REPORT

issued by an Accredited Testing Laboratory

SP Testing

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Reference
8P07820-P30-Rev1

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Part2 of 8P07820-P30

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Electronics - EMC

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Field strength of spurious radiation measurements according to CFR 47 §30.203

Date	Temperature	Humidity
2018-12-16	22 °C ± 3 °C	25 % ± 5 %
2018-12-21	22 °C ± 3 °C	23 % ± 5 %
2019-01-14	22 °C ± 3 °C	12 % ± 5 %
2019-01-15	22 °C ± 3 °C	17 % ± 5 %
2019-01-17	22 °C ± 3 °C	13 % ± 5 %
2019-01-18	22 °C ± 3 °C	22 % ± 5 %
2019-01-21	22 °C ± 3 °C	30 % ± 5 %
2019-01-22	22 °C ± 3 °C	26 % ± 5 %
2019-01-23	22 °C ± 3 °C	26 % ± 5 %
2019-01-24	22 °C ± 3 °C	24 % ± 5 %
2019-01-29	22 °C ± 3 °C	12 % ± 5 %

The measurements were performed with both horizontal and vertical polarization of the antenna. The measurement was performed with a RBW of 1 MHz. The antenna distance and test object height in the different frequency ranges is descried below.

In the test range from 30 – 1000 MHz and 40 – 200 GHz
A propagation loss in free space was calculated. The used formula was

$\gamma = 20\log\left(\frac{4\pi D}{\lambda}\right)$, γ is the propagation loss and D is the antenna distance.

For 30 MHz – 60 GHz D was 3m, for 60 – 110 GHz D was 1.5m and was for 110 – 200 GHz was 1.0m.

In the test range from 1 – 40 GHz a substitution measurement defined in 3GPP TR 37.842 V13.2.0 (2017-03) chapter 10.3.1.1.2 was used to get the actual correction factor (Transducer factor A-D in the figure 1 below) with a Network analyzer (ZNB 40).

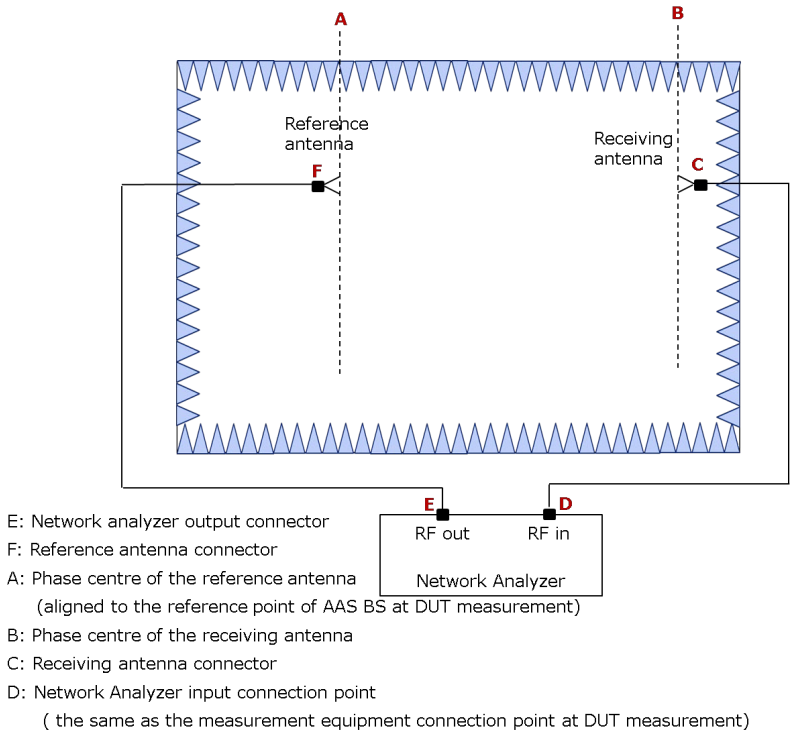


Figure 1: Indoor Anechoic Chamber calibration system setup for EIRP

Stage 1 - Calibration:

1) Connect the reference antenna and the receiving antenna to the measurement RF out port and RF in port of the network analyzer, respectively, as shown in figure 1.
2) Install the reference antenna with its *beam peak direction* and the height of its phase centre aligned with the receiving antenna.
3) Set the centre frequency of the network analyzer to the carrier centre frequency of the tested signal for EIRP measurement of the EUT and measure $LF_{EIRP,\ E\rightarrow D}$, which is equivalent to 20log|S21| (dB) obtained by the network analyzer:
   $LF_{EIRP,\ E\rightarrow D}$: Pathloss between E and D in figure 1.
4) Measure the cable loss, $LF_{EIRP,\ E\rightarrow F}$ between the reference antenna connector and the network analyzer connector:
   $LF_{EIRP,\ E\rightarrow F}$: Cable loss between E and F in figure 1.
5) Calculate the calibration value between A and D with the following formula:
   $L_{EIRP\_cal,\ A\rightarrow D} = LF_{EIRP,\ E\rightarrow D} + G_{REF\_ANT\_EIRP,\ A\rightarrow F} - LF_{EIRP,\ E\rightarrow F}$.
   $L_{EIRP\_cal,\ A\rightarrow D}$: Calibration value between A and D in figure 1. Was implemented in the spectrum analyzer as a transducer.
   $G_{REF\_ANT\_EIRP,\ A\rightarrow F}$: Antenna gain of the reference antenna.

Stage 2 - Measurement:

6) Uninstall the reference antenna and install the EUT with the manufacturer declared coordinate system reference point in the same place as the phase centre of the reference antenna. The manufacturer declared coordinate system orientation of the EUT is set to be aligned with the testing system.
7) Measure the mean power, $P_{R\_EUT\_EIRP,\,D}$, D in figure 1.
8) Calculate the EIRP with the following formula:

$$EIRP = P_{R\_EUT\_EIRP,\,D} + L_{EIRP\_cal,\,A\rightarrow D}$$

The measurement procedure was as the following:

1. A pre-measurement is performed with RMS detector and Max Hold on the spectrum analyzer. The turn table was slowly rotating form 0-360 degrees.

2. Spurious radiation on frequencies closer than 10 dB to the limit in the pre-measurement a manual search for maximum response was done.

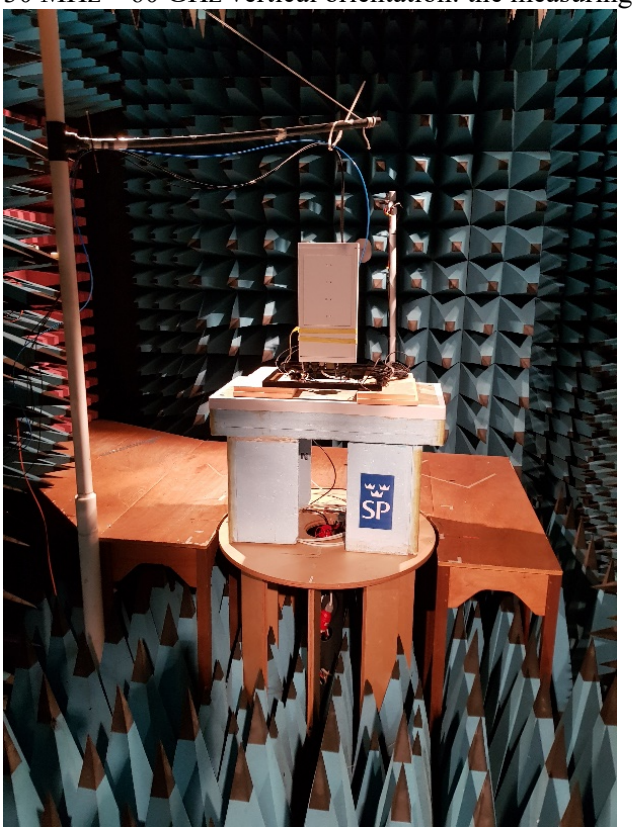
3. If the recorded EIRP value was close or above the TRP limit, a Two Cut TRP measurement or a full sphere was done according to C63.26 mmWave JTG V1.0 chapter 6.6.5. This methods is not included in our scope of accreditation. Overview of the methods.

    a. Two Cut method
        i. EUT set in vertical orientation
        ii. EIRP measurement samples with horizontal and vertical polarization of the measurement antenna. Angular step size based on frequency and dimension of the EUT
        iii. EUT set in horizontal orientation
        iv. EIRP measurement samples with horizontal and vertical polarization of the measurement antenna. Angular step size based on frequency and dimension of the EUT.
        v. TRP = EIRP measurement samples averaged+ΔTRP.
        (ΔTRP= Margin factor based on grid selection).

    b. Full sphere method
        i. EUT set in horizontal orientation bottom of the EUT to the right.
        ii. EIRP measurement samples with horizontal and vertical polarization of the measurement antenna. Angular step size of the turn table was 15 degrees from 0 – 165 degrees and 195 – 360 degrees. In cone of radiation 165 – 195 degrees the step size of the turn table was 1 degree.
        iii. EUT was changed in 15 degrees step from horizontal bottom right to horizontal bottom to the left (twelve steps). Step ii. was repeated for all twelve steps.
        iv. TRP was calculated according to the formula B1 in C63.26 mmWave JTG V1.0 Appendix B.

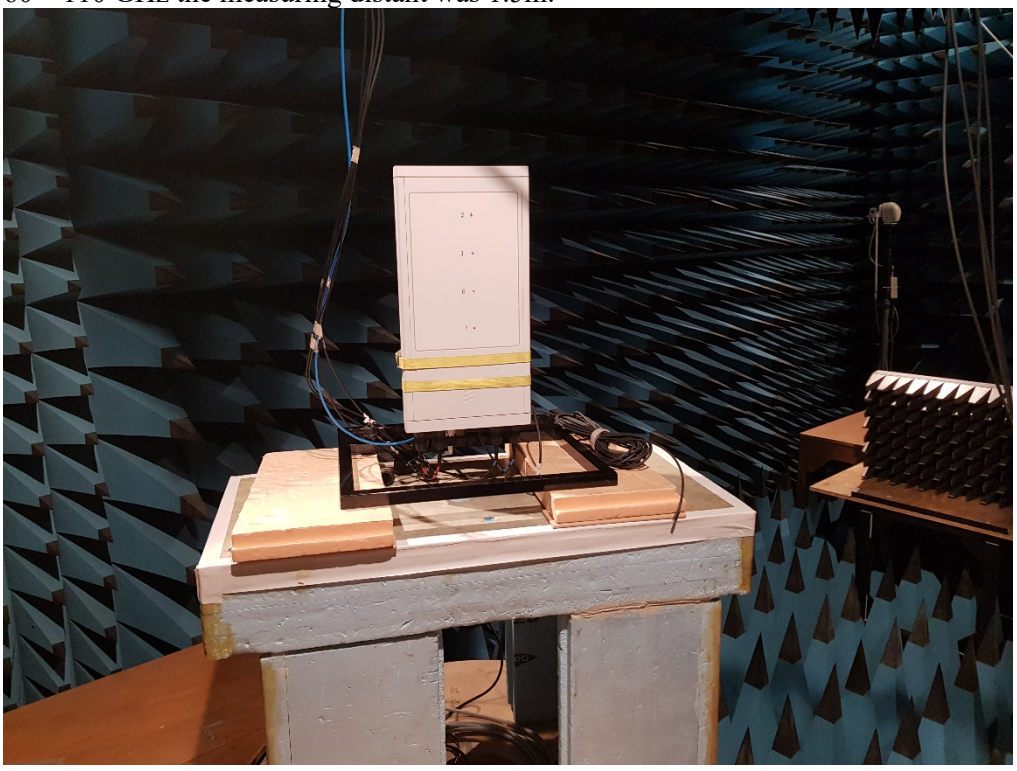
The test set-up during the spurious radiation measurements is shown in the pictures below:

30 MHz – 60 GHz vertical orientation: the measuring distant was 3m

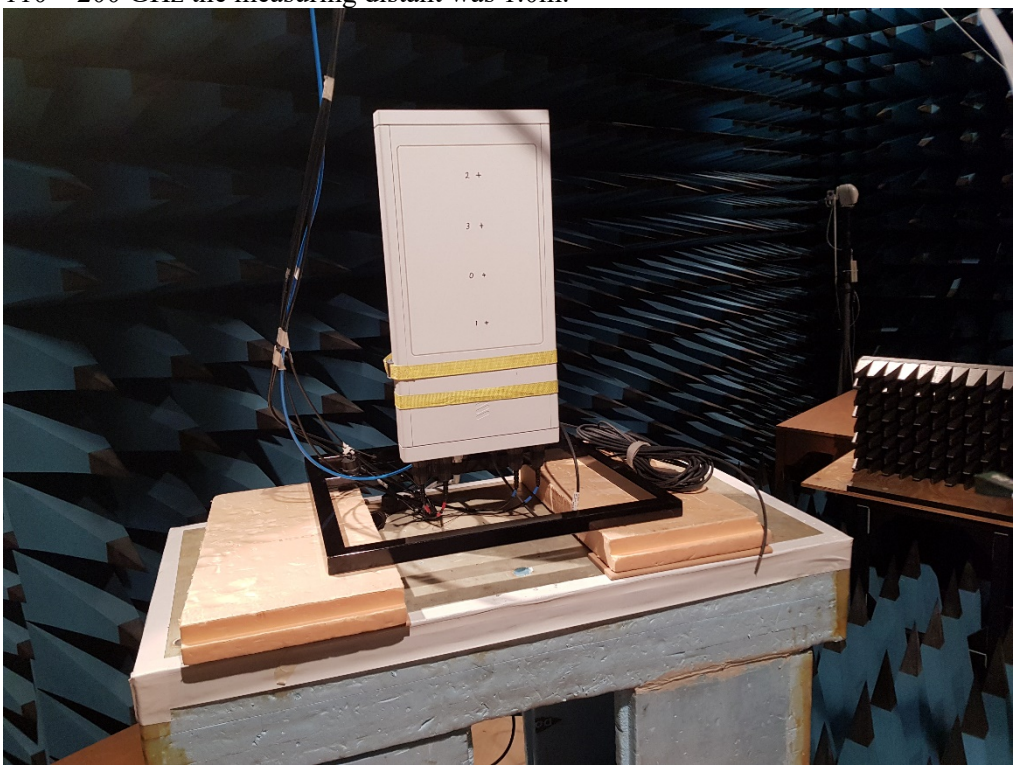


30 MHz – 60 GHz horizontal orientation: the measuring distant was 3m

60 – 110 GHz the measuring distant was 1.5m:



110 – 200 GHz the measuring distant was 1.0m:



Measurement equipment

Measurement equipment	RISE number
Anechoic chamber, Hertz	BX50194
R&S FSW 43	902 073
R&S ESU 26	901 553
R&S ZNB 40	BX50051
EMCO Horn Antenna 3116	503 279
Bilog antenna Schaffner 6143	504 079
Flann STD Gain Horn Antenna 20240-20	503 674
Flann STD Gain Horn Antenna 22240-20	503 674
Flann STD Gain Horn Antenna 24240-20	503 674
Flann STD Gain Horn Antenna 26240-20	503 674
Flann STD Gain Horn Antenna 27240-20	503 674
Flann STD Gain Horn Antenna 29240-20	503 674
Flann STD Gain Horn Antenna 30240-20	503 674
Mixer FS-Z60	100147
Mixer FS-Z90	503 569
Mixer FS-Z110	BX81427
Mizer FS-Z140	BX81428
Mixer FS-Z220	BX81429
Miteq, Low Noise Amplifier	503 278
EMCO Horn Antenna 3115	502 175
EMCO Horn Antenna 3115	501 548
µComp Nordic, Low Noise Amplifier	901 544
Temperature and humidity meter, Testo 615	503 498

Results

Diagram 1 – 70 represents worst case for each test.

Measurement uncertainty: 30 – 1000 MHz 3.1 dB
1 – 18 GHz, 3.0 dB
18 – 40 GHz, 3.1 dB
40 – 60 GHz, 2.27 dB
60 – 75 GHz, 2.70 dB
75 – 110 GHz, 4.24 dB
110 – 150 GHz, 3.61 dB
150 – 170 GHz, 4.67 dB
170 – 200 GHz, 5.10 dB

Limits

CFR 47 §30.203 Emission limits.

(a) The conductive power or the total radiated power of any emission outside a licensee's frequency block shall be −13 dBm/MHz or lower. However, in the bands immediately outside and adjacent to the licensee's frequency block, having a bandwidth equal to 10 percent of the channel bandwidth, the conductive power or the total radiated power of any emission shall be −5 dBm/MHz or lower.

(b)(1) Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater.

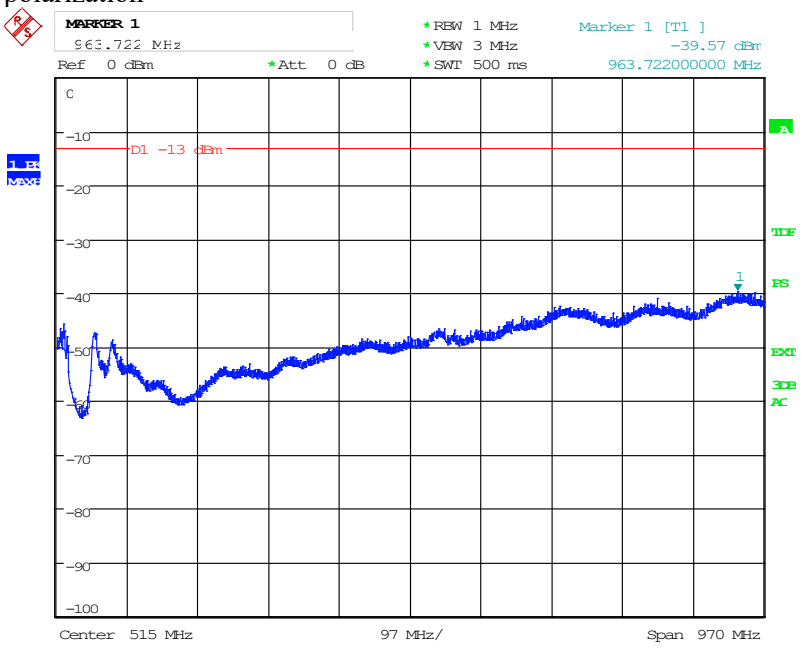
(2) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges as the design permits.

(3) The measurements of emission power can be expressed in peak or average values.

Complies?	Yes

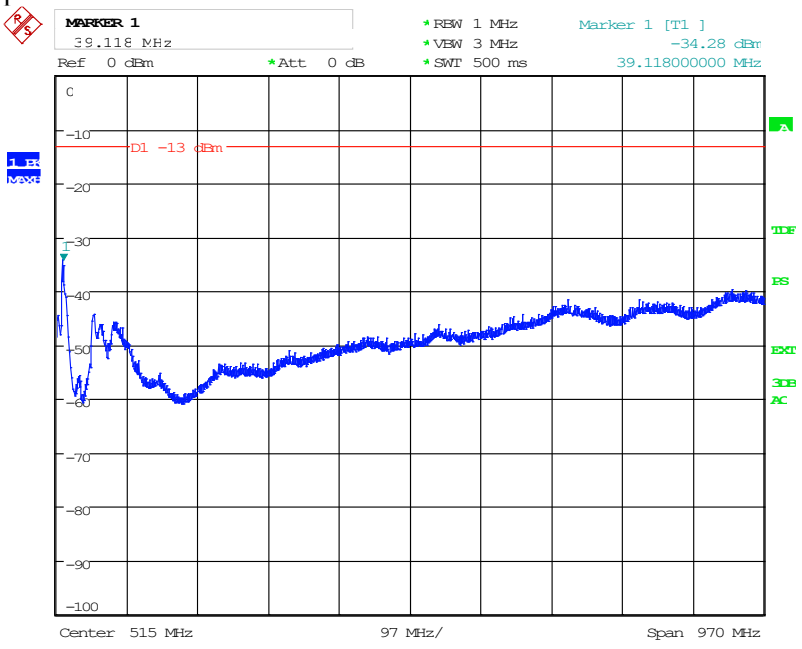
AC KRD 901 079/4

Diagram 1: 30 – 1000 MHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, EIRP Horizontal polarization



Date: 24.JAN.2019 14:56:25

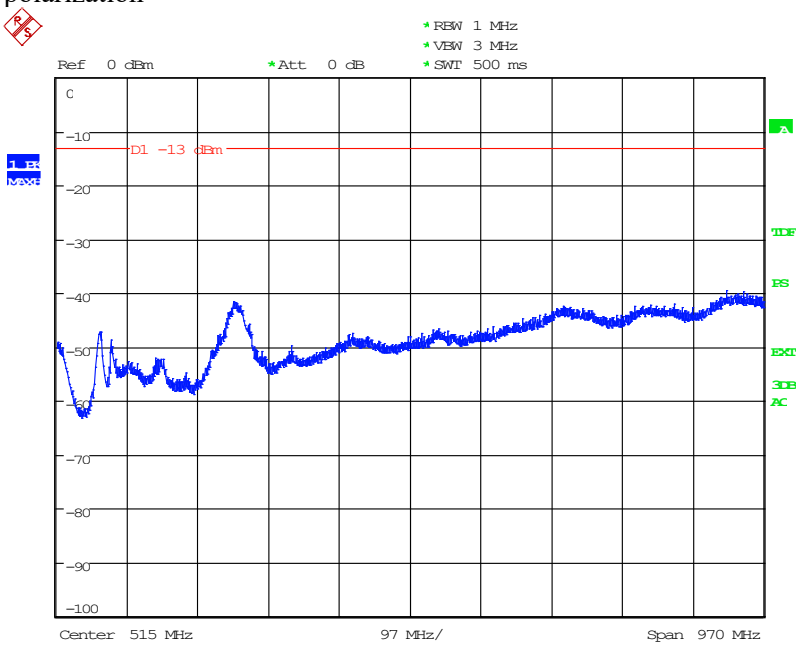
Diagram 2: 30 – 1000 MHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, EIRP Vertical polarization



Date: 24.JAN.2019 14:59:00

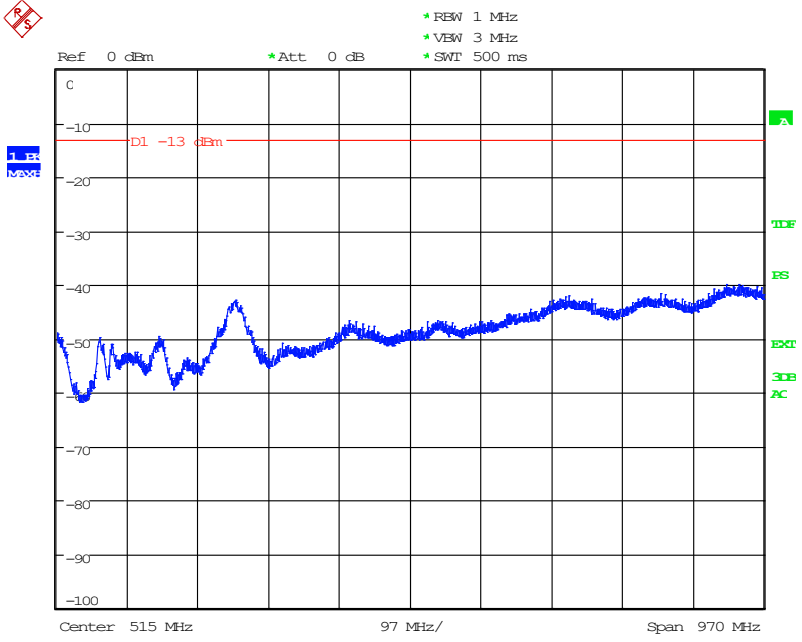
DC KRD 901 079/1

Diagram 3: 30 – 1000 MHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, EIRP Horizontal polarization



Date: 24.JAN.2019 15:41:08

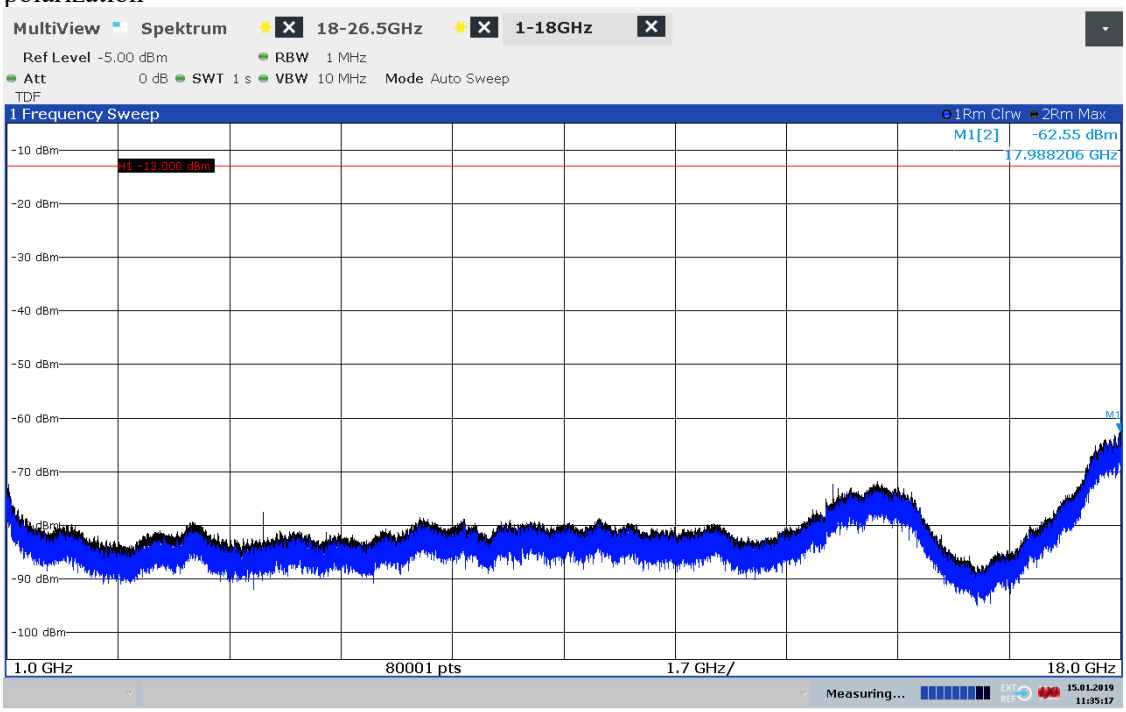
Diagram 4: 30 – 1000 MHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, EIRP Vertical polarization



