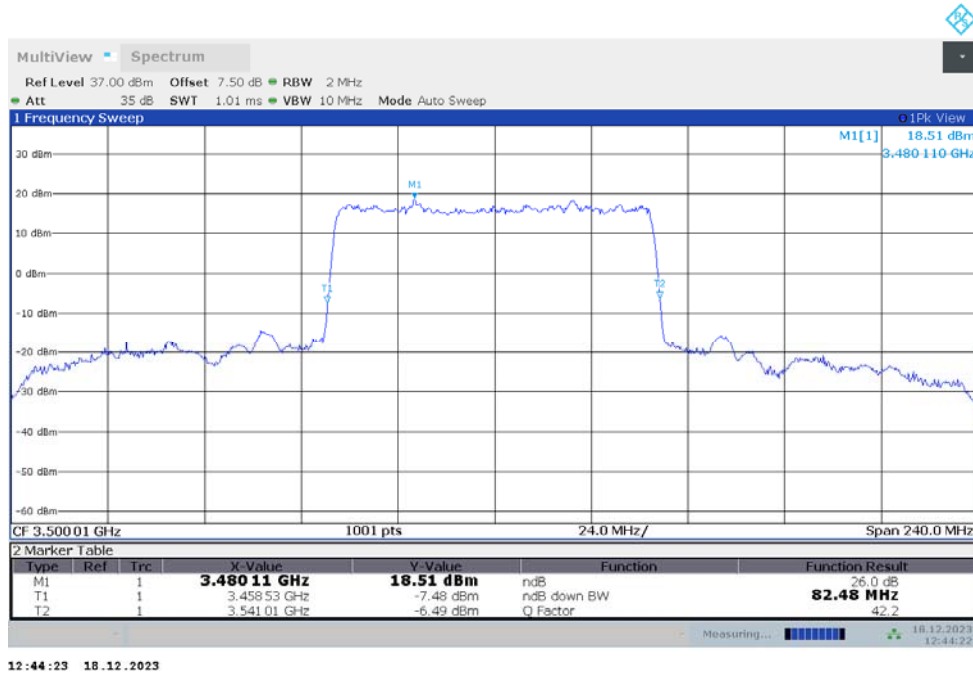


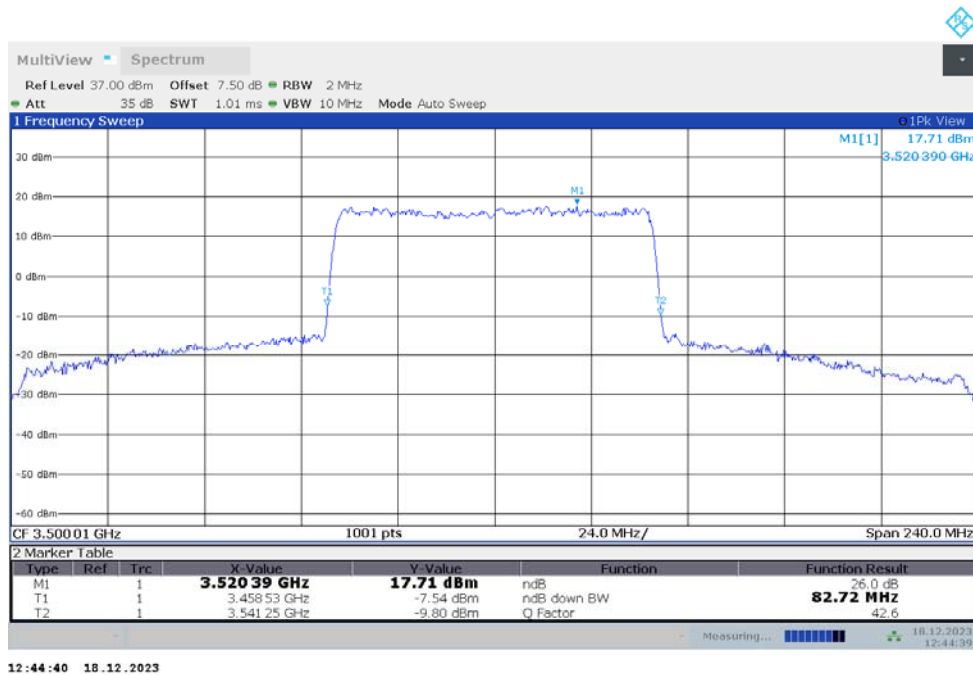
**n78L,80MHz(-26dBc)**

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3500.01	82.480	82.720

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

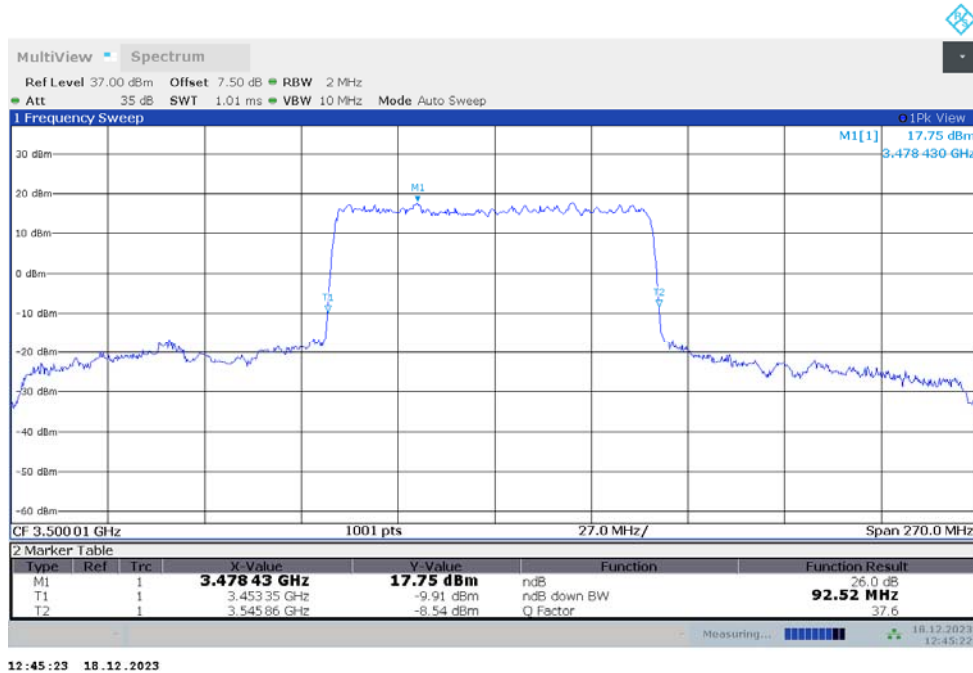
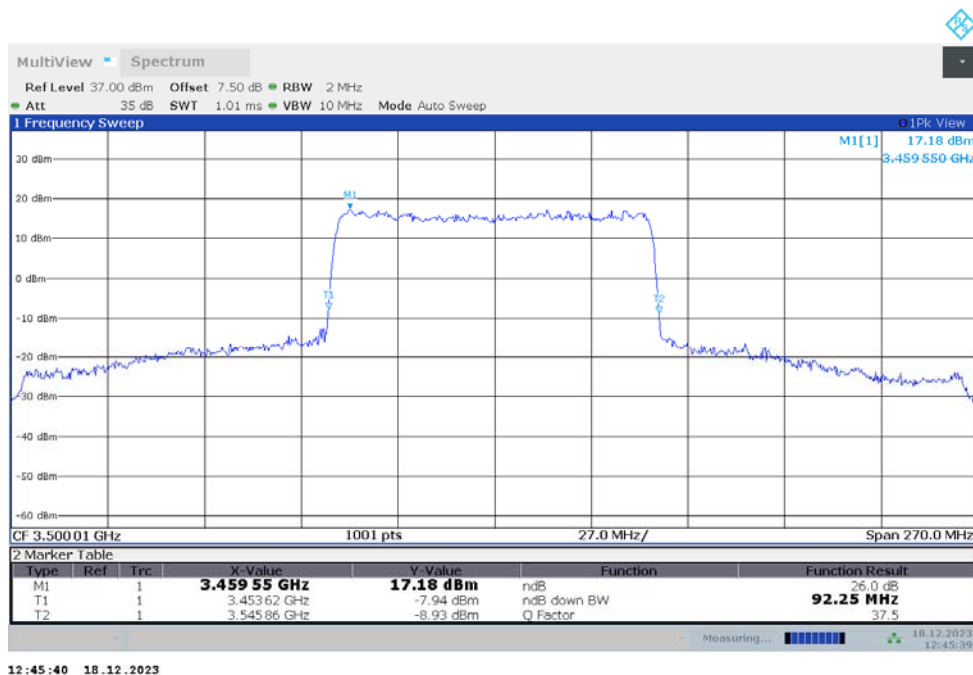


**n78L,80MHz Bandwidth,DFT-s-QPSK (-26dBc BW)**



**n78L,90MHz(-26dBc)**

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)	
	DFT-s-pi/2 BPSK	DFT-s-QPSK
3500.01	92.520	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 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(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 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



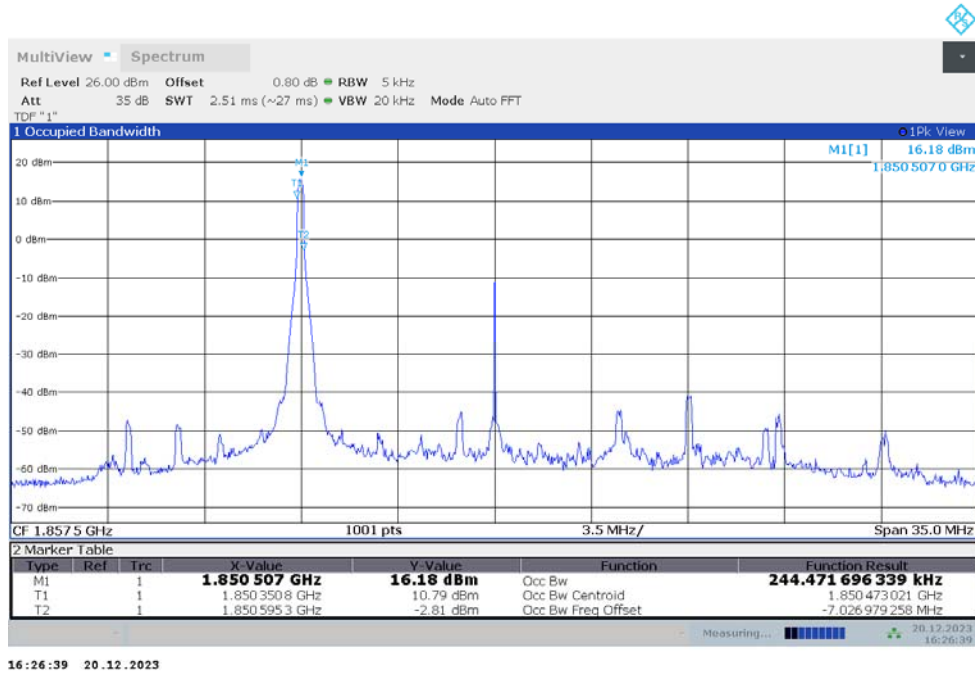
be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

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

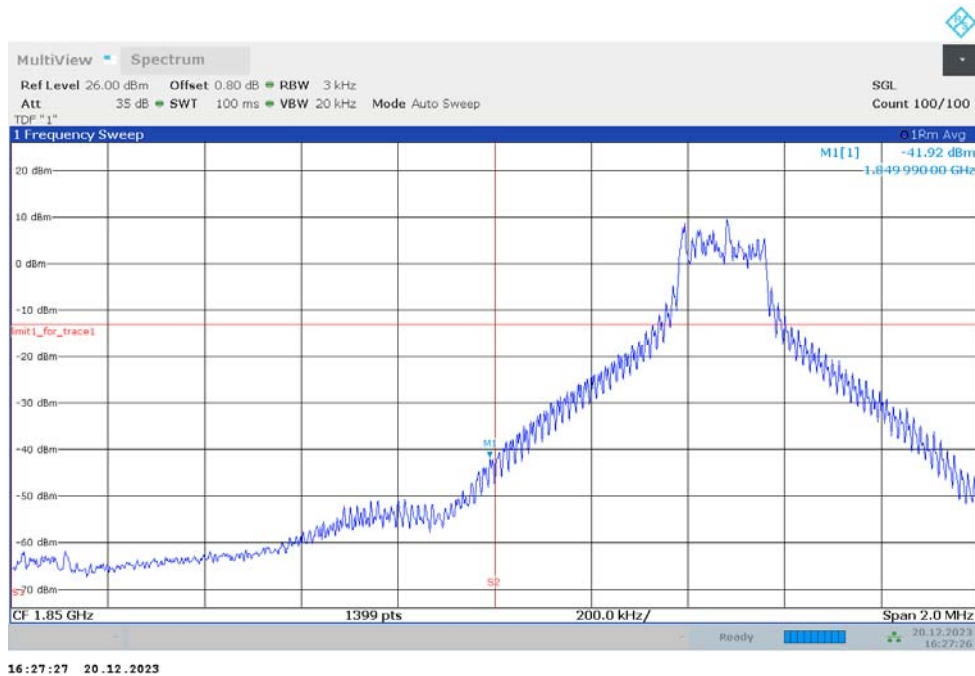
### A.6.2 Measurement result

NR n2

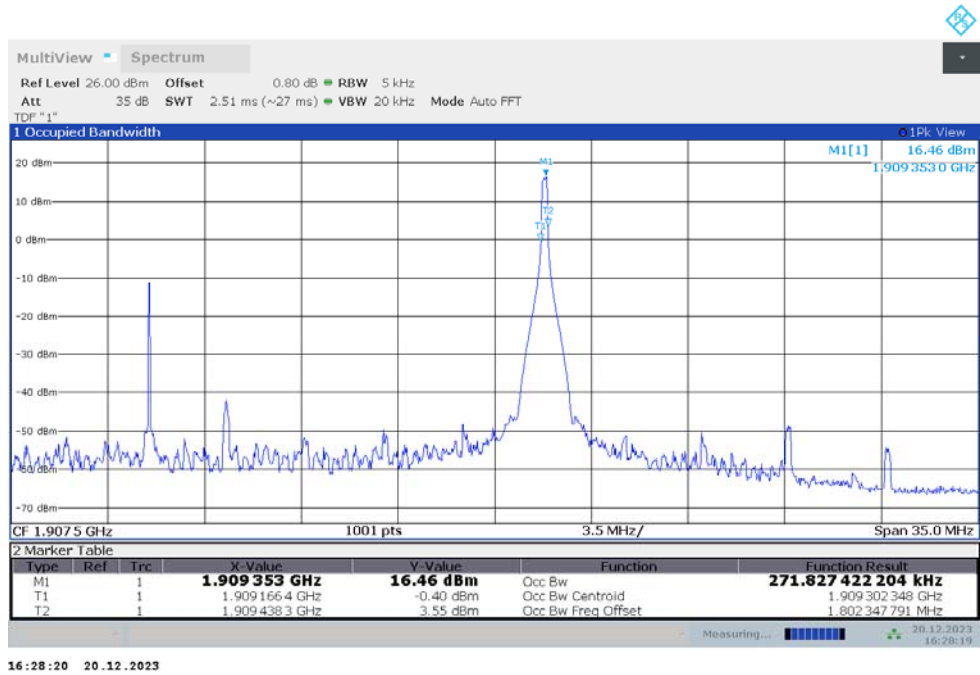
OBW: 1RB-LOW\_offset



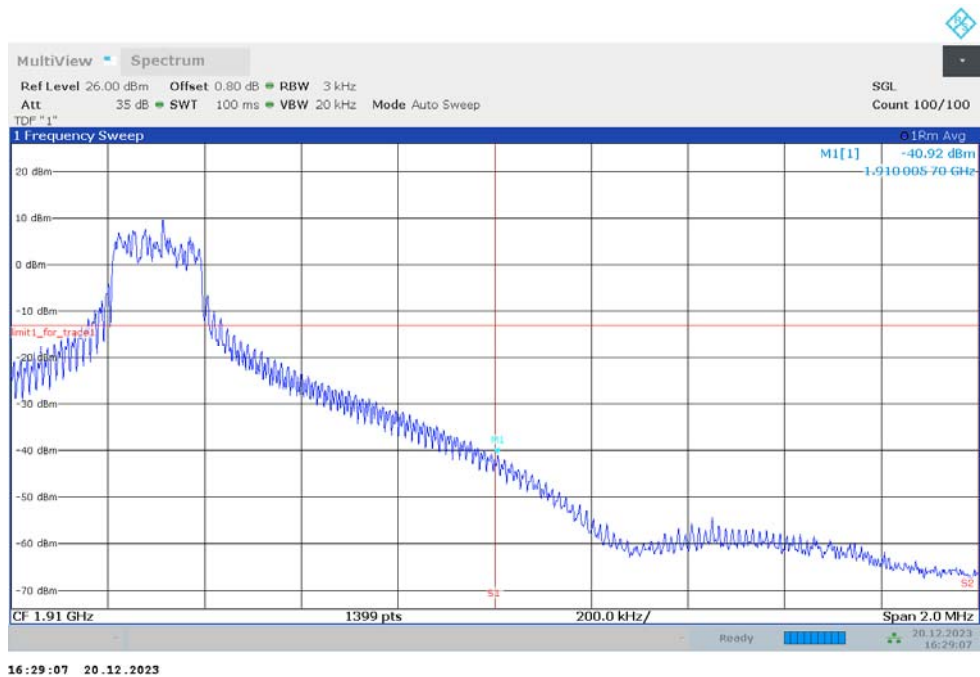
### LOW BAND EDGE BLOCK-1RB-LOW\_offset



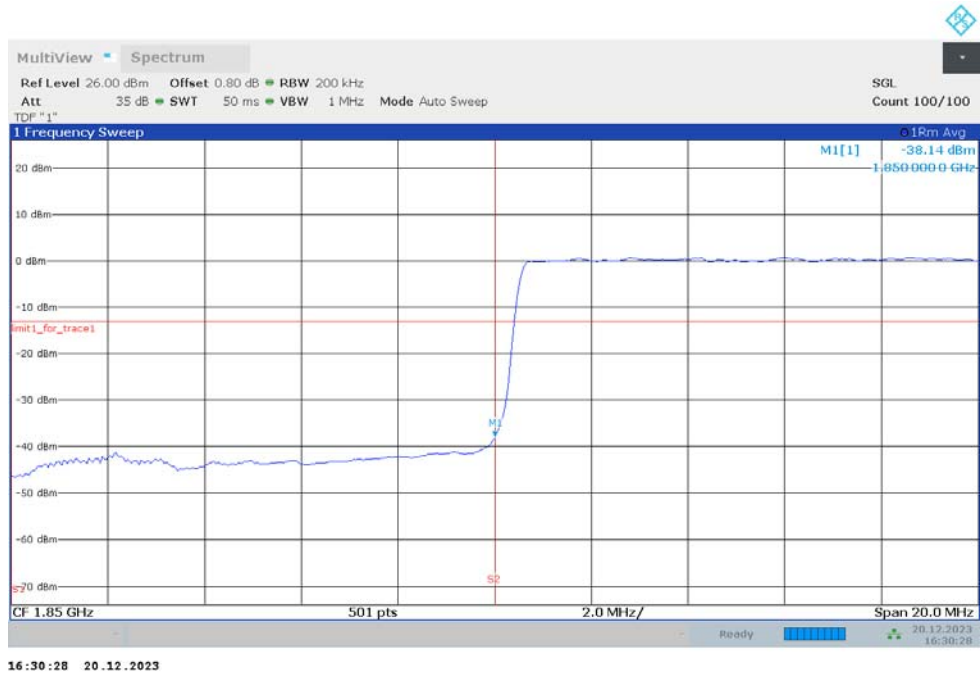
### OBW: 1RB-HIGH\_offset



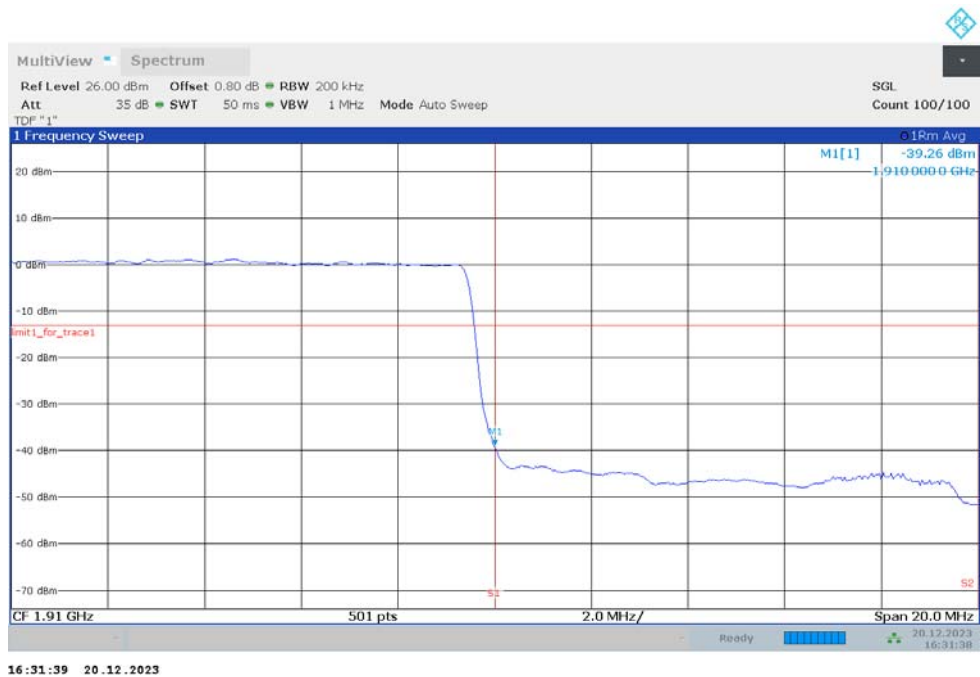
### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



