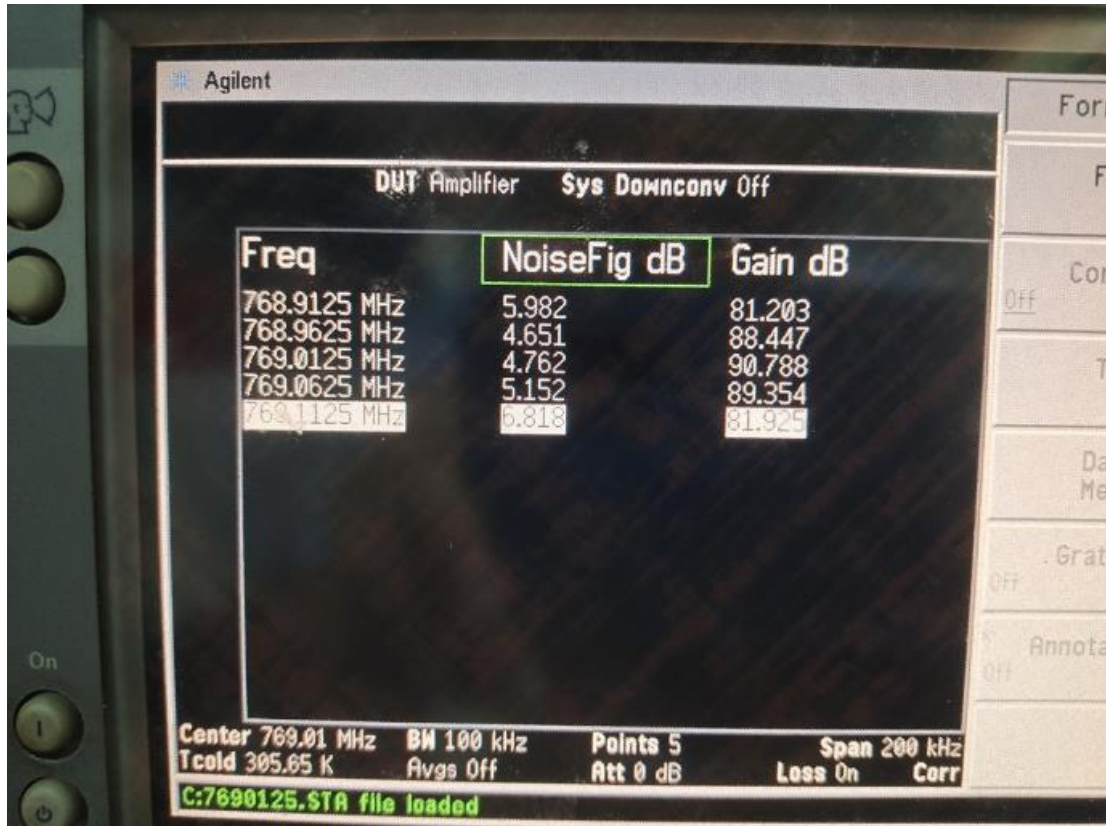


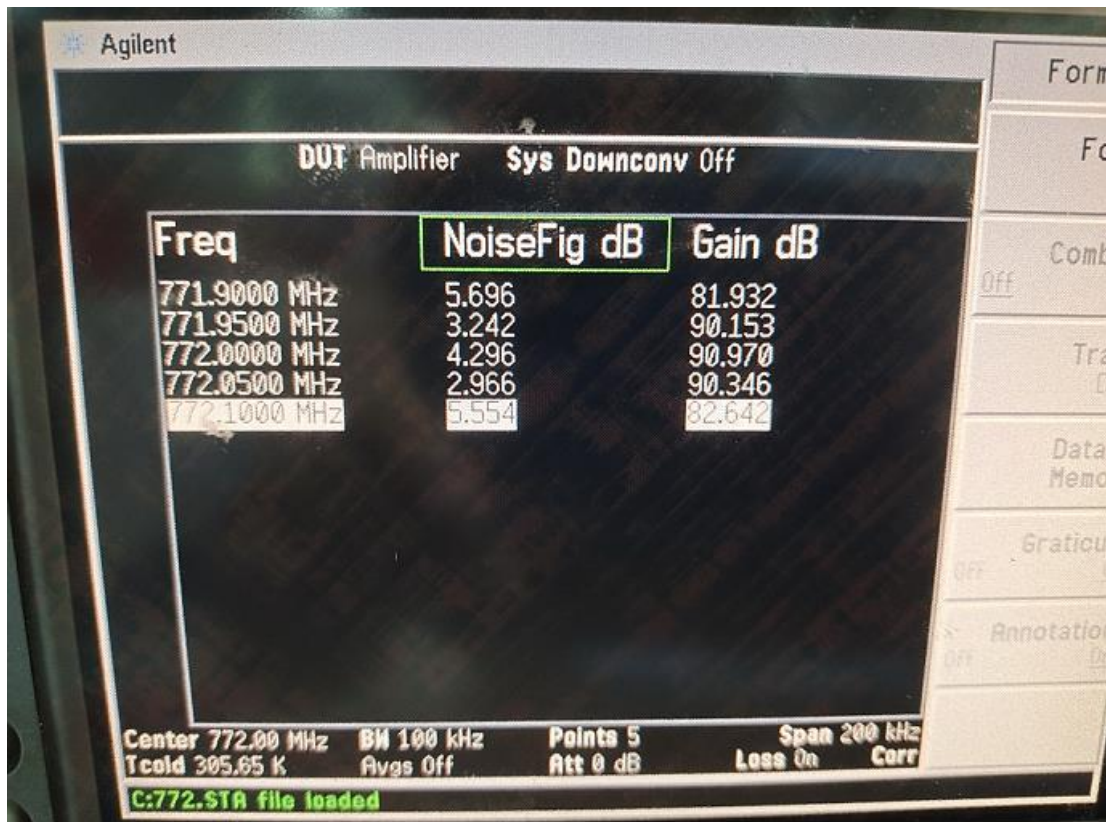
11.7.5. Test screenshot

11.7.5.1. 700MHz Band

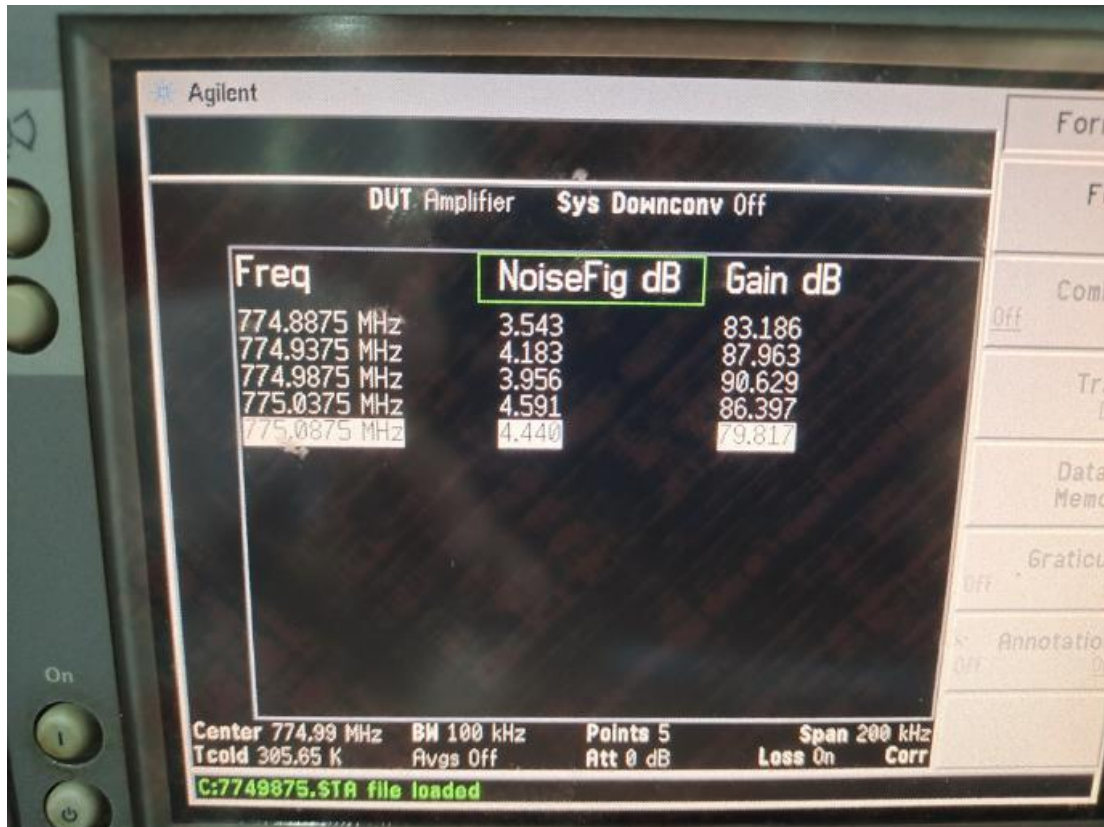
11.7.5.1.1. Downlink



Low frequency: 769.0125MHz

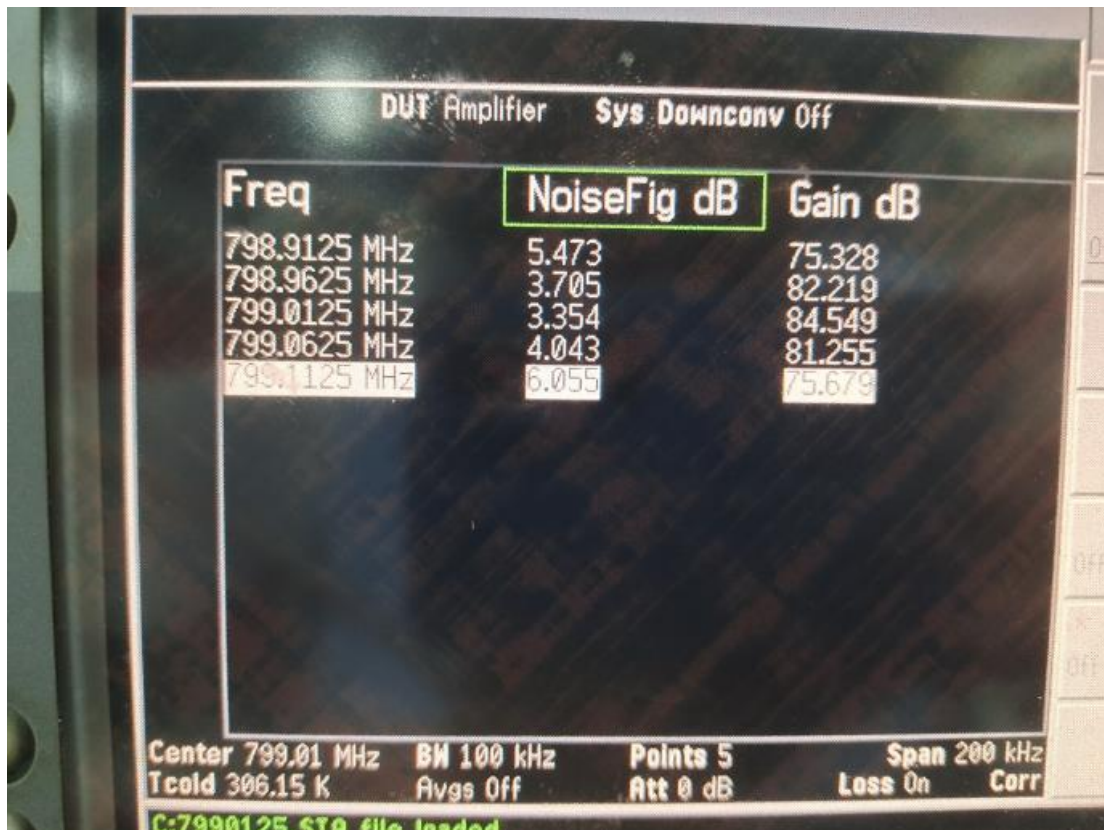


Middle frequency: 772.0MHz

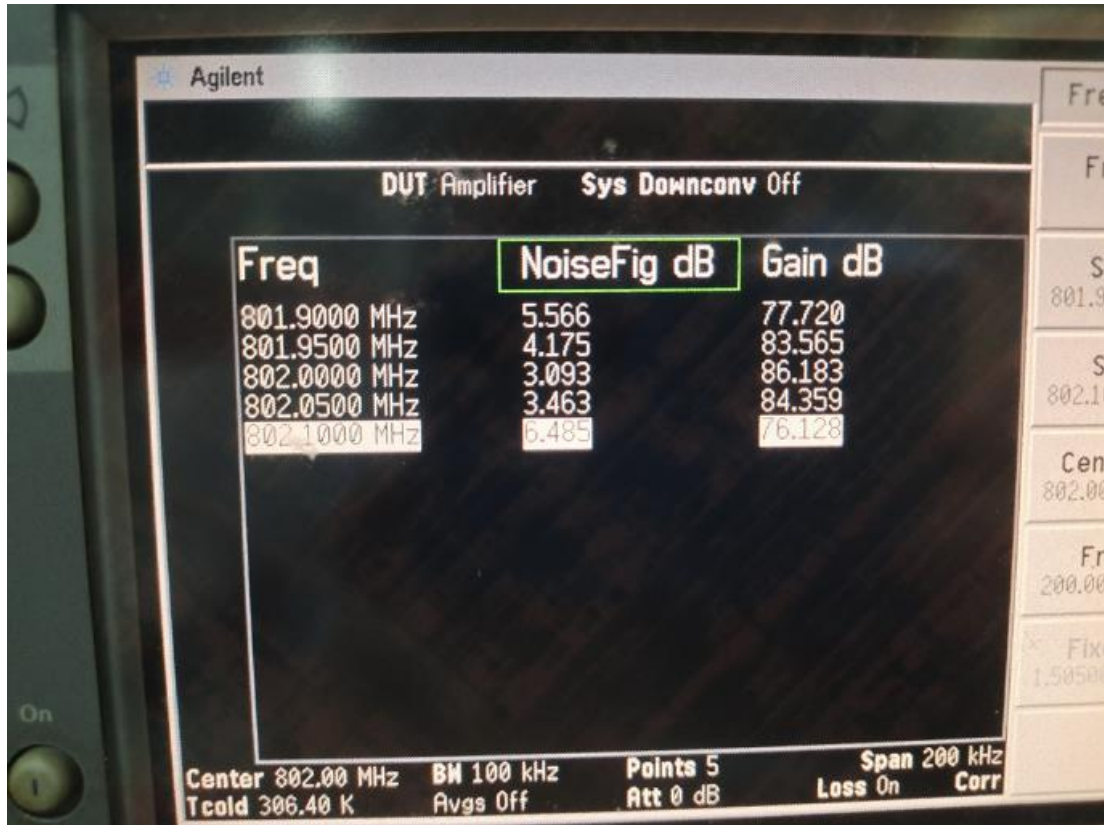


High frequency: 774.9875MHz

11.7.5.1.2. Uplink



Low frequency: 799.0125MHz



Middle frequency: 802.0MHz



High frequency: 804.9875MHz

11.7.5.2. 800MHz Band

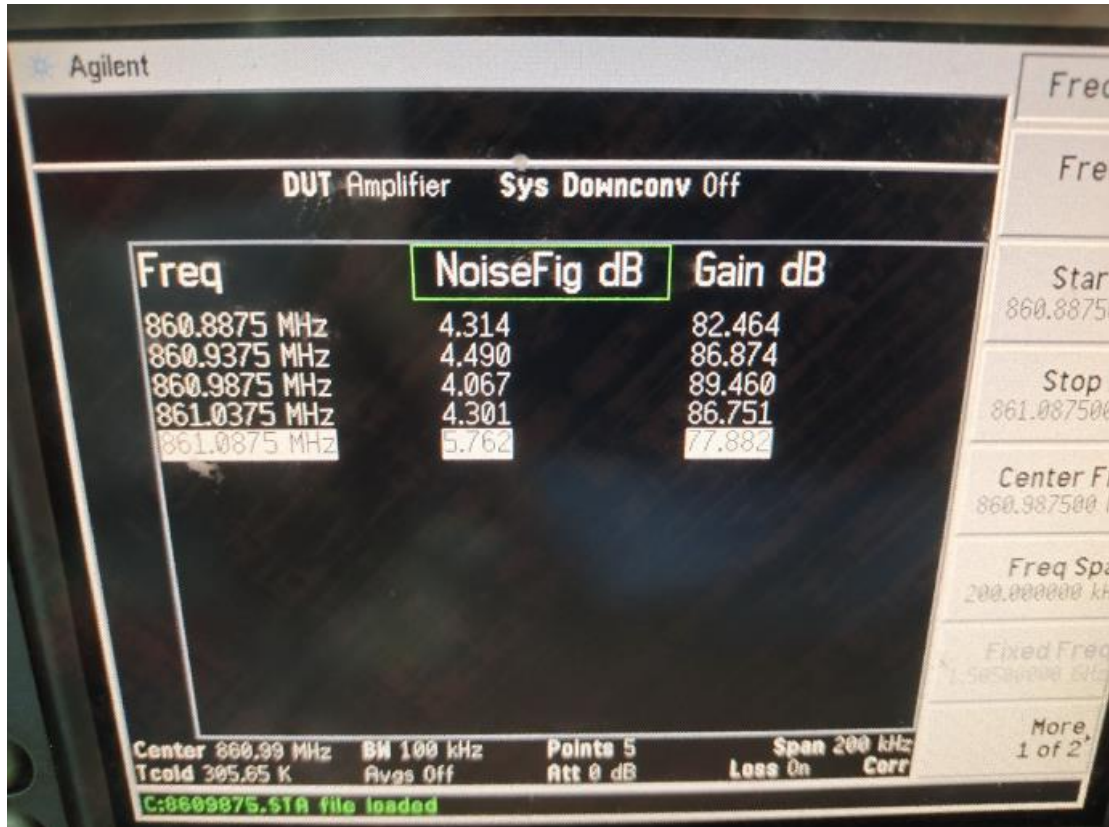
11.7.5.2.1. Downlink



Low frequency: 851.0125MHz



Middle frequency: 856.0MHz



High frequency:860.9875MHz

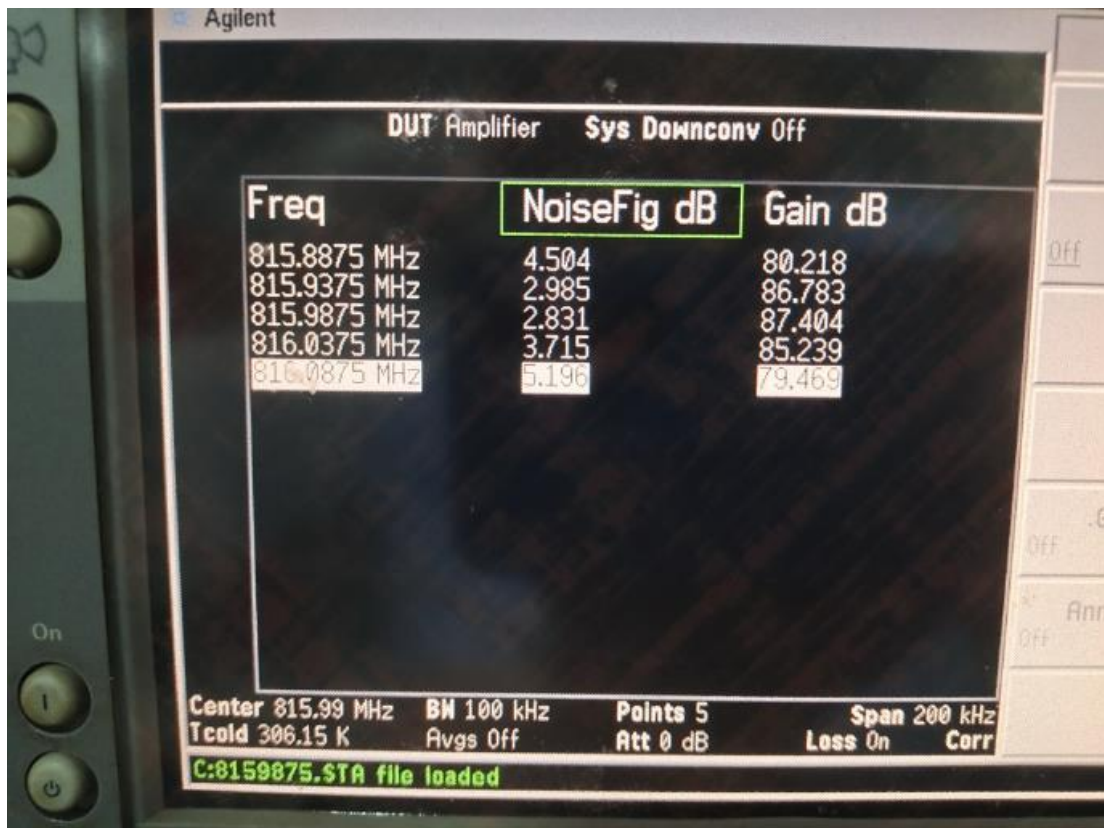
11.7.5.2.2. Uplink



Low frequency: 806.0125MHz



Middle frequency: 811.0MHz



High frequency: 815.9875MHz

11.8. Out-of-band/out-of-block emissions

Test requirement: KDB 935210 D05 clause 4.7.2
FCC PART 90.219 (d)(6)(i)
FCC PART 90.219 (e)(3)

Test Method: KDB 935210 D05/4.7.1 and 4.7.2

11.8.1. Requirements

Refer to the applicable rule part(s) for specified limits on unwanted (out-of-band/out-of-block and spurious) emissions (e.g., Section 90.210).