Date: 24.JAN.2019 15:38:48

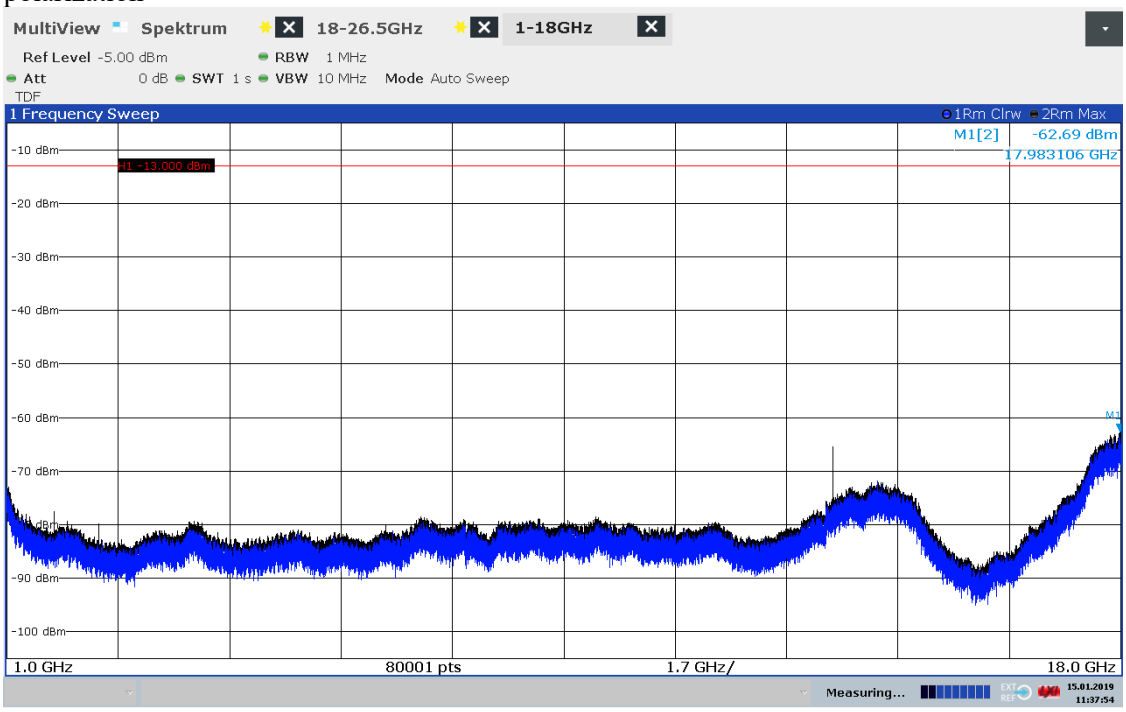
DC KRD 901 079/1

Diagram 5: 1 – 18 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, EIRP Horizontal polarization



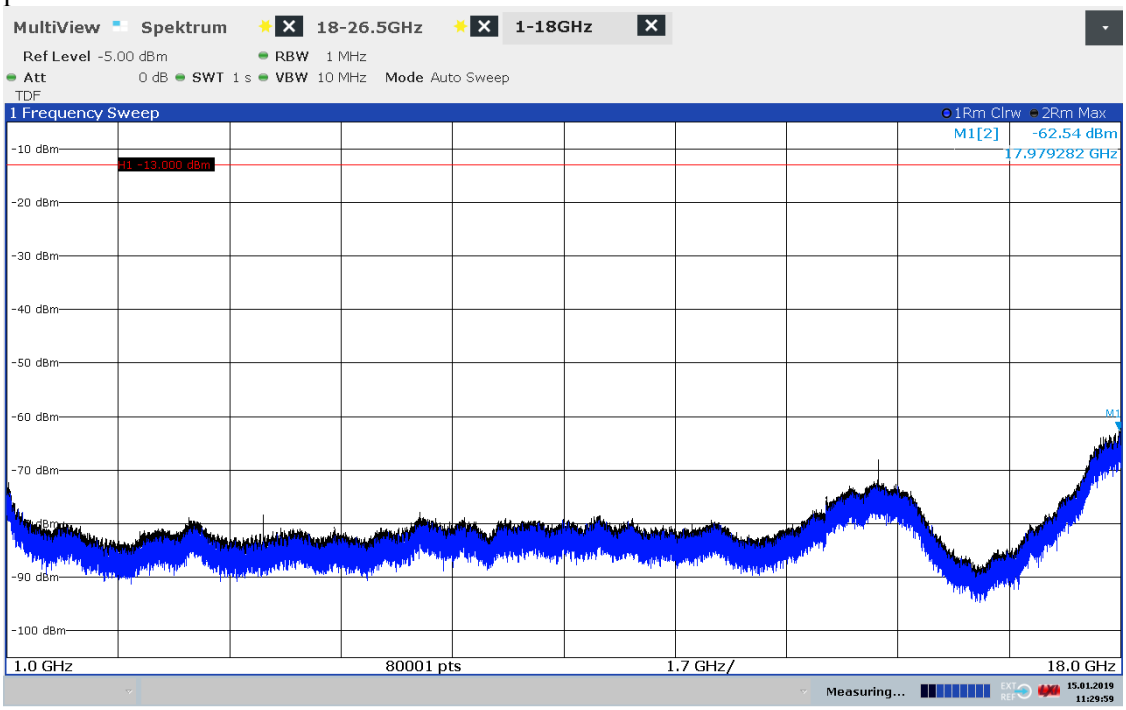
11:35:18 15.01.2019

Diagram 6: 1 – 18 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, EIRP Vertical polarization



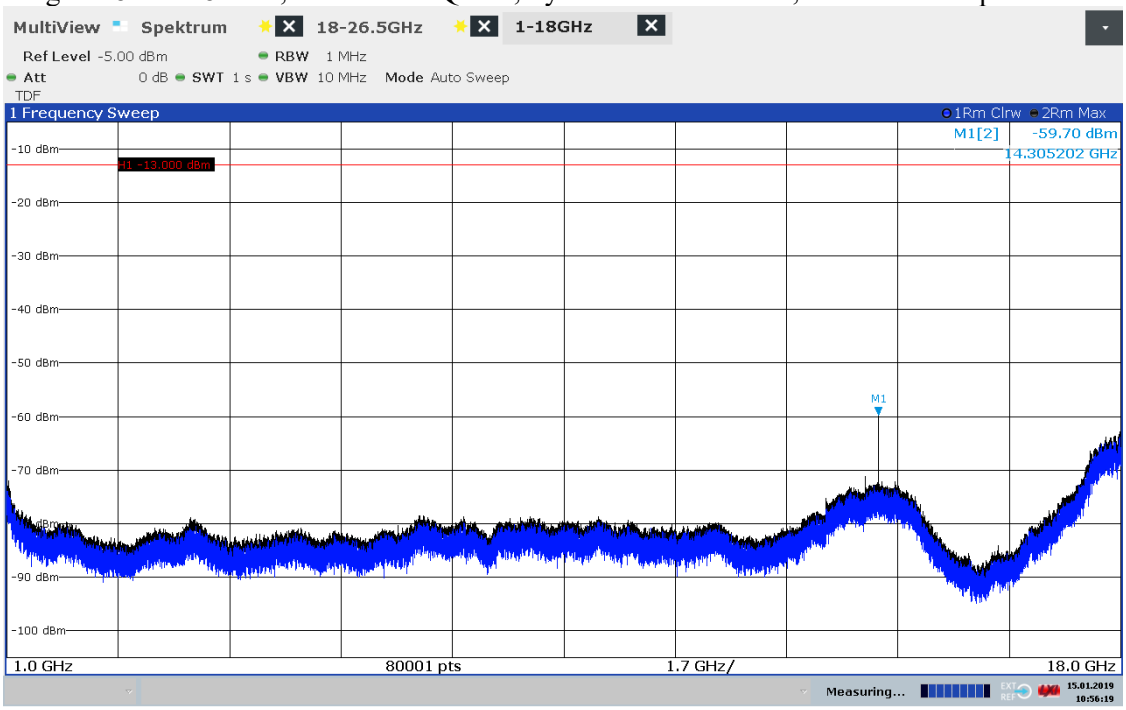
11:37:55 15.01.2019

Diagram 7: 1 – 18 GHz, Modulation QPSK, Symbolic name: MTH_{100}, EIRP Horizontal polarization



11:29:59 15.01.2019

Diagram 8: 1 – 18 GHz, Modulation QPSK, Symbolic name: MTH, EIRP Vertical polarization



10:56:20 15.01.2019

Diagram 9: 18 – 26.5 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, EIRP Horizontal polarization

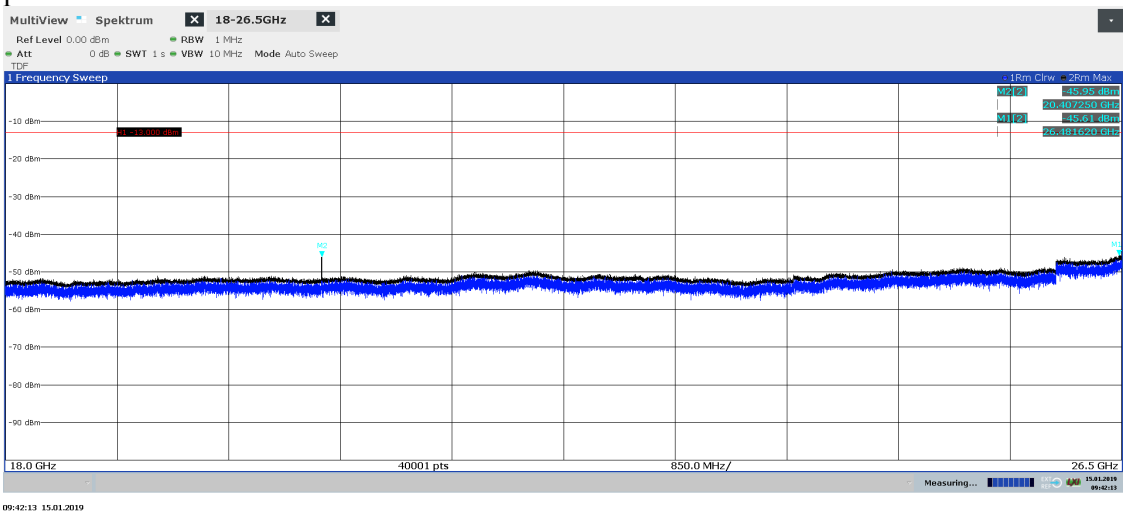


Diagram 10: 18 – 26.5 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, EIRP Vertical polarization

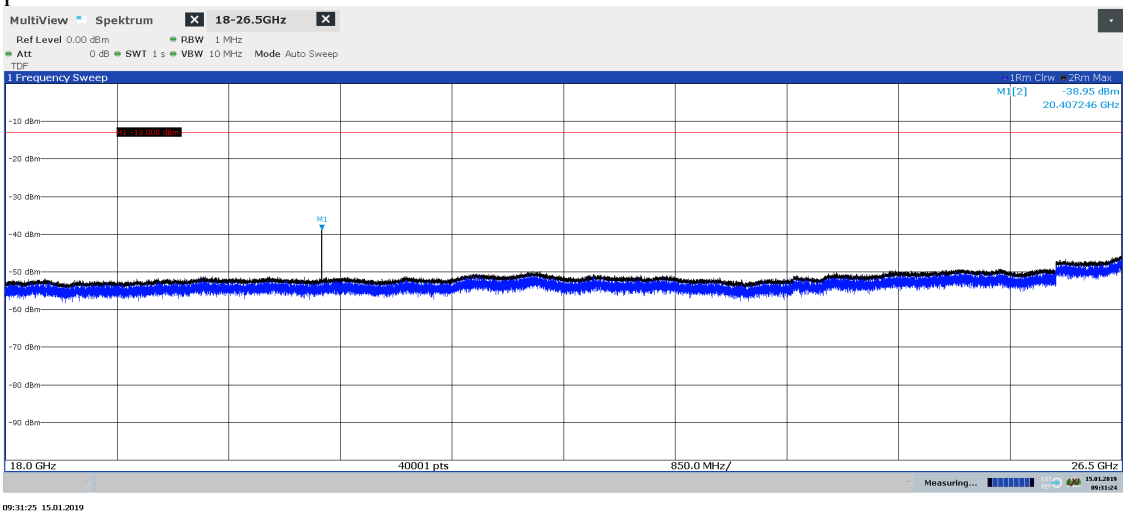


Diagram 11: 18 – 26.5 GHz, Modulation QPSK, Symbolic name: MTH_{100}, EIRP Horizontal polarization

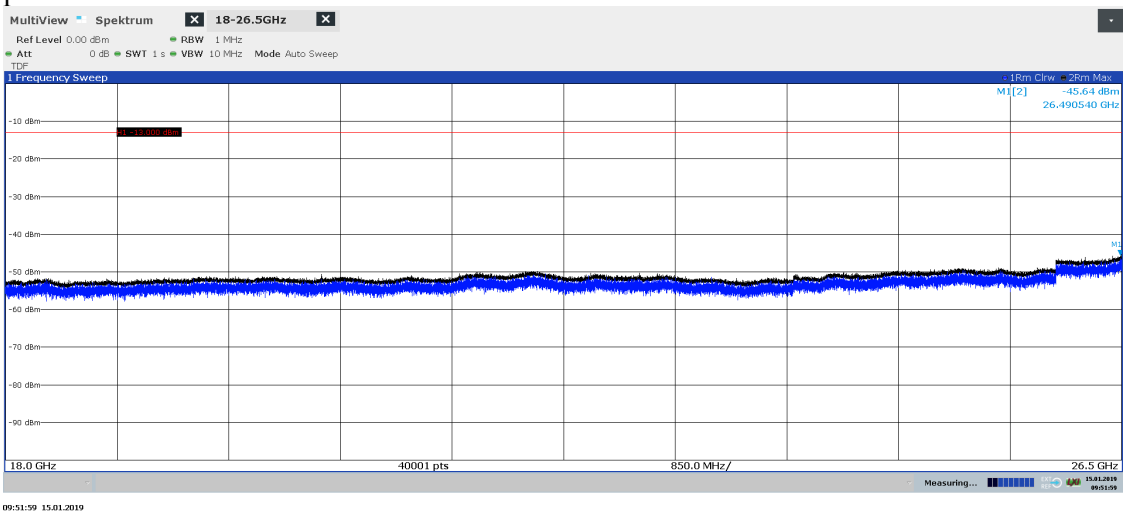


Diagram 12: 18 – 26.5 GHz, Modulation QPSK, Symbolic name: MTH_{100}, EIRP Vertical polarization

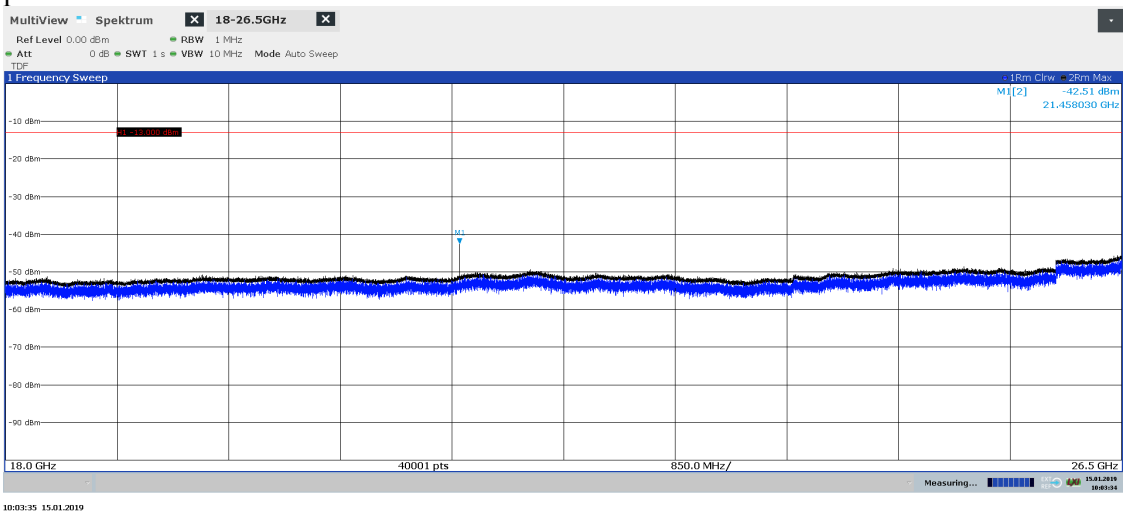
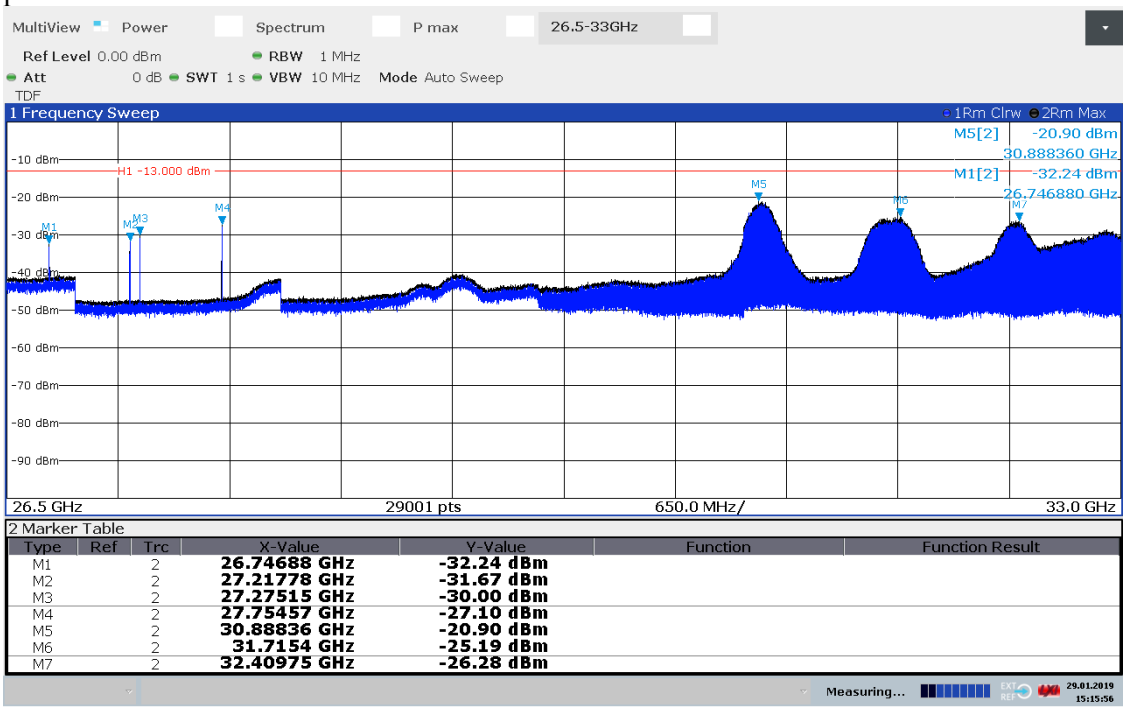
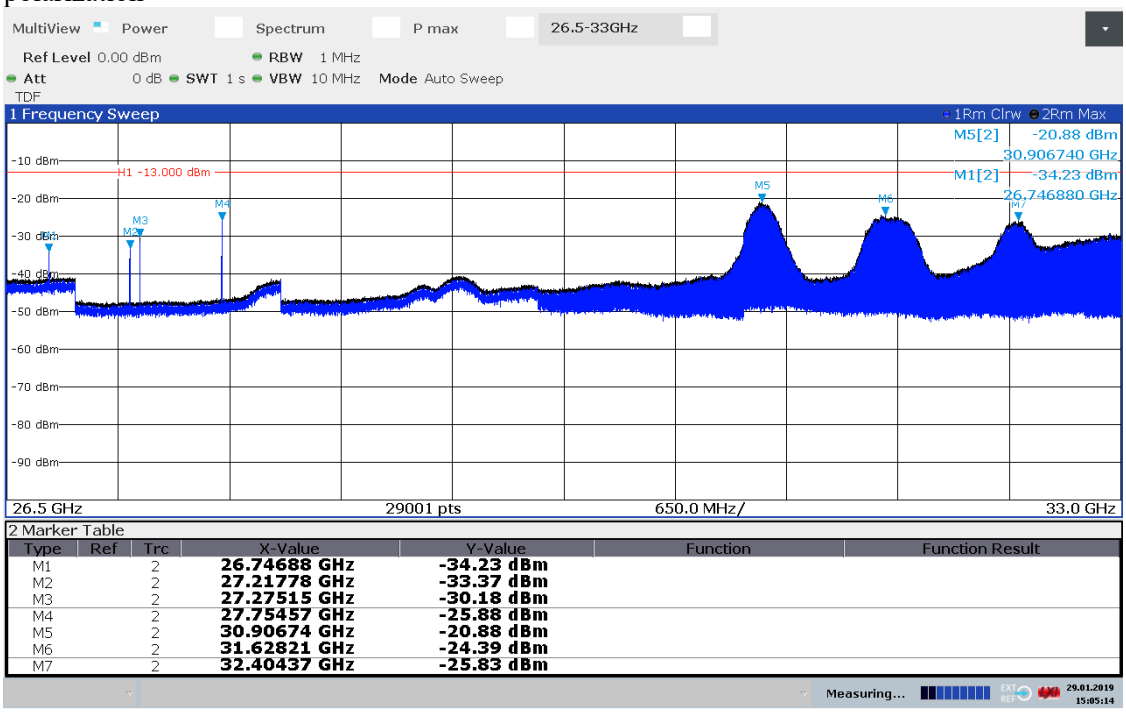


Diagram 13: 26.5 – 33 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, EIRP Horizontal polarization



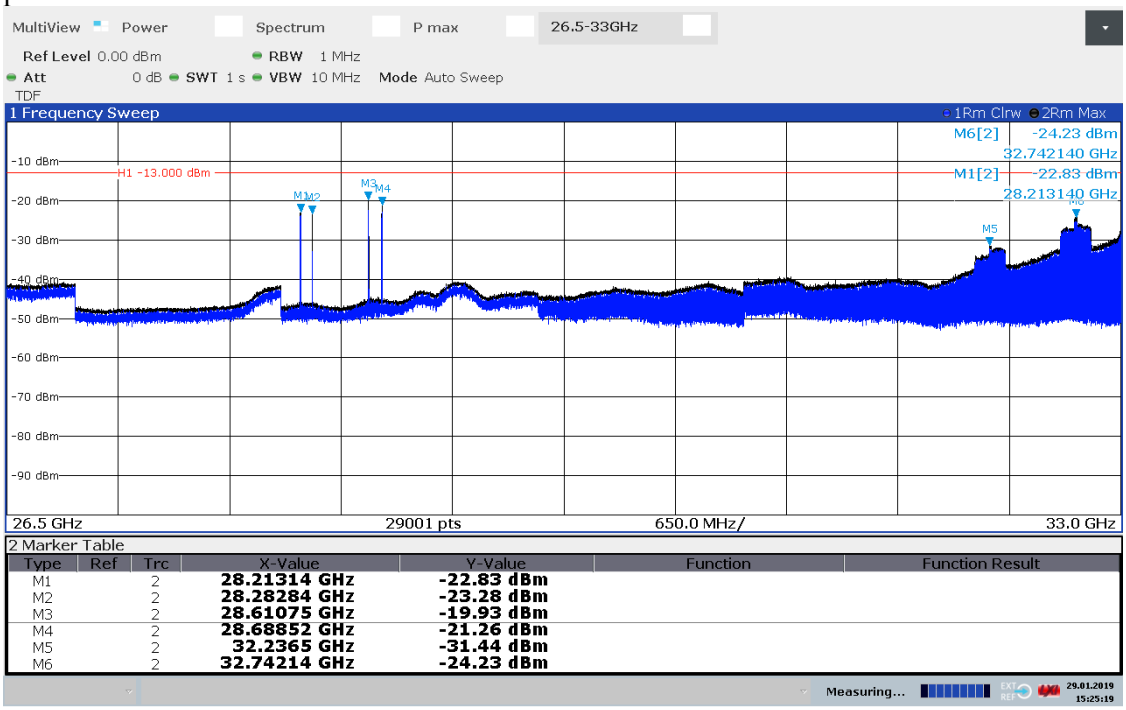
15:15:57 29.01.2019

Diagram 14: 26.5 – 33 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, EIRP Vertical polarization