**LOW BAND EDGE BLOCK-40M-100%RB**



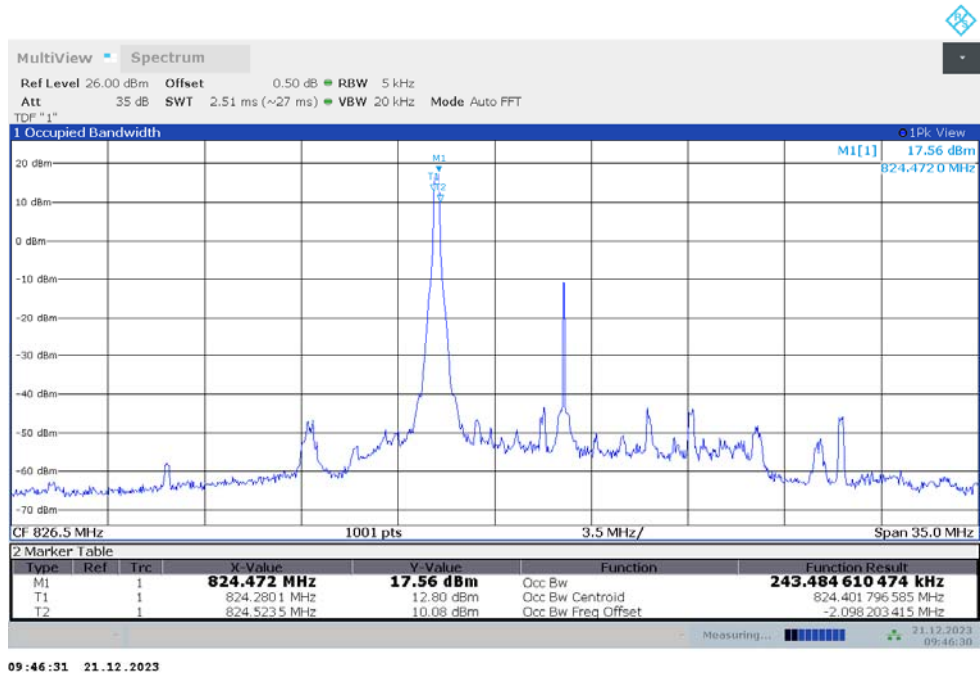
**HIGH BAND EDGE BLOCK-40M-100%RB**



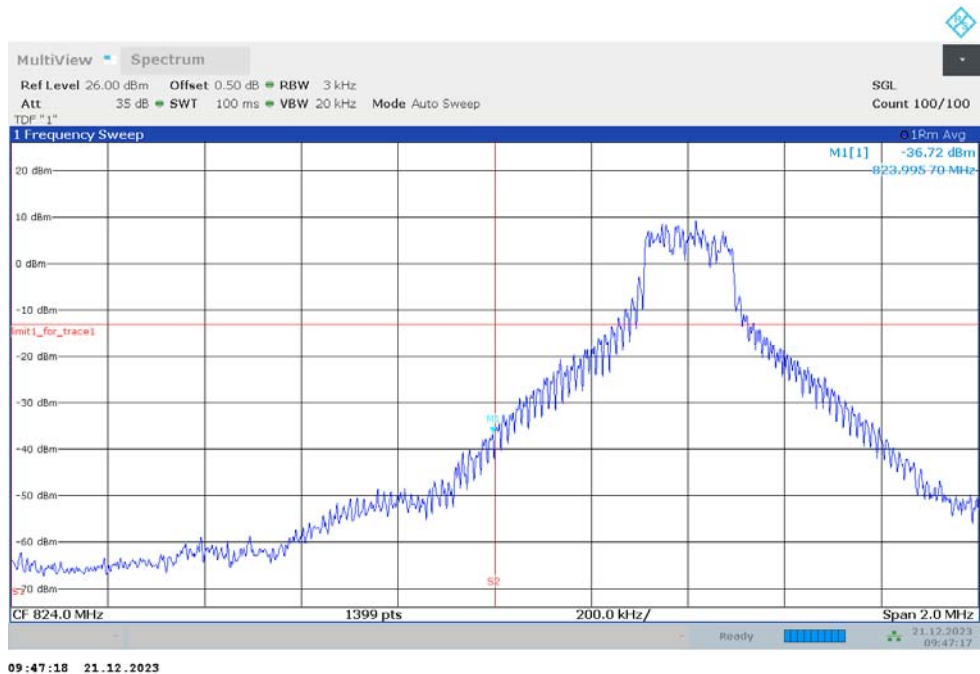


NR n5

OBW: 1RB-LOW\_offset

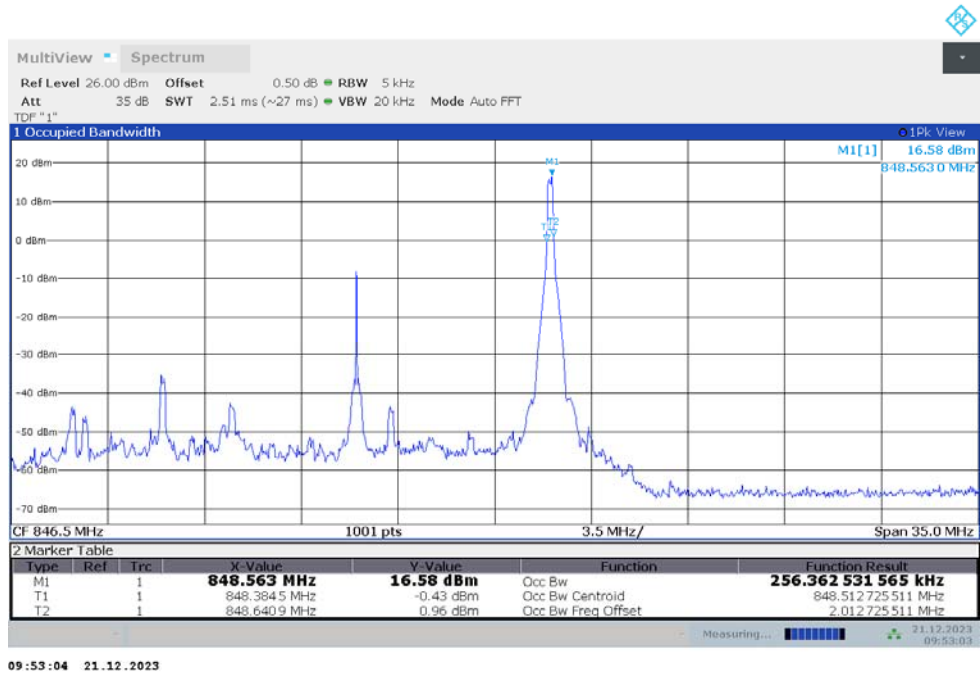


LOW BAND EDGE BLOCK-1RB-LOW\_offset

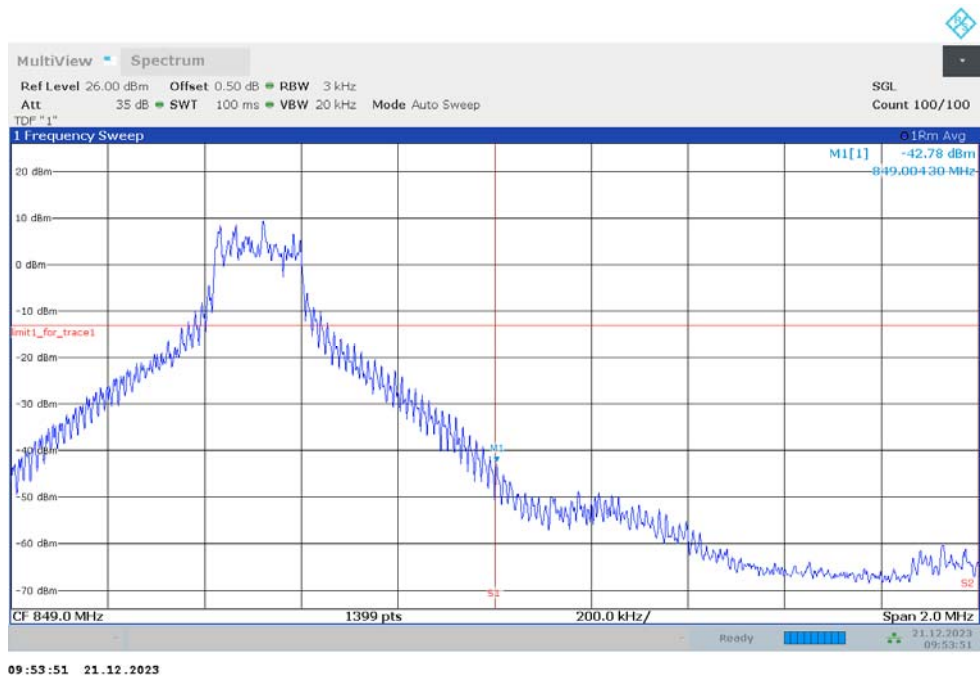




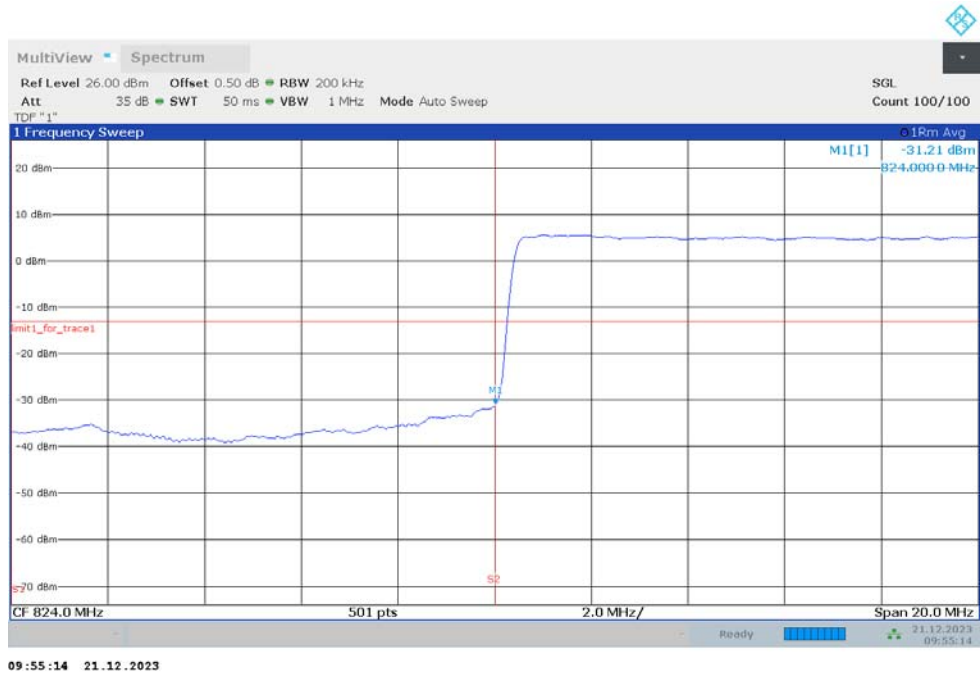
### OBW: 1RB-HIGH\_offset



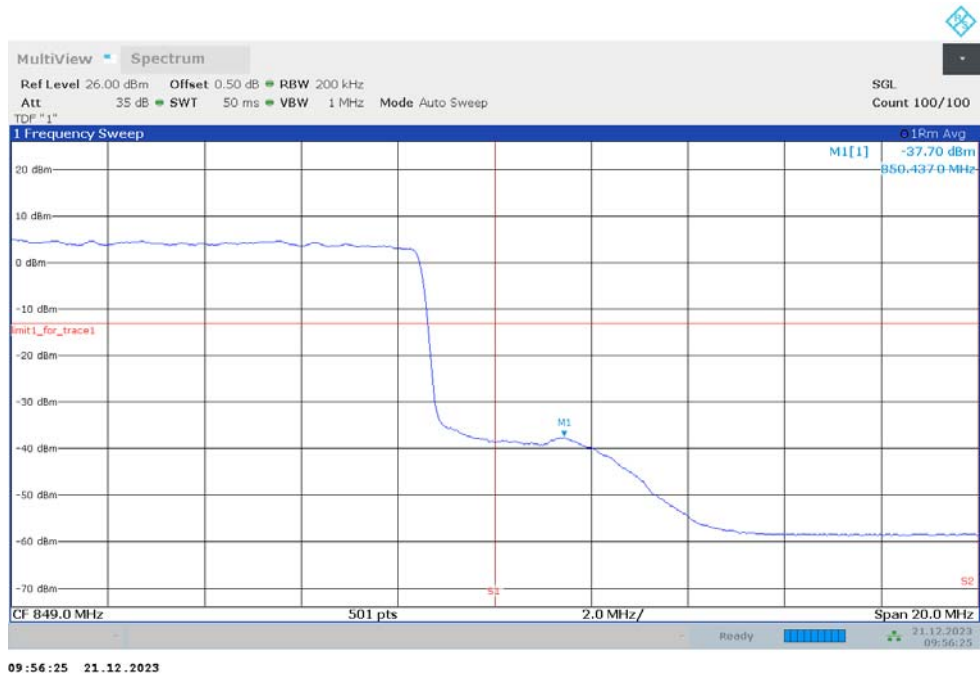
### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



### LOW BAND EDGE BLOCK-20M-100%RB

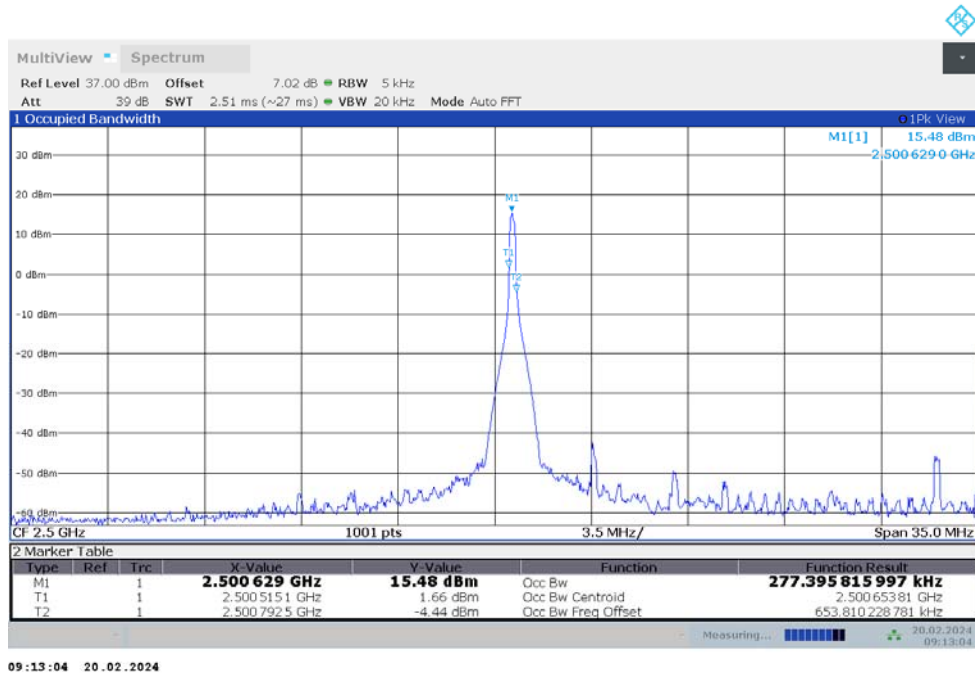


### HIGH BAND EDGE BLOCK-20M-100%RB

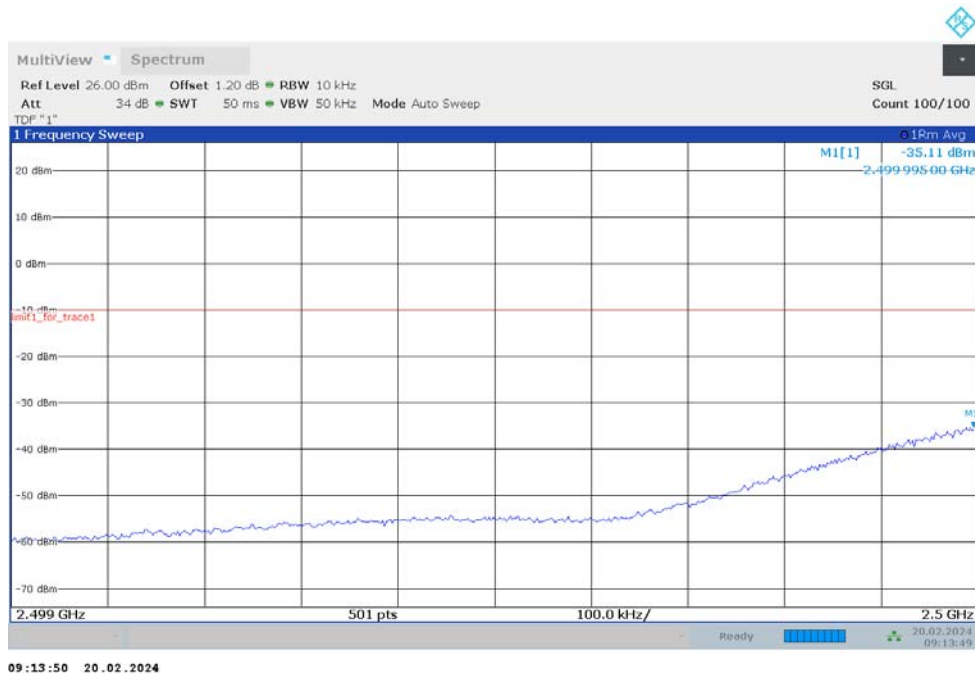


NR n7

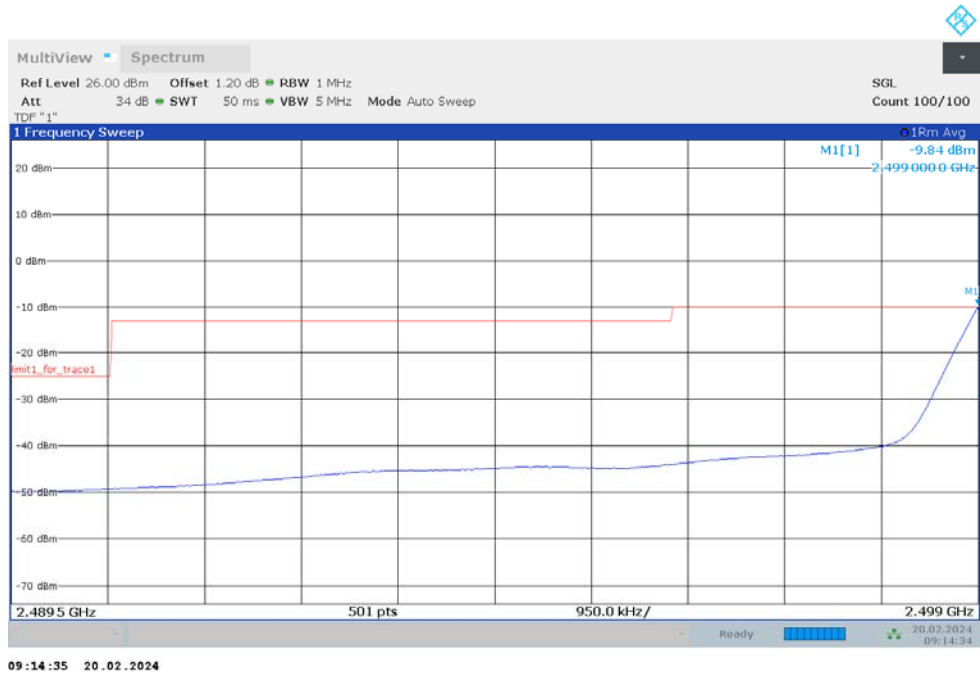
OBW: 1RB-LOW\_offset



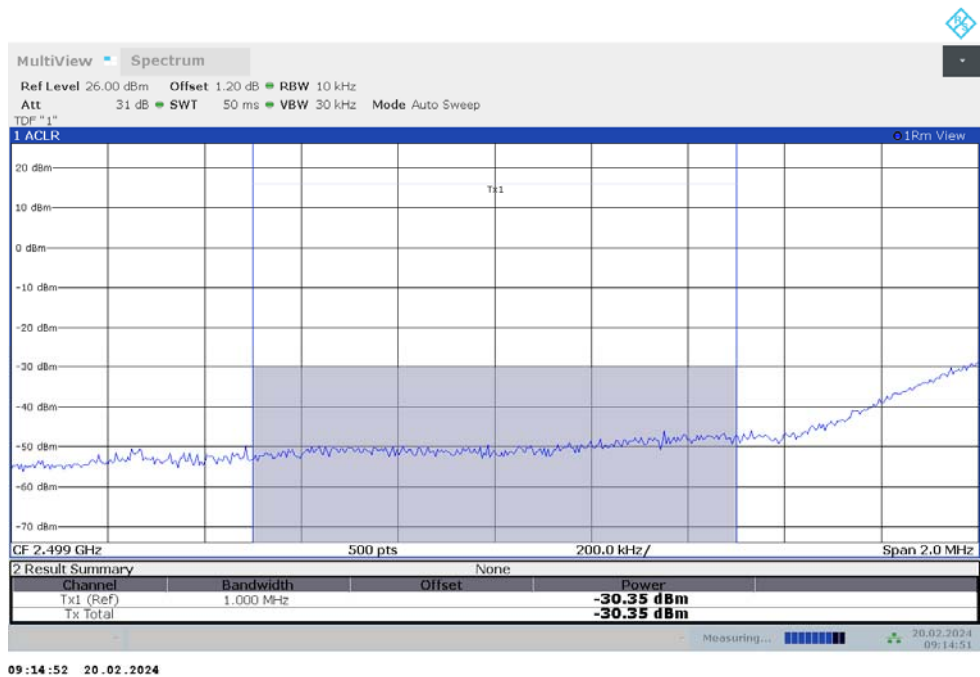
LOW BAND EDGE BLOCK-1RB-LOW\_offset



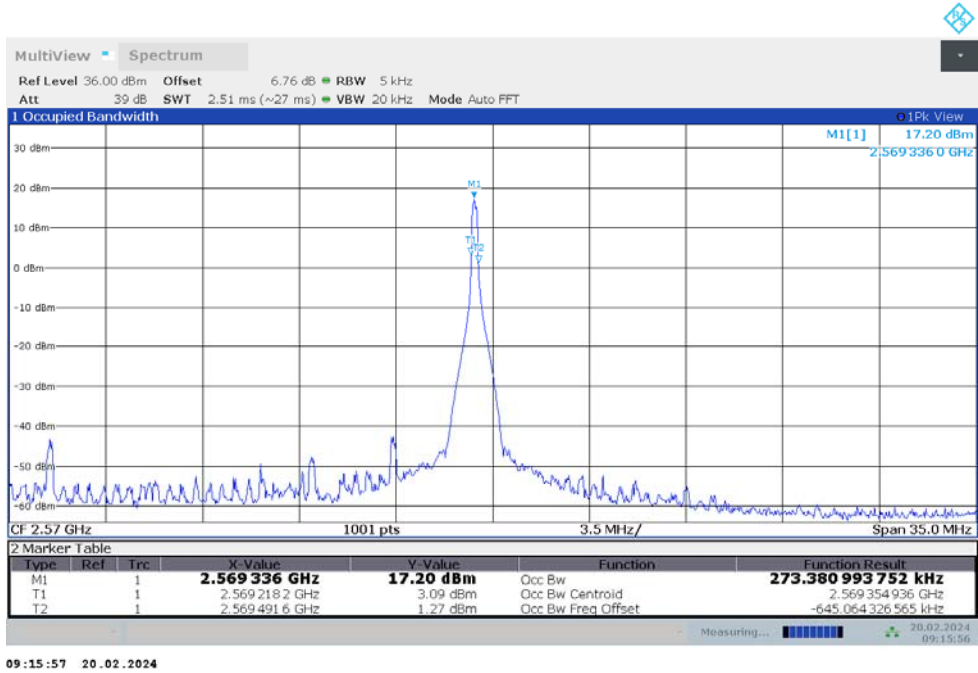
### LOW BAND EDGE BLOCK-1RB-LOW\_offset



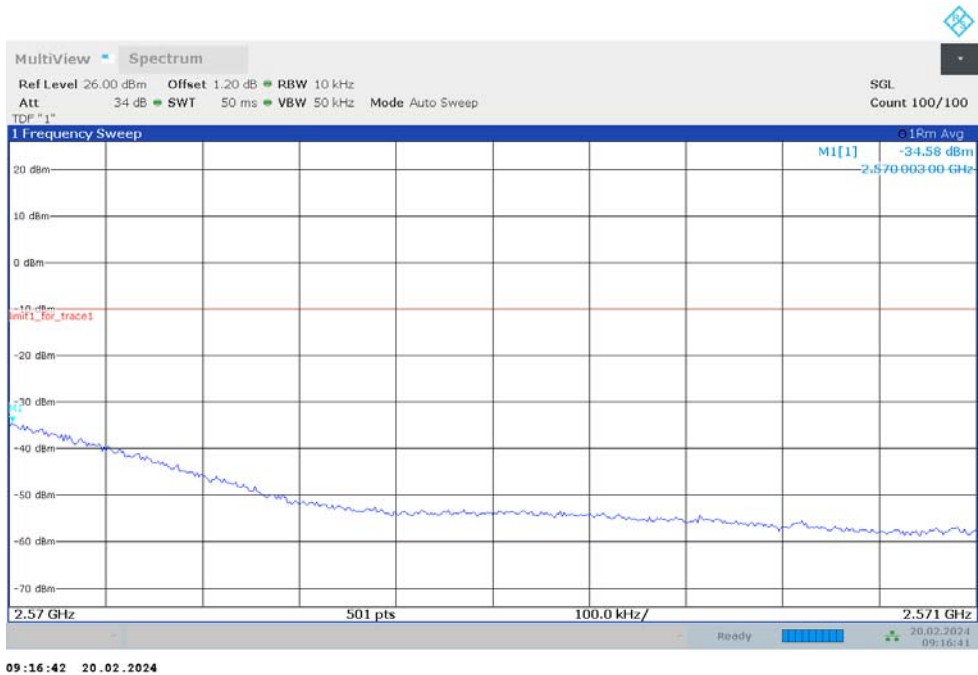
### Channel power



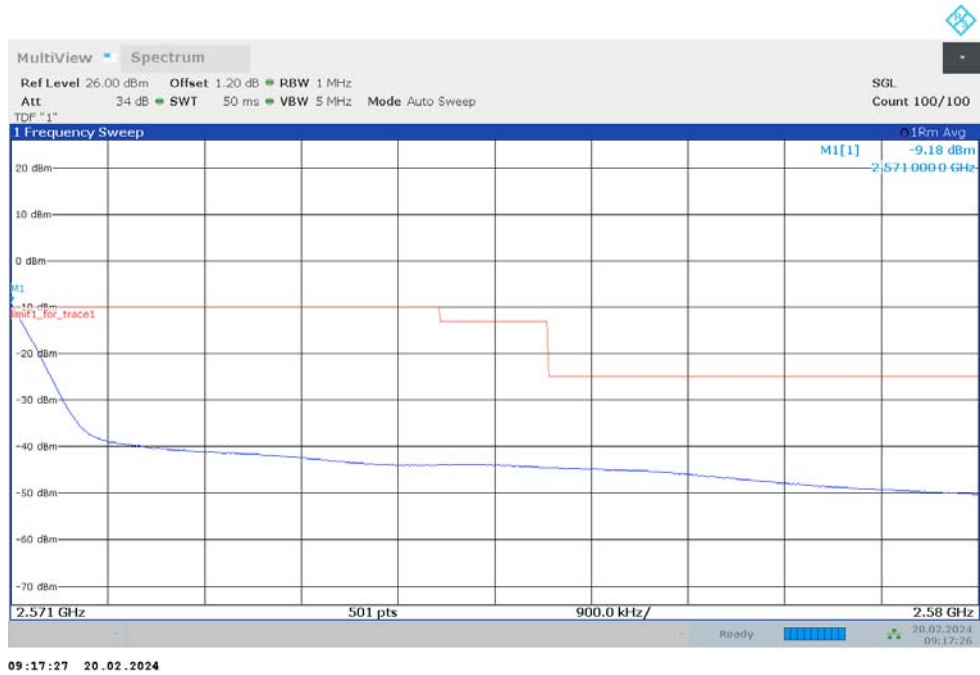
### OBW: 1RB-HIGH\_offset



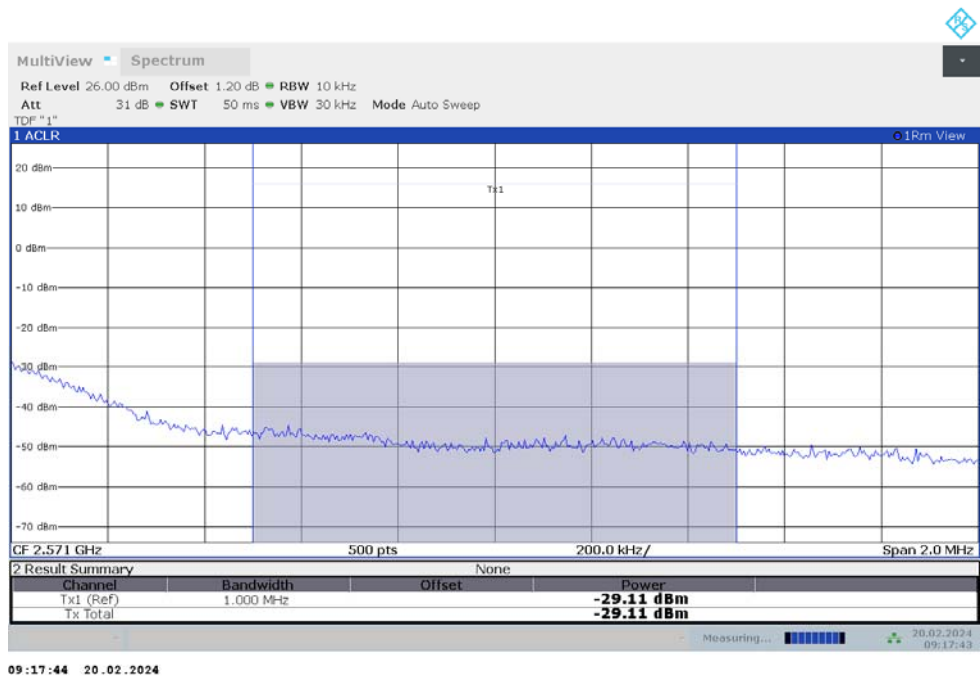
### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



