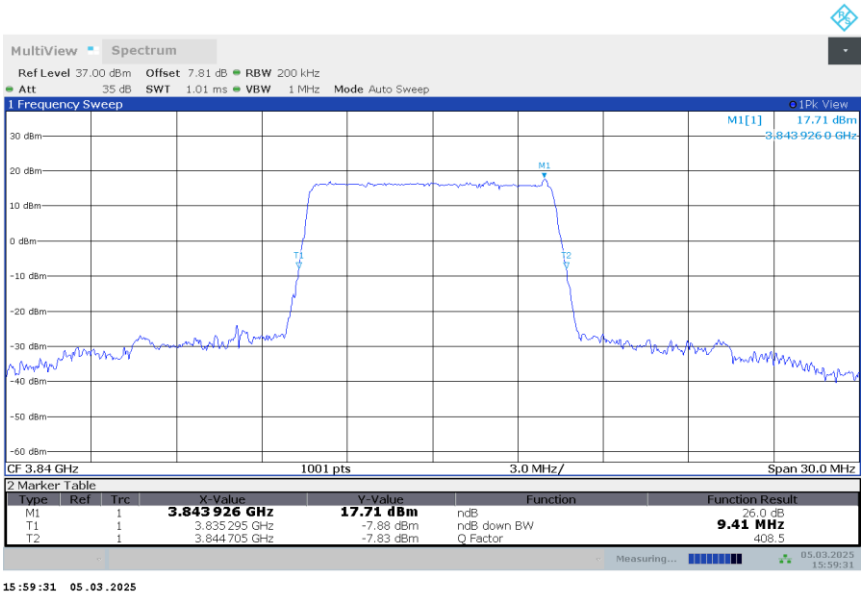
n77H,10MHz Bandwidth,DFT-s-16QAM (-26dBc BW)



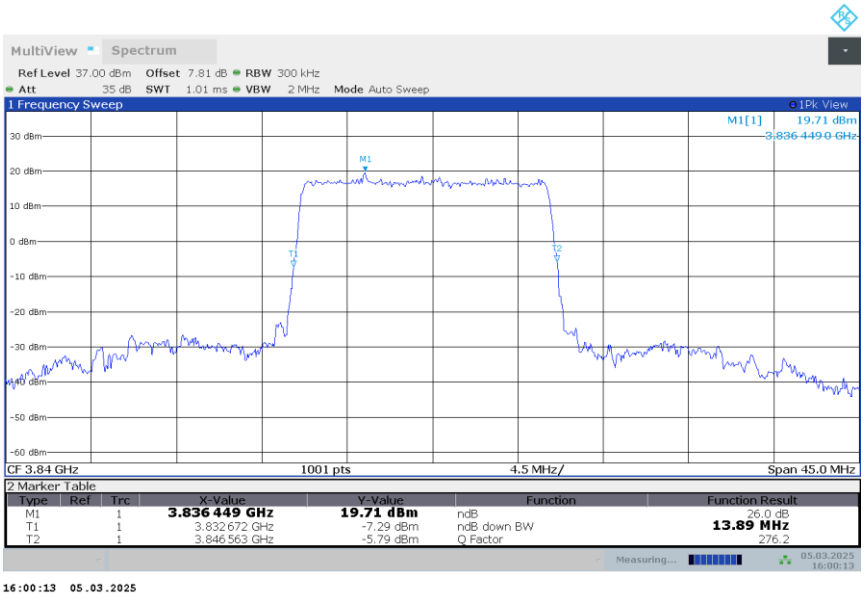
©Copyright. All rights reserved by CTTL.

n77H

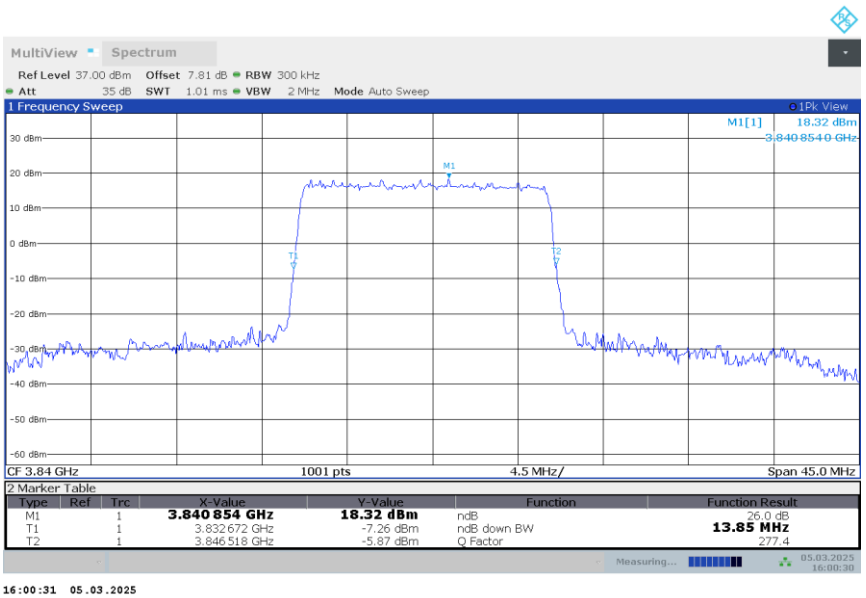
n77H,15MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
3840	13.891	13.846	13.891

n77H,15MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)

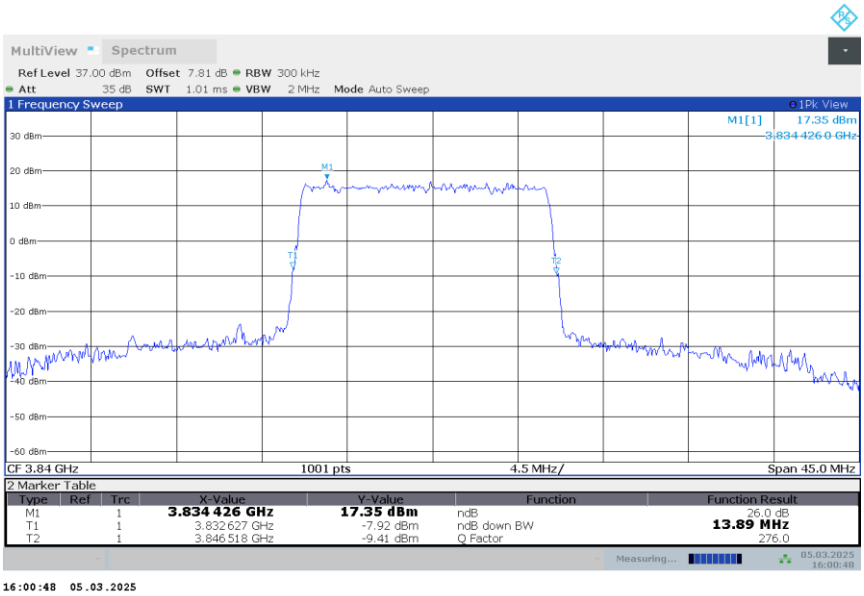


n77H,15MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



©Copyright. All rights reserved by CTTL.

n77H,15MHz Bandwidth,DFT-s-16QAM (-26dBc BW)



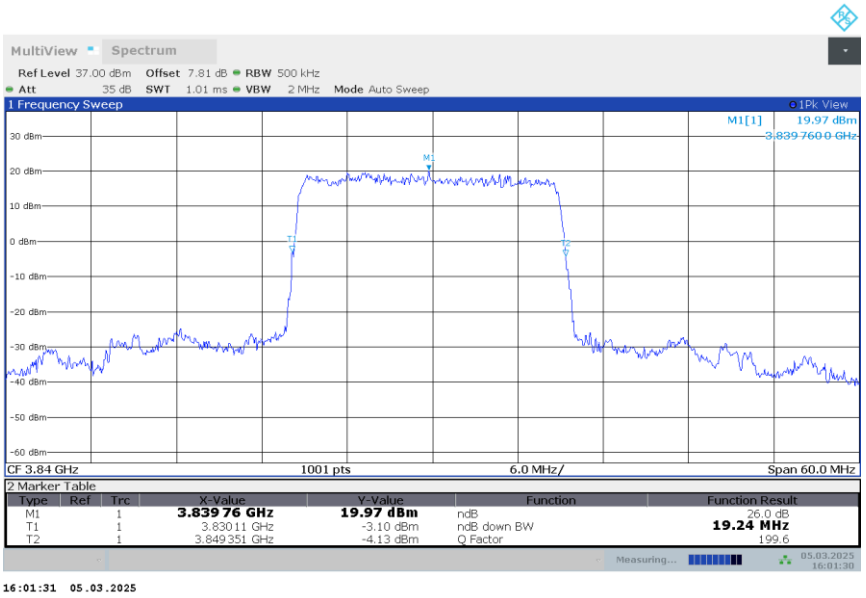
©Copyright. All rights reserved by CTTL.

n77H

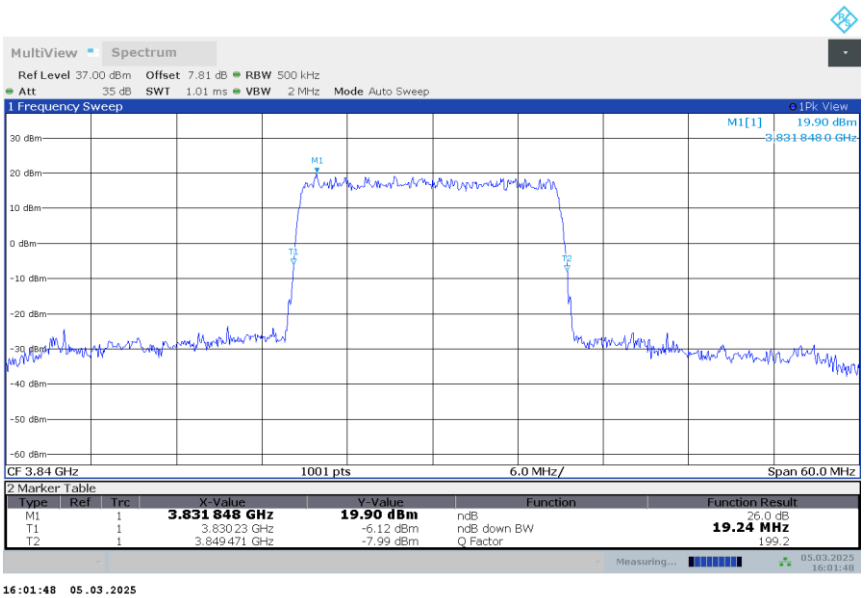
n77H,20MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
3840	19.241	19.241	19.241

n77H,20MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)

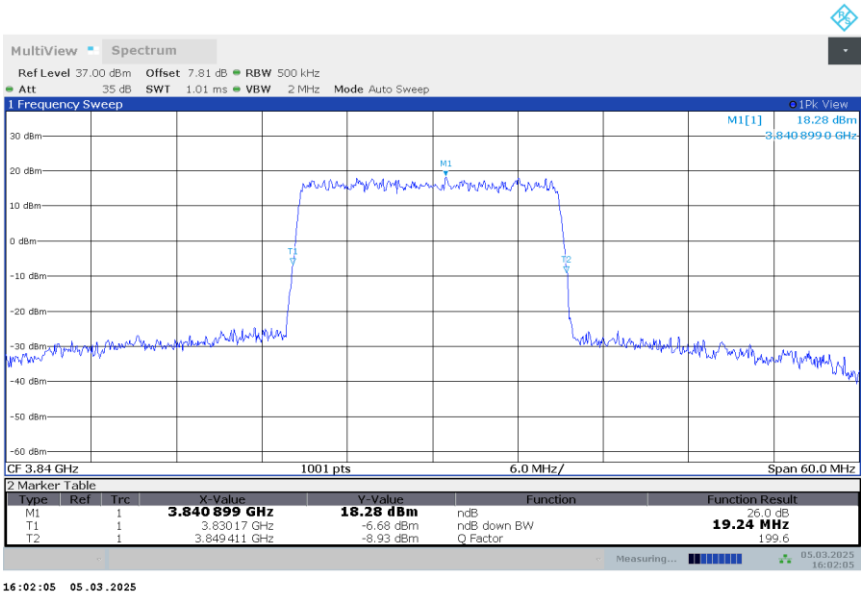


n77H,20MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



©Copyright. All rights reserved by CTTL.

n77H,20MHz Bandwidth,DFT-s-16QAM (-26dBc BW)



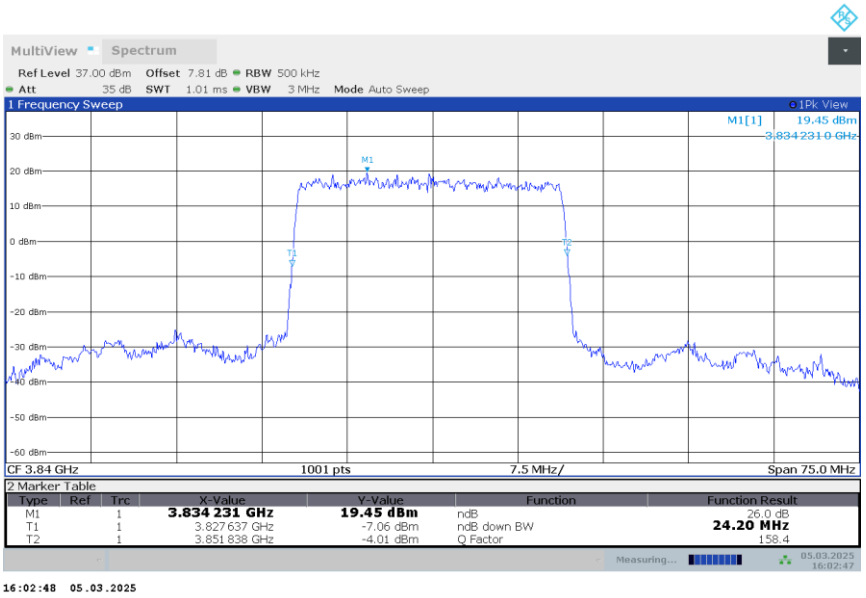
©Copyright. All rights reserved by CTTL.

n77H

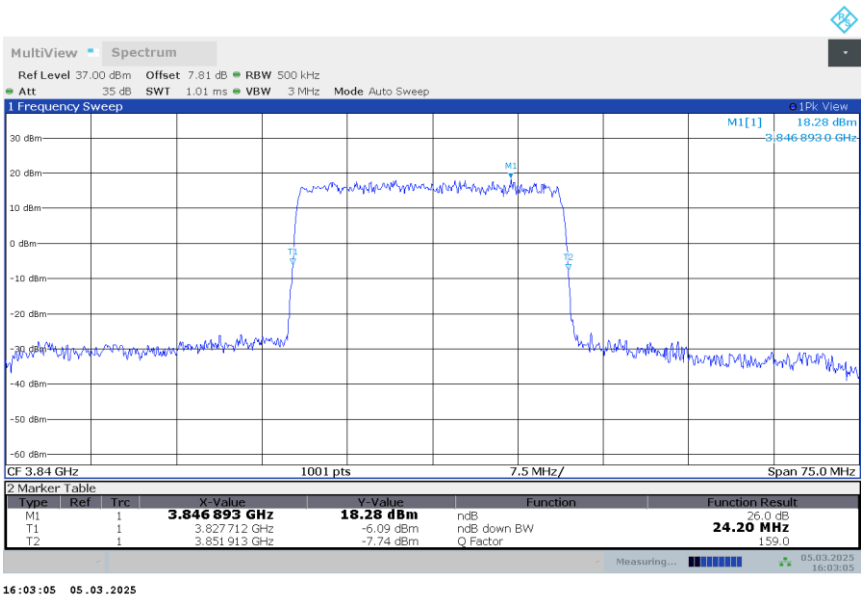
n77H,25MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
3840	24.201	24.201	24.276

n77H,25MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)

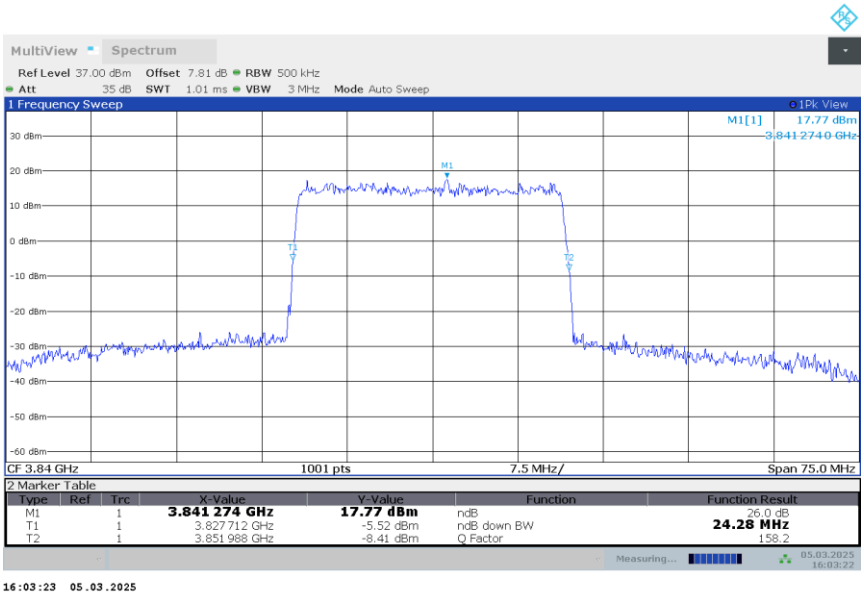


n77H,25MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



©Copyright. All rights reserved by CTTL.

n77H,25MHz Bandwidth,DFT-s-16QAM (-26dBc BW)



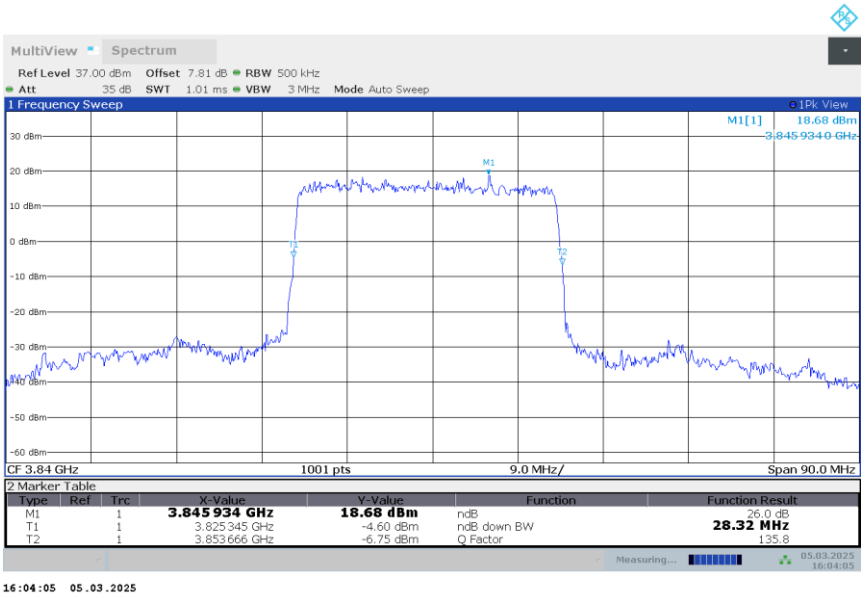
©Copyright. All rights reserved by CTTL.

n77H

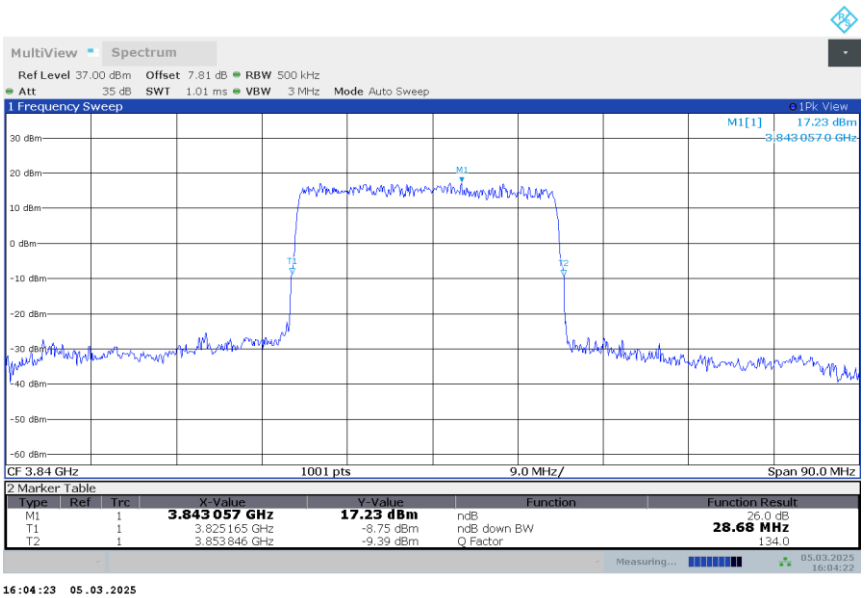
n77H,30MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
3840	28.322	28.681	28.322

n77H,30MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)

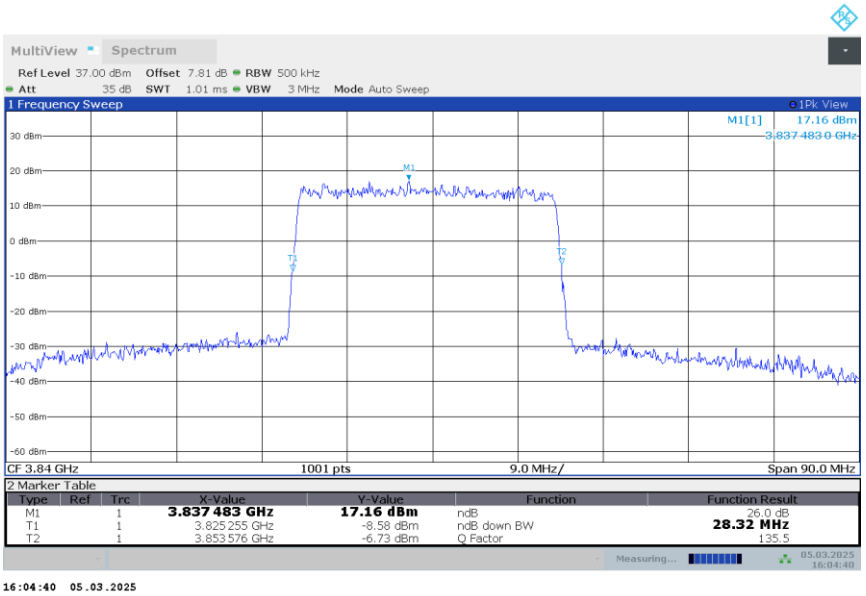


n77H,30MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



©Copyright. All rights reserved by CTTL.

n77H,30MHz Bandwidth,DFT-s-16QAM (-26dBc BW)



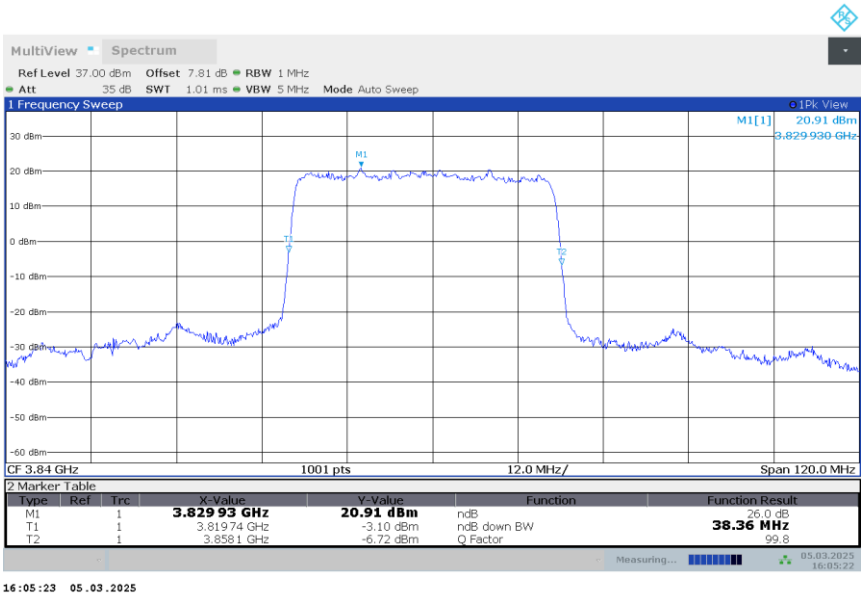
©Copyright. All rights reserved by CTTL.

n77H

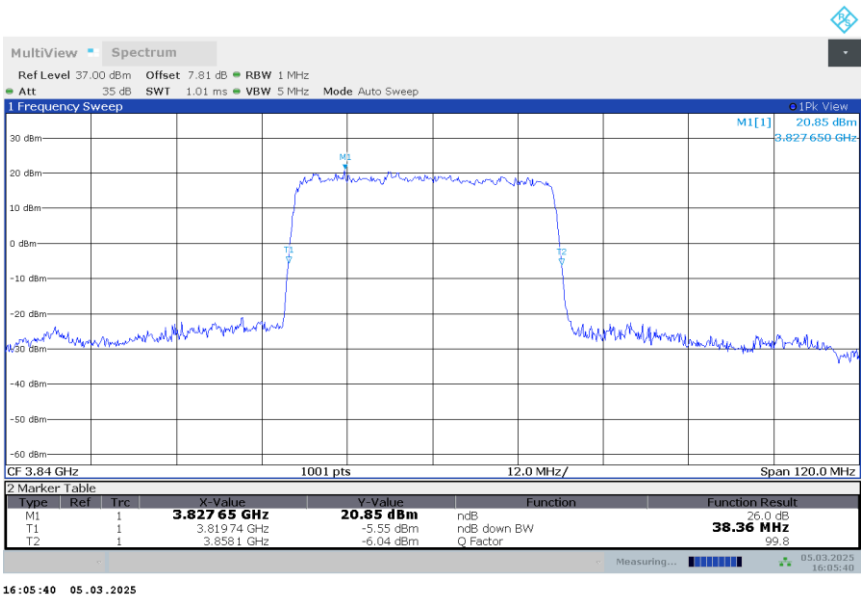
n77H,40MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
3840	38.360	38.360	38.360

n77H,40MHz Bandwidth,DFT-s-pi/2 BPSK (-26dBc BW)

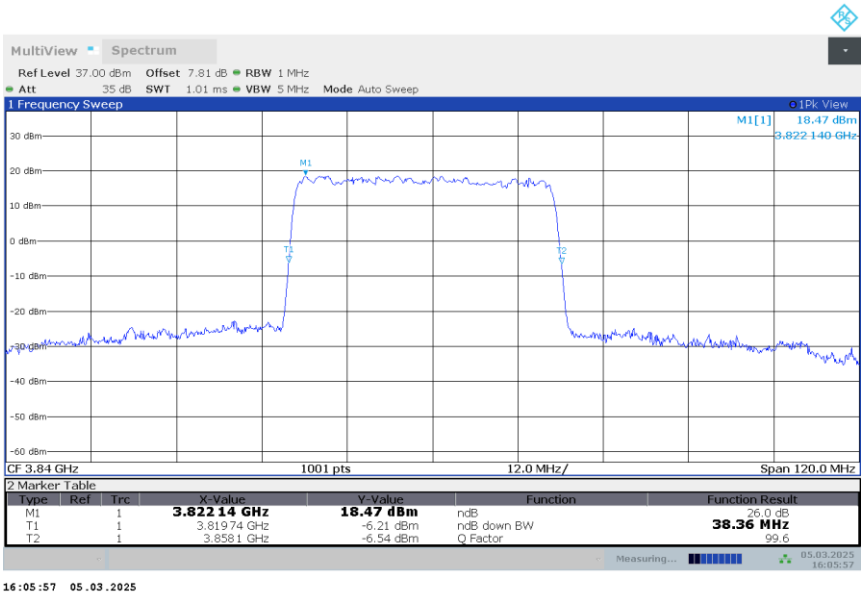


n77H,40MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



©Copyright. All rights reserved by CTTL.

n77H,40MHz Bandwidth,DFT-s-16QAM (-26dBc BW)