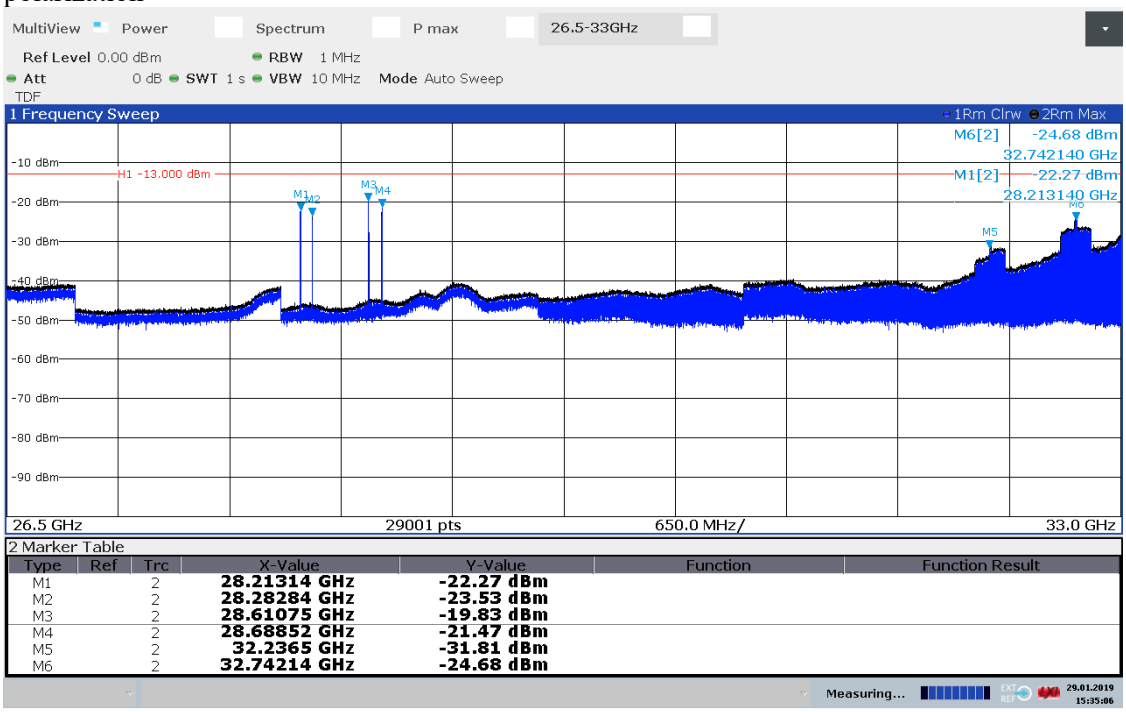
15:05:15 29.01.2019

Diagram 15: 26.5 – 33 GHz, Modulation QPSK, Symbolic name: MTH_{100}, EIRP Horizontal polarization



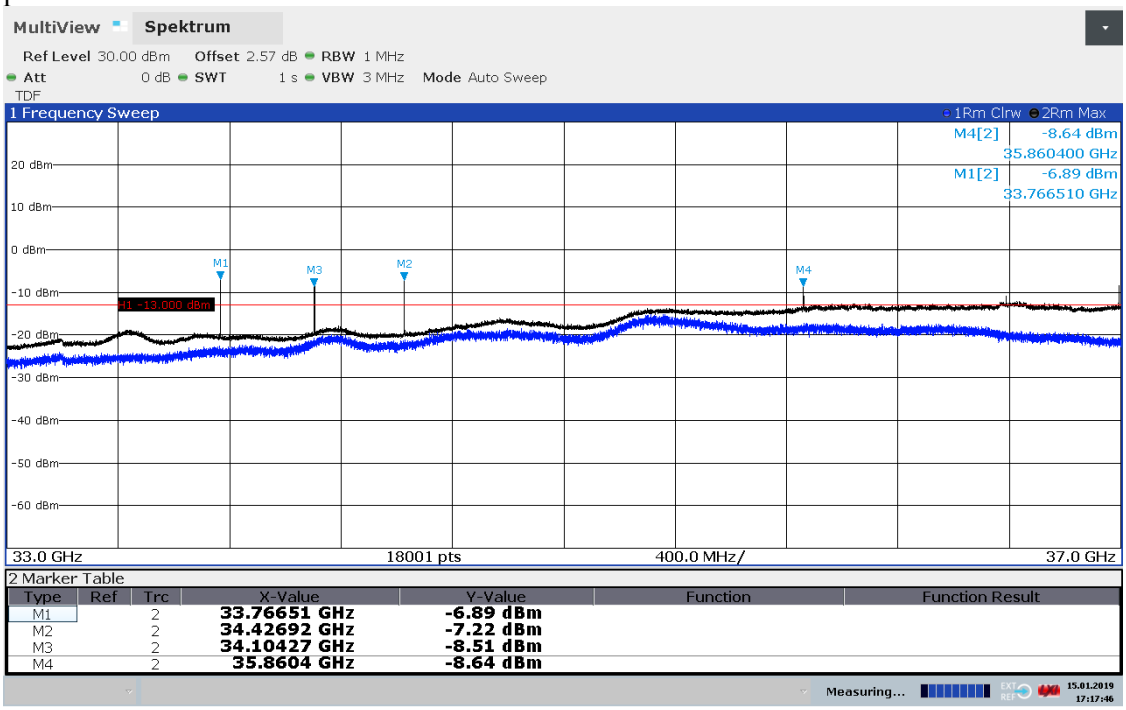
15:25:20 29.01.2019

Diagram 16: 26.5 – 33 GHz, Modulation QPSK, Symbolic name: MTH_{100}, EIRP Vertical polarization



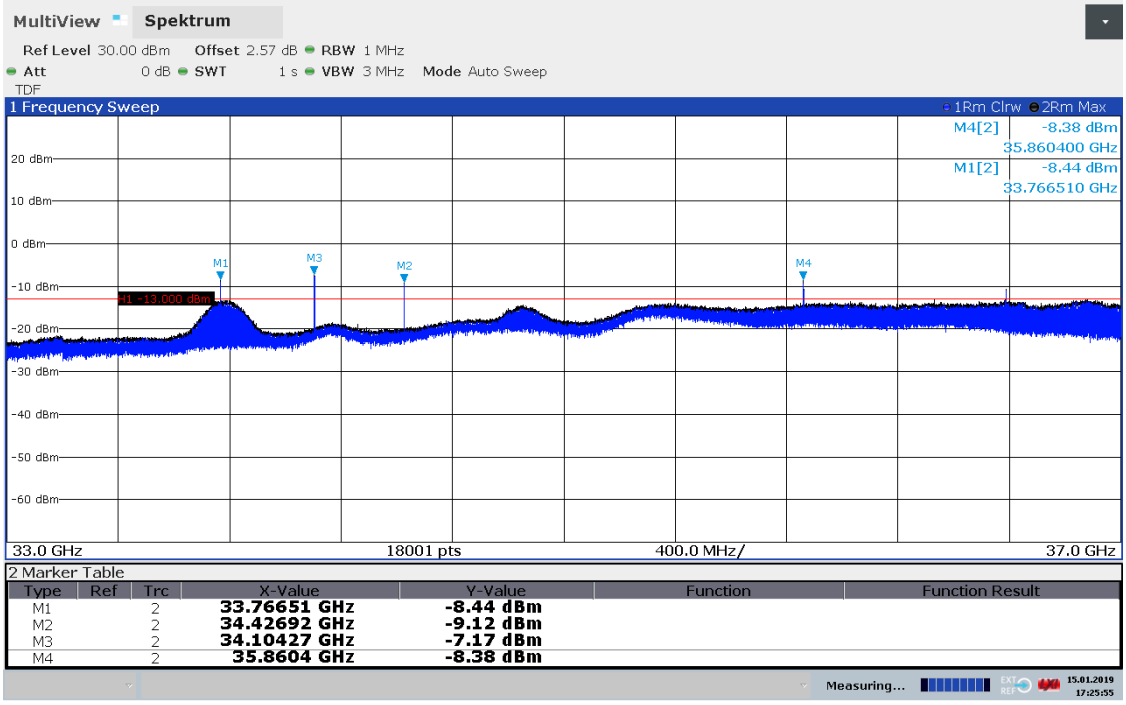
15:35:07 29.01.2019

Diagram 17: 33 – 37 GHz, Modulation QPSK, Symbolic name: WC5Lo$_{100}$, EIRP Horizontal polarization



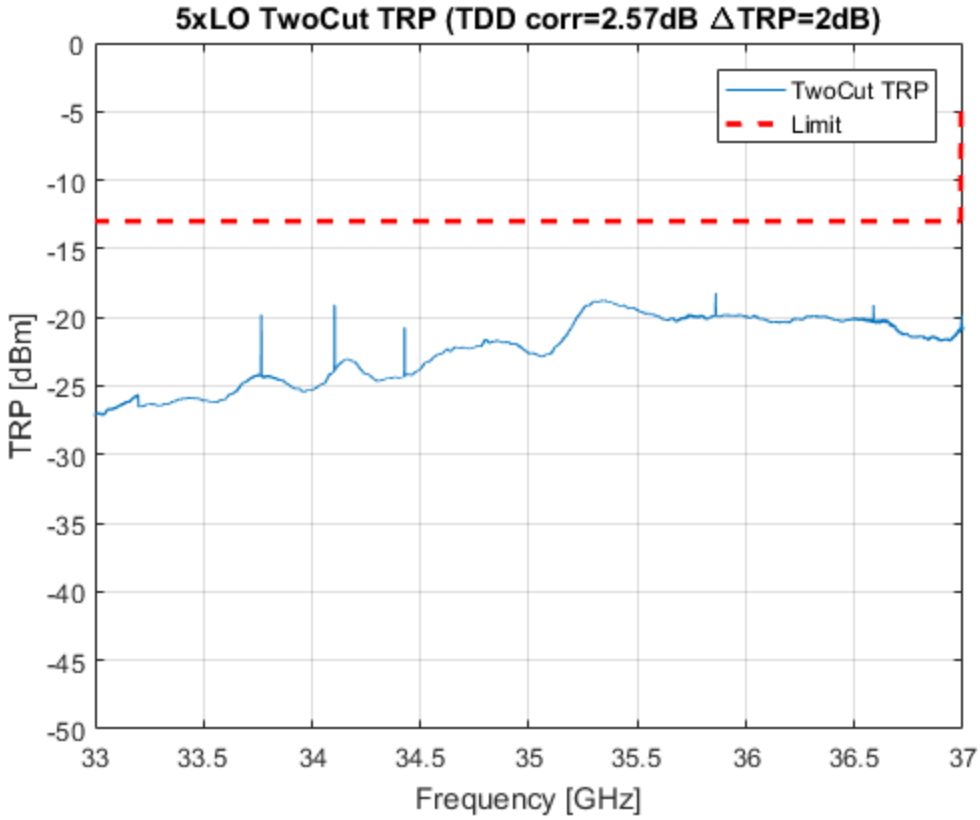
17:17:46 15.01.2019

Diagram 18 33 – 37 GHz, Modulation QPSK, Symbolic name: WC5Lo$_{100}$, EIRP Vertical polarization



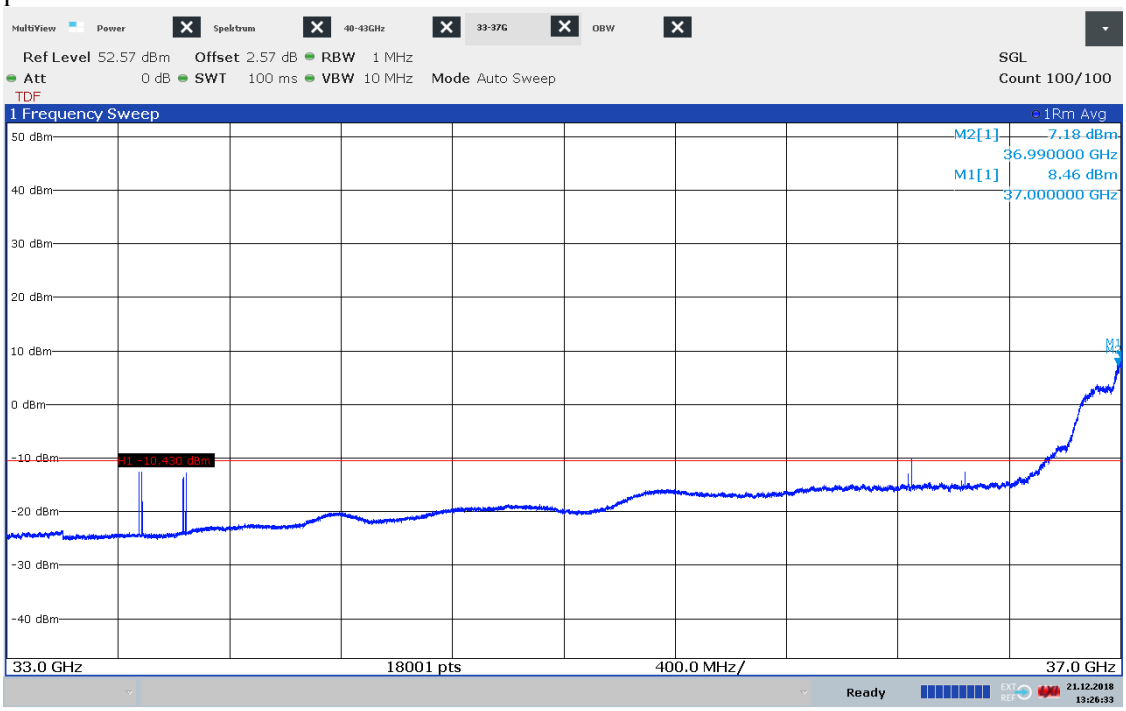
17:25:55 15.01.2019

Diagram 19: 33 – 37 GHz, Modulation QPSK, Symbolic name: $WC5Lo_{100,}$ Two Cut TRP



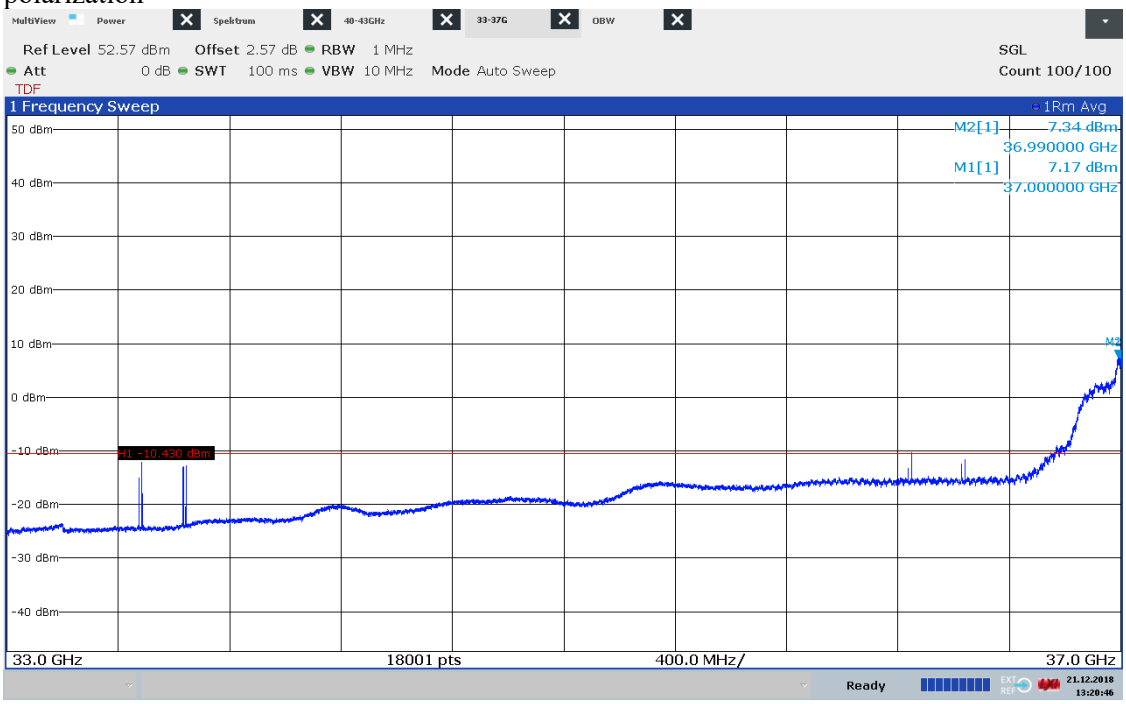
According to ANSI C63.26 mmWave JTG V1.0 chapter 6.6.5.2.1

Diagram 20: 33 – 37 GHz, Modulation QPSK, Symbolic name: $2BEL_{100}$, EIRP Horizontal polarization



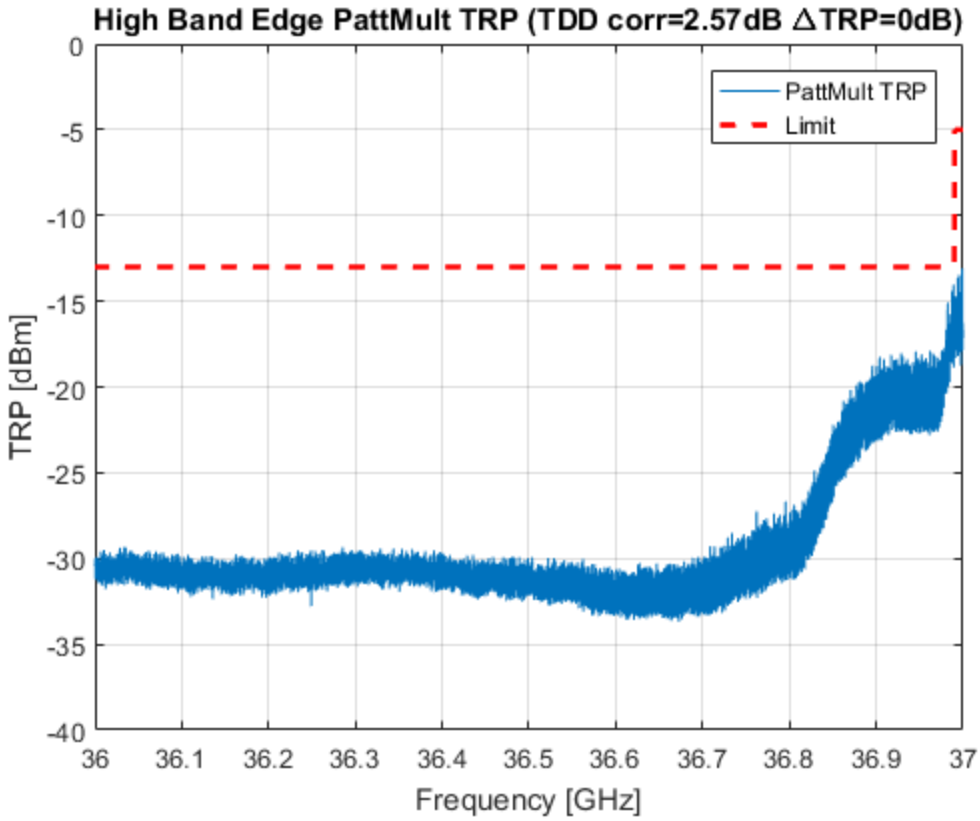
13:26:34 21.12.2018

Diagram 21 33 – 37 GHz, Modulation QPSK, Symbolic name: $2BEL_{100}$, EIRP Vertical polarization



13:20:47 21.12.2018

Diagram 22: 36 – 37 GHz, Modulation QPSK, Symbolic name: 2BEL$_{100}$, Pattern multiplication



According to ANSI C63.26 mmWave JTG V1.0 chapter 6.6.5.2.2

Diagram 23: 38.15 – 38.85 GHz, Modulation QPSK, Symbolic name: $2ML_{100}$, EIRP Horizontal polarization

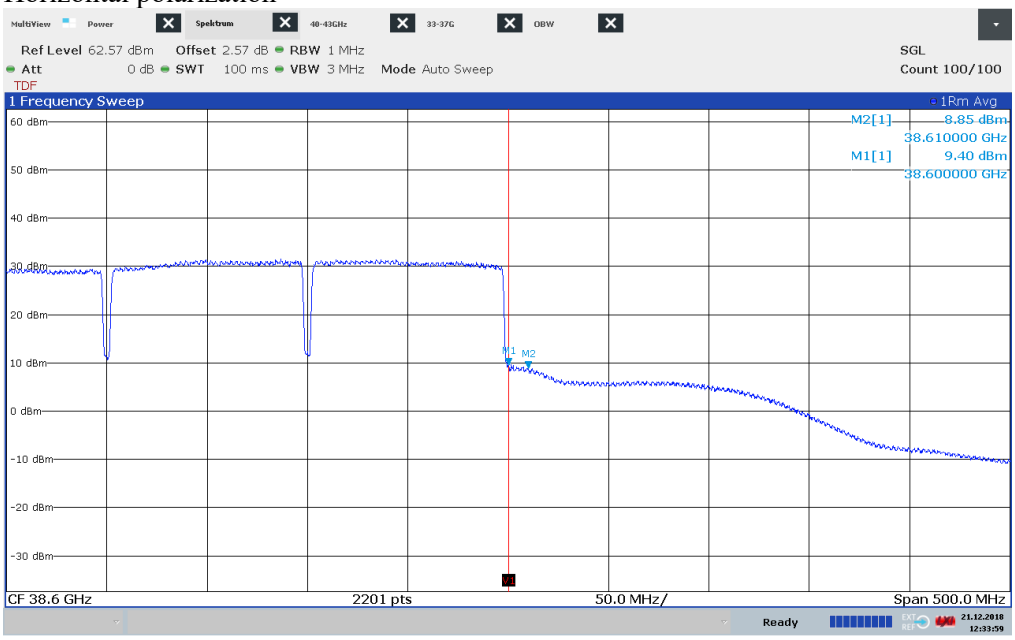
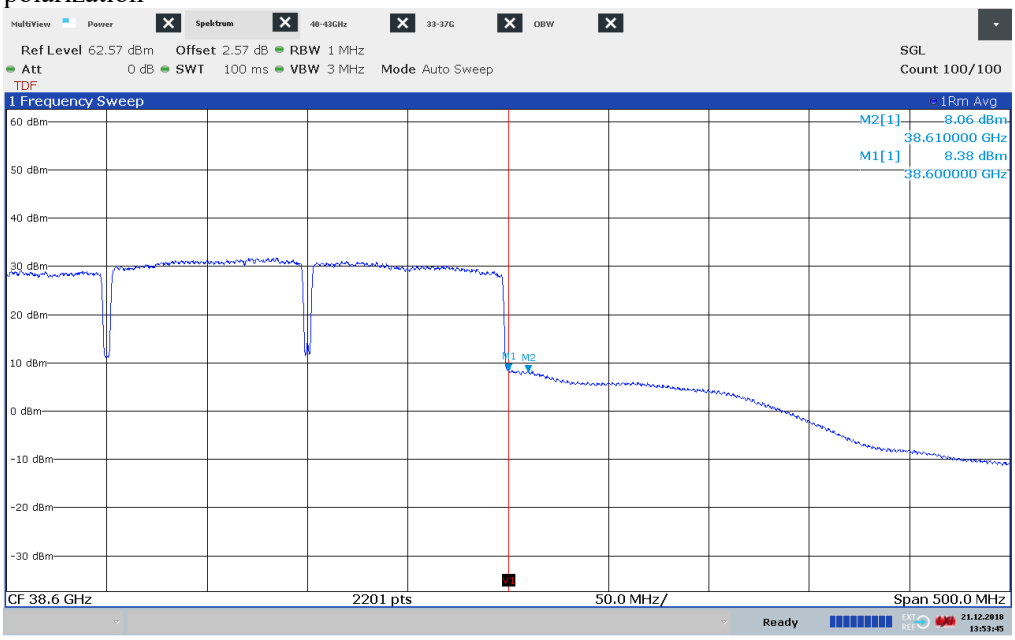


Diagram 24: 38.15 – 38.85 GHz Modulation QPSK, Symbolic name: $2ML_{100}$, EIRP Vertical polarization



Note: According to ANSI C63.26 mmWave JTG V1.0 chapter 6.6.5.2.5 The conducted Power value can be calculated:

Power EIRP Be Low Hor/ Ver [dbm]	Power EIRP Be Low - 10MHz[dBm]	Antenna Gain[dBi]	Conducted power (Hor/ Ver) – antenna gain. BE/ Be -10MHz [dBm]
9.40/ 8.38	8.85/ 8.06	28.6	-15.96/ -16.76

Diagram 25: 38.15 – 38.85 GHz, Modulation QPSK, Symbolic name: $2MH_{100}$, EIRP Horizontal polarization

