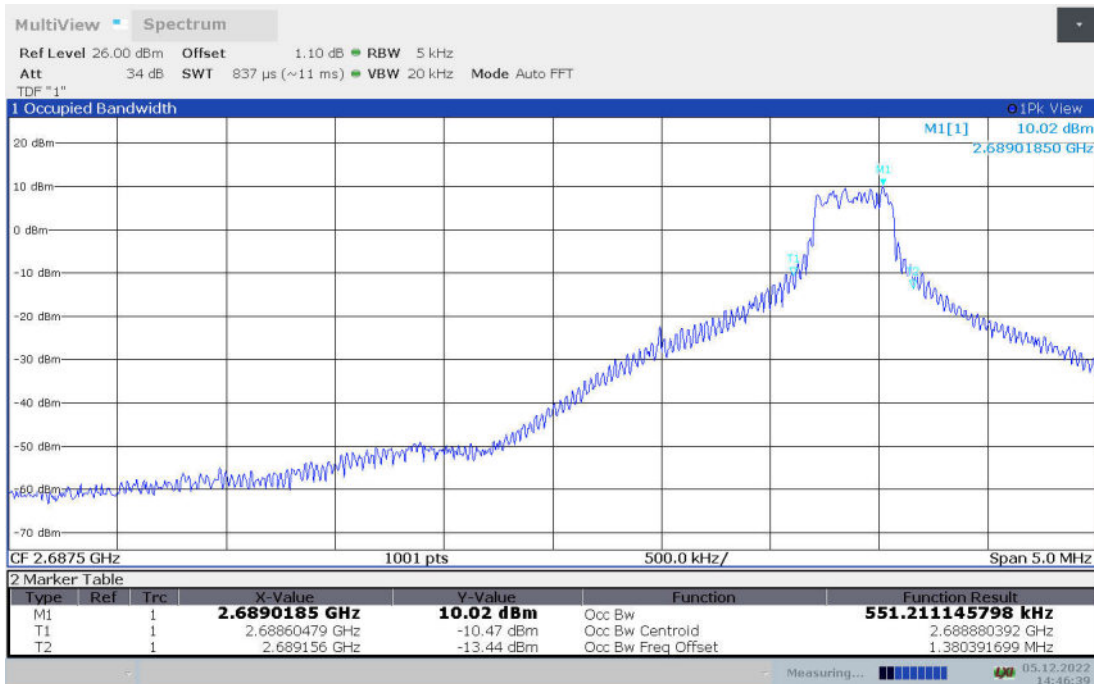
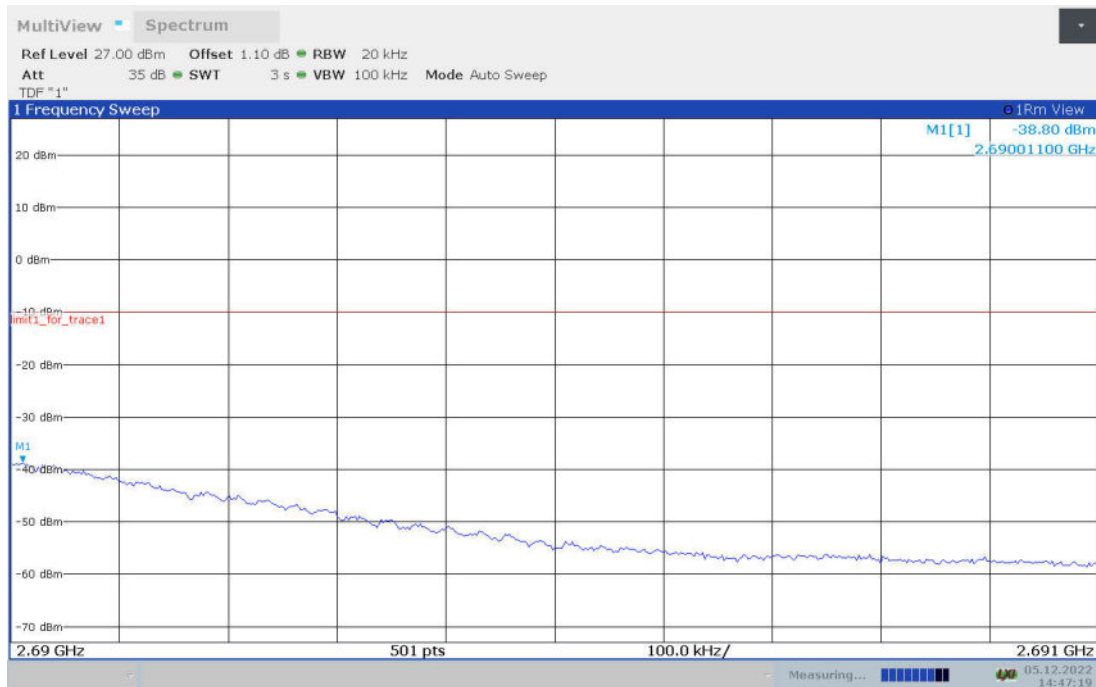


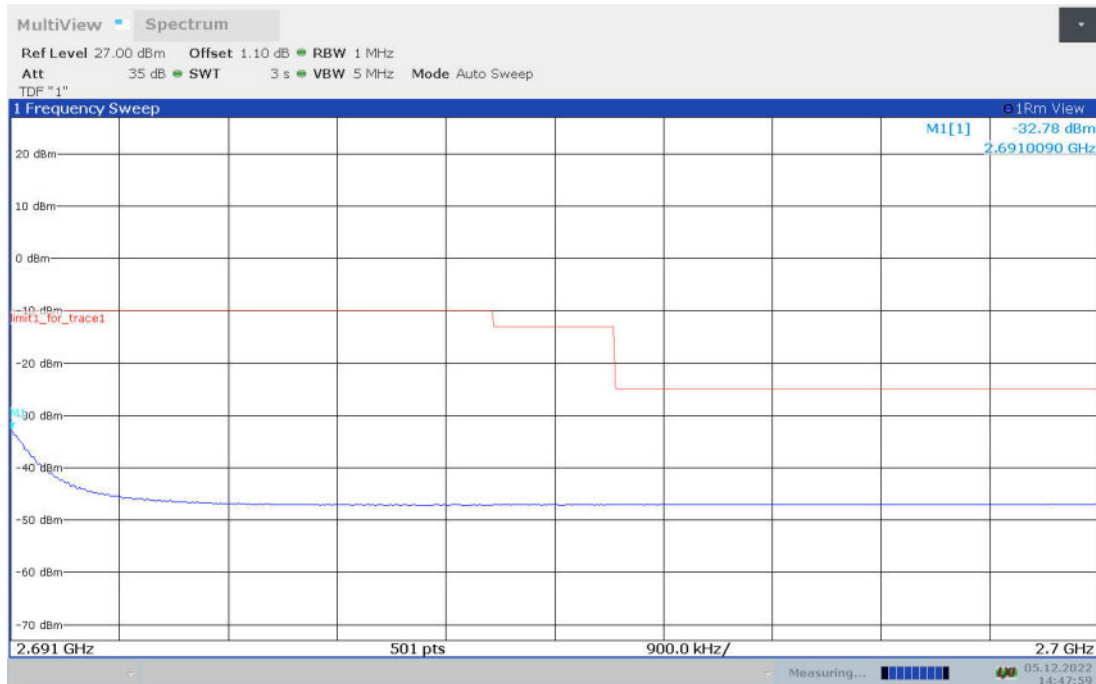
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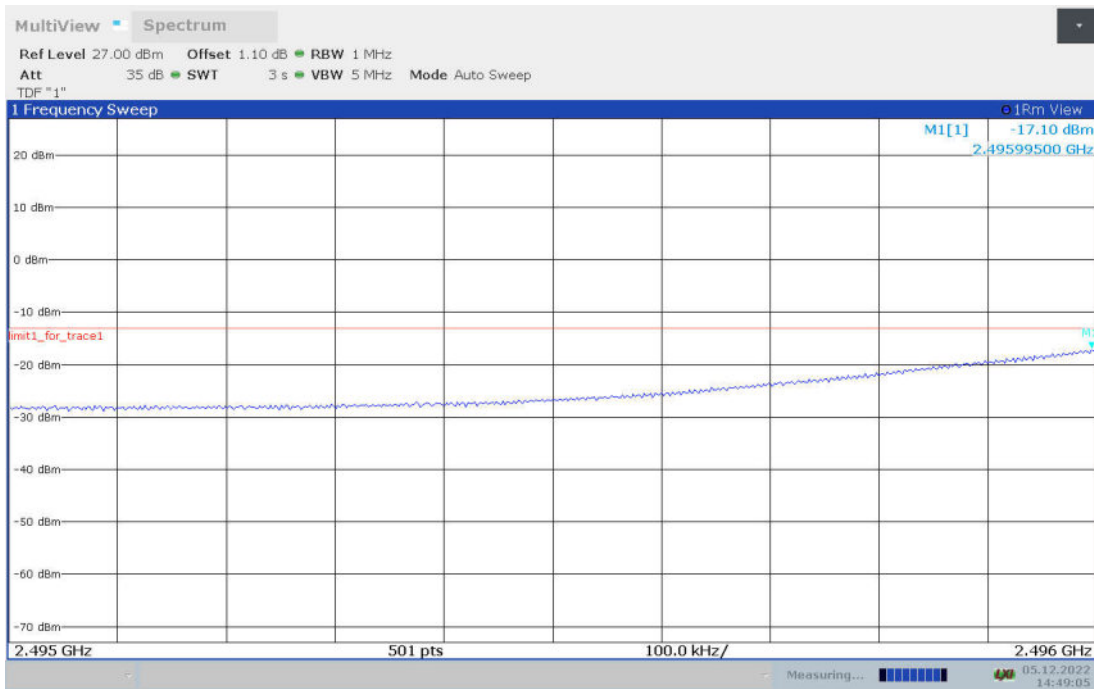
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



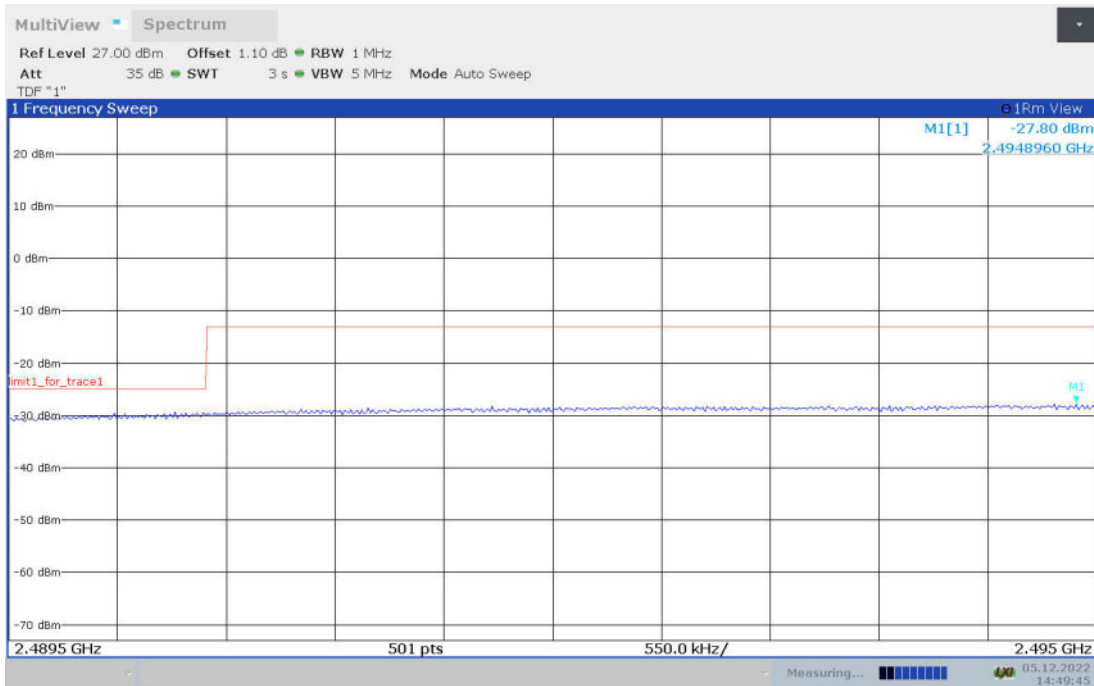
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



