# Annex 1: Measurement diagrams 20-1-0018201T008a-A1

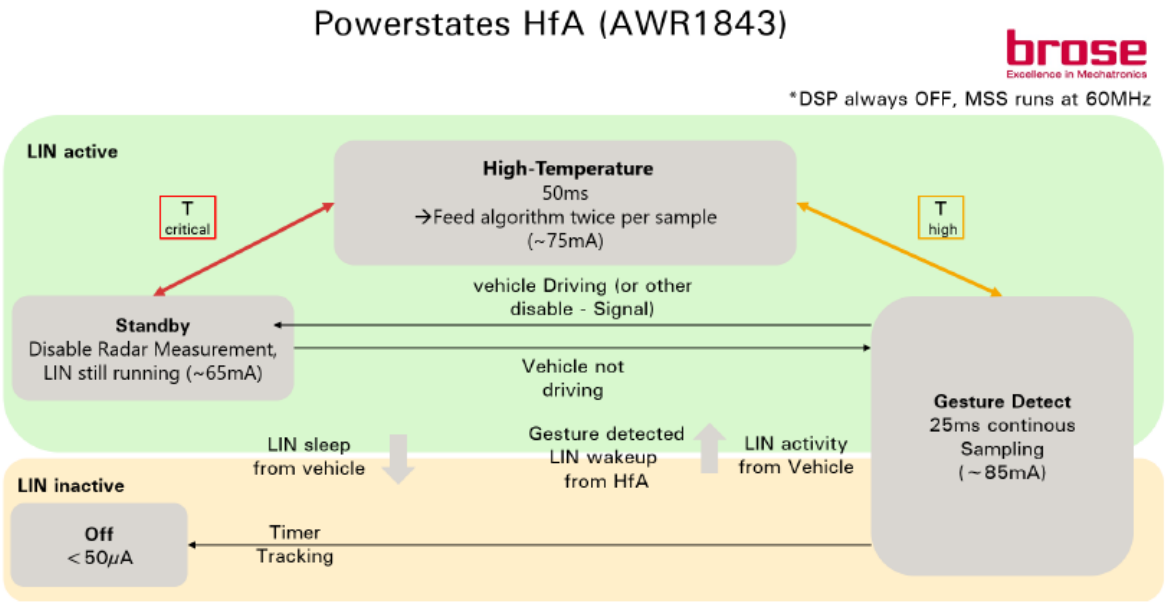
| | | | |
|---|---|---|---|
| **Number of pages:** | 111 | **Date of Report:** | 2023-Mar-03 |
| **Testing company:** | cetecom advanced GmbH<br>Im Teelbruch 116<br>45219 Essen Germany<br>Tel. + 49 (0) 20 54 / 95 19-0<br>Fax: + 49 (0) 20 54 / 95 19-150 | **Applicant:** | Brose Fahrzeugteile SE & Co. KG, Bamberg |
| **Product:** | **Kick Sensor (HfA)** | | |
| **Model:** | **R-HFA GEN1** | | |
| **FCC ID:** | 2AHV8-G45476 | **IC:** | 29958-G45476 |
| **Testing has been carried out in accordance with:** | **FCC Regulations**<br>**Title 47 CFR, Chapter I, Subchapter D, Part 95**<br>**Subpart M**<br>**The 76-81 GHz Band Radar Service**<br>§ 95.3367 76-81 GHz Band Radar Service radiated power limits<br>§ 95.3379 76-81 GHz Band Radar Service unwanted emissions limits<br><br>**ISED-Regulations**<br>**Radio Standards Specification**<br>**RSS-251, Issue 2**<br>Vehicular Radar and Airport Fixed or Mobile Radar in the 76-81 GHz Frequency Band | | |

# Table of Contents

# 1 Measurement diagrams

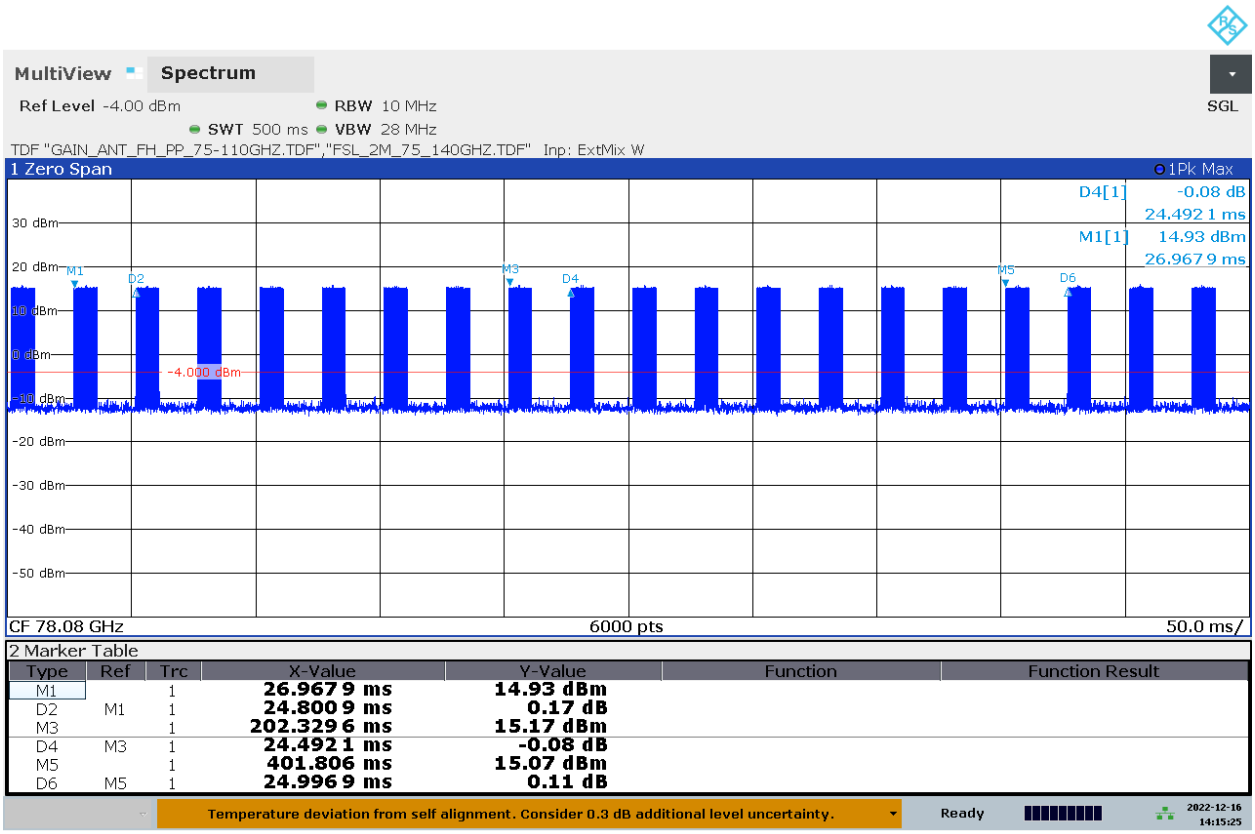
**All Fundamental Measurements have been performed on Two Operating mode (Gesture Detect, High Temperature) where RADAR is ON, check below customer declared operating mode,**

| Mode | Current (@12V) | LIN | Radar |
|---|---|---|---|
| Sleep/Off | <50µA | OFF | OFF |
| Standby | ~65mA | ON | OFF |
| Gesture Detect | ~85mA | ON | ON (25ms Sampling) |
| High-Temperature | ~75mA | ON | ON (50ms Sampling) |



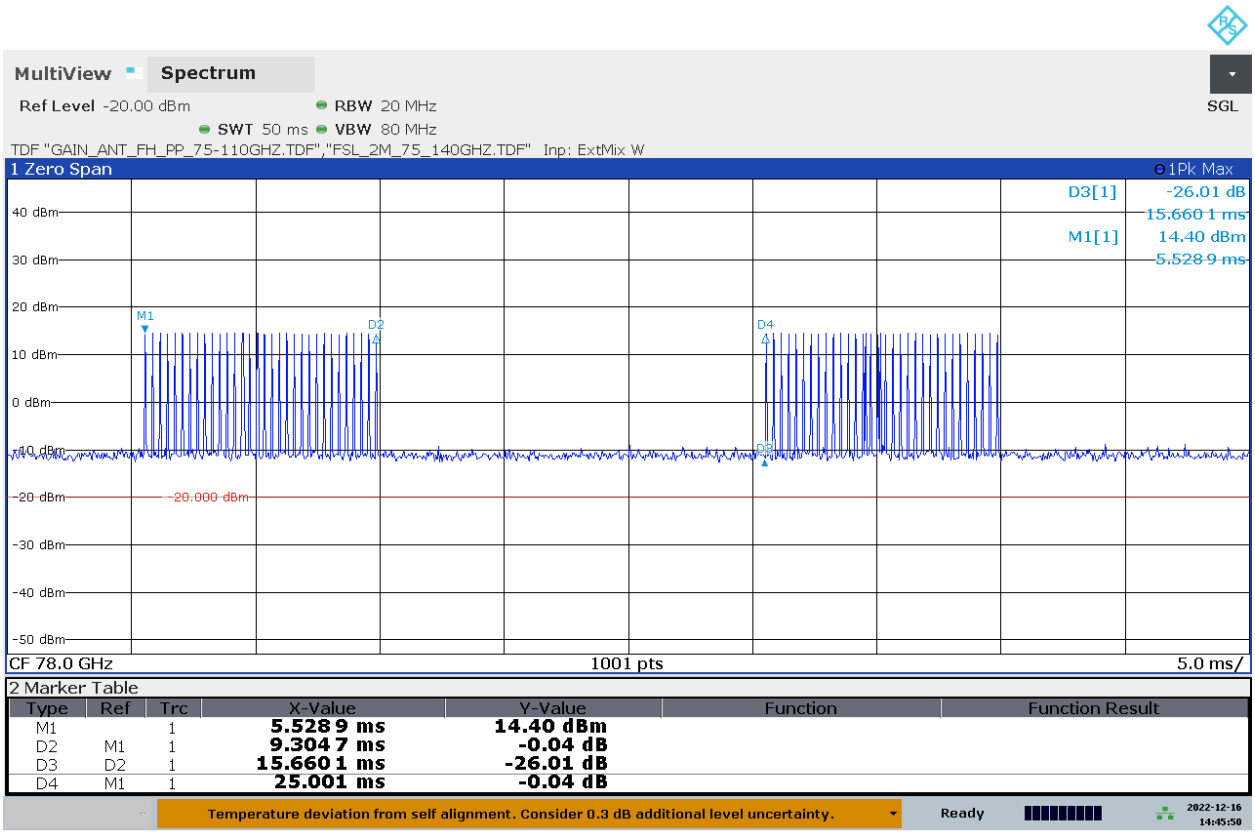
## Measurement time investigation GD mode:

D105_T08_MT_investigation_EUT_87_TT_0_Ant_V_S40_RBW_1MHz_GD_mode




EUT'S 1 Cycle Time =~25 ms (verified)

Non Pulsed RADAR: Frequency Modulated Continuous Wave (FMCW)

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D107_T08_Signal_ON_OFF_EUT_87_Ant_V_S40_single_signal_on_off_time_GD_mode

Remark: Signal ON / OFF time,

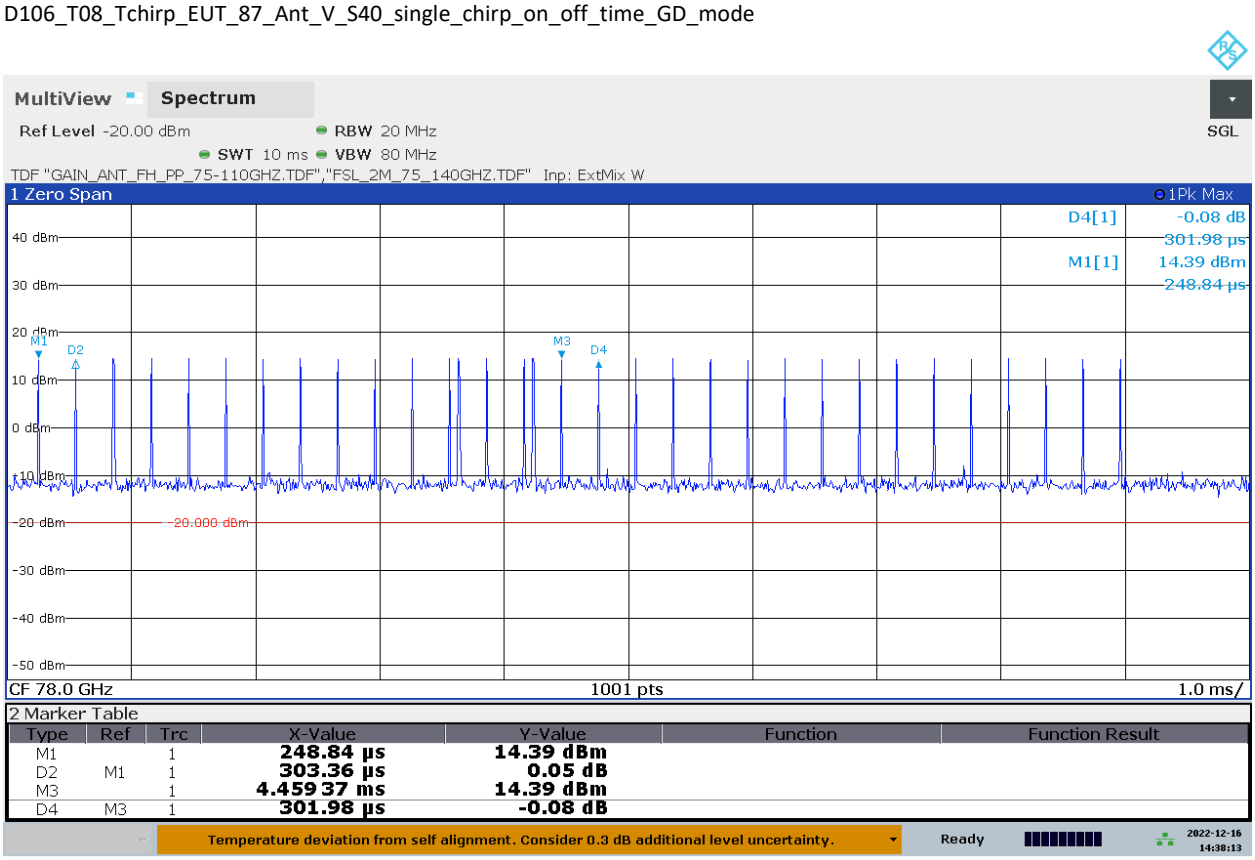
Signal on time = ~9.3 ms,
Signal off time = ~15.7 ms

EUT'S 1 Cycle Time = ~25 ms

32 Chirps per RADAR Cycle.

Modulation: Frequency Modulated Continuous Wave (FMCW)

D106_T08_Tchirp_EUT_87_Ant_V_S40_single_chirp_on_off_time_GD_mode

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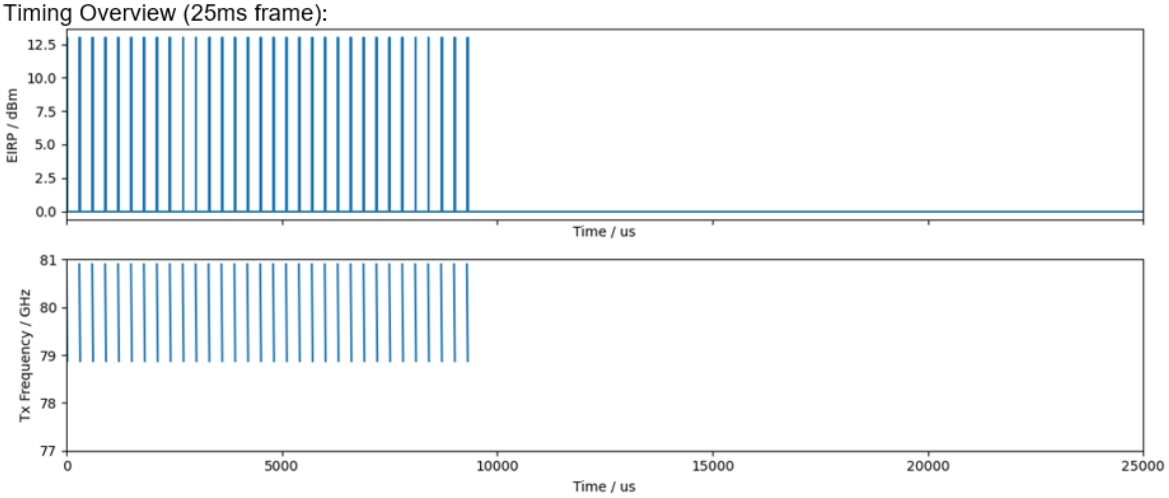
32 Chirps per RADAR Cycle.

**Customer declaration,**

| | |
|---|---|
| Radar | |
| Min Frequency | 77,050GHz |
| Max Frequency | 78,950GHz |
| Modulation (32 Chirps per radar cycle) | Chirp Sequence FMCW |
| Sampling rate | 2.5MSps |
| Chirp Slope | -100MHz/µs |
| Peak transmit power at boresight (EIRP) | +13dBm |
| | |

Timing Overview (25ms frame):




**Additional calculation:**

Radar cycle: T = 25 ms;

Transmission time: t = 20.26 $\mu s$ * 32 ramps = 648 $\mu s$;

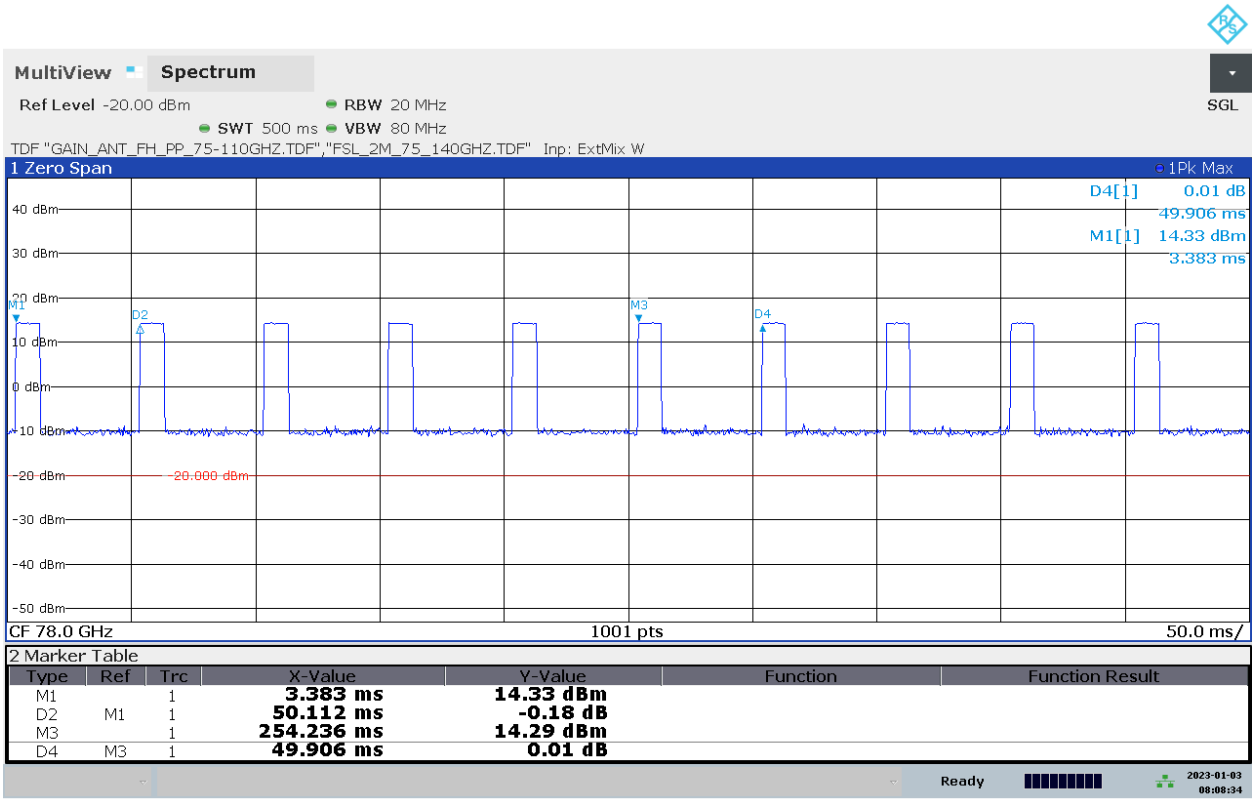
Duty cycle: t / T = 0.648ms / 25ms = 0.025 = 2.5%.

For more information, please check below documents provided by Customer,

- BROSE R-HfA-Datasheet-221006
- Antenna 2022_11_23
- CANape_mode_settings_Radar-HfA - updated

## Measurement time investigation HT mode:

D105_T08_MT_investigation_EUT_87_TT_0_Ant_V_S40_RBW_1MHz_HT_mode

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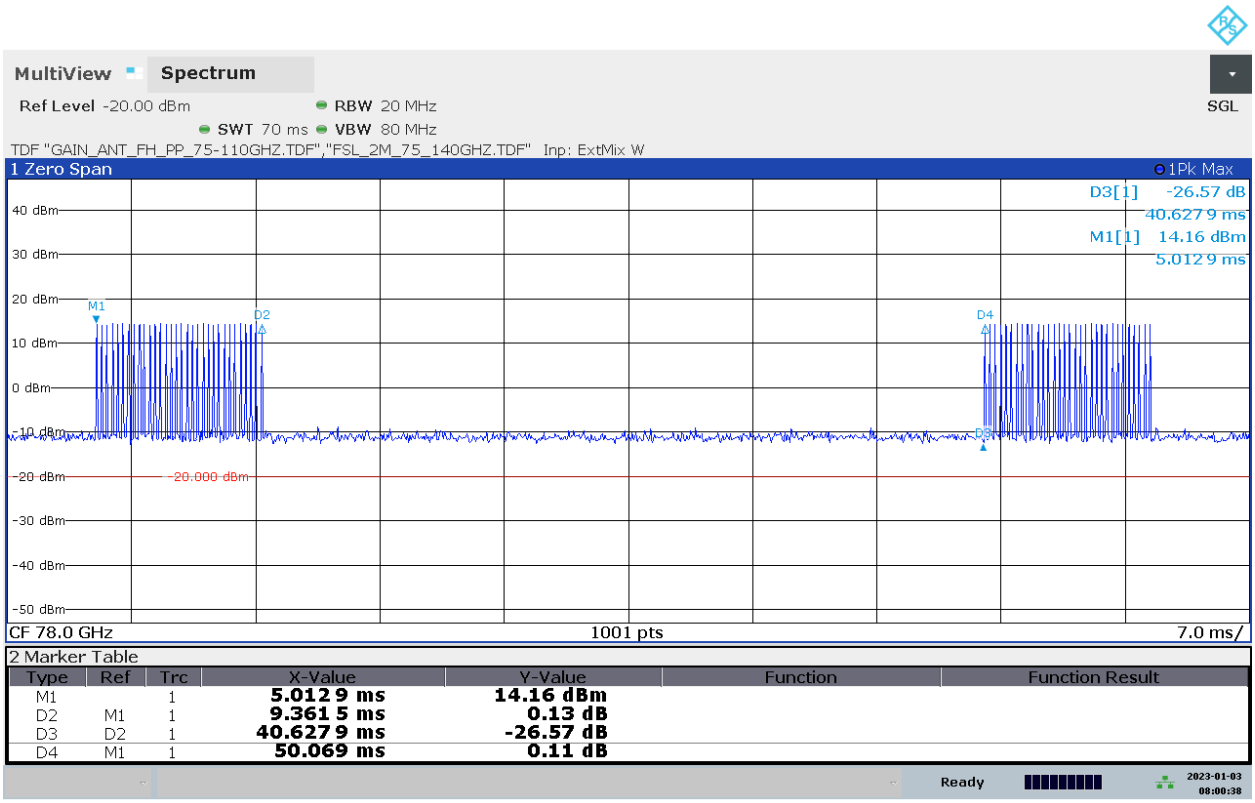
EUT'S Duty Cycle =~50 ms (verified)

Modulation: Frequency Modulated Continuous Wave (FMCW)

D107_T08_Signal_ON_OFF_EUT_87_Ant_V_S40_single_signal_on_off_time_HT_mode

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Remark: Signal ON / OFF time,

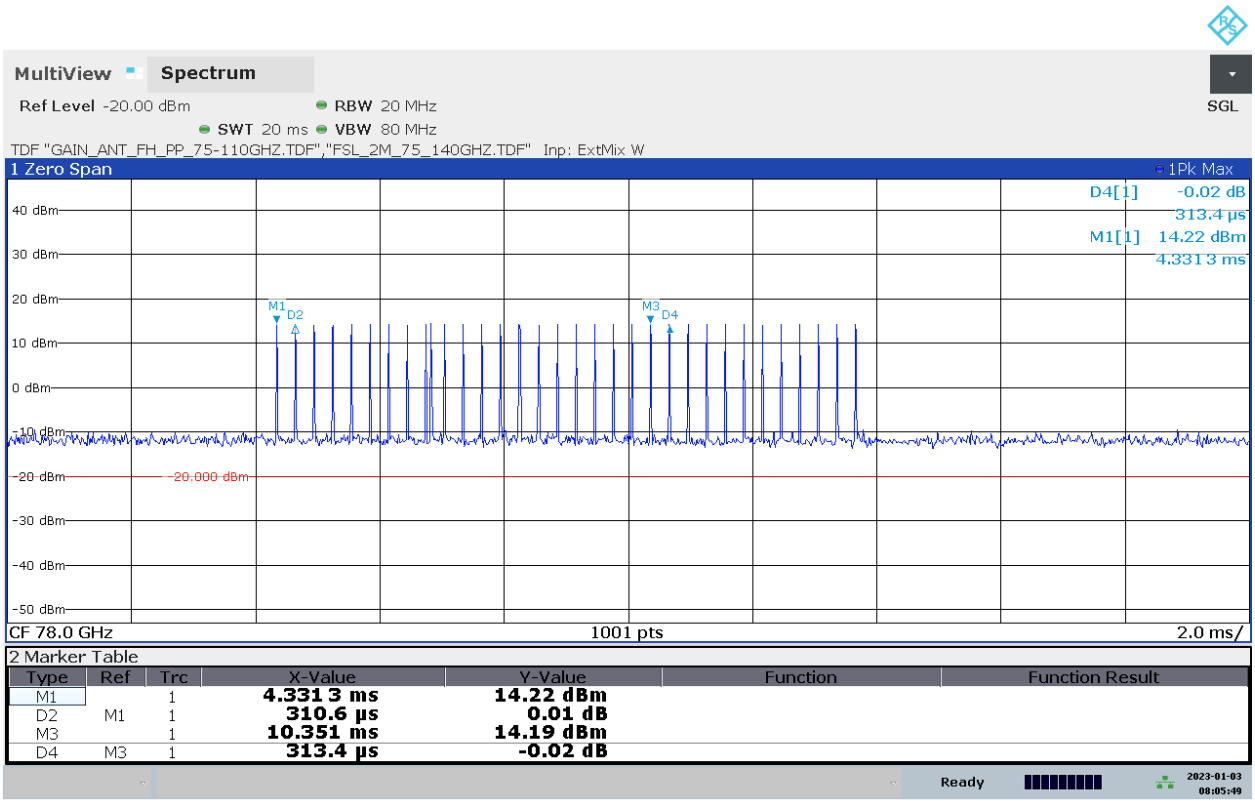
Signal on time = ~9.4 ms,
Signal off time = ~40.6 ms

EUT's Duty cycle= ~50 ms

32 Chirps per RADAR Cycle.

Modulation: Frequency Modulated Continuous Wave (FMCW)

D106_T08_Tchirp_EUT_87_Ant_V_S40_single_chirp_on_off_time_HT_mode

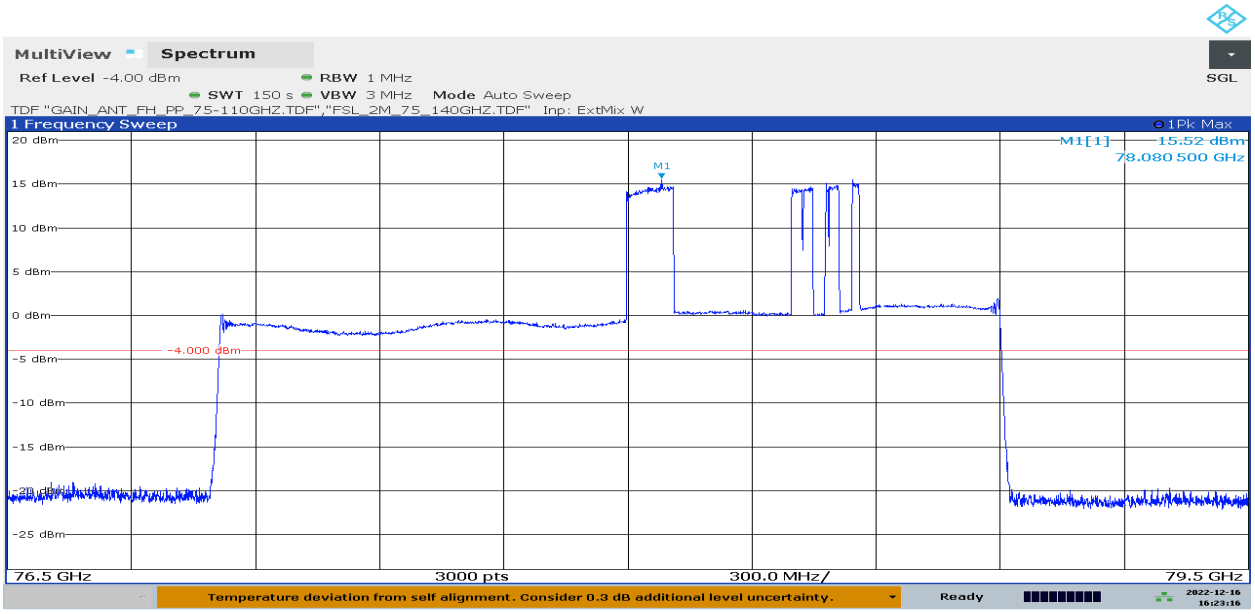



32 Chirps per RADAR Cycle.

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

## 2.1 Peak Detector, $T_{nom}/V_{nom}$_GD Mode

D118_01a_R01_T08_PEAK_Power_Tnom_Vnom_EUT_87_TT_0_Ant_V_MaxH_S40_RBW_1MHz_GD_mode

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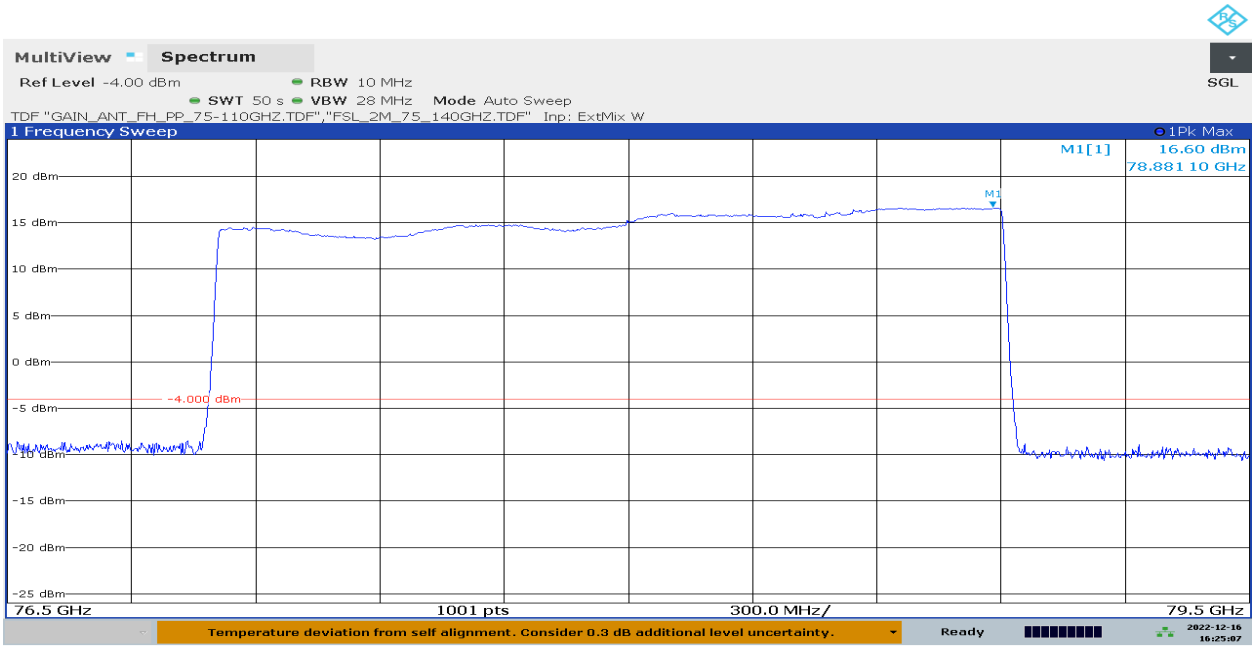
Remark: Only for information, not for assessment.
EUT Transmitting FMCW signal is too fast, therefore Spectrum Analyzer cannot measure correctly with 1 MHz RBW, so that 10 MHz RBW has been taken for this measurement, check below diagram.

D118_02a_R01_T08_PEAK_Power_Tnom_Vnom_EUT_87_TT_0_Ant_V_MaxH_S40_RBW_10MHz_GD_mode

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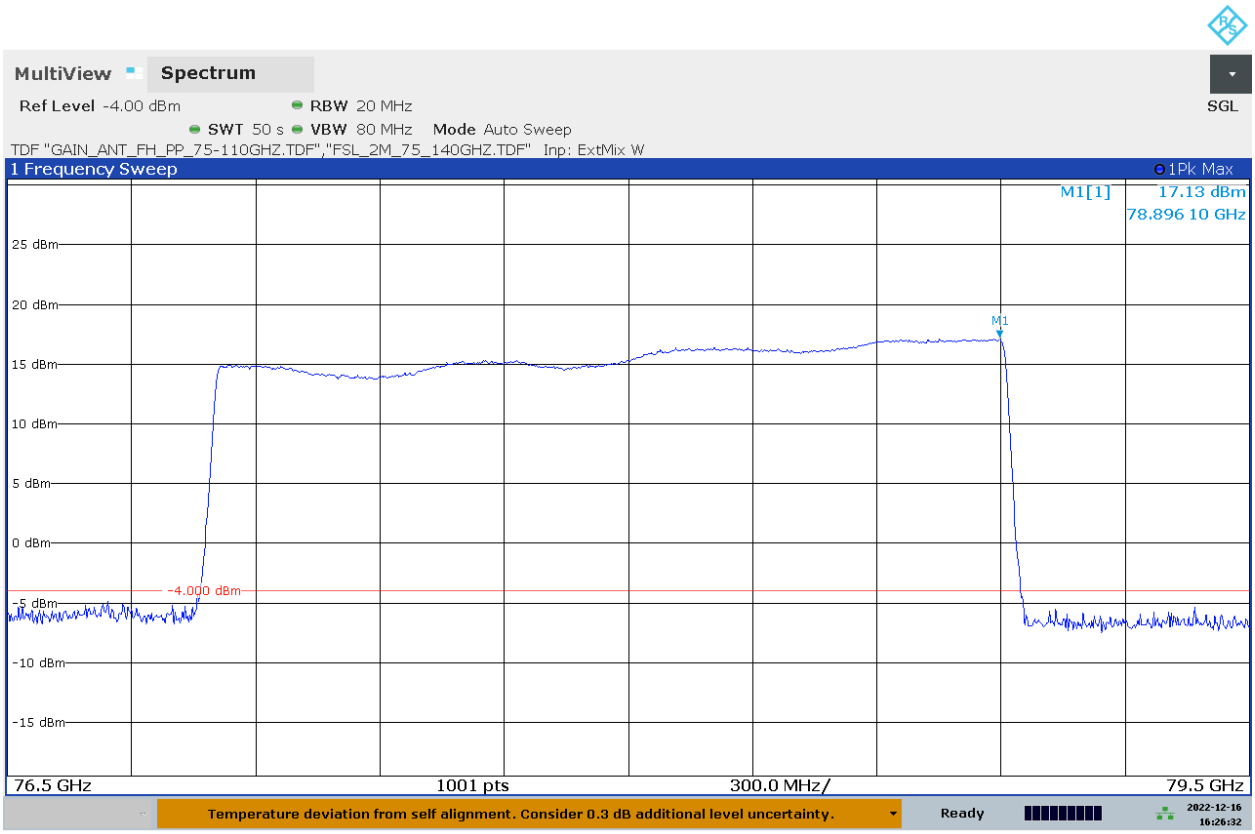
Remark: **Used FMCW Peak Desensitization correction factor, RBW 10MHz has been taken to perform Maximum PEAK Power measurement to receive maximum Emission from the EUT**

**Maximum Radiated Power: 16.60 dBm**
Measurement Antenna polarization: Vertical

D118_03a_R01_T08_PEAK_Power_Tnom_Vnom_EUT_87_TT_0_Ant_V_MaxH_S40_RBW_20MHz_GD_mode

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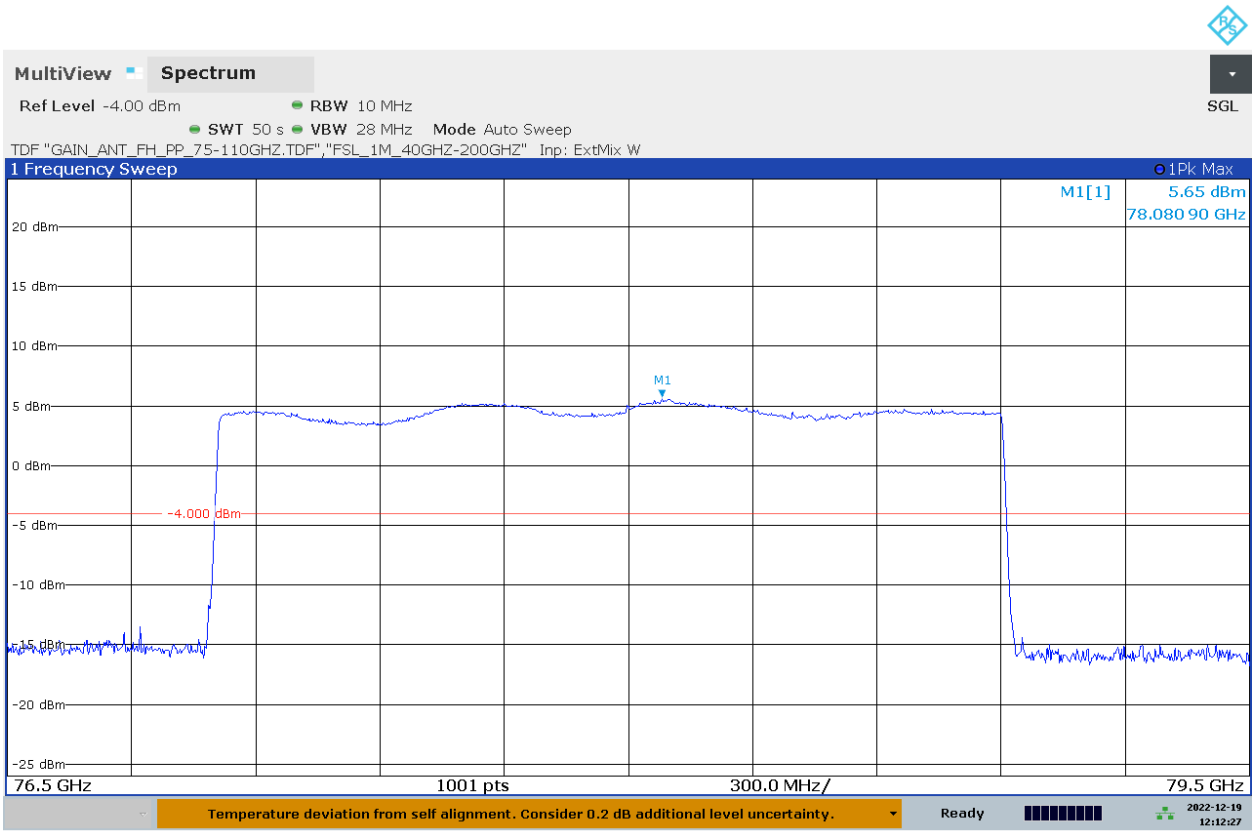
Remark:
Only for information, not for assessment, RBW: 20MHz

**Maximum Radiated Power: 17.13 dBm**
Measurement Antenna polarization: Vertical

D119_02a_R01_T08_PEAK_Power_Tnom_Vnom_EUT_78_TT_35_Ant_H_MaxH_S40_RBW_10MHz_GD_mode

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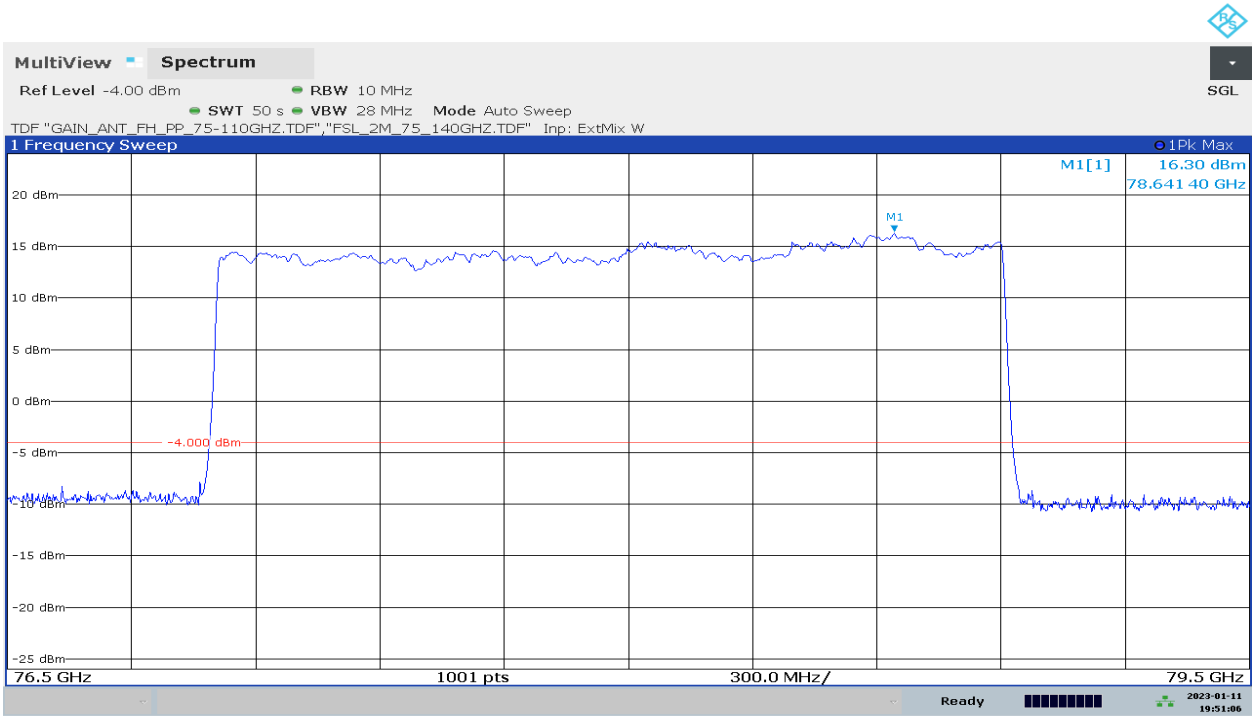
Maximum Radiated Power: 5.65 dBm
Measurement Antenna polarization: Horizontal

Remark: The radiated power is measured with horizontal and vertical polarizations.
The highest level of the radiated power is found at vertical polarization.
Check diagrams 118_02a and D119_02a.
**Therefore the following measurements are done with vertical polarization.**

## 2.2 Peak Detector, Tnom/Vmin_GD Mode

D118_11a_R01_T08_PEAK_Power_Tnom_Vmin_EUT_87_TT_0_Ant_V_MaxH_S40_RBW_10MHz_GD_mode

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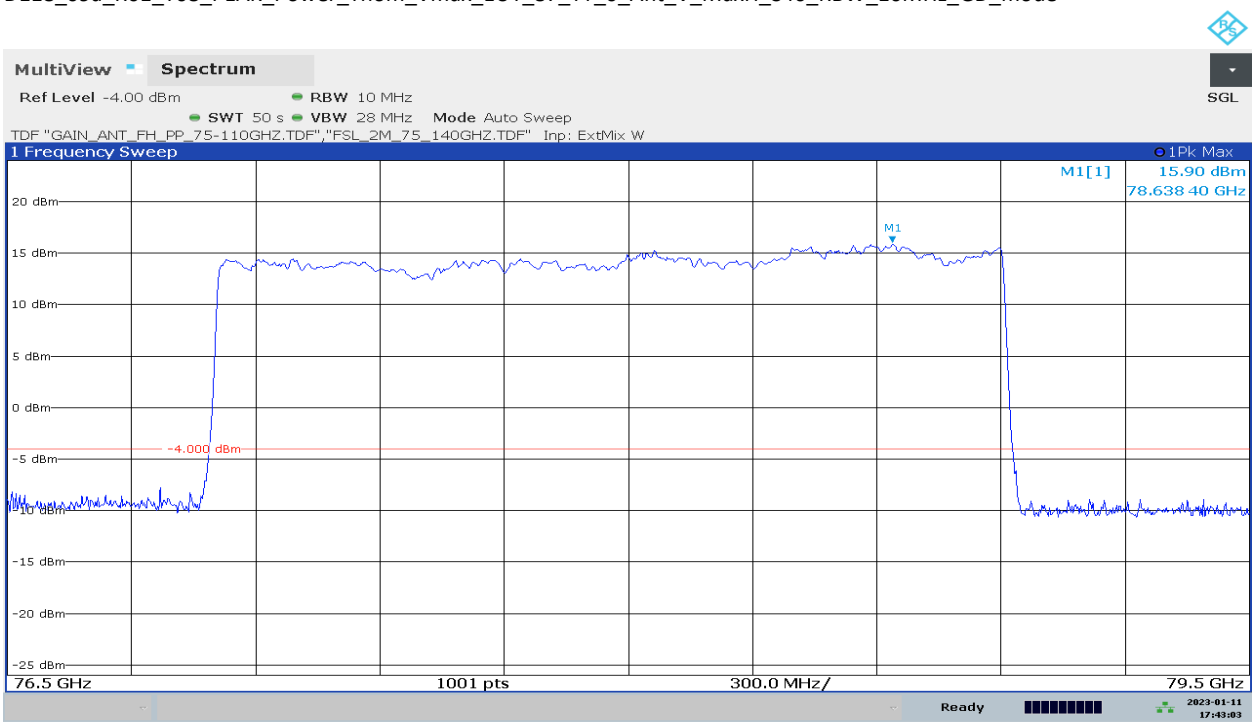
## 2.3 Peak Detector, Tnom/Vmax_GD Mode

D118_09a_R01_T08_PEAK_Power_Tnom_Vmax_EUT_87_TT_0_Ant_V_MaxH_S40_RBW_10MHz_GD_mode

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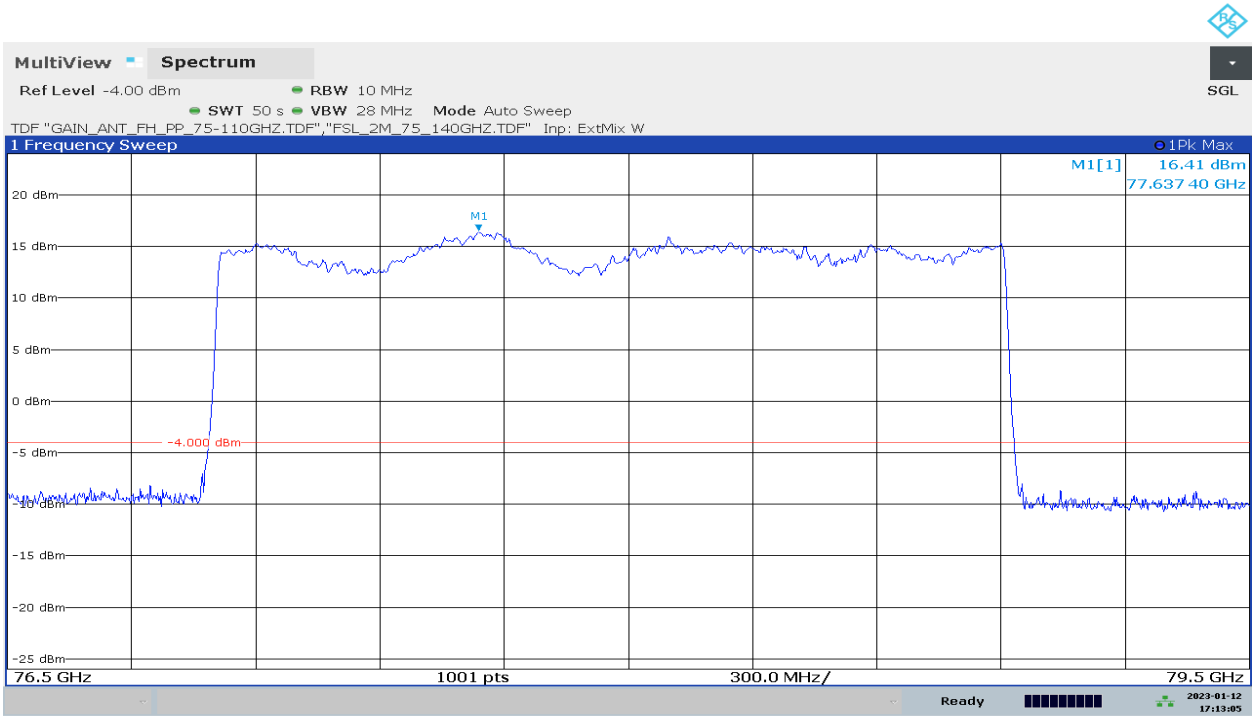
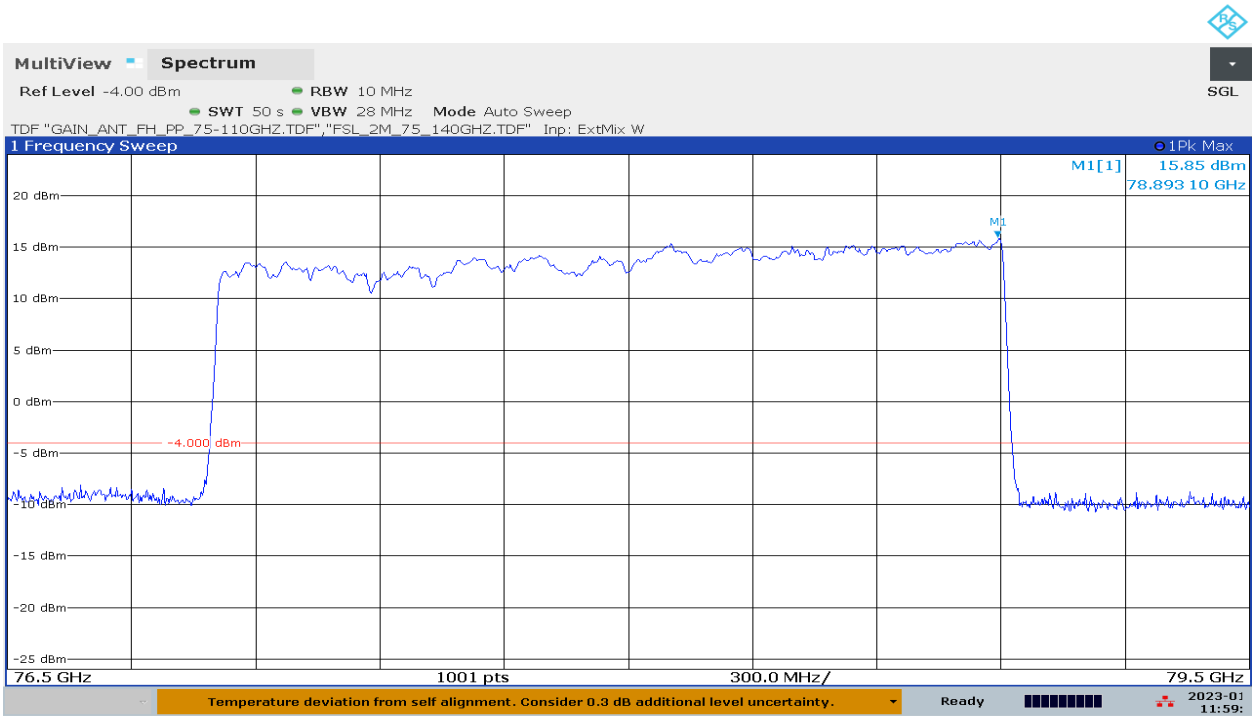
## 2.4 Peak Detector, Vnom/Tmin_GD Mode

D118_05a_R01_T08_PEAK_Power_Vnom_Tmin_EUT_87_TT_0_Ant_V_MaxH_S40_RBW_10MHz_GD_mode



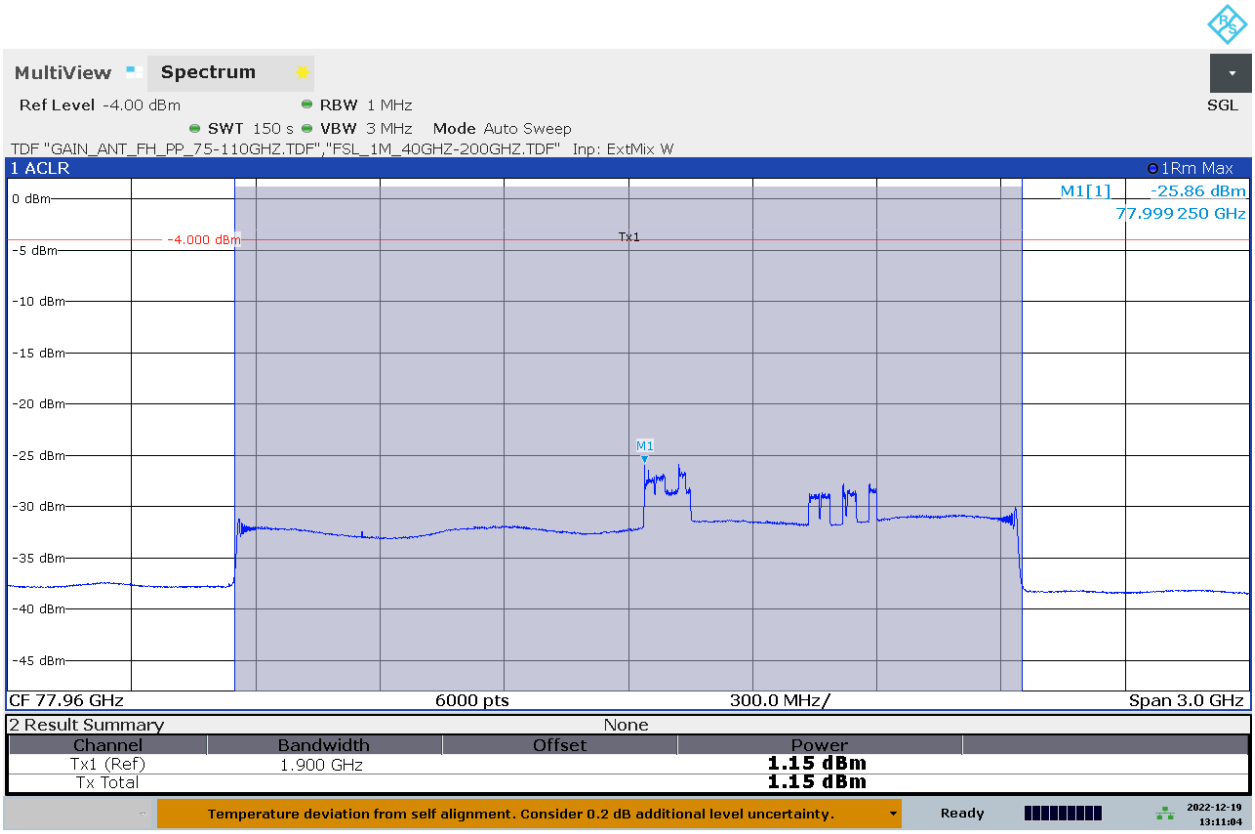

## 2.5 Peak Detector, Vnom/Tmax_GD Mode

D118_07a_R01_T08_PEAK_Power_Vnom_Tmax_EUT_87_TT_0_Ant_V_MaxH_S40_RBW_10MHz_GD_mode



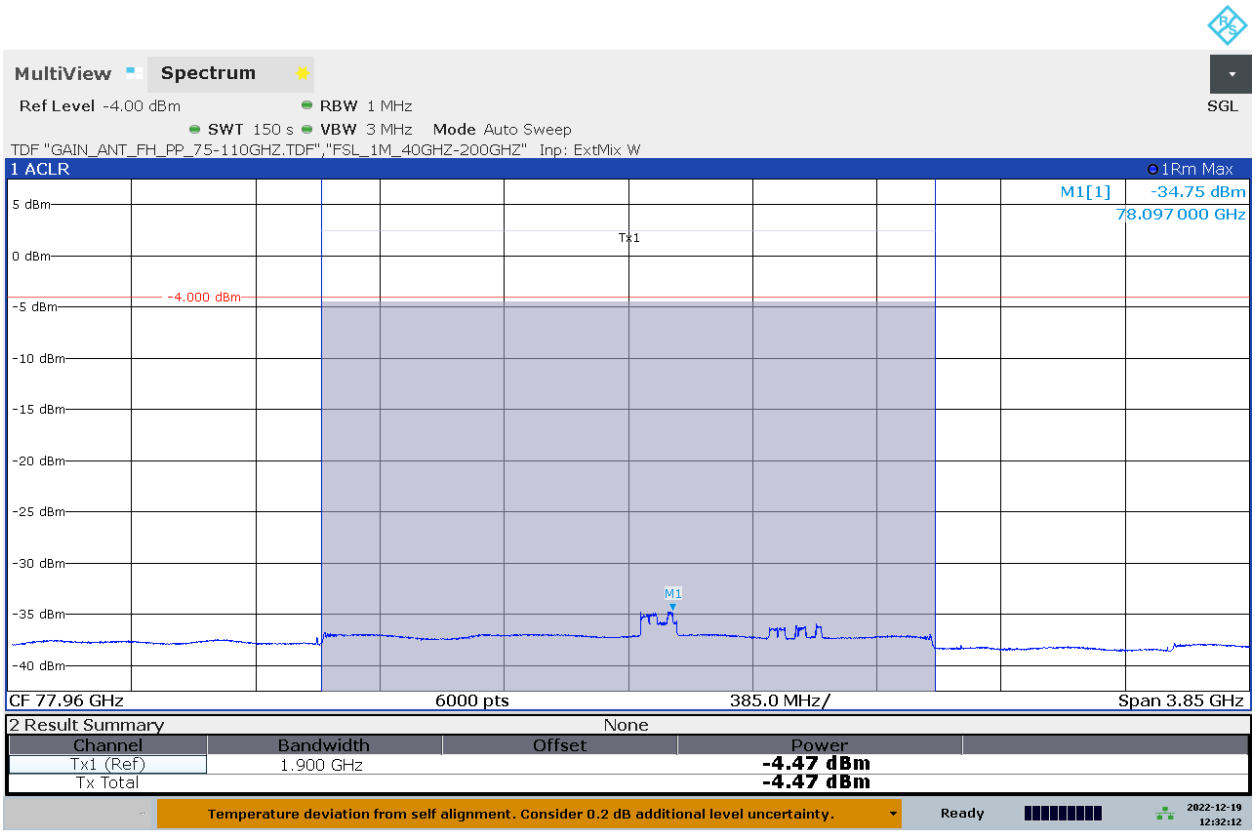
## 2.6 RMS Detector, Tnom/Vnom_GD Mode

D113_01a_R01T08_Channel_Power_RMS_Tnom_Vnom_Ant_V_S40_GD_mode




Total Channel Power = 1.15 dBm,
Maximum Mean Power = -25.86 dBm/MHz,
Measurement Antenna polarization: Vertical.