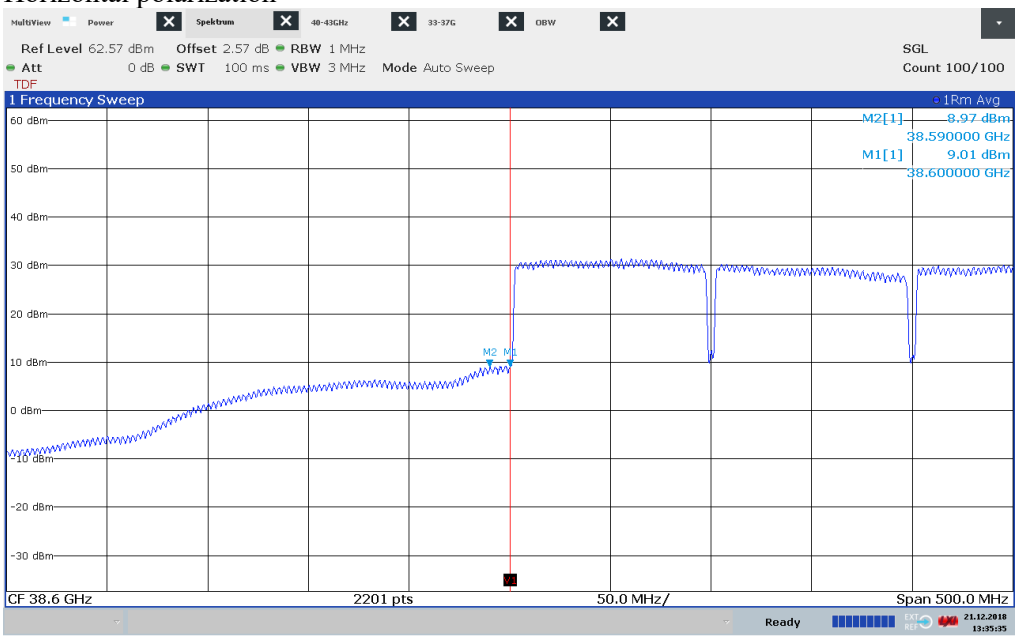
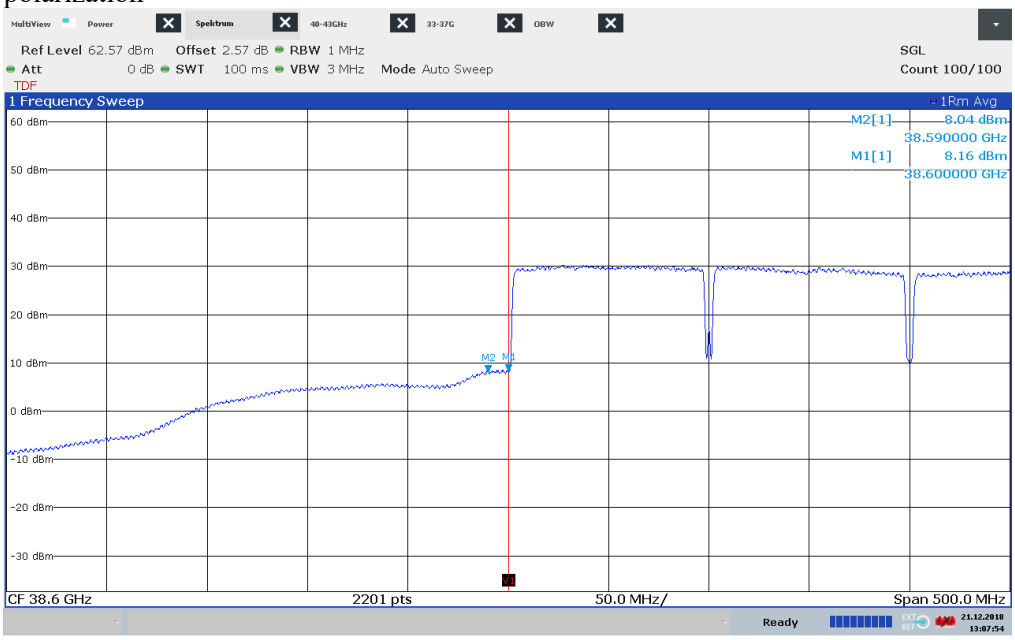


Diagram 26: 38.15 – 38.85 GHz Modulation QPSK, Symbolic name: $2MH_{100}$, EIRP Vertical polarization



Note: According to ANSI C63.26 mmWave JTG V1.0 chapter 6.6.5.2.5 The conducted Power value can be calculated:

Power EIRP Be Low Hor/ Ver [dbm]	Power EIRP Be Low - 10MHz[dBm]	Antenna Gain[dBi]	Conducted power (Hor/ Ver) – antenna gain. BE/ Be -10MHz [dBm]
9.01/ 8.16	8.97/ 8.04	28.6	-16.42/ -16.49

Diagram 27: 40 –43 GHz, Modulation QPSK, Symbolic name: $2BEH_{100}$, EIRP Horizontal polarization

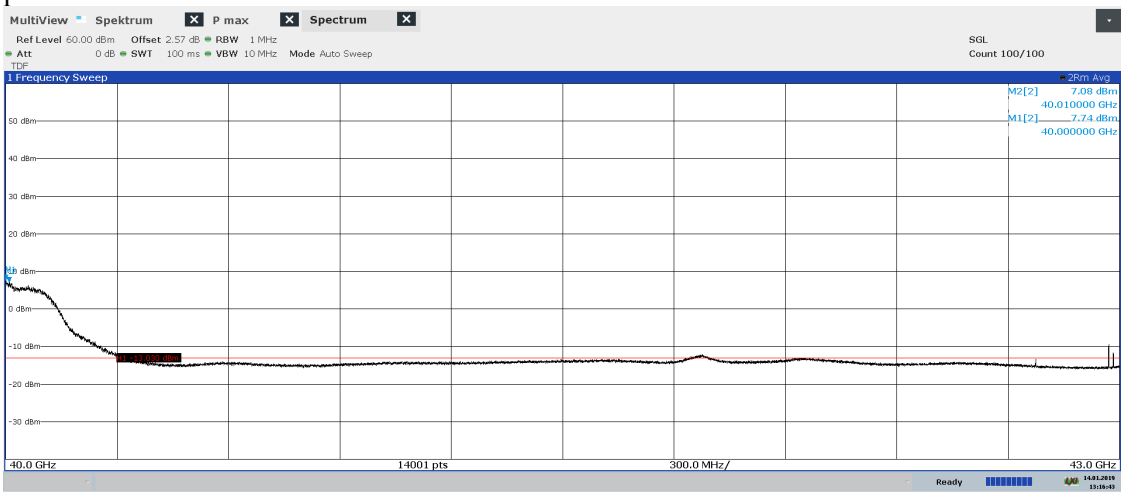


Diagram 28: 40 – 43 GHz Modulation QPSK, Symbolic name: $2BEH_{100}$, EIRP Vertical polarization

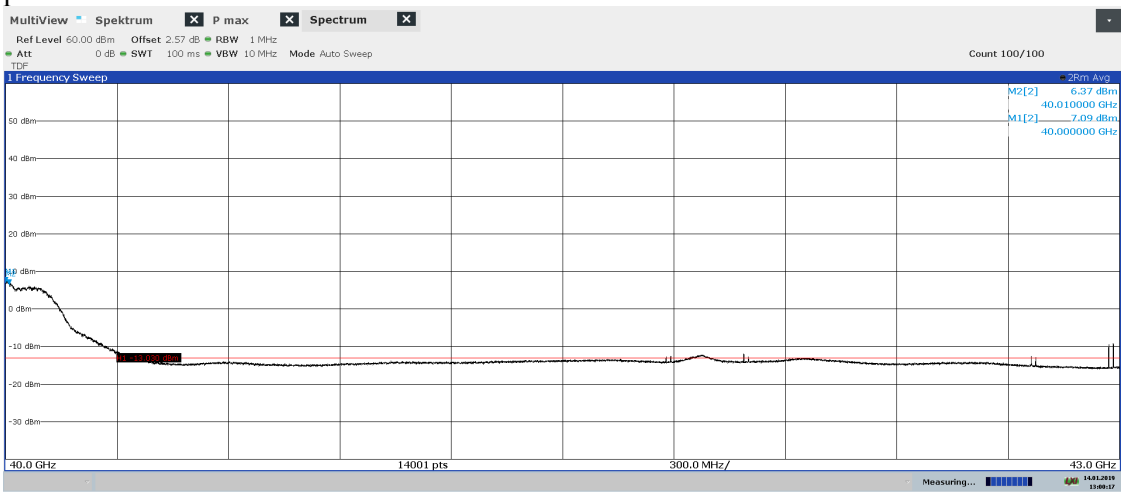
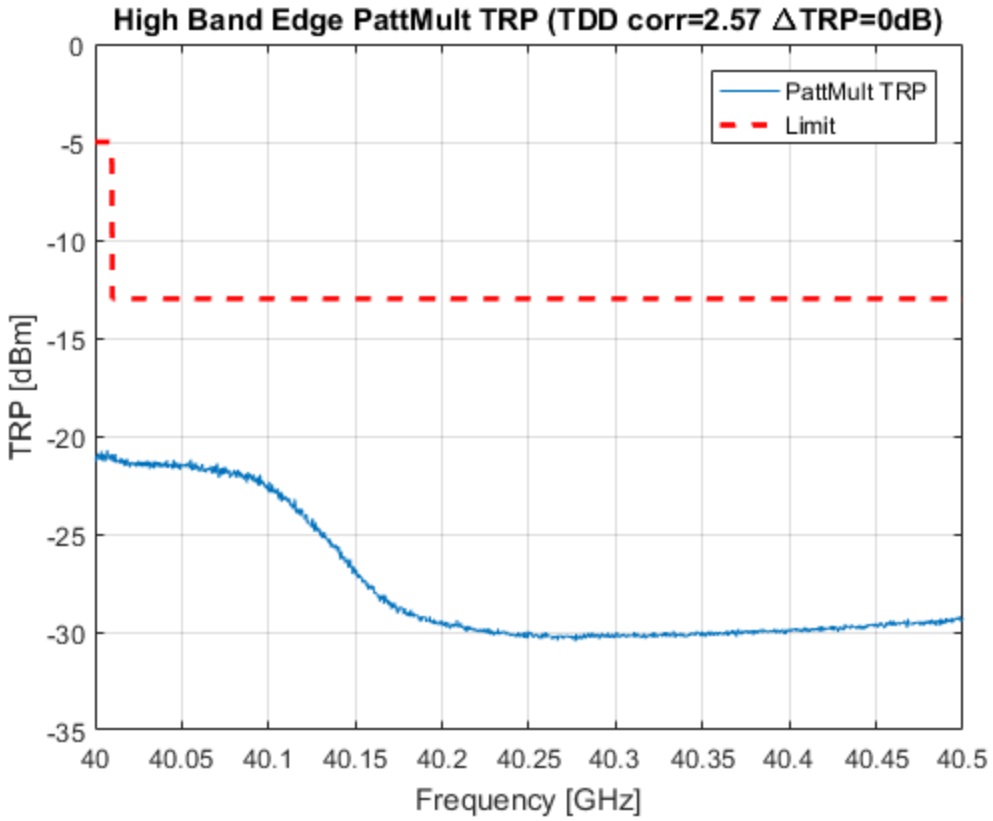
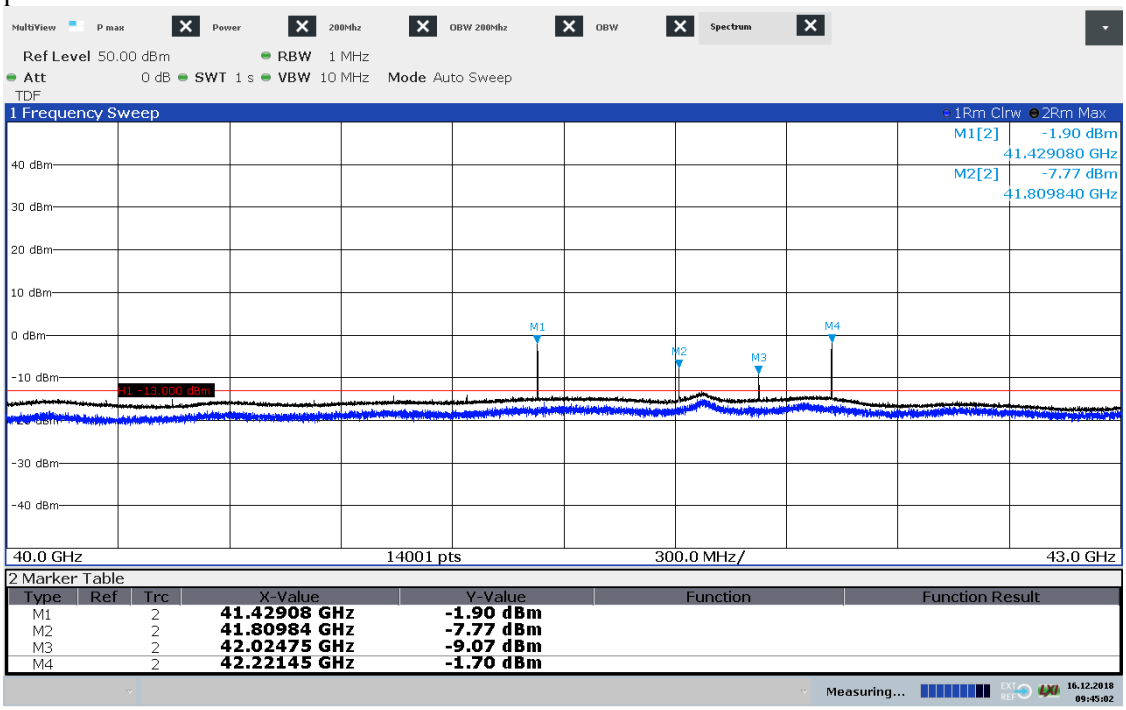


Diagram 29: 40 – 43 GHz, Modulation QPSK, Symbolic name: $2BEL_{100}$, Pattern multiplication



According to ANSI C63.26 mmWave JTG V1.0 chapter 6.6.5.2.2

Diagram 30: 40 –43 GHz, Modulation QPSK, Symbolic name: WC6Lo$_{100}$, EIRP Horizontal polarization

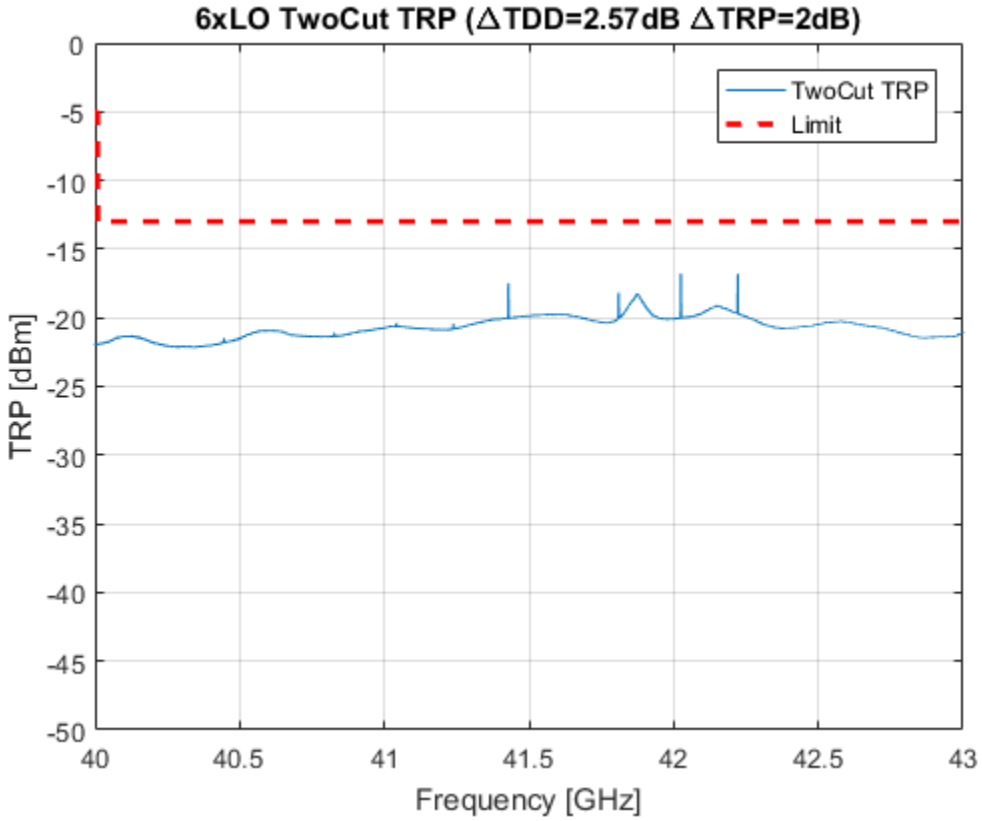


09:45:03 16.12.2018

Diagram 30: 40 – 43 GHz, Modulation QPSK, Symbolic name: WC6Lo$_{100}$, EIRP Vertical polarization

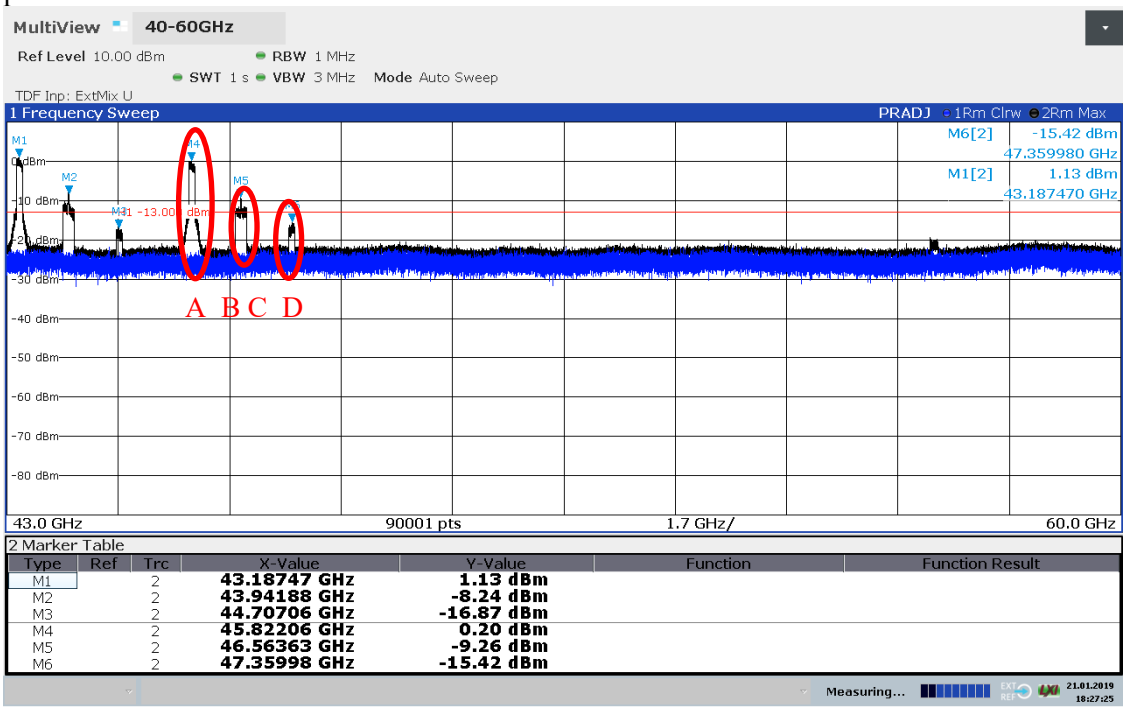
09:50:39 16.12.2018

Diagram 31: 40 – 43 GHz, Modulation QPSK, Symbolic name: WC6Lo$_{100}$, Two Cut TRP



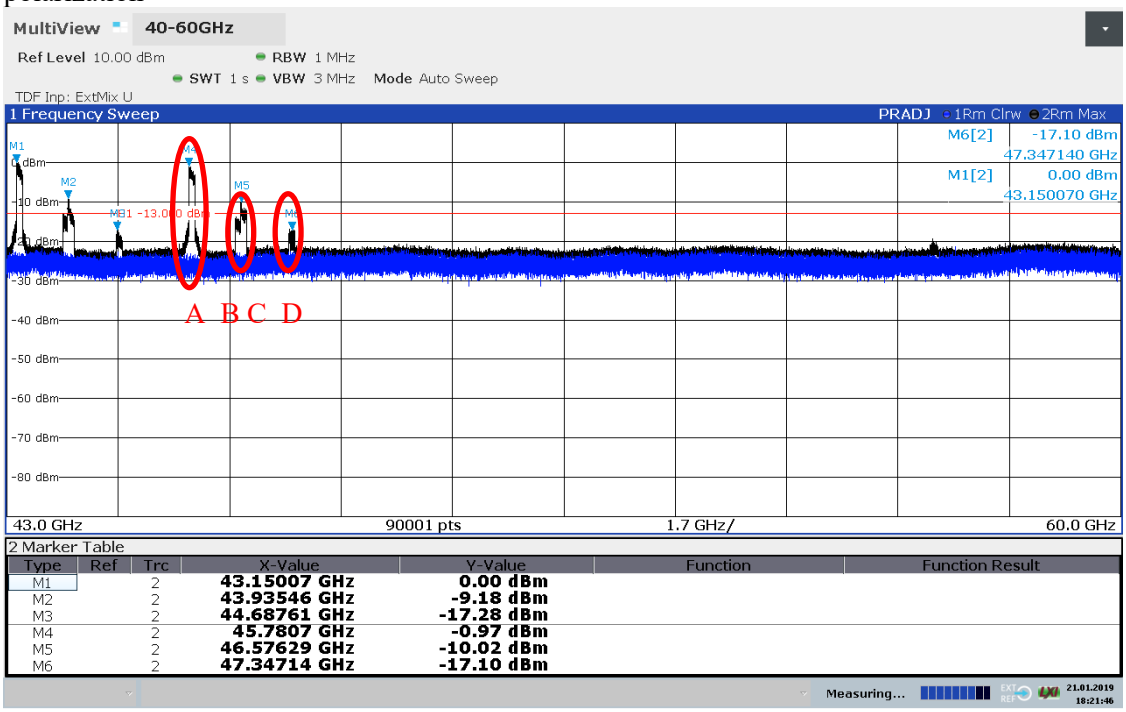
According to ANSI C63.26 mmWave JTG V1.0 chapter 6.6.5.2.1

Diagram 32: 43 – 60 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, EIRP Horizontal polarization



18:27:25 21.01.2019

Diagram 33: 43 – 60 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, EIRP Vertical polarization

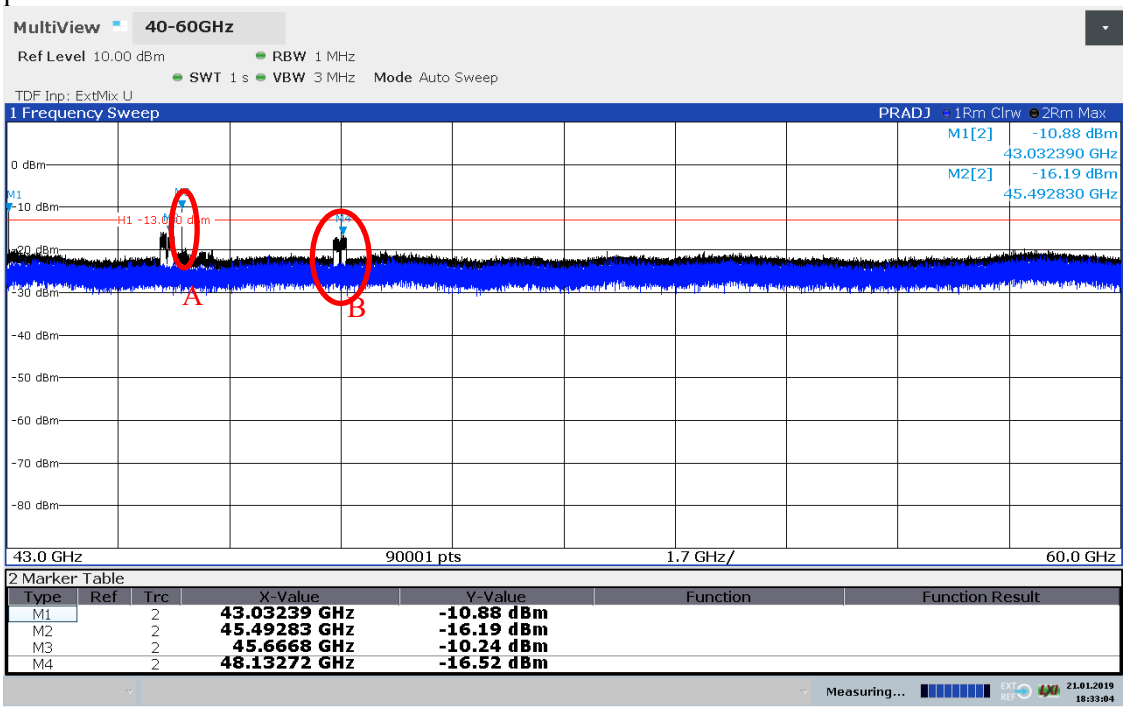


18:21:46 21.01.2019

“False signals” originating from unwanted mixer products between LO signal generated by the spectrum analyzer and the strong out of measurement band RF-signal (EUT carrier frequencies) are marked with red circles. The frequency of the “false signals” can be calculated and are show in the table below.