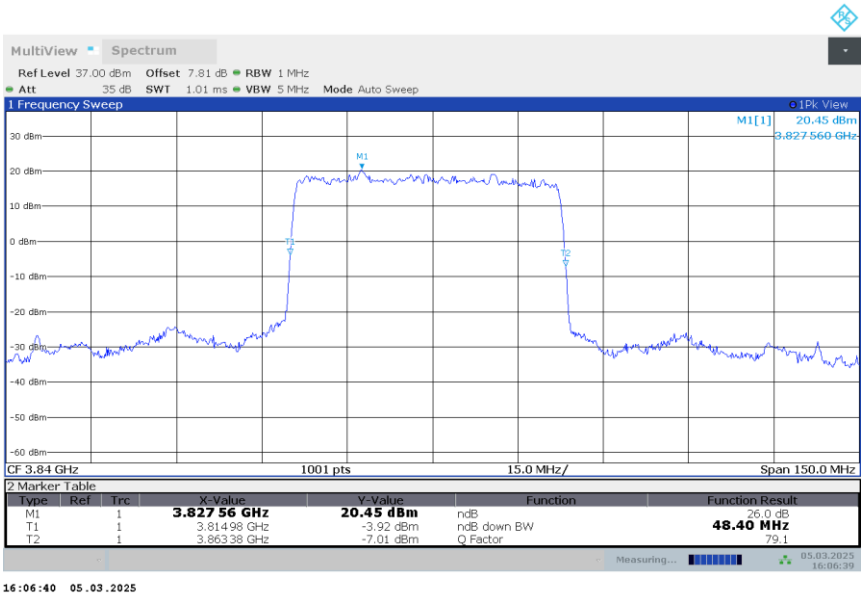
©Copyright. All rights reserved by CTTL.

n77H

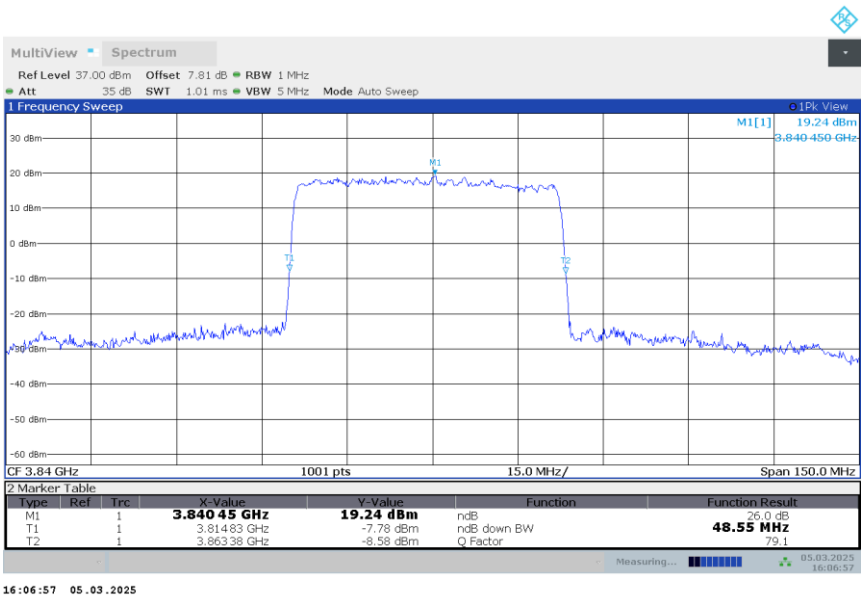
n77H,50MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
3840	48.400	48.550	48.250

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

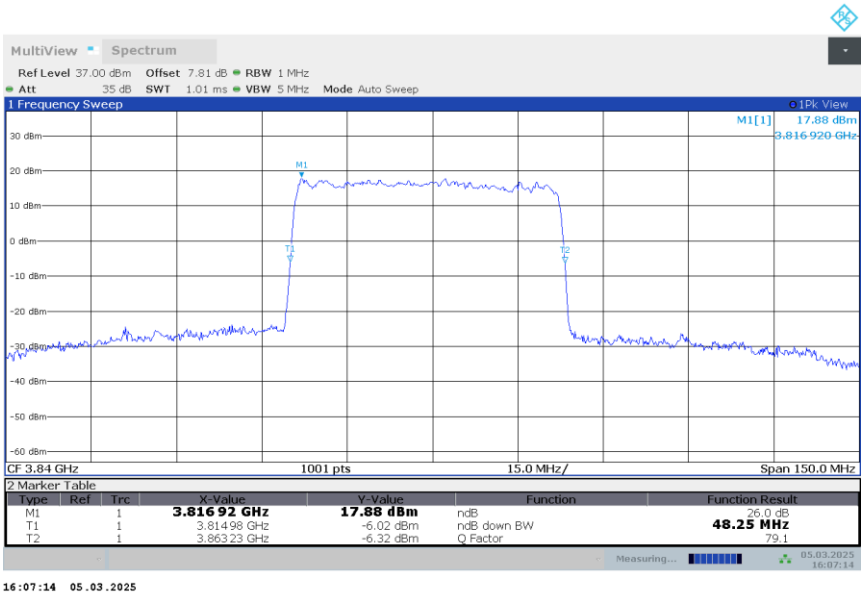


n77H,50MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



©Copyright. All rights reserved by CTTL.

n77H,50MHz Bandwidth,DFT-s-16QAM (-26dBc BW)



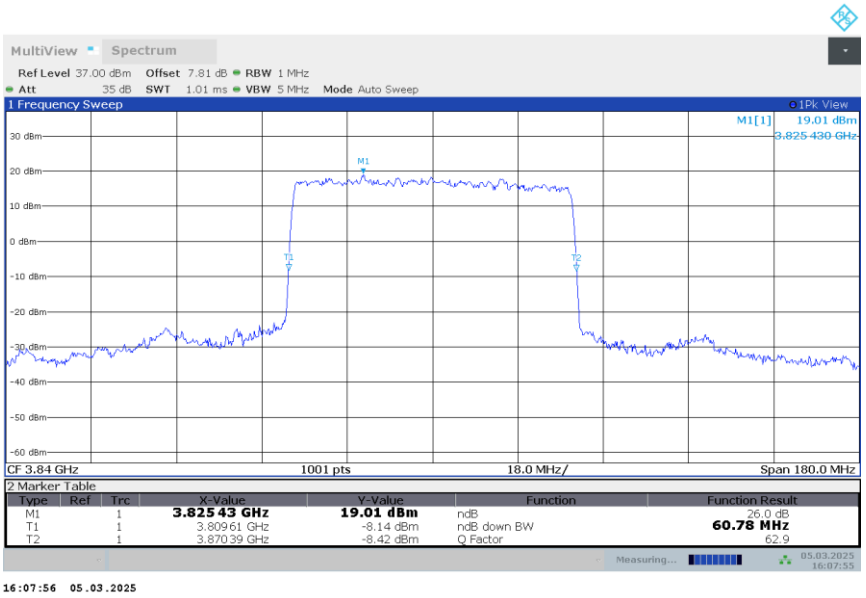
©Copyright. All rights reserved by CTTL.

n77H

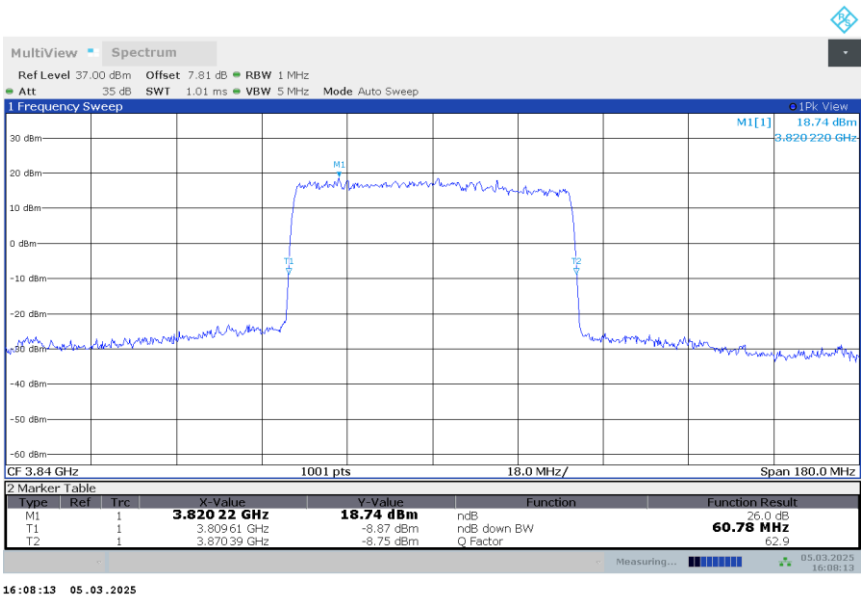
n77H,60MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
3840	60.780	60.780	60.780

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

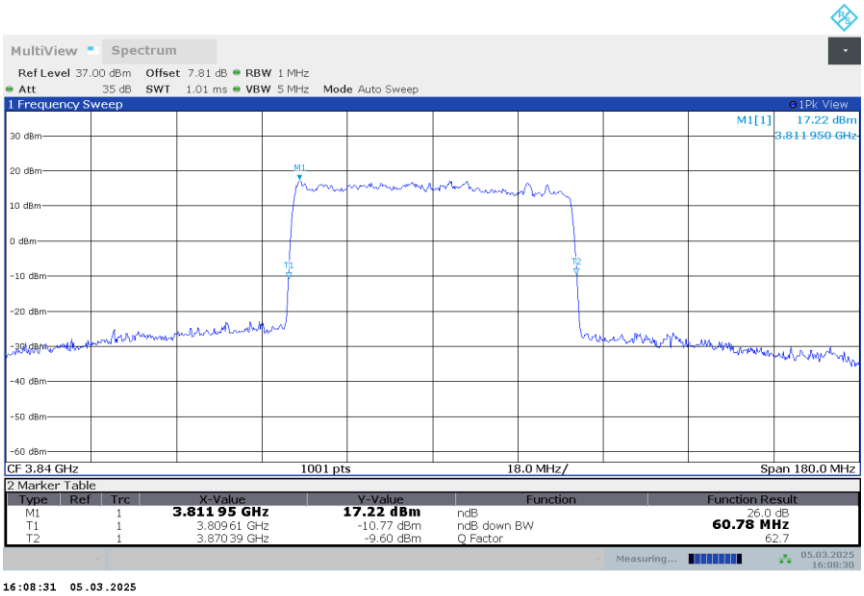


n77H,60MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



©Copyright. All rights reserved by CTTL.

n77H,60MHz Bandwidth,DFT-s-16QAM (-26dBc BW)



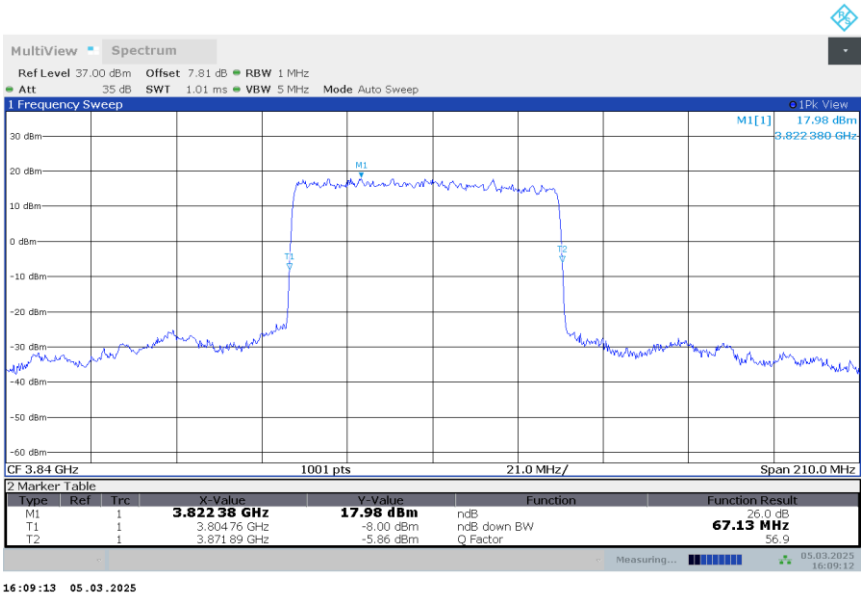
©Copyright. All rights reserved by CTTL.

n77H

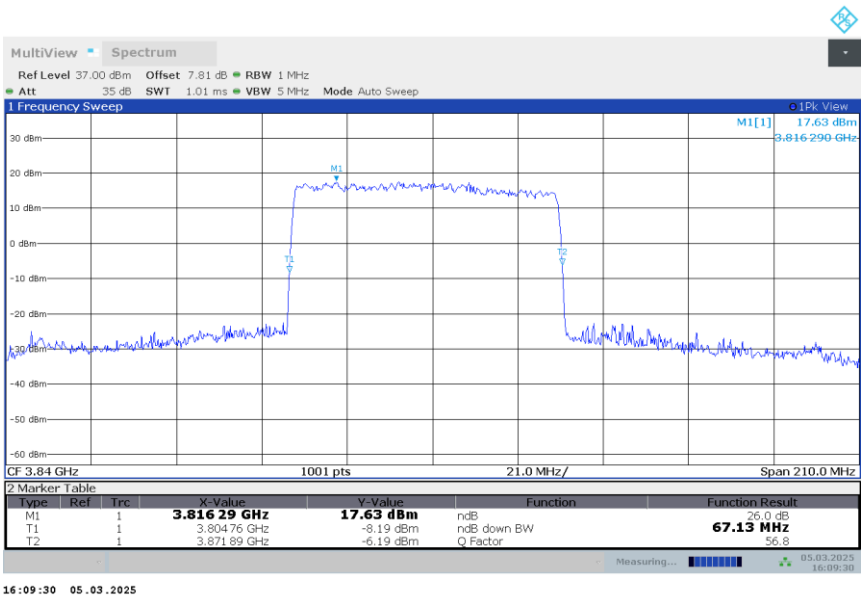
n77H,70MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
3840	67.130	67.130	67.130

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

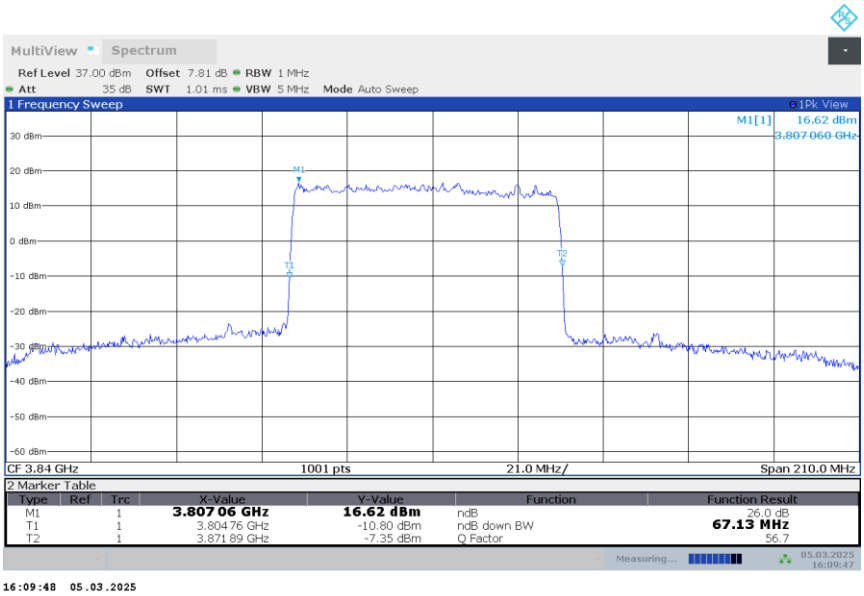


n77H,70MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



©Copyright. All rights reserved by CTTL.

n77H,70MHz Bandwidth,DFT-s-16QAM (-26dBc BW)



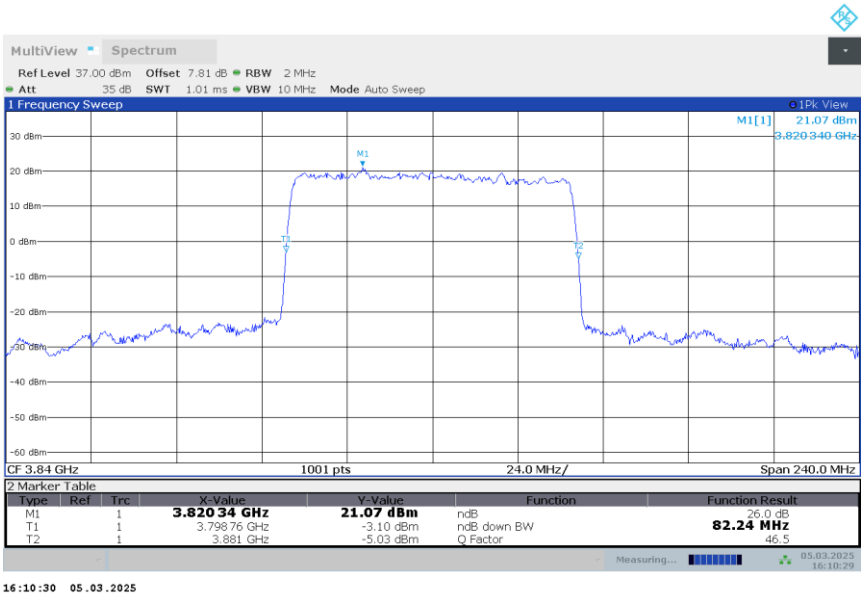
©Copyright. All rights reserved by CTTL.

n77H

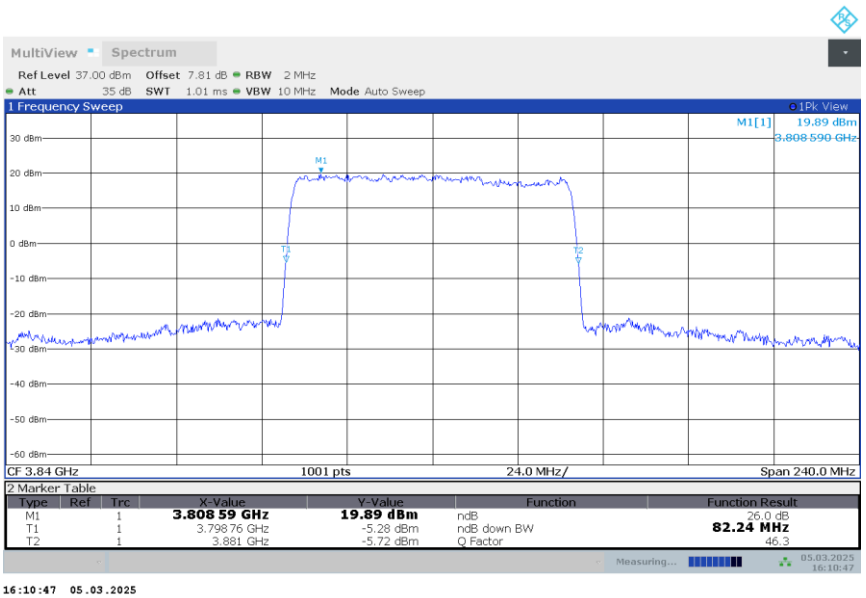
n77H,80MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
3840	82.240	82.240	82.240

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

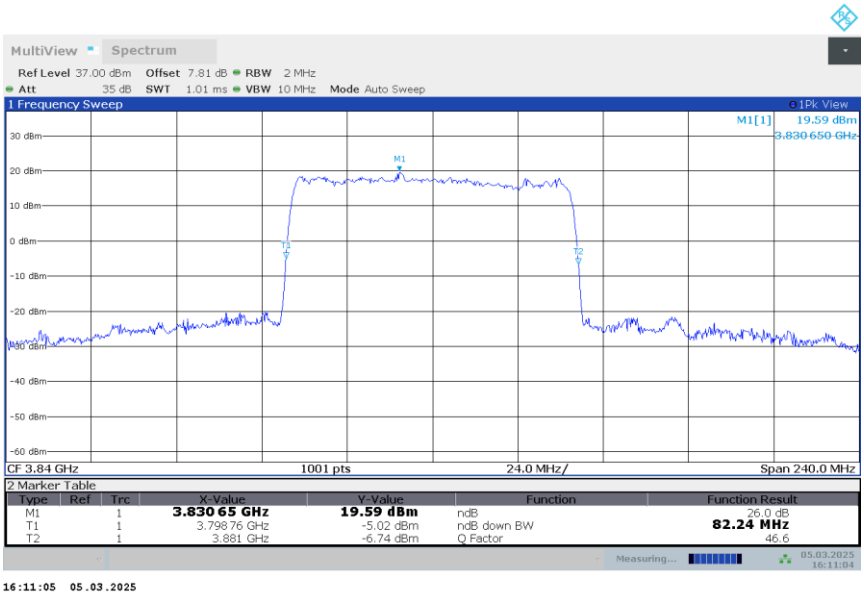


n77H,80MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



©Copyright. All rights reserved by CTTL.

n77H,80MHz Bandwidth,DFT-s-16QAM (-26dBc BW)



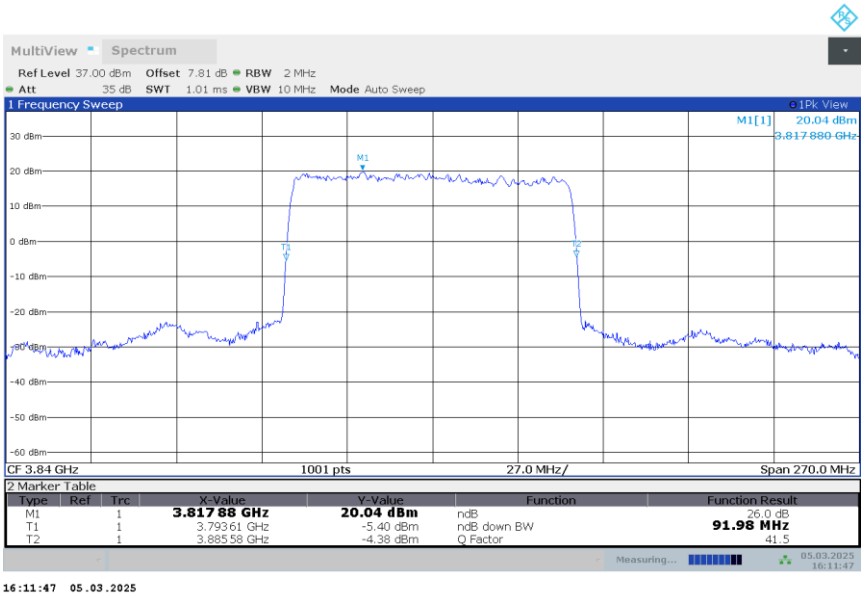
©Copyright. All rights reserved by CTTL.

n77H

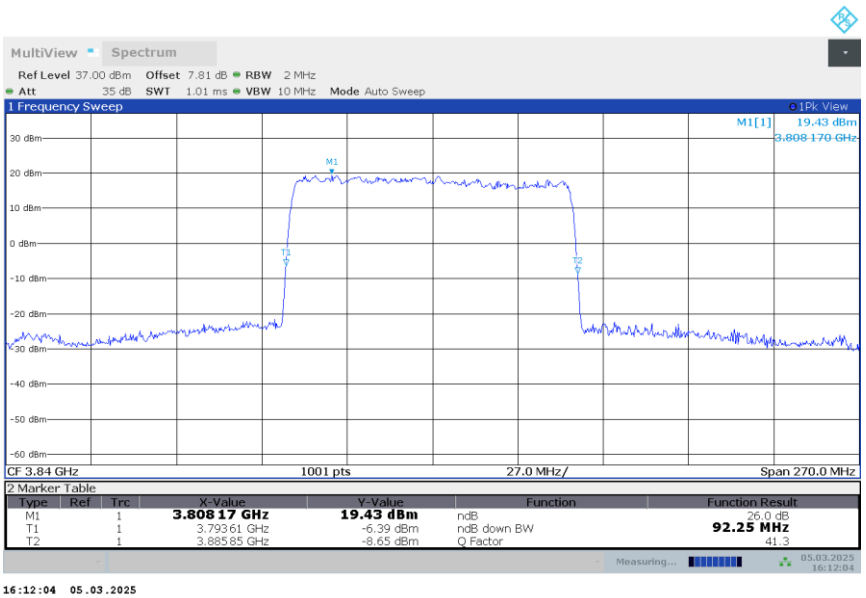
n77H,90MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
3840	91.980	92.250	91.980

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

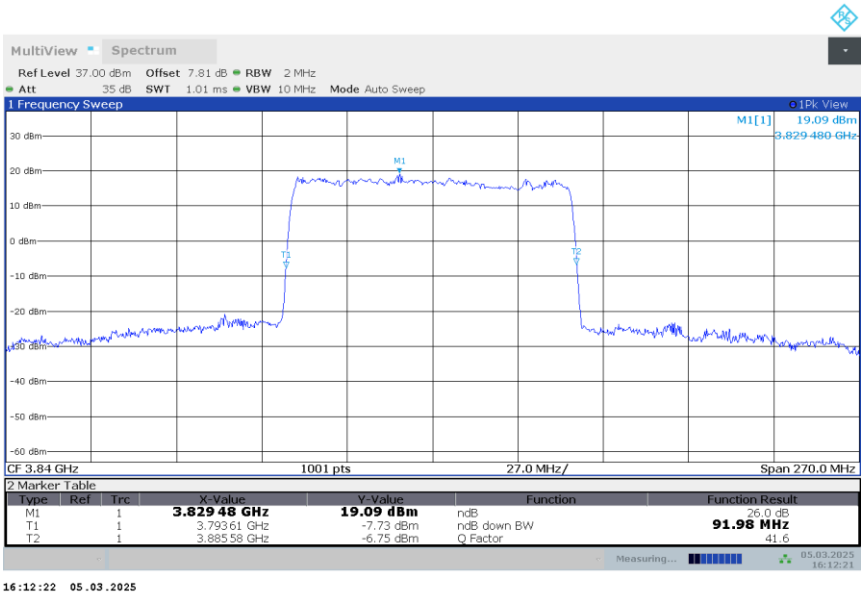


n77H,90MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



©Copyright. All rights reserved by CTTL.

n77H,90MHz Bandwidth,DFT-s-16QAM (-26dBc BW)



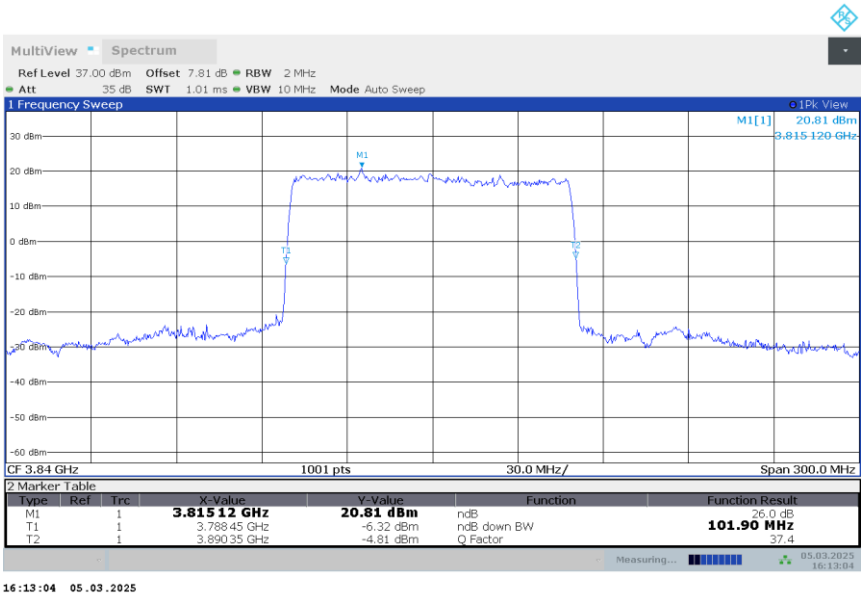
©Copyright. All rights reserved by CTTL.

n77H

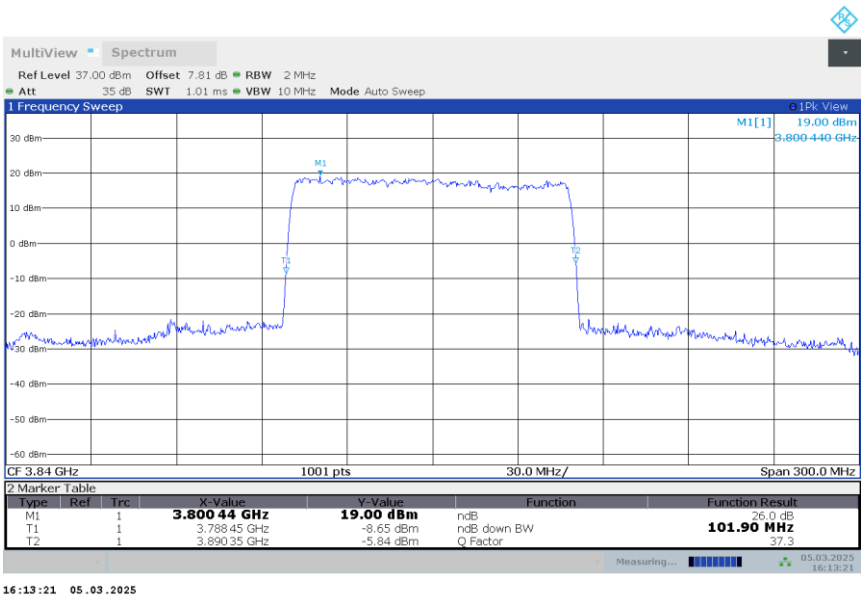
n77H,100MHz(-26dBc)

Frequency (MHz)	Emission Bandwidth (-26dBc) (MHz)		
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM
3840	101.900	101.900	101.600

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

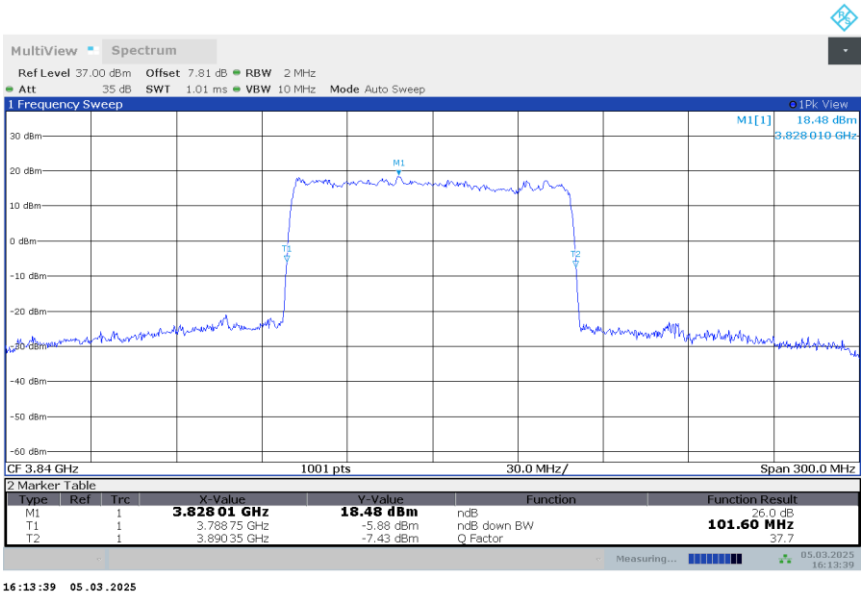


n77H,100MHz Bandwidth,DFT-s-QPSK (-26dBc BW)



©Copyright. All rights reserved by CTTL.

n77H,100MHz Bandwidth,DFT-s-16QAM (-26dBc BW)



©Copyright. All rights reserved by CTTL.

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(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.

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.

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. The conducted power of emissions below 3540 MHz or above 3710 MHz shall not exceed -25dBm/MHz, and the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed -40dBm/MHz.

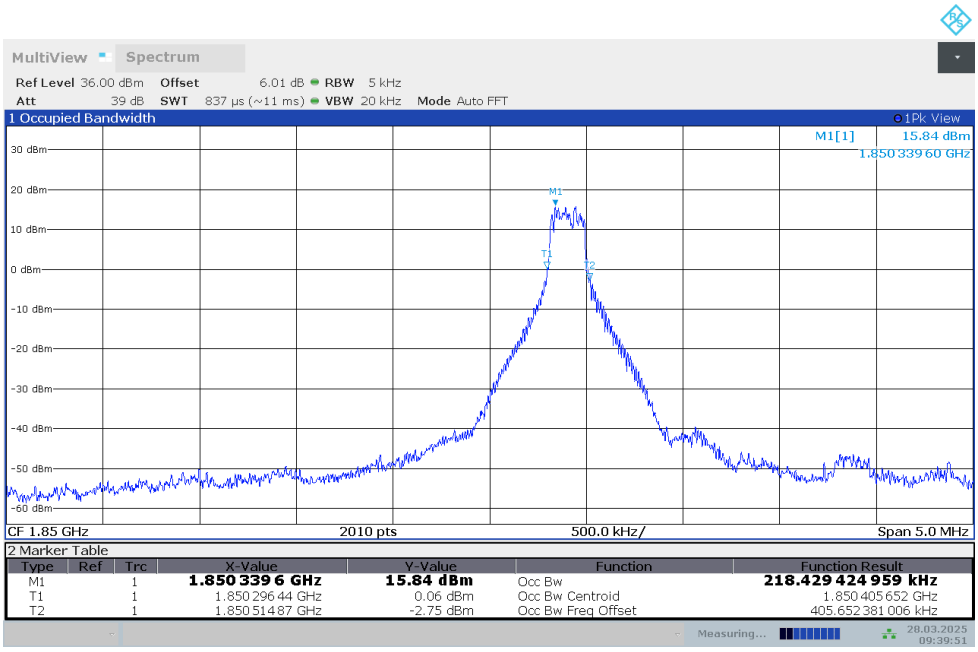
The spectrum analyzer readings are corrected by [10 log (1/duty cycle)] for the non-continuous transmitting scenario.

©Copyright. All rights reserved by CTTL.

A.6.2 Measurement result

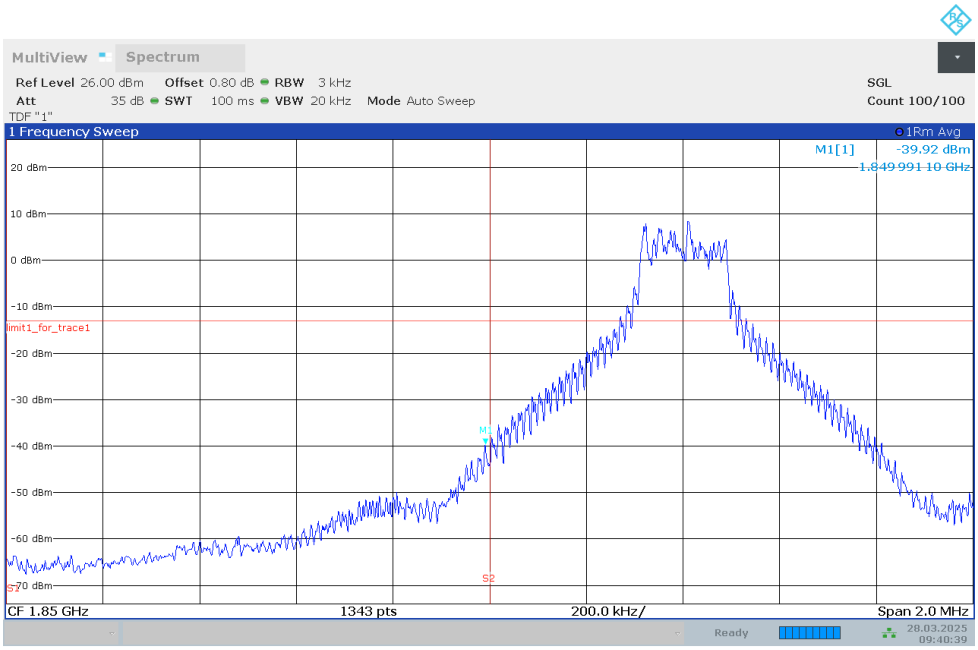
NR n2

OBW: 1RB-LOW_offset



09:39:51 28.03.2025

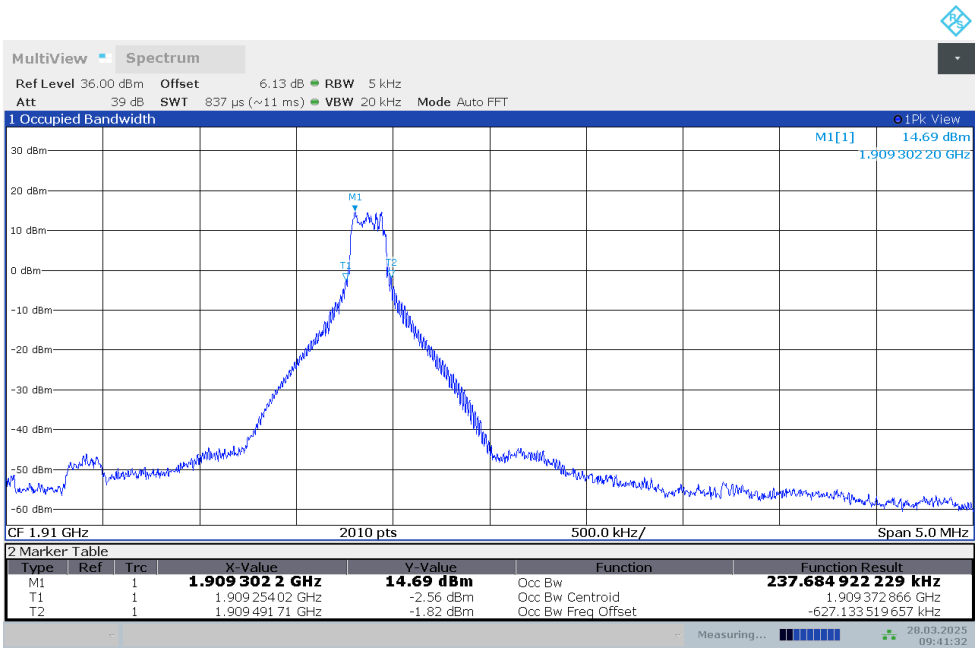
LOW BAND EDGE BLOCK-1RB-LOW_offset



09:40:40 28.03.2025

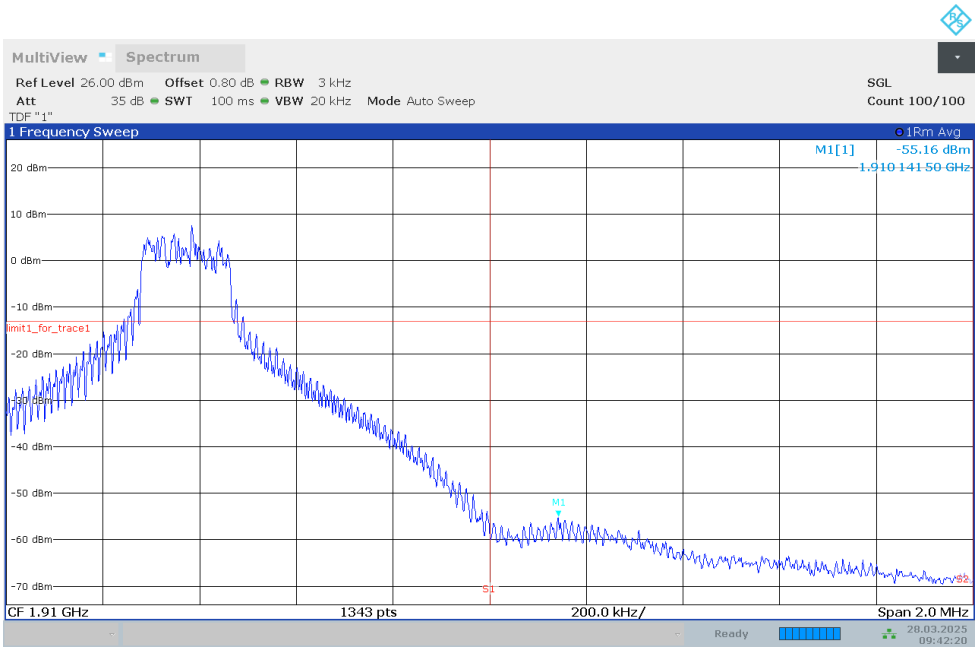
©Copyright. All rights reserved by CTTL.

OBW: 1RB-HIGH_offset



09:41:32 28.03.2025

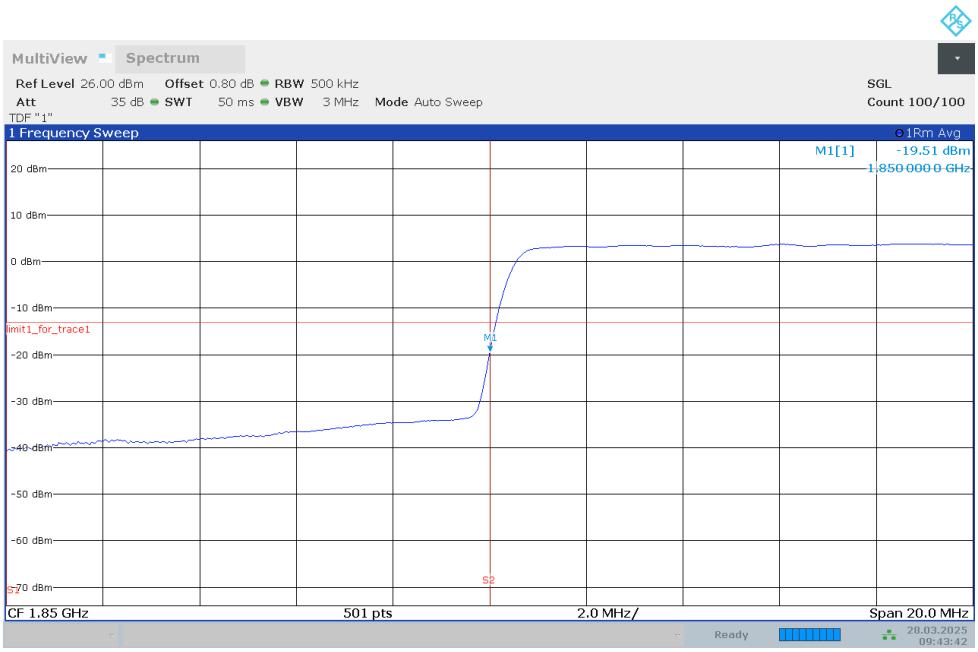
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



09:42:20 28.03.2025

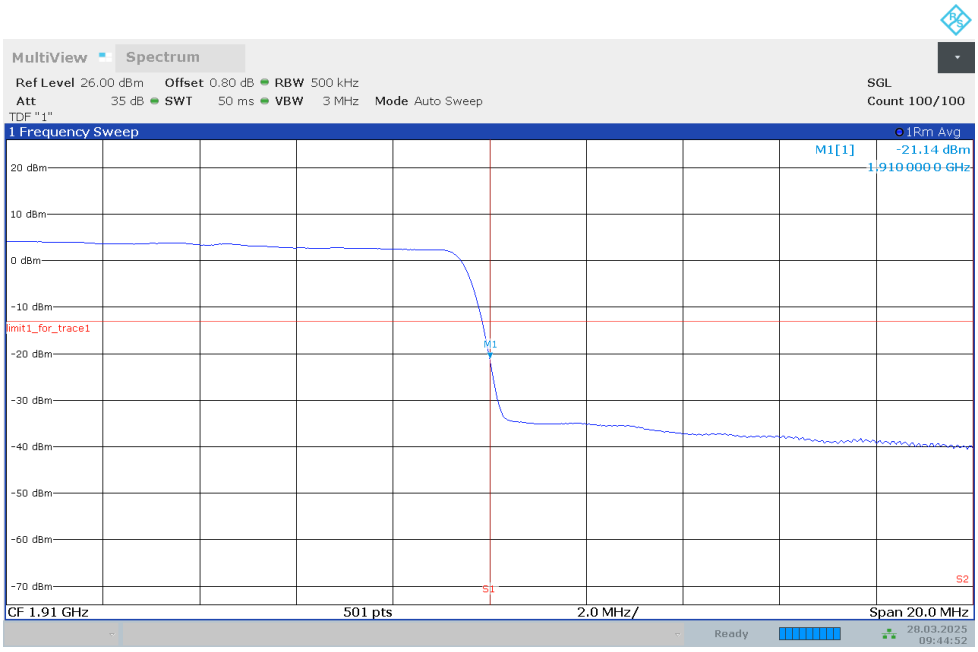
©Copyright. All rights reserved by CTTL.

LOW BAND EDGE BLOCK-40MHz-100%RB



09:43:42 28.03.2025

HIGH BAND EDGE BLOCK-40MHz-100%RB

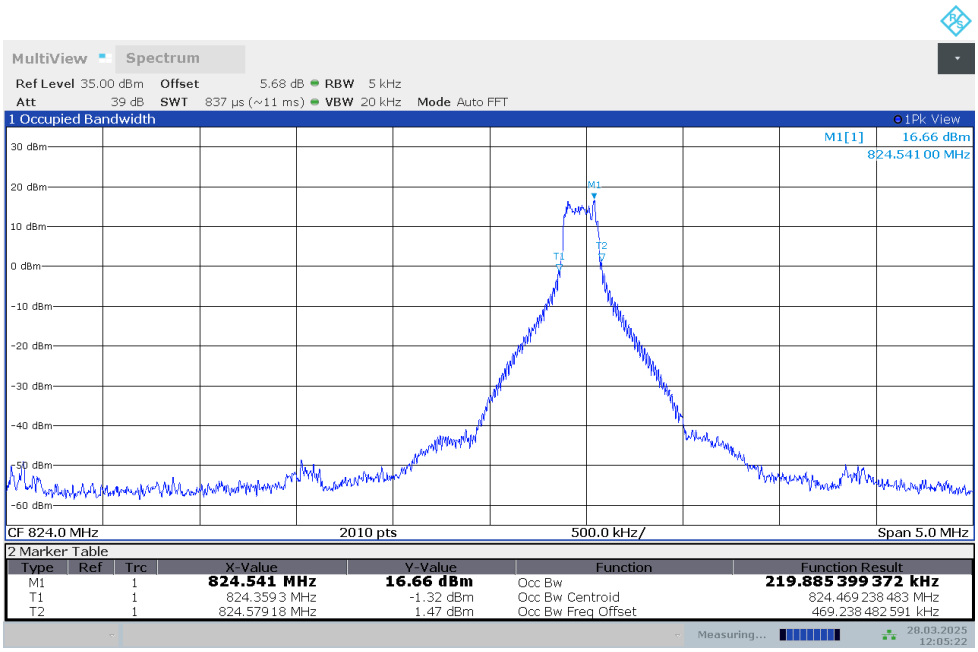


09:44:53 28.03.2025

©Copyright. All rights reserved by CTTL.

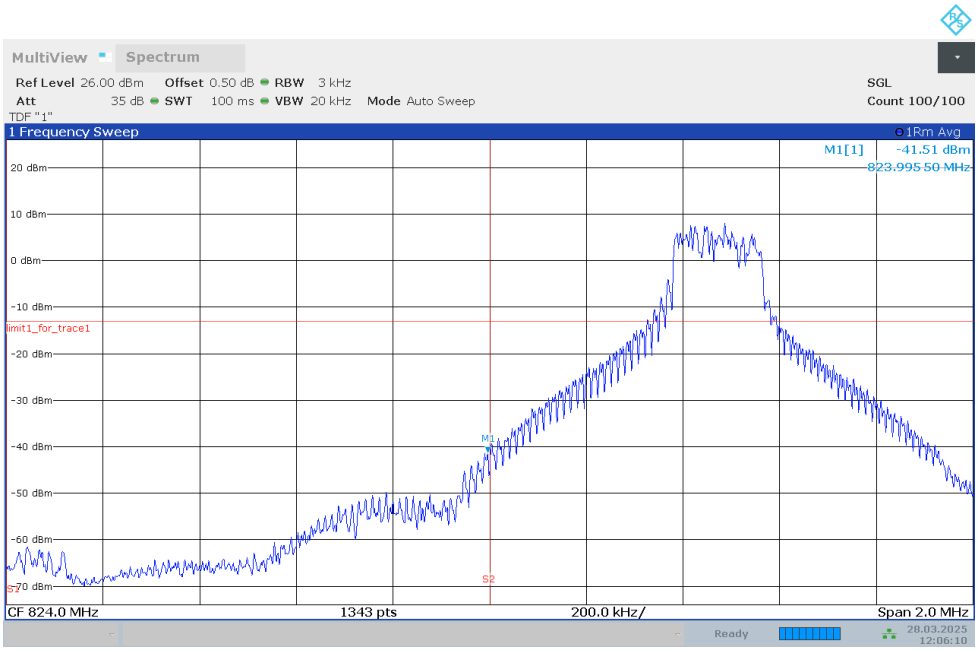
NR n5

OBW: 1RB-LOW_offset



12:05:23 28.03.2025

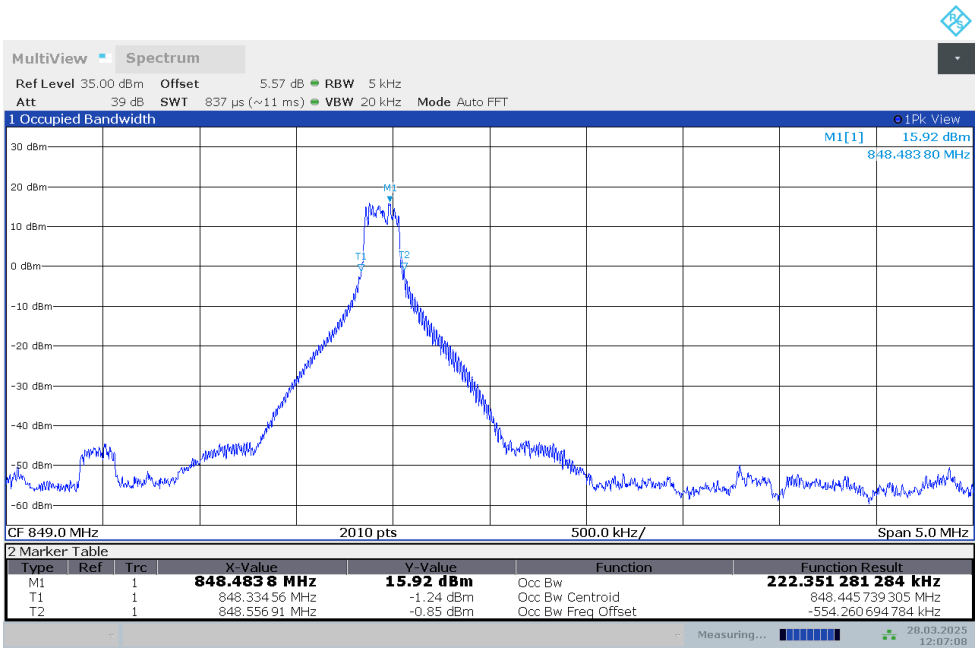
LOW BAND EDGE BLOCK-1RB-LOW_offset



12:06:11 28.03.2025

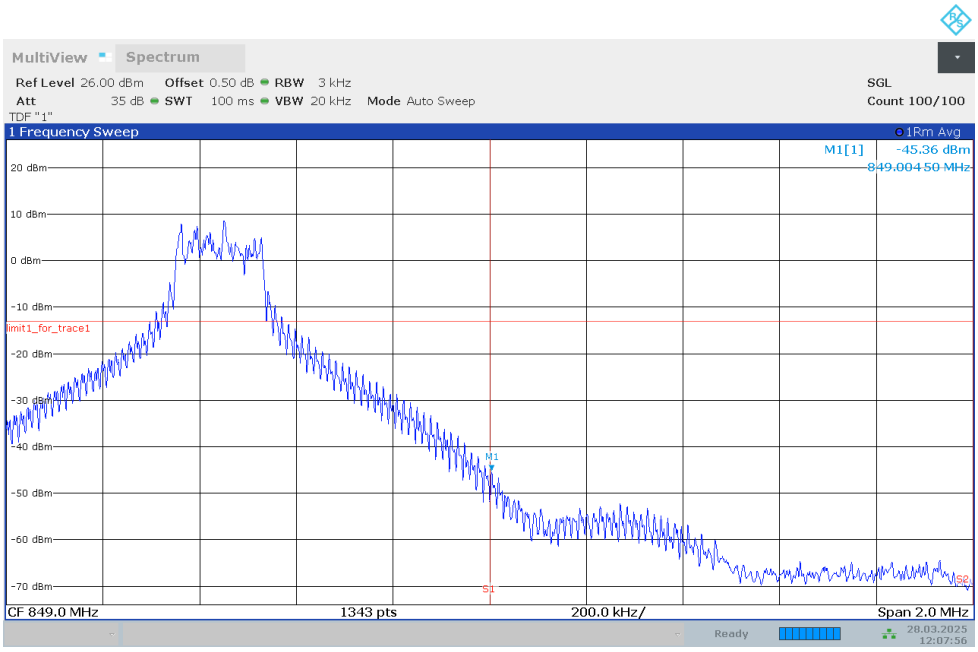
©Copyright. All rights reserved by CTTL.

OBW: 1RB-HIGH_offset



12:07:08 28.03.2025

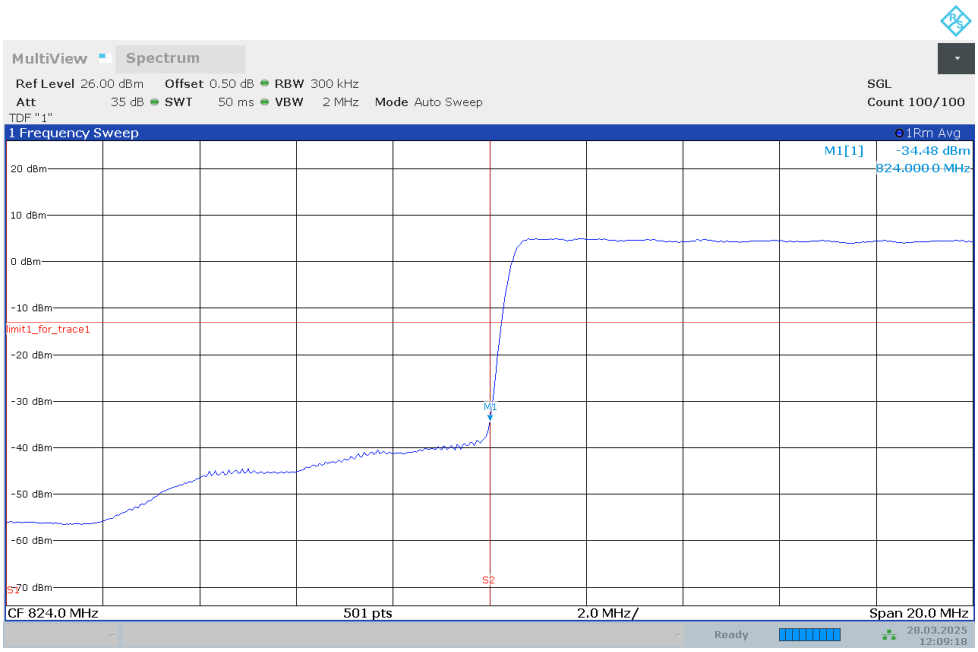
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



12:07:56 28.03.2025

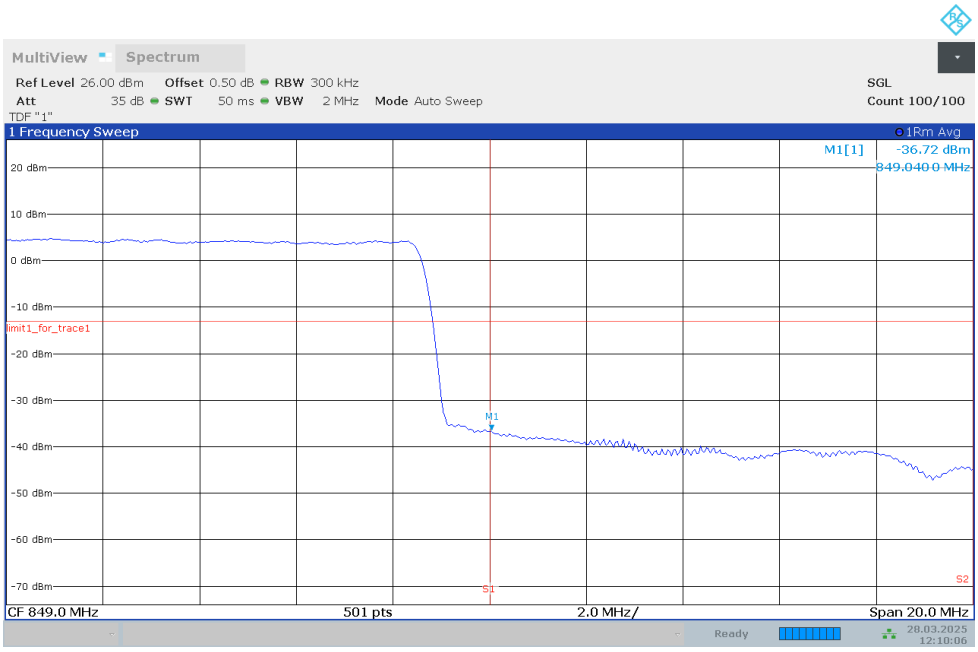
©Copyright. All rights reserved by CTTL.