D114_01a_R01T08_Channel_Power_RMS_Tnom_Vnom_Ant_H_S40_GD_mode

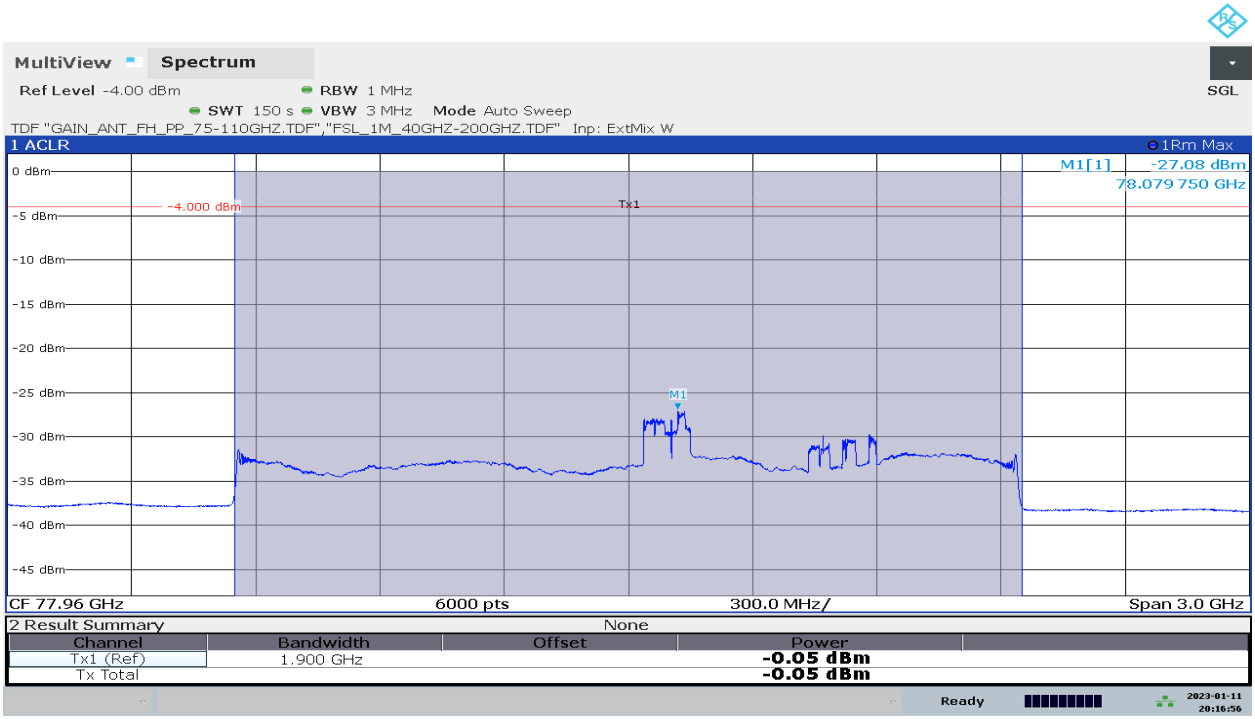



Total Channel Power = -4.47 dBm,
Maximum Mean Power = -34.75 dBm/MHz,
Measurement Antenna polarization: Horizontal.

Remark: The Total channel power is measured with horizontal and vertical polarizations.
The highest Channel power is found at vertical polarization.
Check diagrams 113_01a and D114_01a for GD mode.
**The following measurements are done with vertical polarization only.**

## 2.7 RMS Detector, $T_{nom}/V_{min}$_GD Mode

D113_04a_R01T08_Channel_Power_RMS_Tnom_Vmin_Ant_V_S40_GD_mode

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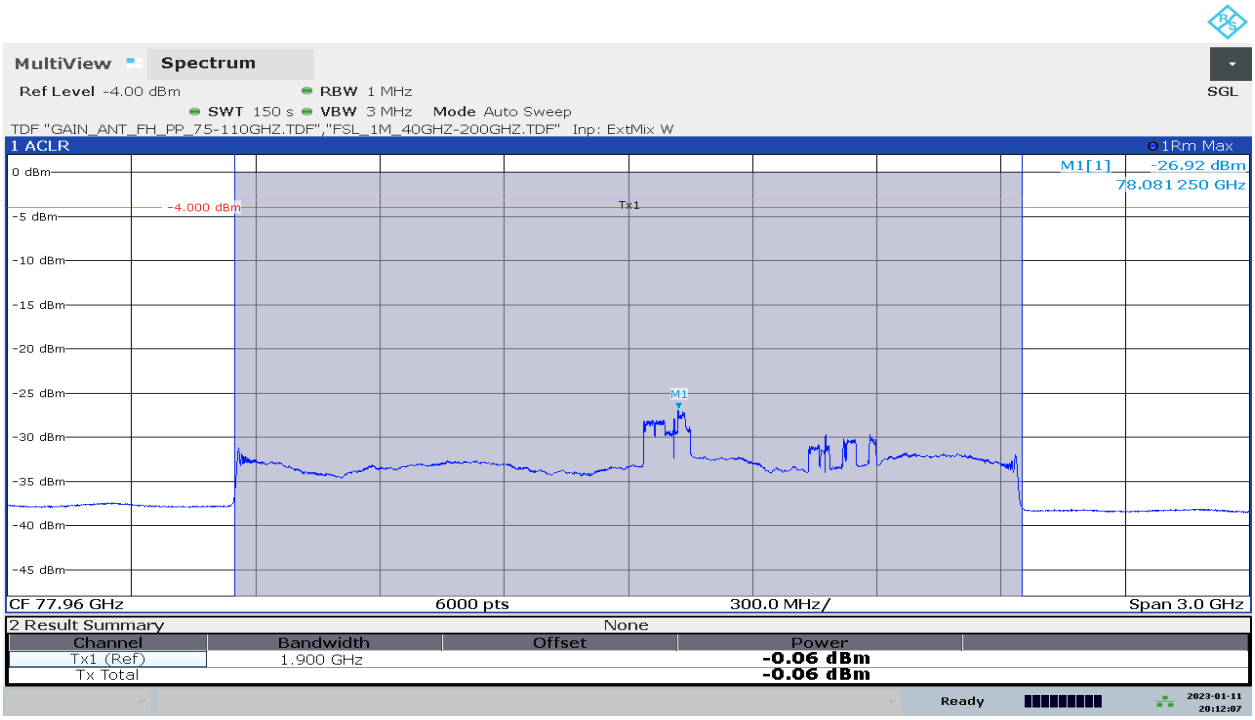
## 2.8 RMS Detector, Tnom/Vmax_GD Mode

D113_05a_R01T08_Channel_Power_RMS_Tnom_Vmax_Ant_V_S40_GD_mode

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## 2.9 RMS Detector, Vnom/Tmin_GD Mode

D113_02a_R01T08_Channel_Power_RMS_Vnom_Tmin_Ant_V_S40_GD_mode


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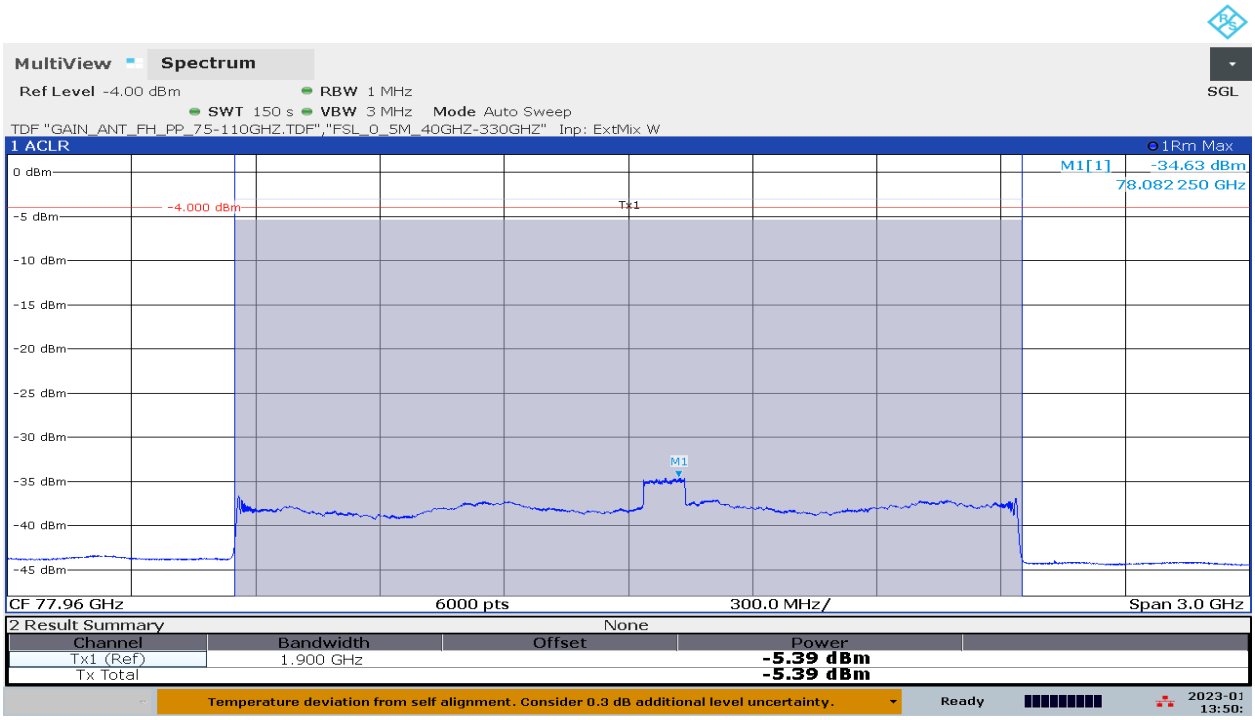
## 2.10 RMS Detector, Vnom/Tmax_GD Mode

D113_03a_R01T08_Channel_Power_RMS_Vnom_Tmax_Ant_V_S40_GD_mode

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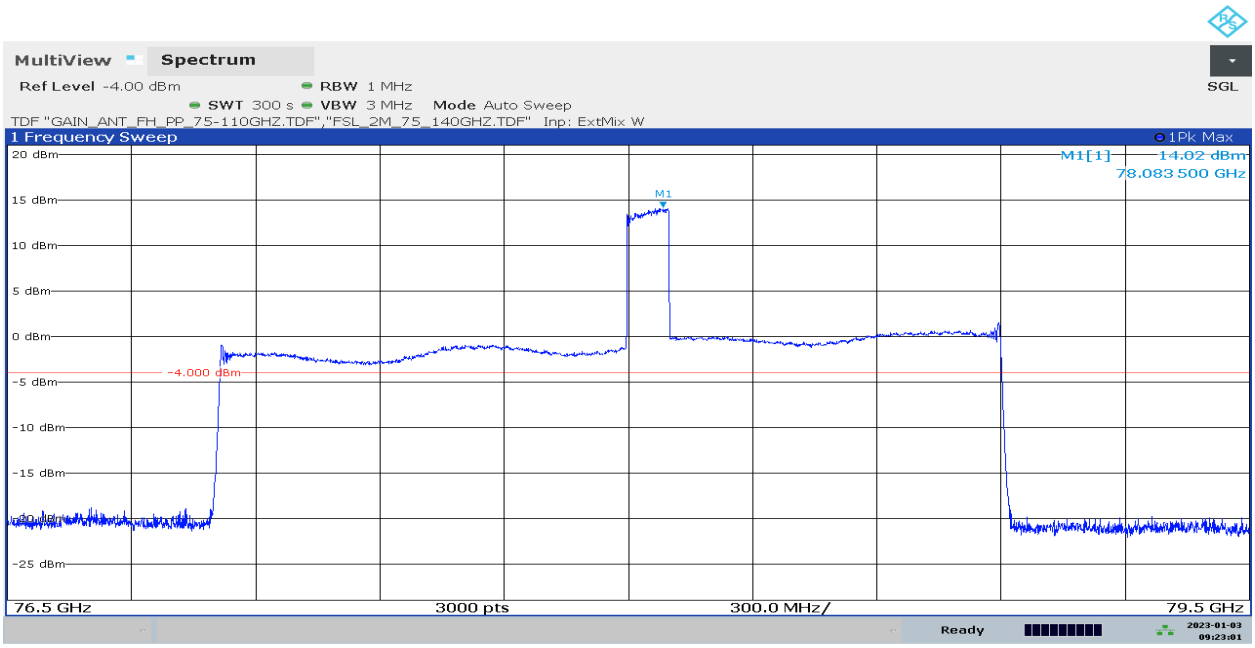
## 2.11 Peak Detector, $T_{nom}/V_{nom}$_HT Mode

D118_01b_R01_T08_PEAK_Power_Tnom_Vnom_EUT_87_TT_0_Ant_V_MaxH_S40_RBW_1MHz_HT_mode

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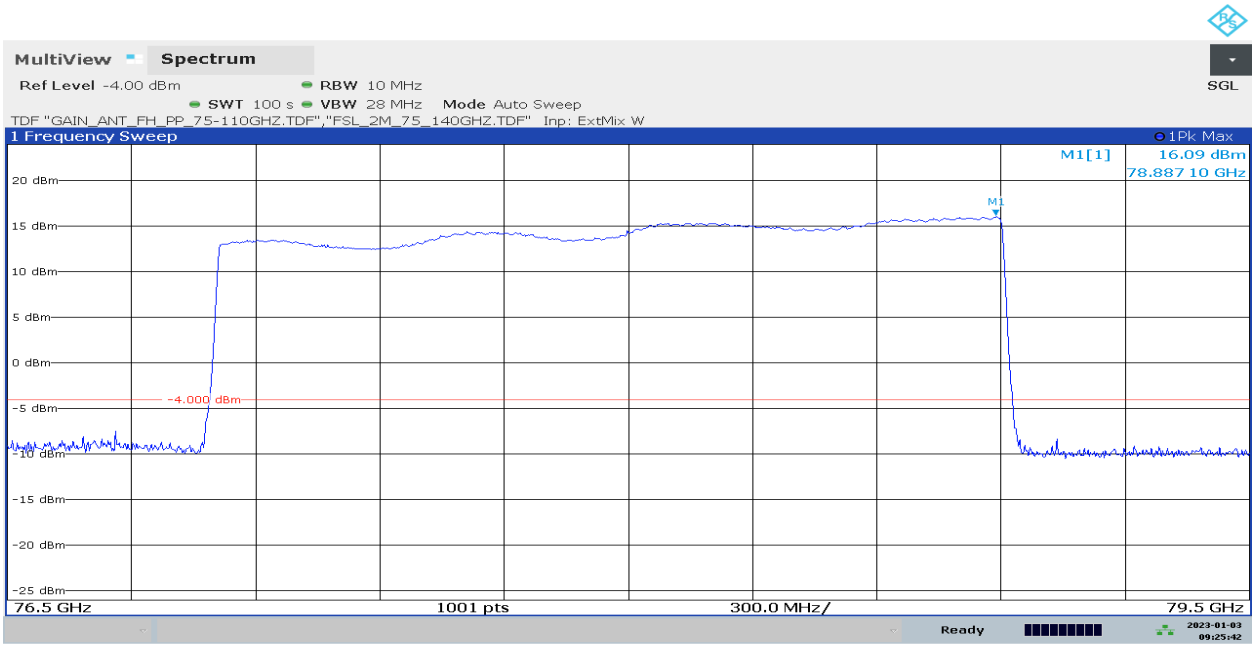
Remark: Only for information, not for assessment.
EUT Transmitting FMCW signal is too fast, therefore Spectrum Analyzer cannot measure correctly with 1 MHz RBW, Desensitization factor has been used to perform Maximum PEAK Power measurement, check below diagram.

**D118_02b_R01_T08_PEAK_Power_Tnom_Vnom_EUT_87_TT_0_Ant_V_MaxH_S40_RBW_10MHz_HT_mode**

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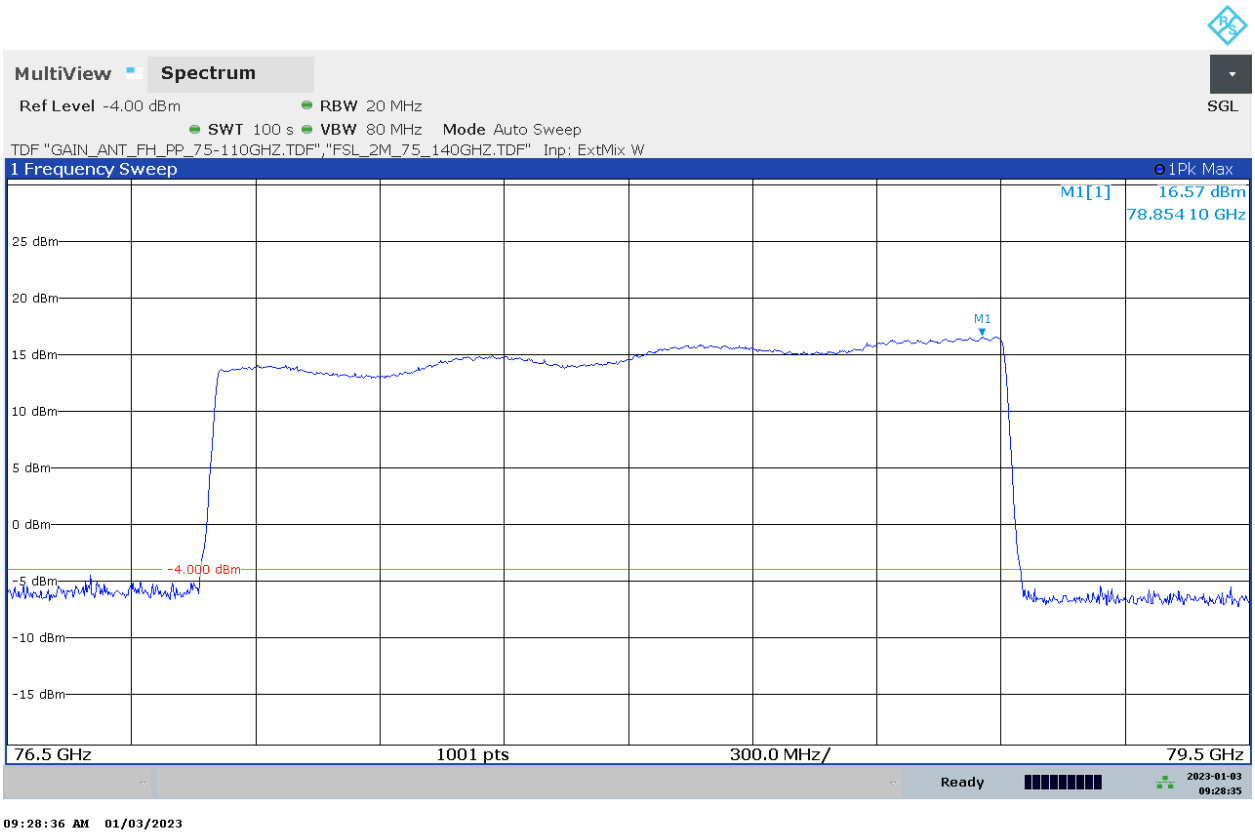
Desensitization correction factor has been used to perform Maximum PEAK Power measurement, Therefore RBW is 10MHz.

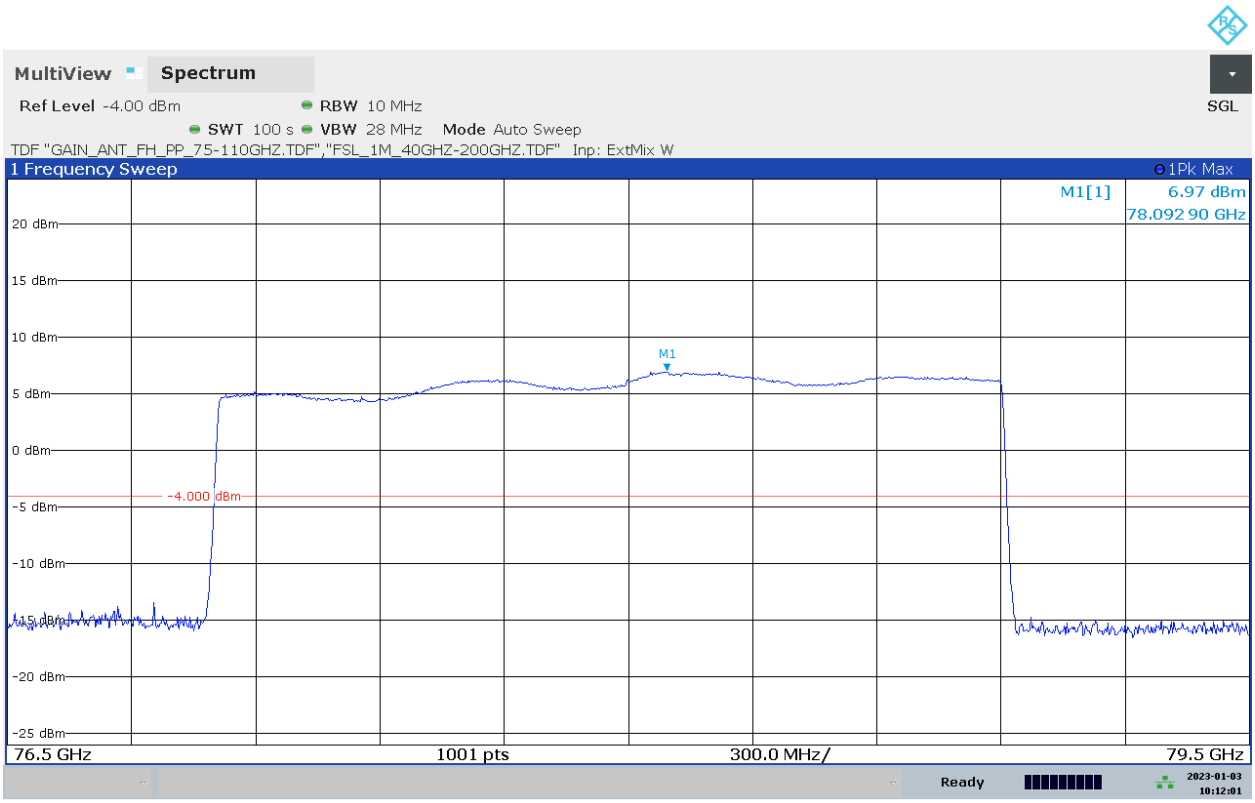
**Maximum Radiated Power: 16.09 dBm**
Measurement Antenna polarization: Vertical

D118_03b_R01_T08_PEAK_Power_Tnom_Vnom_EUT_87_TT_0_Ant_V_MaxH_S40_RBW_20MHz_HT_mode




Remark: RBW 20 MHz
Only for information, not for assessment.

D119_02b_R01_T08_PEAK_Power_Tnom_Vnom_EUT_78_TT_35_Ant_H_MaxH_S40_RBW_10MHz_HT_mode

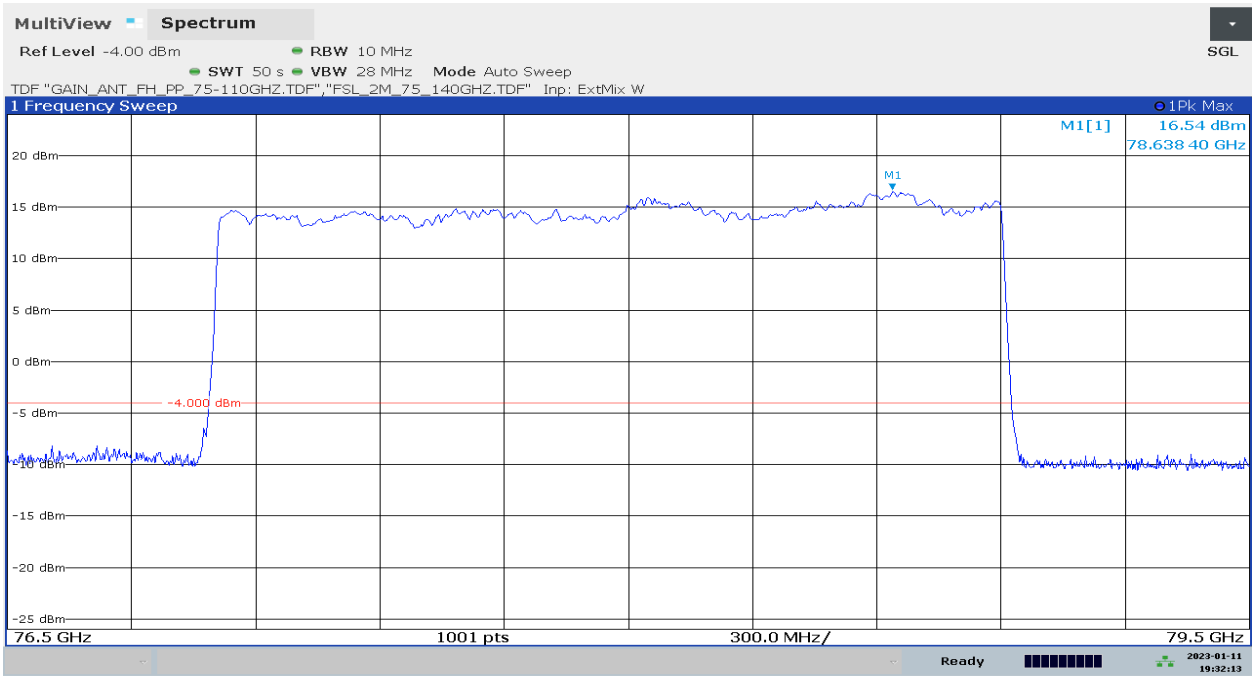



Maximum Radiated Power: 6.97 dBm
Measurement Antenna polarization: Horizontal

Remark: Radiated power is measured with horizontal and vertical polarizations.
The highest level of the radiated power is found at vertical polarization.
Check diagrams 118_02 and D119_02 for HT mode.
**Therefore the following measurements are done with vertical polarization.**

## 2.12 Peak Detector, Tnom/Vmin_HT Mode

D118_11b_R01_T08_PEAK_Power_Tnom_Vmin_EUT_87_TT_0_Ant_V_MaxH_S40_RBW_10MHz_HT_mode

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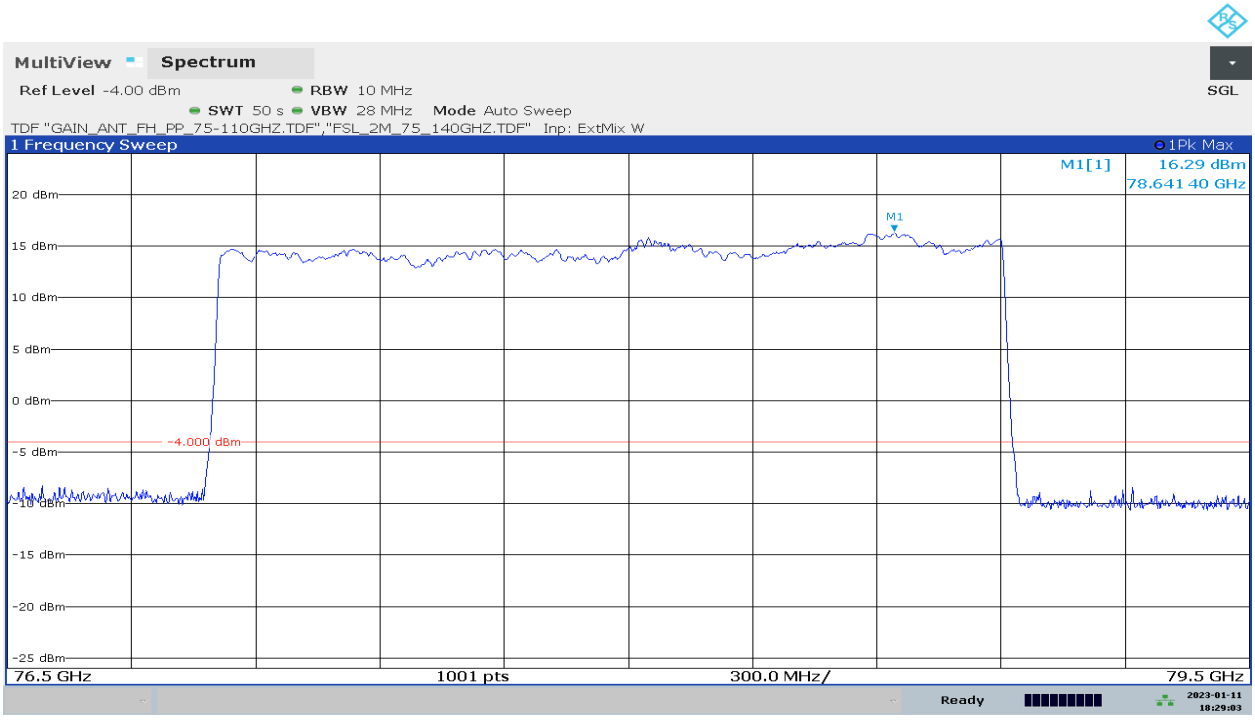
## 2.13 Peak Detector, Tnom/Vmax_HT Mode

D118_09b_R01_T08_PEAK_Power_Tnom_Vmax_EUT_87_TT_0_Ant_V_MaxH_S40_RBW_10MHz_HT_mode

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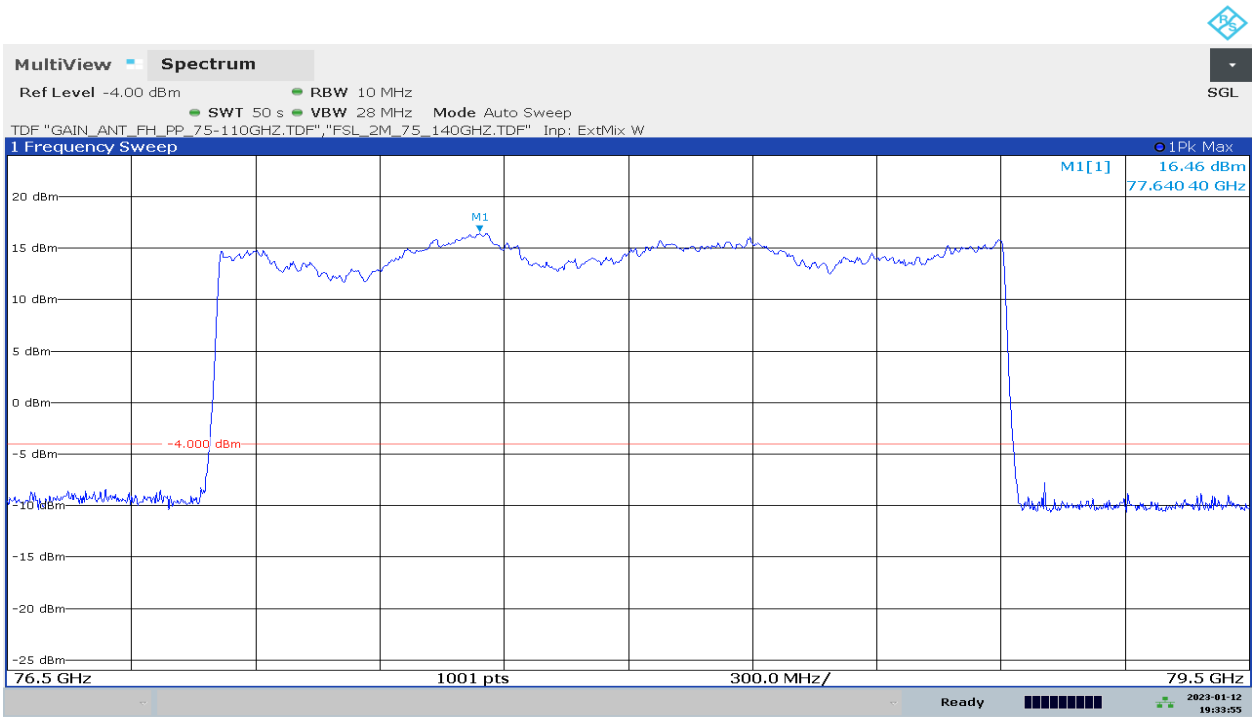
## 2.14 Peak Detector, Vnom/Tmin_HT Mode

D118_05b_R01_T08_PEAK_Power_Vnom_Tmin_EUT_87_TT_0_Ant_V_MaxH_S40_RBW_10MHz_HT_mode

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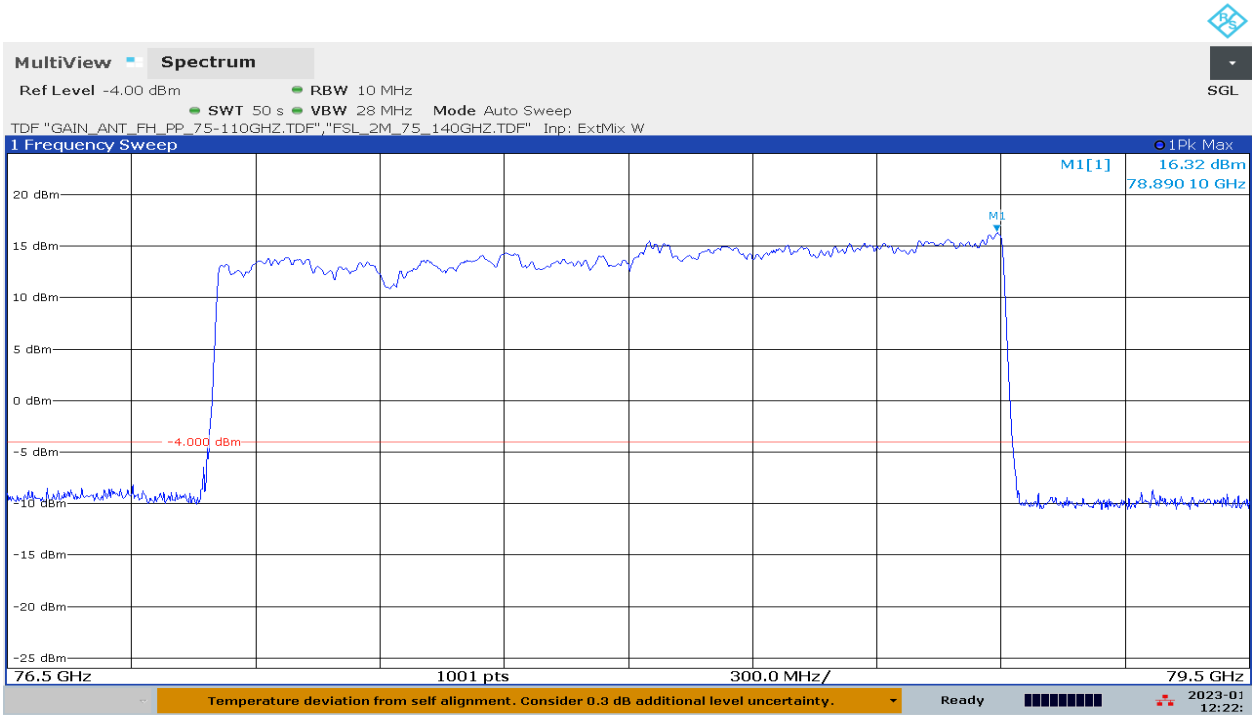
## 2.15 Peak Detector, Vnom/Tmax_HT Mode

D118_07b_R01_T08_PEAK_Power_Vnom_Tmax_EUT_87_TT_0_Ant_V_MaxH_S40_RBW_10MHz_HT_mode

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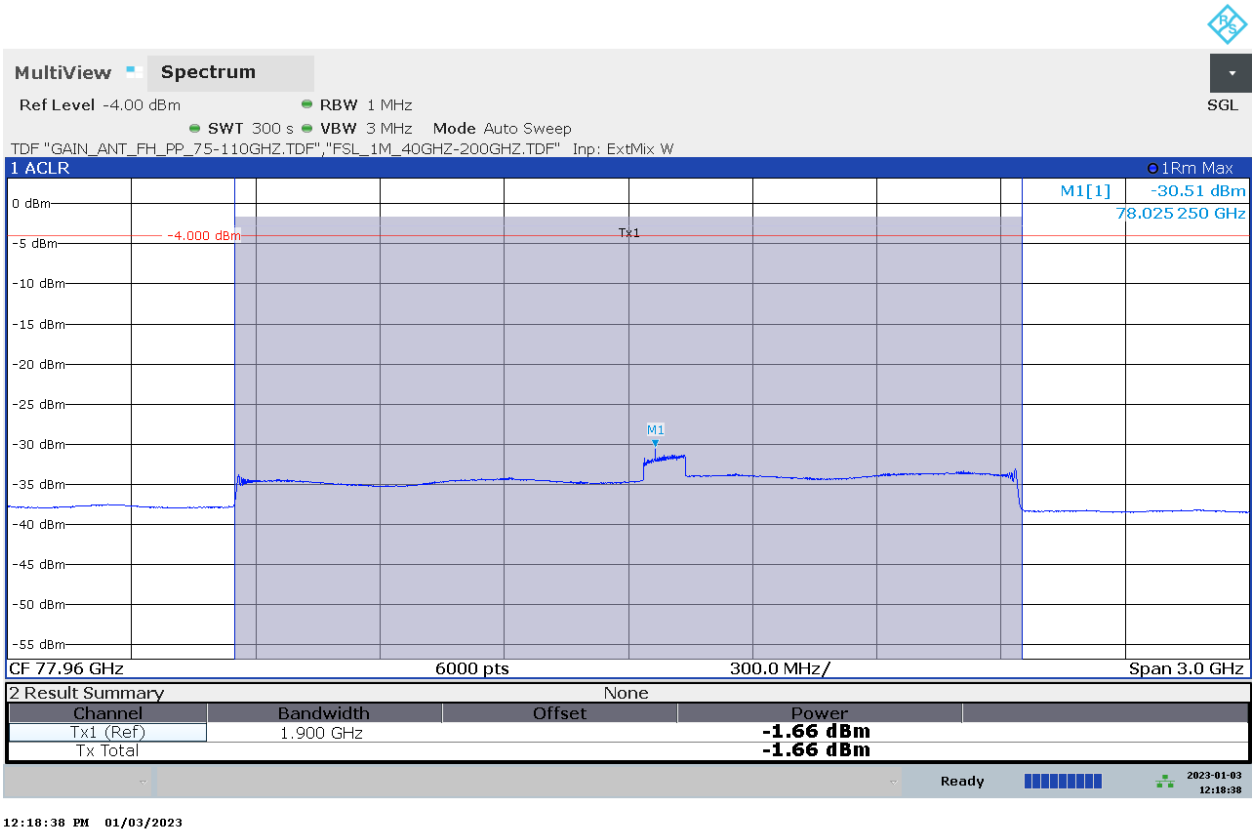
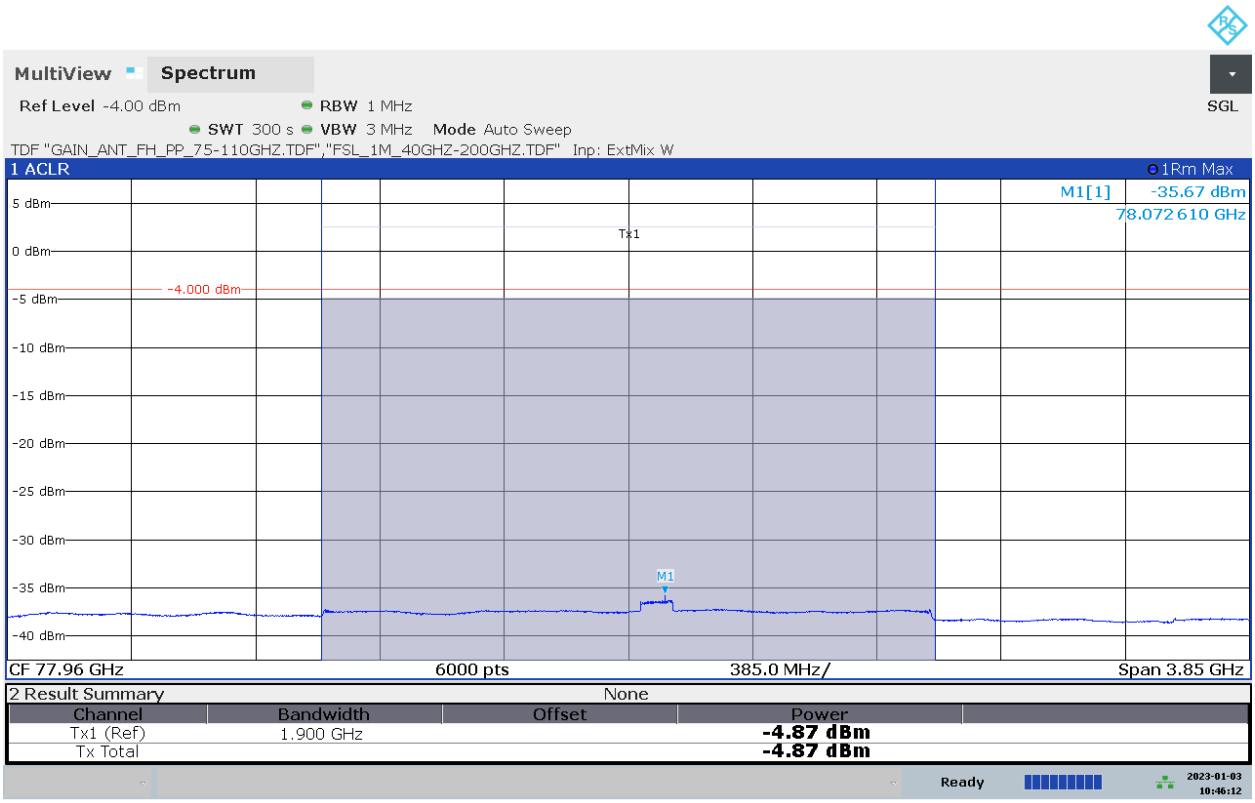
## 2.16 RMS Detector, Tnom/Vnom_HT Mode

D113_01b_R01T08_Channel_Power_RMS_Tnom_Vnom_Ant_V_S40_HT_mode_300s




Total Channel Power = -1.66 dBm,
Maximum Mean Power = -30.51 dBm/MHz,
Measurement Antenna polarization: Vertical.

D114_01b_R01T08_Channel_Power_RMS_Tnom_Vnom_Ant_H_S40_HT_mode

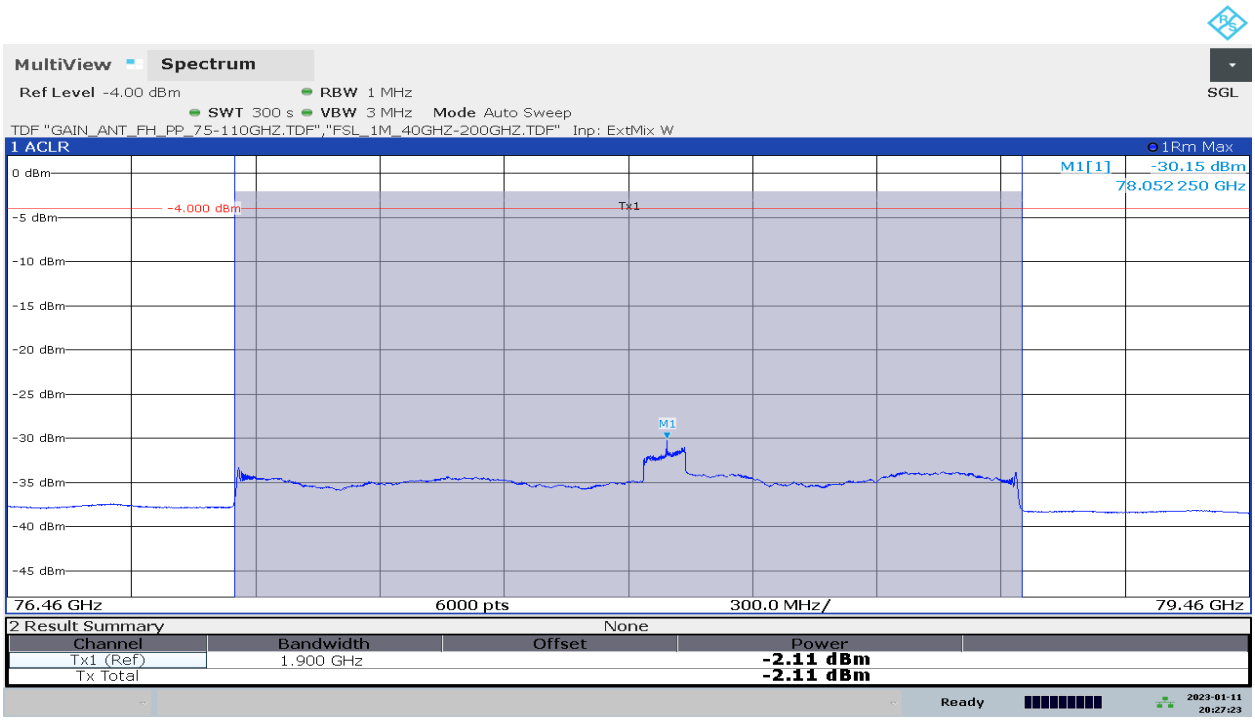



Total Channel Power = -4.87 dBm,
Maximum Mean Power = -35.67 dBm/MHz,
Measurement Antenna polarization: Horizontal.

Remark: The Total channel power is measured with horizontal and vertical polarizations.
The highest Channel power is found at vertical polarization.
Check diagrams D113_01b and D114_01b for HT mode.
**Therefore the following measurements are done with vertical polarization only.**

## 2.17 RMS Detector, $T_{nom}/V_{min}$_HT Mode

D113_04b_R01T08_Channel_Power_RMS_Tnom_Vmin_Ant_V_S40_HT_mode

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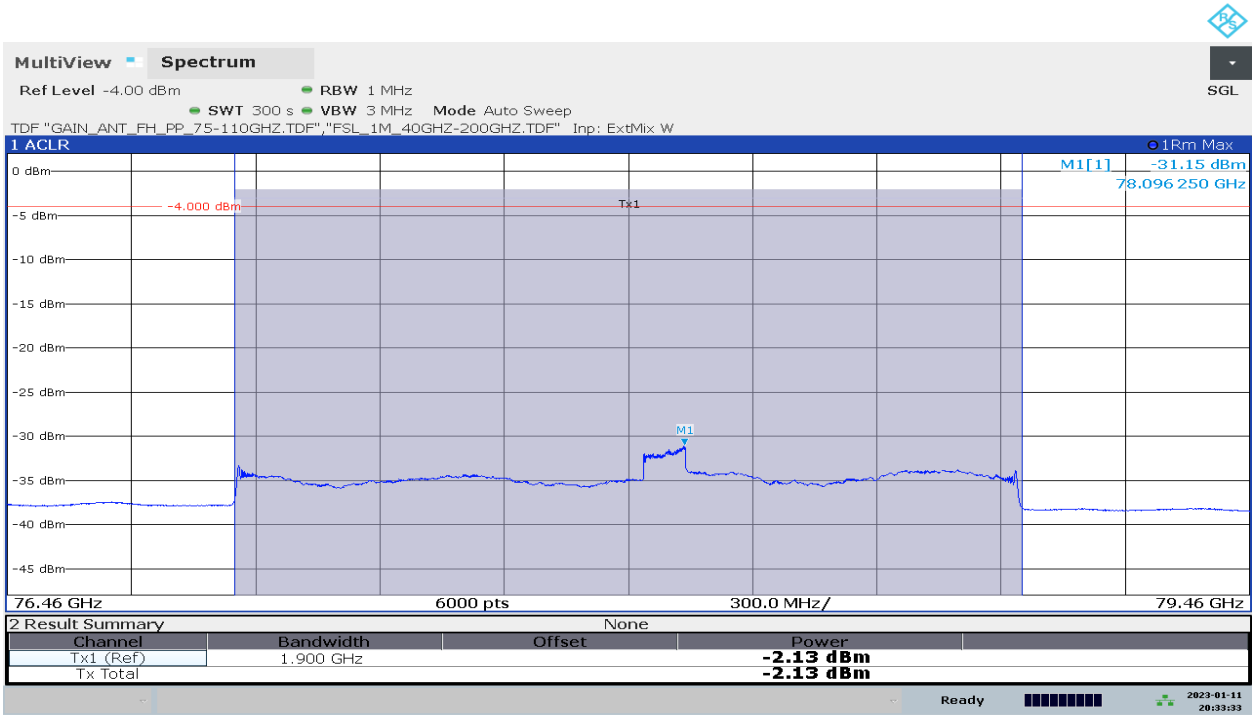
## 2.18 RMS Detector, Tnom/Vmax_HT Mode

D113_05b_R01T08_Channel_Power_RMS_Tnom_Vmax_Ant_V_S40_HT_mode

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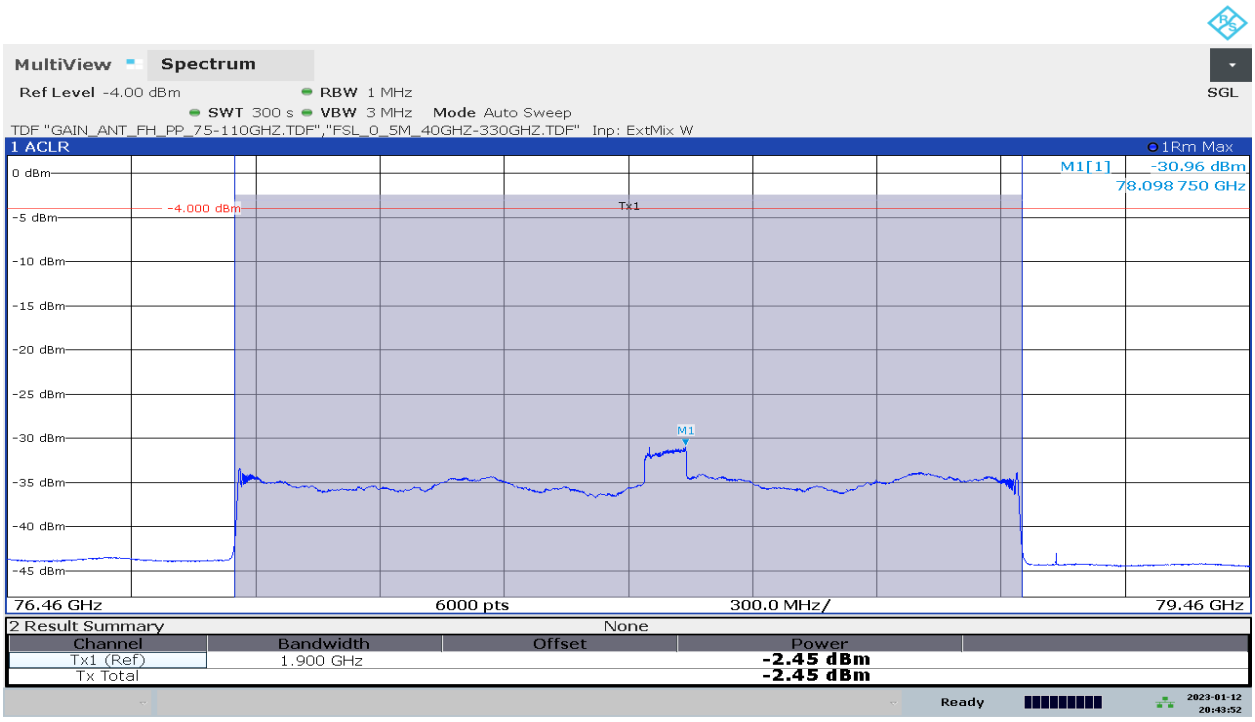
## 2.19 RMS Detector, Vnom/Tmin_HT Mode

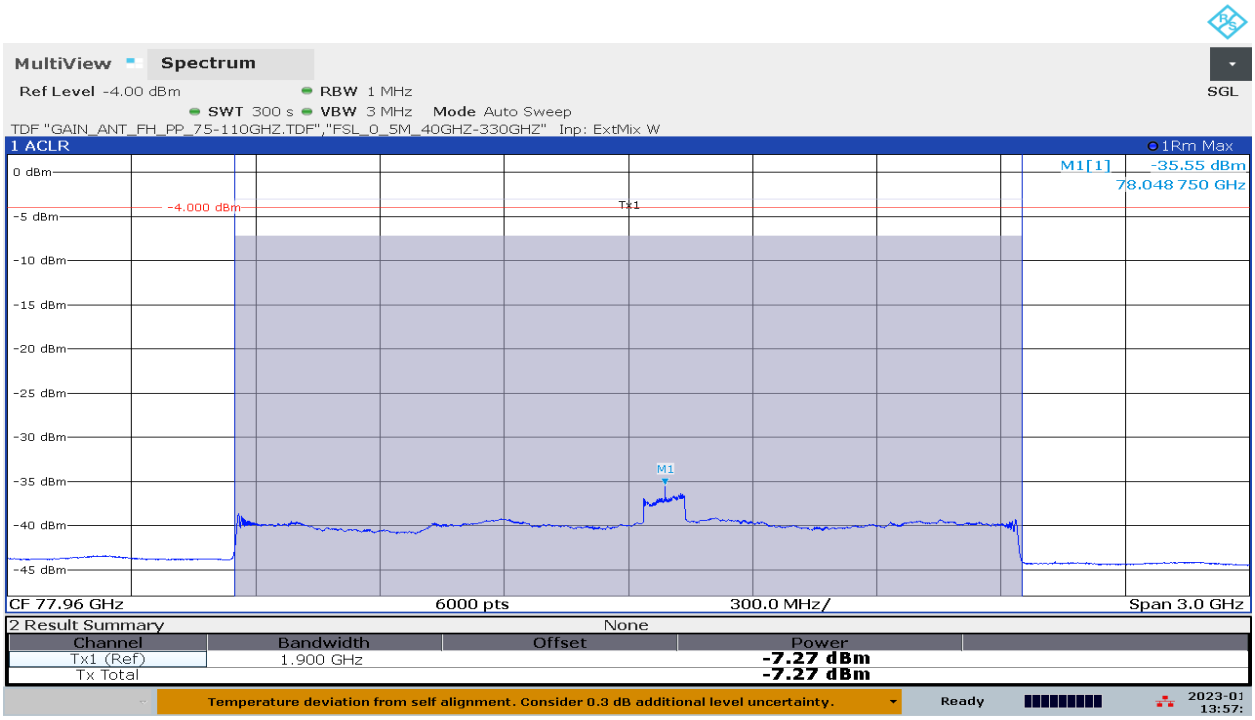
D113_02b_R01T08_Channel_Power_RMS_Vnom_Tmin_Ant_V_S40_HT_mode




08:43:52 PM 01/12/2023

## 2.20 RMS Detector, Vnom/Tmax_HT Mode

D113_03b_R01T08_Channel_Power_RMS_Vnom_Tmax_Ant_V_S40_HT_mode




01:57:26 PM 01/17/2023

# 3 Modulation characteristics

## 3.1 Peak Detector, $V_{nom}/T_{nom}$_GD Mode

See diagram D118_02a

## 3.2 Peak Detector, Vnom/Tmin_GD Mode

See diagram D118_05a

## 3.3 Peak Detector, Vnom/Tmax_GD Mode

See diagram D118_07a

## 3.4 Peak Detector, Tnom/Vmax_GD Mode

See diagram D118_09a

## 3.5 Peak Detector, Tnom/Vmin_GD Mode

See diagram D118_11a

## 3.6 Peak Detector, $V_{nom}/T_{nom}$_HT Mode

See diagram D118_02b

## 3.7 Peak Detector, Vnom/Tmin_HT Mode

See diagram D118_05b

## 3.8 Peak Detector, Vnom/Tmax_HT Mode

See diagram D118_07b

## 3.9 Peak Detector, Tnom/Vmax_HT Mode

See diagram D118_09b

## 3.10 Peak Detector, Tnom/Vmin_HT Mode

See diagram D118_11b

**Remark: for Sweep characteristics, please check below diagrams Nr. (Page Number: 4 to 11),**

**GD mode:**

D105_T08_MT_investigation_EUT_87_TT_0_Ant_V_S40_RBW_1MHz_GD_mode
D107_T08_Signal_ON_OFF_EUT_87_Ant_V_S40_single_signal_on_off_time_GD_mode
D106_T08_Tchirp_EUT_87_Ant_V_S40_single_chirp_on_off_time_GD_mode

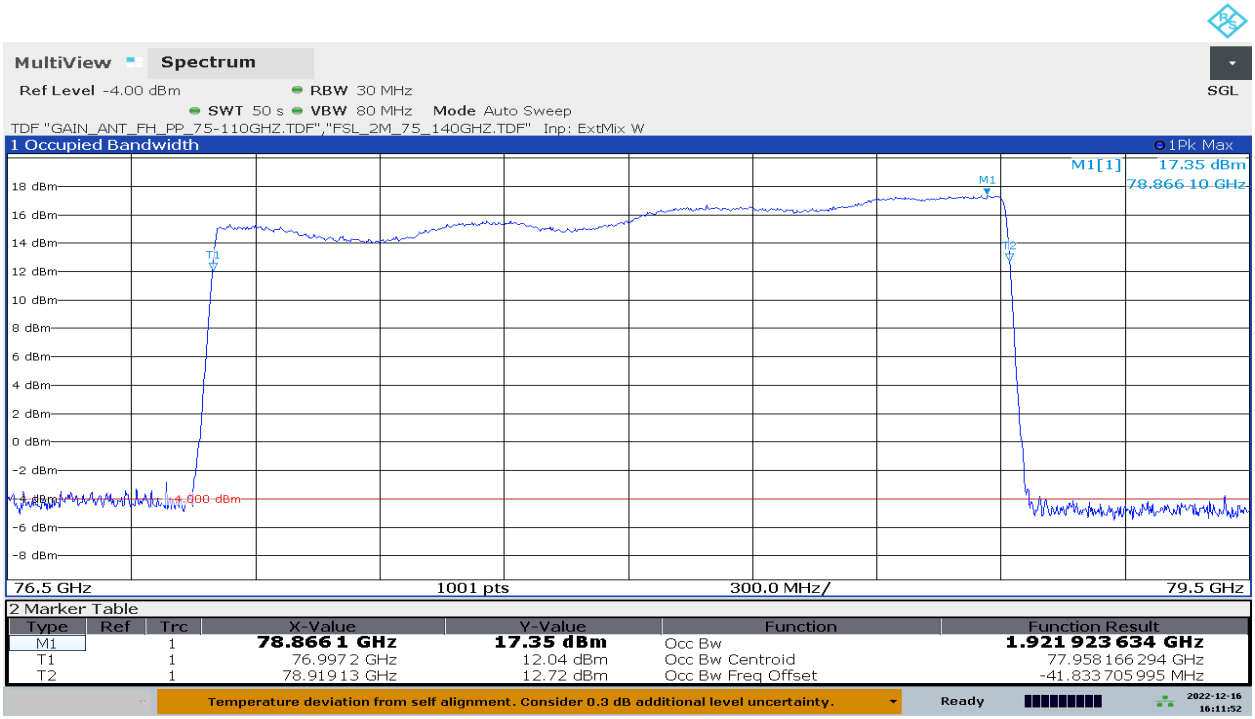
**HT mode:**

D105_T08_MT_investigation_EUT_87_TT_0_Ant_V_S40_RBW_1MHz_HT_mode
D107_T08_Signal_ON_OFF_EUT_87_Ant_V_S40_single_signal_on_off_time_HT_mode
D106_T08_Tchirp_EUT_87_Ant_V_S40_single_chirp_on_off_time_HT_mode

# 4 Occupied bandwidth

## 4.1 Peak Detector, $T_{nom}/V_{nom}$_GD Mode

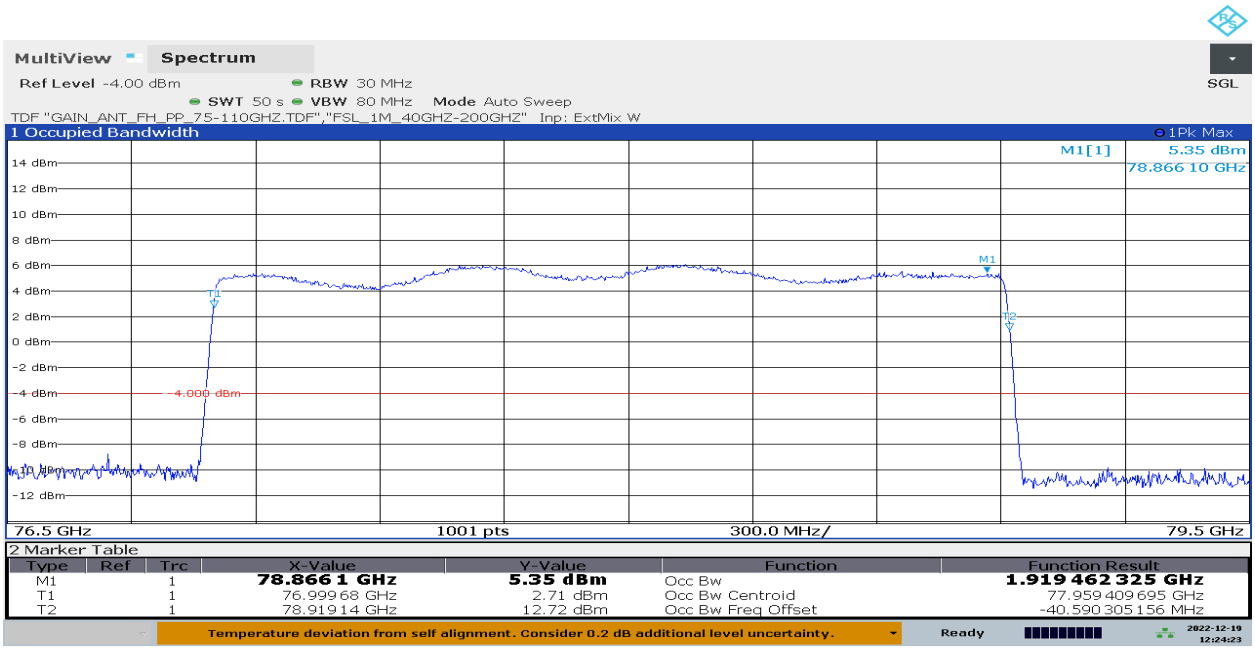
D108_02a_R01T08_99%OBW_Tnom_Vnom_Ant_V_S40_RBW_30MHz_GD_mode




04:11:53 PM 12/16/2022

OBW = ~1.9 GHz Measurement Antenna Polarization: Vertical.