Plot label	F EUT [GHz]	Mixing indicies n [-]	m [-]	"False F" [GHz]
A	37.05	4	-1	45.85
B	37.75	4	-1	46.55
C	37.85	4	-1	46.65
D	38.55	4	-1	47.35

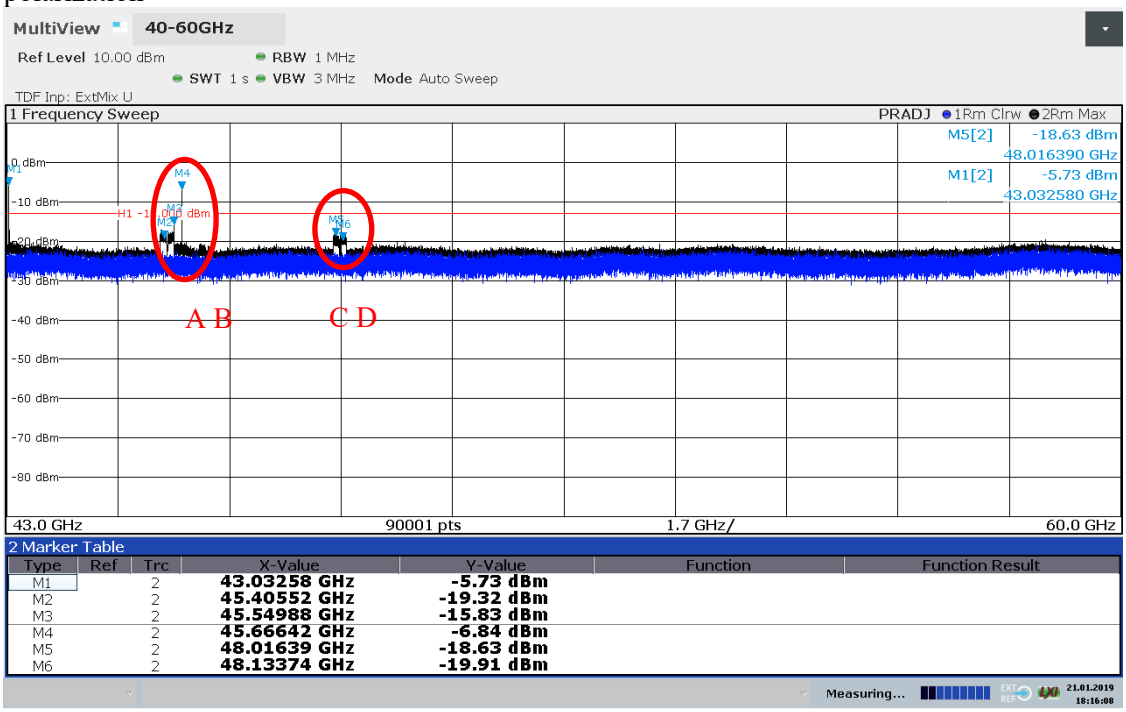
Diagram 34: 43 – 60 GHz, Modulation QPSK, Symbolic name: MTH_{100}, EIRP Horizontal polarization



18:33:05 21.01.2019

Note: Marker 1 is a 6 LO frequency worst case tested in other configuration.

Diagram 35: 43 – 60 GHz, Modulation QPSK, Symbolic name: MTH_{100}, EIRP Vertical polarization



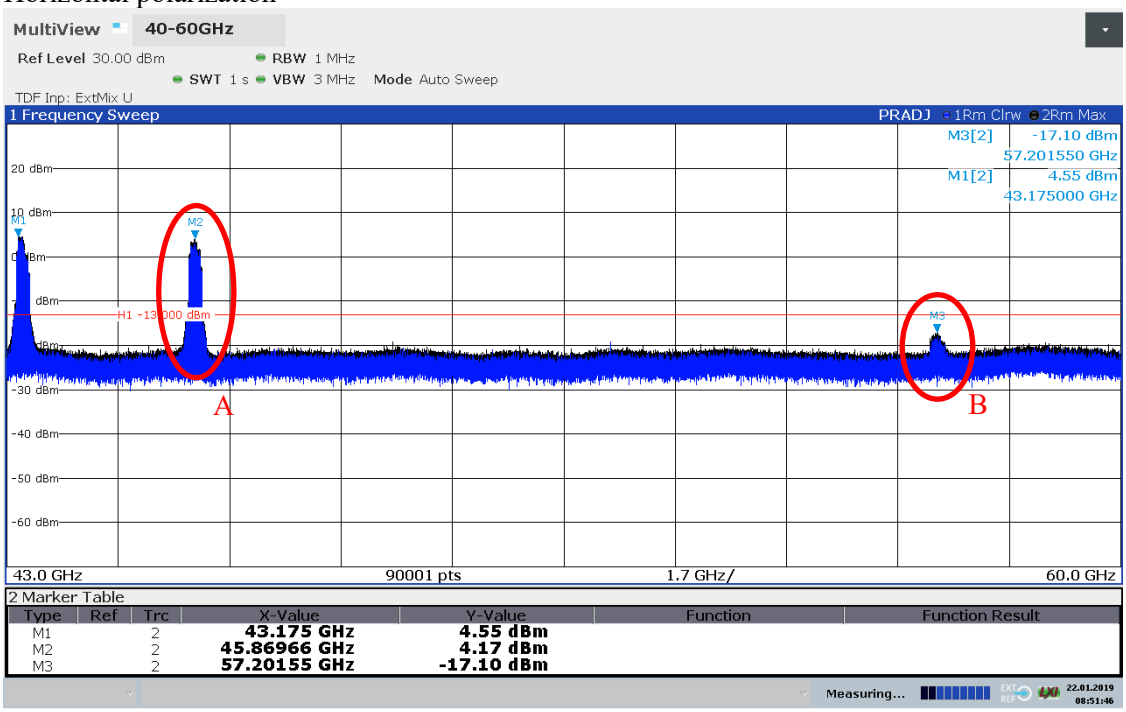
18:16:08 21.01.2019

Note: Marker 1 is a 6 LO frequency worst case tested in other configuration.

“False signals” originating from unwanted mixer products between LO signal generated by the spectrum analyzer and the strong out of measurement band RF-signal (EUT carrier frequencies) are marked with red circles. The frequency of the “false signals” can be calculated and are show in the table below.

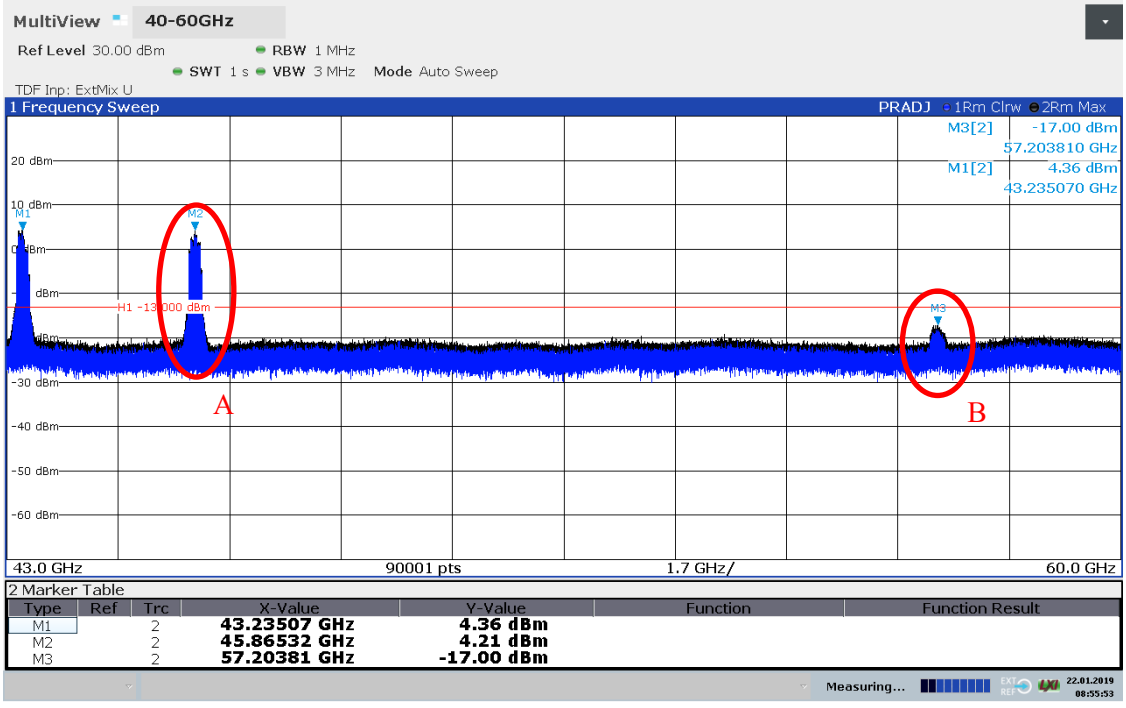
Plot label	F EUT [GHz]	Mixing indicies n [-]	m [-]	"False F" [GHz]
A	39.85	4	-1	45.56
B	39.95	4	-1	45.66
C	39.25	4	-1	48.05
D	39.35	4	-1	48.15

Diagram 36: 43 – 60 GHz, Modulation QPSK, Symbolic name: WC43.2GHz$_{100}$, EIRP Horizontal polarization



08:51:46 22.01.2019

Diagram 37: 43 – 60 GHz, Modulation QPSK, Symbolic name: WC43.2GHz$_{100}$, EIRP Vertical polarization

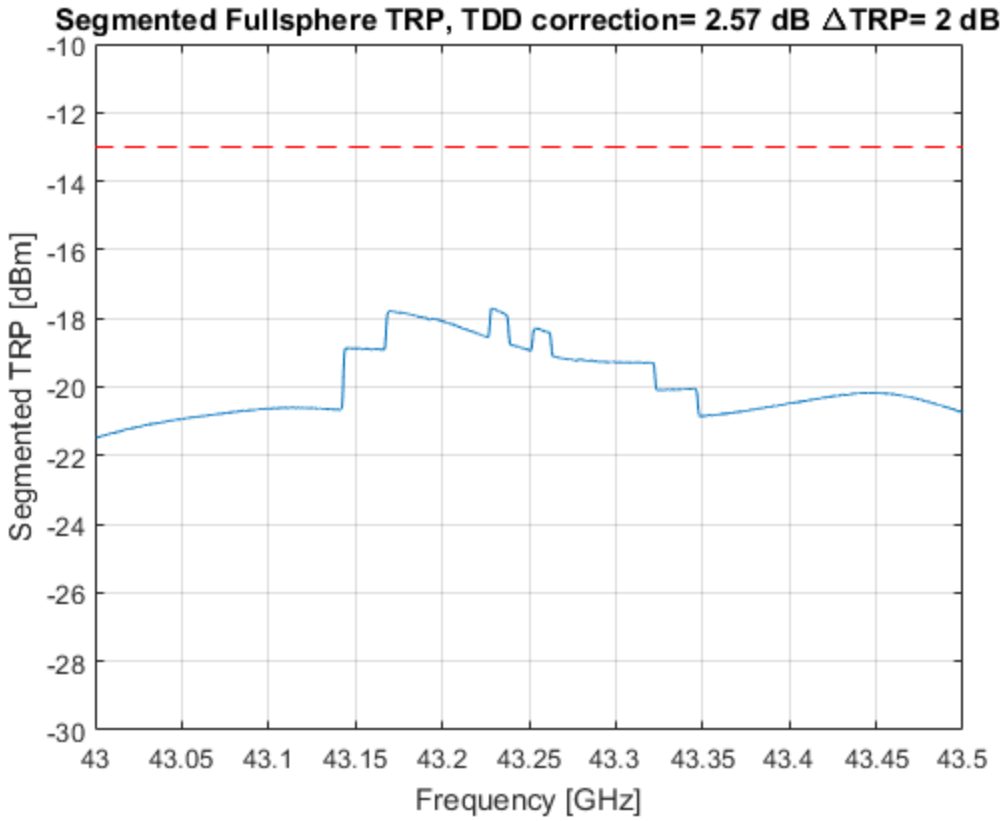


08:55:54 22.01.2019

“False signals” originating from unwanted mixer products between LO signal generated by the spectrum analyzer and the strong out of measurement band RF-signal (EUT carrier frequencies) are marked with red circles. The frequency of the “false signals” can be calculated and are show in the table below.

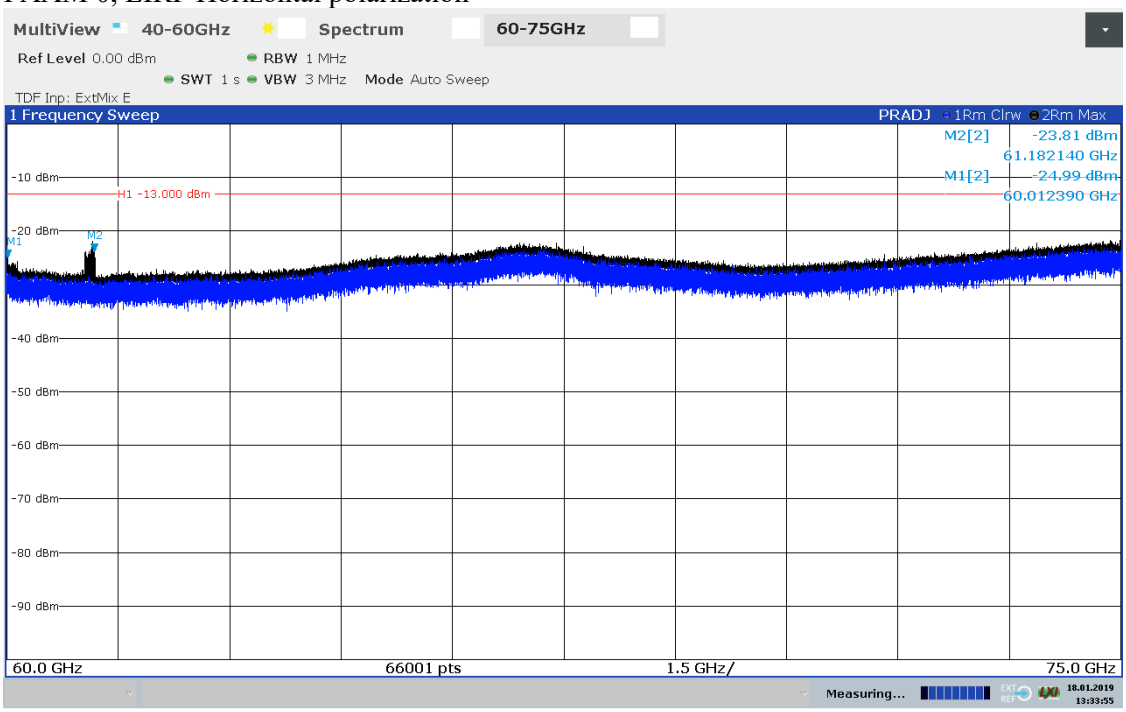
Plot label	Mixing indicies			
	F EUT [GHz]	n [-]	m [-]	"False F" [GHz]
A	37.05	4	1	45.85
B	37.05	-3	1	57.20

Diagram 38: 43 – 60 GHz, Modulation QPSK, Symbolic name: WC43.2GHz$_{100}$, Full sphere TRP



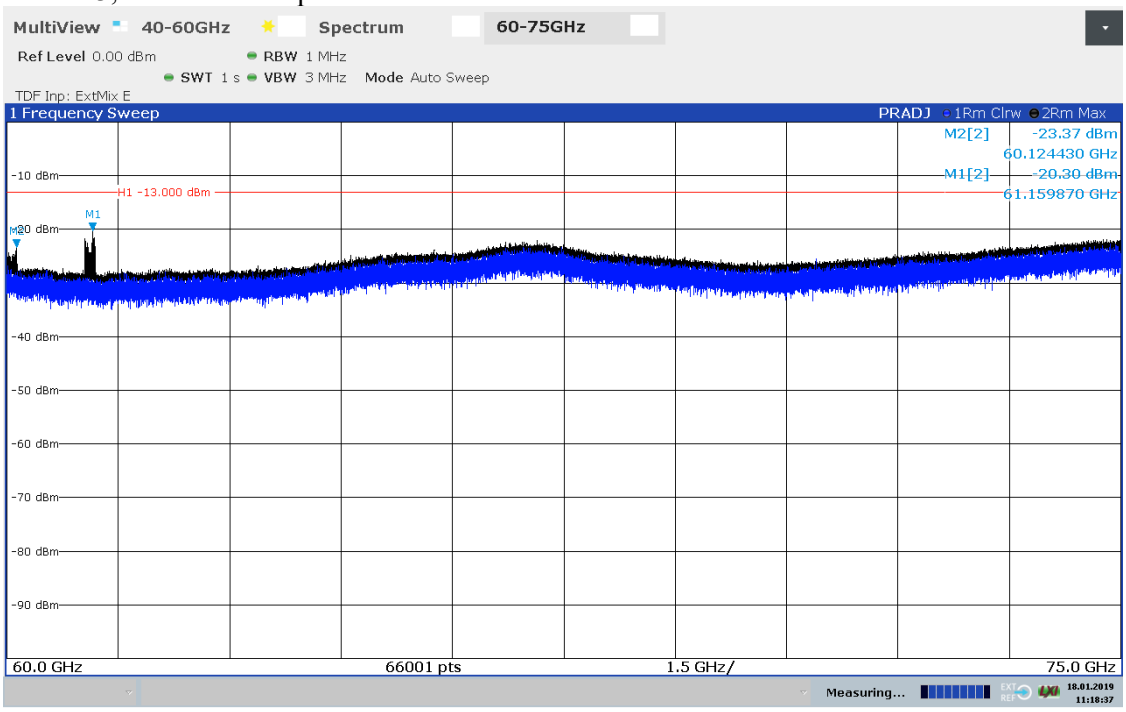
According to ANSI C63.26 mmWave JTG V1.0 chapter 6.6.5.2.3

Diagram 39: 60 – 75 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, antenna aligned to PAAM 0, EIRP Horizontal polarization



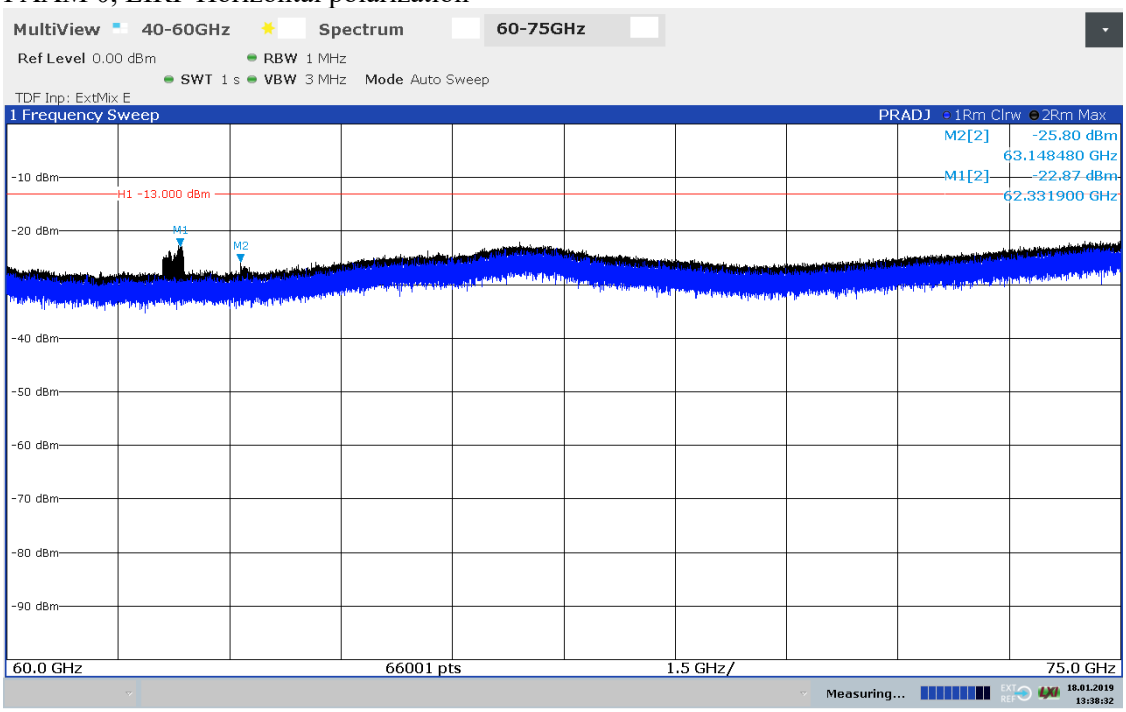
13:33:56 18.01.2019

Diagram 40: 60 – 75 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, antenna aligned to PAAM 3, EIRP Vertical polarization



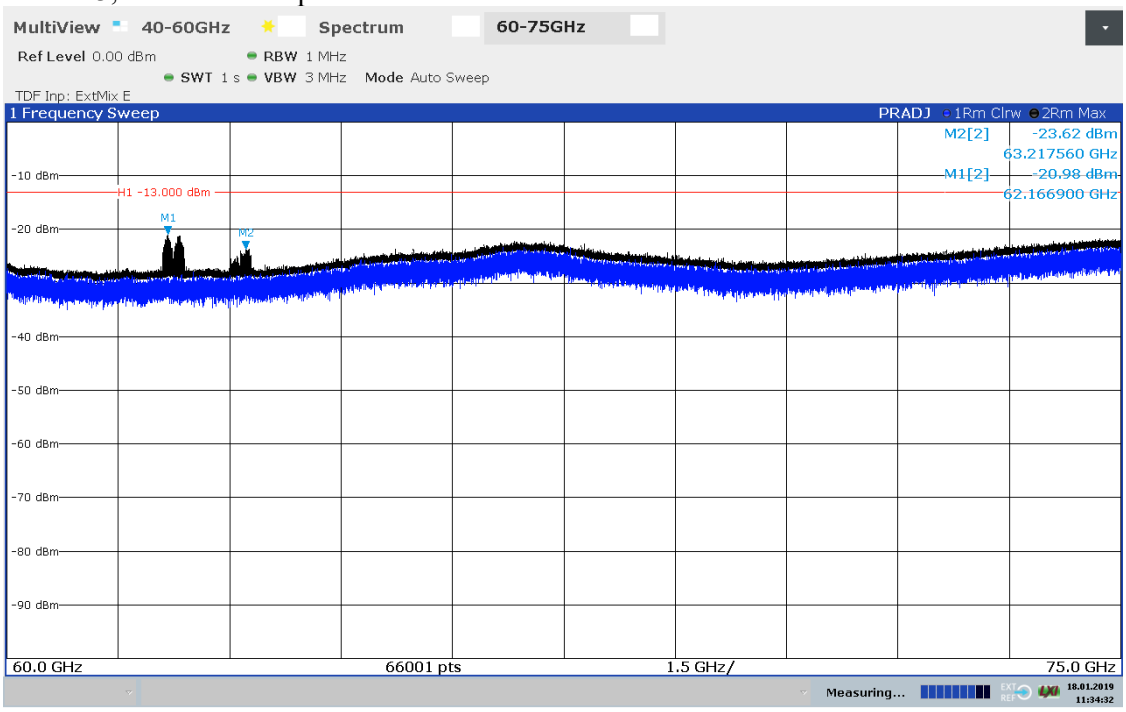
11:18:38 18.01.2019

Diagram 41: 60 – 75 GHz, Modulation QPSK, Symbolic name: MTH_{100}, antenna aligned to PAAM 0, EIRP Horizontal polarization



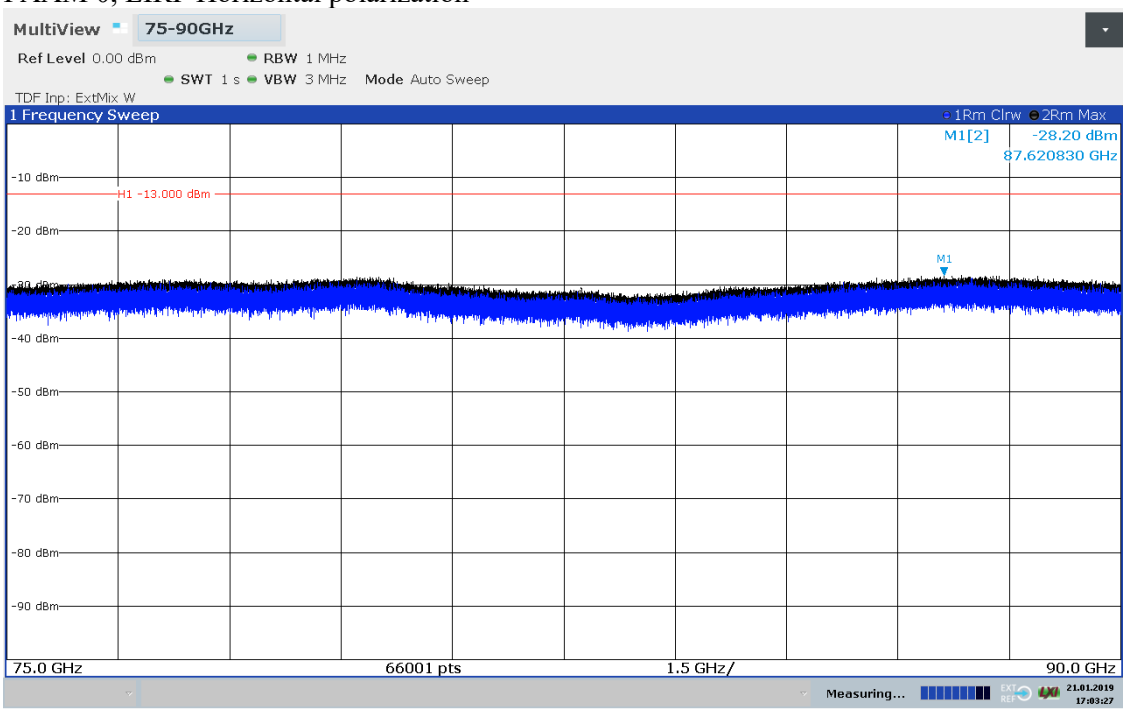
13:38:33 18.01.2019

Diagram 42: 60 – 75 GHz, Modulation QPSK, Symbolic name: MTH_{100}, antenna aligned to PAAM 3, EIRP Vertical polarization