LOW BAND EDGE BLOCK-25MHz-100%RB



12:09:19 28.03.2025

HIGH BAND EDGE BLOCK-25MHz-100%RB

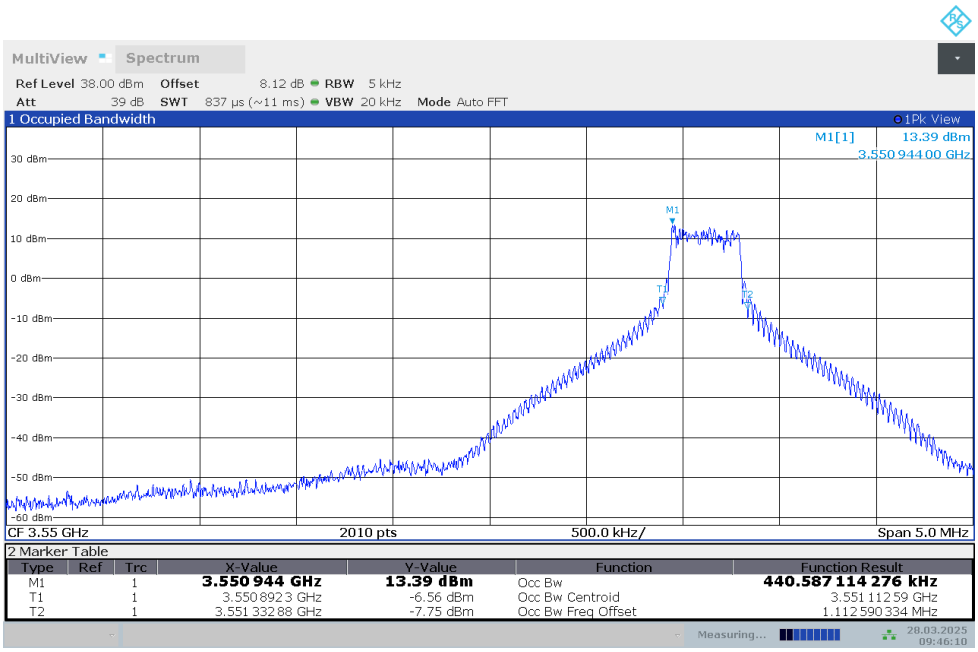


12:10:06 28.03.2025

©Copyright. All rights reserved by CTTL.

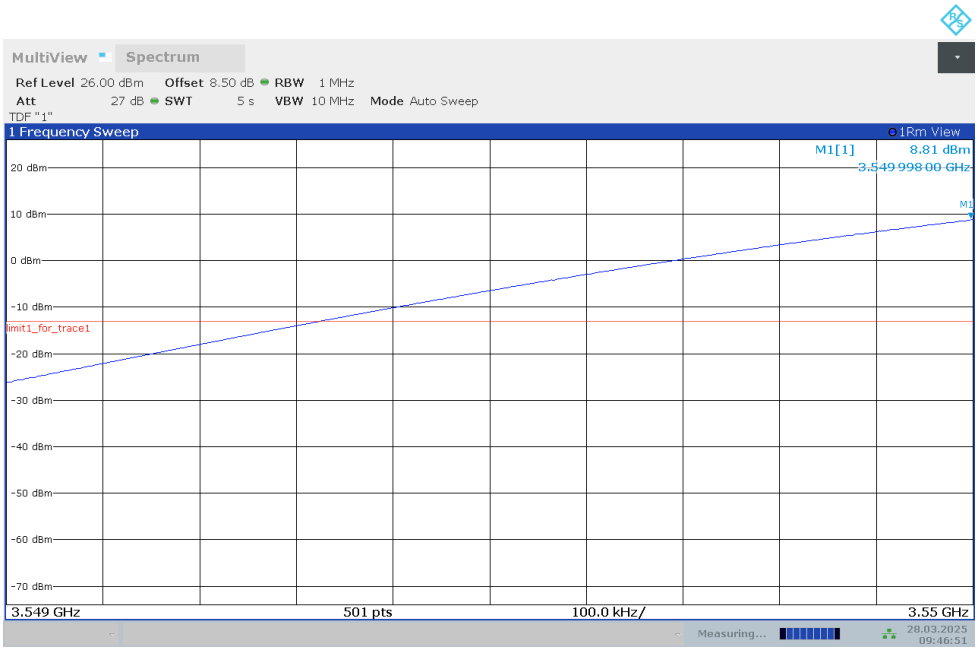
NR n48

OBW: 1RB-LOW_offset



09:46:10 28.03.2025

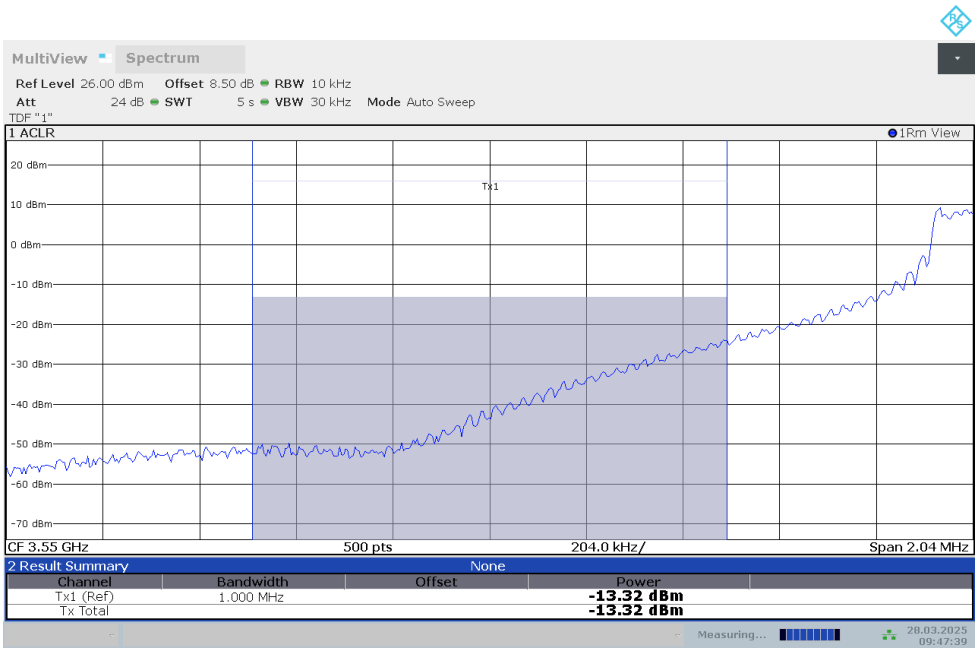
LOW BAND EDGE BLOCK-1RB-LOW_offset



09:46:52 28.03.2025

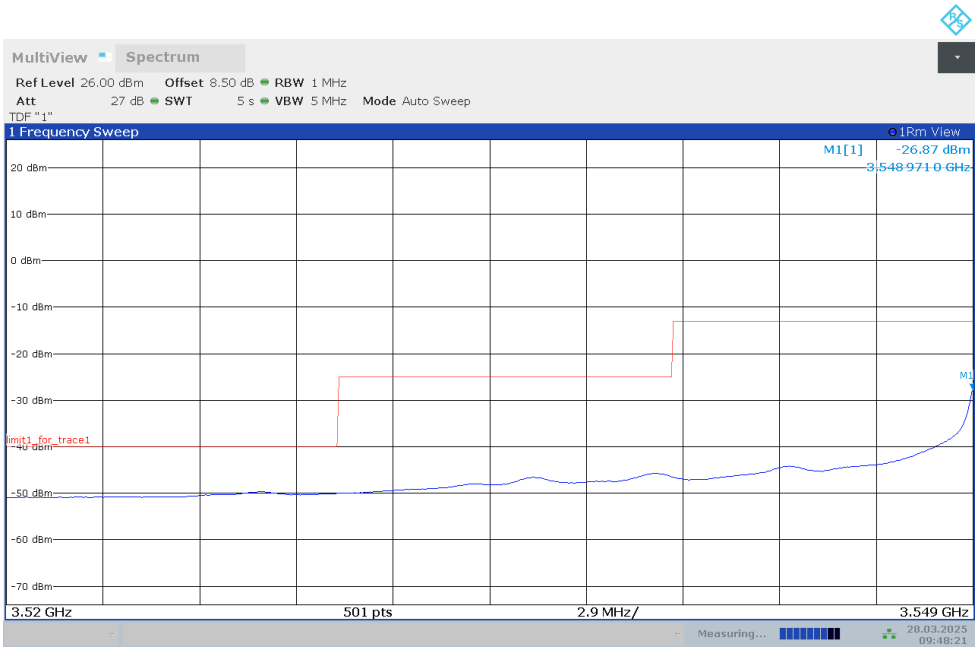
©Copyright. All rights reserved by CTTL.

Channel power



09:47:40 28.03.2025

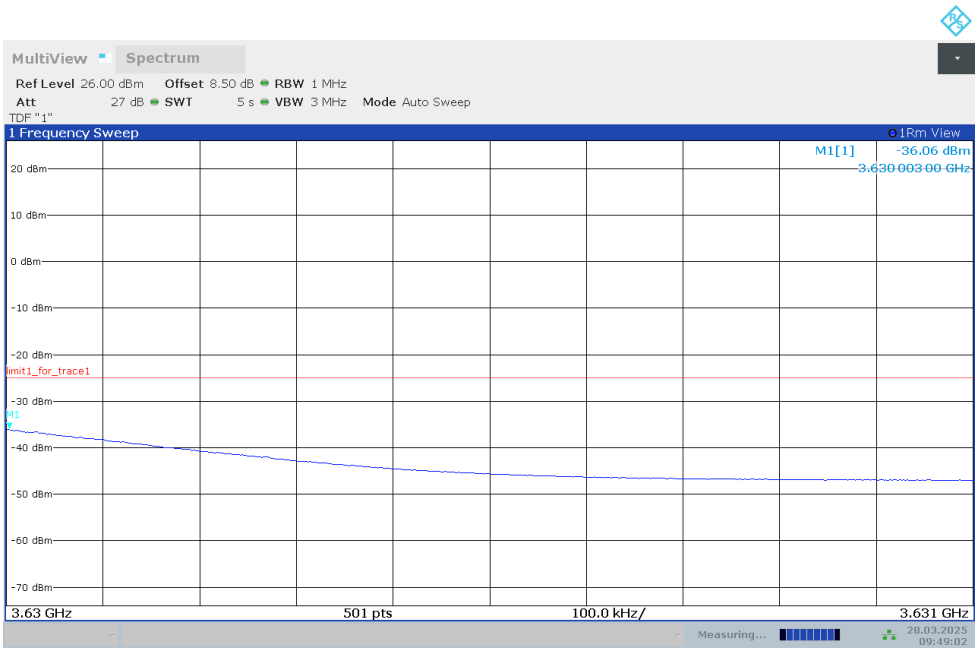
LOW BAND EDGE BLOCK-1RB-LOW_offset



09:48:21 28.03.2025

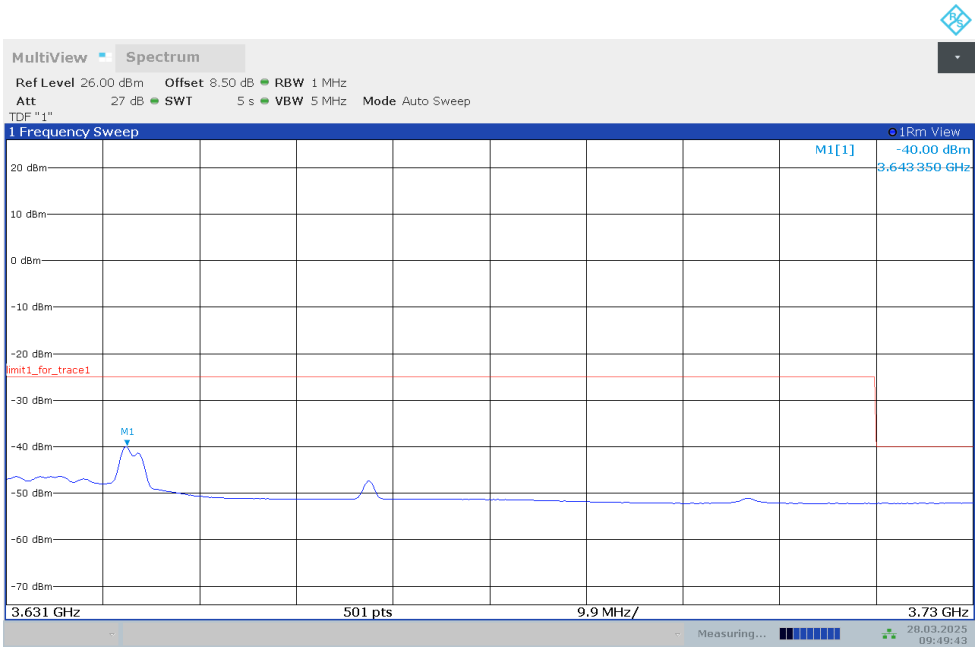
©Copyright. All rights reserved by CTTL.

LOW BAND EDGE BLOCK-1RB-LOW_offset



09:49:02 28.03.2025

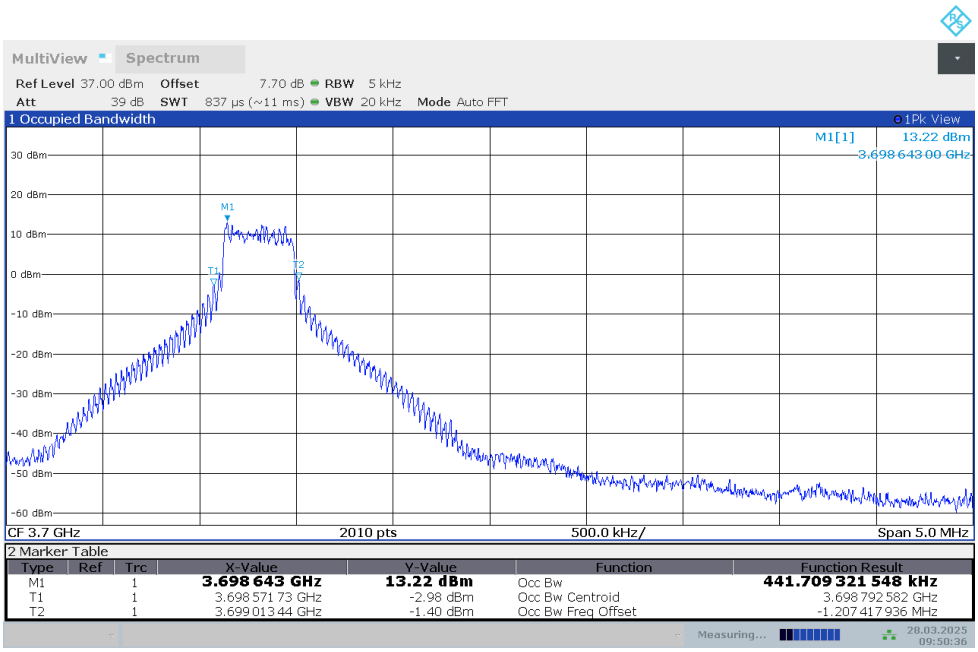
LOW BAND EDGE BLOCK-1RB-LOW_offset



09:49:43 28.03.2025

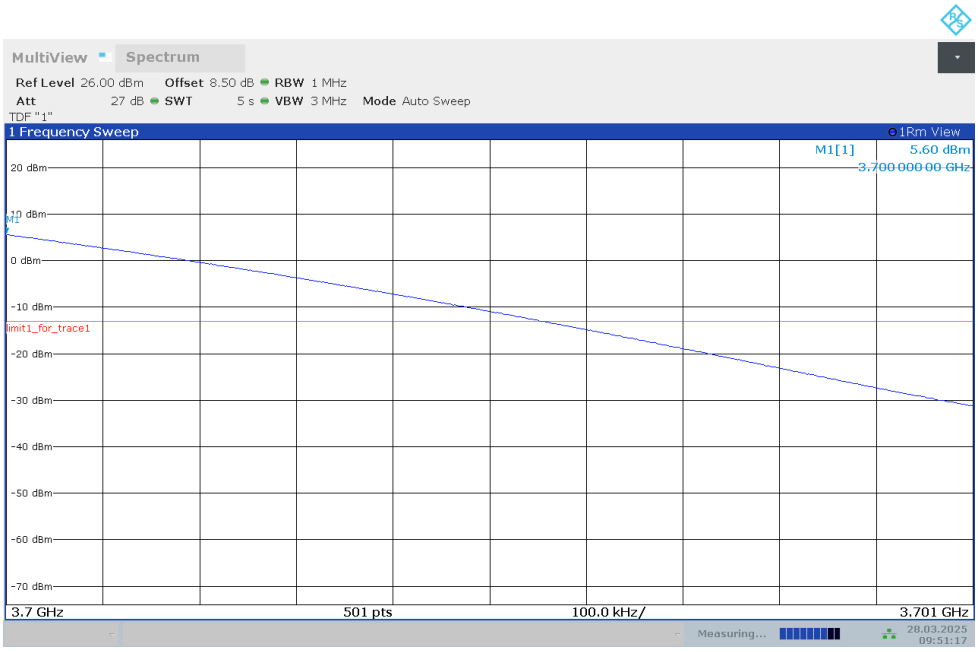
©Copyright. All rights reserved by CTTL.

OBW: 1RB-HIGH_offset



09:50:36 28.03.2025

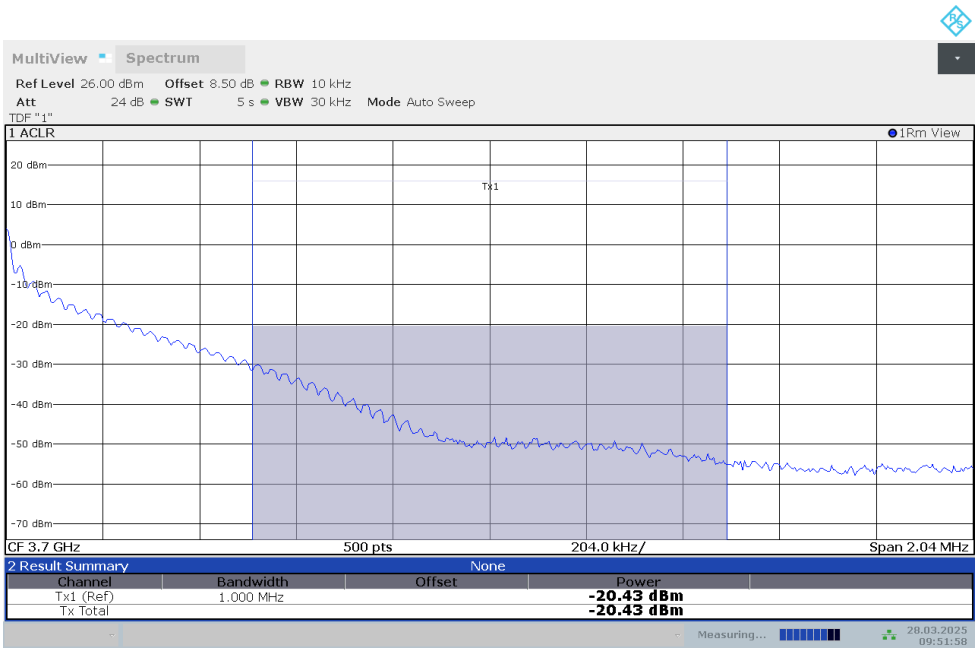
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



09:51:18 28.03.2025

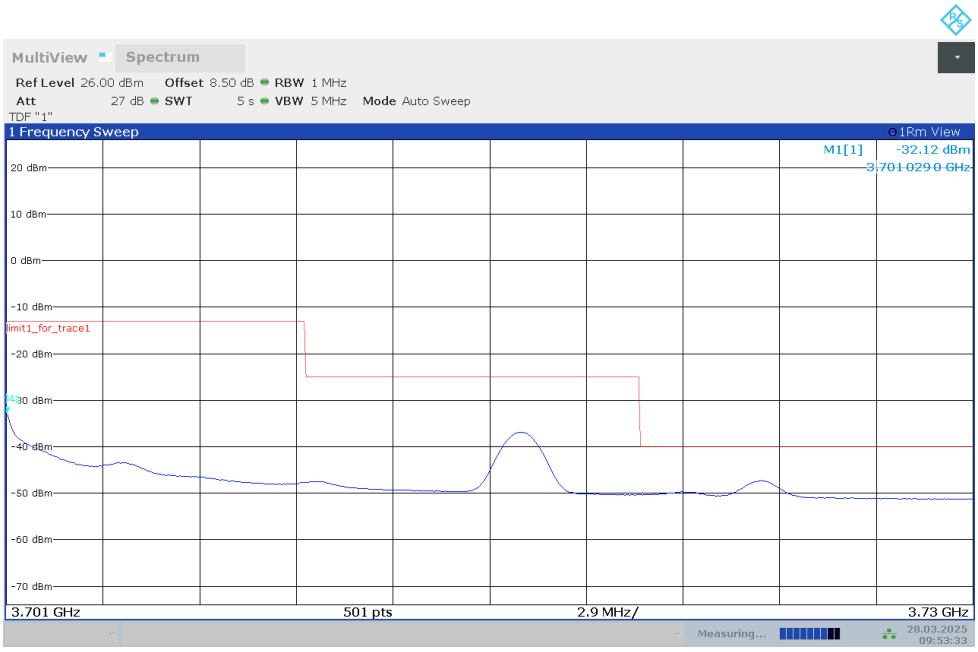
©Copyright. All rights reserved by CTTL.

Channel power



09:51:58 28.03.2025

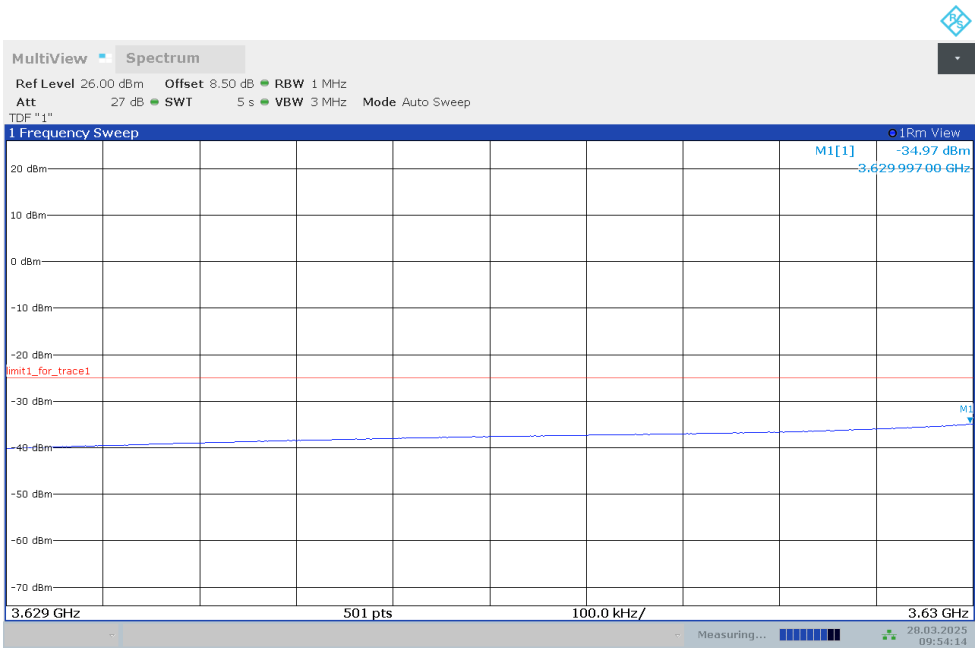
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



09:53:33 28.03.2025

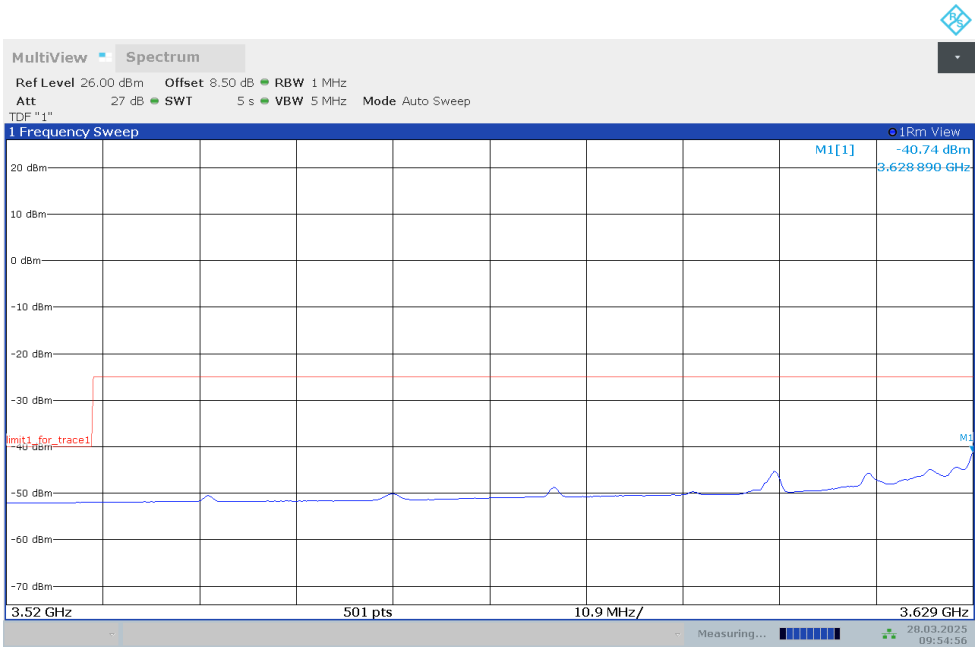
©Copyright. All rights reserved by CTTL.