D109_02a_R01T08_99%OBW_Tnom_Vnom_Ant_H_S40_RBW_30MHz_GD_mode

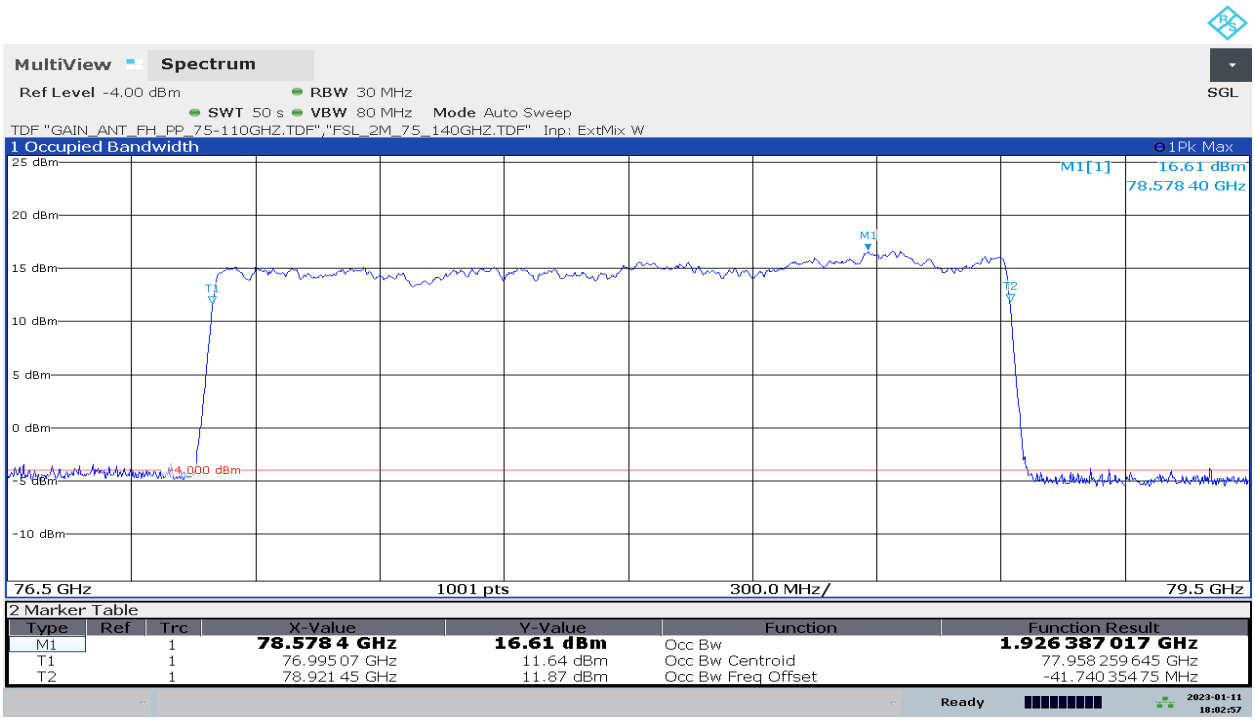



12:24:23 PM 12/19/2022

OBW = ~1.9 GHz Measurement Antenna Polarization: Horizontal.

## 4.2 Peak Detector, Tnom/Vmin_GD Mode

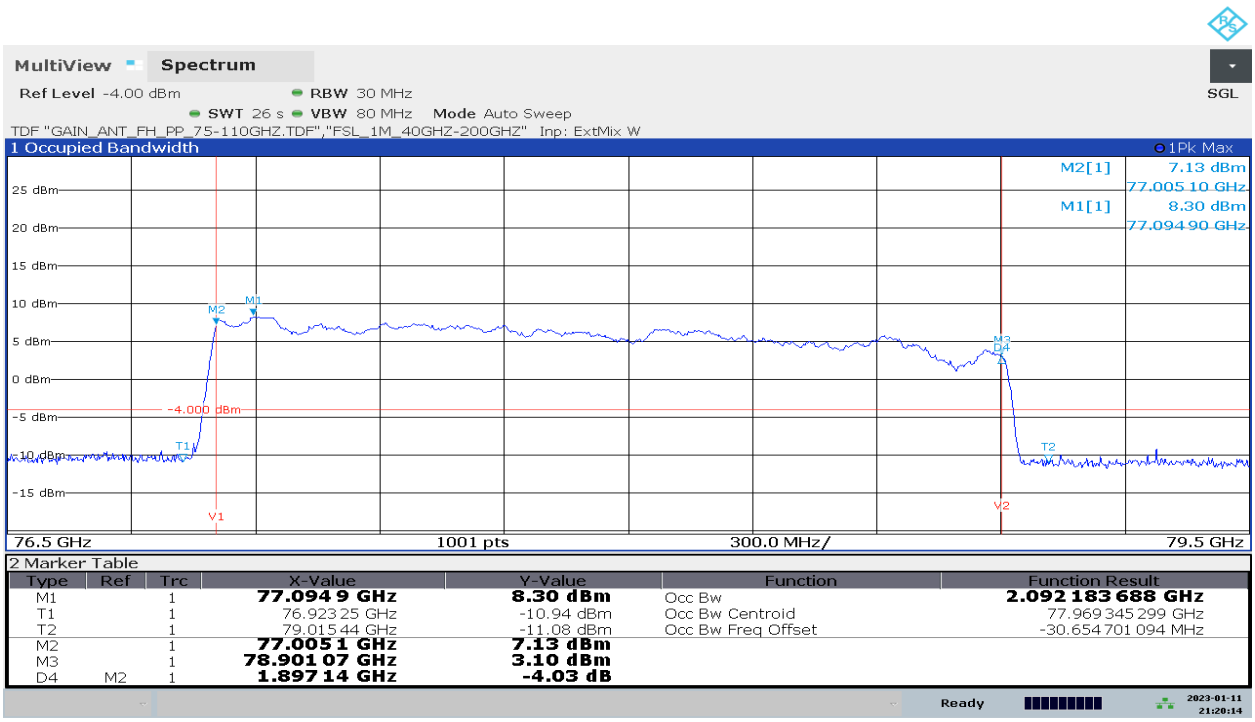
D108_11a_R01T08_99%OBW_Tnom_Vmin_Ant_V_S40_RBW_30MHz_GD_mode




06:02:58 PM 01/11/2023

OBW = ~1.9 GHz Measurement Antenna Polarization: Vertical.

D109_10a_R01T08_99%OBW_Tnom_Vmin_Ant_H_S40_RBW_30MHz_GD_mode

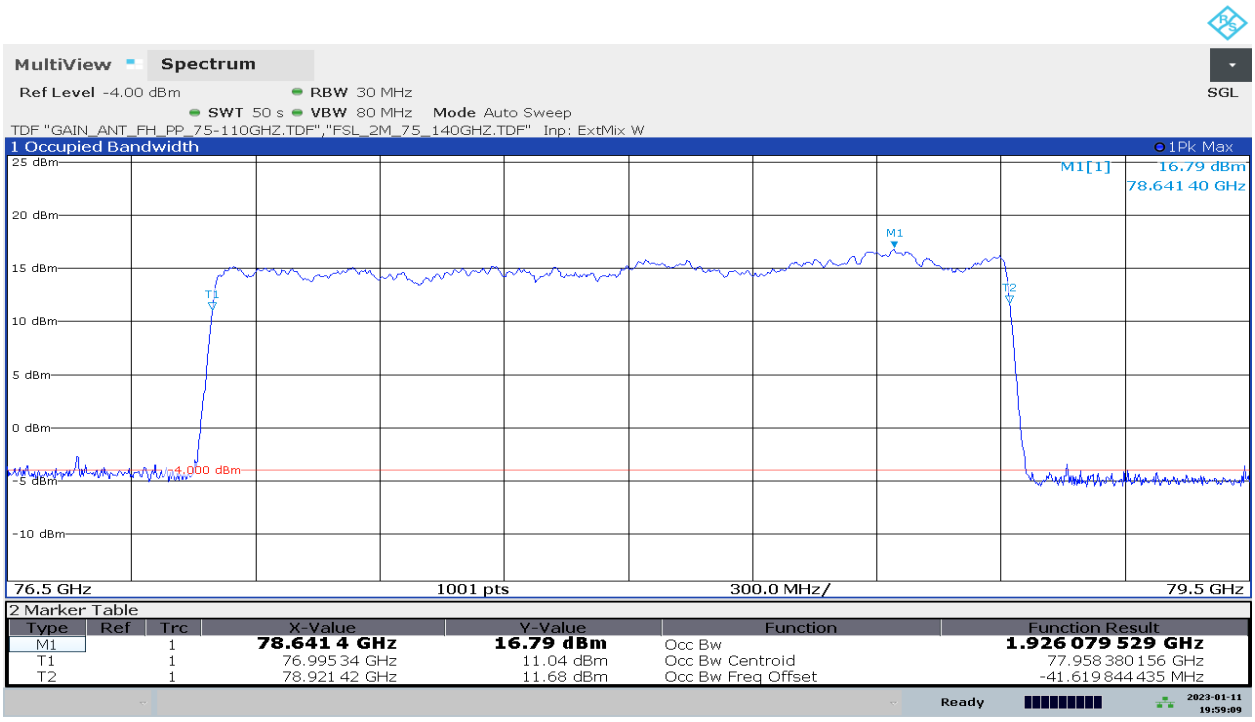



09:20:14 PM 01/11/2023

OBW = ~1.9 GHz Measurement Antenna Polarization: Horizontal.

## 4.3 Peak Detector, Tnom/Vmax_GD Mode

D108_13a_R01T08_99%OBW_Tnom_Vmax_Ant_V_S40_RBW_30MHz_GD_mode




07:59:09 PM 01/11/2023

OBW = ~1.9 GHz Measurement Antenna Polarization: Vertical.

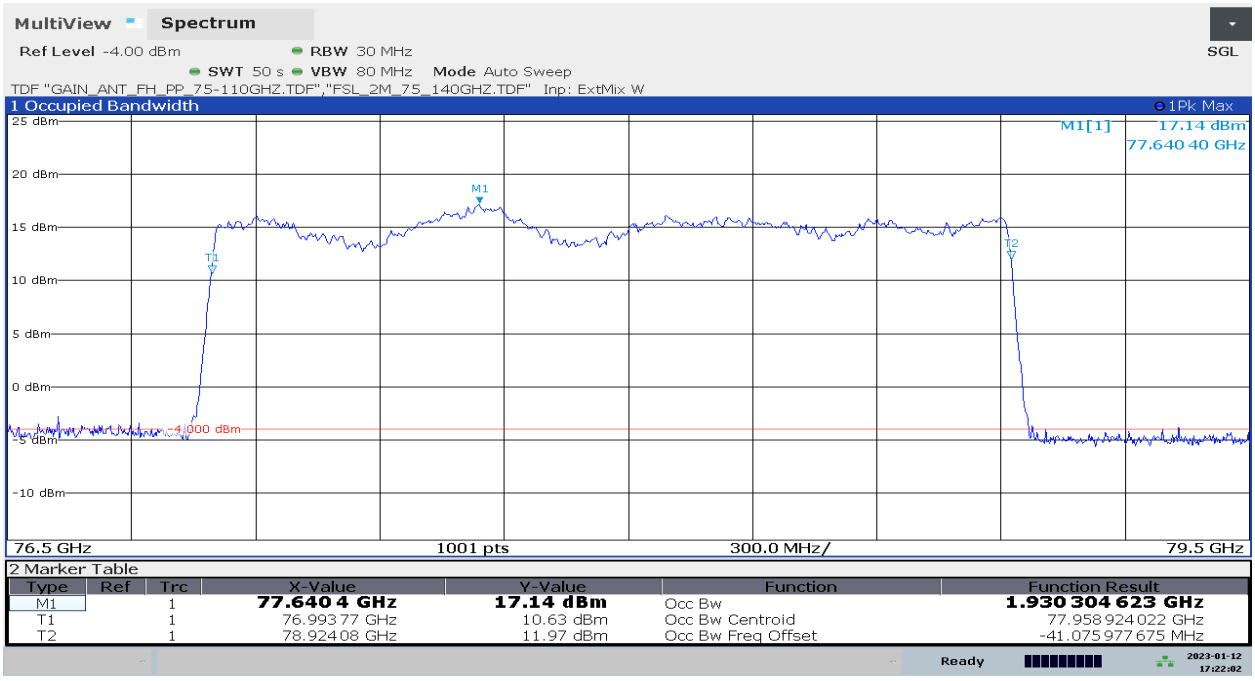
D109_12a_R01T08_99%OBW_Tnom_Vmax_Ant_H_S40_RBW_30MHz_GD_mode


09:31:14 PM 01/11/2023

OBW = ~1.9 GHz Measurement Antenna Polarization: Horizontal.

## 4.4 Peak Detector, Vnom/Tmin_GD Mode

D108_07a_R01T08_99%OBW_Vnom_Tmin_Ant_V_S40_RBW_30MHz_GD_mode




05:22:03 PM 01/12/2023

OBW = ~1.9 GHz Measurement Antenna Polarization: Vertical.

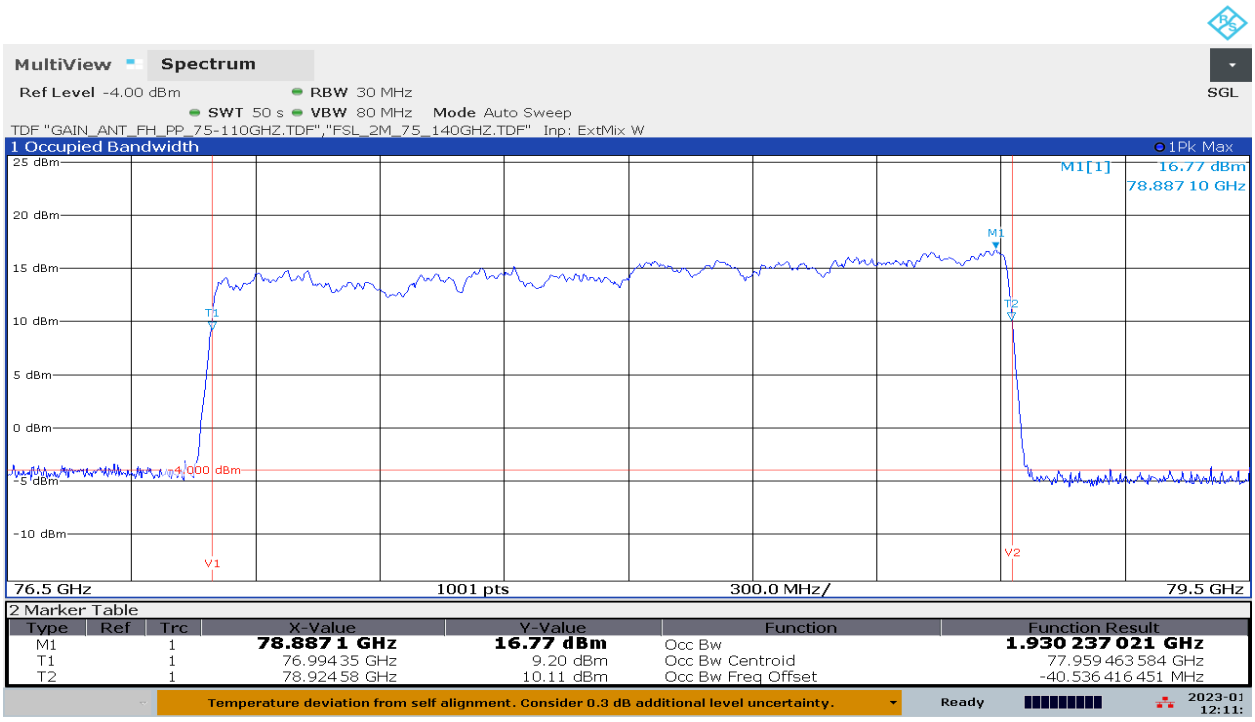
D109_06a_R01T08_99%OBW_Vnom_Tmin_Ant_H_S40_RBW_30MHz_GD_mode


05:45:23 PM 01/12/2023

OBW = ~1.9 GHz Measurement Antenna Polarization: Horizontal.

## 4.5 Peak Detector, Vnom/Tmax_GD Mode

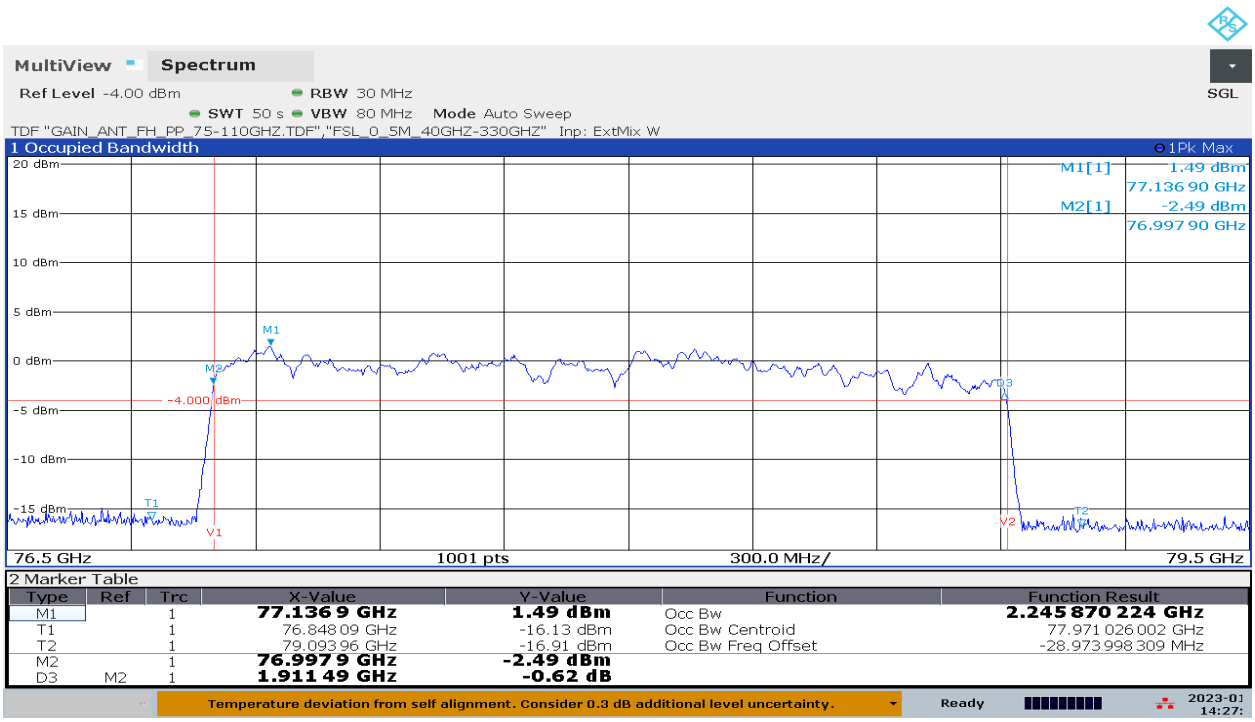
D108_09a_R01T08_99%OBW_Vnom_Tmax_Ant_V_S40_RBW_30MHz_GD_mode




12:11:33 PM 01/17/2023

OBW = ~1.9 GHz Measurement Antenna Polarization: Vertical.

D109_08a_R01T08_99%OBW_Vnom_Tmax_Ant_H_S40_RBW_30MHz_GD_mode



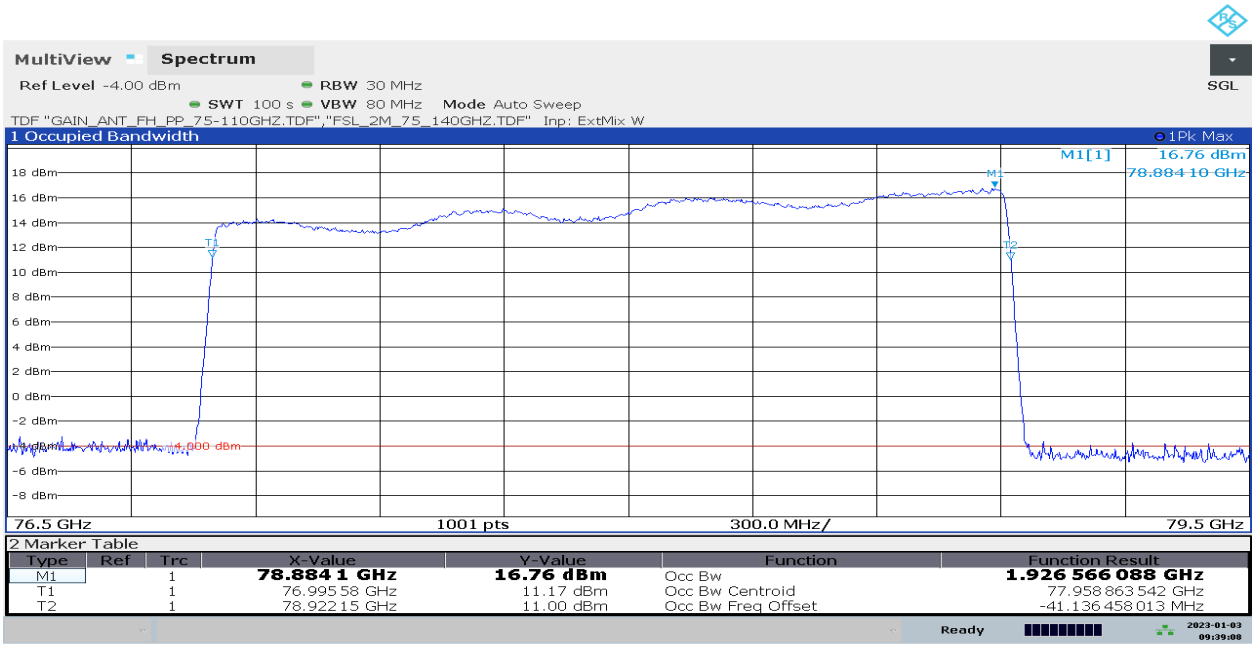

02:27:16 PM 01/17/2023

OBW = ~1.9 GHz Measurement Antenna Polarization: Horizontal.

# 5 Occupied bandwidth / Frequency stability (99% OBW with PEAK Detector)

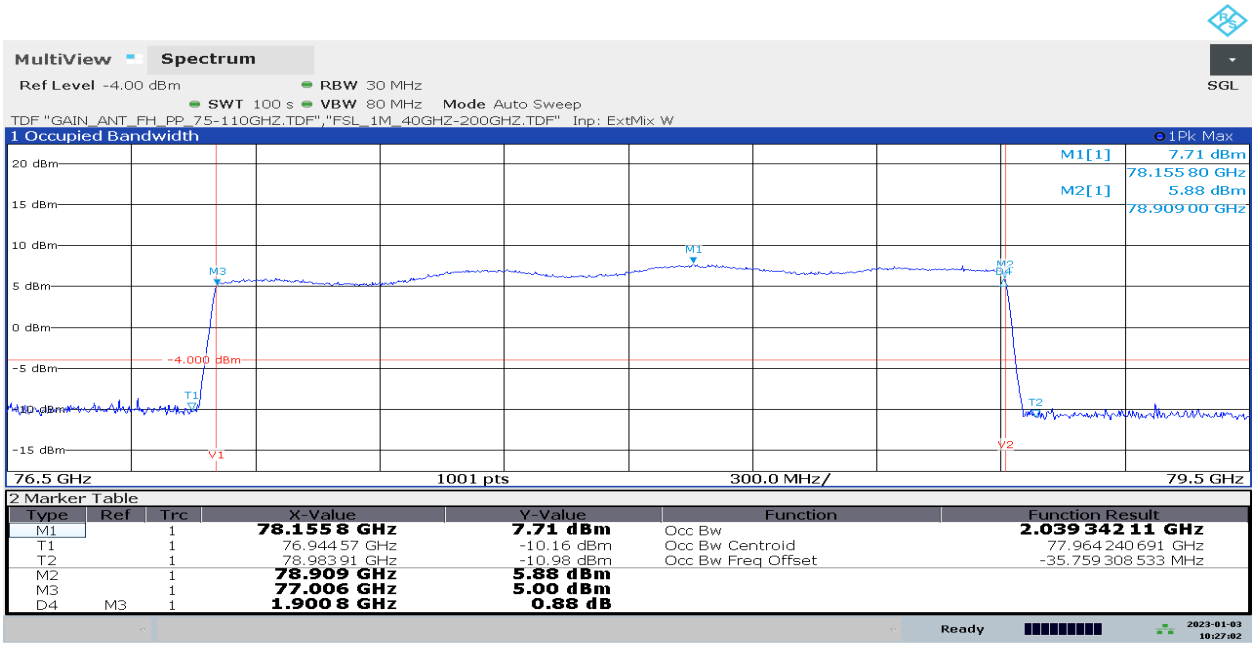
## 5.1 Peak Detector, $T_{nom}/V_{nom}$_HT Mode

D108_02b_R01T08_99%OBW_Tnom_Vnom_Ant_V_S40_RBW_30MHz_HT_mode




OBW = ~1.9 GHz Measurement Antenna Polarization: Vertical.

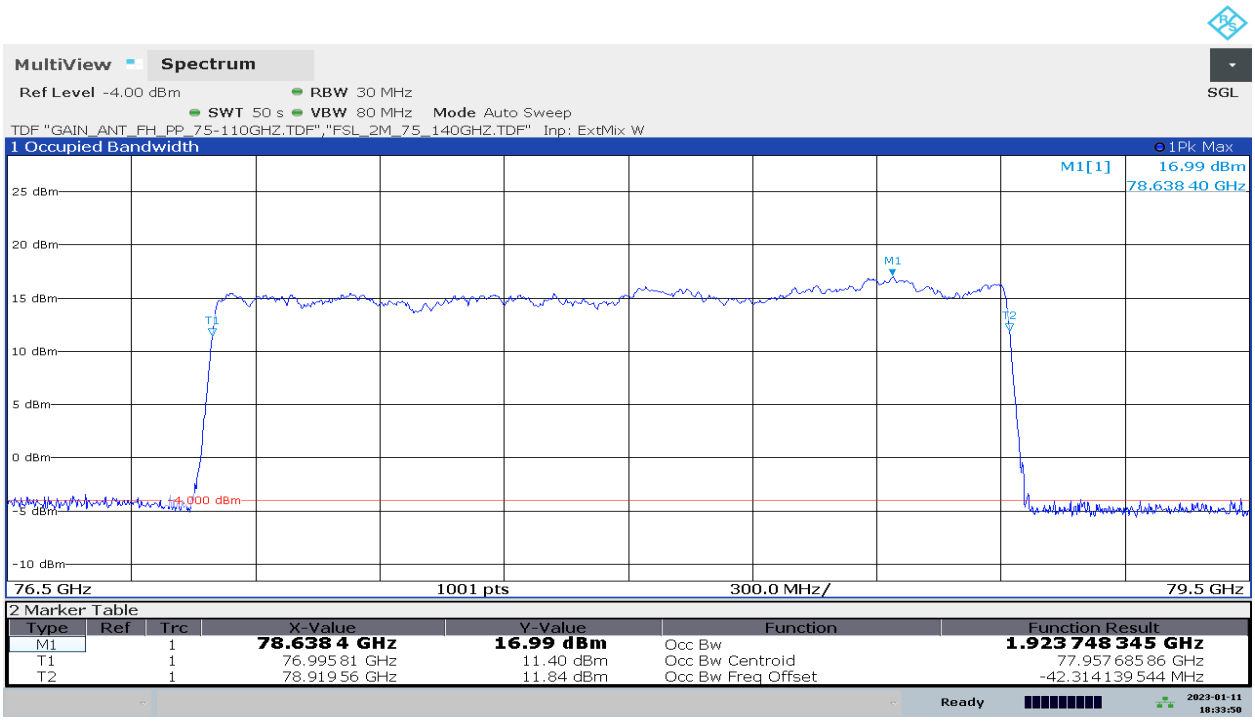
D109_02b_R01T08_99%OBW_Tnom_Vnom_Ant_H_S40_RBW_30MHz_HT_mode




OBW = ~1.9 GHz Measurement Antenna Polarization: Horizontal.

## 5.2 Peak Detector, Tnom/Vmin_HT Mode

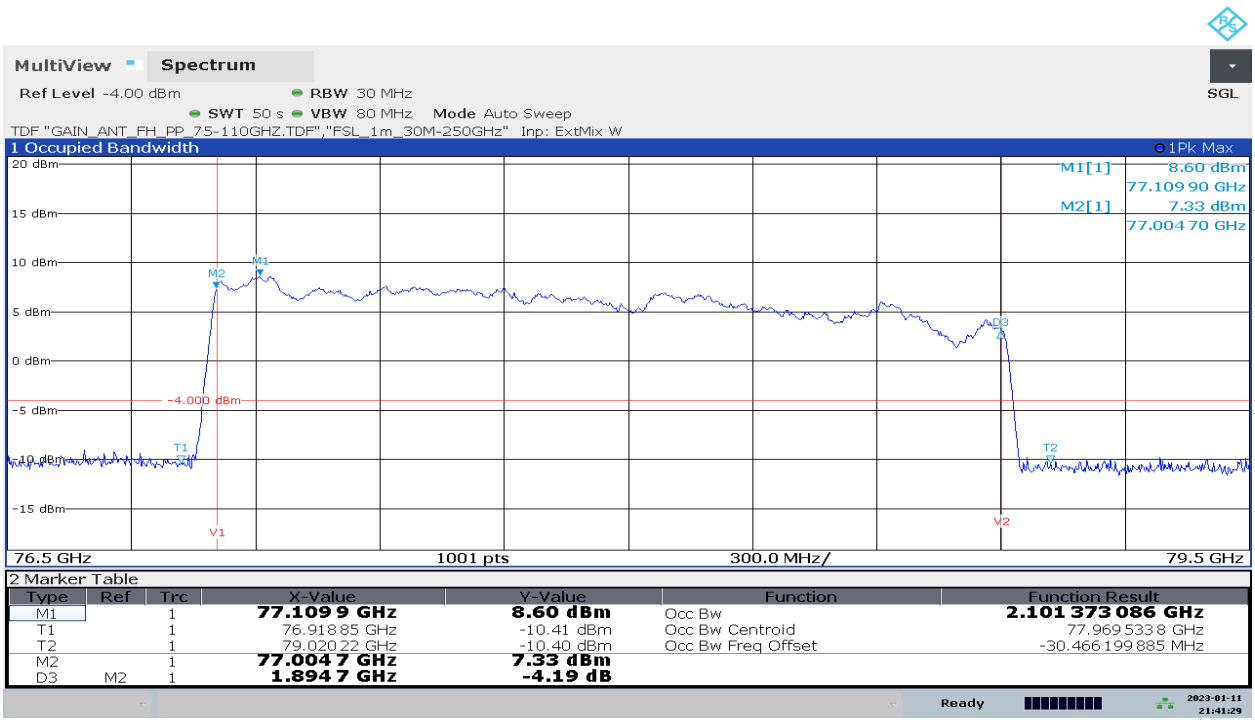
D108_11b_R01T08_99%OBW_Tnom_Vmin_Ant_V_S40_RBW_30MHz_HT_mode




06:33:51 PM 01/11/2023

OBW = ~1.9 GHz Measurement Antenna Polarization: Vertical.

D109_10b_R01T08_99%OBW_Tnom_Vmin_Ant_H_S40_RBW_30MHz_HT_mode

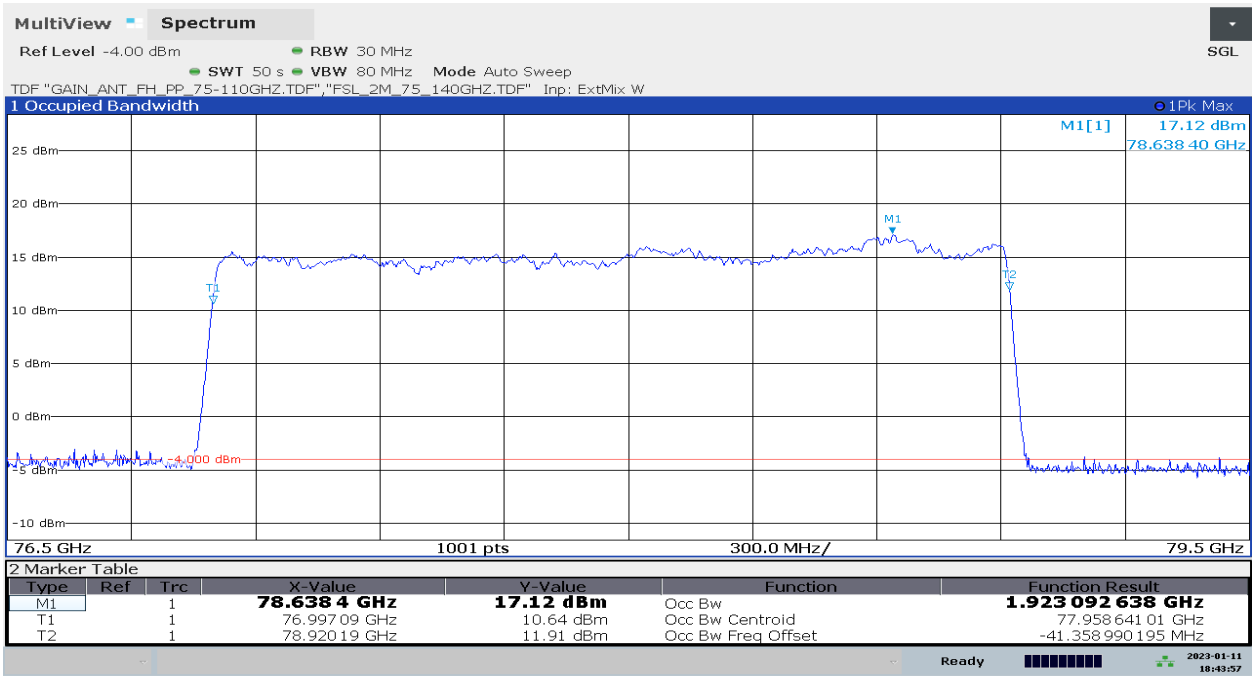



09:41:29 PM 01/11/2023

OBW = ~1.9 GHz Measurement Antenna Polarization: Horizontal.

## 5.3 Peak Detector, Tnom/Vmax_HT Mode

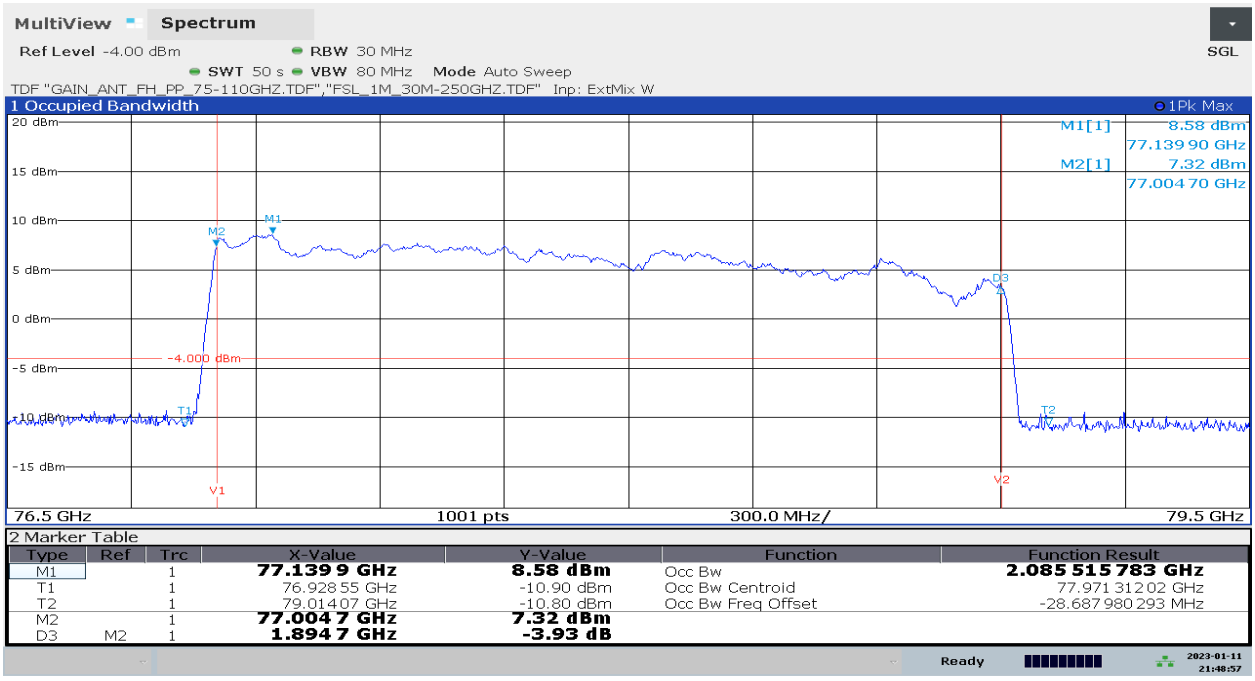
D108_13b_R01T08_99%OBW_Tnom_Vmax_Ant_V_S40_RBW_30MHz_HT_mode




06:43:57 PM 01/11/2023

OBW = ~1.9 GHz Measurement Antenna Polarization: Vertical.

D109_12b_R01T08_99%OBW_Tnom_Vmax_Ant_H_S40_RBW_30MHz_HT_mode

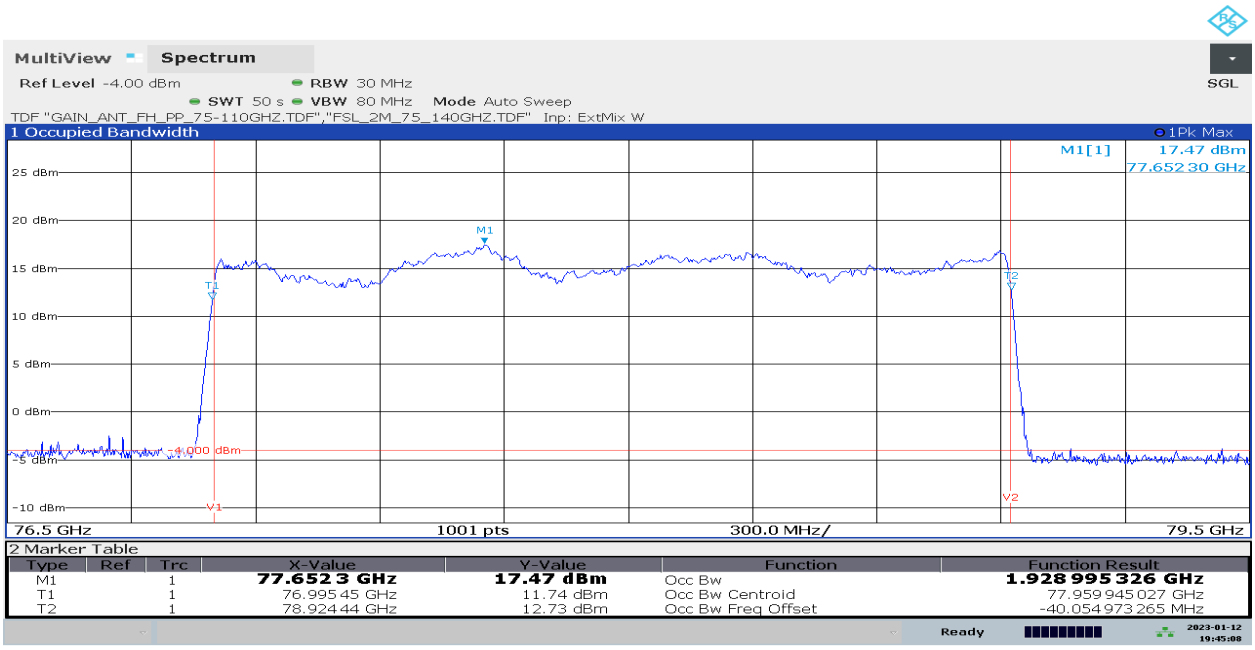



09:48:57 PM 01/11/2023

OBW = ~1.9 GHz Measurement Antenna Polarization: Horizontal.

## 5.4 Peak Detector, Vnom/Tmin_HT Mode

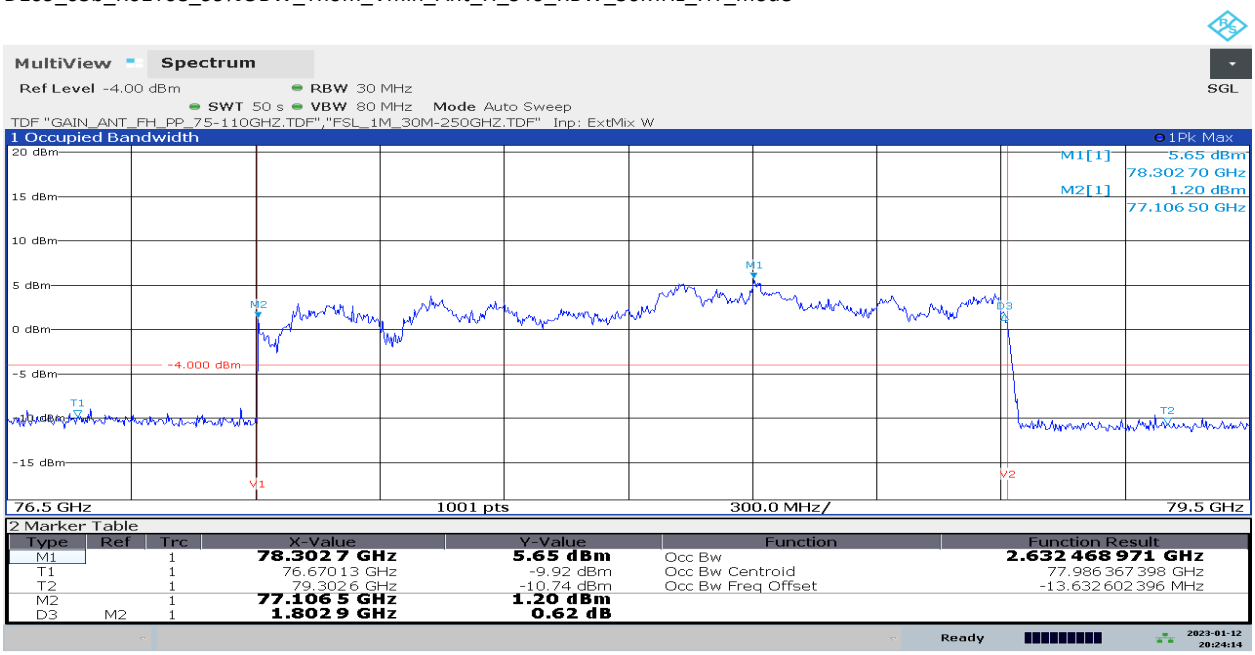
D108_05b_R01T08_99%OBW_Vnom_Tmin_Ant_V_S40_RBW_30MHz_HT_mode




07:45:08 PM 01/12/2023

OBW = ~1.9 GHz Measurement Antenna Polarization: Vertical.

D109_05b_R01T08_99%OBW_Tnom_Vmin_Ant_H_S40_RBW_30MHz_HT_mode

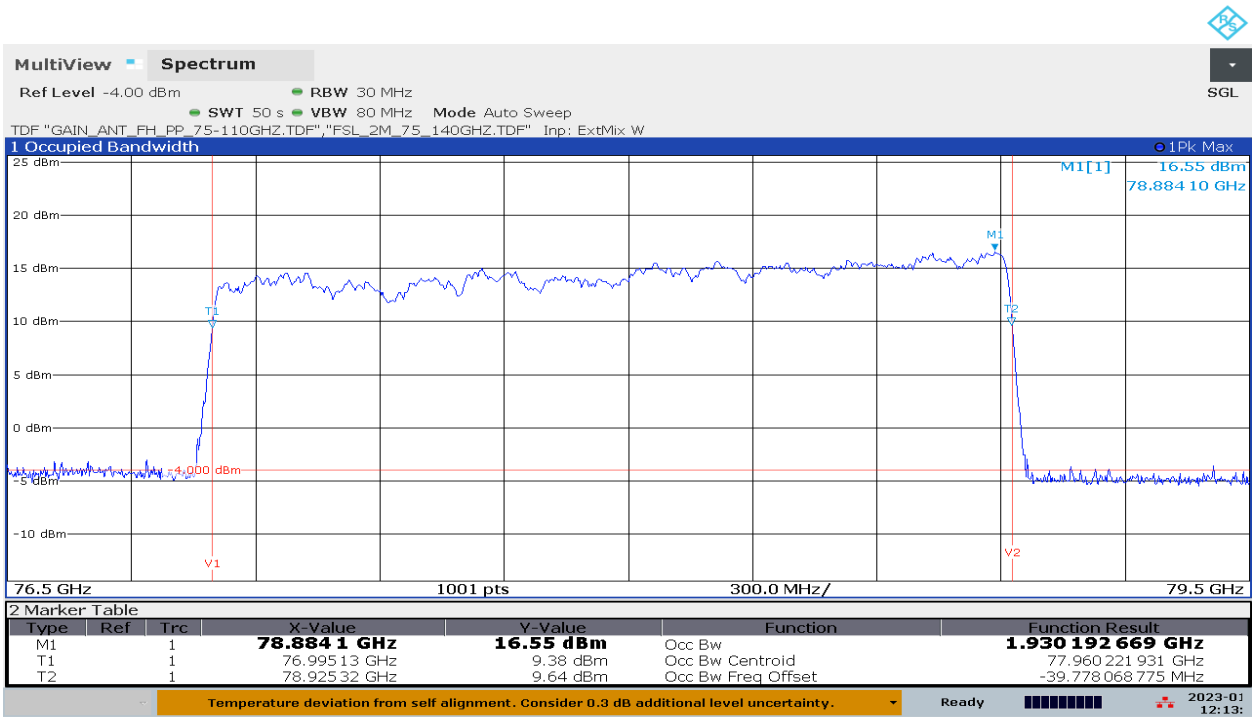



08:24:14 PM 01/12/2023

OBW = ~1.9 GHz Measurement Antenna Polarization: Horizontal.

## 5.5 Peak Detector, Vnom/Tmax_HT Mode

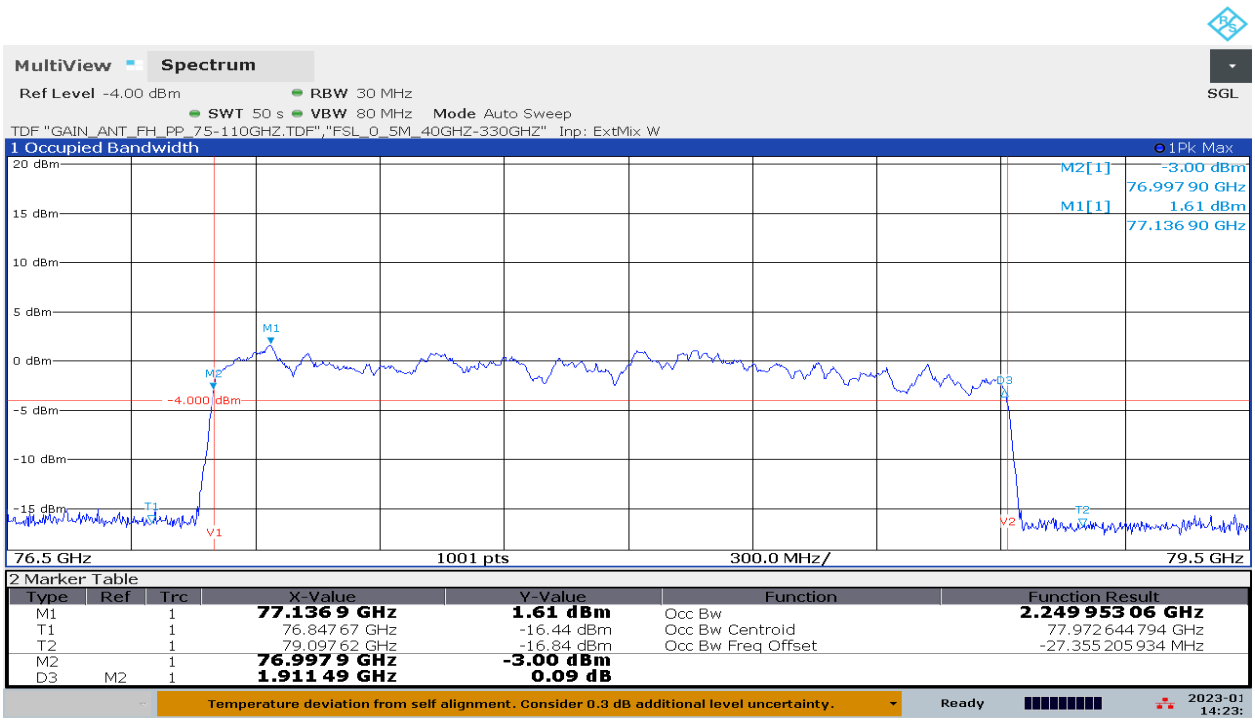
D108_09b_R01T08_99%OBW_Vnom_Tmax_Ant_V_S40_RBW_30MHz_HT_mode




12:13:34 PM 01/17/2023

OBW = ~1.9 GHz Measurement Antenna Polarization: Vertical.