Spurious emissions shall be measured using a single test signal sequentially tuned to the low, middle, and high channels or frequencies within each authorized frequency band of operation.

Intermodulation products shall be measured using two CW signals with all available channel spacings (e.g., 12.5 kHz and 6.25 kHz) with the center between these channels being equal to the center frequency f_0 as determined from 4.3.

NOTE—Intermodulation-product spurious emission measurements are not required for single-channel boosters that cannot accommodate two simultaneous signals within the passband.

For a multi-channel enhancer, any intermodulation product level must be attenuated, relative to P, by at least: $43 + 10 \cdot \log_{10} P$ is less stringent than 70dB, that limit was used.

Spurious emissions shall be measured using a single test signal sequentially tuned to the low, middle, and high channels or frequencies within each authorized frequency band of operation.

Out-of-band/out-of-block emissions (including intermodulation products) shall be measured under each of the following two stimulus conditions:

- a) two adjacent test signals sequentially tuned to the lower and upper frequency band/block edges;
- b) a single test signal, sequentially tuned to the lowest and highest frequencies or channels within the frequency band/block under examination.

NOTE—Single-channel boosters that cannot accommodate two simultaneous signals within the passband may be excluded from the test stipulated in step a).

----- **The following blanks** -----

11.8.2. Test configuration

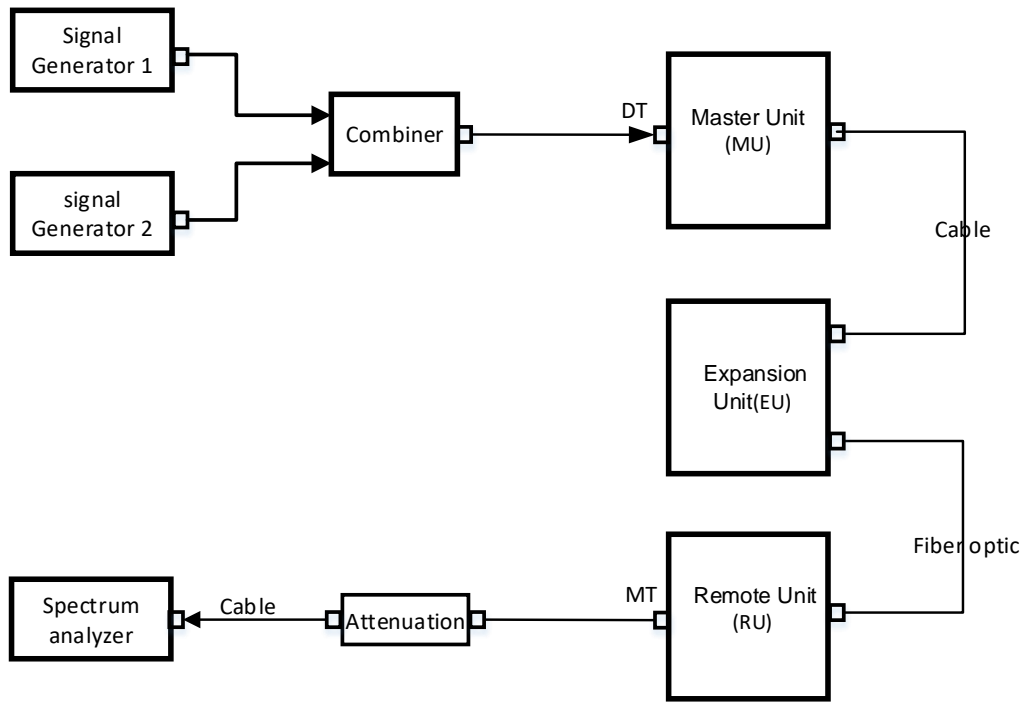


Figure 11.8-1 Downlink connection diagram

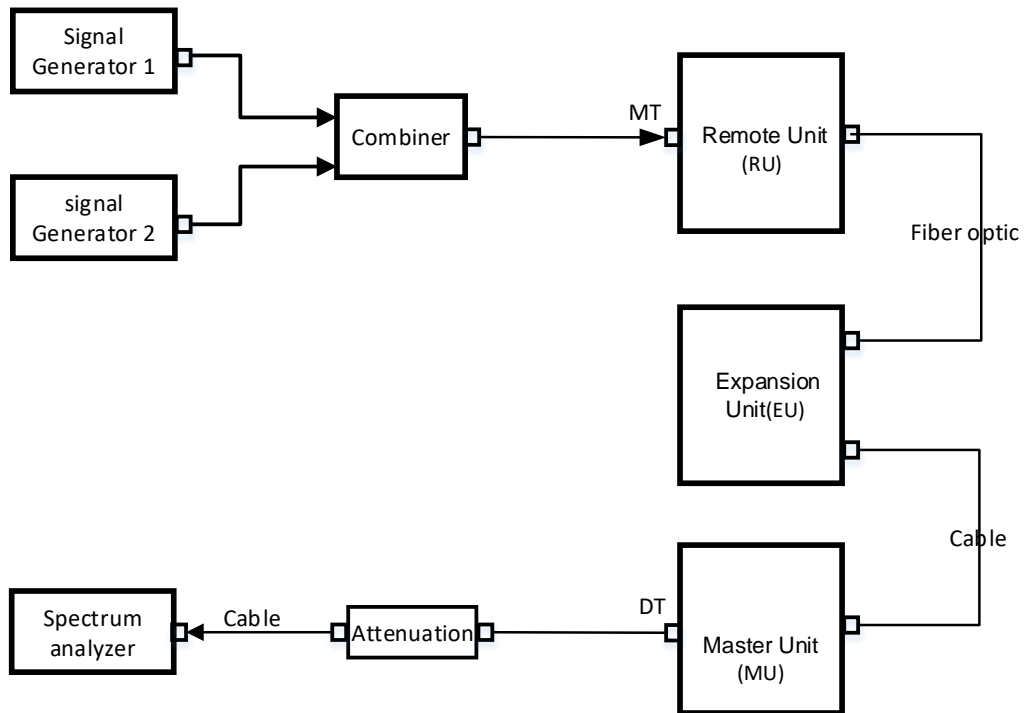


Figure 11.8-2 Uplink connection diagram

----- The following blanks -----

11.8.3. Test procedures

- a) Connect a signal generator to the input of the EUT.
If the signal generator is not capable of producing two independent modulated carriers simultaneously, then two discrete signal generators can be connected, with an appropriate combining network to support the two-signal test.
- b) Configure the two signal generators to produce CW on frequencies spaced consistent with 4.7.1, with amplitude levels set to just below the AGC threshold (see 4.2). Set the signal generator amplitudes so that the power from each into the EUT is equivalent.
- c) Connect a spectrum analyzer to the EUT output.
- d) Set the span to 100 kHz.
- e) Set RBW = 300 Hz with VBW $\geq 3 \times$ RBW.
- f) Set the detector to power averaging (rms).
- g) Place a marker on highest intermodulation product amplitude.
- h) Capture the plot for inclusion in the test report.
- i) Repeat steps c) to h) with the composite input power level set to 3 dB above the AGC threshold.
- j) Repeat steps b) to i) for all operational bands.

Any frequency outside the authorized bandwidth was attenuated by at least $43+10*\log(P)$ dB. This corresponds to an absolute level of $-13\text{dBm} (P_{\text{dBm}}-(43+10*\log(P_{\text{W}})))$.

----- The following blanks -----

11.8.4. Test results

Test Date (yy-mm-dd): 2023-05-22

Normal condition: Temp: 26.8°C, Humid: 56%, Atmospheric Pressure: 101kpa

Supply Voltage: AC 110V, 50Hz

11.8.4.1. 700MHz Band

11.8.4.1.1. Downlink

Test status	Test frequency	Intermodulation product Limit (dBm)	Max. intermodulation product (dBm)	Margin (dB)	Result
(1) Frequency range: 769MHz~775MHz					
(1.1) Channel Bandwidth: 12.5kHz					
With the ALC threshold level	Low frequency: f1:769.00625MHz f2:769.01875MHz	-13.0	-22.0	9.0	PASS
	Mid frequency: f1:772.0MHz f2:772.0125MHz	-13.0	-25.6	12.6	PASS
	High frequency: f1:774.98125MHz f2:774.99375MHz	-13.0	-21.8	8.8	PASS
With the input signal amplitude set 3 dB above the AGC threshold	Low frequency: f1:769.00625MHz f2:769.01875MHz	-13.0	-21.1	8.1	PASS
	Mid frequency: f1:772.0MHz f2:772.0125MHz	-13.0	-24.3	11.3	PASS
	High frequency: f1:774.98125MHz f2:774.99375MHz	-13.0	-20.9	7.9	PASS
(1.2) Channel Bandwidth: 25kHz					
With the ALC threshold level	Low frequency: f1:769.0125MHz f2:769.0375MHz	-13.0	-20.0	7.0	PASS
	Mid frequency: f1:772.0MHz f2:772.025MHz	-13.0	-24.2	11.2	PASS
	High frequency: f1:774.9625MHz f2:774.9875MHz	-13.0	-20.2	7.2	PASS
With the input signal amplitude set 3 dB above the AGC threshold	Low frequency: f1:769.0125MHz f2:769.0375MHz	-13.0	-20.0	7.0	PASS
	Mid frequency: f1:772.0MHz f2:772.025MHz	-13.0	-23.5	10.5	PASS
	High frequency: f1:774.9625MHz f2:774.9875MHz	-13.0	-20.4	7.4	PASS
NOTE 1: Intermodulation products select the worst data record. NOTE 2: Margin = specification limit - Maximum mark level.					

11.8.4.1.2. Uplink

Test status	Test frequency	Intermodulation product Limit (dBm)	Max. intermodulation product (dBm)	Margin (dB)	Result
(2) Frequency range: 799MHz~805MHz					
(2.1) Channel Bandwidth: 12.5kHz					
With the ALC threshold level	Low frequency: f1:799.00625MHz f2:799.01875MHz	-13.0	-22.1	9.1	PASS
	Mid frequency: f1:802.0MHz f2:802.0125MHz	-13.0	-21.5	8.5	PASS
	High frequency: f1:804.98125MHz f2:804.99375MHz	-13.0	-20.6	7.6	PASS
With the input signal amplitude set 3 dB above the AGC threshold	Low frequency: f1:799.00625MHz f2:799.01875MHz	-13.0	-22.1	9.1	PASS
	Mid frequency: f1:802.0MHz f2:802.0125MHz	-13.0	-21.5	8.5	PASS
	High frequency: f1:804.98125MHz f2:804.99375MHz	-13.0	-20.5	7.5	PASS
(2.2) Channel Bandwidth: 25kHz					
With the ALC threshold level	Low frequency: f1:799.0125MHz f2:799.0375MHz	-13.0	-23.3	10.3	PASS
	Mid frequency: f1:802.0MHz f2:802.025MHz	-13.0	-22.2	9.2	PASS
	High frequency: f1:804.9625MHz f2:804.9875MHz	-13.0	-22.7	9.7	PASS
With the input signal amplitude set 3 dB above the AGC threshold	Low frequency: f1:799.0125MHz f2:799.0375MHz	-13.0	-23.4	10.4	PASS
	Mid frequency: f1:802.0MHz f2:802.025MHz	-13.0	-22.6	9.6	PASS
	High frequency: f1:804.9625MHz f2:804.9875MHz	-13.0	-22.4	9.4	PASS
NOTE 1: Intermodulation products select the worst data record.					
NOTE 2: Margin= specification limit -Maximum mark level.					

----- The following blanks -----

11.8.4.2. 800MHz Band

11.8.4.2.1. Downlink

Test status	Test frequency	Intermodulaiton product Limit (dBm)	Max. intermodulation product (dBm)	Margin (dB)	Result
(3) Frequency range: 851MHz~861MHz					
(3.1) Channel Bandwidth: 12.5kHz					
With the ALC threshold level	Low frequency: f1:851.00625MHz f2:851.01875MHz	-13.0	-22.5	9.5	PASS
	Mid frequency: f1:856.0MHz f2:856.0125MHz	-13.0	-21.2	8.2	PASS
	High frequency: f1:860.98125MHz f2:860.99375MHz	-13.0	-16.7	3.7	PASS
With the input signal amplitude set 3 dB above the AGC threshold	Low frequency: f1:851.00625MHz f2:851.01875MHz	-13.0	-22.5	9.5	PASS
	Mid frequency: f1:856.0MHz f2:856.0125MHz	-13.0	-20.1	7.1	PASS
	High frequency: f1:860.98125MHz f2:860.99375MHz	-13.0	-16.3	3.3	PASS
(3.2) Channel Bandwidth: 25kHz					
With the ALC threshold level	Low frequency: f1:851.0125MHz f2:851.0375MHz	-13.0	-22.3	9.3	PASS
	Mid frequency: f1:856.0MHz f2:856.025MHz	-13.0	-19.7	6.7	PASS
	High frequency: f1:860.9625MHz f2:860.9875MHz	-13.0	-17.4	4.4	PASS
With the input signal amplitude set 3 dB above the AGC threshold	Low frequency: f1:851.0125MHz f2:851.0375MHz	-13.0	-22	9.0	PASS
	Mid frequency: f1:856.0MHz f2:856.025MHz	-13.0	-18.8	5.8	PASS
	High frequency: f1:860.9625MHz f2:860.9875MHz	-13.0	-17.2	4.2	PASS
NOTE 1:Intermodulation products select the worst data record. NOTE 2: Margin= specification limit -Maximum mark level.					

----- The following blanks -----

11.8.4.2.2. Uplink

Test status	Test frequency	Intermodulation product Limit (dBm)	Max. intermodulation product (dBm)	Margin (dB)	Result
(4) Frequency range: 806MHz~816MHz					
(4.1) Channel Bandwidth: 12.5kHz					
With the ALC threshold level	Low frequency: f1:806.00625MHz f2:806.01875MHz	-13.0	-21	8.0	PASS
	Mid frequency: f1:811.0MHz f2:811.0125MHz	-13.0	-21.2	8.2	PASS
	High frequency: f1:815.98125MHz f2:815.99375MHz	-13.0	-22.7	9.7	PASS
With the input signal amplitude set 3 dB above the AGC threshold	Low frequency: f1:806.00625MHz f2:806.01875MHz	-13.0	-20.9	7.9	PASS
	Mid frequency: f1:811.0MHz f2:811.0125MHz	-13.0	-20.9	7.9	PASS
	High frequency: f1:815.98125MHz f2:815.99375MHz	-13.0	-22.7	9.7	PASS
(4.2) Channel Bandwidth: 25kHz					
With the ALC threshold level	Low frequency: f1:806.0125MHz f2:806.0375MHz	-13.0	-24.9	11.9	PASS
	Mid frequency: f1:811.0MHz f2:811.025MHz	-13.0	-24.3	11.3	PASS
	High frequency: f1:815.9625MHz f2:815.9875MHz	-13.0	-24.1	11.1	PASS
With the input signal amplitude set 3 dB above the AGC threshold	Low frequency: f1:806.0125MHz f2:806.0375MHz	-13.0	-23.8	10.8	PASS
	Mid frequency: f1:811.0MHz f2:811.025MHz	-13.0	-24.3	11.3	PASS
	High frequency: f1:815.9625MHz f2:815.9875MHz	-13.0	-24.2	11.2	PASS
NOTE 1: Intermodulation products select the worst data record.					
NOTE 2: Margin= specification limit -Maximum mark level.					