HIGH BAND EDGE BLOCK-1RB-HIGH_offset



09:54:15 28.03.2025

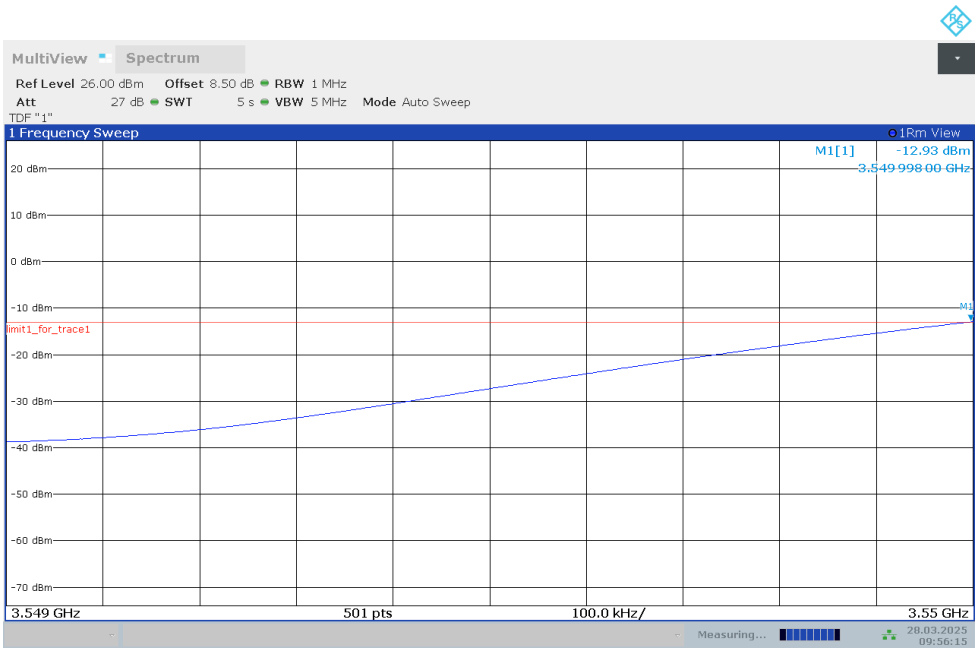
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



09:54:56 28.03.2025

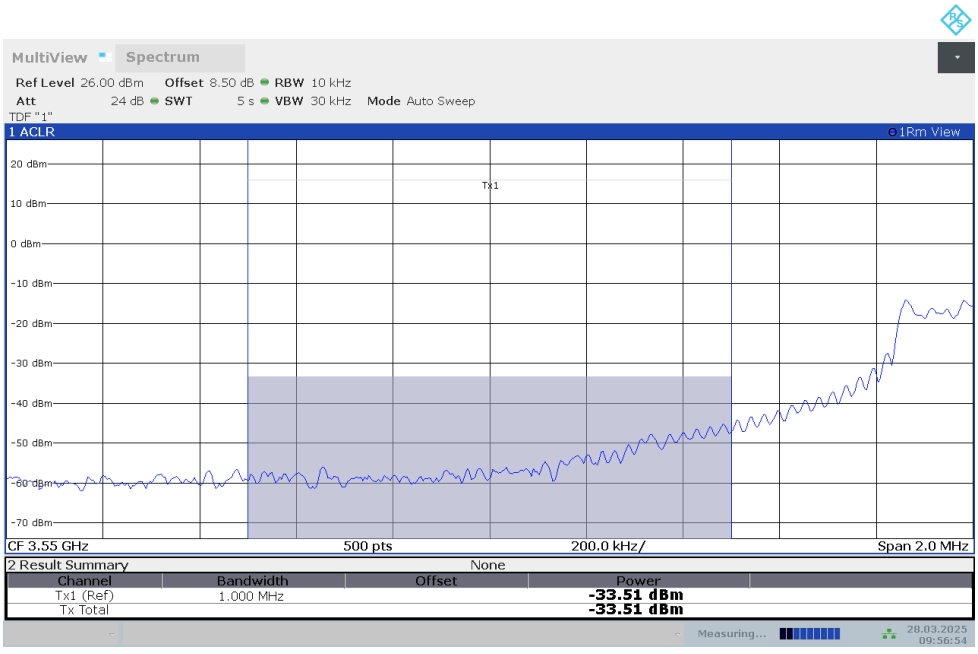
©Copyright. All rights reserved by CTTL.

LOW BAND EDGE BLOCK-100MHz-100%RB



09:56:16 28.03.2025

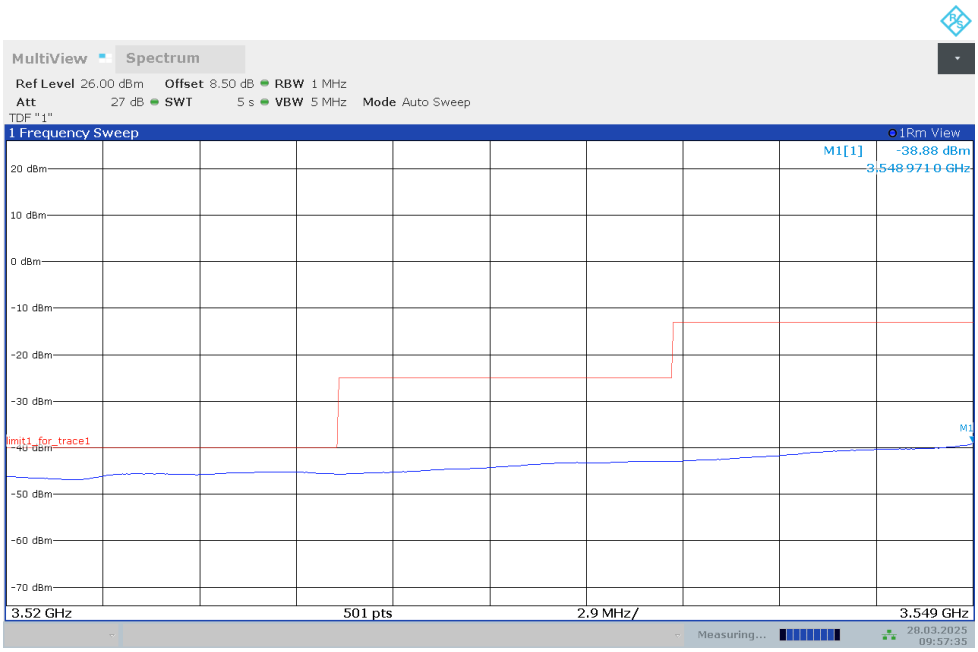
Channel power



09:56:54 28.03.2025

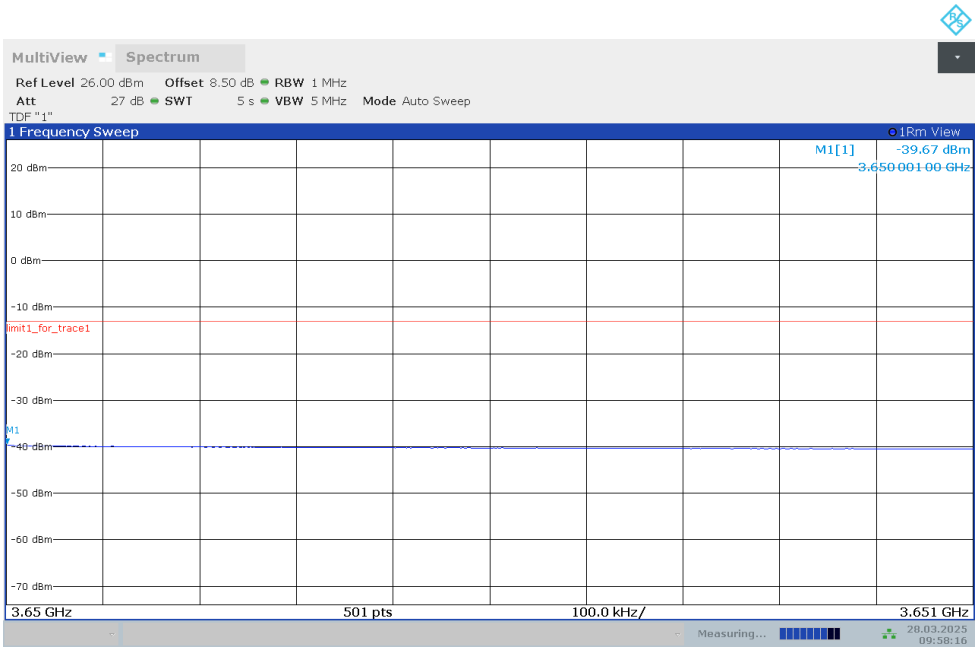
©Copyright. All rights reserved by CTTL.

LOW BAND EDGE BLOCK-100MHz-100%RB



09:57:36 28.03.2025

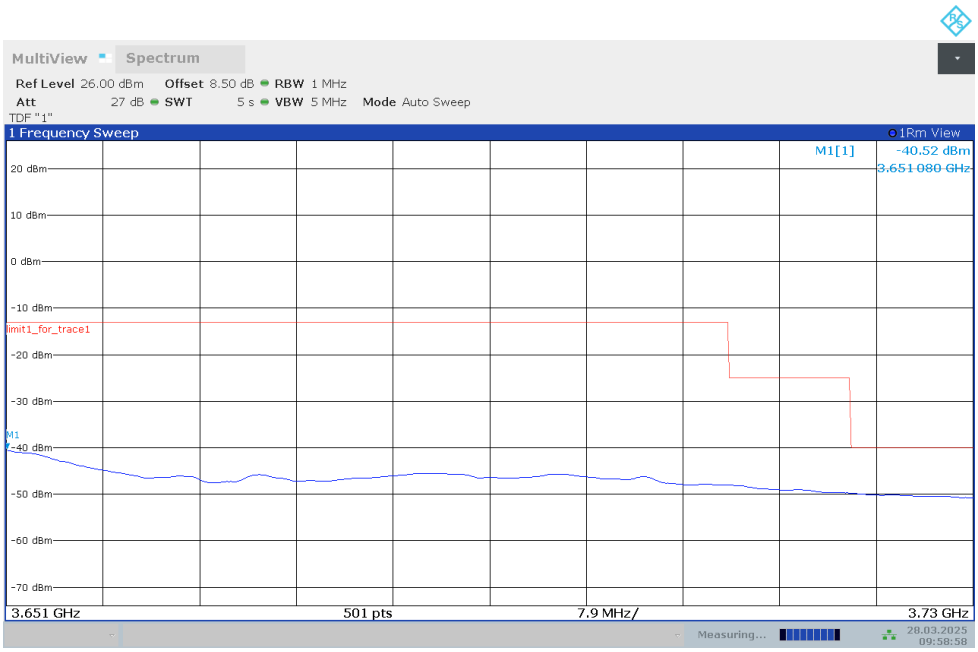
LOW BAND EDGE BLOCK-100MHz-100%RB



09:58:17 28.03.2025

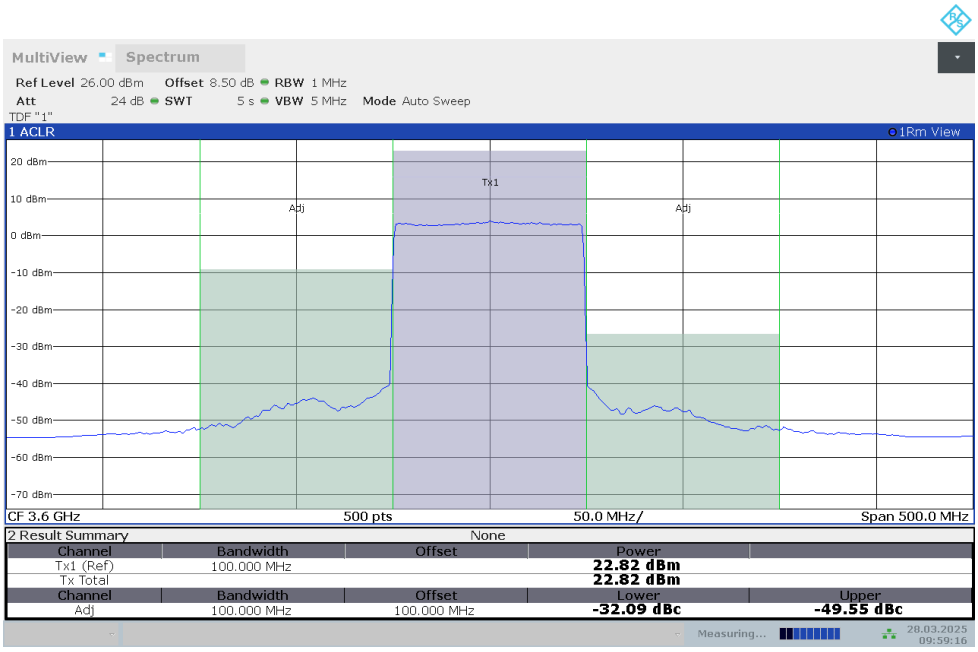
©Copyright. All rights reserved by CTTL.

LOW BAND EDGE BLOCK-100MHz-100%RB



09:58:58 28.03.2025

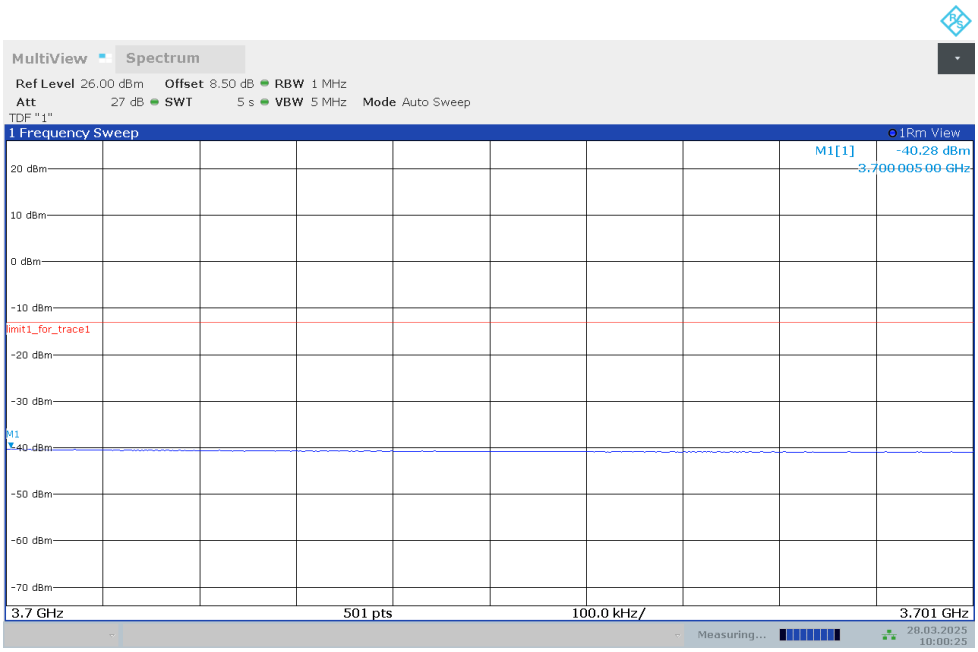
ACLR



09:59:17 28.03.2025

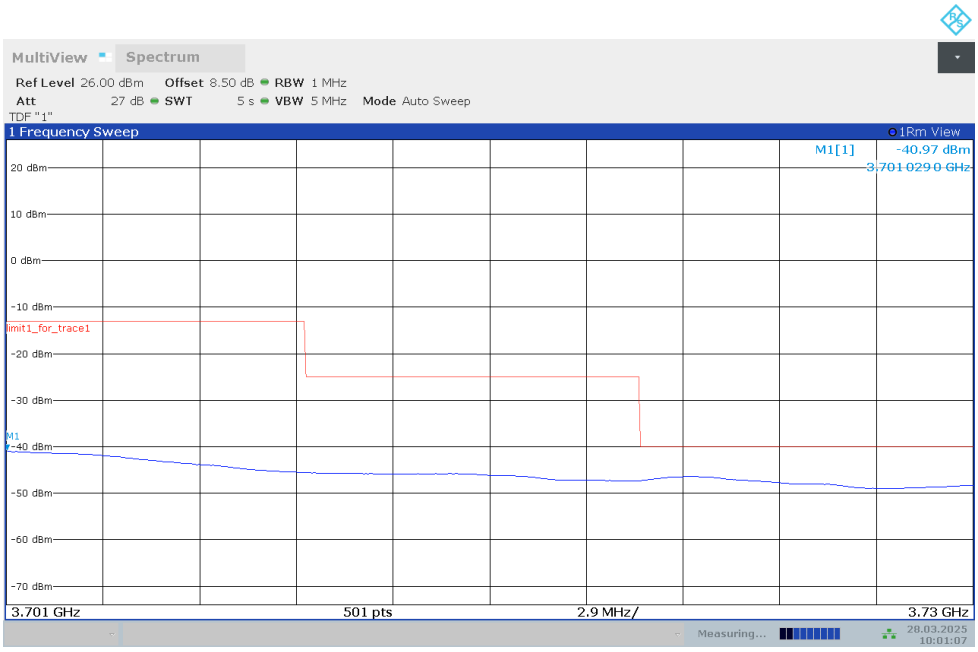
©Copyright. All rights reserved by CTTL.

HIGH BAND EDGE BLOCK-100MHz-100%RB



10:00:26 28.03.2025

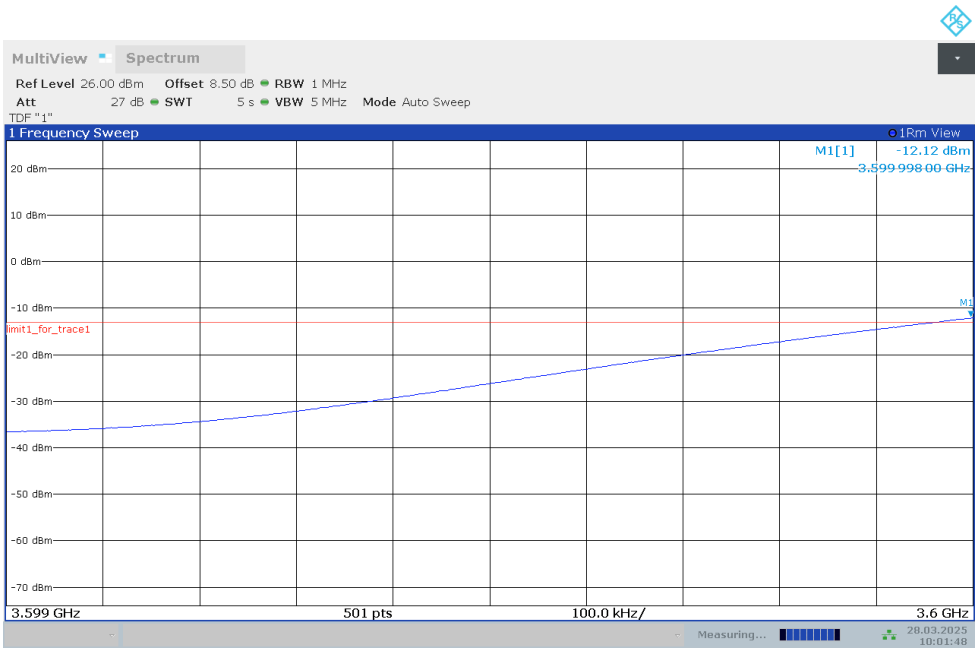
HIGH BAND EDGE BLOCK-100MHz-100%RB



10:01:07 28.03.2025

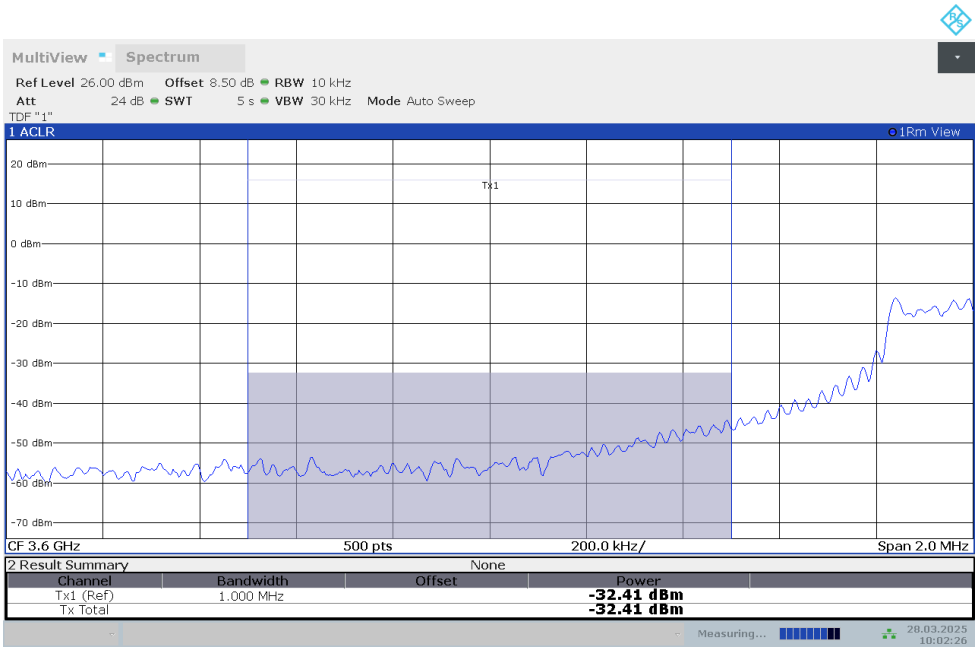
©Copyright. All rights reserved by CTTL.

HIGH BAND EDGE BLOCK-100MHz-100%RB



10:01:48 28.03.2025

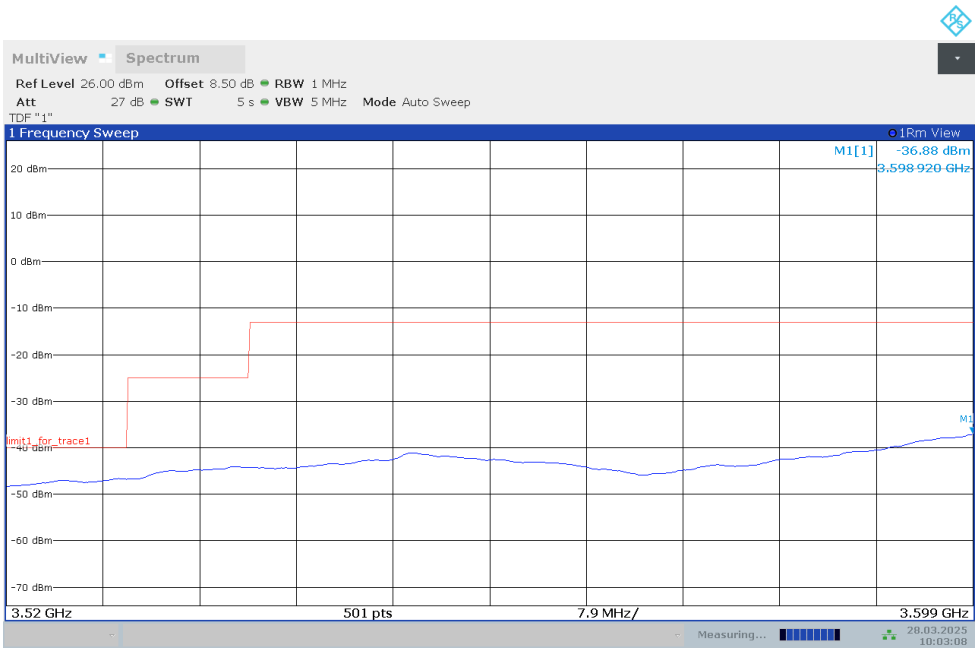
Channel power



10:02:27 28.03.2025

©Copyright. All rights reserved by CTTL.

HIGH BAND EDGE BLOCK-100MHz-100%RB



10:03:08 28.03.2025

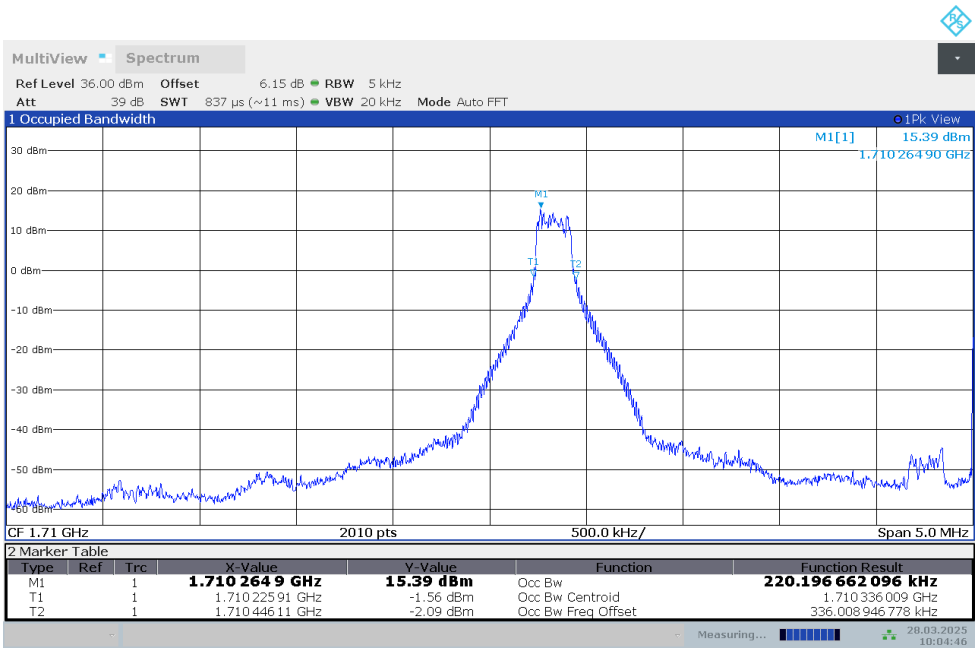
ACLR

10:03:27 28.03.2025

©Copyright. All rights reserved by CTTL.

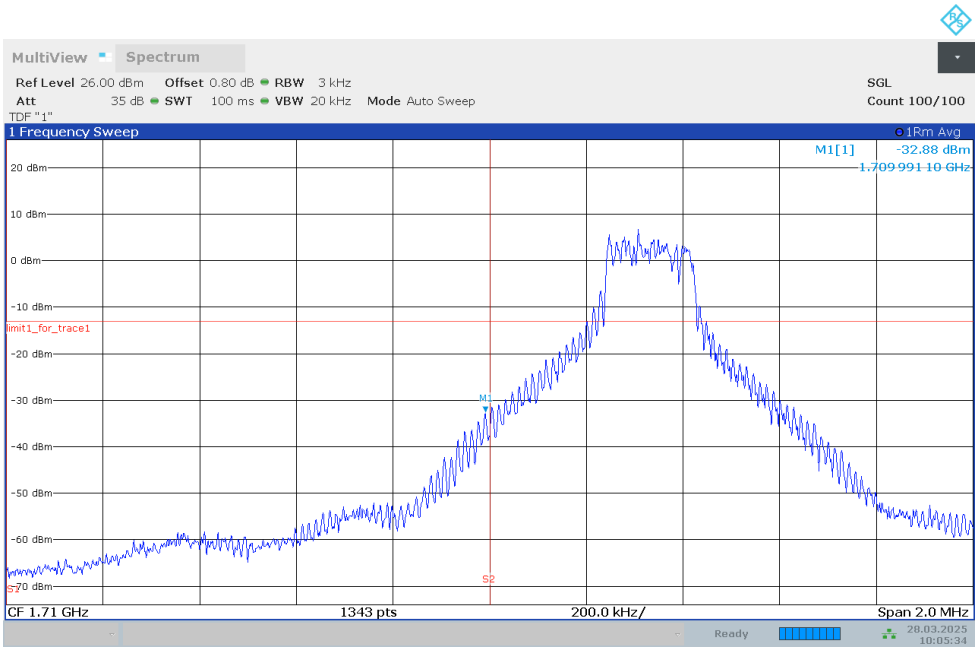
NR n66

OBW: 1RB-LOW_offset



10:04:46 28.03.2025

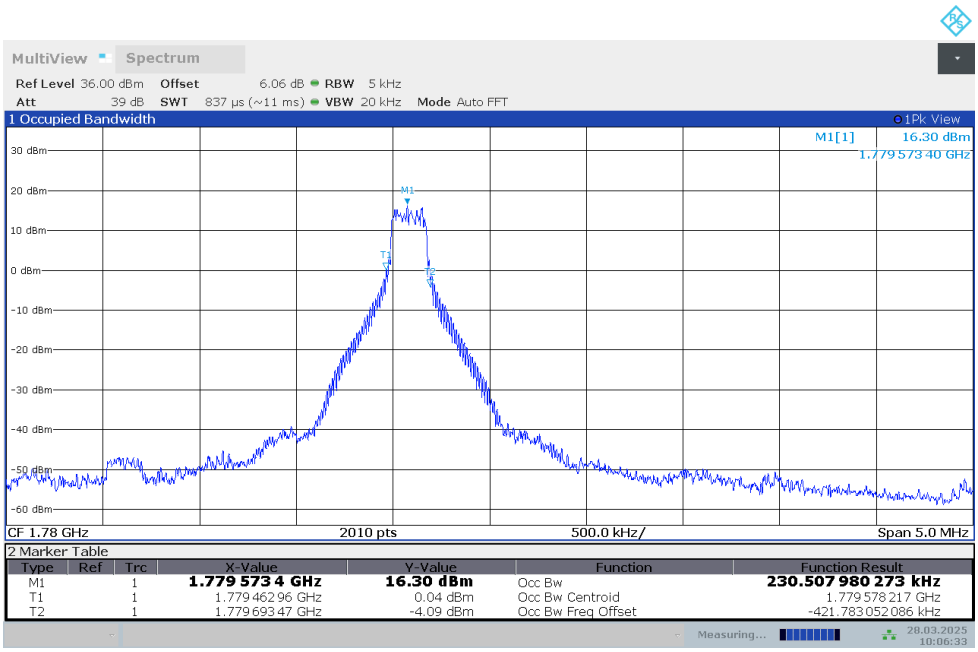
LOW BAND EDGE BLOCK-1RB-LOW_offset



10:05:34 28.03.2025

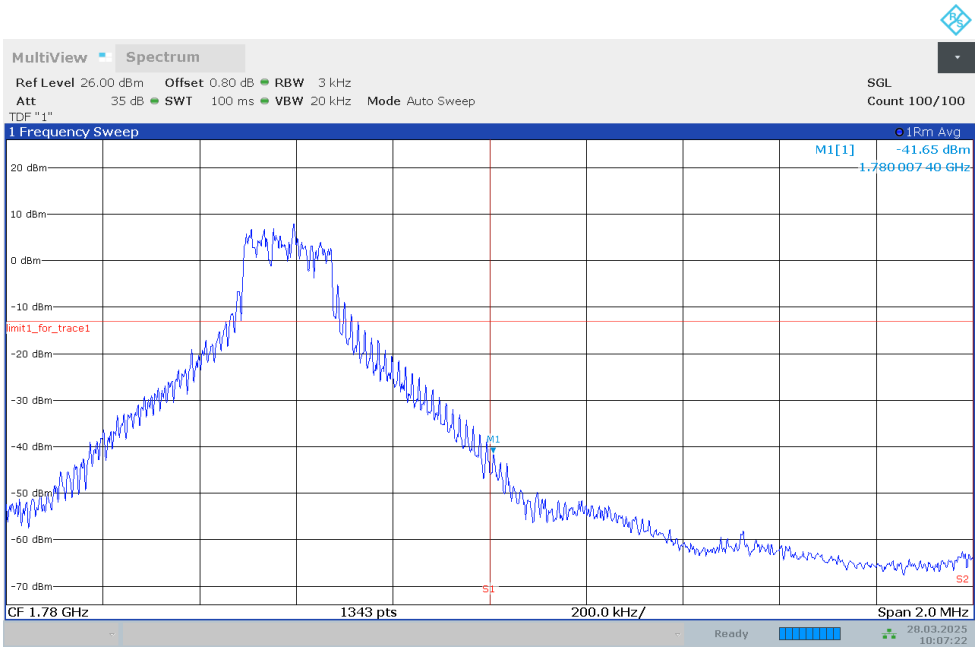
©Copyright. All rights reserved by CTTL.