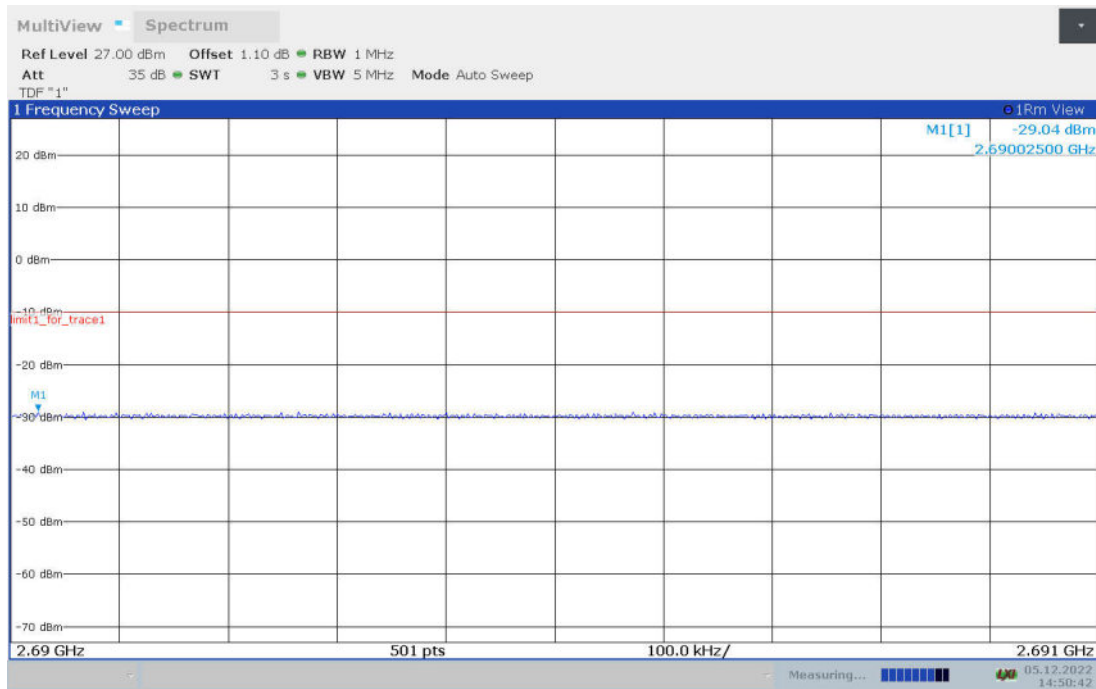
LOW BAND EDGE BLOCK-100M-100%RB



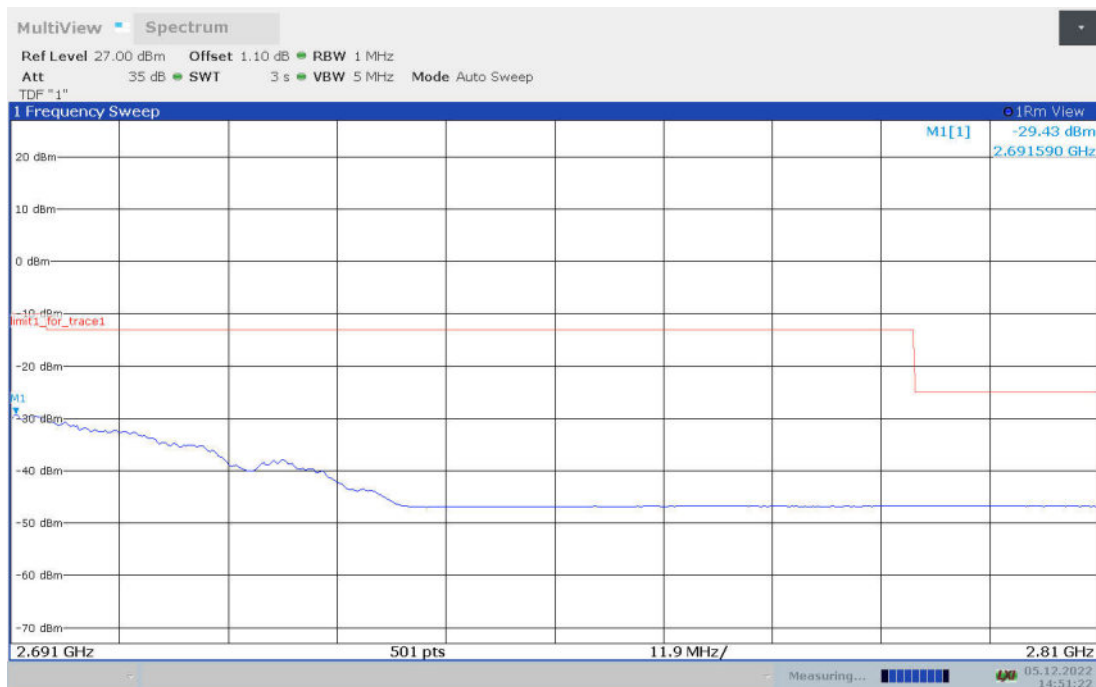
LOW BAND EDGE BLOCK-100M-100%RB



HIGH BAND EDGE BLOCK-100M-100%RB

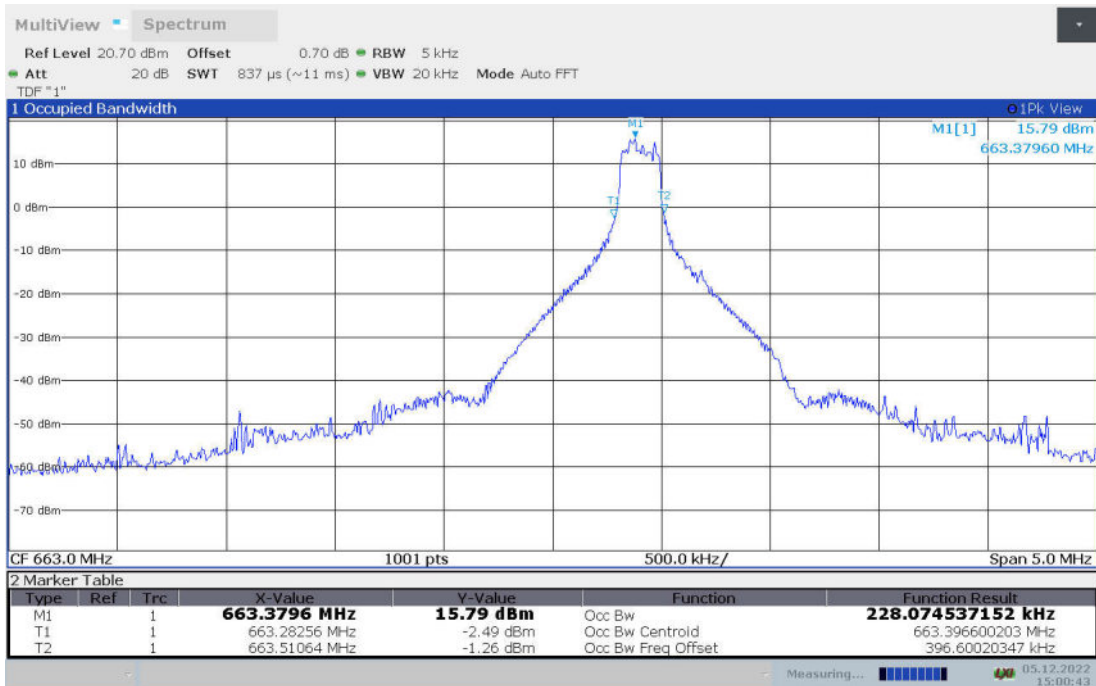


HIGH BAND EDGE BLOCK-100M-100%RB

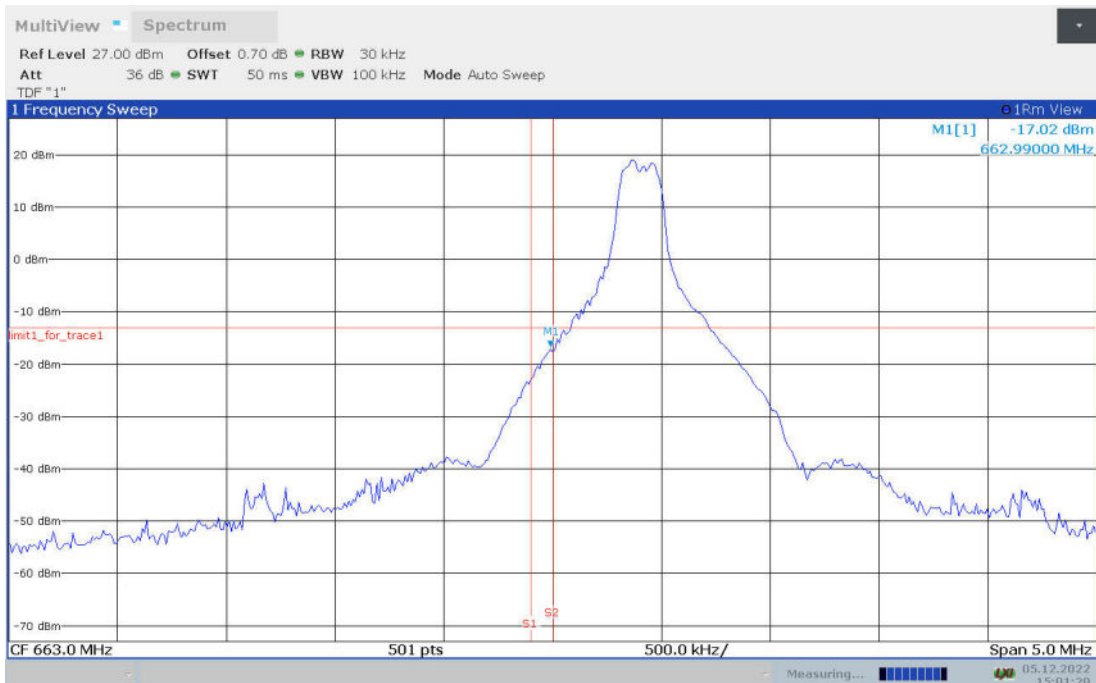


n71

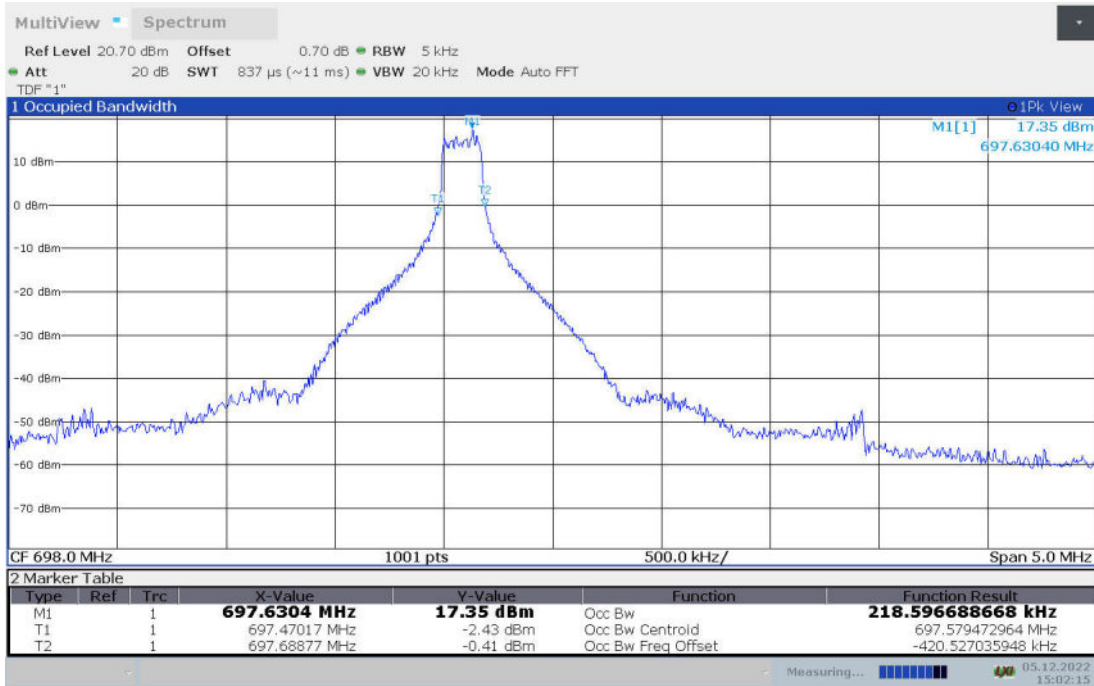
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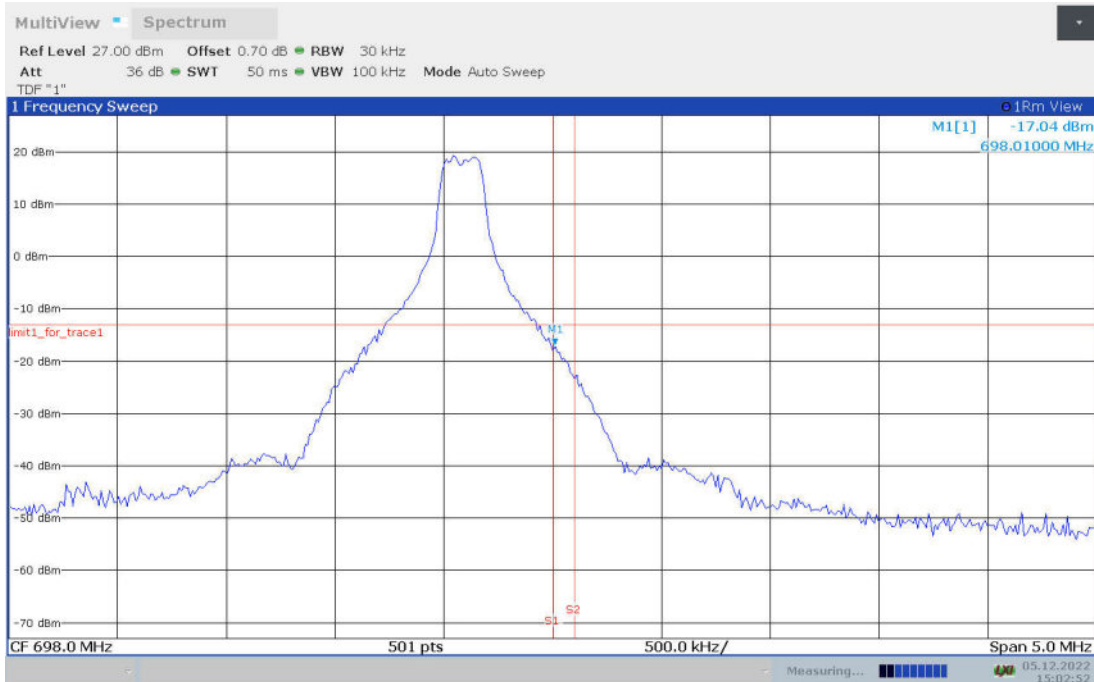
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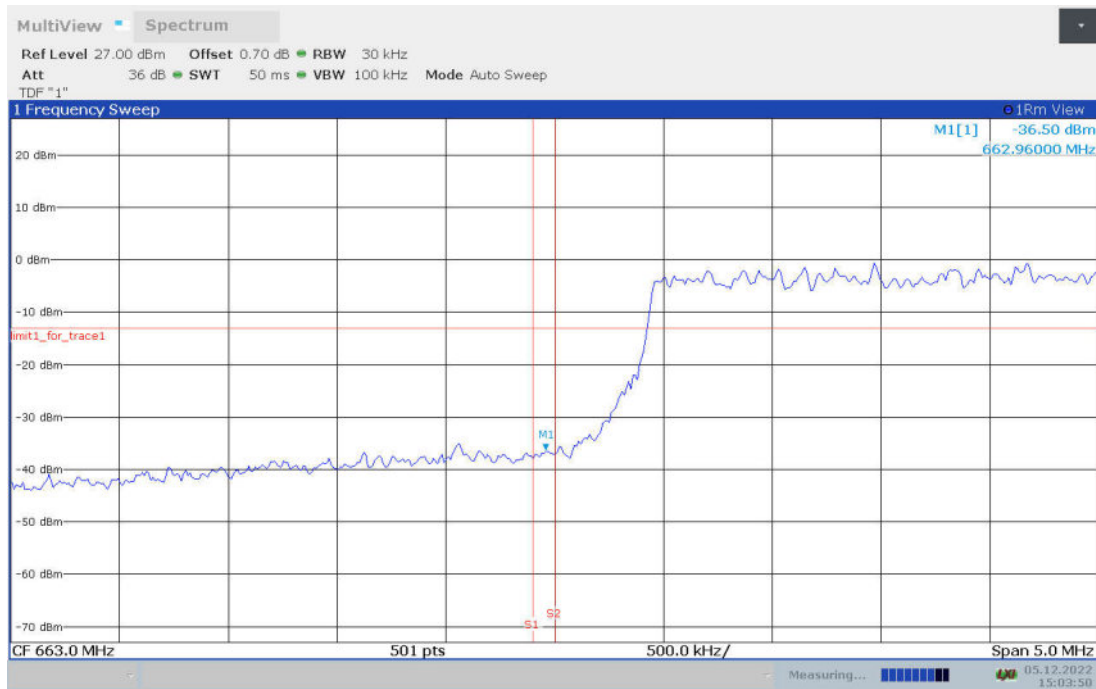
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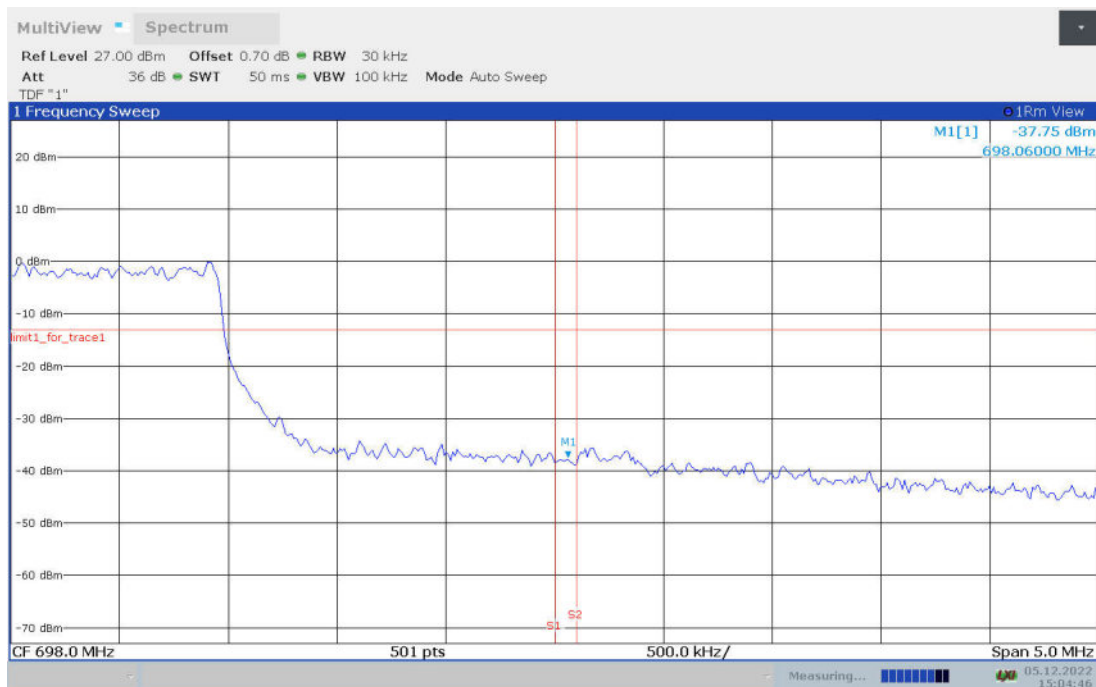
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-20M-100%RB

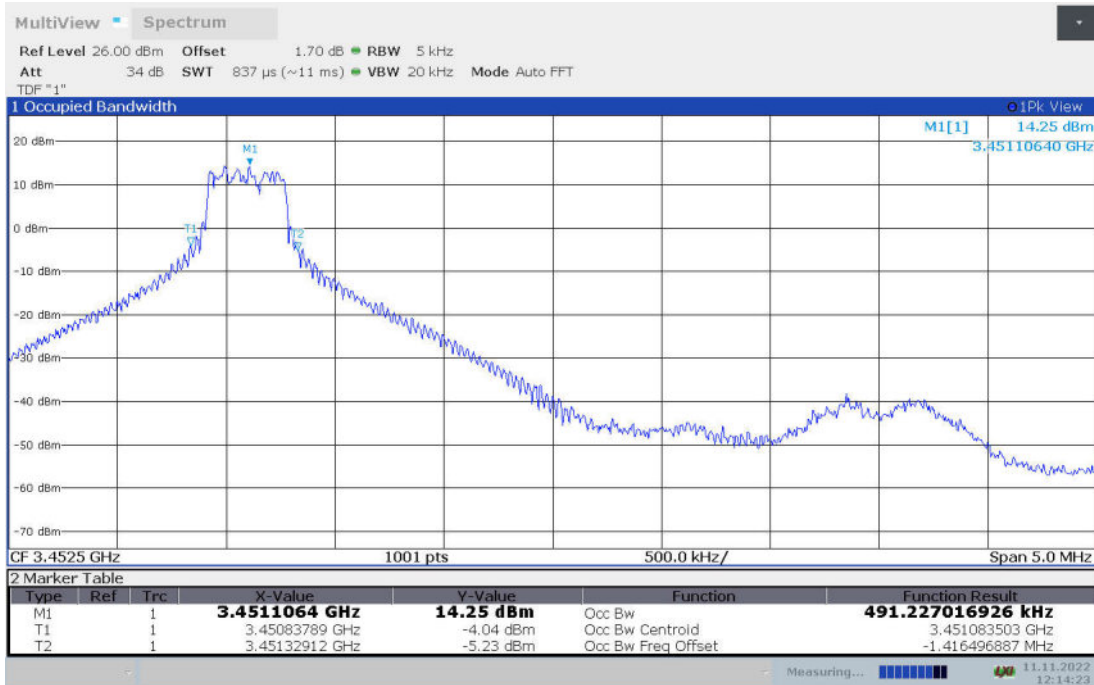


HIGH BAND EDGE BLOCK-20M-100%RB

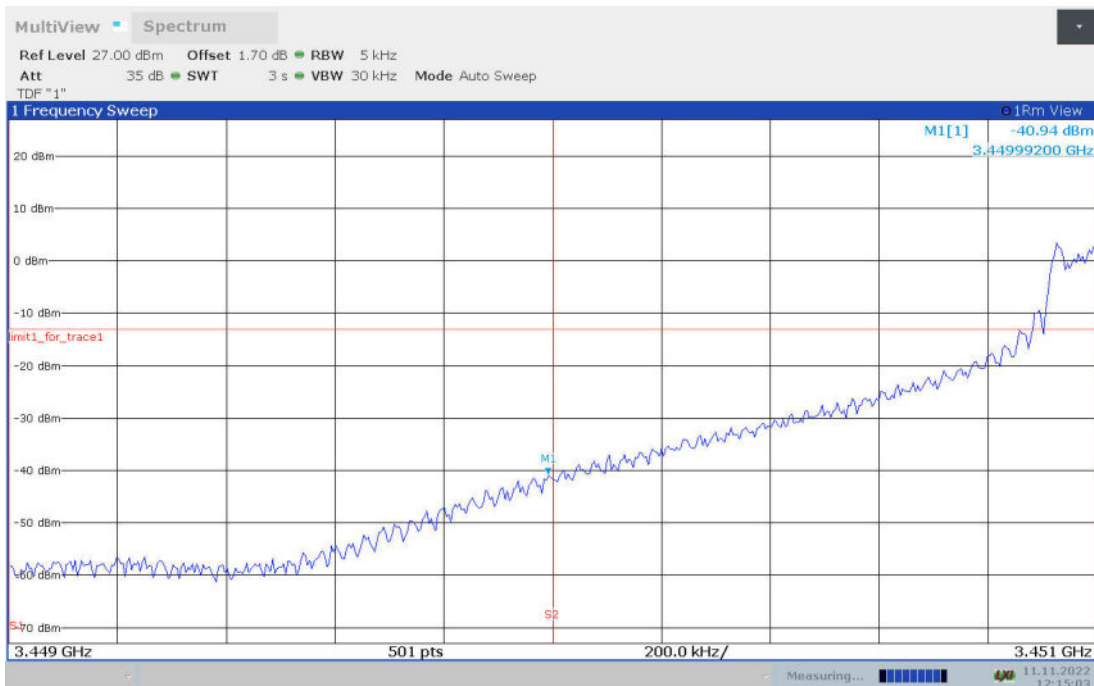


n77L

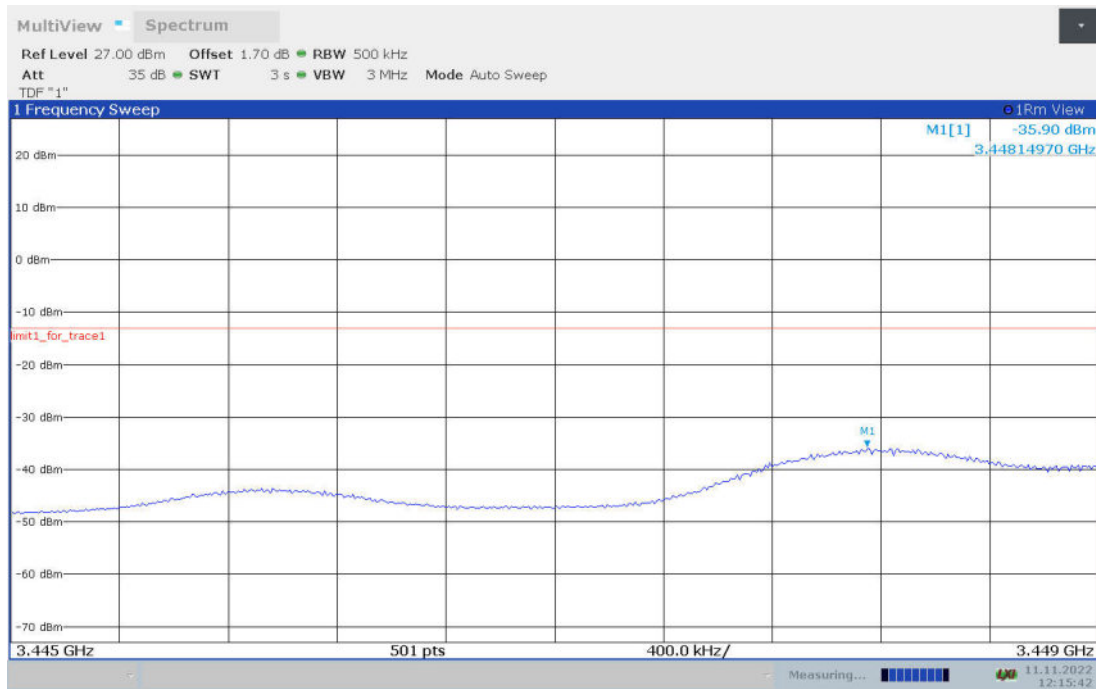
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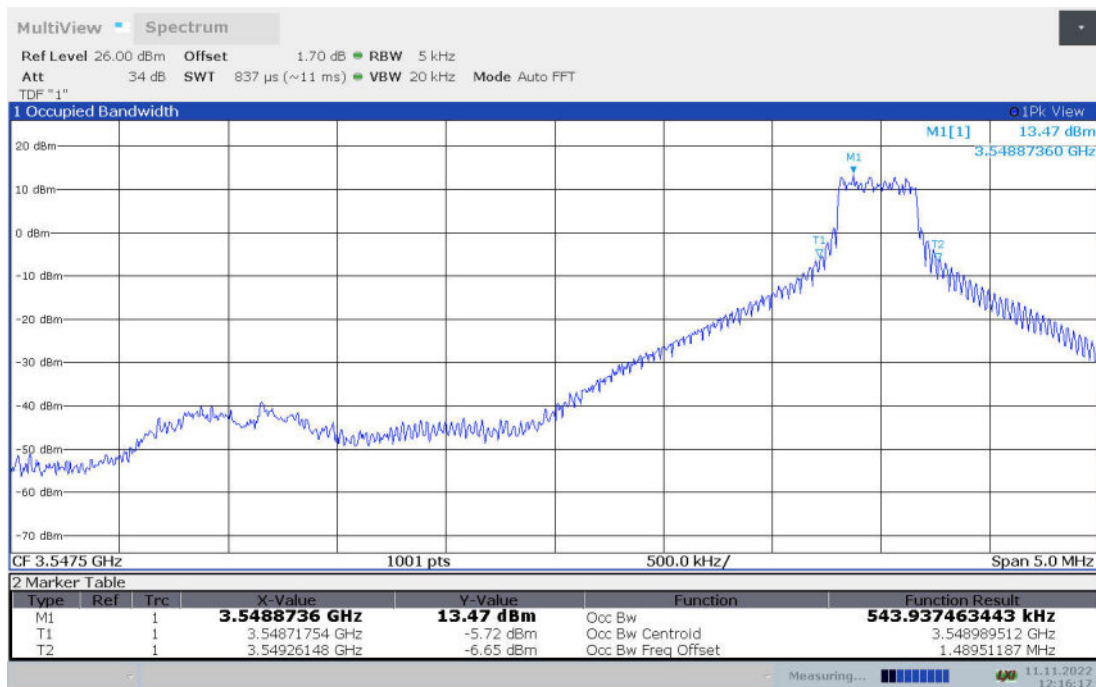
LOW BAND EDGE BLOCK-1RB-LOW_offset



