

Annex 1: Measurement diagrams to  
TEST REPORT  
No.: 18-1-0245501T05a

According to:  
**47 CFR Part 95**  
**RSS-Gen Issue 5**  
**RSS-251 Issue 2**

for

**Veoneer US, Inc.**

**77V12BSM**  
**77 GHz BSM Radar Sensor**

**FCC ID: WU877V12BSM**  
**IC: 8436B-77V12BSM**

Laboratory Accreditation



accredited according to DIN EN ISO/IEC 17025

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## Table of contents

<b>1. THE MAXIMUM PEAK POWER EIRP / PEAK EIRP SPECTRAL DENSITY. THE MAXIMUM POWER EIRP/ AVERAGE EIRP.....</b>	<b>5</b>
1.1. RMS Detector, $T_{\text{nom}}/V_{\text{nom}}$ .....	5
1.2. Peak Detector, $T_{\text{nom}}/V_{\text{nom}}$ .....	5
1.3. RMS Detector, $T_{\text{min}}/V_{\text{nom}}$ .....	6
1.4. Peak Detector, $T_{\text{min}}/V_{\text{nom}}$ .....	6
1.5. RMS Detector, $T_{\text{max}}/V_{\text{nom}}$ .....	7
1.6. Peak Detector, $T_{\text{max}}/V_{\text{nom}}$ .....	7
1.7. RMS Detector, $T_{\text{nom}}/V_{\text{min}}$ .....	8
1.8. Peak Detector, $T_{\text{nom}}/V_{\text{min}}$ .....	8
1.9. RMS Detector, $T_{\text{nom}}/V_{\text{max}}$ .....	9
1.10. Peak Detector, $T_{\text{nom}}/V_{\text{max}}$ .....	9
<b>2. MODULATION CHARACTERISTICS.....</b>	<b>10</b>
2.1. Peak Detector, $T_{\text{nom}}/V_{\text{nom}}$ .....	10
2.2. Peak Detector, $T_{\text{min}}/V_{\text{nom}}$ .....	10
2.3. Peak Detector, $T_{\text{max}}/V_{\text{nom}}$ .....	10
2.4. Peak Detector, $T_{\text{nom}}/V_{\text{min}}$ .....	10
2.5. Peak Detector, $T_{\text{nom}}/V_{\text{max}}$ .....	10
<b>3. OCCUPIED BANDWIDTH.....</b>	<b>11</b>
3.1. Peak Detector, $T_{\text{nom}}/V_{\text{nom}}$ , RBW 10 MHz (only required for 99% RSS Gen Occupied BW).....	11
3.2. Peak Detector, $T_{\text{nom}}/V_{\text{nom}}$ .....	11
3.3. Peak Detector, $T_{\text{min}}/V_{\text{nom}}$ .....	11
3.4. Peak Detector, $T_{\text{max}}/V_{\text{nom}}$ .....	11
3.5. Peak Detector, $T_{\text{nom}}/V_{\text{min}}$ .....	11
3.6. Peak Detector, $T_{\text{nom}}/V_{\text{max}}$ .....	11
<b>4. FIELD STRENGTH OF EMISSIONS (BAND EDGE).....</b>	<b>12</b>
4.1. RMS Detector, low edge, 74.1 GHz – 75 GHz.....	12
4.2. RMS Detector, low edge, 75 GHz – 76.1 GHz.....	12
4.3. RMS Detector, high edge, SigID USB + LSB .....	13
<b>5. FIELD STRENGTH OF EMISSIONS (RADIATED SPURIOUS).....</b>	<b>14</b>
5.1. 9 kHz – 30 MHz, laying, valid for $f_{\text{CW\_low}} + f_{\text{CW\_center}} + f_{\text{CW\_high}}$ .....	14
5.2. 9 kHz – 30 MHz, standing, valid for $f_{\text{CW\_low}} + f_{\text{CW\_center}} + f_{\text{CW\_high}}$ .....	14
5.3. 30 MHz – 1 GHz, laying, valid for $f_{\text{CW\_low}} + f_{\text{CW\_center}} + f_{\text{CW\_high}}$ .....	15
5.4. 30 MHz – 1 GHz, standing, valid for $f_{\text{CW\_low}} + f_{\text{CW\_center}} + f_{\text{CW\_high}}$ .....	15
5.5. 960 MHz – 1 GHz, valid for $f_{\text{CW\_low}} + f_{\text{CW\_center}} + f_{\text{CW\_high}}$ .....	16
5.6. 1 GHz – 7 GHz, valid for $f_{\text{CW\_low}} + f_{\text{CW\_center}} + f_{\text{CW\_high}}$ .....	16
5.7. 7 GHz – 18 GHz, valid for $f_{\text{CW\_low}} + f_{\text{CW\_center}} + f_{\text{CW\_high}}$ .....	17
5.8. 18 GHz – 40 GHz, ANT VER, valid for $f_{\text{CW\_low}} + f_{\text{CW\_center}} + f_{\text{CW\_high}}$ .....	17
5.9. 18 GHz – 40 GHz, ANT HOR, valid for $f_{\text{CW\_low}} + f_{\text{CW\_center}} + f_{\text{CW\_high}}$ .....	18
5.10. 40 GHz – 55 GHz, ANT HOR + VER, all positions, $f_{\text{CW\_low}}$ .....	18
5.11. 40 GHz – 55 GHz, ANT HOR + VER, all positions, $f_{\text{CW\_center}}$ .....	19
5.12. 40 GHz – 55 GHz, ANT HOR + VER, all positions, $f_{\text{CW\_high}}$ .....	19
5.13. 40 GHz – 55 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW .....	20
5.14. 55 GHz – 75 GHz, ANT HOR + VER, SigID USB + LSB, all positions, $f_{\text{CW\_low}}$ .....	20
5.15. 55 GHz – 75 GHz, ANT HOR + VER, SigID LSB, all positions, $f_{\text{CW\_low}}$ .....	21
5.16. 55 GHz – 75 GHz, ANT HOR + VER, SigID USB, all positions, $f_{\text{CW\_low}}$ .....	21
5.17. 55 GHz – 75 GHz, ANT HOR + VER, SigID USB + LSB, all positions, $f_{\text{CW\_center}}$ .....	22
5.18. 55 GHz – 75 GHz, ANT HOR + VER, SigID LSB, all positions, $f_{\text{CW\_center}}$ .....	22
5.19. 55 GHz – 75 GHz, ANT HOR + VER, SigID USB, all positions, $f_{\text{CW\_center}}$ .....	23
5.20. 55 GHz – 75 GHz, ANT HOR + VER, SigID USB + LSB, all positions, $f_{\text{CW\_high}}$ .....	23
5.21. 55 GHz – 75 GHz, ANT HOR + VER, SigID LSB, all positions, $f_{\text{CW\_high}}$ .....	24
5.22. 55 GHz – 75 GHz, ANT HOR + VER, SigID USB, all positions, $f_{\text{CW\_high}}$ .....	24

5.23. 55 GHz – 73.5 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW .....	25
5.24. 73.5 GHz – 74.5 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW .....	25
5.25. 74.5 GHz – 75 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW .....	26
5.26. 75 GHz – 97 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_low .....	26
5.27. 75 GHz – 97 GHz, ANT HOR + VER, SigID LSB, all positions, f_CW_low .....	27
5.28. 75 GHz – 97 GHz, ANT HOR + VER, SigID USB, all positions, f_CW_low .....	27
5.29. 75 GHz – 97 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_center .....	28
5.30. 75 GHz – 97 GHz, ANT HOR + VER, SigID LSB, all positions, f_CW_center .....	28
5.31. 75 GHz – 97 GHz, ANT HOR + VER, SigID USB, all positions, f_CW_center .....	29
5.32. 75 GHz – 97 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_high .....	29
5.33. 75 GHz – 97 GHz, ANT HOR + VER, SigID LSB, all positions, f_CW_high .....	30
5.34. 75 GHz – 97 GHz, ANT HOR + VER, SigID USB, all positions, f_CW_high .....	30
5.35. 75 GHz – 76 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW .....	31
5.36. 77 GHz – 78.5 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW .....	31
5.37. 78.5 GHz – 79.5 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW .....	32
5.38. 79.5 GHz – 81 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW .....	32
5.39. 81 GHz – 90 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW .....	33
5.40. 90 GHz – 98 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW .....	33
5.41. 97 GHz – 110 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_low .....	34
5.42. 97 GHz – 110 GHz, ANT HOR + VER, SigID LSB, all positions, f_CW_low .....	34
5.43. 97 GHz – 110 GHz, ANT HOR + VER, SigID USB, all positions, f_CW_low .....	35
5.44. 97 GHz – 110 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_center .....	35
5.45. 97 GHz – 110 GHz, ANT HOR + VER, SigID LSB, all positions, f_CW_center .....	36
5.46. 97 GHz – 110 GHz, ANT HOR + VER, SigID USB, all positions, f_CW_center .....	36
5.47. 97 GHz – 110 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_high .....	37
5.48. 97 GHz – 110 GHz, ANT HOR + VER, SigID LSB, all positions, f_CW_high .....	37
5.49. 97 GHz – 110 GHz, ANT HOR + VER, SigID USB, all positions, f_CW_high .....	38
5.50. 98 GHz – 110 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW .....	38
5.51. 110 GHz – 140 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_low .....	39
5.52. 110 GHz – 140 GHz, ANT HOR + VER, SigID LSB, all positions, f_CW_low .....	39
5.53. 110 GHz – 140 GHz, ANT HOR + VER, SigID USB, all positions, f_CW_low .....	40
5.54. 110 GHz – 140 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_center .....	40
5.55. 110 GHz – 140 GHz, ANT HOR + VER, SigID LSB, all positions, f_CW_center .....	41
5.56. 110 GHz – 140 GHz, ANT HOR + VER, SigID USB, all positions, f_CW_center .....	41
5.57. 110 GHz – 140 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_high .....	42
5.58. 110 GHz – 140 GHz, ANT HOR + VER, SigID LSB, all positions, f_CW_high .....	42
5.59. 110 GHz – 122 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW .....	43
5.60. 122 GHz – 138 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW .....	43
5.61. 138 GHz – 140 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW .....	44
5.62. 140 GHz – 162 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_low .....	44
5.63. 140 GHz – 162 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_center .....	45
5.64. 140 GHz – 162 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_high .....	45
5.65. 140 GHz – 154 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW .....	46
5.66. 154 GHz – 162 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW .....	46
5.67. 162 GHz – 200 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_low .....	47
5.68. 162 GHz – 200 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_center .....	47
5.69. 162 GHz – 200 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_high .....	48
5.70. 162 GHz – 170 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW .....	48
5.71. 170 GHz – 200 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW .....	49
5.72. 200 GHz – 220 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_low .....	49

5.73. 200 GHz – 220 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_center .....	50
5.74. 200 GHz – 220 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_high.....	50
5.75. 200 GHz – 220 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW .....	51
5.76. 220 GHz – 243 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_low .....	51
5.77. 220 GHz – 243 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_center .....	52
5.78. 220 GHz – 243 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f_CW_high.....	52
5.79. 220 GHz – 243 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW .....	53
<b>6. FREQUENCY STABILITY.....</b>	<b>54</b>
6.1. $T_{nom}/V_{nom}$ .....	54
6.2. $T_{min}/V_{nom}$ .....	54
6.3. $T_{max}/V_{nom}$ .....	55
6.4. $T_{nom}/V_{min}$ .....	55
6.5. $T_{nom}/V_{max}$ .....	56

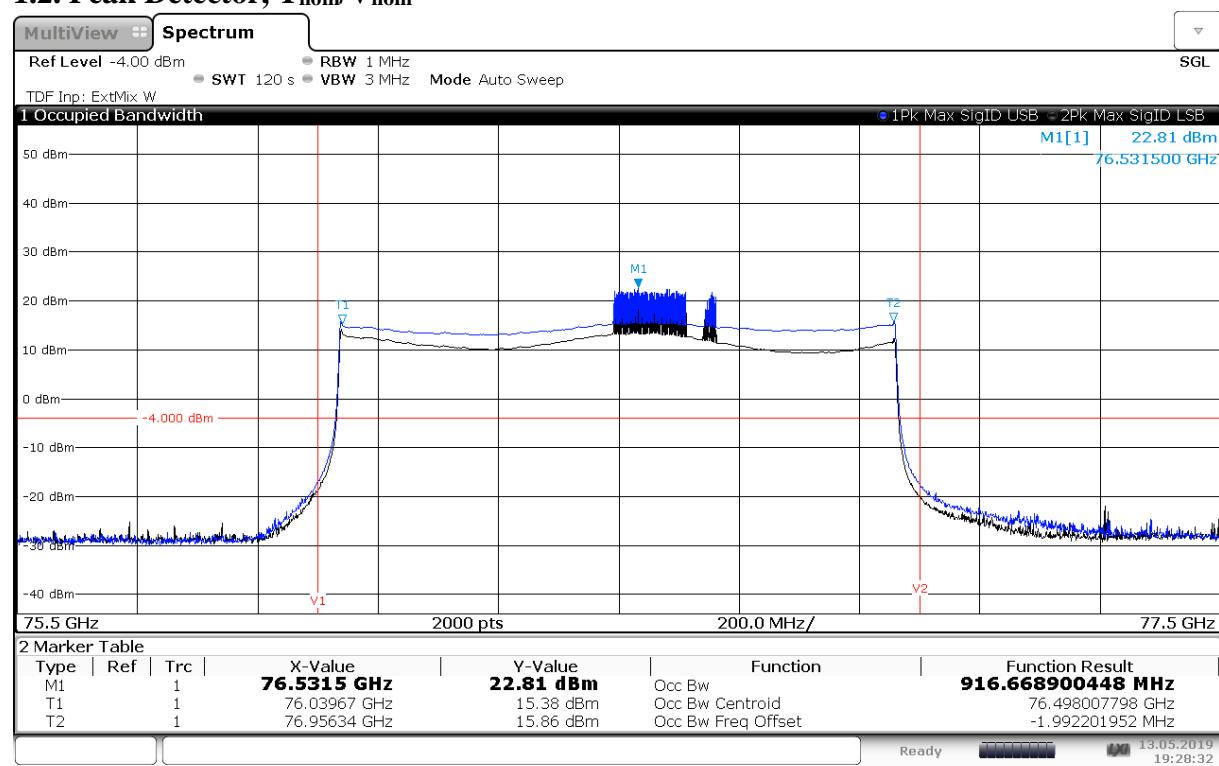
## 1. The maximum peak power EIRP / peak EIRP spectral density. The maximum power EIRP/ average EIRP.

### 1.1. RMS Detector, $T_{nom}/V_{nom}$



\* -4 dBm is only a reference line from the FSW67. Limit: 50 dBm (Average), 55 dBm (Peak).

### 1.2. Peak Detector, $T_{nom}/V_{nom}$



\* -4 dBm is only a reference line from the FSW67. Limit: 50 dBm (Average), 55 dBm (Peak).

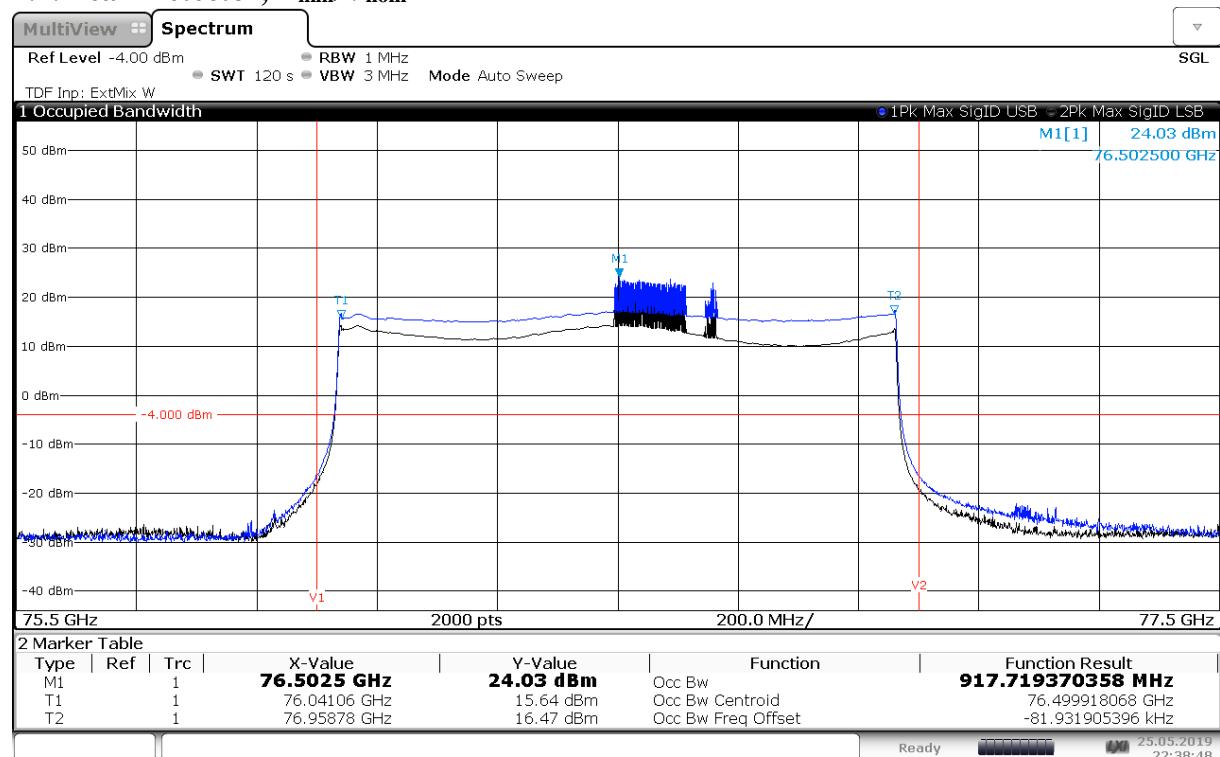
### 1.3. RMS Detector, $T_{min}/V_{nom}$



22:34:33 25.05.2019

\* -4 dBm is only a reference line from the FSW67. Limit: 50 dBm (Average), 55 dBm (Peak).

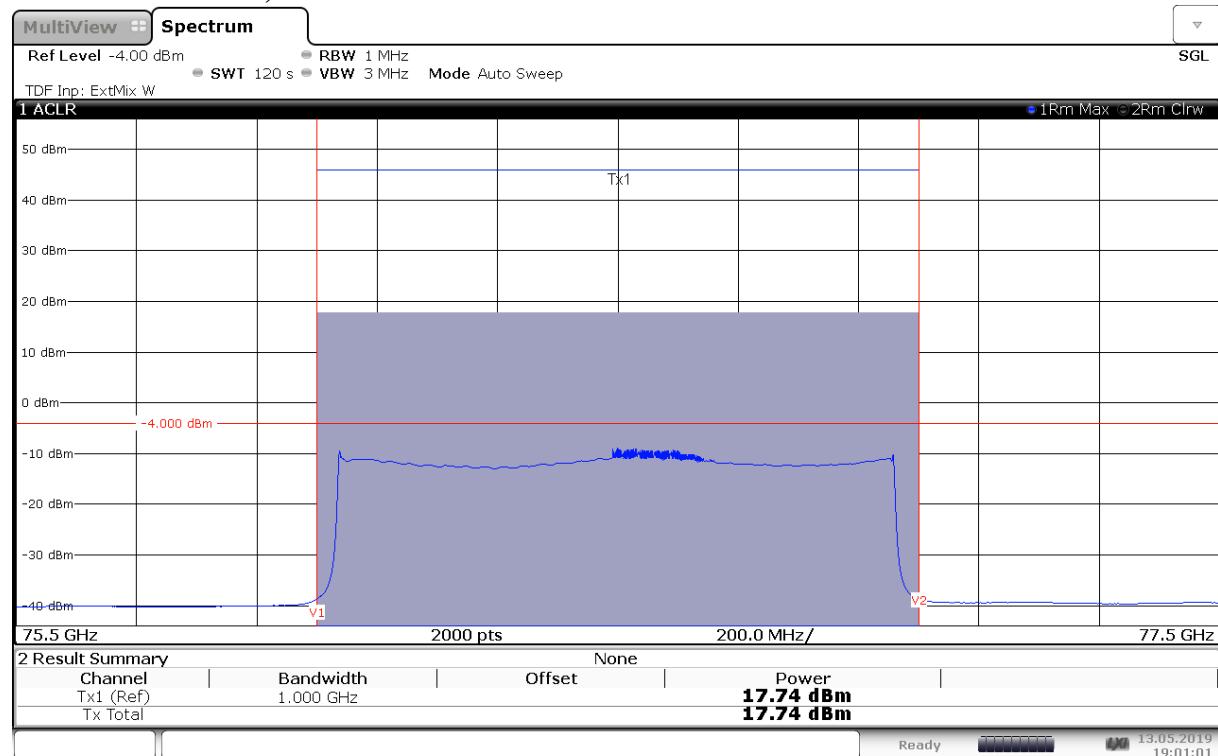
### 1.4. Peak Detector, $T_{min}/V_{nom}$



22:38:48 25.05.2019

\* -4 dBm is only a reference line from the FSW67. Limit: 50 dBm (Average), 55 dBm (Peak).

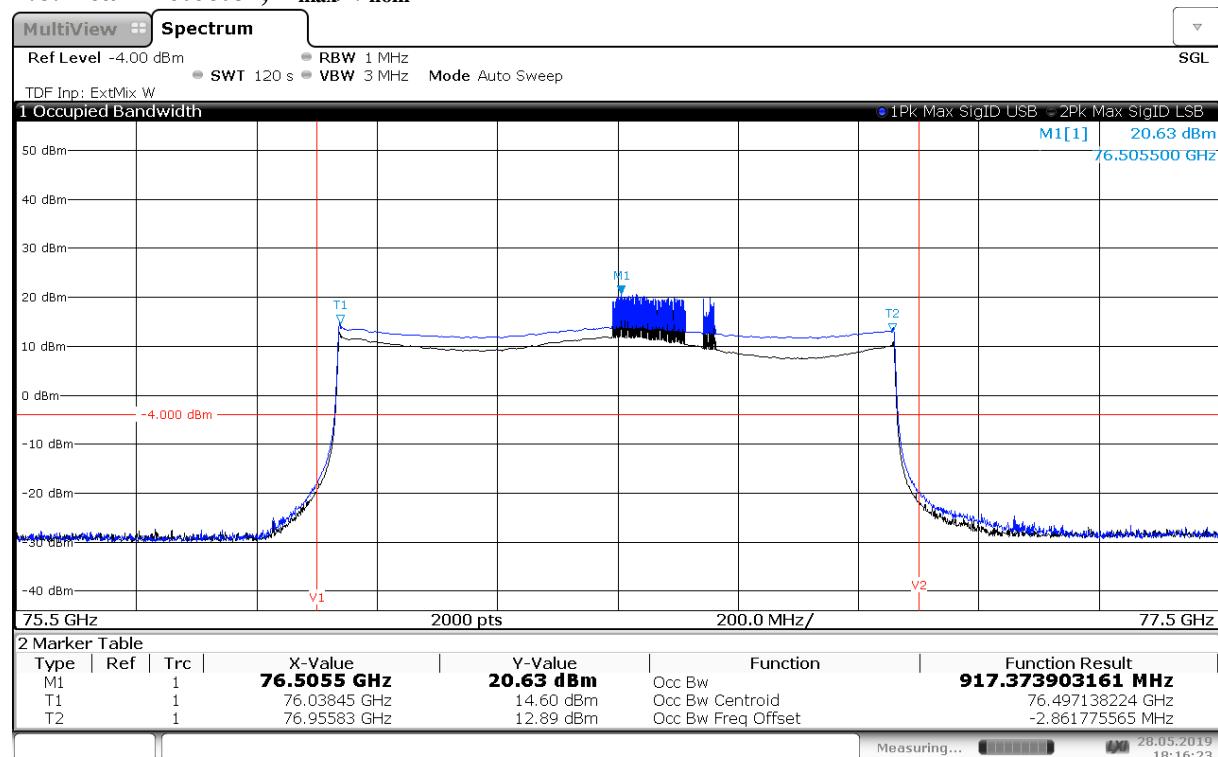
## 1.5. RMS Detector, $T_{max}/V_{nom}$



19:01:02 13.05.2019

\* -4 dBm is only a reference line from the FSW67. Limit: 50 dBm (Average), 55 dBm (Peak).

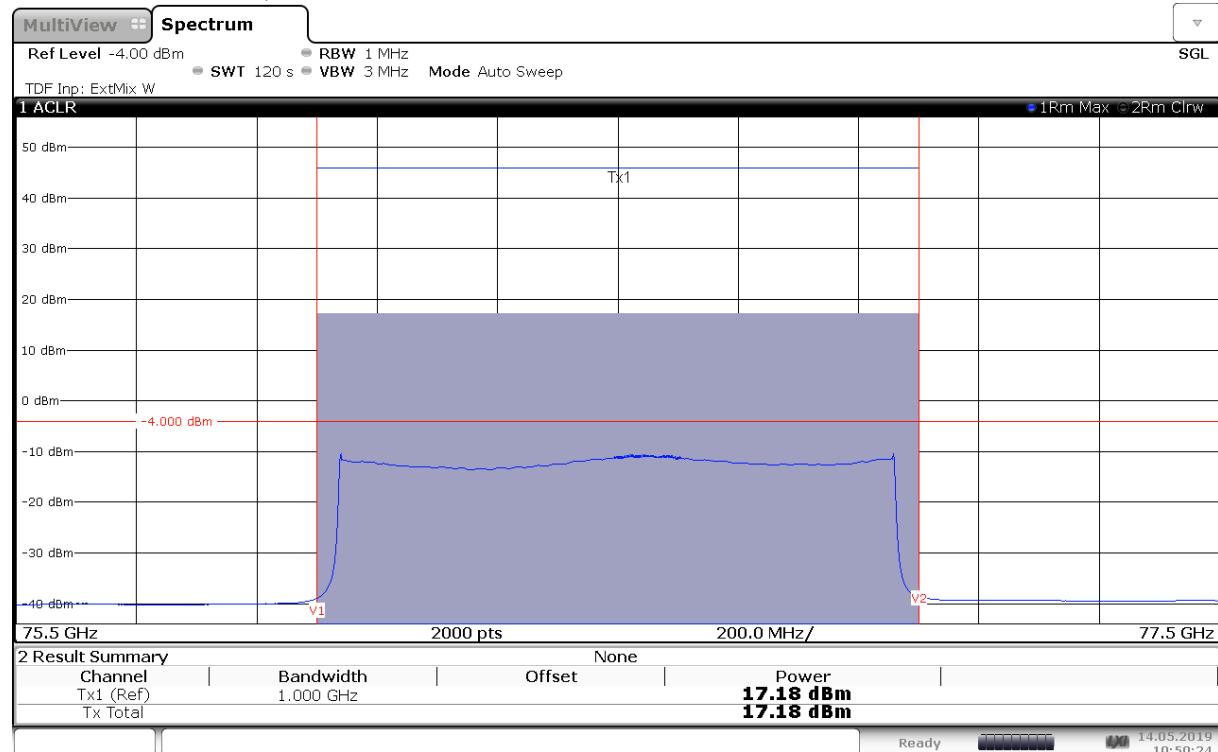
## 1.6. Peak Detector, $T_{max}/V_{nom}$



18:16:24 28.05.2019

\* -4 dBm is only a reference line from the FSW67. Limit: 50 dBm (Average), 55 dBm (Peak).

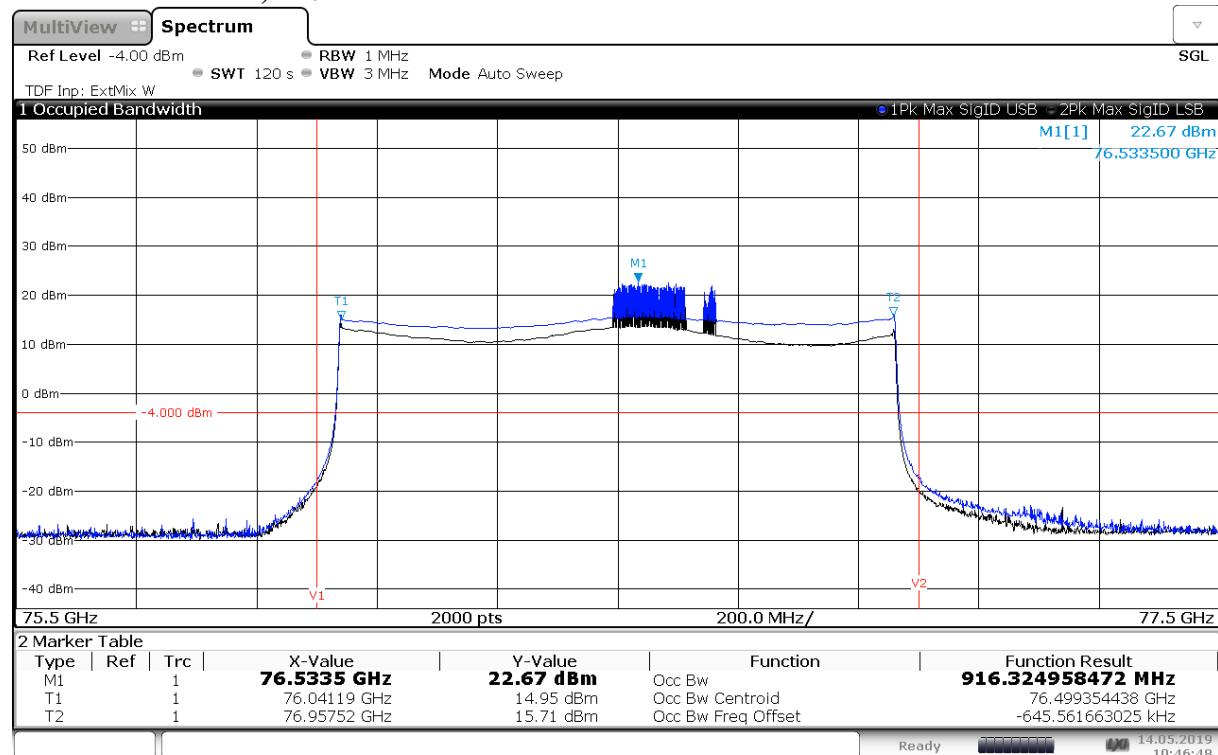
## 1.7. RMS Detector, $T_{nom}/V_{min}$



10:50:24 14.05.2019

\* -4 dBm is only a reference line from the FSW67. Limit: 50 dBm (Average), 55 dBm (Peak).