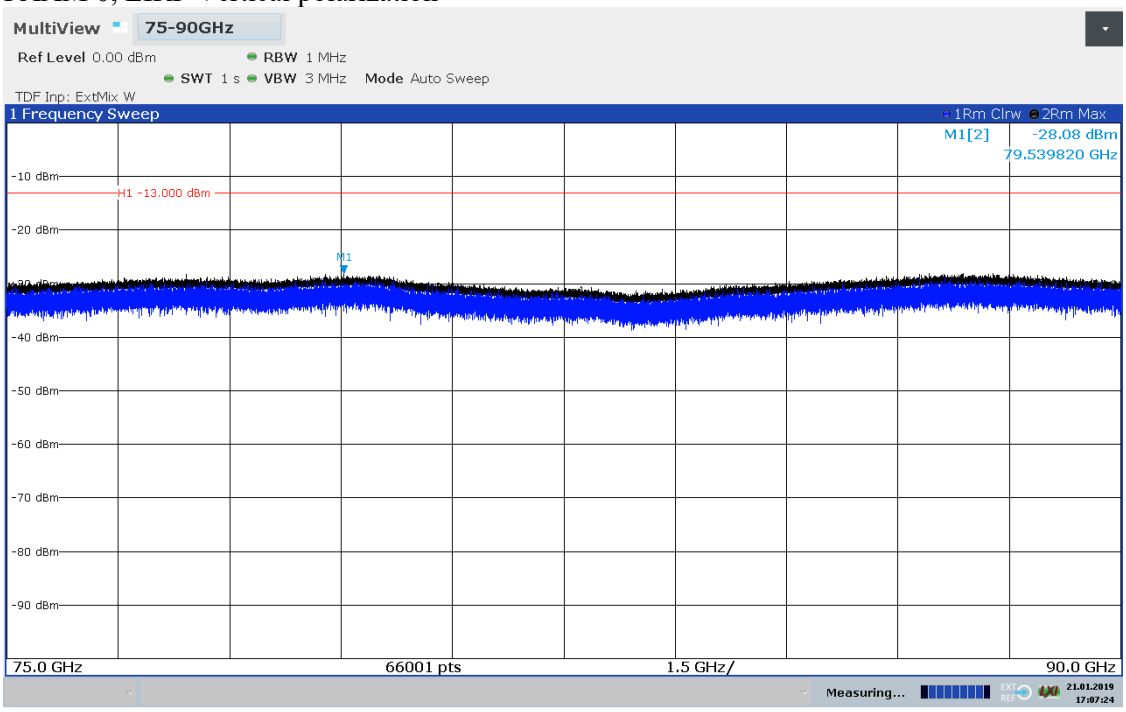
11:34:34 18.01.2019

Diagram 43: 75 – 90 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, antenna aligned to PAAM 0, EIRP Horizontal polarization



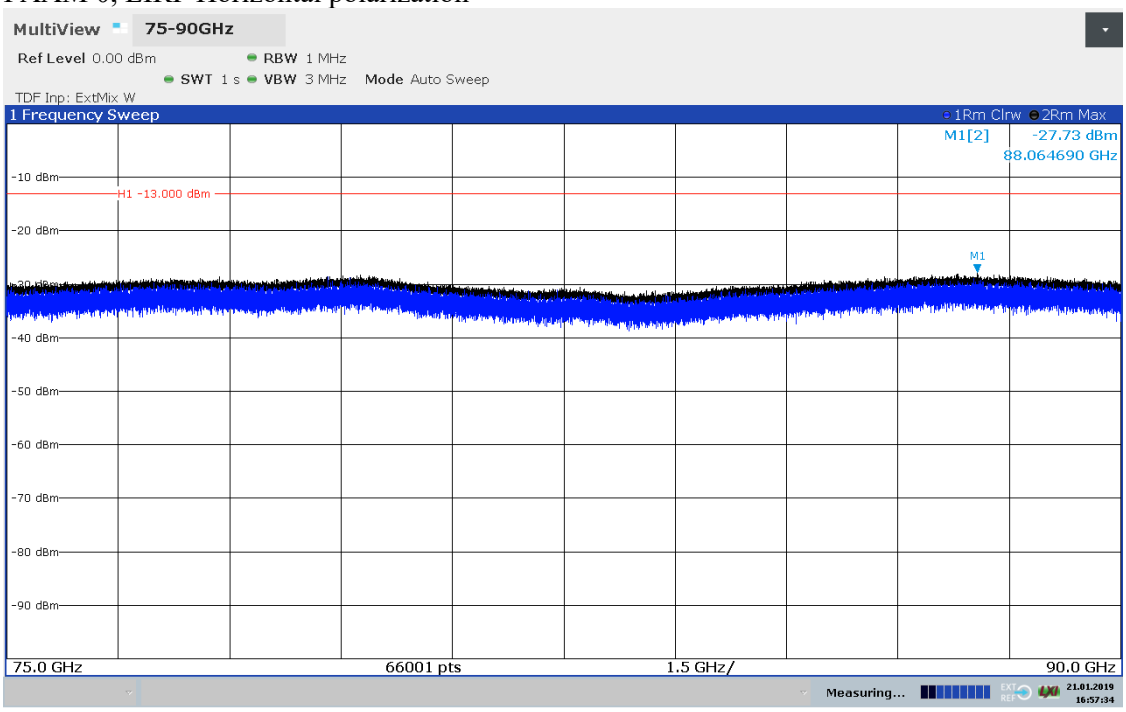
17:03:28 21.01.2019

Diagram 44: 75 – 90 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, antenna aligned to PAAM 0, EIRP Vertical polarization



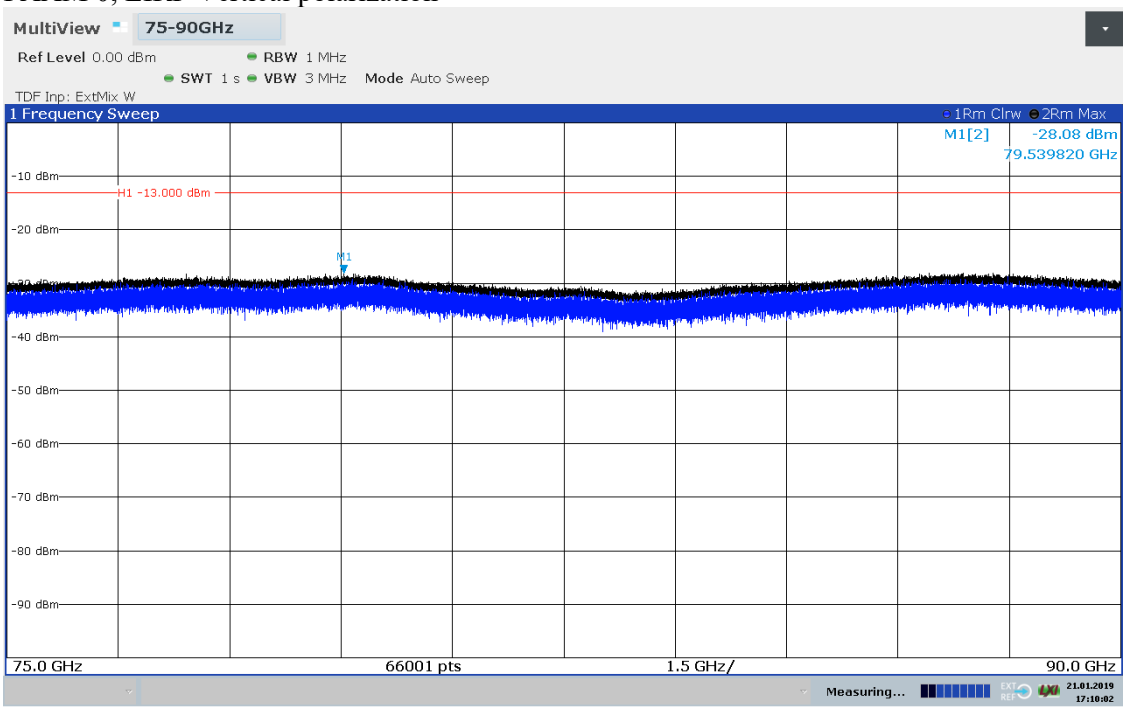
17:07:24 21.01.2019

Diagram 45: 75 – 90 GHz, Modulation QPSK, Symbolic name: MTH_{100}, antenna aligned to PAAM 0, EIRP Horizontal polarization



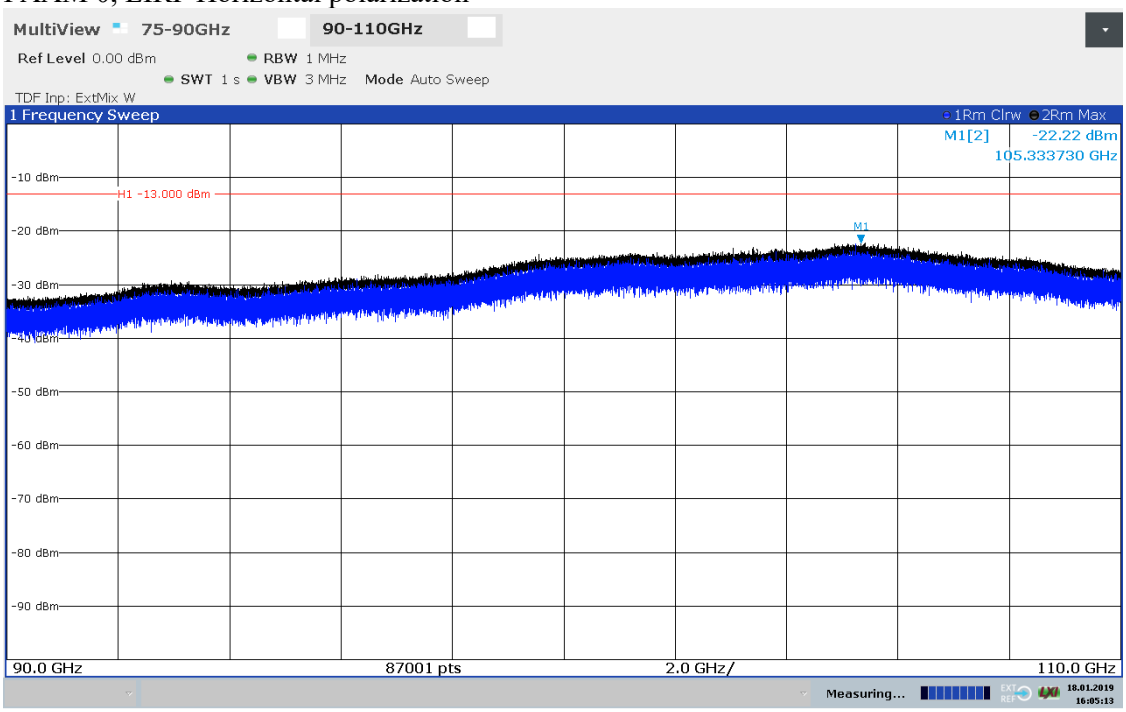
16:57:35 21.01.2019

Diagram 46: 75 – 90 GHz, Modulation QPSK, Symbolic name: MTH_{100}, antenna aligned to PAAM 0, EIRP Vertical polarization



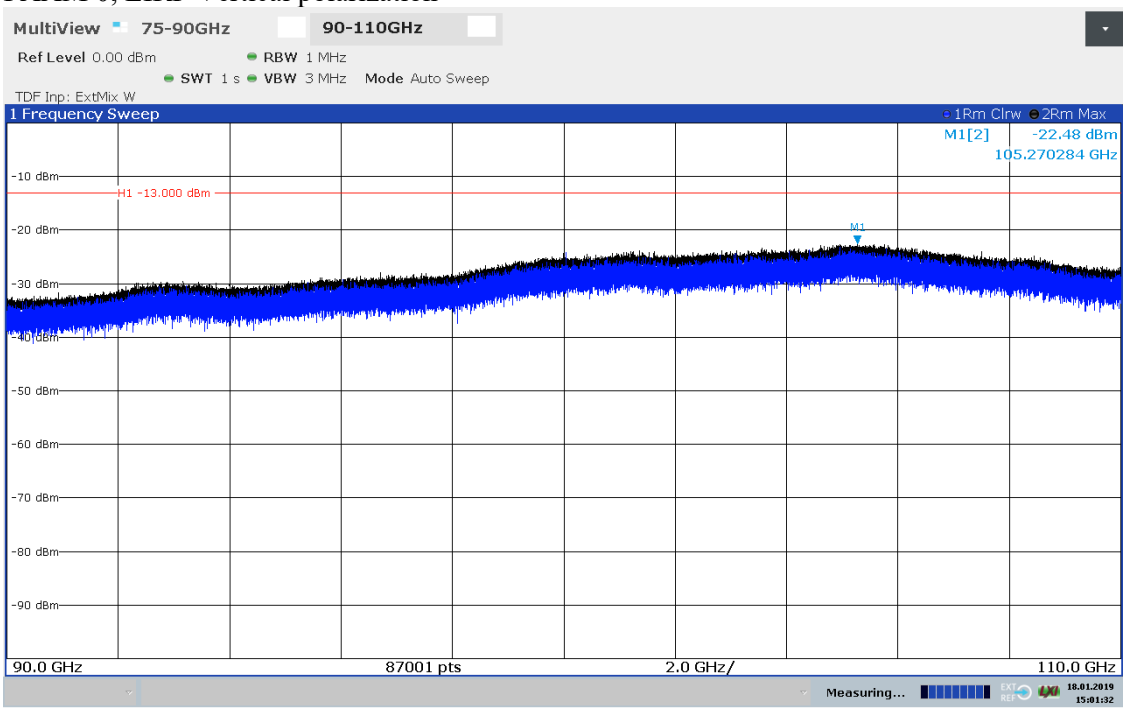
17:10:03 21.01.2019

Diagram 47: 90 – 110 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, antenna aligned to PAAM 0, EIRP Horizontal polarization



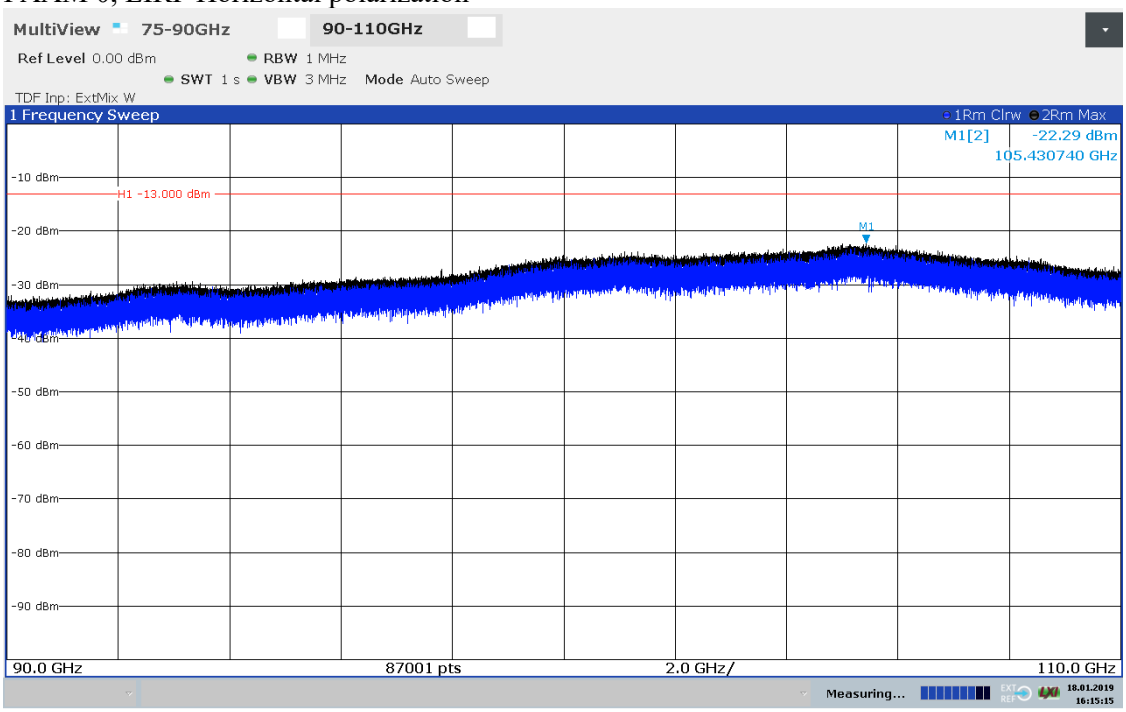
16:05:14 18.01.2019

Diagram 48: 90 – 110 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, antenna aligned to PAAM 0, EIRP Vertical polarization



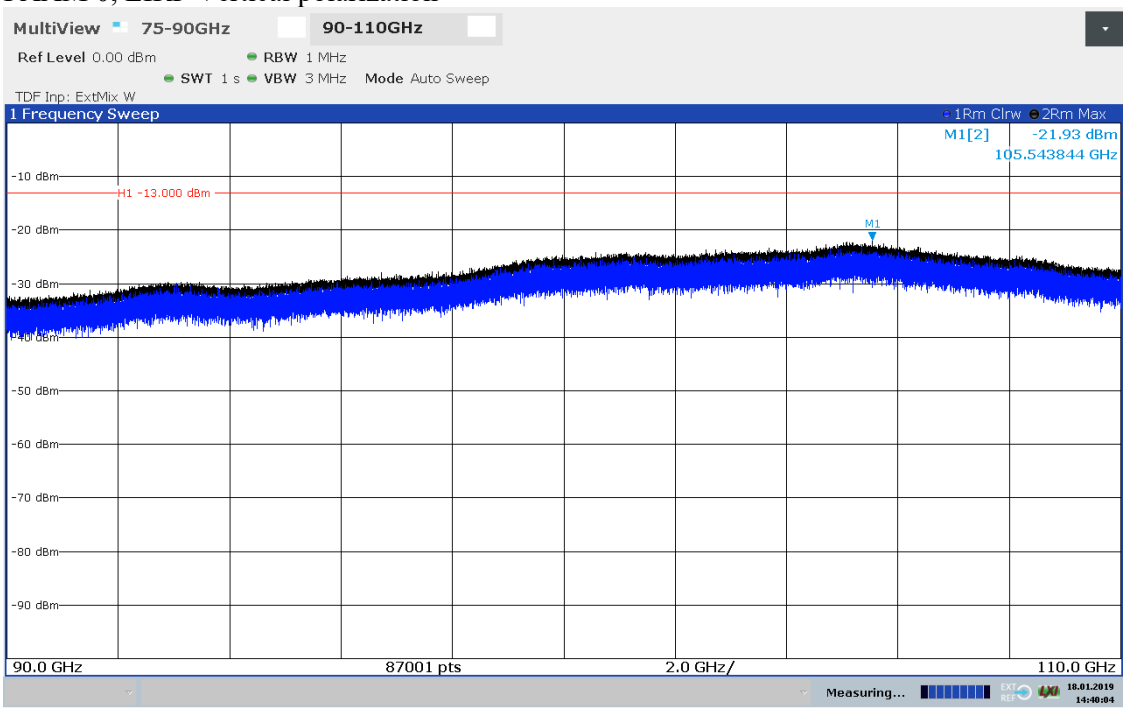
15:01:32 18.01.2019

Diagram 49: 90 – 110 GHz, Modulation QPSK, Symbolic name: MTH_{100}, antenna aligned to PAAM 0, EIRP Horizontal polarization



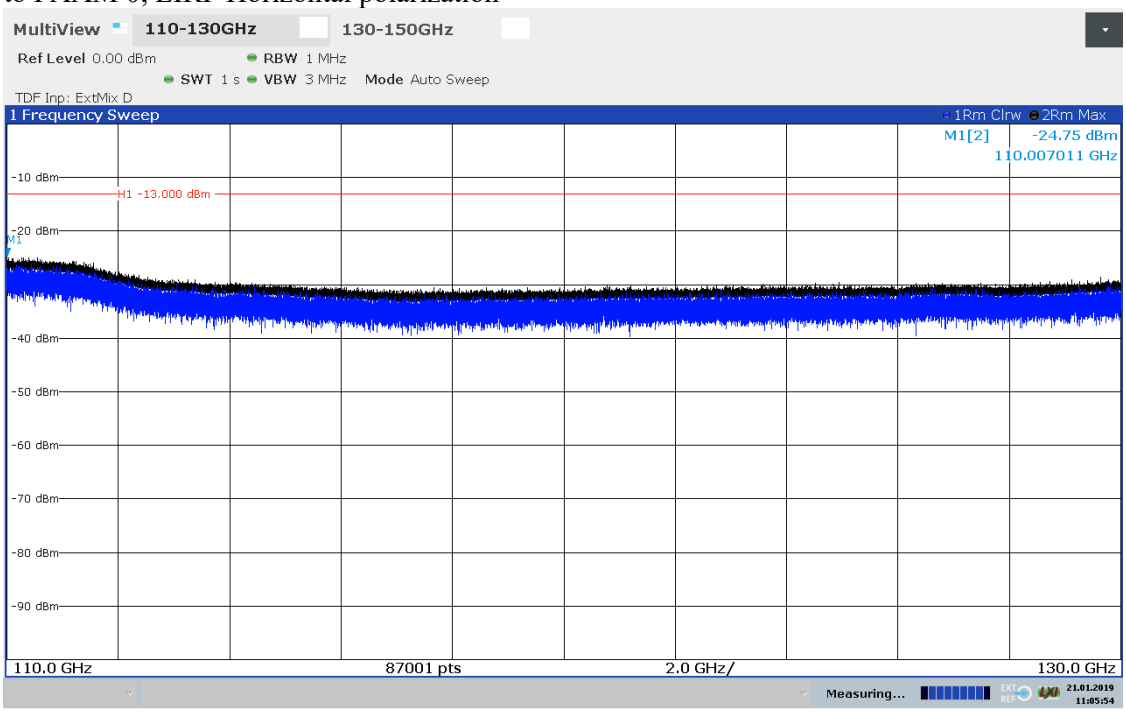
16:15:16 18.01.2019

Diagram 50: 90 – 110 GHz, Modulation QPSK, Symbolic name: MTH_{100}, antenna aligned to PAAM 0, EIRP Vertical polarization



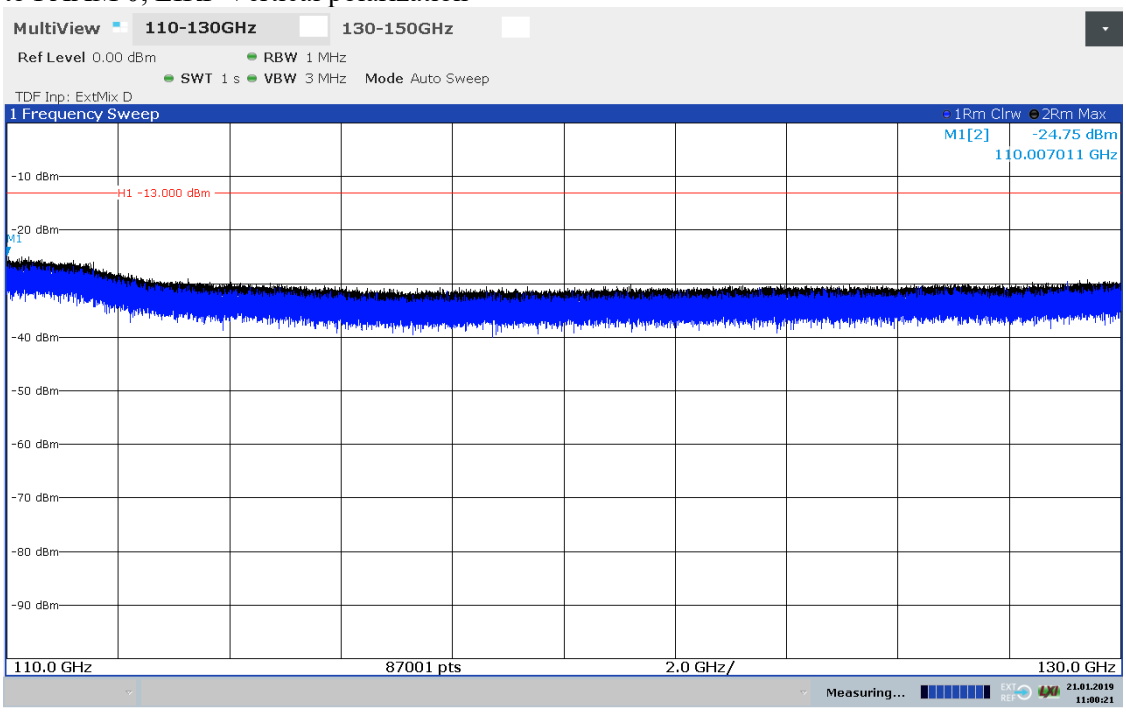
14:40:04 18.01.2019

Diagram 51: 110 – 130 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, antenna aligned to PAAM 0, EIRP Horizontal polarization