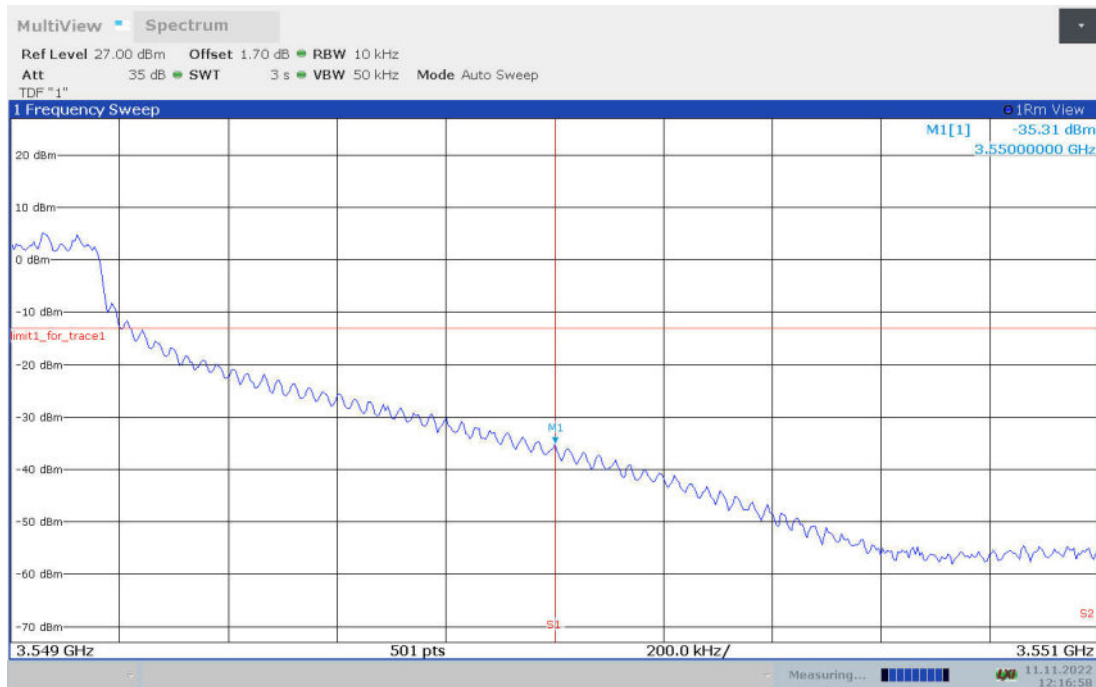
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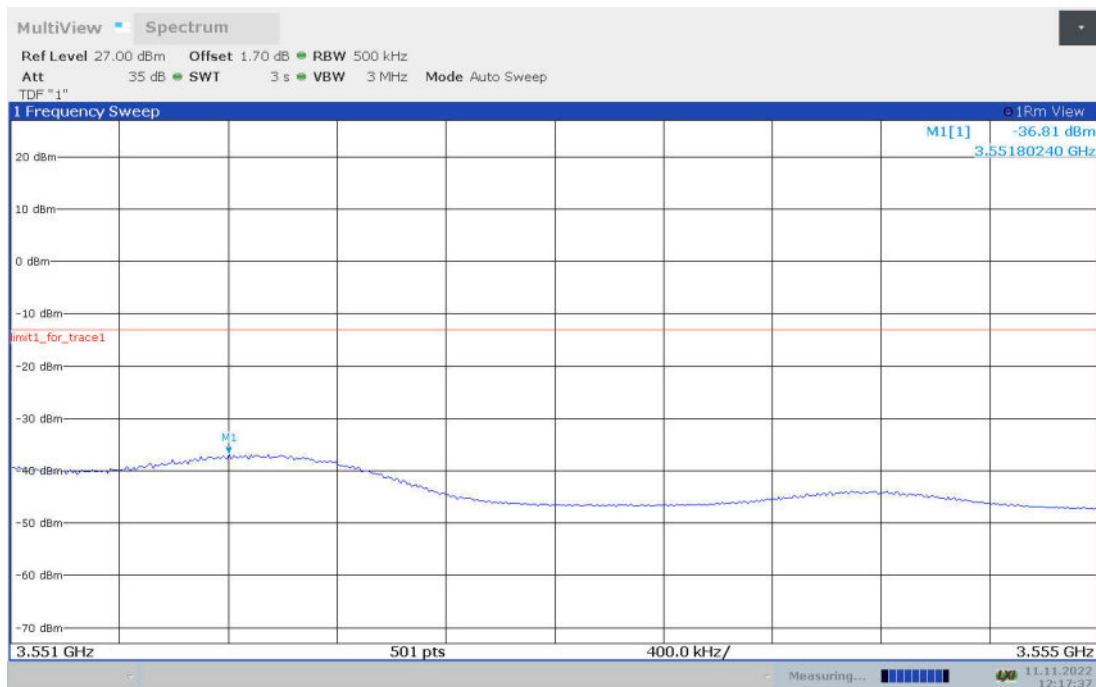
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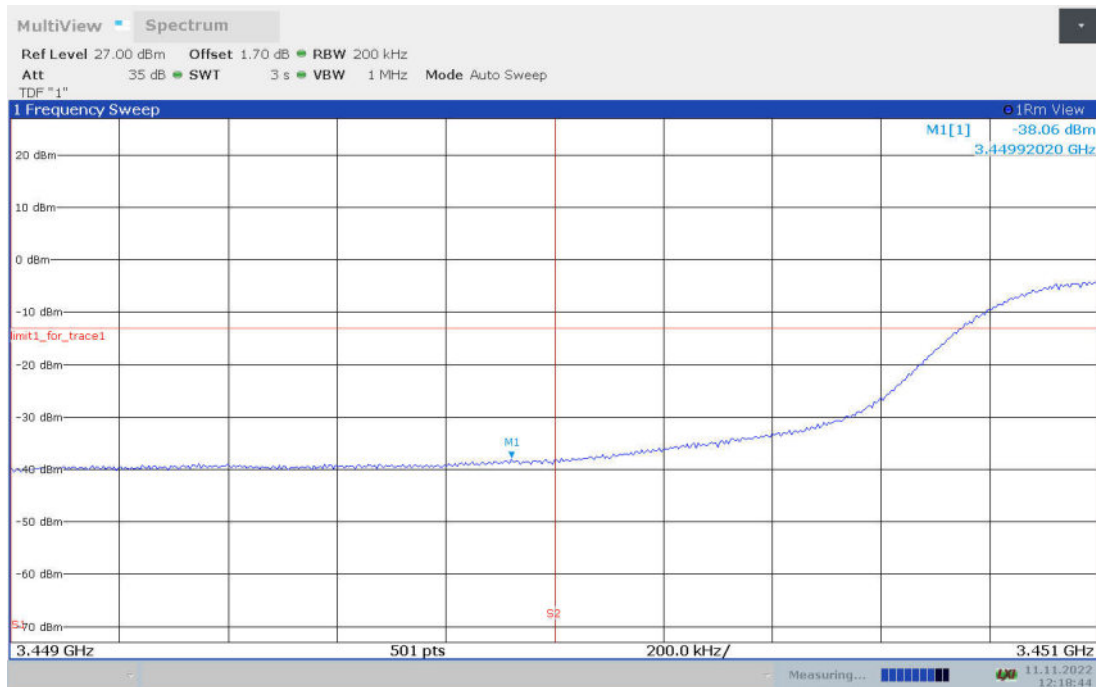
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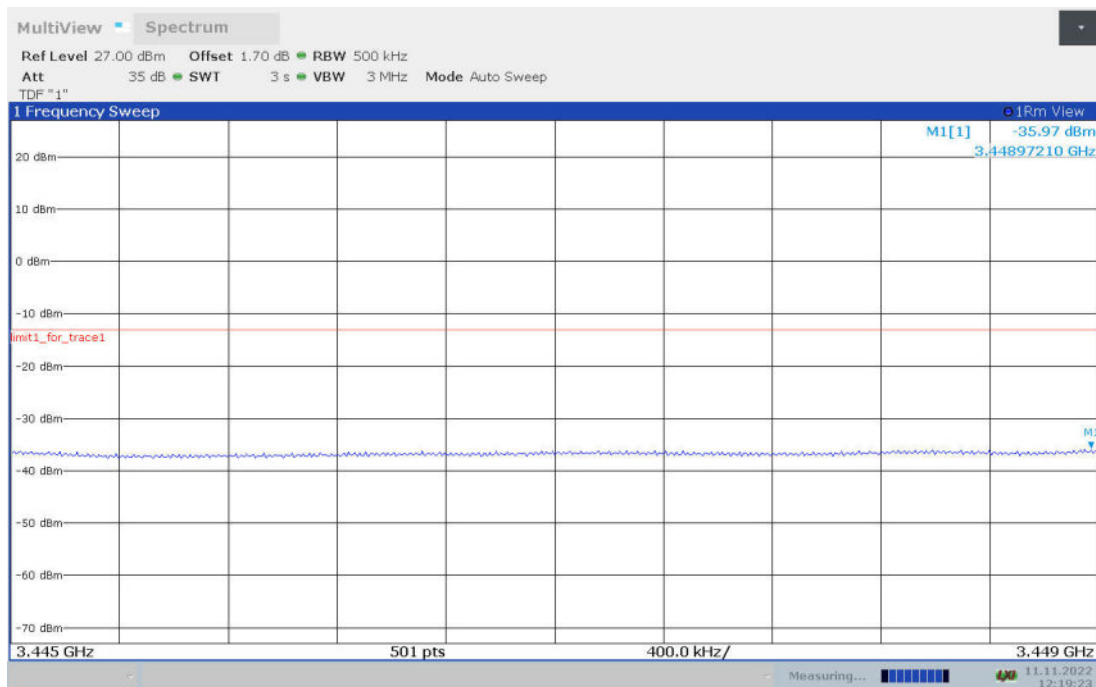
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