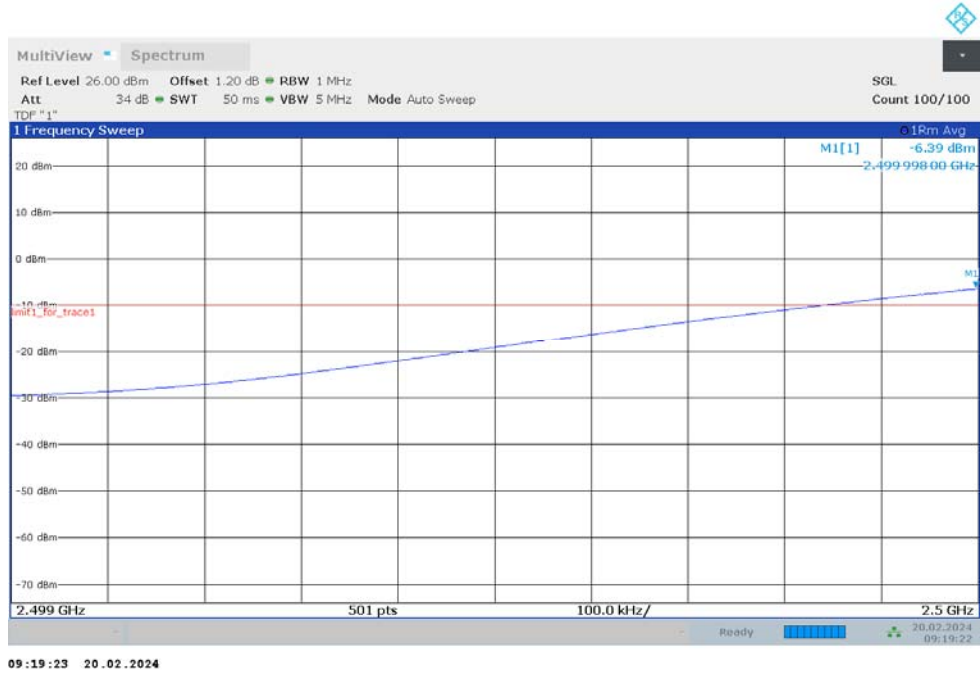
### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



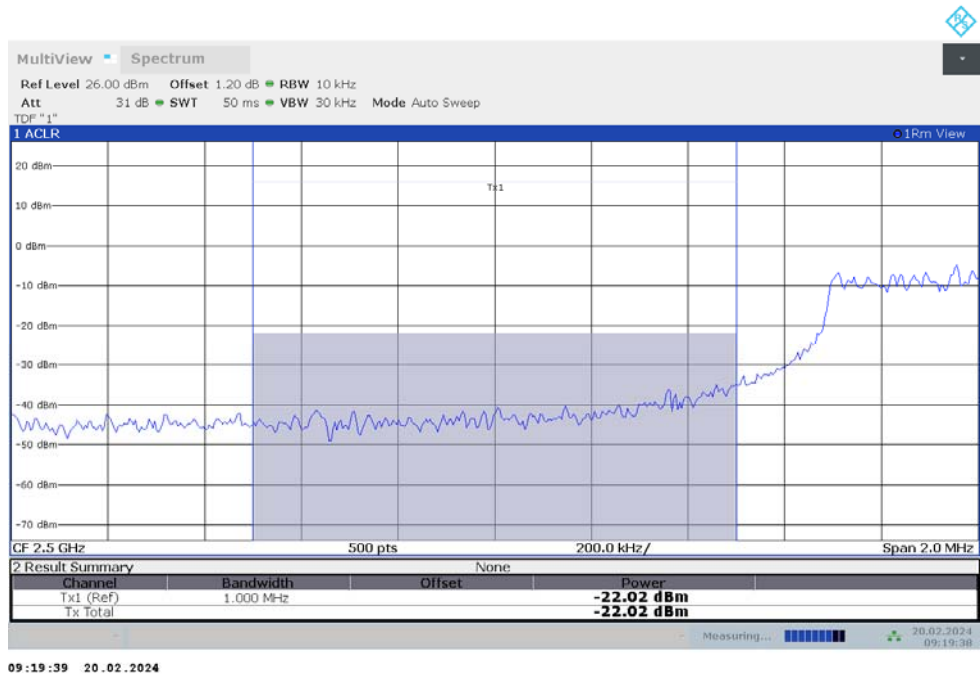
### Channel power



### LOW BAND EDGE BLOCK-50M-100%RB

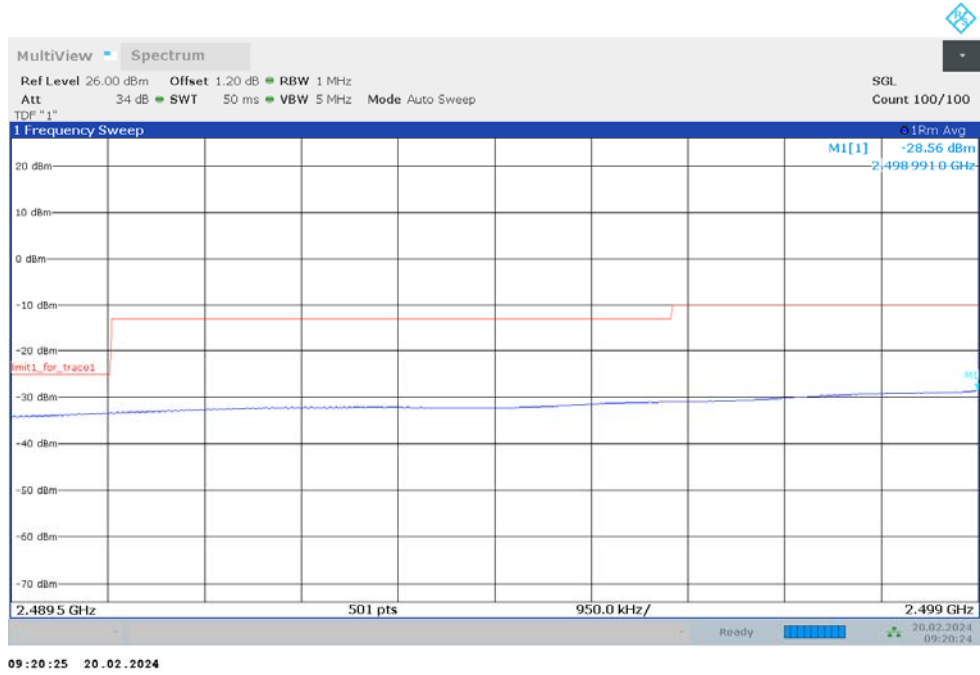


### Channel power

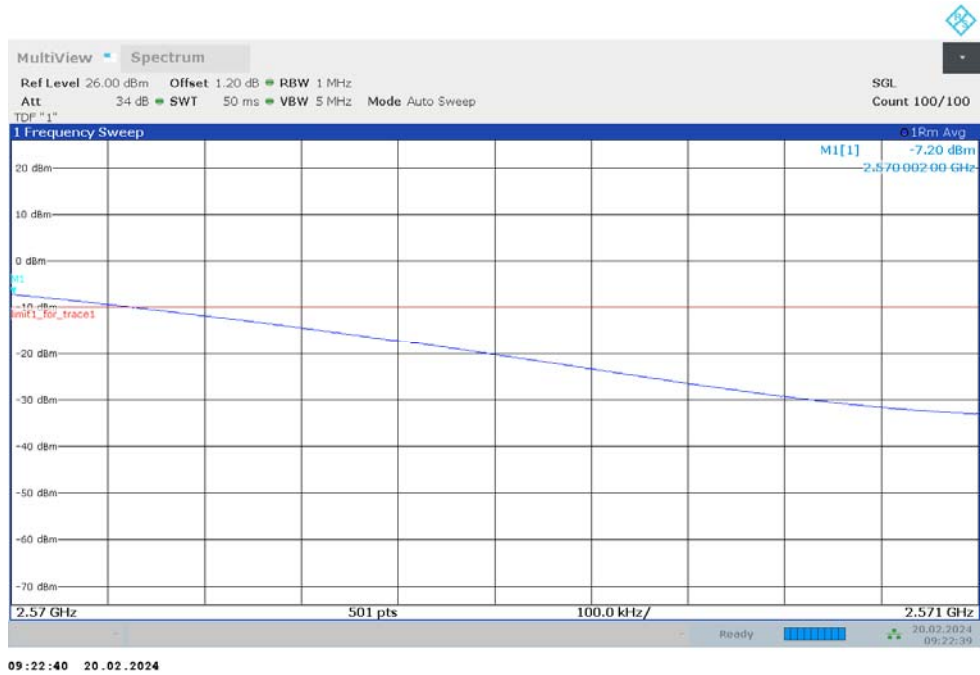




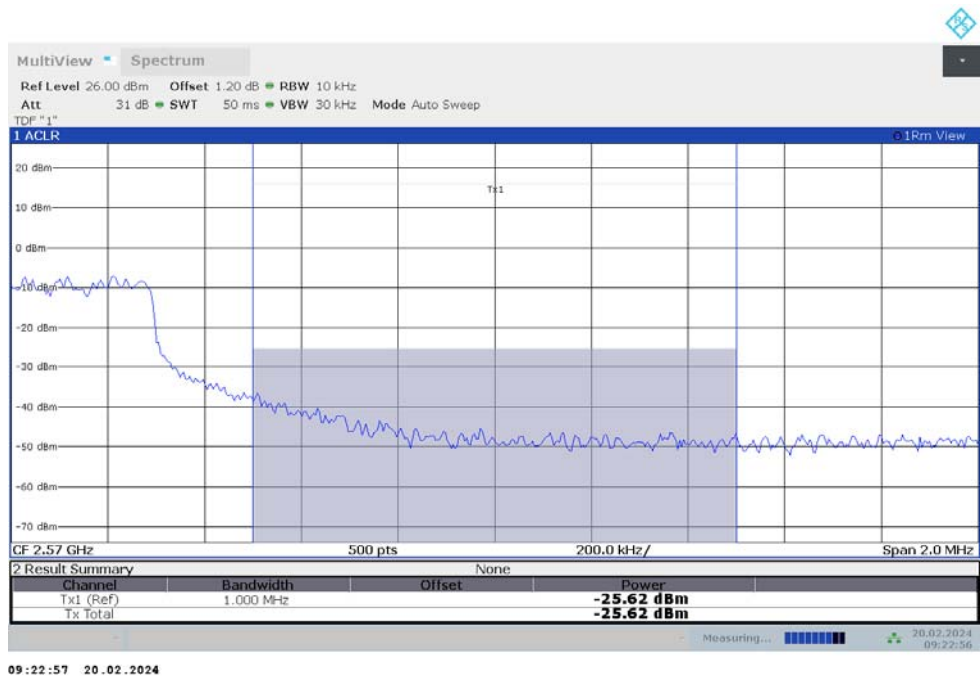
### LOW BAND EDGE BLOCK-50M-100%RB



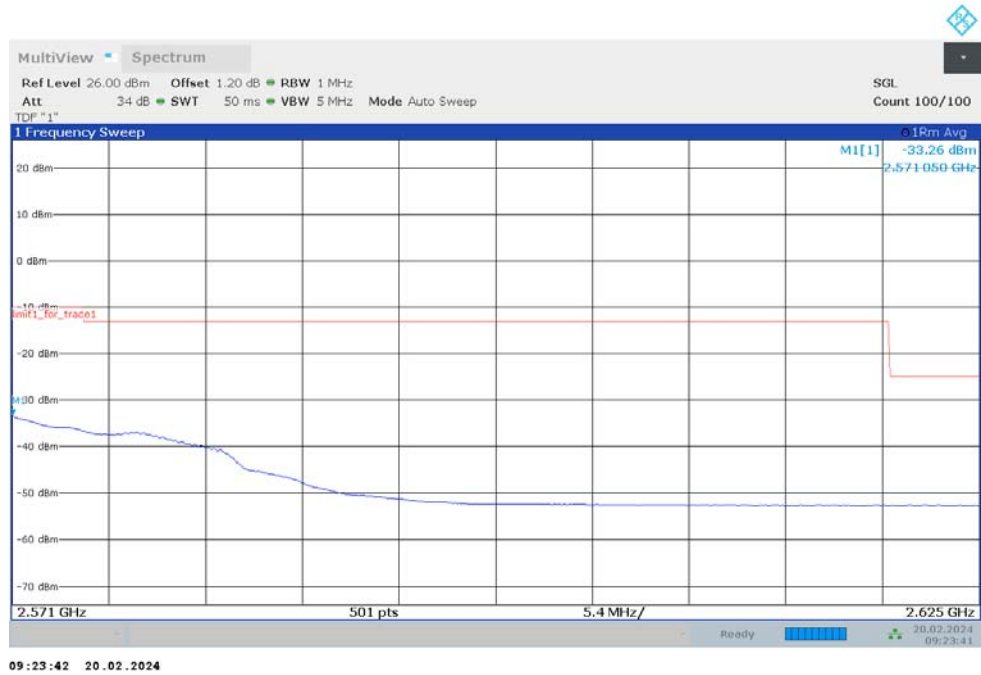
### HIGH BAND EDGE BLOCK-50M-100%RB



### Channel power

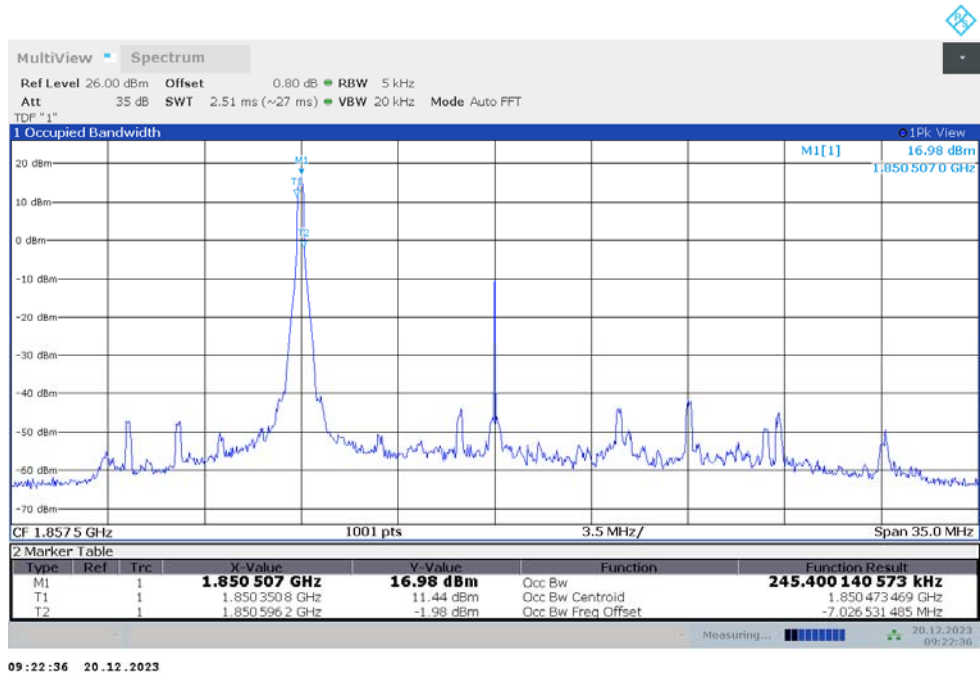


### HIGH BAND EDGE BLOCK-50M-100%RB

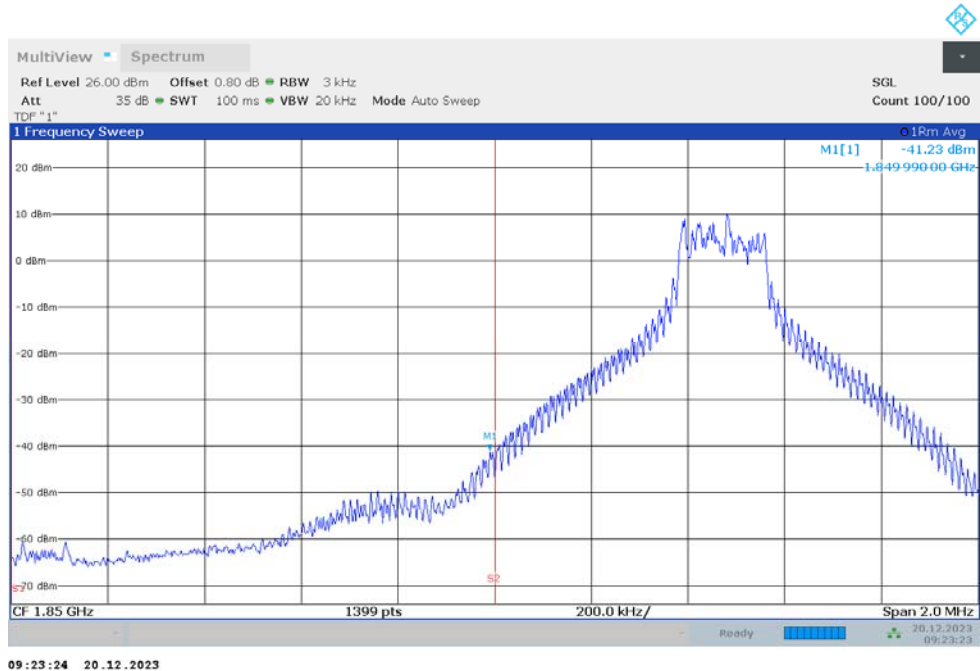


NR n25

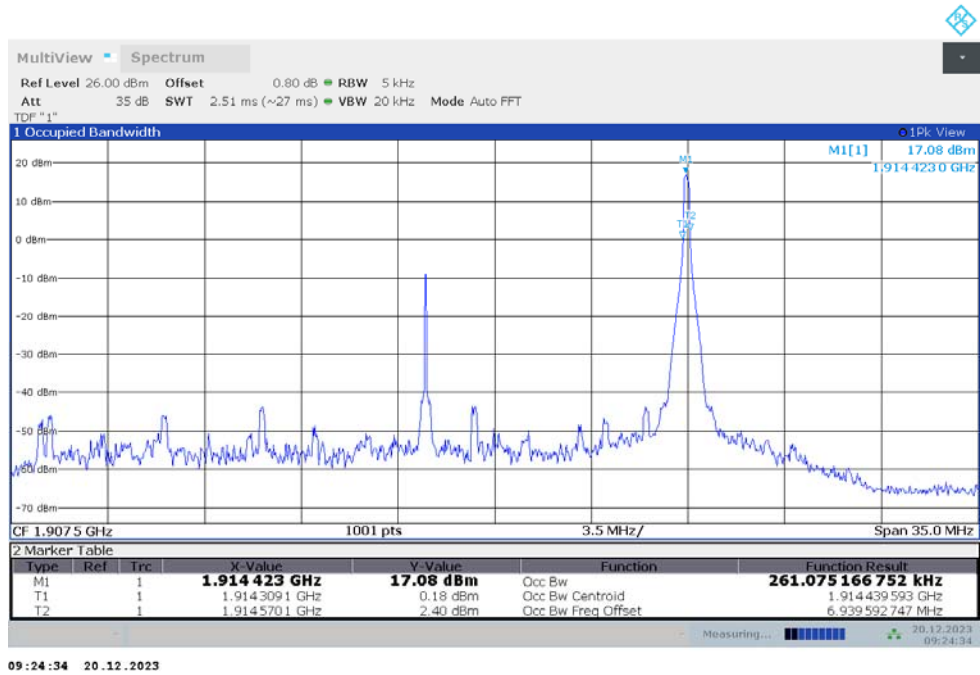
OBW: 1RB-LOW\_offset



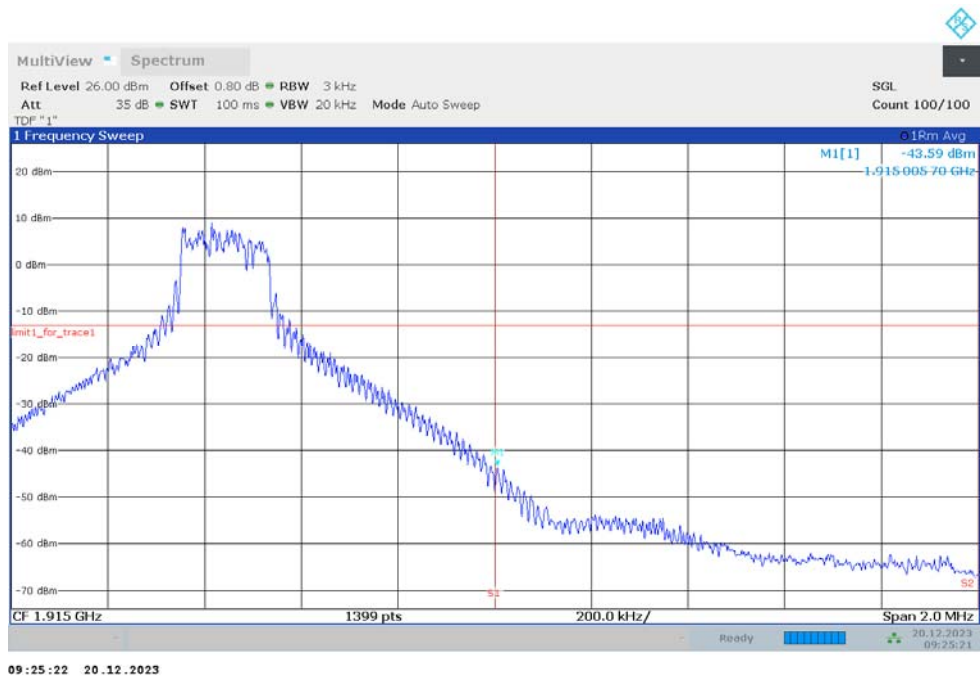
LOW BAND EDGE BLOCK-1RB-LOW\_offset



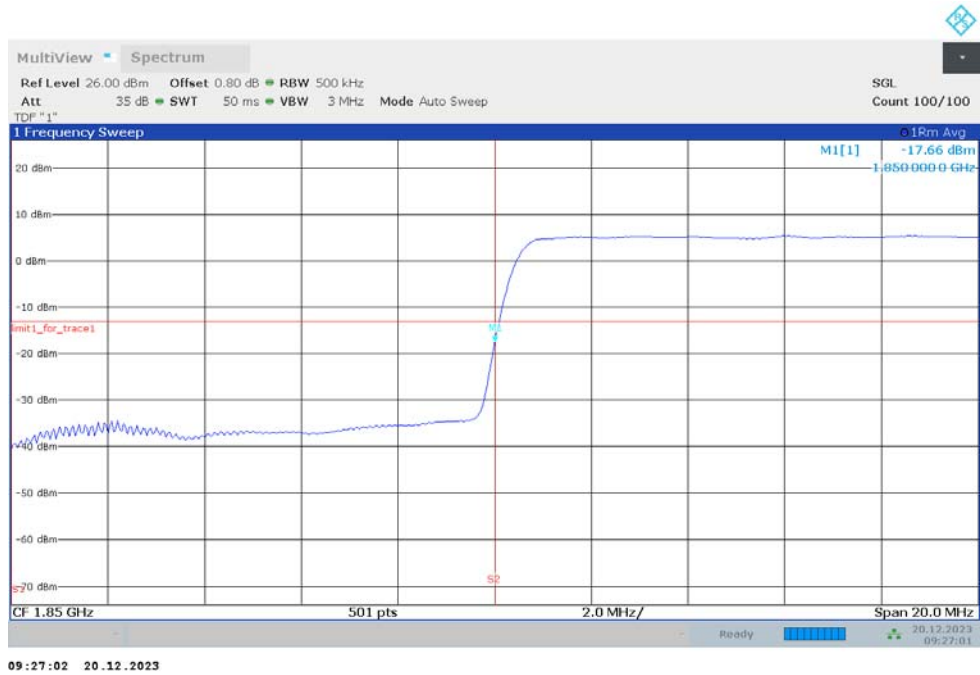
### OBW: 1RB-HIGH\_offset



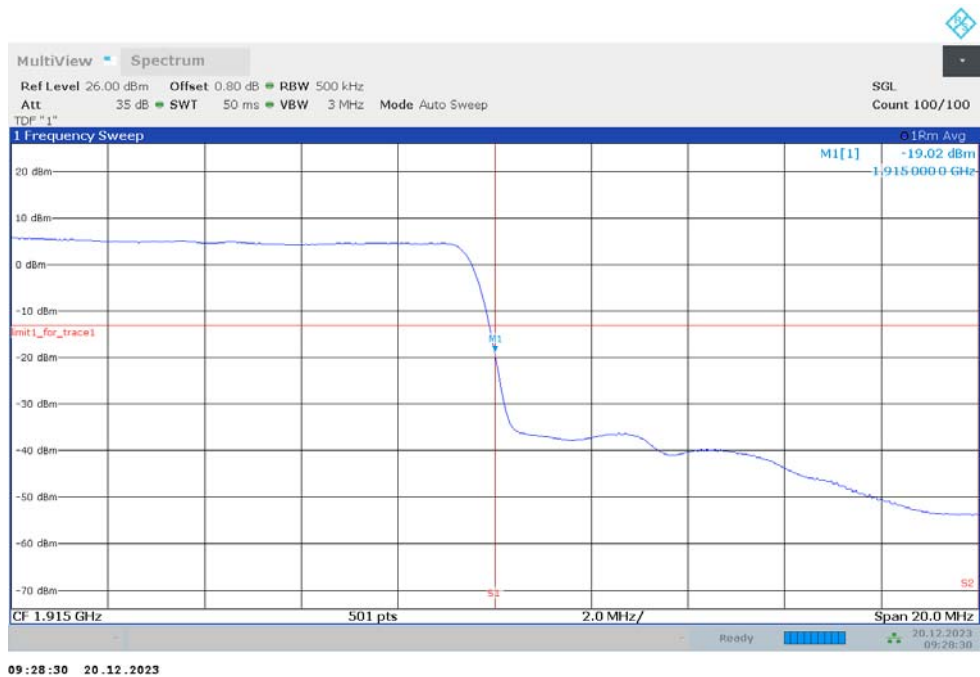
### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



### LOW BAND EDGE BLOCK-40M-100%RB

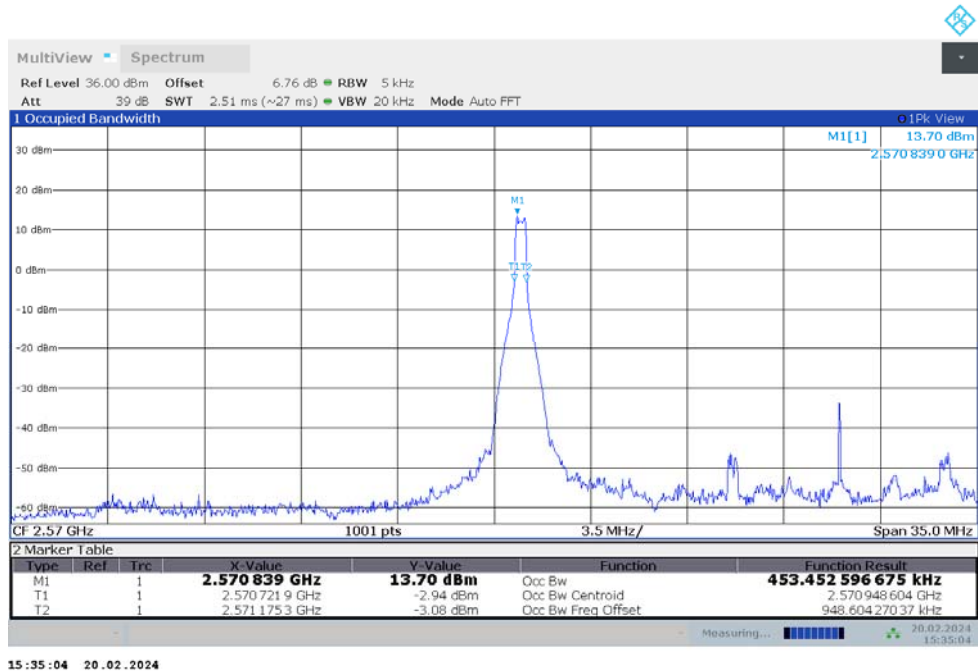


### HIGH BAND EDGE BLOCK-40M-100%RB

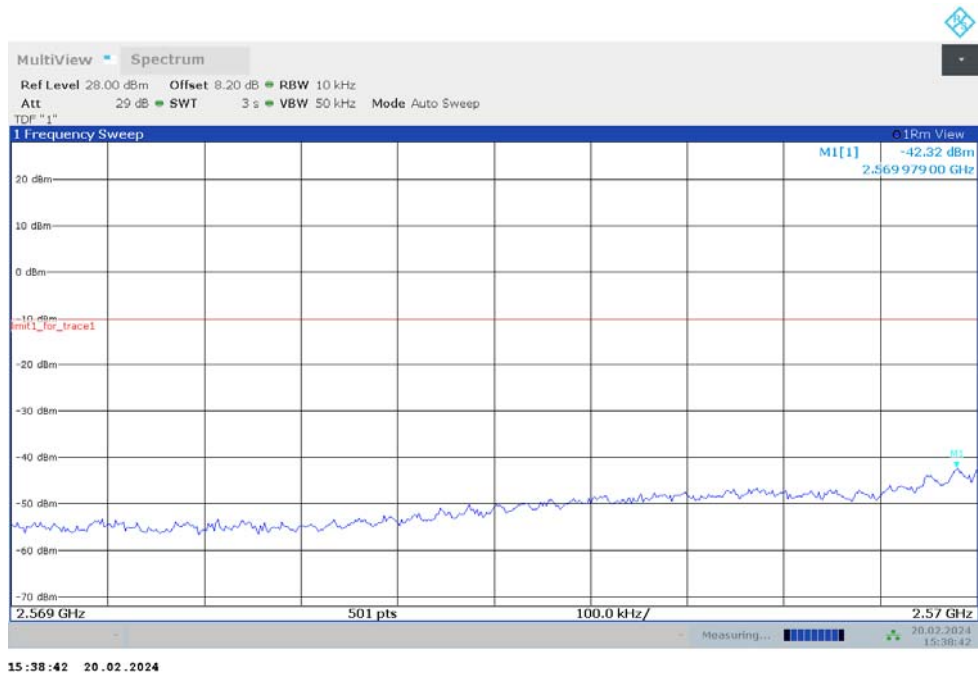


NR n38

OBW: 1RB-LOW\_offset

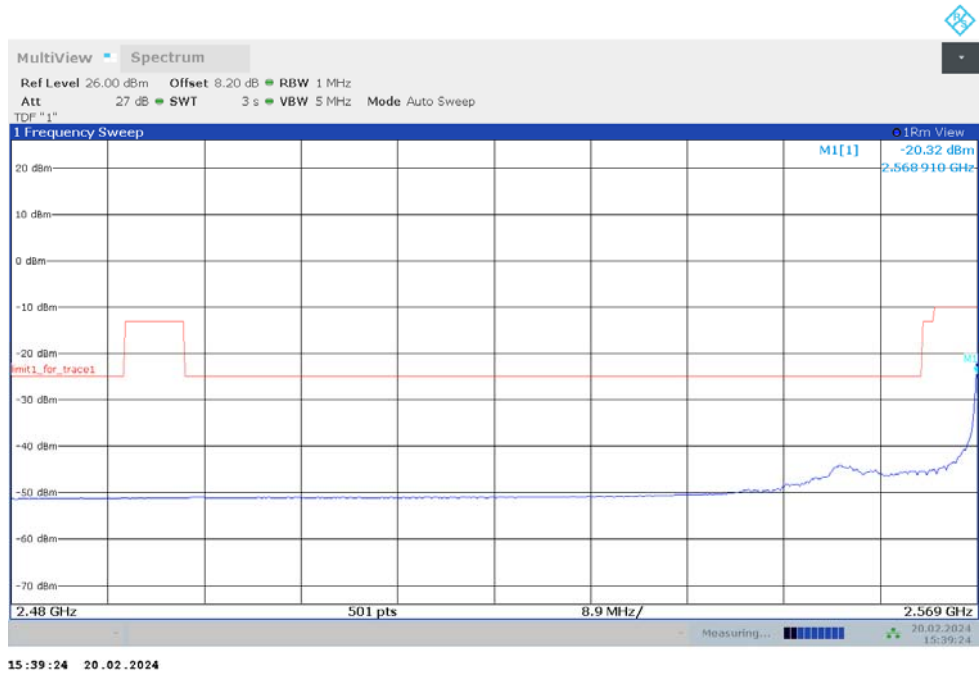


LOW BAND EDGE BLOCK-1RB-LOW\_offset

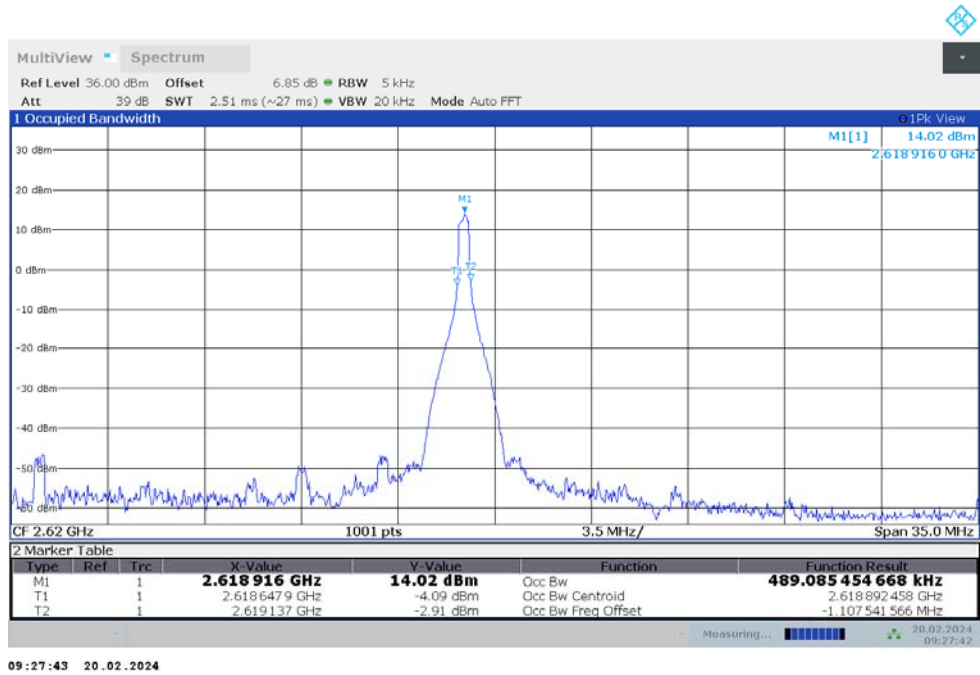




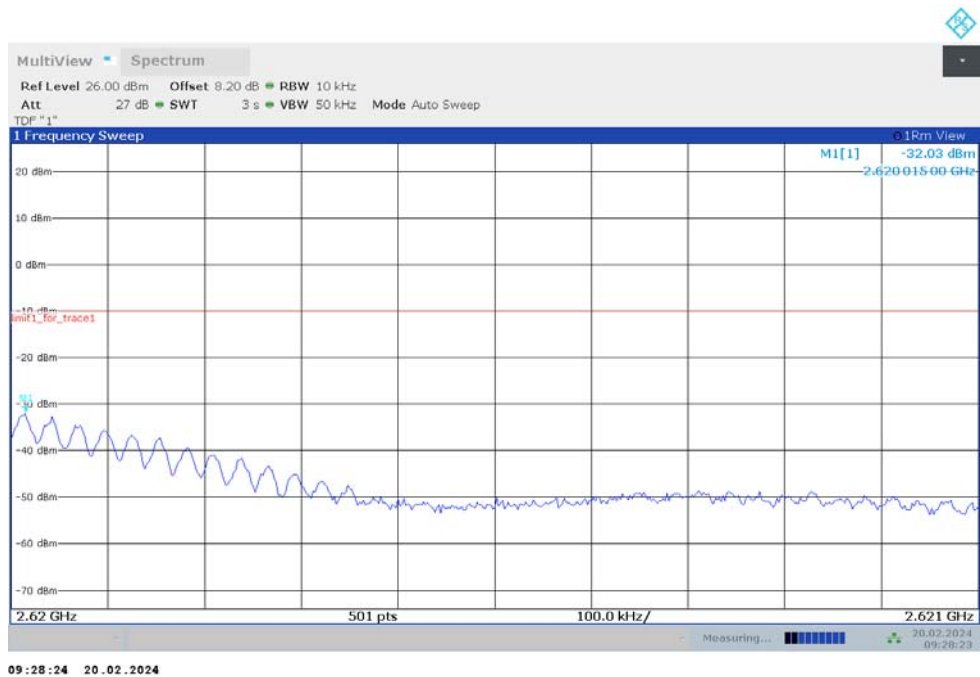
### LOW BAND EDGE BLOCK-1RB-LOW\_offset



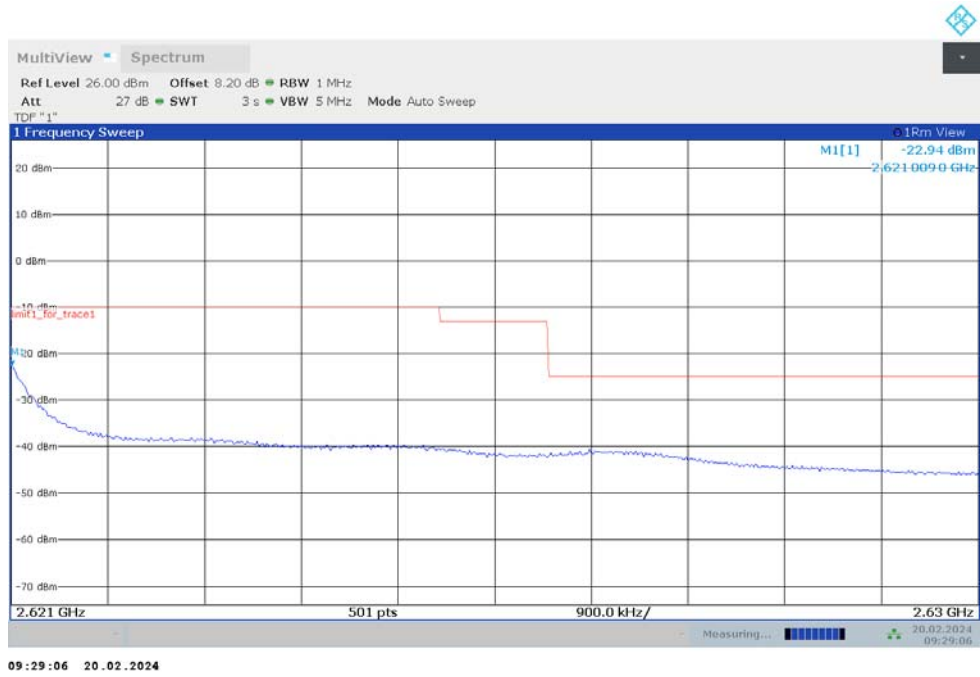
### OBW: 1RB-HIGH\_offset



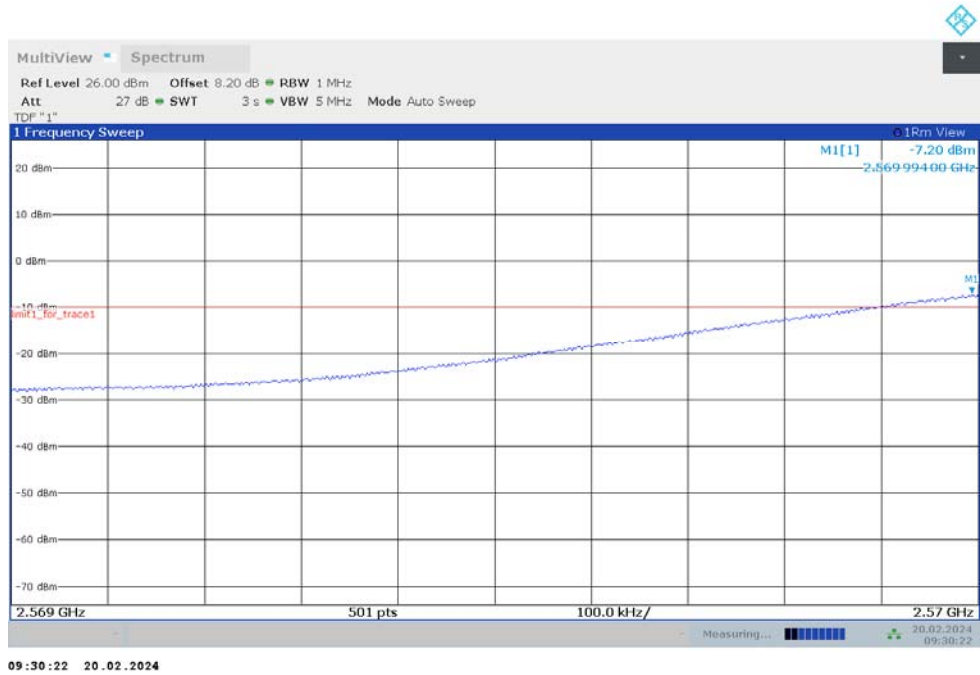
### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



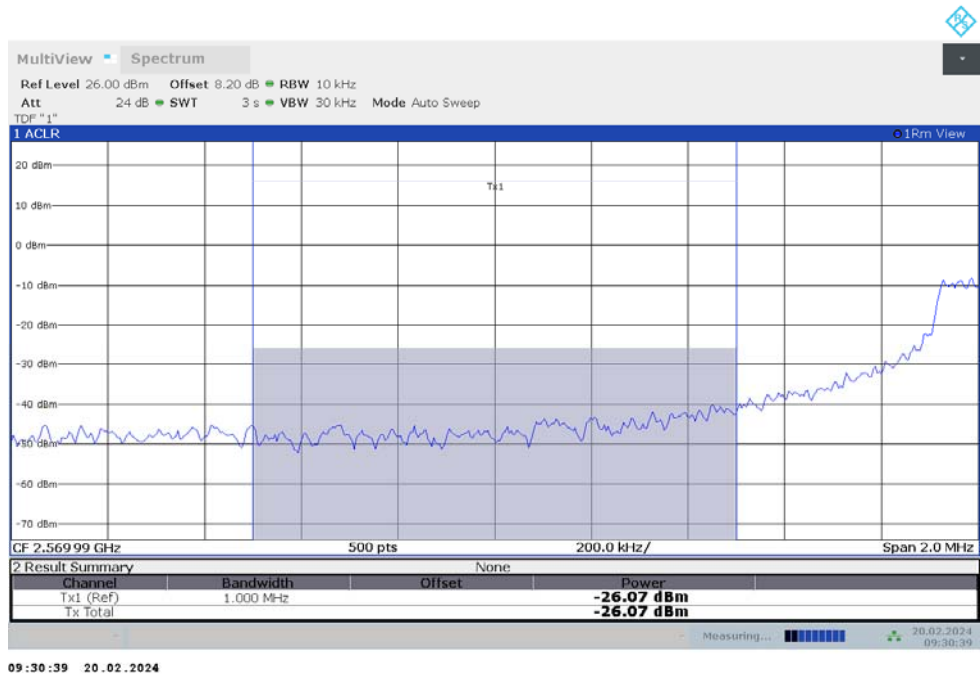
### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