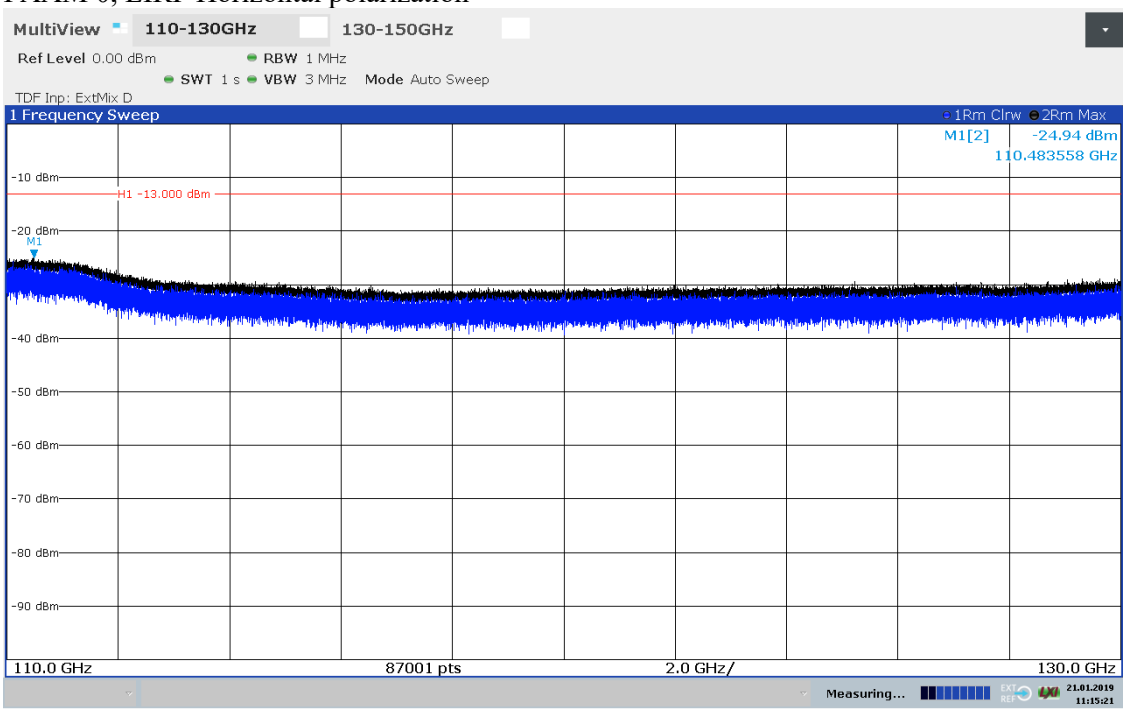
11:05:54 21.01.2019

Diagram 52: 110 – 130 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, antenna aligned to PAAM 0, EIRP Vertical polarization



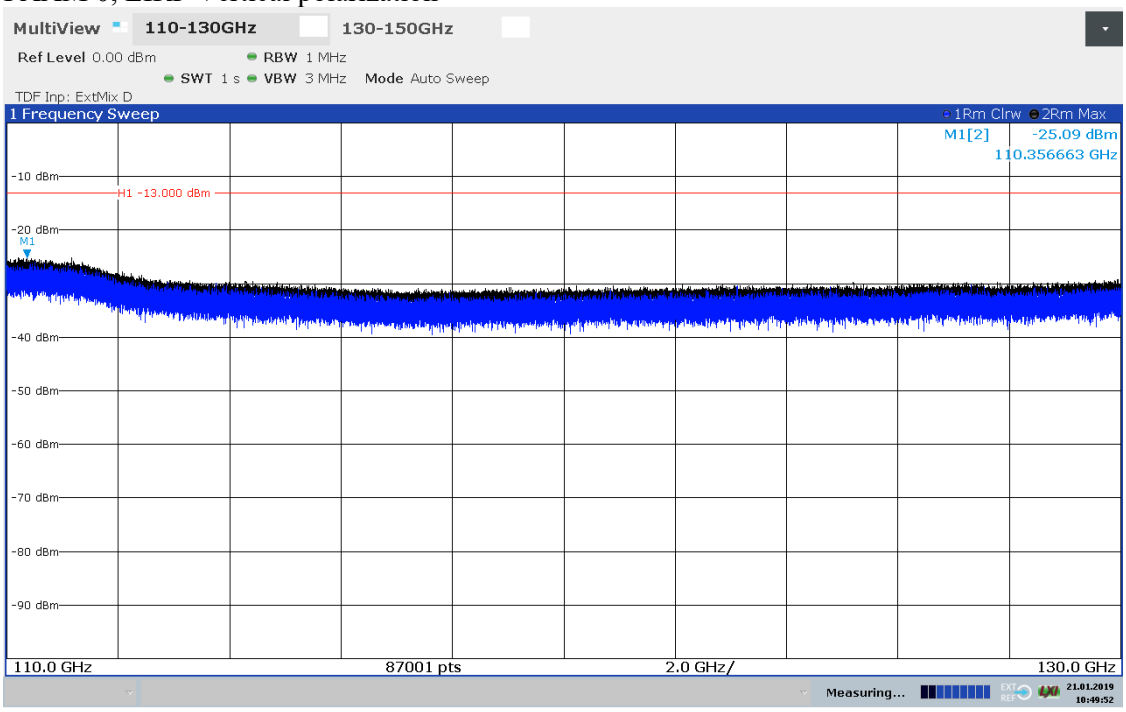
11:00:22 21.01.2019

Diagram 53: 110 – 130 GHz, Modulation QPSK, Symbolic name: MTH_{100}, antenna aligned to PAAM 0, EIRP Horizontal polarization



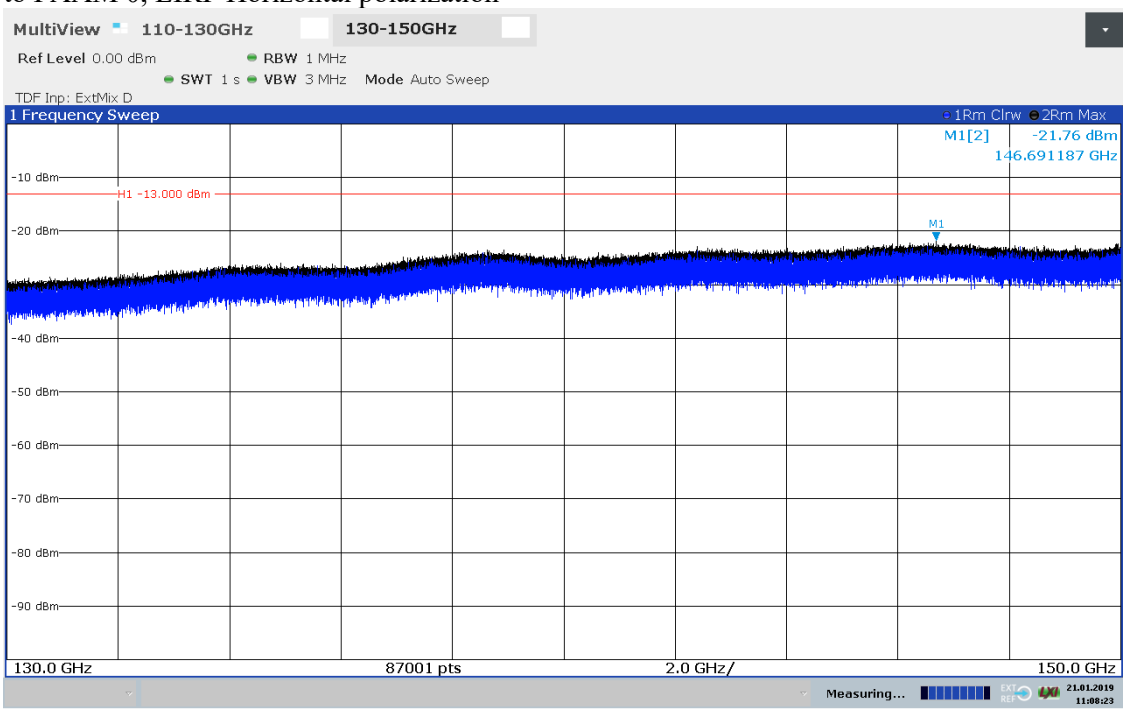
11:15:21 21.01.2019

Diagram 54: 110 – 130 GHz, Modulation QPSK, Symbolic name: MTH_{100}, antenna aligned to PAAM 0, EIRP Vertical polarization



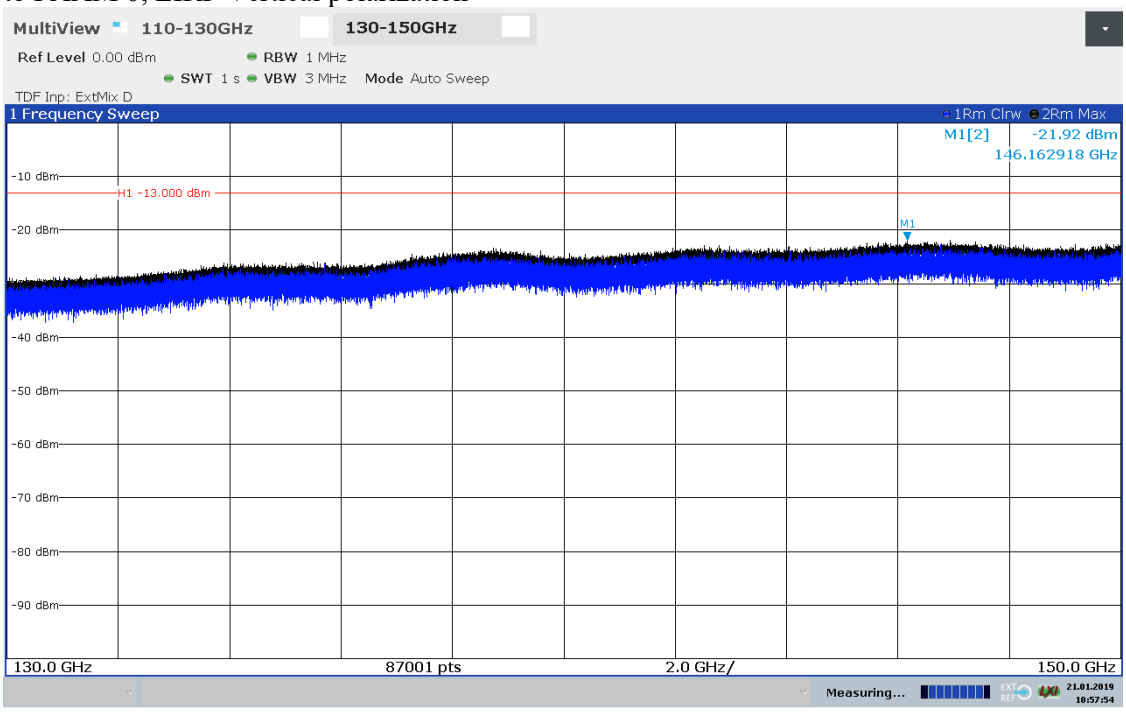
10:49:53 21.01.2019

Diagram 55: 130 – 150 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, antenna aligned to PAAM 0, EIRP Horizontal polarization



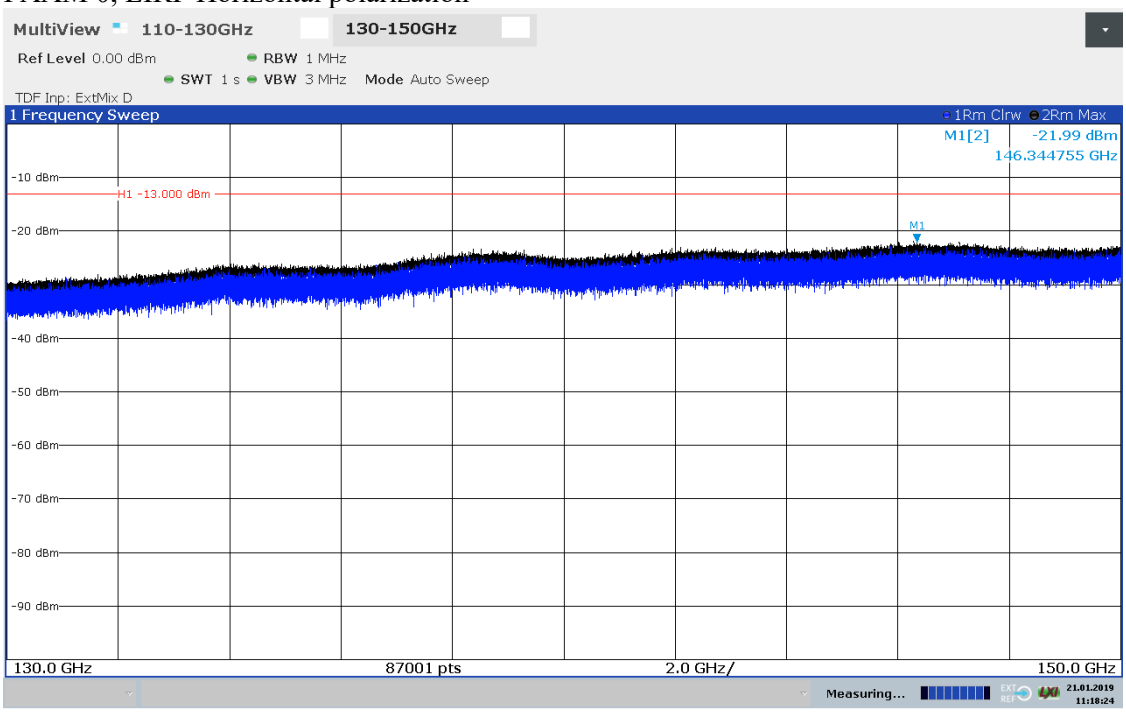
11:08:24 21.01.2019

Diagram 56: 130 – 150 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, antenna aligned to PAAM 0, EIRP Vertical polarization



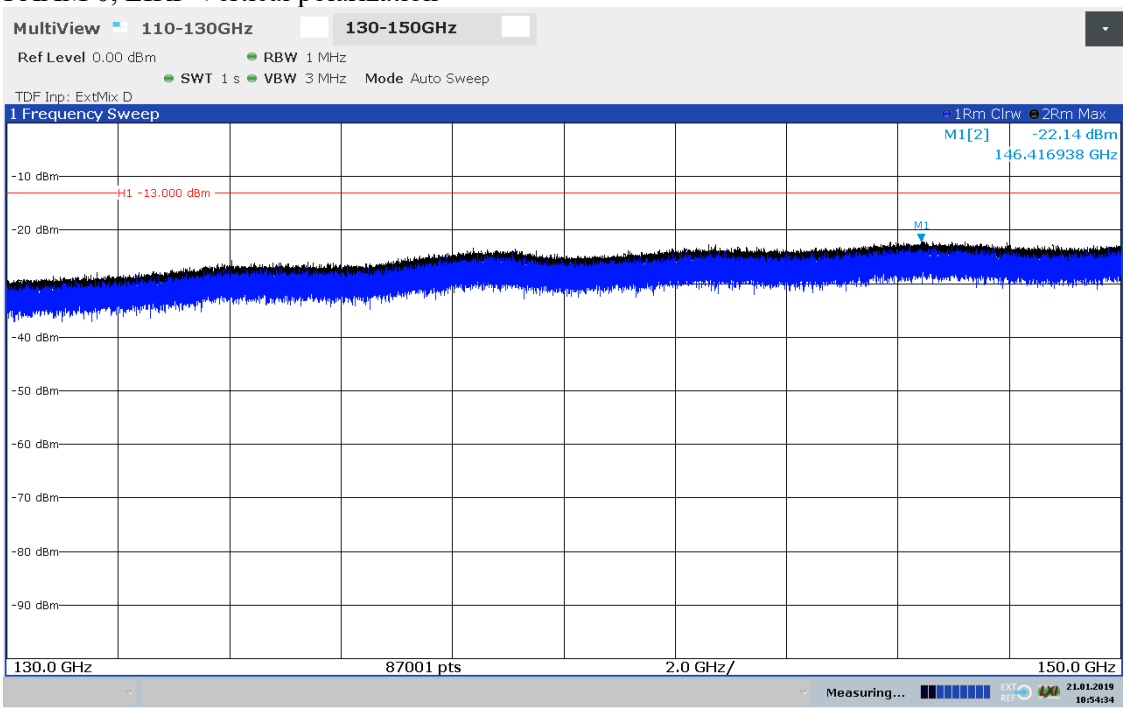
10:57:55 21.01.2019

Diagram 57: 130 – 150 GHz, Modulation QPSK, Symbolic name: MTH_{100}, antenna aligned to PAAM 0, EIRP Horizontal polarization



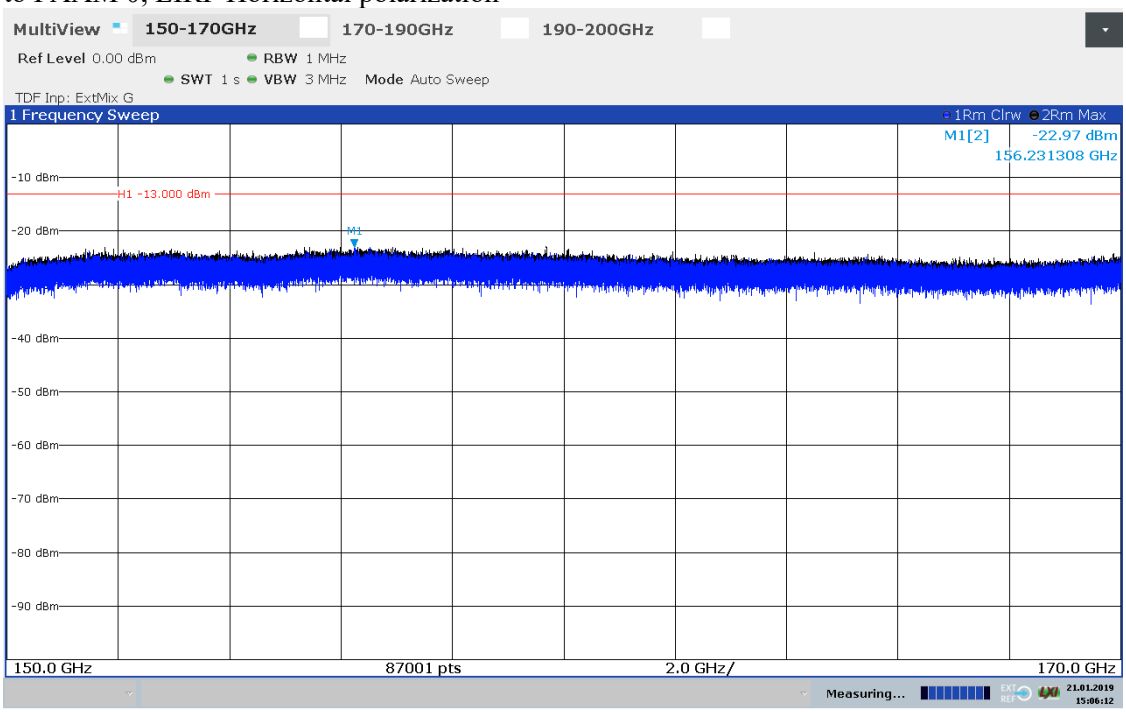
11:18:25 21.01.2019

Diagram 58: 130 – 150 GHz, Modulation QPSK, Symbolic name: MTH_{100}, antenna aligned to PAAM 0, EIRP Vertical polarization



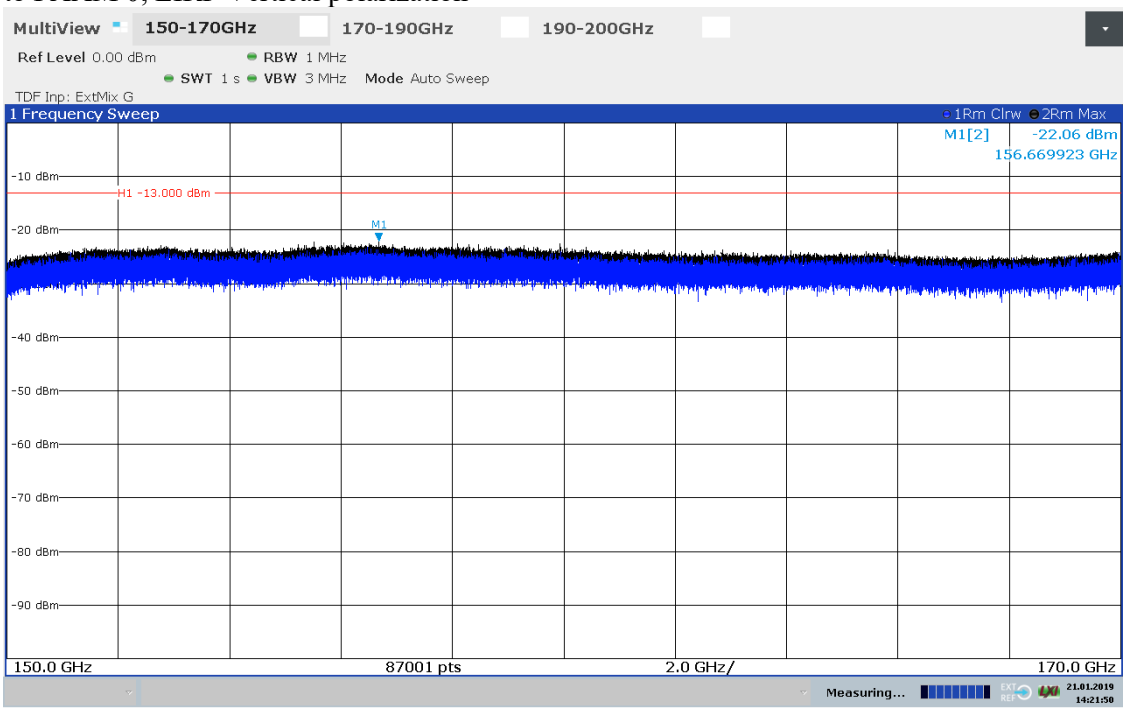
10:54:35 21.01.2019

Diagram 59: 150 – 170 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, antenna aligned to PAAM 0, EIRP Horizontal polarization



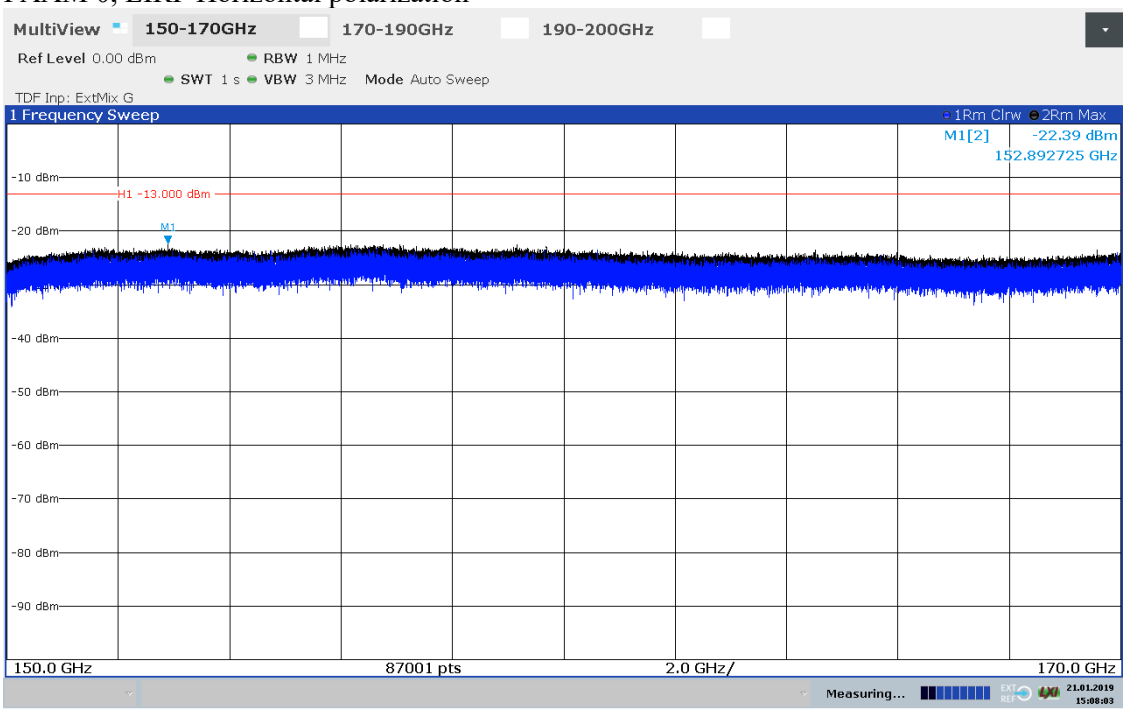
15:06:13 21.01.2019

Diagram 60: 150 – 170 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, antenna aligned to PAAM 0, EIRP Vertical polarization