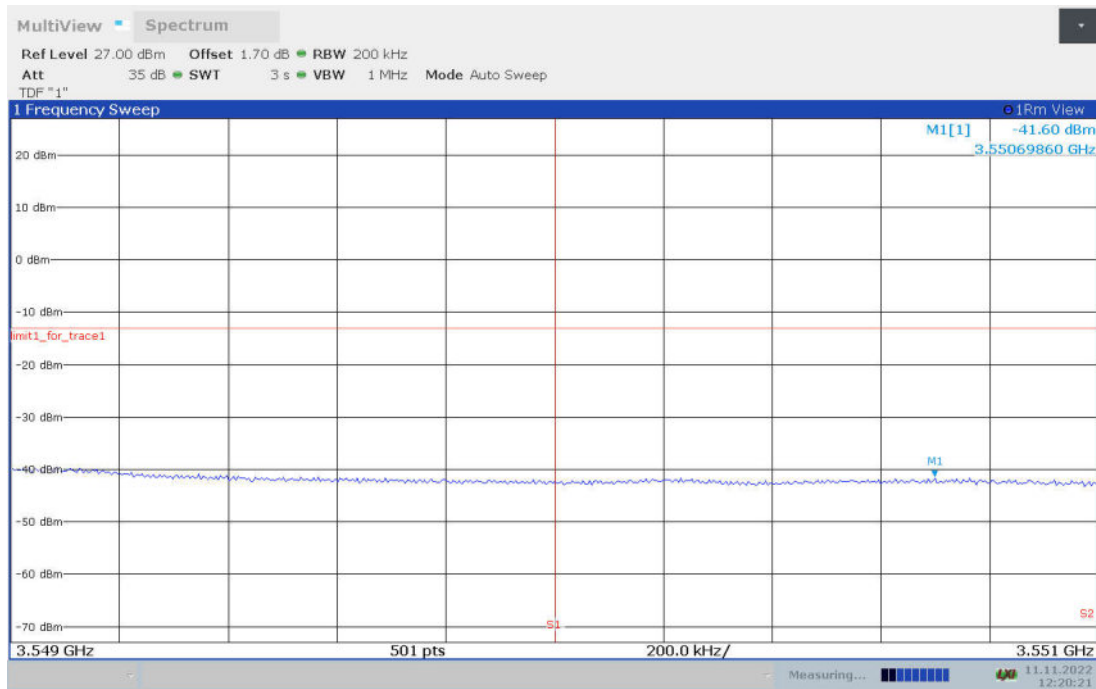
LOW BAND EDGE BLOCK-100M-100%RB



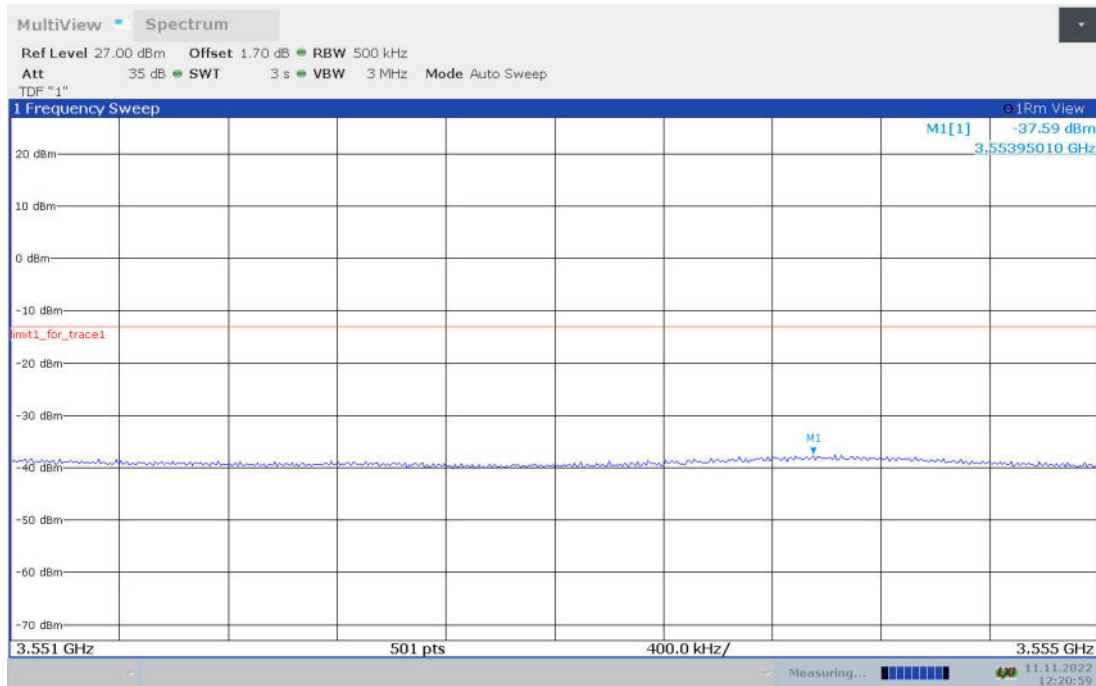
LOW BAND EDGE BLOCK-100M-100%RB



HIGH BAND EDGE BLOCK-100M-100%RB

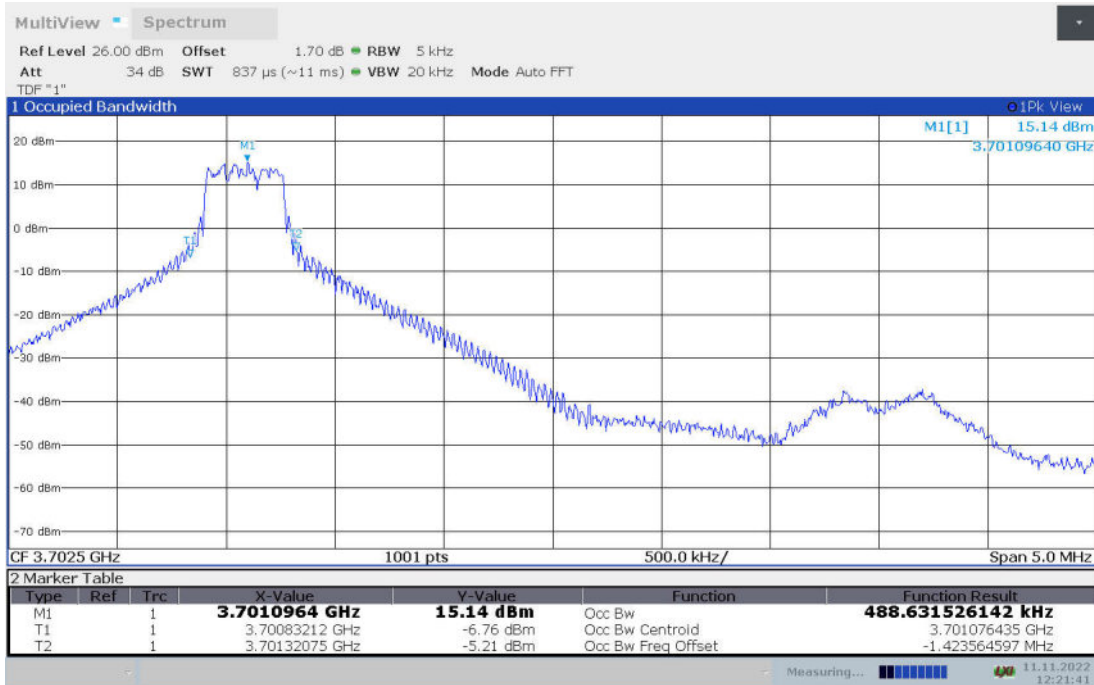


HIGH BAND EDGE BLOCK-100M-100%RB

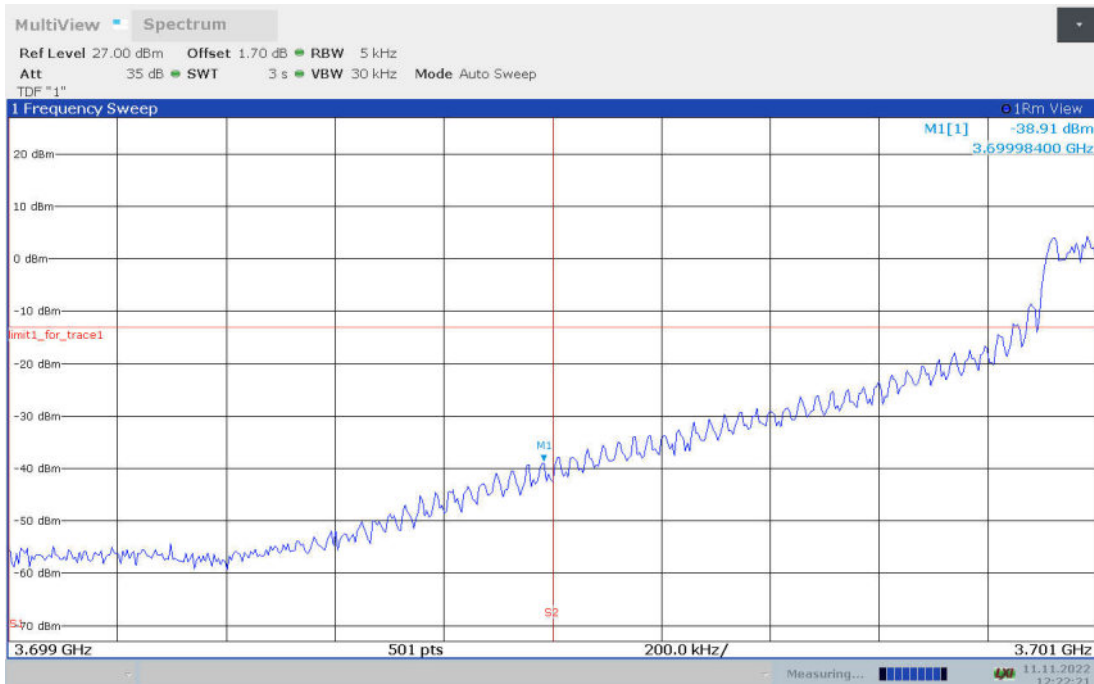


n77H

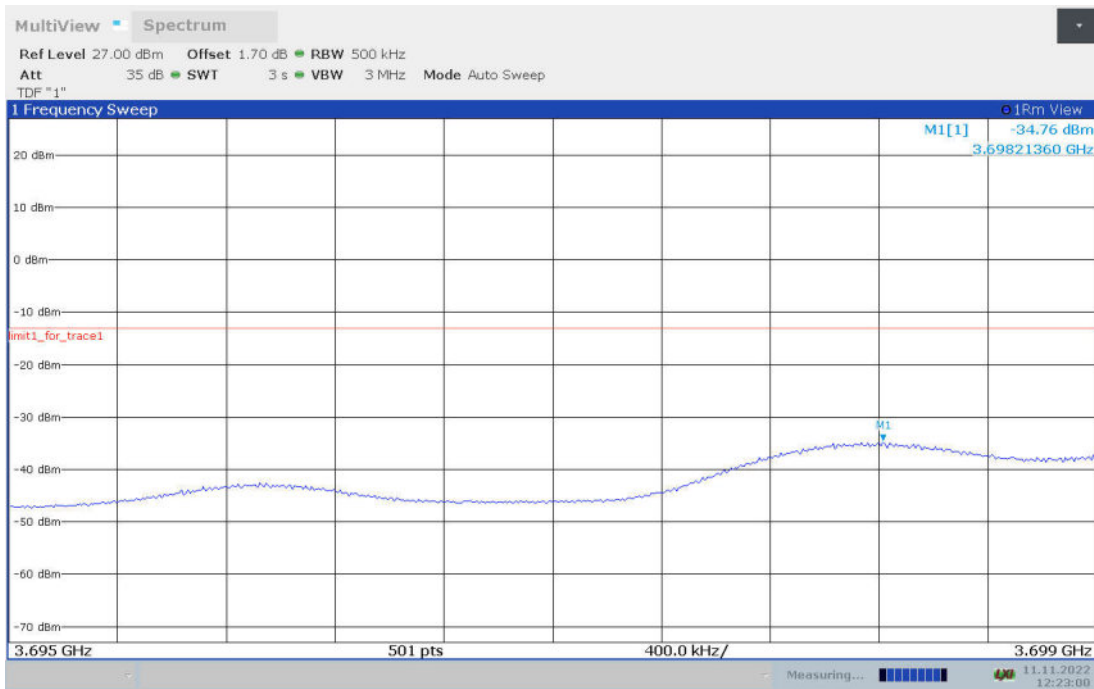
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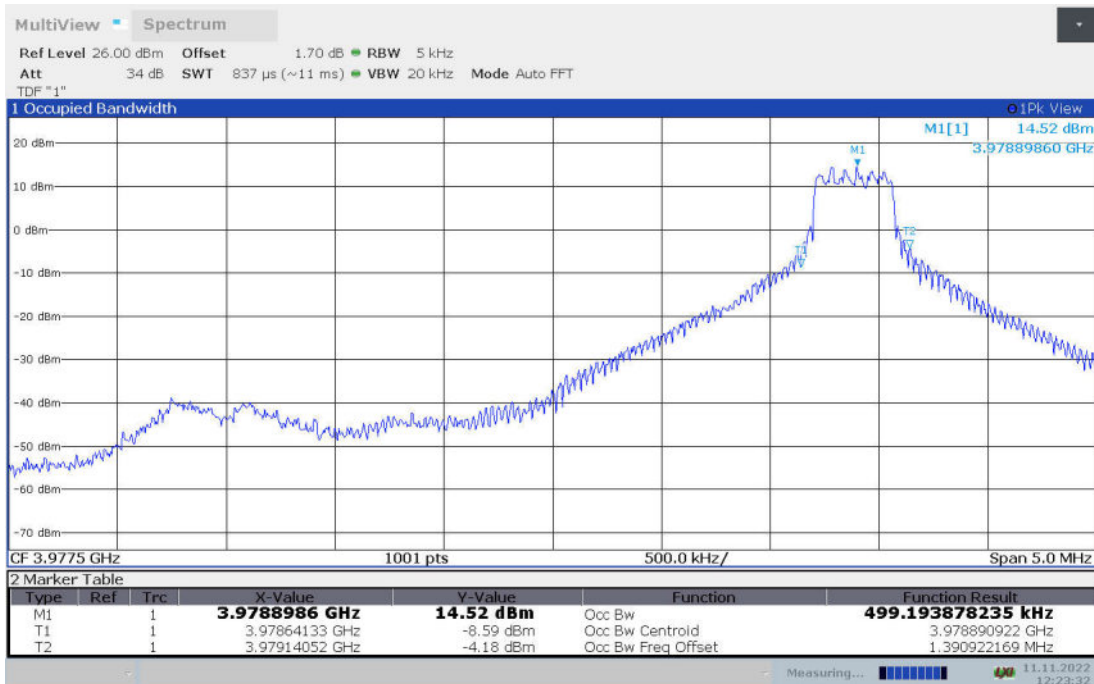
LOW BAND EDGE BLOCK-1RB-LOW_offset



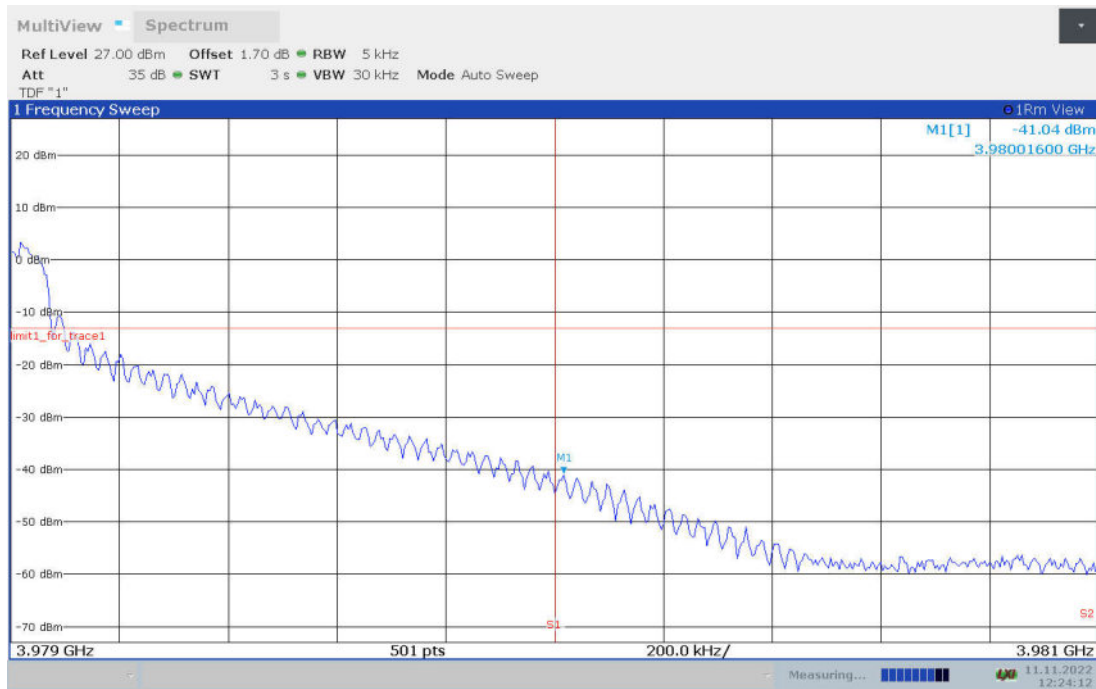
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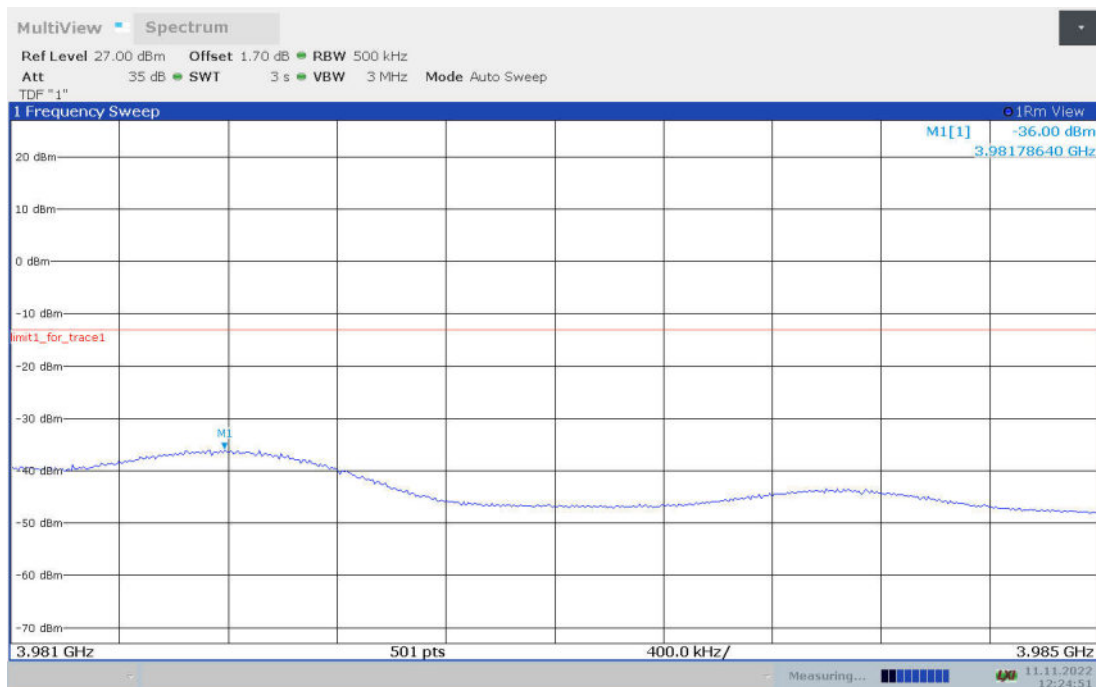
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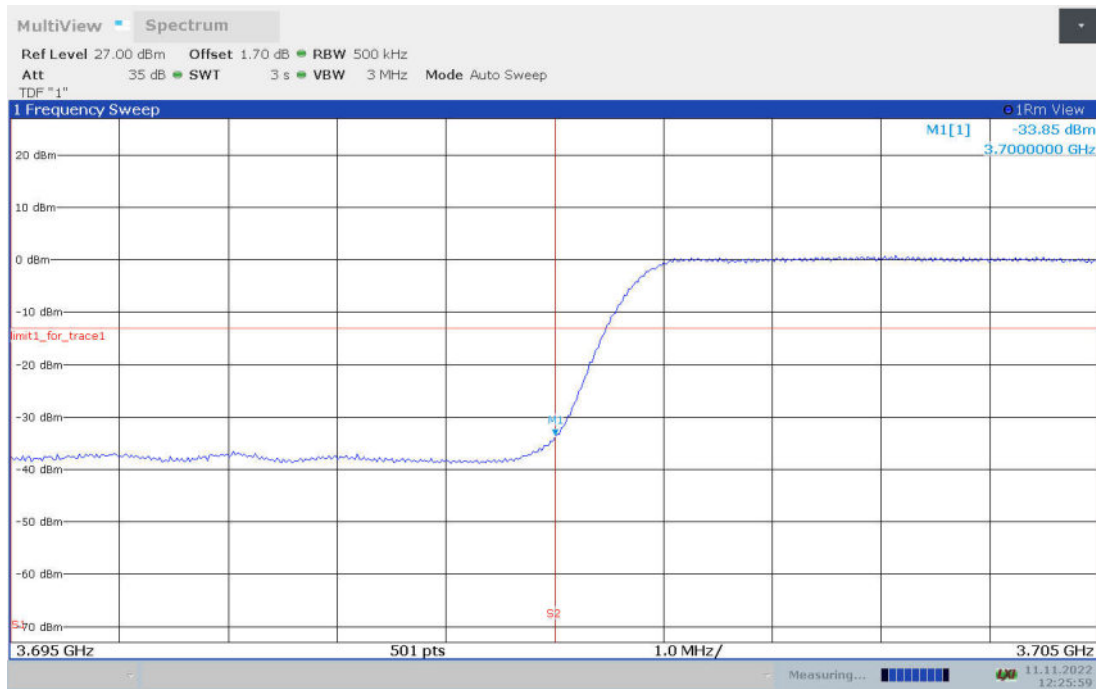
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



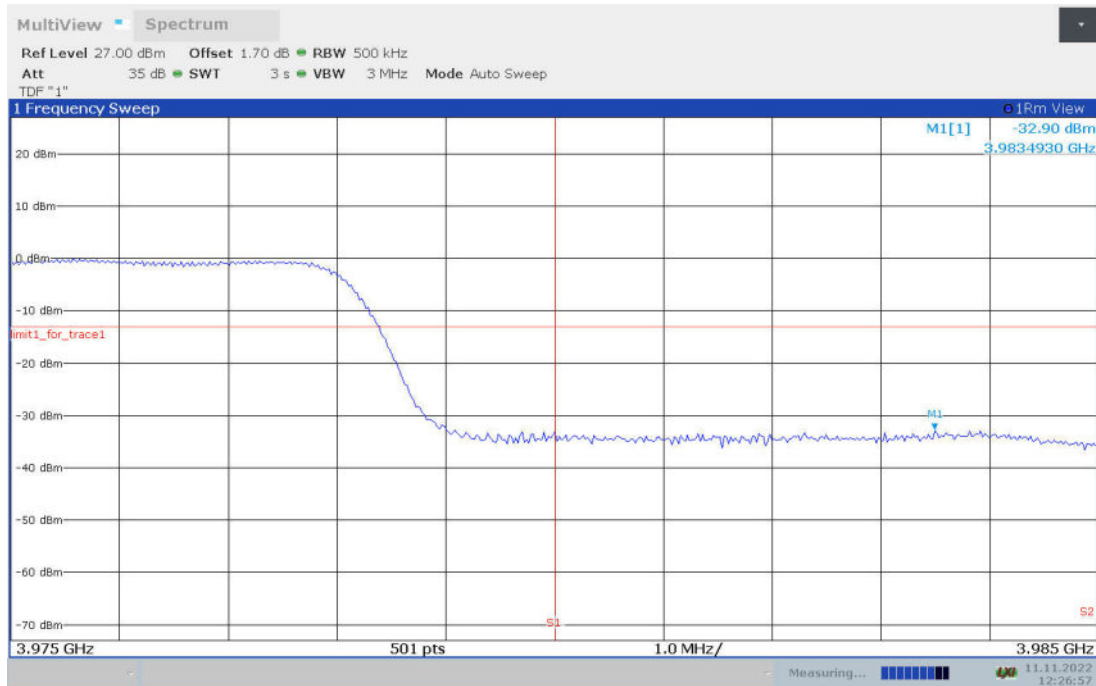
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-100M-100%RB

