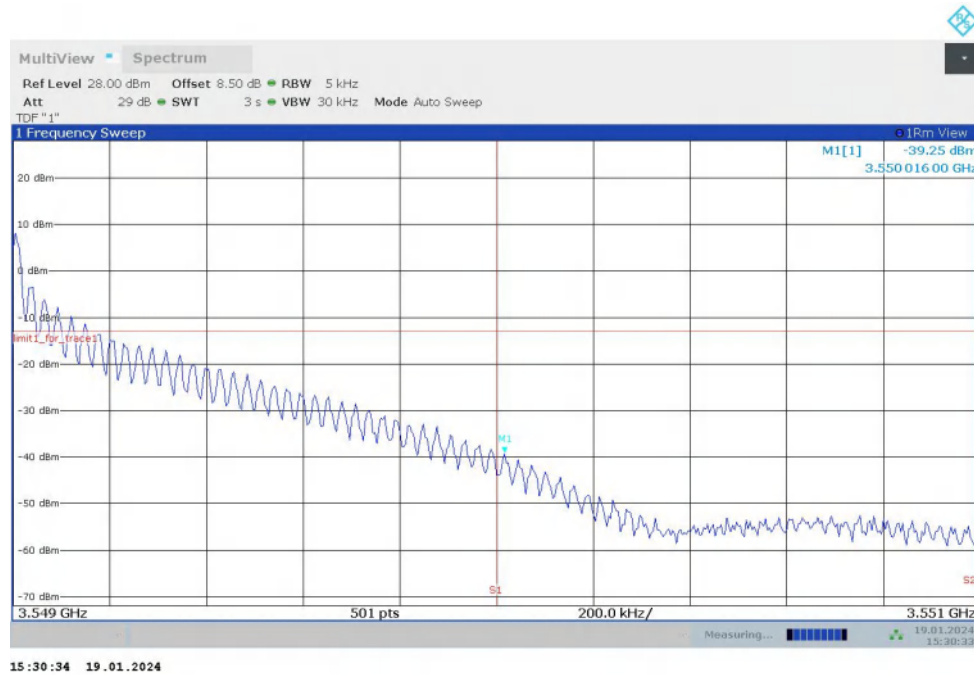
LOW BAND EDGE BLOCK-1RB-LOW_offset



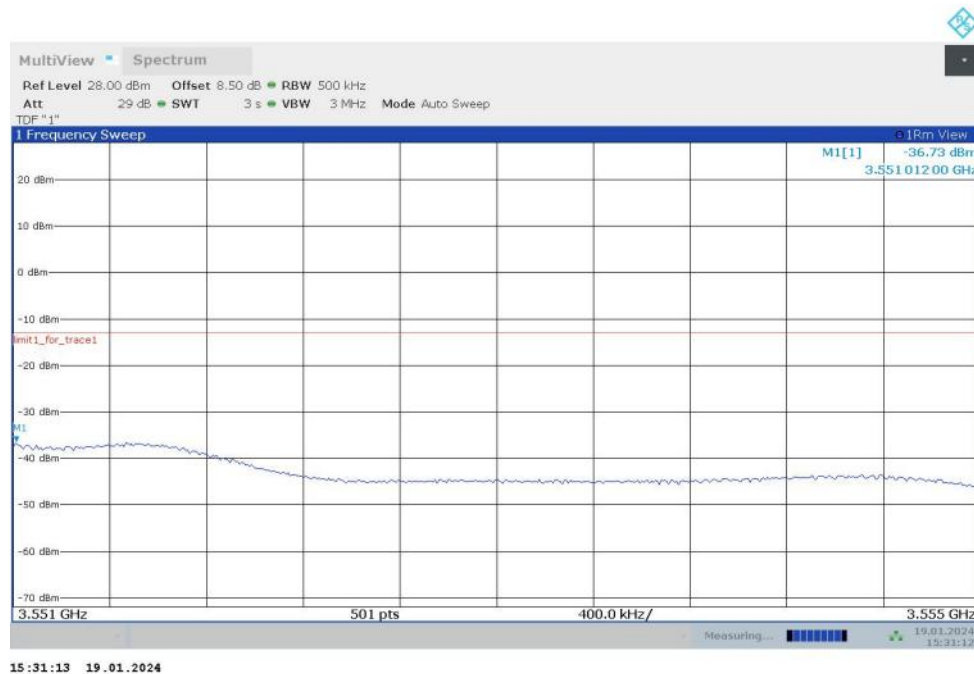
OBW: 1RB-HIGH_offset



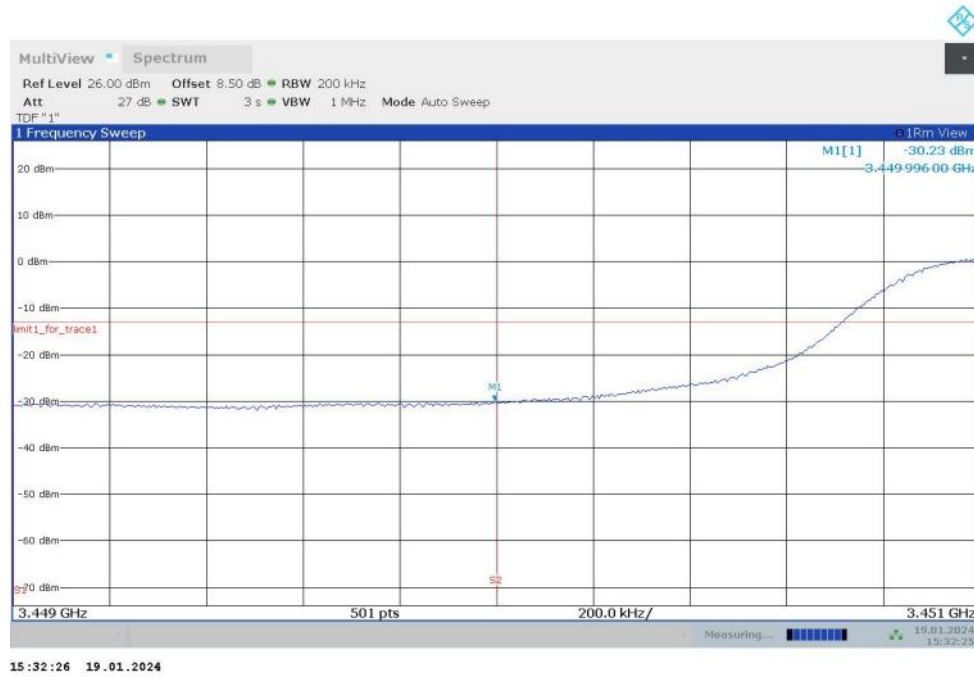
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



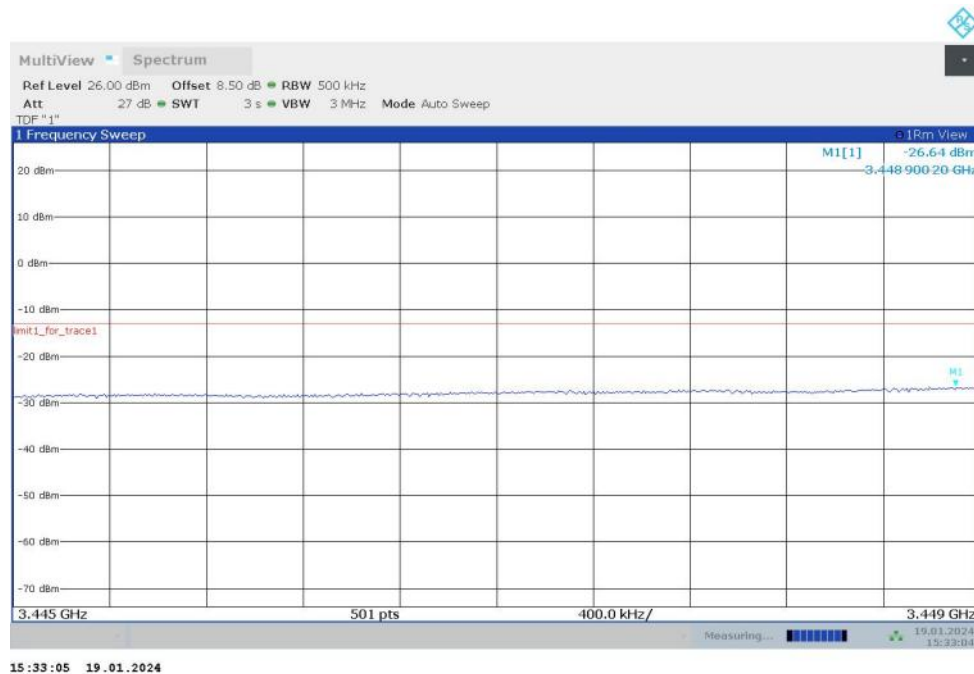
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