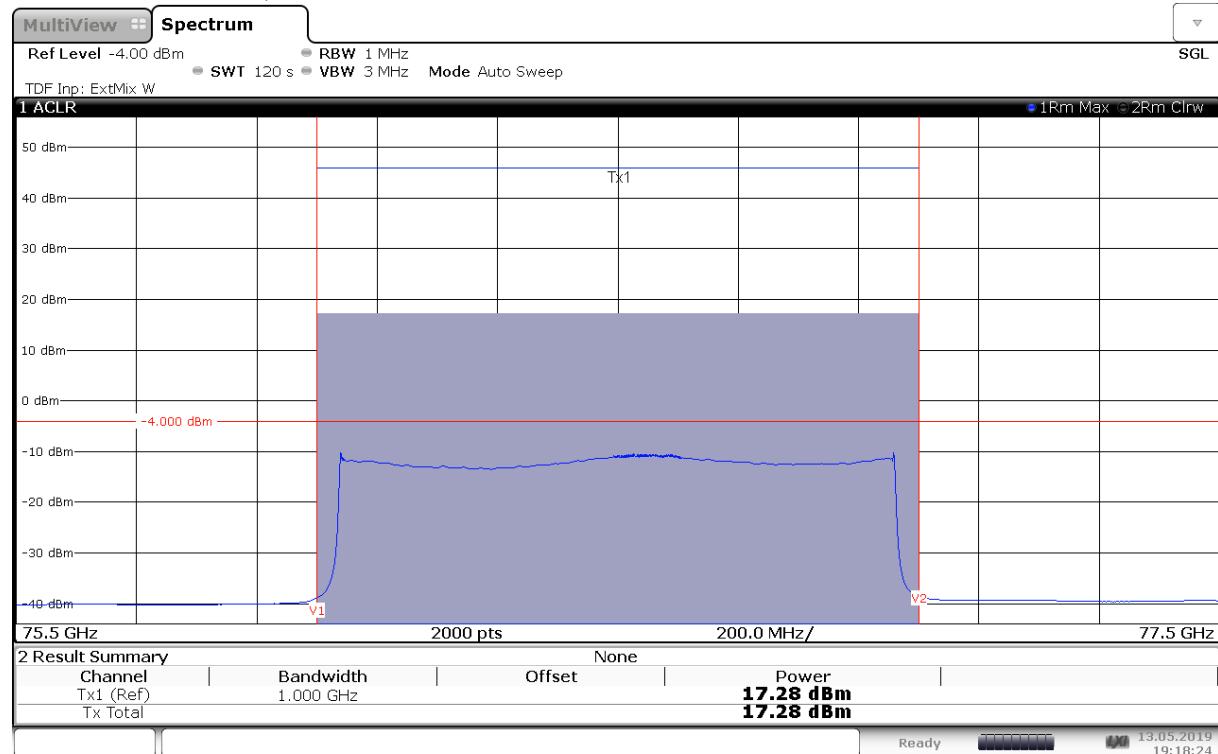
## 1.8. Peak Detector, $T_{nom}/V_{min}$



10:46:49 14.05.2019

\* -4 dBm is only a reference line from the FSW67. Limit: 50 dBm (Average), 55 dBm (Peak).

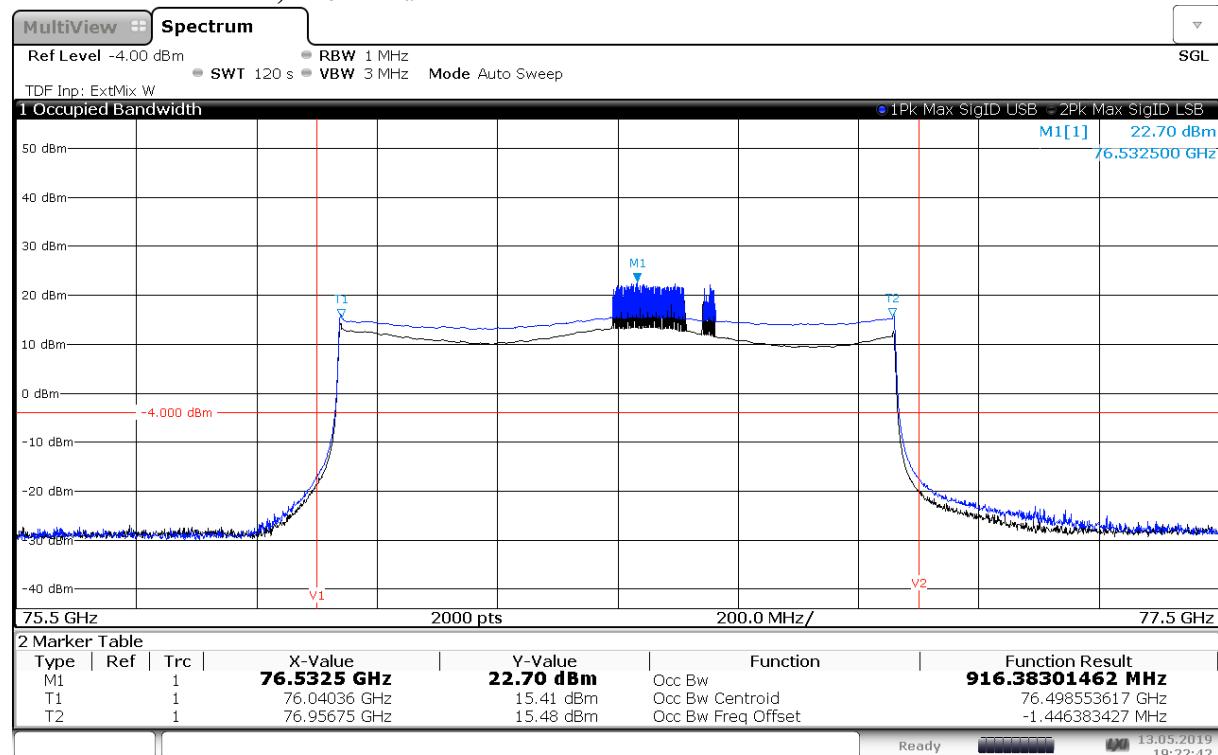
## 1.9. RMS Detector, $T_{nom}/V_{max}$



19:18:24 13.05.2019

\* -4 dBm is only a reference line from the FSW67. Limit: 50 dBm (Average), 55 dBm (Peak).

## 1.10. Peak Detector, $T_{nom}/V_{max}$



19:22:43 13.05.2019

\* -4 dBm is only a reference line from the FSW67. Limit: 50 dBm (Average), 55 dBm (Peak).

## **2. Modulation characteristics**

### **2.1. Peak Detector, $T_{\text{nom}}/V_{\text{nom}}$**

See diagram 1.2

### **2.2. Peak Detector, $T_{\text{min}}/V_{\text{nom}}$**

See diagram 1.4

### **2.3. Peak Detector, $T_{\text{max}}/V_{\text{nom}}$**

See diagram 1.6

### **2.4. Peak Detector, $T_{\text{nom}}/V_{\text{min}}$**

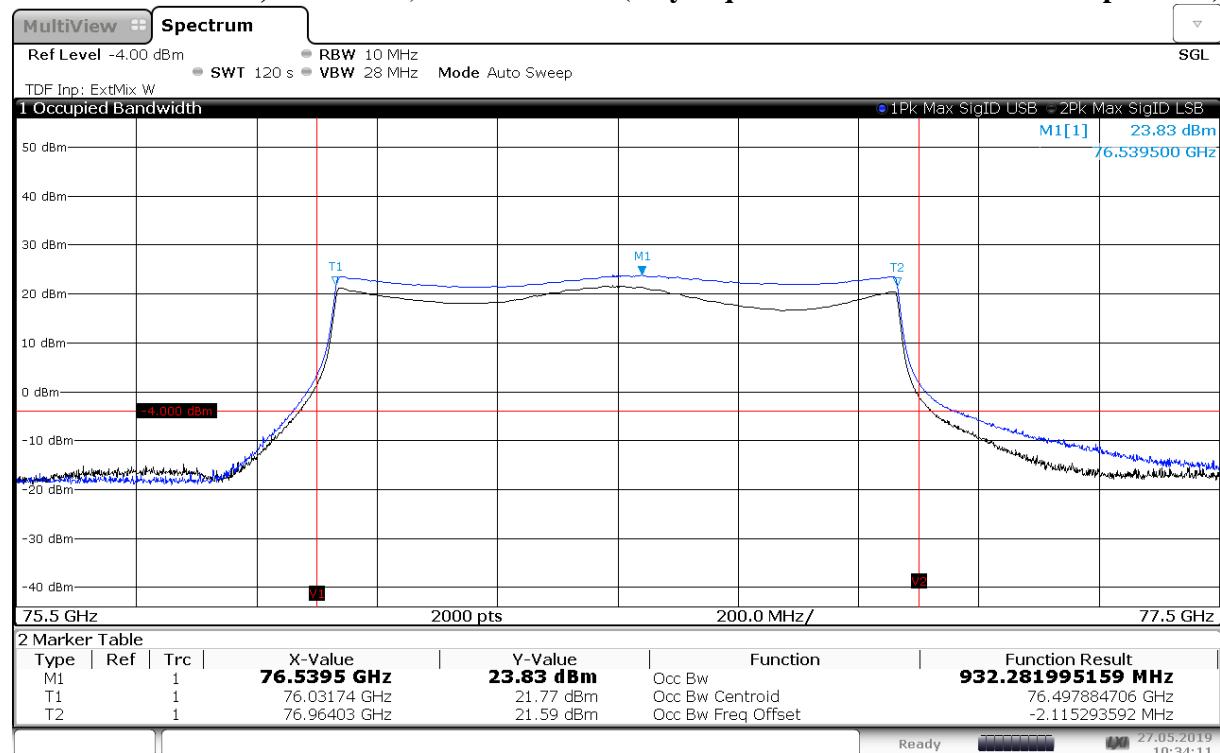
See diagram 1.8

### **2.5. Peak Detector, $T_{\text{nom}}/V_{\text{max}}$**

See diagram 1.10

### 3. Occupied bandwidth

#### 3.1. Peak Detector, $T_{nom}/V_{nom}$ , RBW 10 MHz (only required for 99% RSS Gen Occupied BW)



10:34:12 27.05.2019

\* -4 dBm is only a reference line from the FSW67. Limit: 50 dBm (Average), 55 dBm (Peak).

#### 3.2. Peak Detector, $T_{nom}/V_{nom}$

See diagram 1.2

#### 3.3. Peak Detector, $T_{min}/V_{nom}$

See diagram 1.4

#### 3.4. Peak Detector, $T_{max}/V_{nom}$

See diagram 1.6

#### 3.5. Peak Detector, $T_{nom}/V_{min}$

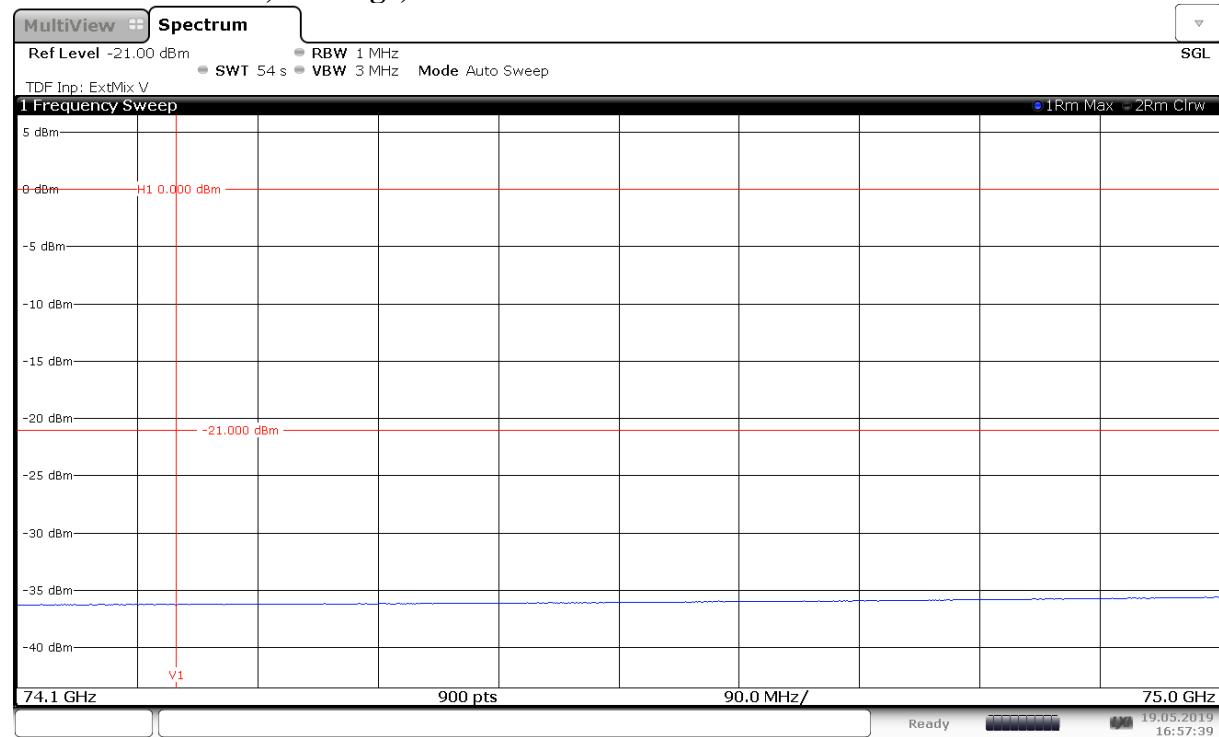
See diagram 1.8

#### 3.6. Peak Detector, $T_{nom}/V_{max}$

See diagram 1.10

## 4. Field strength of emissions (band edge)

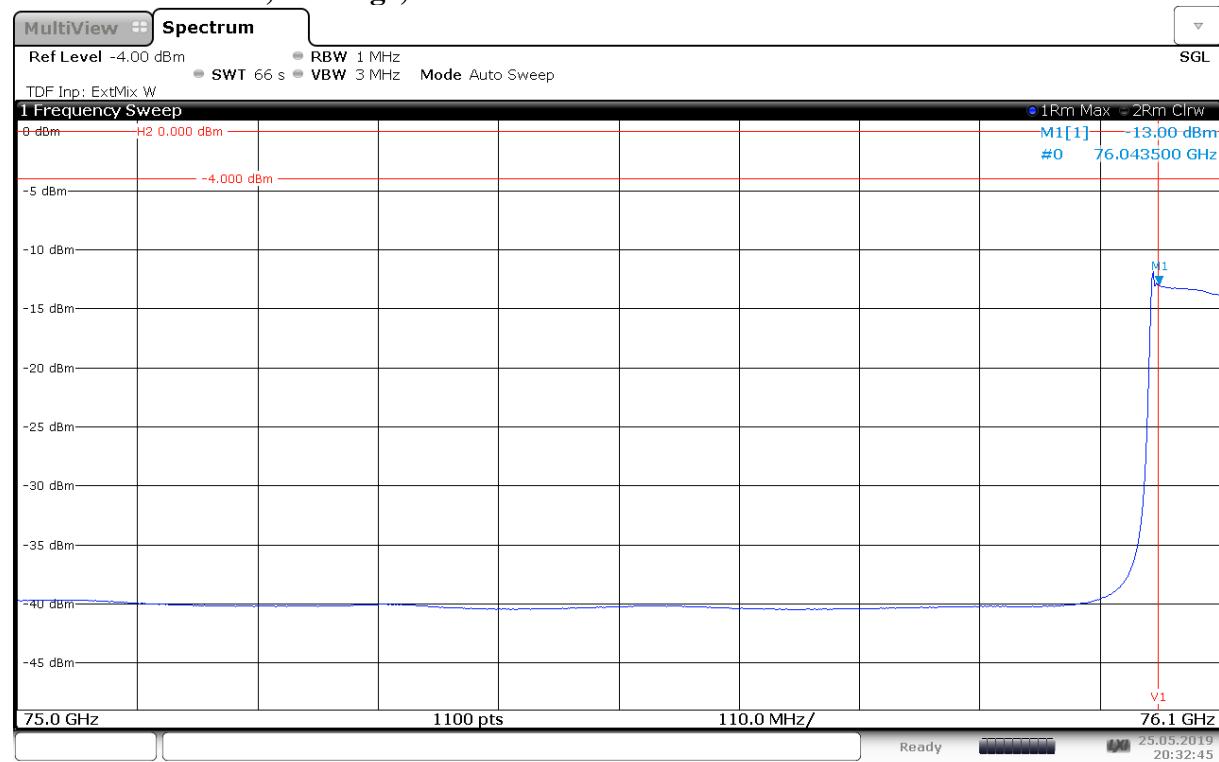
### 4.1. RMS Detector, low edge, 74.1 GHz – 75 GHz



16:57:40 19.05.2019

\* -21 dBm is only a reference line from the FSW67. Limit is 0 dBm.

### 4.2. RMS Detector, low edge, 75 GHz – 76.1 GHz



20:32:45 25.05.2019

\* -4 dBm is only a reference line from the FSW67. Limit is 0 dBm.

**4.3. RMS Detector, high edge, SigID USB + LSB**

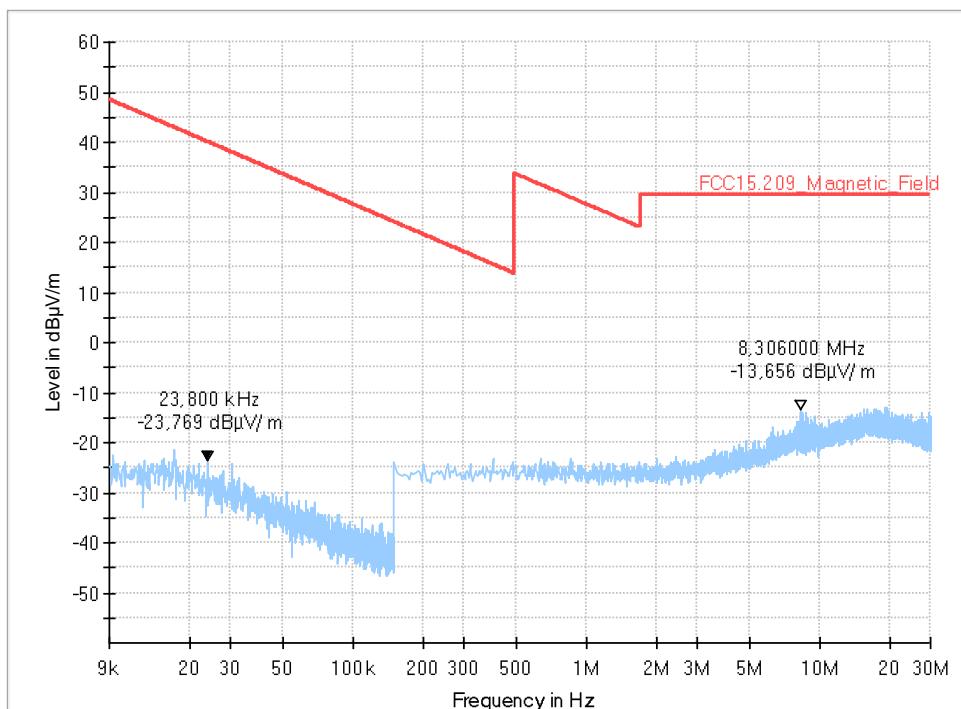
No emissions above 77 GHz respectively 81 GHz. See diagrams in from section 5.36. 77 GHz – 78.5 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW to 5.38. 79.5 GHz – 81 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW.

\* Limit is 0 dBm.

## 5. Field strength of emissions (radiated spurious)

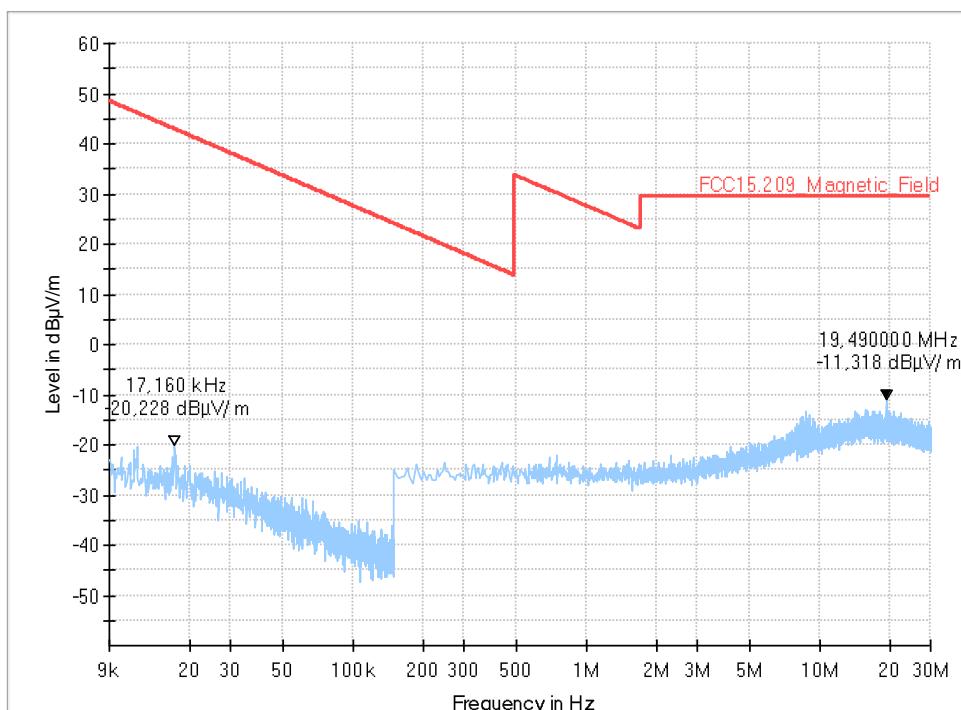
### 5.1. 9 kHz – 30 MHz, laying, valid for f\_CW\_low + f\_CW\_center + f\_CW\_high

Full Spectrum



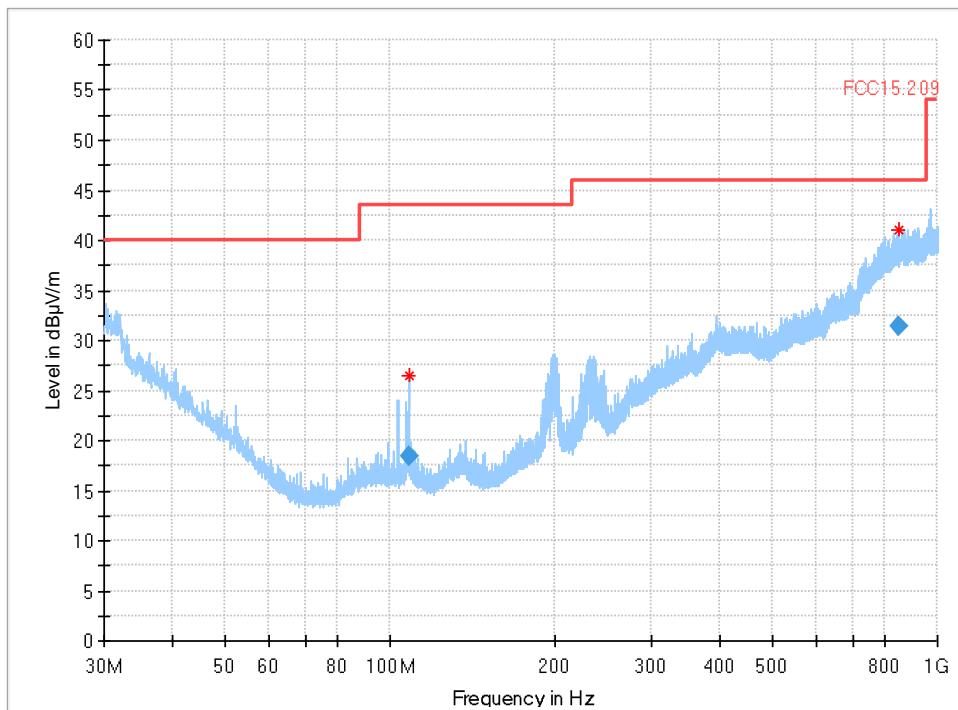
### 5.2. 9 kHz – 30 MHz, standing, valid for f\_CW\_low + f\_CW\_center + f\_CW\_high

Full Spectrum

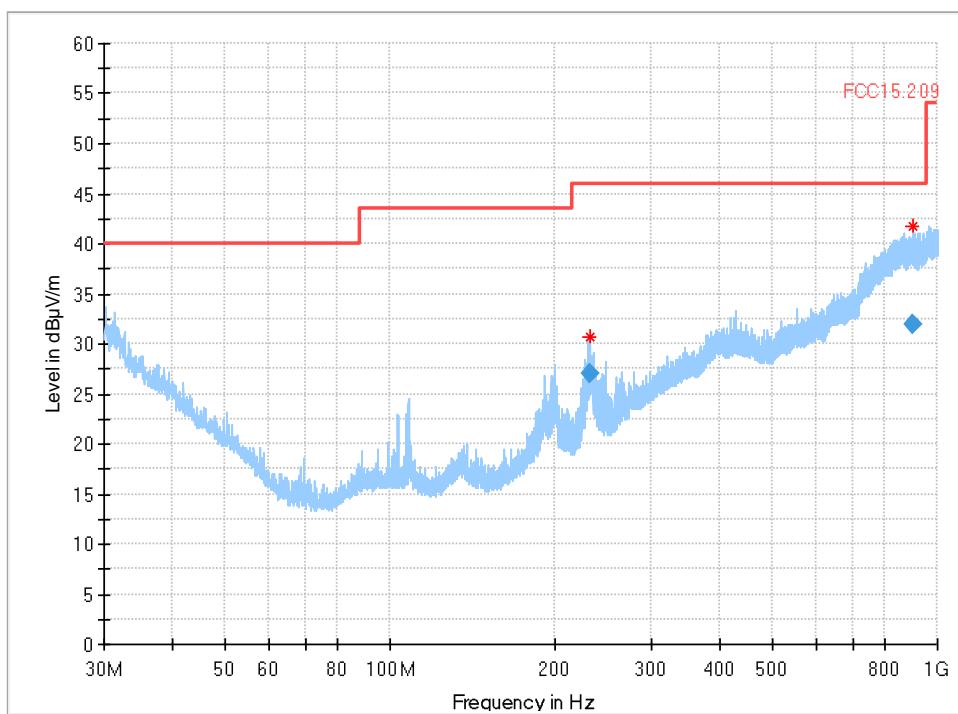


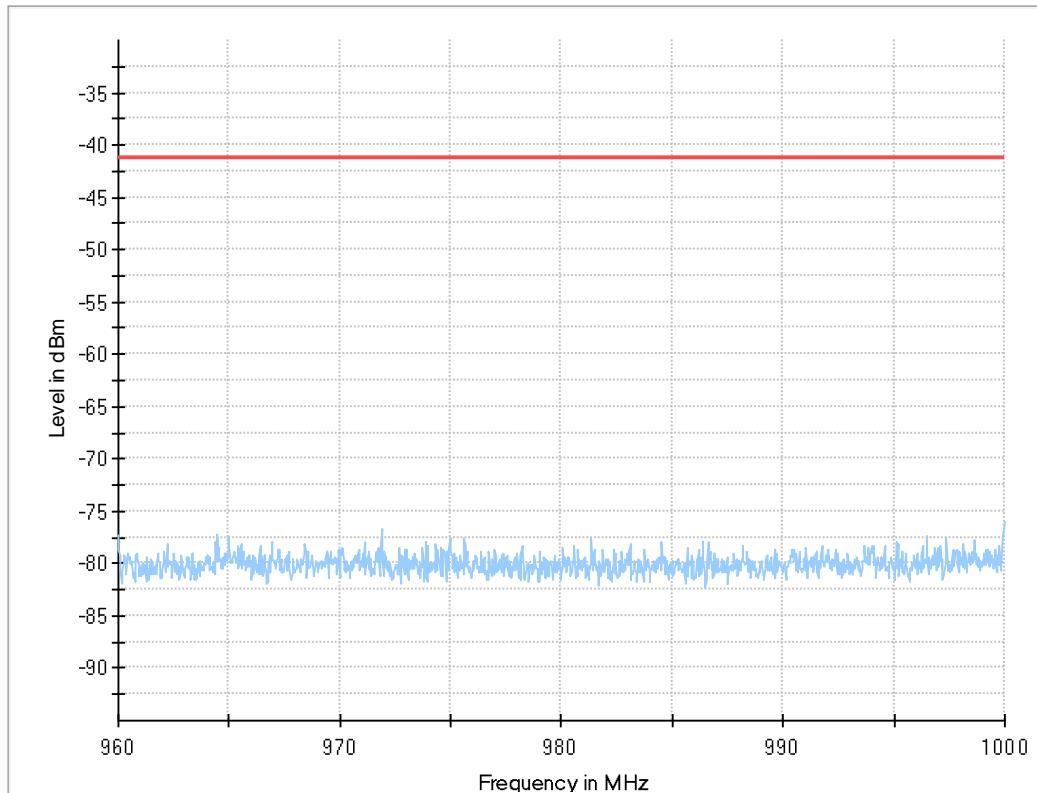
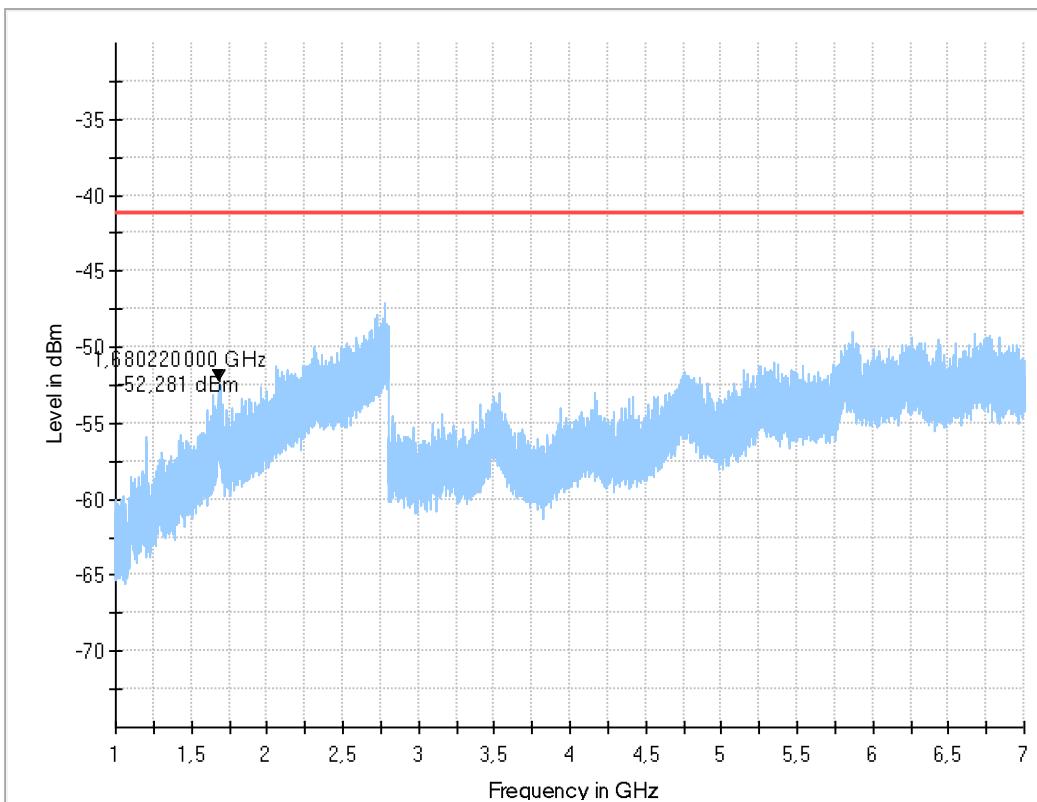
**5.3. 30 MHz – 1 GHz, laying, valid for f\_CW\_low + f\_CW\_center + f\_CW\_high**

Full Spectrum

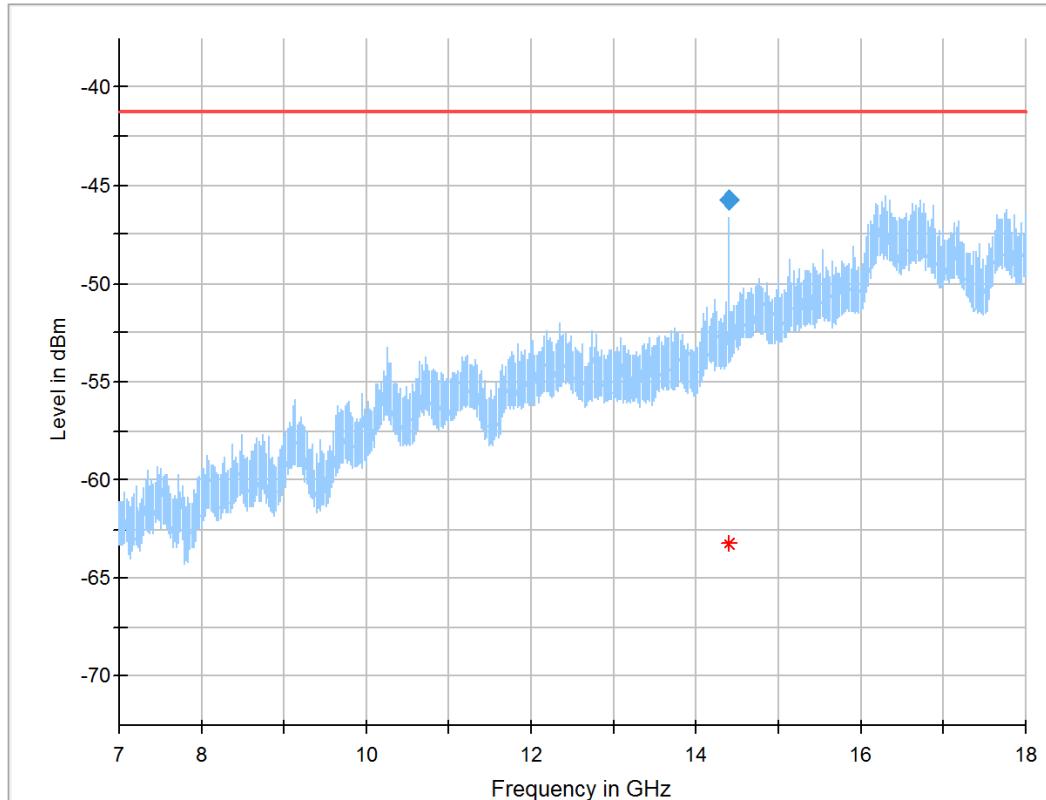
**5.4. 30 MHz – 1 GHz, standing, valid for f\_CW\_low + f\_CW\_center + f\_CW\_high**