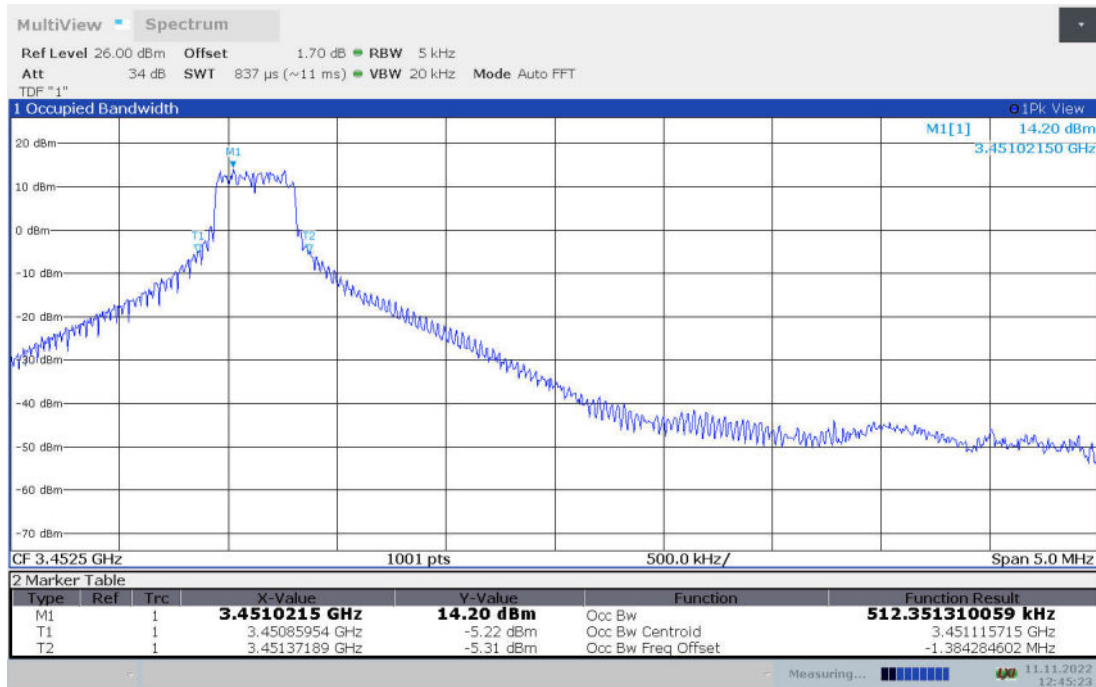


HIGH BAND EDGE BLOCK-100M-100%RB

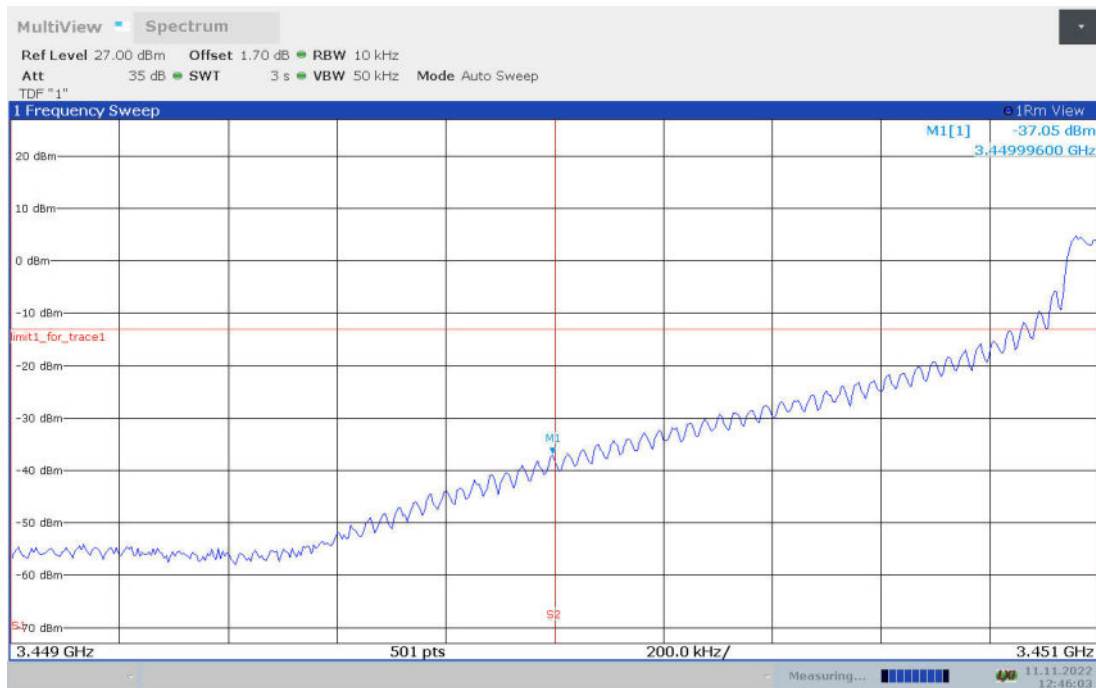


n78L

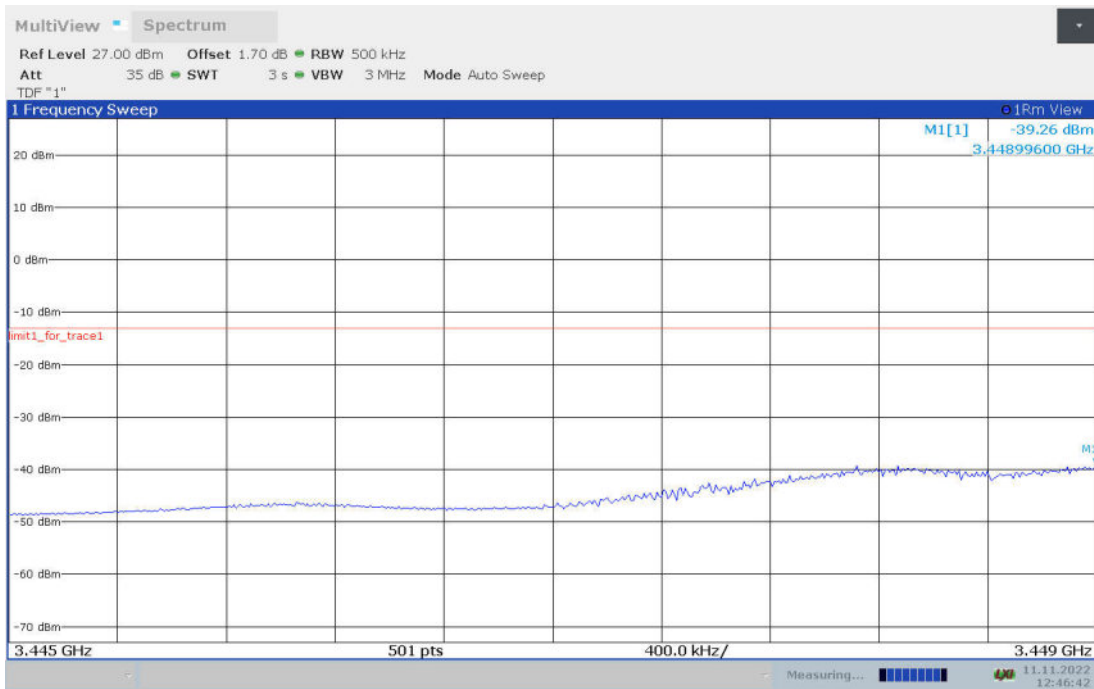
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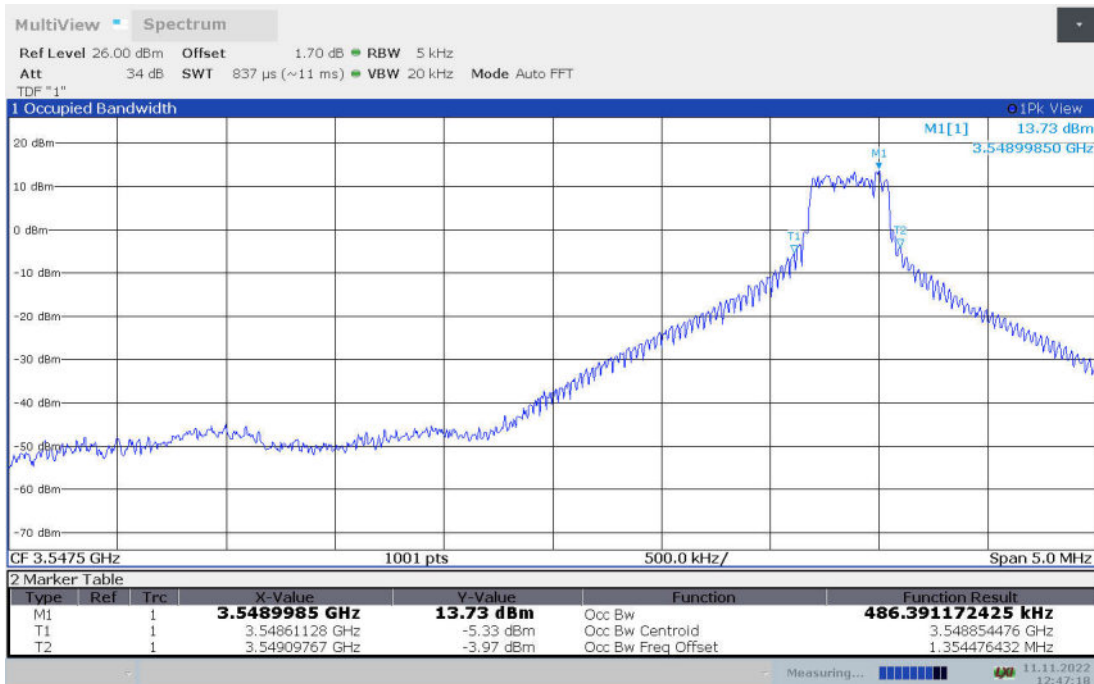
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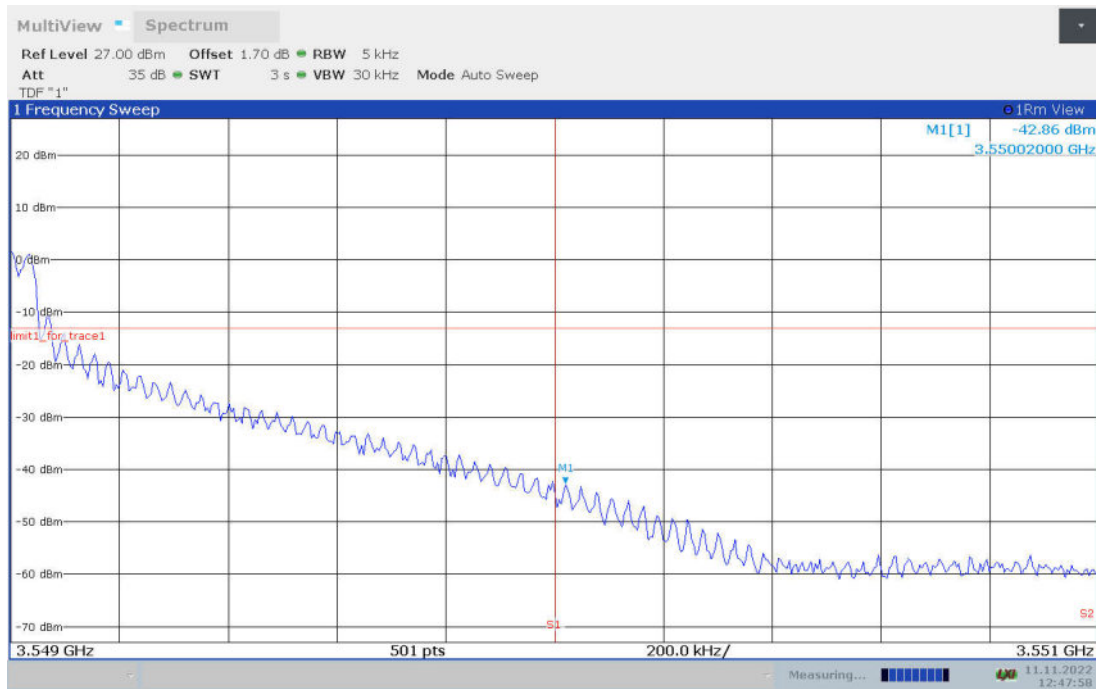
LOW BAND EDGE BLOCK-1RB-LOW_offset



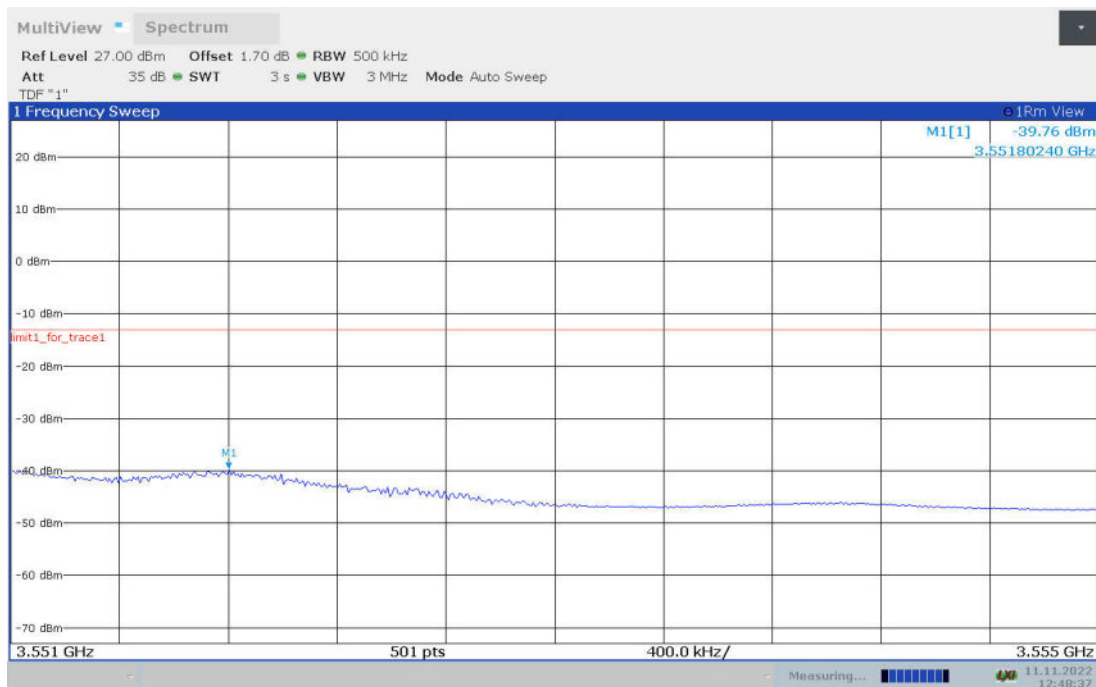
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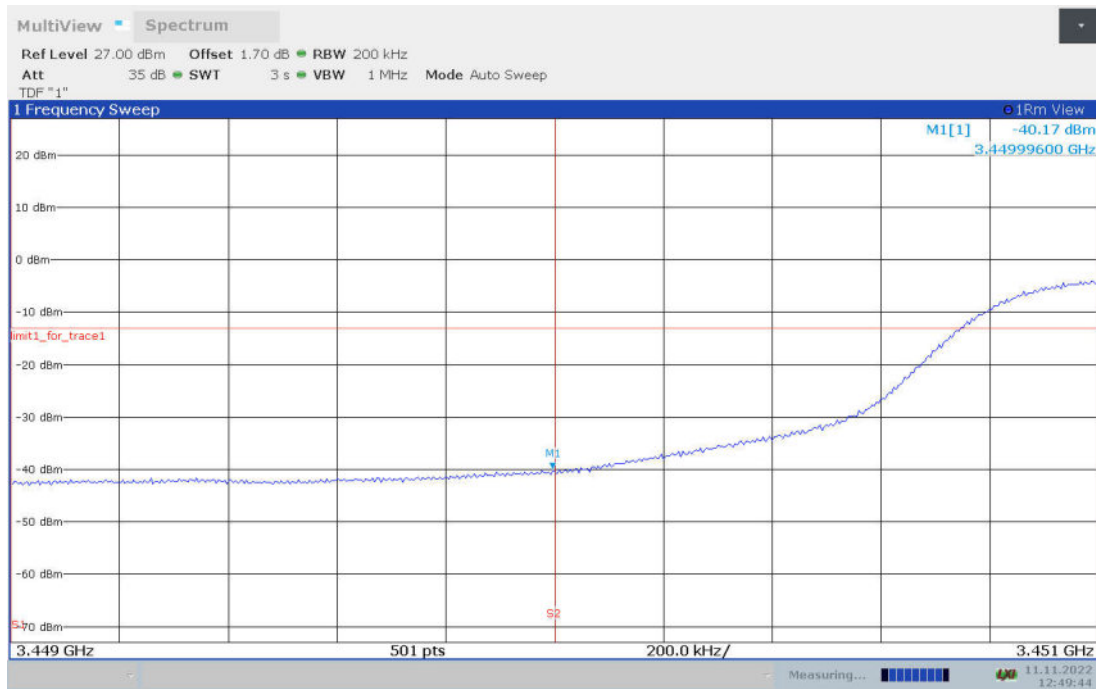
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



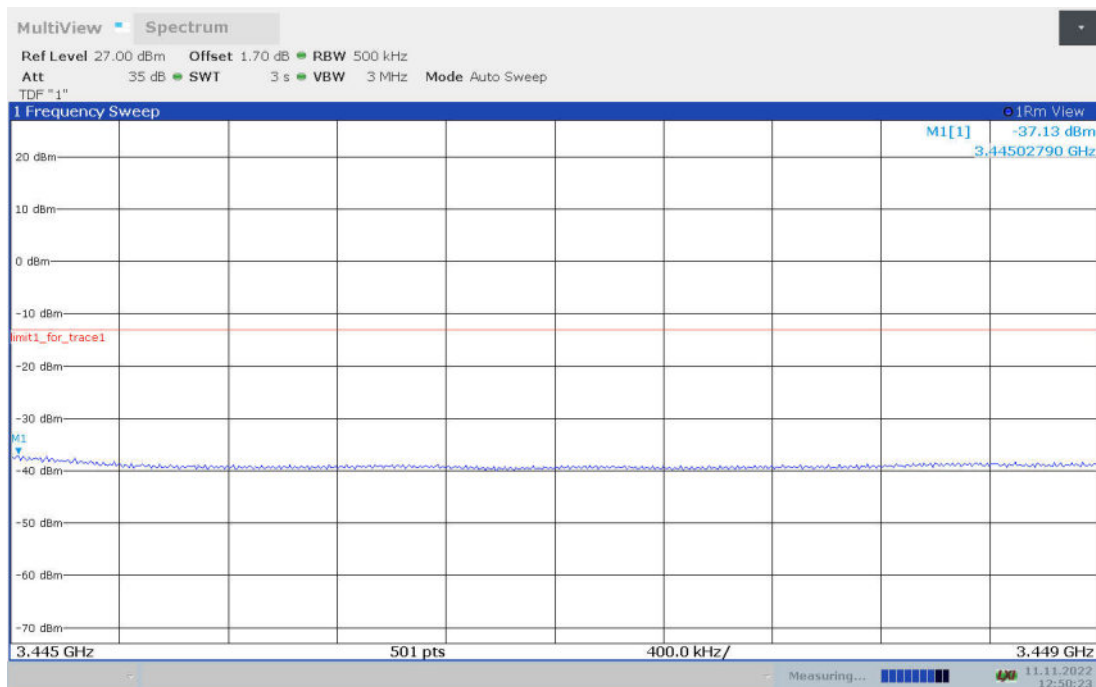
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