OBW: 1RB-HIGH_offset



10:06:34 28.03.2025

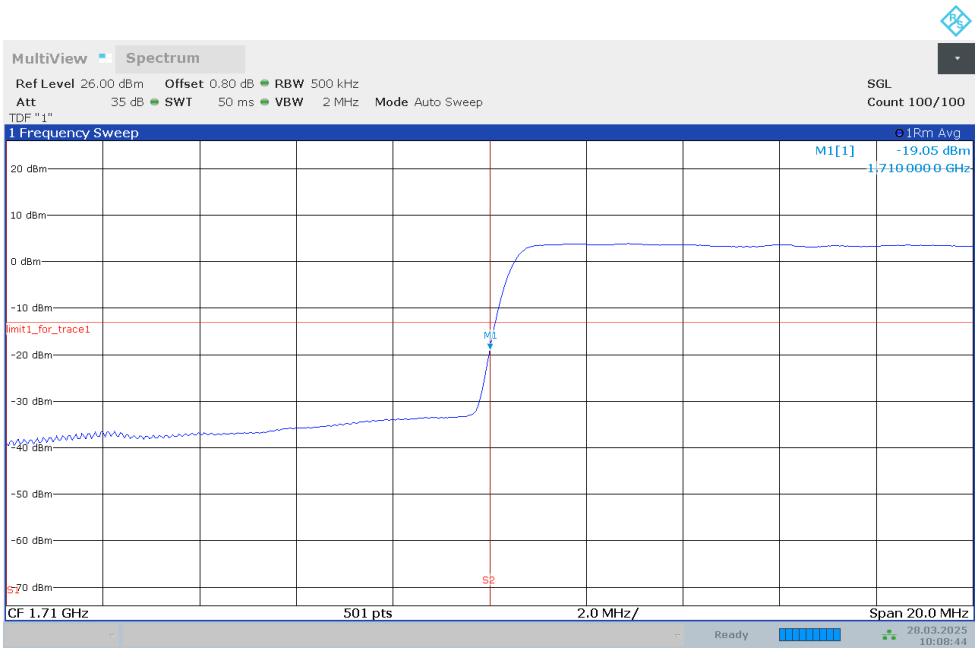
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



10:07:22 28.03.2025

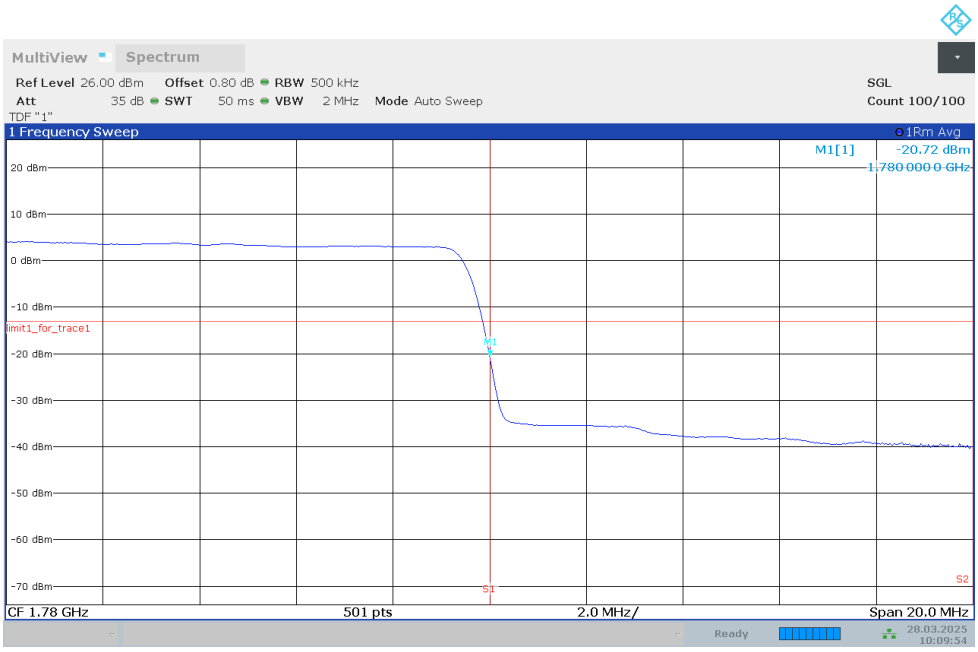
©Copyright. All rights reserved by CTTL.

LOW BAND EDGE BLOCK-40MHz-100%RB



10:08:45 28.03.2025

HIGH BAND EDGE BLOCK-40MHz-100%RB

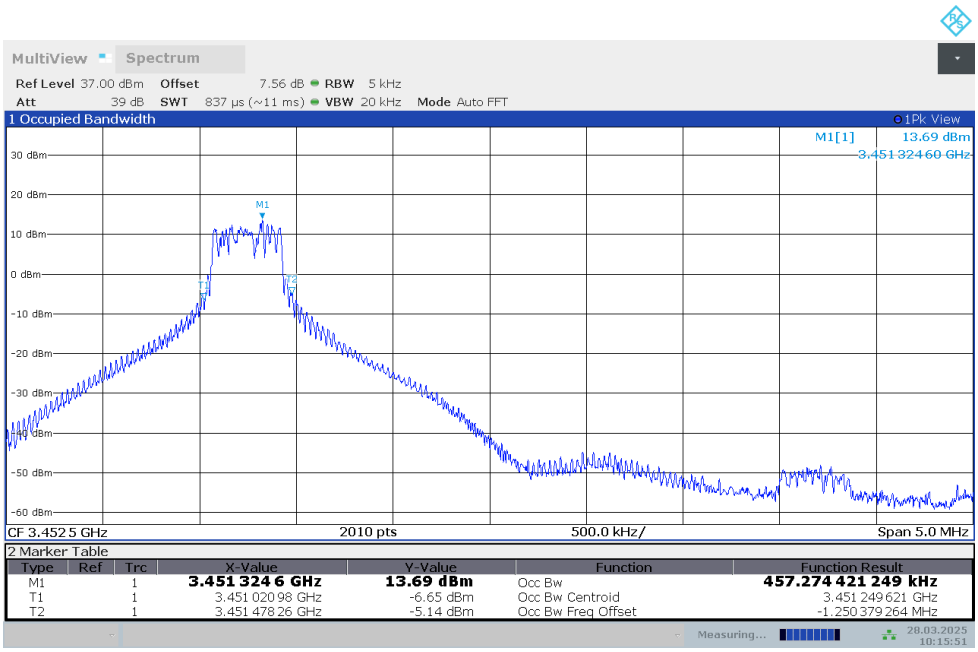


10:09:55 28.03.2025

©Copyright. All rights reserved by CTTL.

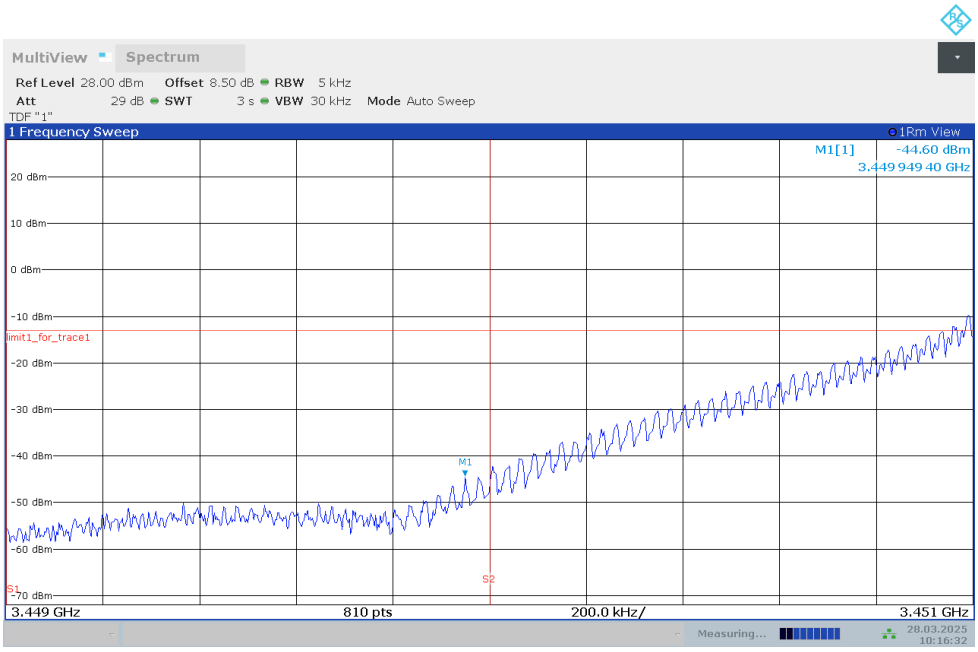
NR n77L

OBW: 1RB-LOW_offset



10:15:51 28.03.2025

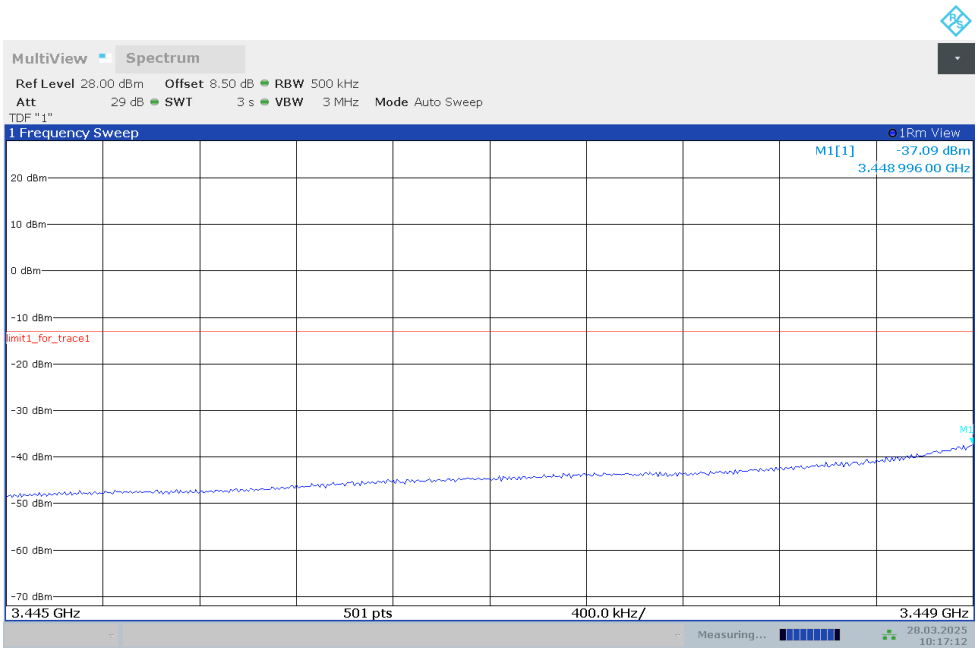
LOW BAND EDGE BLOCK-1RB-LOW_offset



10:16:33 28.03.2025

©Copyright. All rights reserved by CTTL.

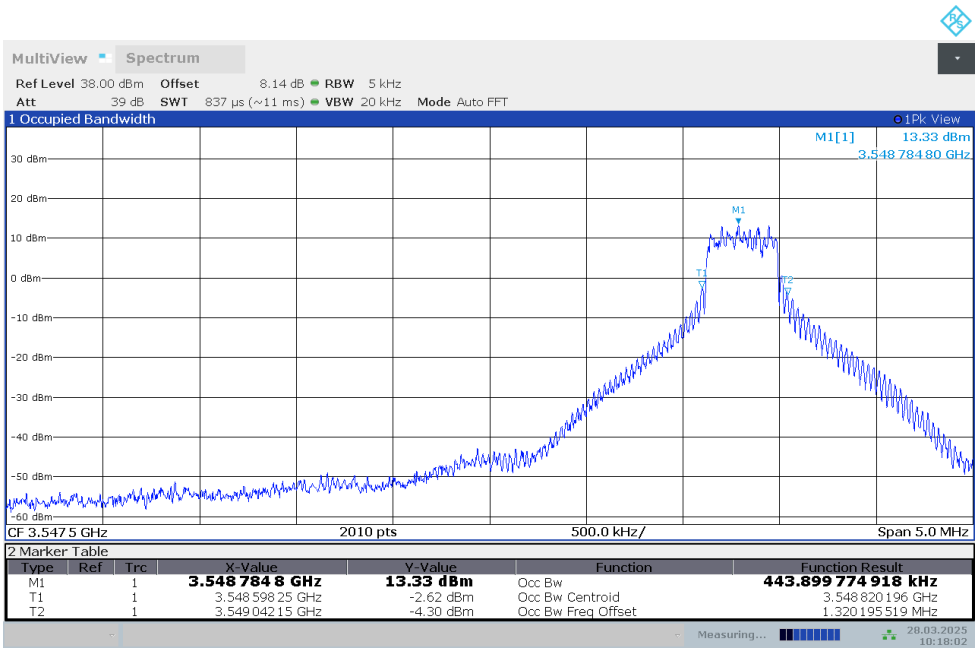
LOW BAND EDGE BLOCK-1RB-LOW_offset



10:17:13 28.03.2025

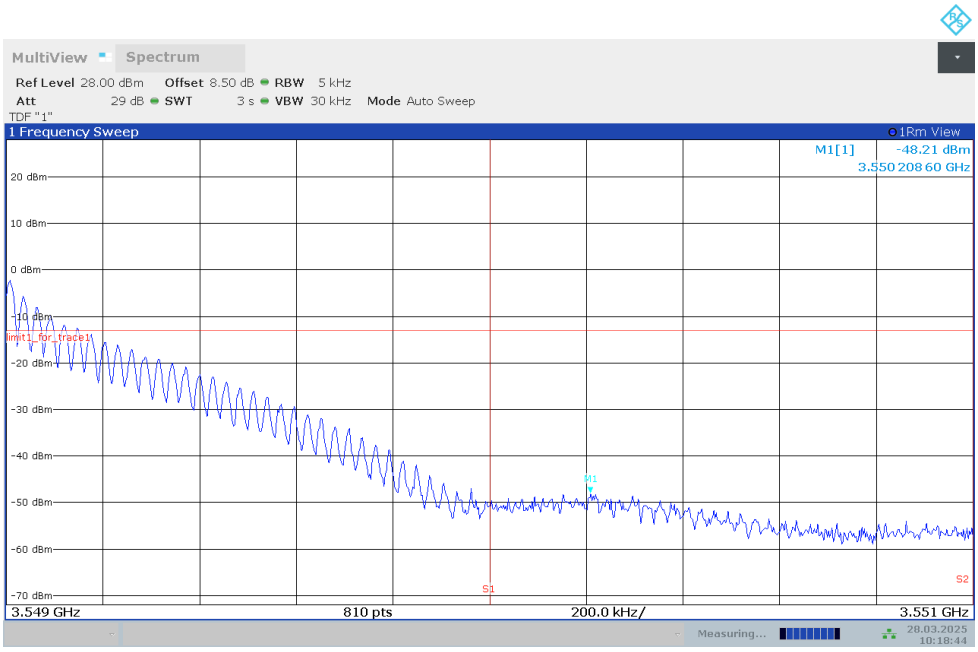
©Copyright. All rights reserved by CTTL.

OBW: 1RB-HIGH_offset



10:18:03 28.03.2025

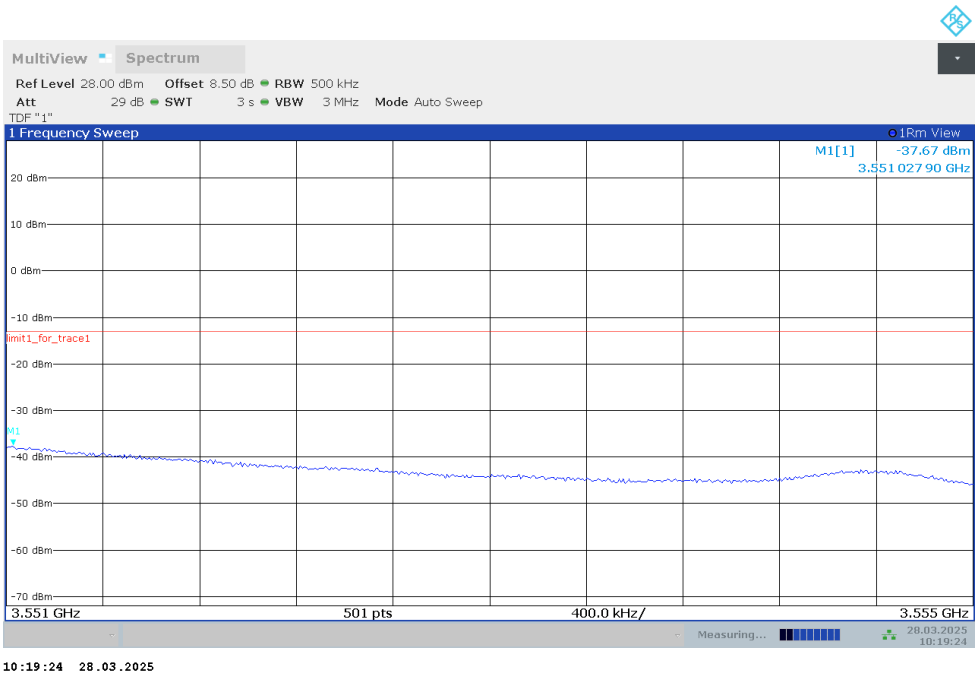
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



10:18:44 28.03.2025

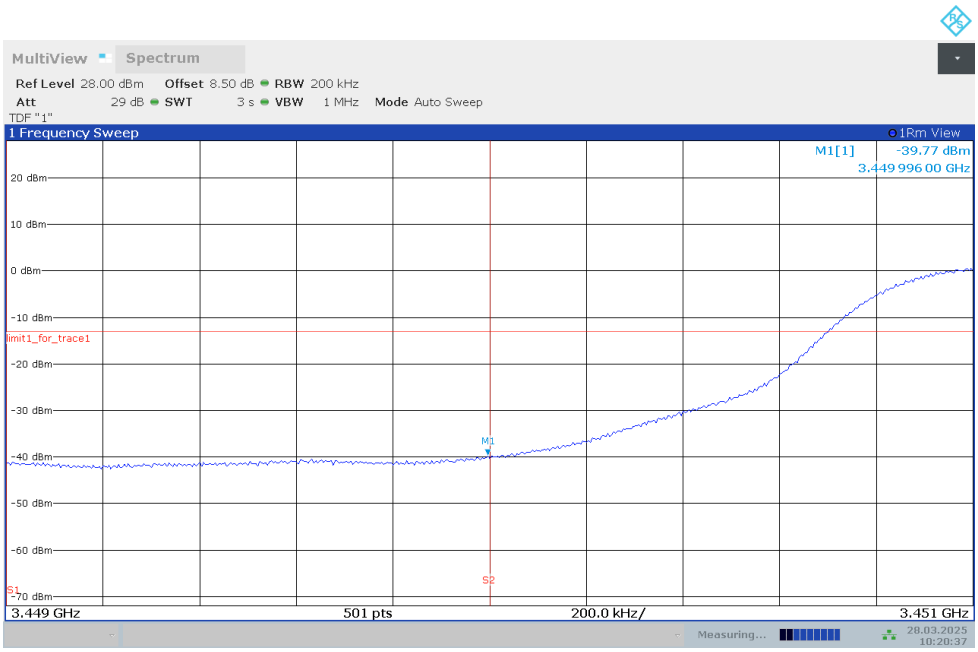
©Copyright. All rights reserved by CTTL.

HIGH BAND EDGE BLOCK-1RB-HIGH_offset



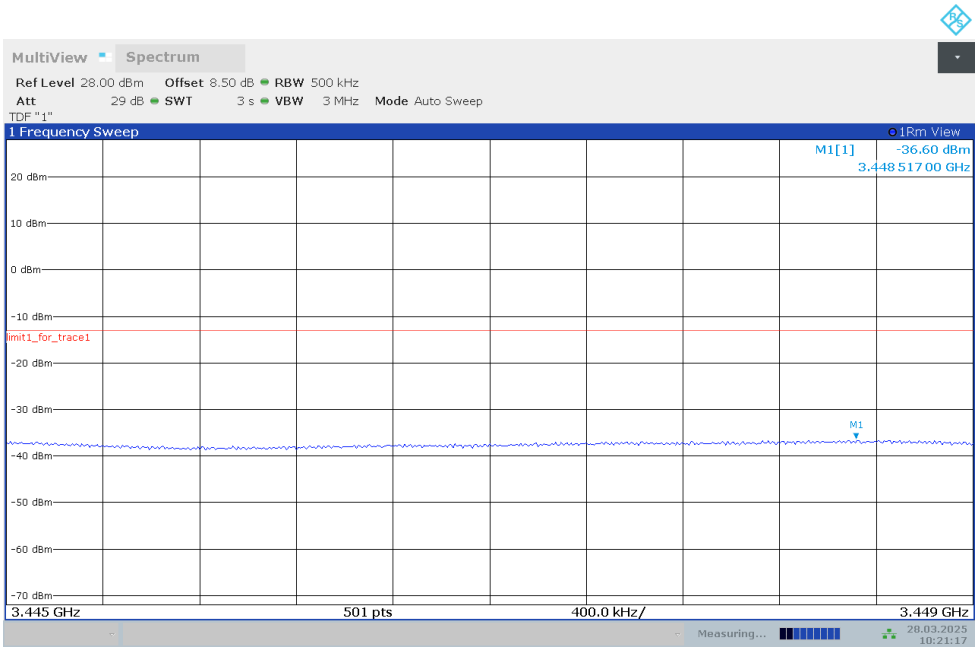
©Copyright. All rights reserved by CTTL.

LOW BAND EDGE BLOCK-100MHz-100%RB



10:20:37 28.03.2025

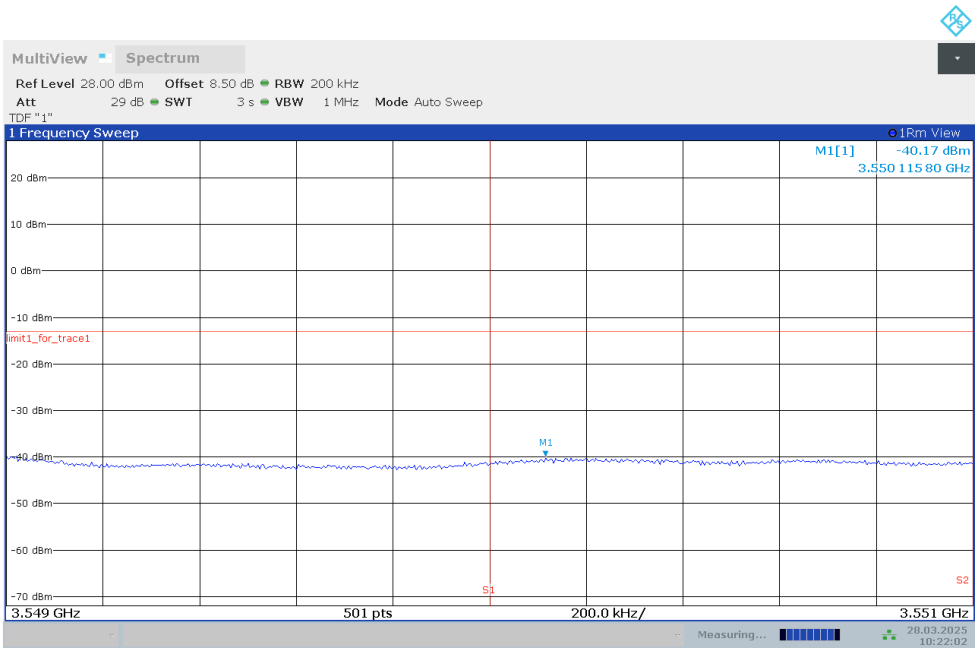
LOW BAND EDGE BLOCK-100MHz-100%RB



10:21:17 28.03.2025

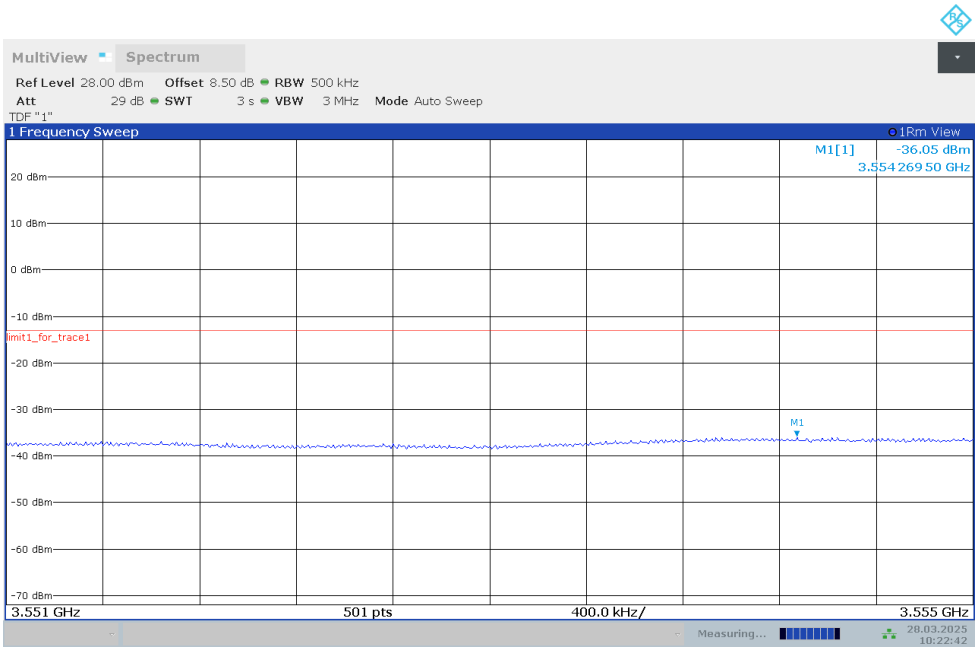
©Copyright. All rights reserved by CTTL.