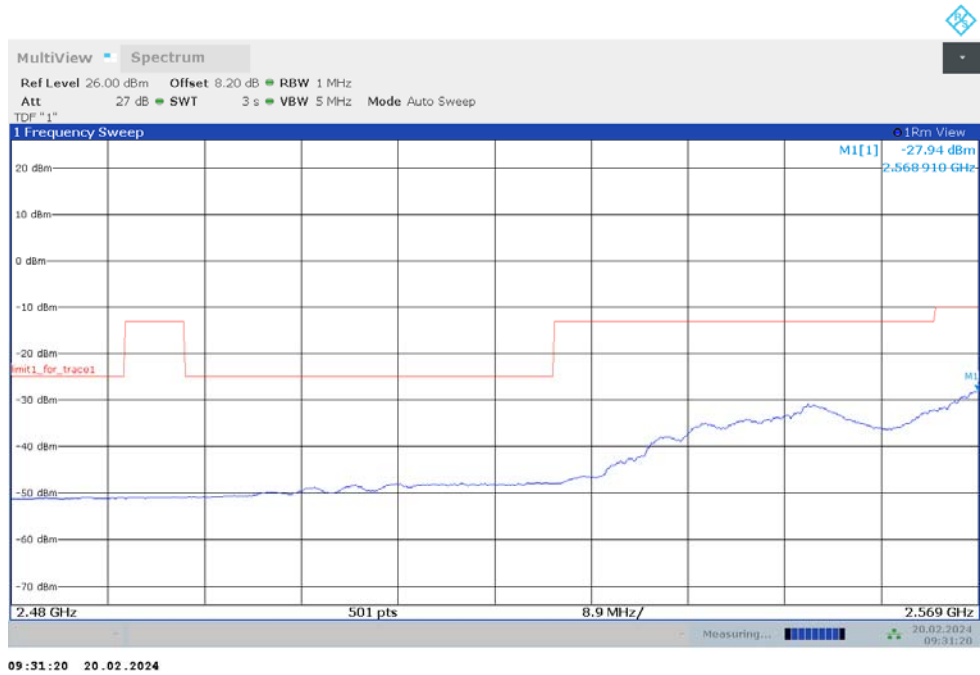
### LOW BAND EDGE BLOCK-40M-100%RB



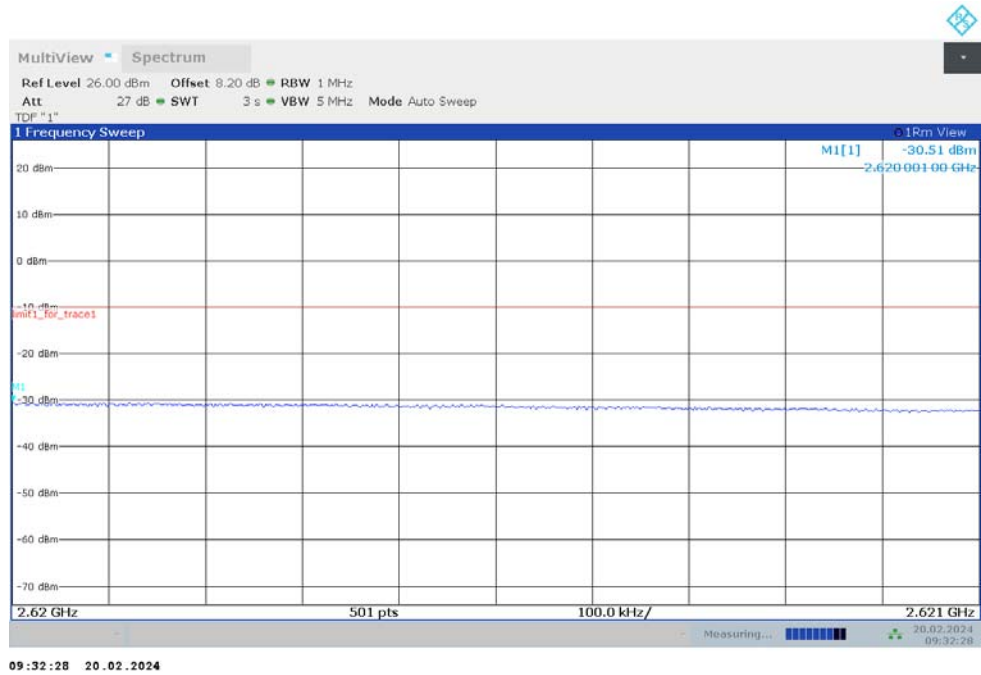
### Channel power



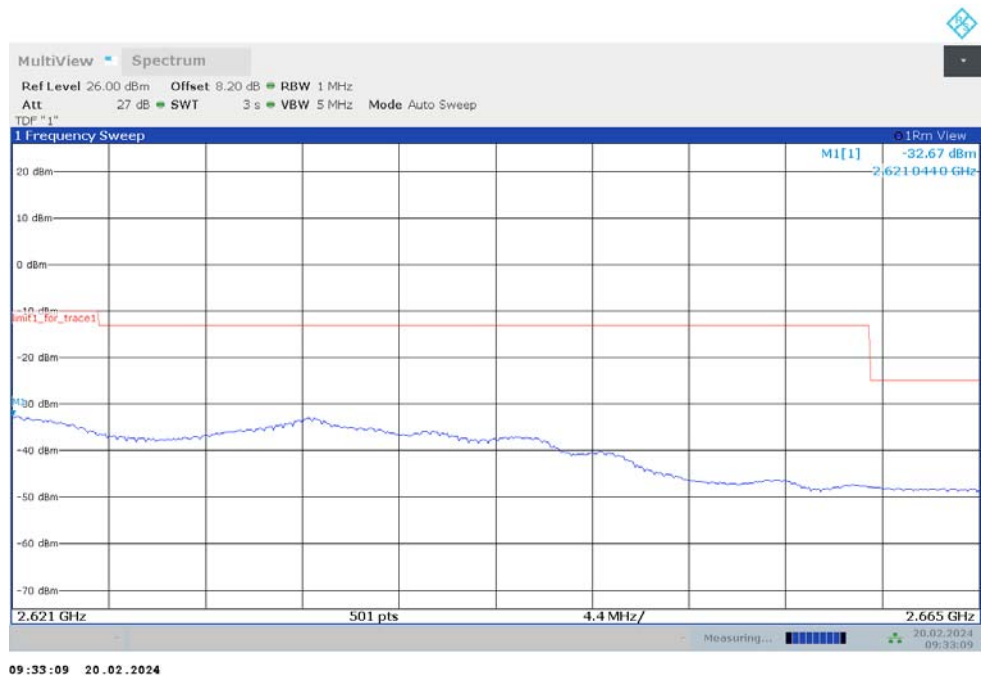
### LOW BAND EDGE BLOCK-40M-100%RB



### HIGH BAND EDGE BLOCK-40M-100%RB

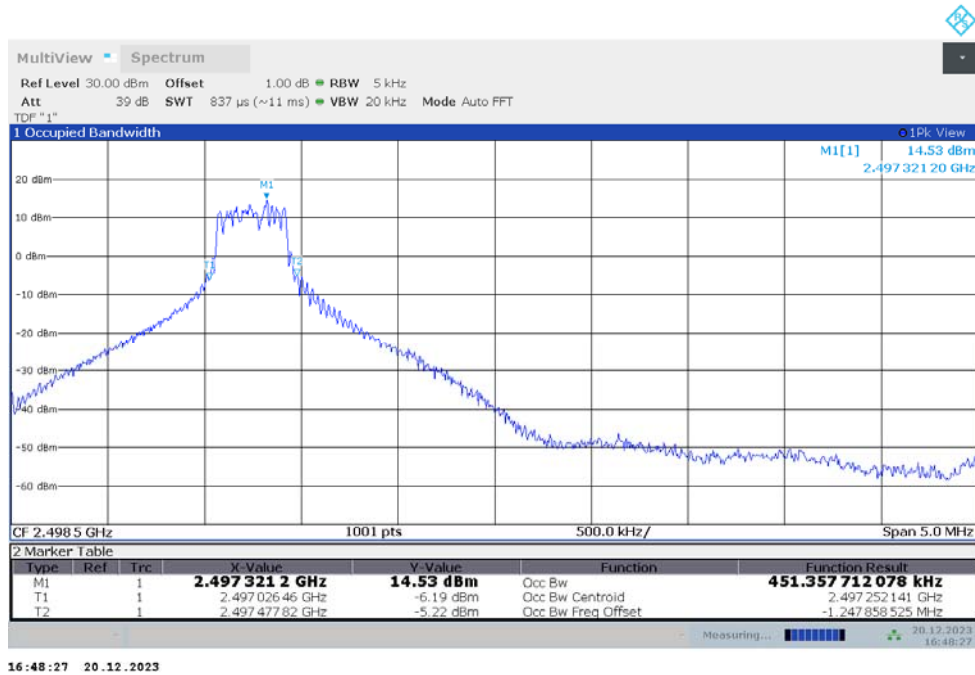


### HIGH BAND EDGE BLOCK-40M-100%RB

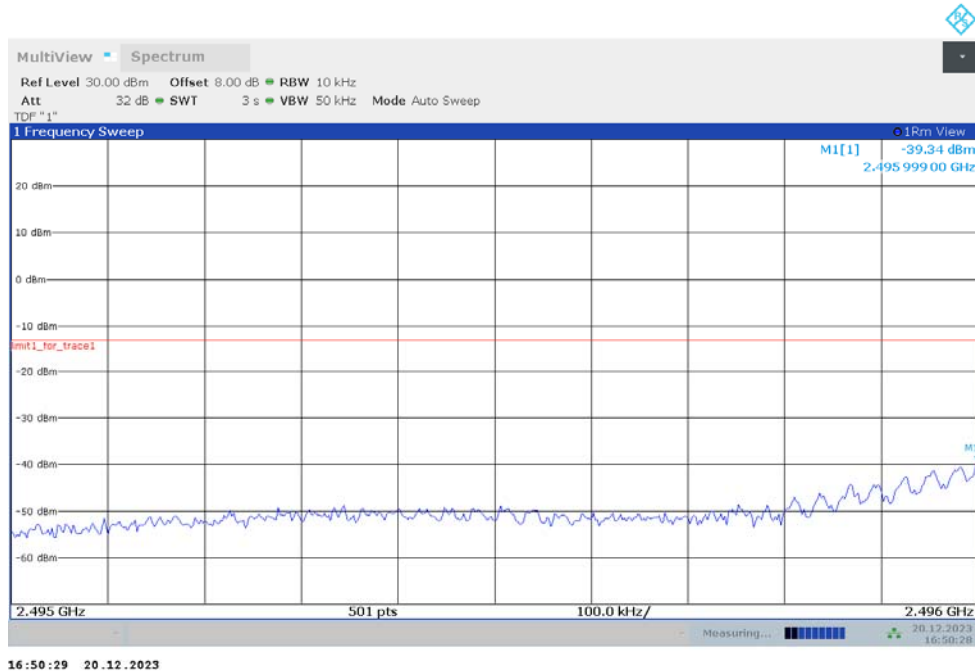


NR n41

OBW: 1RB-LOW\_offset

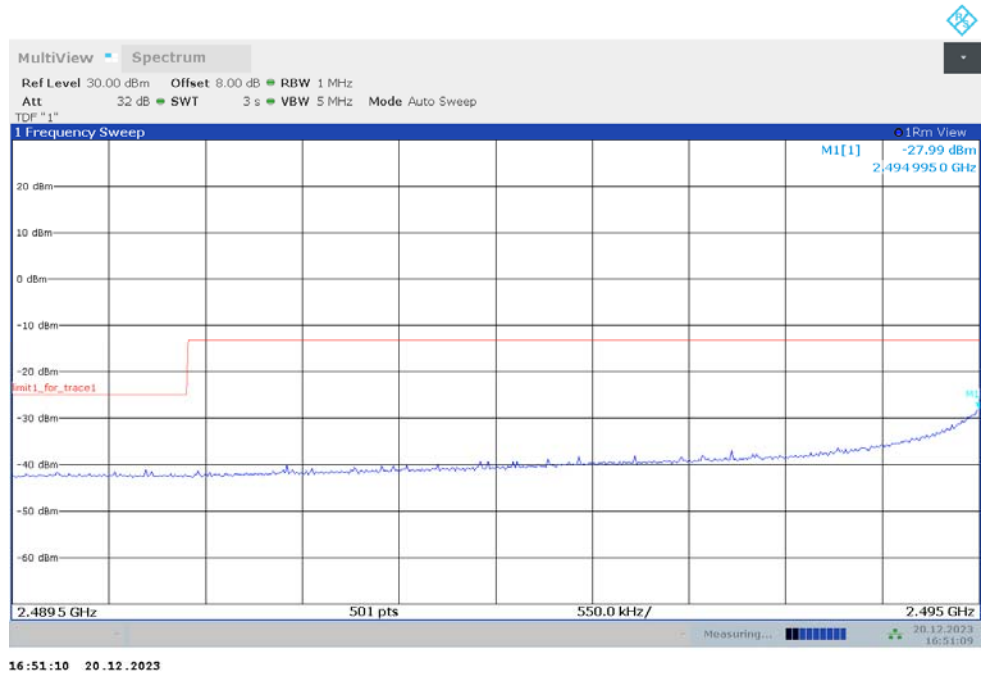


LOW BAND EDGE BLOCK-1RB-LOW\_offset

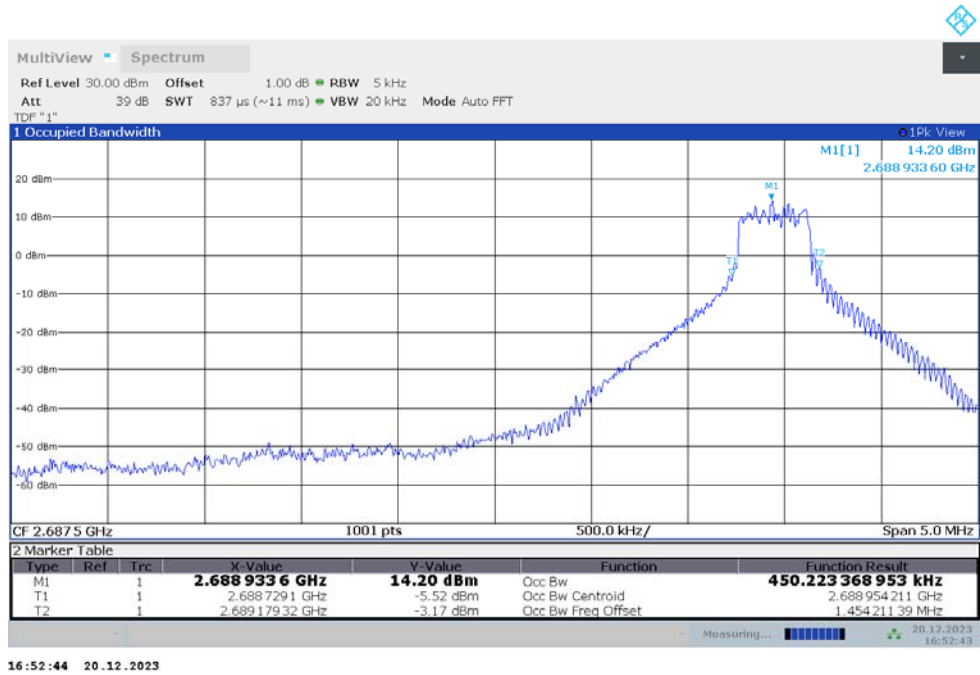




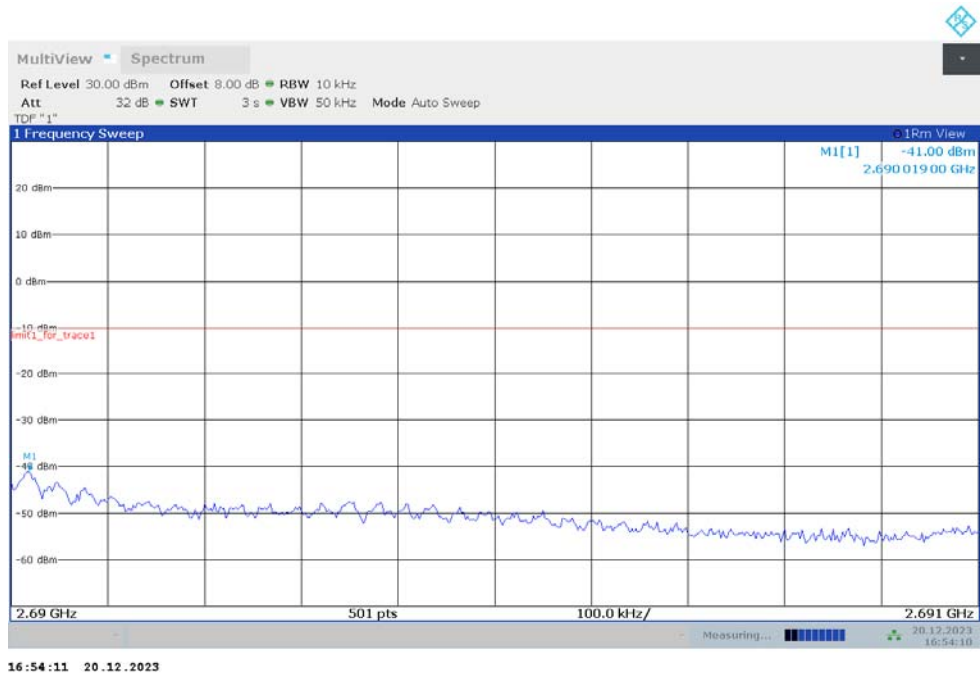
### LOW BAND EDGE BLOCK-1RB-LOW\_offset



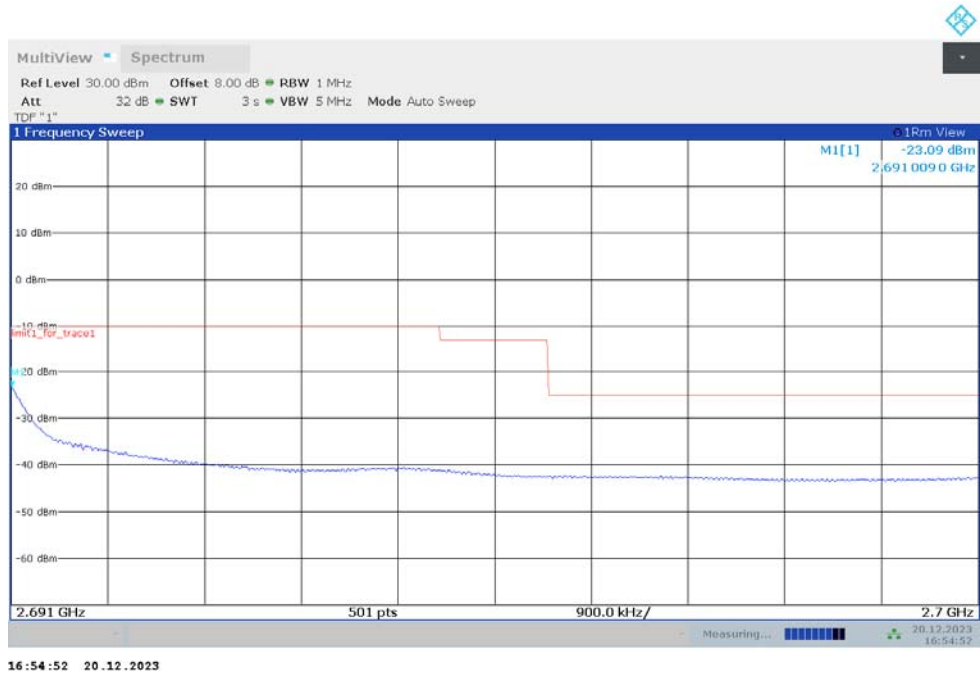
### OBW: 1RB-HIGH\_offset



### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



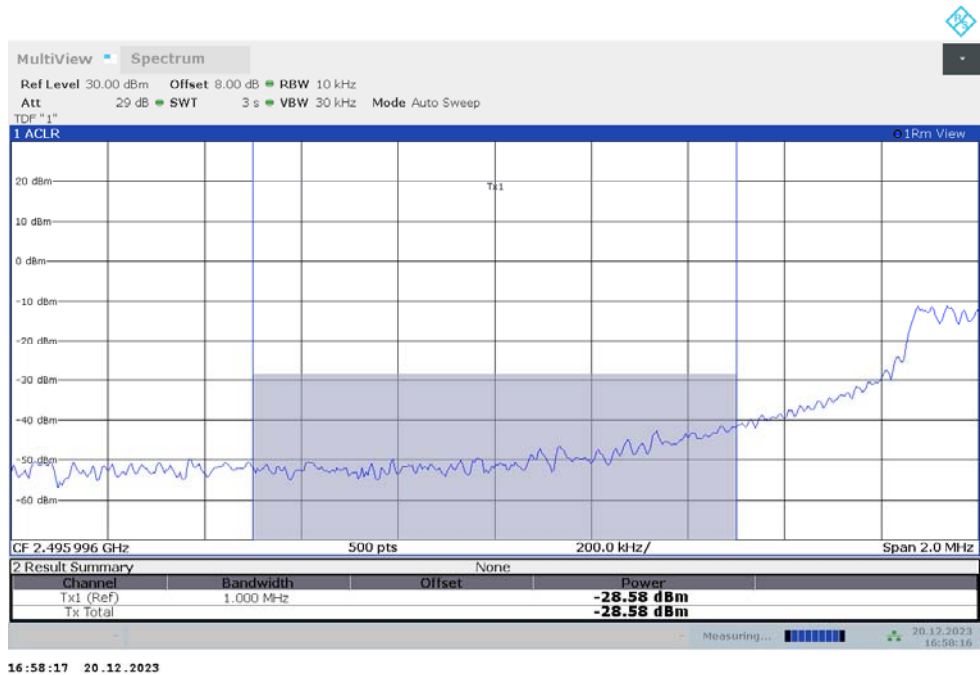
### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