D109_08b_R01T08_99%OBW_Vnom_Tmax_Ant_H_S40_RBW_30MHz_HT_mode




02:23:22 PM 01/17/2023

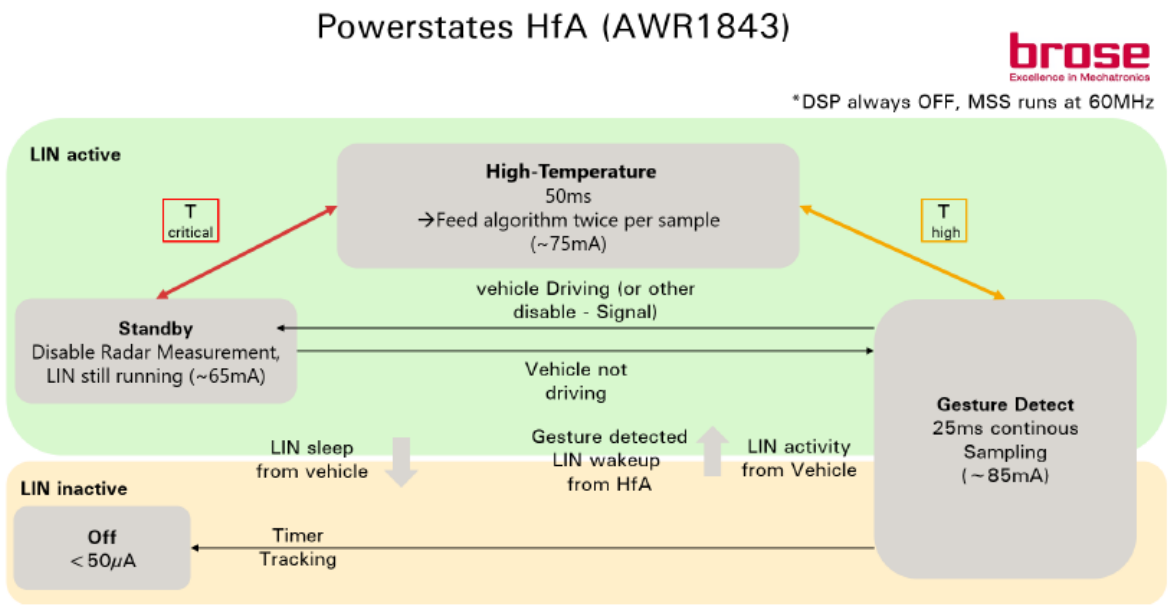
OBW = ~1.9 GHz Measurement Antenna Polarization: Horizontal.

# 6 Field strength of emissions (Radiated Spurious Emissions) below 40 GHz

**Remark on test mode:**

**Radiated Spurious Emission from 9k to 40 GHz (below 40 GHz) have been performed with both Operating modes (Gesture detect and High Temperature mode) where RADAR is active.**

| Mode | Current (@12V) | LIN | Radar |
|---|---|---|---|
| Sleep/Off | <50µA | OFF | OFF |
| Standby | ~65mA | ON | OFF |
| Gesture Detect | ~85mA | ON | ON (25ms Sampling) |
| High-Temperature | ~75mA | ON | ON (50ms Sampling) |



### 6.1.1 Frequency range 9 kHz – 30 MHz (Standing) – GD mode

## 2.01_R01T08_RSE_TX_RADAR_GD_mode_EUT_Standing

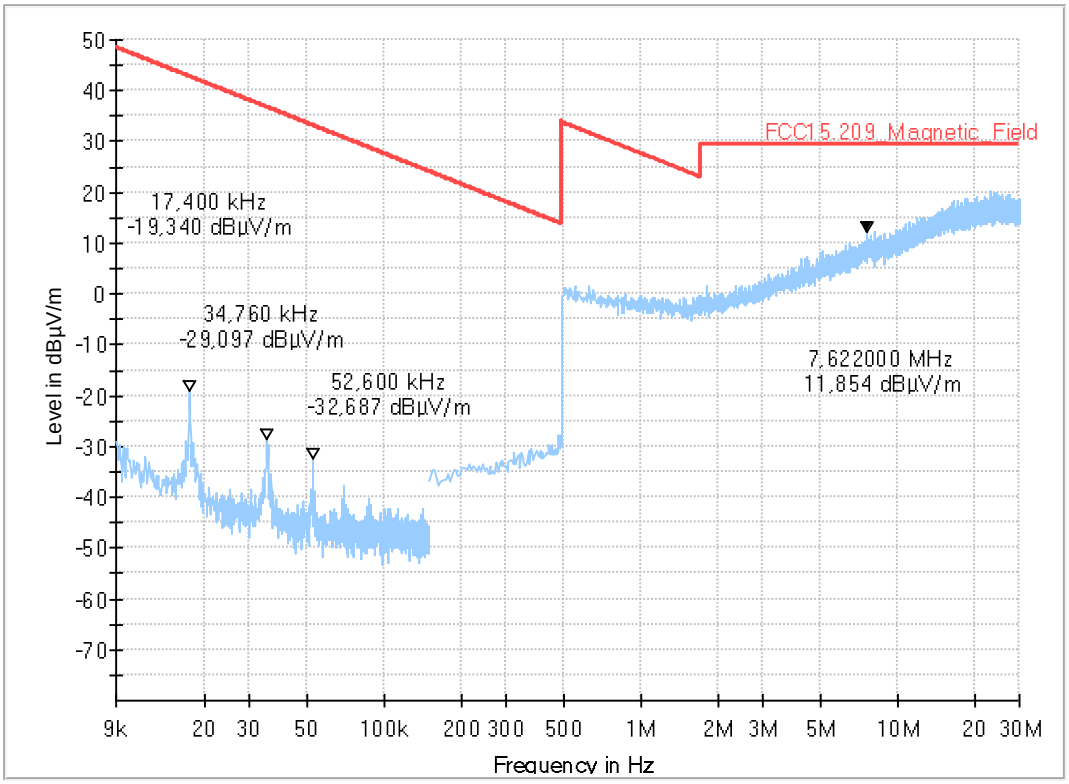
### Common Information

| | |
|---|---|
| Test description: | Magnetic Field Strength Measurement related to 30/300 m distance |
| Test Site Location: | Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance |
| Version of Testsoftware: | EMC32 V10.50.0 |
| Distance correction: | used accord. table, pls. see test report |
| Technical Data: | Please see page 2 for detailed data of measurement setup |
| Rec. antenna (pre-scan): | height 1.00 m, parallel and 90° to EUT polarisation |
| Used filter: | bypass |
| Test Standard: | FCC 15.205 § 15.209; RSS-Gen: Issue 4 |
| Operator: | AHo |
| Operating Mode: | Gesture mode (RADAR Active) |
| Power during tests: | 12V DC |
| Environmental Conditions: | Humidity : 45%rH; Temperature: 20°C |
| EUT Setup: | EUT Standing |
| Verdict: | Passed |

### EUT Information

| | |
|---|---|
| PMT number | 20-1-00182S40_C01 |
| Comment: | 12 VDC |

Full Spectrum



### 6.1.2 Frequency range 9 kHz – 30 MHz (Laying) – GD mode

## 2.02_R01T08_RSE_TX_RADAR_GD_mode_EUT_Laying

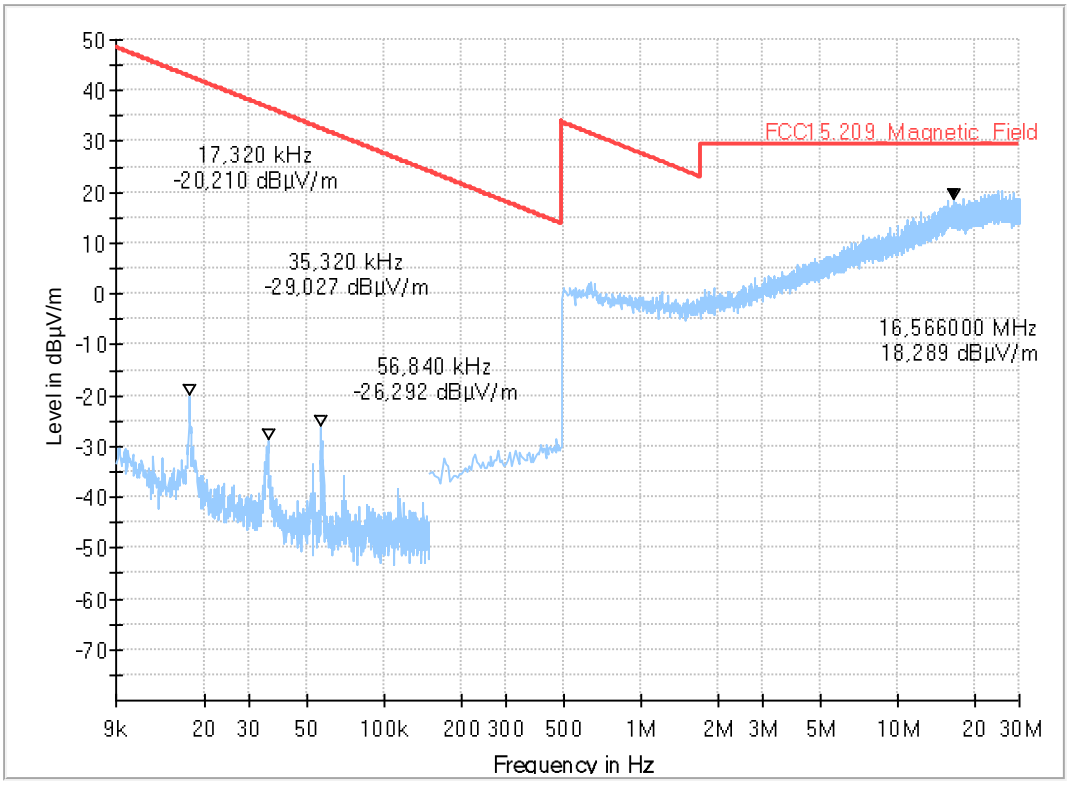
### Common Information

| | |
|---|---|
| Test description: | Magnetic Field Strength Measurement related to 30/300 m distance |
| Test Site Location: | Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance |
| Version of Testsoftware: | EMC32 V10.50.0 |
| Distance correction: | used accord. table, pls. see test report |
| Technical Data: | Please see page 2 for detailed data of measurement setup |
| Rec. antenna (pre-scan): | height 1.00 m, parallel and 90° to EUT polarisation |
| Used filter: | bypass |
| Test Standard: | FCC 15.205 § 15.209; RSS-Gen: Issue 4 |
| Operator: | AHo |
| Operating Mode: | High Temperature mode (RADAR Active) |
| Power during tests: | 12V DC |
| Environmental Conditions: | Humidity : 45%rH; Temperature: 20°C |
| EUT Setup: | EUT Laying |
| Verdict: | Passed |

### EUT Information

| | |
|---|---|
| PMT number | 20-1-00182S40_C01 |
| Comment: | 12 VDC |

Full Spectrum



### 6.1.3 Frequency range 9 kHz – 30 MHz (Standing) – HT mode

## 2.03_R01T08_RSE_TX_RADAR_HT_mode_EUT_Standing

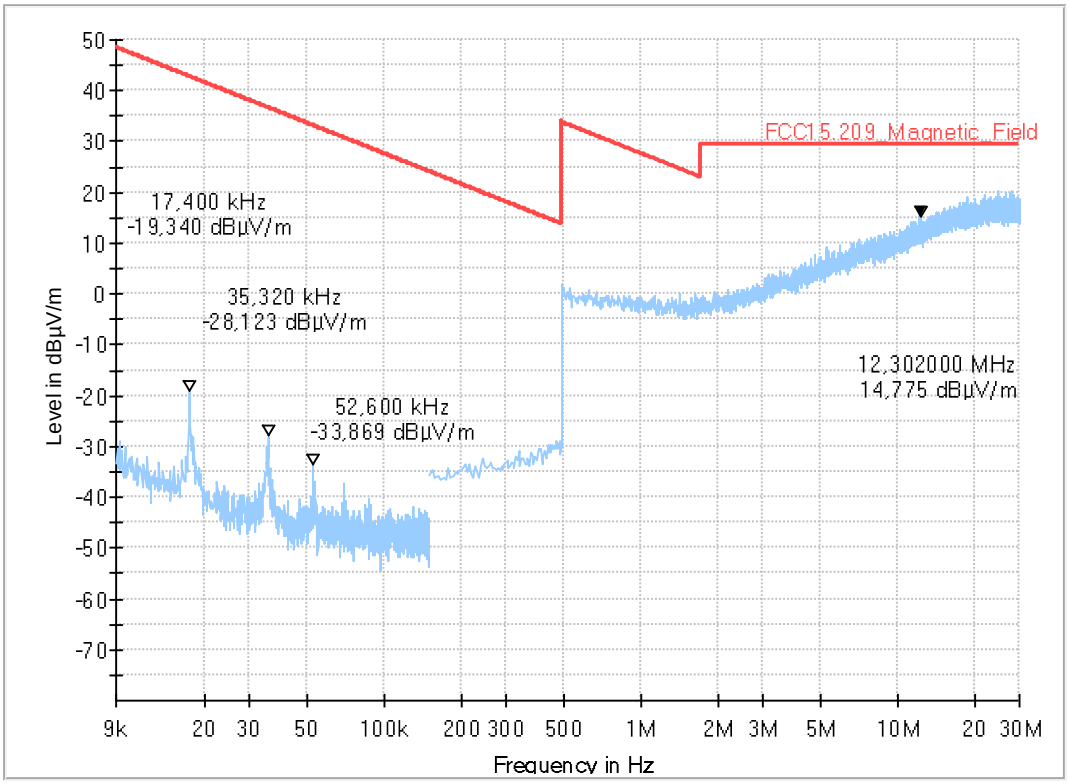
### Common Information

| | |
|---|---|
| Test description: | Magnetic Field Strength Measurement related to 30/300 m distance |
| Test Site Location: | Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance |
| Version of Testsoftware: | EMC32 V10.50.0 |
| Distance correction: | used accord. table, pls. see test report |
| Technical Data: | Please see page 2 for detailed data of measurement setup |
| Rec. antenna (pre-scan): | height 1.00 m, parallel and 90° to EUT polarisation |
| Used filter: | bypass |
| Test Standard: | FCC 15.205 § 15.209; RSS-Gen: Issue 4 |
| Operator: | AHo |
| Operating Mode: | High Temperature mode (RADAR Active) |
| Power during tests: | 12V DC |
| Environmental Conditions: | Humidity : 45%rH; Temperature: 20°C |
| EUT Setup: | EUT Standing |
| Verdict: | Passed |

### EUT Information

| | |
|---|---|
| PMT number | 20-1-00182S40_C01 |
| Comment: | 12 VDC |

Full Spectrum



### 6.1.4 Frequency range 9 kHz – 30 MHz (Laying) – HT mode

## 2.04_R01T08_RSE_TX_RADAR_HT_mode_EUT_Laying

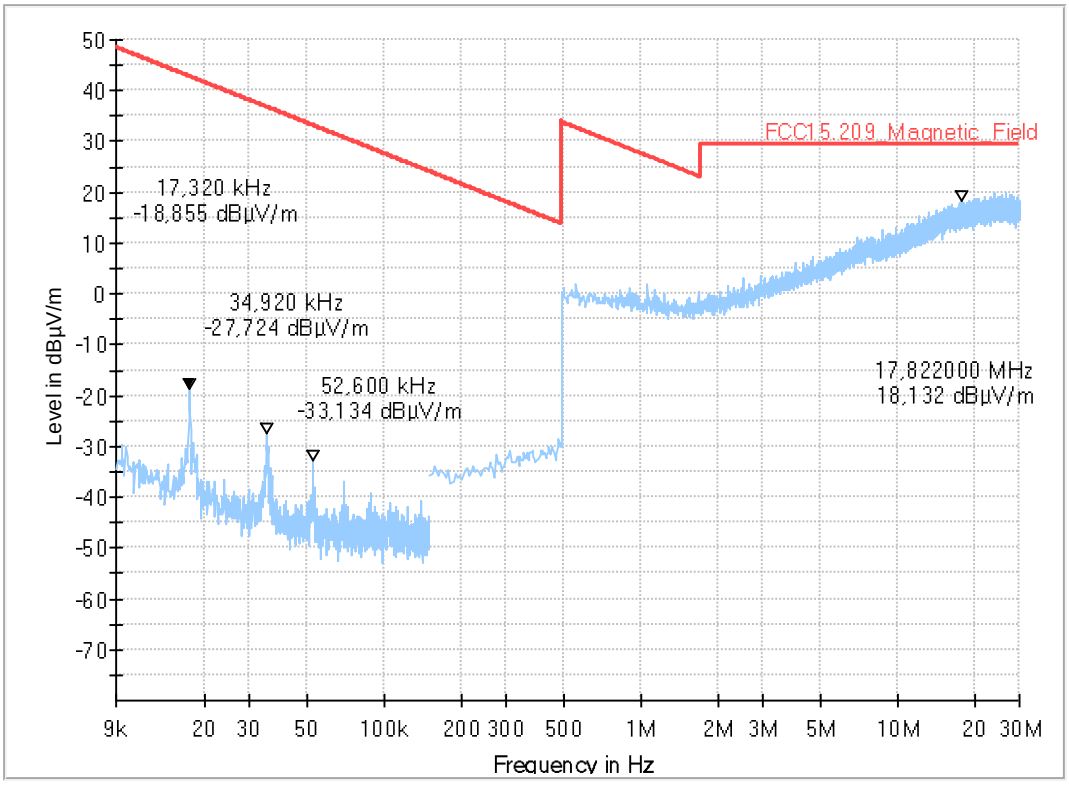
### Common Information

| | |
|---|---|
| Test description: | Magnetic Field Strength Measurement related to 30/300 m distance |
| Test Site Location: | Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance |
| Version of Testsoftware: | EMC32 V10.50.0 |
| Distance correction: | used accord. table, pls. see test report |
| Technical Data: | Please see page 2 for detailed data of measurement setup |
| Rec. antenna (pre-scan): | height 1.00 m, parallel and 90° to EUT polarisation |
| Used filter: | bypass |
| Test Standard: | FCC 15.205 § 15.209; RSS-Gen: Issue 4 |
| Operator: | AHo |
| Operating Mode: | High Temperature mode (RADAR Active) |
| Power during tests: | 12V DC |
| Environmental Conditions: | Humidity : 45%rH; Temperature: 20°C |
| EUT Setup: | EUT Laying |
| Verdict: | Passed |

### EUT Information

| | |
|---|---|
| PMT number | 20-1-00182S40_C01 |
| Comment: | 12 VDC |

Full Spectrum



### 6.1.5 Frequency range 30 MHz – 1 GHz (Standing) – GD mode

## 3.01_R01T8_RSE_TX_RADAR_fc_78GHz_GD_mode_FCC_EUT_Standing

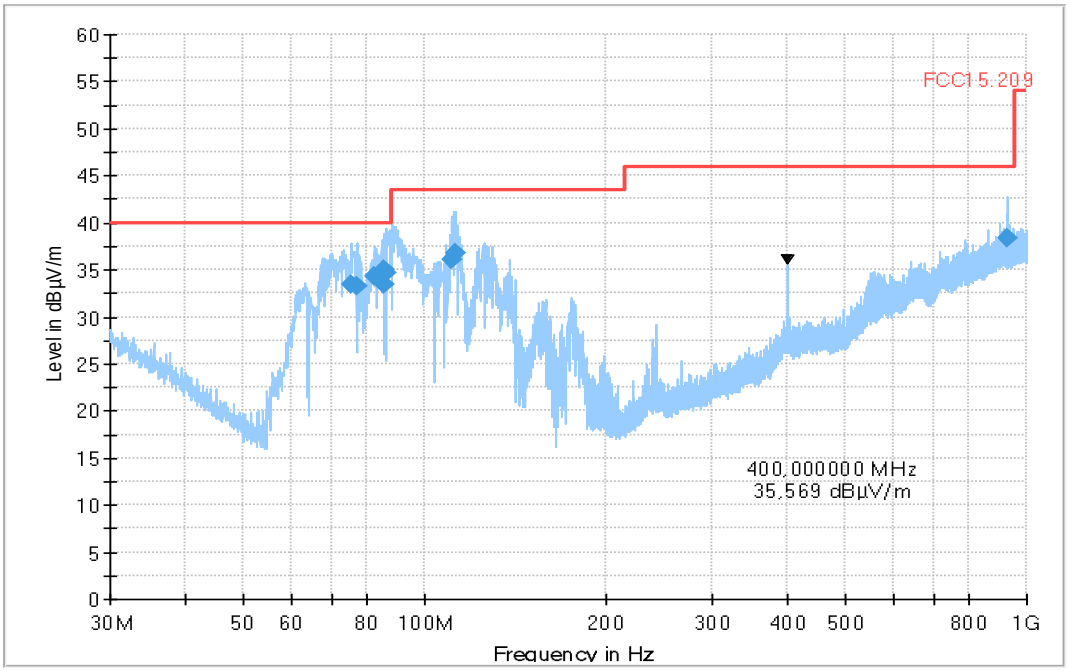
### Common Information

| | |
|---|---|
| Test Description: | Radiated field strength emission in 3m distance |
| Test Site: | CETECOM GmbH Essen |
| Test Standard: | FCC 15.205&15.209 & RSS Gen. Issue 5 |
| Antenna polarisation: | horizontal/vertical |
| Environmental Conditions:: | Humidity : 45%rH; Temperature: 20°C |
| Operator Name: | AHo |
| Operating Mode: | Gesture mode + RADAR Active |
| Power supply: | 12 V DC |
| Verdict: | Passed |
| Comment: | EUT Standing (front, rear, left, right) |

### EUT Information

| | |
|---|---|
| PMT number: | 20-1-00182S40_C01 |

Full Spectrum




### Final_Result

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) | Sig Path (dB) | Preamp (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| 75.670000 | 33.47 | 40.00 | 6.53 | 120.000 | 105.0 | V | 17.0 | 6.4 | 0.0 | 0.9 |
| 77.290000 | 33.24 | 40.00 | 6.76 | 120.000 | 125.0 | V | 34.0 | 6.6 | 0.0 | 0.9 |
| 82.770000 | 34.32 | 40.00 | 5.68 | 120.000 | 153.0 | V | 338.0 | 7.3 | 0.0 | 1.0 |
| 85.270000 | 33.42 | 40.00 | 6.58 | 120.000 | 127.0 | V | 15.0 | 7.5 | 0.0 | 0.9 |
| 85.750000 | 34.98 | 40.00 | 5.02 | 120.000 | 112.0 | V | 2.0 | 7.6 | 0.0 | 0.9 |
| 86.210000 | 34.75 | 40.00 | 5.25 | 120.000 | 154.0 | V | 2.0 | 7.7 | 0.0 | 0.9 |
| 111.070000 | 36.06 | 43.50 | 7.44 | 120.000 | 109.0 | V | 328.0 | 7.7 | 0.0 | 1.2 |
| 112.790000 | 36.77 | 43.50 | 6.73 | 120.000 | 112.0 | V | 320.0 | 7.6 | 0.0 | 1.1 |
| 926.430000 | 38.31 | 46.00 | 7.69 | 120.000 | 269.0 | V | 253.0 | 27.0 | 0.0 | 3.4 |

(continuation of the "Final_Result" table from column 18 ...)

| Frequency (MHz) | Trd Corr. (dB/m) | Raw Rec (dBµV) | Comment |
|---|---|---|---|
| 75.670000 | 5.5 | 27.0 | 17:08:08 - 13.01.2023 |
| 77.290000 | 5.7 | 26.7 | 16:26:38 - 13.01.2023 |
| 82.770000 | 6.3 | 27.0 | 16:30:44 - 13.01.2023 |
| 85.270000 | 6.6 | 25.9 | 16:36:04 - 13.01.2023 |
| 85.750000 | 6.7 | 27.4 | 16:40:49 - 13.01.2023 |
| 86.210000 | 6.8 | 27.1 | 16:45:20 - 13.01.2023 |
| 111.070000 | 6.5 | 28.3 | 16:57:51 - 13.01.2023 |
| 112.790000 | 6.5 | 29.1 | 17:02:35 - 13.01.2023 |
| 926.430000 | 23.6 | 11.3 | 17:13:42 - 13.01.2023 |

### 6.1.6 Frequency range 30 MHz – 1 GHz (Laying) – GD mode

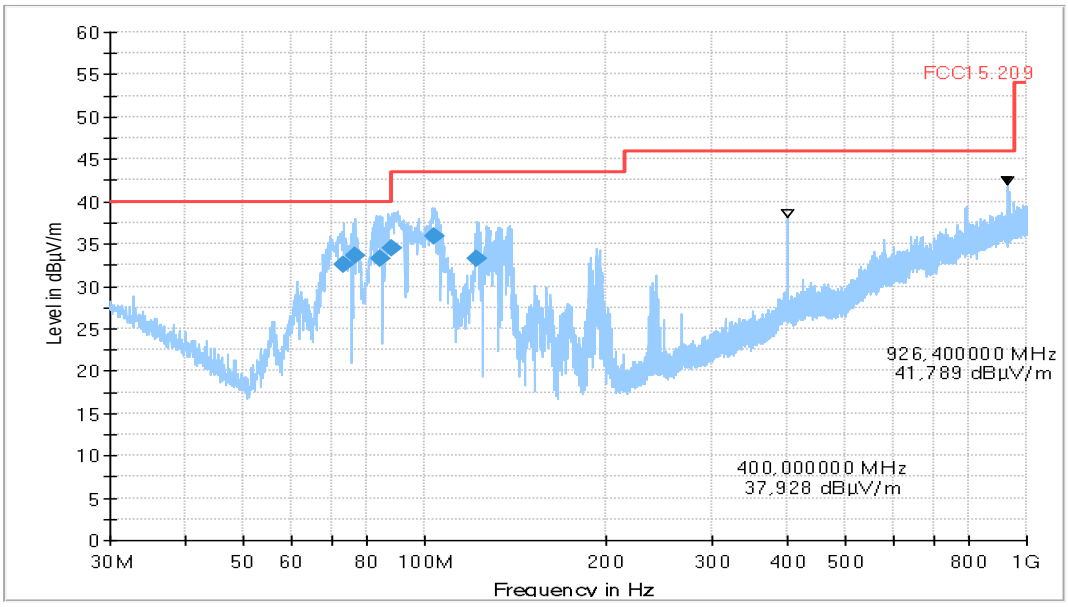
**3.02_R01T8_RSE_TX_RADAR_fc_78GHz_GD_mode_FCC_SED_EUT_Laying**

## Common Information

| | |
|---|---|
| Test Description: | Radiated field strength emission in 3m distance |
| Test Site: | CETECOM GmbH Essen |
| Test Standard: | FCC 15.205&15.209 & RSS Gen. Issue 5 |
| Antenna polarisation: | horizontal/vertical |
| Environmental Conditions:: | Humidity : 45%rH; Temperature: 20°C |
| Operator Name: | AHo |
| Operating Mode: | Gesture mode + RADAR Active |
| Power supply: | 12 V DC |
| Verdict: | Passed |
| Comment: | EUT Laying (top, bottom, left, right) |

## EUT Information

PMT number: 20-1-00182S40_C01



## Final_Result

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) | Sig Path (dB) | Preamp (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| 73.130000 | 32.60 | 40.00 | 7.40 | 120.000 | 108.0 | V | 49.0 | 6.2 | 0.0 | 0.8 |
| 76.570000 | 33.56 | 40.00 | 6.44 | 120.000 | 144.0 | V | 36.0 | 6.5 | 0.0 | 0.9 |
| 84.090000 | 33.33 | 40.00 | 6.67 | 120.000 | 109.0 | V | 53.0 | 7.5 | 0.0 | 0.9 |
| 87.830000 | 34.43 | 40.00 | 5.57 | 120.000 | 117.0 | V | 74.0 | 7.8 | 0.0 | 0.9 |
| 103.630000 | 35.83 | 43.50 | 7.67 | 120.000 | 242.0 | H | 15.0 | 7.7 | 0.0 | 1.0 |
| 122.110000 | 33.23 | 43.50 | 10.27 | 120.000 | 111.0 | V | 253.0 | 7.3 | 0.0 | 1.0 |

(continuation of the "Final_Result" table from column 18 ...)

| Frequency (MHz) | Trd Corr. (dB/m) | Raw Rec (dBµV) | Comment |
|---|---|---|---|
| 73.130000 | 5.4 | 26.4 | 17:56:40 - 13.01.2023 |
| 76.570000 | 5.6 | 27.1 | 18:01:20 - 13.01.2023 |
| 84.090000 | 6.6 | 25.9 | 18:06:11 - 13.01.2023 |
| 87.830000 | 6.9 | 26.6 | 18:16:53 - 13.01.2023 |
| 103.630000 | 6.7 | 28.1 | 17:51:38 - 13.01.2023 |
| 122.110000 | 6.3 | 25.9 | 18:11:23 - 13.01.2023 |

### 6.1.7 Frequency range 30 MHz – 1 GHz (Standing) – HT mode

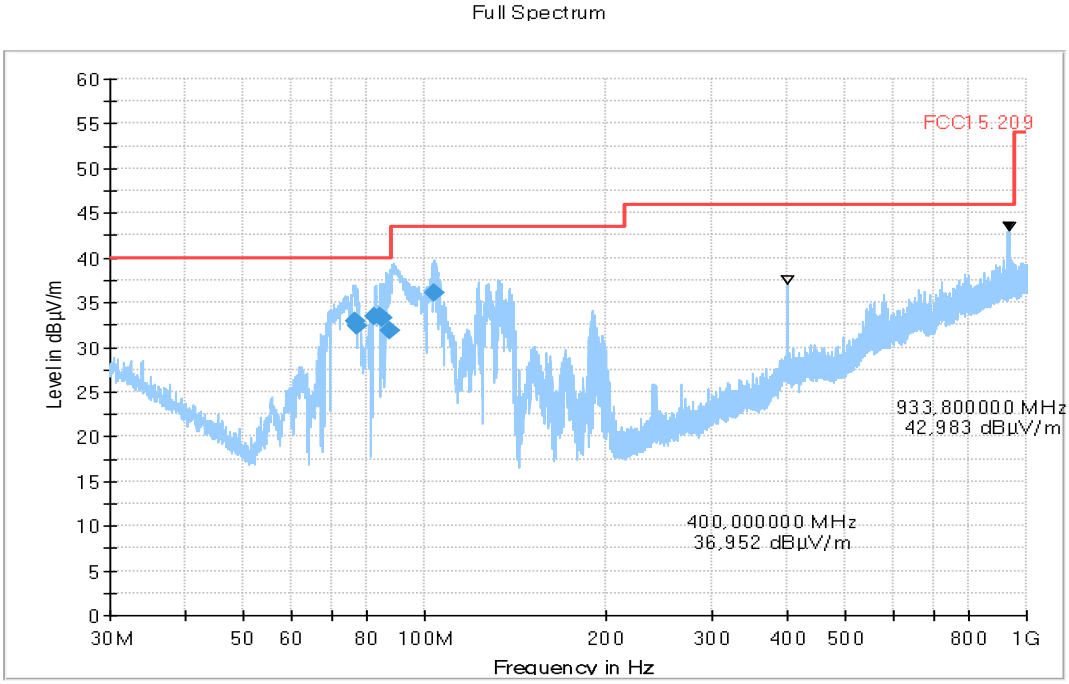
## 3.03_R01T8_RSE_TX_RADAR_fc_78GHz_HT_mode_FCC_Standing

### Common Information

| | |
|---|---|
| Test Description: | Radiated field strength emission in 3m distance |
| Test Site: | CETECOM GmbH Essen |
| Test Standard: | FCC 15.205&15.209 & RSS Gen. Issue 5 |
| Antenna polarisation: | horizontal/vertical |
| Environmental Conditions:: | Humidity : 45%rH; Temperature: 20°C |
| Operator Name: | AHo |
| Operating Mode: | Gesture mode + RADAR Active |
| Power supply: | 12 V DC |
| Verdict: | Passed |
| Comment: | EUT Standing (front, rear, left, right) |

### EUT Information

PMT number: 20-1-00182S40_C01




**Remark:** Worst case position has been found at EUT Standing position, therefore 30M to 1GHz test of HT mode has been carried out with EUT Standing Position.

### Final_Result

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) | Sig Path (dB) | Preamp (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| 76.330000 | 32.98 | 40.00 | 7.02 | 120.000 | 109.0 | V | 46.0 | 6.5 | 0.0 | 0.9 |
| 77.030000 | 32.44 | 40.00 | 7.56 | 120.000 | 117.0 | V | 11.0 | 6.5 | 0.0 | 0.9 |
| 82.750000 | 33.37 | 40.00 | 6.63 | 120.000 | 130.0 | V | 0.0 | 7.3 | 0.0 | 1.0 |
| 84.350000 | 33.44 | 40.00 | 6.56 | 120.000 | 109.0 | V | 6.0 | 7.5 | 0.0 | 0.9 |
| 85.230000 | 33.31 | 40.00 | 6.69 | 120.000 | 138.0 | V | 8.0 | 7.5 | 0.0 | 0.9 |
| 87.550000 | 31.93 | 40.00 | 8.07 | 120.000 | 145.0 | V | 81.0 | 7.7 | 0.0 | 0.9 |
| 103.490000 | 36.03 | 43.50 | 7.47 | 120.000 | 223.0 | H | 16.0 | 7.7 | 0.0 | 1.0 |

(continuation of the "Final_Result" table from column 18 ...)

| Frequency (MHz) | Trd Corr. (dB/m) | Raw Rec (dBµV) | Comment |
|---|---|---|---|
| 76.330000 | 5.6 | 26.5 | 19:08:29 - 13.01.2023 |
| 77.030000 | 5.6 | 25.9 | 19:13:11 - 13.01.2023 |
| 82.750000 | 6.3 | 26.0 | 19:17:52 - 13.01.2023 |
| 84.350000 | 6.6 | 26.0 | 19:32:39 - 13.01.2023 |
| 85.230000 | 6.6 | 25.8 | 19:22:47 - 13.01.2023 |
| 87.550000 | 6.8 | 24.2 | 19:27:35 - 13.01.2023 |
| 103.490000 | 6.7 | 28.3 | 19:03:28 - 13.01.2023 |

### 6.1.8 Frequency range 1 GHz – 12.4 GHz – GD mode

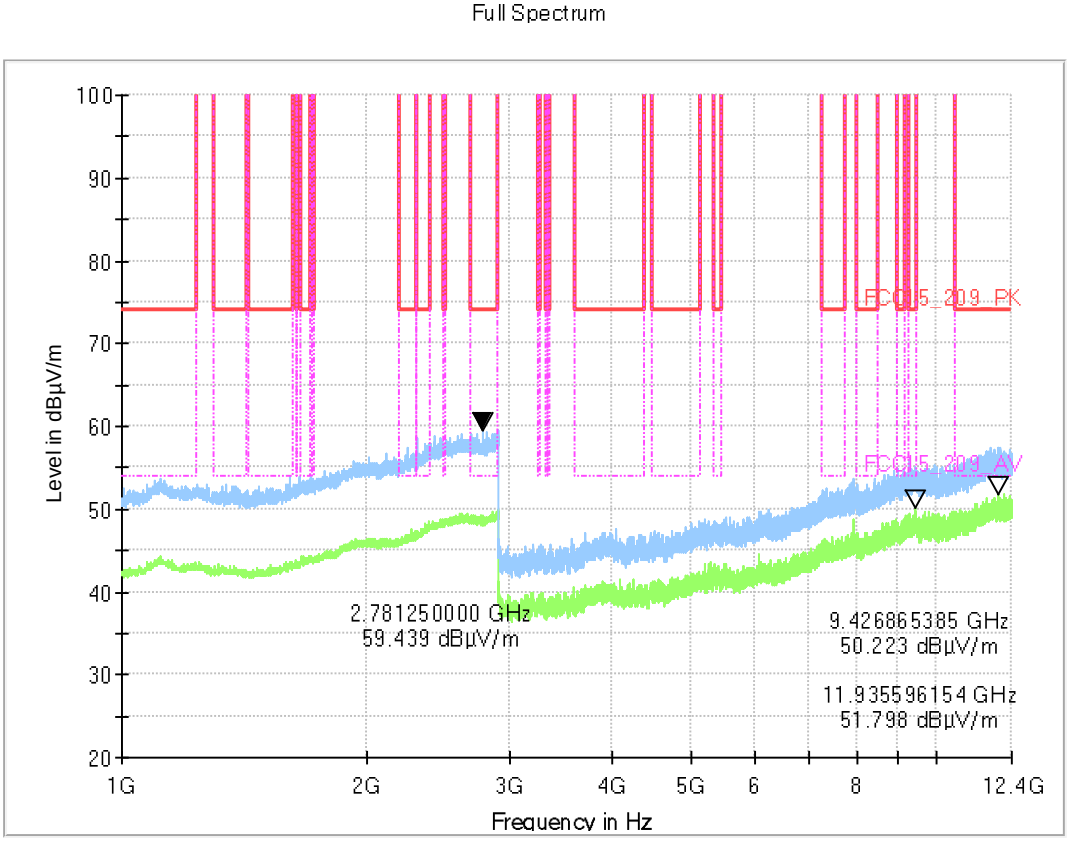
## D127_01_R01T08_TX_RSE_1G_12.4GHz_GD_mode

## Common Information

| | |
|---|---|
| Test Description: | Radiated Field Strength Emission@3m distance |
| Test Site Location: | CETECOM GmbH Essen |
| Test Site: | Fully Anechoic Room (FAR2) |
| Test Standard: | FCC 15.209 & RSS-Gen, Issue 5 |
| Operating Mode: | GD mode + RADAR ON |
| Environmental Conditions: | Humidity: 50%rH; Temperature: 21°C |
| SW-Version: | EMC32 V10.60.20 |
| Operator: | AHo |
| Verdict: | Passed |

## EUT Information

| | |
|---|---|
| PMT Sample Nr. | 20-1-00182S40_C01 |



### 6.1.9 Frequency range 1 GHz – 12.4 GHz – HT mode

## D128_01_R01T08_TX_RSE_1G_12.4GHz_HT_mode_FCC

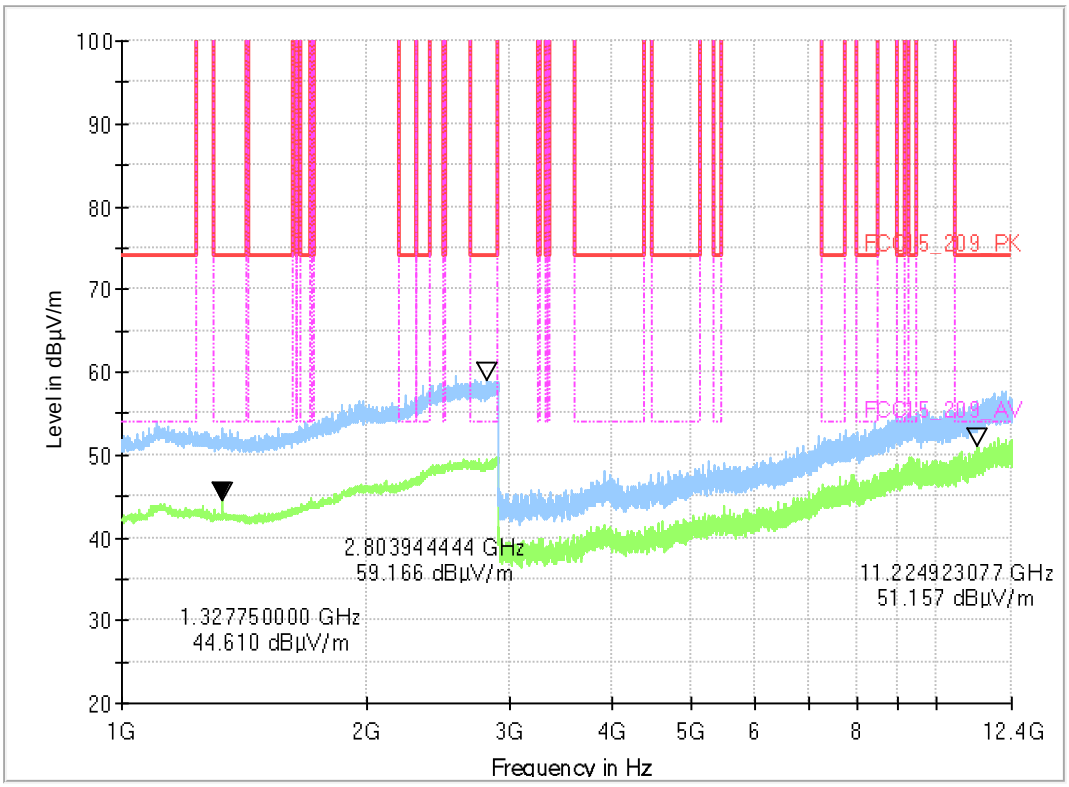
## Common Information

| | |
|---|---|
| Test Description: | Radiated Field Strength Emission@3m distance |
| Test Site Location: | CETECOM GmbH Essen |
| Test Site: | Fully Anechoic Room (FAR2) |
| Test Standard: | FCC 15.209 & RSS-Gen, Issue 5 |
| Operating Mode: | HT mode + RADAR ON |
| Environmental Conditions: | Humidity: 46%rH; Temperature: 20.5°C |
| SW-Version: | EMC32 V10.60.20 |
| Operator: | AHo |
| Verdict: | Passed |

## EUT Information

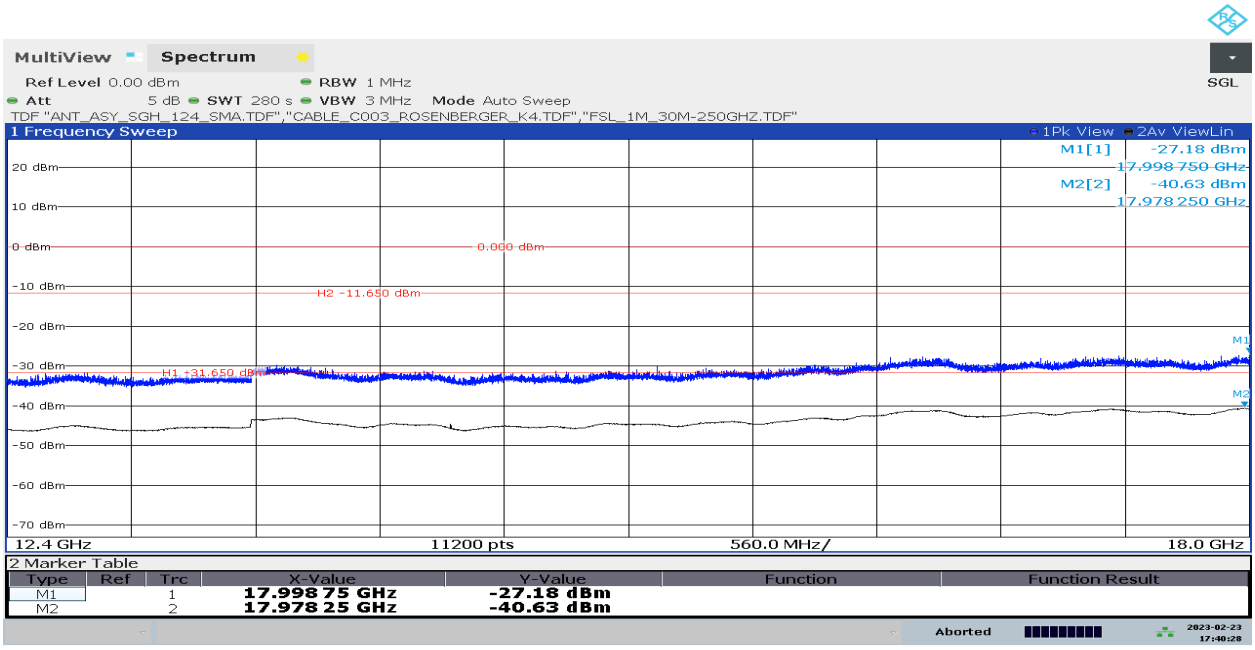
| | |
|---|---|
| PMT Sample Nr. | 20-1-00182S40_C01 |

Full Spectrum



## 6.1.10 Frequency range 12.4 GHz – 18 GHz - Antenna-Vertical – GD mode

D127_05a_R01T08_TX_RSE_12.4G_18GHz_ANT_V_GD_mode_FCC

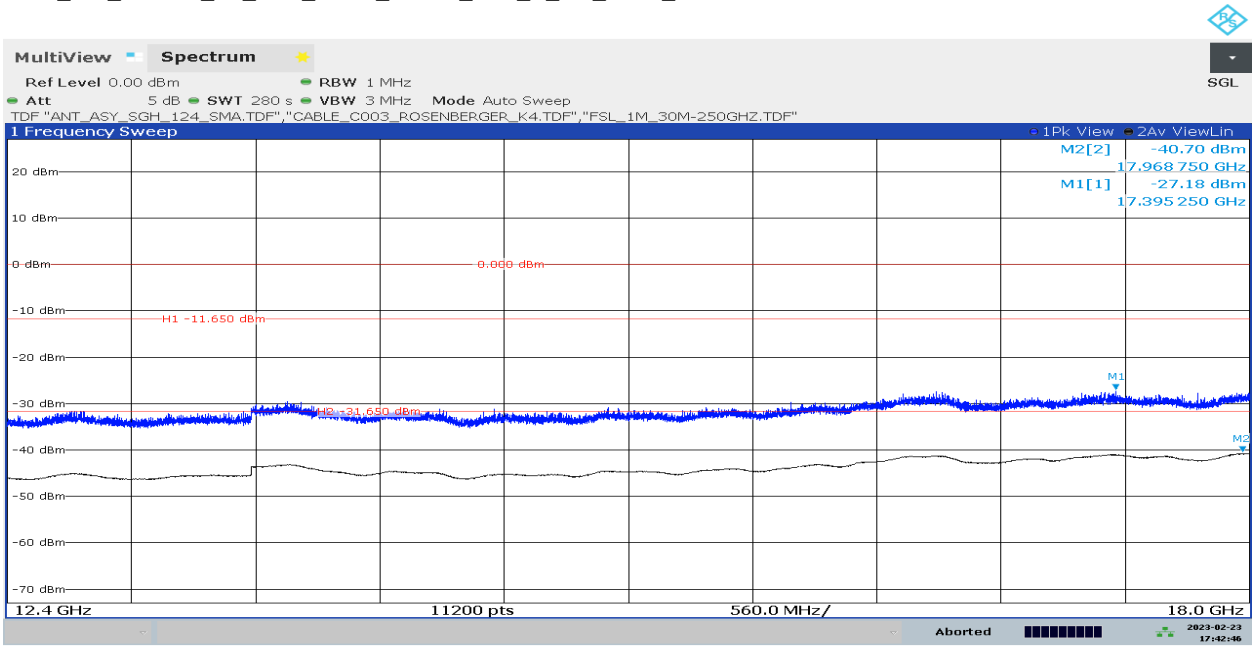



05:40:28 PM 02/23/2023

Remark: Peak and Average Power both are below the limit line, Results: Passed.
Peak Limit: -11.65 dBm, Average Limit: -31.65 dBm

## 6.1.11 Frequency range 12.4 GHz – 18 GHz - Antenna-Horizontal – GD mode

D127_02a_R01T08_TX_RSE_12.4G_18GHz_ANT_H_GD_mode_FCC

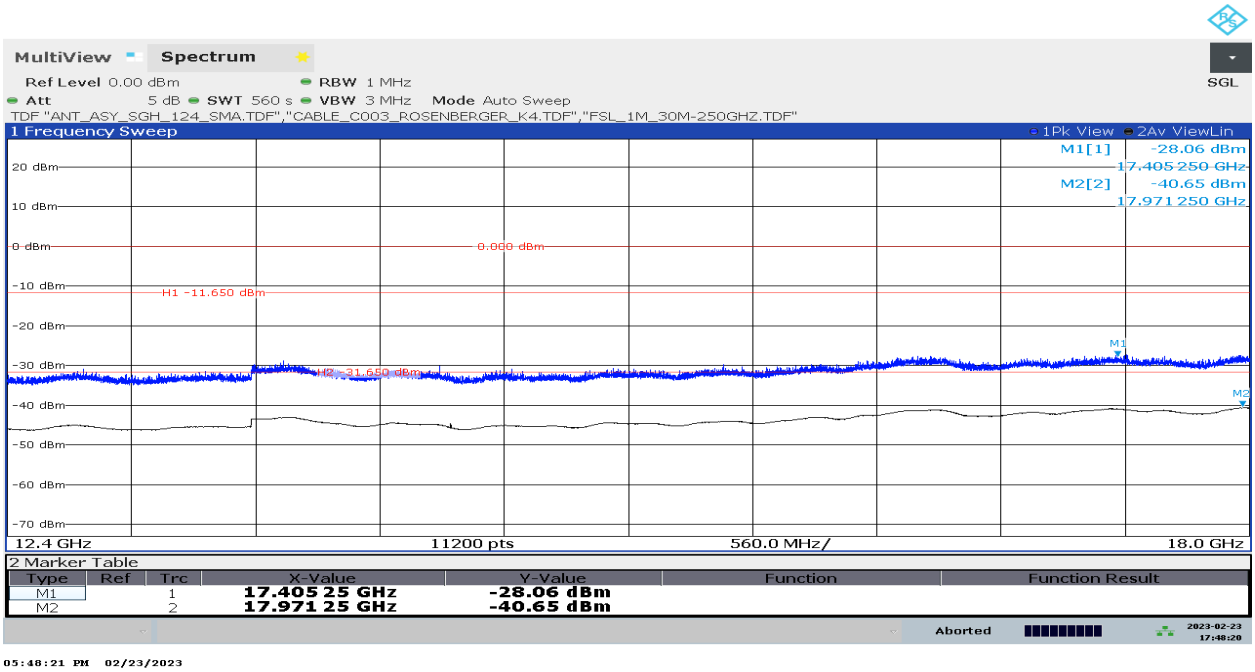



05:42:46 PM 02/23/2023

Remark: Peak and Average Power both are below the limit line, Results: Passed.
Peak Limit: -11.65 dBm, Average Limit: -31.65 dBm

## 6.1.12 Frequency range 12.4 GHz – 18 GHz - Antenna-Vertical – HT mode

D127_05b_R01T08_TX_RSE_12.4G_18GHz_ANT_V_HT_mode_FCC

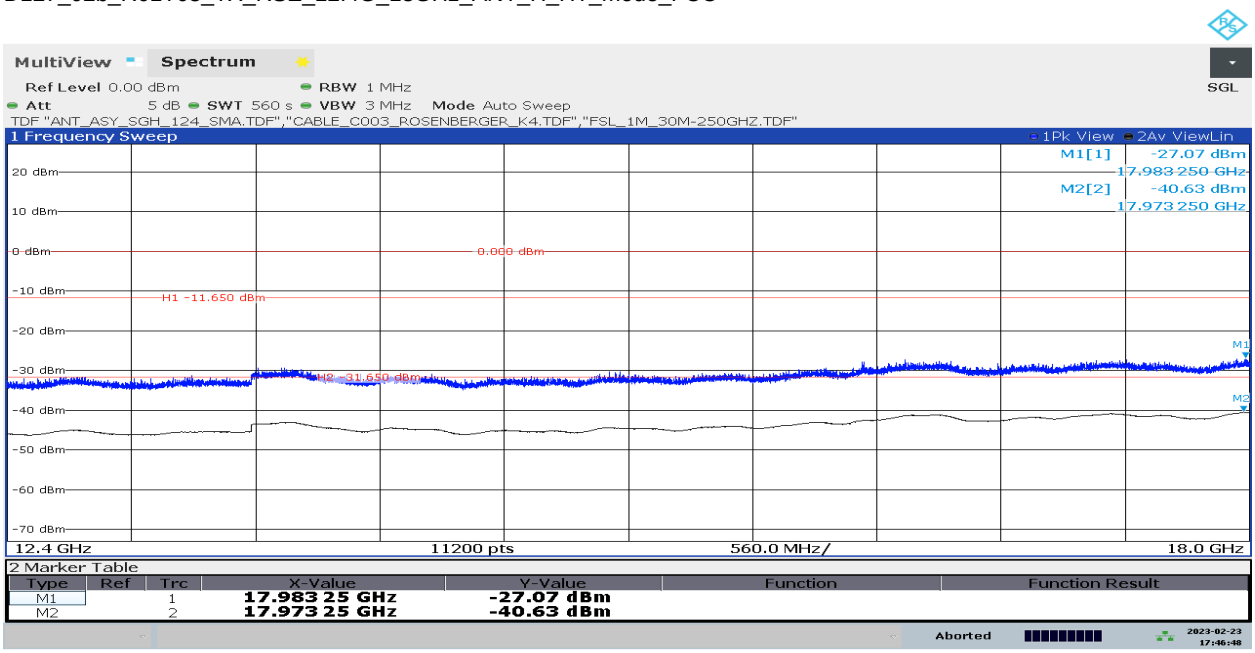



05:48:21 PM 02/23/2023

Remark: Peak and Average Power both are below the limit line, Results: Passed.
Peak Limit: -11.65 dBm, Average Limit: -31.65 dBm

## 6.1.13 Frequency range 12.4 GHz – 18 GHz - Antenna-Horizontal – HT mode

D127_02b_R01T08_TX_RSE_12.4G_18GHz_ANT_H_HT_mode_FCC

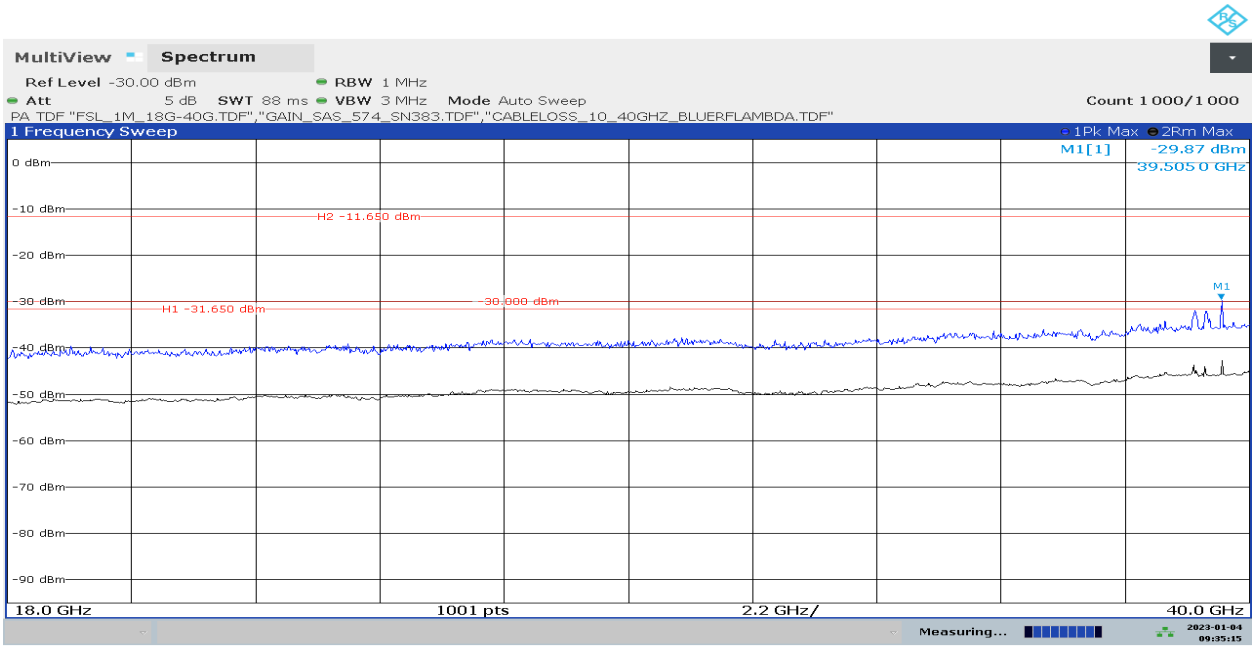



05:46:49 PM 02/23/2023

Remark: Peak and Average Power both are below the limit line, Results: Passed.
Peak Limit: -11.65 dBm, Average Limit: -31.65 dBm

## 6.1.14 Frequency range 18 GHz – 40 GHz – Measurement Antenna Vertical_GD mode

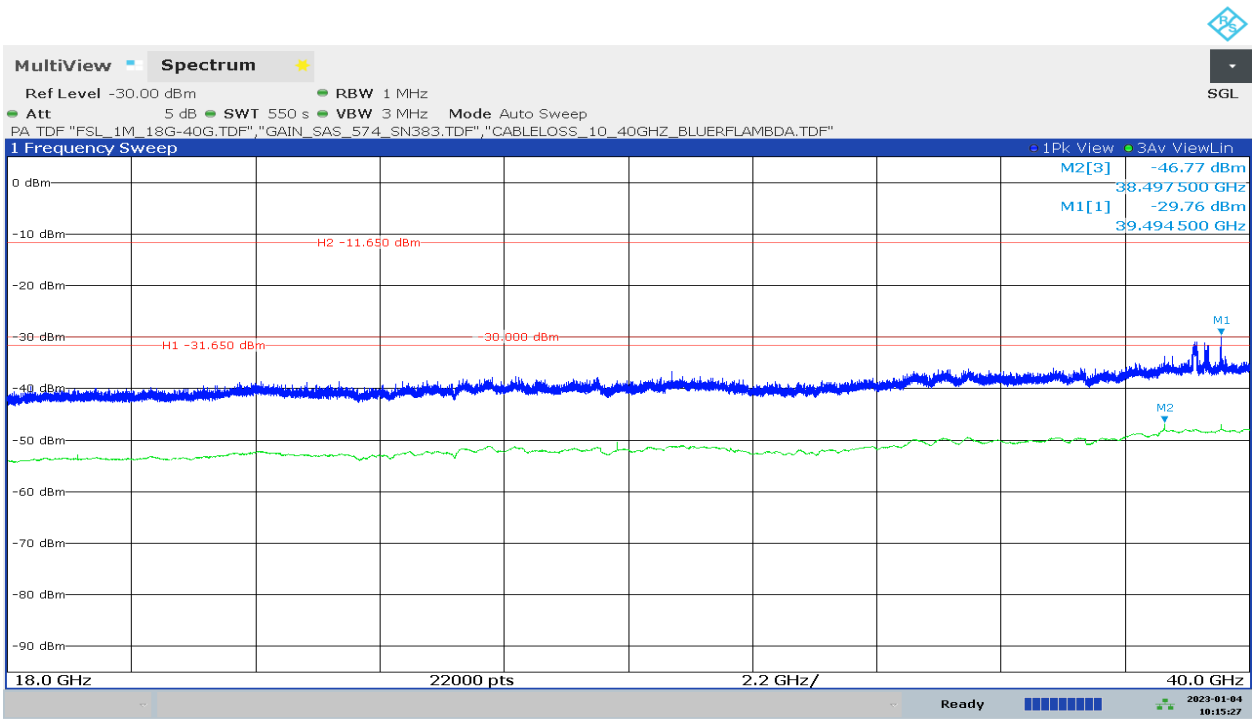
D130_R01T08_TX_RSE_18G_40GHz_EUT_90_Ant_V_detector_S40_TT_0_360_sweep_auto_GD_mode_pretest




09:35:16 AM 01/04/2023

Remark: Pretest has been performed with Peak detector to find the EUT and Turn Table Worst case position.