HIGH BAND EDGE BLOCK-100MHz-100%RB



10:22:02 28.03.2025

HIGH BAND EDGE BLOCK-100MHz-100%RB

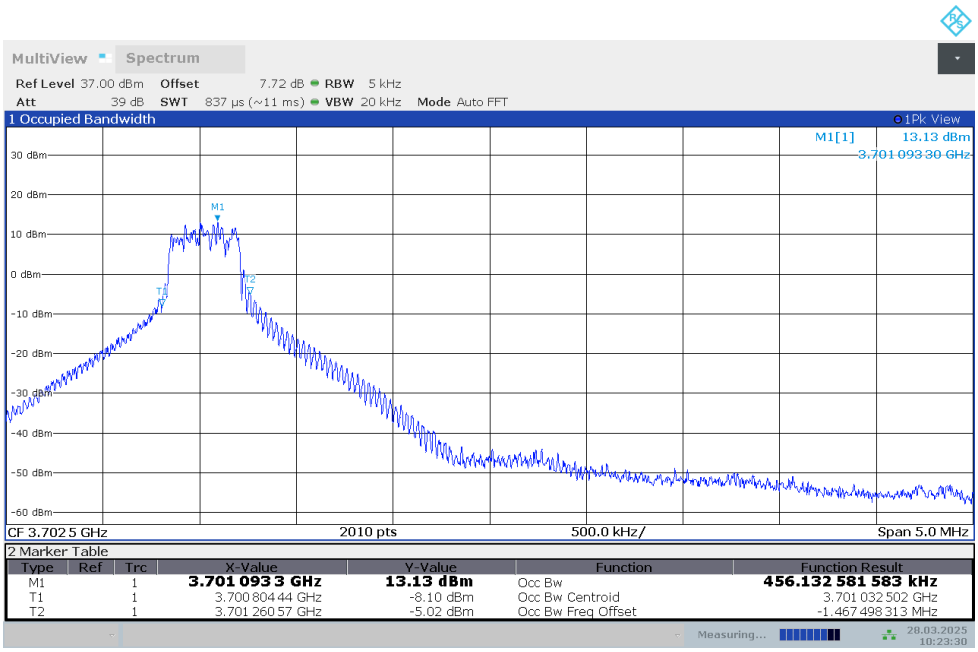


10:22:43 28.03.2025

©Copyright. All rights reserved by CTTL.

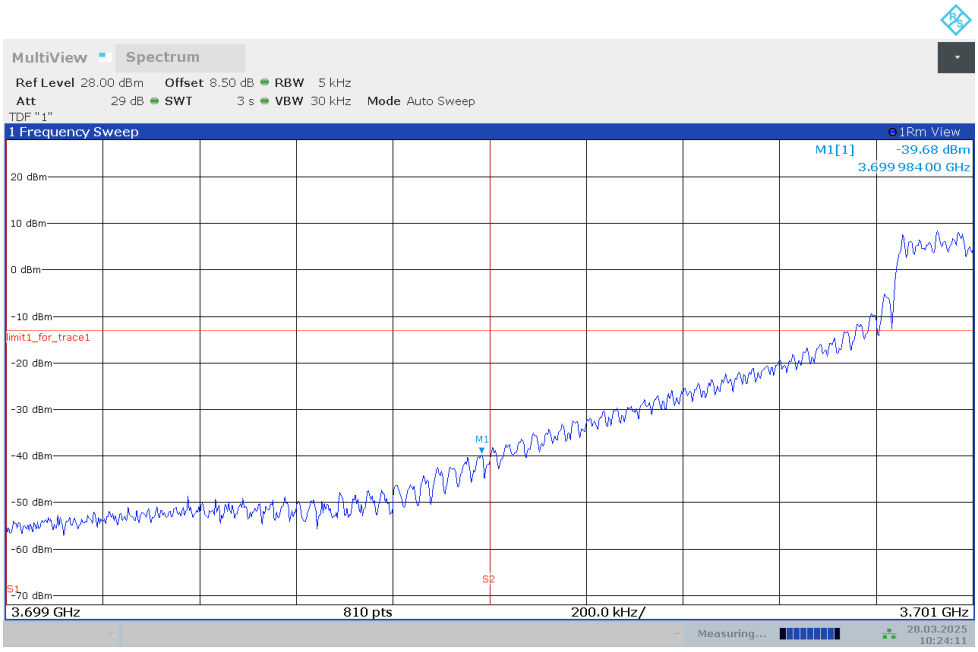
NR n77H

OBW: 1RB-LOW_offset



10:23:30 28.03.2025

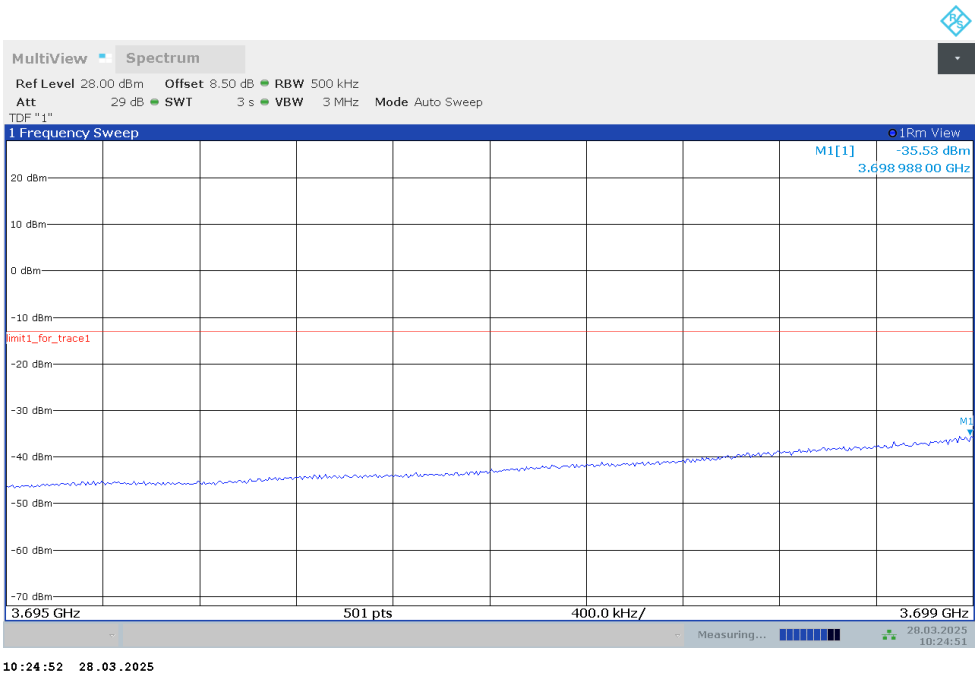
LOW BAND EDGE BLOCK-1RB-LOW_offset



10:24:12 28.03.2025

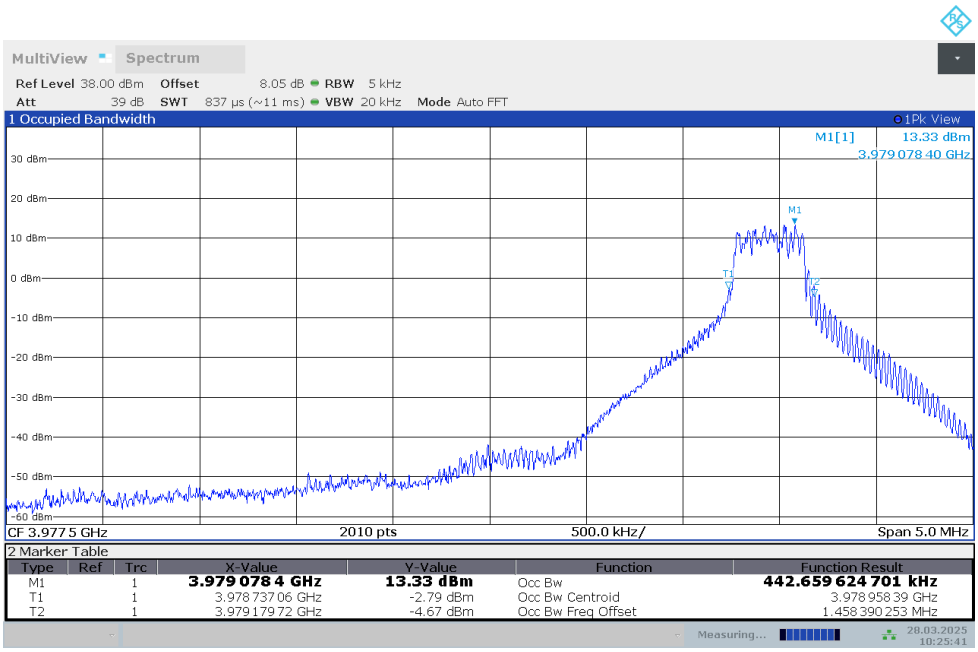
©Copyright. All rights reserved by CTTL.

LOW BAND EDGE BLOCK-1RB-LOW_offset



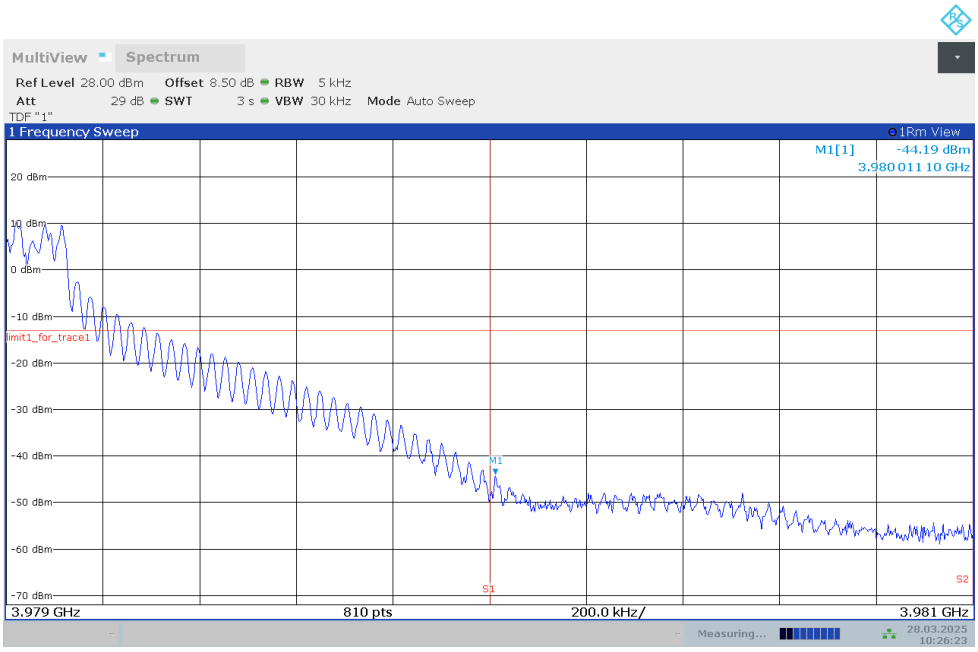
©Copyright. All rights reserved by CTTL.

OBW: 1RB-HIGH_offset



10:25:42 28.03.2025

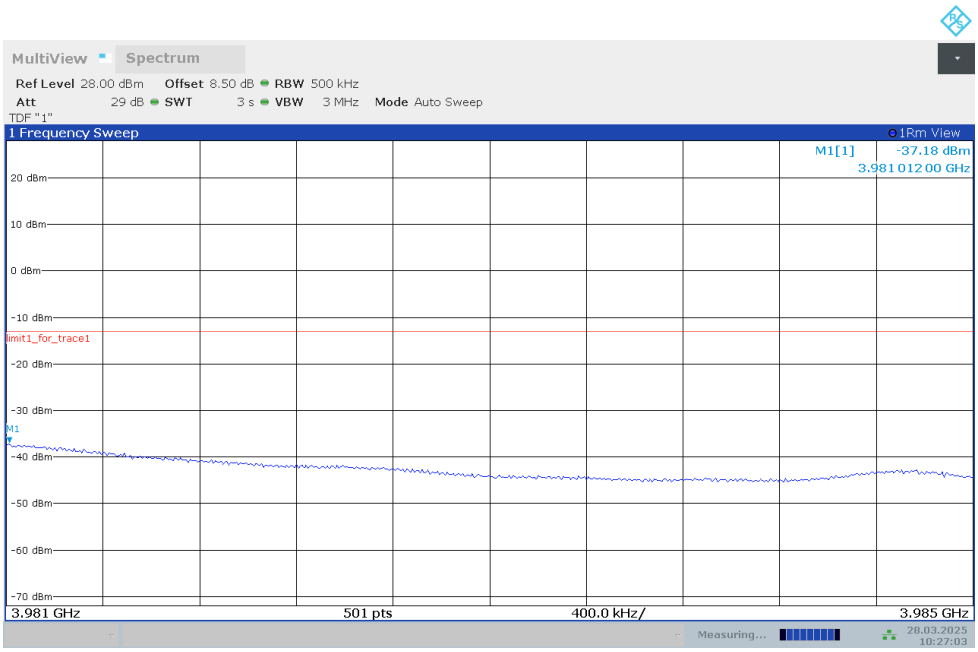
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



10:26:23 28.03.2025

©Copyright. All rights reserved by CTTL.

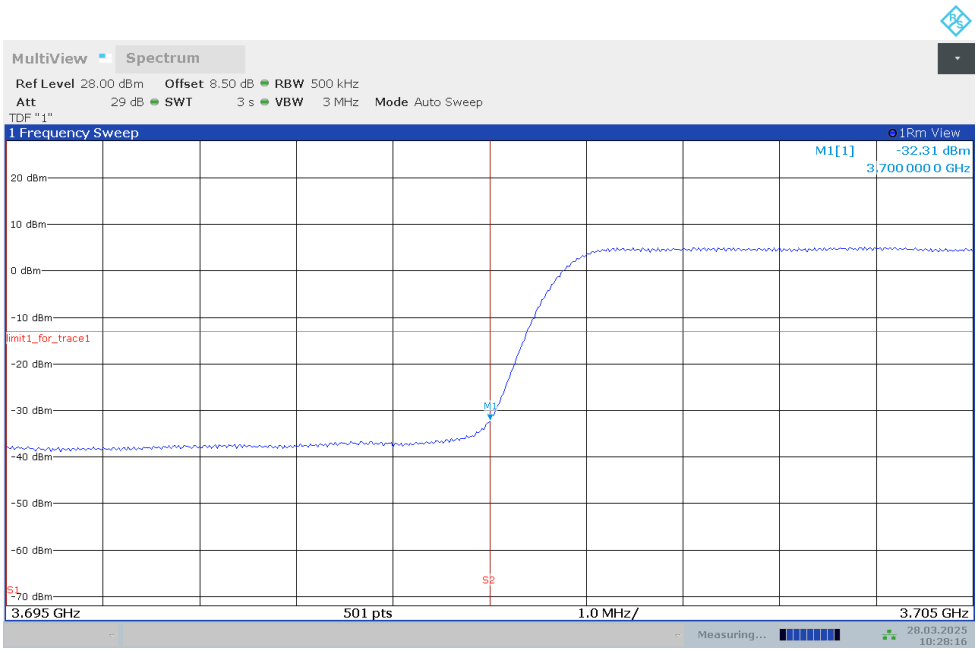
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



10:27:03 28.03.2025

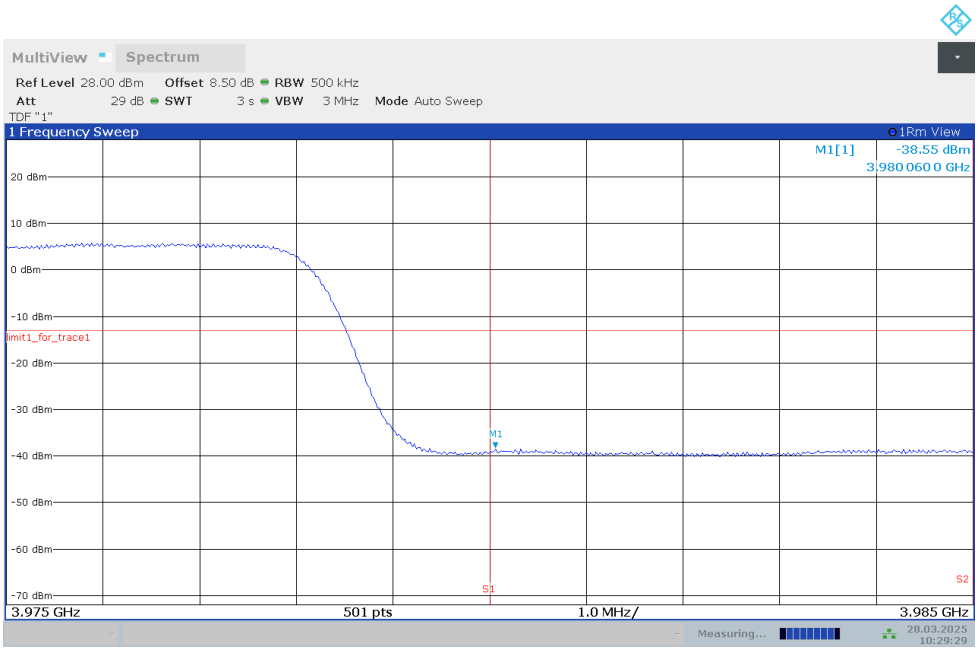
©Copyright. All rights reserved by CTTL.

LOW BAND EDGE BLOCK-100MHz-100%RB



10:28:16 28.03.2025

HIGH BAND EDGE BLOCK-100MHz-100%RB

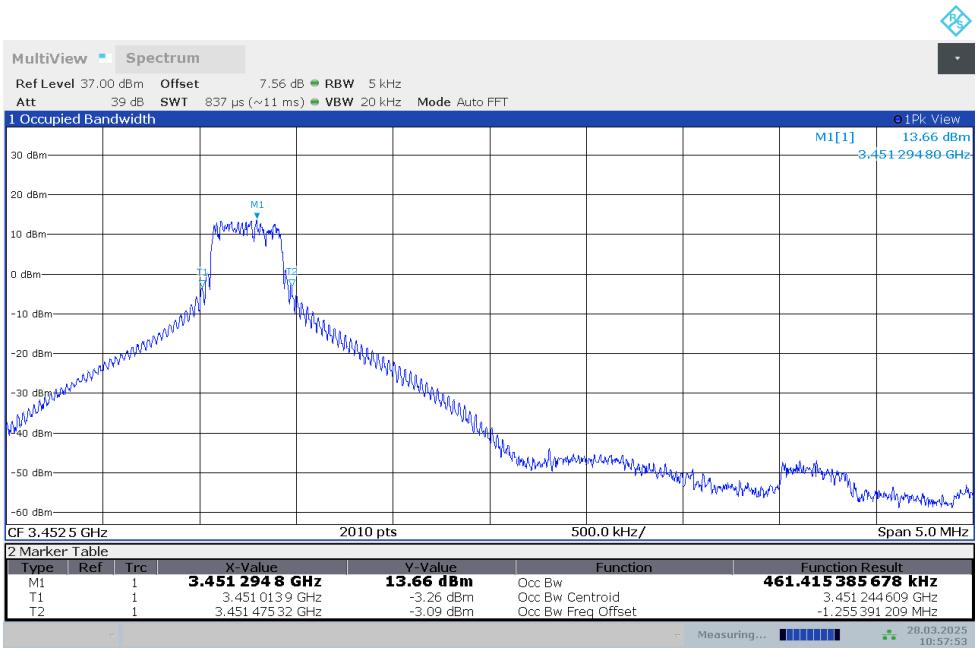


10:29:30 28.03.2025

©Copyright. All rights reserved by CTTL.

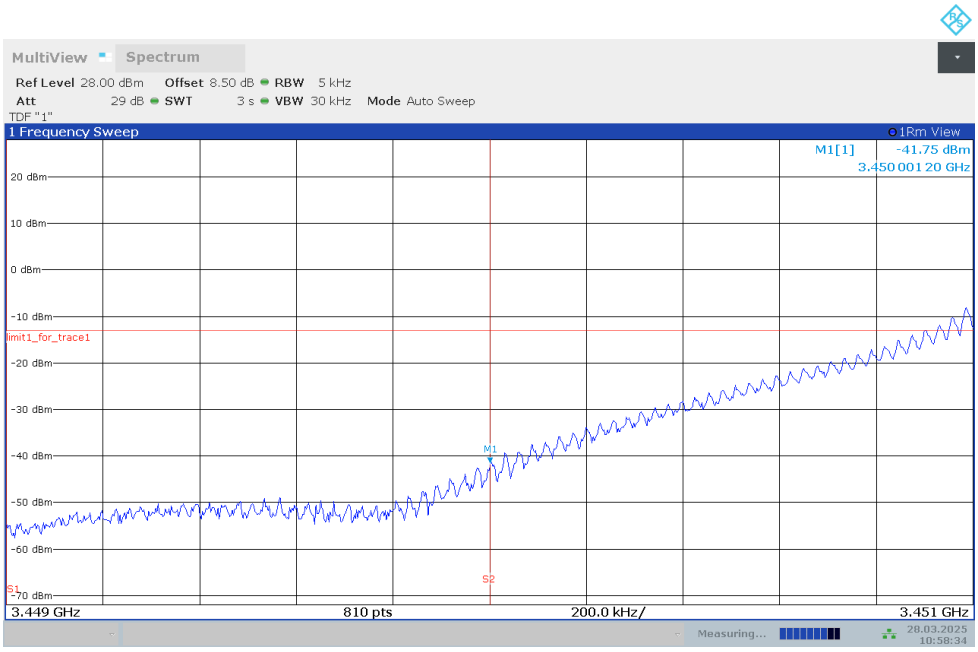
NR n78L

OBW: 1RB-LOW_offset



10:57:53 28.03.2025

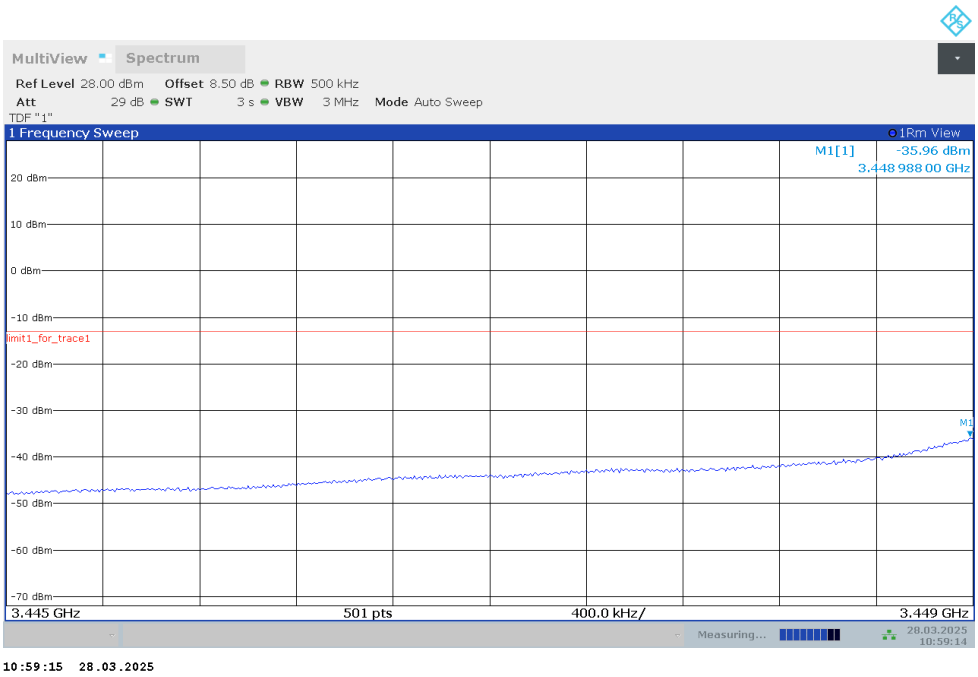
LOW BAND EDGE BLOCK-1RB-LOW_offset



10:58:35 28.03.2025

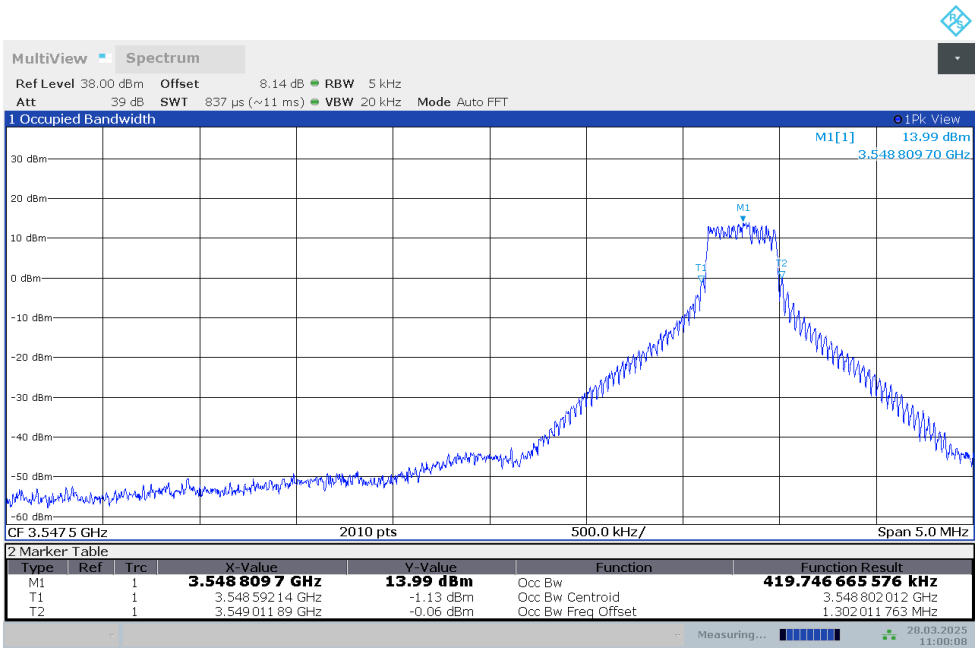
©Copyright. All rights reserved by CTTL.

LOW BAND EDGE BLOCK-1RB-LOW_offset



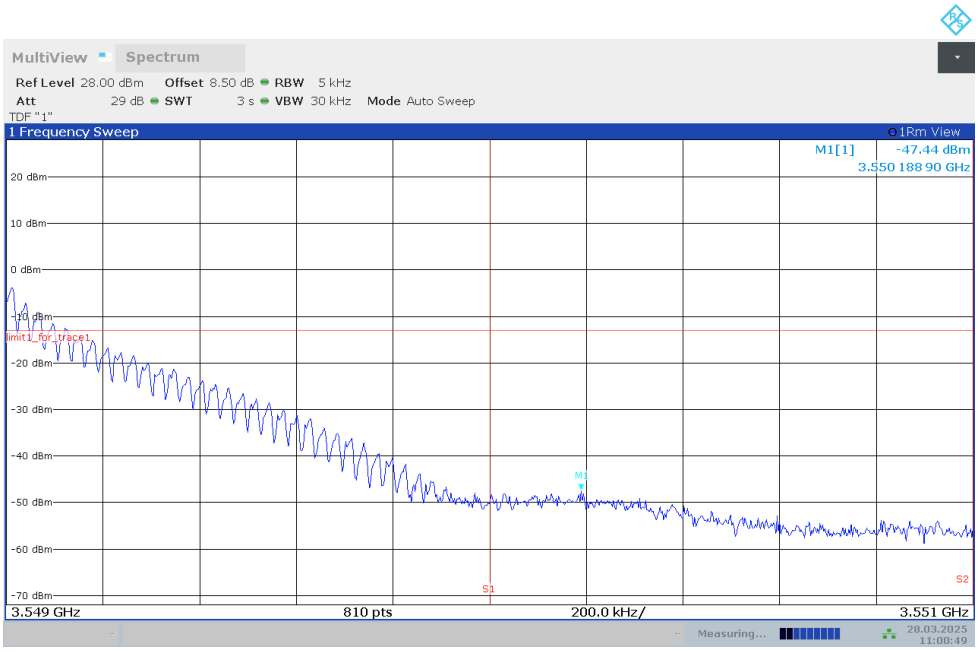
©Copyright. All rights reserved by CTTL.