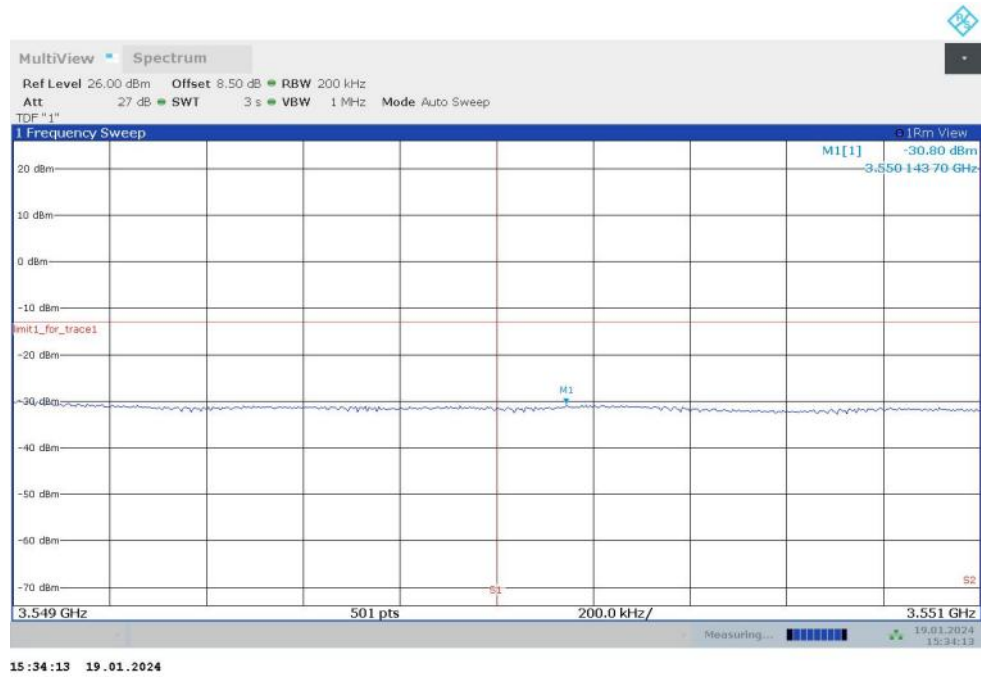
LOW BAND EDGE BLOCK-90M-100%RB



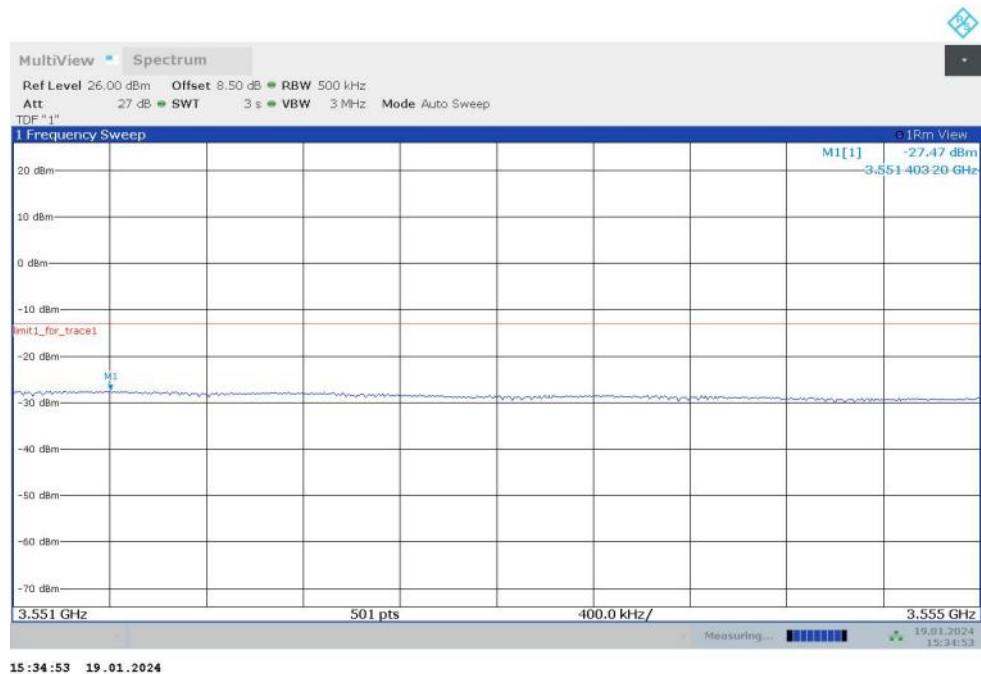
LOW BAND EDGE BLOCK-90M-100%RB



HIGH BAND EDGE BLOCK-90M-100%RB

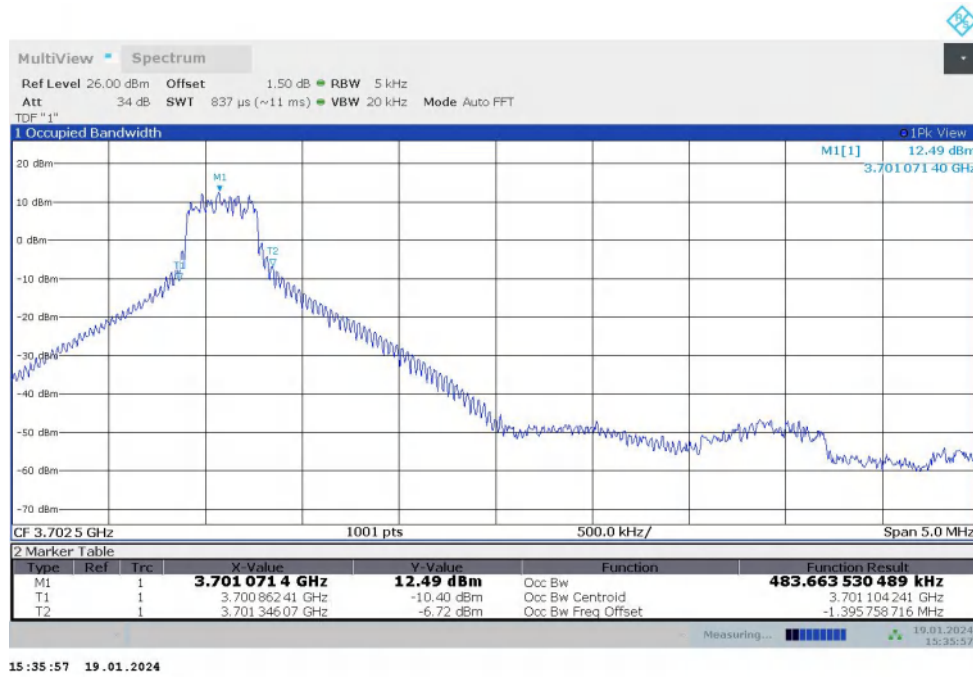


HIGH BAND EDGE BLOCK-90M-100%RB