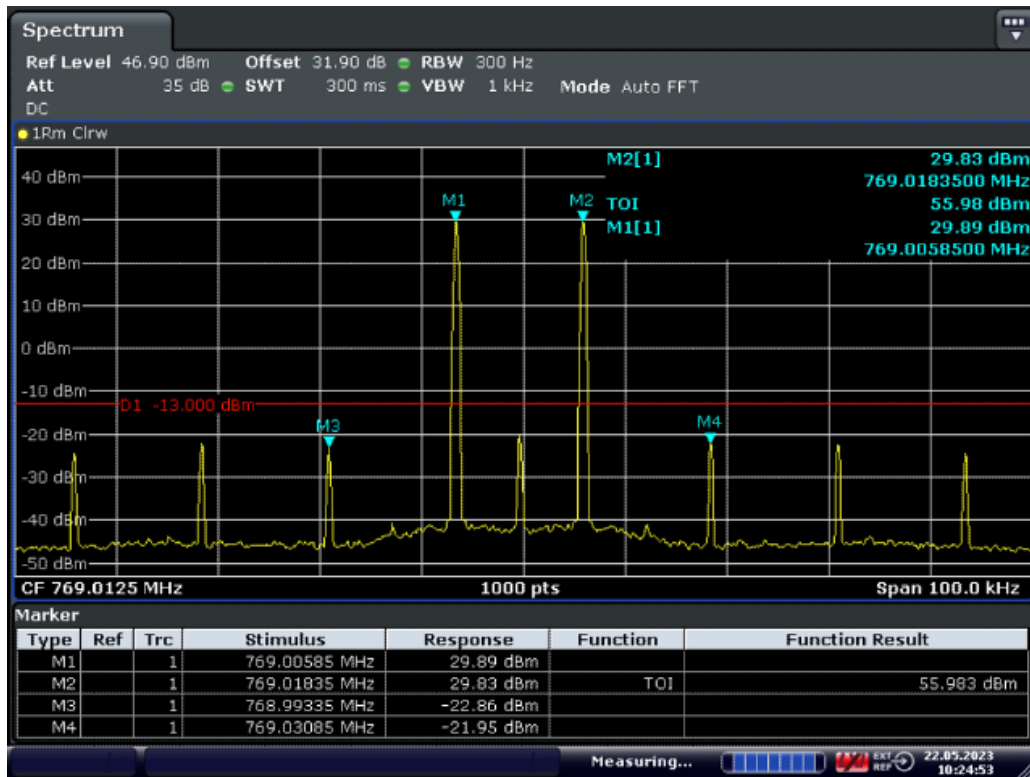
----- The following blanks -----

11.8.5. Test screenshot

11.8.5.1. 700MHz Band

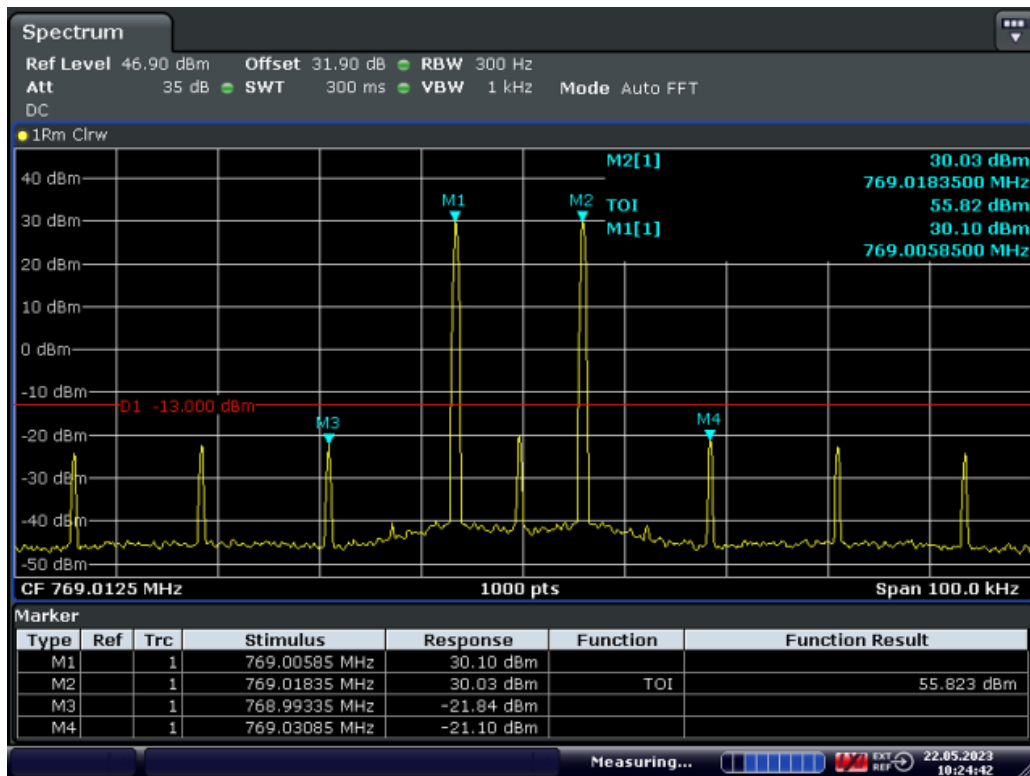
11.8.5.1.1. Channel bandwidth 12.5kHz

11.8.5.1.1.1. Downlink



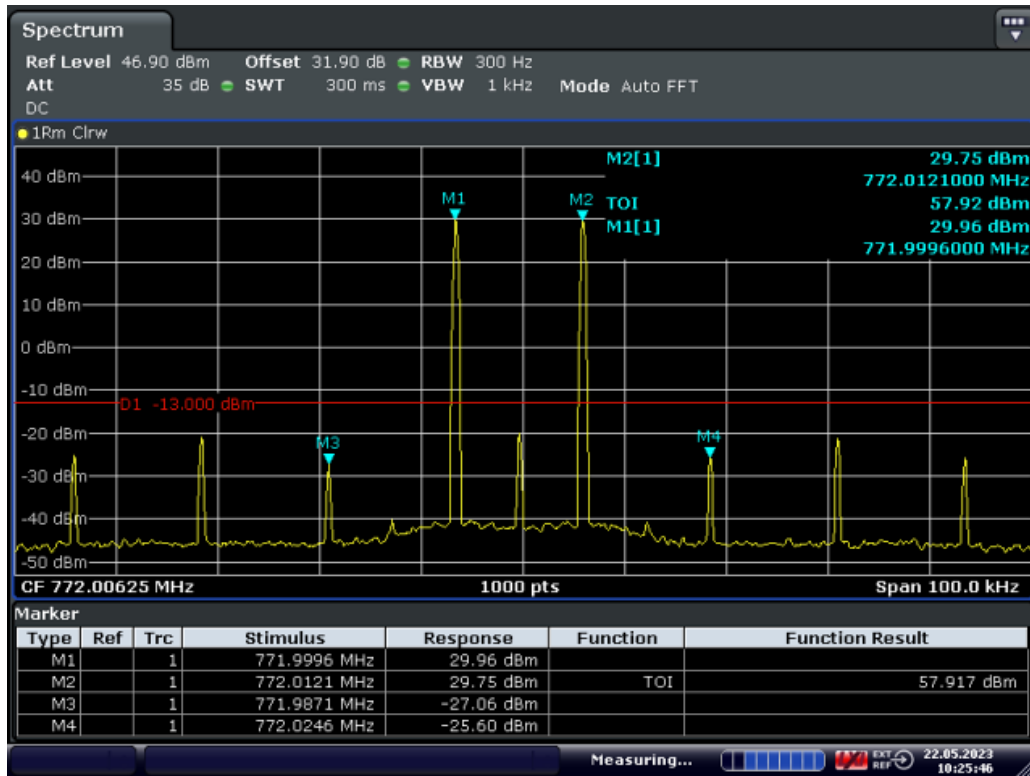
Date: 22.MAY.2023 10:24:53

Low Frequency and with the ALC threshold level



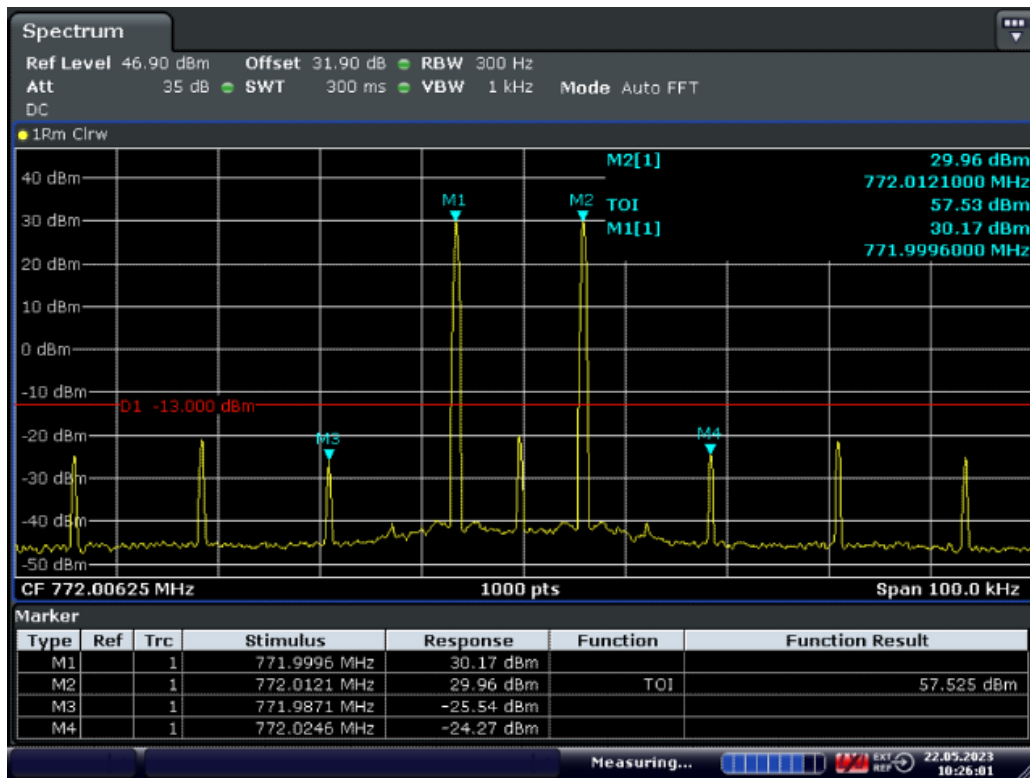
Date: 22.MAY.2023 10:24:42

Low Frequency and with the input signal amplitude set 3 dB above the ALC threshold



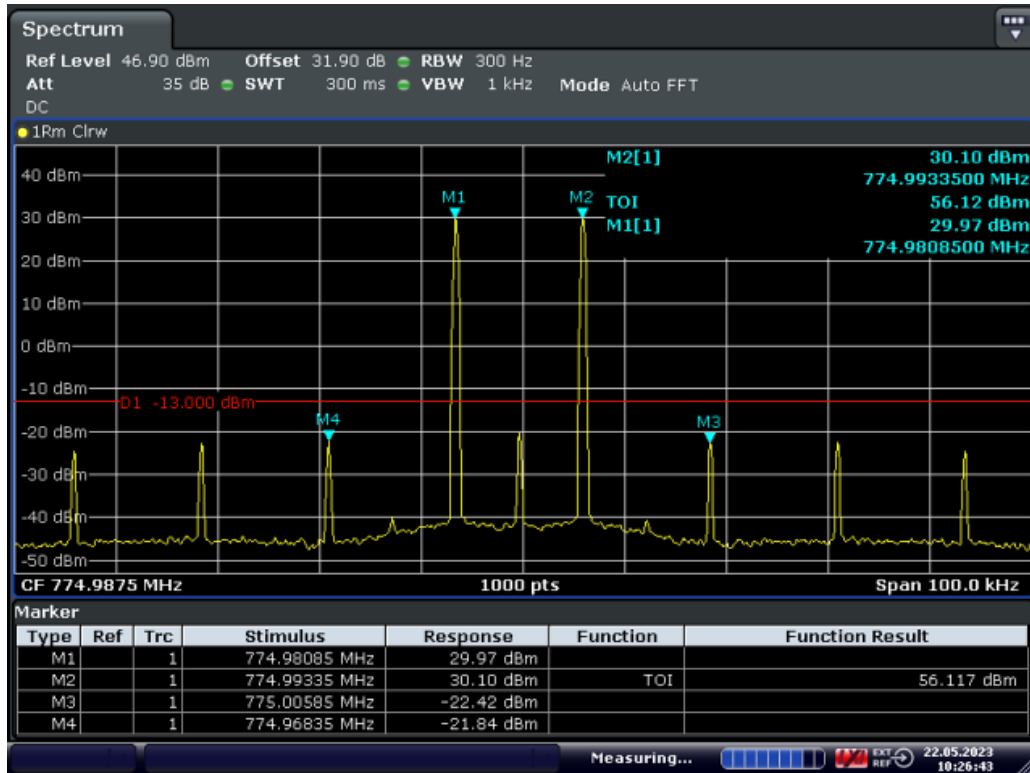
Date: 22.MAY.2023 10:25:47

Mid Frequency and with the ALC threshold level



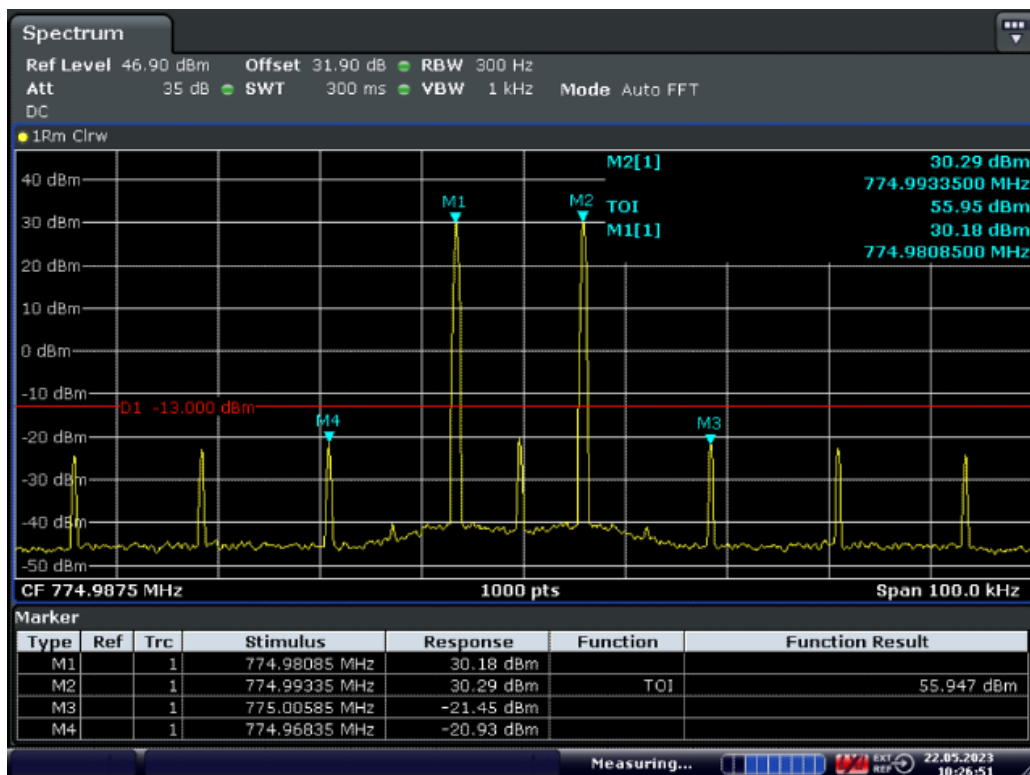
Date: 22.MAY.2023 10:26:01

Mid Frequency and with the input signal amplitude set 3 dB above the ALC threshold



Date: 22.MAY.2023 10:26:43

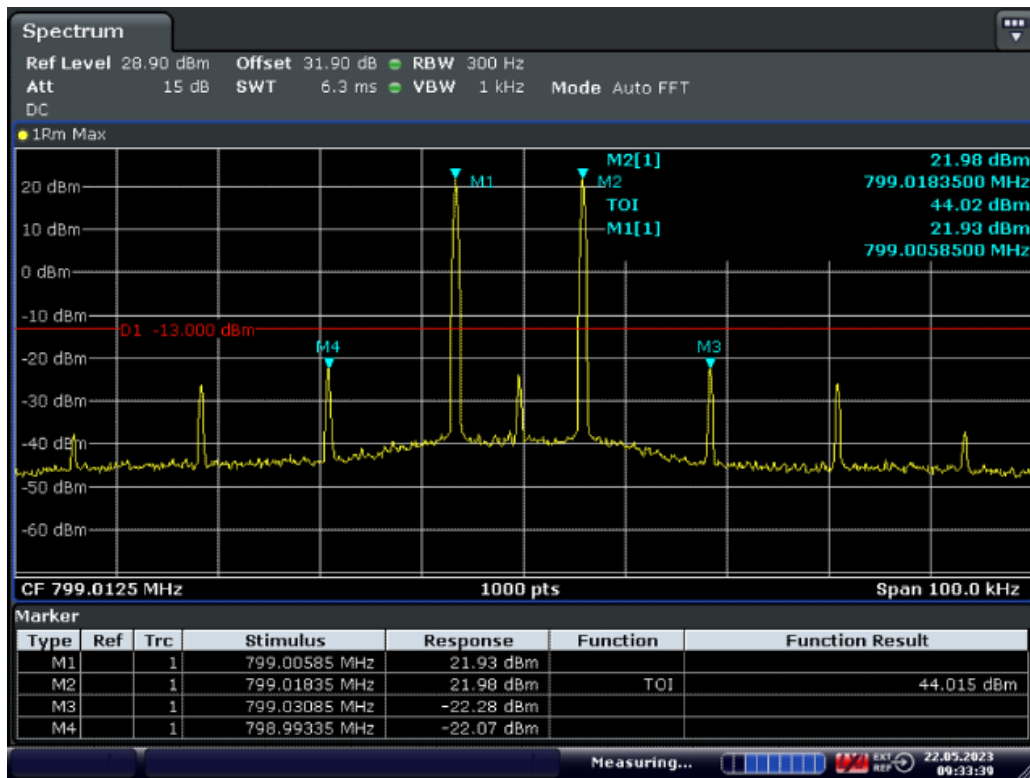
High Frequency and with the ALC threshold level



Date: 22.MAY.2023 10:26:51

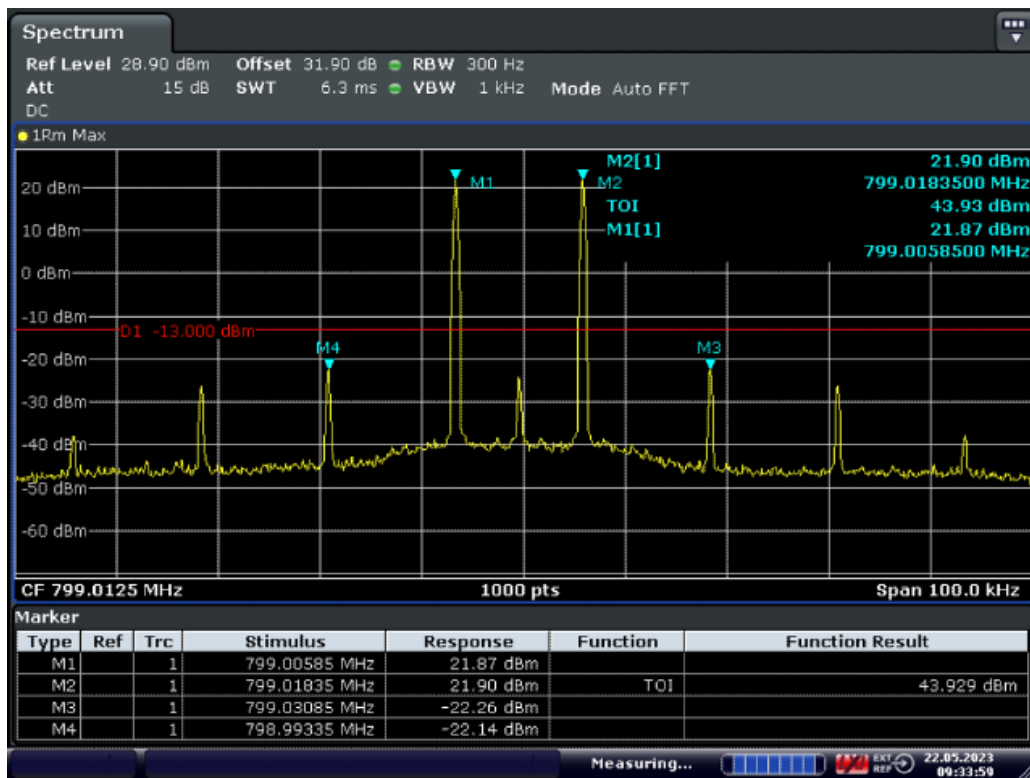
High Frequency and with the input signal amplitude set 3 dB above the ALC threshold

11.8.5.1.1.2. Uplink



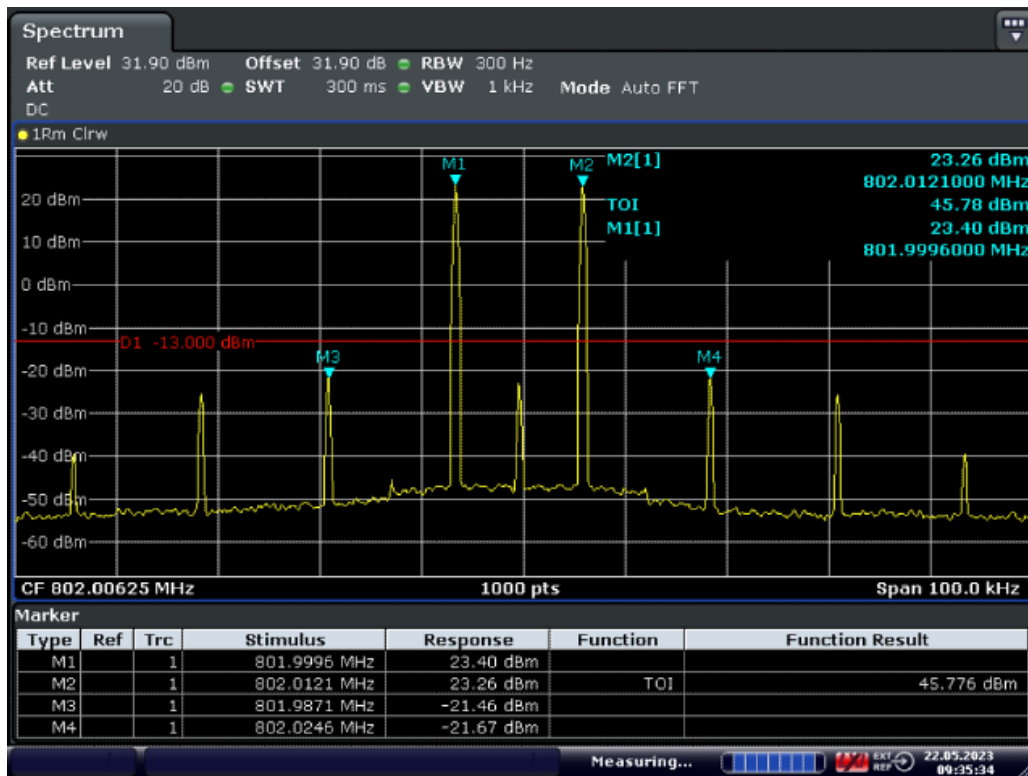
Date: 22.MAY.2023 09:33:39

Low Frequency and with the ALC threshold level



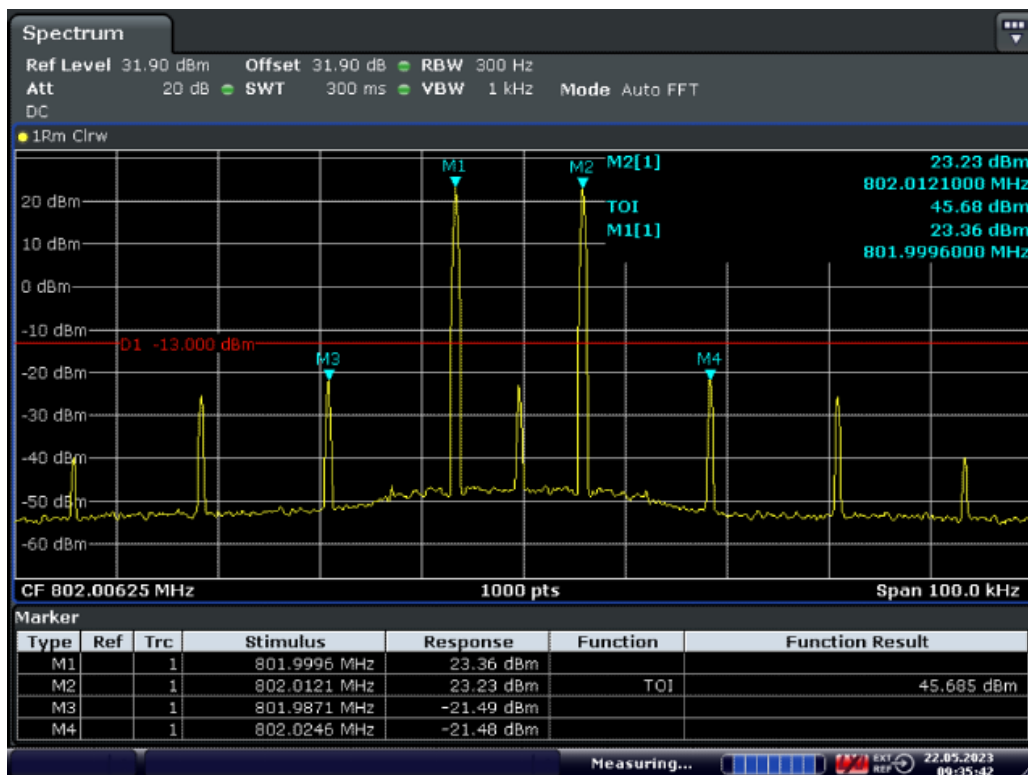
Date: 22.MAY.2023 09:34:00

Low Frequency and with the input signal amplitude set 3 dB above the ALC threshold



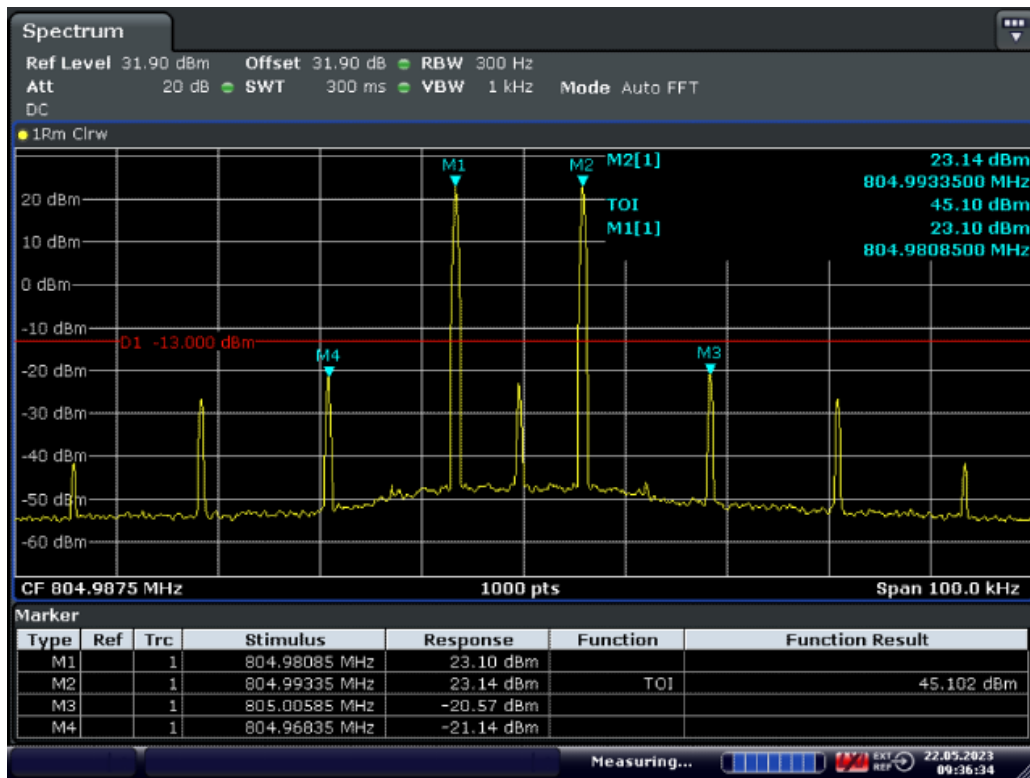
Date: 22.MAY.2023 09:35:34

Mid Frequency and with the ALC threshold level



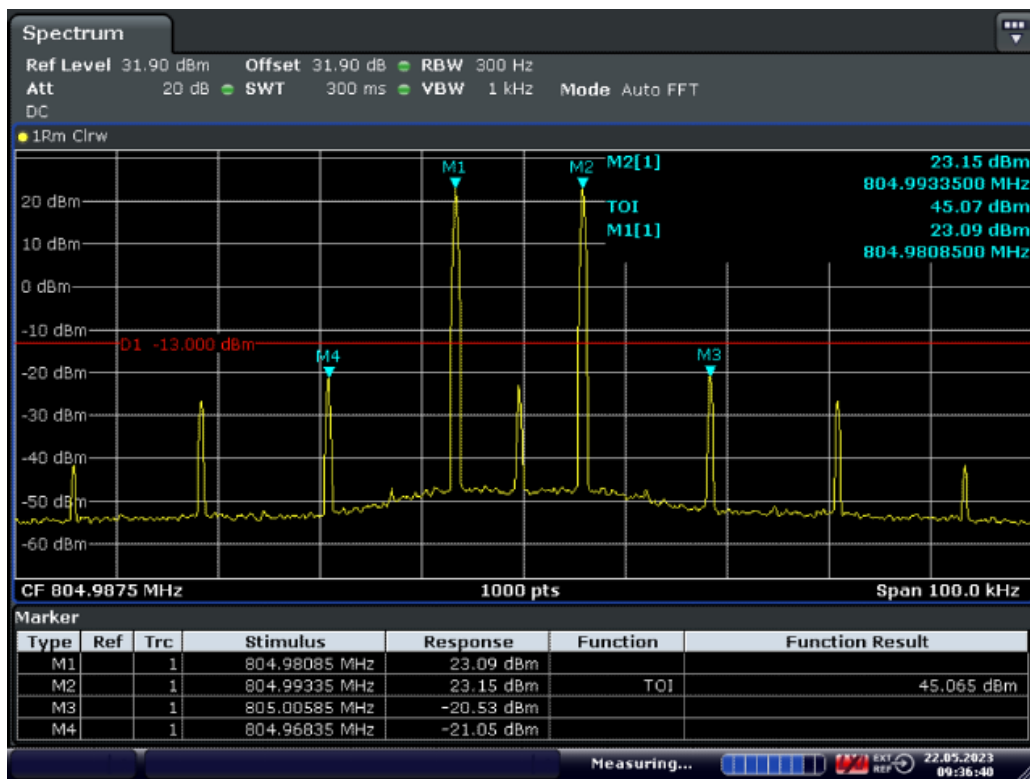
Date: 22.MAY.2023 09:35:42

Mid Frequency and with the input signal amplitude set 3 dB above the ALC threshold



Date: 22.MAY.2023 09:36:34

High Frequency and with the ALC threshold level

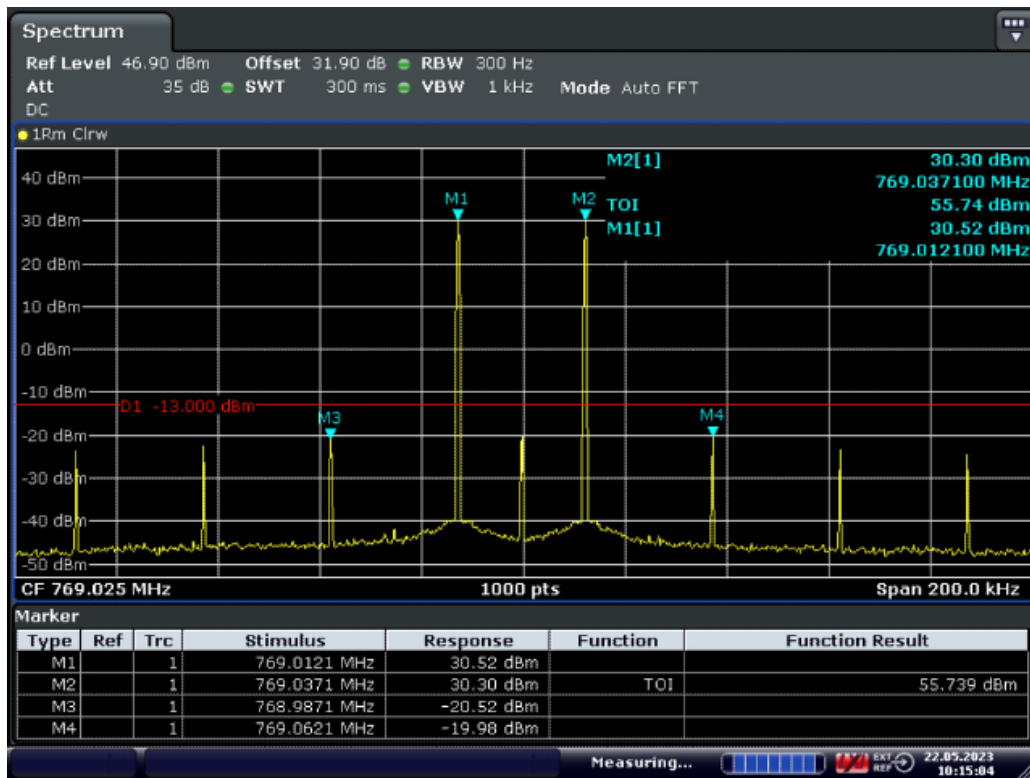


Date: 22.MAY.2023 09:36:40

High Frequency and with the input signal amplitude set 3 dB above the ALC threshold

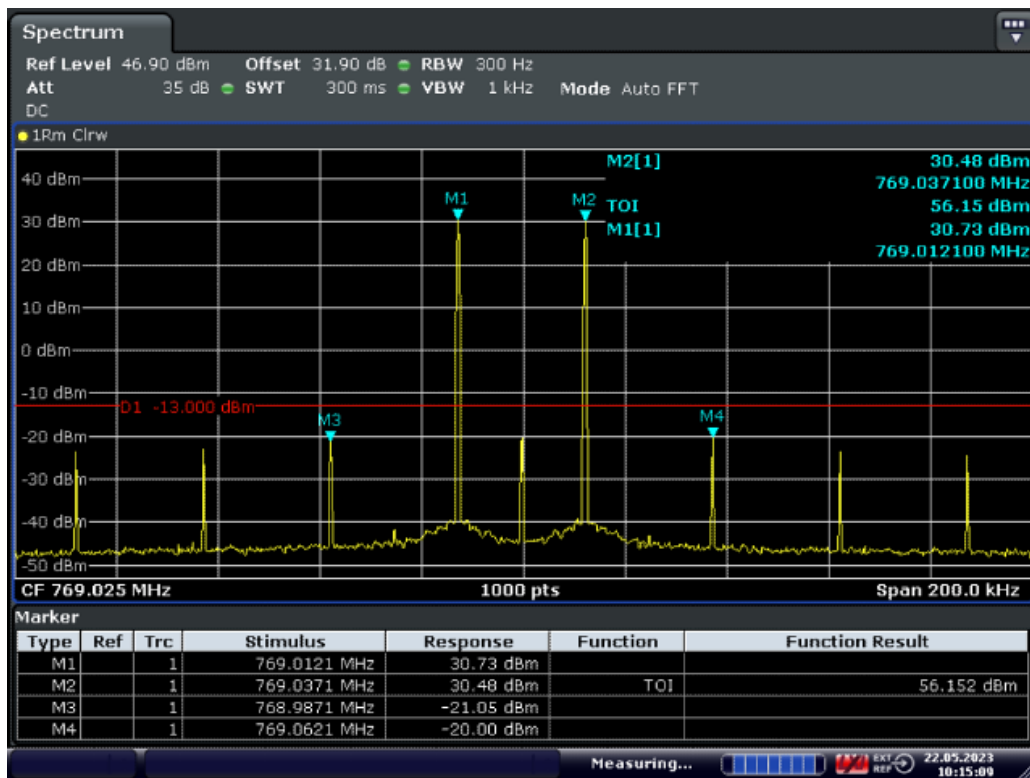
11.8.5.1.2. Channel bandwidth 25kHz

11.8.5.1.2.1. Downlink



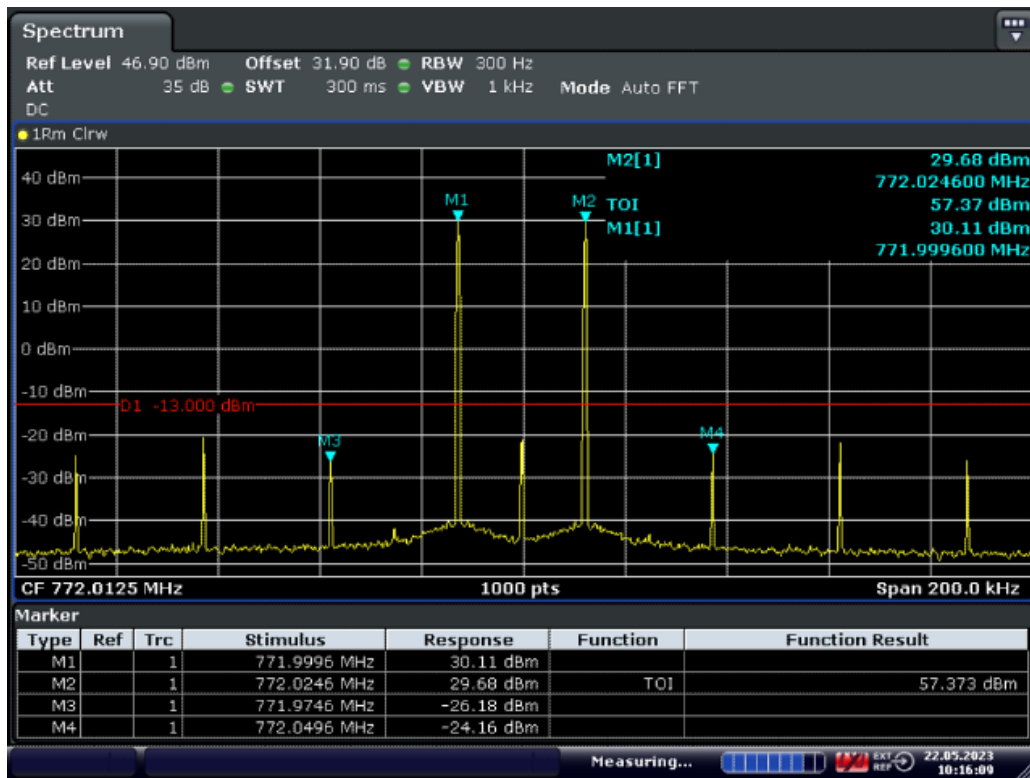
Date: 22.MAY.2023 10:15:04

Low Frequency and with the ALC threshold level



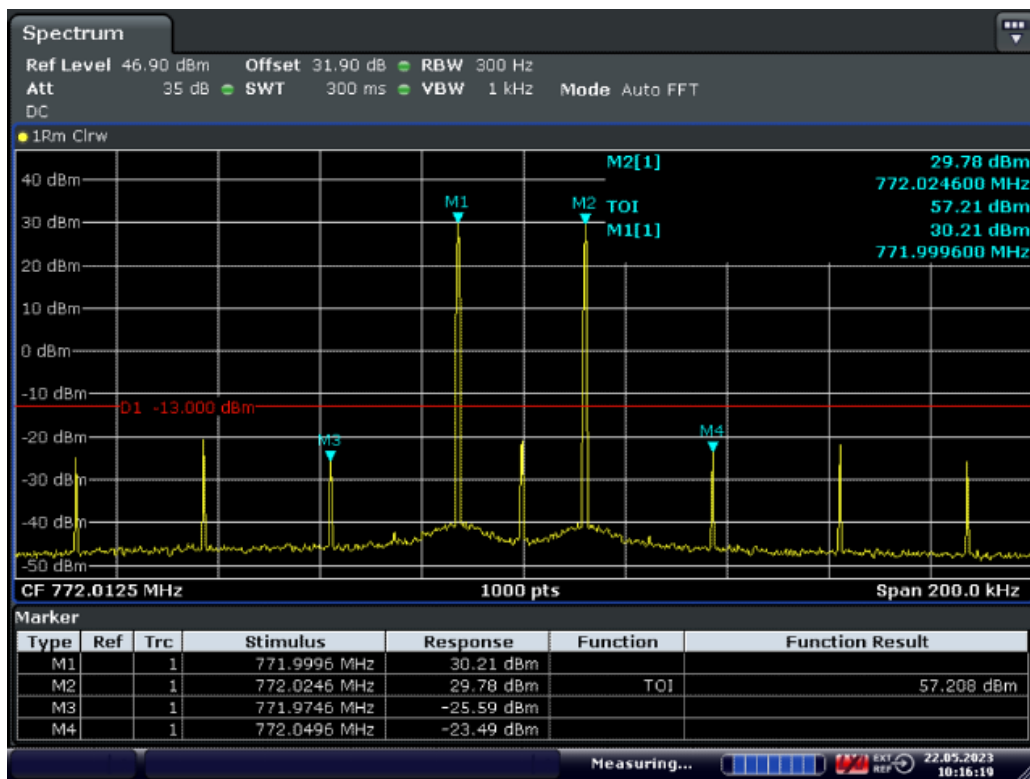
Date: 22.MAY.2023 10:15:09

Low Frequency and with the input signal amplitude set 3 dB above the ALC threshold