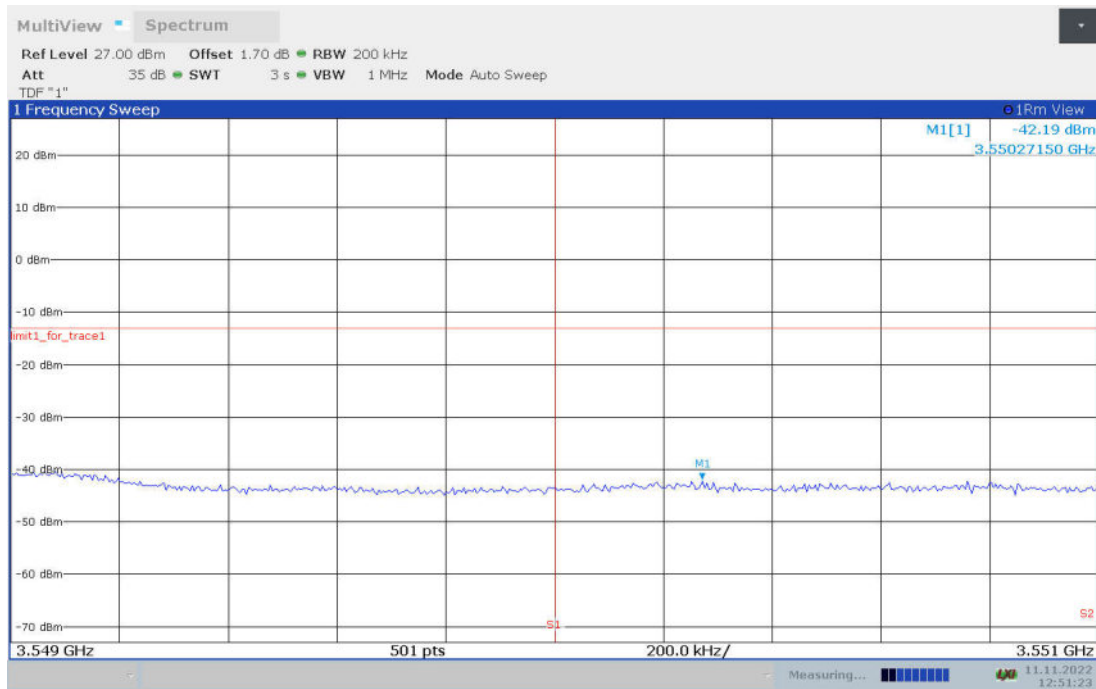
LOW BAND EDGE BLOCK-100M-100%RB



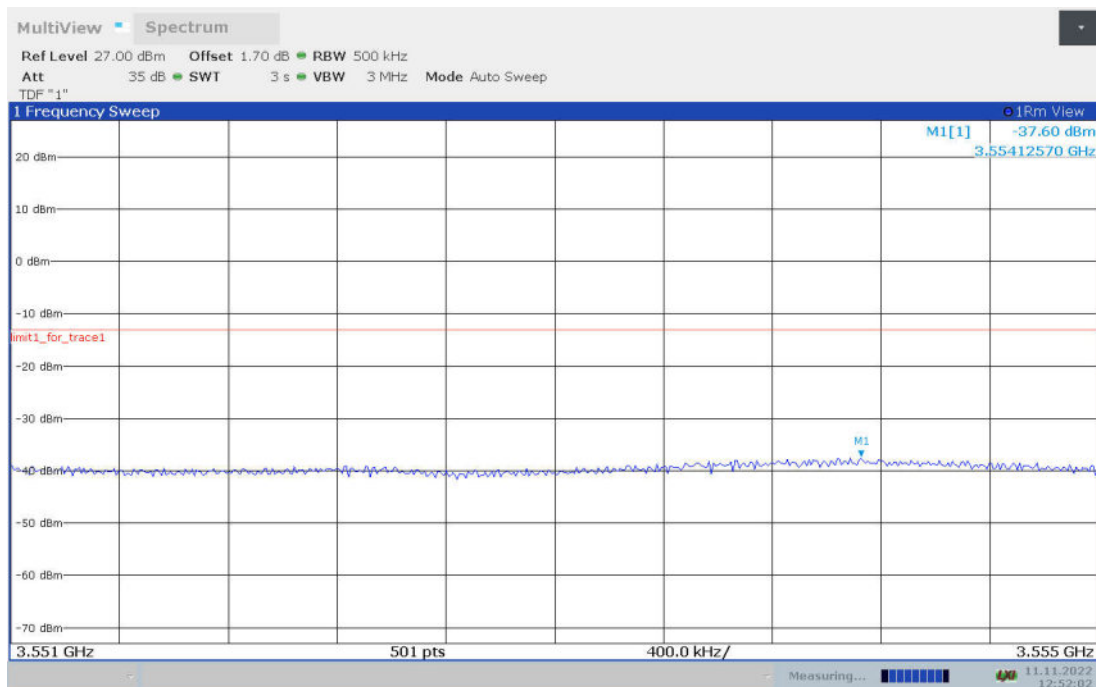
LOW BAND EDGE BLOCK-100M-100%RB



HIGH BAND EDGE BLOCK-100M-100%RB

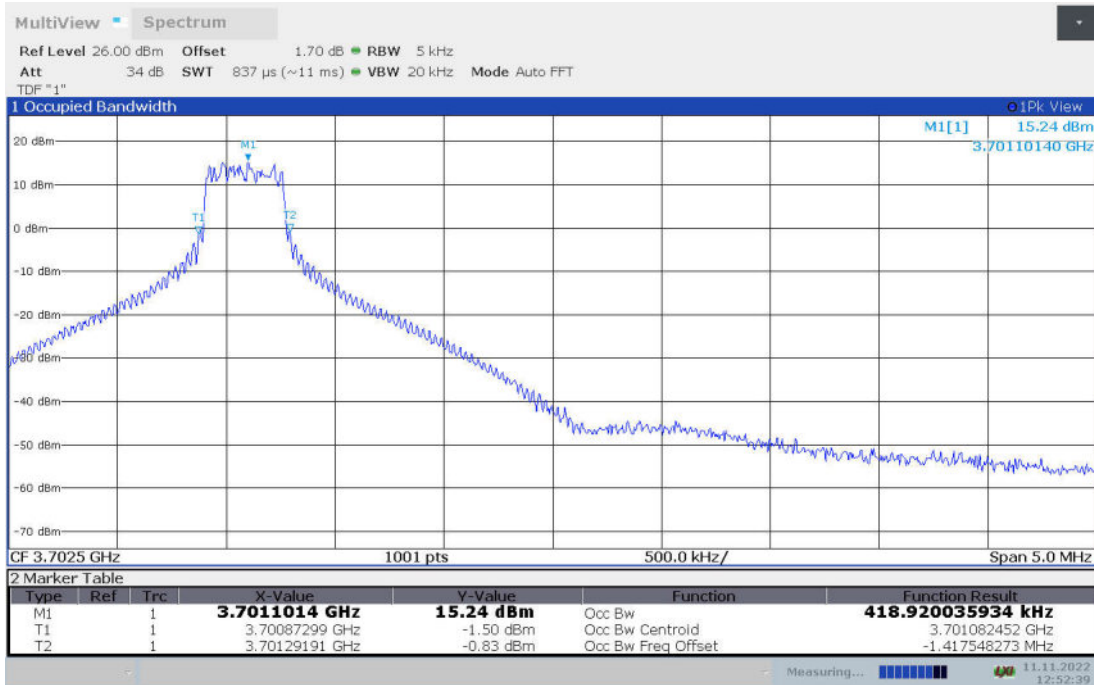


HIGH BAND EDGE BLOCK-100M-100%RB

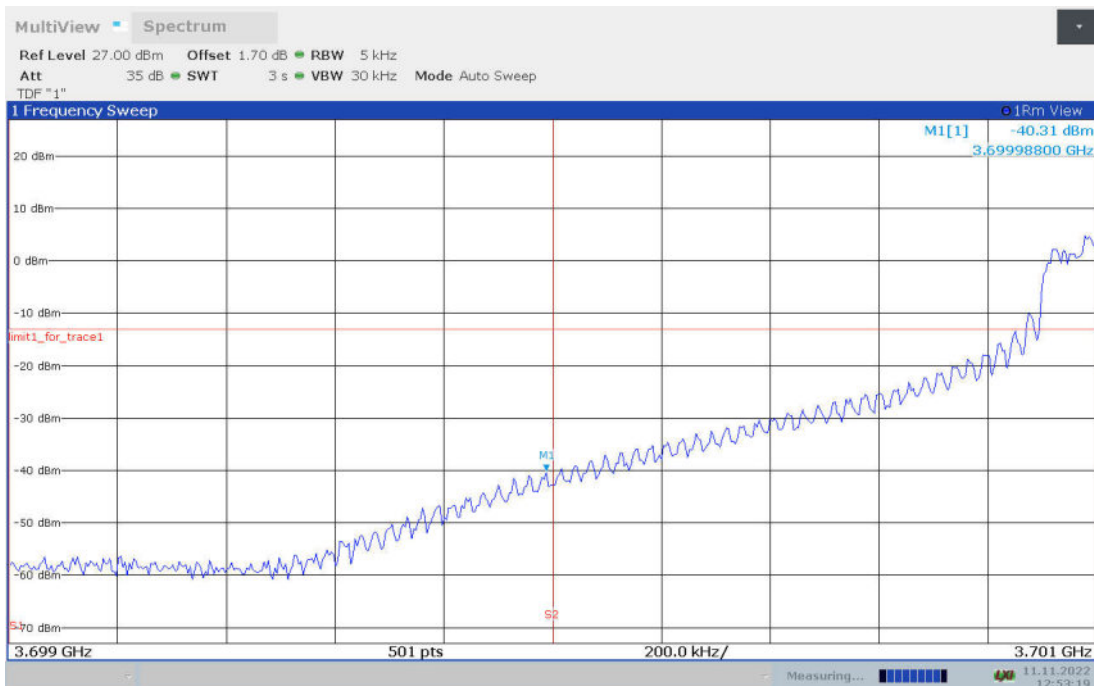


n78H

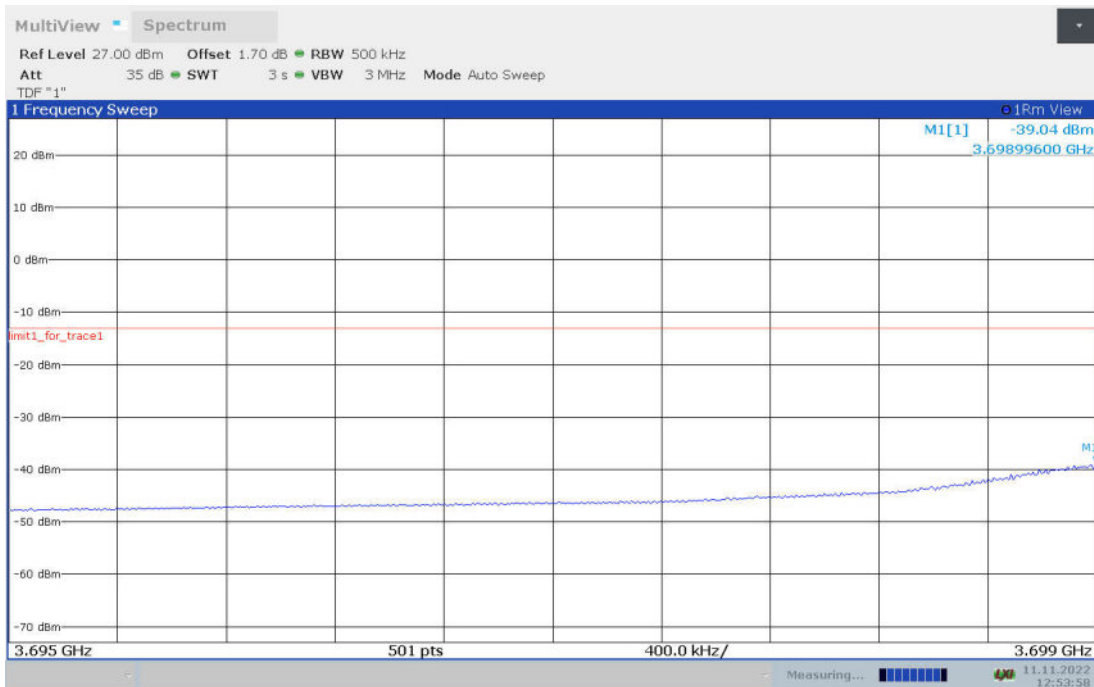
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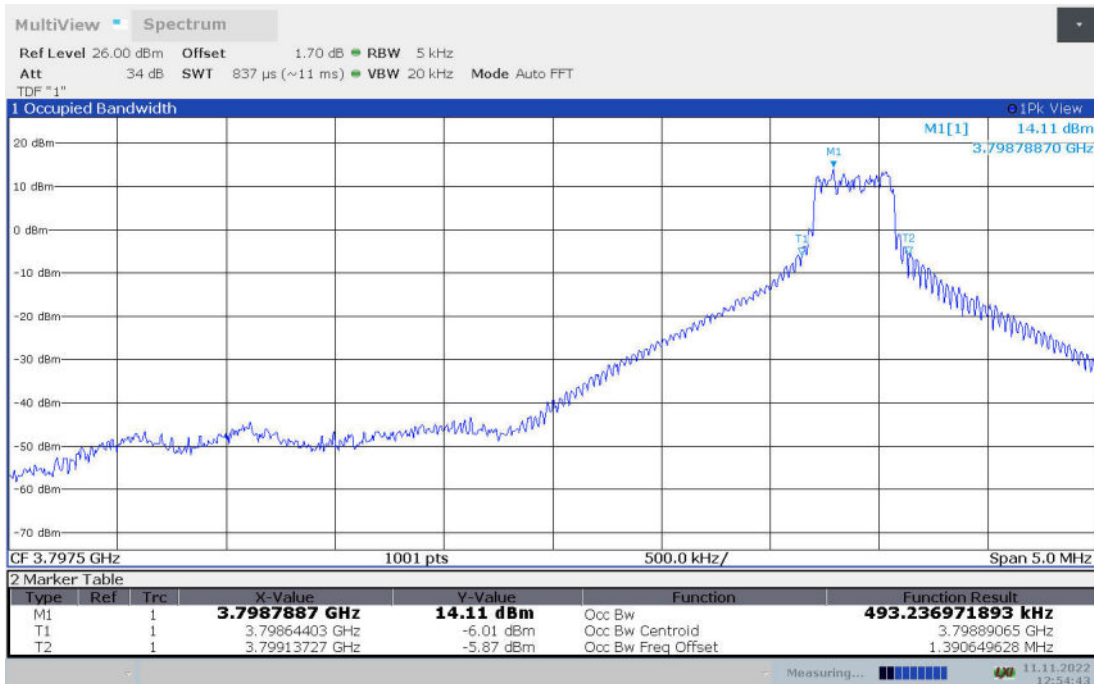
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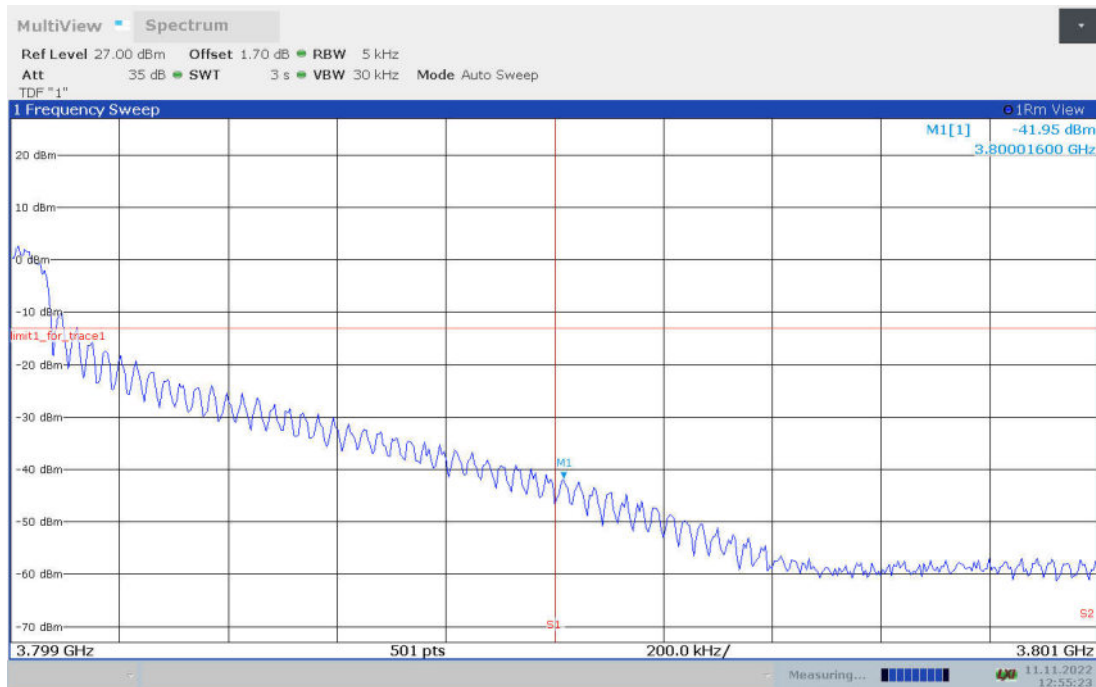
LOW BAND EDGE BLOCK-1RB-LOW_offset



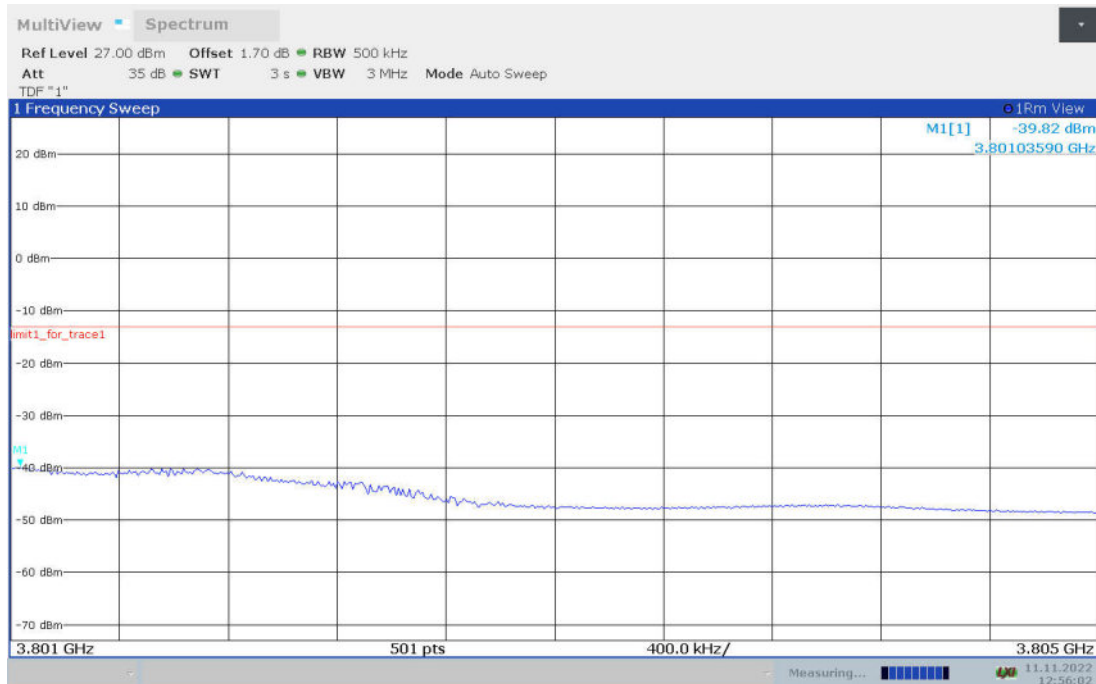
OBW: 1RB-HIGH_offset



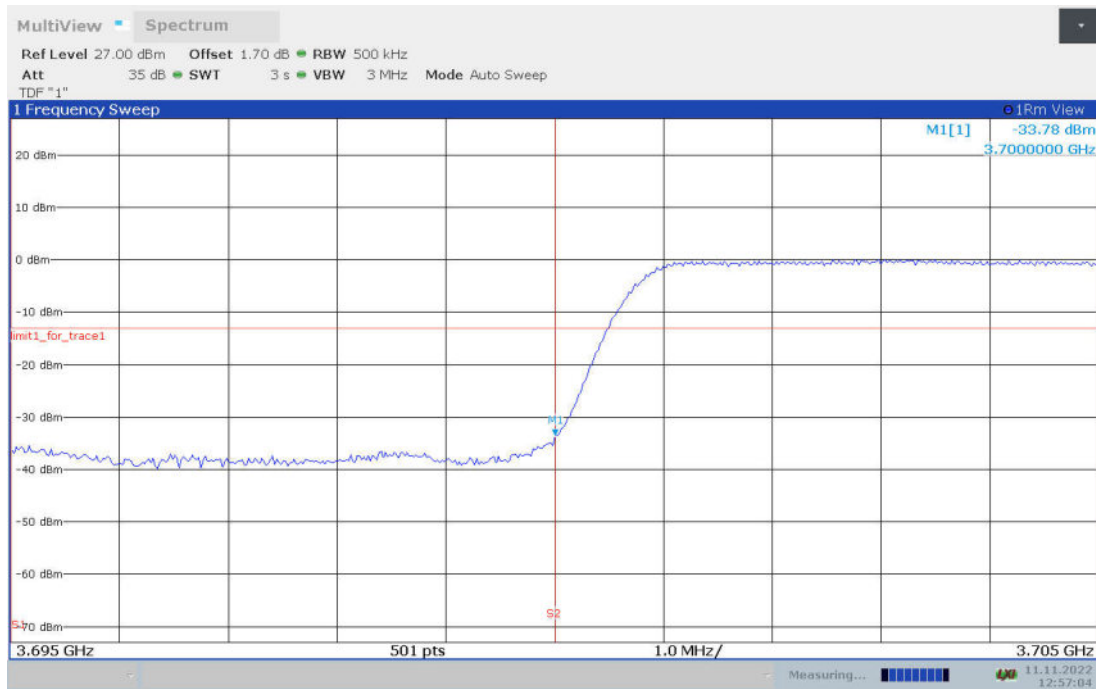
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



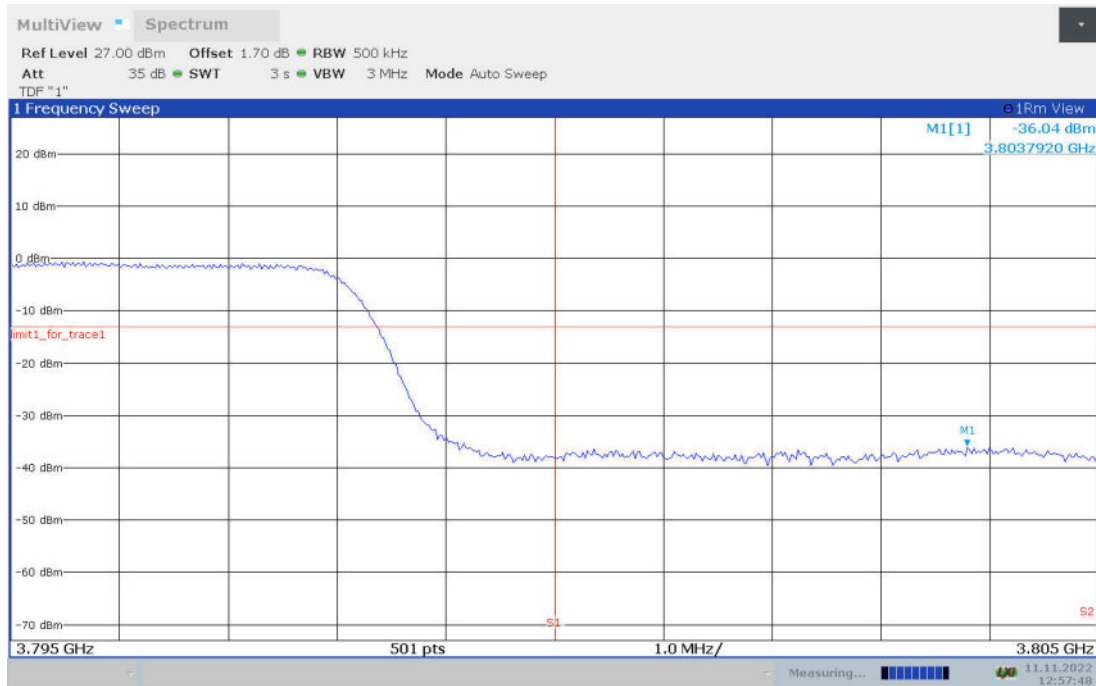
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



LOW BAND EDGE BLOCK-100M-100%RB



HIGH BAND EDGE BLOCK-100M-100%RB





A.7 CONDUCTED SPURIOUS EMISSION

Reference

FCC: CFR Part 2.1051, 22.917, 24.238, 27.53.