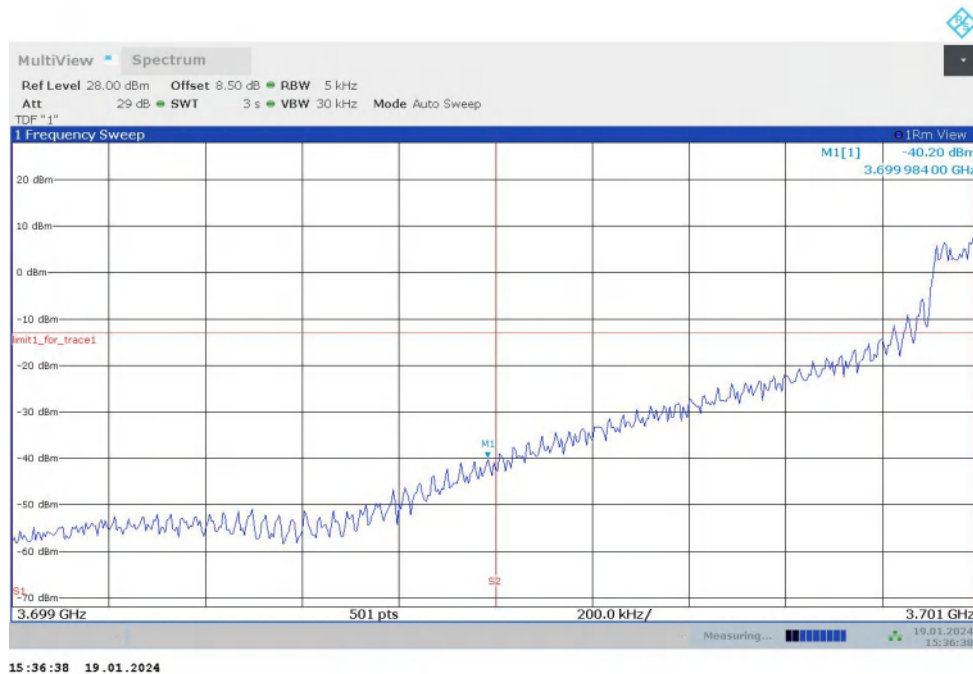


NR n77H

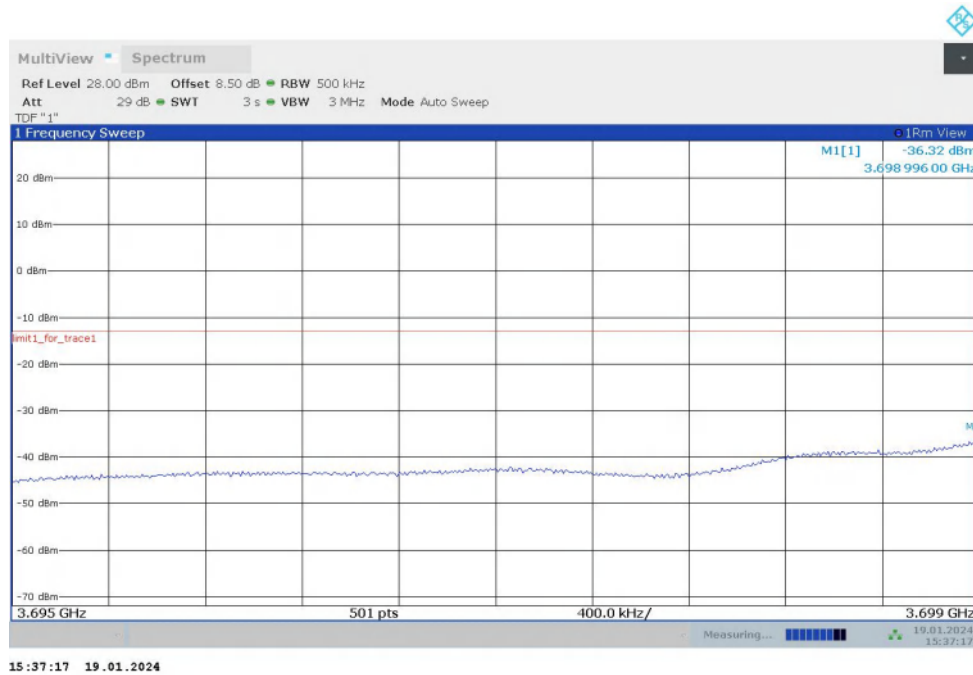
OBW: 1RB-LOW_offset



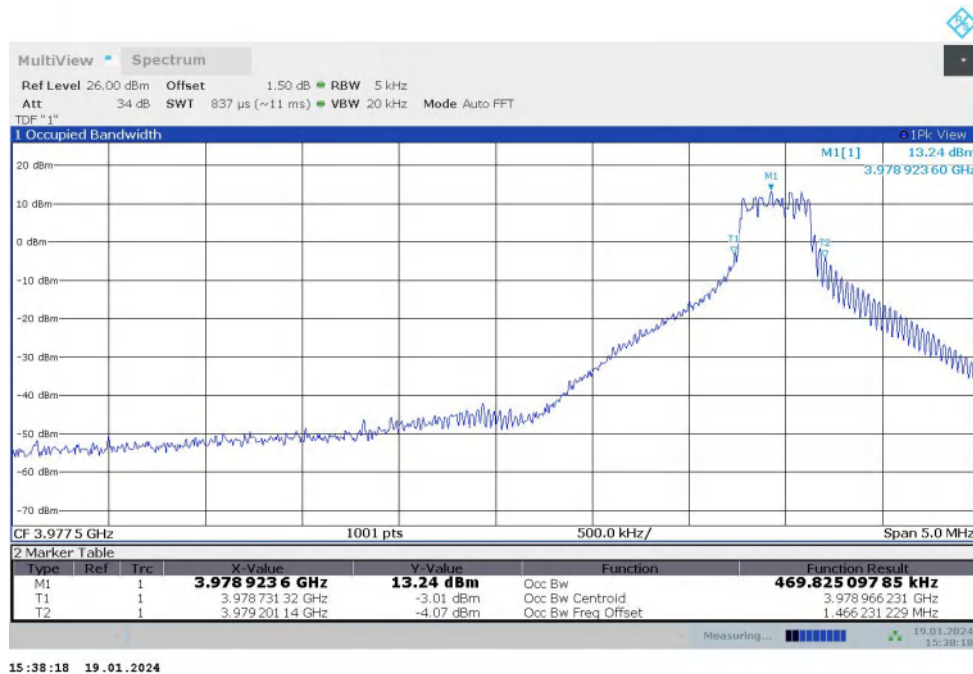
LOW BAND EDGE BLOCK-1RB-LOW_offset



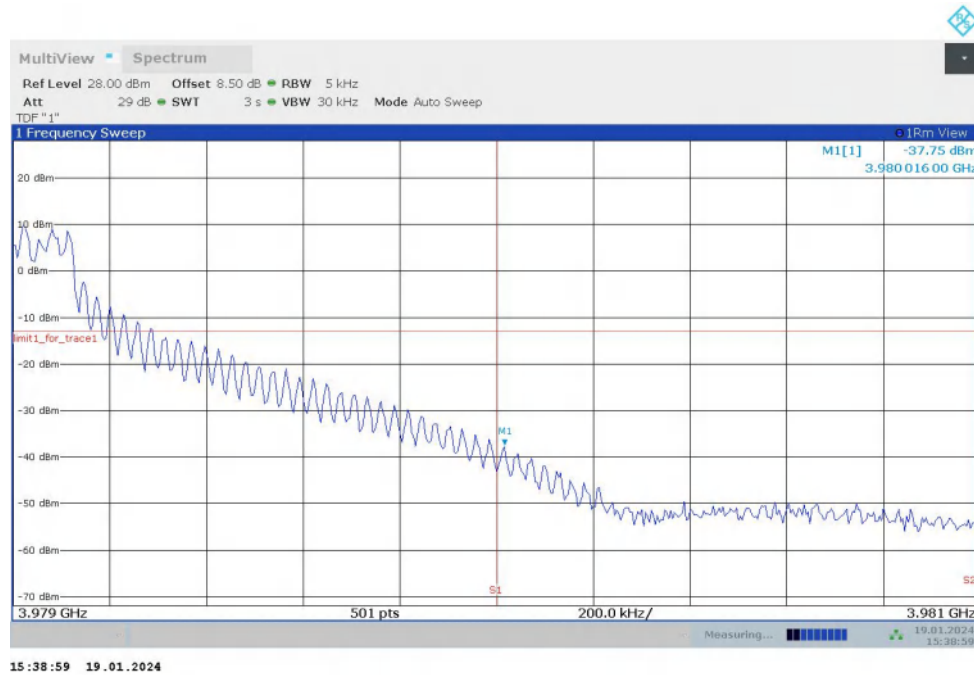
LOW BAND EDGE BLOCK-1RB-LOW_offset