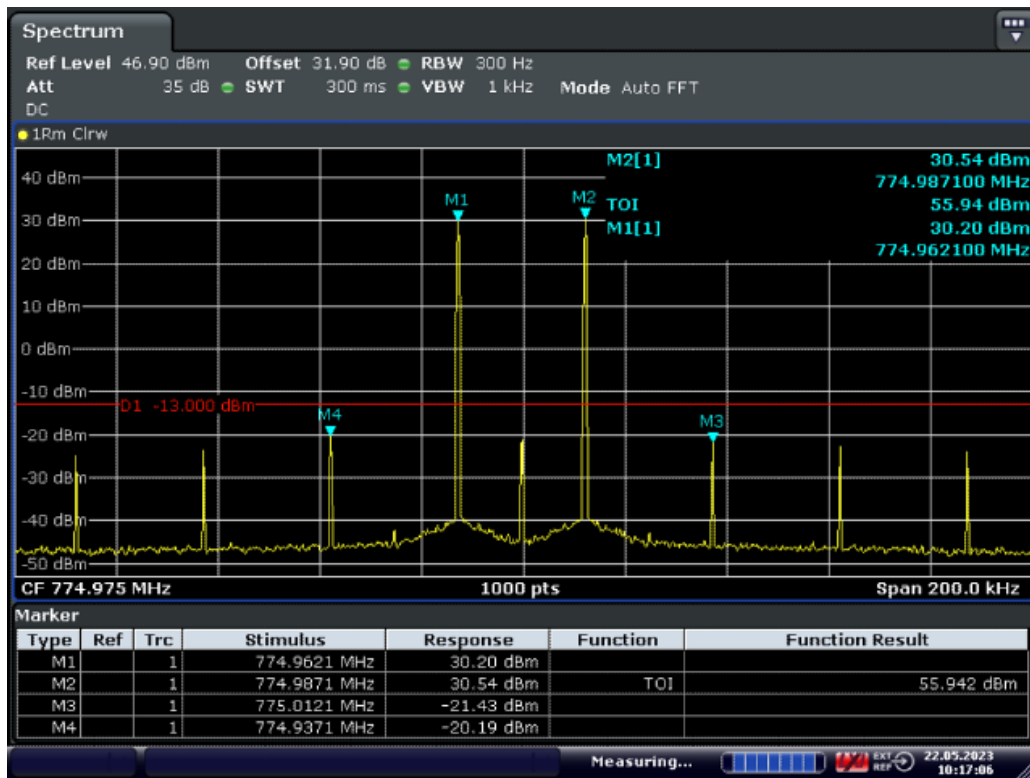
Date: 22.MAY.2023 10:16:09

Mid Frequency and with the ALC threshold level



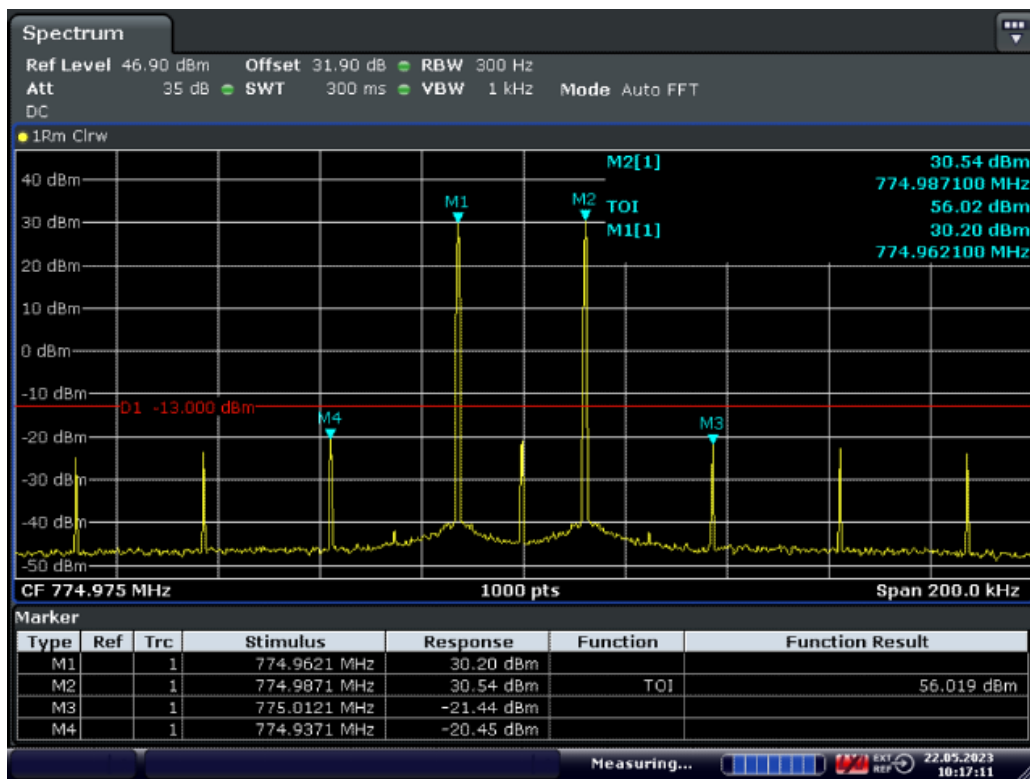
Date: 22.MAY.2023 10:16:19

Mid Frequency and with the input signal amplitude set 3 dB above the ALC threshold



Date: 22.MAY.2023 10:17:06

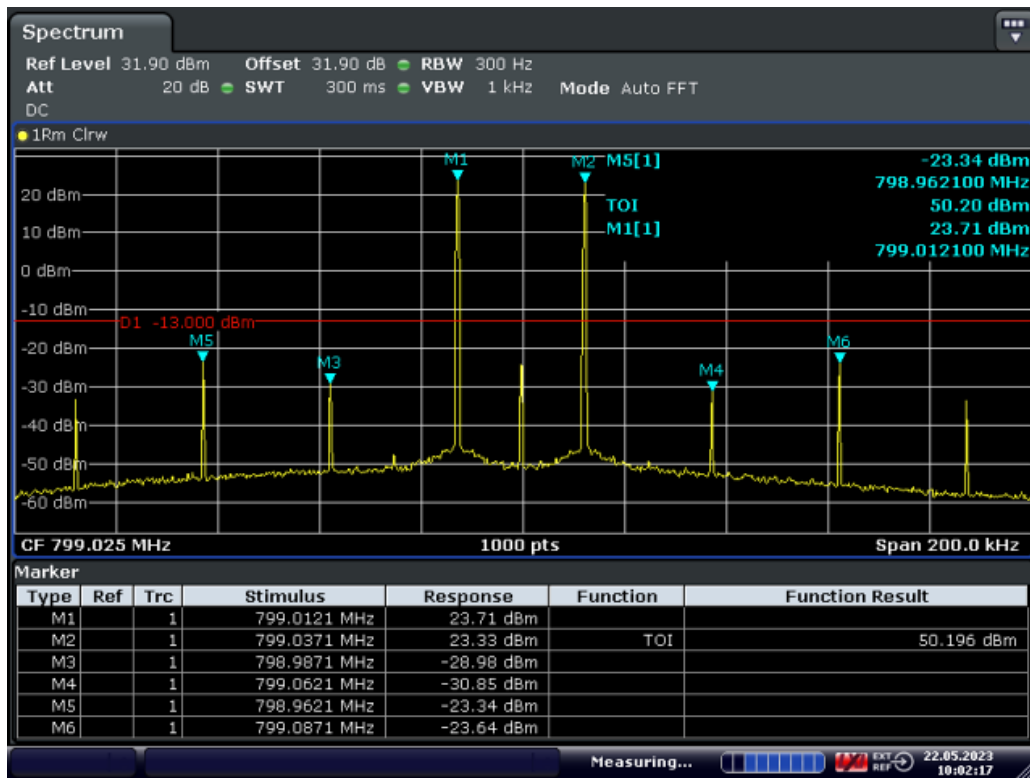
High Frequency and with the ALC threshold level



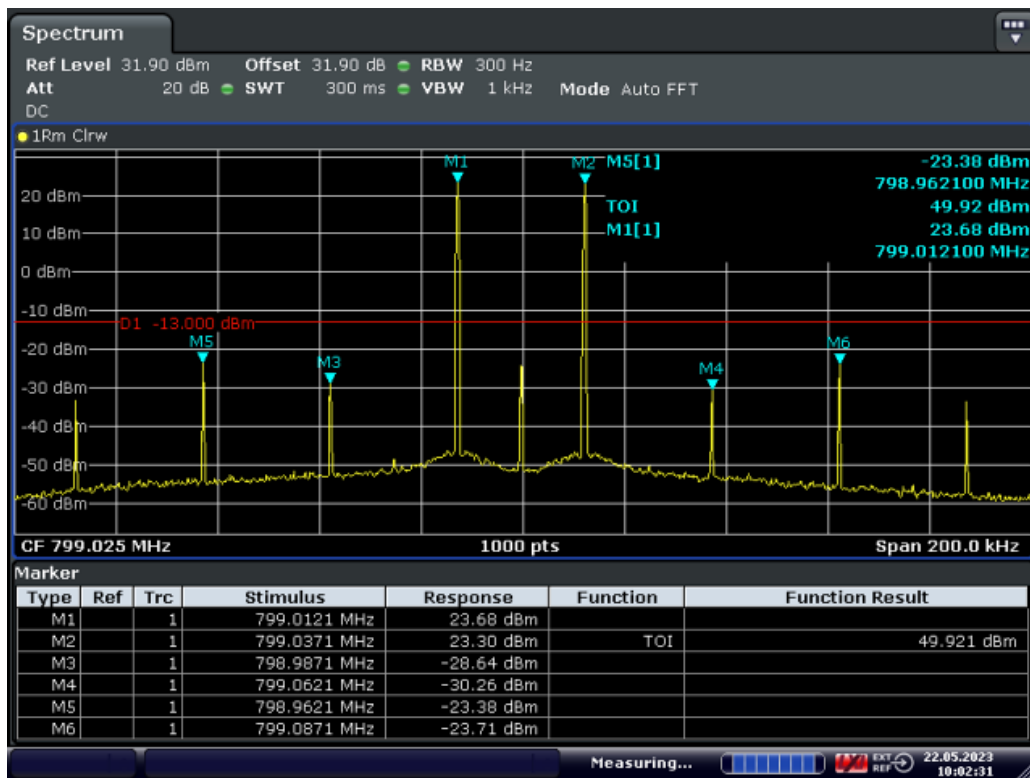
Date: 22.MAY.2023 10:17:11

High Frequency and with the input signal amplitude set 3 dB above the ALC threshold

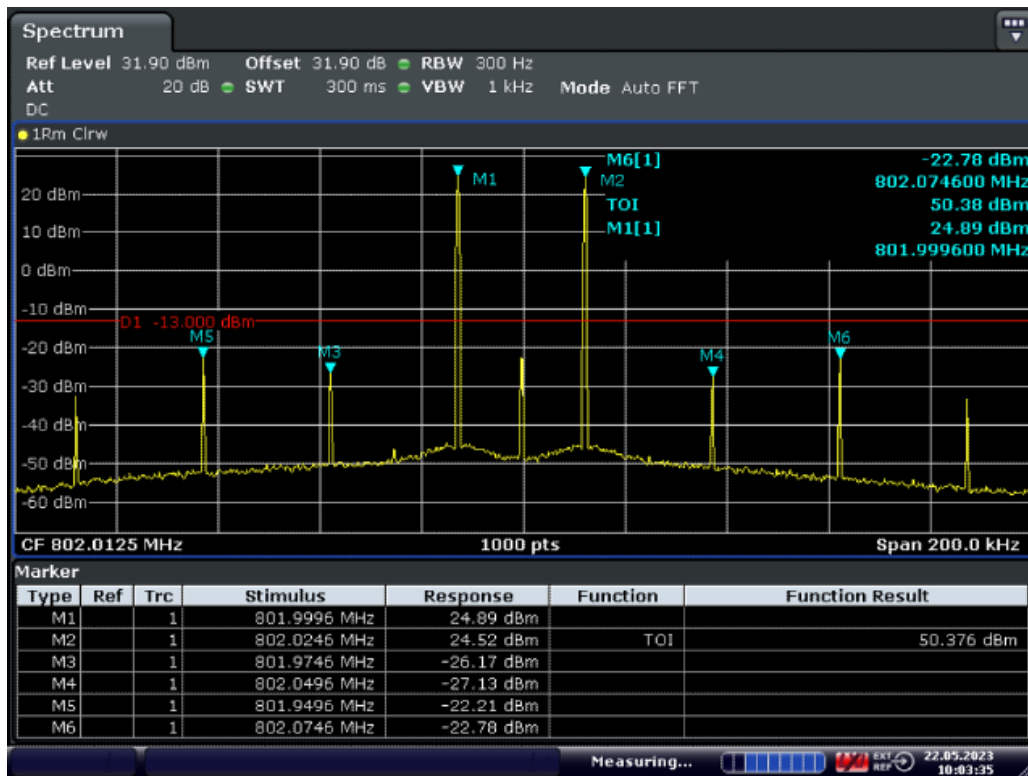
11.8.5.1.2.2. Uplink



Low Frequency and with the ALC threshold level

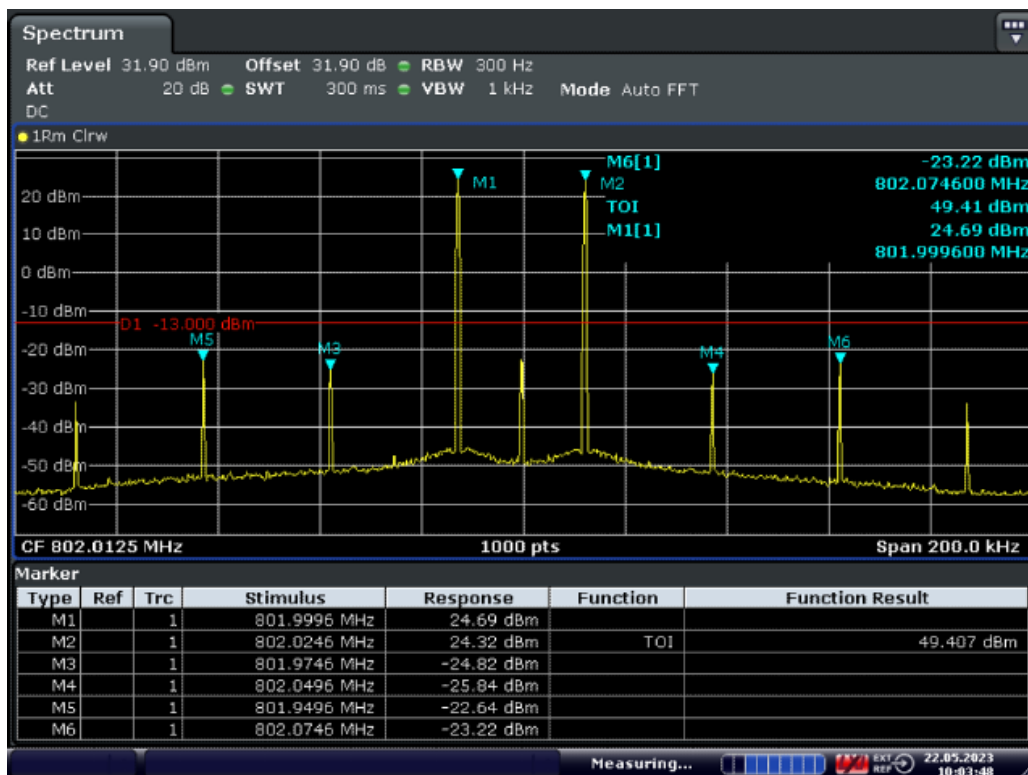


Low Frequency and with the input signal amplitude set 3 dB above the ALC threshold



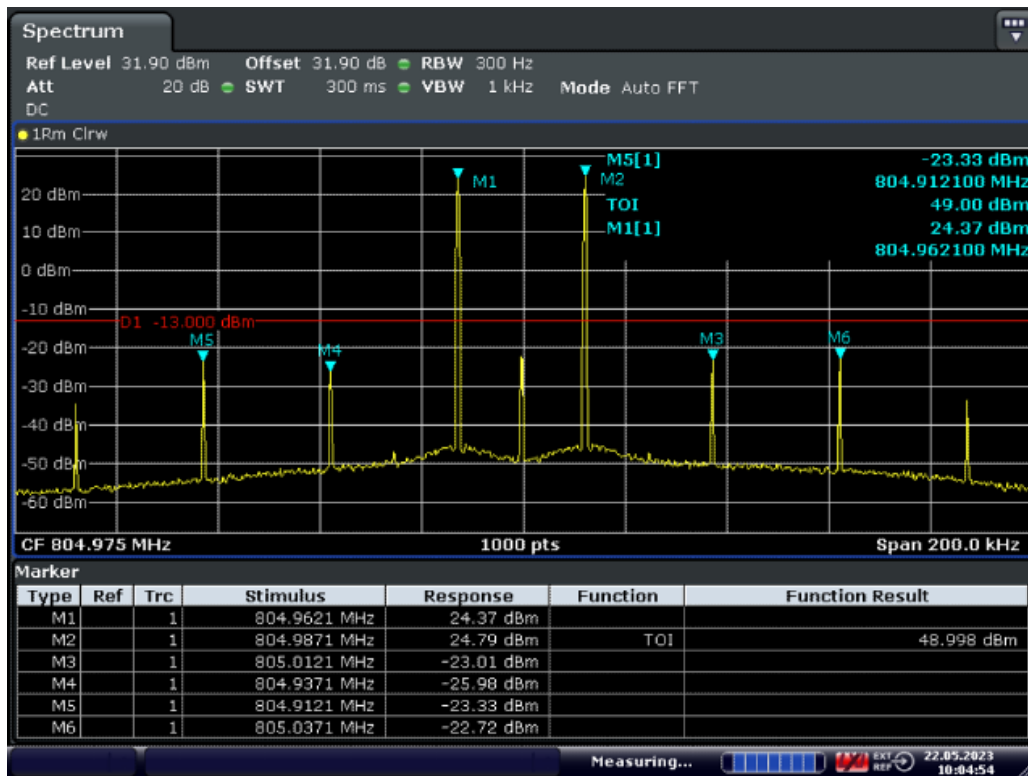
Date: 22.MAY.2023 10:03:35

Mid Frequency and with the ALC threshold level



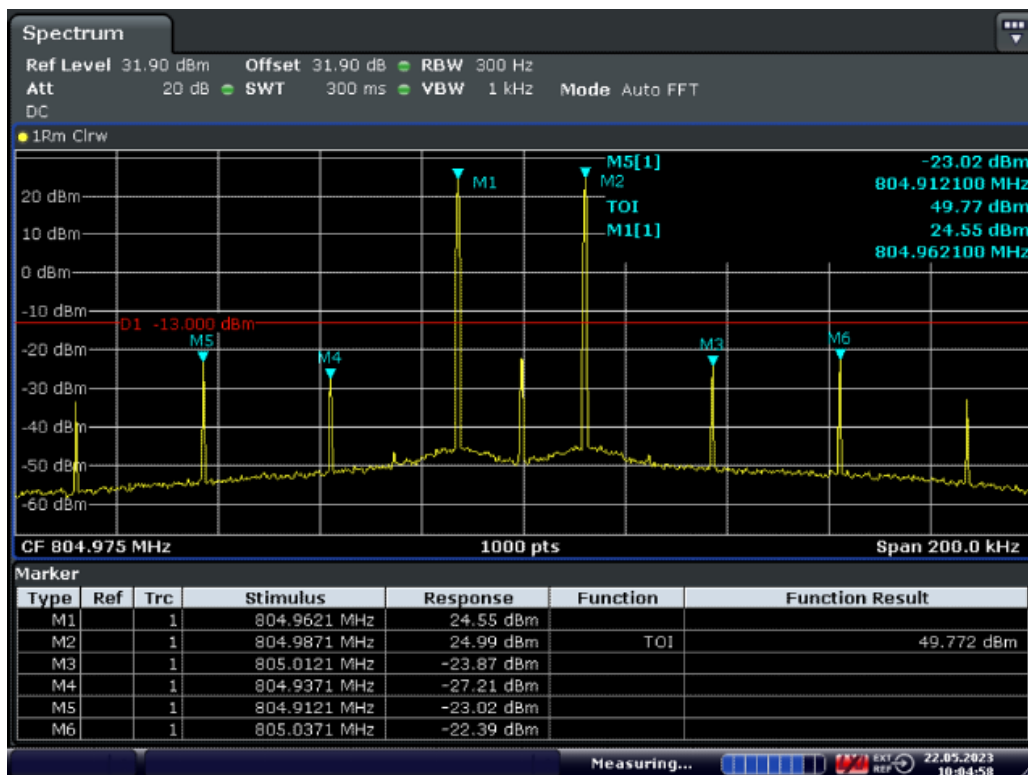
Date: 22.MAY.2023 10:03:48

Mid Frequency and with the input signal amplitude set 3 dB above the ALC threshold