OBW: 1RB-HIGH_offset



11:00:09 28.03.2025

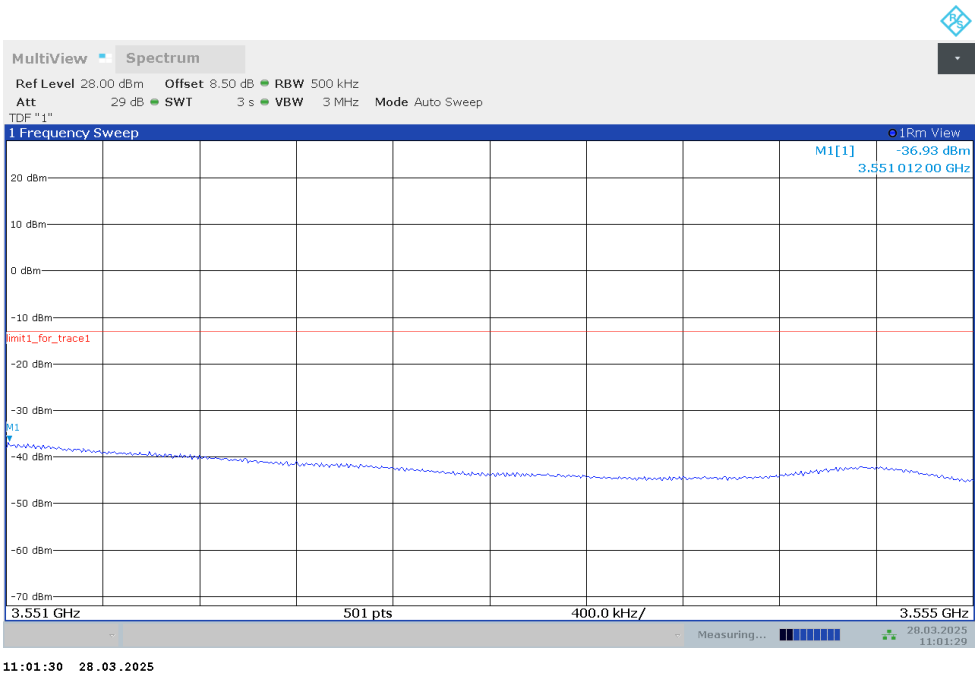
HIGH BAND EDGE BLOCK-1RB-HIGH_offset



11:00:50 28.03.2025

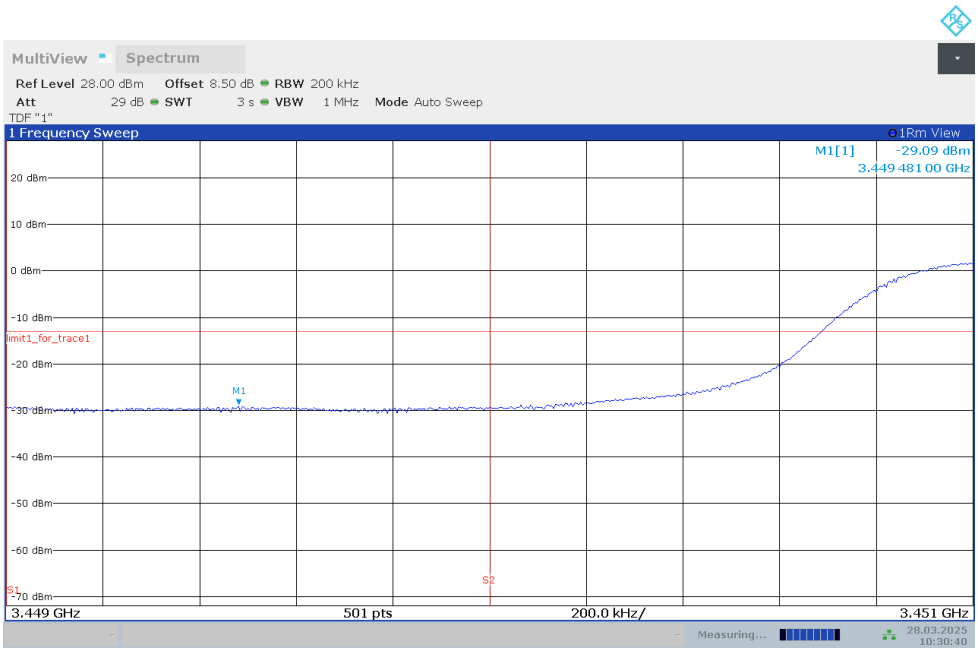
©Copyright. All rights reserved by CTTL.

HIGH BAND EDGE BLOCK-1RB-HIGH_offset



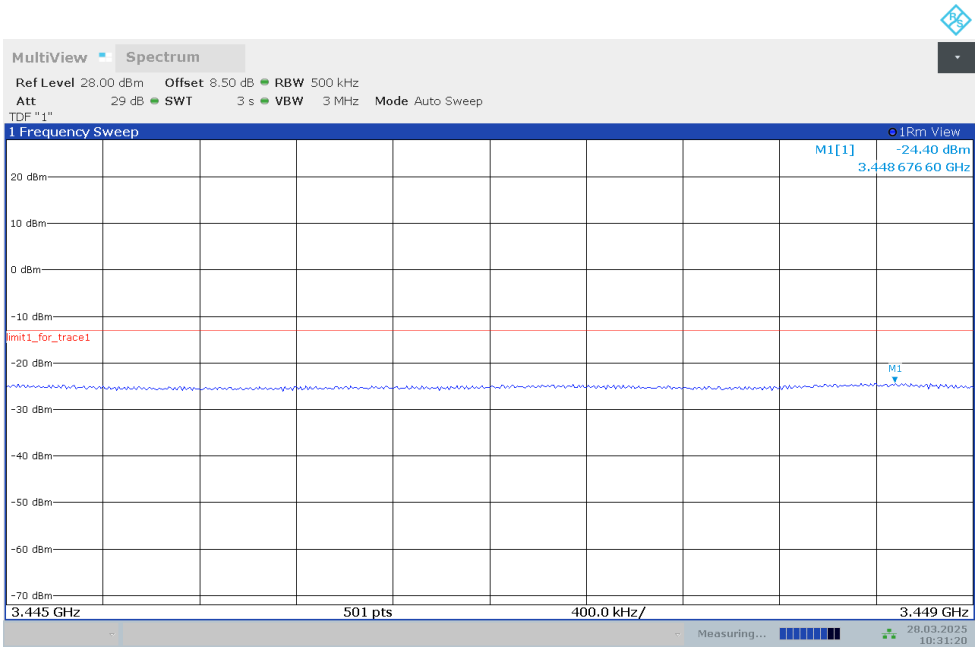
©Copyright. All rights reserved by CTTL.

LOW BAND EDGE BLOCK-100MHz-100%RB



10:30:40 28.03.2025

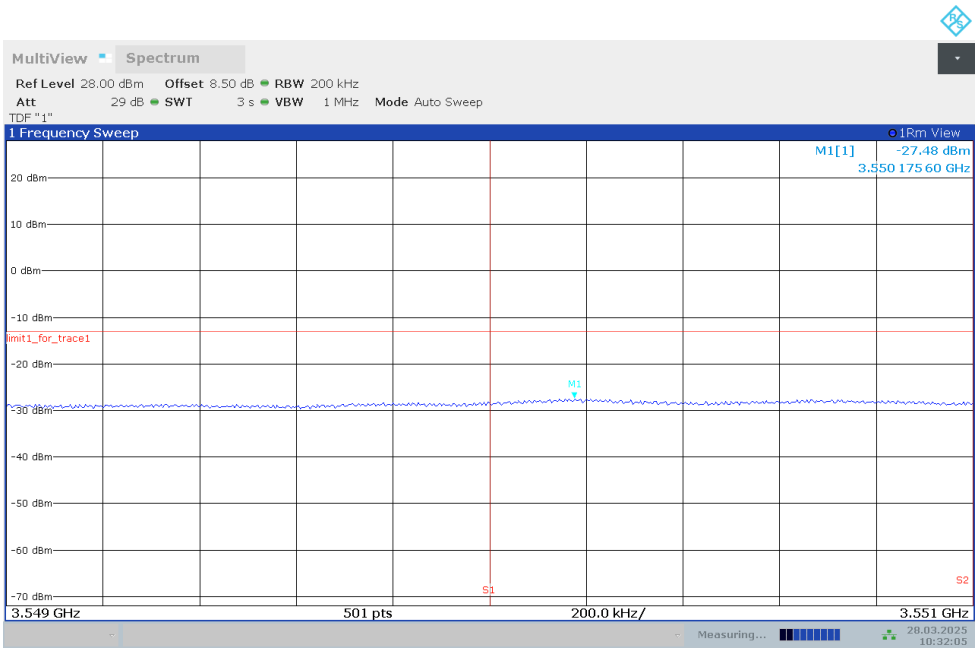
LOW BAND EDGE BLOCK-100MHz-100%RB



10:31:20 28.03.2025

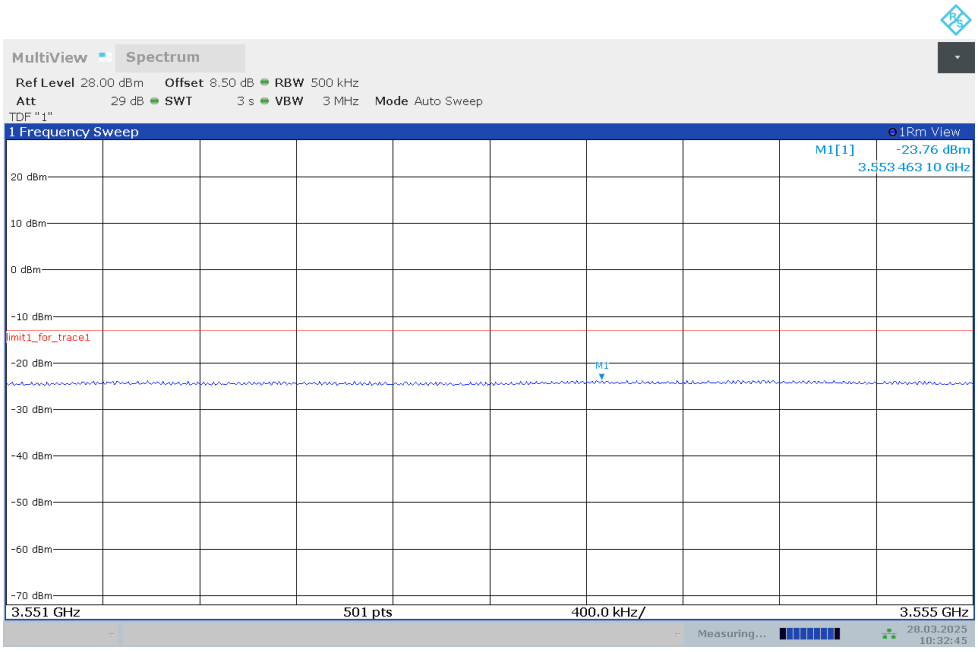
©Copyright. All rights reserved by CTTL.

HIGH BAND EDGE BLOCK-100MHz-100%RB



10:32:05 28.03.2025

HIGH BAND EDGE BLOCK-100MHz-100%RB



10:32:45 28.03.2025

©Copyright. All rights reserved by CTTL.

A.7 Conducted Spurious Emission

A.7.1 Measurement Method

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

1. In measuring unwanted emissions, the spectrum shall be investigated from 30 MHz or the lowest radio frequency signal generated in the equipment, whichever is lower, without going below 9 kHz, up to at least the frequency given below:
   (a) If the equipment operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
   (b) If the equipment operates at or above 10 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
2. Determine EUT transmit frequencies: below outlines the band edge frequencies pertinent to conducted emissions testing.
3. The number of sweep points of spectrum analyzer is greater than 2×span/RBW.

A. 7.2 Measurement Limit

Part 22.917, Part 24.238 and Part 27.53(h) specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

Part 27.53(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.

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.

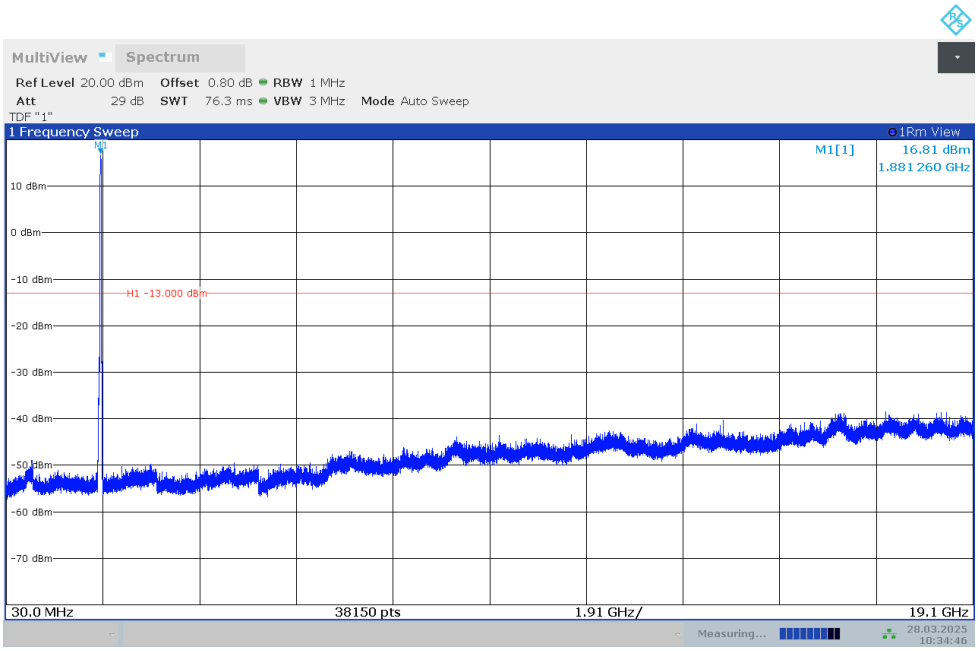
Part 96.41(e) states for channel and frequency assignments made by a CBSD to End User Devices, the conducted power of any End User Device emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed −13 dBm/MHz within 0 to B megahertz (where B is the bandwidth 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. The conducted power of emissions below 3540 MHz or above 3710 MHz shall not exceed -25dBm/MHz, and the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed -40dBm/MHz.

©Copyright. All rights reserved by CTTL.

A.7.3 Measurement result

n2

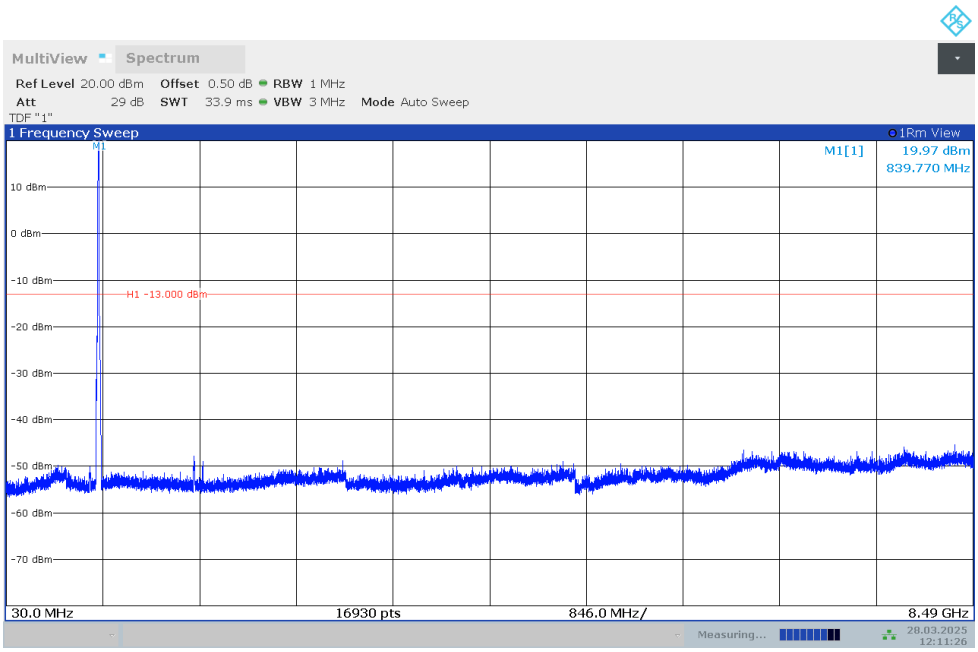
NOTE: peak above the limit line is the carrier frequency.



10:34:47 28.03.2025

n5

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

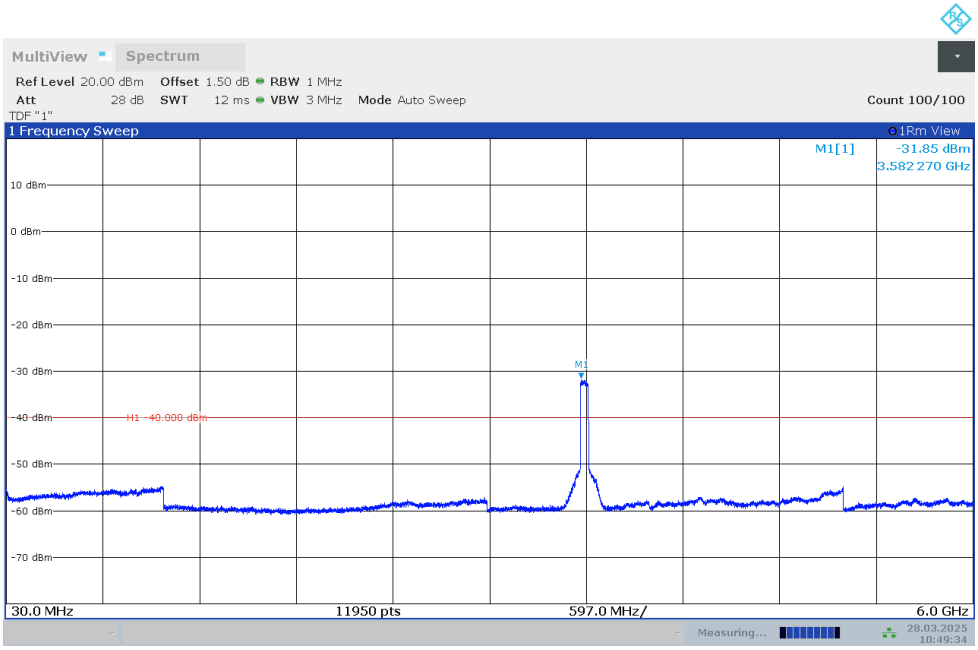


12:11:27 28.03.2025

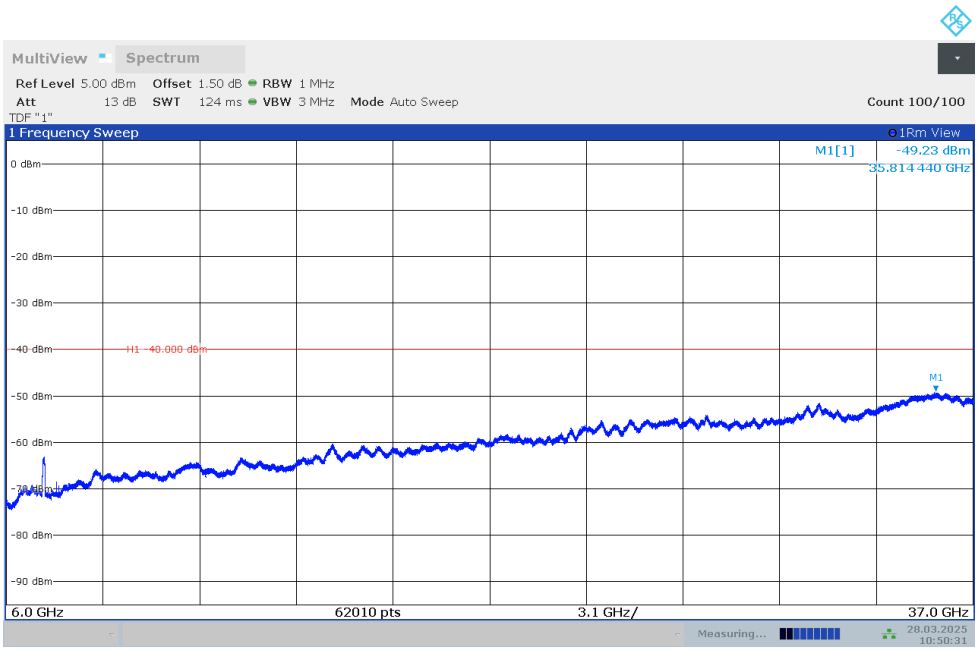
©Copyright. All rights reserved by CTTL.

n48

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



10:49:35 28.03.2025

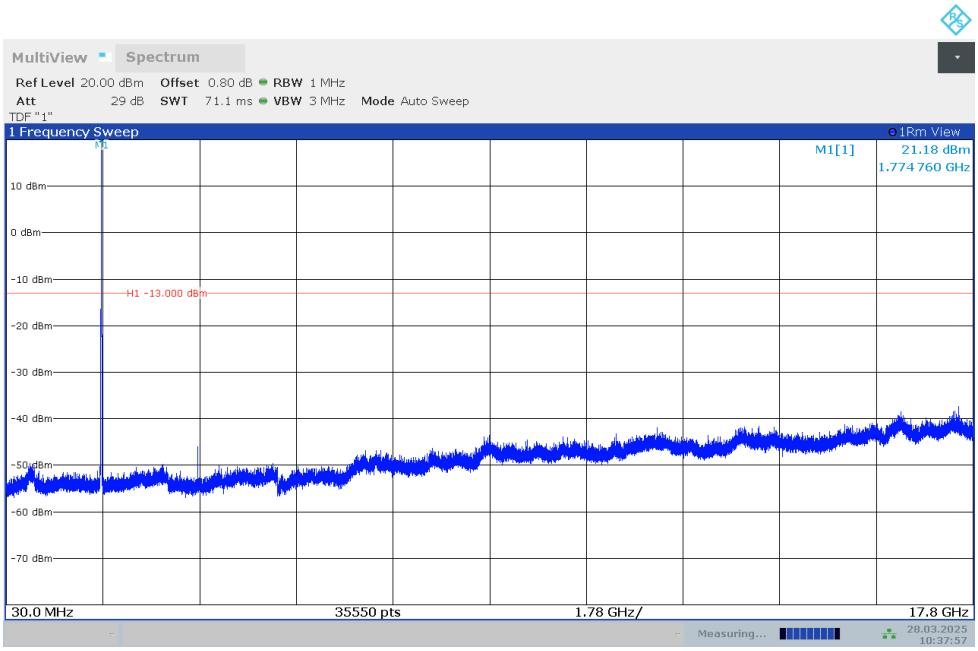


10:50:32 28.03.2025

©Copyright. All rights reserved by CTTL.

n66

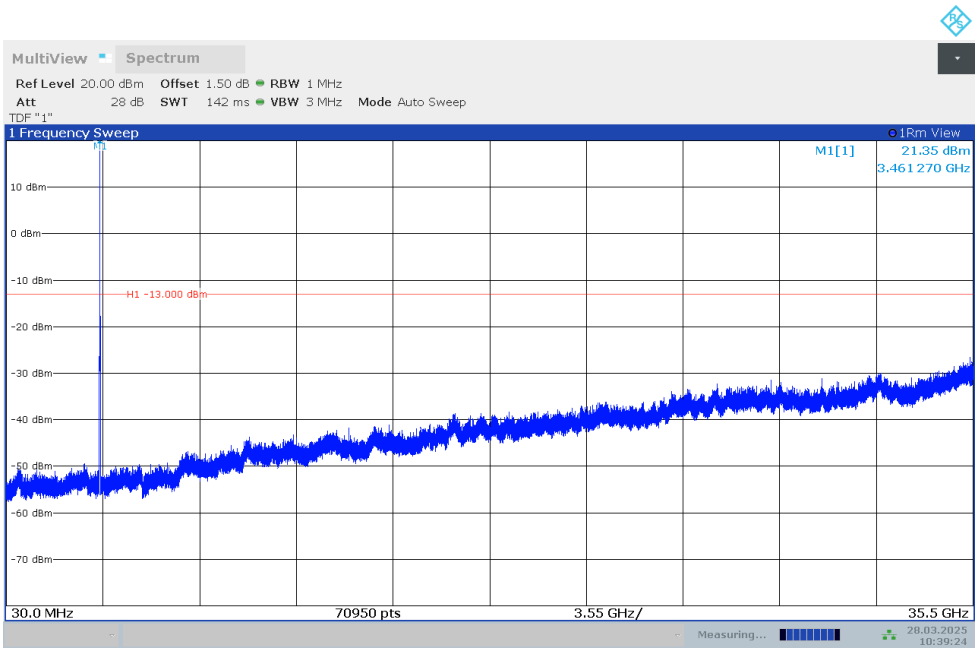
NOTE: peak above the limit line is the carrier frequency.



10:37:58 28.03.2025

n77L

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

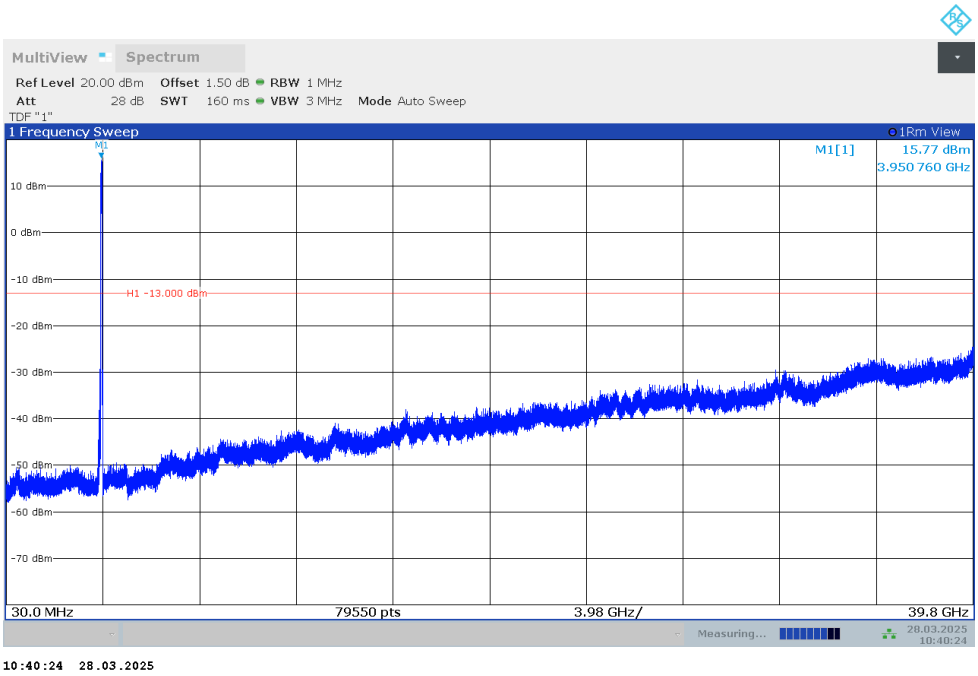


10:39:25 28.03.2025

©Copyright. All rights reserved by CTTL.

n77H

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



©Copyright. All rights reserved by CTTL.

A.8 Peak-to-Average Power Ratio

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

a) Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;

b) Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;

c) Set the number of counts to a value that stabilizes the measured CCDF curve;

d) Record the maximum PAPR level associated with a probability of 0.1%.

Measurement results

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	5.30	5.89	6.59	6.88	6.90	8.68	8.69	8.71	8.88

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	5.21	5.66	6.42	6.57	6.67	8.57	8.39	8.55	8.55

n66,40MHz

Frequency (MHz)	PAPR (dB)								
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM	DFT-s-64QAM	DFT-s-256QAM	CP-QPSK	CP-16QAM	CP-64QAM	CP-256QAM
1745	5.26	5.84	6.56	6.88	6.90	8.57	8.56	8.64	8.87

n77L,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
3500.01	4.83	5.55	6.25	6.70	6.73	7.80	8.09	7.97	8.50

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	4.95	5.74	6.40	6.73	6.84	8.21	8.25	8.32	8.56

©Copyright. All rights reserved by CTTL.

Annex B: Accreditation Certificate

Accredited Laboratory

A2LA has accredited

TELECOMMUNICATION TECHNOLOGY LABS, CAICT

Beijing, People's Republic of China

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 23rd day of July 2024.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 7049.01
Valid to July 31, 2026

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

*****END OF REPORT*****

©Copyright. All rights reserved by CTTL.