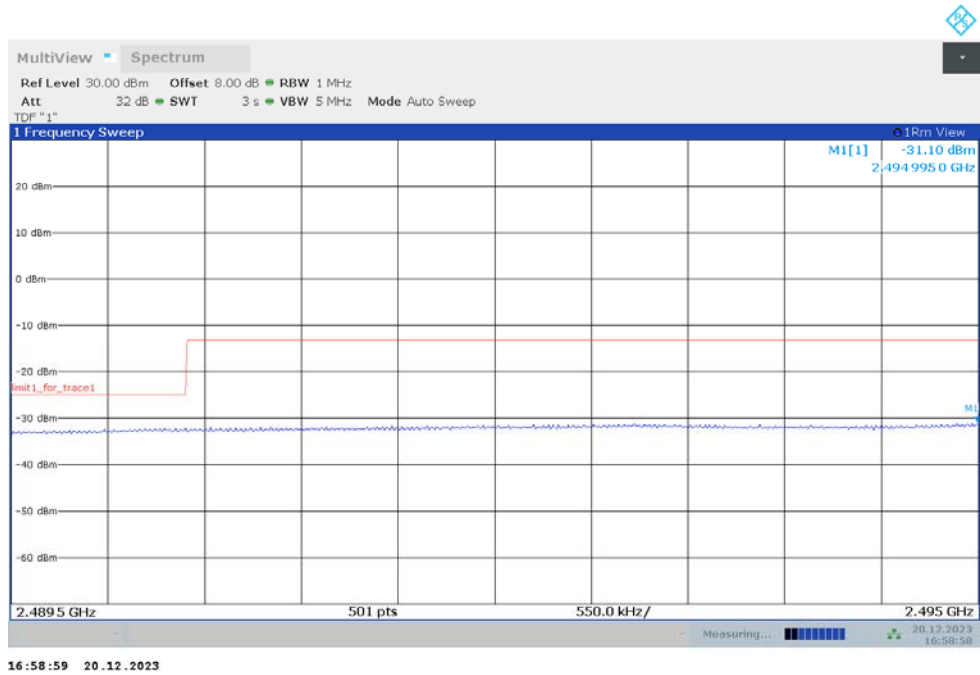
### LOW BAND EDGE BLOCK-100M-100%RB



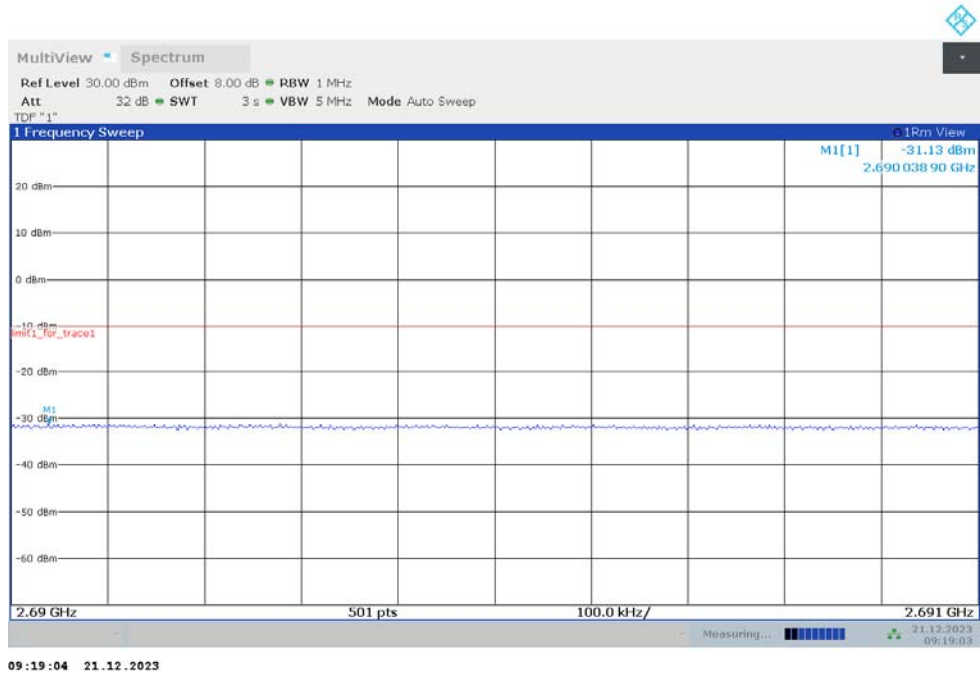
### Channel power



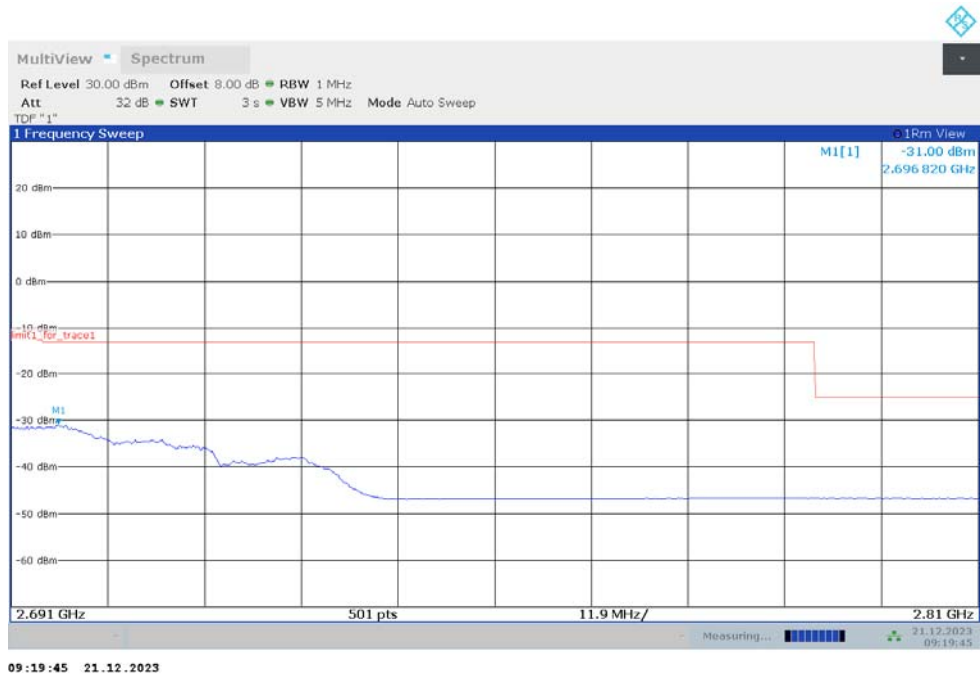
### LOW BAND EDGE BLOCK-100M-100%RB



### HIGH BAND EDGE BLOCK-100M-100%RB

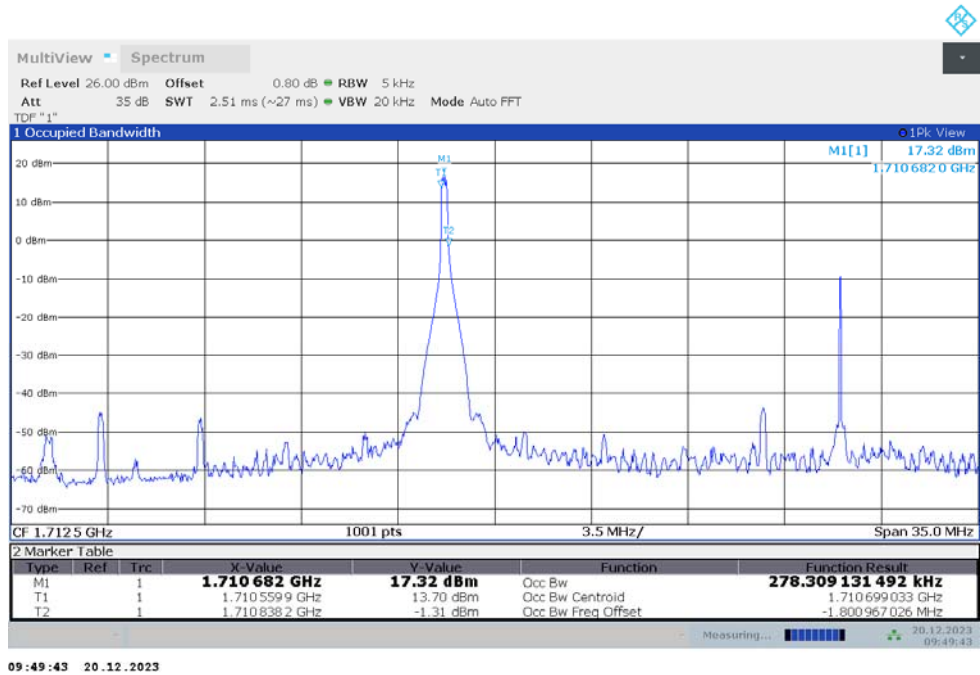


### HIGH BAND EDGE BLOCK-100M-100%RB

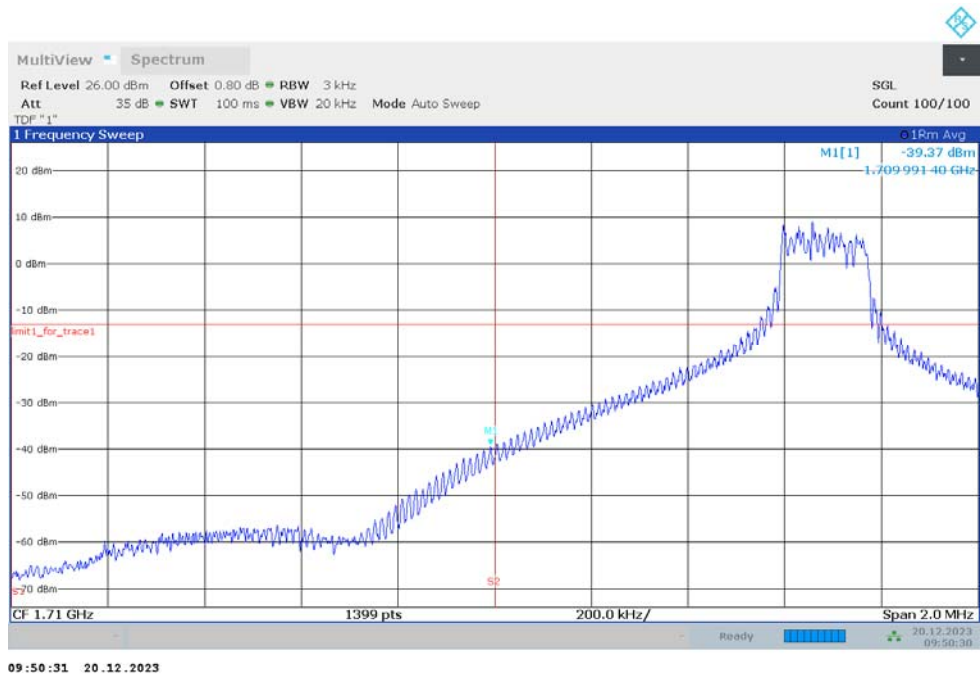


NR n66

OBW: 1RB-LOW\_offset

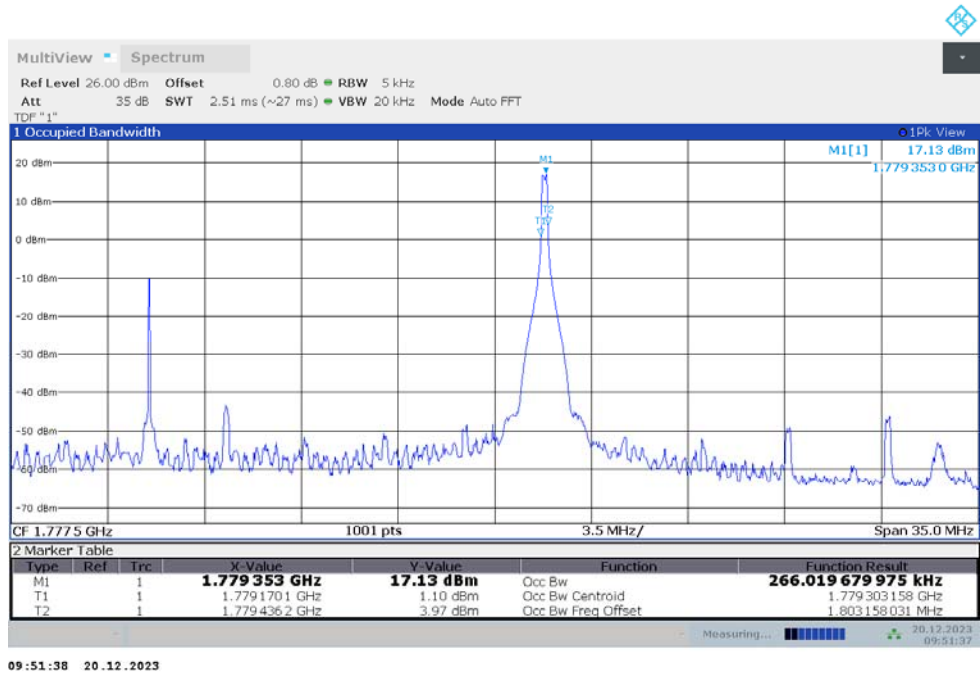


LOW BAND EDGE BLOCK-1RB-LOW\_offset

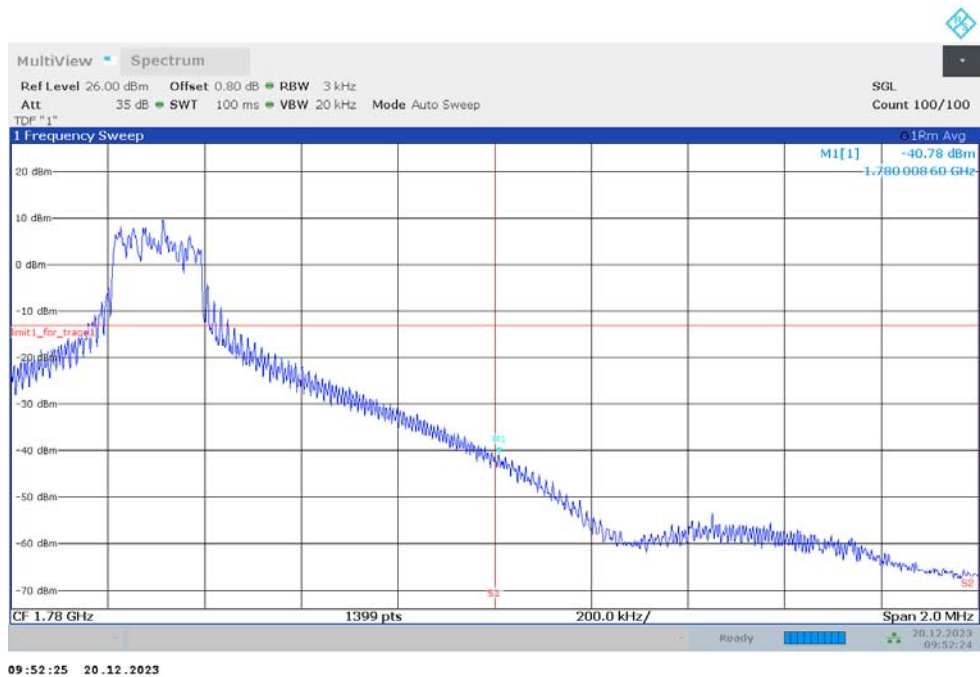




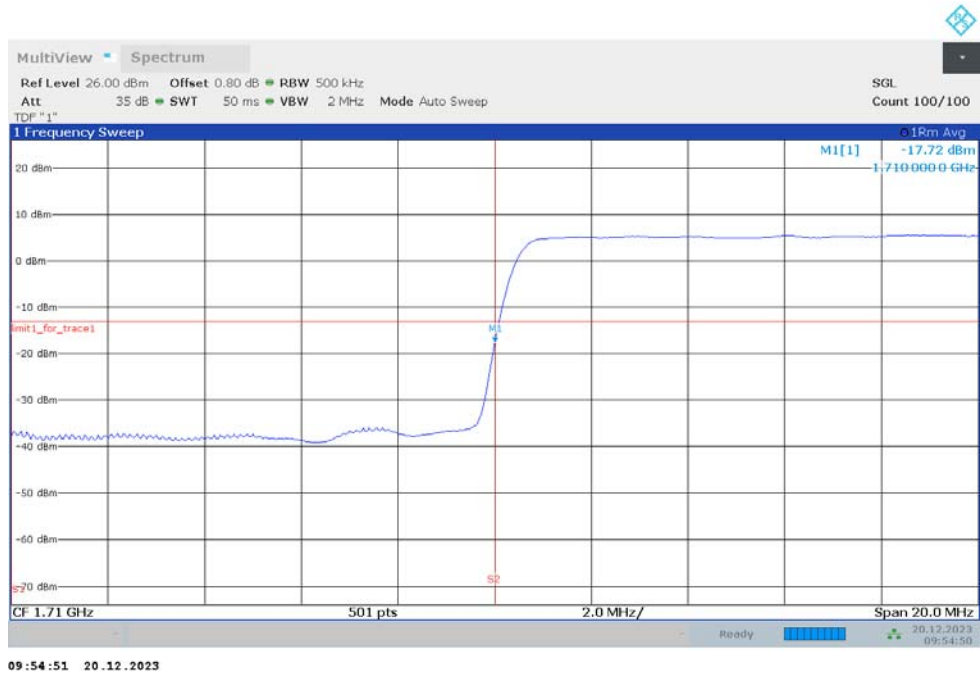
### OBW: 1RB-HIGH\_offset



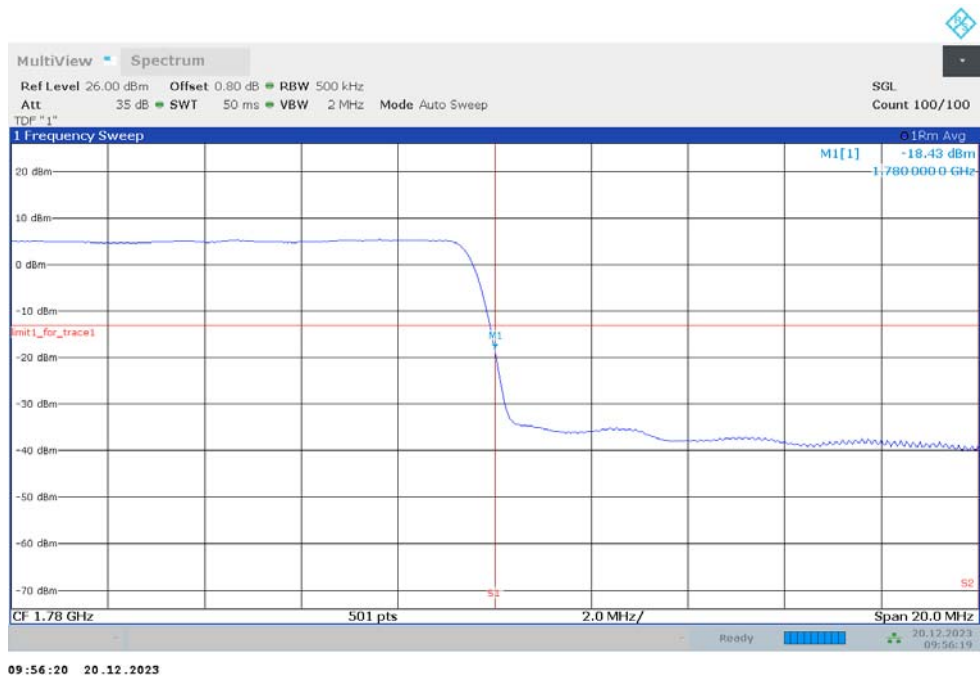
### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



### LOW BAND EDGE BLOCK-40M-100%RB

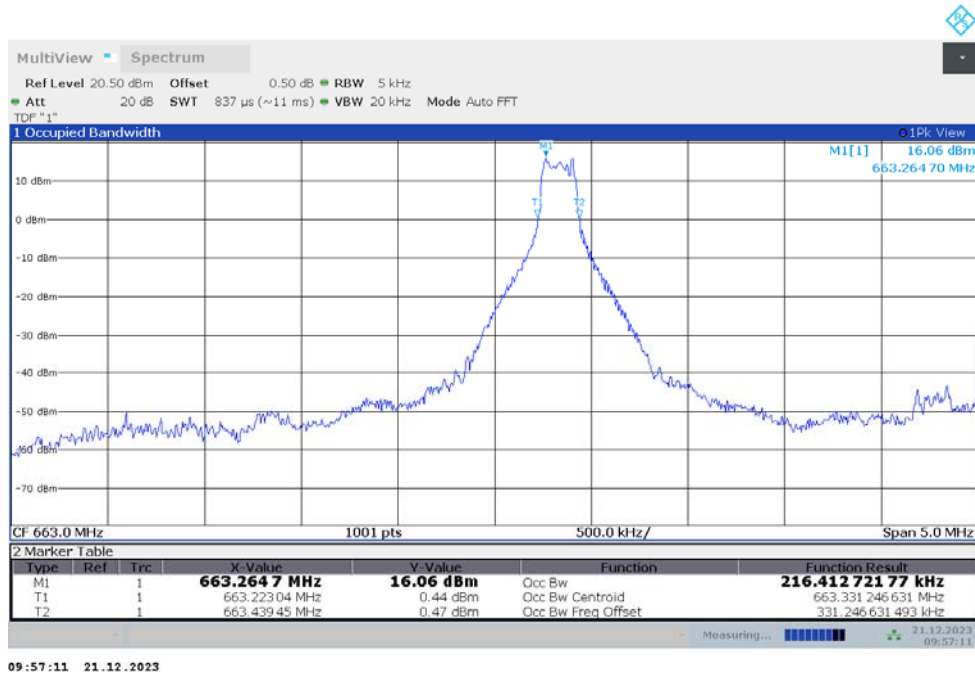


### HIGH BAND EDGE BLOCK-40M-100%RB

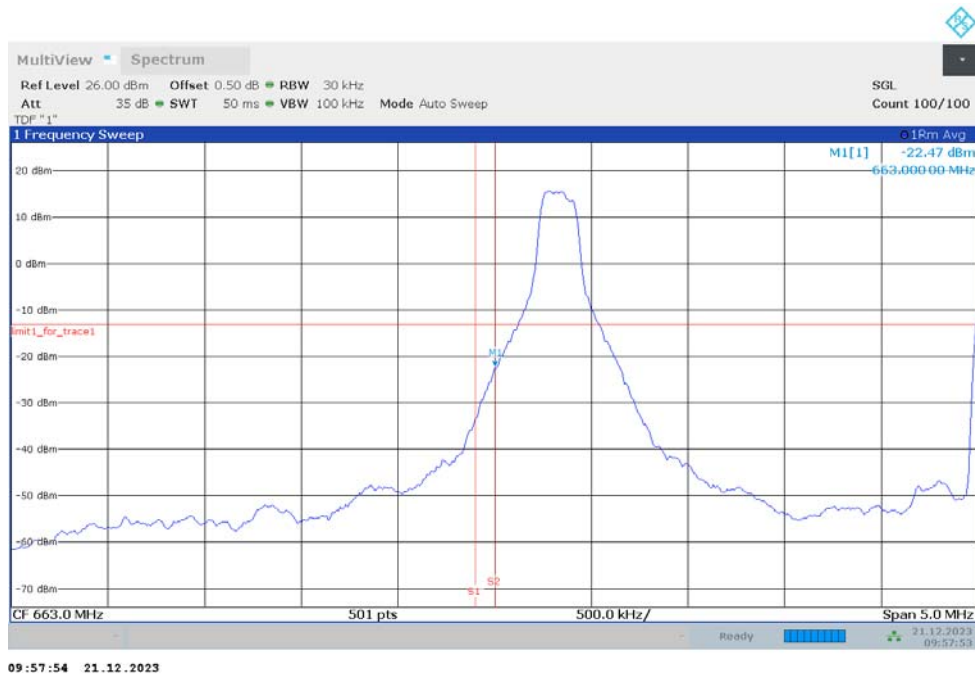


NR n71

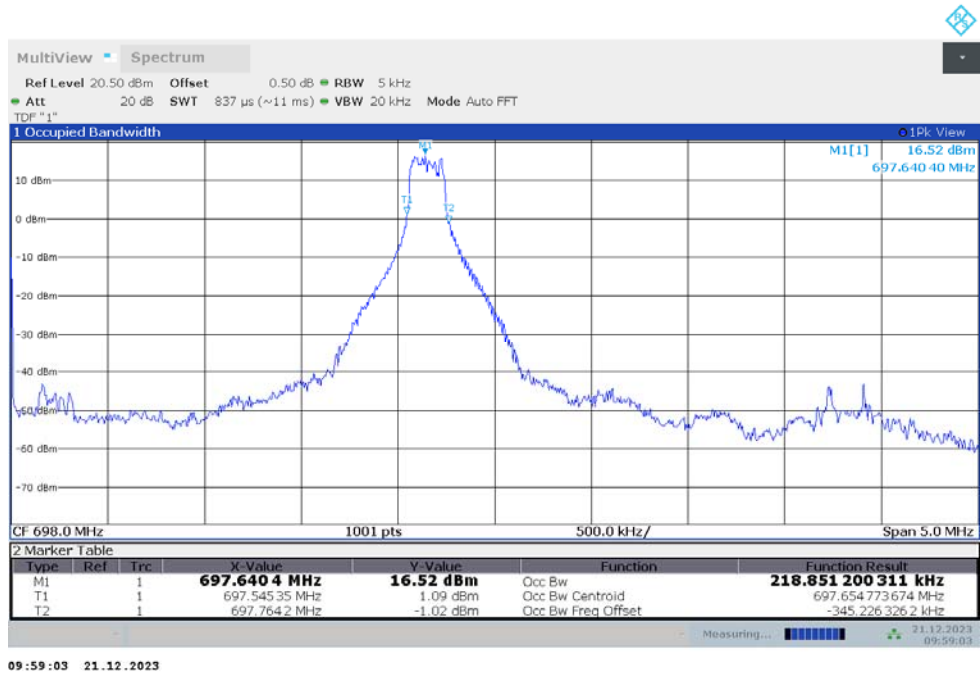
OBW: 1RB-LOW\_offset



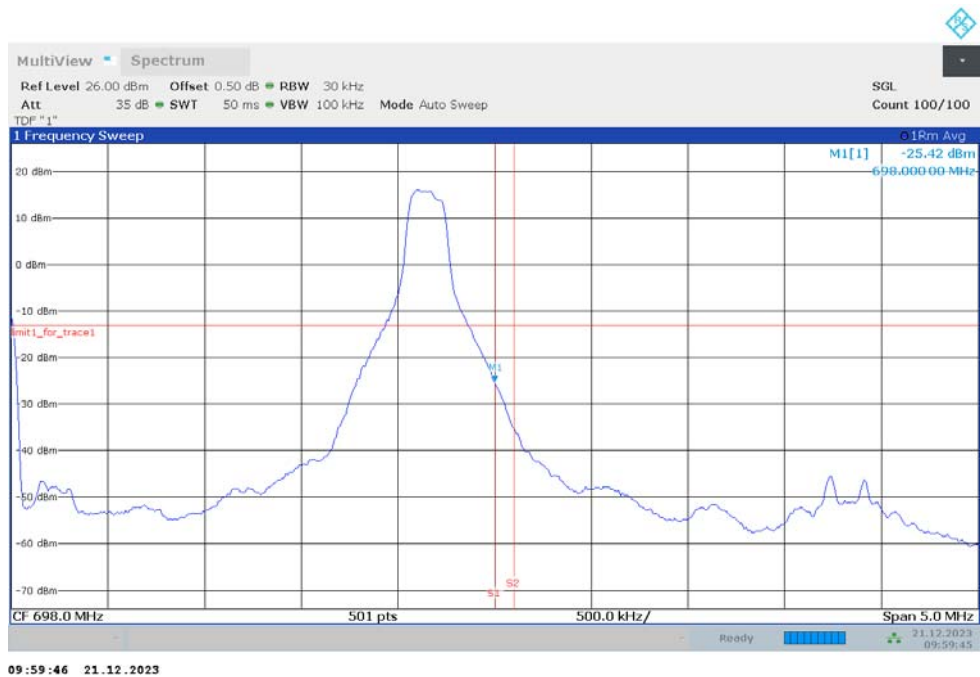
LOW BAND EDGE BLOCK-1RB-LOW\_offset



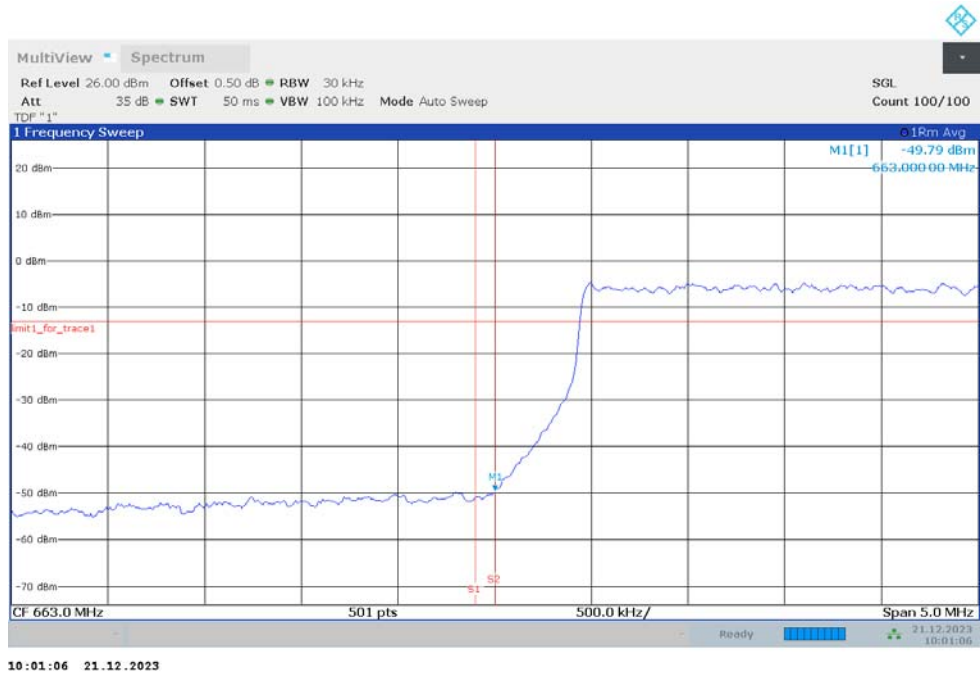
### OBW: 1RB-HIGH\_offset



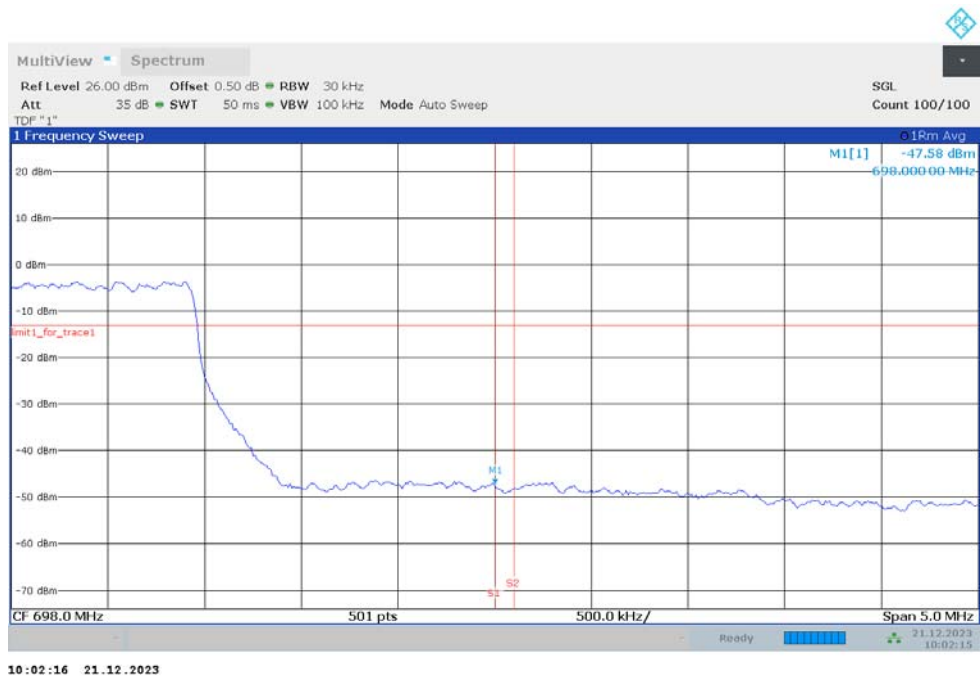
### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