Full Spectrum

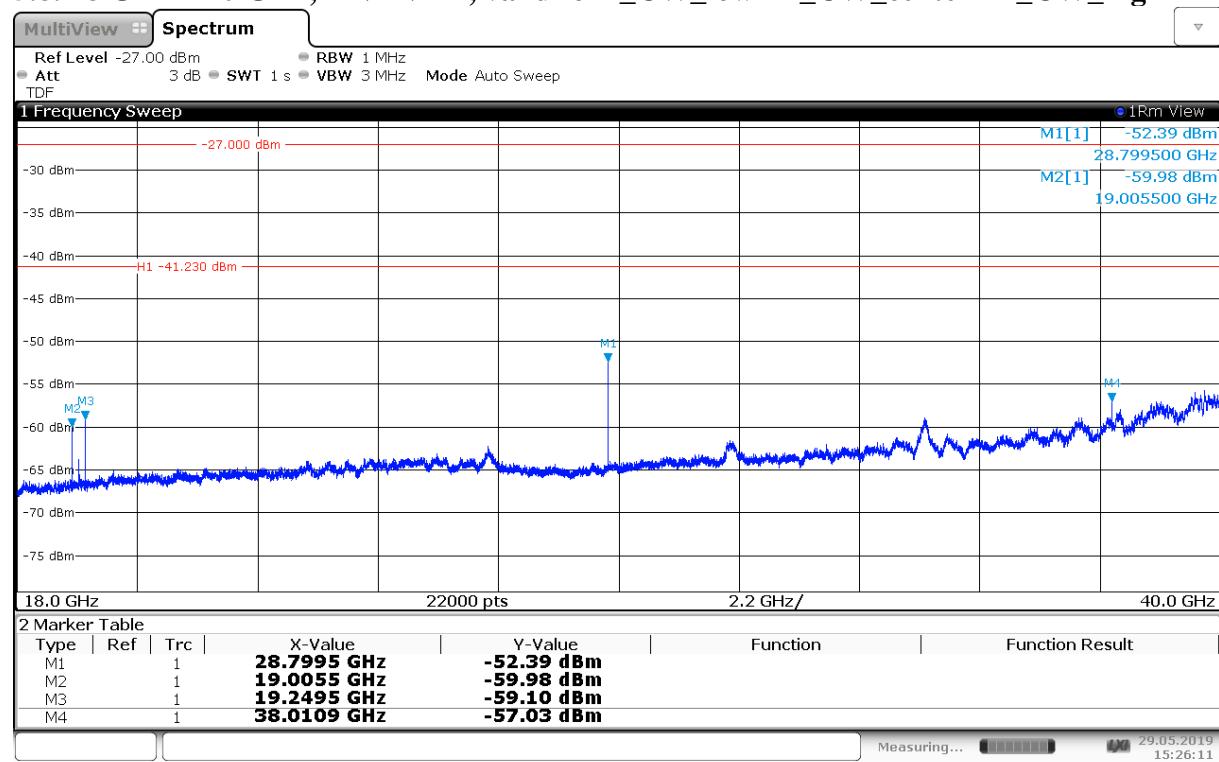


**5.5. 960 MHz – 1 GHz, valid for f\_CW\_low + f\_CW\_center + f\_CW\_high****5.6. 1 GHz – 7 GHz, valid for f\_CW\_low + f\_CW\_center + f\_CW\_high**

### 5.7. 7 GHz – 18 GHz, valid for f\_CW\_low + f\_CW\_center + f\_CW\_high



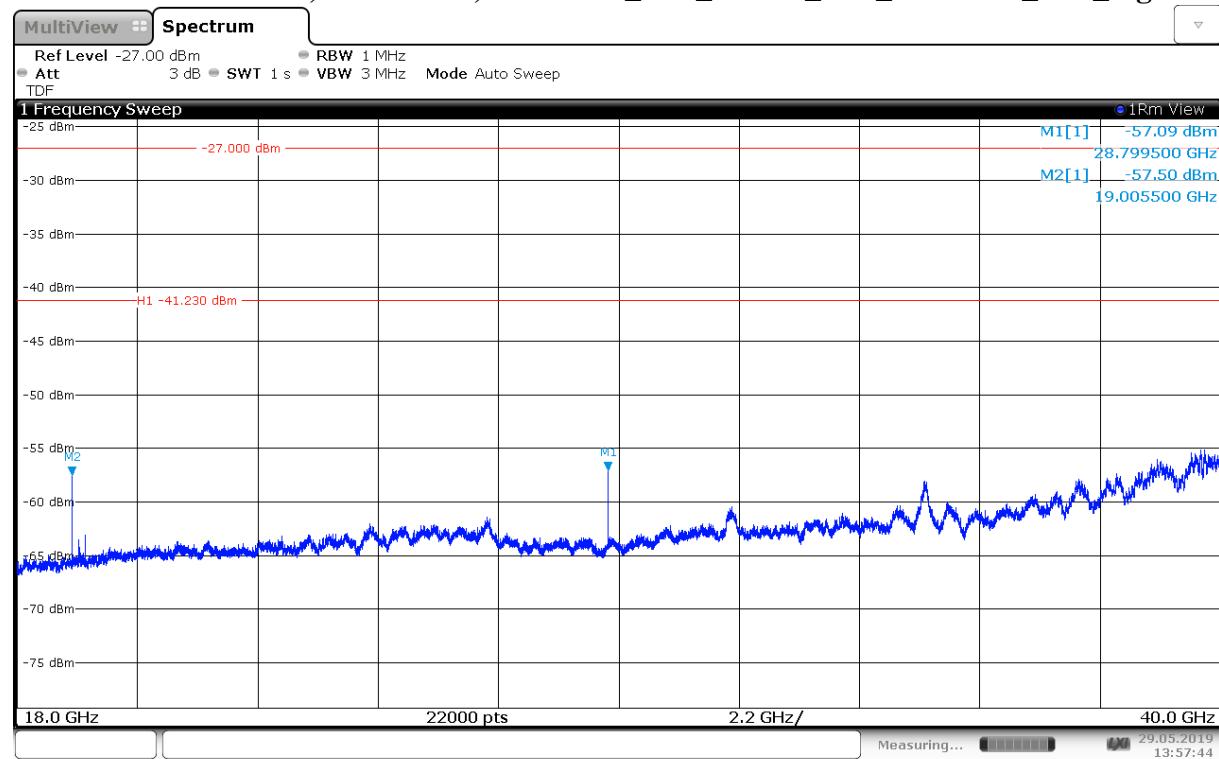
### 5.8. 18 GHz – 40 GHz, ANT VER, valid for f\_CW\_low + f\_CW\_center + f\_CW\_high



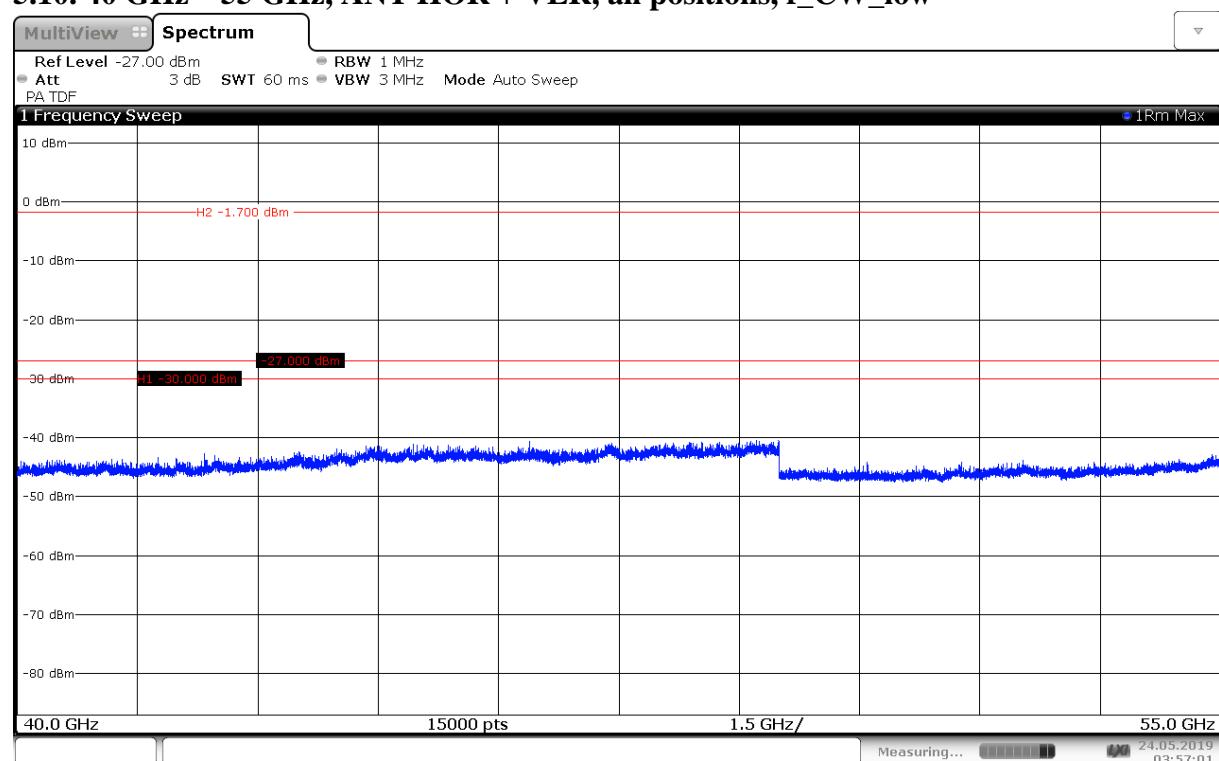
15:26:11 29.05.2019

\* -27 dBm is only a reference line from the FSW67. Limit is -41.23 dBm.

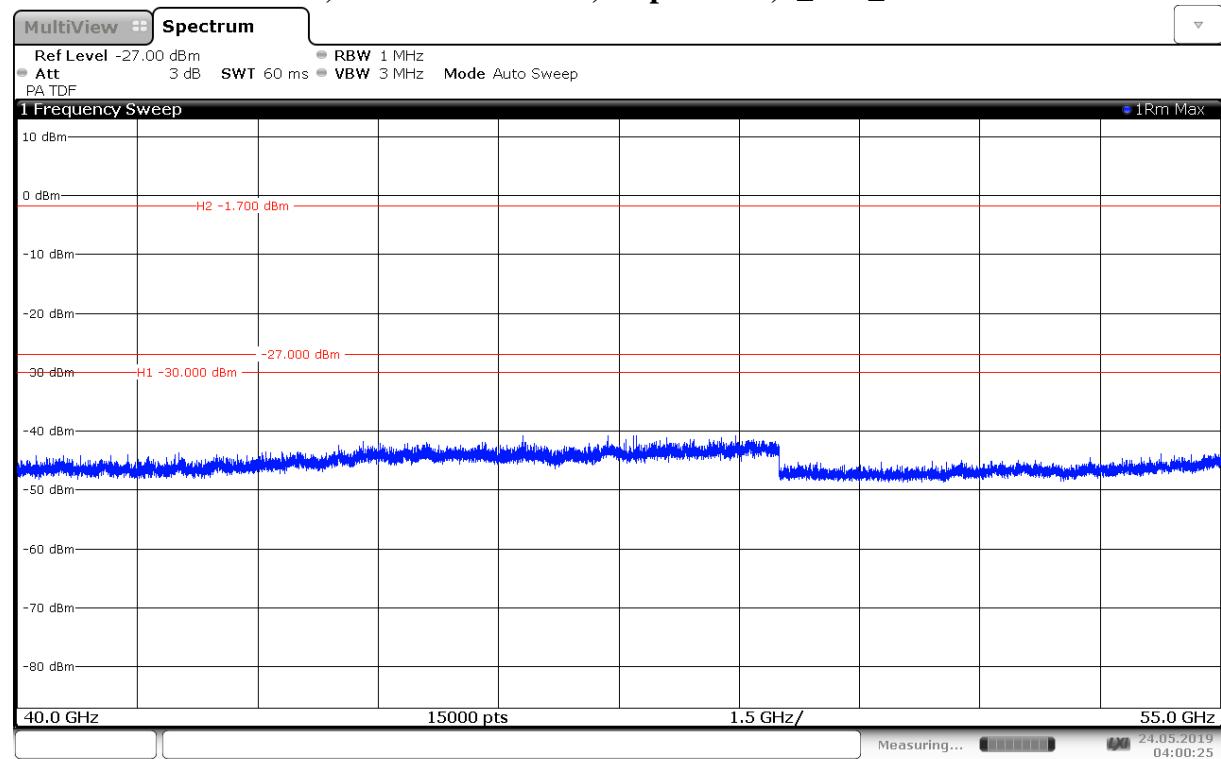
### 5.9. 18 GHz – 40 GHz, ANT HOR, valid for f\_CW\_low + f\_CW\_center + f\_CW\_high



### 5.10. 40 GHz – 55 GHz, ANT HOR + VER, all positions, f\_CW\_low



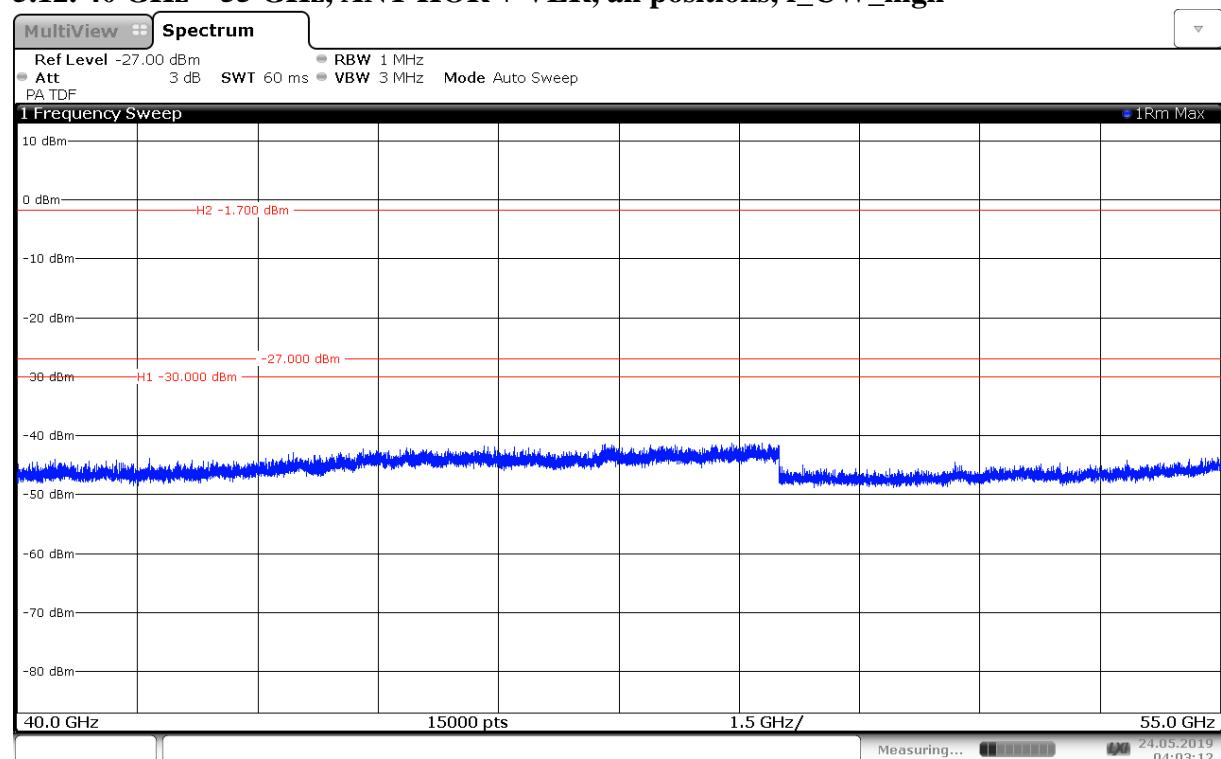
### 5.11. 40 GHz – 55 GHz, ANT HOR + VER, all positions, f\_CW\_center



04:00:26 24.05.2019

\* -27 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

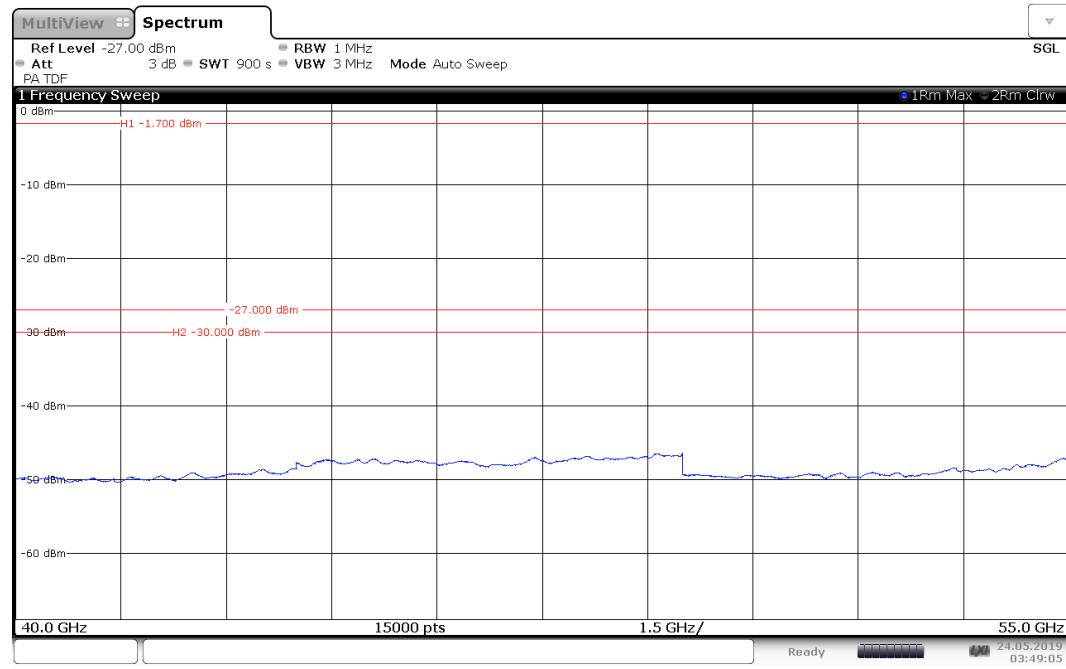
### 5.12. 40 GHz – 55 GHz, ANT HOR + VER, all positions, f\_CW\_high



04:03:12 24.05.2019

\* -27 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

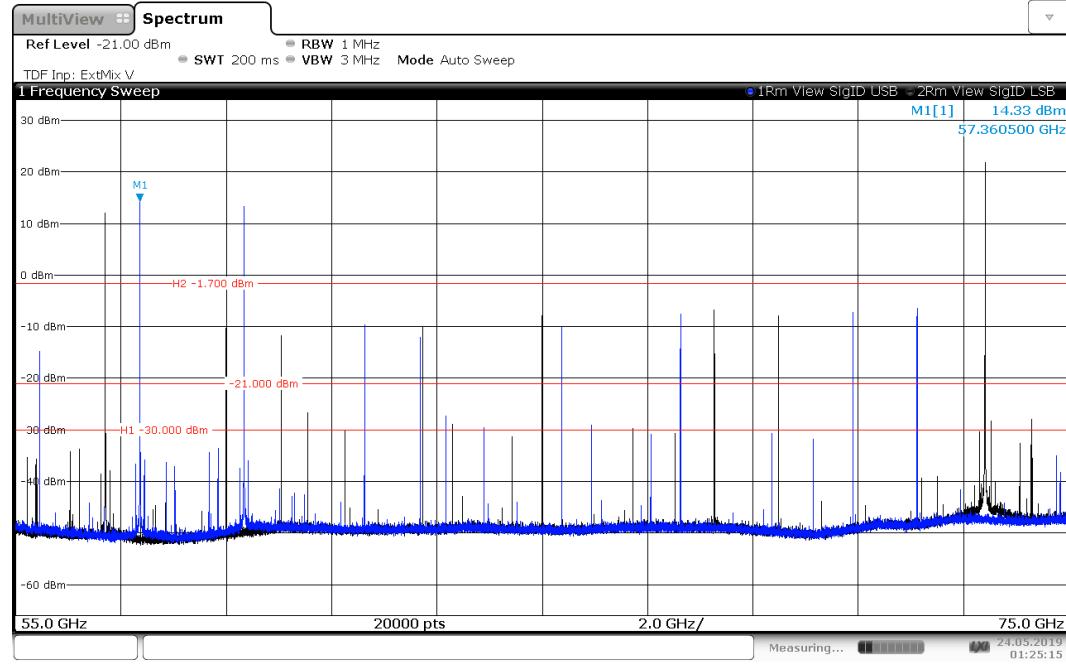
### 5.13. 40 GHz – 55 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW



03:49:06 24.05.2019

\* -27 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

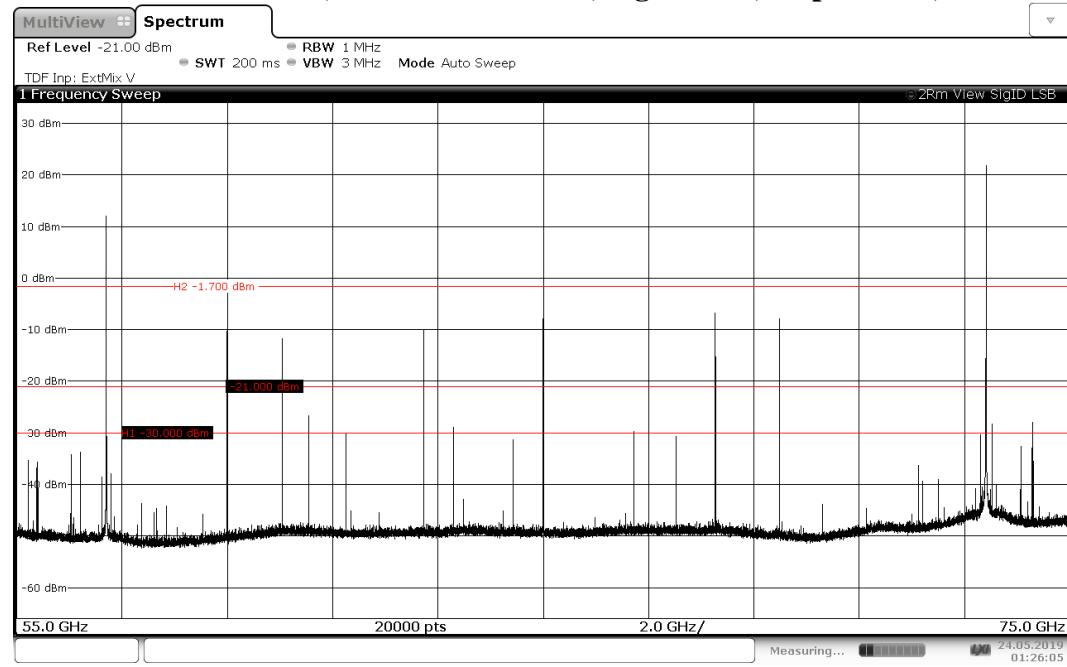
### 5.14. 55 GHz – 75 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_low



01:25:15 24.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

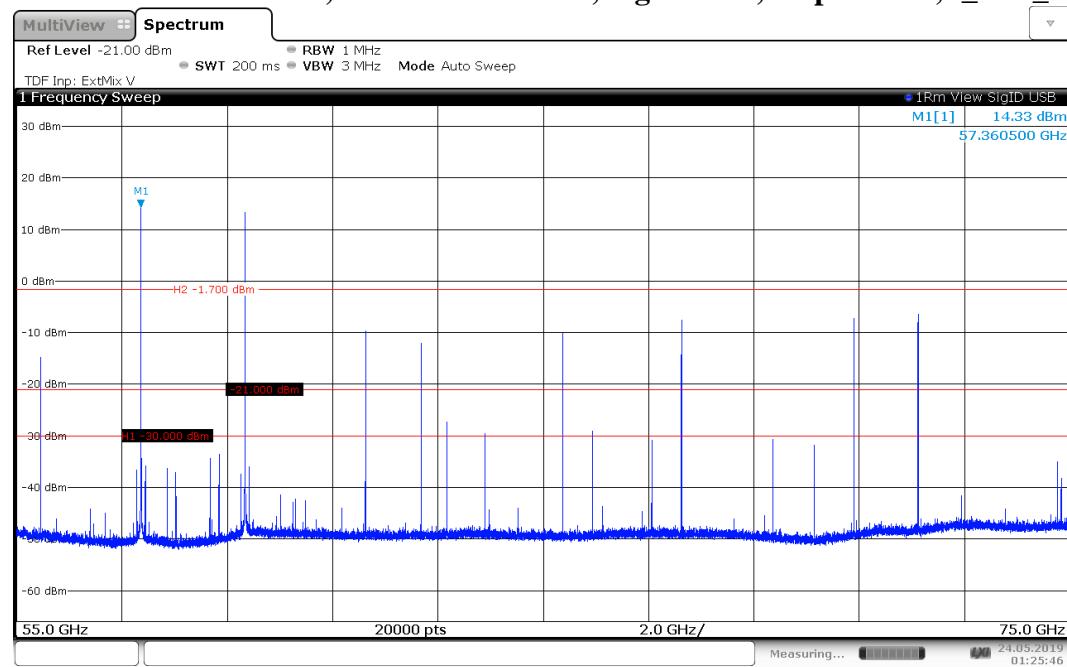
## 5.15. 55 GHz – 75 GHz, ANT HOR + VER, SigID LSB, all positions, f\_CW\_low



01:26:05 24.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

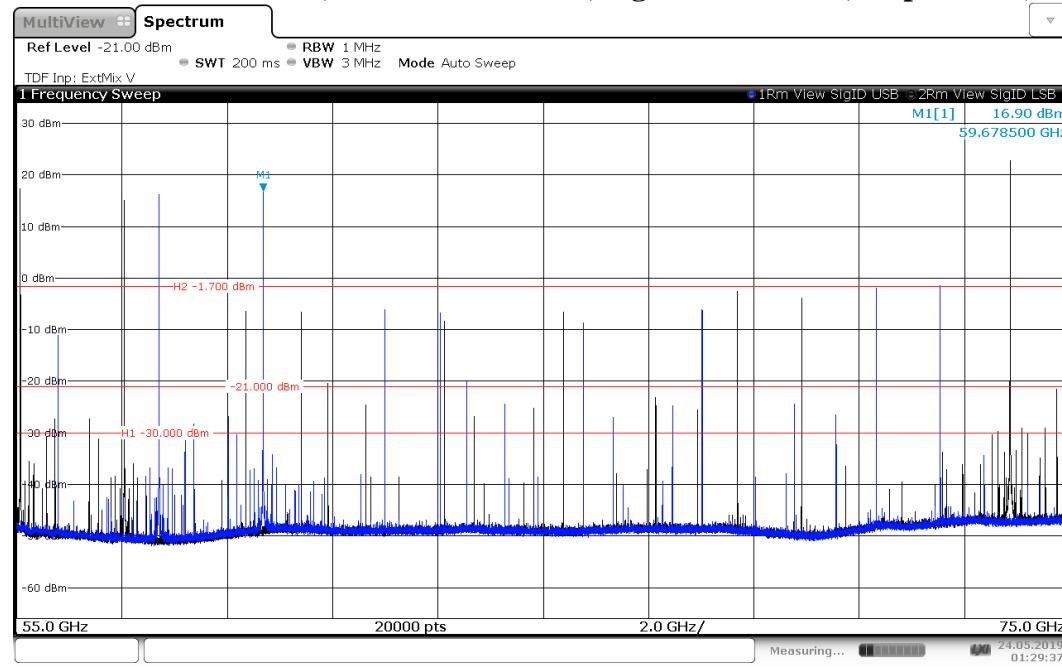
## 5.16. 55 GHz – 75 GHz, ANT HOR + VER, SigID USB, all positions, f\_CW\_low



01:25:47 24.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

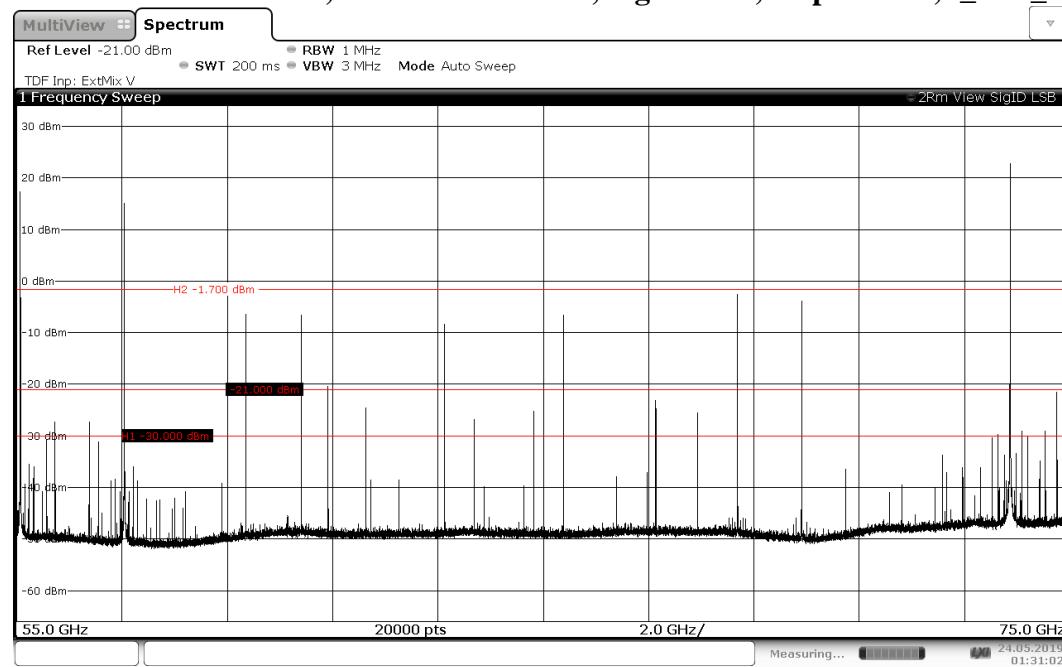
## 5.17. 55 GHz – 75 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_center