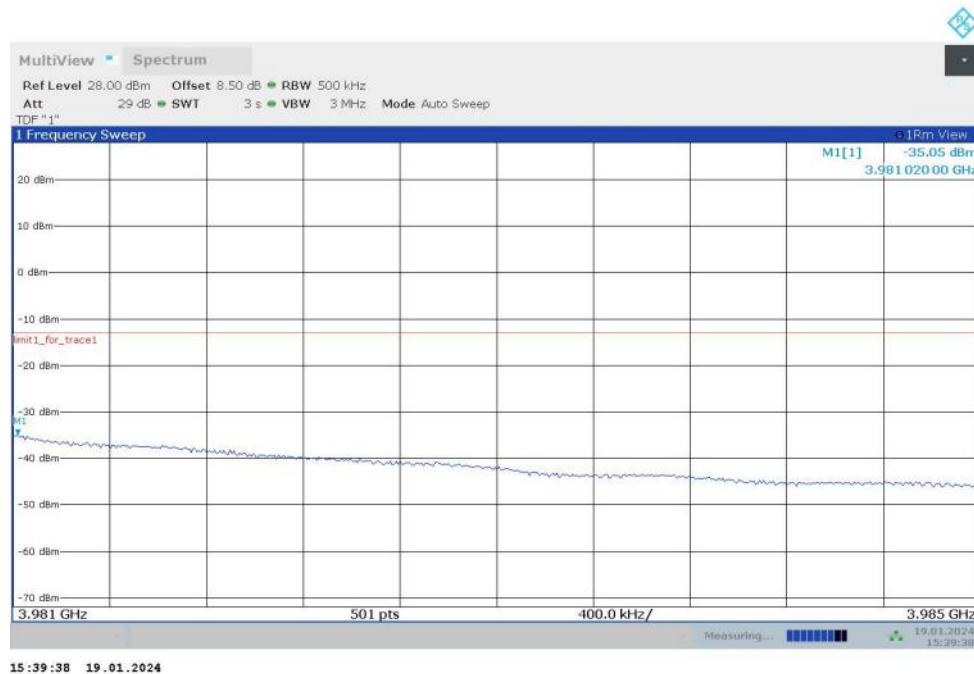
OBW: 1RB-HIGH_offset



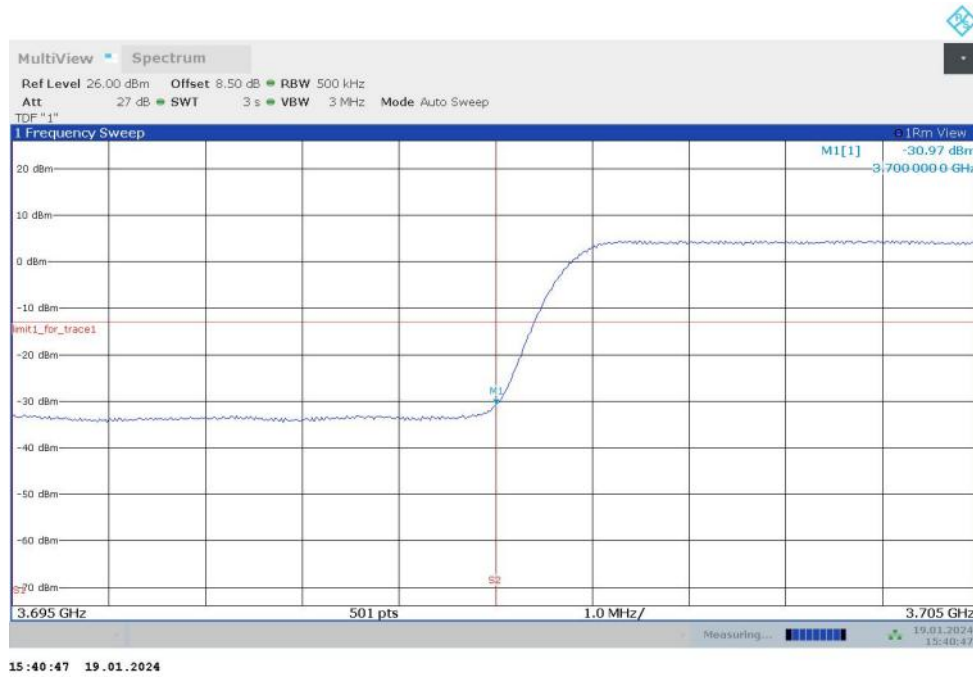
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



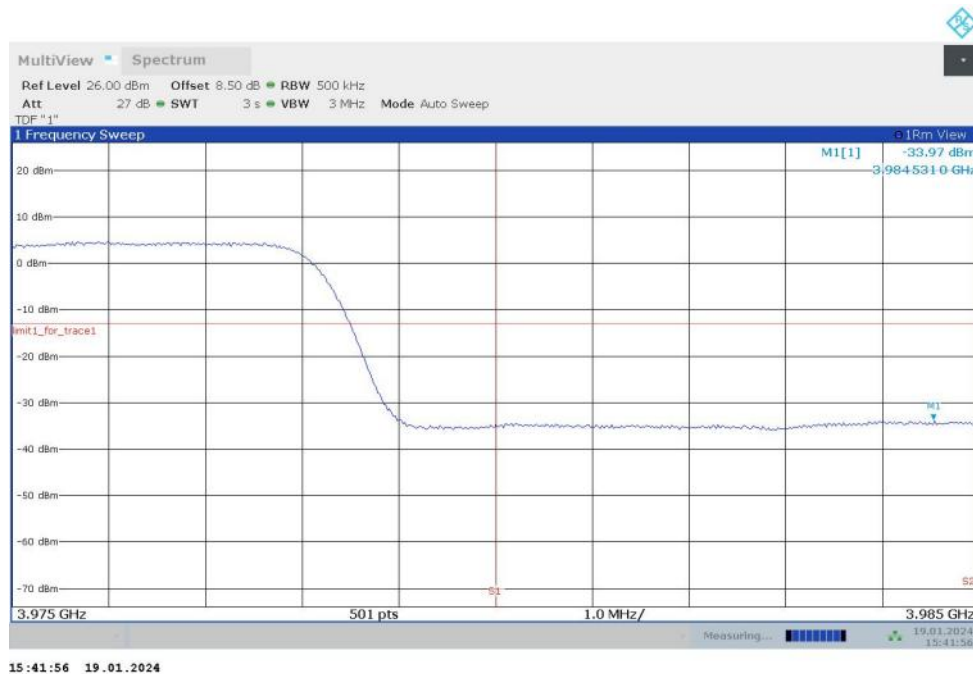
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-100M-100%RB

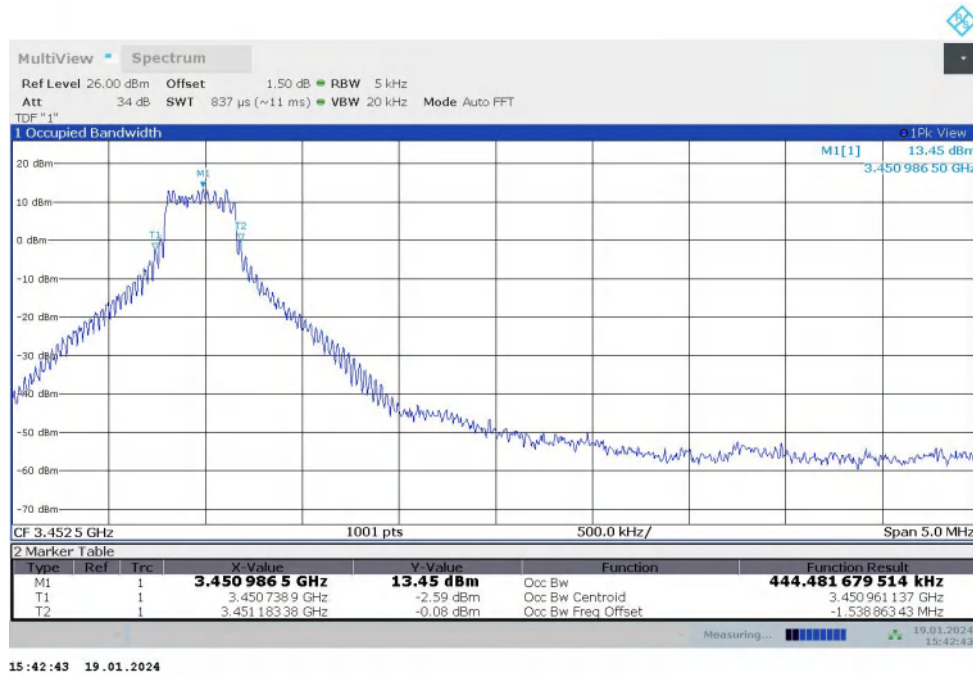


HIGH BAND EDGE BLOCK-100M-100%RB

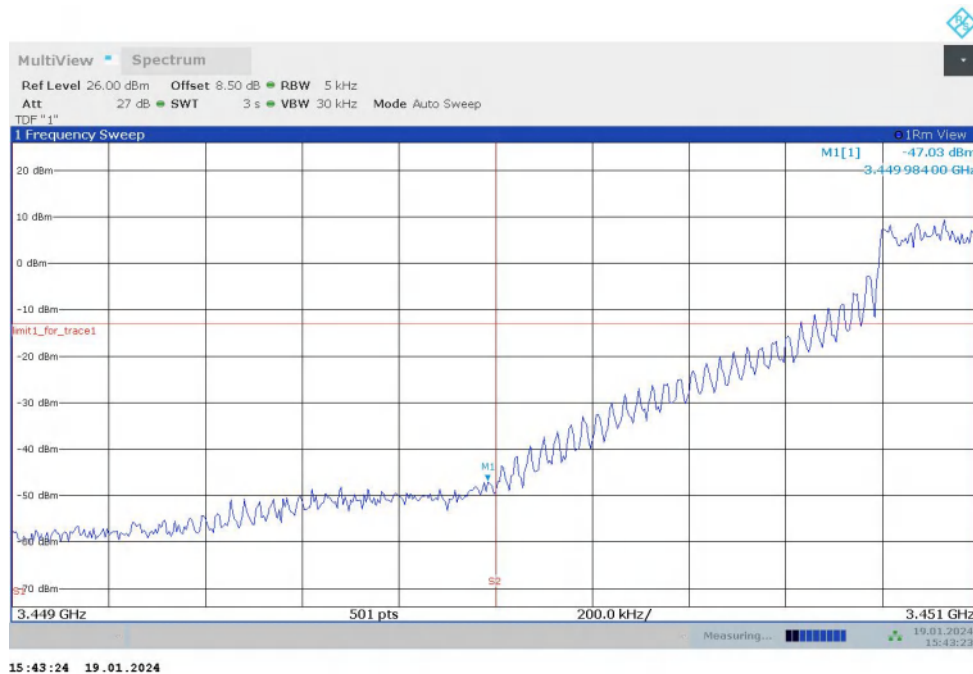


NR n78L

OBW: 1RB-LOW_offset



LOW BAND EDGE BLOCK-1RB-LOW_offset



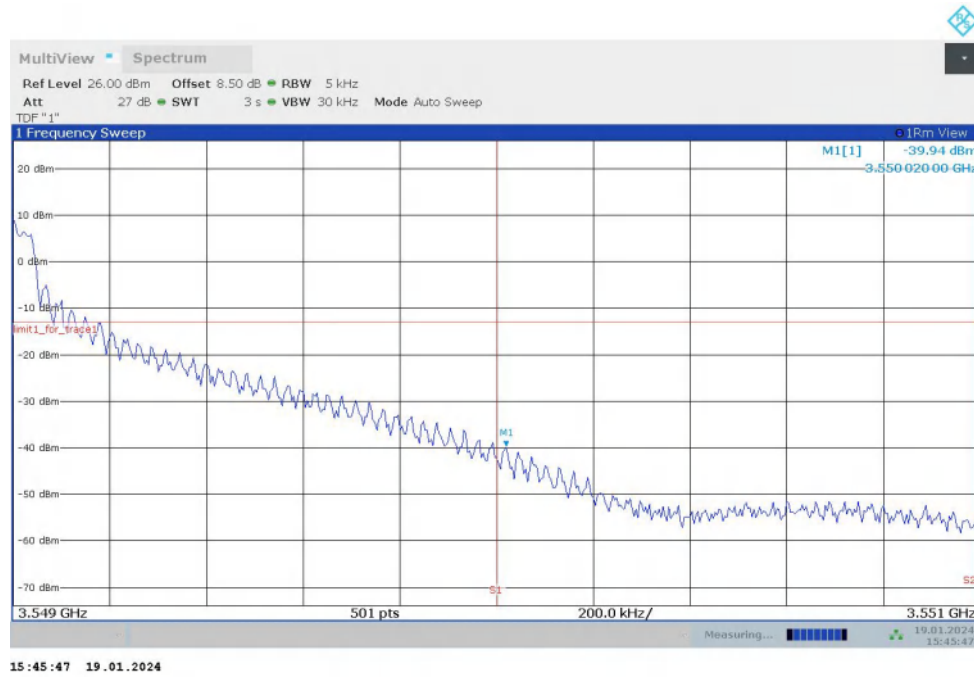
LOW BAND EDGE BLOCK-1RB-LOW_offset



OBW: 1RB-HIGH_offset



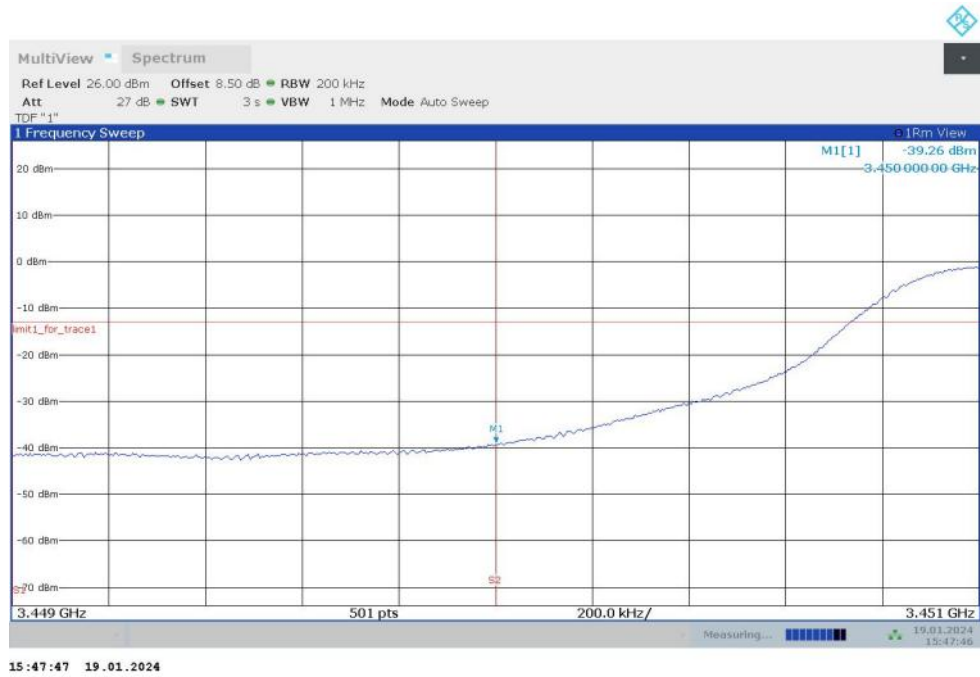
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



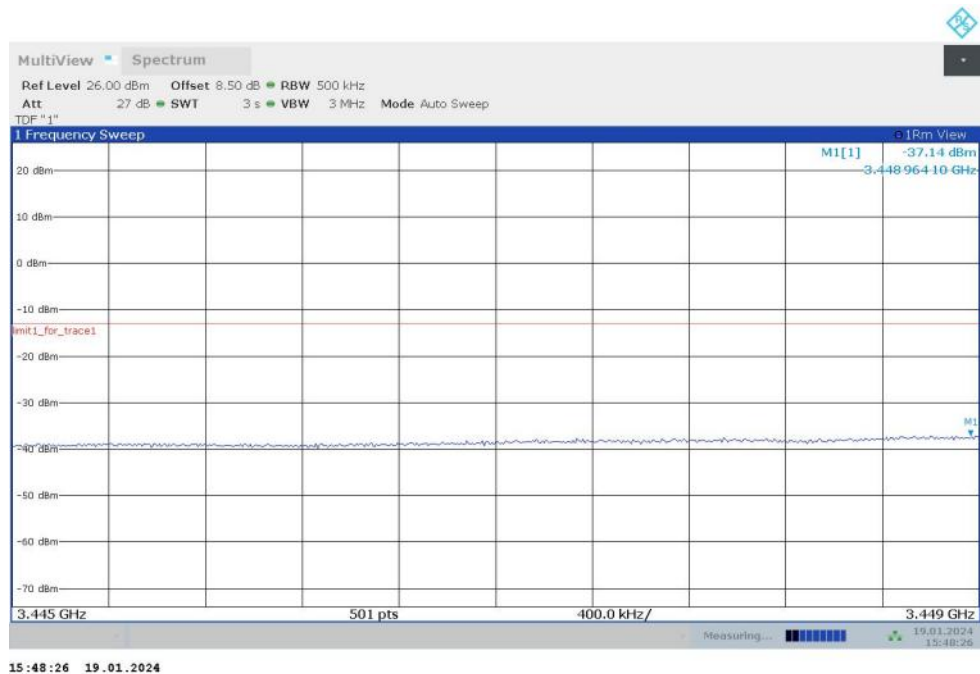
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