D130_01_R01T08_TX_RSE_18G_40GHz_EUT_90_Ant_V_TT_0_S40_GD_mode_fcc



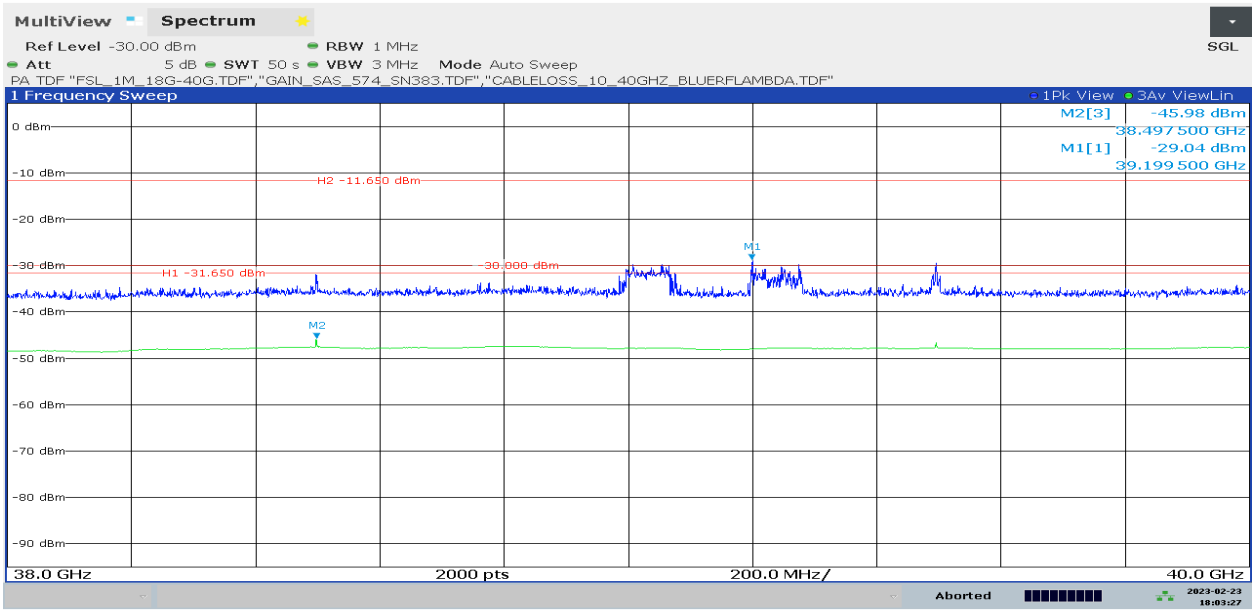

10:15:27 AM 01/04/2023

**Remark: Final Test – No critical Emission found – Limit Line: -11.65 dBm (Peak), -31.65 dBm (Avg.) – Result: Passed.**

Final test has been carried out on worst case position of EUT = 90° and TT = 0°

## Small Span – 38G to 40 GHz

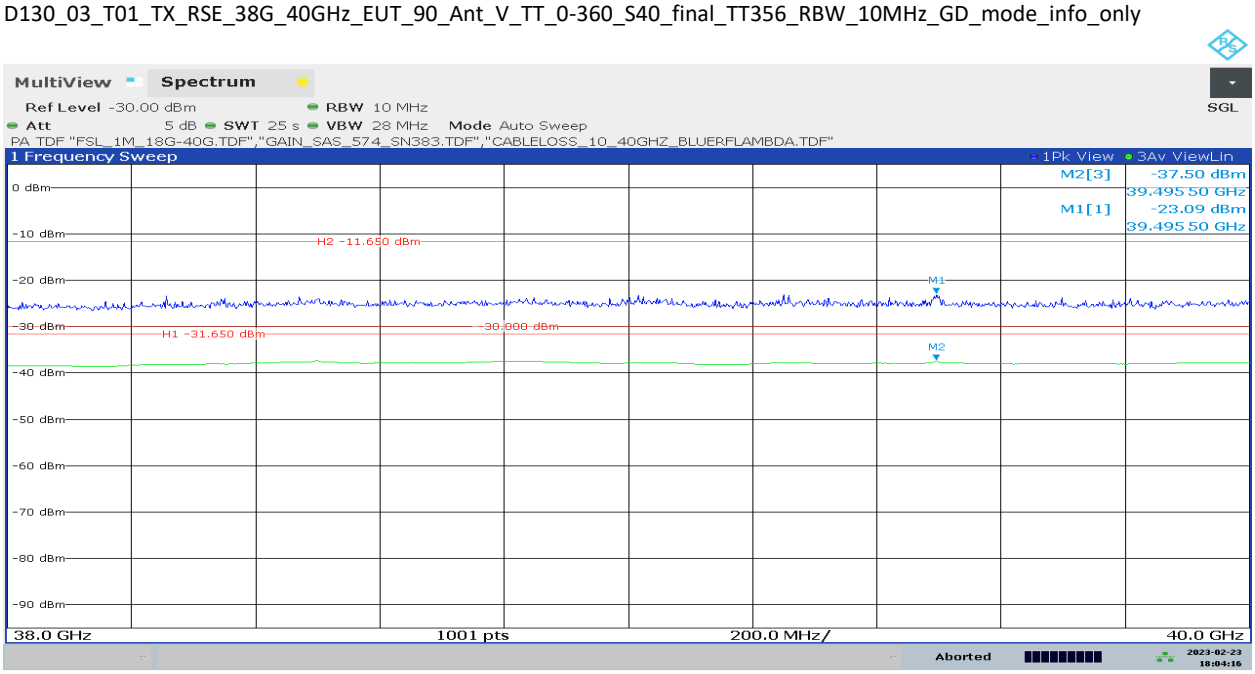
D130_02_T01_TX_RSE_38G_40GHz_EUT_90_Ant_V_TT_0-360_S40_GD_mode_final_TT356




06:03:28 PM 02/23/2023

**Remark: Final Test – No critical Emission found – Limit Line: -11.65 dBm (Peak), -31.65 dBm (Avg.) – Result: Passed.**

**Due to Desensitization factor, another test with RBW 10 MHz has been performed, No critical issue found,**
D130_03_T01_TX_RSE_38G_40GHz_EUT_90_Ant_V_TT_0-360_S40_final_TT356_RBW_10MHz_GD_mode_info_only



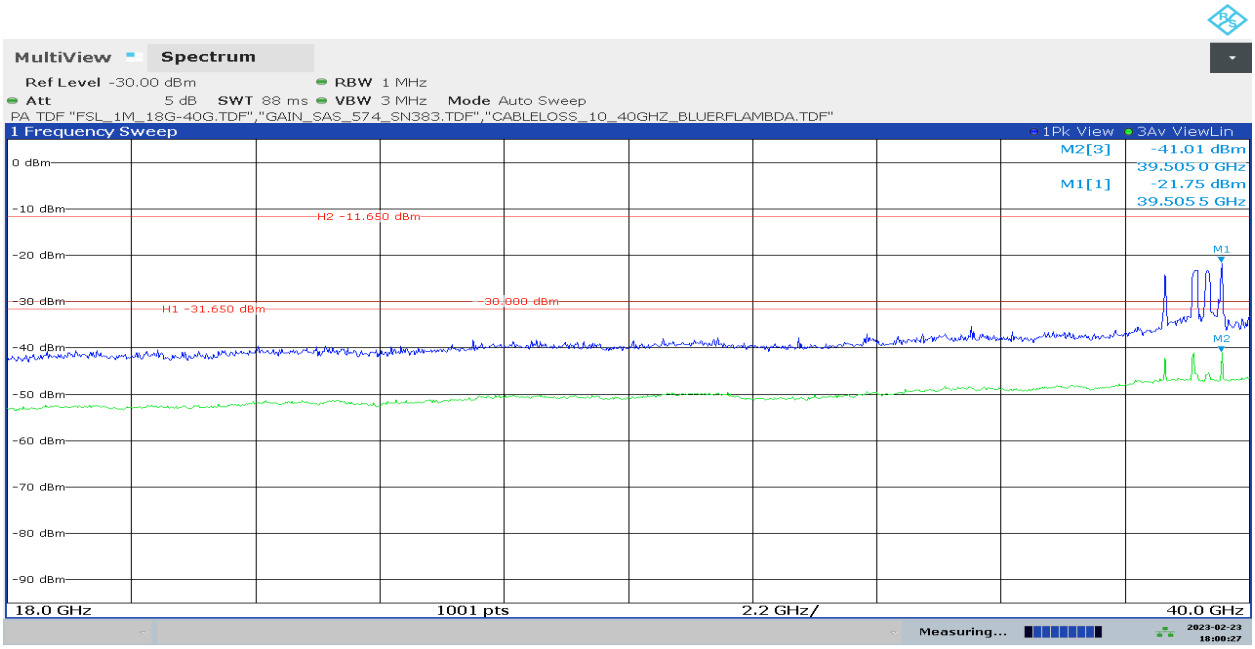

06:04:17 PM 02/23/2023

**Remark: No critical Emission found – Only for information – RBW 10 MHz.**
Due to Desensitization factor RBW has been taken 10 MHz. No Critical frequency found, Results: Passed

**Desensitization factor has been considered only for PEAK Power**

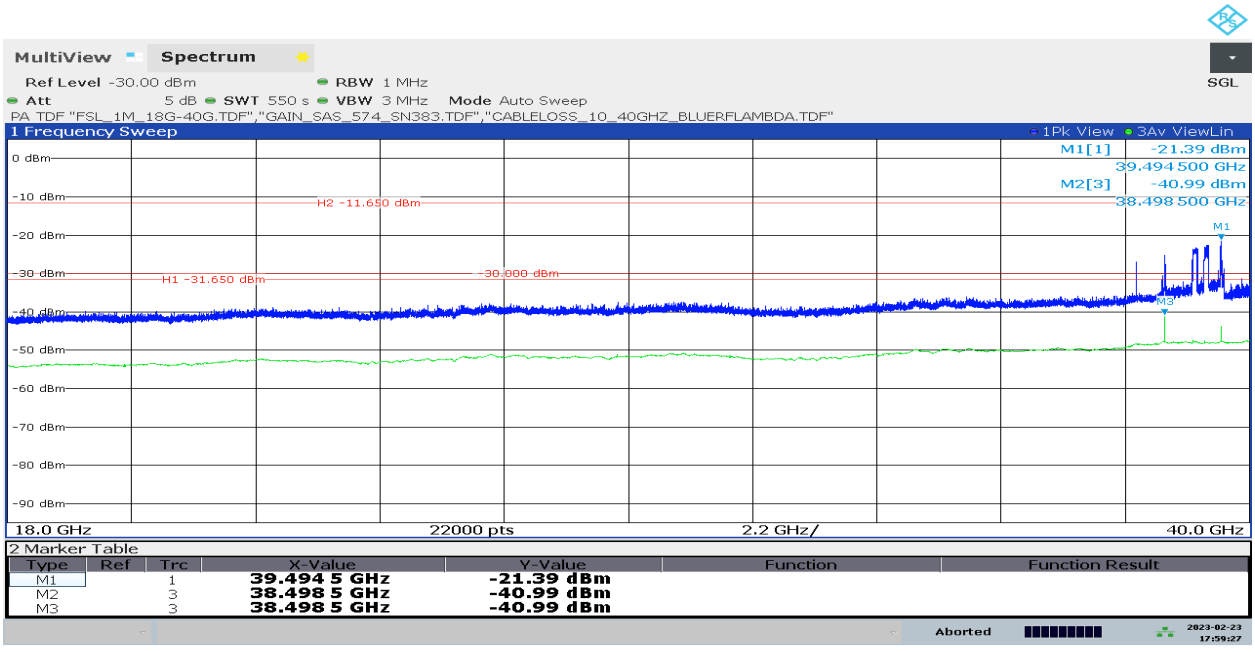
## 6.1.15 Frequency range 18 GHz – 40 GHz – Measurement Antenna Horizontal_GD mode

D129_R01T08_TX_RSE_18G_40GHz_EUT_90_Ant_H_S40_TT_0_360_sweep_auto_GD_mode_pretest




Remark: Pretest has been performed with Peak detector to find the EUT and Turn Table Worst case position.

D129_01_R01T08_TX_RSE_18G_40GHz_Ant_H_S40_GD_mode_EUT_90_TT_33_final_test

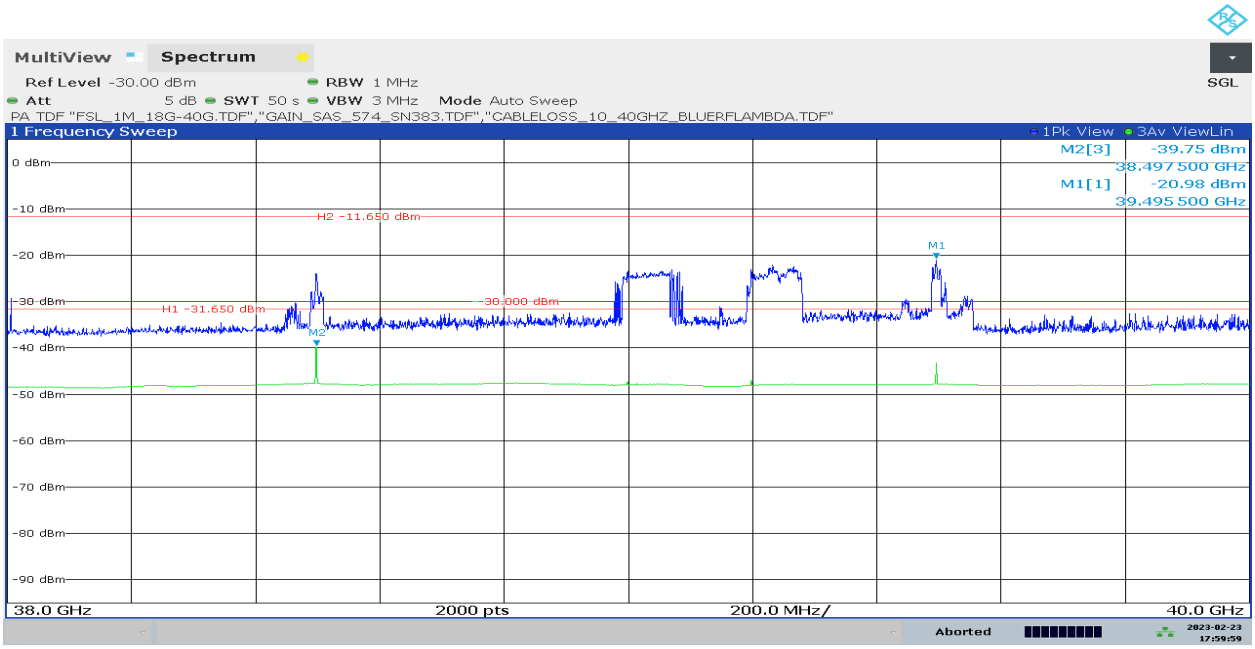



**Remark: Final Test – No critical Emission found – Limit Line: -11.65 dBm (Peak), -31.65 dBm (Avg.) – Result: Passed.**
Final test has been carried out on worst case position of EUT = 90° and TT = 33°

More measurements have been performed in small span, 38G to 40GHz, check below Diagrams,

## Small Span – 38G to 40 GHz

D129_02_T01_TX_RSE_38G_40GHz_Ant_H_S40_f_EUT_90_TT_33_final_test

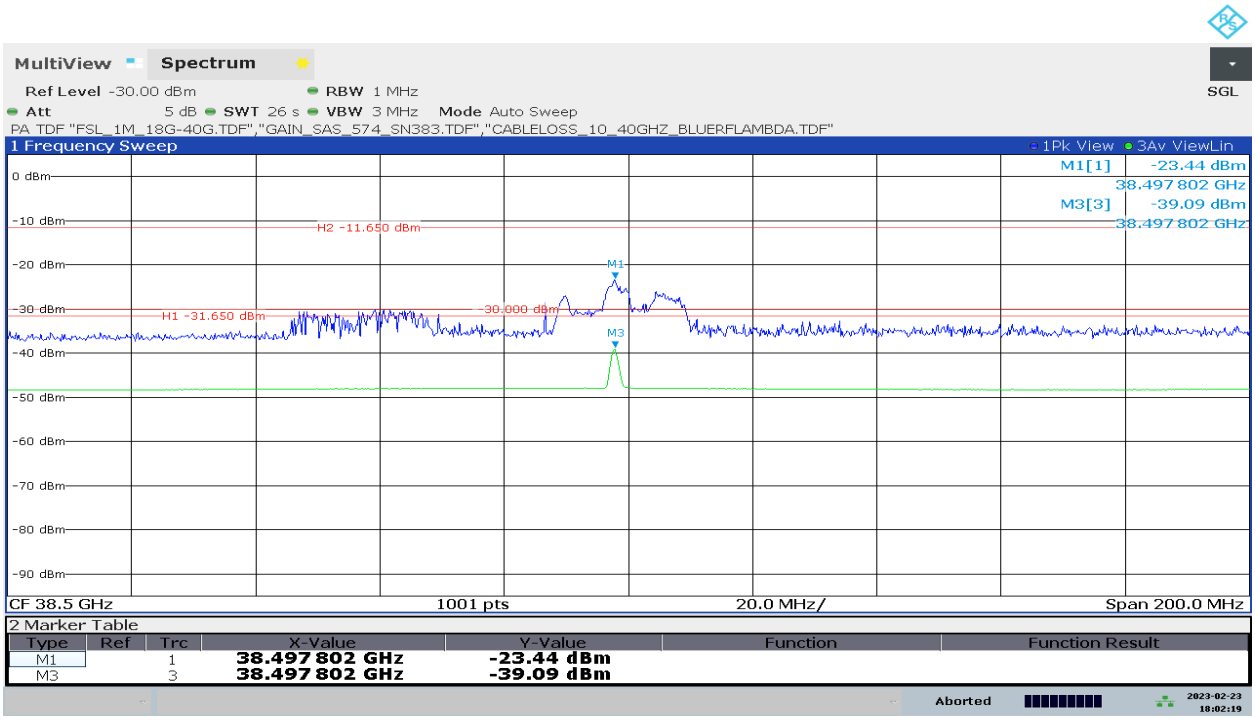



**Remark: Critical Frequency found @ 38.5 GHz and 39.5 GHz,**

**More measurements are performed on critical frequencies in a small span, check below diagrams,**

## Small Span – 200 MHz @38.5GHz

D129_04_T01_TX_RSE_38.5GHz_Ant_H_S40_GD_mode_final_test_EUT_90_TT_33

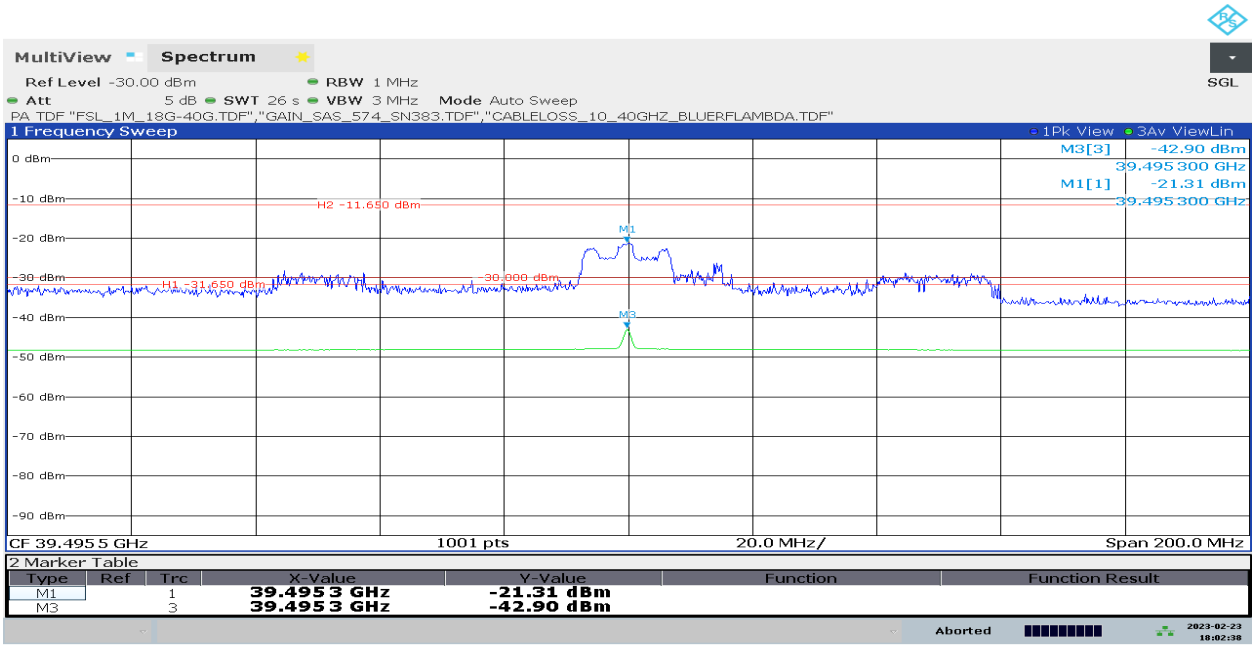



06:02:20 PM 02/23/2023

Remark: Peak and Average Power both are below the limit line, Results: Passed.
Peak Limit: -11.65 dBm, Average Limit: -31.65 dBm

## Small Span – 200 MHz @39.5GHz

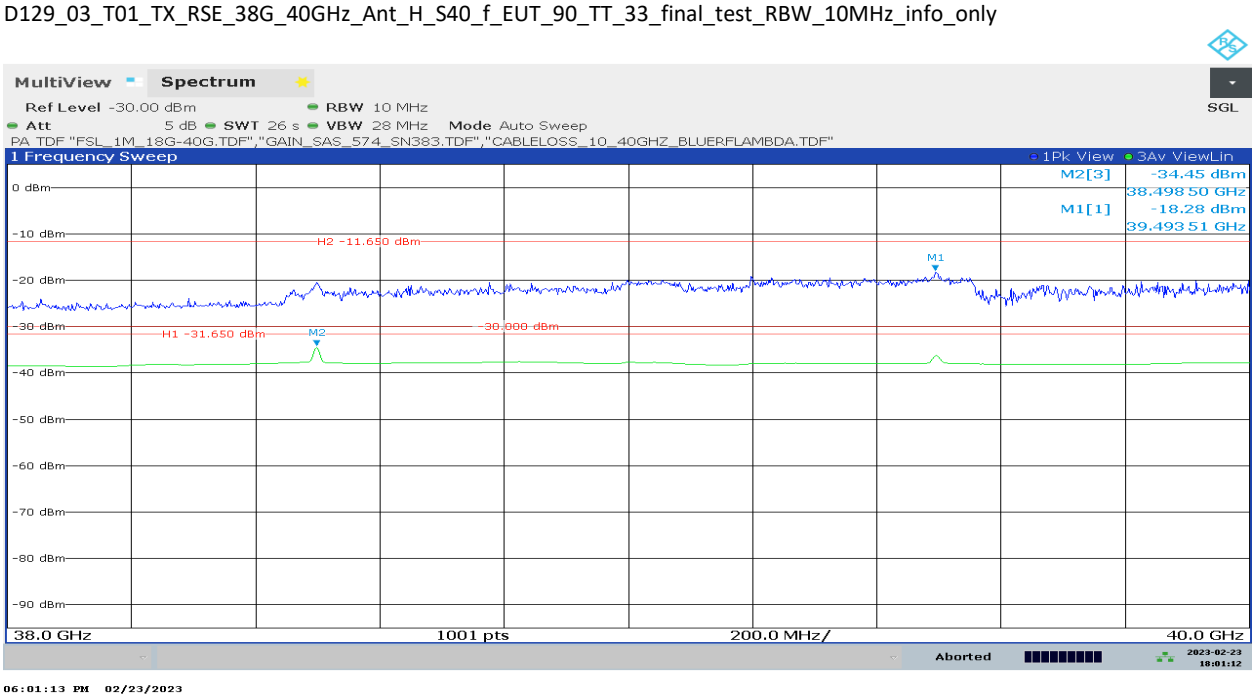
D129_05_T01_TX_RSE_39.5GHz_Ant_H_S40_GD_mode_final_test_EUT_90_TT_33




06:02:39 PM 02/23/2023

Remark: Peak and Average Power both are below the limit line, Results: Passed.
Peak Limit: -11.65 dBm, Average Limit: -31.65 dBm

**Due to Desensitization factor, another test with RBW 10 MHz has been performed, No critical issue found,**
D129_03_T01_TX_RSE_38G_40GHz_Ant_H_S40_f_EUT_90_TT_33_final_test_RBW_10MHz_info_only




Remark: Peak and Average Power both are below the limit line, Results: Passed.
Peak Limit: -11.65 dBm, Average Limit: -31.65 dBm

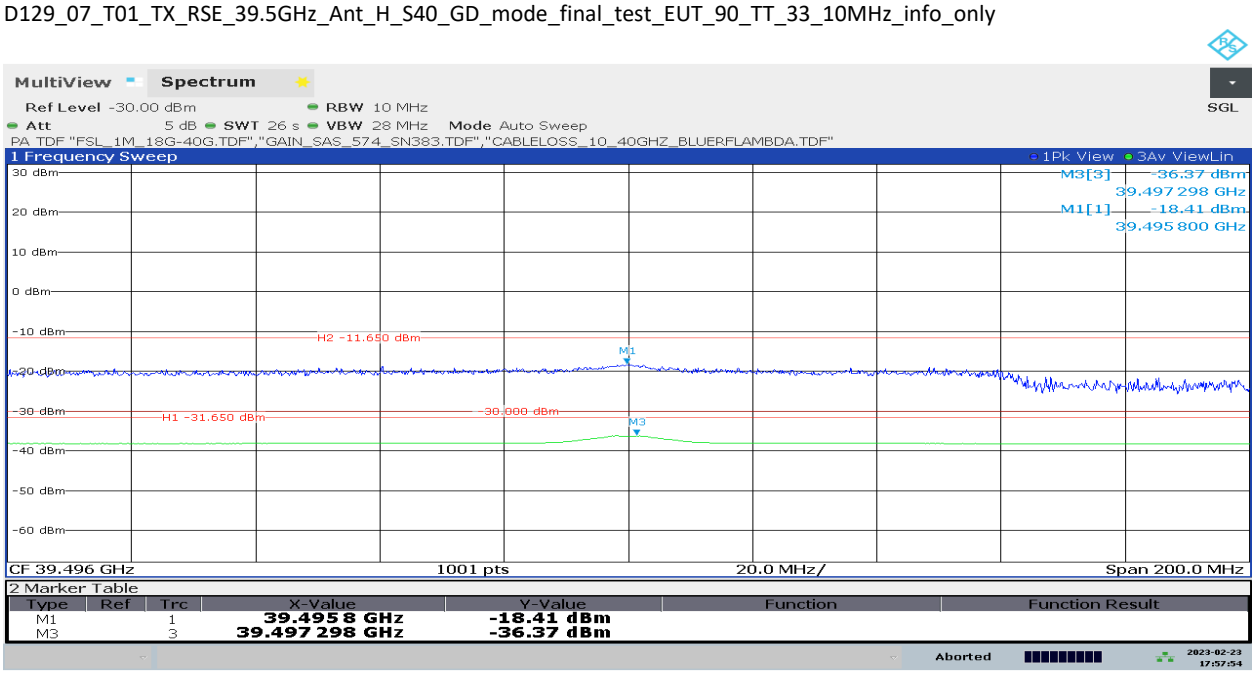
**Desensitization factor has been considered only for PEAK Power**

**Due to Desensitization factor, another test with RBW 10 MHz has been performed, No critical issue found,**
D129_06_T01_TX_RSE_38.5GHz_Ant_H_S40_GD_mode_final_test_EUT_90_TT_33_RBW_10MHz_info_only


05:57:25 PM 02/23/2023

Remark: Peak and Average Power both are below the limit line, Results: Passed.
Peak Limit: -11.65 dBm, Average Limit: -31.65 dBm
**Desensitization factor has been considered only for PEAK Power**

D129_07_T01_TX_RSE_39.5GHz_Ant_H_S40_GD_mode_final_test_EUT_90_TT_33_10MHz_info_only

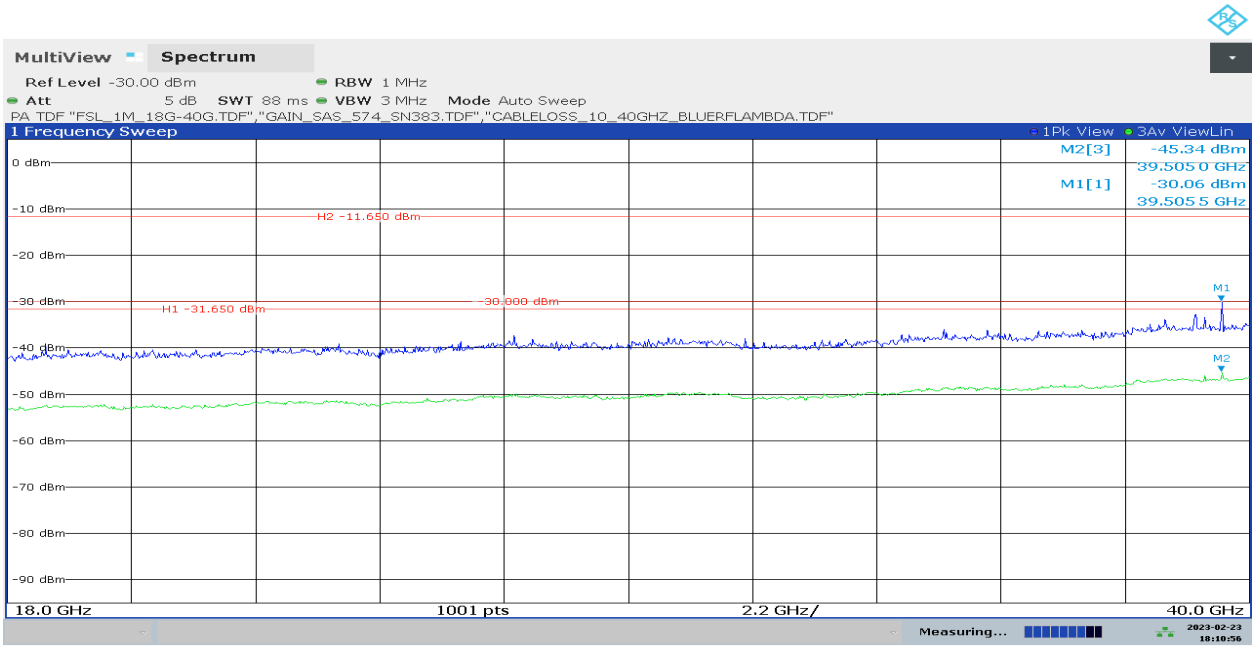



05:57:55 PM 02/23/2023

Remark: Peak and Average Power both are below the limit line, Results: Passed.
Peak Limit: -11.65 dBm, Average Limit: -31.65 dBm
**Desensitization factor has been considered only for PEAK Power**

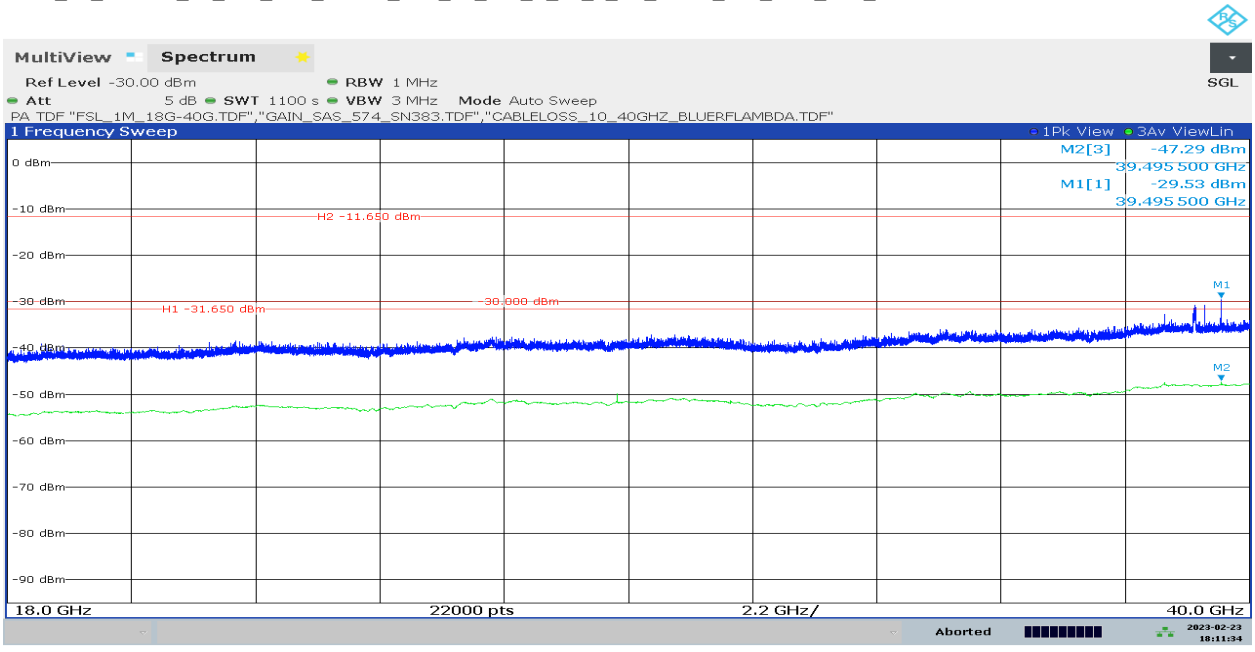
## 6.1.16 Frequency range 18 GHz – 40 GHz – Measurement Antenna Vertical_HT mode

D150_R01T08_TX_RSE_18G_40GHz_EUT_90_Ant_V_S40_TT_0_360_sweep_auto_HT_mode_pretest




Remark: Pretest has been performed with Peak detector to find the EUT and Turn Table Worst case position.

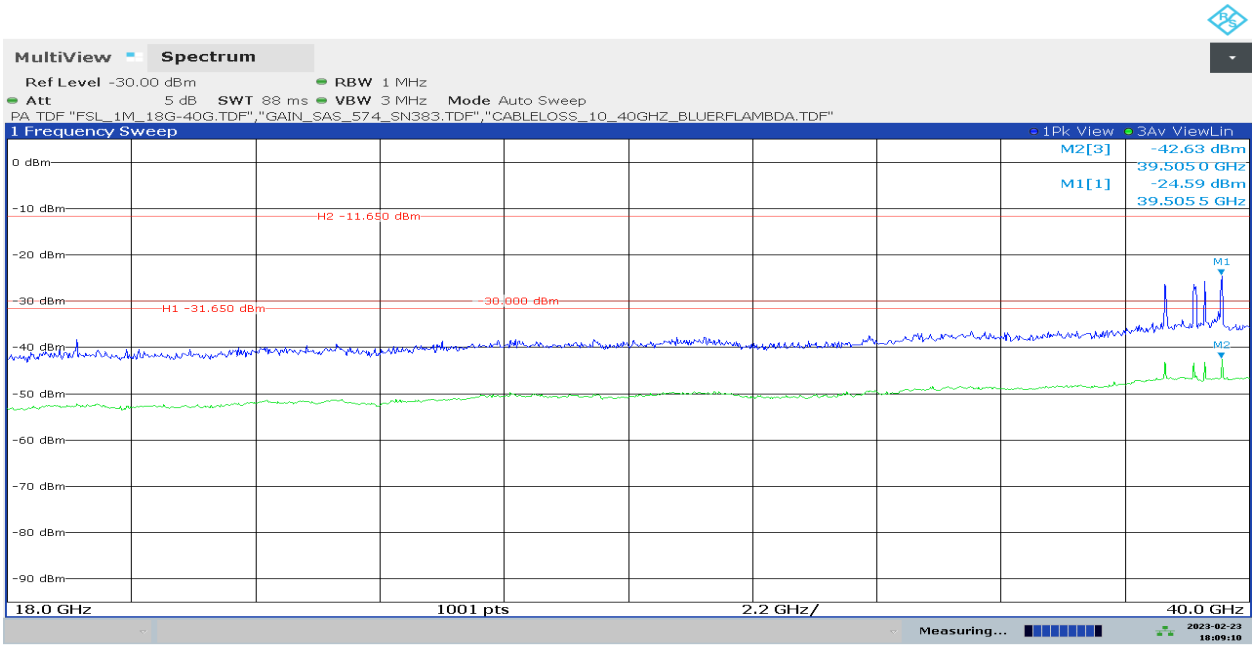
D150_01_R01T08_TX_RSE_18G_40GHz_EUT_90_Ant_V_TT_0_HT_mode_S40_final_test_1100s




Final test has been carried out on worst case position of EUT = 90° and TT = 0°

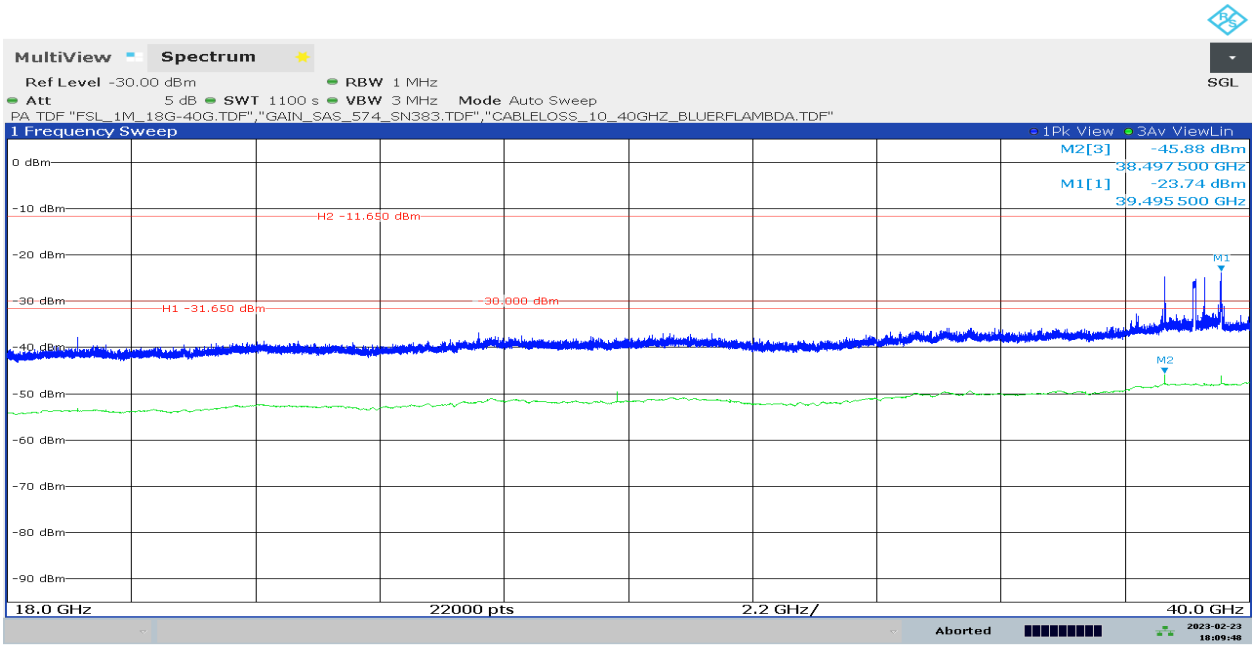
## 6.1.17 Frequency range 18 GHz – 40 GHz – Measurement Antenna Horizontal_HT mode

D151_R01T08_TX_RSE_18G_40GHz_EUT_90_Ant_H_S40_TT_0_360_sweep_auto_HT_mode_pretest_fcc




Remark: Pretest has been performed with Peak detector to find the EUT and Turn Table Worst case position.

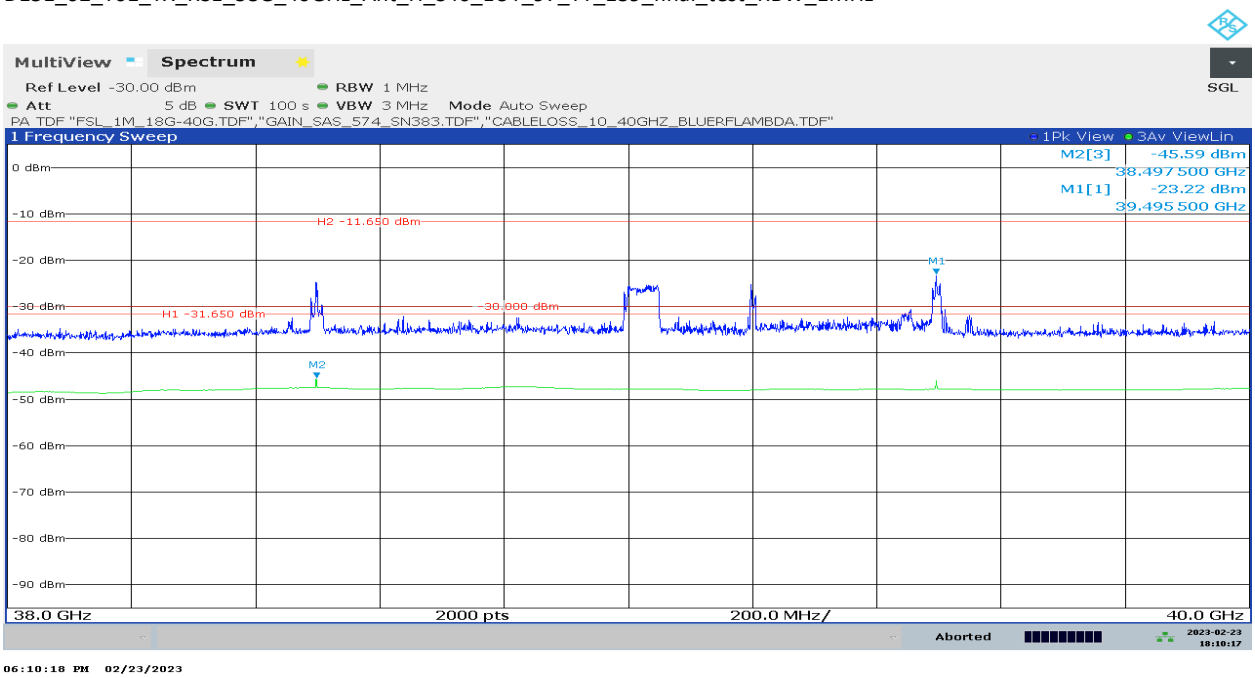
D151_01_R01T08_TX_RSE_18G_40GHz_Ant_H_HT_mode_S40_1100s_EUT_97_TT_139_final_test




**Remark: Final Test – No critical Emission found – Limit Line: -11.65 dBm (Peak), -31.65 dBm (Avg.) – Result: Passed.**

Final test has been carried out on worst case position of EUT = 97° and TT = 139°

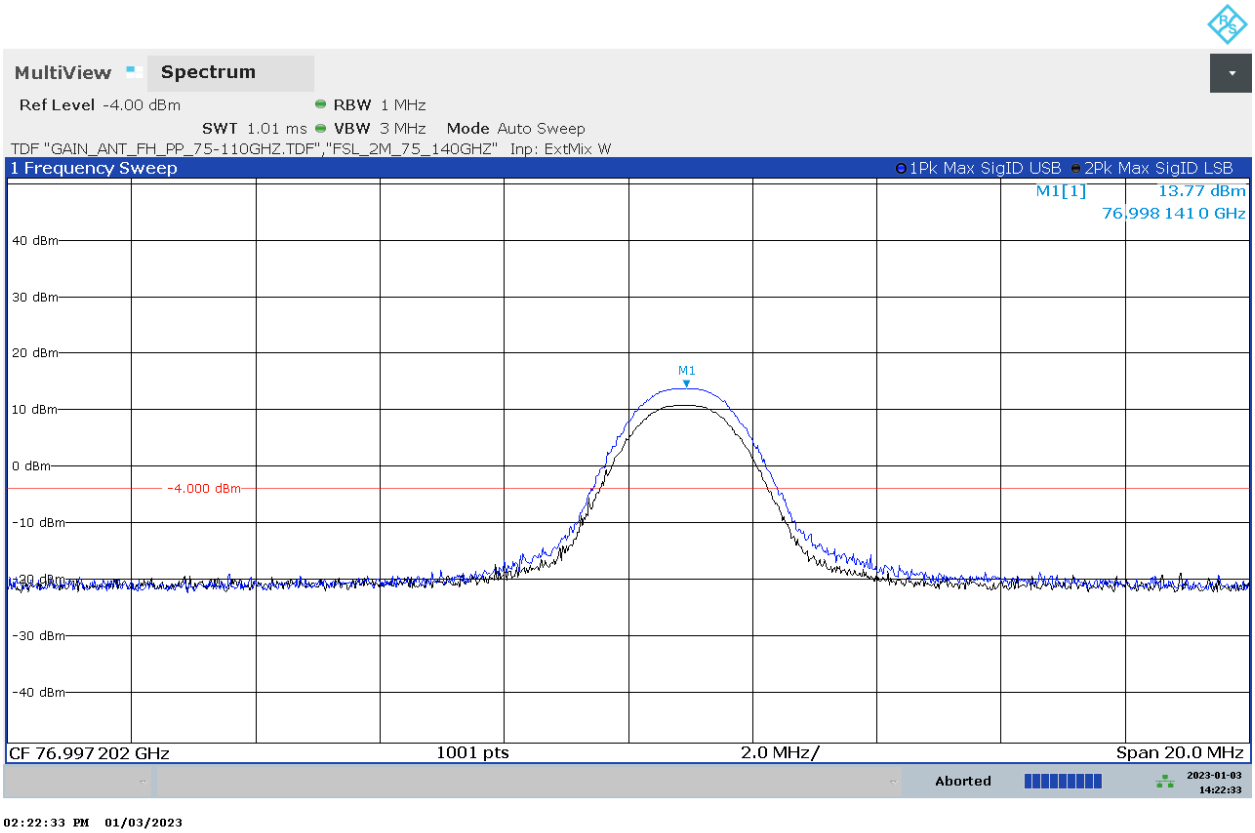
D151_02_T01_TX_RSE_38G_40GHz_Ant_H_S40_EUT_97_TT_139_final_test_RBW_1MHz



# 7 Radiated Spurious Emission above 40GHz

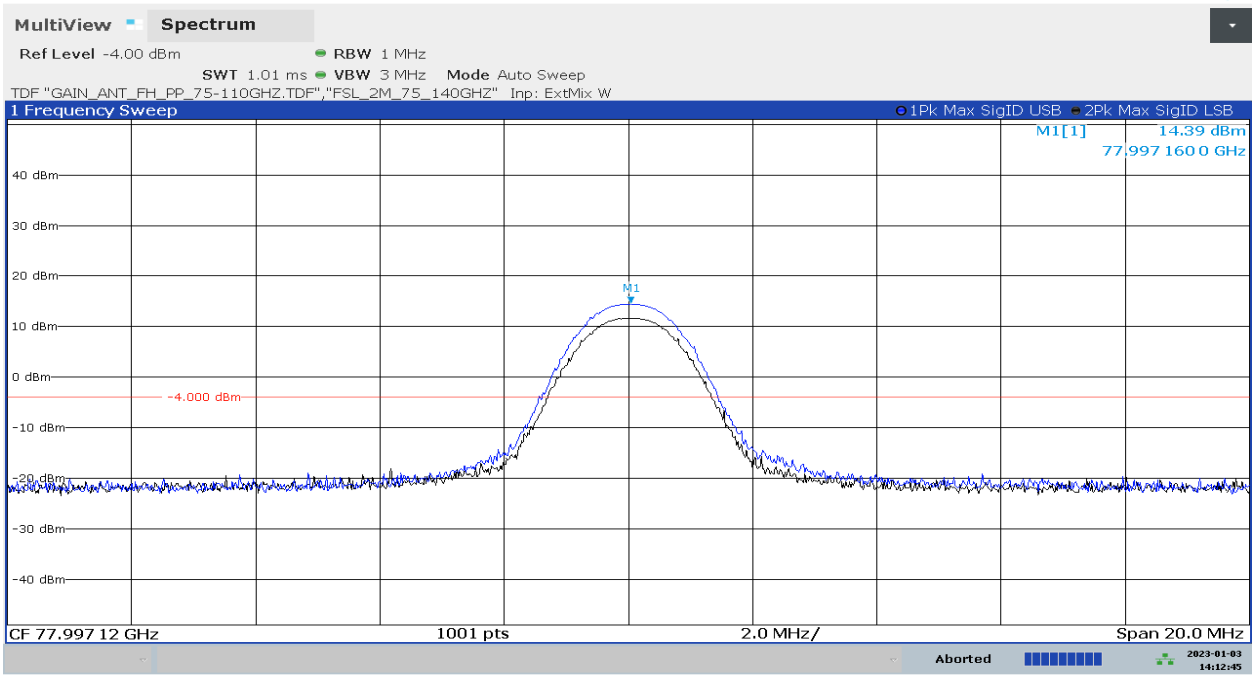
- Spurious Emission above 40 GHz has been perormed with CW mode sample,
- Three Samples on CW_Low, CW_Mid, CW_High channels are configured from Customer on three different Frequencies,
- Maximum Peak Power measurements have performed on Three different sample on three different Positions,
- Maximum Power has been found at CW_mid, check below Diagrams,
- Therefore all Spurious Emission above 40 GHz have been performed with CW_mode_mid_channel.