01:29:37 24.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

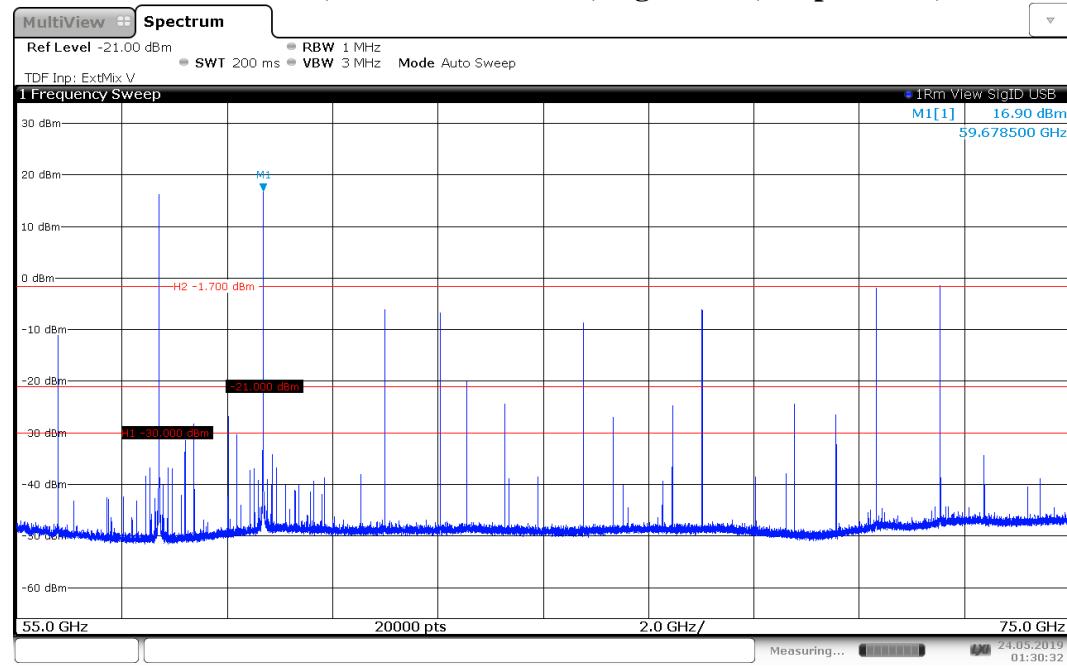
## 5.18. 55 GHz – 75 GHz, ANT HOR + VER, SigID LSB, all positions, f\_CW\_center



01:31:02 24.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

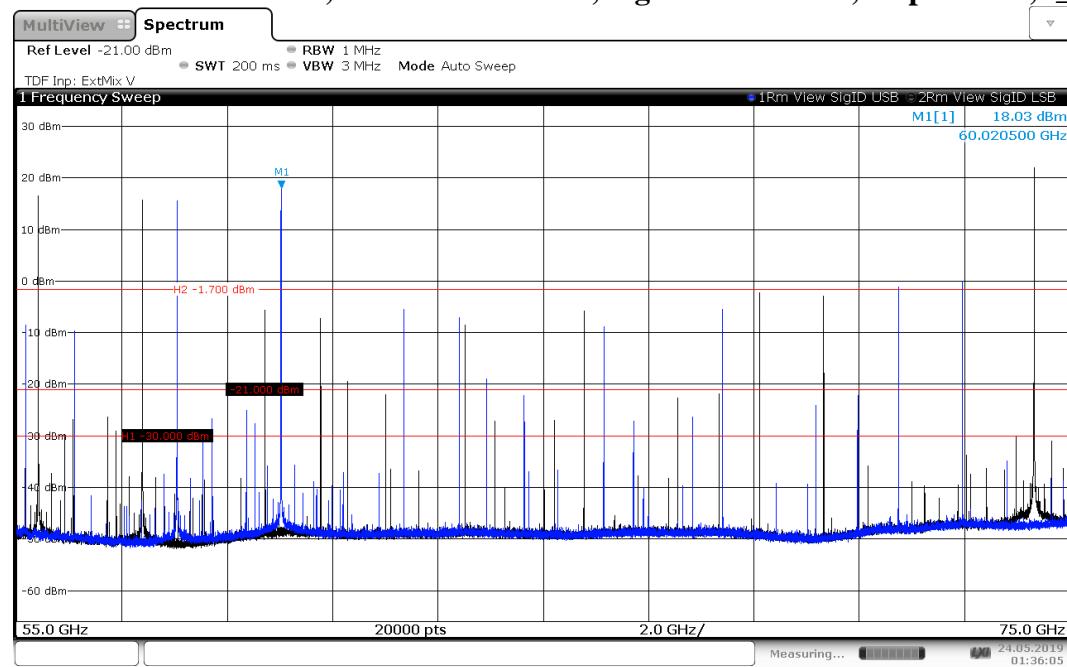
## 5.19. 55 GHz – 75 GHz, ANT HOR + VER, SigID USB, all positions, f\_CW\_center



01:30:32 24.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

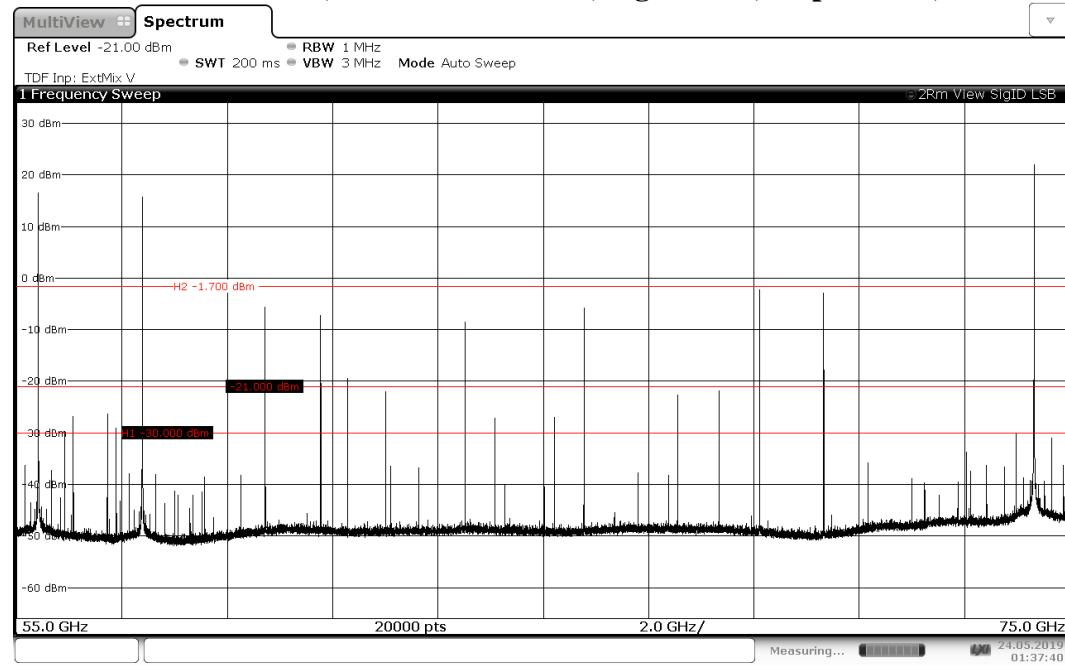
## 5.20. 55 GHz – 75 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_high



01:36:05 24.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

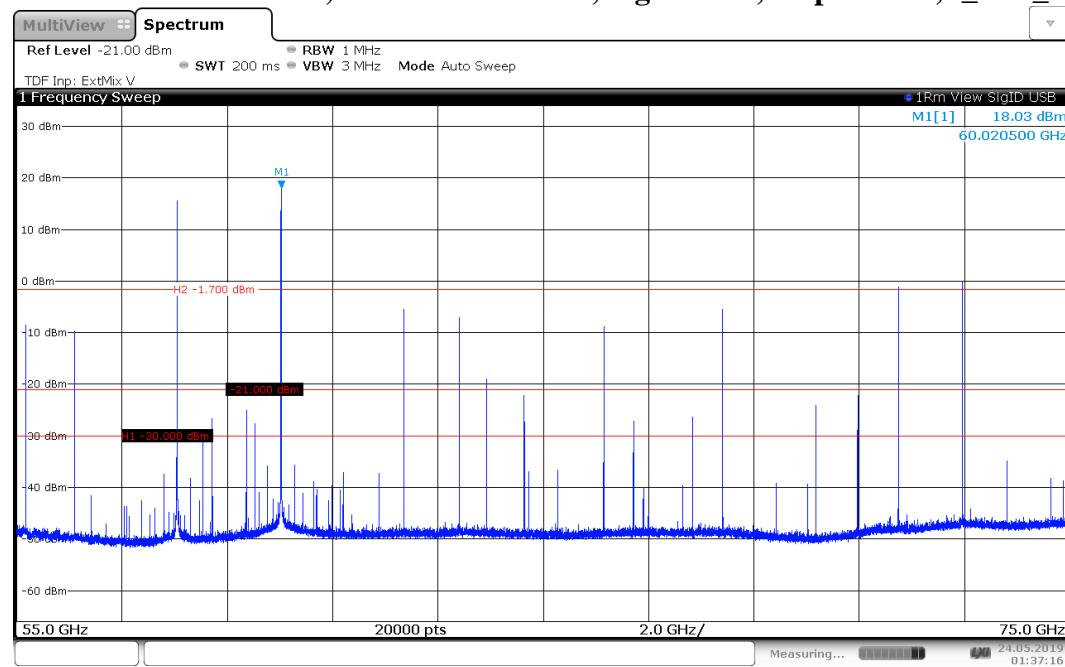
## 5.21. 55 GHz – 75 GHz, ANT HOR + VER, SigID LSB, all positions, f\_CW\_high



01:37:41 24.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

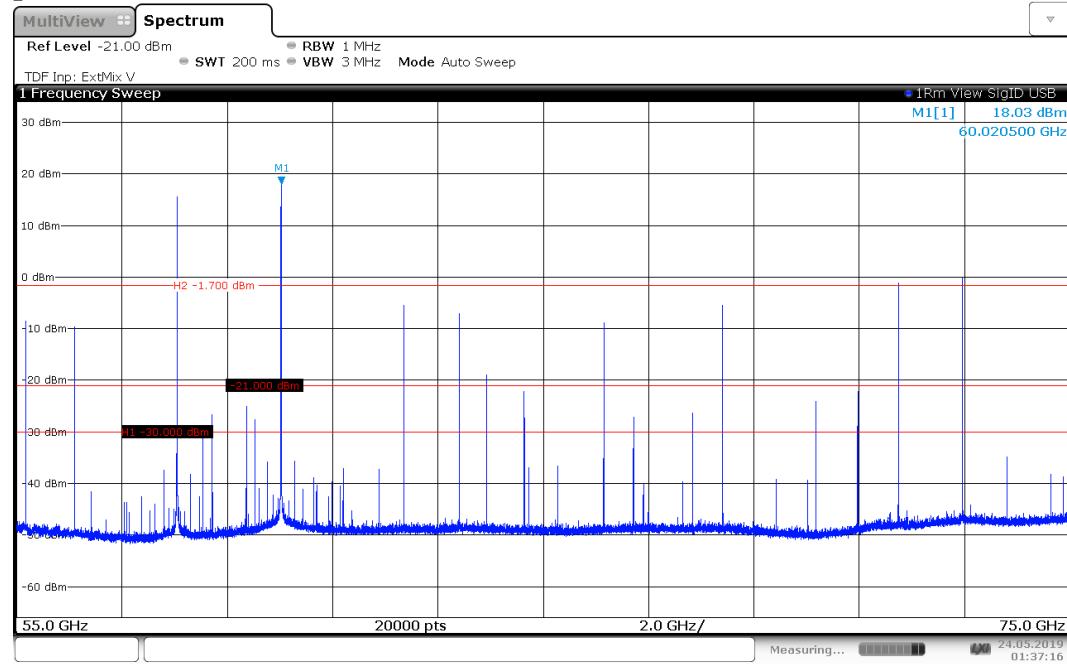
## 5.22. 55 GHz – 75 GHz, ANT HOR + VER, SigID USB, all positions, f\_CW\_high



01:37:16 24.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

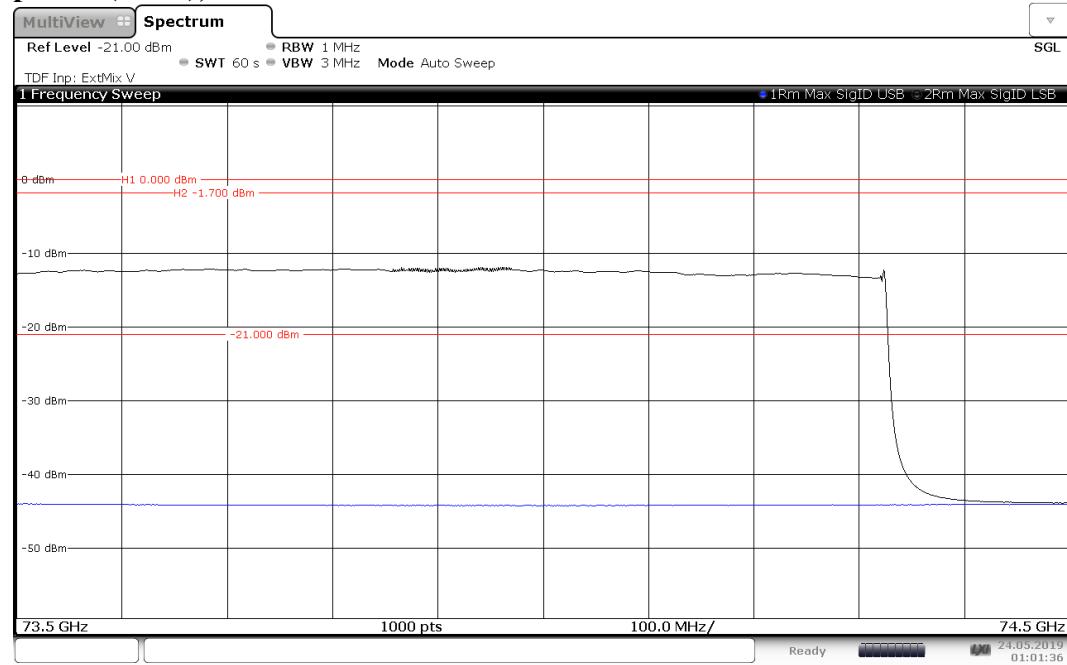
### 5.23. 55 GHz – 73.5 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW



01:37:16 24.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

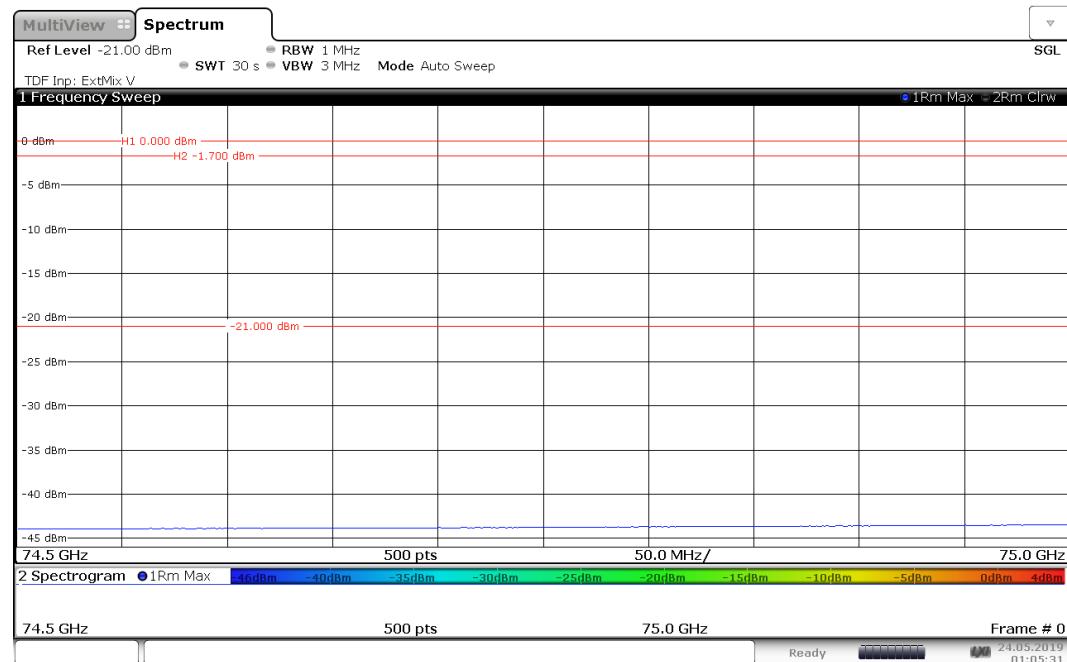
### 5.24. 73.5 GHz – 74.5 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW



01:01:37 24.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and 0 dBm (ISED).

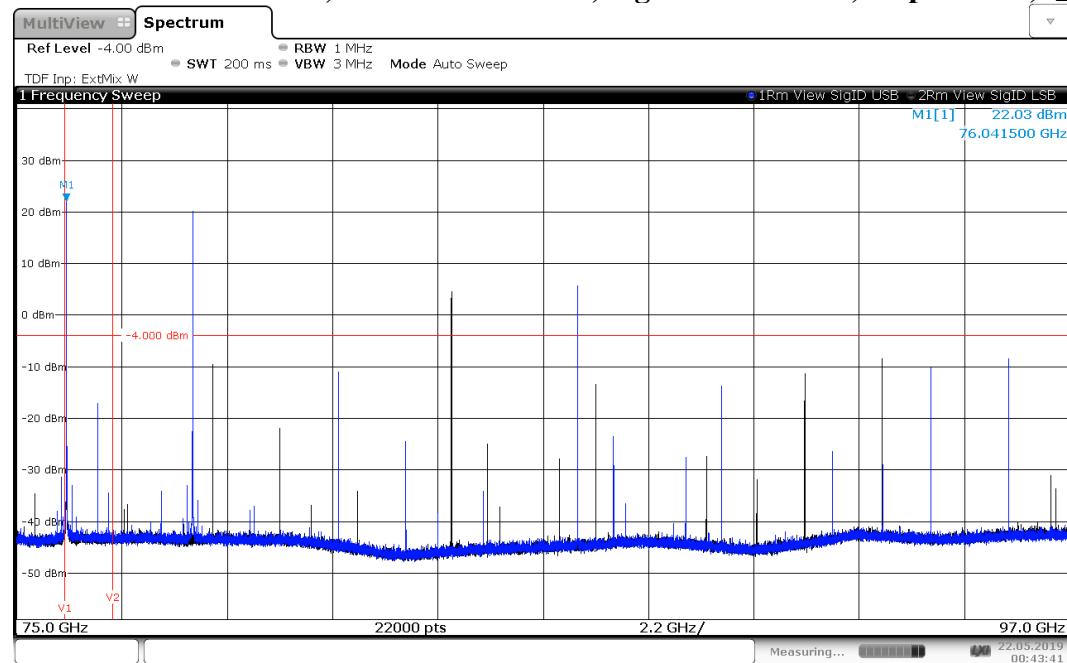
## 5.25. 74.5 GHz – 75 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW



01:05:32 24.05.2019

\* -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and 0 dBm (ISED).

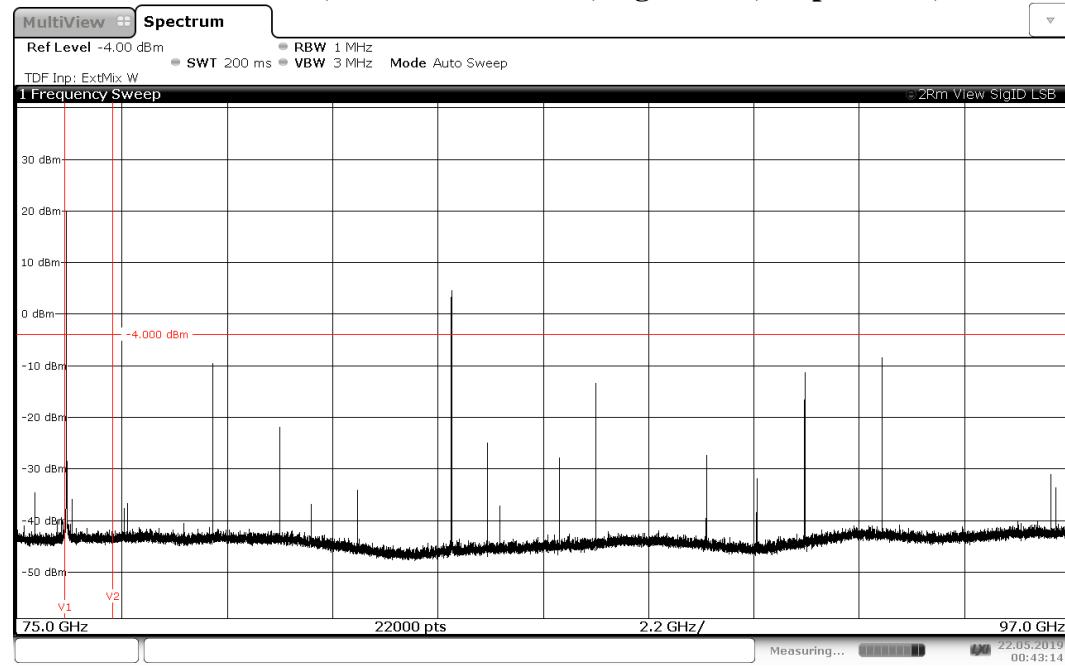
## 5.26. 75 GHz – 97 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_low



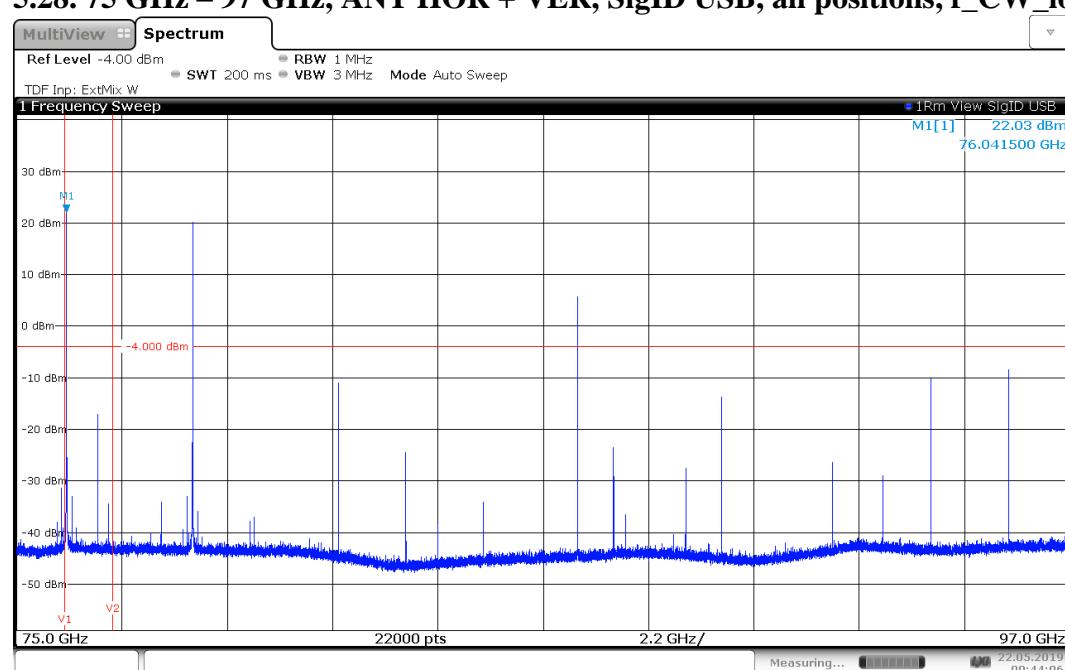
00:43:41 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

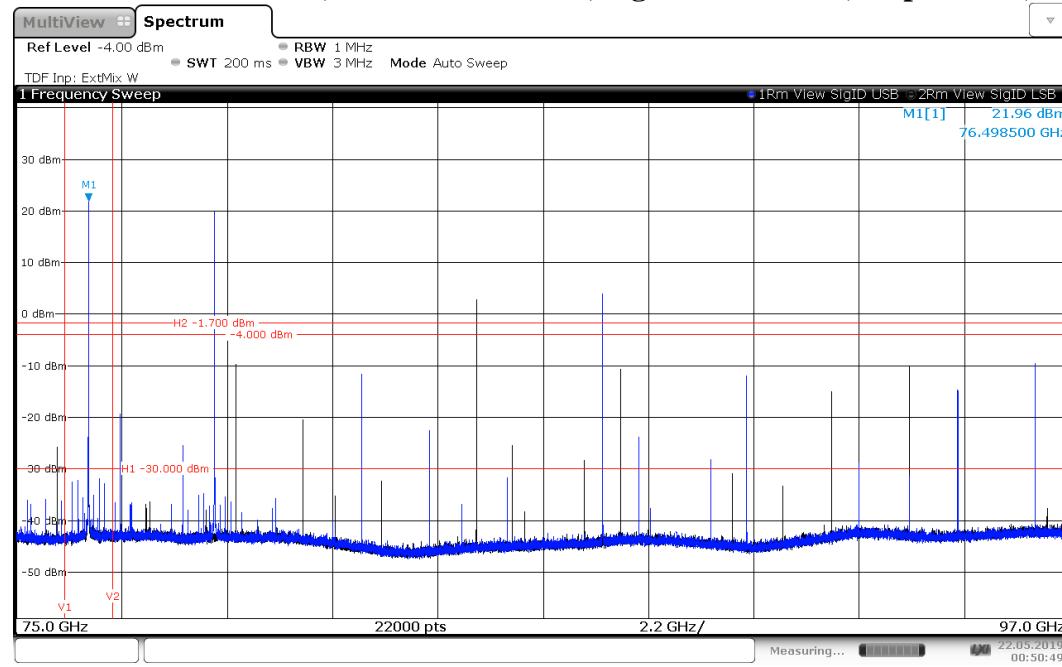
### 5.27. 75 GHz – 97 GHz, ANT HOR + VER, SigID LSB, all positions, f\_CW\_low



### 5.28. 75 GHz – 97 GHz, ANT HOR + VER, SigID USB, all positions, f\_CW\_low



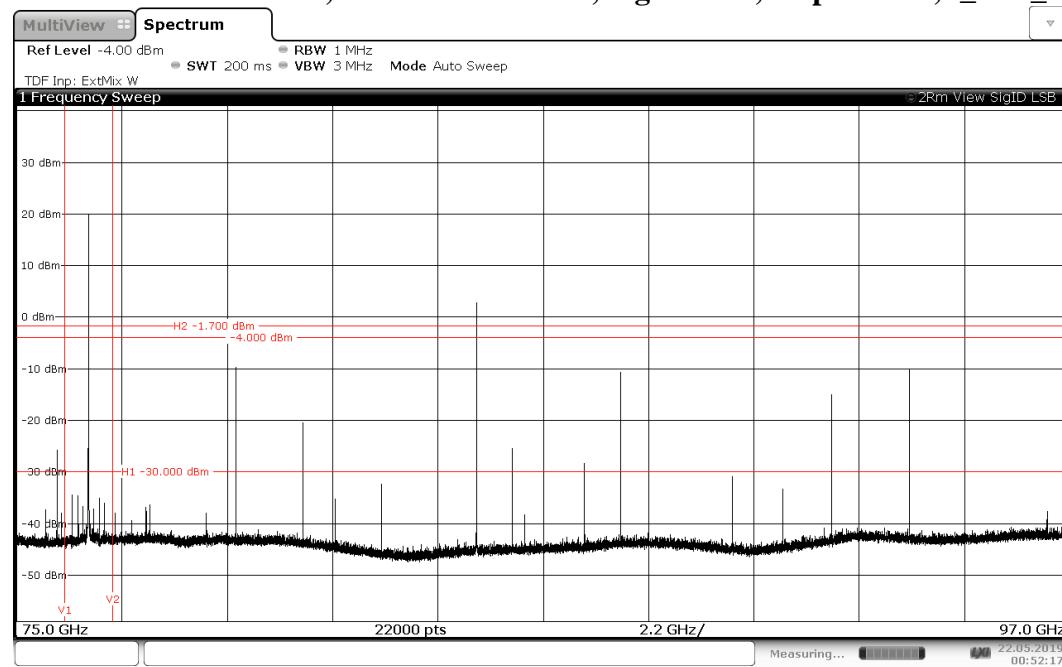
### 5.29. 75 GHz – 97 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_center



00:50:50 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

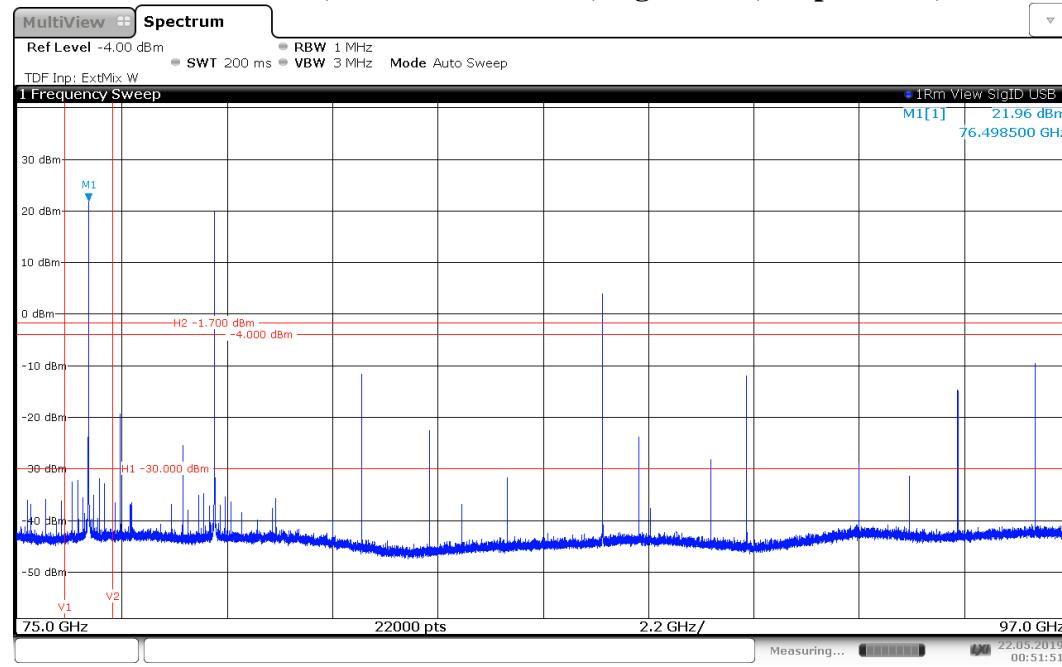
### 5.30. 75 GHz – 97 GHz, ANT HOR + VER, SigID LSB, all positions, f\_CW\_center



00:52:18 22.05.2019

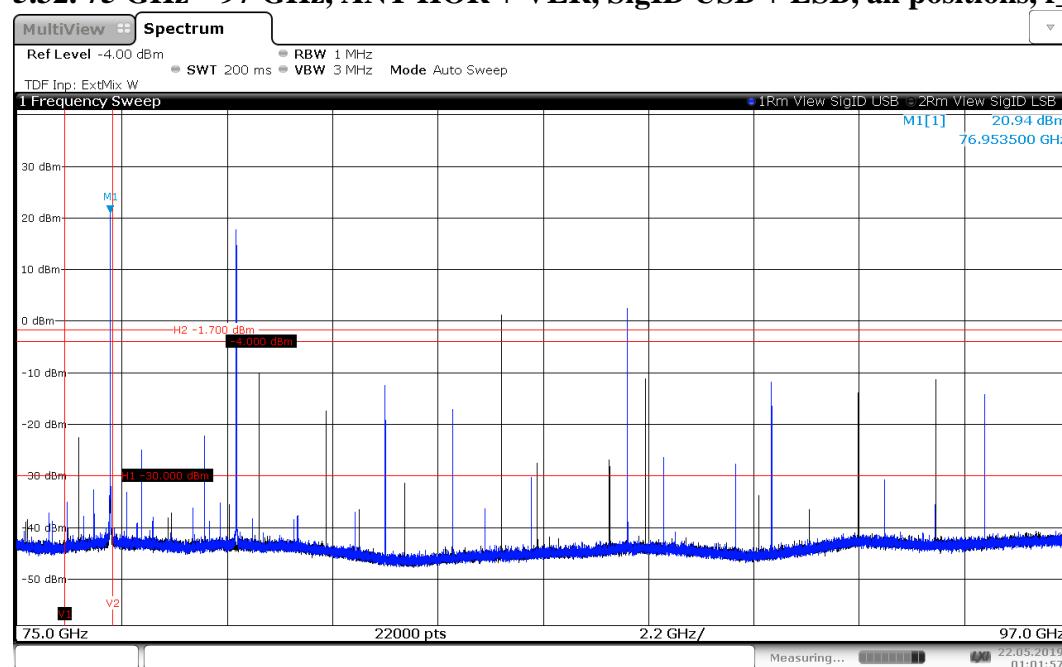
\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