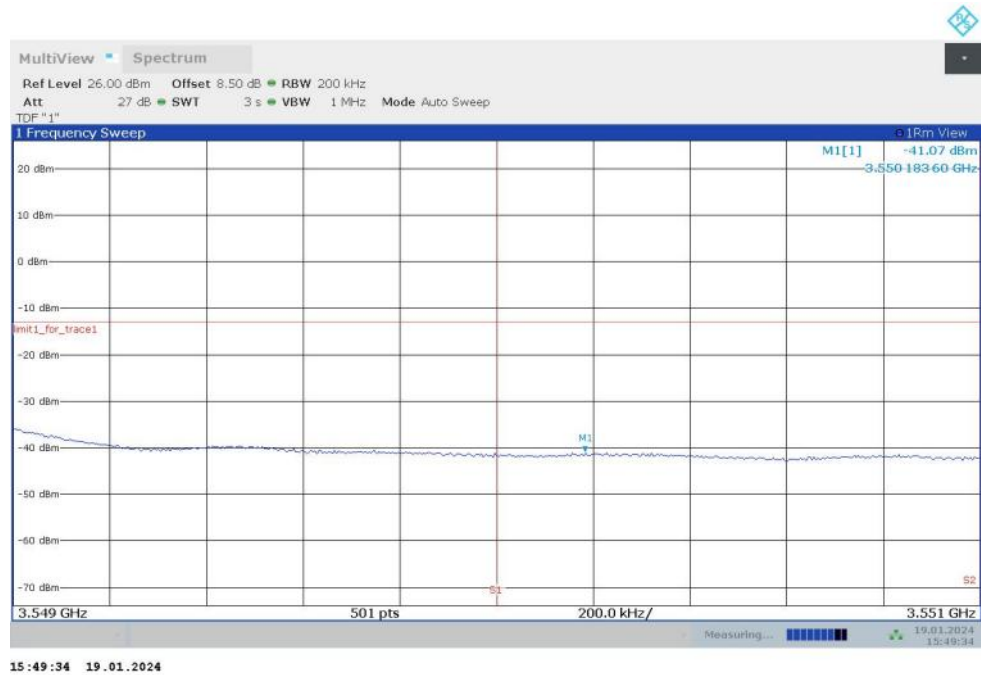
LOW BAND EDGE BLOCK-90M-100%RB



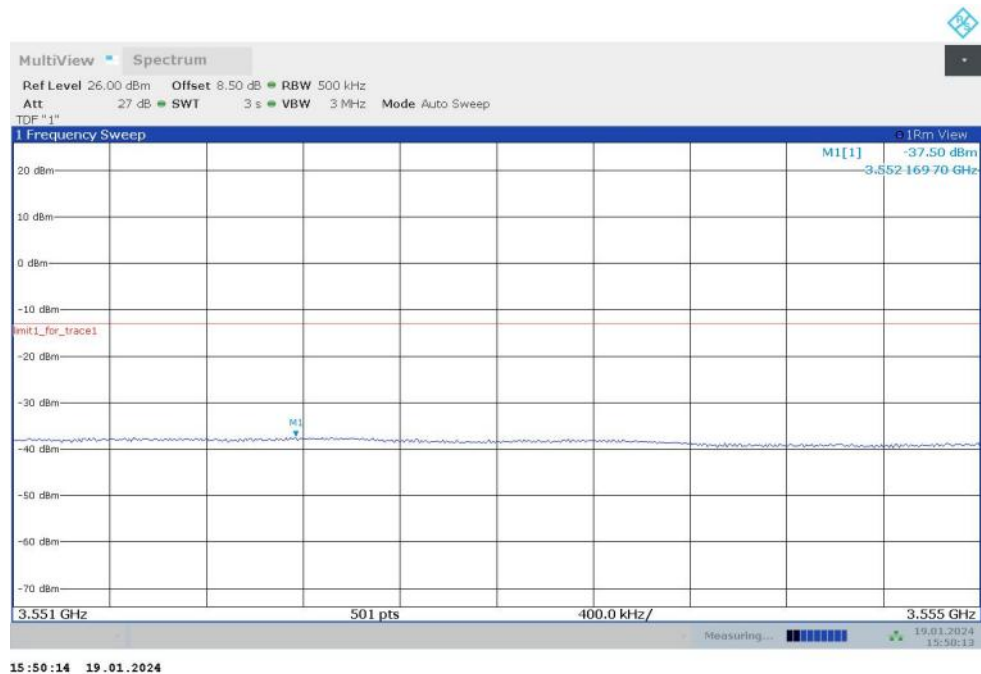
LOW BAND EDGE BLOCK-90M-100%RB



HIGH BAND EDGE BLOCK-90M-100%RB



HIGH BAND EDGE BLOCK-90M-100%RB



Note: The maximum value of expanded measurement uncertainty for this test item is $U = 0.626 \text{ kHz}$, $k = 2$.

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 96.41(e) states for channel and frequency assignments made by a CBSD to End User Devices, the conducted power of any End User Device emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed -13 dBm/MHz within 0 to B megahertz (where B is the bandwidth in megahertz of the assigned channel or multiple contiguous channels of the End User Device) above the upper CBSD-assigned channel edge and within 0 to B megahertz below the lower CBSD-assigned channel edge. At all frequencies greater than B megahertz above the upper CBSD assigned channel edge and less than B megahertz below the lower CBSD-assigned channel edge, the conducted power of any End User Device emission shall not exceed -25 dBm/MHz. Notwithstanding the emission limits in this paragraph, the Adjacent Channel Leakage Ratio for End User Devices shall be at least 30 dB.

Part 27.53(n) states for mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz. Compliance with this paragraph (n)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

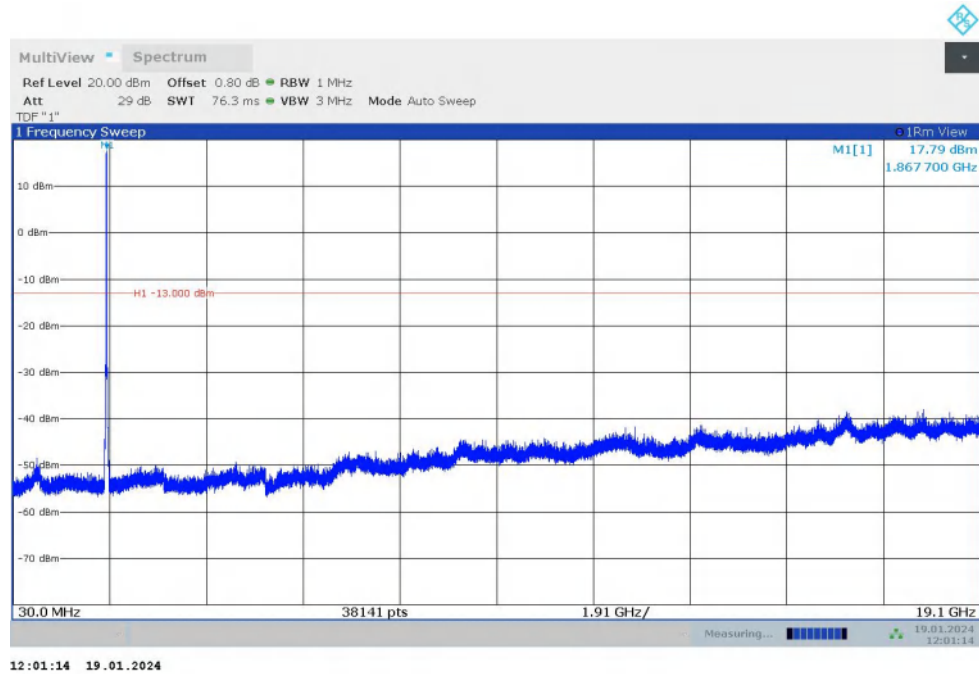
Part 27.53(l) states for mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