Date: 22.MAY.2023 10:04:54

High Frequency and with the ALC threshold level



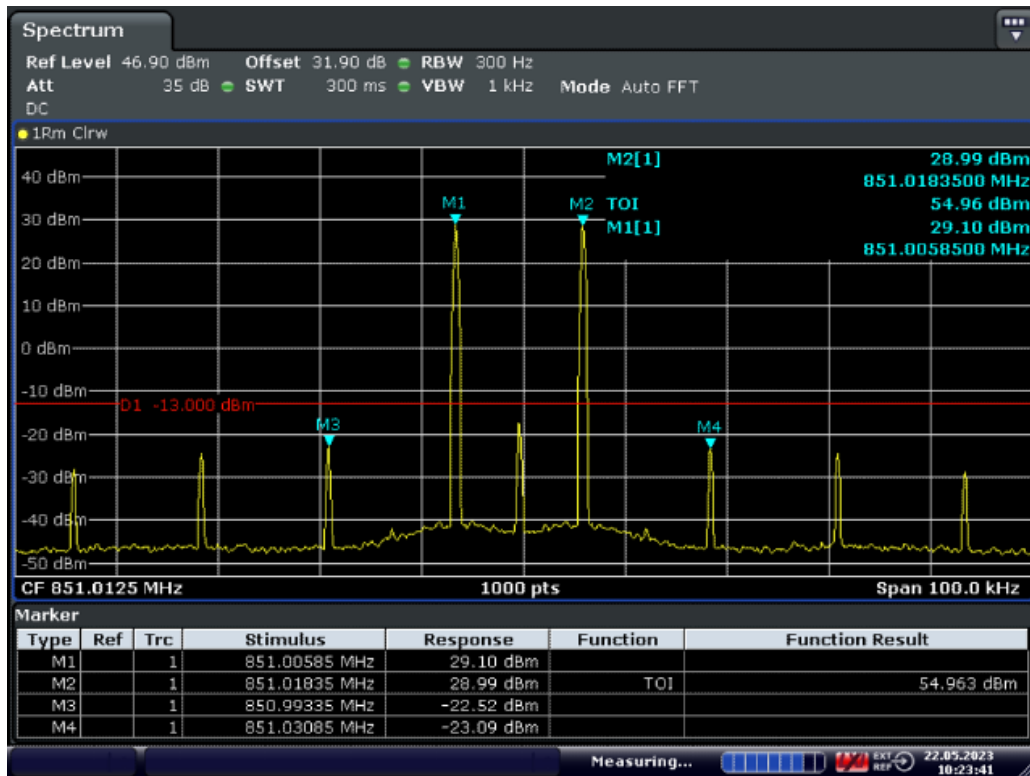
Date: 22.MAY.2023 10:04:58

High Frequency and with the input signal amplitude set 3 dB above the ALC threshold

11.8.5.2. 800MHz Band

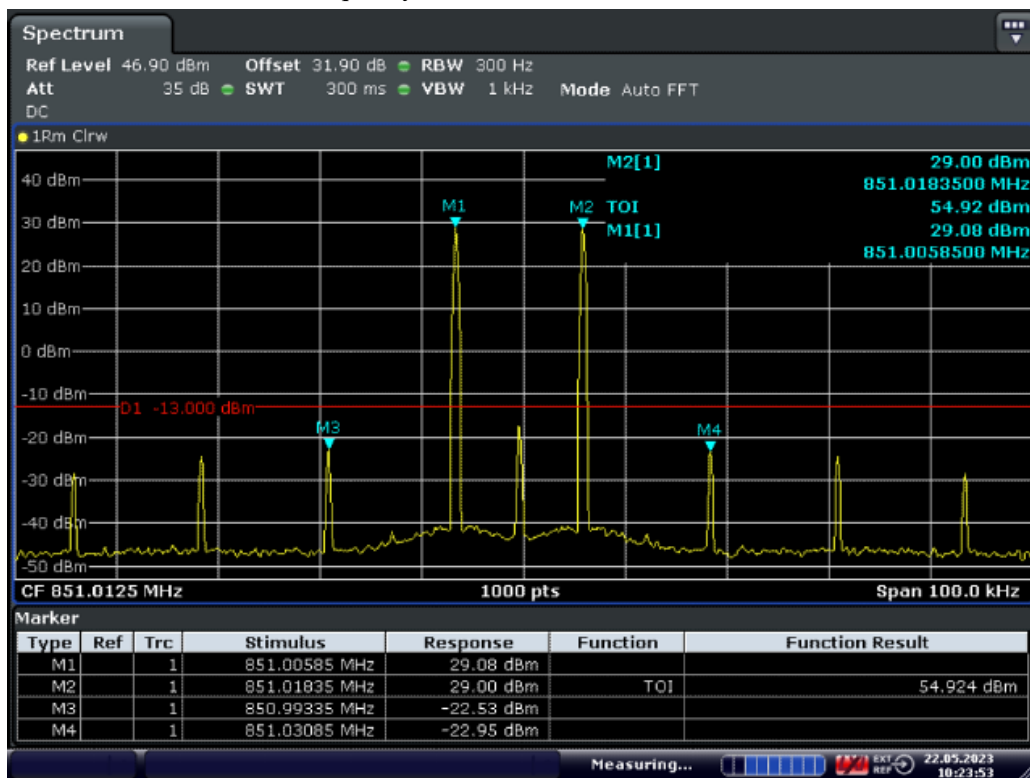
11.8.5.2.1. Channel bandwidth 12.5kHz

11.8.5.2.1.1. Downlink



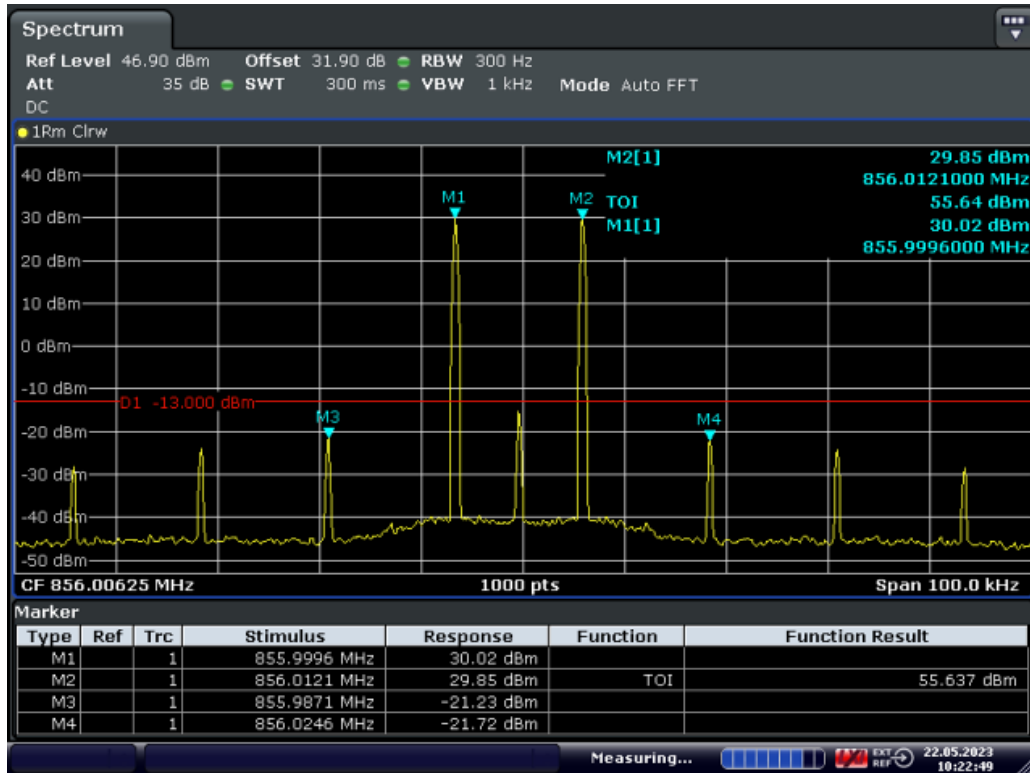
Date: 22.MAY.2023 10:23:41

Low Frequency and with the ALC threshold level



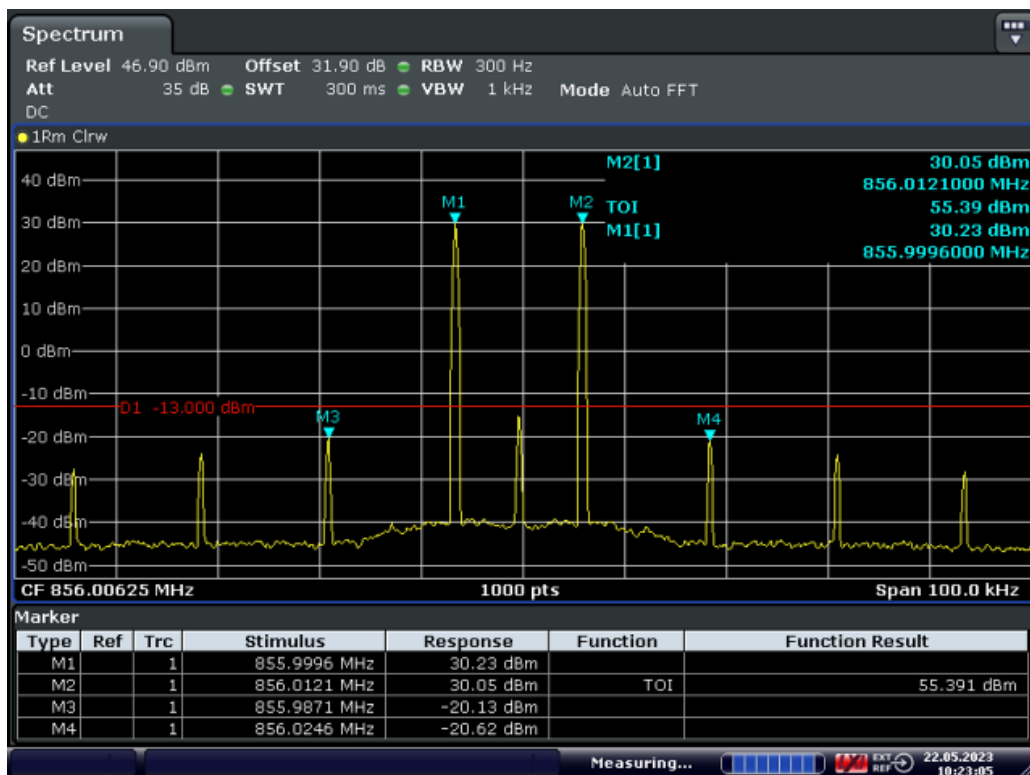
Date: 22.MAY.2023 10:23:53

Low Frequency and with the input signal amplitude set 3 dB above the ALC threshold



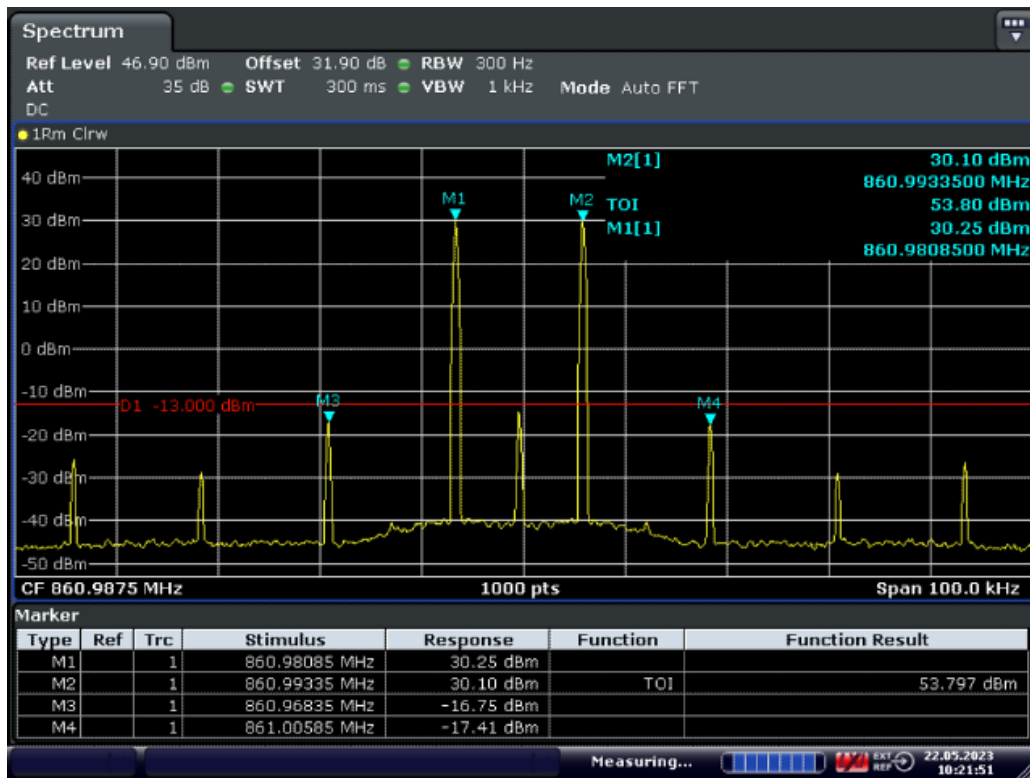
Date: 22.MAY.2023 10:22:49

Mid Frequency and with the ALC threshold level



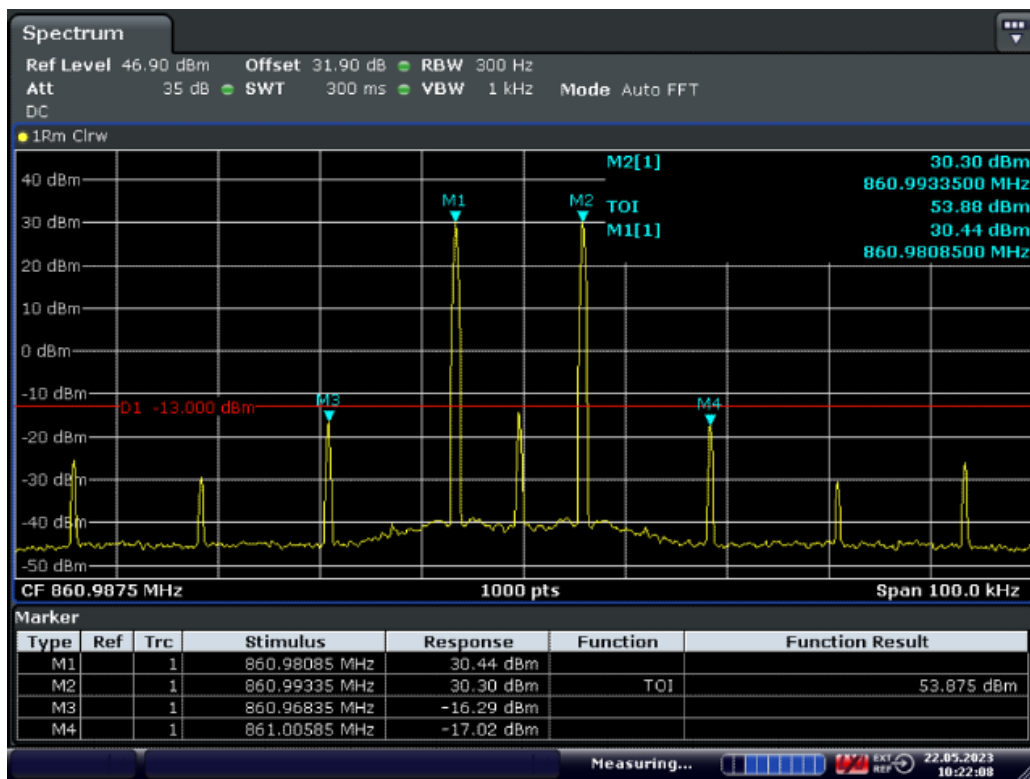
Date: 22.MAY.2023 10:23:05

Mid Frequency and with the input signal amplitude set 3 dB above the ALC threshold



Date: 22.MAY.2023 10:21:51

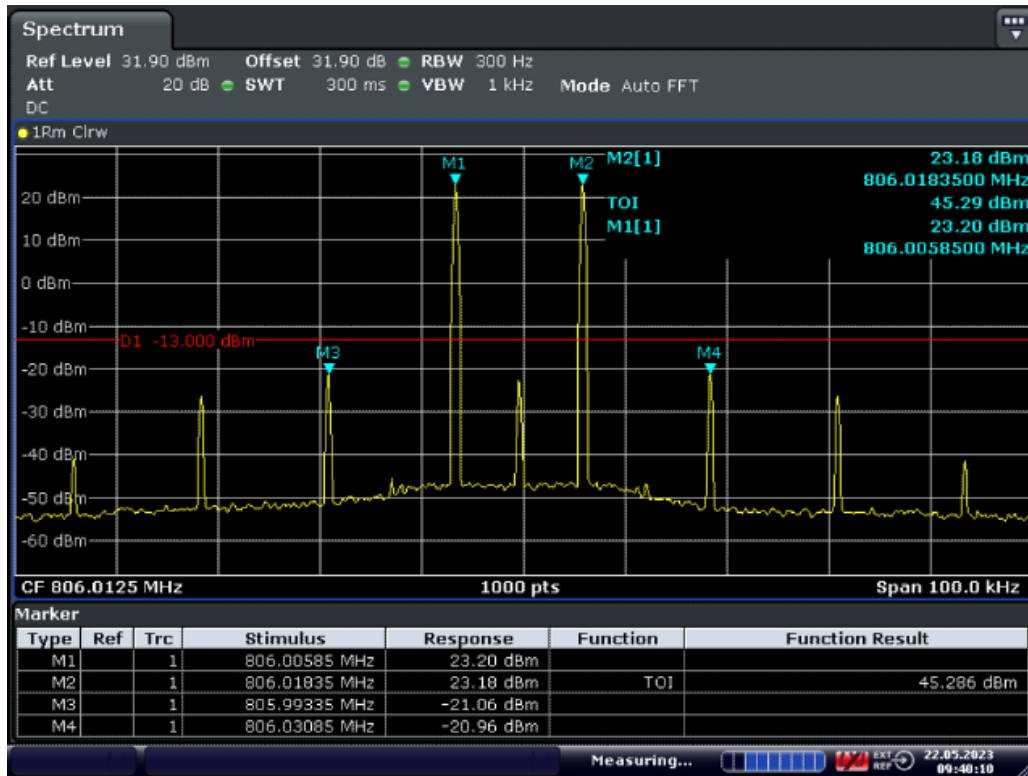
High Frequency and with the ALC threshold level



Date: 22.MAY.2023 10:22:08

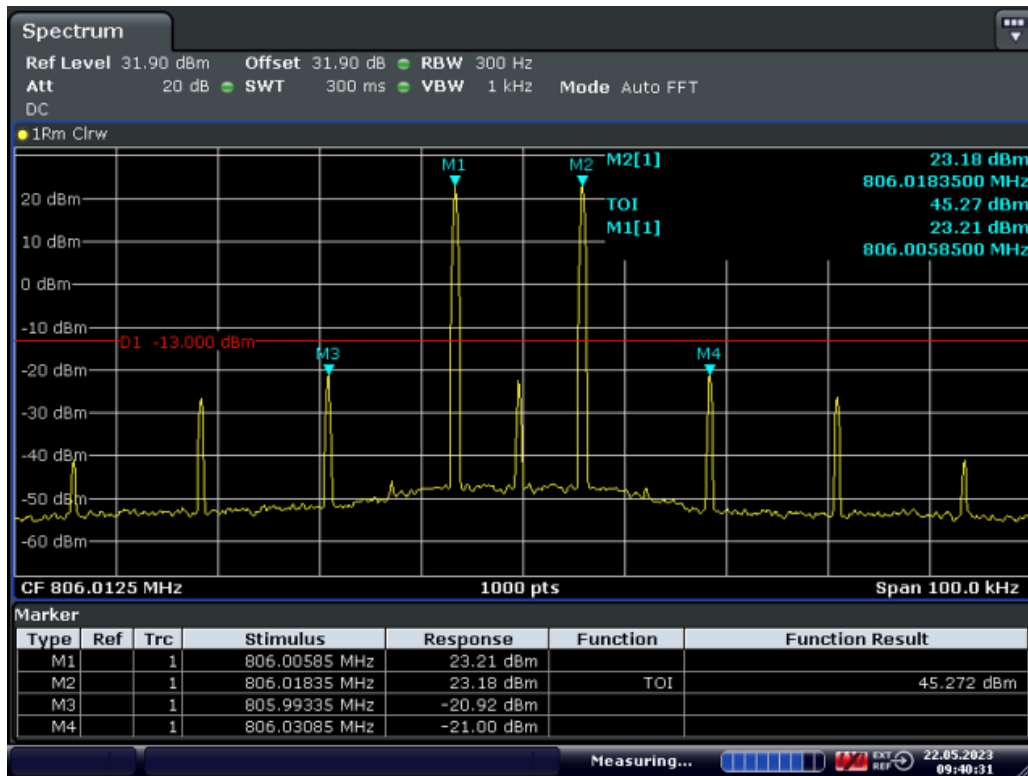
High Frequency and with the input signal amplitude set 3 dB above the ALC threshold

11.8.5.2.1.2. Uplink



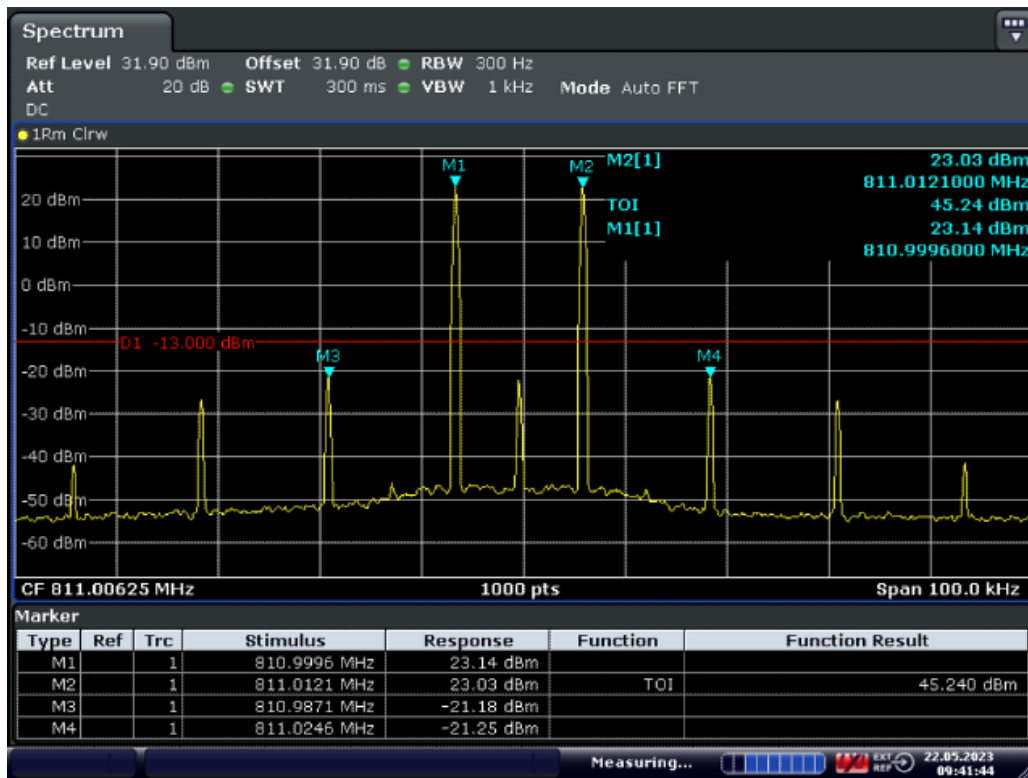
Date: 22.MAY.2023 09:40:10

Low Frequency and with the ALC threshold level



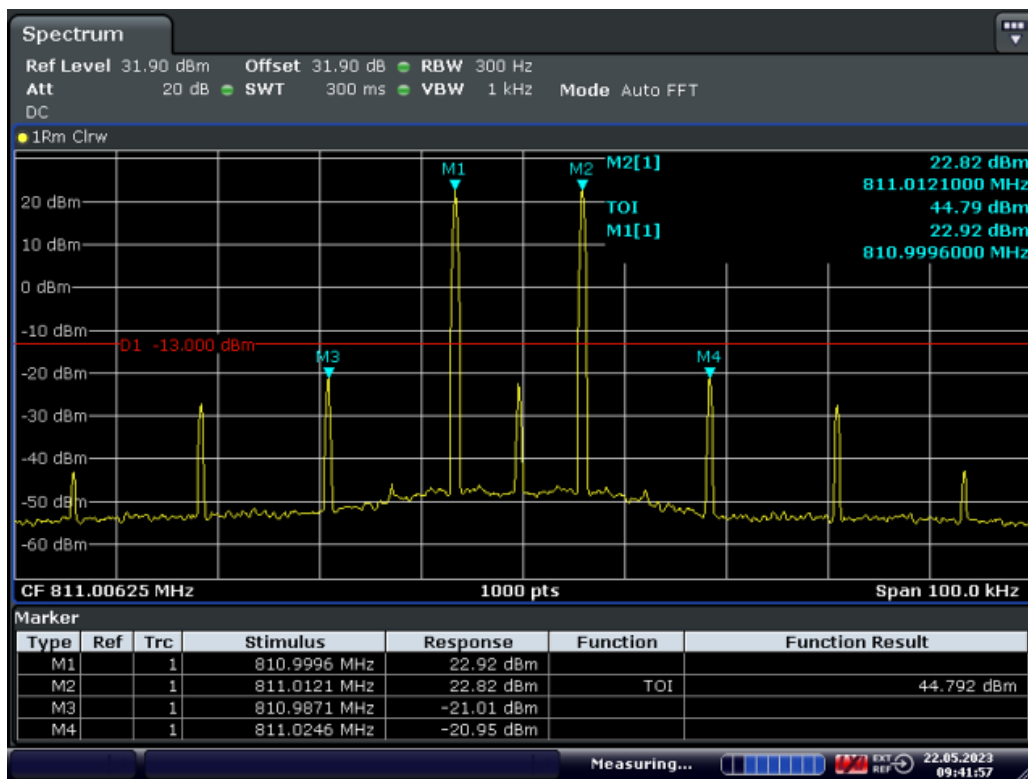
Date: 22.MAY.2023 09:40:31

Low Frequency and with the input signal amplitude set 3 dB above the ALC threshold



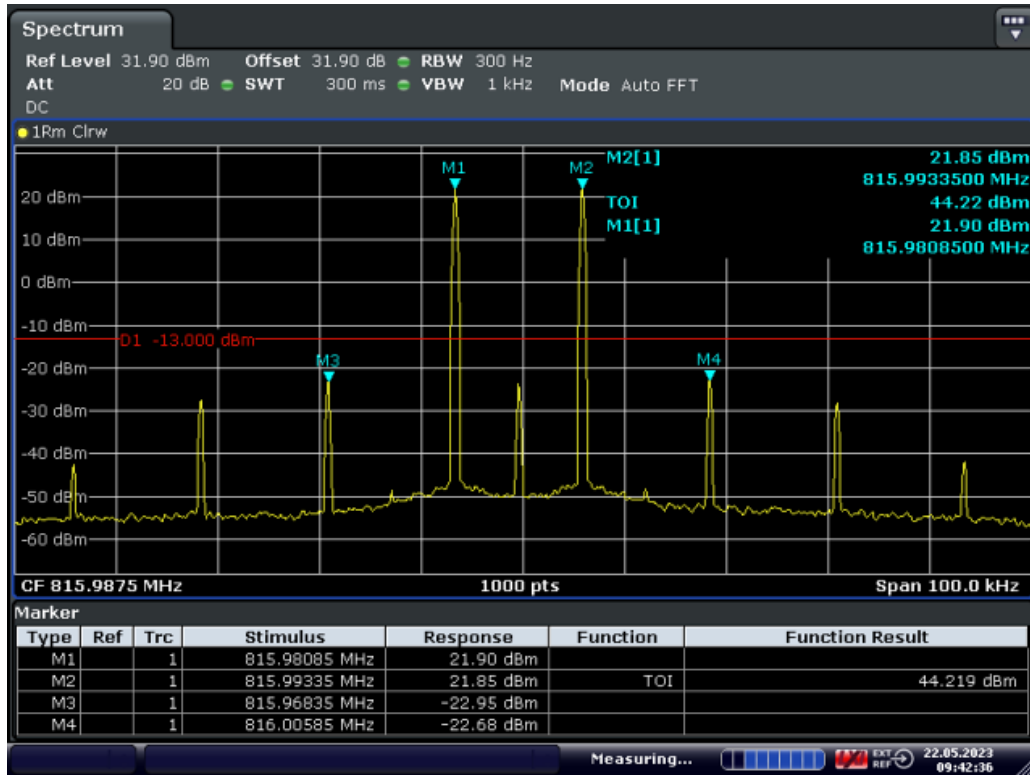
Date: 22.MAY.2023 09:41:45

Mid Frequency and with the ALC threshold level



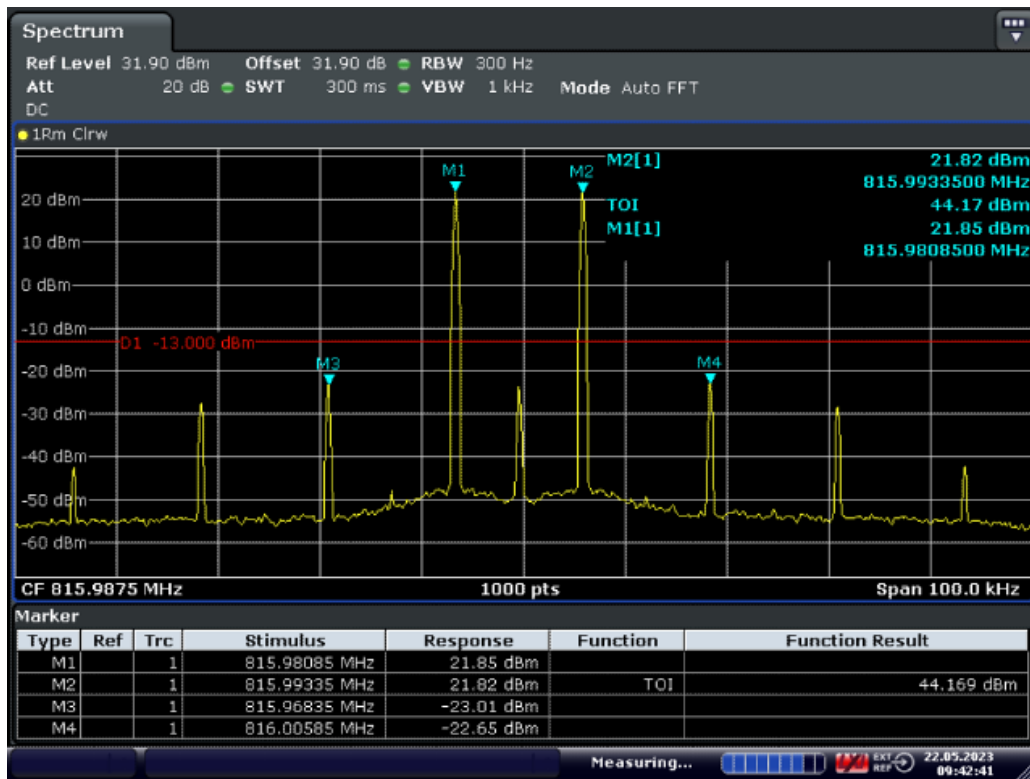
Date: 22.MAY.2023 09:41:57

Mid Frequency and with the input signal amplitude set 3 dB above the ALC threshold



Date: 22.MAY.2023 09:42:36

High Frequency and with the ALC threshold level

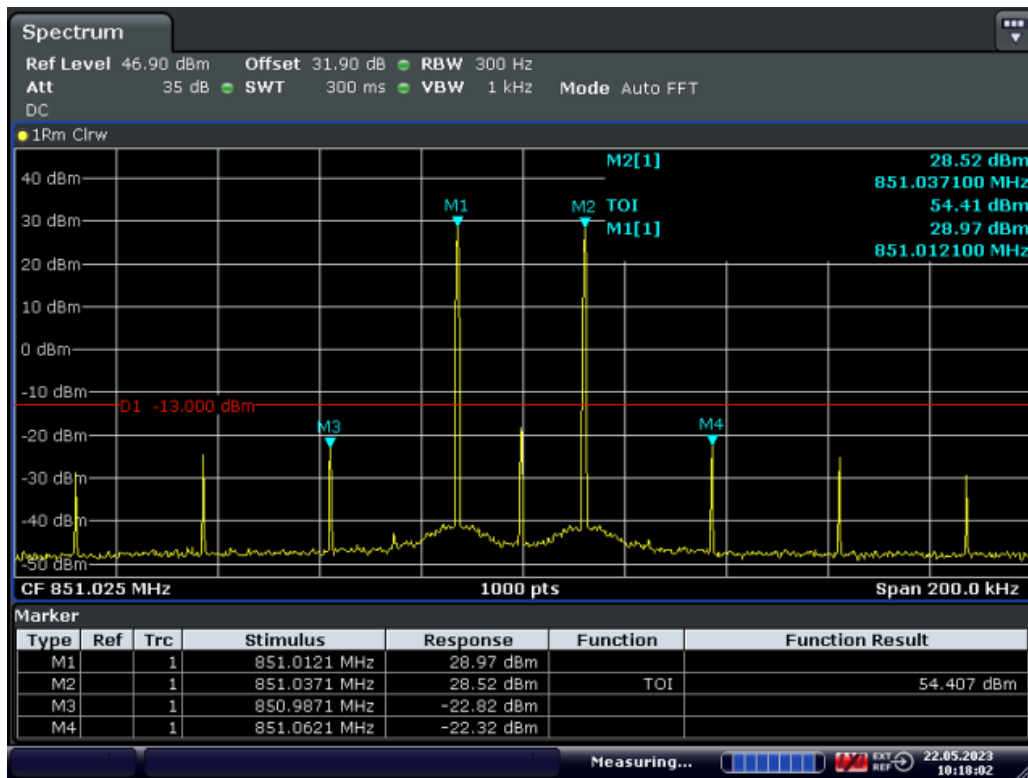


Date: 22.MAY.2023 09:42:41

High Frequency and with the input signal amplitude set 3 dB above the ALC threshold