### 5.31. 75 GHz – 97 GHz, ANT HOR + VER, SigID USB, all positions, f\_CW\_center



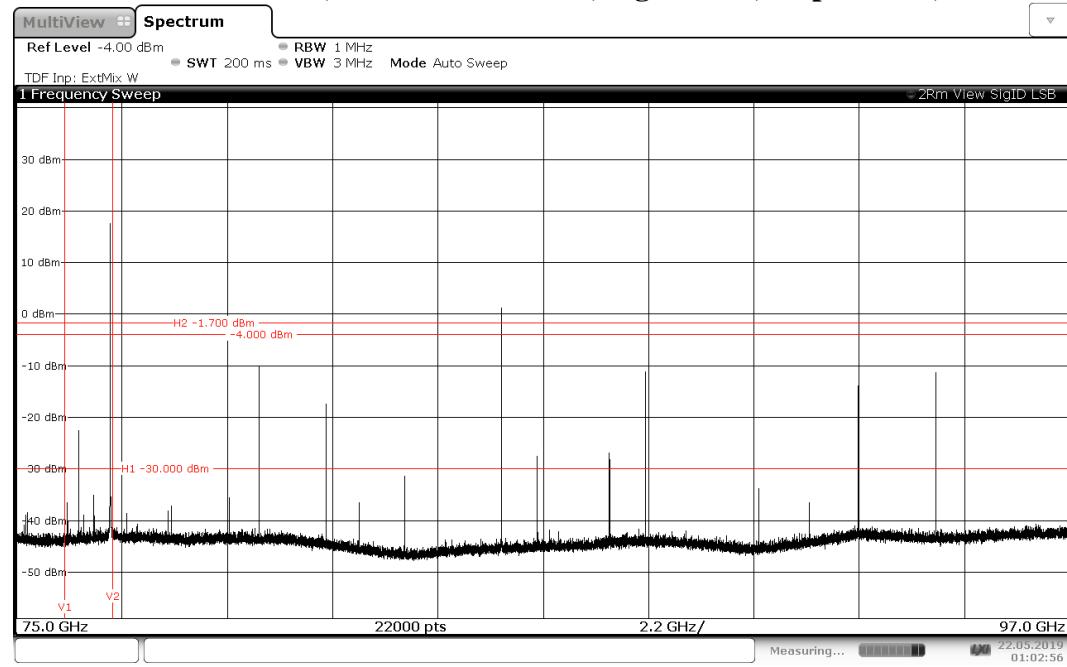
\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

### 5.32. 75 GHz – 97 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_high



\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

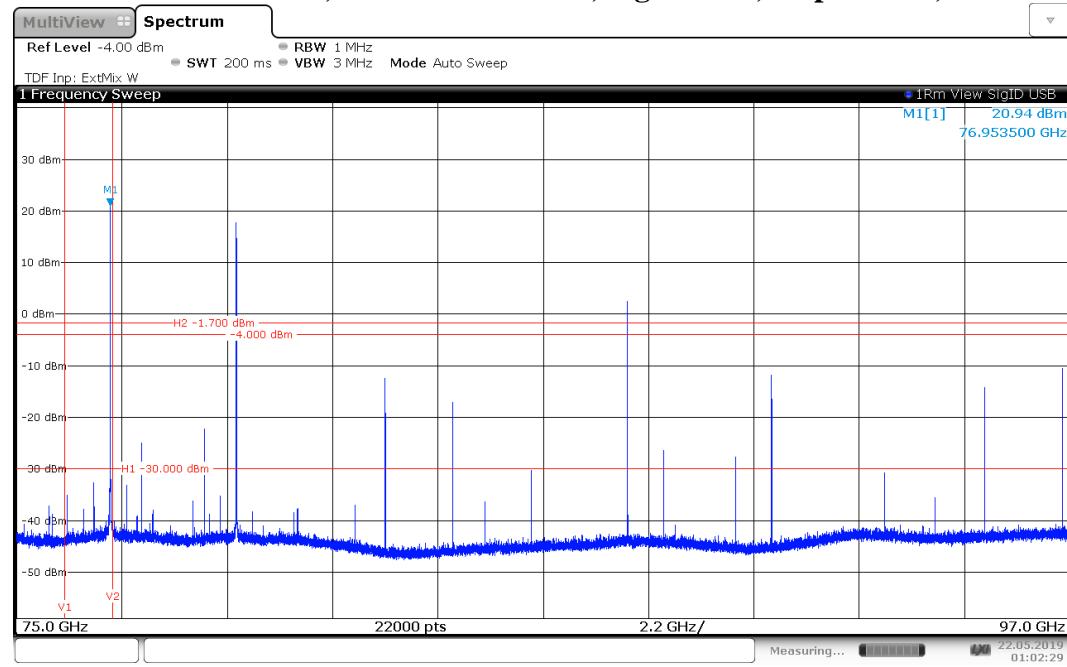
### 5.33. 75 GHz – 97 GHz, ANT HOR + VER, SigID LSB, all positions, f\_CW\_high



01:02:56 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

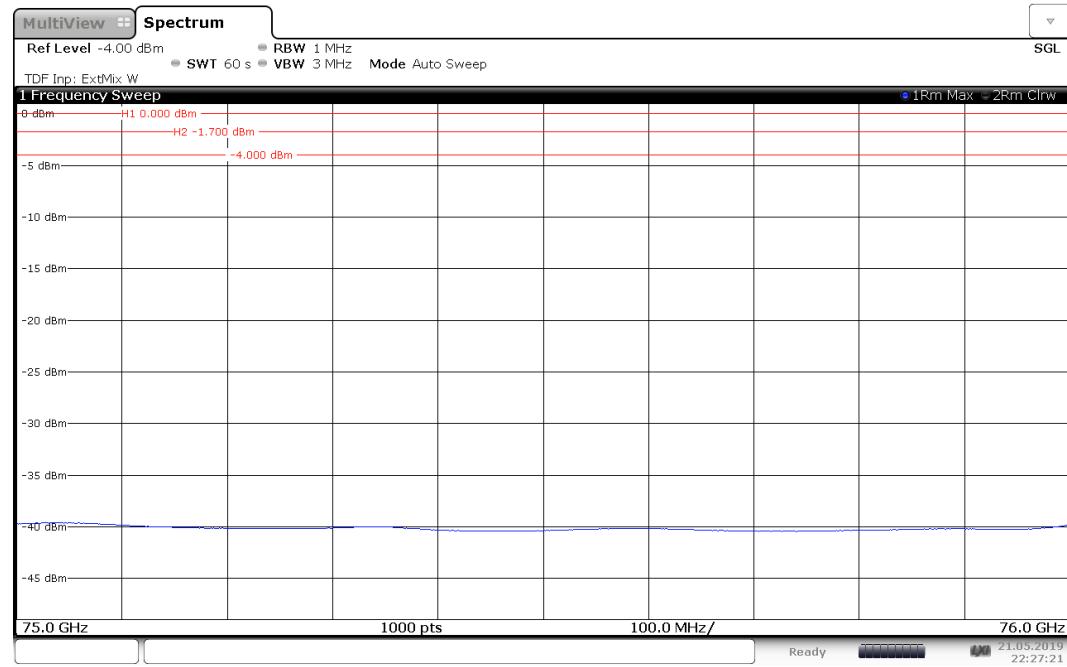
### 5.34. 75 GHz – 97 GHz, ANT HOR + VER, SigID USB, all positions, f\_CW\_high



01:02:29 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

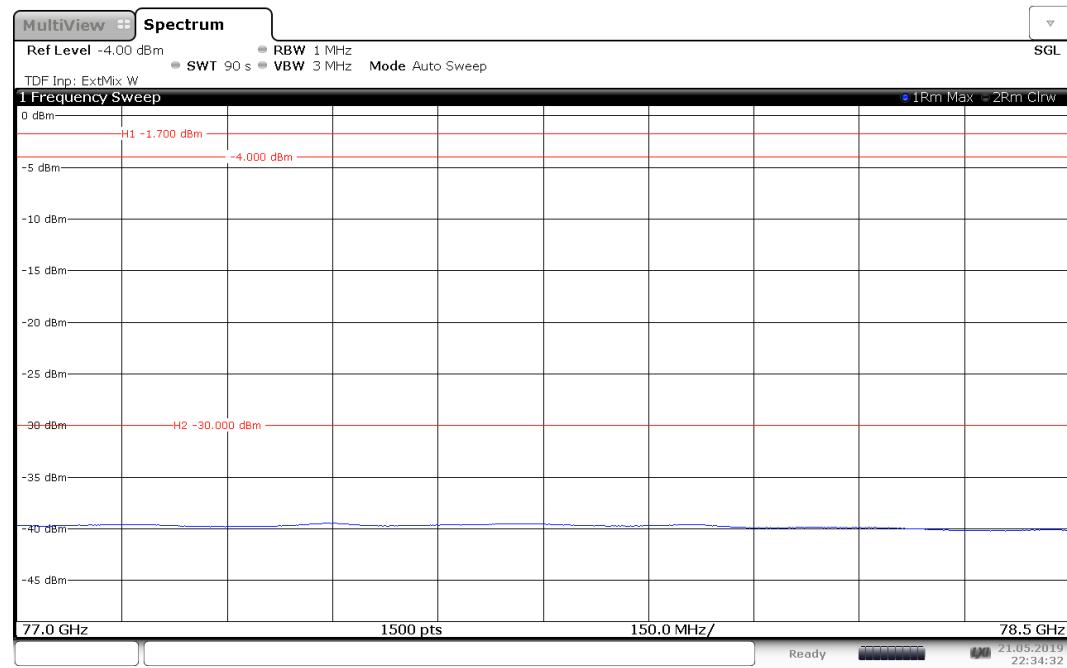
### 5.35. 75 GHz – 76 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW



22:27:22 21.05.2019

\* -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and 0 dBm (ISED).

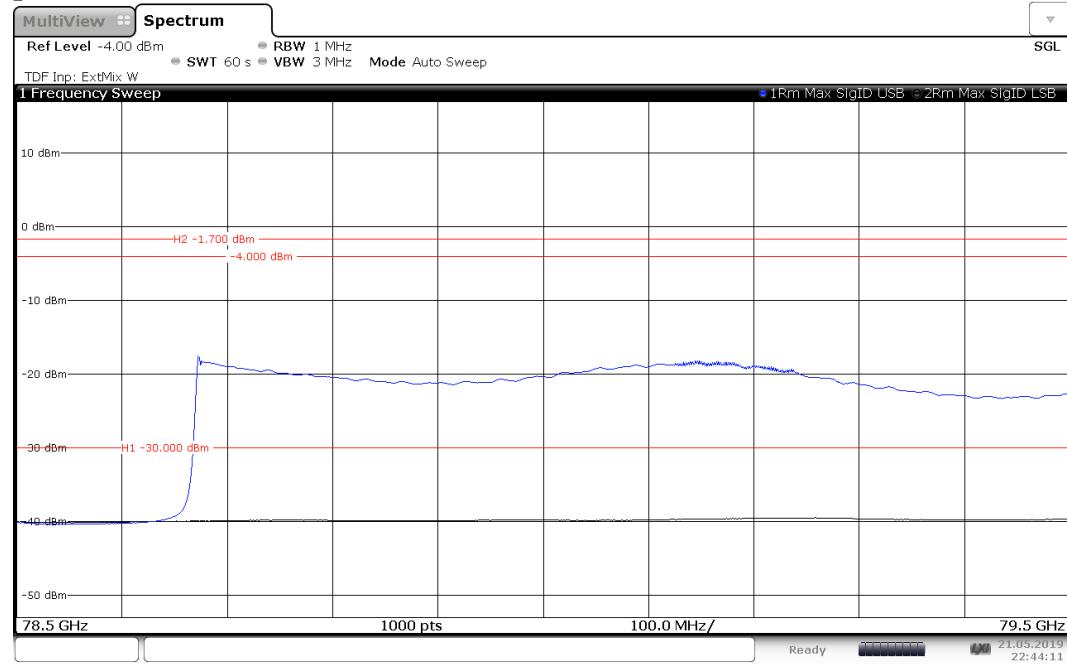
### 5.36. 77 GHz – 78.5 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW



22:34:32 21.05.2019

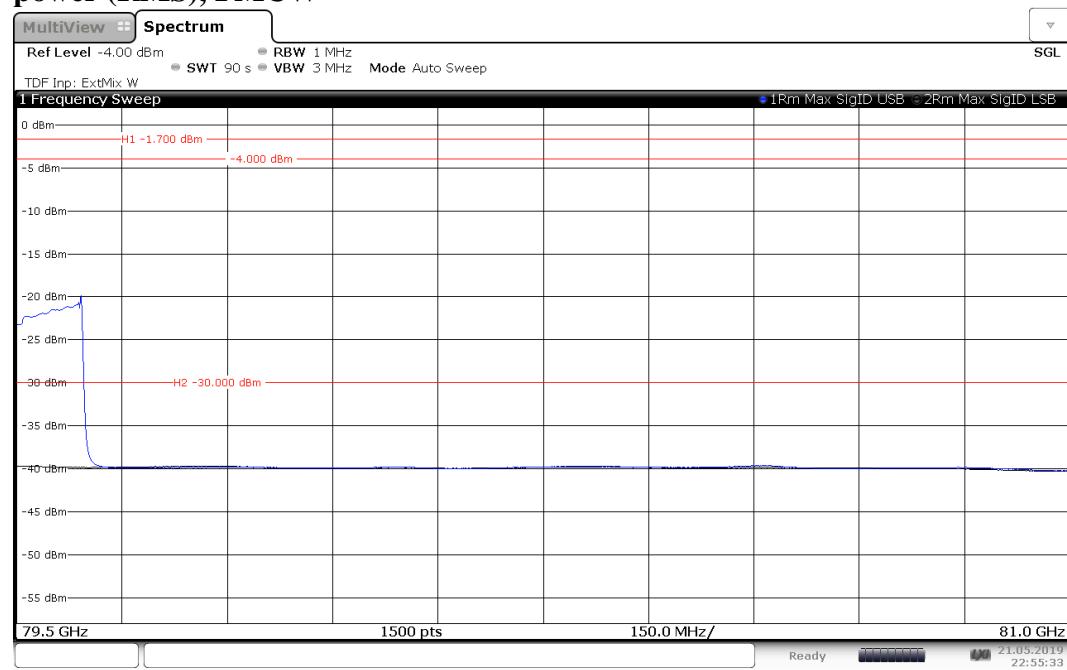
\* -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

### 5.37. 78.5 GHz – 79.5 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW



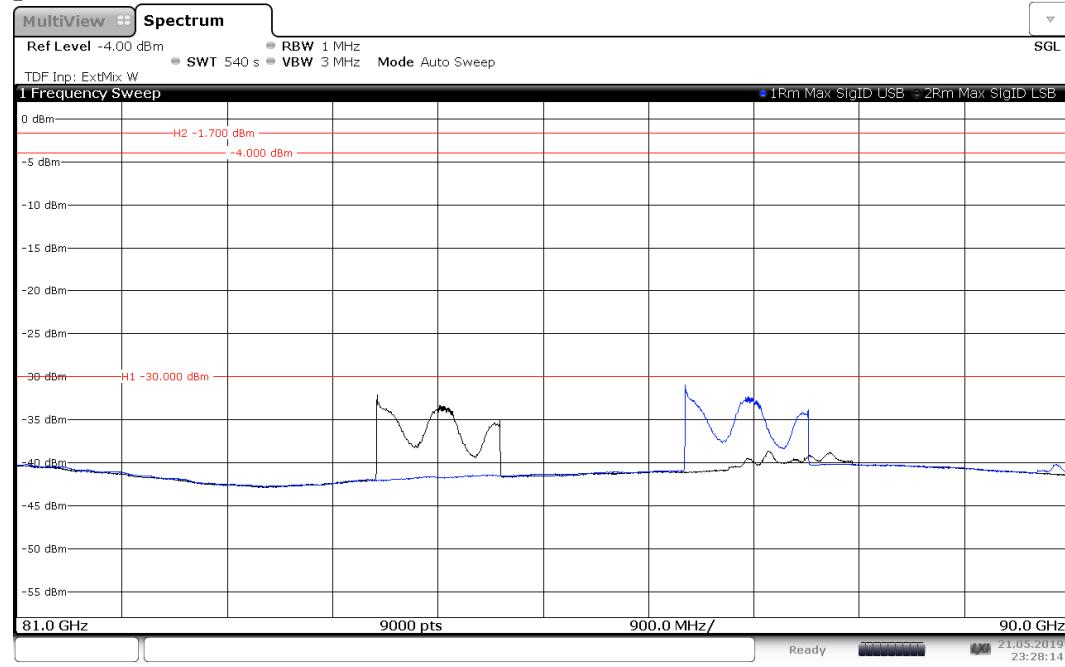
\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

### 5.38. 79.5 GHz – 81 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW



\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

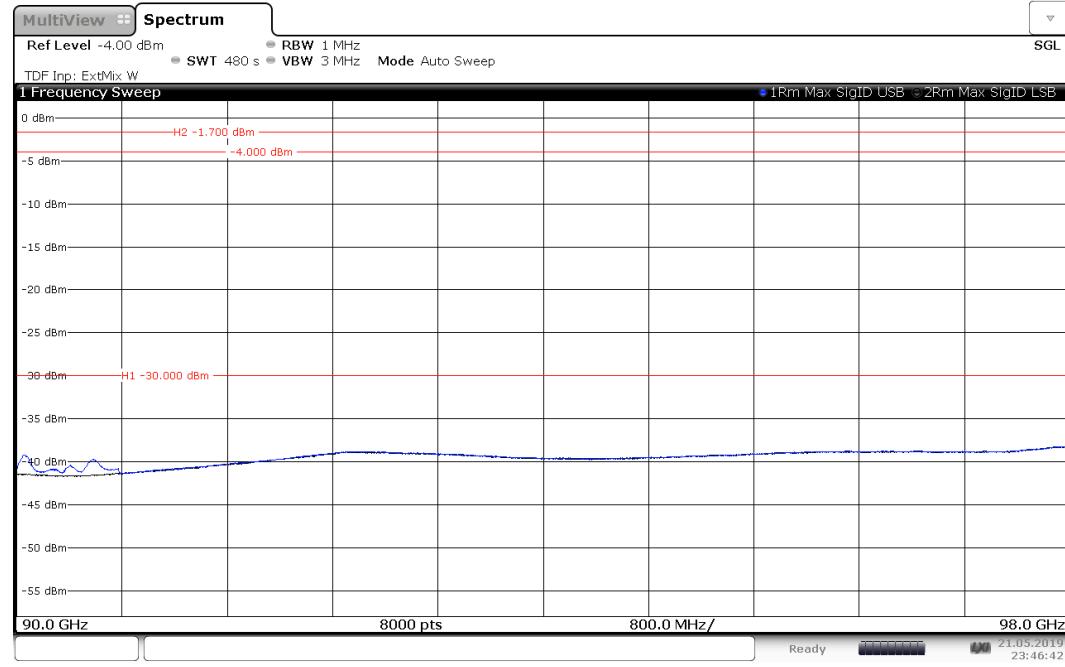
### 5.39. 81 GHz – 90 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW



23:28:15 21.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

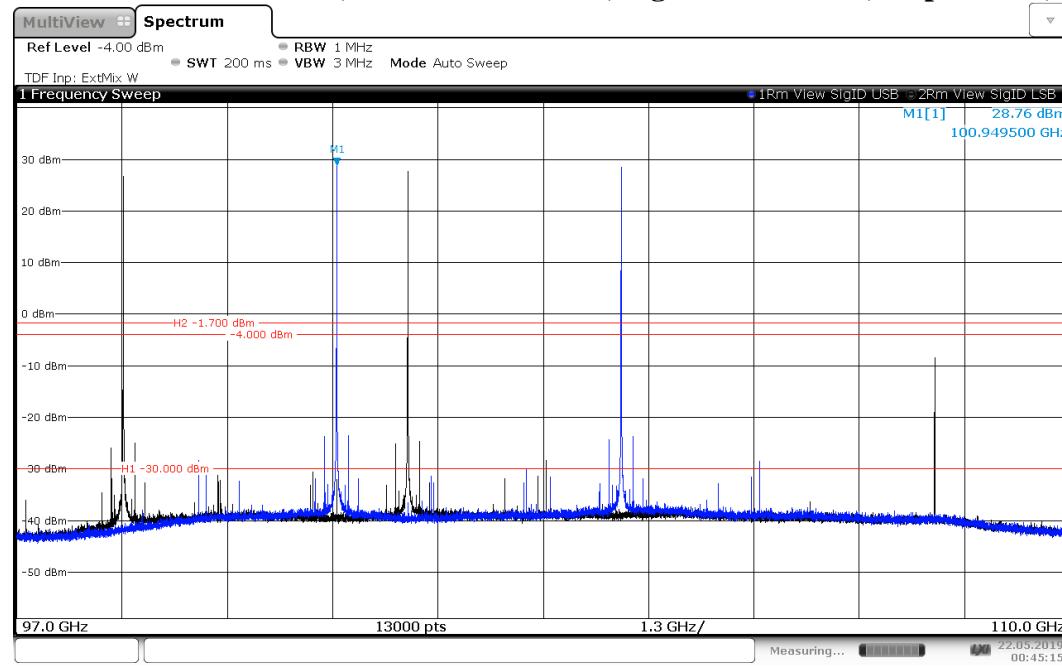
### 5.40. 90 GHz – 98 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW



23:46:43 21.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

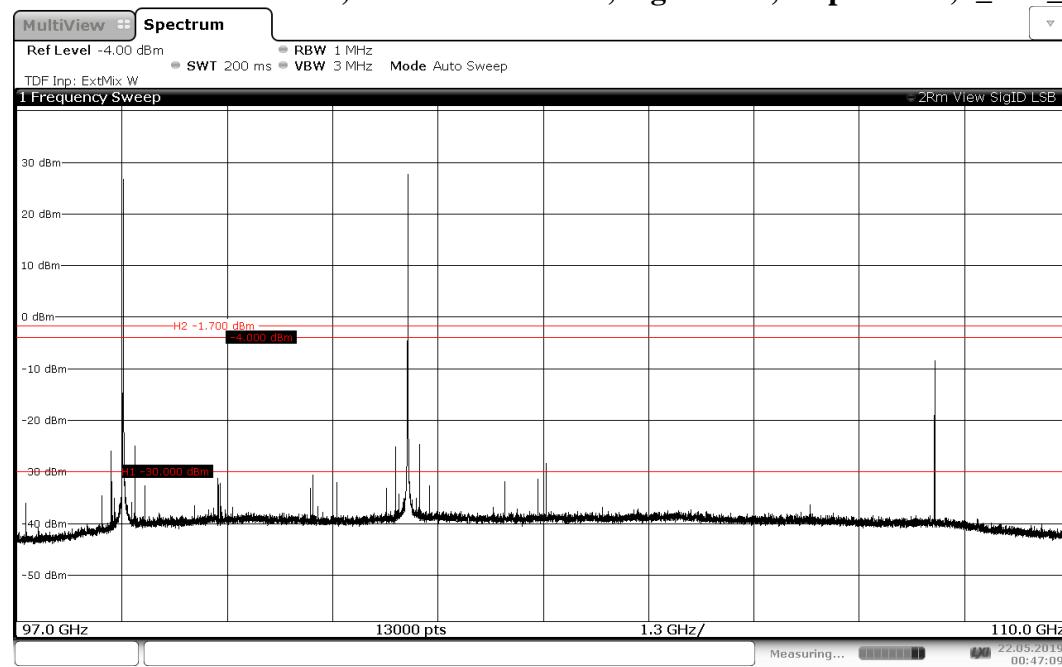
### 5.41. 97 GHz – 110 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_low



00:45:15 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

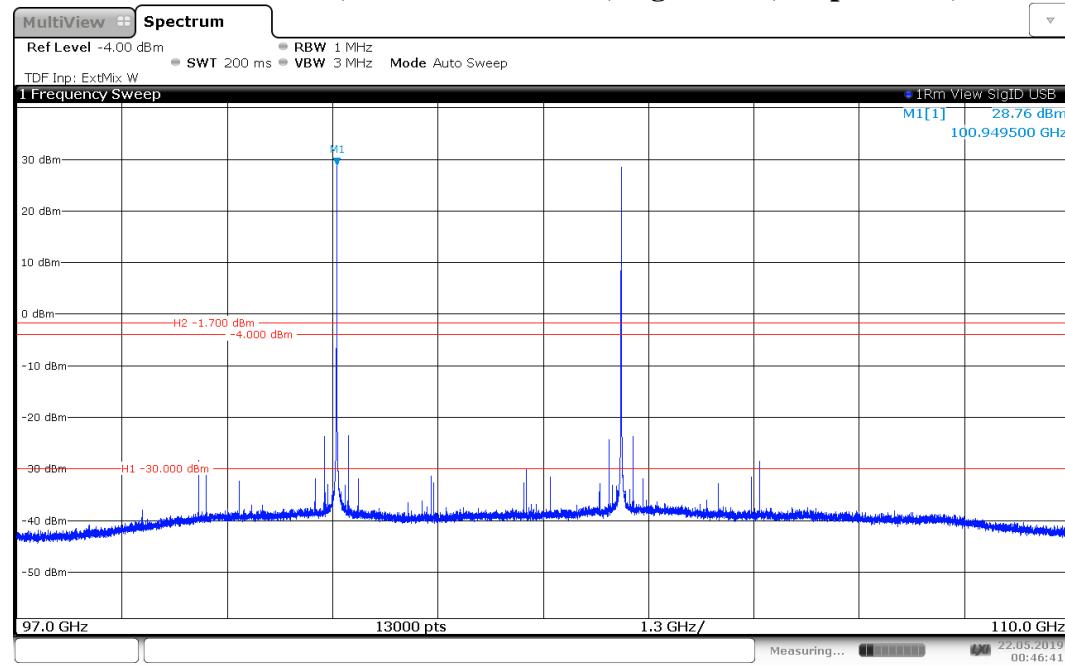
### 5.42. 97 GHz – 110 GHz, ANT HOR + VER, SigID LSB, all positions, f\_CW\_low



00:47:09 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

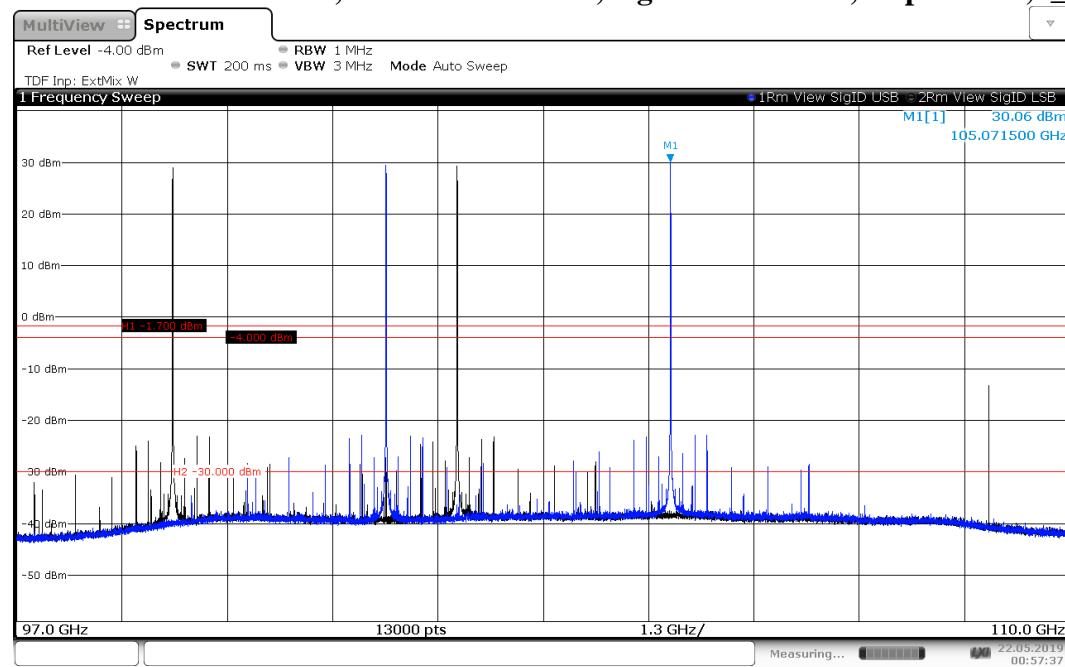
### 5.43. 97 GHz – 110 GHz, ANT HOR + VER, SigID USB, all positions, f\_CW\_low



00:46:42 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

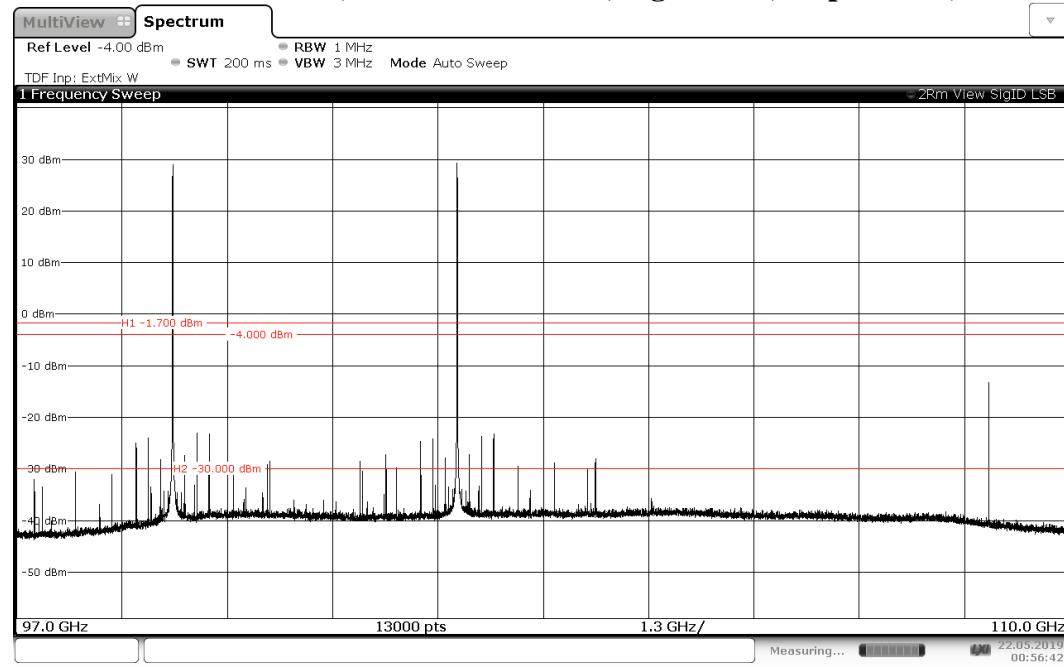
### 5.44. 97 GHz – 110 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_center