A.7.1 Measurement Method

The following steps outline the procedure used to measure the conducted emissions from the EUT.

1. Determine frequency range for measurements: From CFR 2.1051 the spectrum should be investigated from the lowest radio frequency generated in the equipment up to at least the 10th harmonic of the carrier frequency. For the mobile station equipment tested, this equates to a frequency range of 13 MHz to 9 GHz, data taken from 10 MHz to 25 GHz.
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 set to 30001 which is greater than span/RBW.

A. 7.2 Measurement Limit

Part 22.917 For operations in the 824–849MHz band, the FCC limit is $43 + 10 \log (P)$ dB below the transmitter power(P) in a 100kHz bandwidth. However, in the 1MHz 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.

Part 24.238 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 base station 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 the provisions of this paragraph (n)(1) 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. 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. Notwithstanding the channel edge requirement of -13 dBm per megahertz, for base station operations in the 3450-3550 MHz band, the conducted power of any emission below 3440 MHz or above 3560 MHz shall not exceed -25 dBm/MHz, and the conducted power of emissions below 3430 MHz or above 3570 MHz shall not exceed -40 dBm/MHz. Part 27.53(l) states for base station 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)(1) 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. 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.

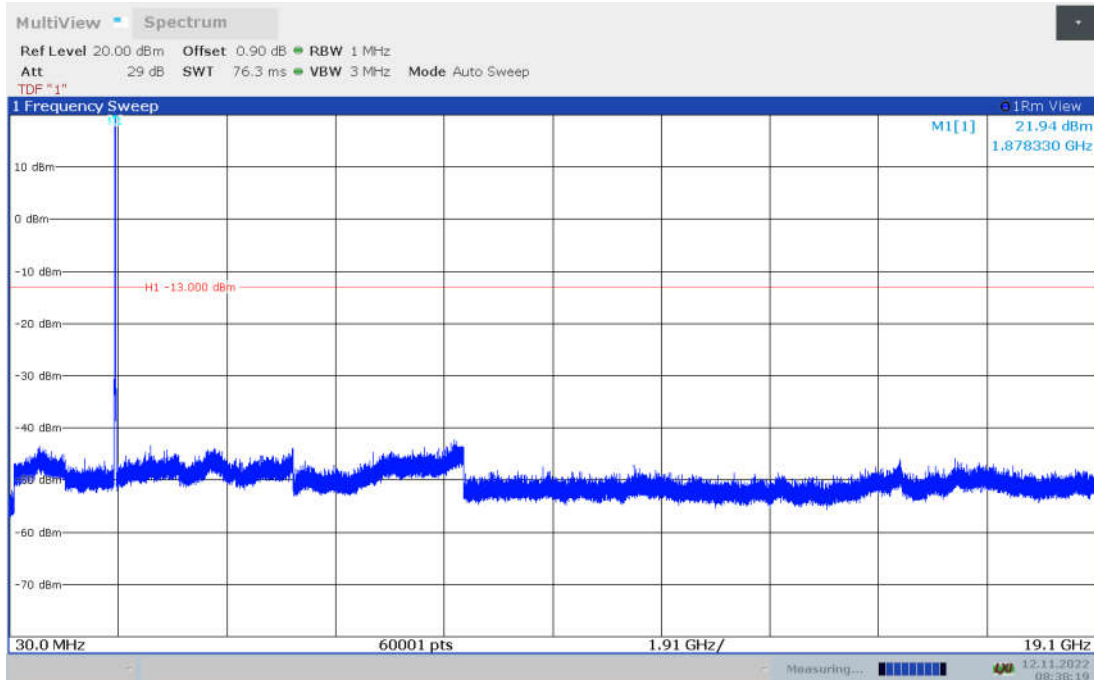
A. 6.3 Measurement result

Only worst case result is given below

n2 : 30MHz –19.1GHz

Spurious emission limit –13dBm.

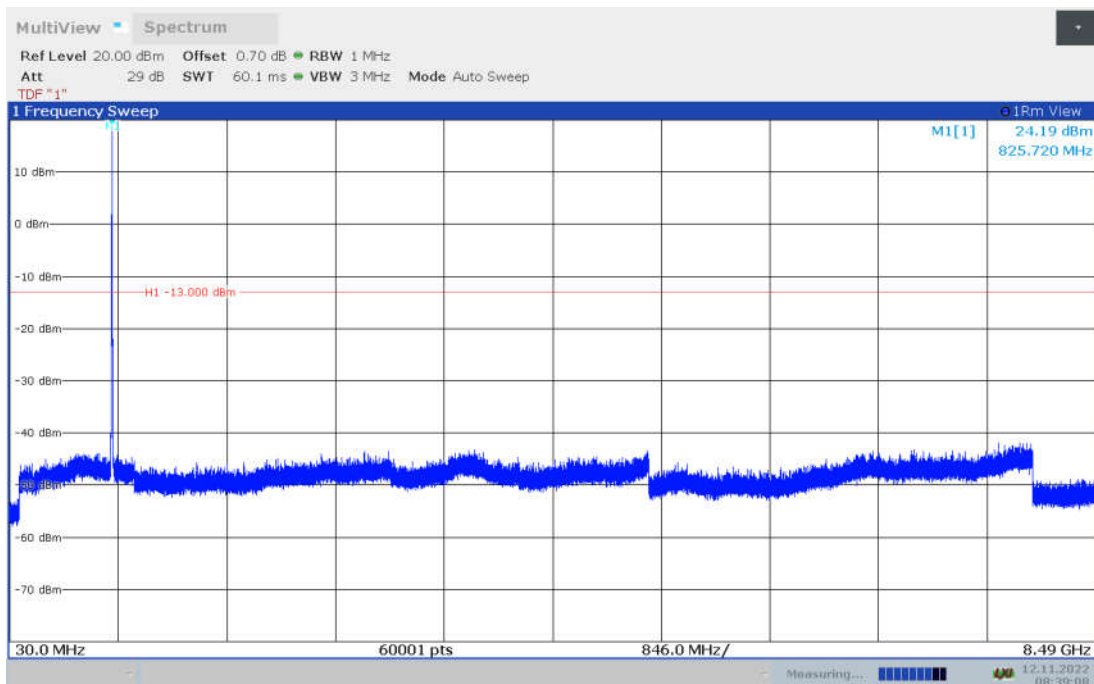
NOTE: peak above the limit line is the carrier frequency.



n5 : 30MHz –8.49GHz

Spurious emission limit –13dBm.

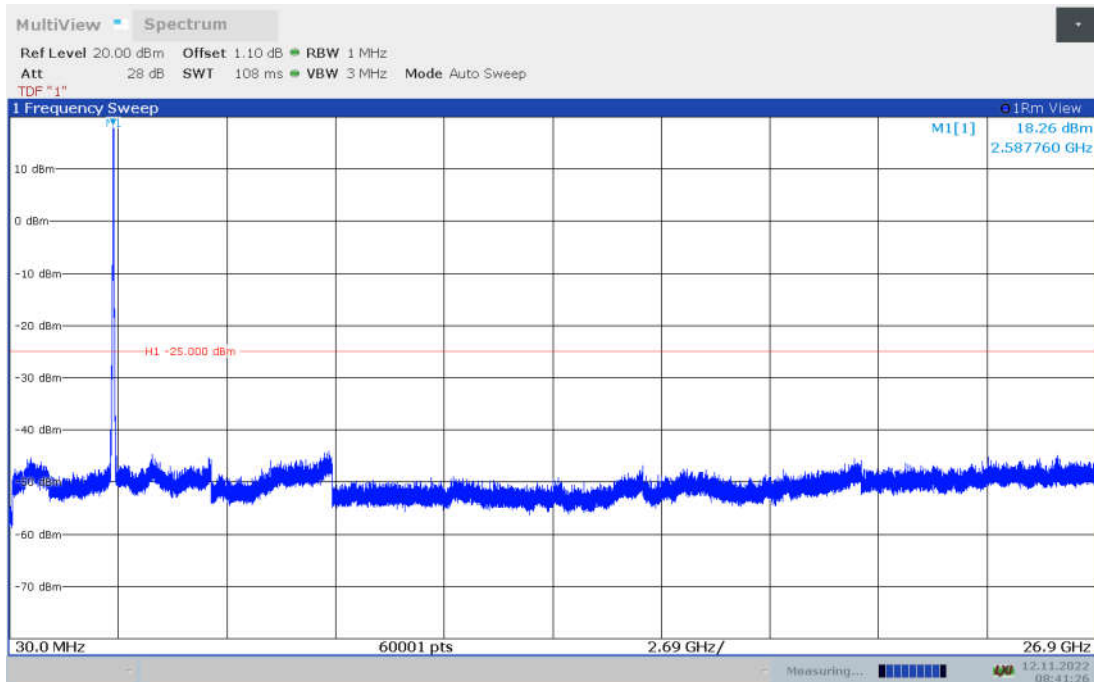
NOTE: peak above the limit line is the carrier frequency.



n41 : 30MHz –26.9GHz

Spurious emission limit –25dBm.

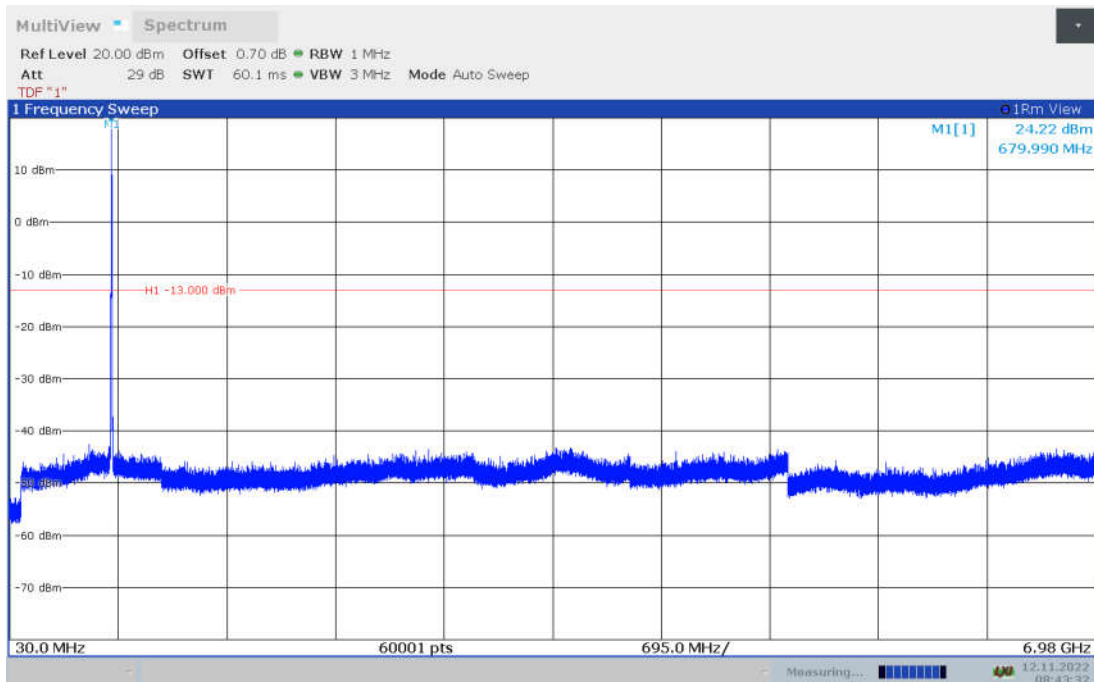
NOTE: peak above the limit line is the carrier frequency.



n71 : 30MHz –6.98GHz

Spurious emission limit –13dBm.

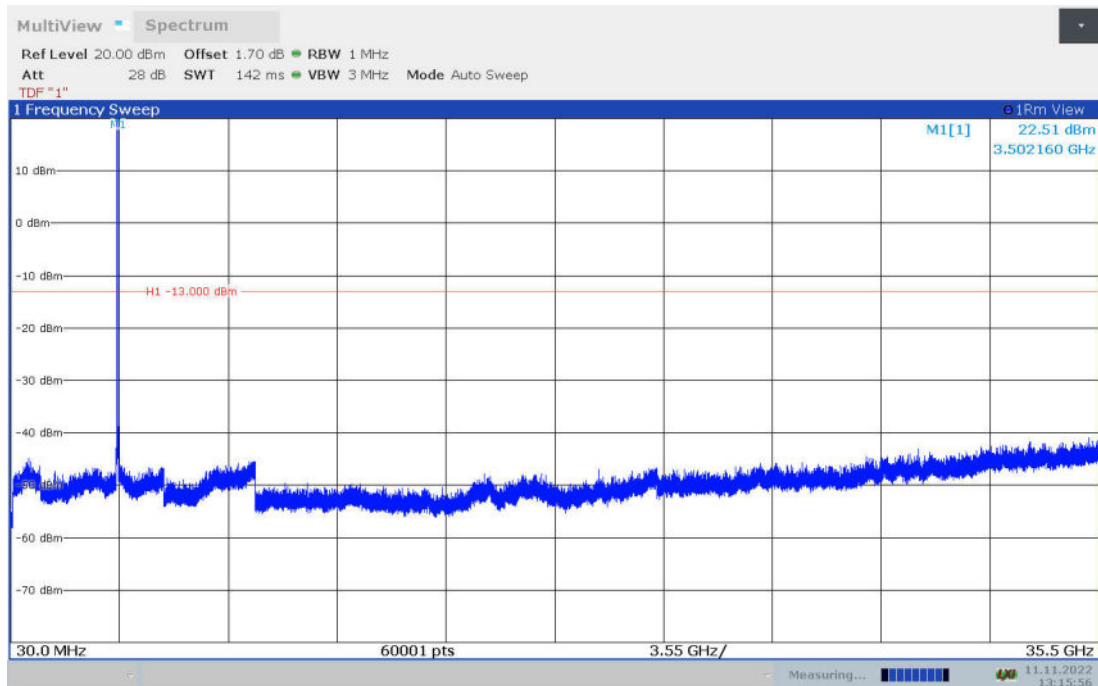
NOTE: peak above the limit line is the carrier frequency.



n77L : 30MHz –35.5GHz

Spurious emission limit –30dBm.

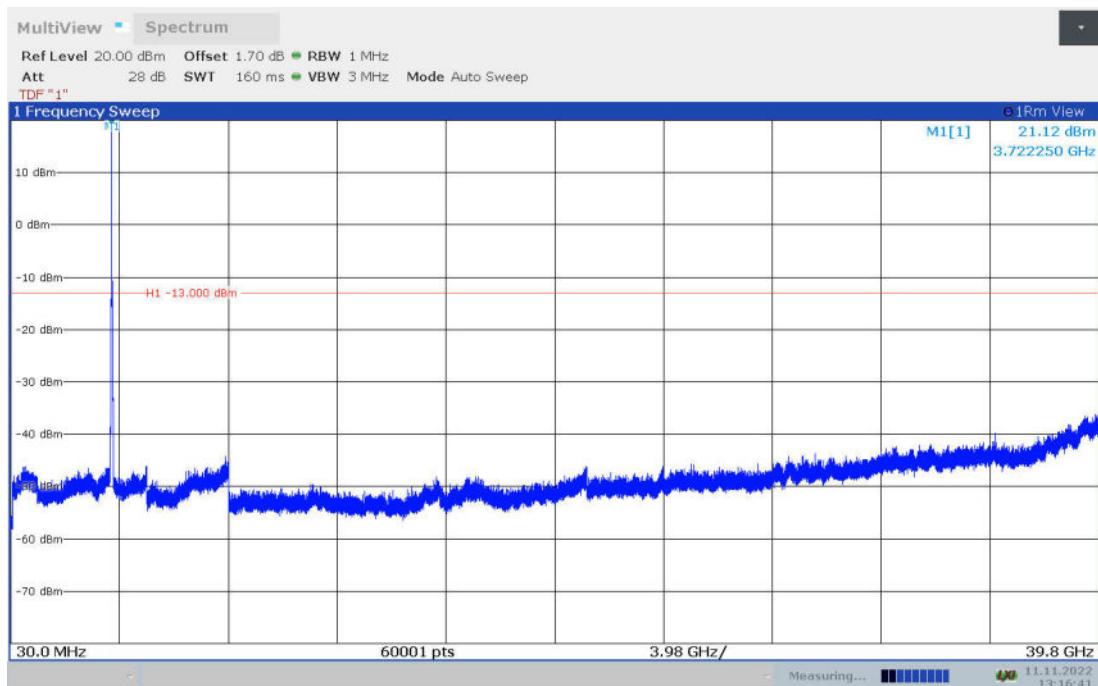
NOTE: peak above the limit line is the carrier frequency.



n77H : 30MHz –39.8GHz

Spurious emission limit –13dBm.

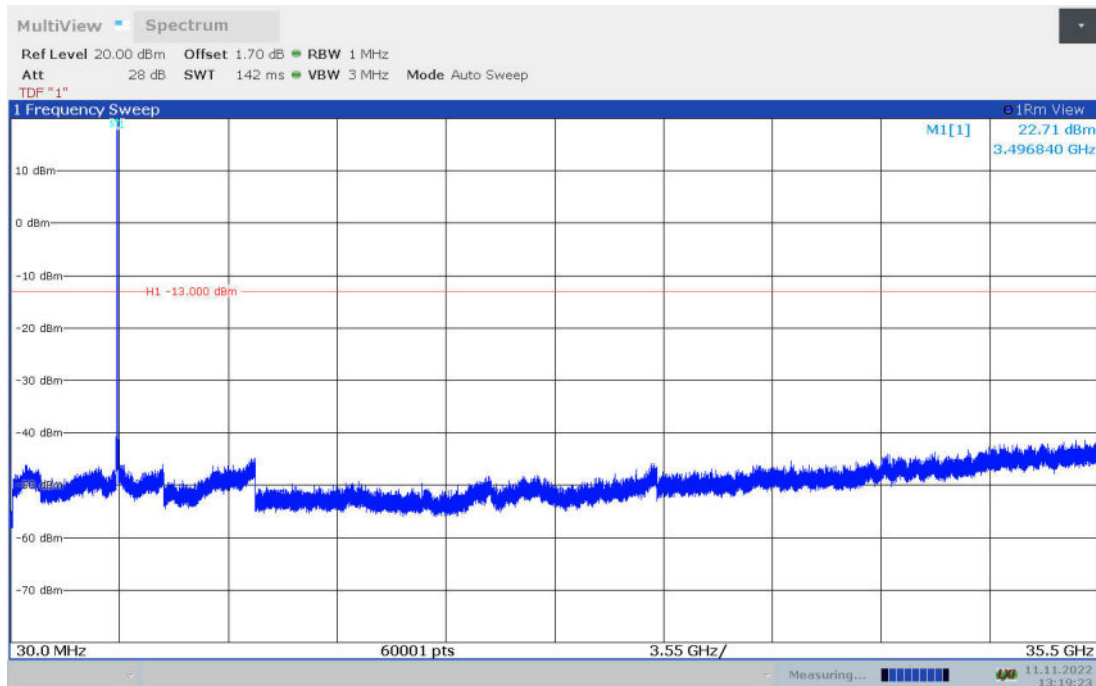
NOTE: peak above the limit line is the carrier frequency.



n78L : 30MHz –35.5GHz

Spurious emission limit –13dBm.