D005_R01T08_PEAK_Power_Tnom_Vnom_EUT_87_TT_0_Ant_V_MaxH_S40_CW_mode_low_77GHz_13.77dBm




Remark: CW mode low Channel, Maximum Peak Power: 13.77 dBm

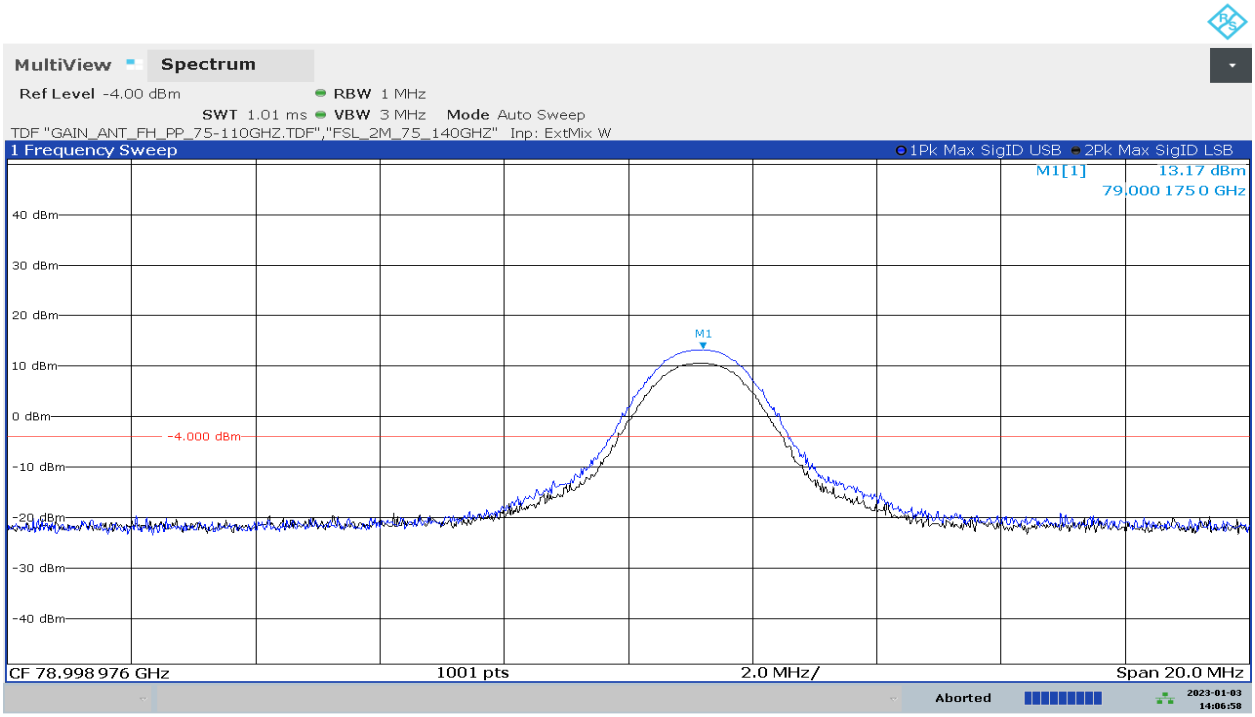
D006_R01T08_PEAK_Power_Tnom_Vnom_EUT_87_TT_0_Ant_V_MaxH_S40_CW_mode_mid_78GHz_14.39dBm




02:12:45 PM 01/03/2023

Remark: CW mode mid Channel, Maximum Peak Power: 14.39 dBm

D007_R01T08_PEAK_Power_Tnom_Vnom_EUT_87_TT_0_Ant_V_MaxH_S40_CW_mode_high_79GHz_13.17dBm

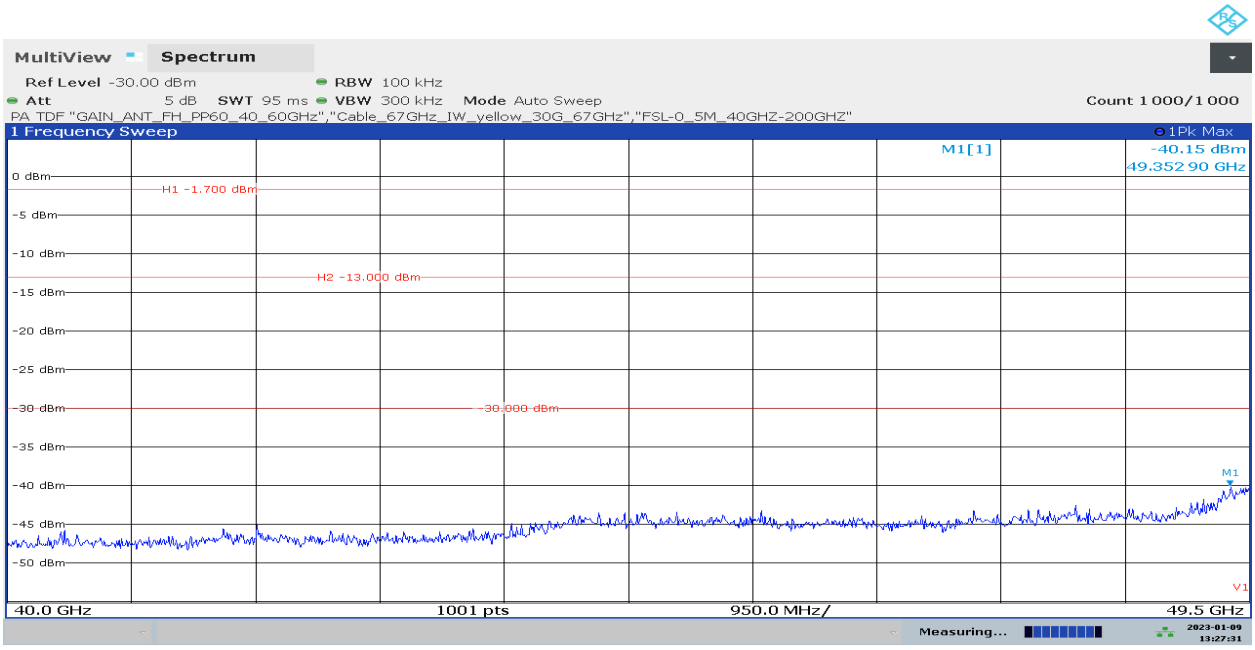



02:06:58 PM 01/03/2023

Remark: CW mode high Channel, Maximum Peak Power: 13.17 dBm

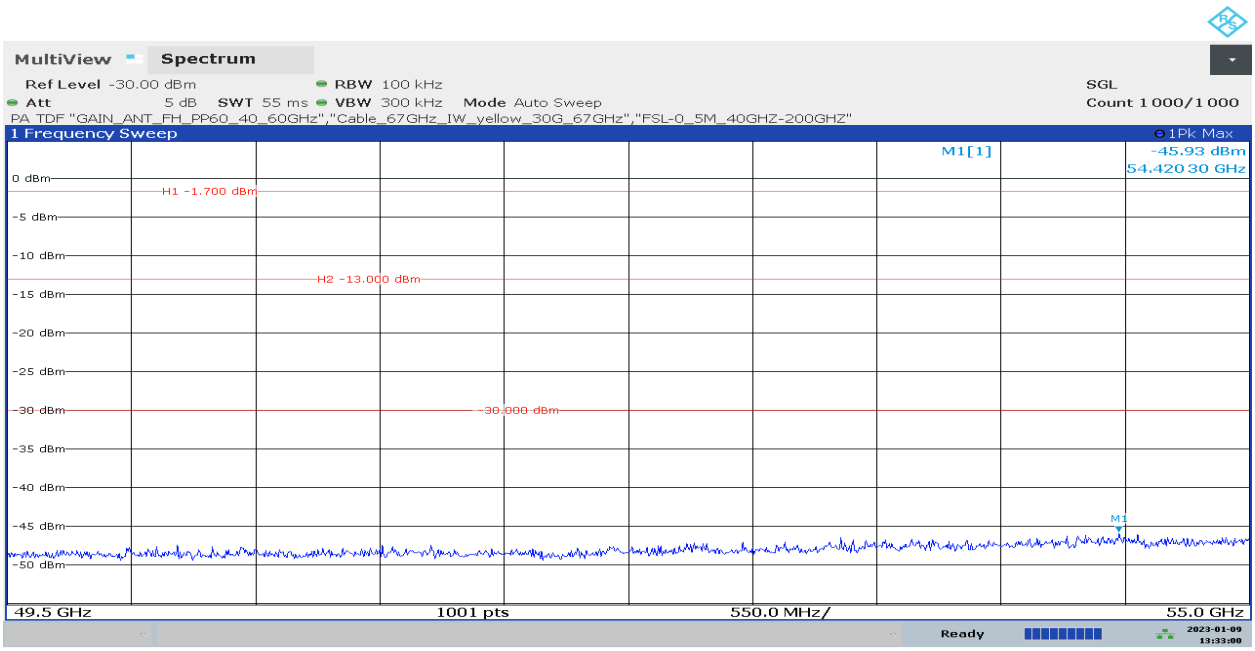
### 7.1.1 Frequency range 40 GHz – 55 GHz – Measurement Antenna Vertical

D131_01_R01T08_TX_RSE_40G_49.5GHz_EUT_90_Ant_V_CW_mode_FCC_ISED




01:27:31 PM 01/09/2023

D131_02_R01T08_TX_RSE_49.5G_55GHz_EUT_90_Ant_V_CW_mode_FCC_ISED

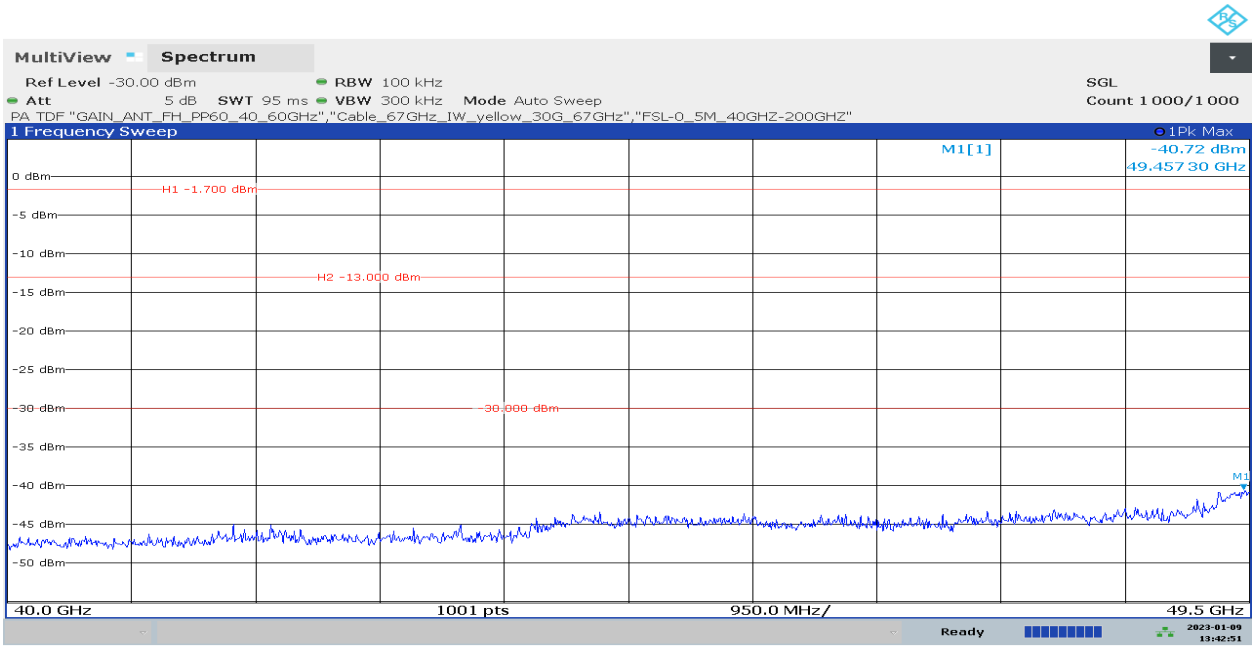



01:33:00 PM 01/09/2023

Remark:
No critical Emission found during premeasurements, Measurement mode: Continuous sweep with PEAK detector.
Limit line for FCC: -1.7 dBm – Results: Passed,
Limit line for ISED: -30 dBm – Results: Passed
Other Limit lines are not related to this measurement.

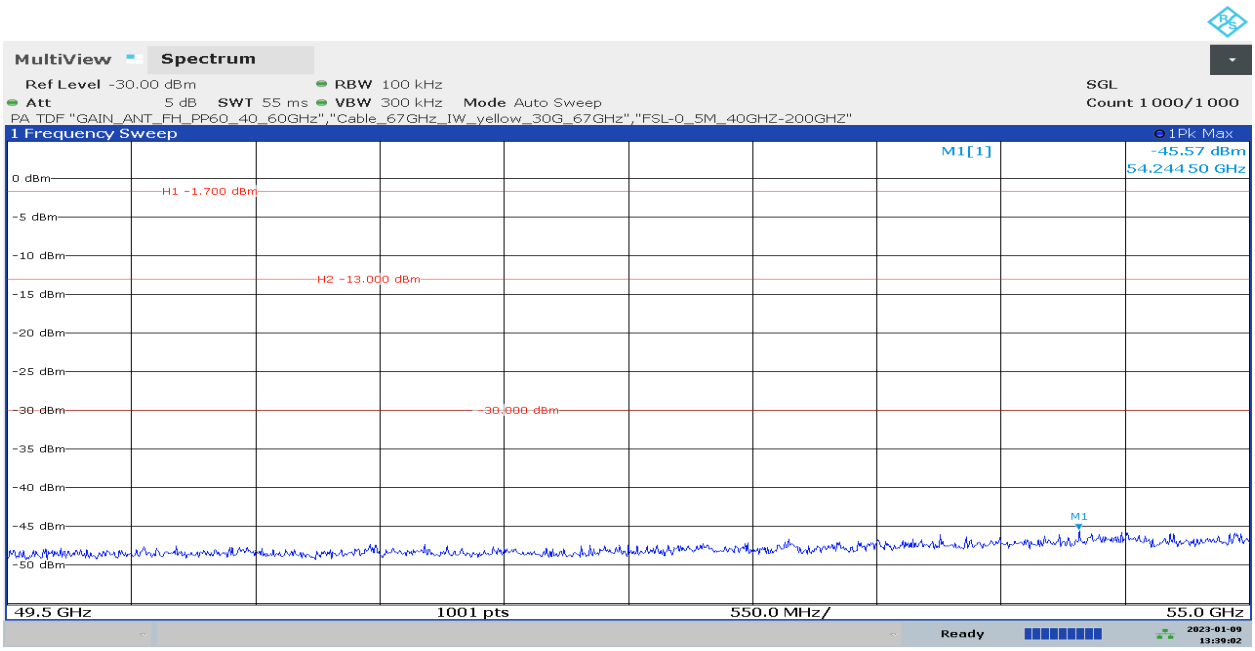
### 7.1.2 Frequency range 40 GHz – 55 GHz – Measurement Antenna Horizontal

D132_01_R01T08_TX_RSE_40G_49.5GHz_EUT_90_Ant_H_CW_mode_FCC_ISED




01:42:51 PM 01/09/2023

D132_02_R01T08_TX_RSE_49.5G_55GHz_EUT_90_Ant_H_CW_mode_FCC_ISED

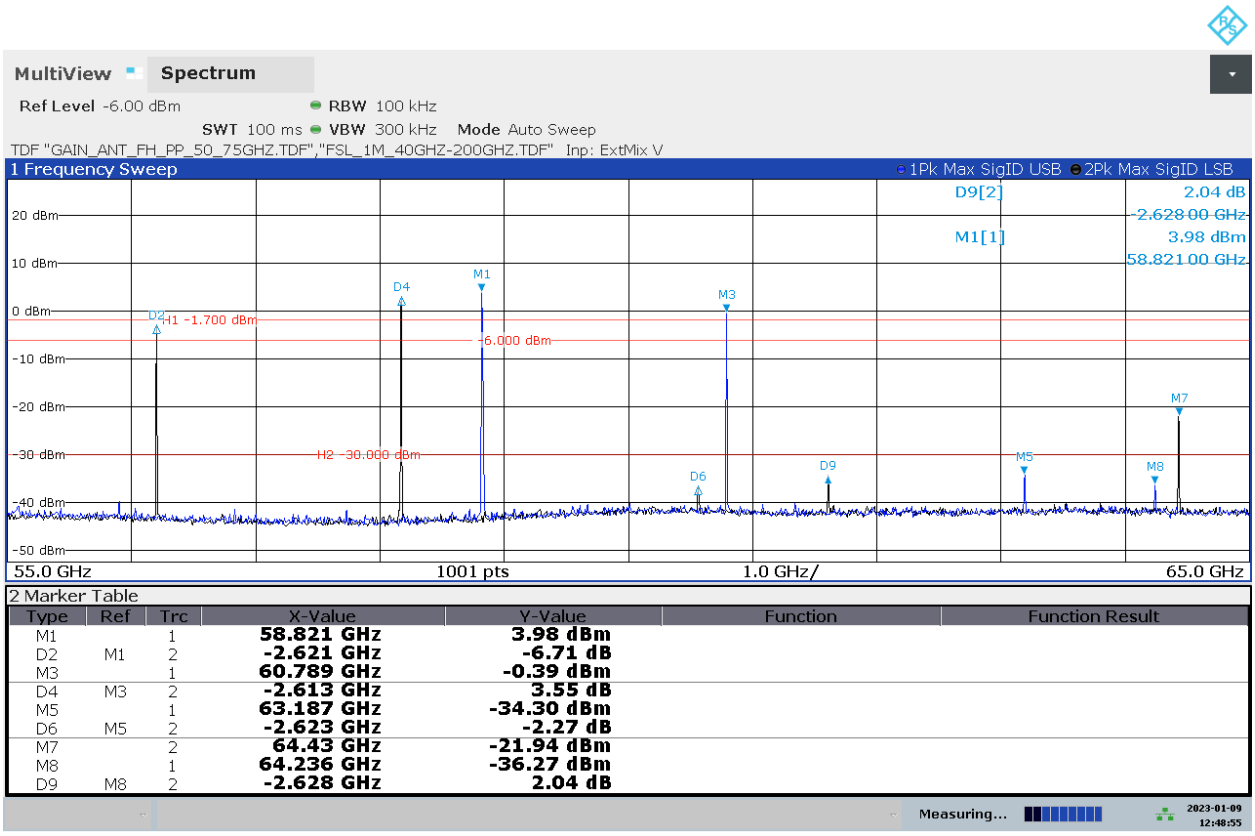



01:39:02 PM 01/09/2023

Remark:
No critical Emission found during premeasurements, Measurement mode: Continuous sweep with PEAK detector.
Limit line for FCC: -1.7 dBm – Results: Passed,
Limit line for ISED: -30 dBm – Results: Passed
Other Limit lines are not related to this measurement.

### 7.1.3 Frequency range 55 GHz – 65 GHz – Measurement Antenna Vertical

D133_01_R01T08_TX_RSE_55G_65GHz_EUT_90_Ant_V_CW_mode_FCC_ISED




**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

The signals which are overlapping are real signals and related to Assessment.

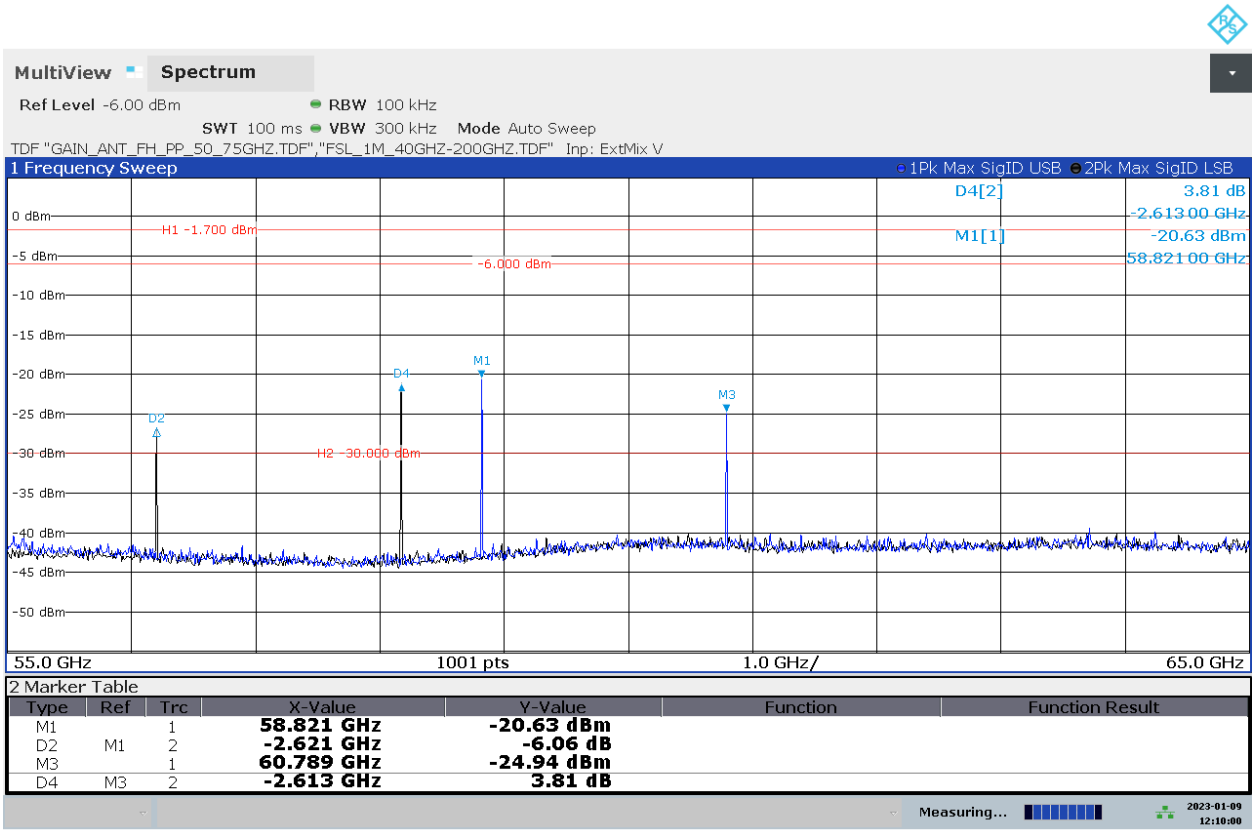
In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line for FCC: -1.7 dBm – Results: Passed,
Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.

### 7.1.4 Frequency range 55 GHz – 65 GHz – Measurement Antenna Horizontal

D134_01_R01T08_TX_RSE_55G_65GHz_EUT_90_Ant_H_CW_mode_FCC_ISED




**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

The signals which are overlapping are real signals and related to Assessment.

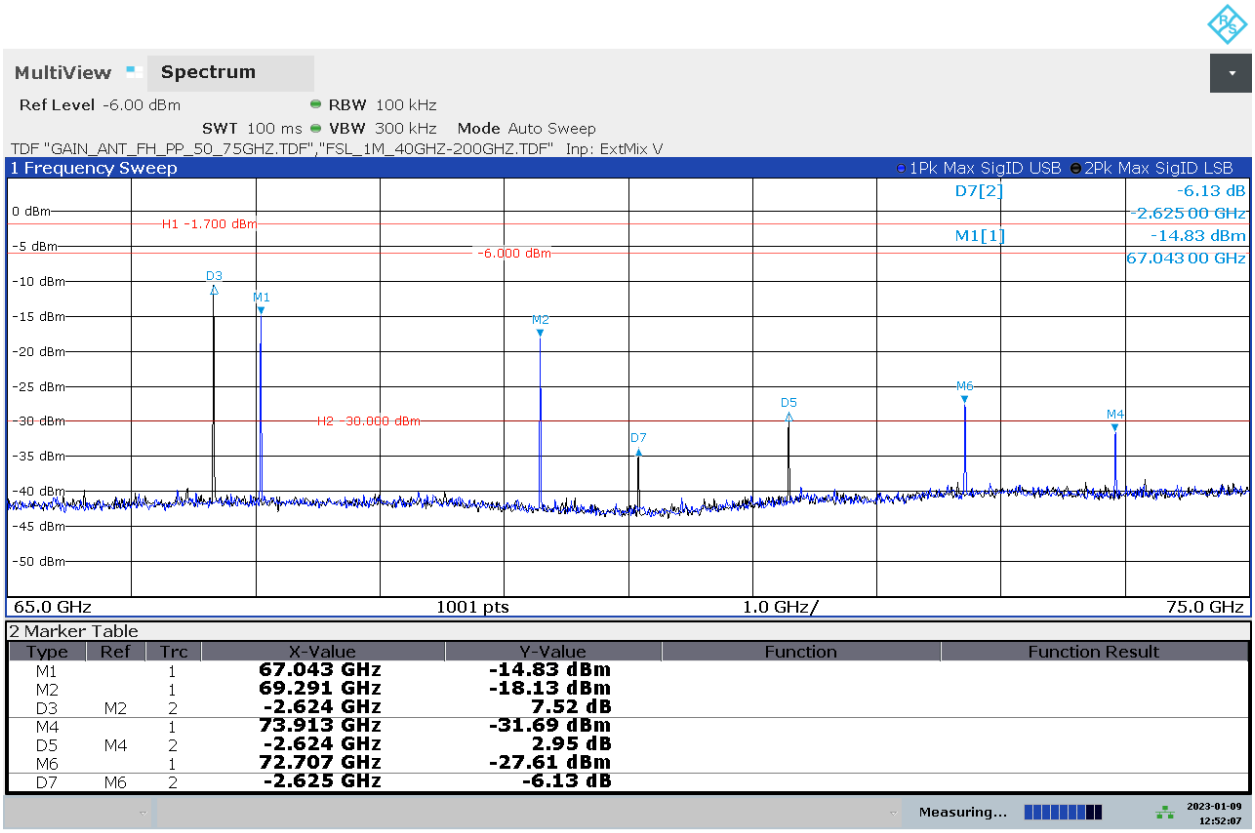
In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line for FCC: -1.7 dBm – Results: Passed,
Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.

### 7.1.5 Frequency range 65 GHz – 75 GHz – Measurement Antenna Vertical

D133_02_R01T08_TX_RSE_65G_75GHz_EUT_90_Ant_V_CW_mode_FCC_ISED




**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

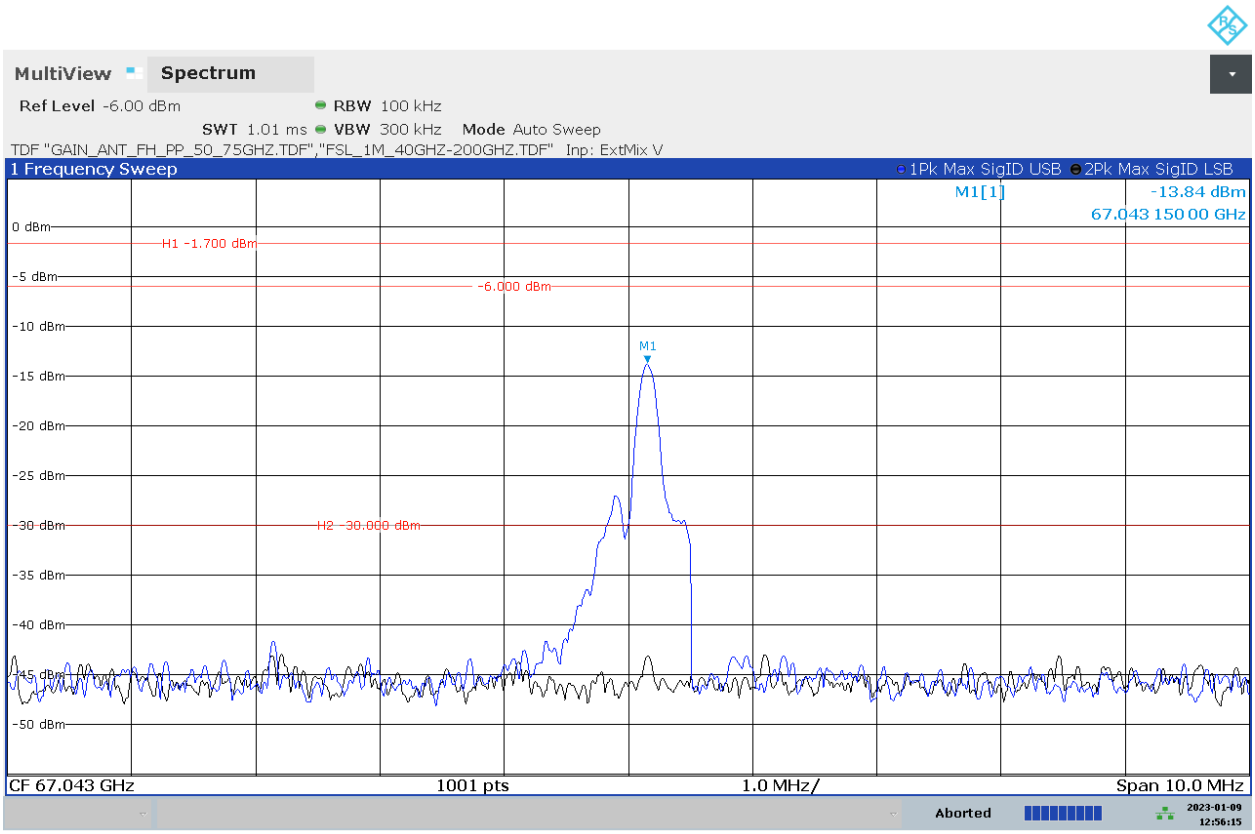
The signals which are overlapping are real signals and related to Assessment.

In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line for FCC: -1.7 dBm – Results: Passed,
Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.

D133_03_R01T08_TX_RSE_65G_75GHz_EUT_90_Ant_V_CW_mode_M1_info_only_FCC_ISED




**Remarks: Final test has been carried out at Marker 1 @ ~67 GHz.**
Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment.

The signals which are overlapping are real signals and related to Assessment.

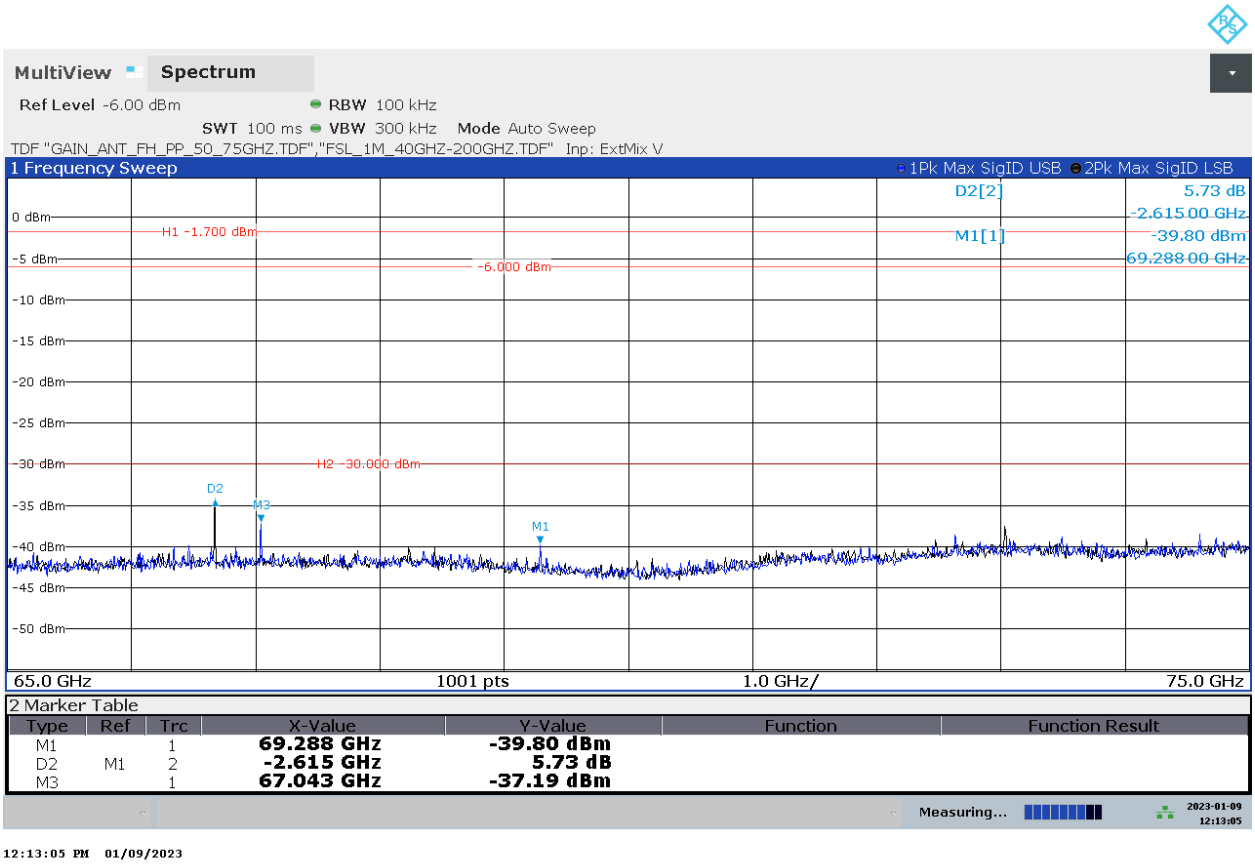
In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line for FCC: -1.7 dBm – Results: Passed,
Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.

### 7.1.6 Frequency range 65 GHz – 75 GHz – Measurement Antenna Horizontal

D134_02_R01T08_TX_RSE_65G_75GHz_EUT_90_Ant_H_CW_mode_FCC_ISED




12:13:05 PM 01/09/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

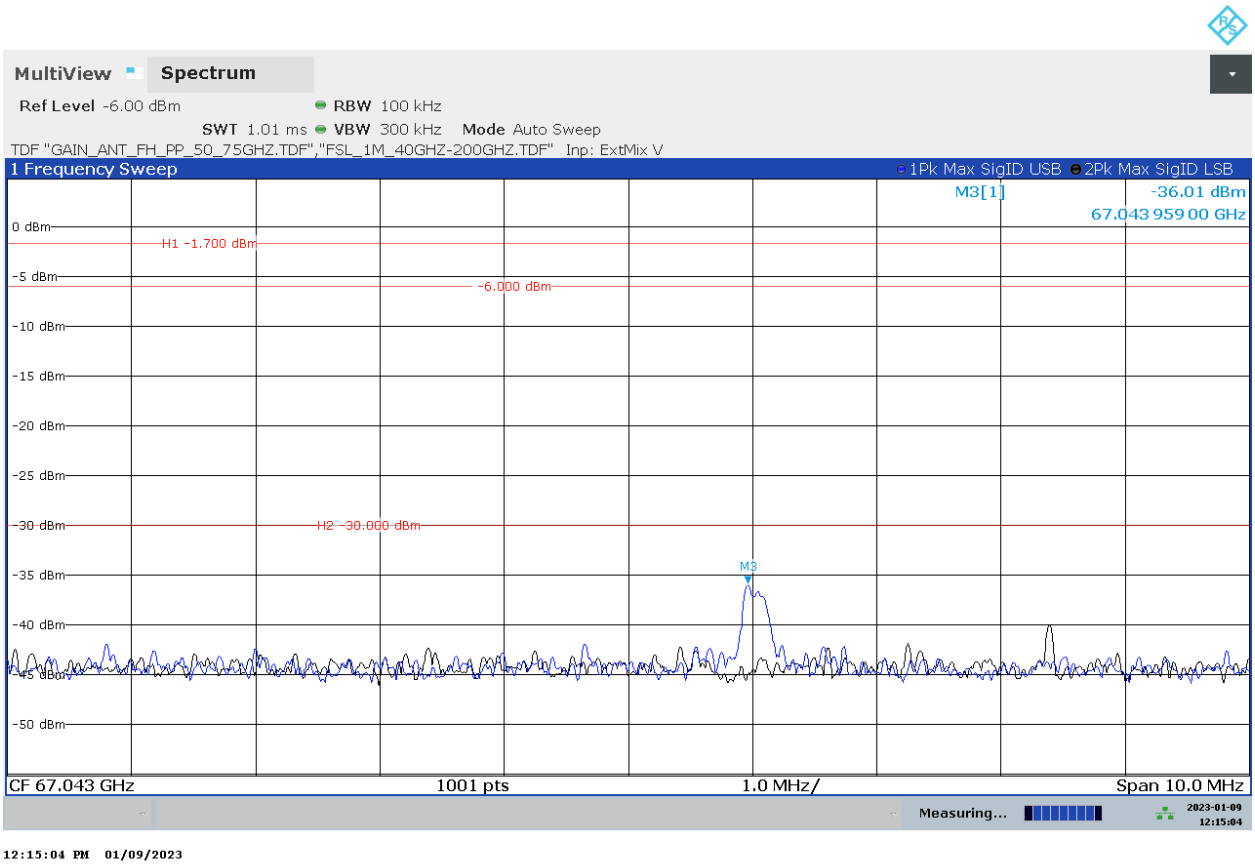
The signals which are overlapping are real signals and related to Assessment.

In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line for FCC: -1.7 dBm – Results: Passed,
Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.

D134_03_R01T08_TX_RSE_65G_75GHz_EUT_90_Ant_H_CW_mode_M3_info_only_FCC_ISED




**Remarks: Final test has been carried out at Marker 1 @ ~67 GHz.**
Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment.

The signals which are overlapping are real signals and related to Assessment.

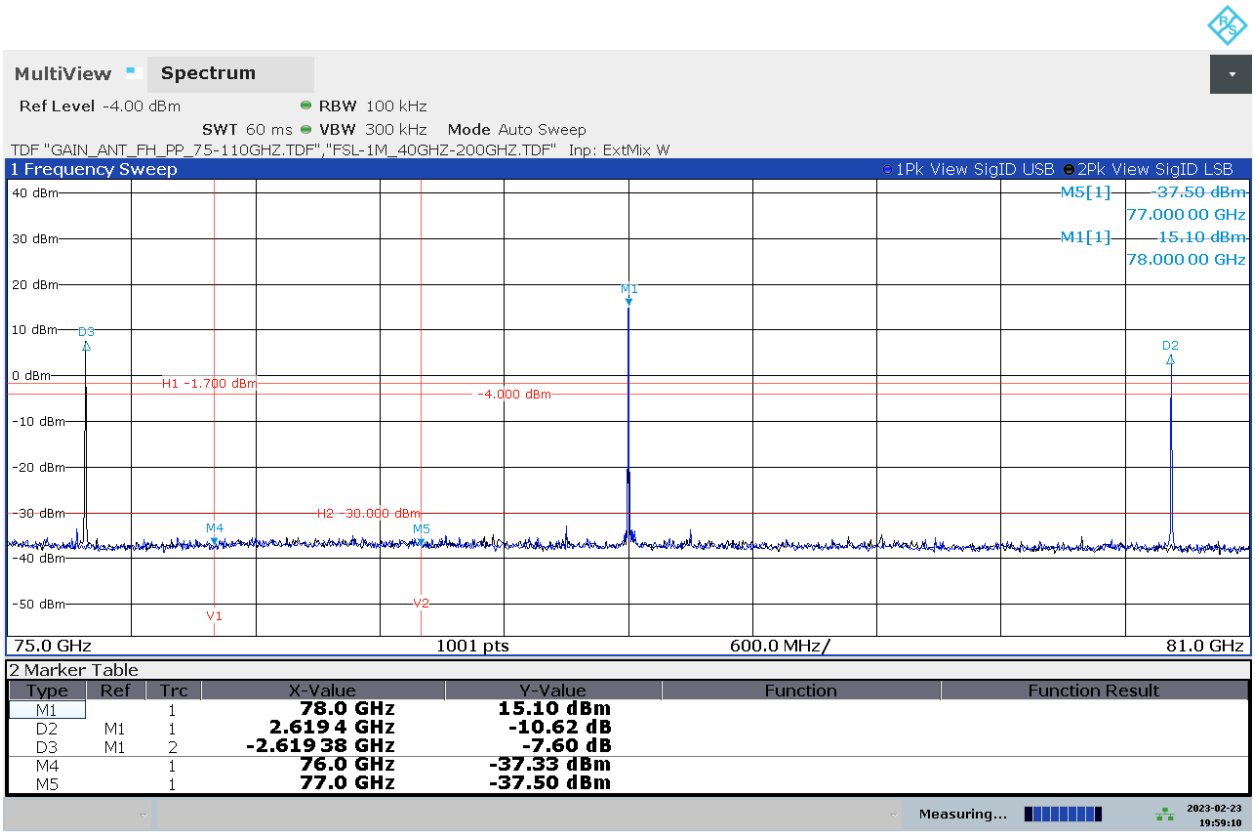
In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line for FCC: -1.7 dBm – Results: Passed,
Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.

### 7.1.7 Frequency range 75 GHz – 81 GHz – Measurement Antenna Vertical

D002_R01T08_Oberview_75G_81GHz_Ant_V_info_only_CW_mode_mid_FCC_ISED




07:59:10 PM 02/23/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

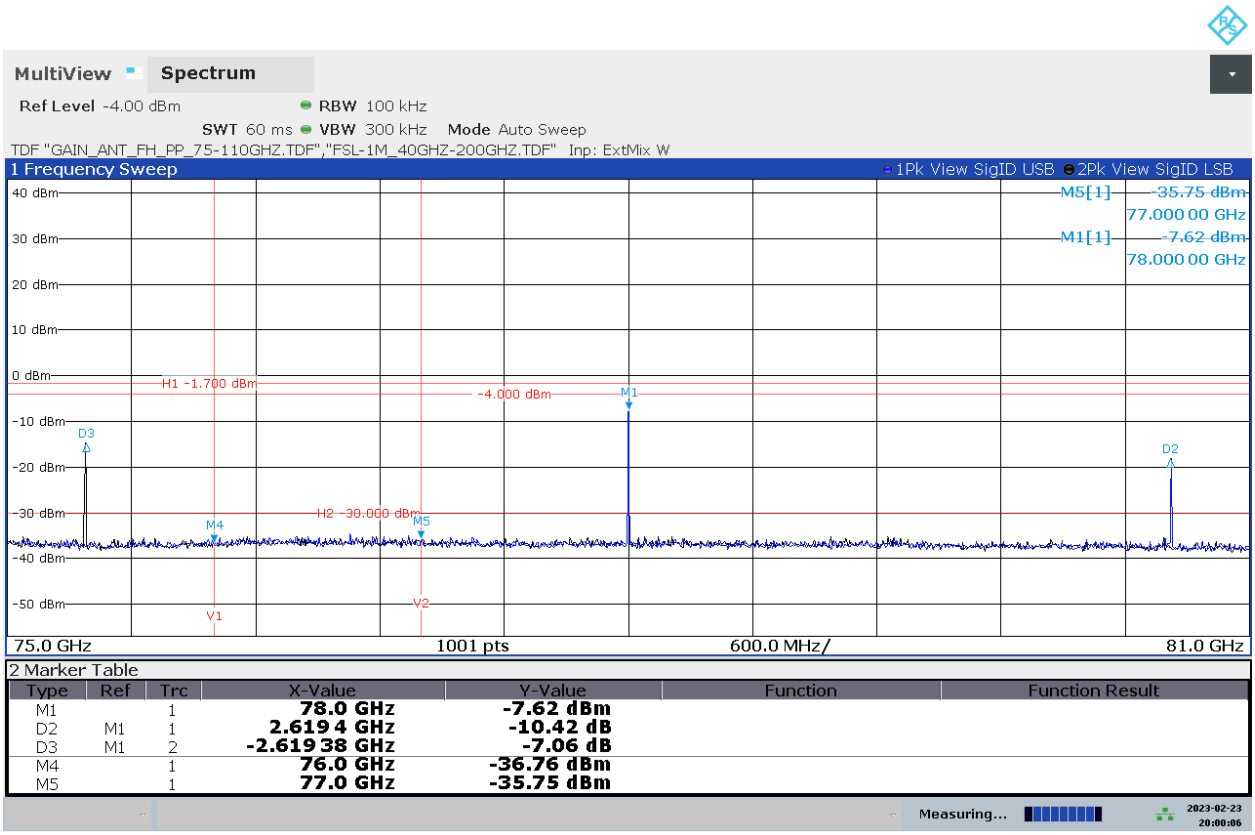
The signals which are overlapping are real signals and related to Assessment.

In this Diagram which are over the Limit line are Ghost signals. Not related to Results.
75G to 76GHz (M4):
Limit line for FCC: -1.7 dBm – Results: Passed,
Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.
Emission at 78 GHz is overlapping and over the limit line, but not related to Assessment,
78 GHz is the Transmit frequency, CW mode on mid Channel.

### 7.1.8 Frequency range 75 GHz – 81 GHz – Measurement Antenna Horizontal

D004_R01T08_Oberview_75G_81GHz_Ant_H_info_only_CW_mode_mid_FCC_ISED




**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

The signals which are overlapping are real signals and related to Assessment.

In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

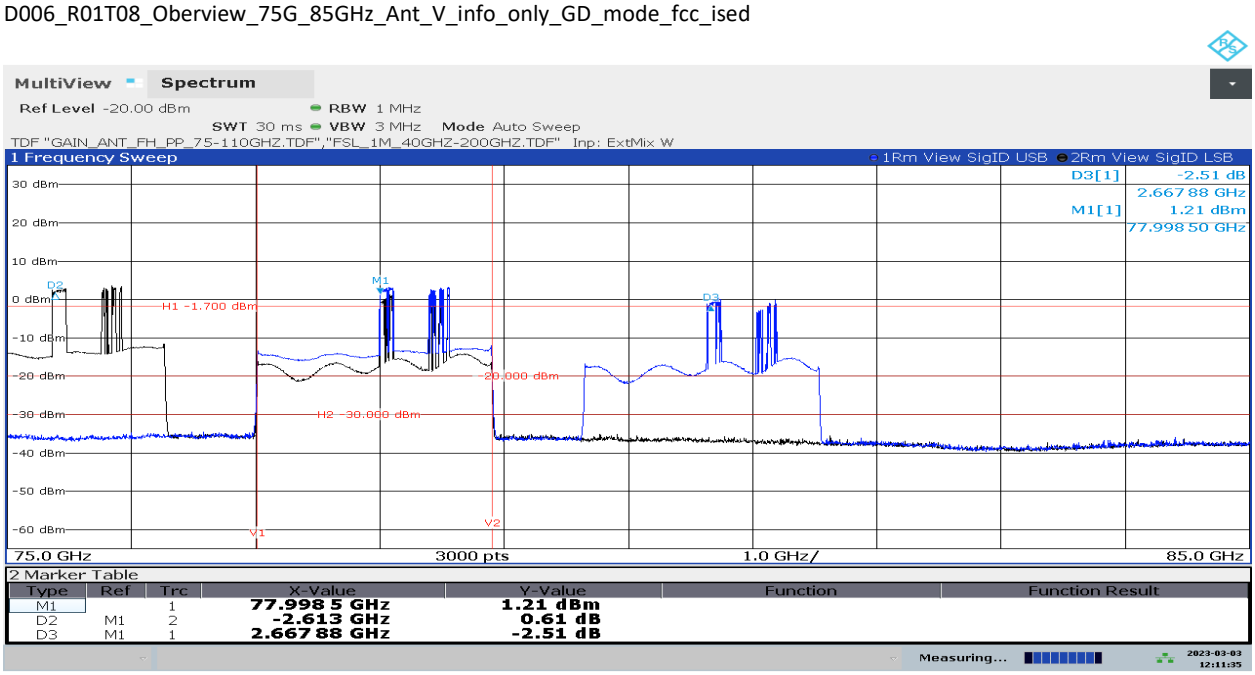
75G to 76GHz (M4):
Limit line for FCC: -1.7 dBm – Results: Passed,
Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.

Emission at 78 GHz is overlapping and over the limit line, but not related to Assessment,
78 GHz is the Transmit frequency, CW mode on mid Channel.

### 7.1.9 Frequency range 75 GHz – 85 GHz – Measurement Antenna Vertical – GD mode_overview

D006_R01T08_Oberview_75G_85GHz_Ant_V_info_only_GD_mode_fcc_ised

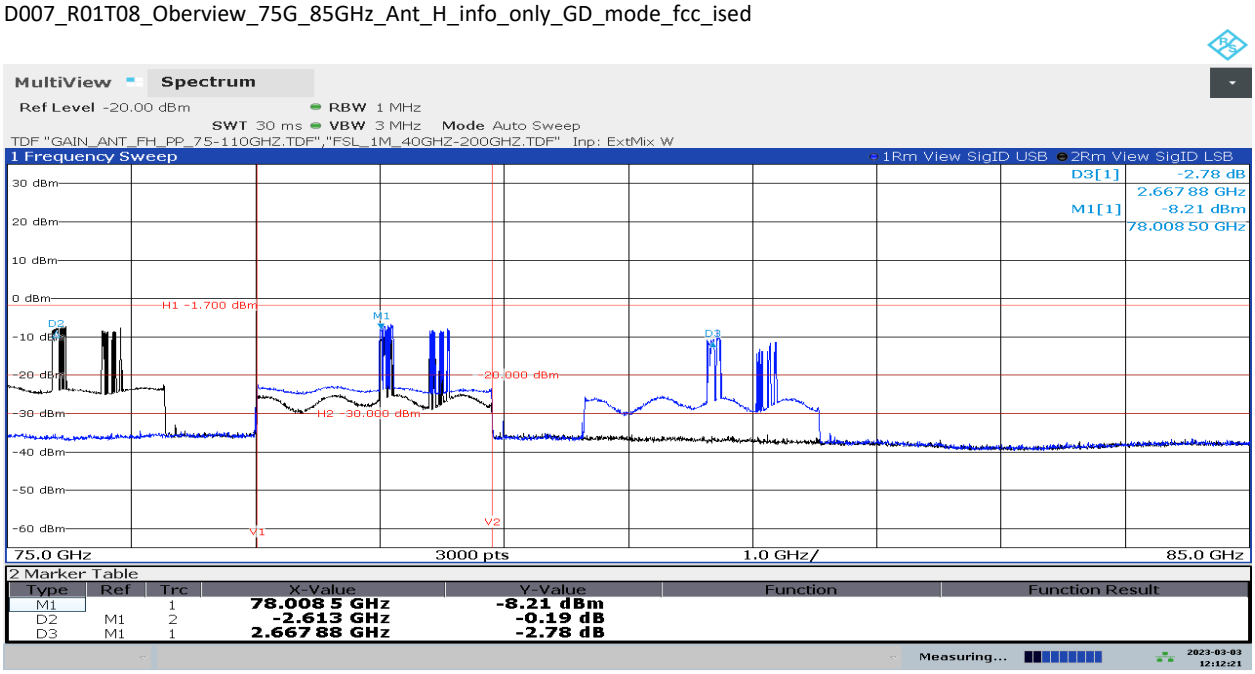



12:11:36 PM 03/03/2023

Remark: Only for information – Overview 75G to 85GHz with GD mode

### 7.1.10 Frequency range 75 GHz – 81 GHz – Measurement Antenna Horizontal – GD mode_overview

D007_R01T08_Oberview_75G_85GHz_Ant_H_info_only_GD_mode_fcc_ised

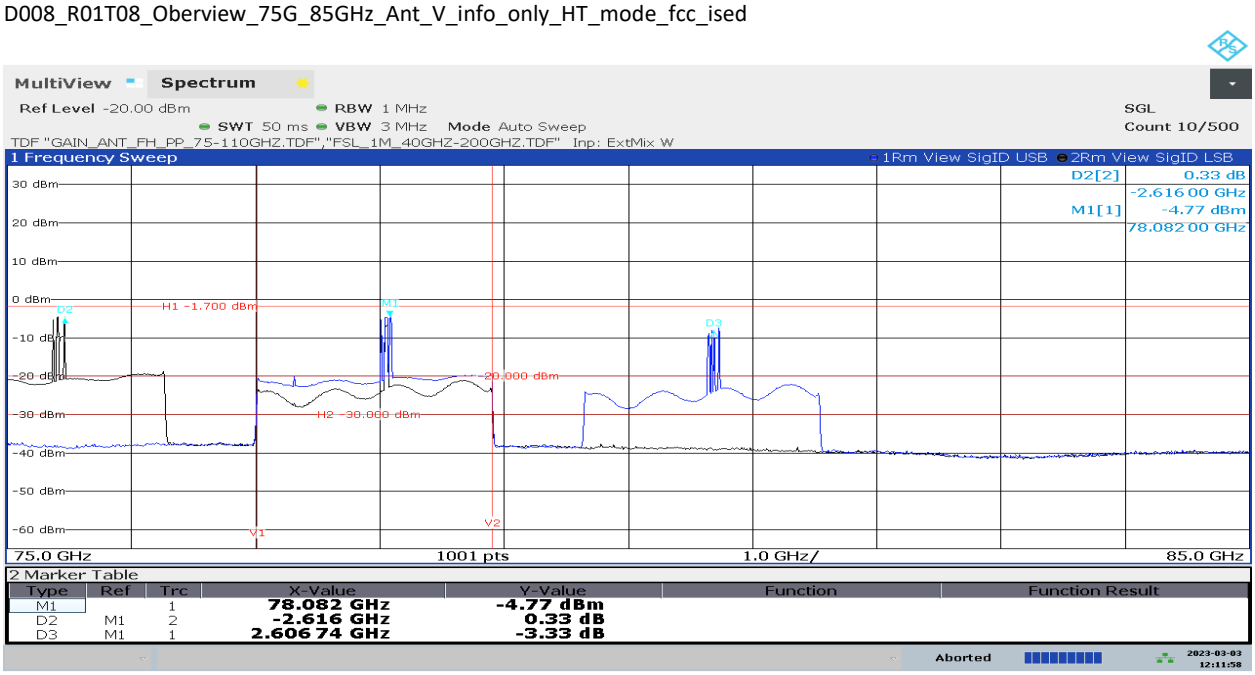



12:12:22 PM 03/03/2023

Remark: Only for information – Overview 75G to 85GHz with GD mode

### 7.1.11 Frequency range 75 GHz – 81 GHz – Measurement Antenna Vertical – HT mode_overview

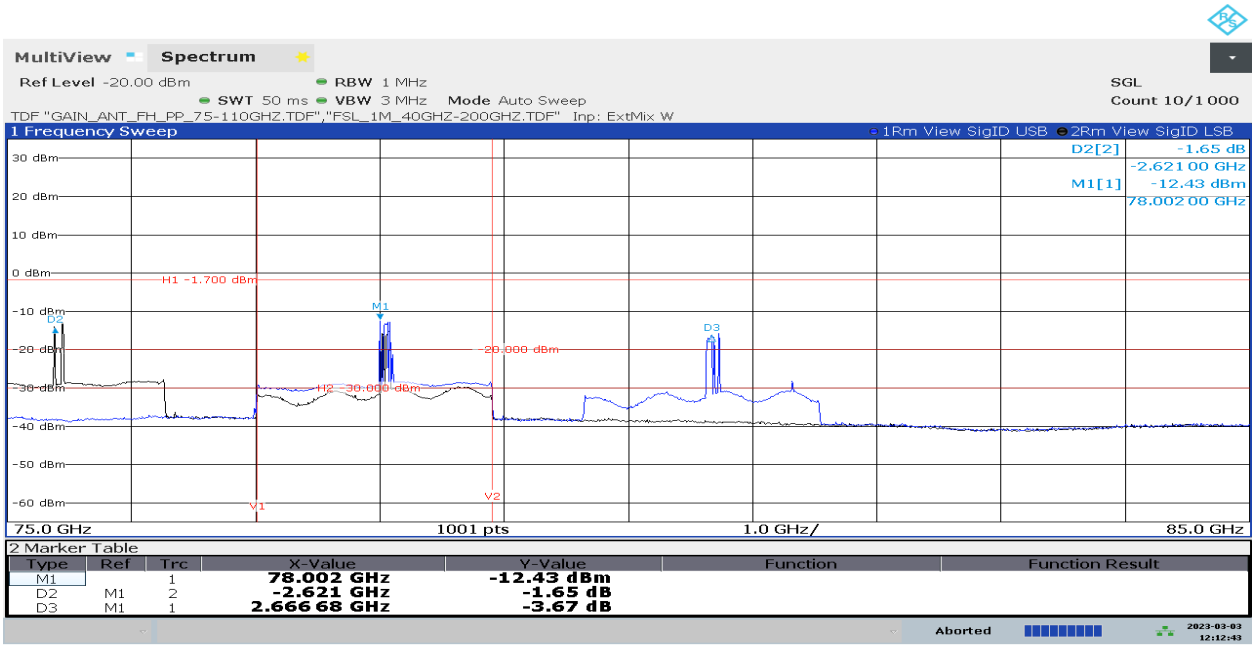
D008_R01T08_Oberview_75G_85GHz_Ant_V_info_only_HT_mode_fcc_ised




Remark: Only for information – Overview 75G to 85GHz with HT mode

### 7.1.12 Frequency range 75 GHz – 81 GHz – Measurement Antenna Horizontal – HT mode_overview

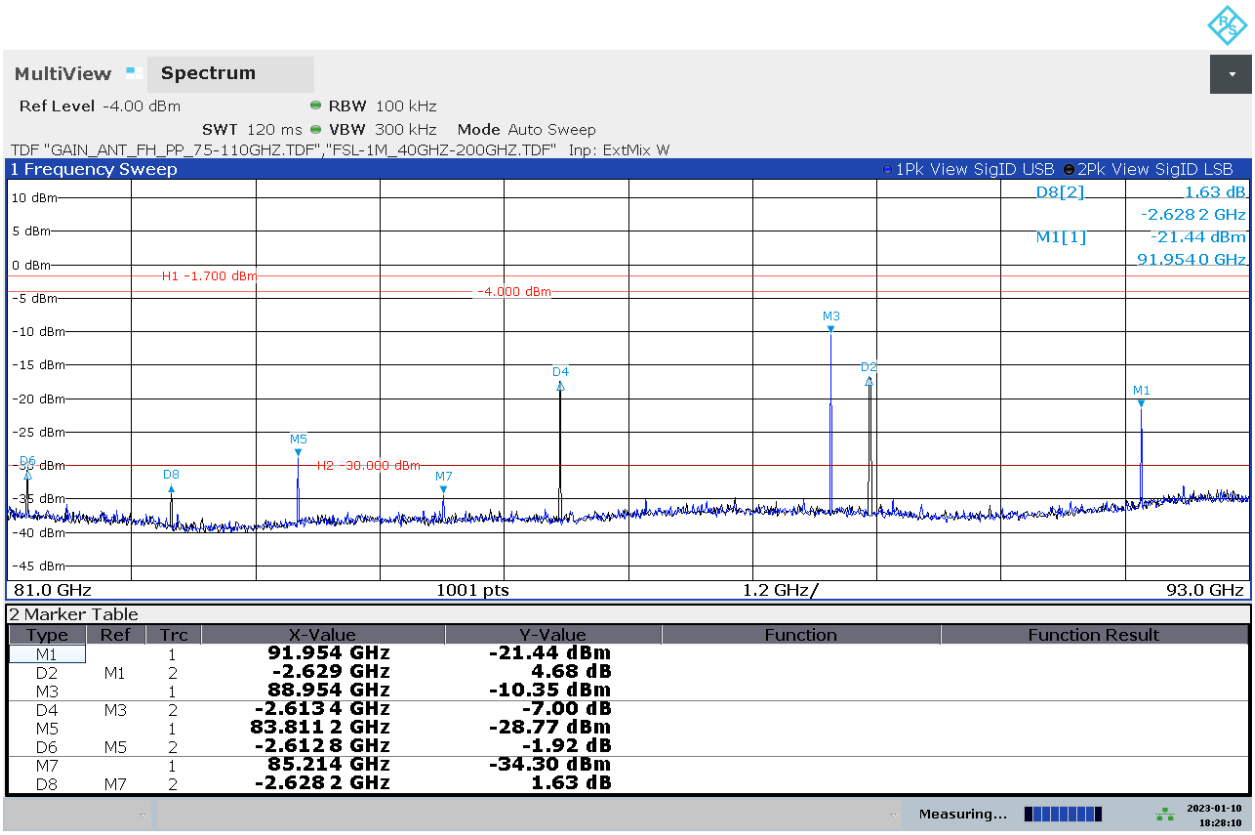
D009_R01T08_Oberview_75G_85GHz_Ant_H_info_only_HT_mode_fcc_ised




Remark: Only for information – Overview 75G to 85GHz with HT mode

### 7.1.13 Frequency range 81 GHz – 93 GHz – Measurement Antenna Vertical

D135_R01T08_TX_RSE_81G_93GHz_EUT_90_Ant_V_CW_mode_mid_FCC_ISED




**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

The signals which are overlapping are real signals and related to Assessment.

In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

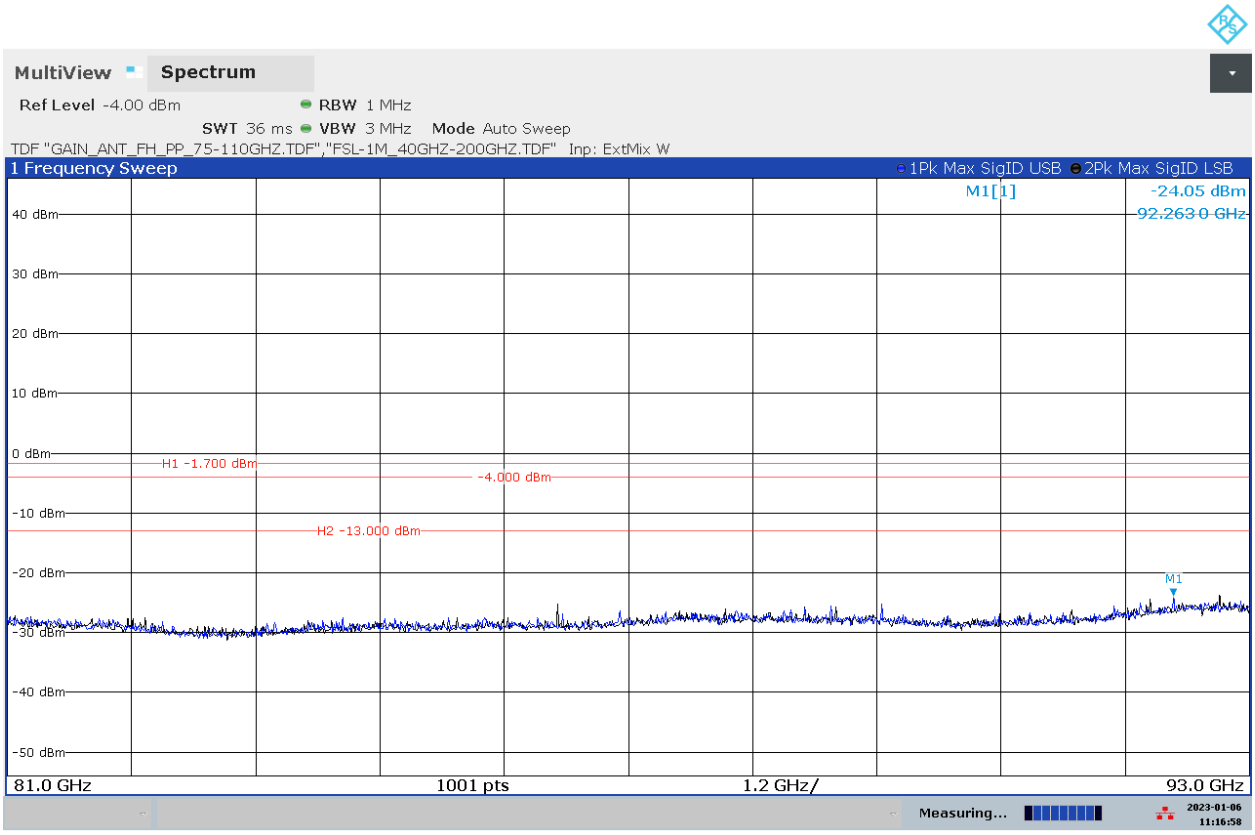
Limit line for FCC: -1.7 dBm – Results: Passed,

Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.

### 7.1.14 Frequency range 81 GHz – 93 GHz – Measurement Antenna Horizontal

D136a_R01T08_TX_RSE_81G_93GHz_EUT_90_Ant_H_CW_mode_mid_FCC




11:16:58 AM 01/06/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment.

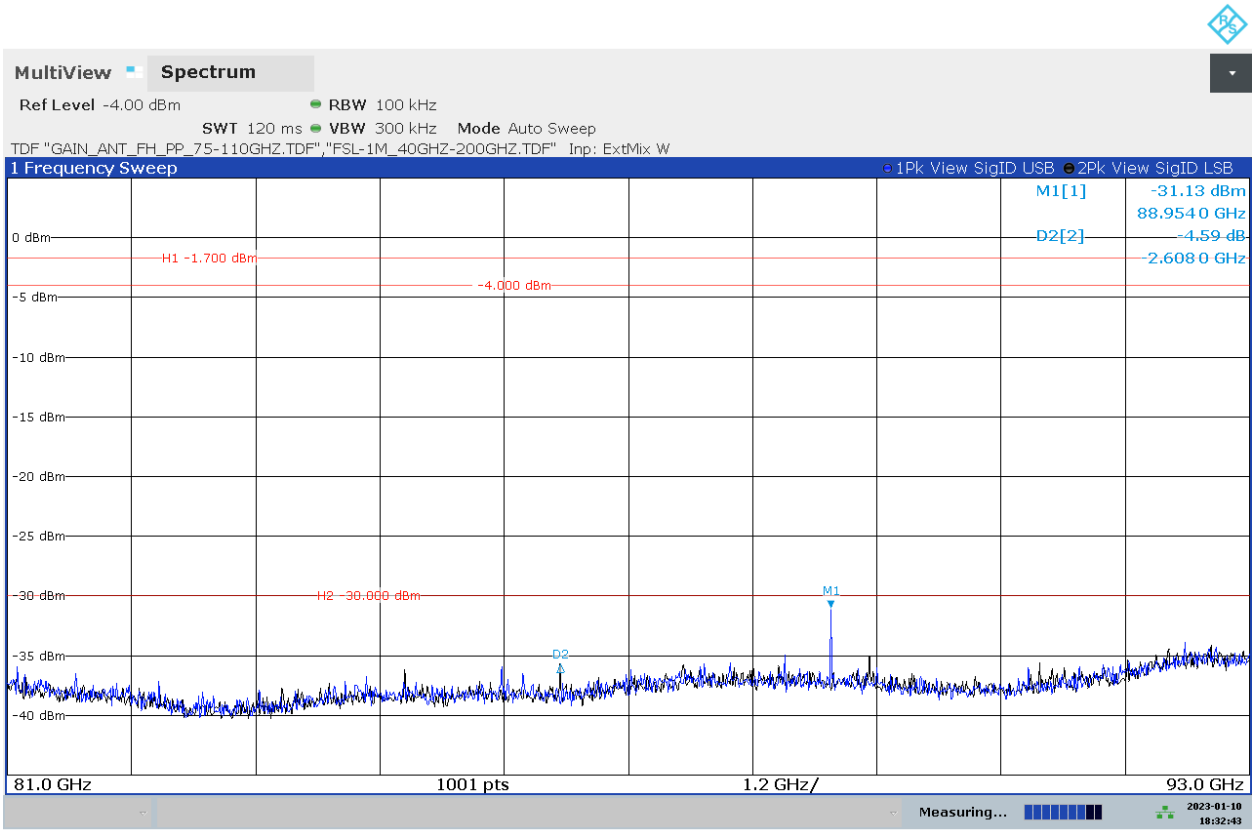
The signals which are overlapping are real signals and related to Assessment.

In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line for FCC: -1.7 dBm – Results: Passed,

Other Limit lines are not related to this measurement.

D136b_R01T08_TX_RSE_81G_93GHz_EUT_90_Ant_H_CW_mode_mid_ISED




06:32:43 PM 01/10/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment.

The signals which are overlapping are real signals and related to Assessment.

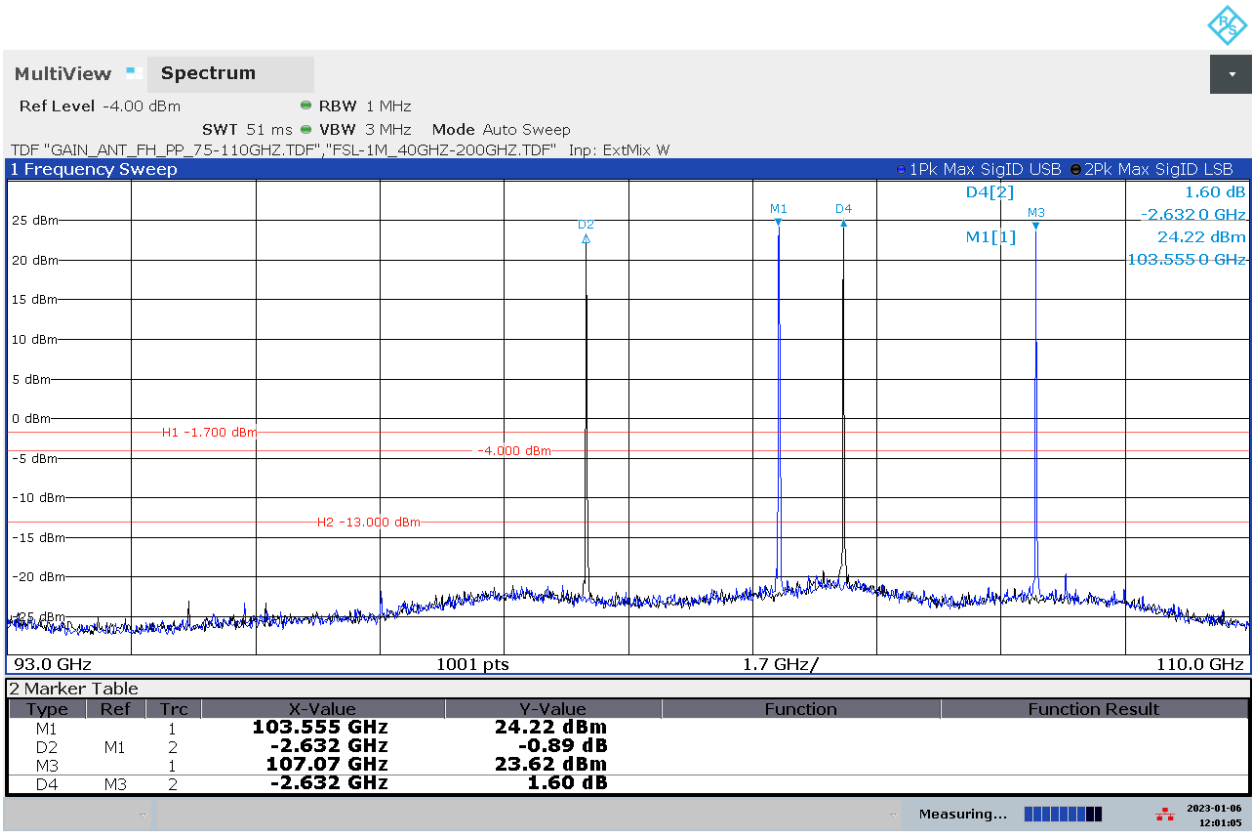
In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.

### 7.1.15 Frequency range 93 GHz – 110 GHz – Measurement Antenna Vertical

D137a_R01T08_TX_RSE_93G_110GHz_EUT_90_Ant_V_CW_mode_FCC




12:01:06 PM 01/06/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

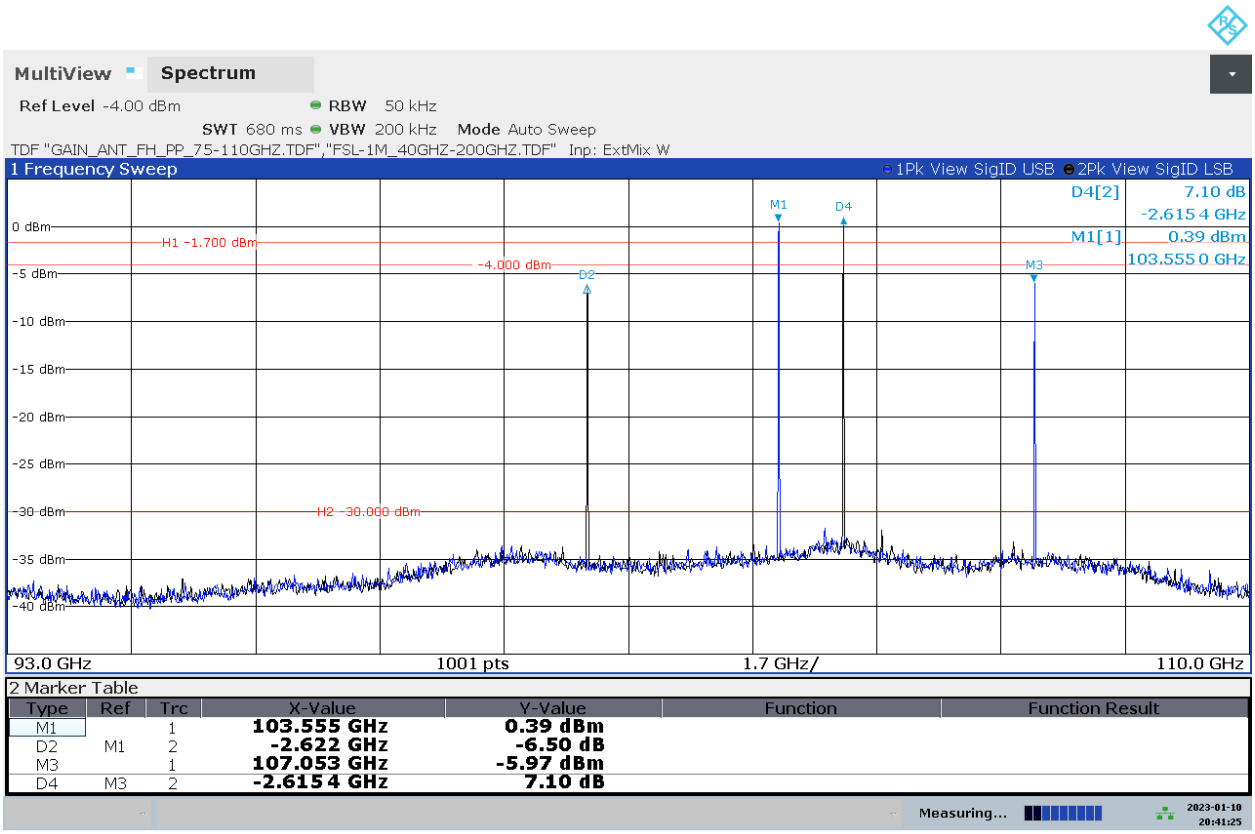
The signals which are overlapping are real signals and related to Assessment.

In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line for FCC: -1.7 dBm – Results: Passed,

Other Limit lines are not related to this measurement.

D137b_R01T08_TX_RSE_93G_110GHz_EUT_90_Ant_V+H_CW_mode_ISED




**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

The signals which are overlapping are real signals and related to Assessment.

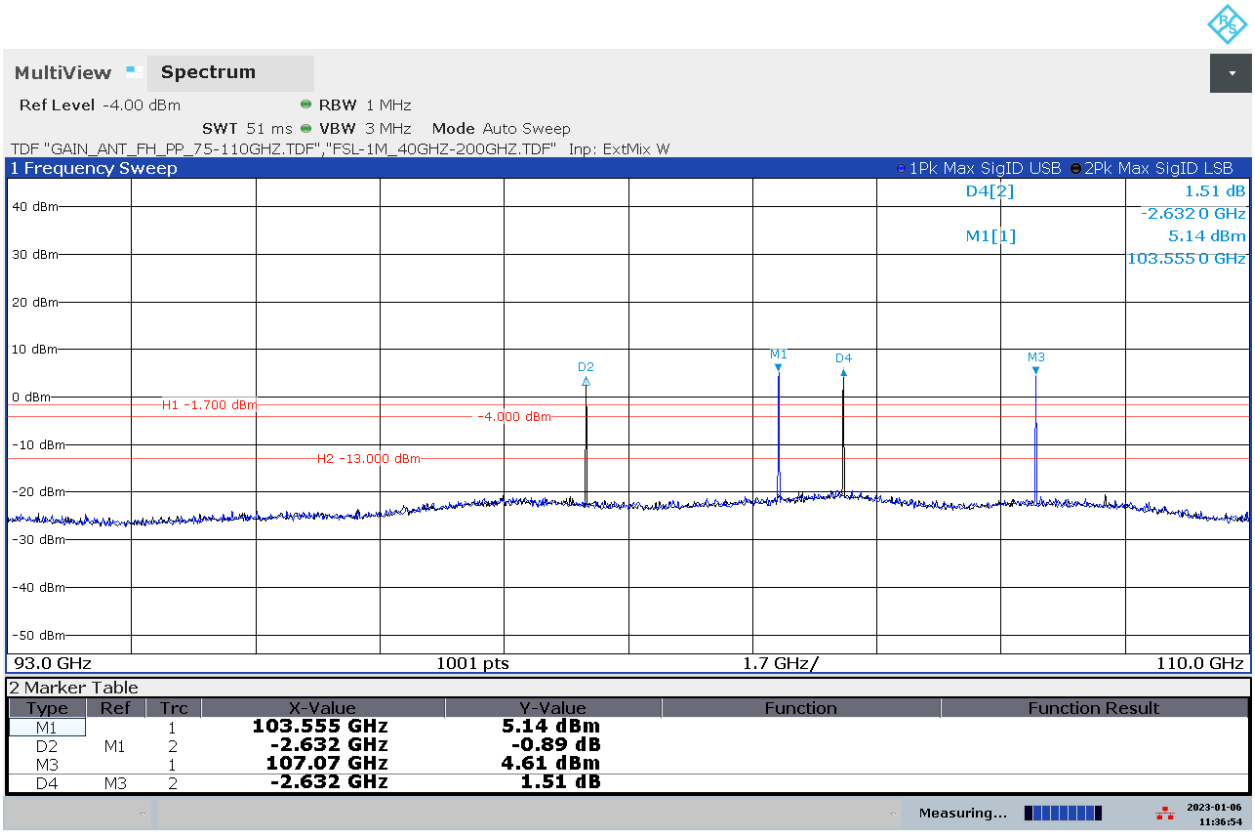
In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.

### 7.1.16 Frequency range 93 GHz – 110 GHz – Measurement Antenna Horizontal

D138_R01T08_TX_RSE_93G_110GHz_EUT_90_Ant_H_CW_mode_FCC




11:36:55 AM 01/06/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

The signals which are overlapping are real signals and related to Assessment.

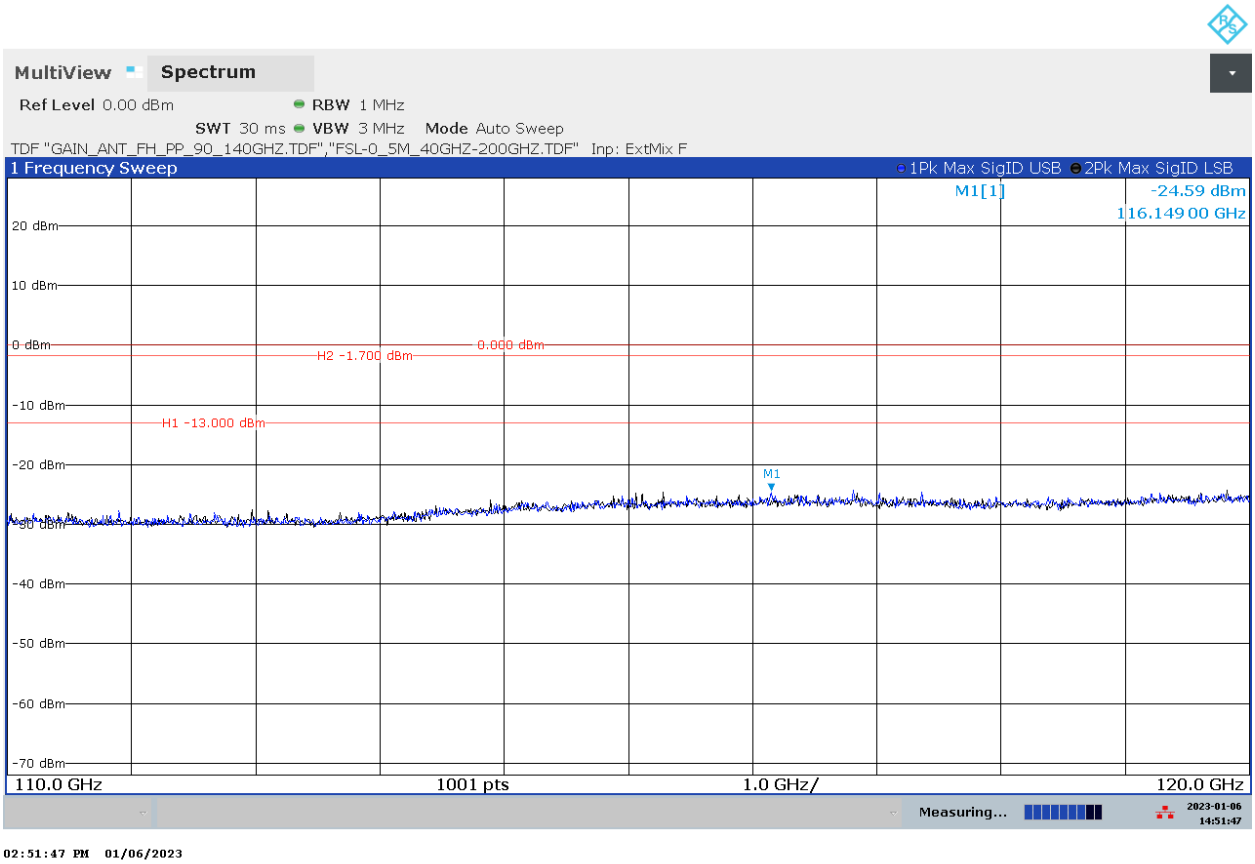
In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line: -1.7 dBm. Results: Passed

Other Limit lines are not related to this measurement.

### 7.1.17 Frequency range 110 GHz – 120 GHz – Measurement Antenna Vertical

D139_01a_R01T08_TX_RSE_110G_120GHz_EUT_90_Ant_V_CW_mode_FCC




02:51:47 PM 01/06/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

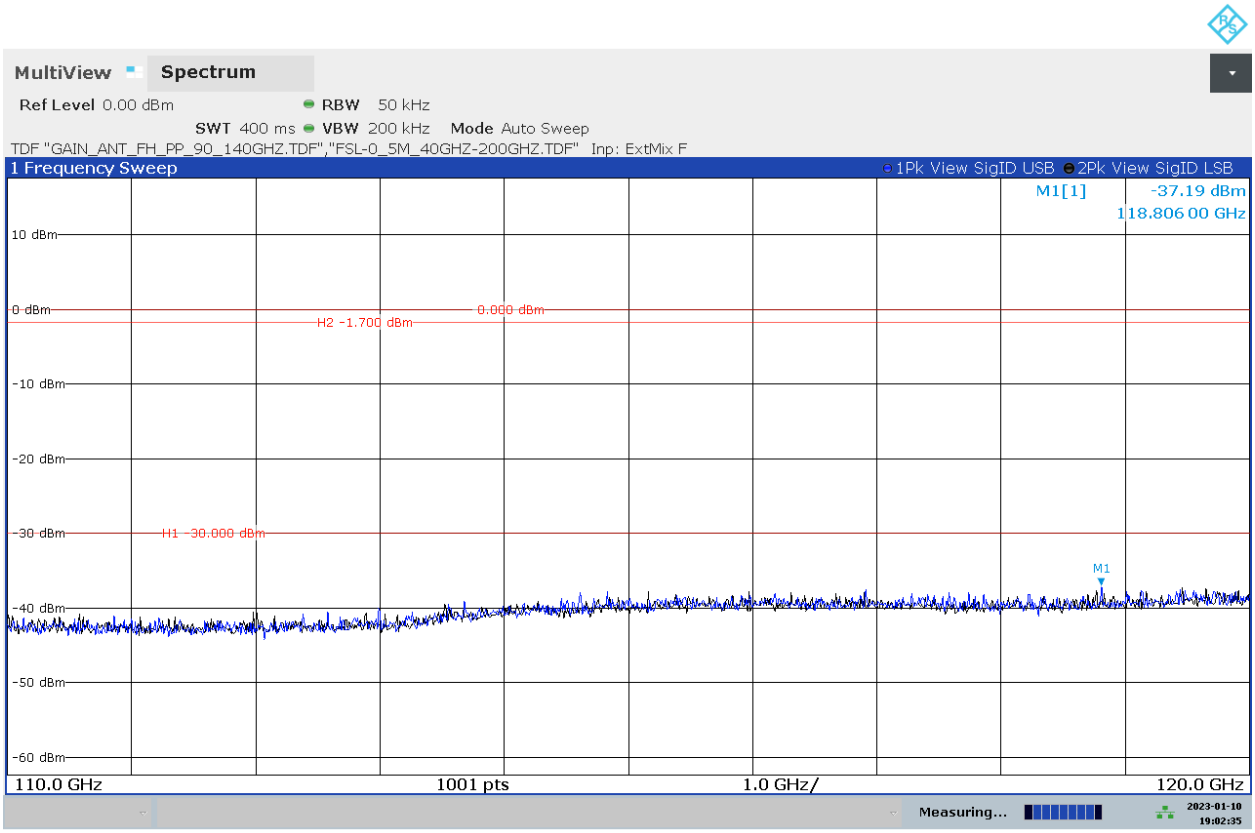
The Signals which are not overlapping are ghost signals, therefore not related to Assessment.

The signals which are overlapping are real signals and related to Assessment.

Limit line: -1.7 dBm. Results: Passed

Other Limit lines are not related to this measurement.

D139_01b_R01T08_TX_RSE_110G_120GHz_EUT_90_Ant_V_CW_mode_ISED




07:02:35 PM 01/10/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment.

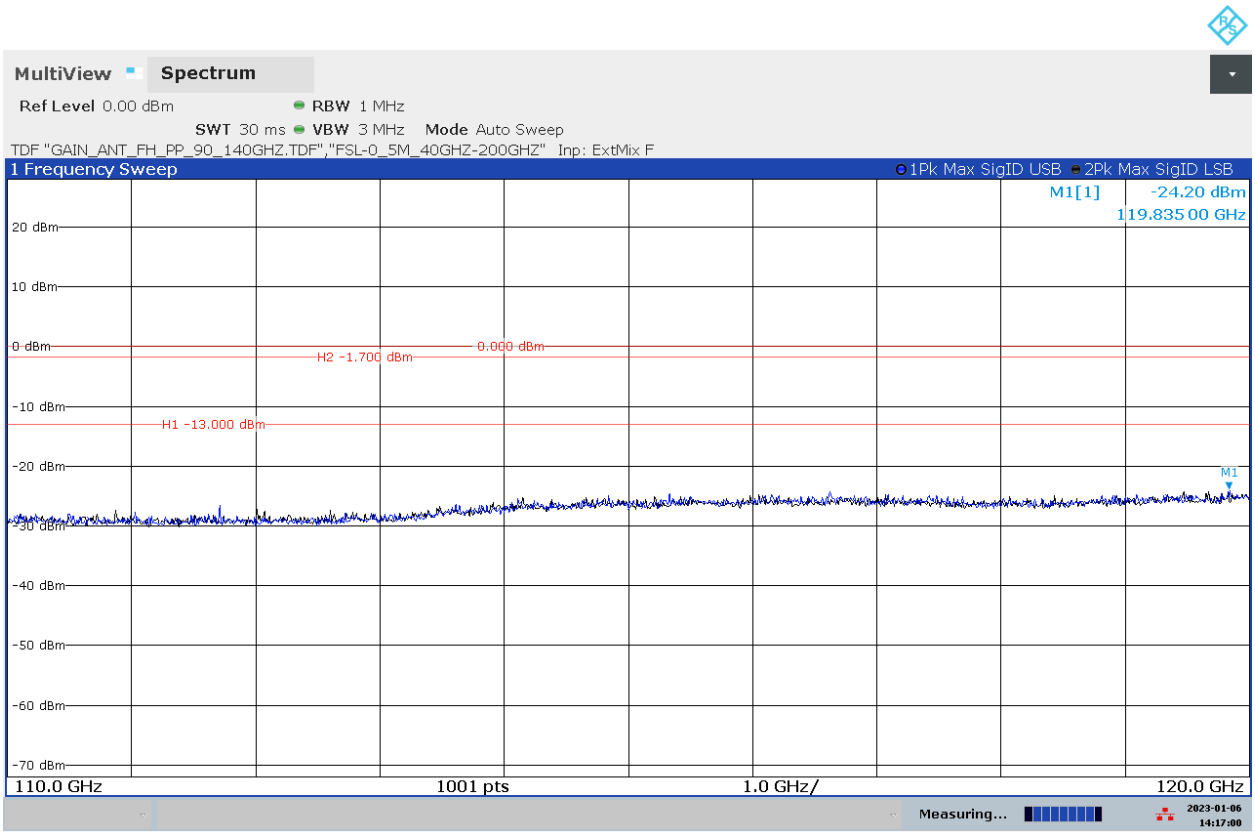
The signals which are overlapping are real signals and related to Assessment.

Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.

### 7.1.18 Frequency range 110 GHz – 120 GHz – Measurement Antenna Horizontal

D140_01a_R01T08_TX_RSE_110G_120GHz_EUT_90_Ant_H_CW_mode_FCC




**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

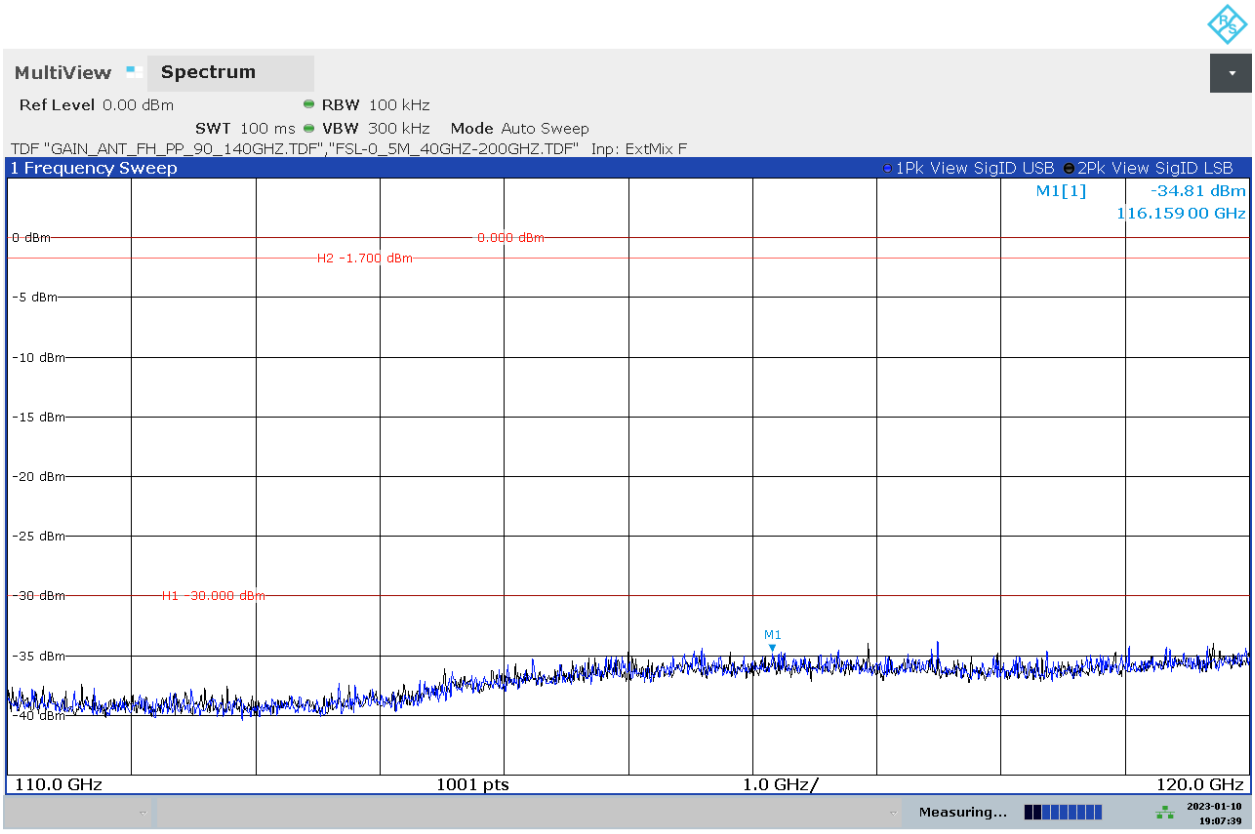
The Signals which are not overlapping are ghost signals, therefore not related to Assessment.

The signals which are overlapping are real signals and related to Assessment.

Limit line: -1.7 dBm. Results: Passed

Other Limit lines are not related to this measurement.

D140_01b_R01T08_TX_RSE_110G_120GHz_EUT_90_Ant_H_CW_mode_ISED




07:07:39 PM 01/10/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment.

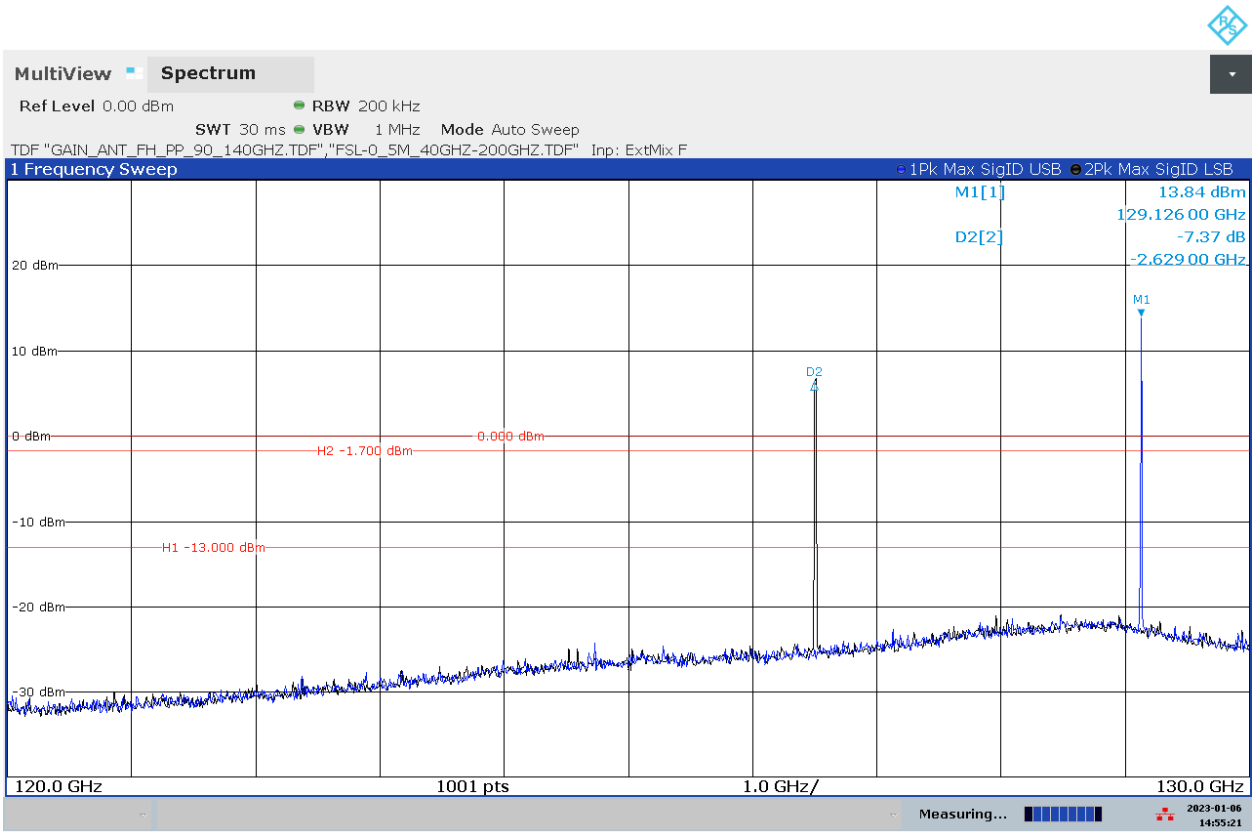
The signals which are overlapping are real signals and related to Assessment.

Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.

### 7.1.19 Frequency range 120 GHz – 130 GHz – Measurement Antenna Vertical

D139_02a_R01T08_TX_RSE_120G_130GHz_EUT_90_Ant_V_CW_mode_FCC




**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

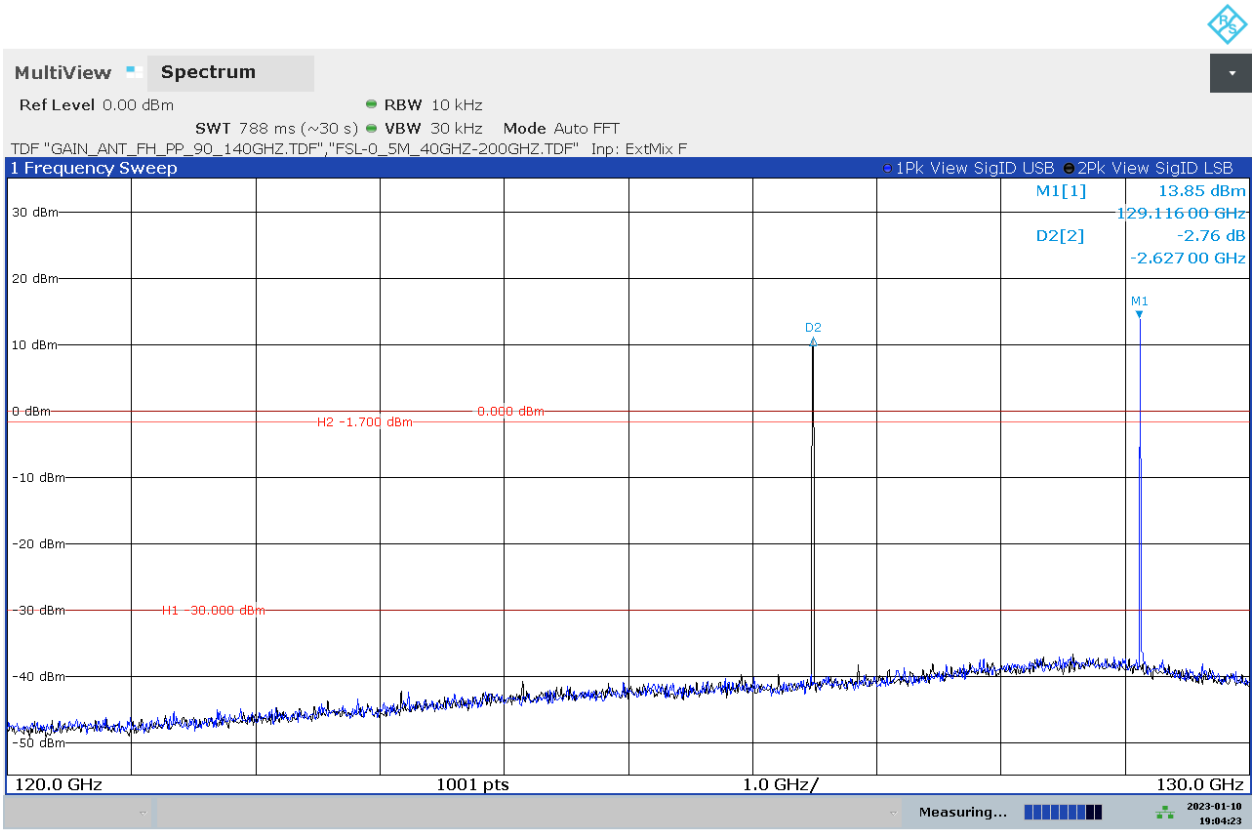
The signals which are overlapping are real signals and related to Assessment.

In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line: -1.7 dBm. Results: Passed

Other Limit lines are not related to this measurement.

D139_02b_R01T08_TX_RSE_120G_130GHz_EUT_90_Ant_V+H_CW_mode_ISED




07:04:23 PM 01/10/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

The signals which are overlapping are real signals and related to Assessment.

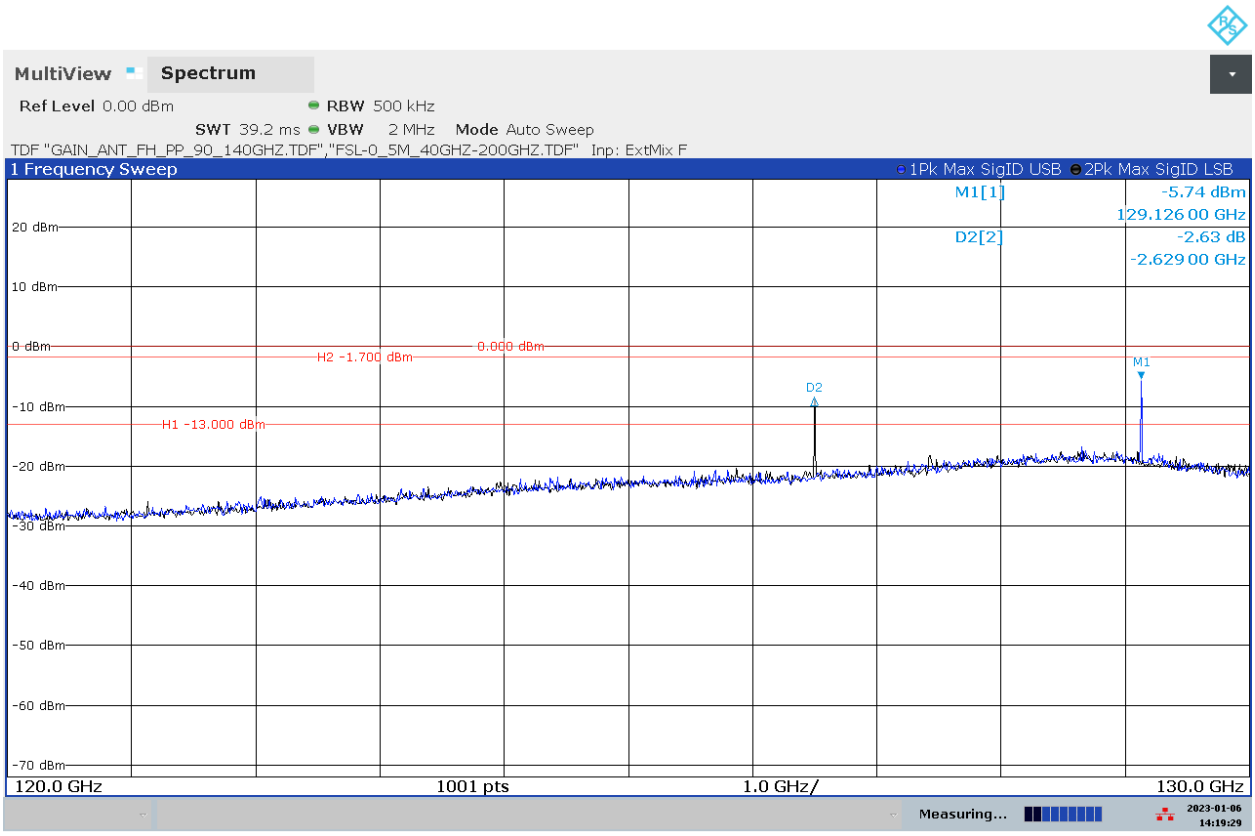
In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.

### 7.1.20 Frequency range 120 GHz – 130 GHz – Measurement Antenna Horizontal

D140_02a_R01T08_TX_RSE_120G_130GHz_EUT_90_Ant_H_CW_mode_FCC




02:19:29 PM 01/06/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

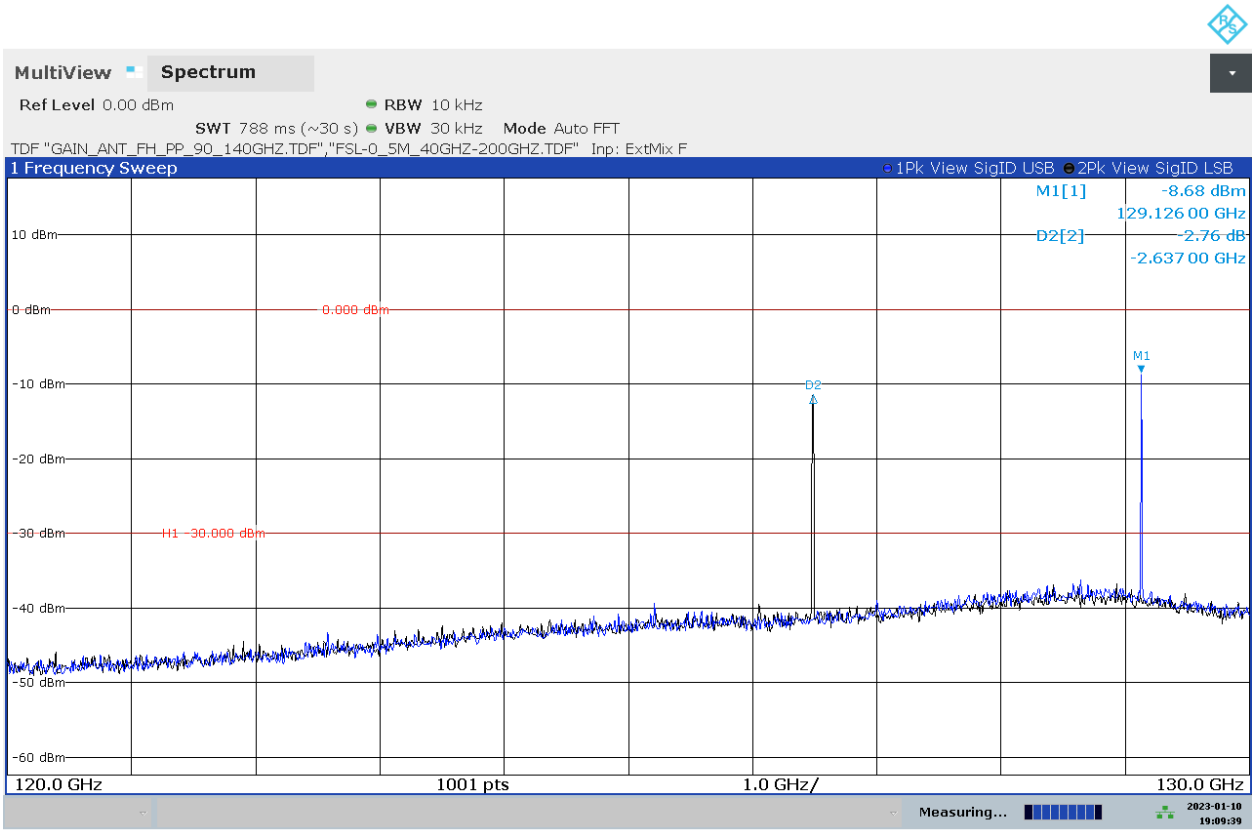
The signals which are overlapping are real signals and related to Assessment.

In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line: -1.7 dBm. Results: Passed

Other Limit lines are not related to this measurement.

D140_02b_R01T08_TX_RSE_120G_130GHz_EUT_90_Ant_H_CW_mode_ISED




07:09:39 PM 01/10/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

The signals which are overlapping are real signals and related to Assessment.

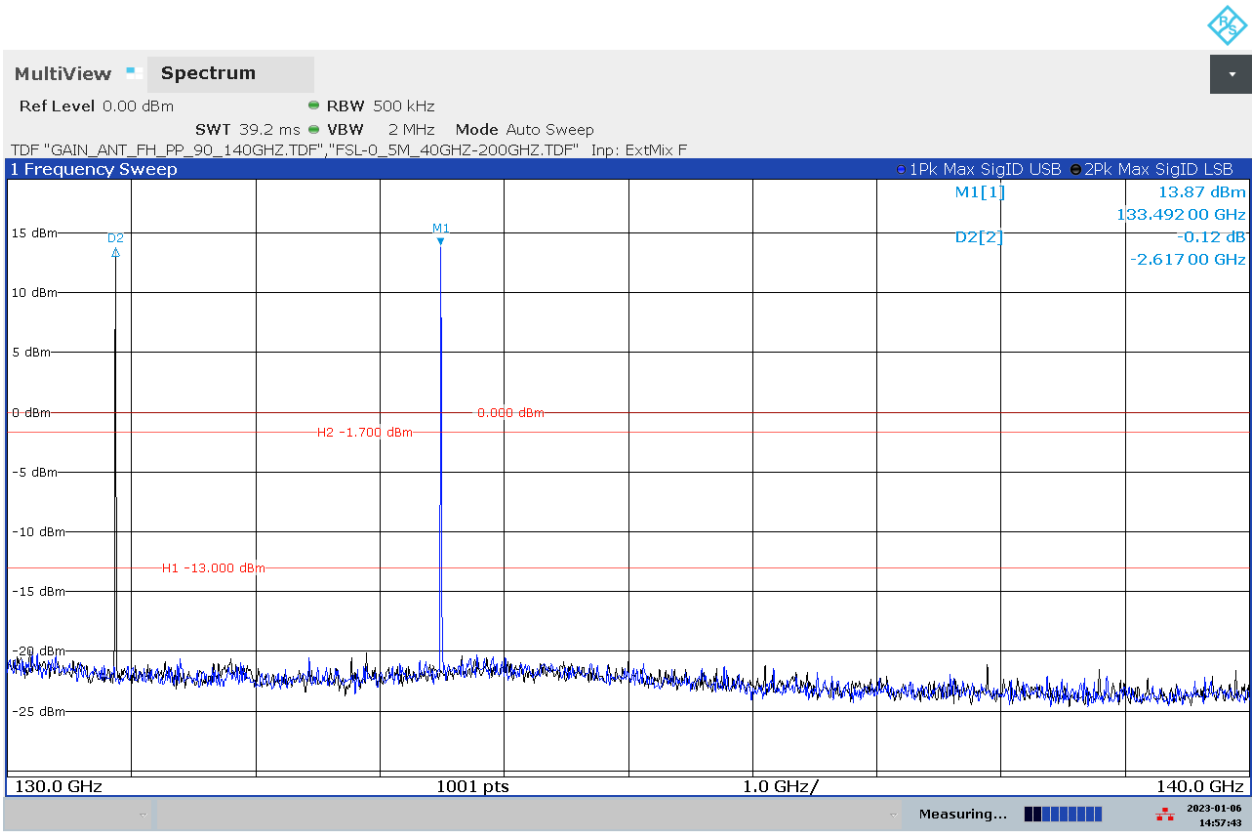
In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.

### 7.1.21 Frequency range 130 GHz – 140 GHz – Measurement Antenna Vertical

D139_03a_R01T08_TX_RSE_130G_140GHz_EUT_90_Ant_V_CW_mode_FCC




02:57:43 PM 01/06/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

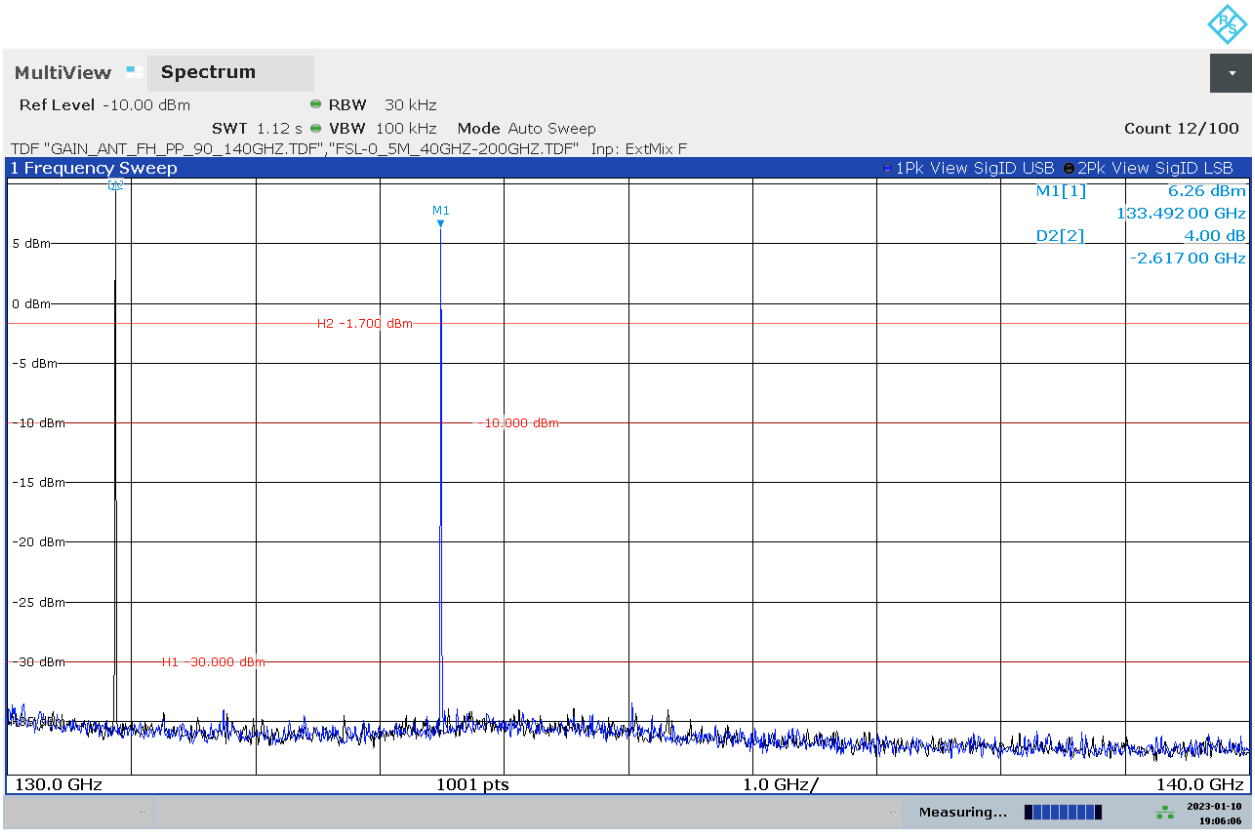
The signals which are overlapping are real signals and related to Assessment.

In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line: -1.7 dBm. Results: Passed

Other Limit lines are not related to this measurement.

D139_03b_R01T08_TX_RSE_130G_140GHz_EUT_90_Ant_V_CW_mode_ISED




**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

The signals which are overlapping are real signals and related to Assessment.

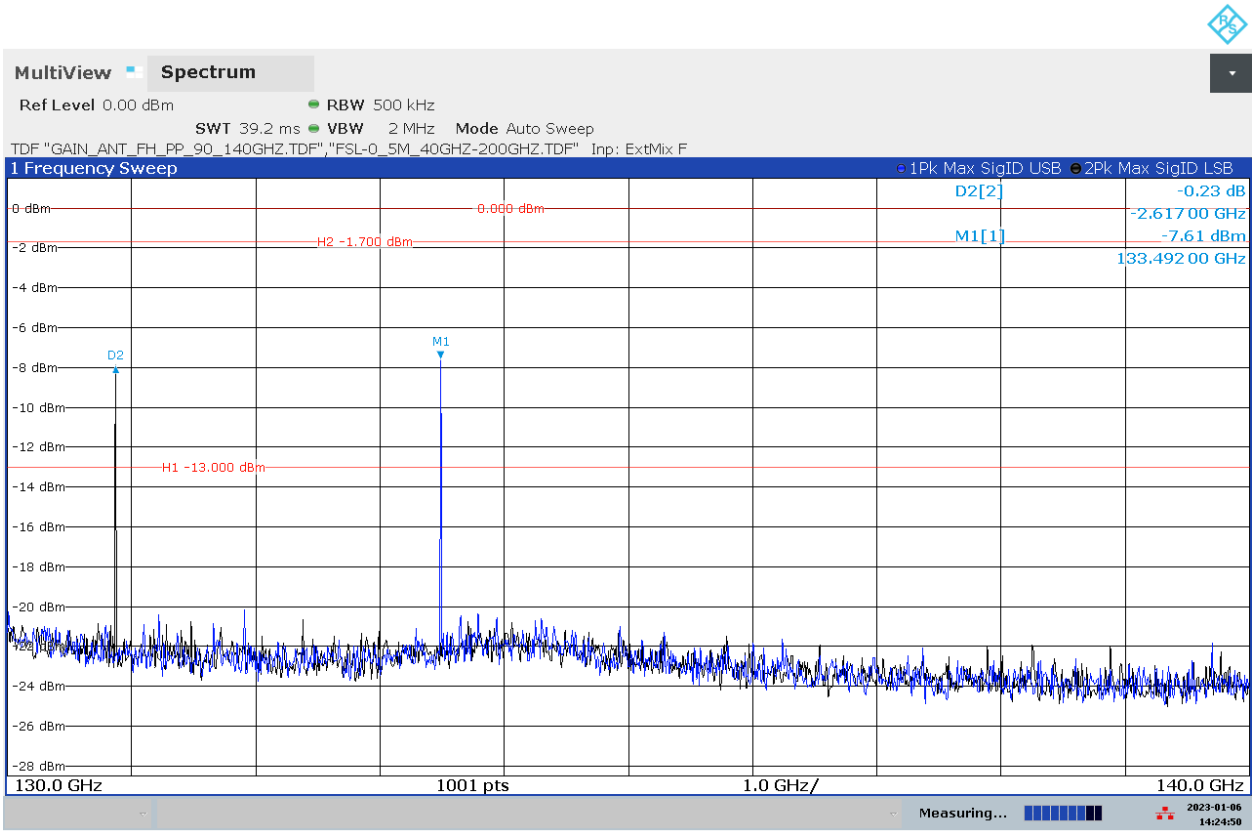
In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.

### 7.1.22 Frequency range 130 GHz – 140 GHz – Measurement Antenna Horizontal

D140_03a_R01T08_TX_RSE_130G_140GHz_EUT_90_Ant_H_CW_mode_FCC




02:24:50 PM 01/06/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

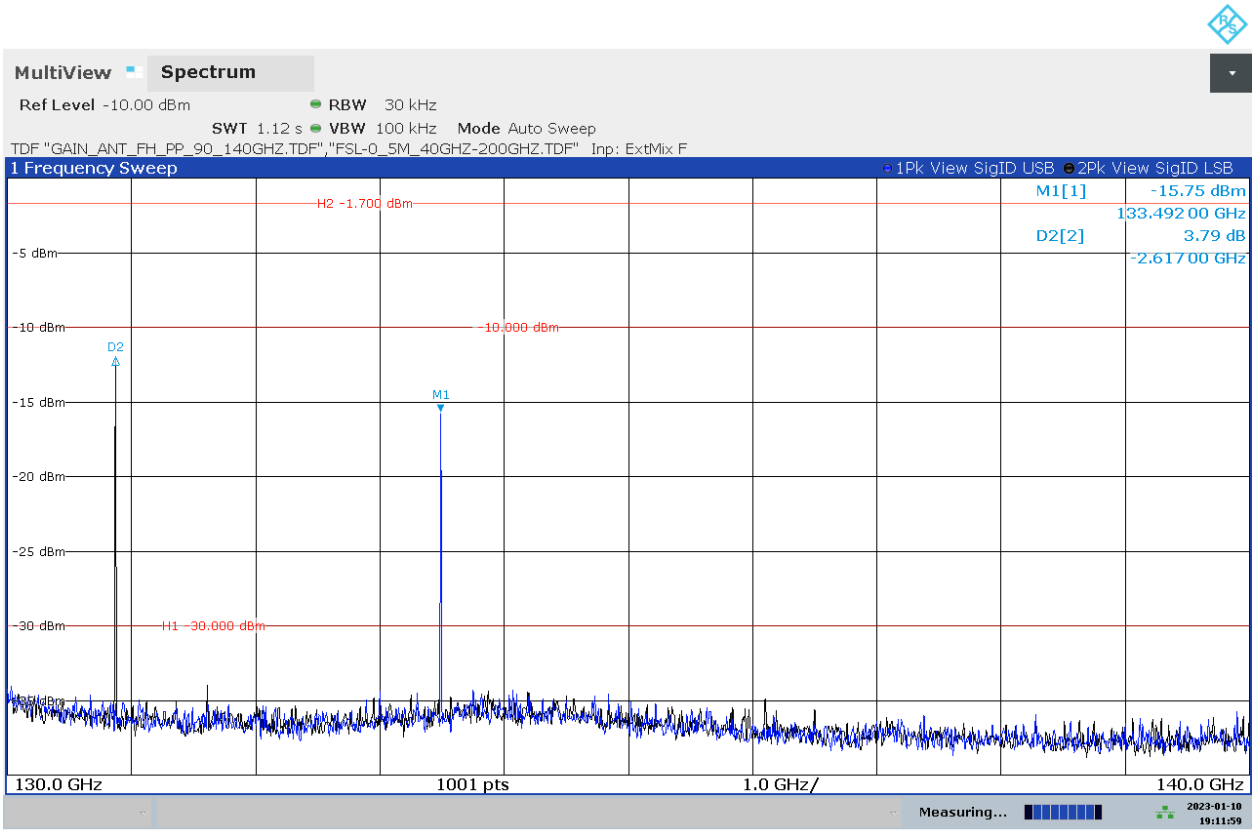
The signals which are overlapping are real signals and related to Assessment.

In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line: -1.7 dBm. Results: Passed

Other Limit lines are not related to this measurement.

D140_03b_R01T08_TX_RSE_130G_140GHz_EUT_90_Ant_H_CW_mode_ISED




**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

The signals which are overlapping are real signals and related to Assessment.

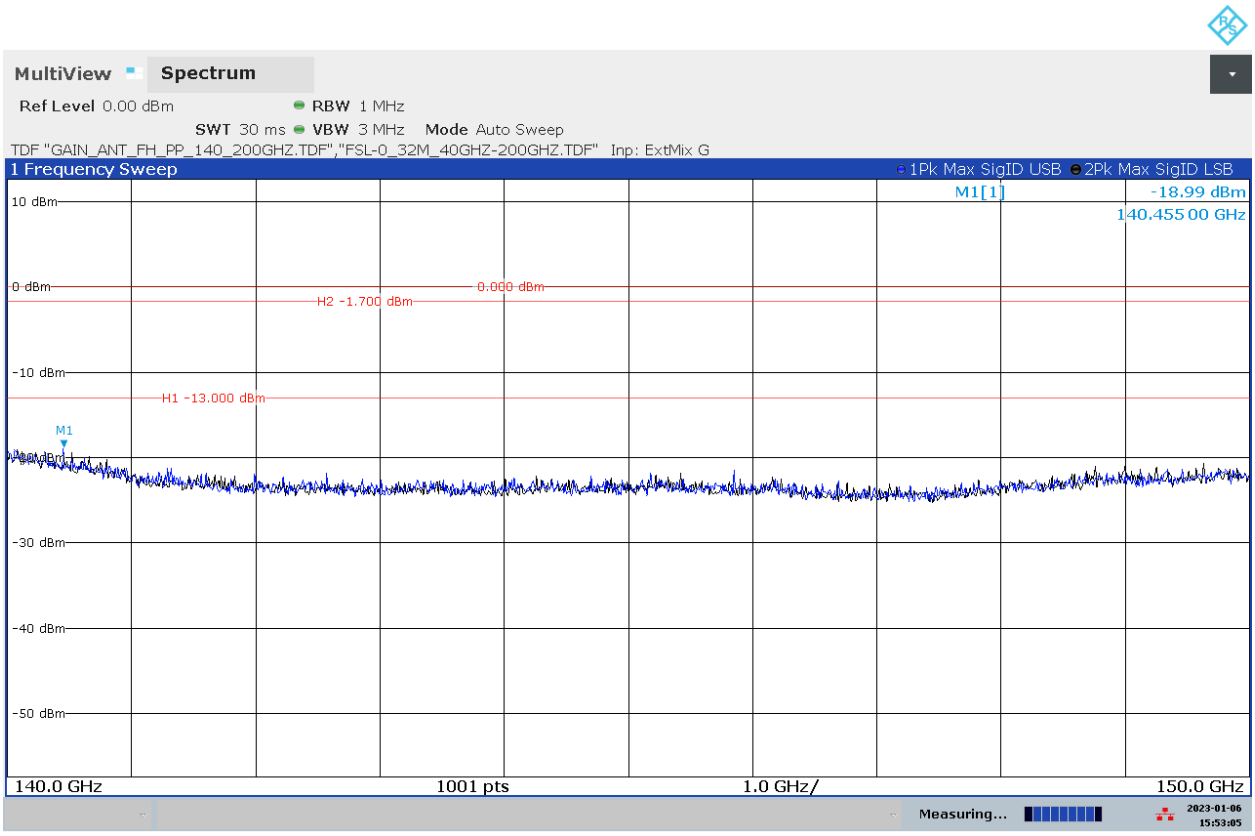
In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.

### 7.1.23 Frequency range 140 GHz – 150 GHz – Measurement Antenna Vertical

D141_01_R01T08_TX_RSE_140G_150GHz_EUT_90_Ant_V_CW_mode_FCC




03:53:06 PM 01/06/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment.

The signals which are overlapping are real signals and related to Assessment.

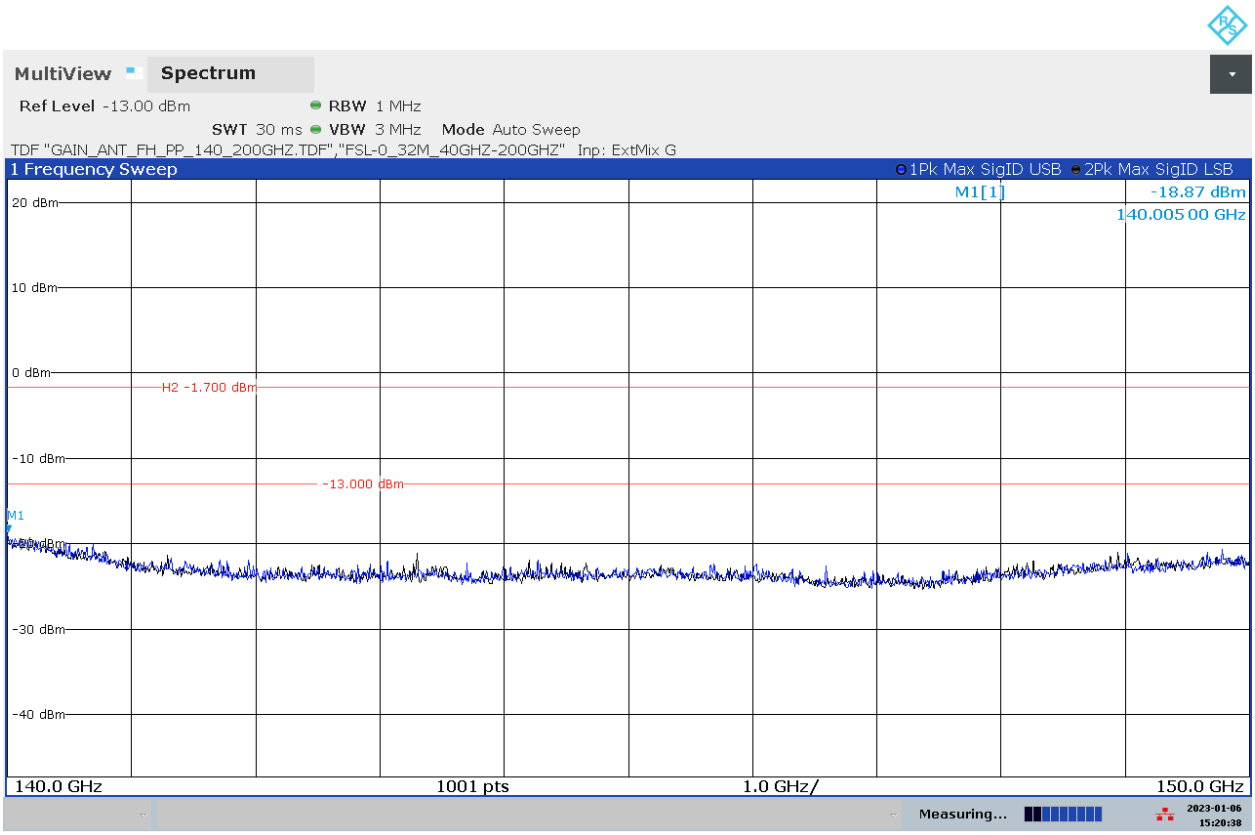
In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line: -1.7 dBm. Results: Passed

Other Limit lines are not related to this measurement.

### 7.1.24 Frequency range 140 GHz – 150 GHz – Measurement Antenna Horizontal

D142_01_R01T08_TX_RSE_140G_150GHz_EUT_90_Ant_H_CW_mode_FCC




**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment.

The signals which are overlapping are real signals and related to Assessment.

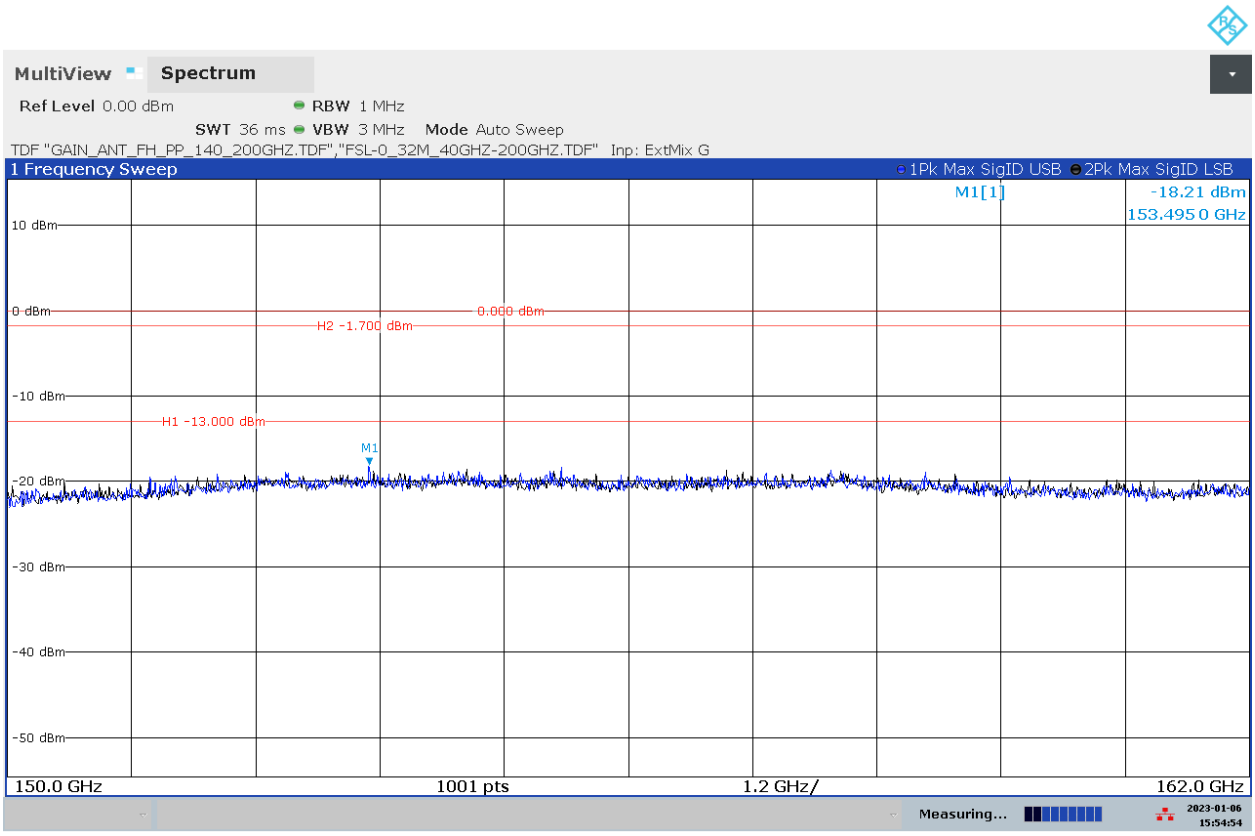
In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line: -1.7 dBm. Results: Passed

Other Limit lines are not related to this measurement.

### 7.1.25 Frequency range 150 GHz – 162 GHz – Measurement Antenna Vertical

D141_02_R01T08_TX_RSE_150G_162GHz_EUT_90_Ant_V_CW_mode_FCC




03:54:54 PM 01/06/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment.

The signals which are overlapping are real signals and related to Assessment.

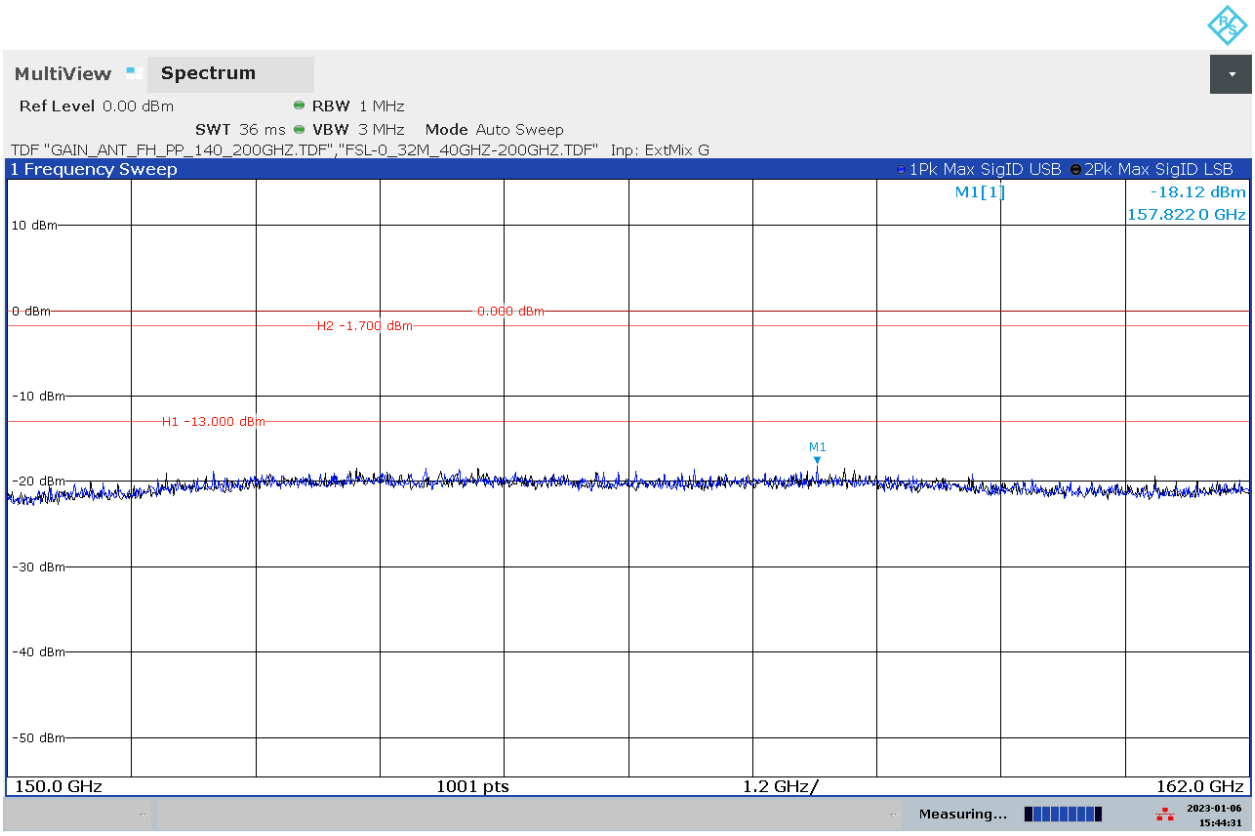
In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line: -1.7 dBm. Results: Passed

Other Limit lines are not related to this measurement.

### 7.1.26 Frequency range 150 GHz – 162 GHz – Measurement Antenna Horizontal

D142_02_R01T08_TX_RSE_150G_162GHz_EUT_90_Ant_H_CW_mode_FCC




**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment.

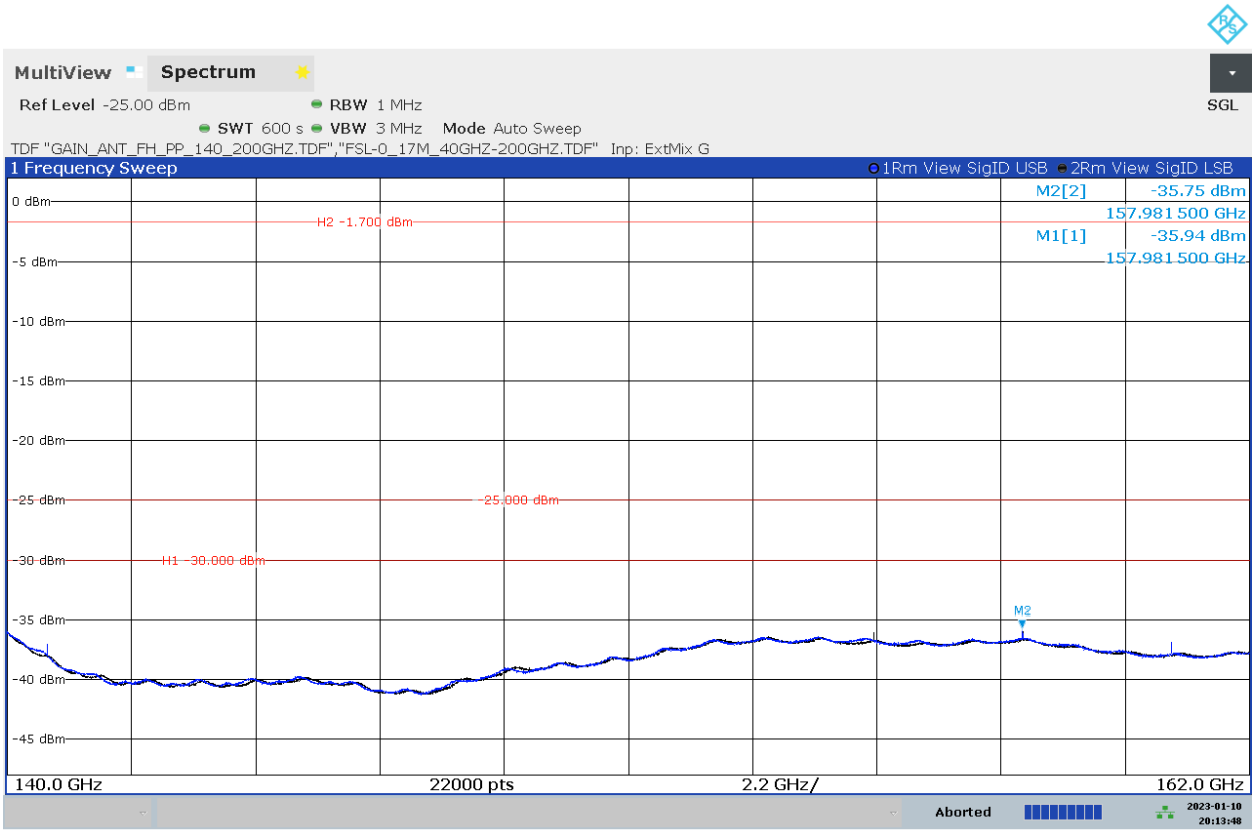
The signals which are overlapping are real signals and related to Assessment.

In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line: -1.7 dBm. Results: Passed

Other Limit lines are not related to this measurement.

D141_03_R01T08_TX_RSE_140G_162GHz_EUT_90_Ant_V_CW_mode_ISED




08:13:48 PM 01/10/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment.

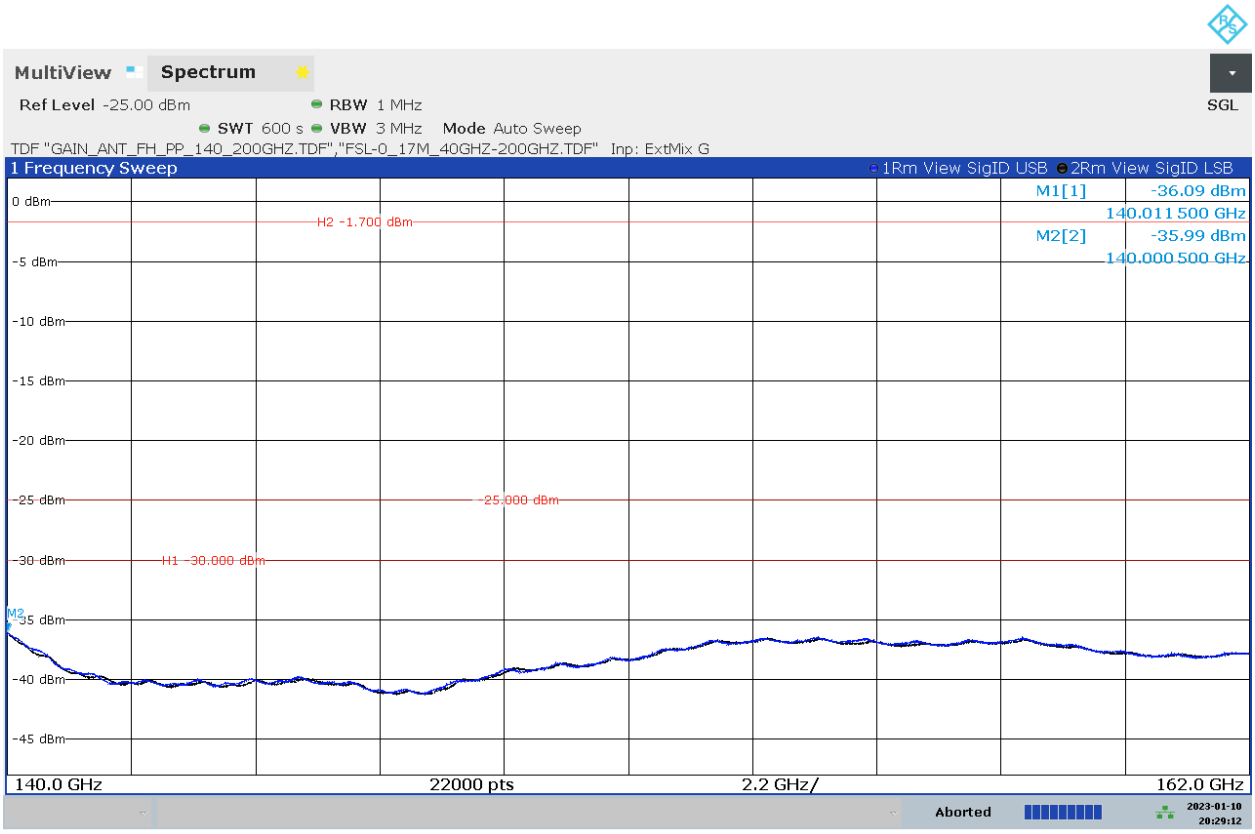
The signals which are overlapping are real signals and related to Assessment.

In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.

D142_03_R01T08_TX_RSE_140G_162GHz_EUT_90_Ant_H_CW_mode_ISED




08:29:12 PM 01/10/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment.

The signals which are overlapping are real signals and related to Assessment.

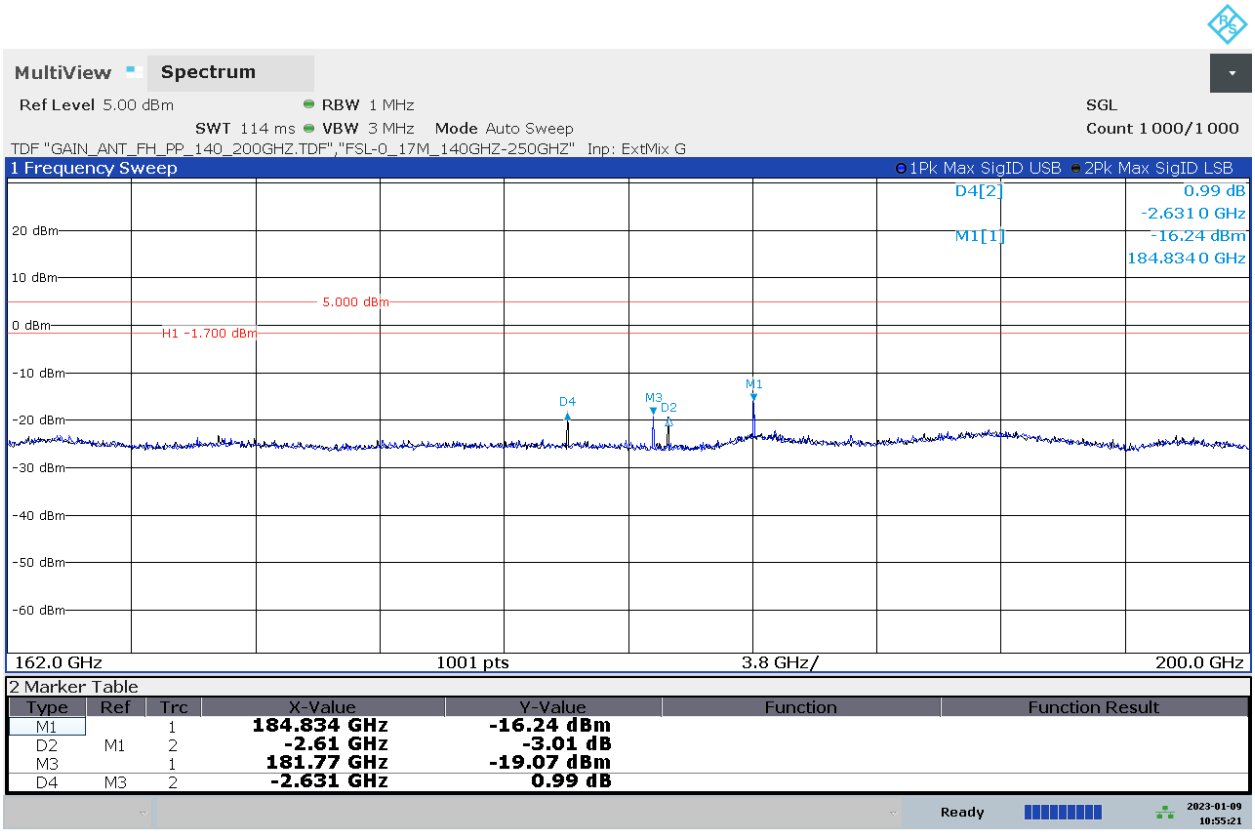
In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line for ISED: -30 dBm – Results: Passed

Other Limit lines are not related to this measurement.

### 7.1.27 Frequency range 162 GHz – 200 GHz – Measurement Antenna Vertical

D143_R01T08_TX_RSE_162G_200GHz_EUT_90_Ant_V_CW_mode




**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

The signals which are overlapping are real signals and related to Assessment.

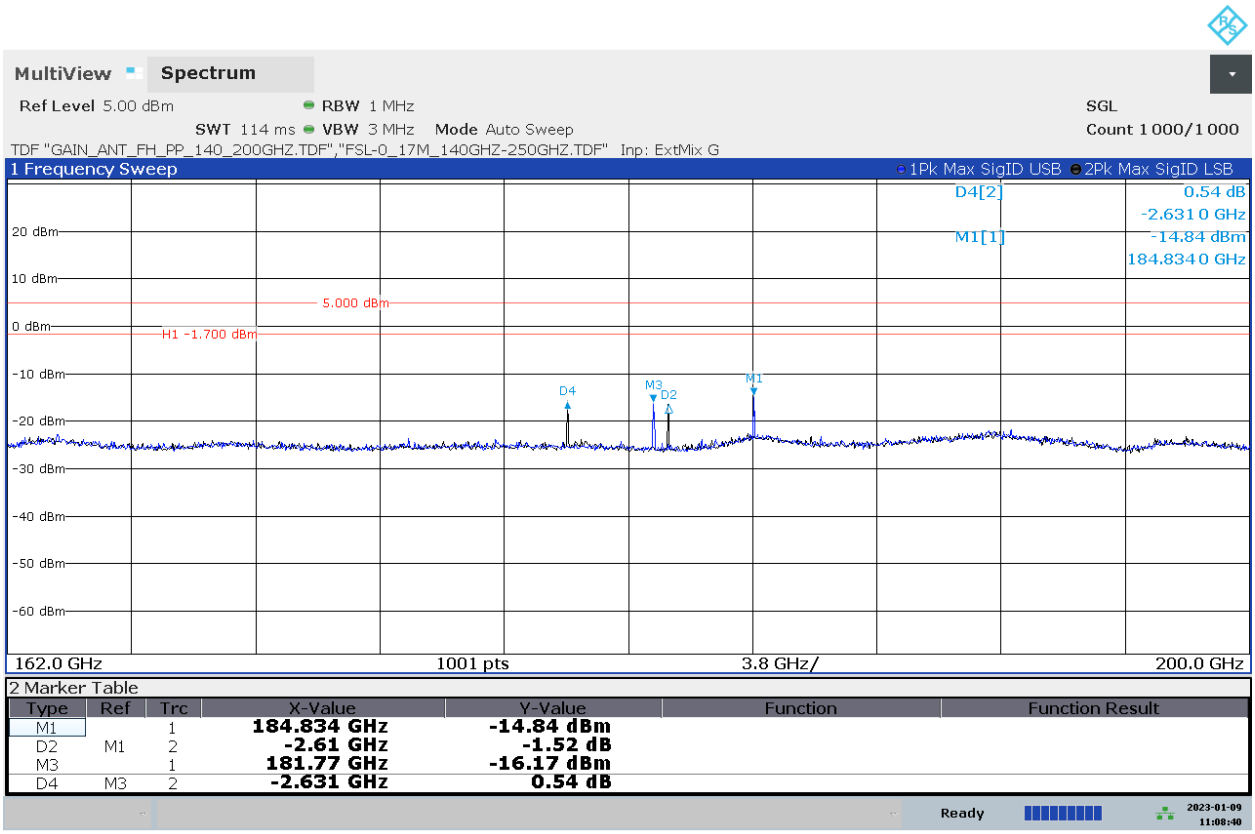
In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line: -1.7 dBm. Results: Passed

5 dBm is the Ref level of Spectrum Analyzer.

### 7.1.28 Frequency range 162 GHz – 200 GHz – Measurement Antenna Horizontal

D145_R01T08_TX_RSE_162G_200GHz_EUT_90_Ant_H_CW_mode




**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

The signals which are overlapping are real signals and related to Assessment.

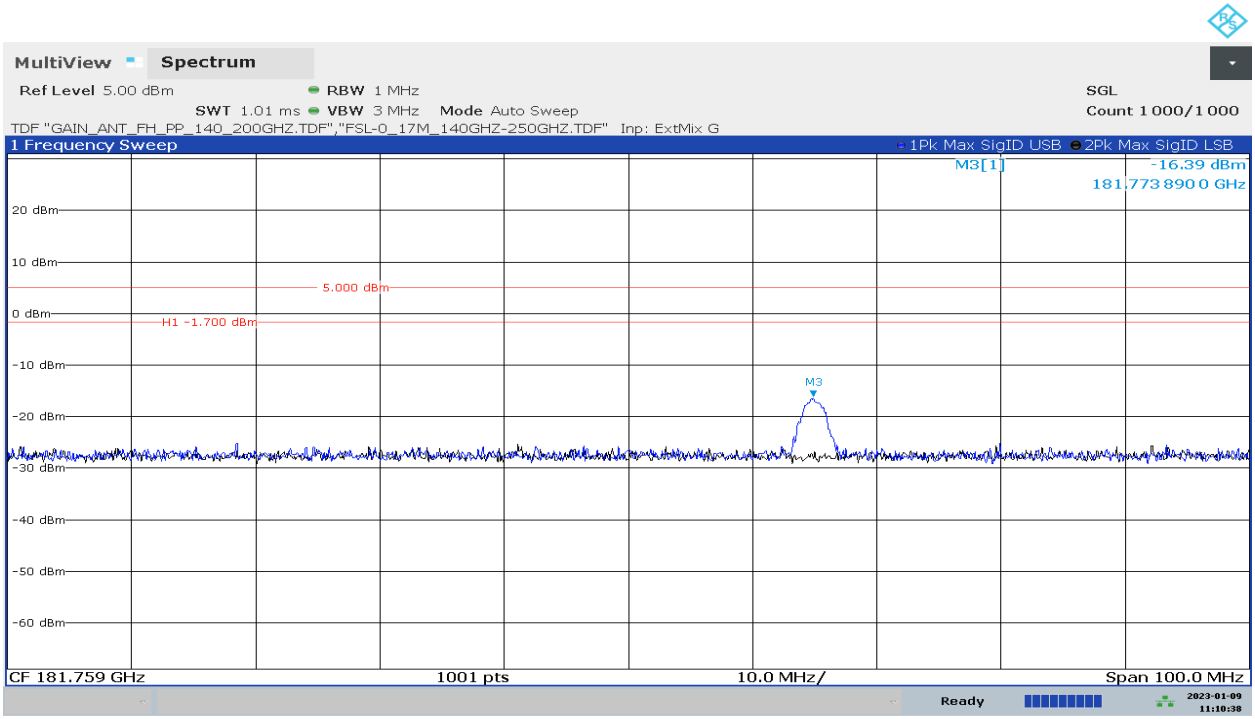
In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line: -1.7 dBm. Results: Passed

5 dBm is the Ref level of Spectrum Analyzer.

Two measurements have been performed at M1 and M3 and found no critical Emission, check below Diagrams, Diagram D145_01 and D145_02

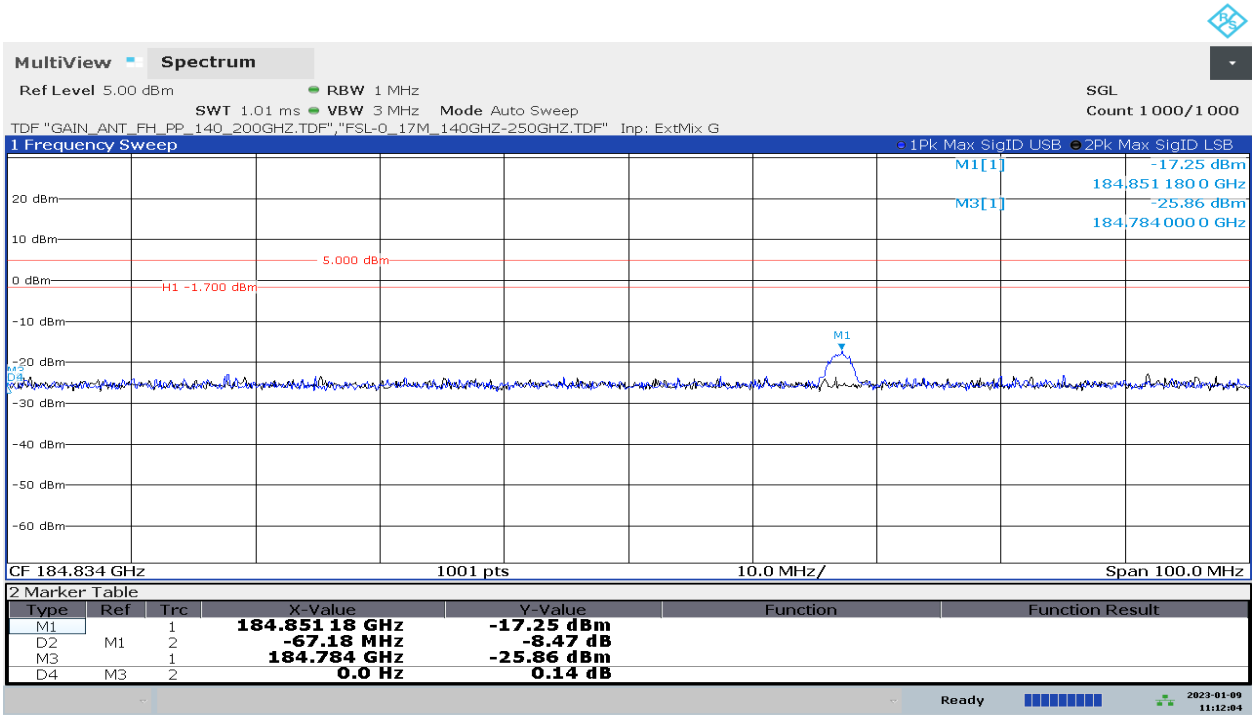
D145_01_R01T08_TX_RSE_162G_200GHz_EUT_90_Ant_H_CW_mode_M3_info_only




11:10:38 AM 01/09/2023

**Remark: Final Measurement performed at Marker 3 @181.77GHz, this is a ghost signal, not related to Results.**

D145_02_R01T08_TX_RSE_162G_200GHz_EUT_90_Ant_H_CW_mode_M1_info_only

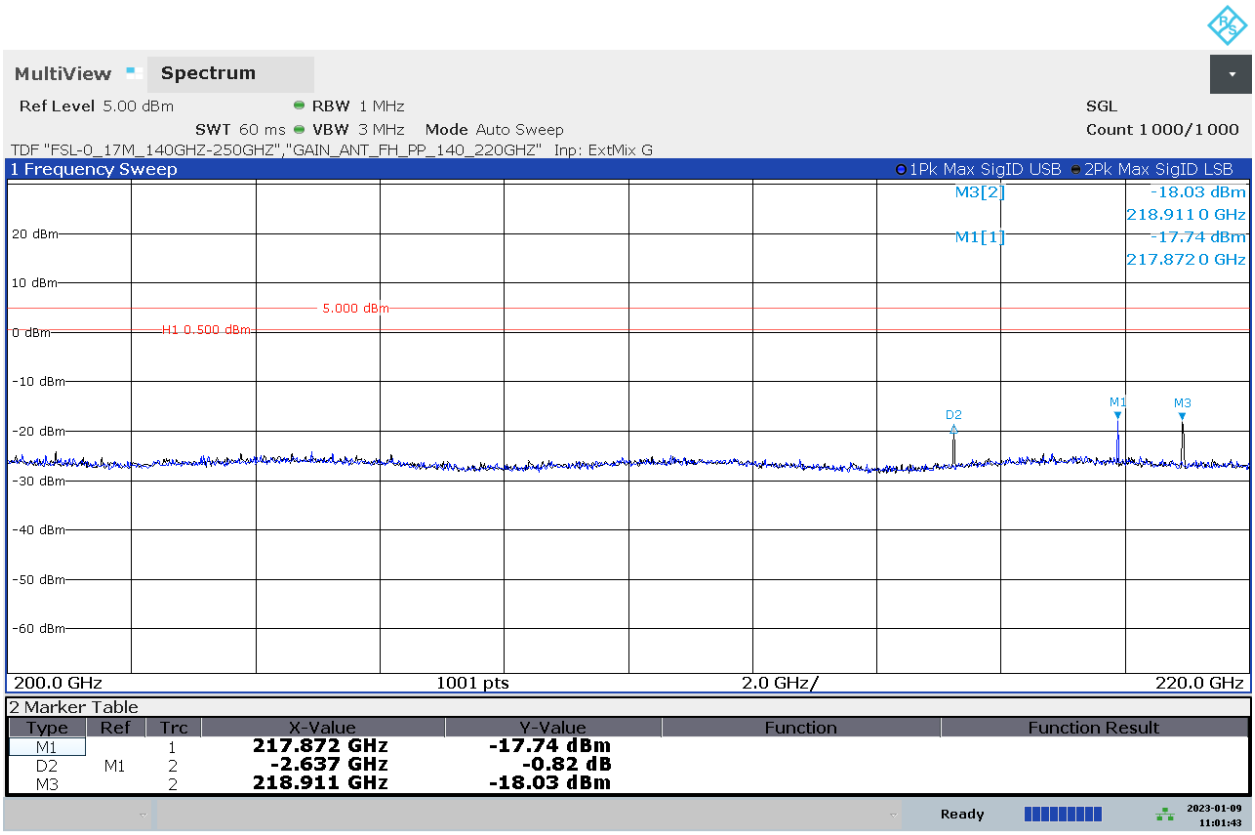



11:12:04 AM 01/09/2023

**Remark: Final Measurement performed at Marker 1 @184.85GHz, this is a ghost signal, not related to Results.**

### 7.1.29 Frequency range 200 GHz – 220 GHz – Measurement Antenna Vertical

D144_R01T08_TX_RSE_200G_220GHz_EUT_90_Ant_V_CW_mode




**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

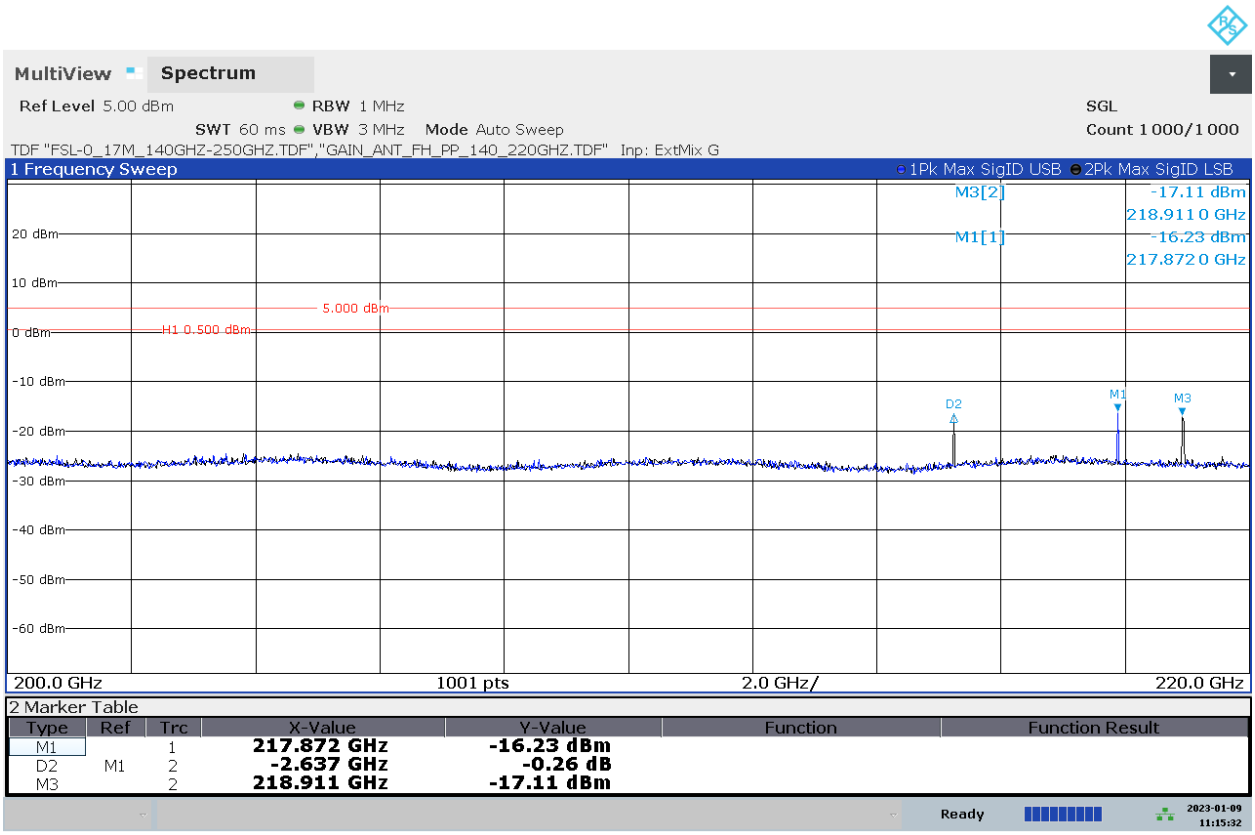
The signals which are overlapping are real signals and related to Assessment.

In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line: 0.5 dBm – Result: Passed.
5 dBm is the Ref level of Spectrum Analyzer.

### 7.1.30 Frequency range 200 GHz – 220 GHz – Measurement Antenna Horizontal

D146_R01T08_TX_RSE_200G_220GHz_EUT_90_Ant_H_CW_mode




11:15:32 AM 01/09/2023

**Remarks:**

Since the Signal ID (Image Signal) function of Spectrum Analyzer has been activated, therefore there are many Ghost signals.

The Signals which are not overlapping are ghost signals, therefore not related to Assessment. Every Ghost Signal are verified separately during measurements.

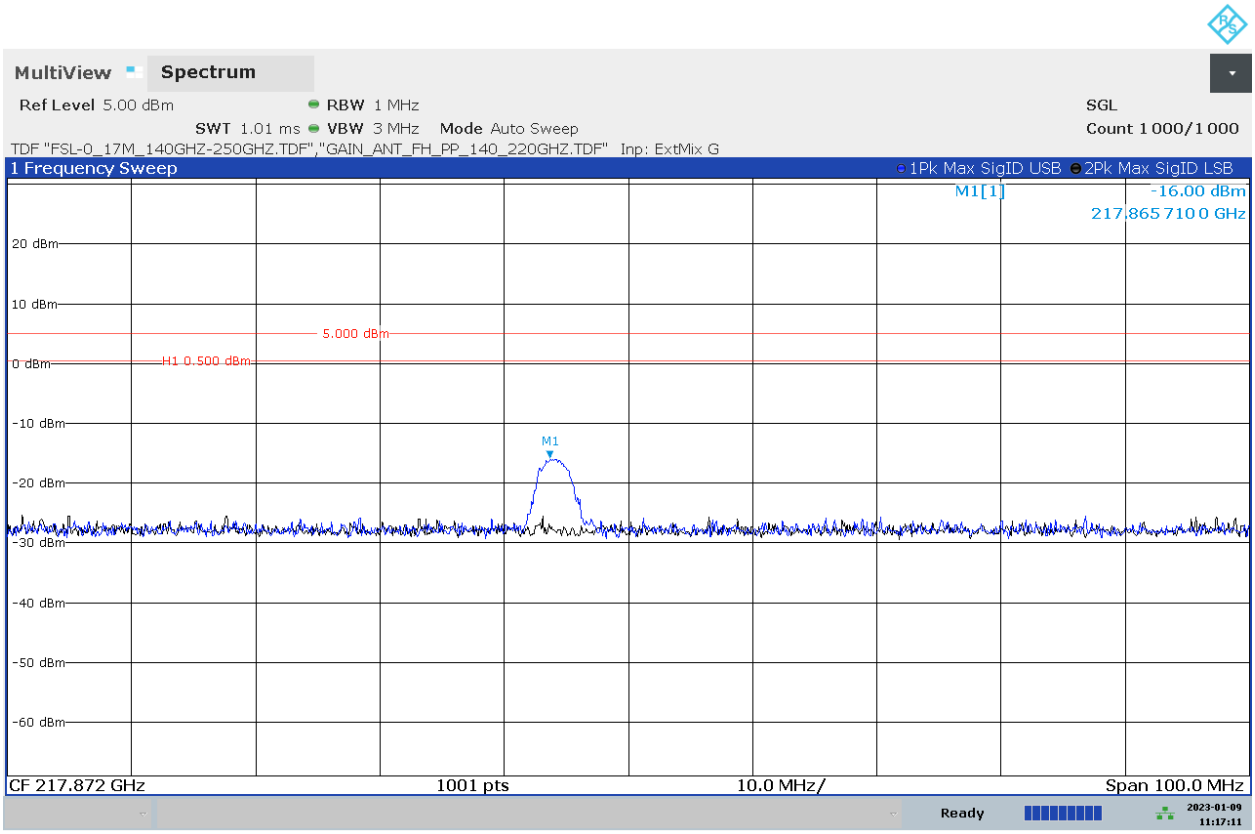
The signals which are overlapping are real signals and related to Assessment.

In this Diagram which are over the Limit line are Ghost signals. Not related to Results.

Limit line: 0.5 dBm – Result: Passed.
5 dBm is the Ref level of Spectrum Analyzer.

Two measurements have been performed at M1 and M3 and found no critical Emission, check below Diagrams, Diagram D146_01

D146_01_R01T08_TX_RSE_200G_220GHz_EUT_90_Ant_H_CW_mode_M1_info_only



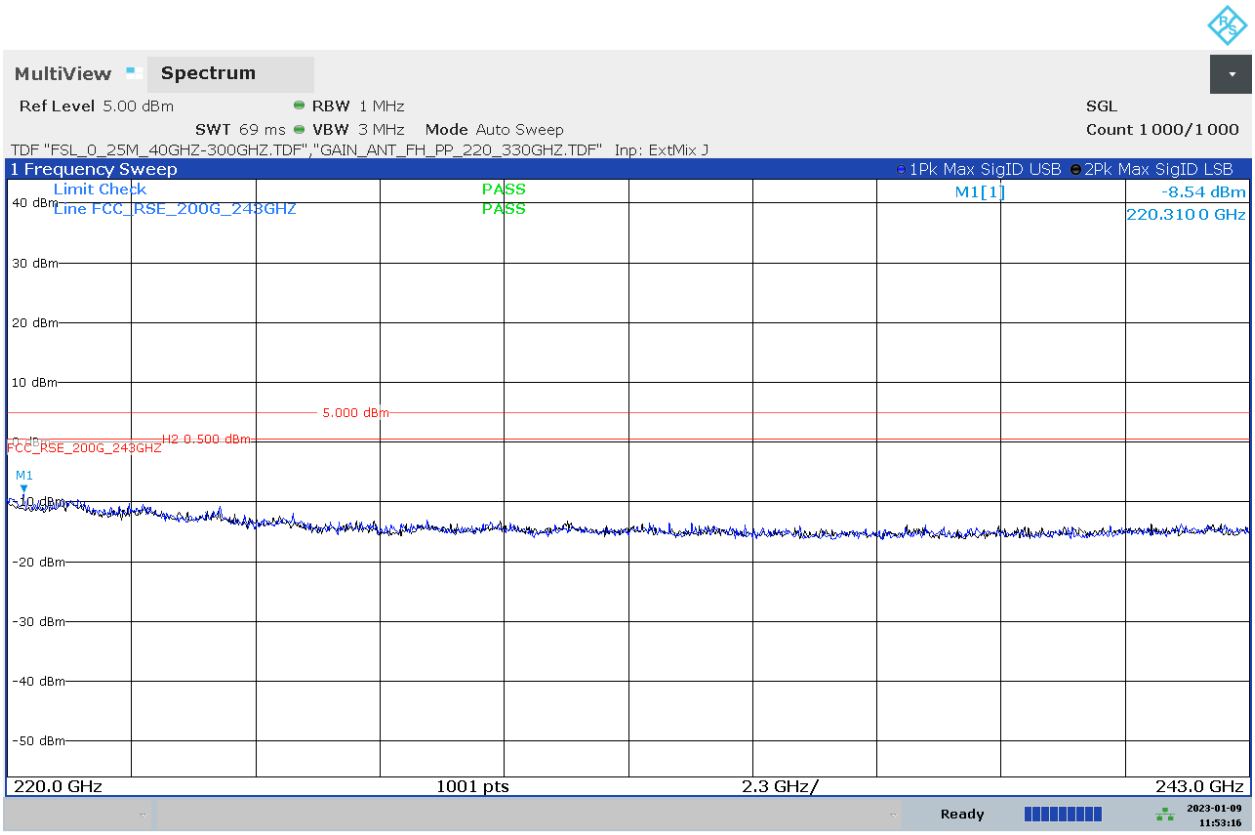

11:17:11 AM 01/09/2023

**Remark: Final Measurement performed at Marker 1 @217.87GHz, this is a ghost signal, not related to Results.**

Limit line: 0.5 dBm – Result: Passed.
5 dBm is the Ref level of Spectrum Analyzer.

### 7.1.31 Frequency range 220 GHz – 243 GHz – Measurement Antenna Vertical

D147_R01T08_TX_RSE_220G_243GHz_EUT_90_Ant_V_CW_mode




11:53:16 AM 01/09/2023

**Remarks:**

Signal ID (Image Signal) function of Spectrum Analyzer has been activated to distinguish Ghost and Real signals.

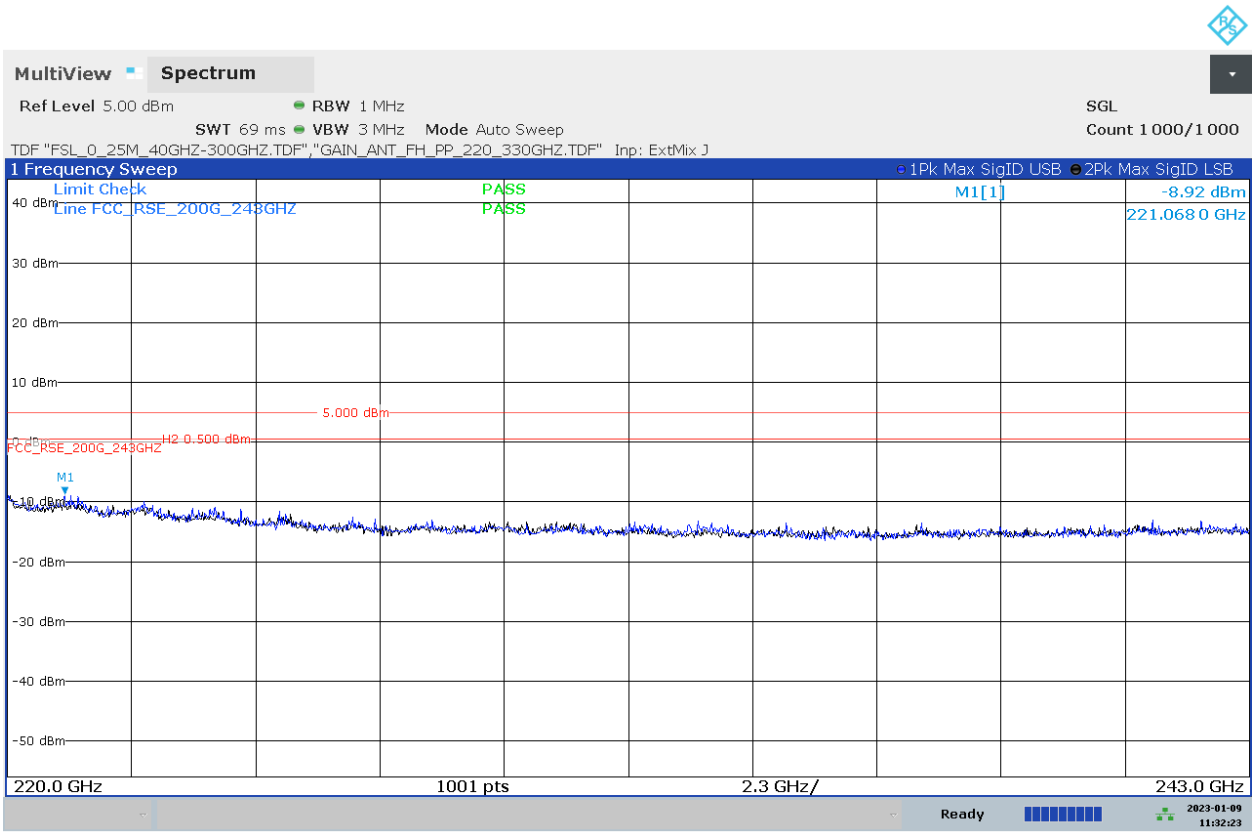
No Critical Emission found.

Limit line: 0.5 dBm. Results: Passed

5 dBm is the Ref level of Spectrum Analyzer.

### 7.1.32 Frequency range 220 GHz – 243 GHz – Measurement Antenna Horizontal

D148_R01T08_TX_RSE_220G_243GHz_EUT_90_Ant_H_CW_mode




11:32:23 AM 01/09/2023

**Remarks:**

Signal ID (Image Signal) function of Spectrum Analyzer has been activated to distinguish Ghost and Real signals.

No Critical Emission found.

Limit line: 0.5 dBm. Results: Passed

5 dBm is the Ref level of Spectrum Analyzer.

# End of the Annex