00:57:38 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

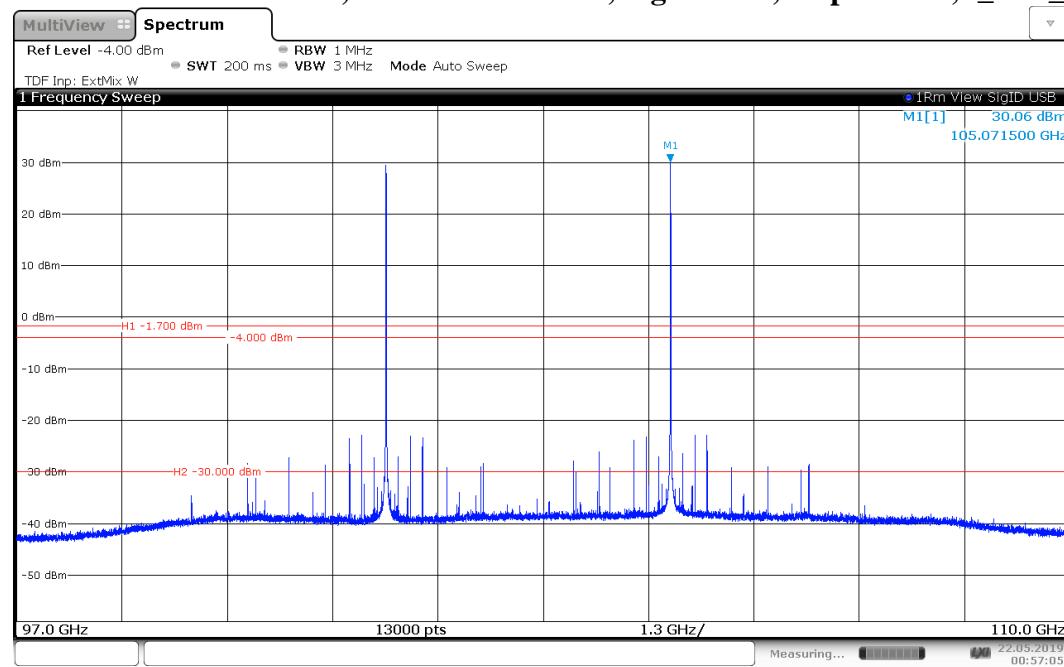
### 5.45. 97 GHz – 110 GHz, ANT HOR + VER, SigID LSB, all positions, f\_CW\_center



00:56:43 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

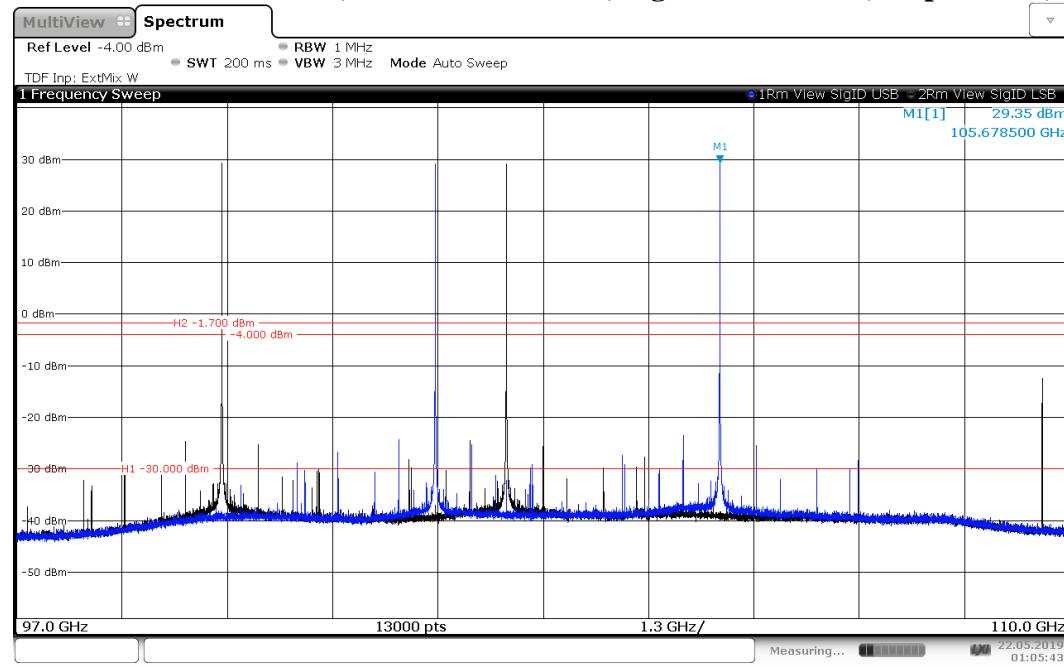
### 5.46. 97 GHz – 110 GHz, ANT HOR + VER, SigID USB, all positions, f\_CW\_center



00:57:05 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

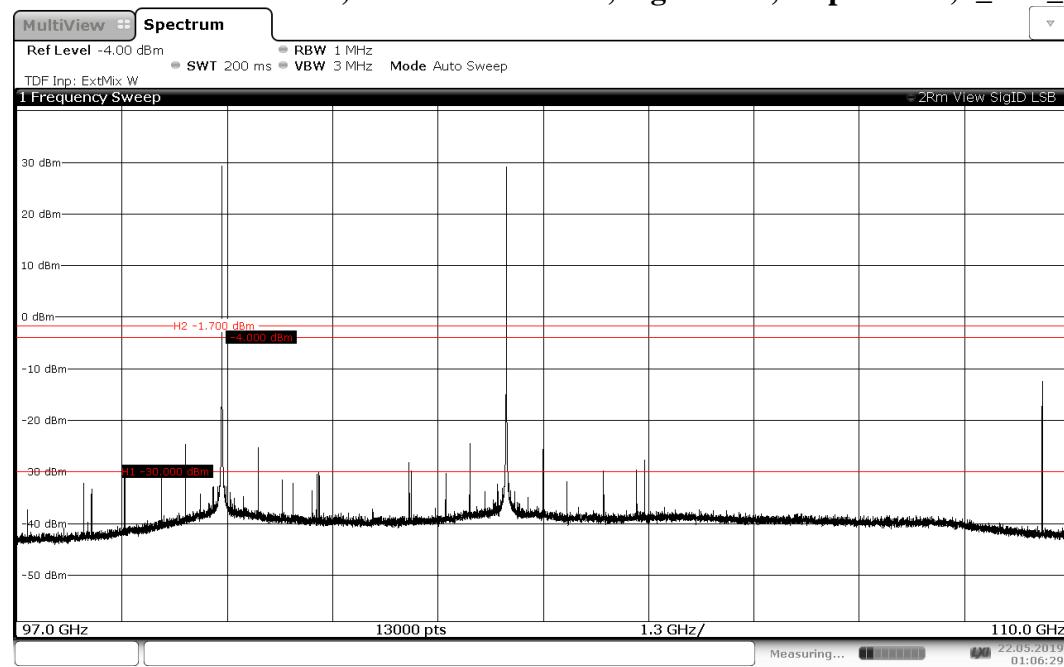
### 5.47. 97 GHz – 110 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_high



01:05:44 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

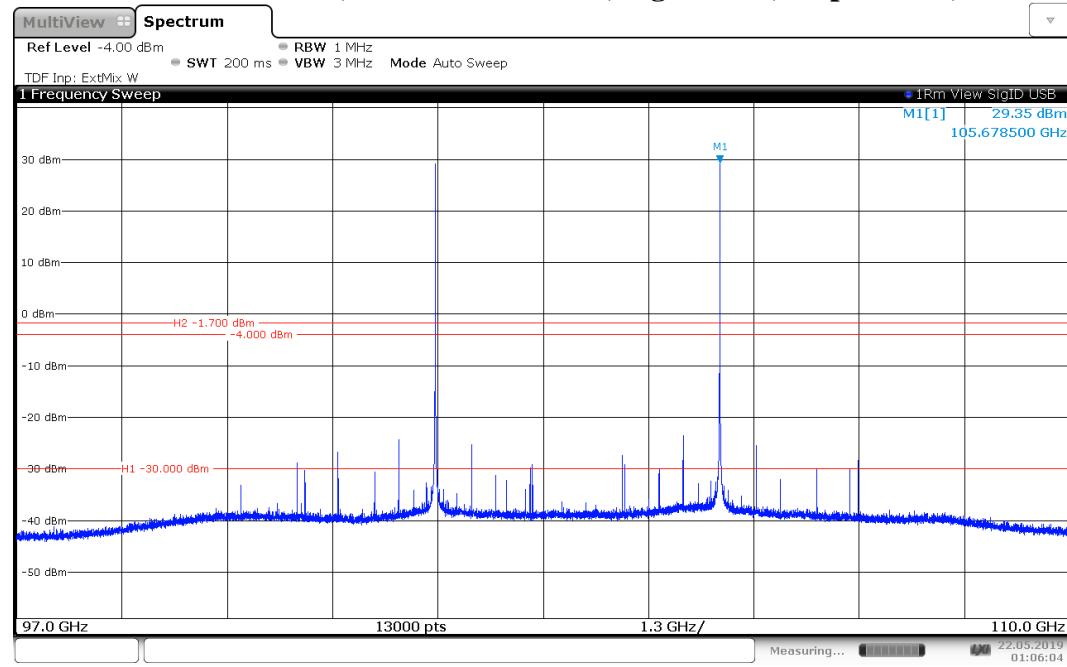
### 5.48. 97 GHz – 110 GHz, ANT HOR + VER, SigID LSB, all positions, f\_CW\_high



01:06:29 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

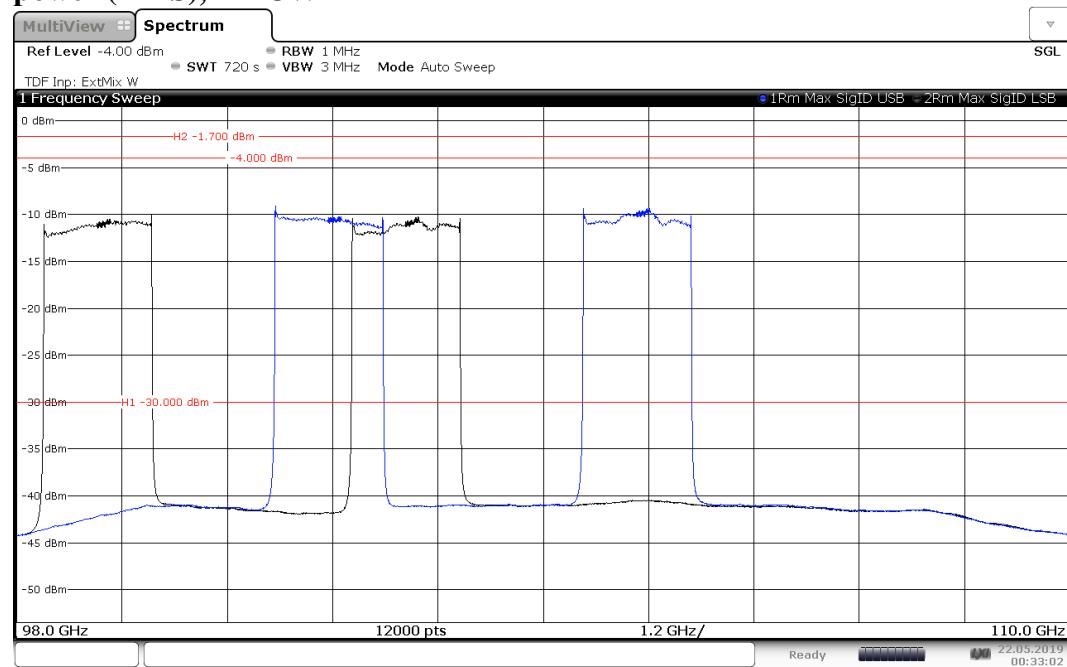
### 5.49. 97 GHz – 110 GHz, ANT HOR + VER, SigID USB, all positions, f\_CW\_high



01:06:05 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

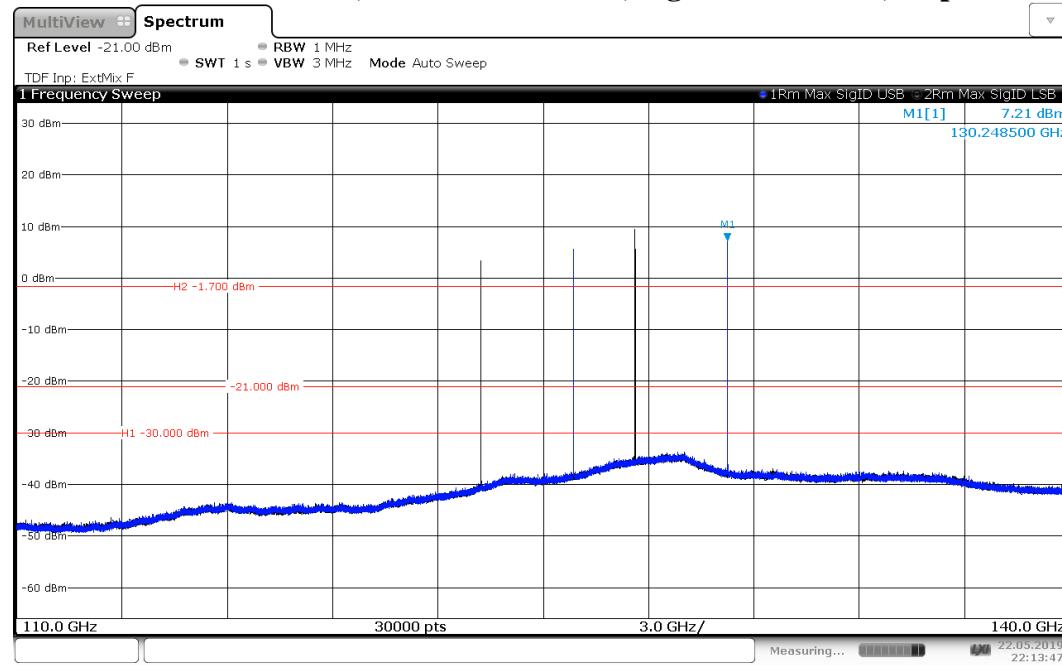
### 5.50. 98 GHz – 110 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW



00:33:02 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -4 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

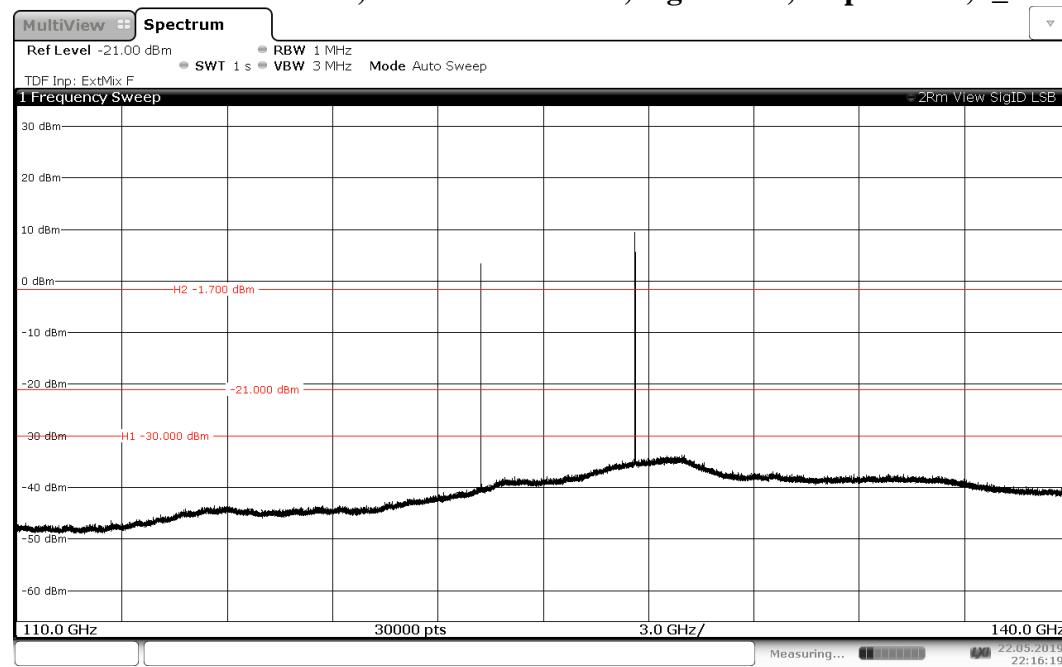
## 5.51. 110 GHz – 140 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_low



22:13:48 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

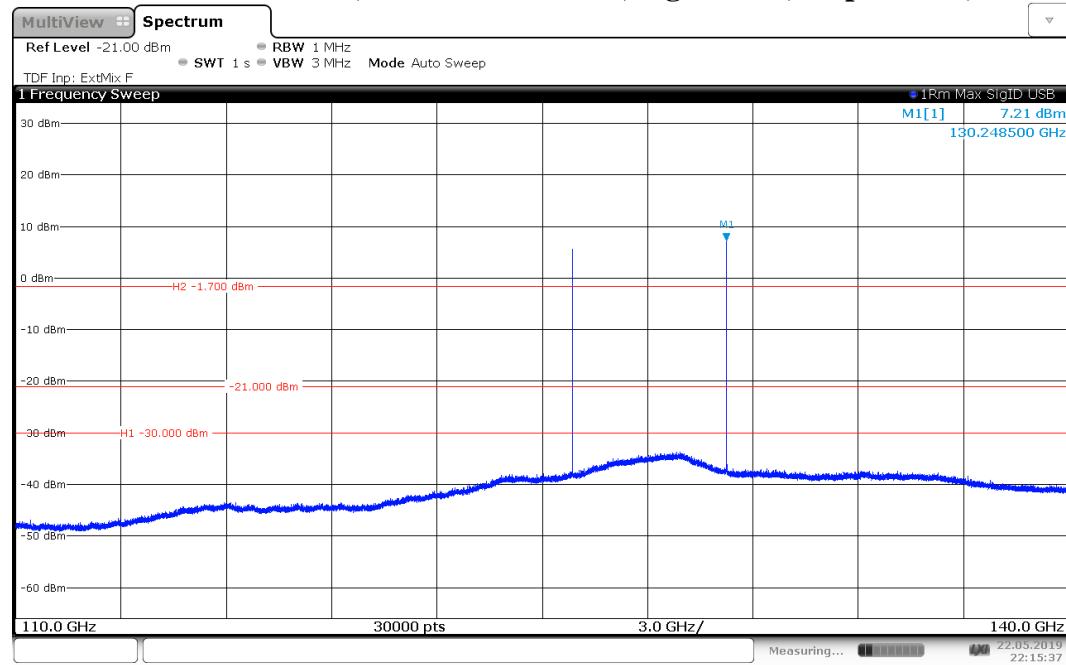
## 5.52. 110 GHz – 140 GHz, ANT HOR + VER, SigID LSB, all positions, f\_CW\_low



22:16:19 22.05.2019

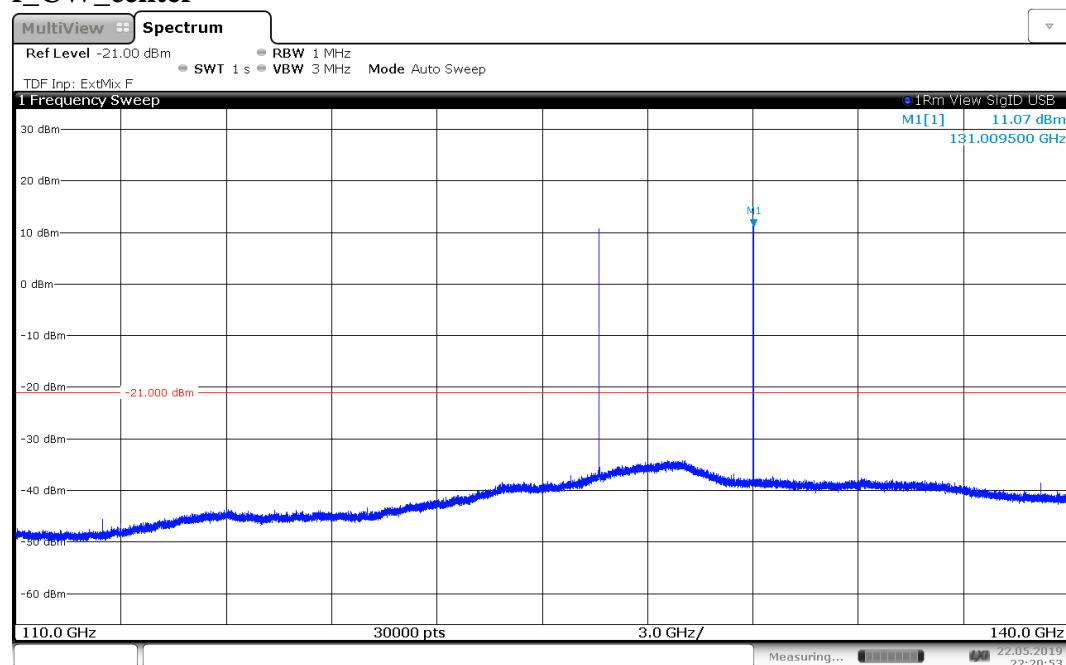
\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

### 5.53. 110 GHz – 140 GHz, ANT HOR + VER, SigID USB, all positions, f\_CW\_low



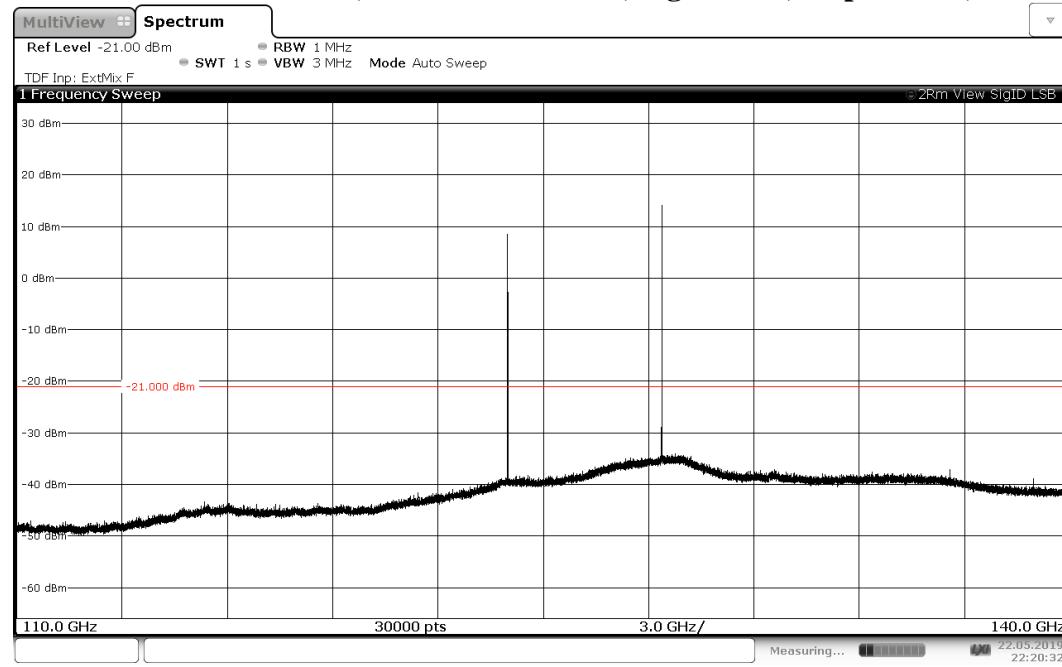
\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

### 5.54. 110 GHz – 140 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_center



\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

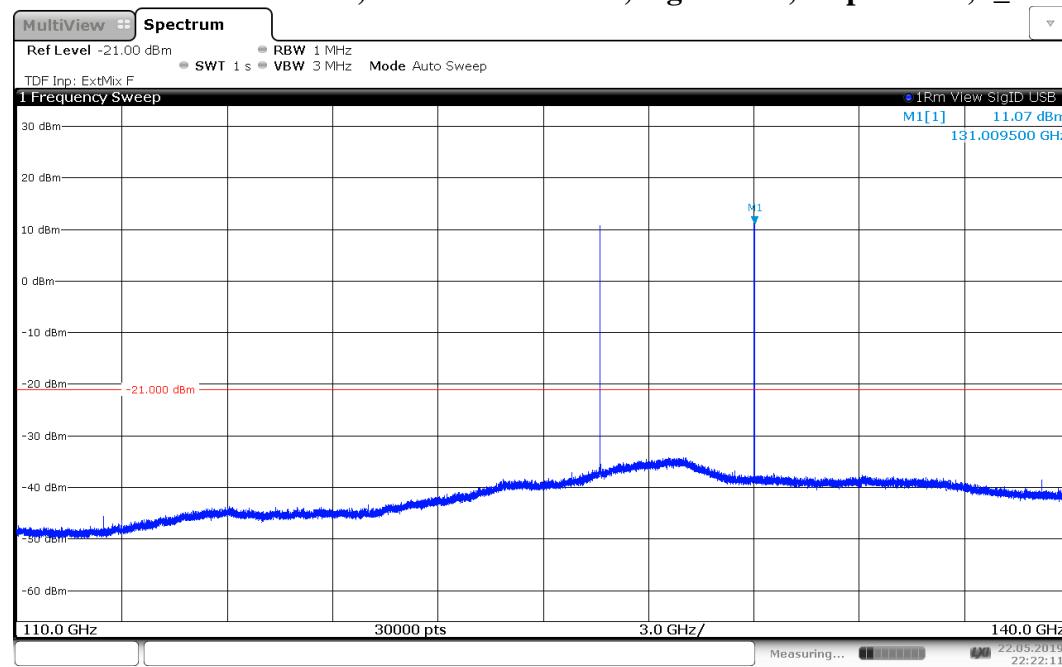
### 5.55. 110 GHz – 140 GHz, ANT HOR + VER, SigID LSB, all positions, f\_CW\_center



22:20:32 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

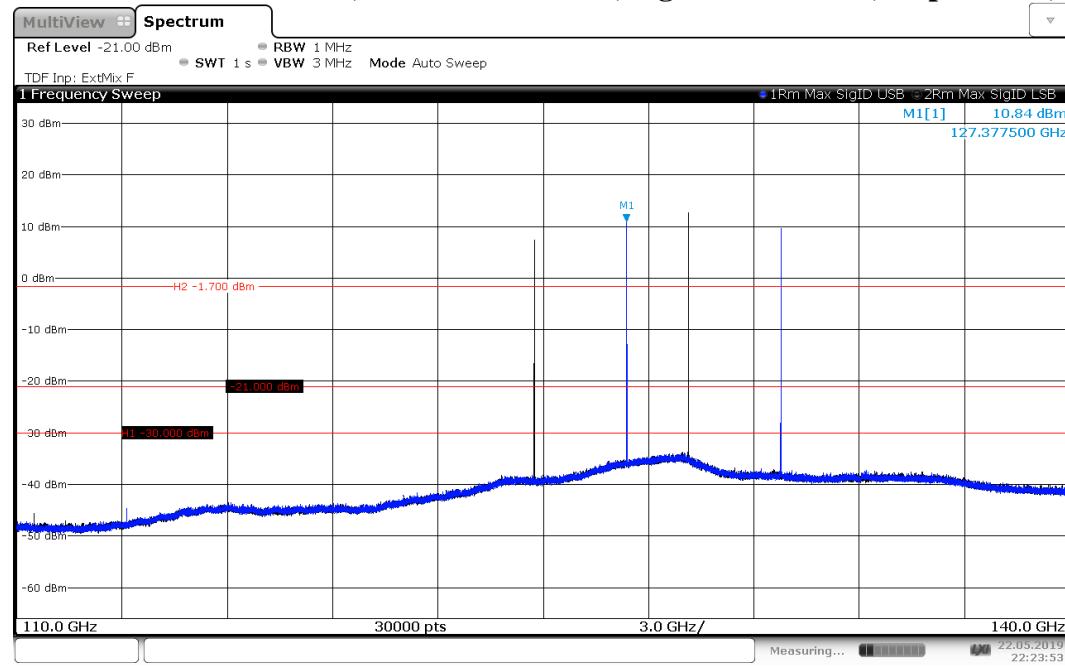
### 5.56. 110 GHz – 140 GHz, ANT HOR + VER, SigID USB, all positions, f\_CW\_center



22:22:11 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

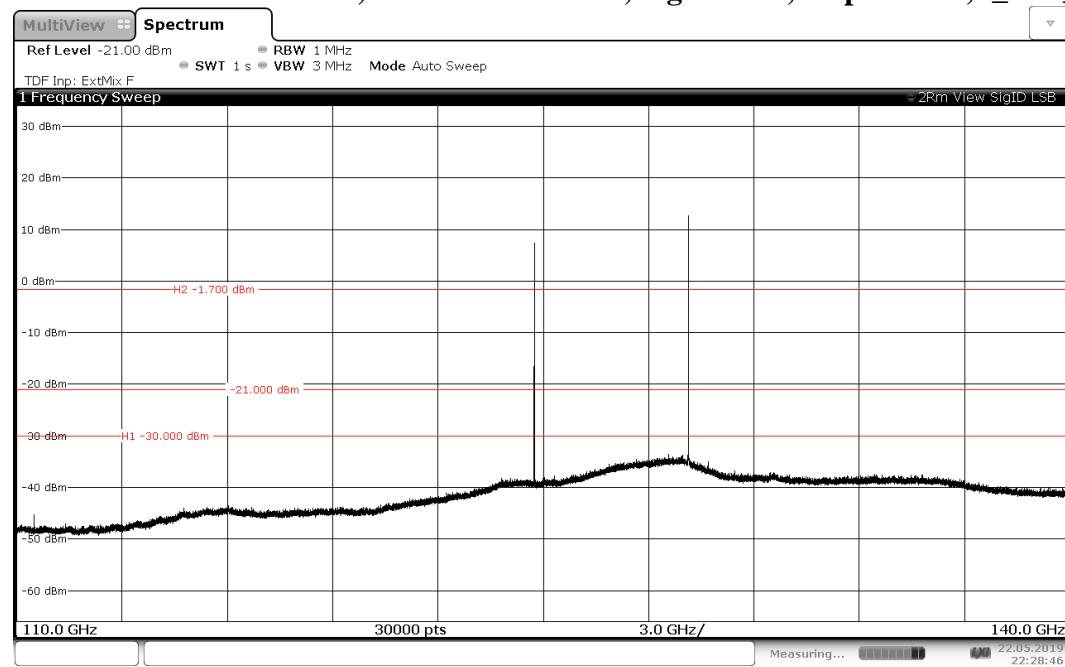
### 5.57. 110 GHz – 140 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_high



22:23:54 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

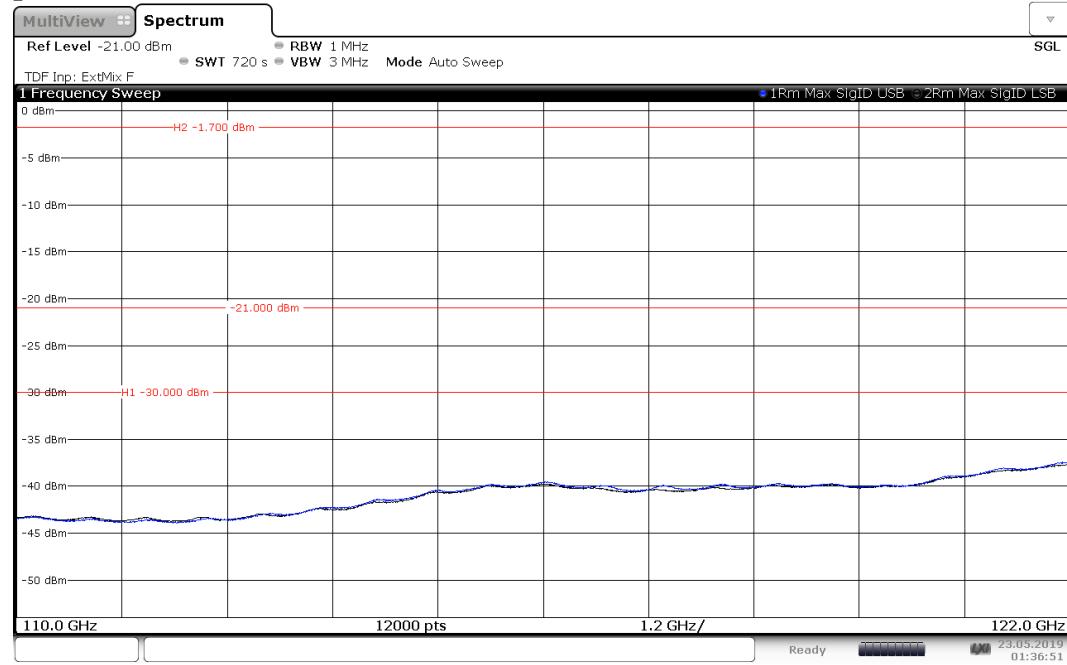
### 5.58. 110 GHz – 140 GHz, ANT HOR + VER, SigID LSB, all positions, f\_CW\_high