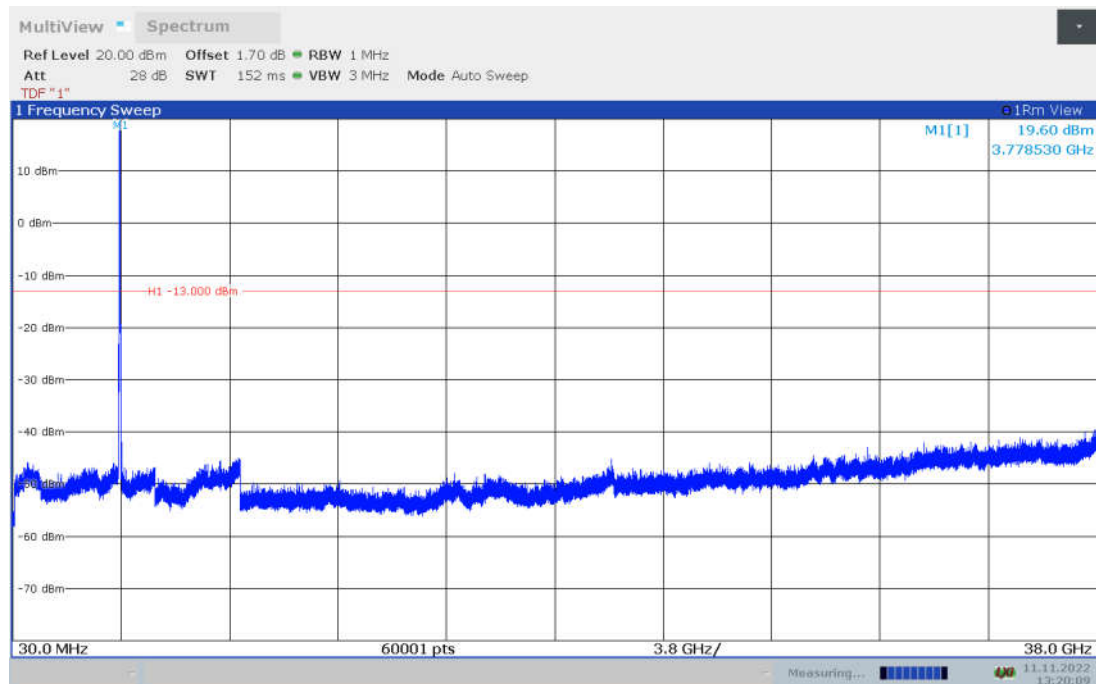
NOTE: peak above the limit line is the carrier frequency.



n78H : 30MHz –38.0GHz

Spurious emission limit –13dBm.

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



Note: Expanded measurement uncertainty is $U = 0.49\text{dB}(100\text{kHz}-2\text{GHz})/1.21\text{dB}(2\text{GHz}-26.5\text{GHz})$, $k = 1.96$

A.8 PEAK-TO-AVERAGE POWER RATIO

The peak-to-average power ratio (PAPR) 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 \geq 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

Only worst case result is given below

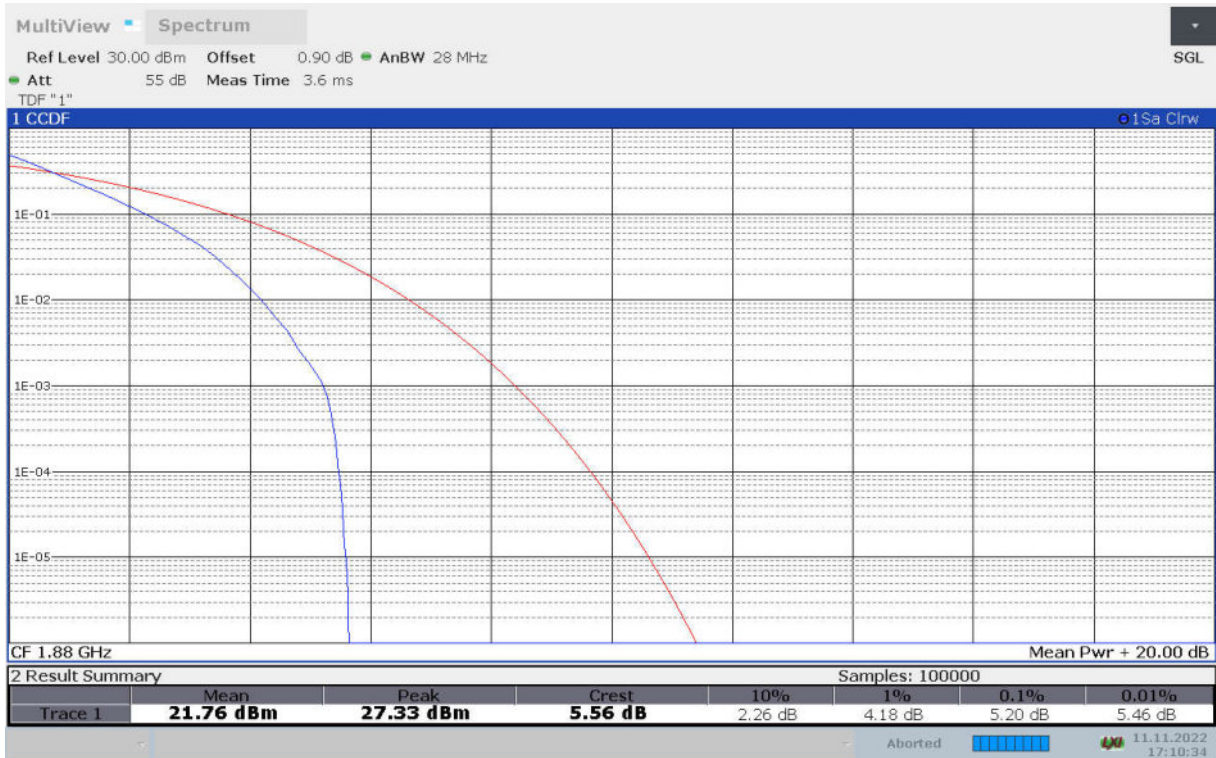
n2,20MHz

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
1880	3.86	5.20	5.88	6.00	6.06	7.20	7.12	6.72	7.82

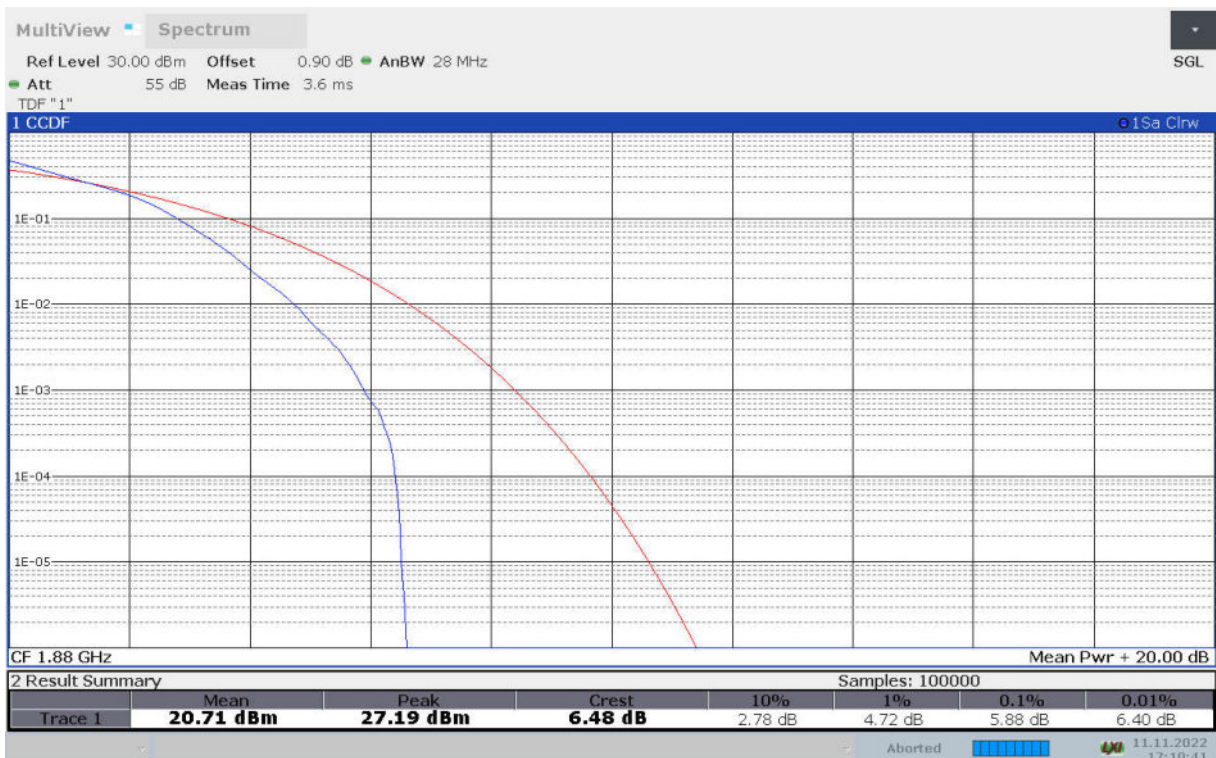
n2, 20MHz Bandwidth, DFT-s-pi/2 BPSK (PAPR)



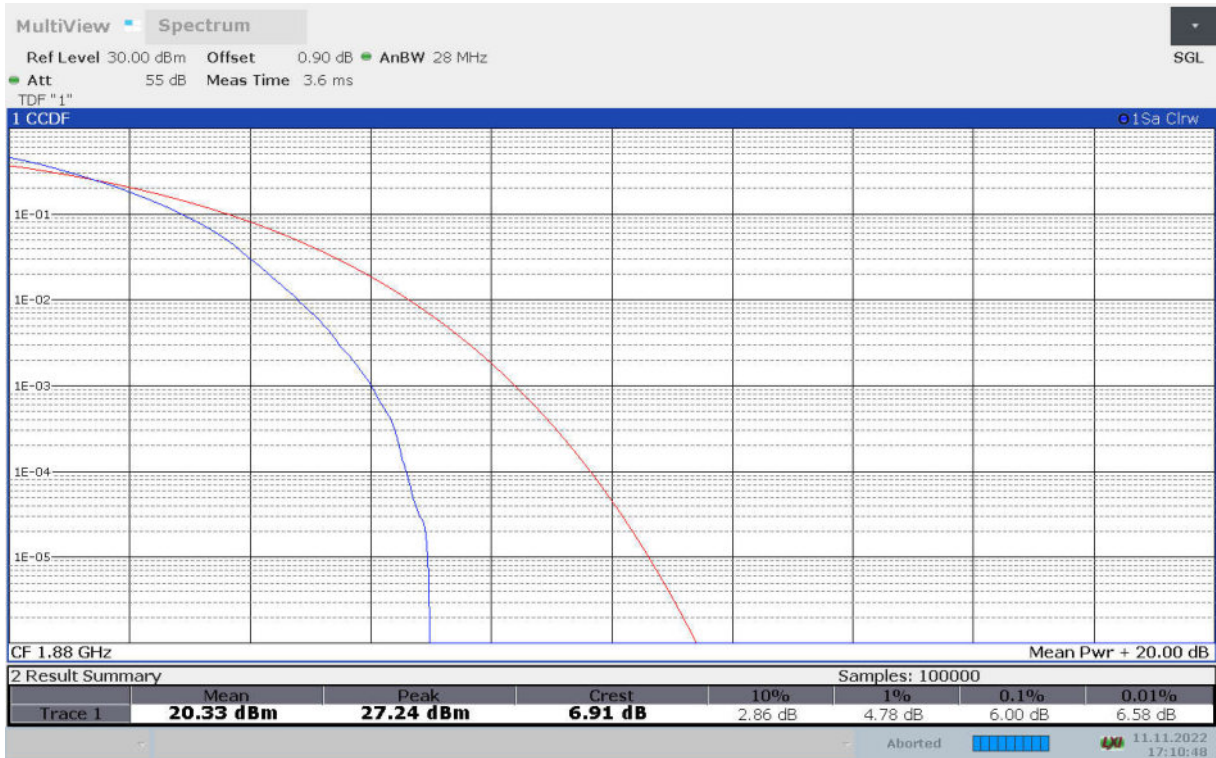
n2, 20MHz Bandwidth, DFT-s-QPSK (PAPR)



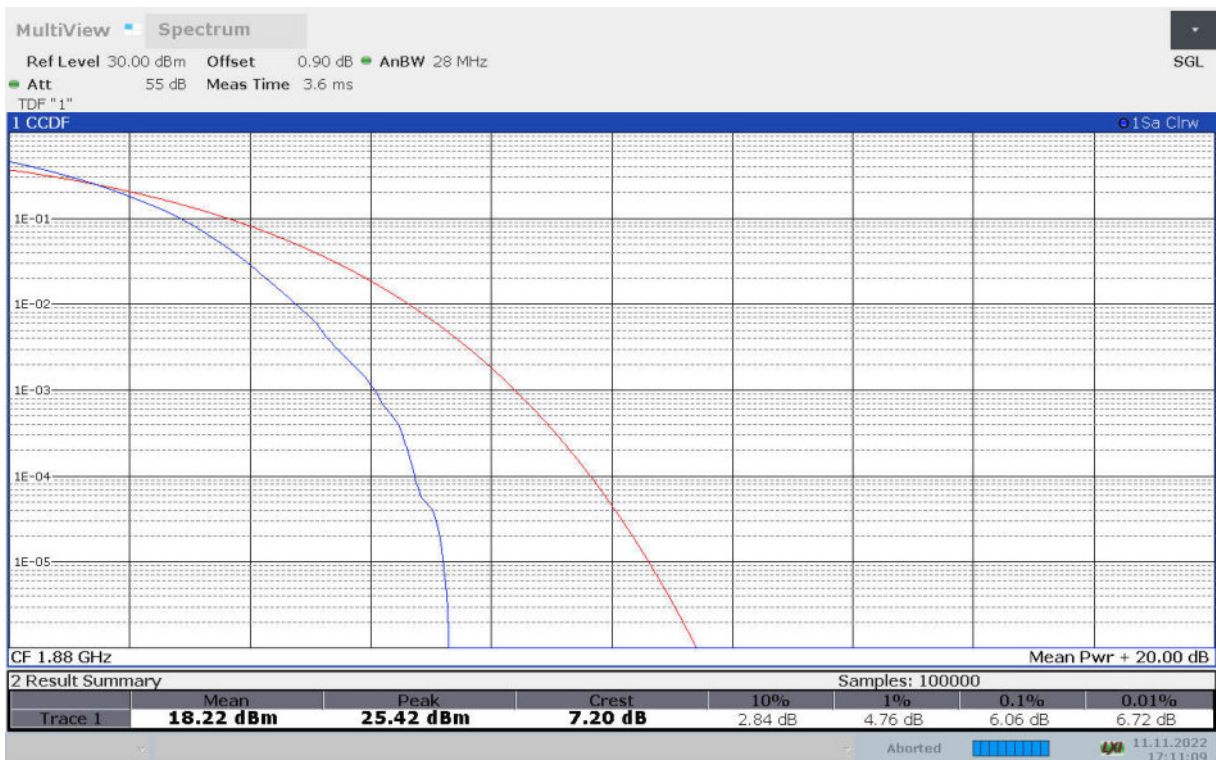
n2, 20MHz Bandwidth, DFT-s-16QAM (PAPR)



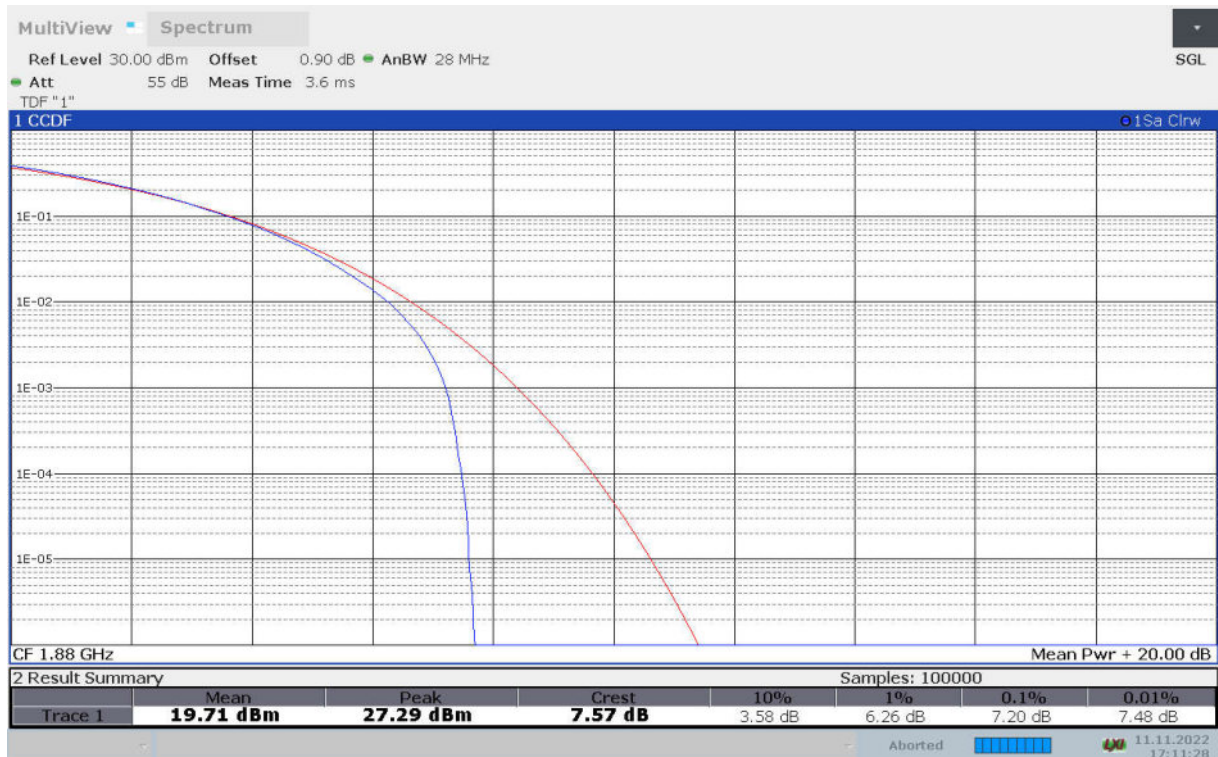
n2, 20MHz Bandwidth, DFT-s-64QAM (PAPR)



n2, 20MHz Bandwidth, DFT-s-256QAM (PAPR)



n2, 20MHz Bandwidth, CP-QPSK (PAPR)



n2, 20MHz Bandwidth, CP-16QAM (PAPR)