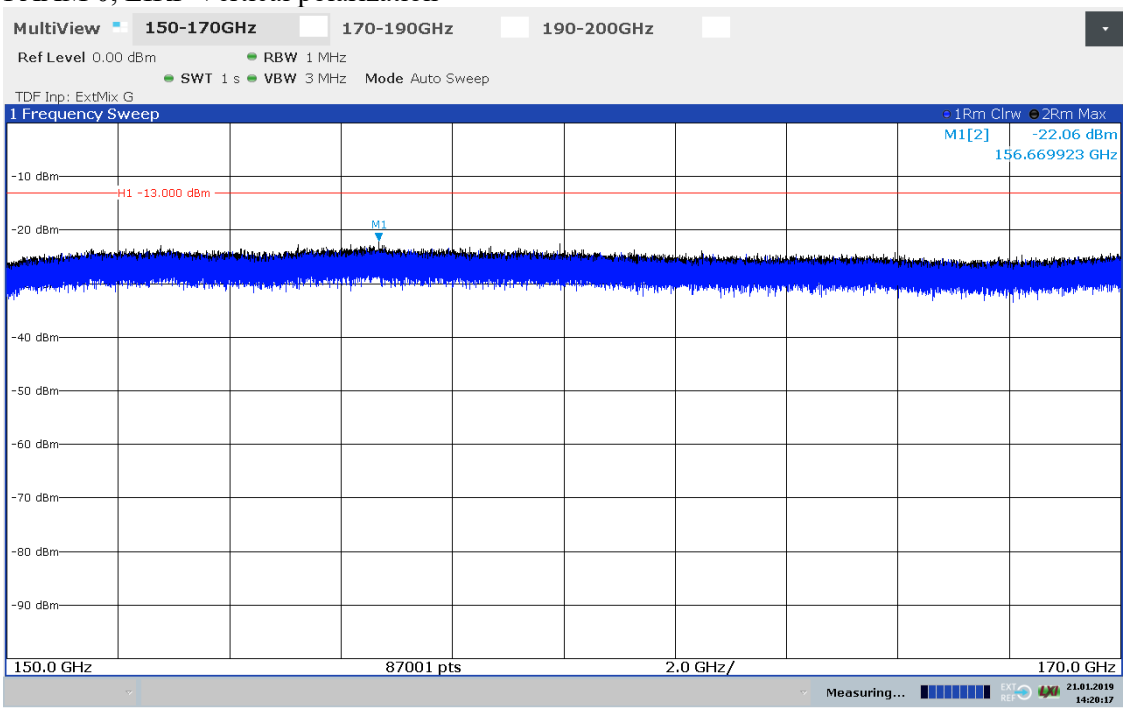
14:21:51 21.01.2019

Diagram 61: 150 – 170 GHz, Modulation QPSK, Symbolic name: MTH_{100}, antenna aligned to PAAM 0, EIRP Horizontal polarization



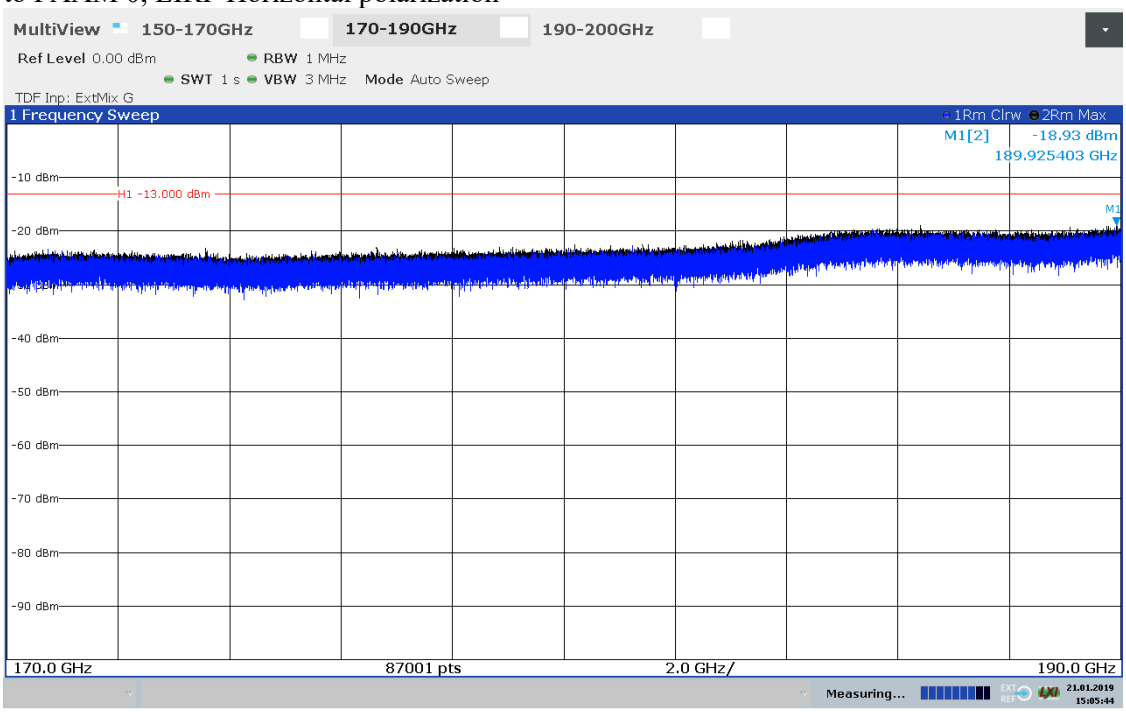
15:08:03 21.01.2019

Diagram 62: 150 – 170 GHz, Modulation QPSK, Symbolic name: MTH_{100}, antenna aligned to PAAM 0, EIRP Vertical polarization



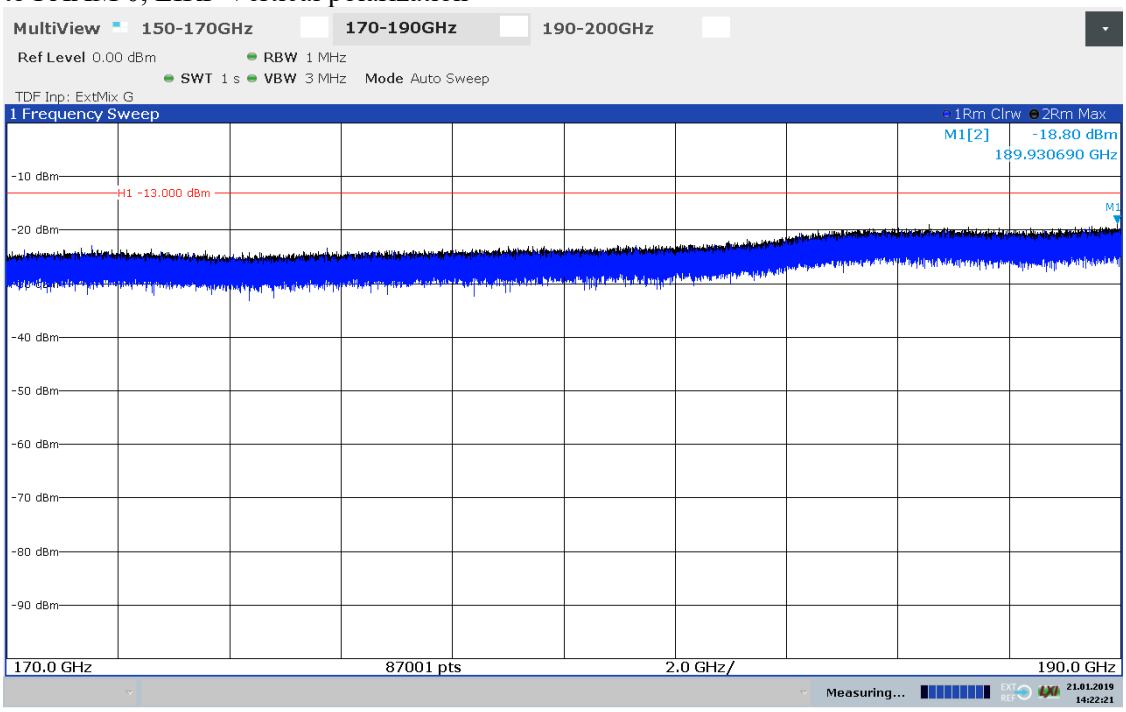
14:20:18 21.01.2019

Diagram 63: 170 – 190 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, antenna aligned to PAAM 0, EIRP Horizontal polarization



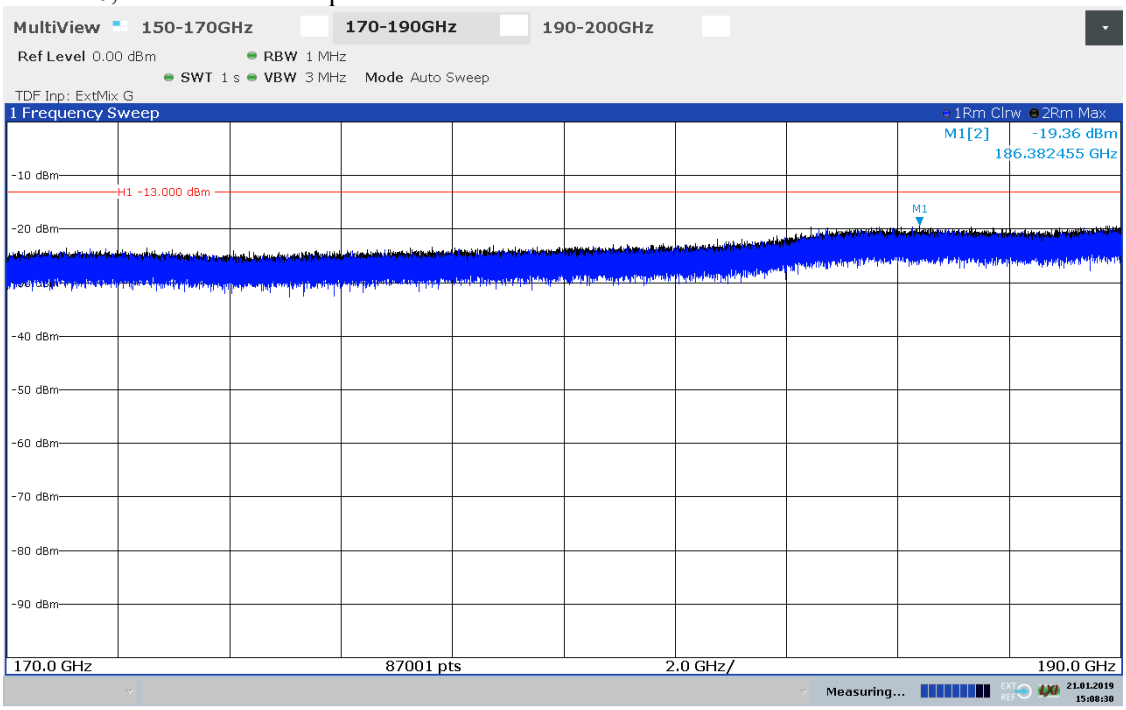
15:05:44 21.01.2019

Diagram 64: 170 – 190 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, antenna aligned to PAAM 0, EIRP Vertical polarization



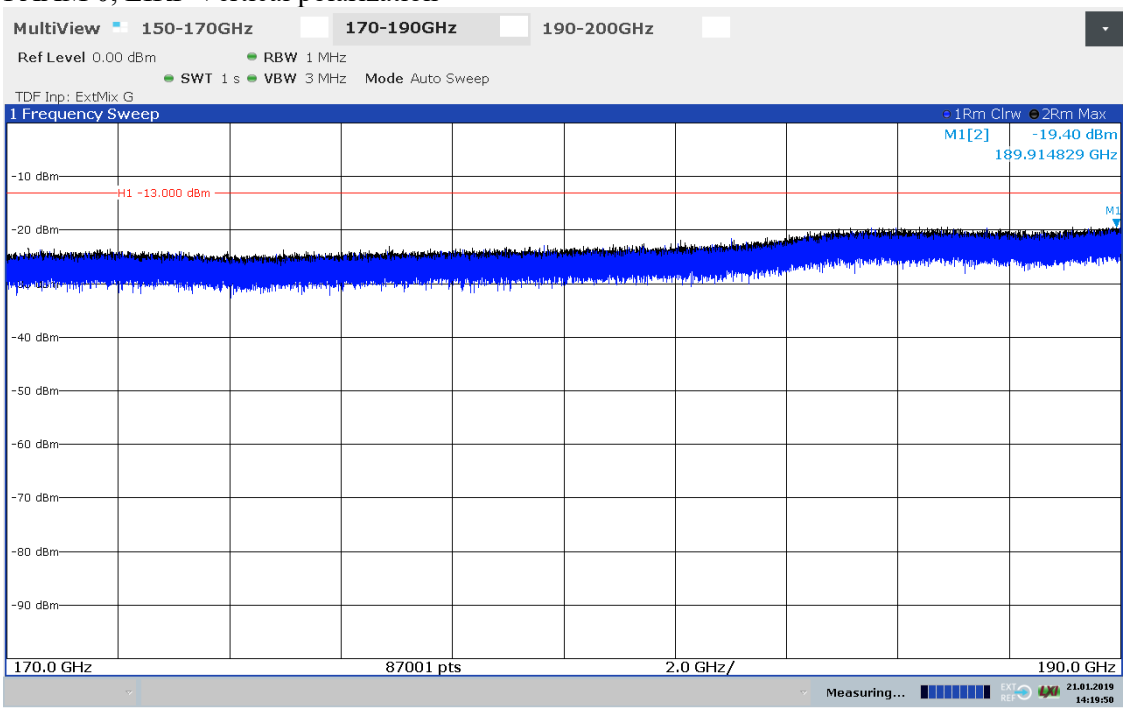
14:22:21 21.01.2019

Diagram 65: 170 – 190 GHz, Modulation QPSK, Symbolic name: MTH_{100}, antenna aligned to PAAM 0, EIRP Horizontal polarization



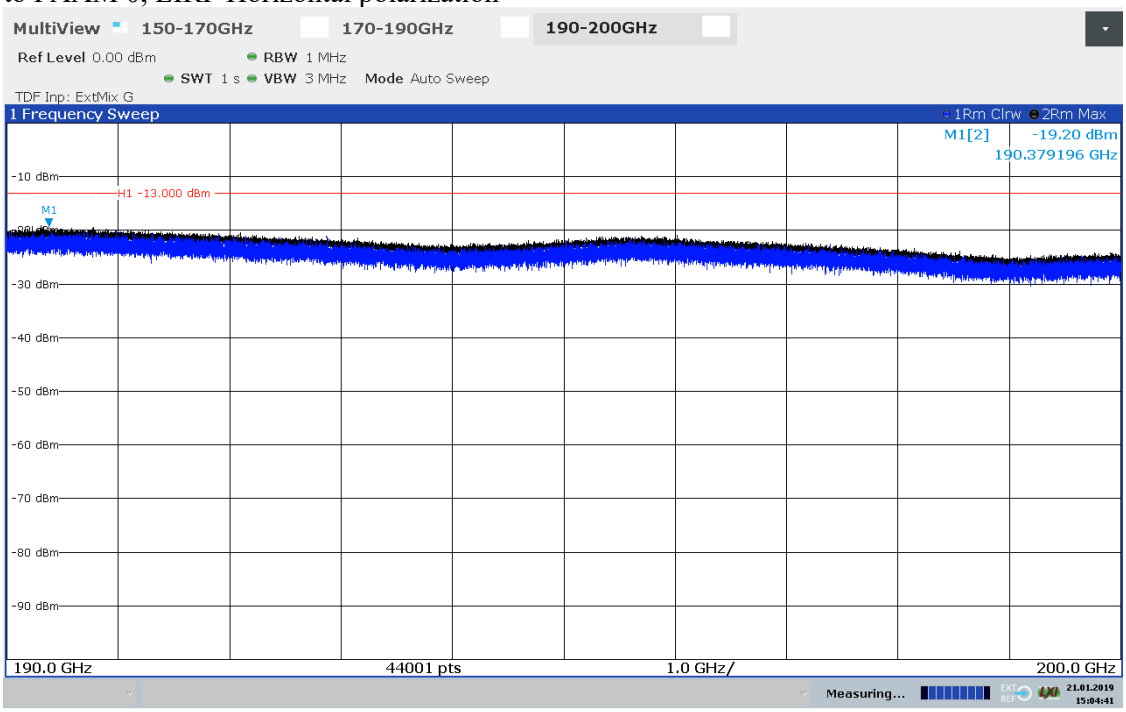
15:08:31 21.01.2019

Diagram 66: 170 – 190 GHz, Modulation QPSK, Symbolic name: MTH_{100}, antenna aligned to PAAM 0, EIRP Vertical polarization



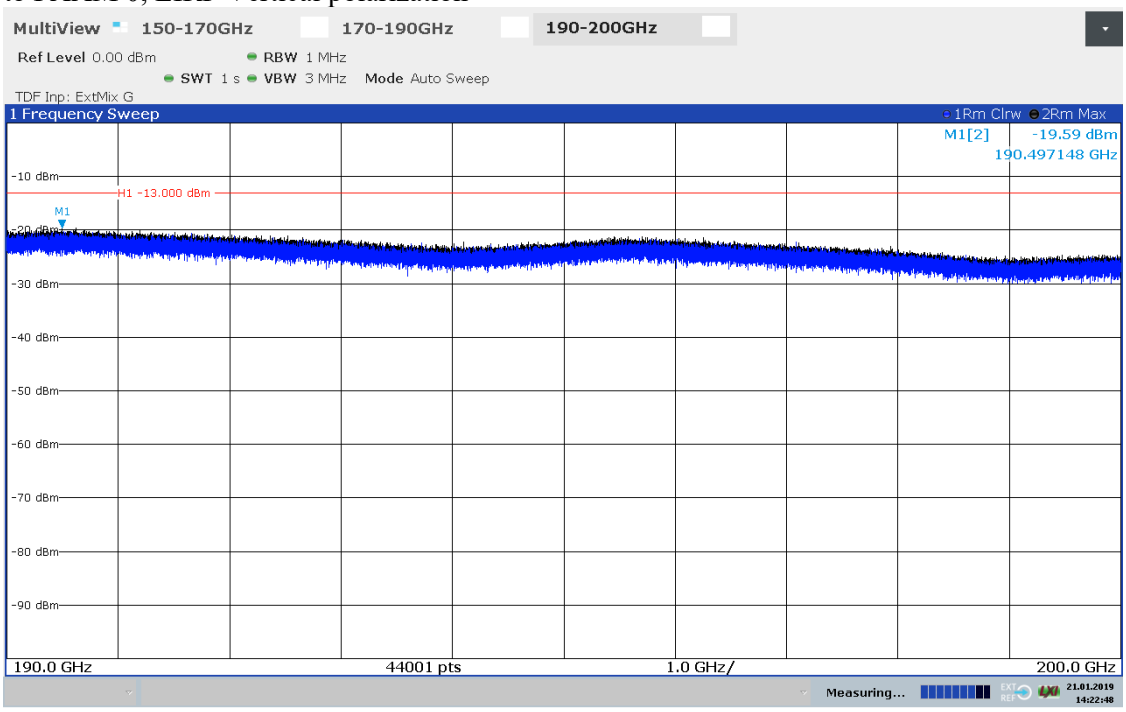
14:19:50 21.01.2019

Diagram 67: 190 – 200 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, antenna aligned to PAAM 0, EIRP Horizontal polarization



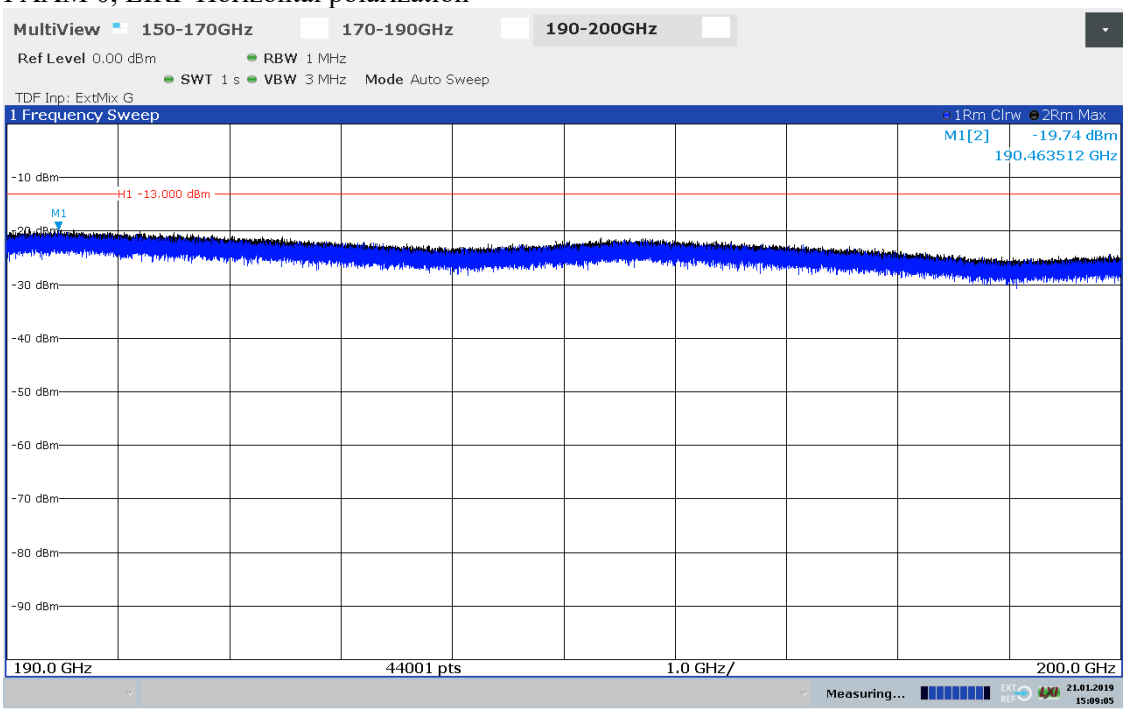
15:04:41 21.01.2019

Diagram 68: 190 – 200 GHz, Modulation QPSK, Symbolic name: $BMTL_{100}$, antenna aligned to PAAM 0, EIRP Vertical polarization



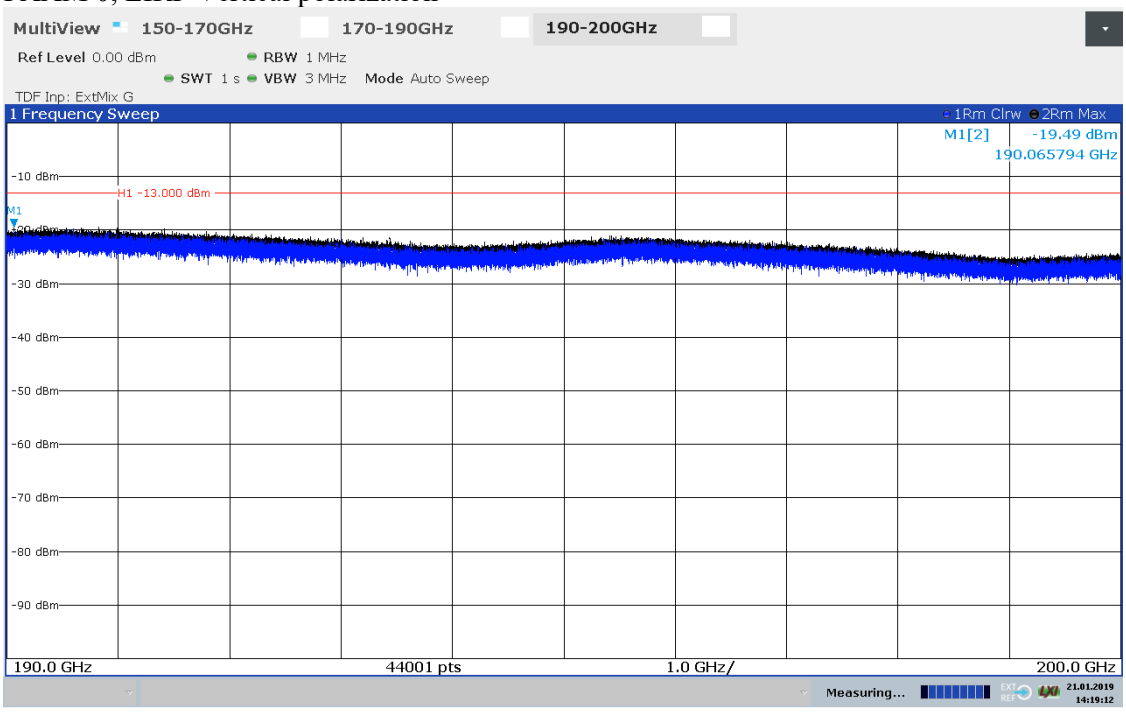
14:22:48 21.01.2019

Diagram 69: 190 – 200 GHz, Modulation QPSK, Symbolic name: MTH_{100}, antenna aligned to PAAM 0, EIRP Horizontal polarization



15:09:06 21.01.2019

Diagram 70: 190 – 200 GHz, Modulation QPSK, Symbolic name: MTH_{100}, antenna aligned to PAAM 0, EIRP Vertical polarization



14:19:12 21.01.2019

Photos of test object

Front side

Rear side

Test object label KRD 901 079/1:

Test object label KRD 901 079/4:

Bottom side KRD 901 079/1

Bottom side KRD 901 079/4

Top side

Left side

Right side

SFP module Data 1:

SFP module Data 2:

SFP module Data 3:

SFP module Data 4: