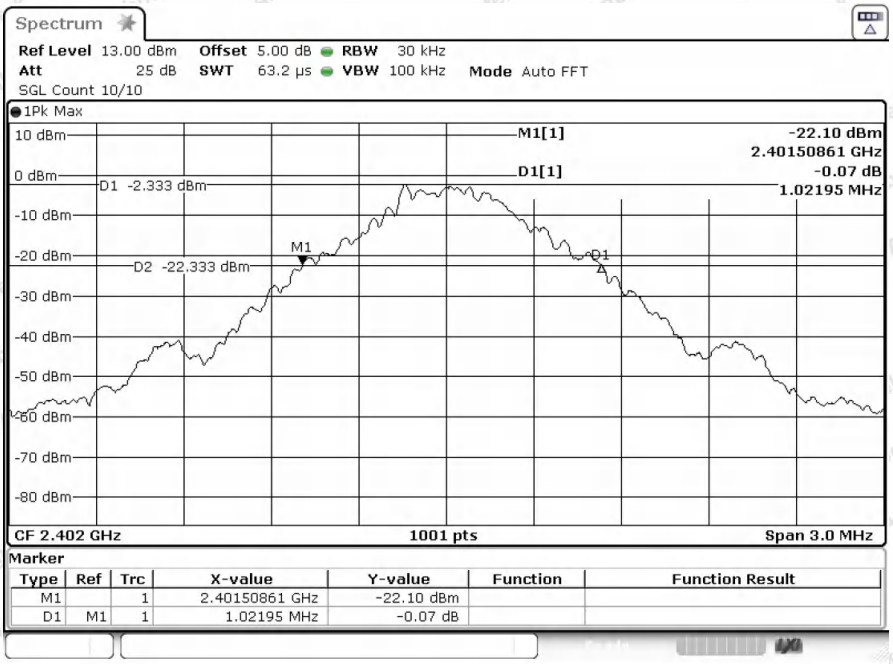
# Appendix Test Data

| | | | |
|---|---|---|---|
| Report No.: | 18220WC40076001 | Test Sample No.: | 1-2-2 |
| Start Test Date: | 2024.4.22 | Finish Test Date: | 2024.4.22 |
| Test Engineer: | Joker Huang | Auditor: | Justin Feng |
| Temperature: | 25.5℃ | Relative Humidity: | 47% |
| Pressure: | 101kPa | | |

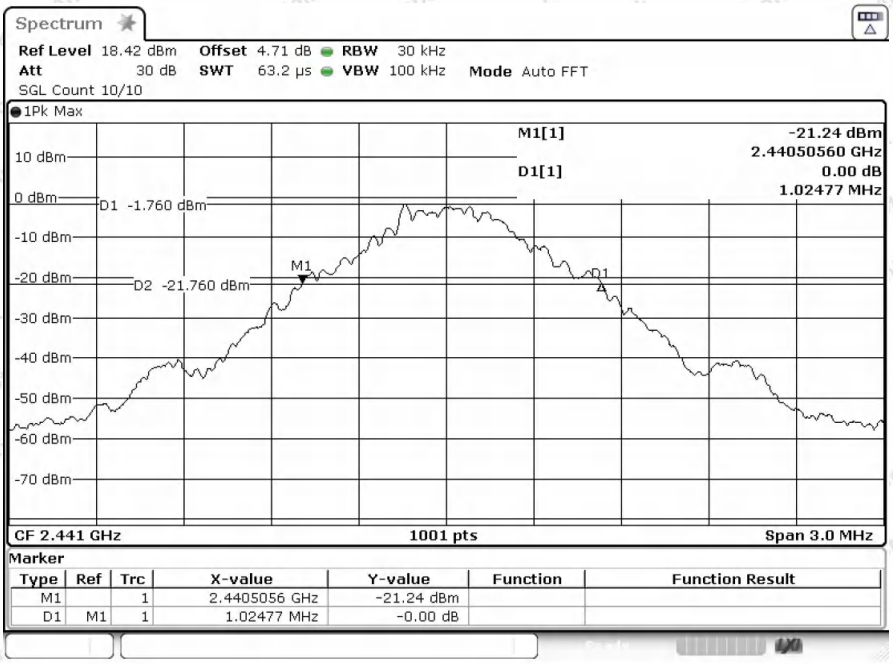
## Appendix A: -20dB Bandwidth

| Condition | Antenna | Modulation | Frequency (MHz) | -20dB BW(MHz) | if larger than CFS |
|---|---|---|---|---|---|
| NVNT | ANT1 | 1-DH5 | 2402.00 | 1.022 | Yes |
| NVNT | ANT1 | 1-DH5 | 2441.00 | 1.025 | Yes |
| NVNT | ANT1 | 1-DH5 | 2480.00 | 1.034 | Yes |
| NVNT | ANT1 | 2-DH5 | 2402.00 | 1.322 | Yes |
| NVNT | ANT1 | 2-DH5 | 2441.00 | 1.328 | Yes |
| NVNT | ANT1 | 2-DH5 | 2480.00 | 1.343 | Yes |
| NVNT | ANT1 | 3-DH5 | 2402.00 | 1.295 | Yes |
| NVNT | ANT1 | 3-DH5 | 2441.00 | 1.292 | Yes |
| NVNT | ANT1 | 3-DH5 | 2480.00 | 1.289 | Yes |

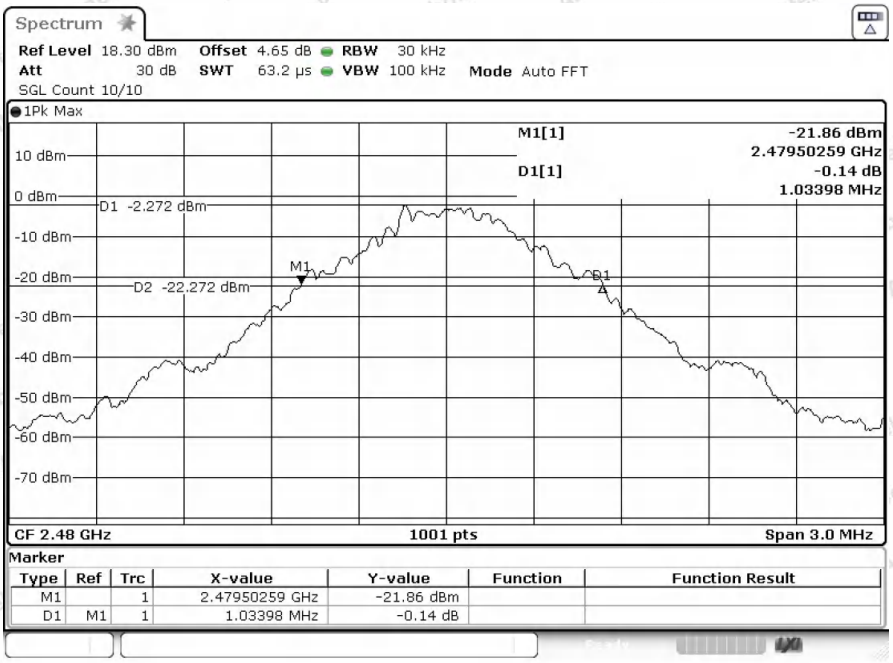
**-20dB_Bandwidth_NVNT_ANT1_1-DH5_2402**



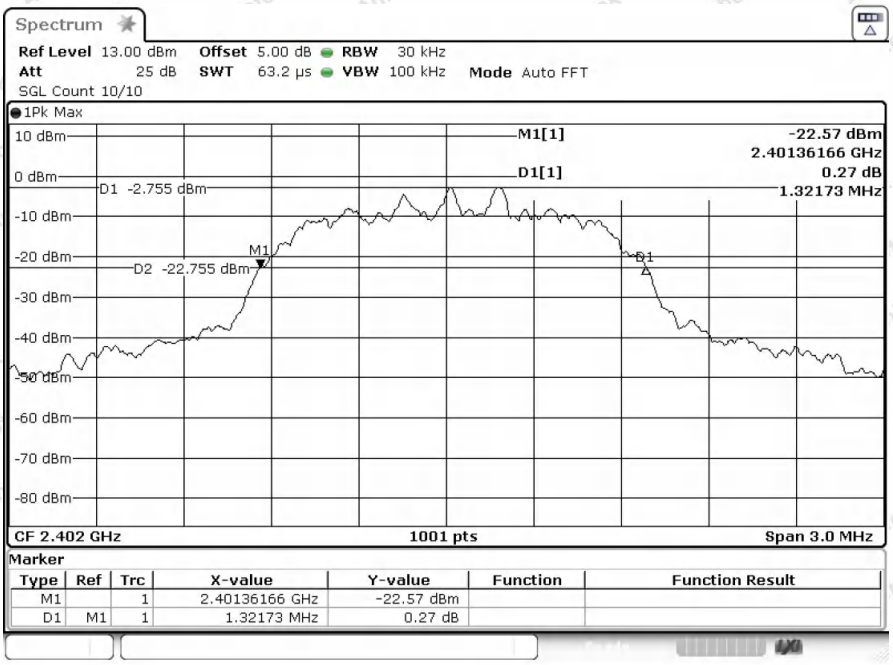

**-20dB_Bandwidth_NVNT_ANT1_1-DH5_2441**



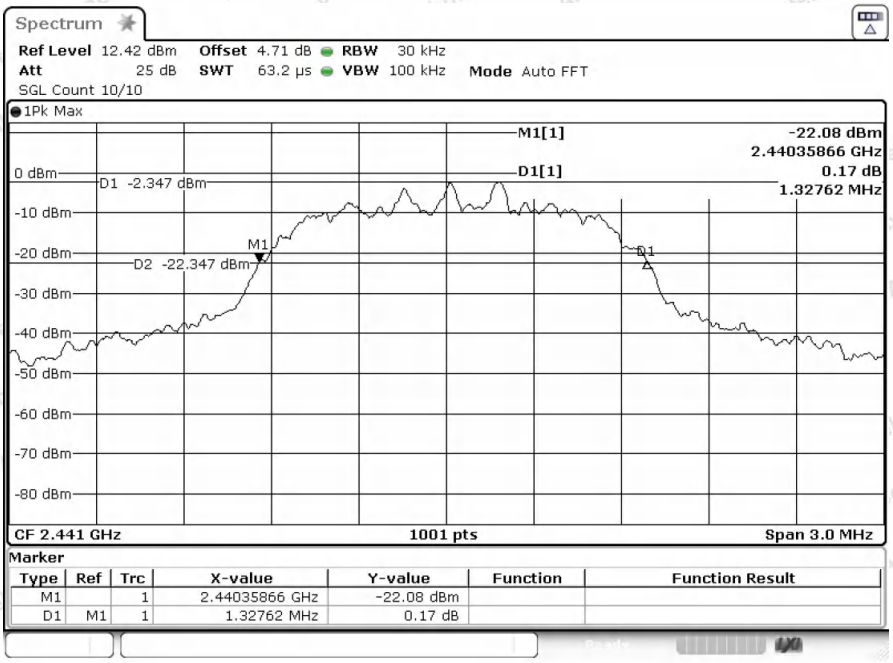

**-20dB_Bandwidth_NVNT_ANT1_1-DH5_2480**



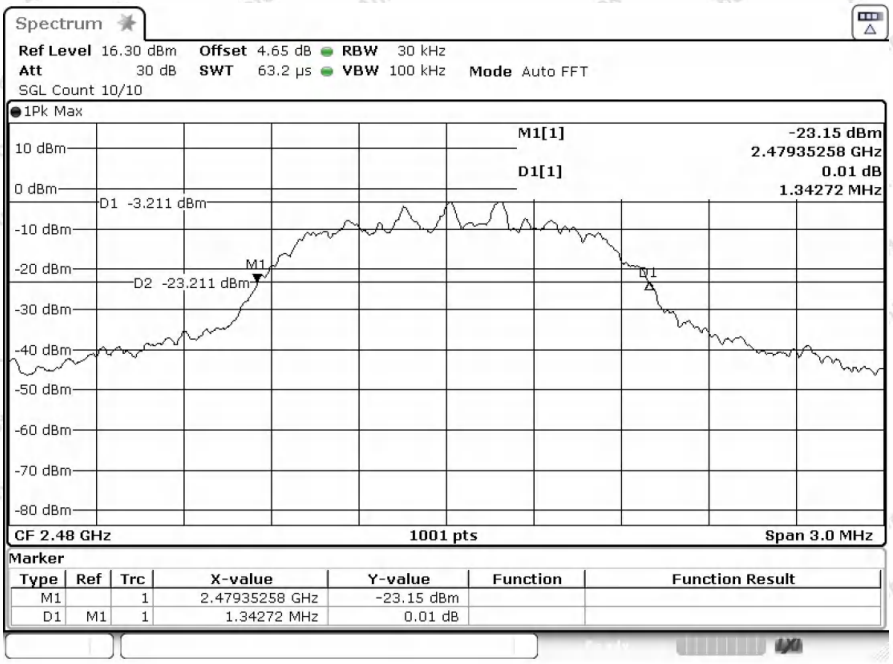

**-20dB_Bandwidth_NVNT_ANT1_2-DH5_2402**



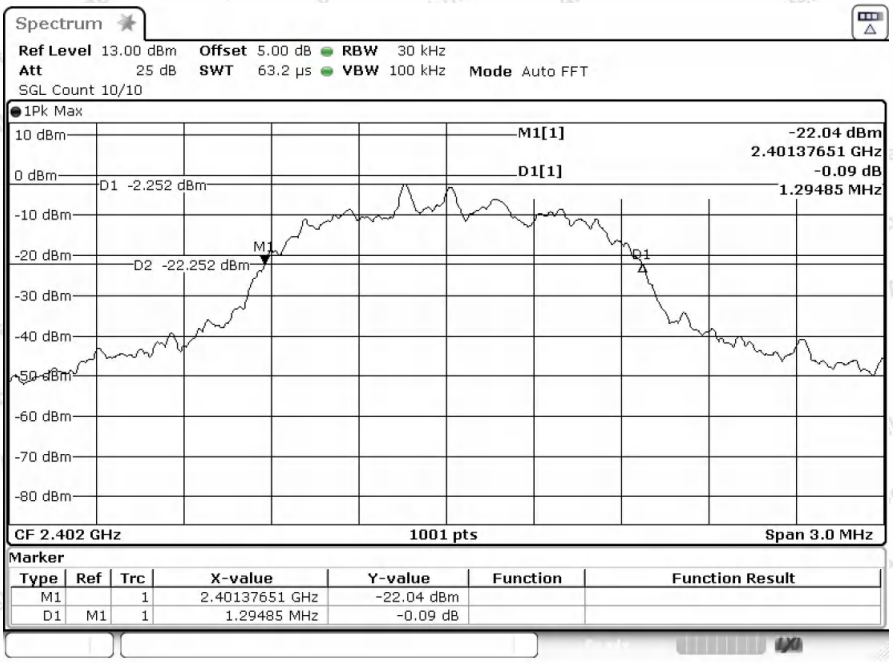

**-20dB_Bandwidth_NVNT_ANT1_2-DH5_2441**



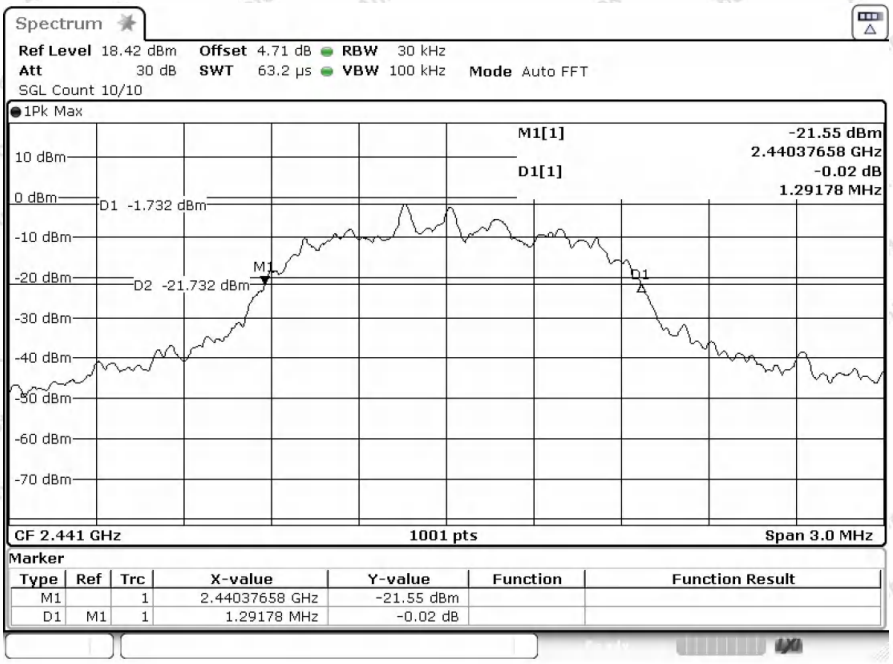

**-20dB_Bandwidth_NVNT_ANT1_2-DH5_2480**



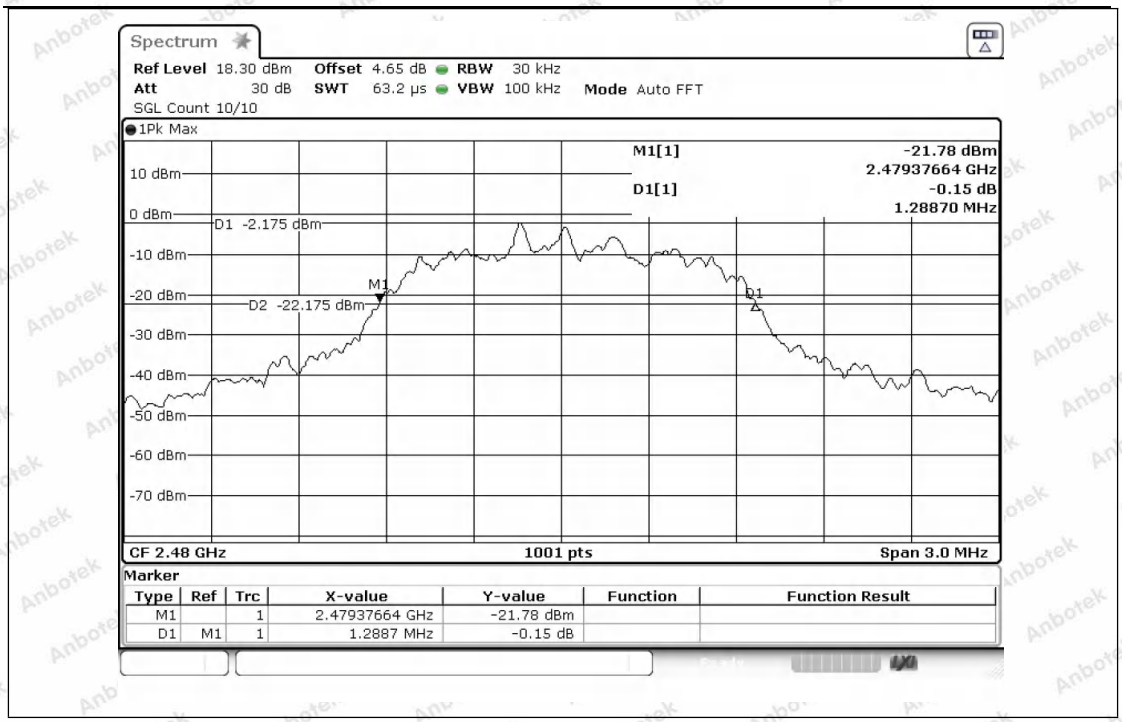

**-20dB_Bandwidth_NVNT_ANT1_3-DH5_2402**




**-20dB_Bandwidth_NVNT_ANT1_3-DH5_2441**



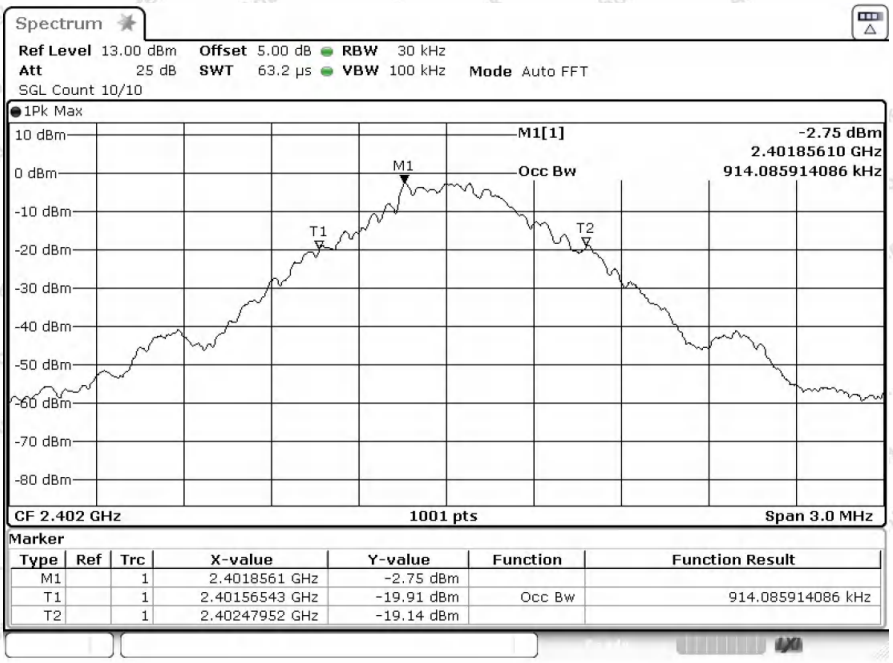

**-20dB_Bandwidth_NVNT_ANT1_3-DH5_2480**


Spectrum
Ref Level 18.30 dBm Offset 4.65 dB RBW 30 kHz
Att 30 dB SWT 63.2 µs VBW 100 kHz Mode Auto FFT
SGL Count 10/10
1Pk Max
M1[1] -21.78 dBm
2.47937664 GHz
D1[1] -0.15 dB
1.28870 MHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
D1 -2.175 dBm
D2 -22.175 dBm
M1
D1
CF 2.48 GHz
1001 pts
Span 3.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.47937664 GHz -21.78 dBm
D1 M1 1 1.2887 MHz -0.15 dB

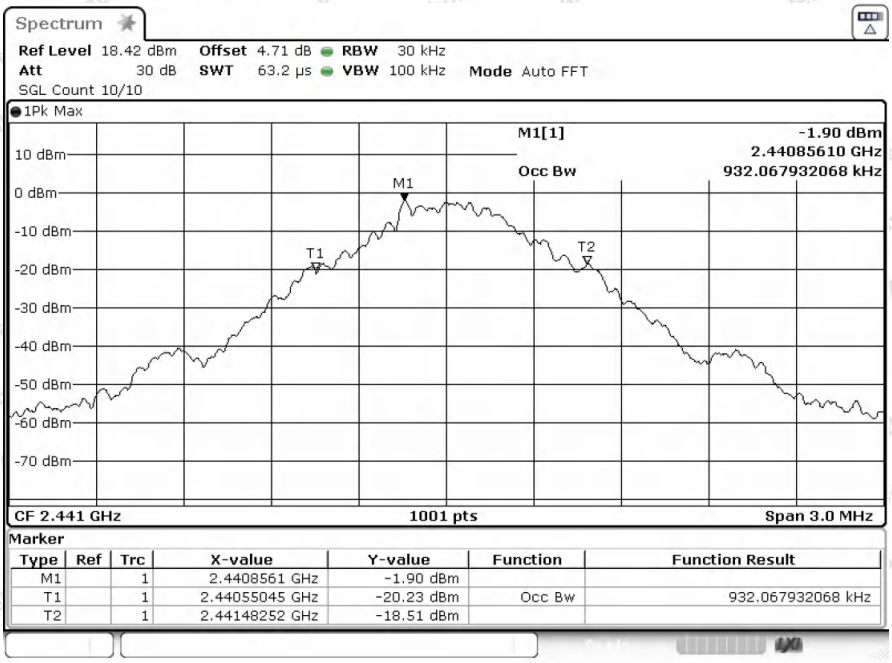
# Appendix B: 99% Occupied Bandwidth

| Condition | Antenna | Modulation | Frequency (MHz) | 99%%BW(MHz) |
|---|---|---|---|---|
| NVNT | ANT1 | 1-DH5 | 2402.00 | 0.914 |
| NVNT | ANT1 | 1-DH5 | 2441.00 | 0.932 |
| NVNT | ANT1 | 1-DH5 | 2480.00 | 0.950 |
| NVNT | ANT1 | 2-DH5 | 2402.00 | 1.202 |
| NVNT | ANT1 | 2-DH5 | 2441.00 | 1.211 |
| NVNT | ANT1 | 2-DH5 | 2480.00 | 1.226 |
| NVNT | ANT1 | 3-DH5 | 2402.00 | 1.205 |
| NVNT | ANT1 | 3-DH5 | 2441.00 | 1.208 |
| NVNT | ANT1 | 3-DH5 | 2480.00 | 1.211 |

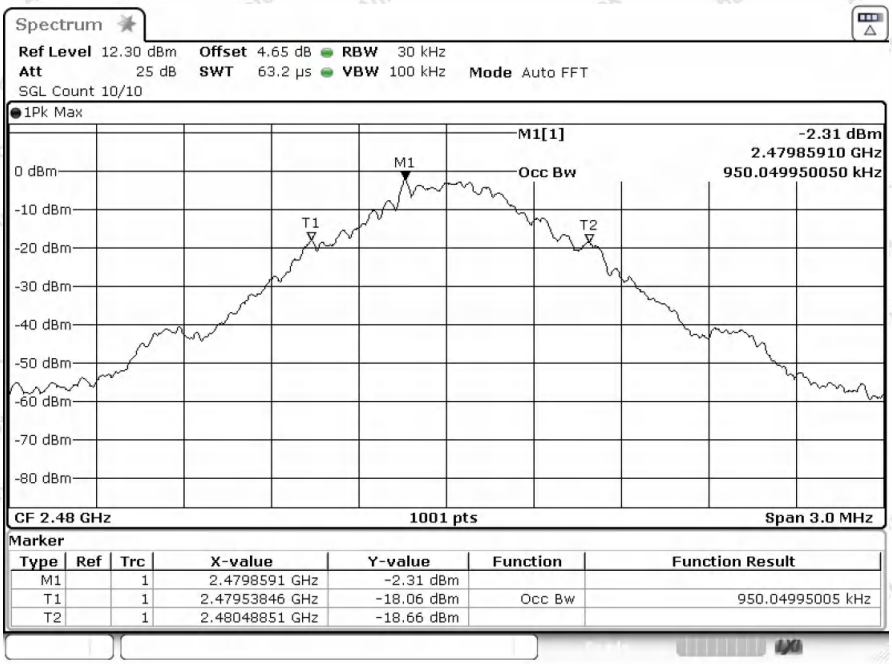
**99%_Occupied_Bandwidth_NVNT_ANT1_1-DH5_2402**



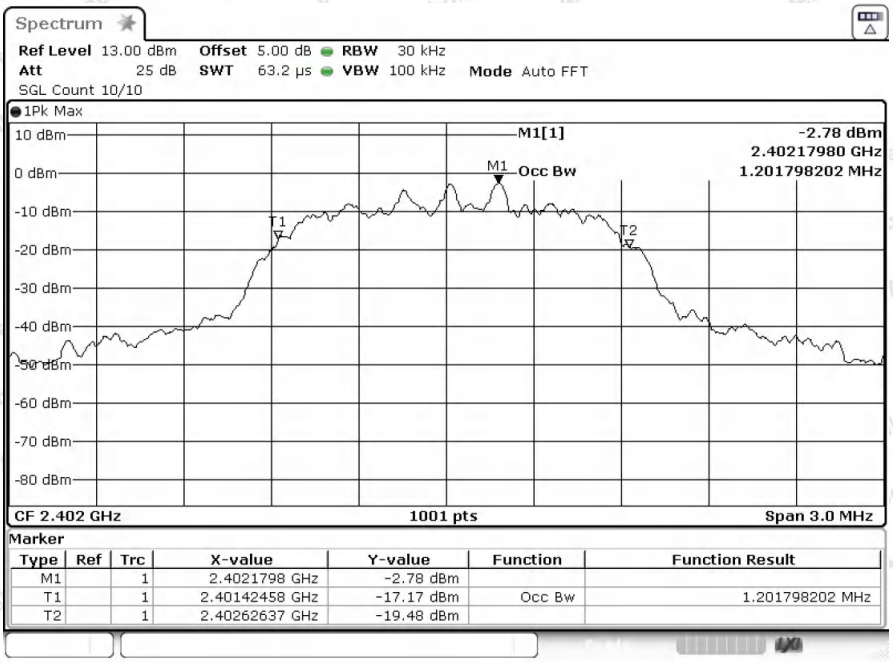

**99%_Occupied_Bandwidth_NVNT_ANT1_1-DH5_2441**



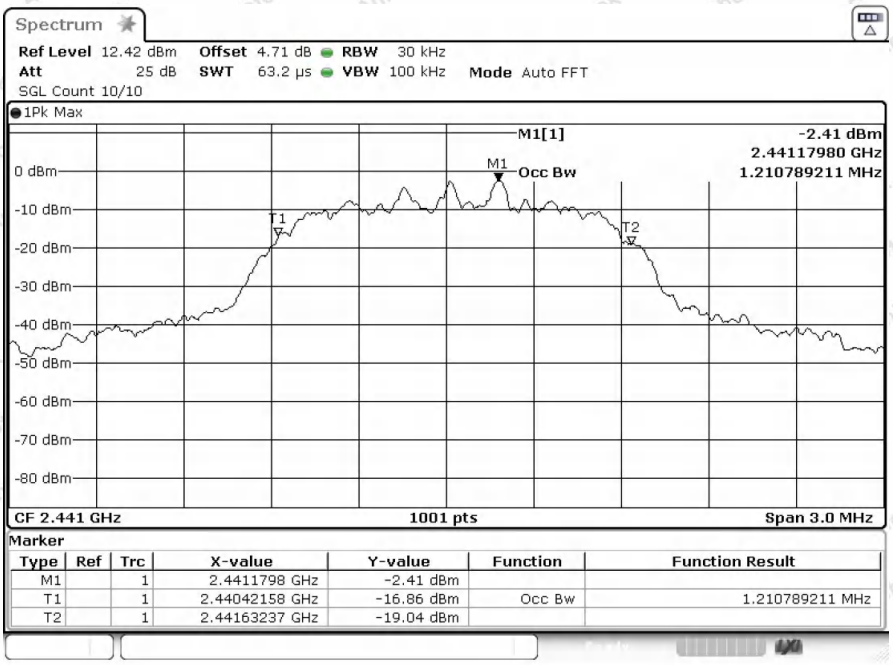

**99%_Occupied_Bandwidth_NVNT_ANT1_1-DH5_2480**



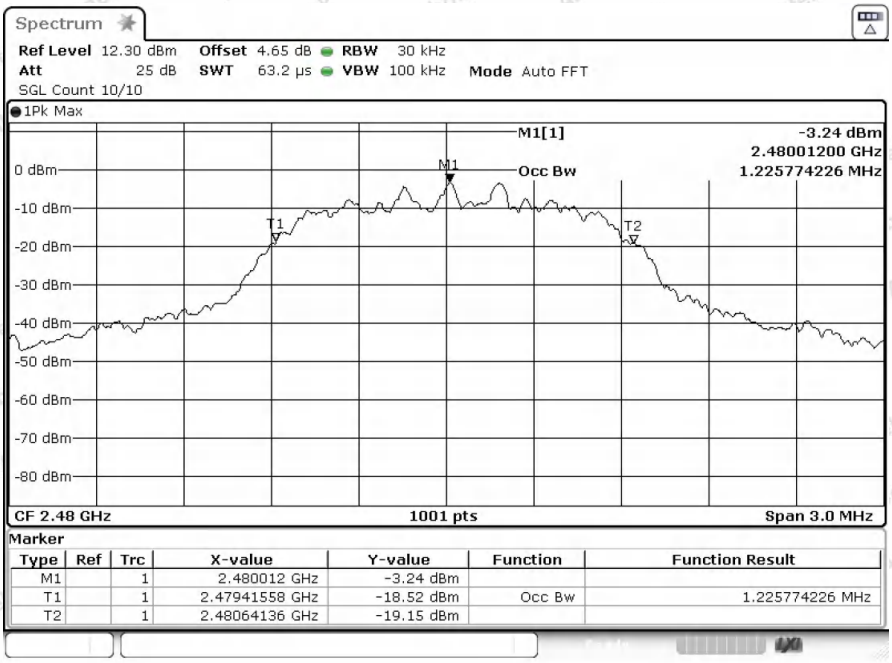

**99%_Occupied_Bandwidth_NVNT_ANT1_2-DH5_2402**



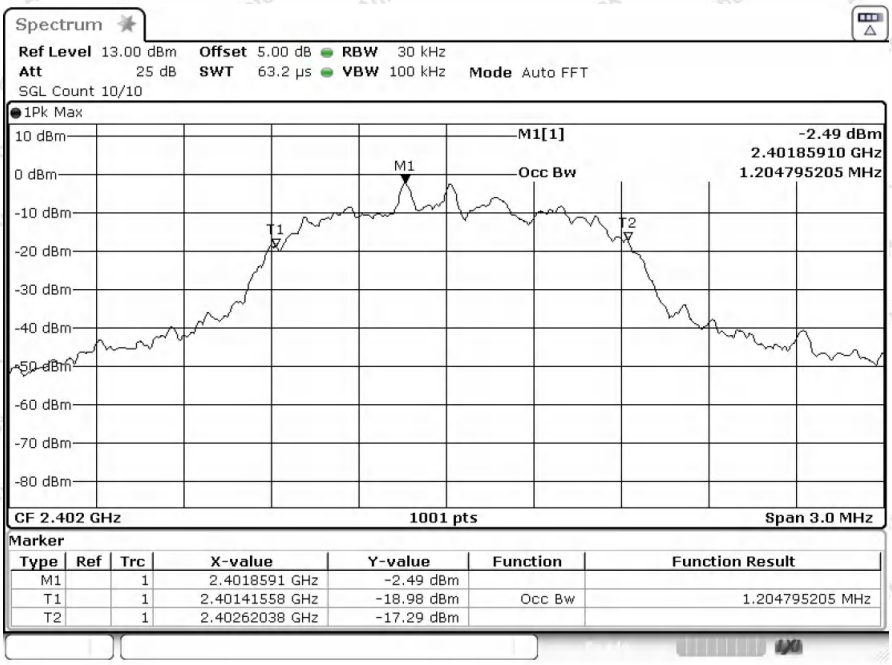

**99%_Occupied_Bandwidth_NVNT_ANT1_2-DH5_2441**



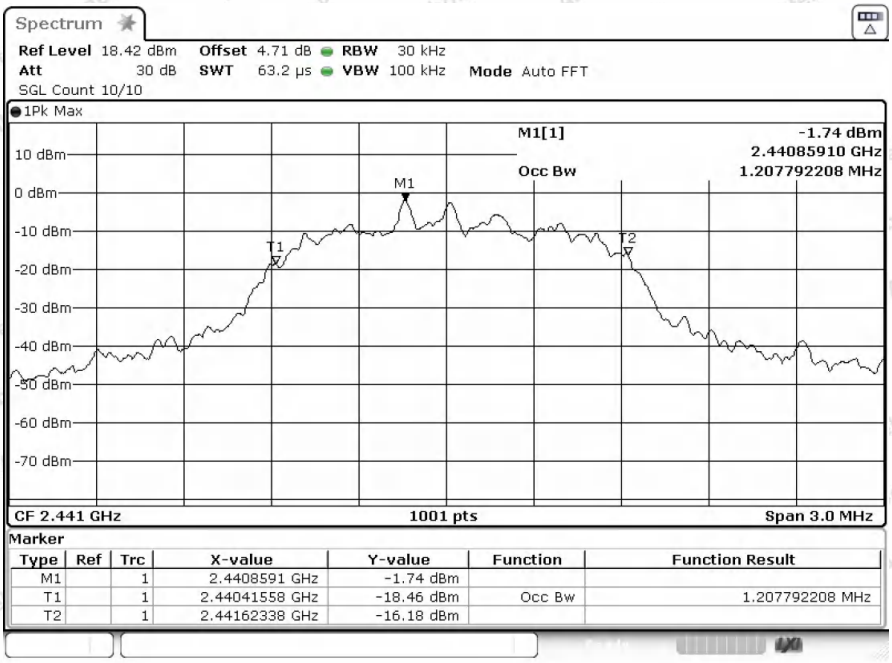

**99%_Occupied_Bandwidth_NVNT_ANT1_2-DH5_2480**



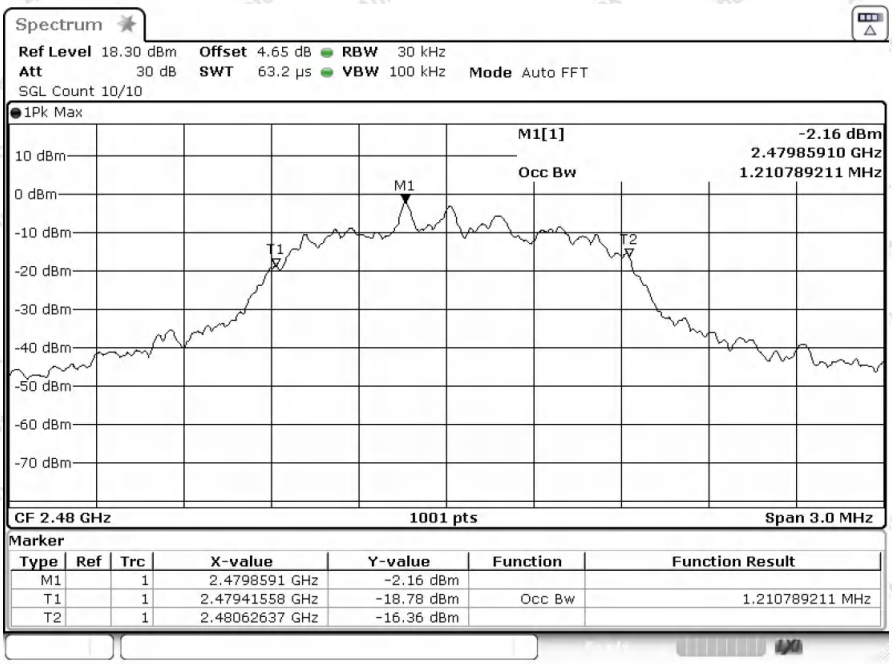

**99%_Occupied_Bandwidth_NVNT_ANT1_3-DH5_2402**




**99%_Occupied_Bandwidth_NVNT_ANT1_3-DH5_2441**



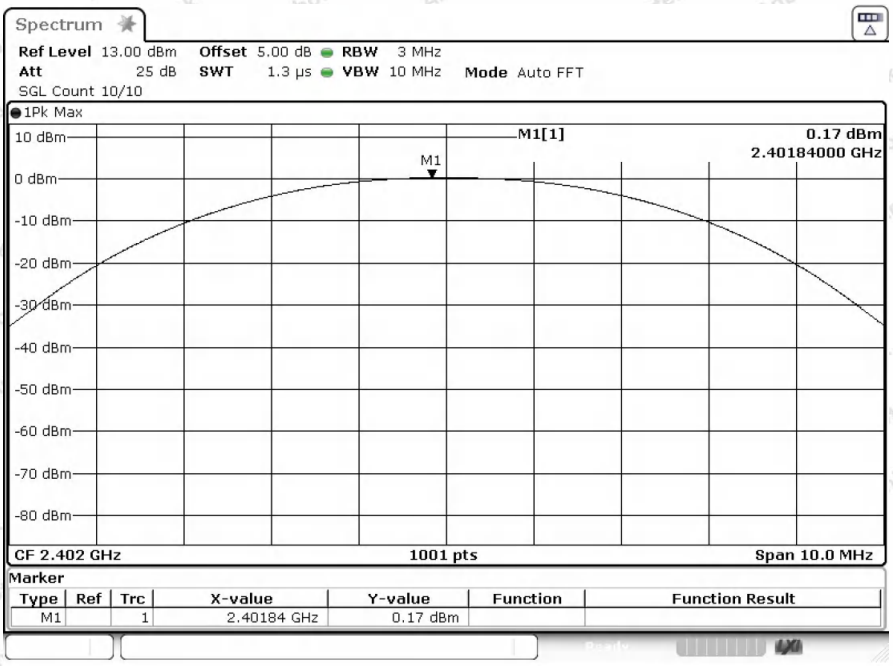

**99%_Occupied_Bandwidth_NVNT_ANT1_3-DH5_2480**



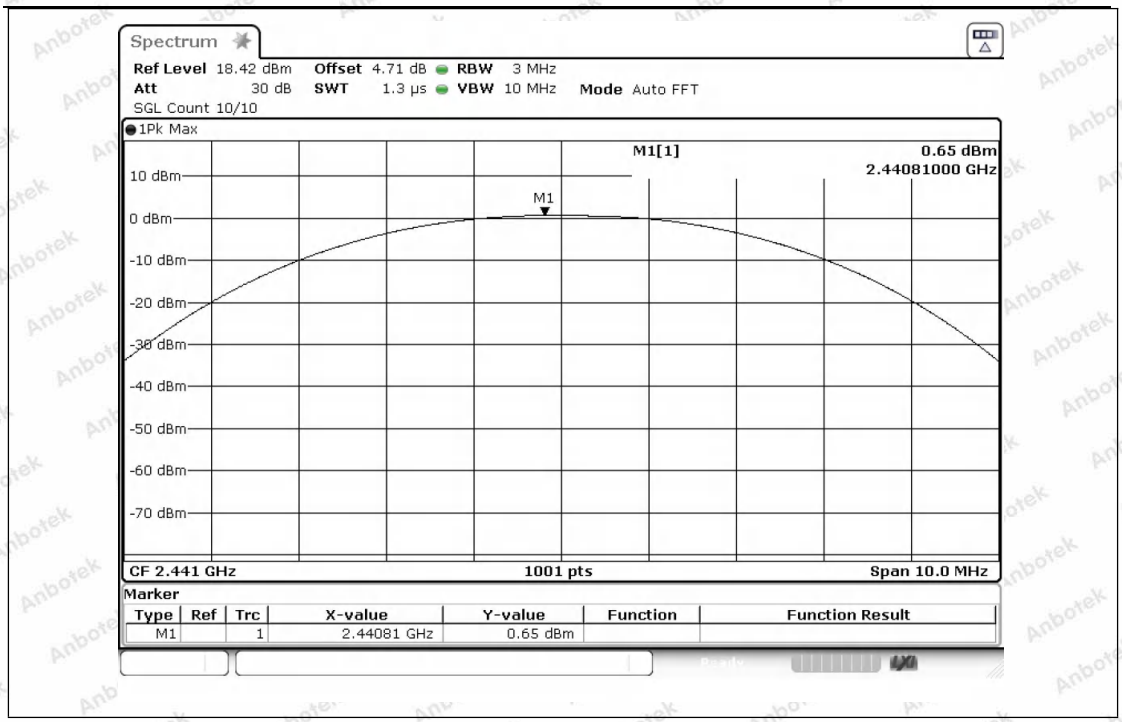
# Appendix C: Peak Output Power

| Condition | Antenna | Modulation | Frequency (MHz) | Max. Conducted Power(dBm) | Max. Conducted Power(mW) | Limit(mW) | Result |
|---|---|---|---|---|---|---|---|
| NVNT | ANT1 | 1-DH5 | 2402.00 | 0.17 | 1.04 | 125 | Pass |
| NVNT | ANT1 | 1-DH5 | 2441.00 | 0.65 | 1.16 | 125 | Pass |
| NVNT | ANT1 | 1-DH5 | 2480.00 | 0.20 | 1.05 | 125 | Pass |
| NVNT | ANT1 | 2-DH5 | 2402.00 | 0.83 | 1.21 | 125 | Pass |
| NVNT | ANT1 | 2-DH5 | 2441.00 | 1.12 | 1.30 | 125 | Pass |
| NVNT | ANT1 | 2-DH5 | 2480.00 | 0.71 | 1.18 | 125 | Pass |
| NVNT | ANT1 | 3-DH5 | 2402.00 | 1.12 | 1.29 | 125 | Pass |
| NVNT | ANT1 | 3-DH5 | 2441.00 | **1.60** | 1.44 | 125 | Pass |
| NVNT | ANT1 | 3-DH5 | 2480.00 | 0.99 | 1.26 | 125 | Pass |

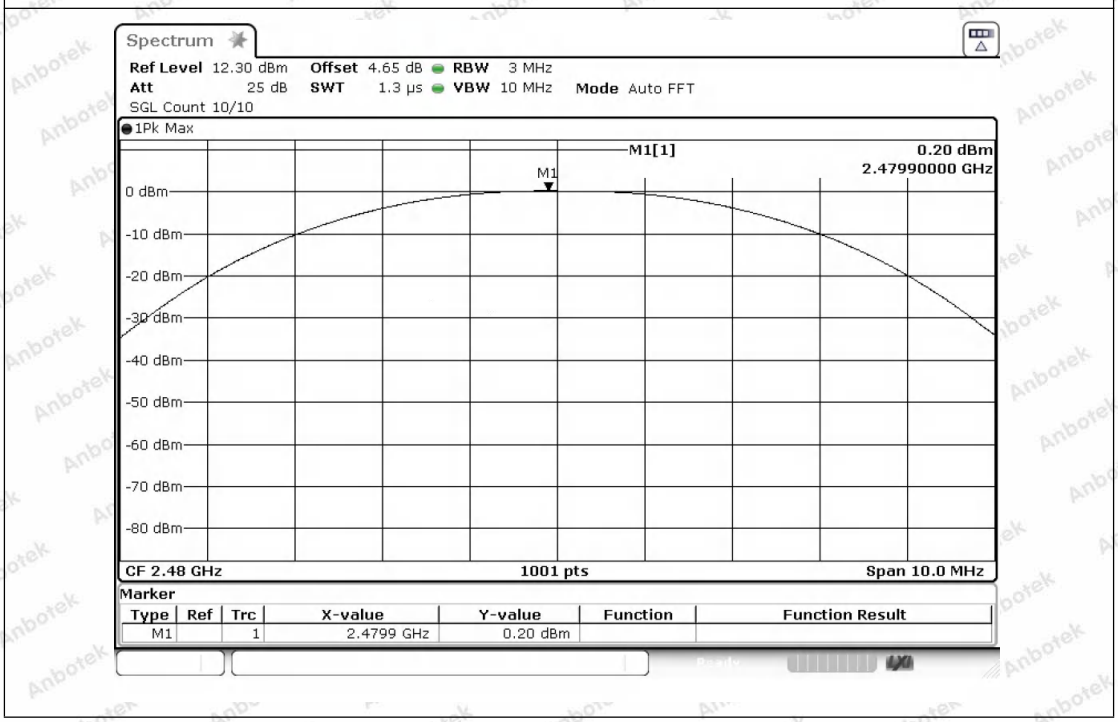
**Peak_Output_Power_NVNT_ANT1_1-DH5_2402**



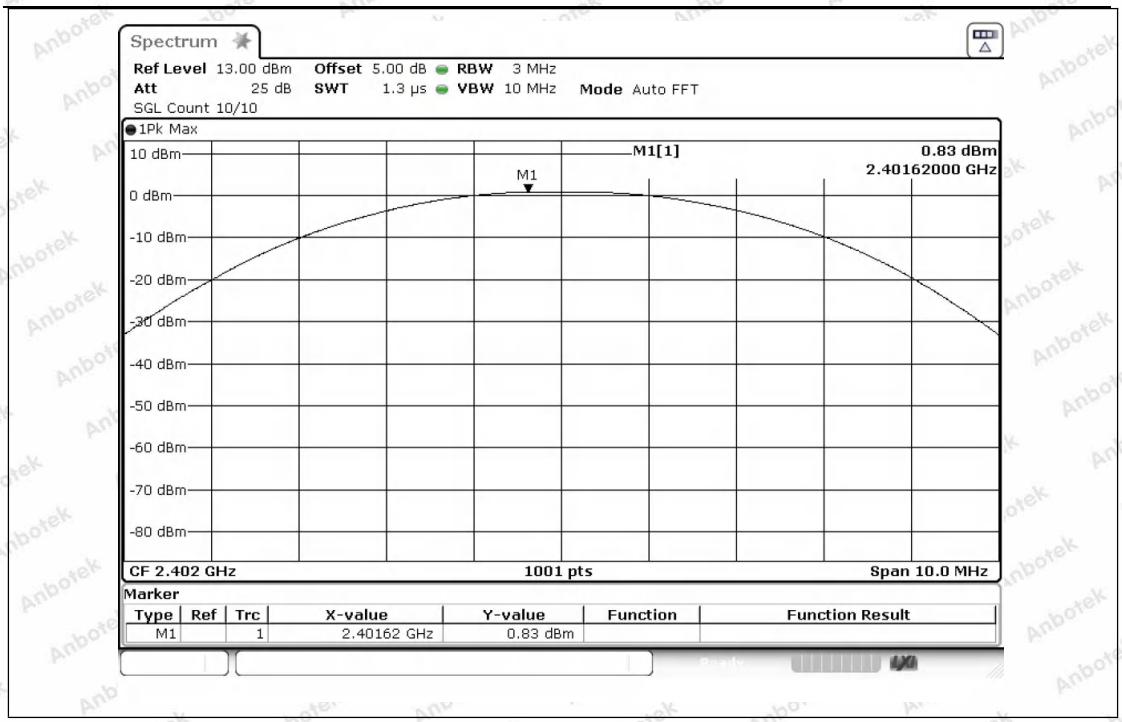

**Peak_Output_Power_NVNT_ANT1_1-DH5_2441**



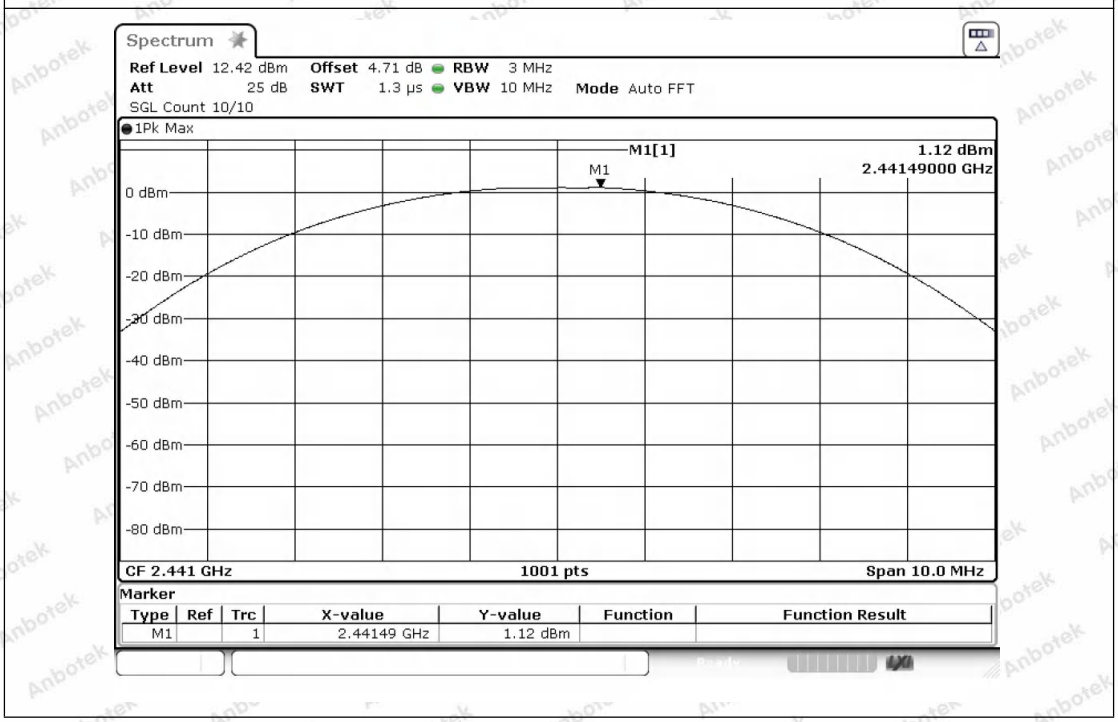

**Peak_Output_Power_NVNT_ANT1_1-DH5_2480**



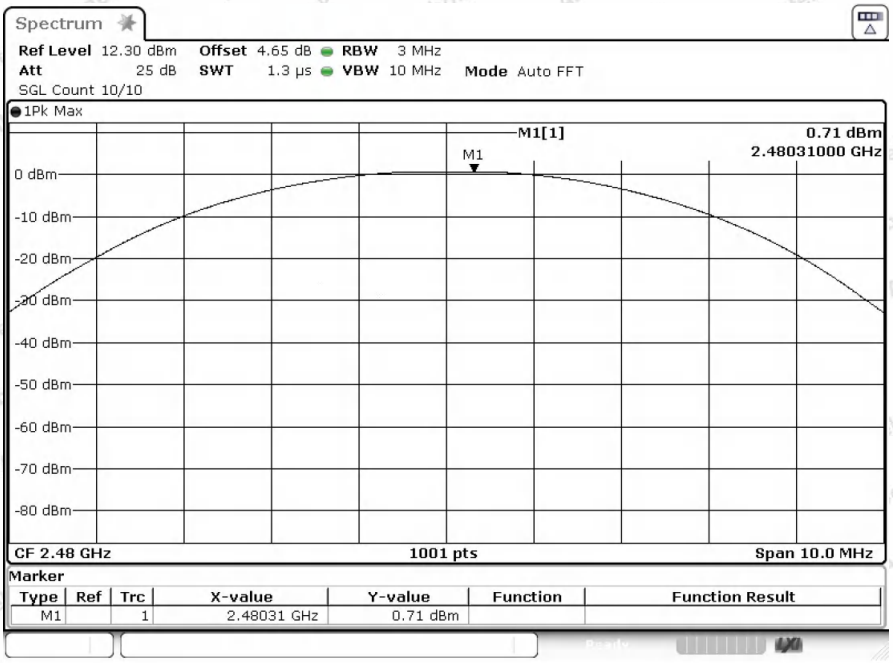

**Peak_Output_Power_NVNT_ANT1_2-DH5_2402**



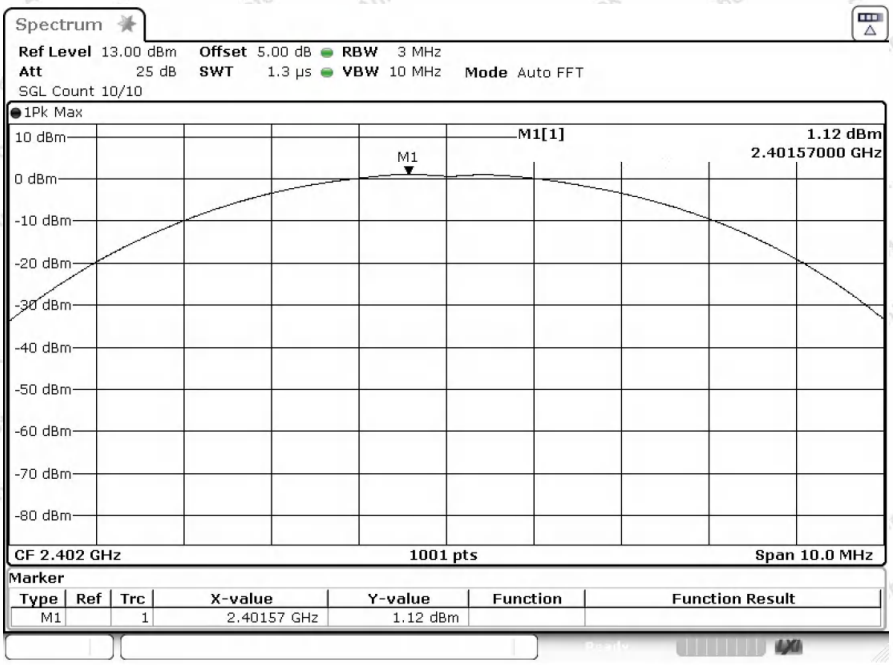

**Peak_Output_Power_NVNT_ANT1_2-DH5_2441**



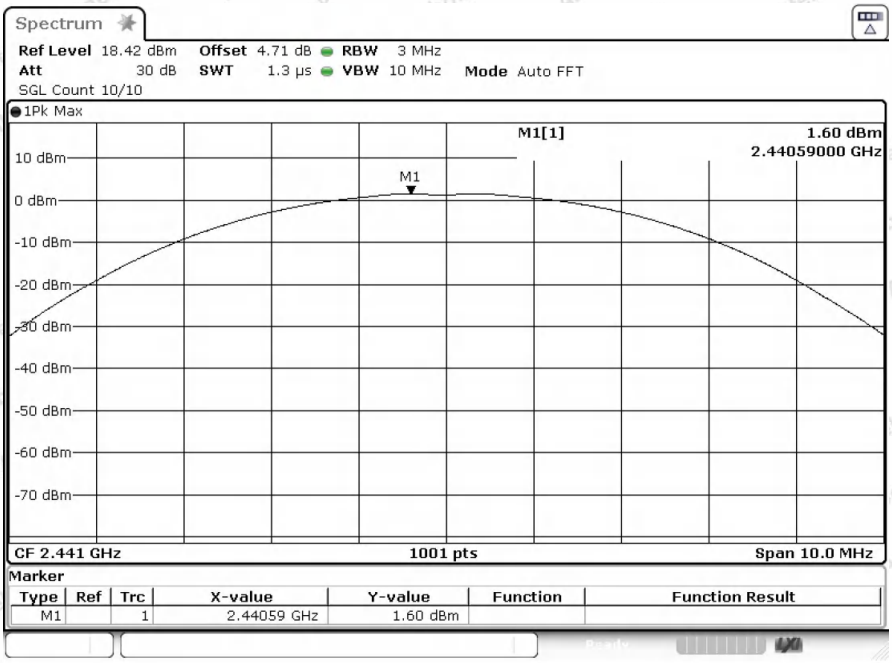

**Peak_Output_Power_NVNT_ANT1_2-DH5_2480**



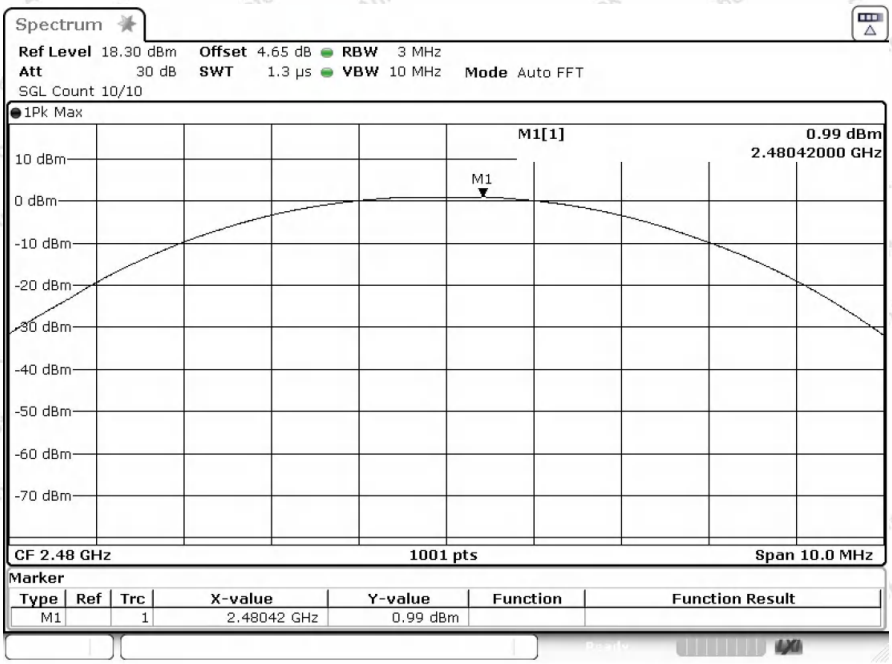

**Peak_Output_Power_NVNT_ANT1_3-DH5_2402**




**Peak_Output_Power_NVNT_ANT1_3-DH5_2441**



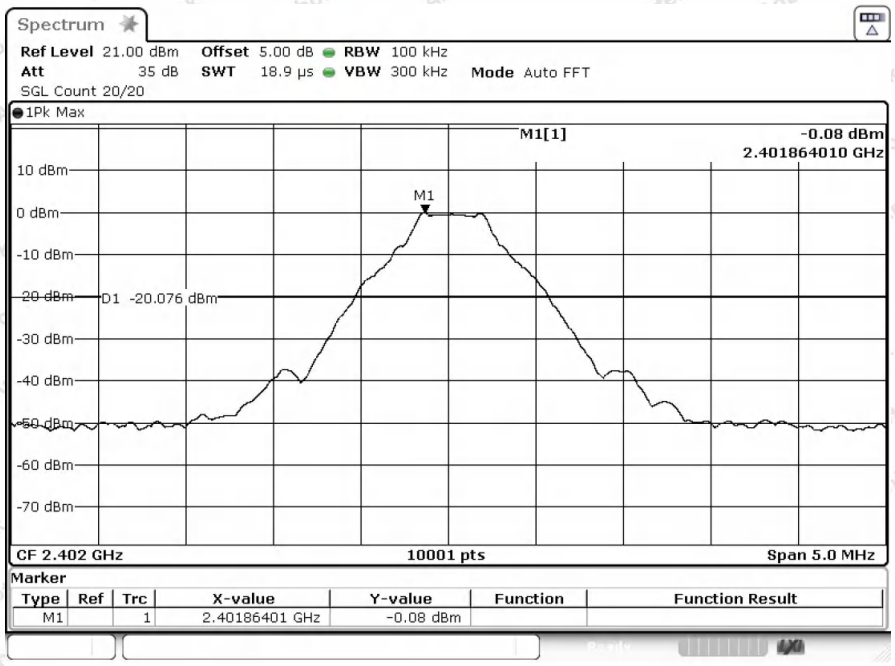

**Peak_Output_Power_NVNT_ANT1_3-DH5_2480**



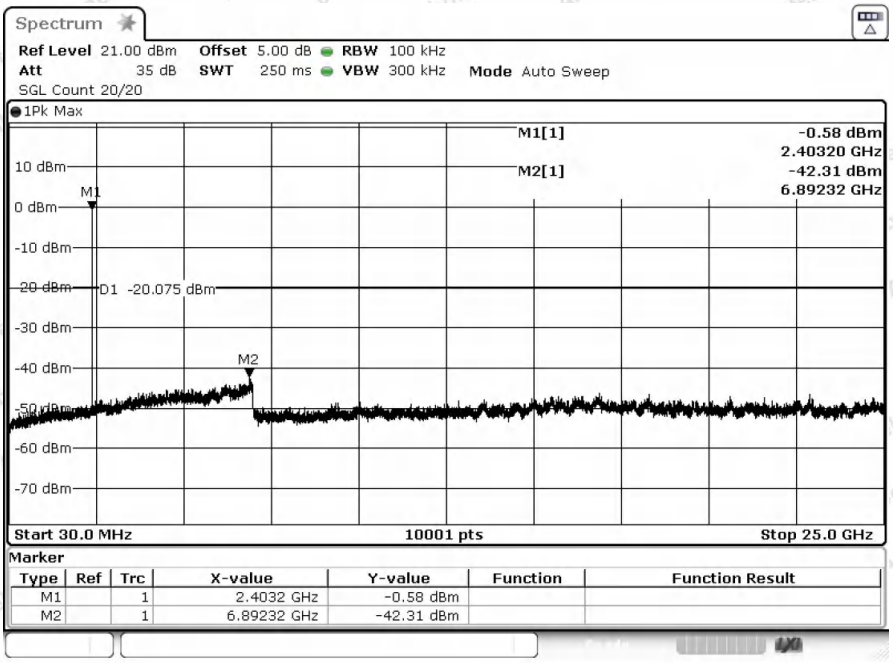
# Appendix D: Spurious Emissions

| Condition | Antenna | Modulation | TX Mode | Spurious MAX.Value(dBm) | Limit | Result |
|---|---|---|---|---|---|---|
| NVNT | ANT1 | 1-DH5 | 2402.00 | -42.307 | -20.075 | Pass |
| NVNT | ANT1 | 1-DH5 | 2441.00 | -41.965 | -19.629 | Pass |
| NVNT | ANT1 | 1-DH5 | 2480.00 | -41.369 | -20.388 | Pass |
| NVNT | ANT1 | 2-DH5 | 2402.00 | -42.866 | -20.016 | Pass |
| NVNT | ANT1 | 2-DH5 | 2441.00 | -43.761 | -19.744 | Pass |
| NVNT | ANT1 | 2-DH5 | 2480.00 | -43.299 | -20.182 | Pass |
| NVNT | ANT1 | 3-DH5 | 2402.00 | -48.067 | -20.047 | Pass |
| NVNT | ANT1 | 3-DH5 | 2441.00 | -42.962 | -19.637 | Pass |
| NVNT | ANT1 | 3-DH5 | 2480.00 | -43.331 | -20.157 | Pass |

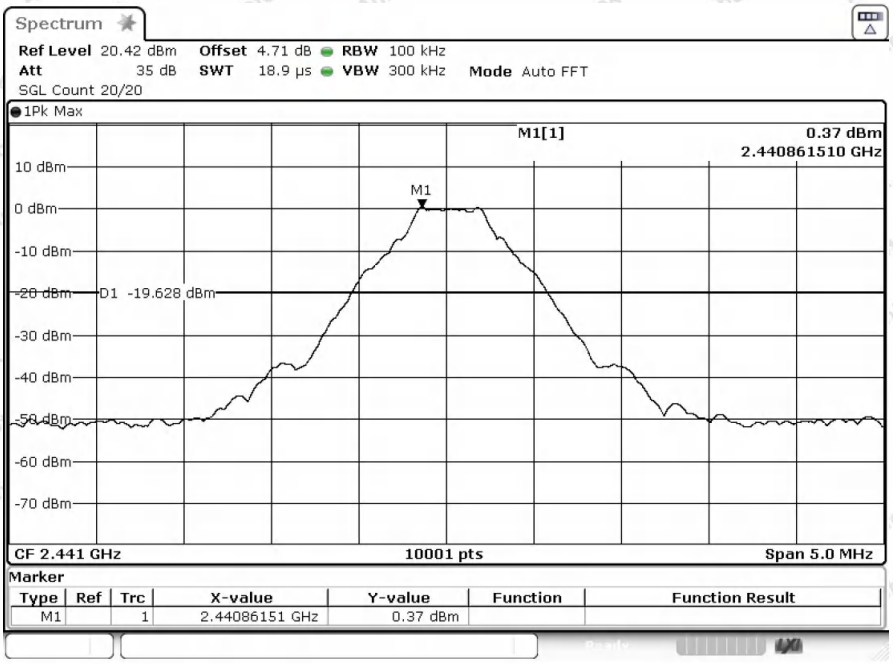
**1_Reference_Level_NVNT_ANT1_1-DH5_2402**