Compliance with this paragraph (l)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

A. 7.3 Measurement result

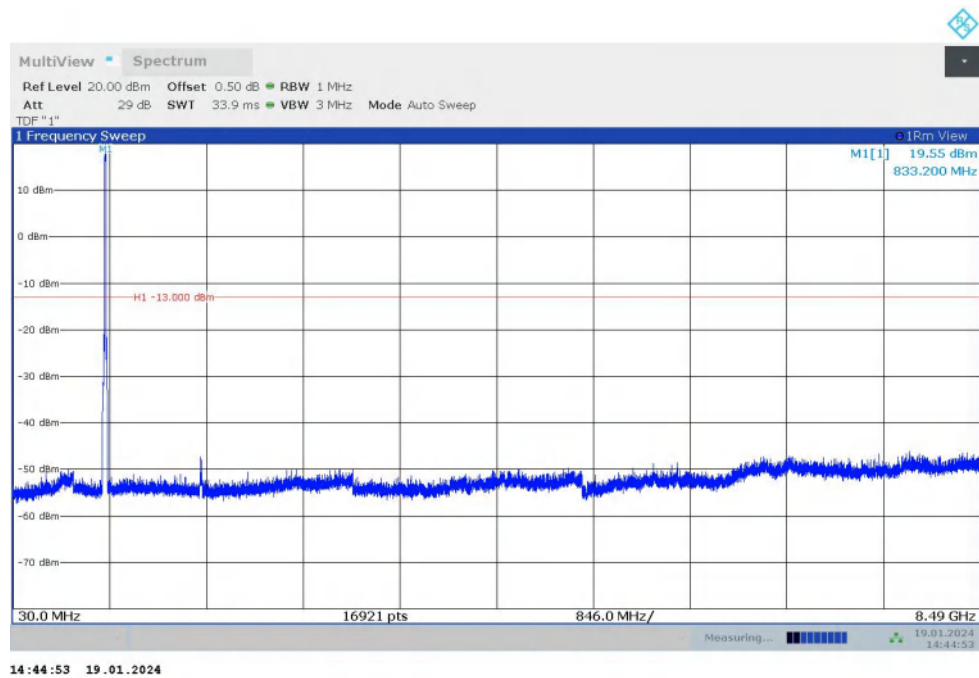
n2

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



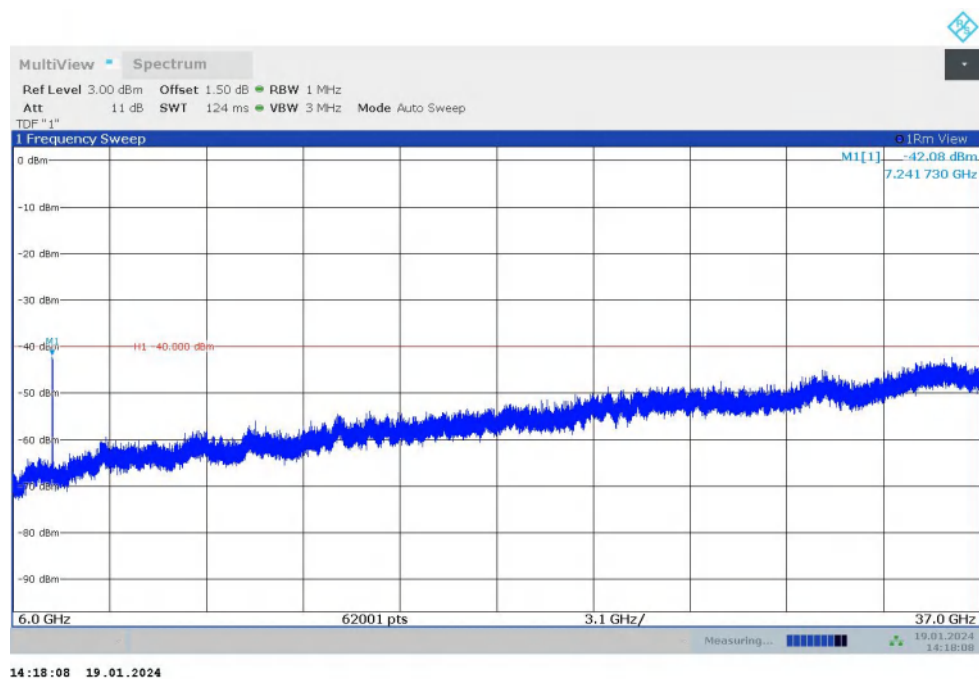
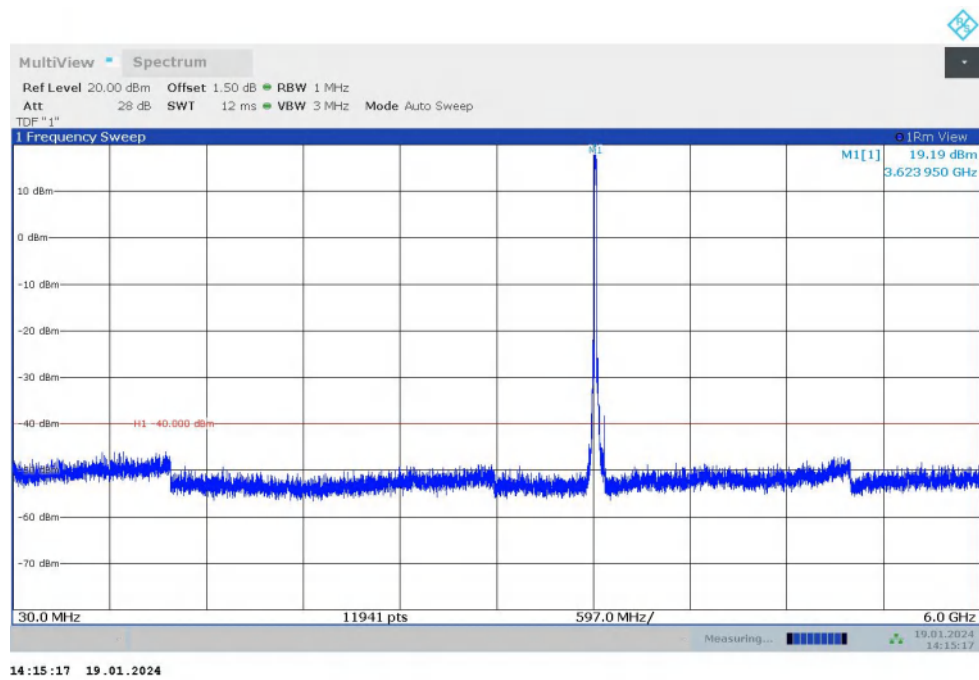
n5