### LOW BAND EDGE BLOCK-20M-100%RB

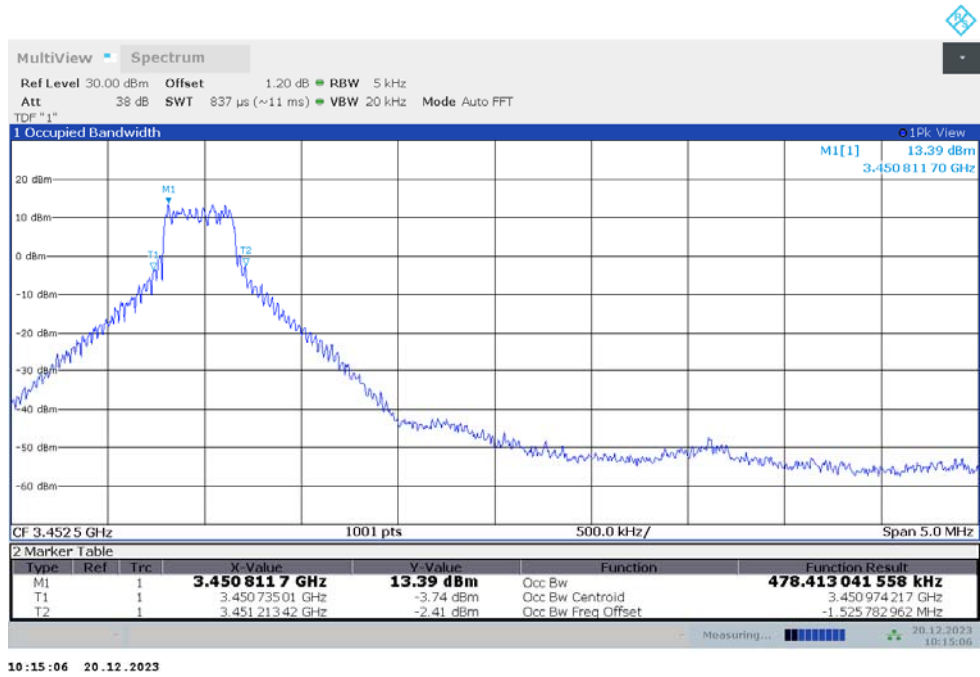


### HIGH BAND EDGE BLOCK-20M-100%RB

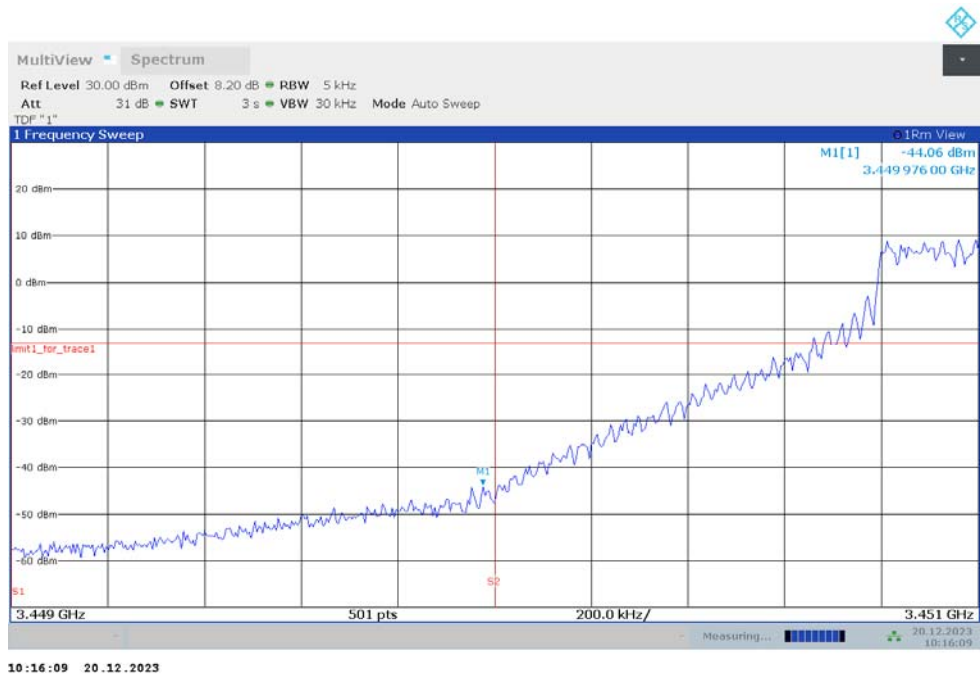


NR n77L

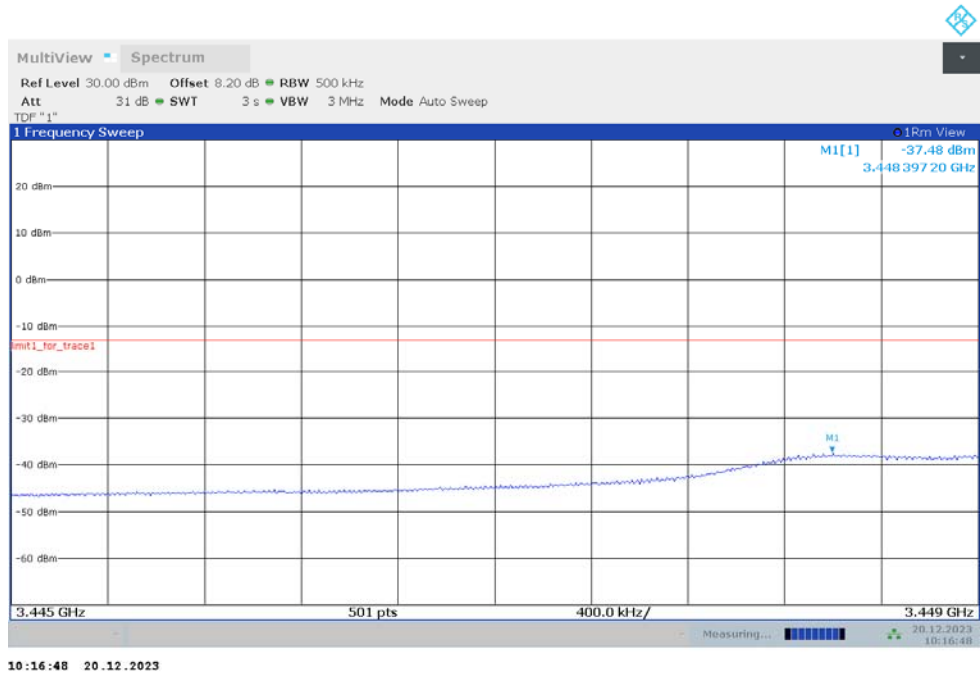
OBW: 1RB-LOW\_offset



LOW BAND EDGE BLOCK-1RB-LOW\_offset



### LOW BAND EDGE BLOCK-1RB-LOW\_offset

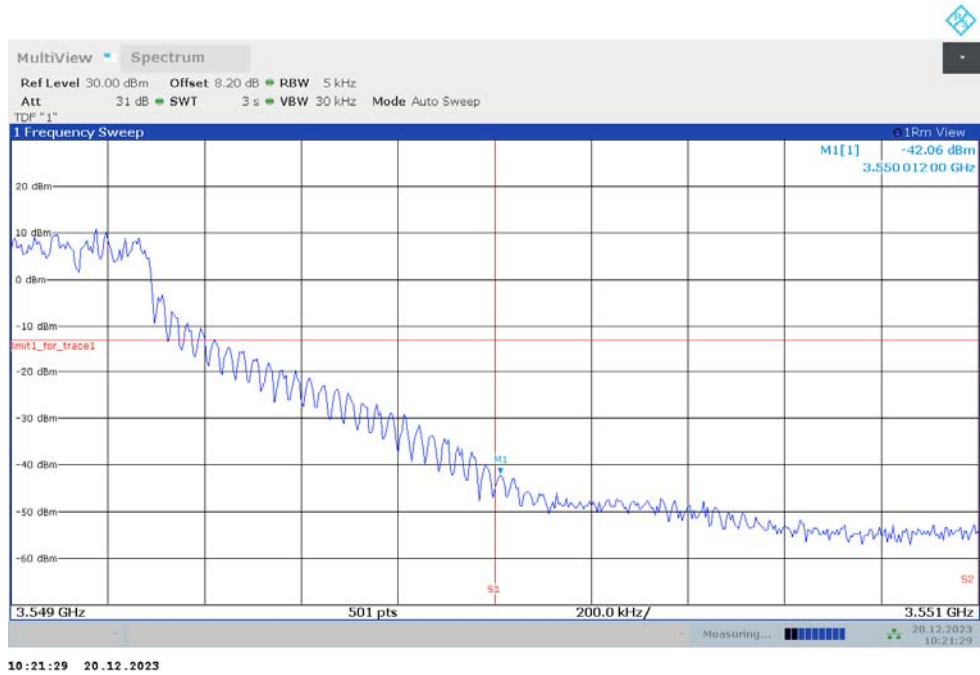


### OBW: 1RB-HIGH\_offset

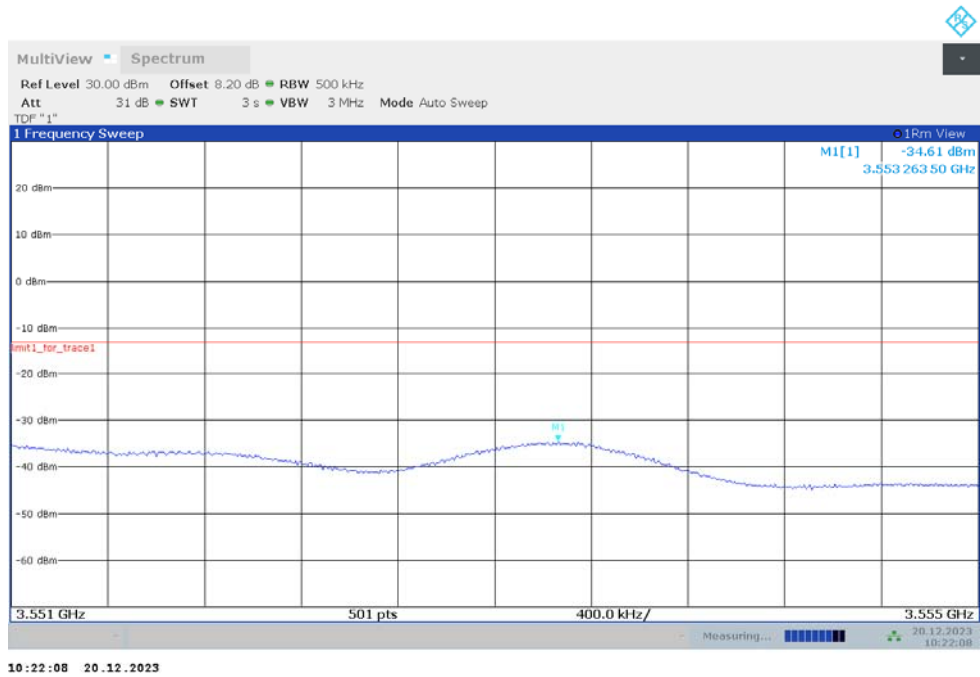




### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset

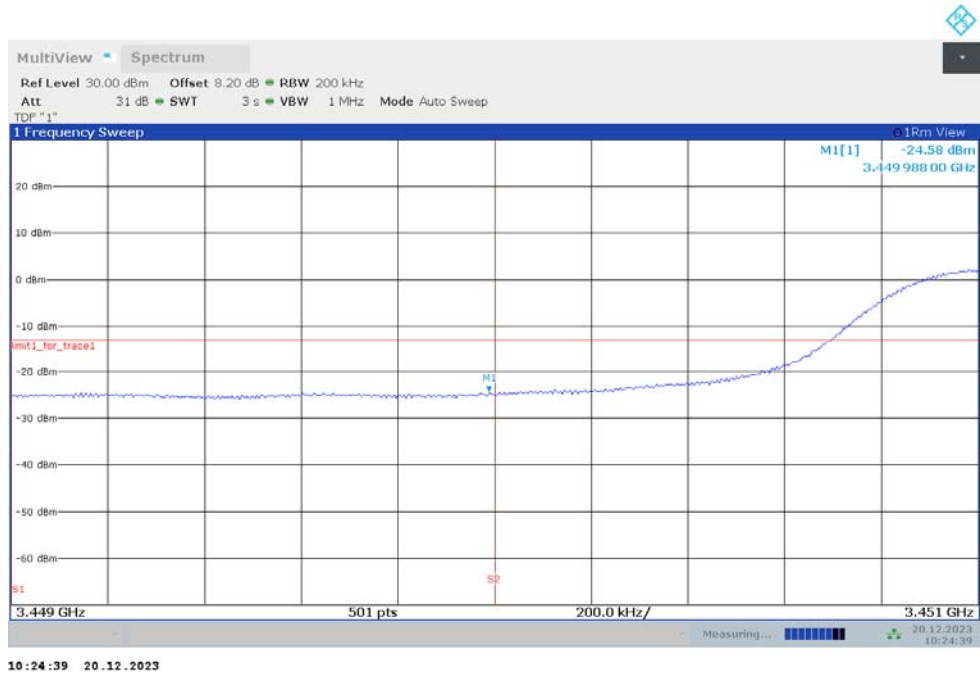


### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset

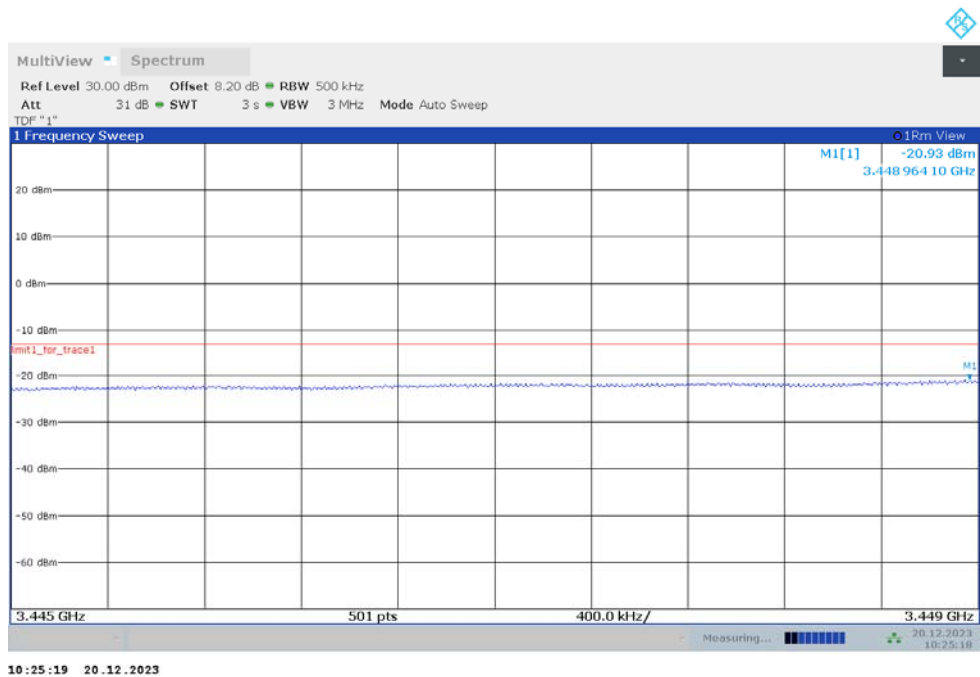




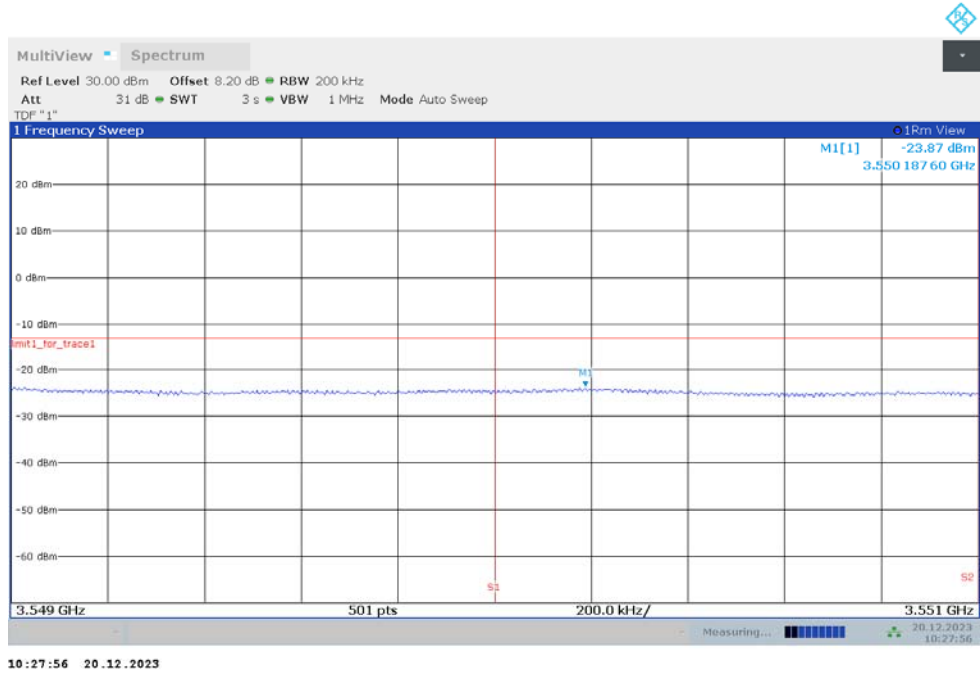
**LOW BAND EDGE BLOCK-90M-100%RB**



**LOW BAND EDGE BLOCK-90M-100%RB**



### HIGH BAND EDGE BLOCK-90M-100%RB

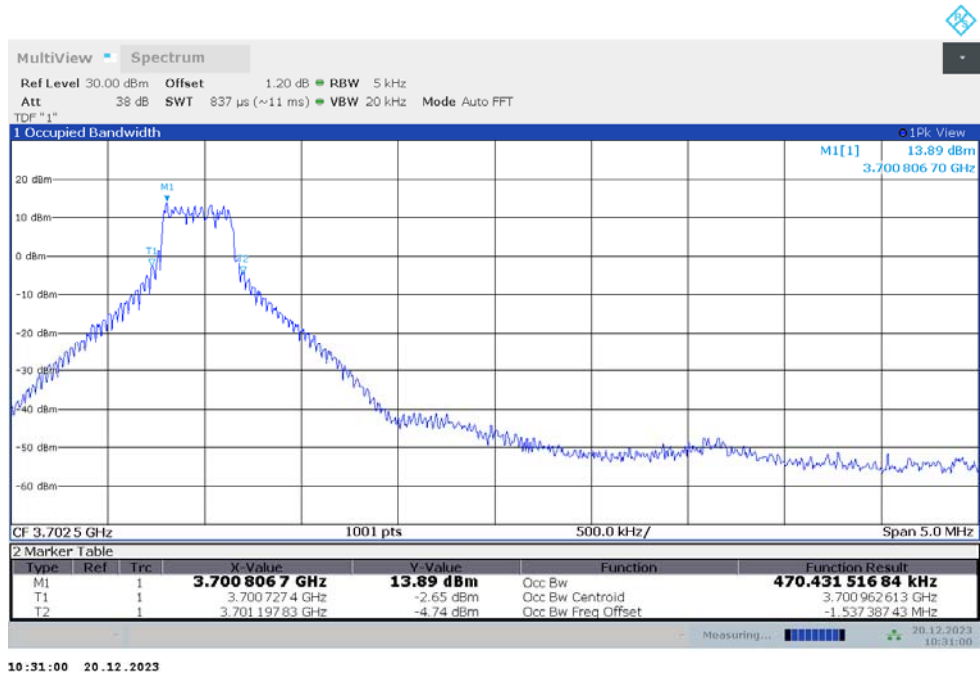


### HIGH BAND EDGE BLOCK-90M-100%RB

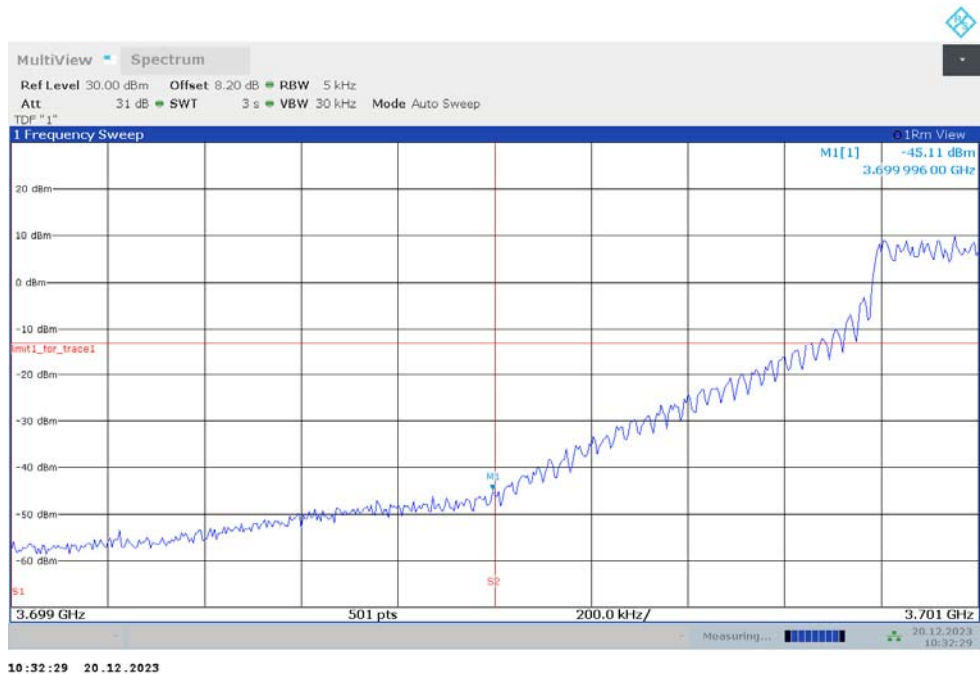


NR n77H

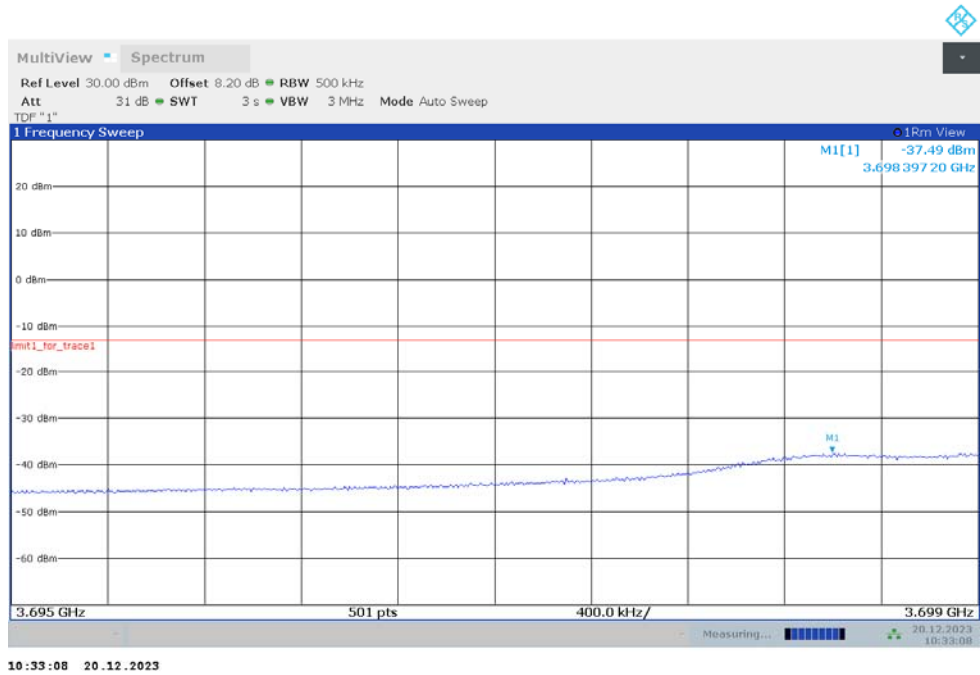
OBW: 1RB-LOW\_offset



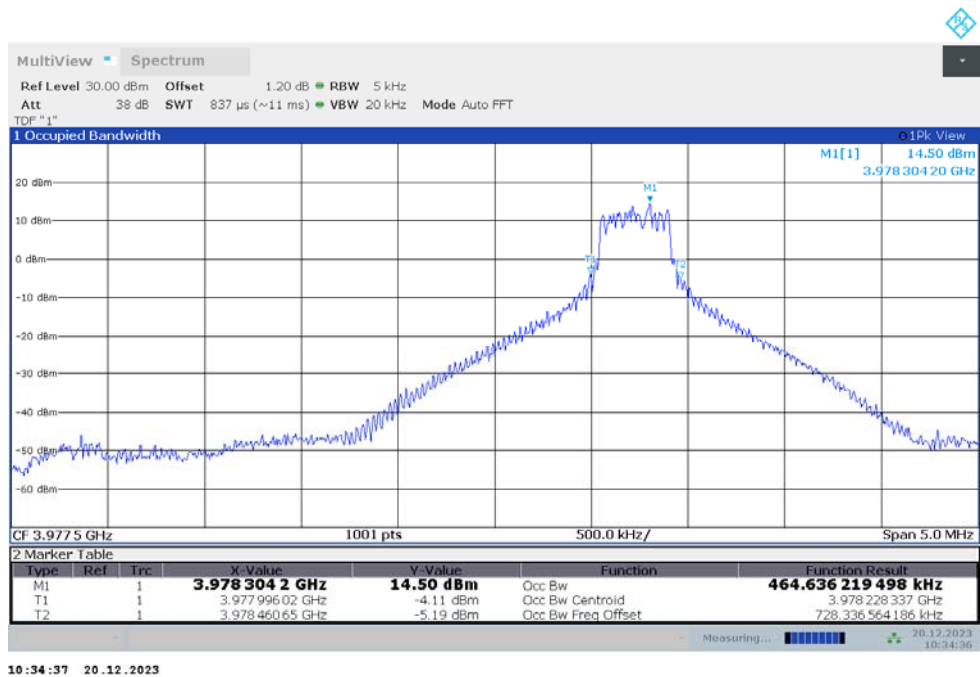
LOW BAND EDGE BLOCK-1RB-LOW\_offset



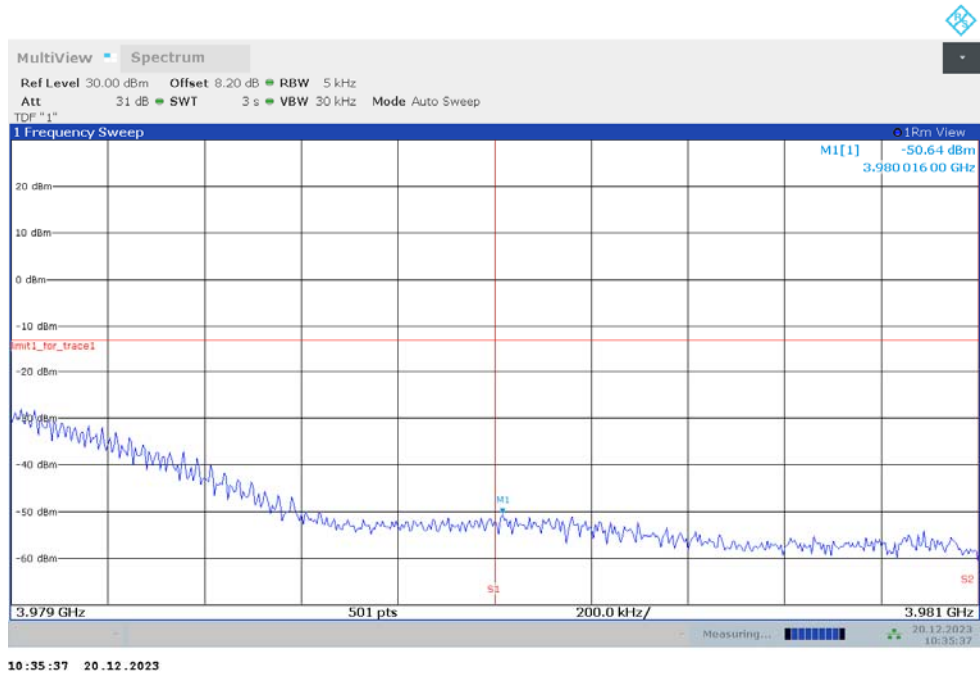
### LOW BAND EDGE BLOCK-1RB-LOW\_offset



### OBW: 1RB-HIGH\_offset



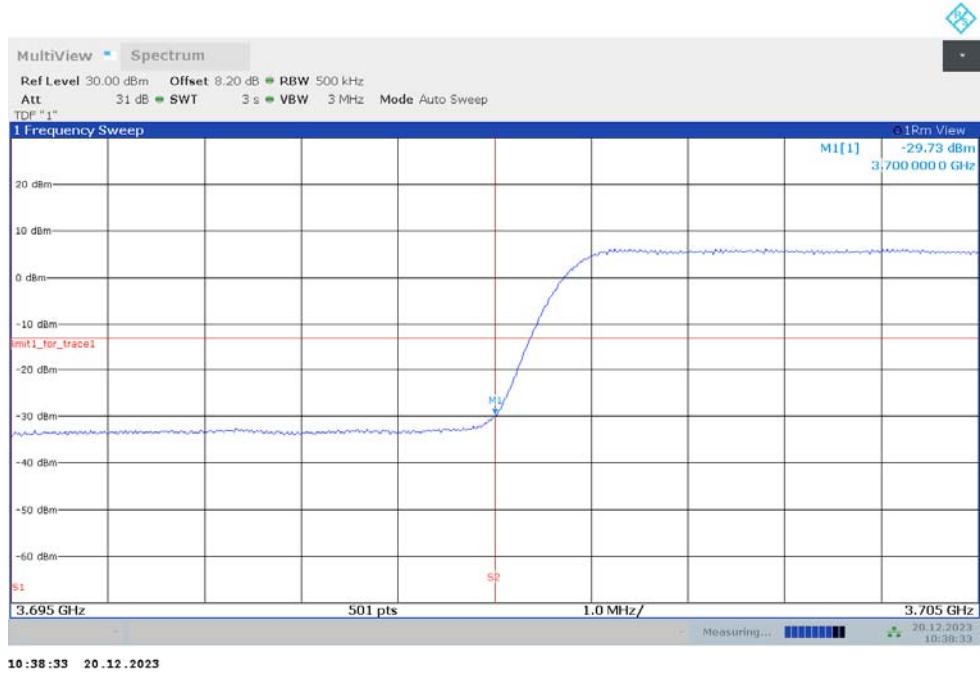
### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



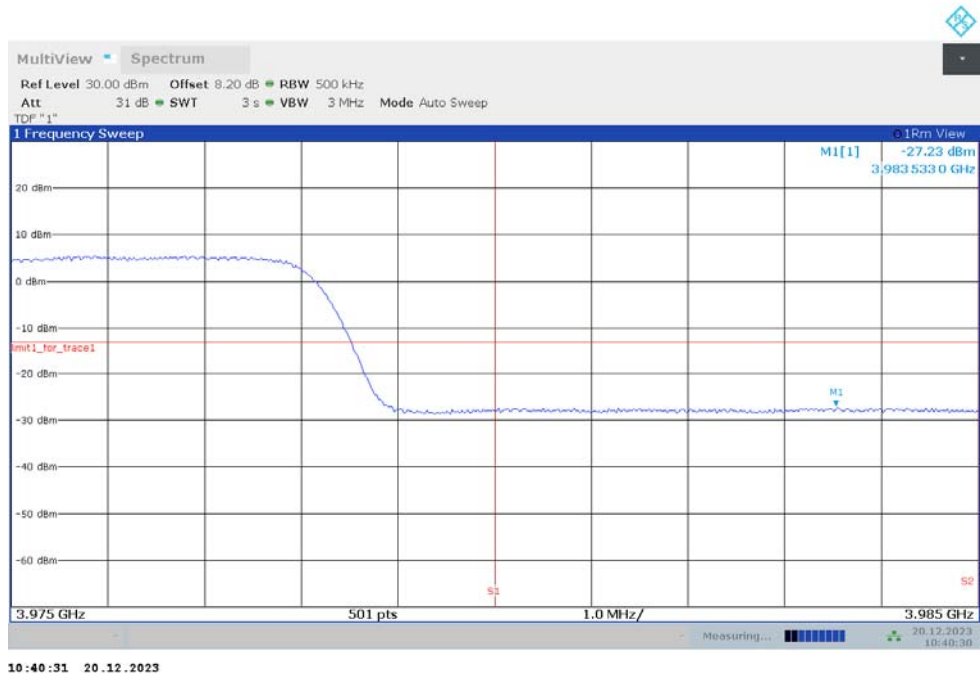
### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



### LOW BAND EDGE BLOCK-100M-100%RB

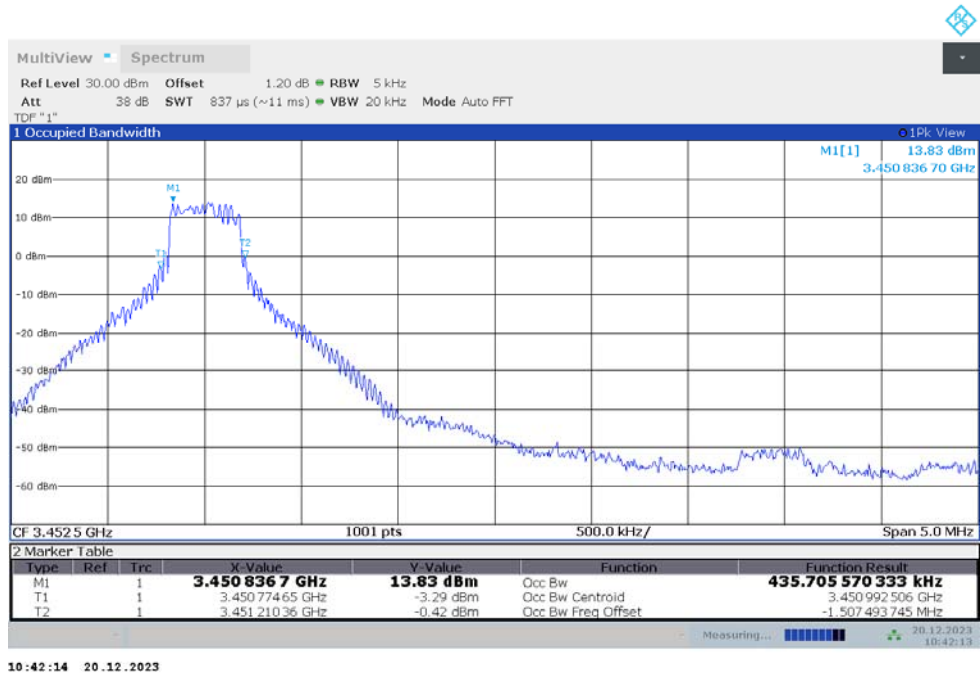


### HIGH BAND EDGE BLOCK-100M-100%RB

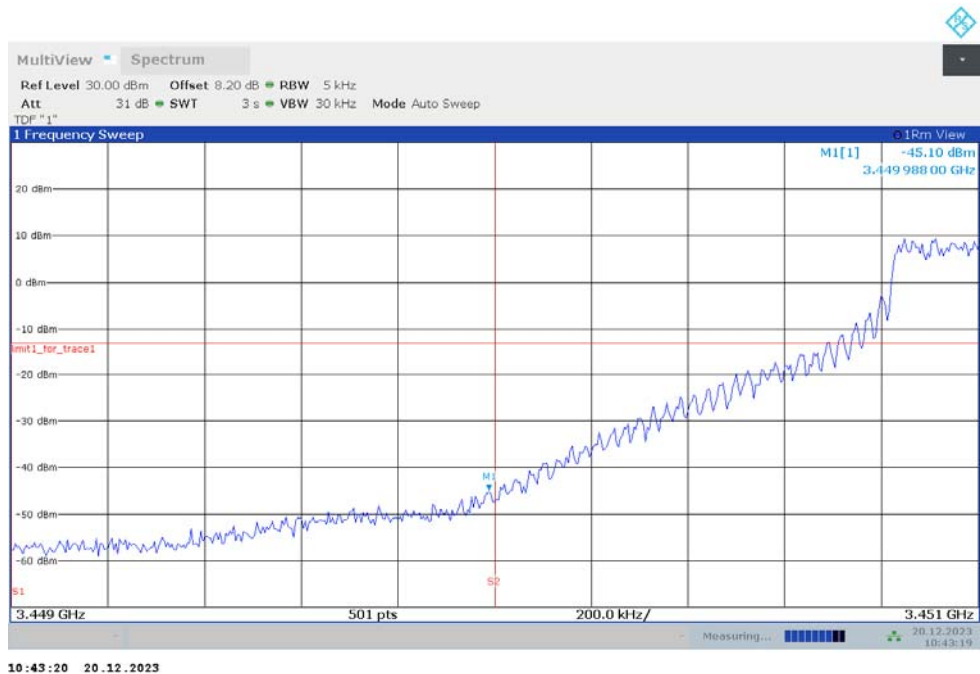


NR n78L

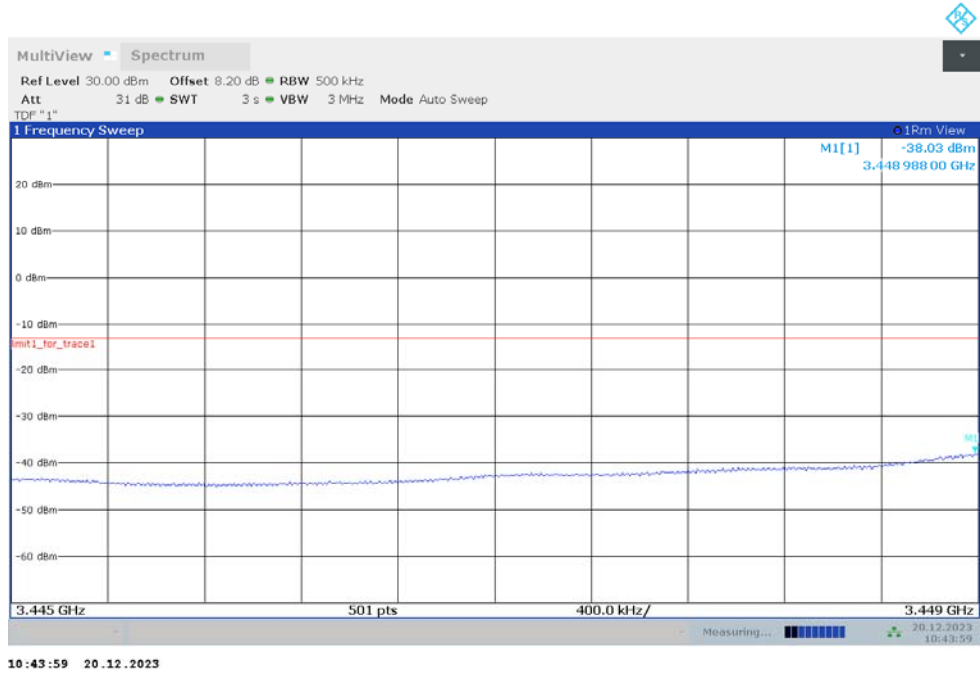
OBW: 1RB-LOW\_offset



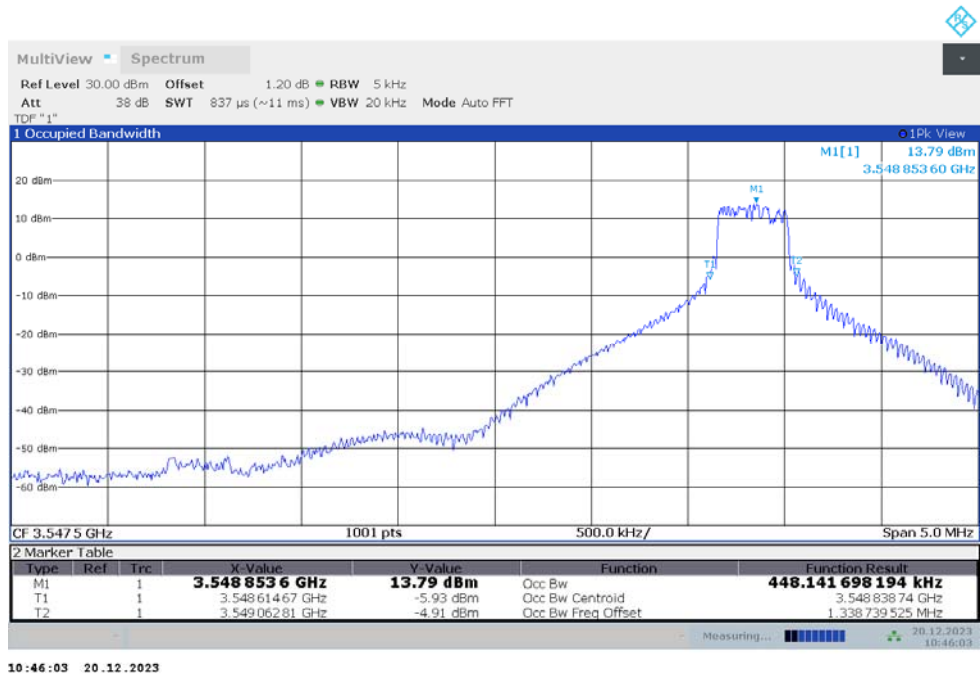
LOW BAND EDGE BLOCK-1RB-LOW\_offset



### LOW BAND EDGE BLOCK-1RB-LOW\_offset

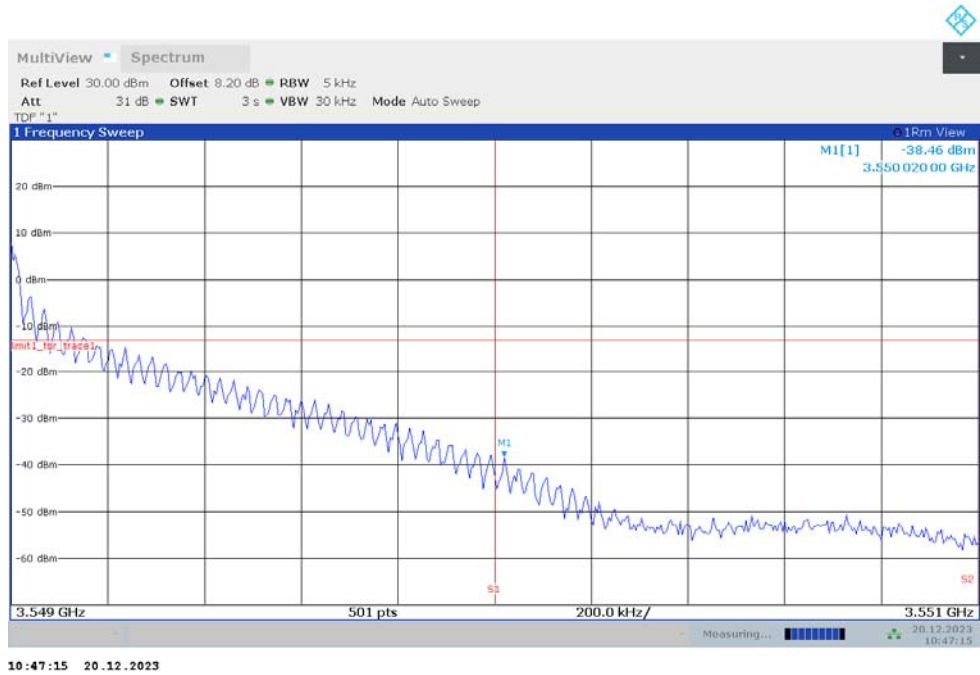


### OBW: 1RB-HIGH\_offset





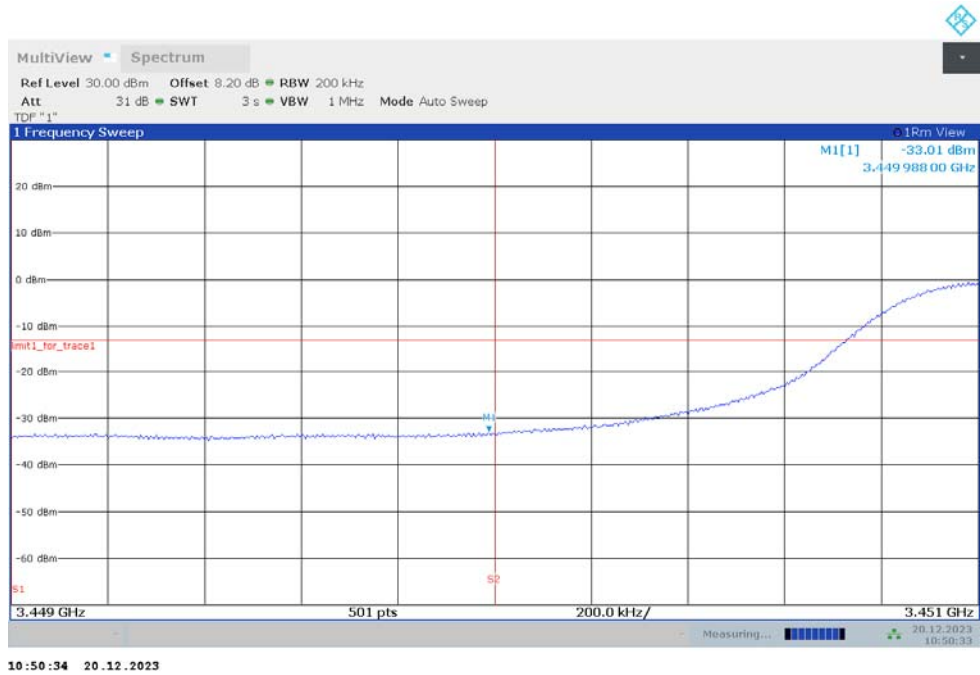
### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



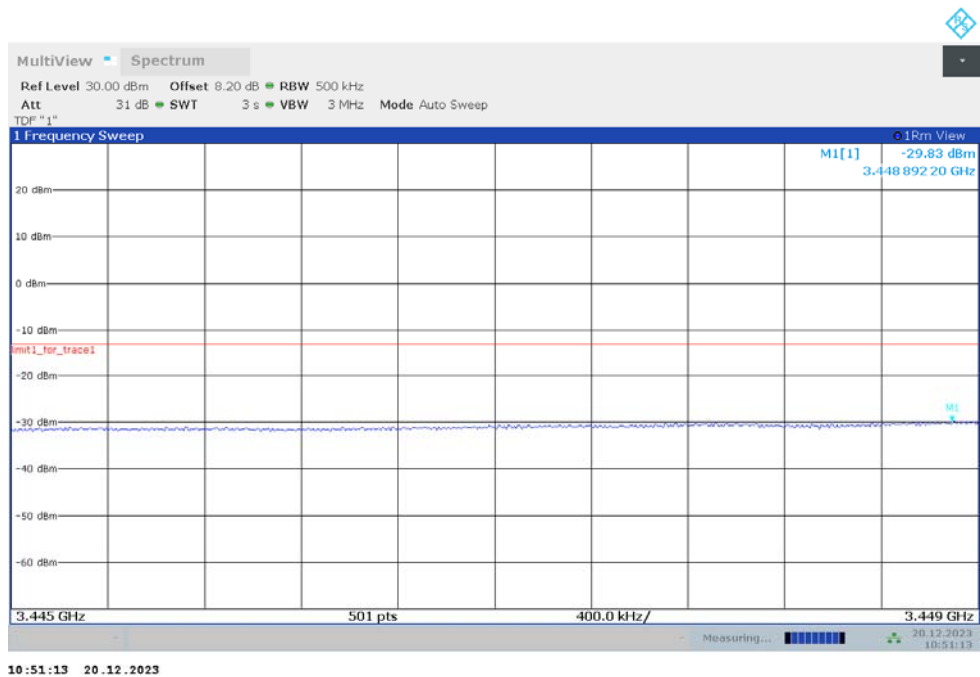
### HIGH BAND EDGE BLOCK-1RB-HIGH\_offset



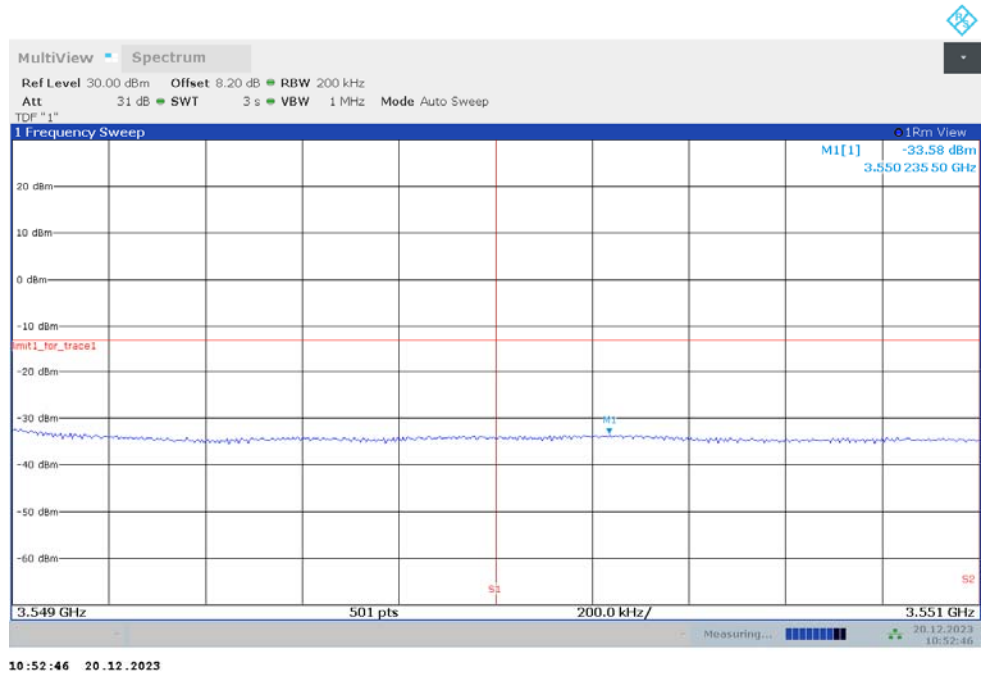
### LOW BAND EDGE BLOCK-90M-100%RB



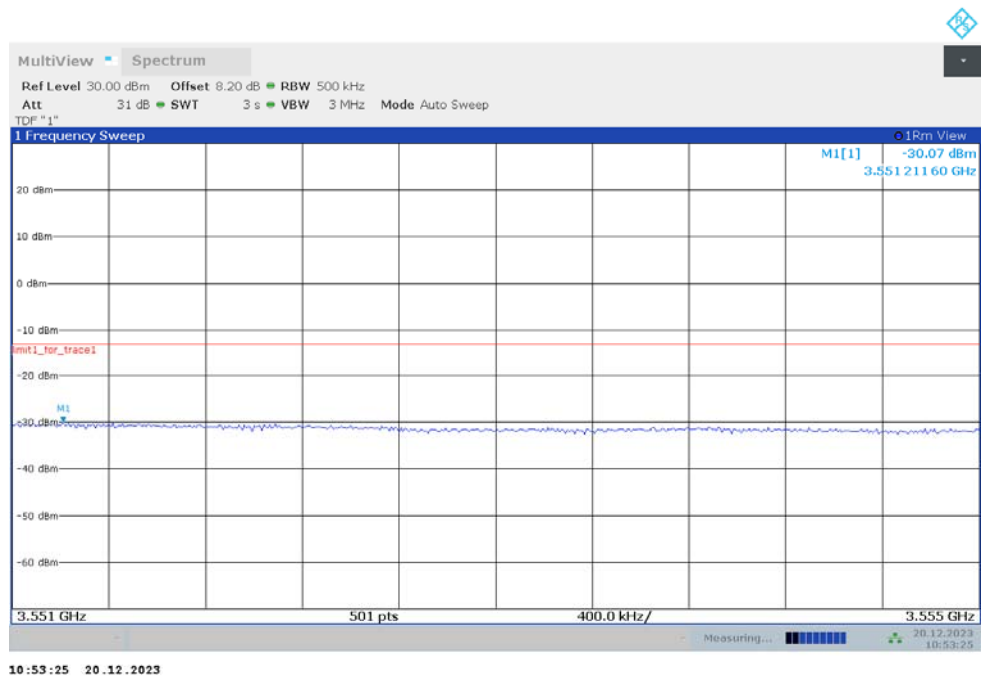
### LOW BAND EDGE BLOCK-90M-100%RB



### 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 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(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 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



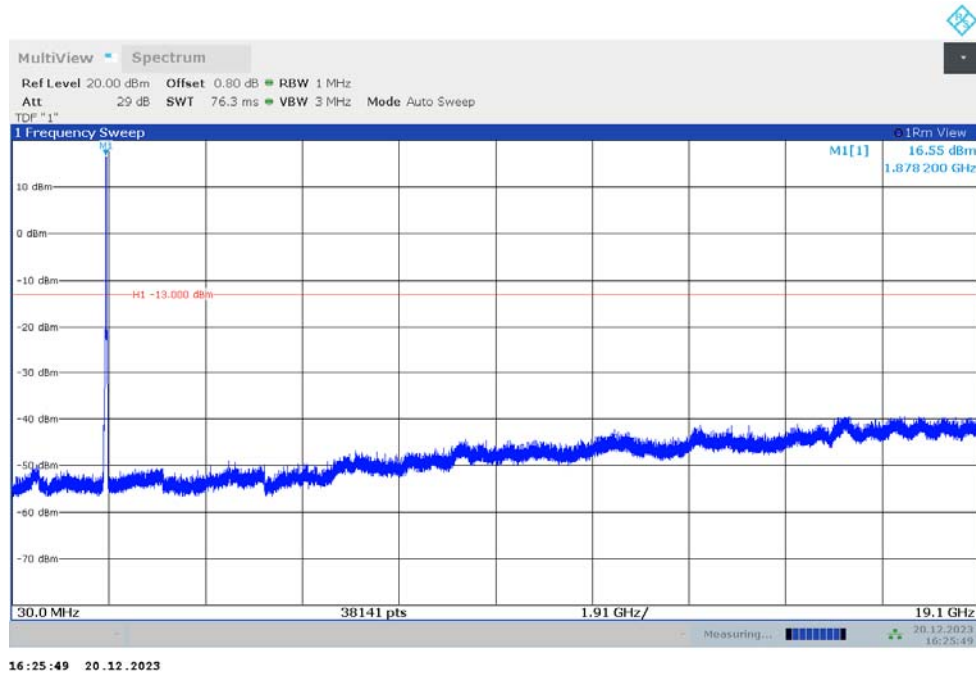
from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions 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**

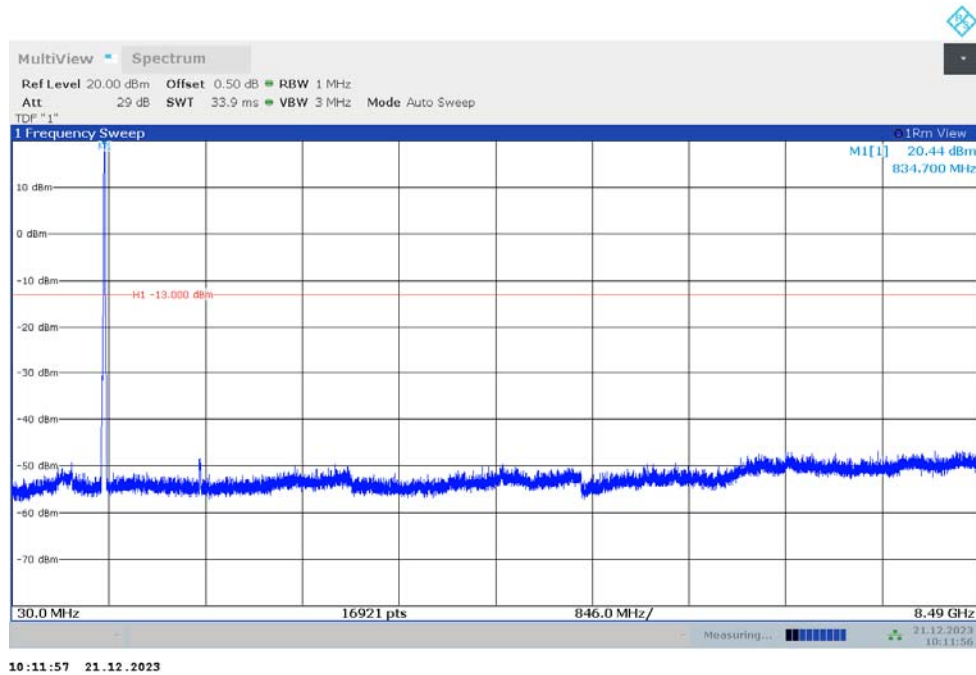
**n2**

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



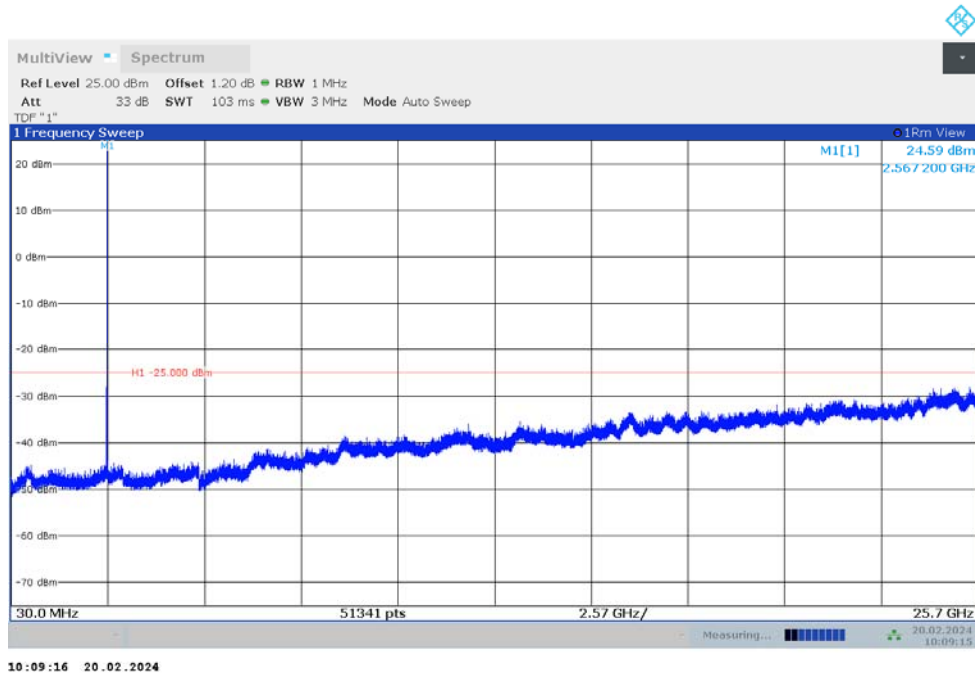
**n5**

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



n7

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



n25

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