22:28:46 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

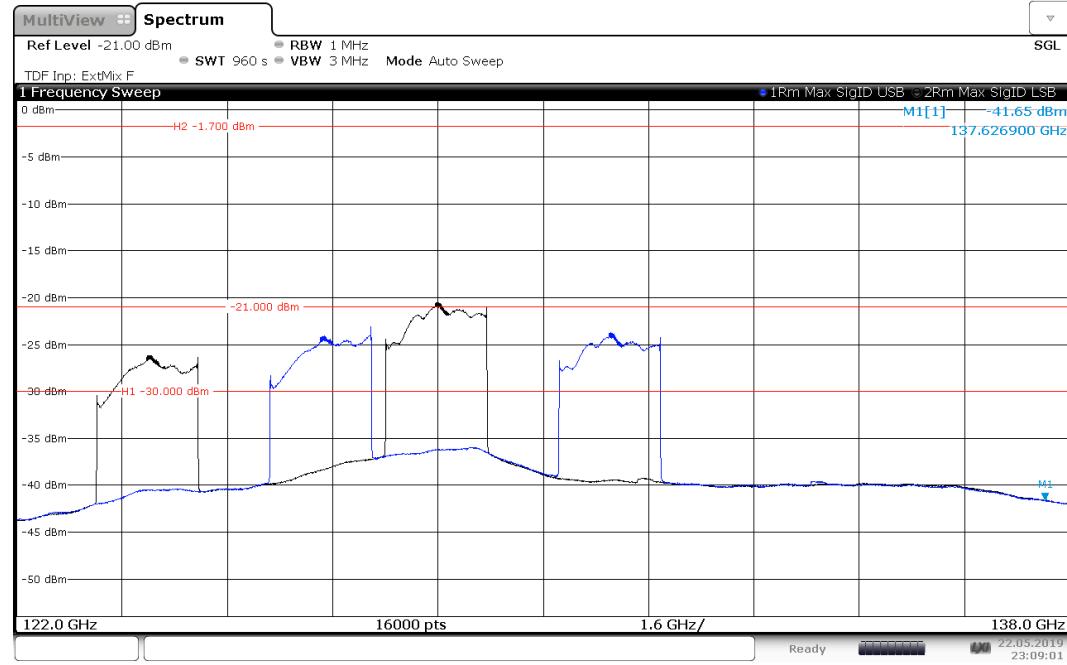
## 5.59. 110 GHz – 122 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW



01:36:51 23.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

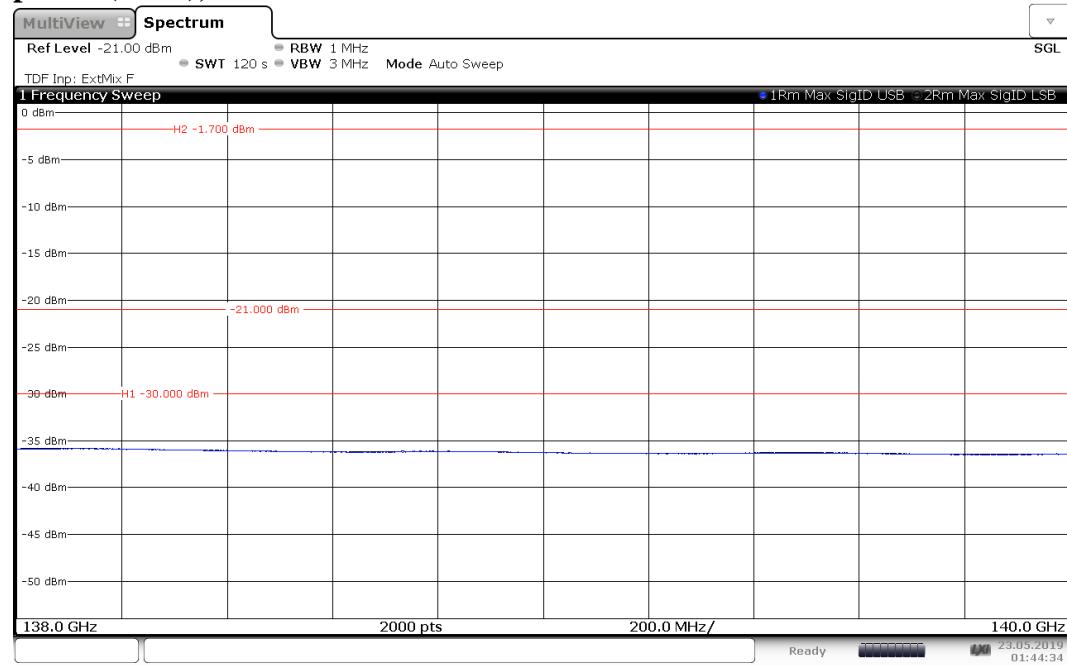
## 5.60. 122 GHz – 138 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW



23:09:02 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED). No real signal is above the limit.

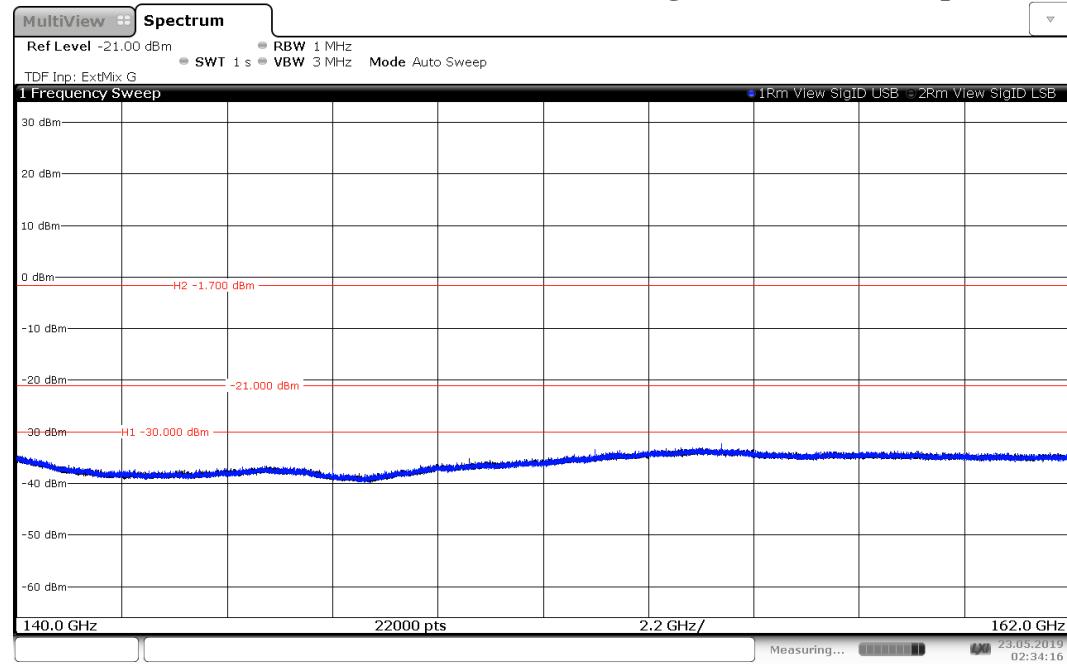
## 5.61. 138 GHz – 140 GHz, ANT HOR + VER, SigID USB+LSB, position with the highest power (RMS), FMCW



01:44:35 23.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

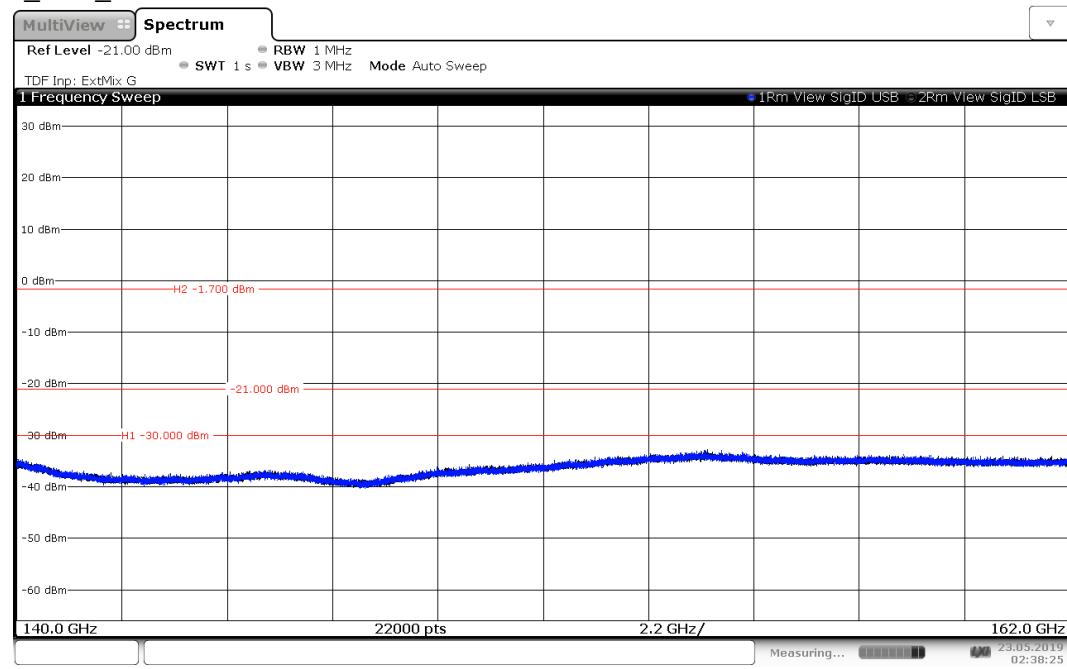
## 5.62. 140 GHz – 162 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_low



02:34:16 23.05.2019

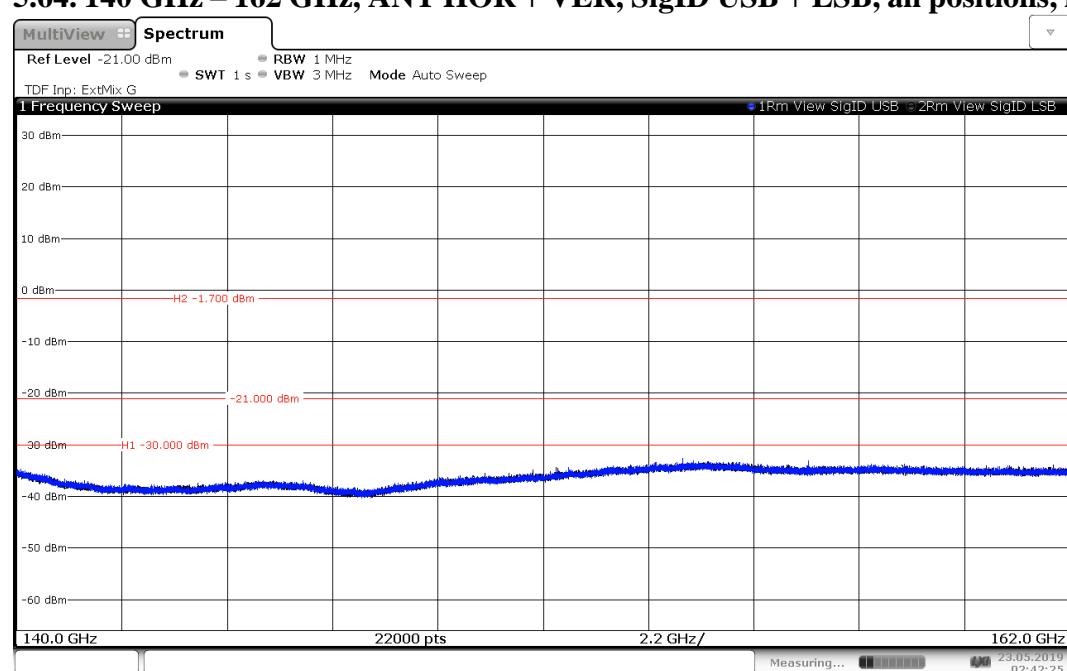
\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

### 5.63. 140 GHz – 162 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_center



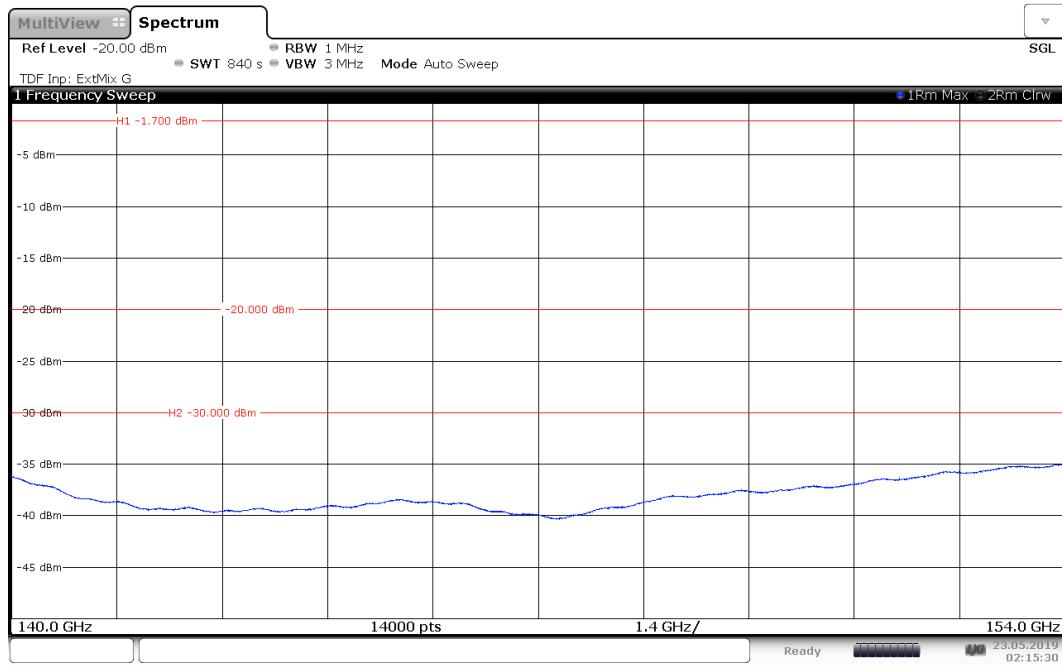
\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

### 5.64. 140 GHz – 162 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_high



\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

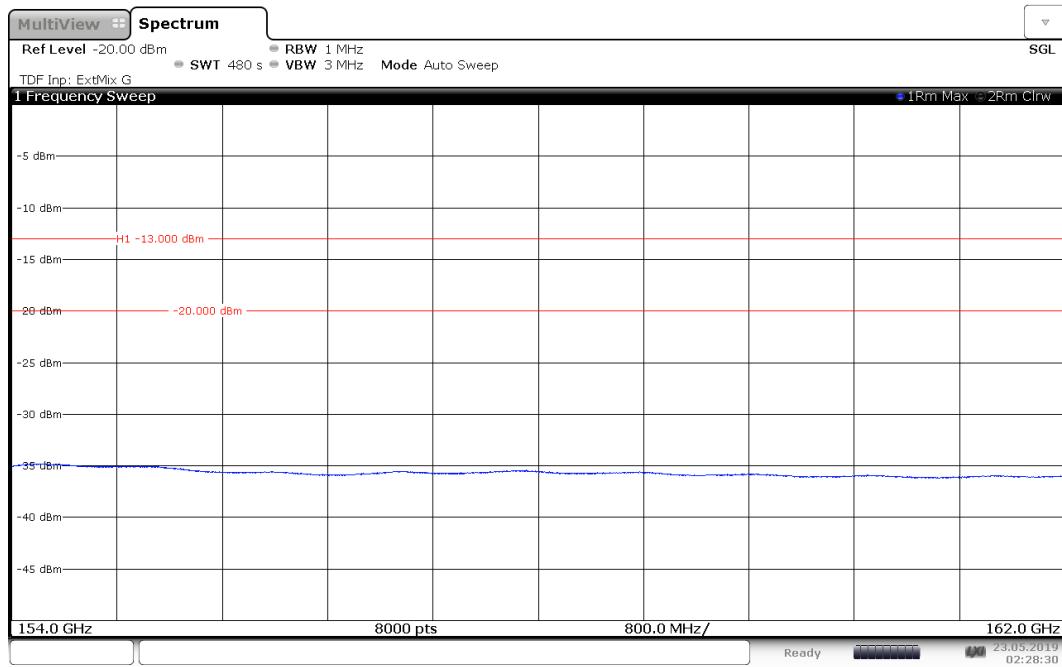
### 5.65. 140 GHz – 154 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW



02:15:31 23.05.2019

\* -20 dB is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

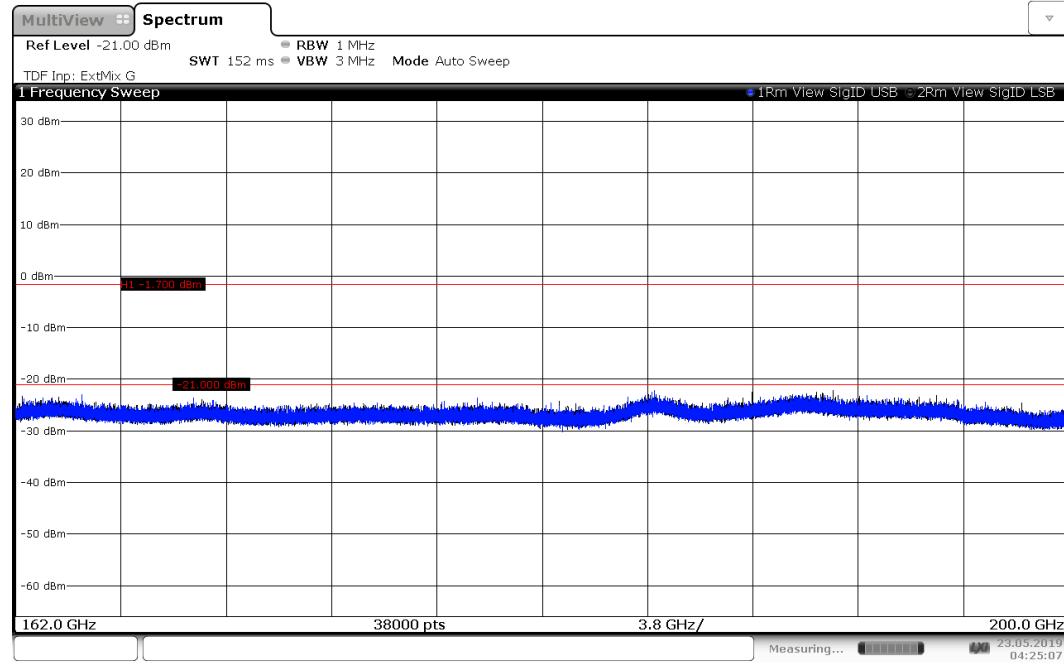
### 5.66. 154 GHz – 162 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW



02:28:30 23.05.2019

\* -20 dB is only a reference line from the FSW67. Limit is -1.7 dBm (FCC) and -30 dBm (ISED).

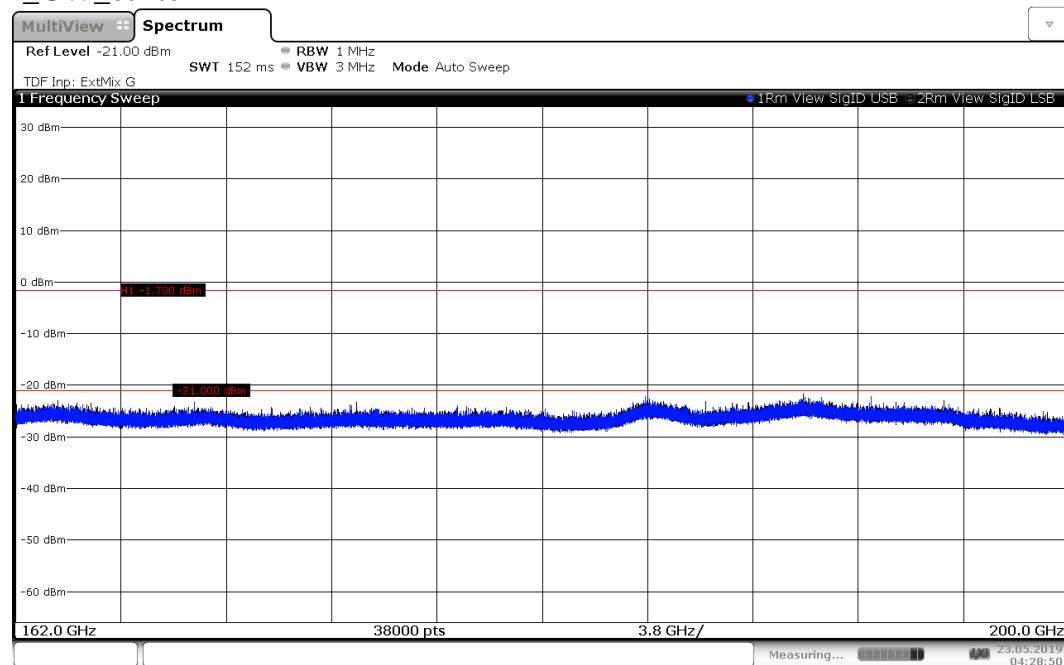
### 5.67. 162 GHz – 200 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_low



04:25:07 23.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm.

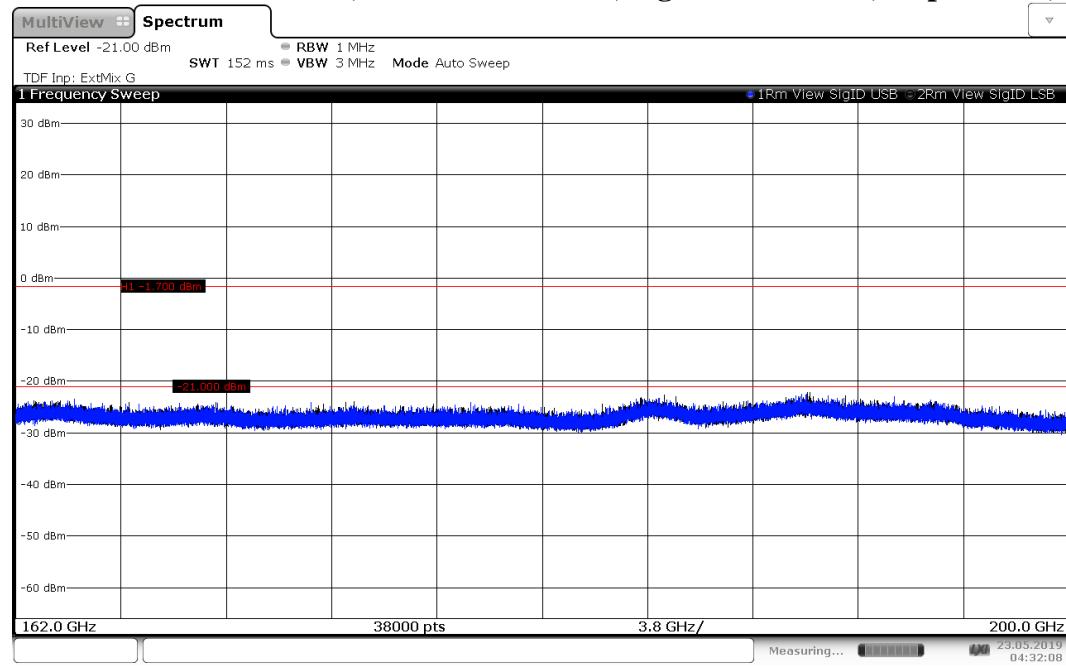
### 5.68. 162 GHz – 200 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_center



04:28:50 23.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm.

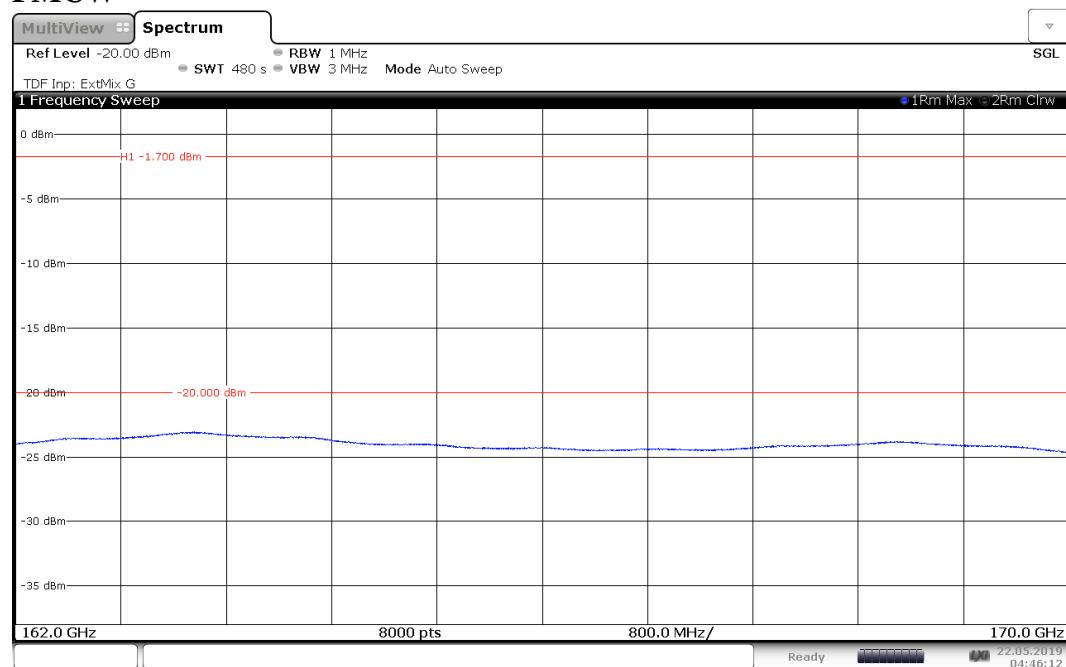
### 5.69. 162 GHz – 200 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_high



04:32:09 23.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is -1.7 dBm.

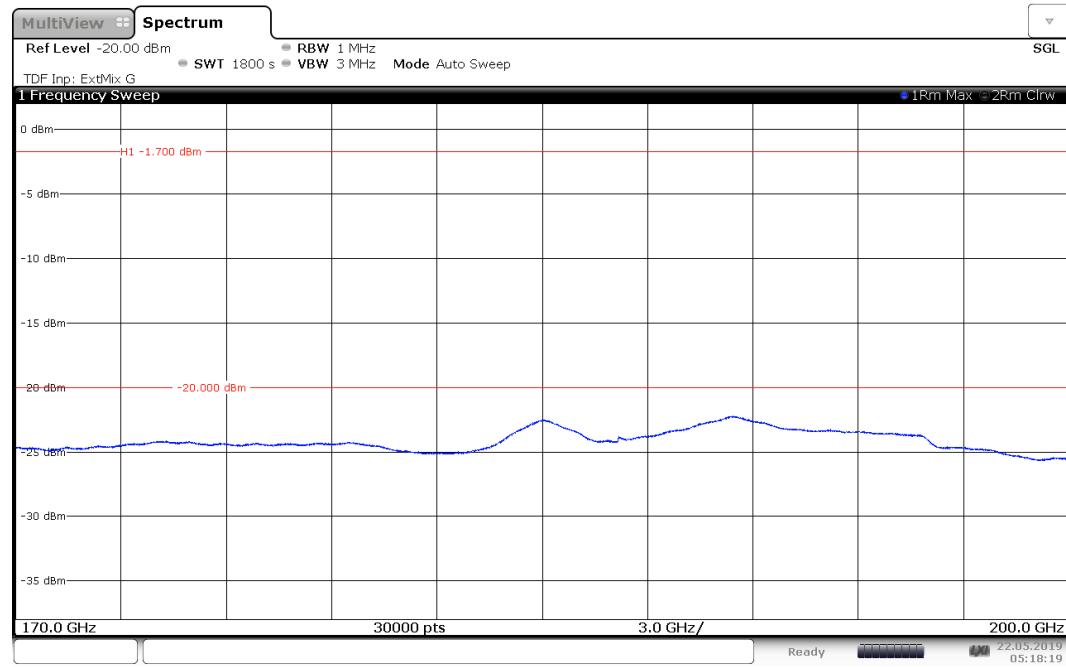
### 5.70. 162 GHz – 170 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW



04:46:12 22.05.2019

\* -20 dB is only a reference line from the FSW67. Limit is -1.7 dBm.

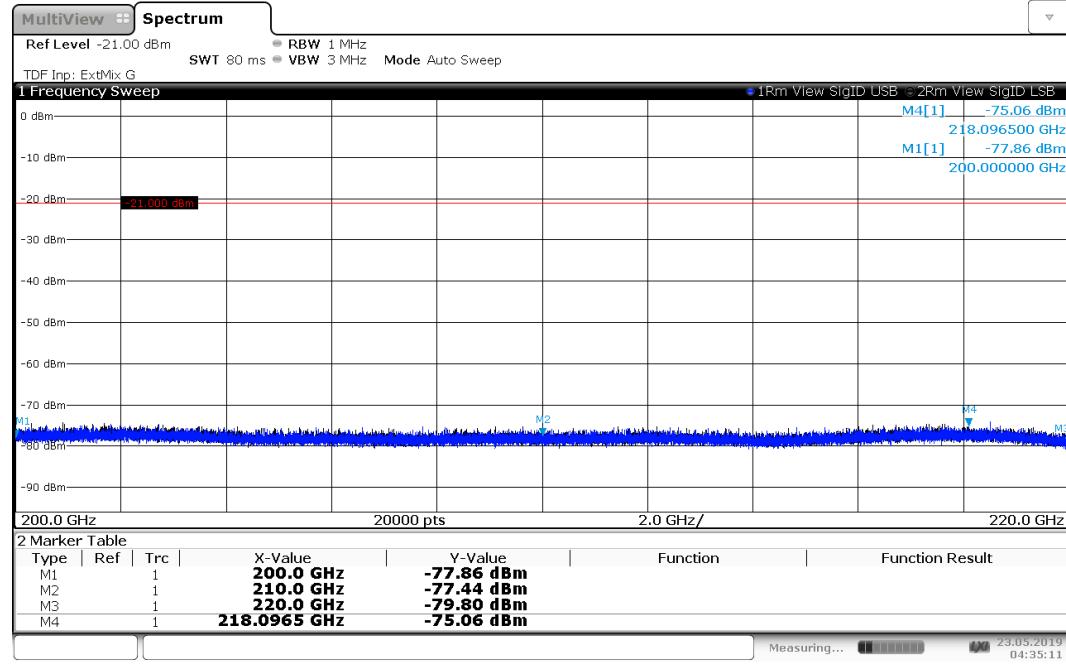
## 5.71. 170 GHz – 200 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW



05:18:20 22.05.2019

\* -20 dB is only a reference line from the FSW67. Limit is -1.7 dBm.

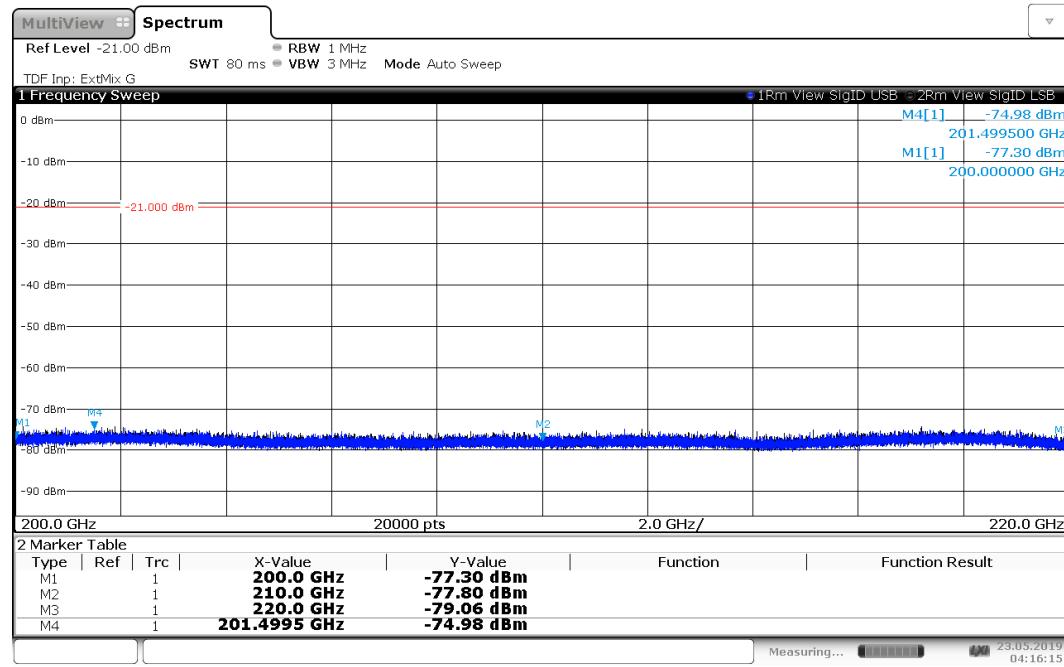
## 5.72. 200 GHz – 220 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_low



04:35:11 23.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is 0.5 dBm (see calculations in subsection 5.8.6).

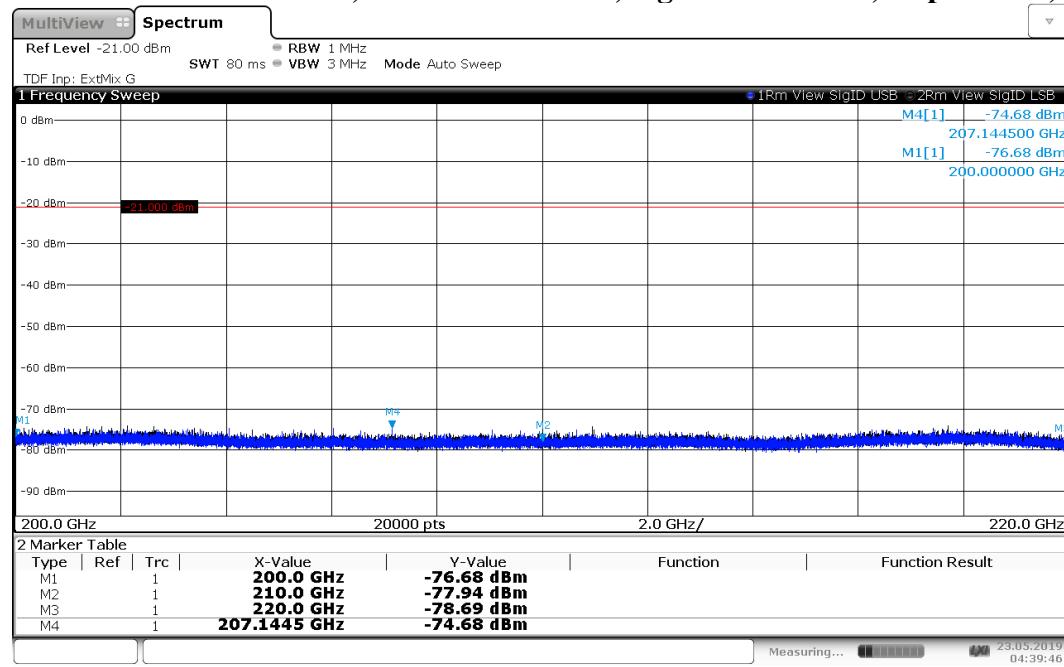
### 5.73. 200 GHz – 220 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_center



04:16:16 23.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is 0.5 dBm (see calculations in subsection 5.8.6).

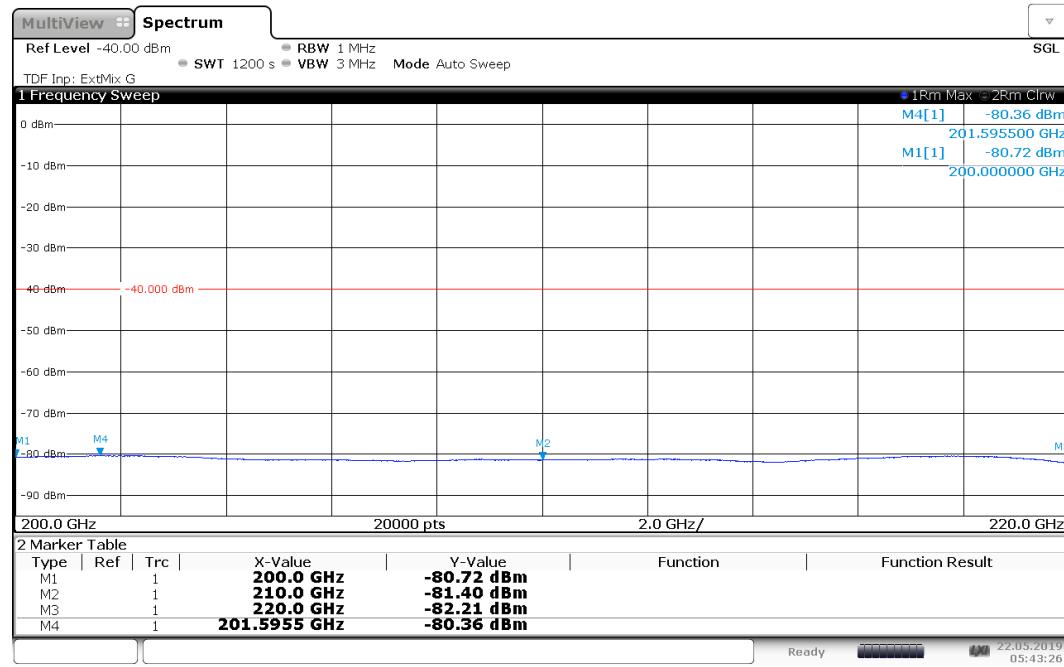
### 5.74. 200 GHz – 220 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_high



04:39:46 23.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is 0.5 dBm (see calculations in subsection 5.8.6).

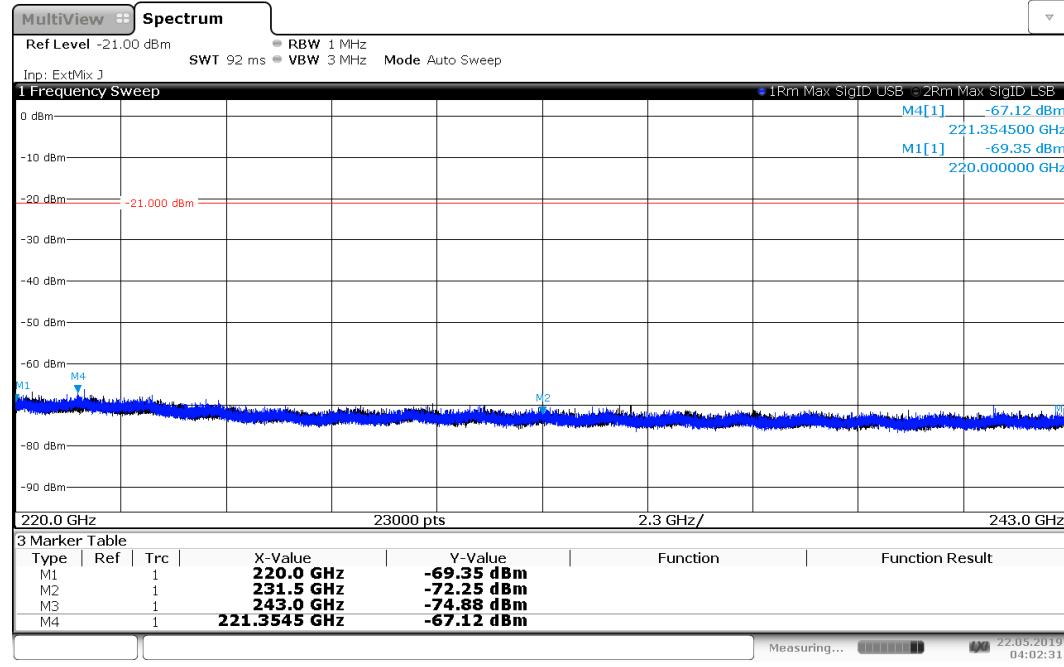
## 5.75. 200 GHz – 220 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW



05:43:26 22.05.2019

\* -40 dBm is only a reference line from the FSW67. Limit is 0.5 dBm (see calculations in subsection 5.8.6).

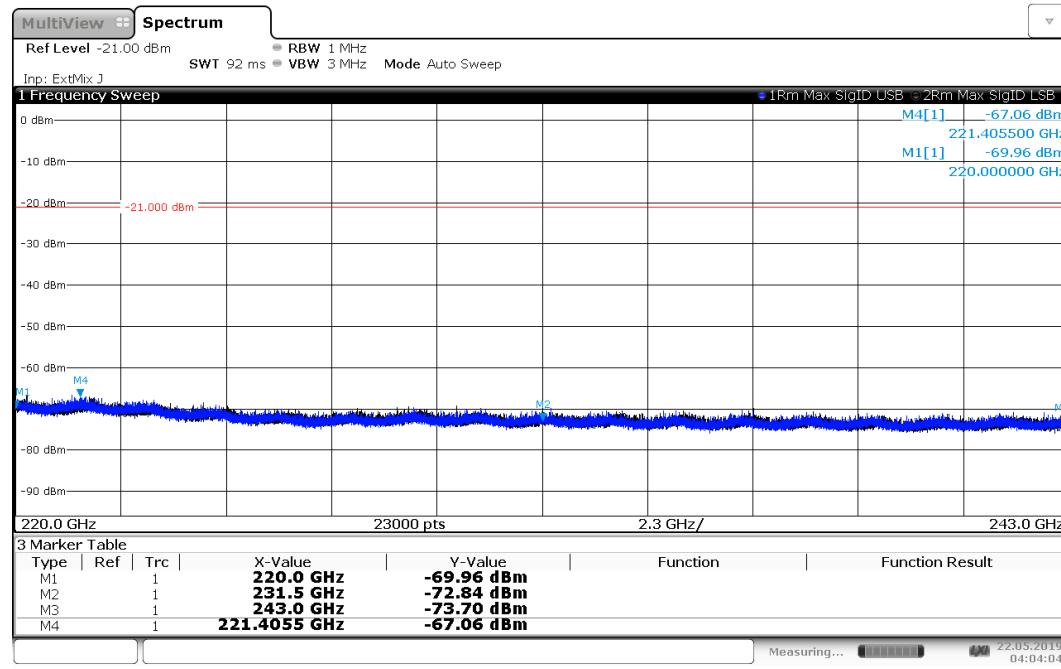
## 5.76. 220 GHz – 243 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_low



04:02:31 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is 0.5 dBm (see calculations in subsection 5.8.6).

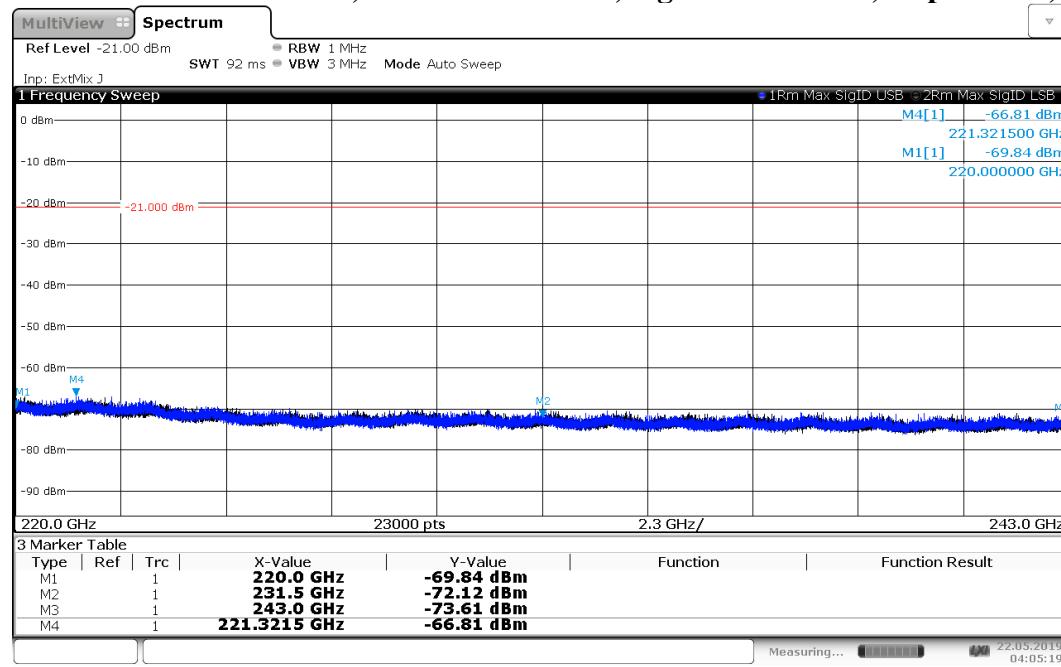
### 5.77. 220 GHz – 243 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_center



04:04:05 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is 0.5 dBm (see calculations in subsection 5.8.6).

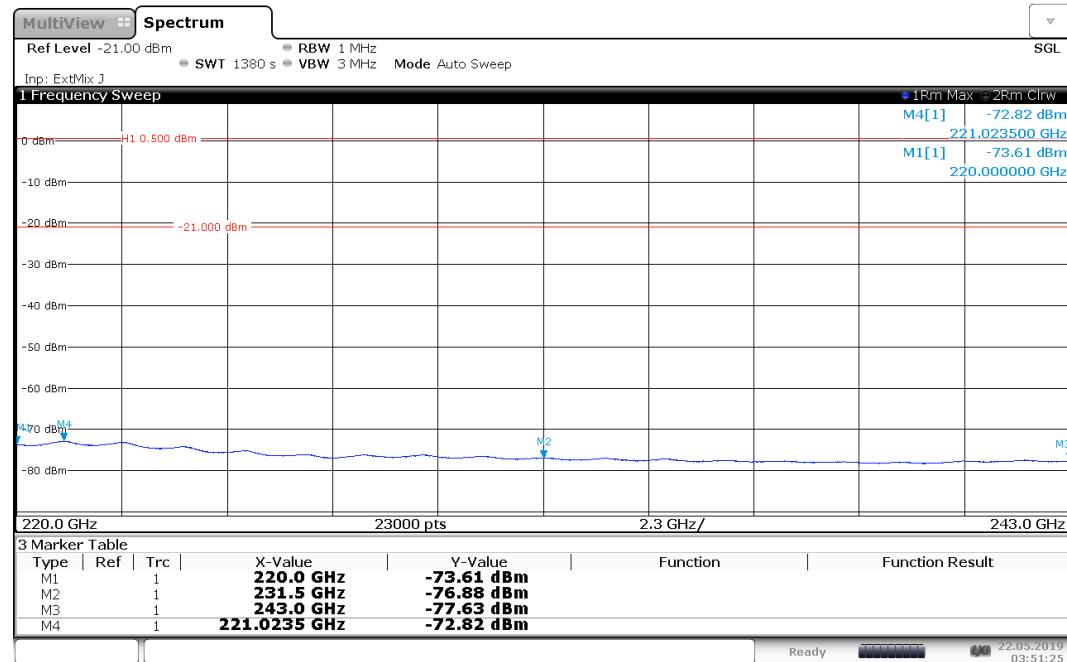
### 5.78. 220 GHz – 243 GHz, ANT HOR + VER, SigID USB + LSB, all positions, f\_CW\_high



04:05:20 22.05.2019

\* Signal ID function is used. The diagram shows image signals and mixer products. The real input signal is shown, only when USB and LSD traces have the same position on the frequency axis => Apart from the noise floor no real input signal was observed. See subsection 5.8.6. in the main report. -21 dBm is only a reference line from the FSW67. Limit is 0.5 dBm (see calculations in subsection 5.8.6).

## 5.79. 220 GHz – 243 GHz, ANT HOR + VER, position with the highest power (RMS), FMCW

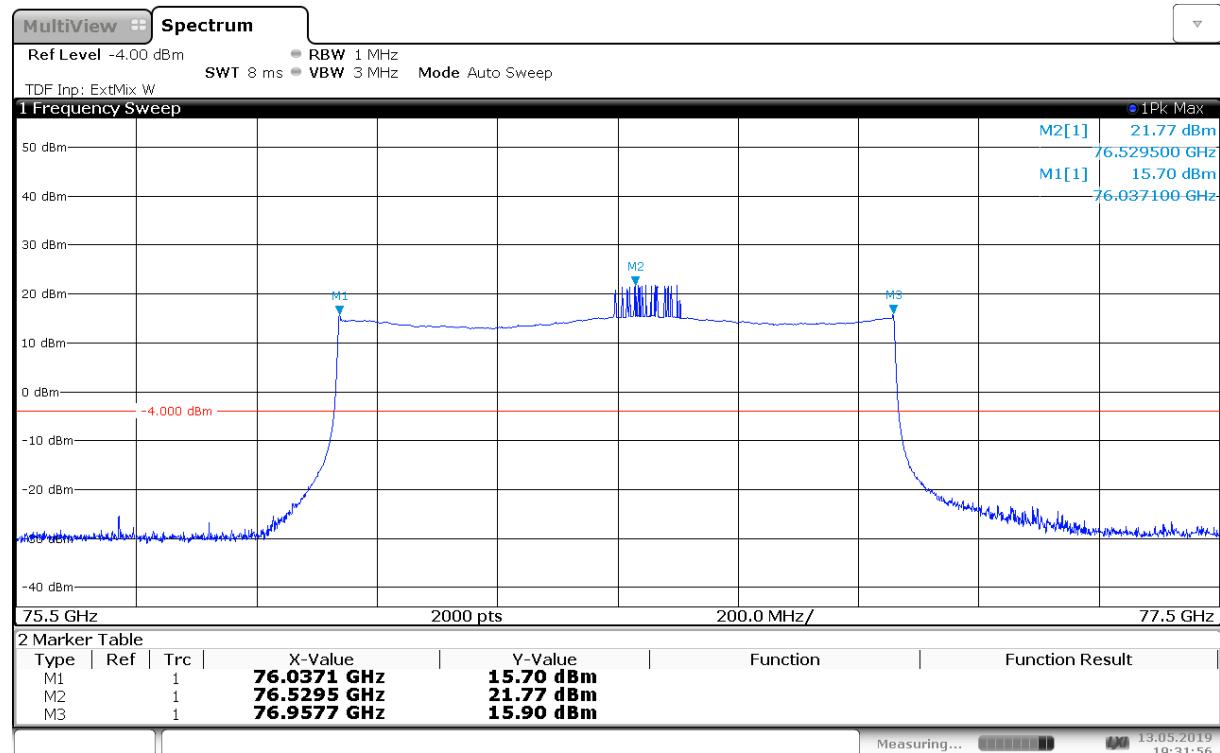


03:51:26 22.05.2019

\* -21 dBm is only a reference line from the FSW67. Limit is 0.5 dBm (see calculations in subsection 5.8.6).

## 6. Frequency stability

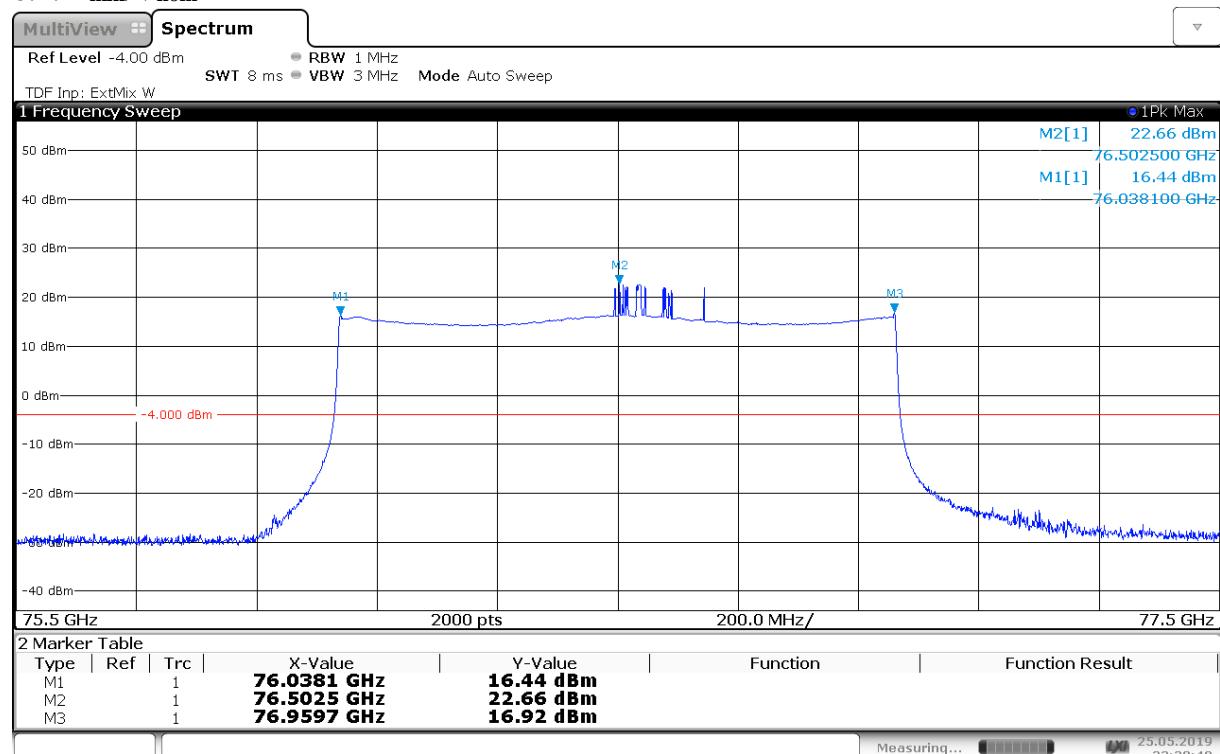
### 6.1. T<sub>nom</sub>/V<sub>nom</sub>



19:31:57 13.05.2019

\* -4 dBm is only a reference line from the FSW67.

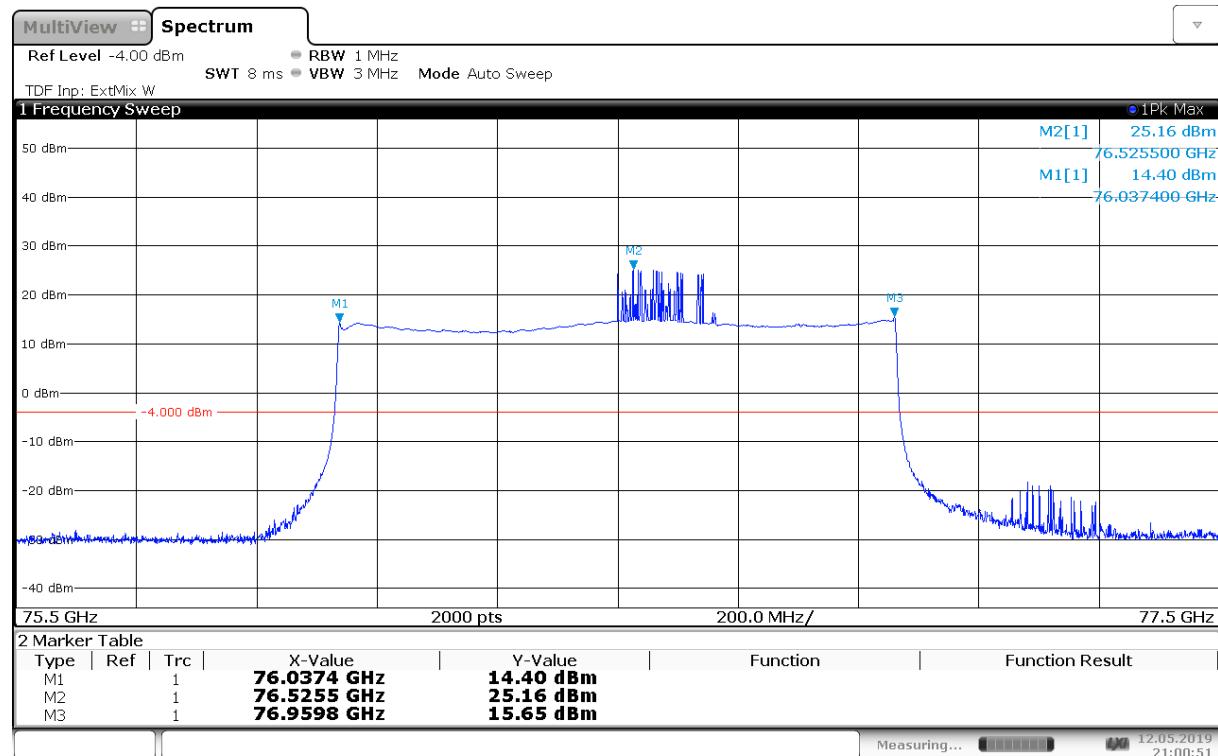
### 6.2. T<sub>min</sub>/V<sub>nom</sub>



22:39:49 25.05.2019

\* -4 dBm is only a reference line from the FSW67.

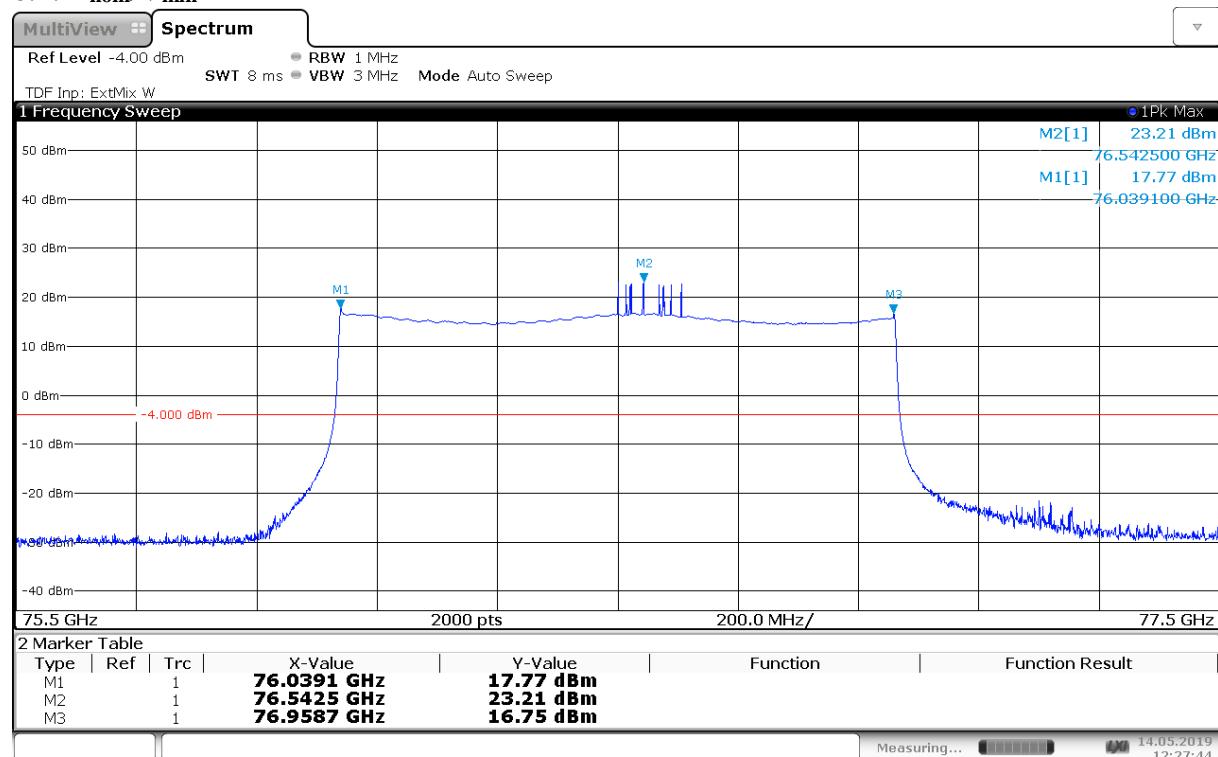
### 6.3. T<sub>max</sub>/V<sub>nom</sub>



21:00:51 12.05.2019

\* -4 dBm is only a reference line from the FSW67.

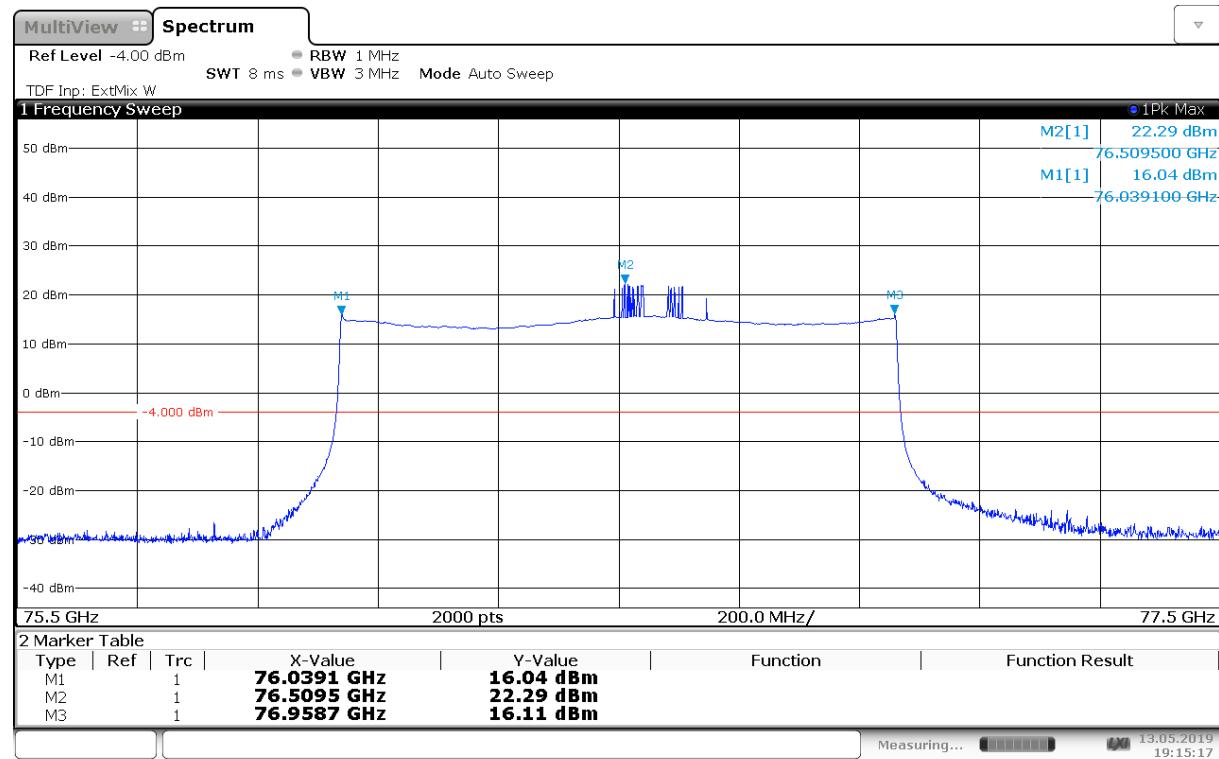
### 6.4. T<sub>nom</sub>/V<sub>min</sub>



12:27:44 14.05.2019

\* -4 dBm is only a reference line from the FSW67.

## 6.5. $T_{nom}/V_{max}$



**19:15:18 13.05.2019**

\* -4 dBm is only a reference line from the FSW67.