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



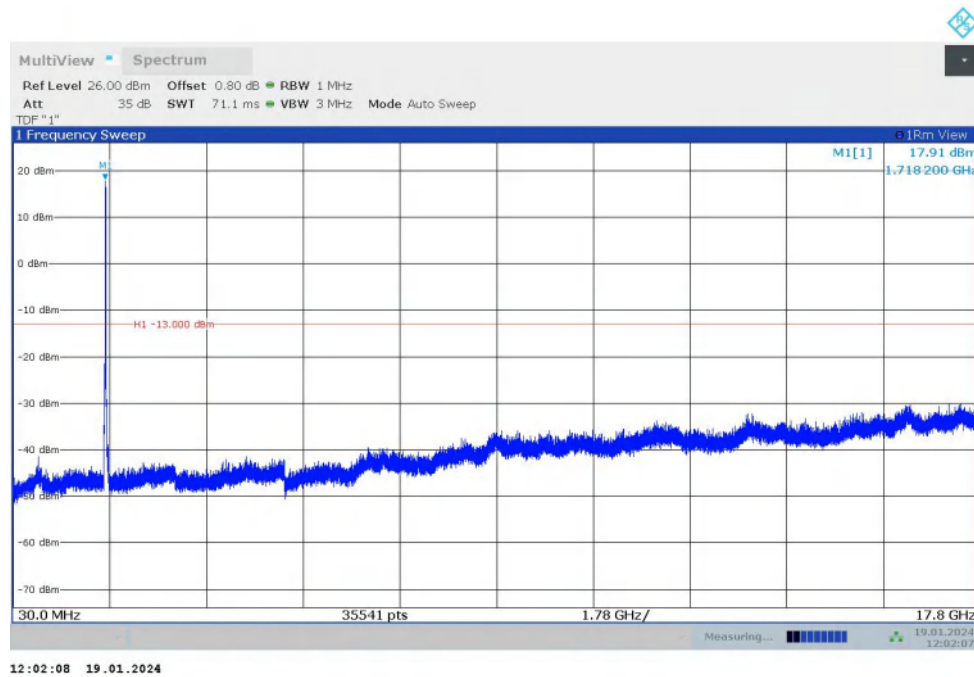
n48

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



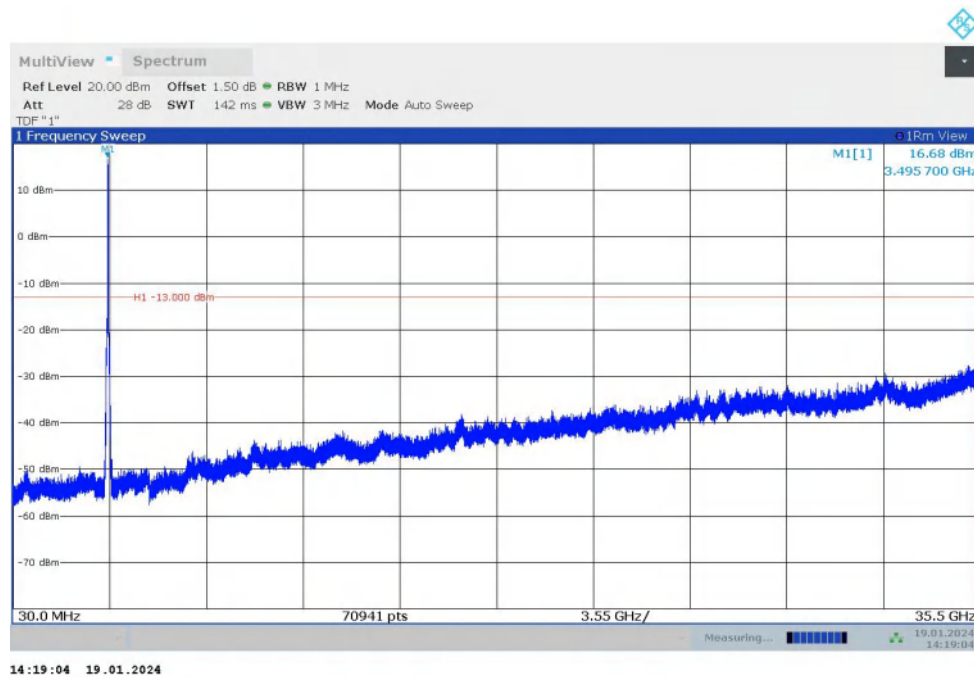
n66

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



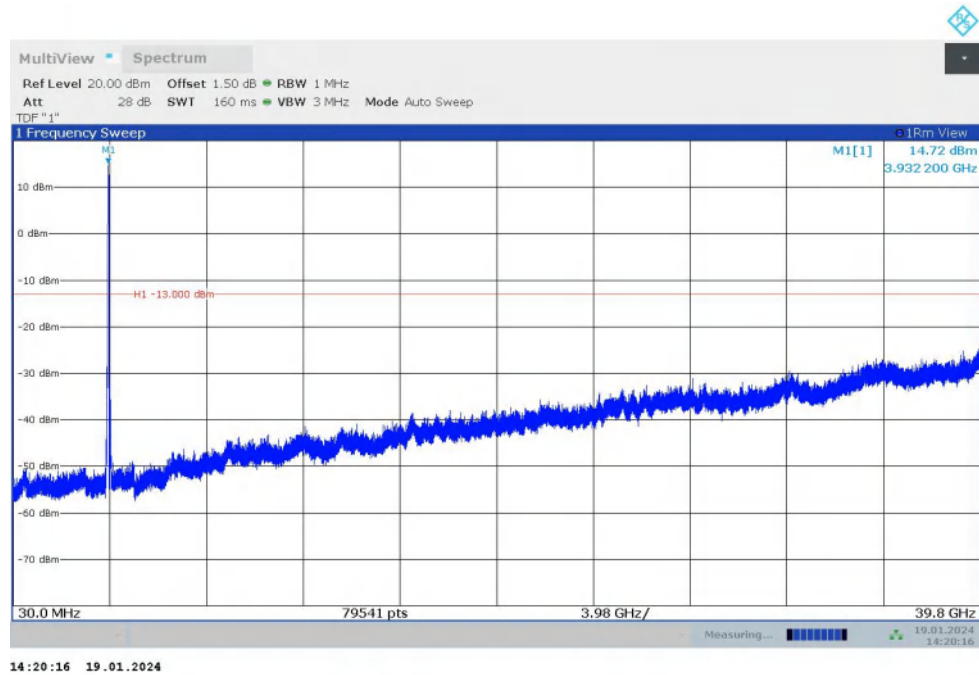
n77L

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



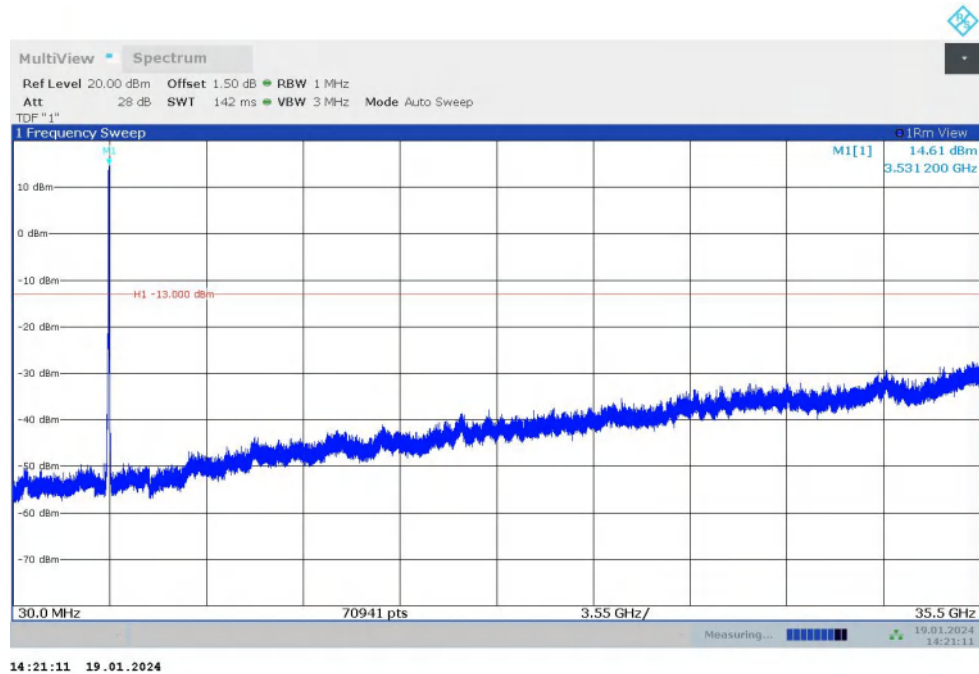
n77H

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



n78L

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



Note: The maximum value of expanded measurement uncertainty for this test item is $U = 0.372 \text{ dB}$, $k = 2$.

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

n2,40MHz

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
1880	4.92	5.49	6.10	6.39	6.51	7.98	7.99	8.09	8.37

n48,100MHz

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
3624.99	4.09	4.95	6.39	6.63	6.61	8.17	8.16	8.26	8.25

n66,45MHz

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	4.72	5.62	6.25	6.46	6.70	8.18	8.18	8.32	8.58

n77L,90MHz

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
3500.01	4.12	5.17	5.79	6.01	6.36	7.29	7.37	7.44	8.09

n77H,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
3840	3.78	4.83	6.36	6.54	6.57	8.14	8.24	8.22	8.30

n78L,90MHz

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
3500.01	4.39	5.48	6.08	6.28	6.51	7.89	7.88	8.03	8.28

Note: The maximum value of expanded measurement uncertainty for this test item is $U = 0.356$ dB, $k = 2$.

Annex B: Accreditation Certificate



END OF REPORT