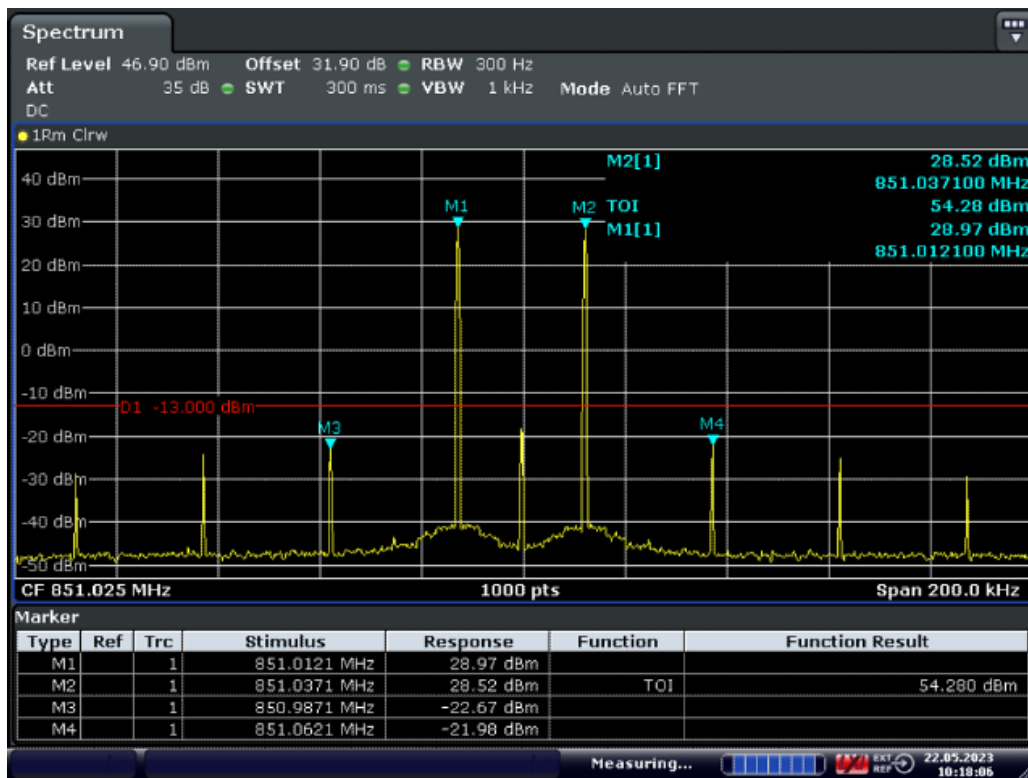
11.8.5.2.2. Channel bandwidth 25kHz

11.8.5.2.2.1. Downlink



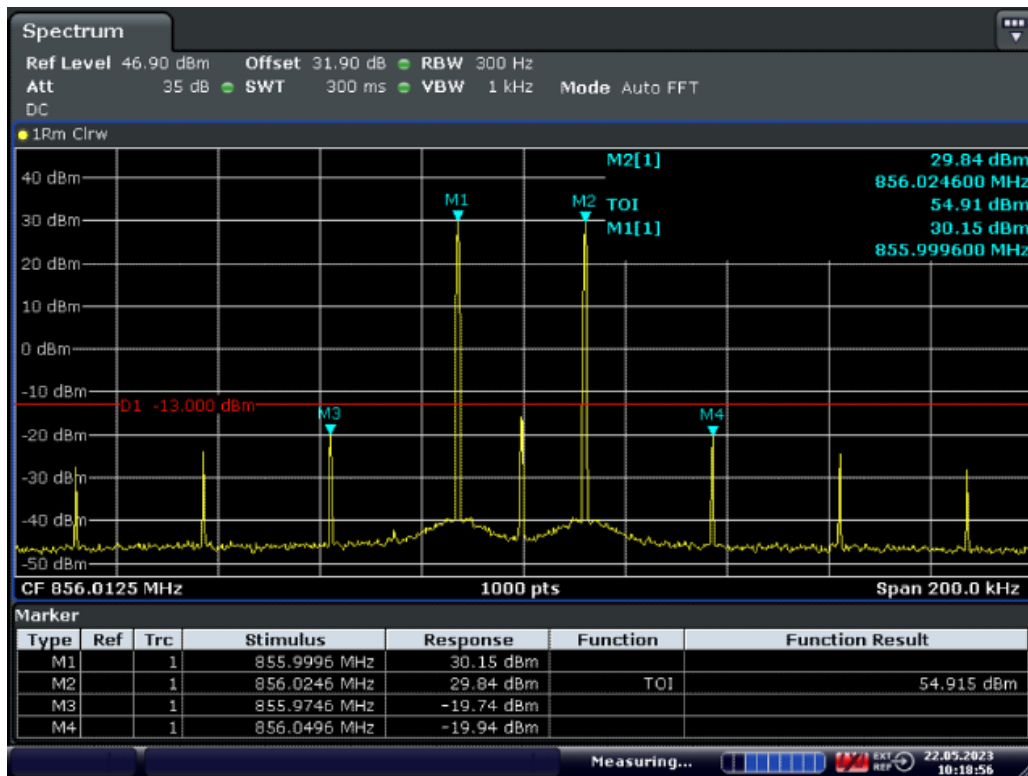
Date: 22.MAY.2023 10:18:02

Low Frequency and with the ALC threshold level



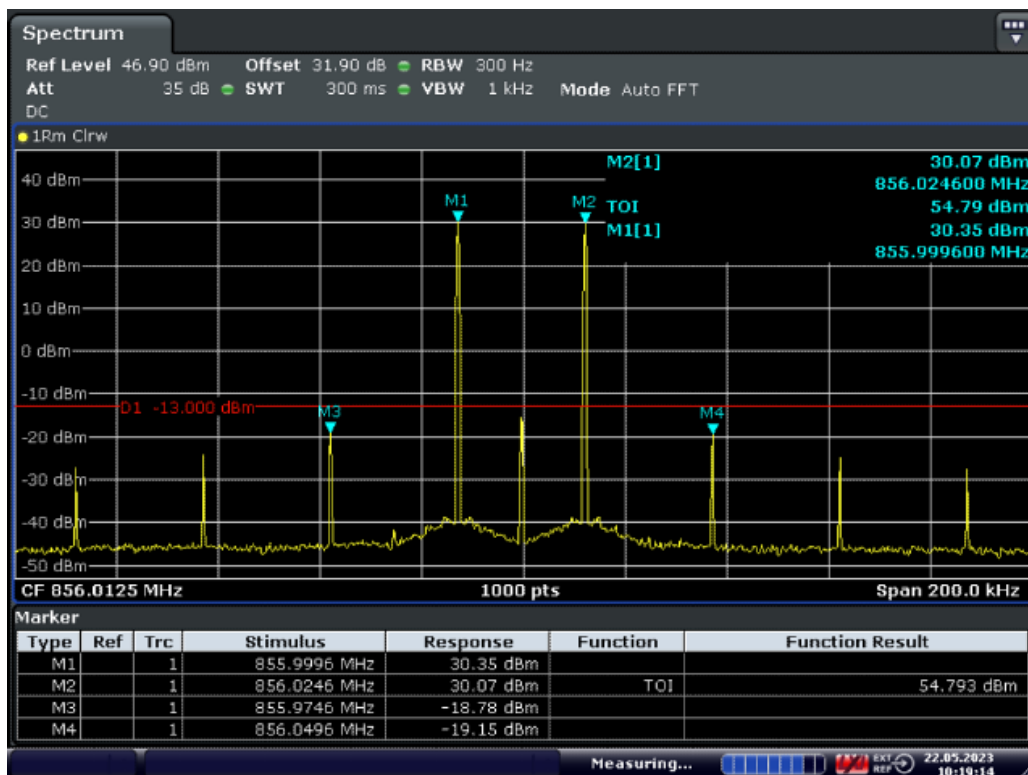
Date: 22.MAY.2023 10:18:06

Low Frequency and with the input signal amplitude set 3 dB above the ALC threshold



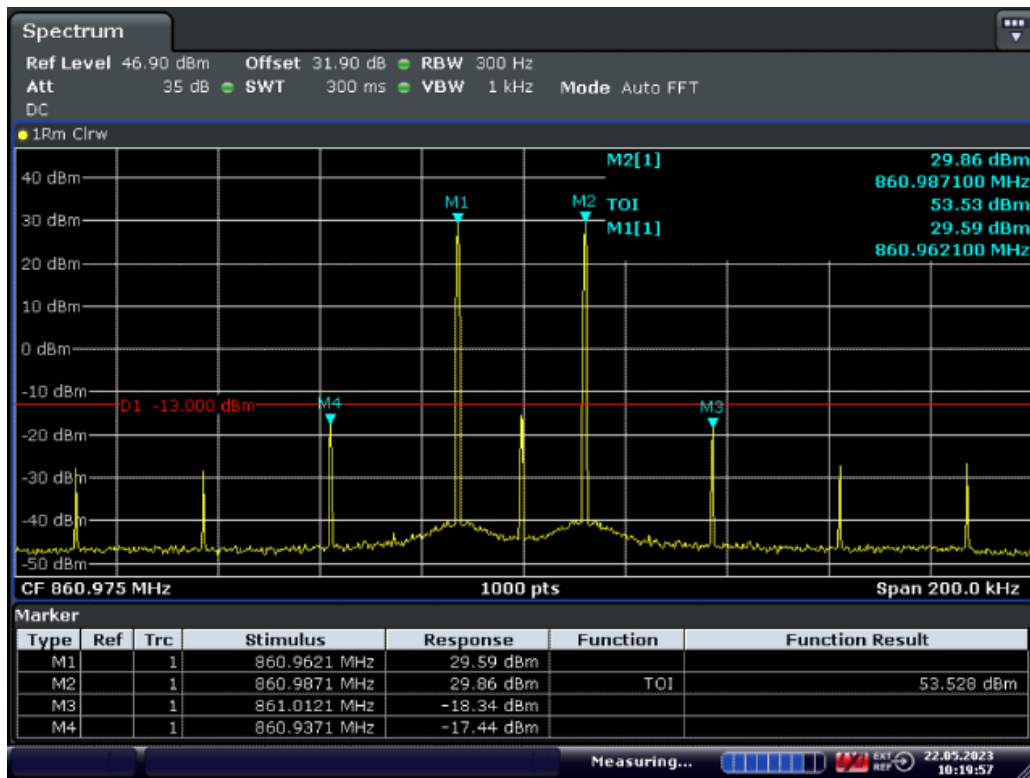
Date: 22.MAY.2023 10:18:56

Mid Frequency and with the ALC threshold level



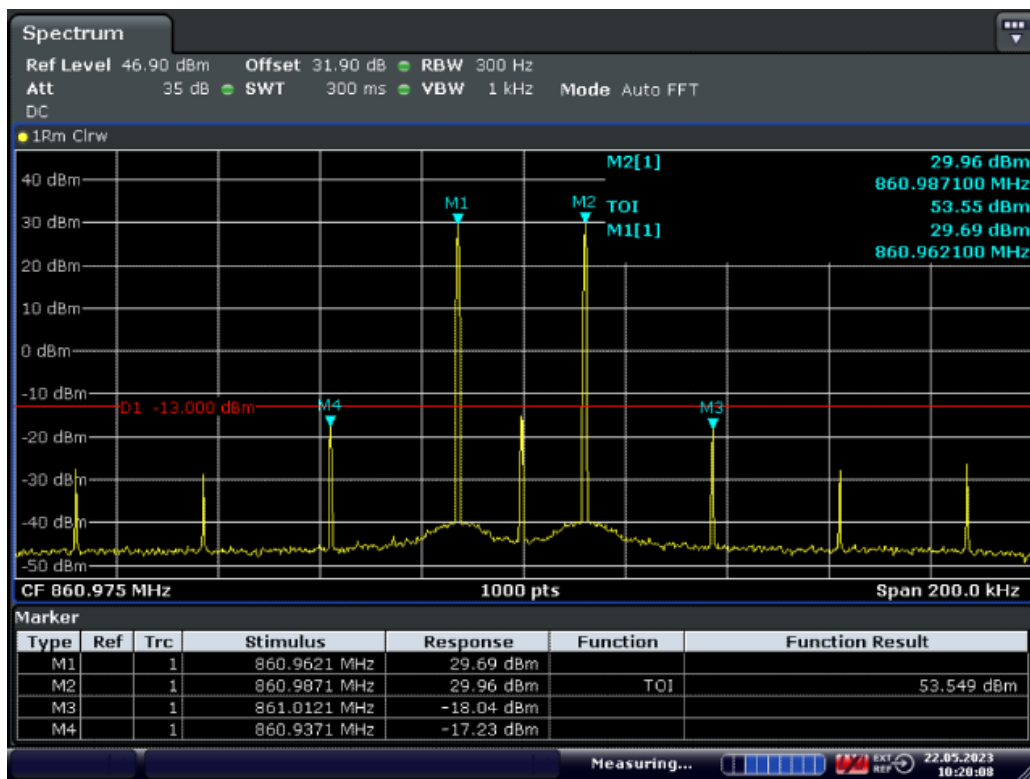
Date: 22.MAY.2023 10:19:14

Mid Frequency and with the input signal amplitude set 3 dB above the ALC threshold



Date: 22.MAY.2023 10:19:57

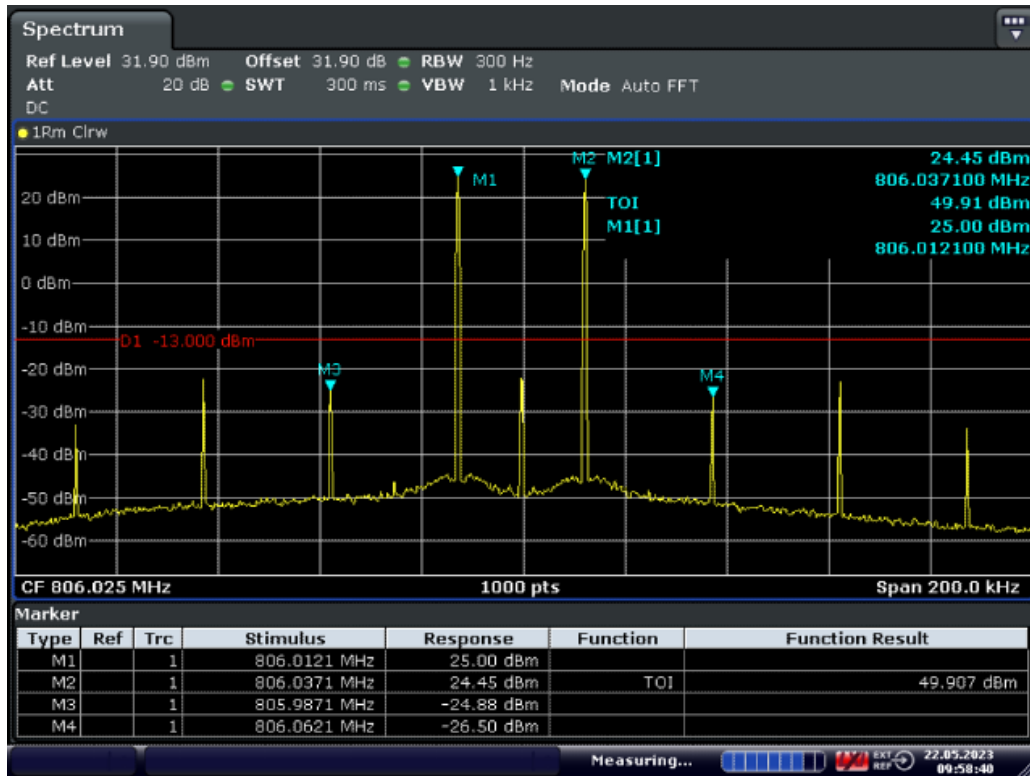
High Frequency and with the ALC threshold level



Date: 22.MAY.2023 10:20:08

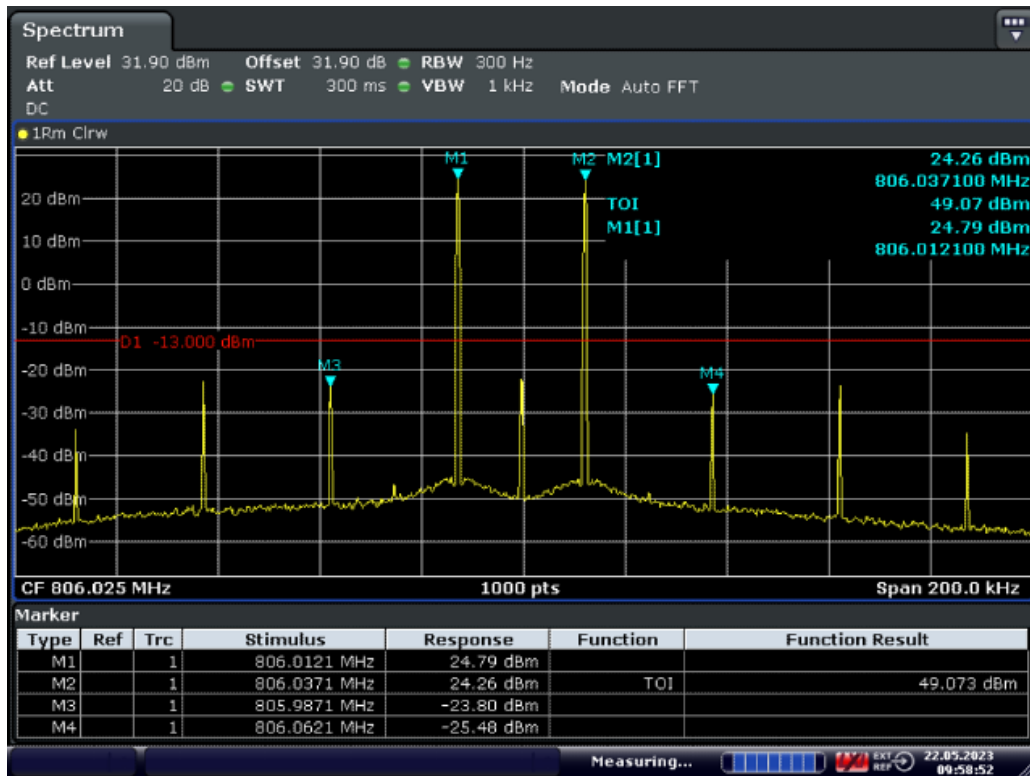
High Frequency and with the input signal amplitude set 3 dB above the ALC threshold

11.8.5.2.2.2. Uplink



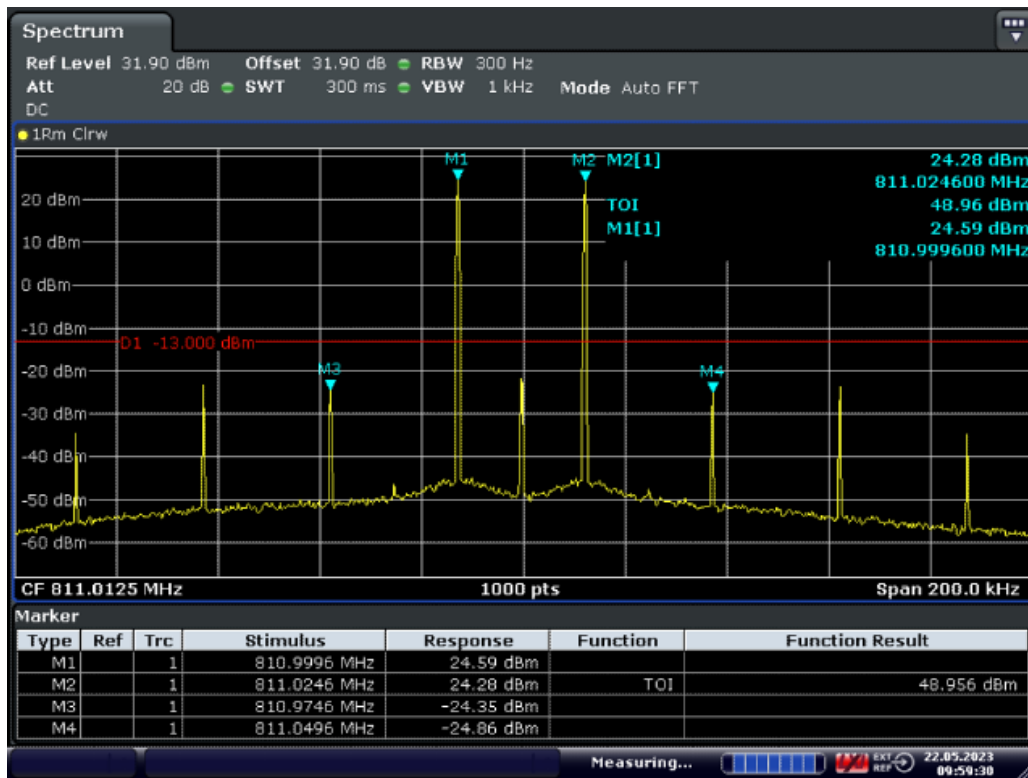
Date: 22.MAY.2023 09:58:40

Low Frequency and with the ALC threshold level



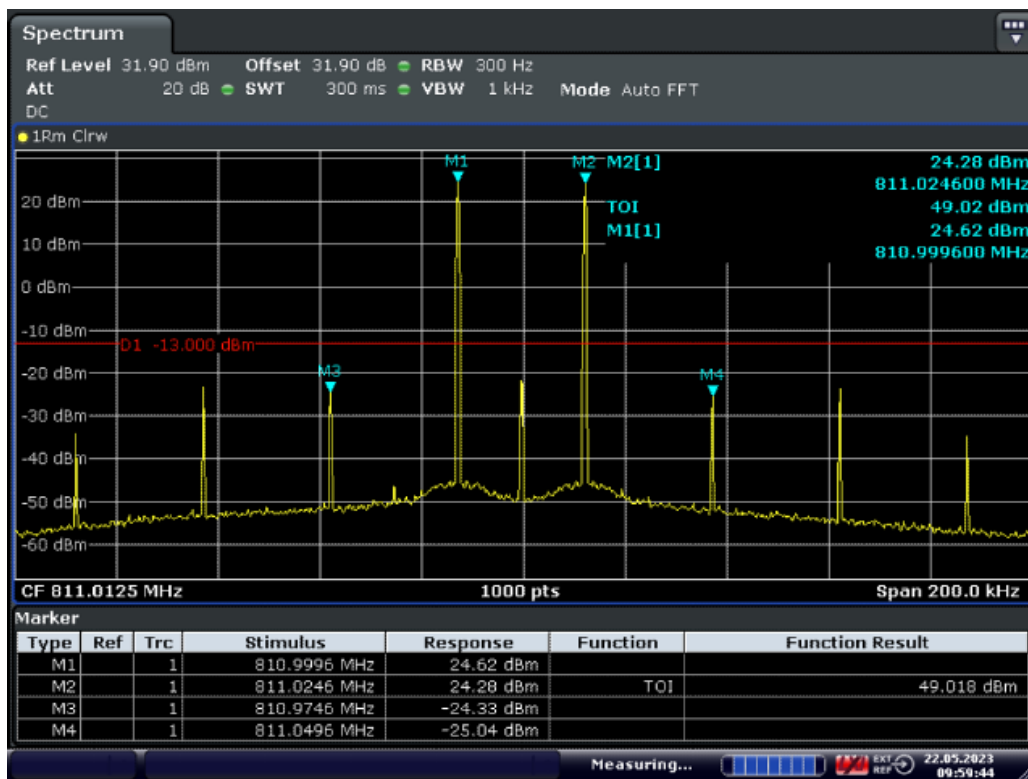
Date: 22.MAY.2023 09:58:52

Low Frequency and with the input signal amplitude set 3 dB above the ALC threshold



Date: 22.MAY.2023 09:59:30

Mid Frequency and with the ALC threshold level



Date: 22.MAY.2023 09:59:44

Mid Frequency and with the input signal amplitude set 3 dB above the ALC threshold