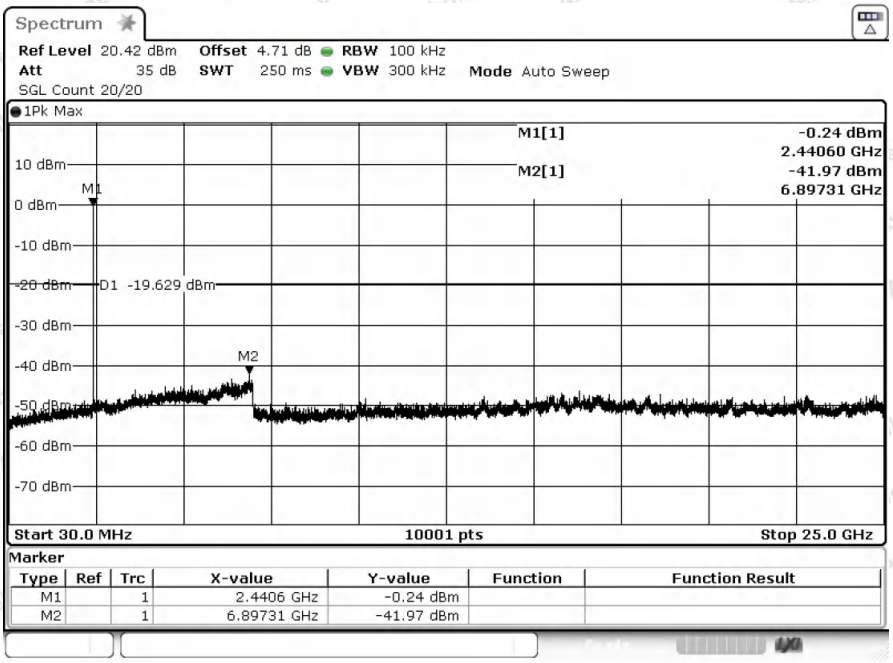

**2_Spurious_Emissions_NVNT_ANT1_1-DH5_2402**



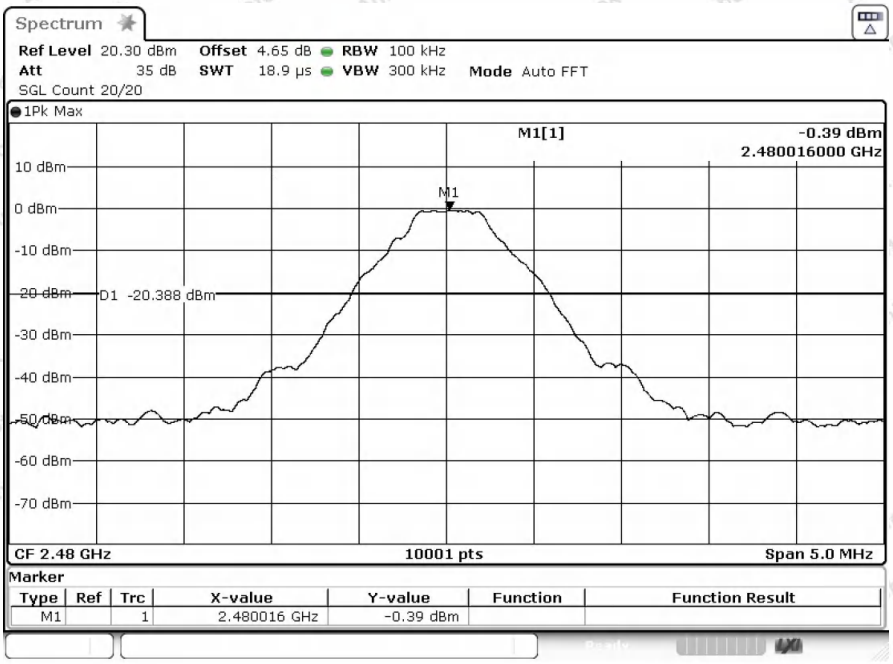

1_Reference_Level_NVNT_ANT1_1-DH5_2441



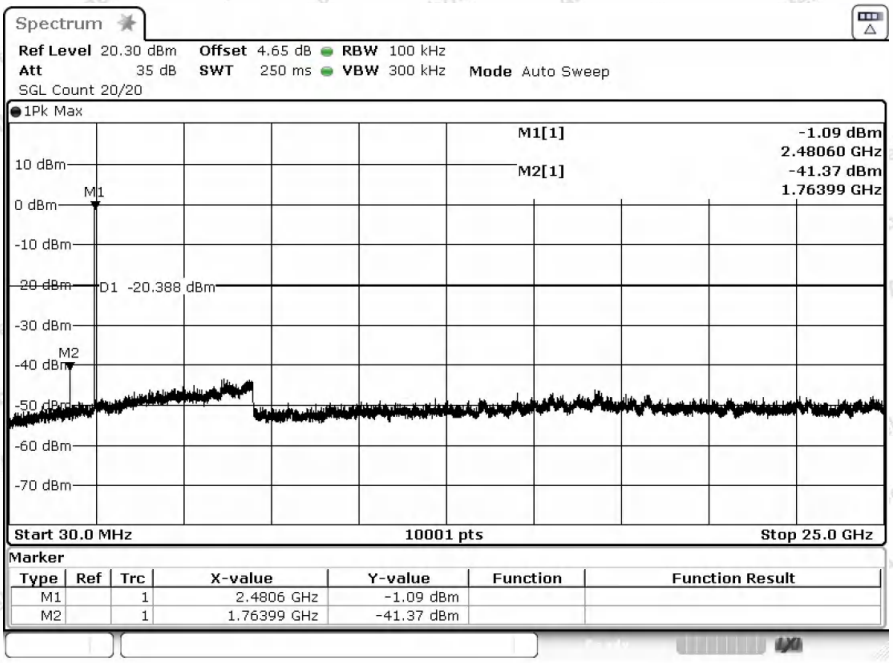

2_Spurious_Emissions_NVNT_ANT1_1-DH5_2441



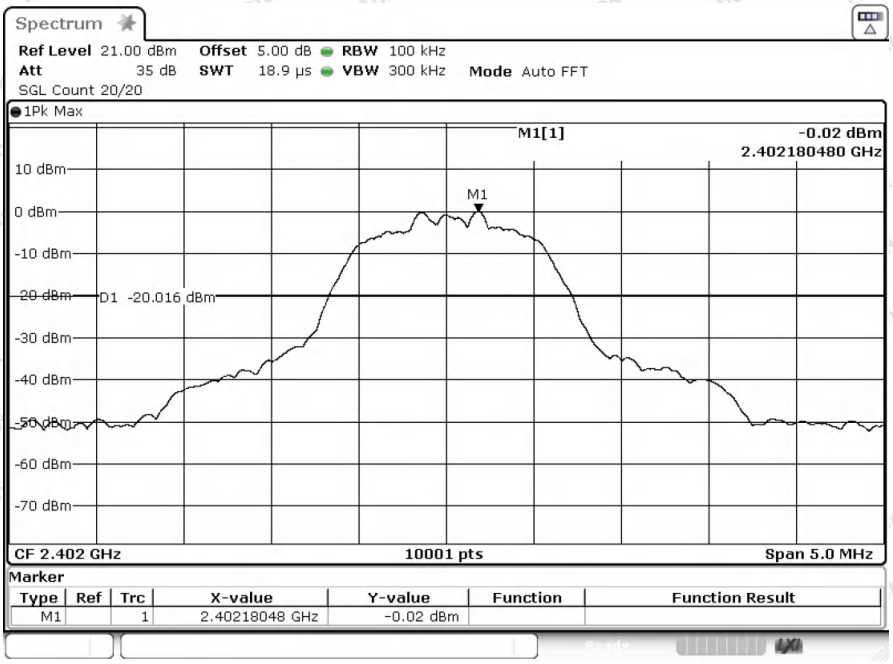

1_Reference_Level_NVNT_ANT1_1-DH5_2480



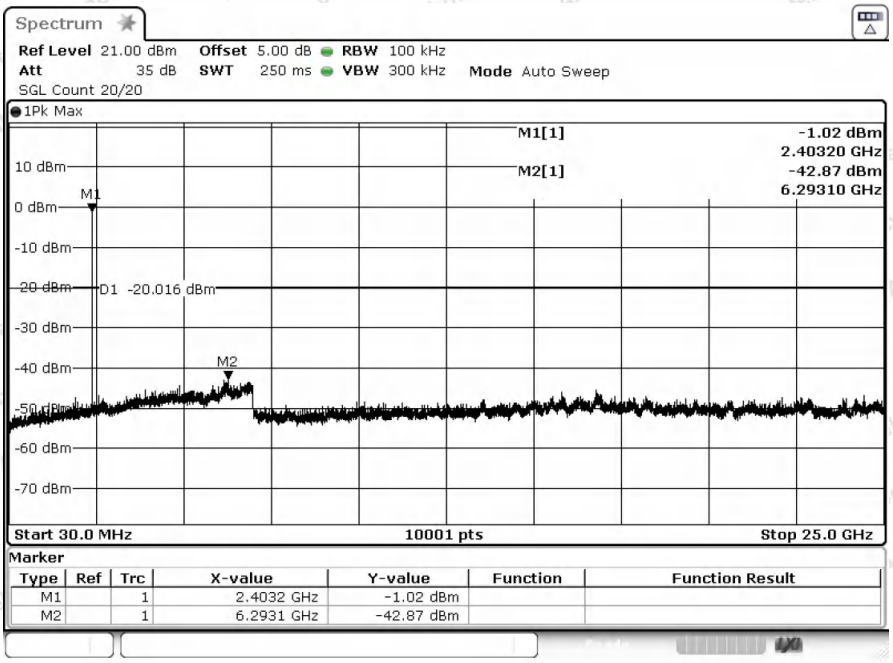

2_Spurious_Emissions_NVNT_ANT1_1-DH5_2480



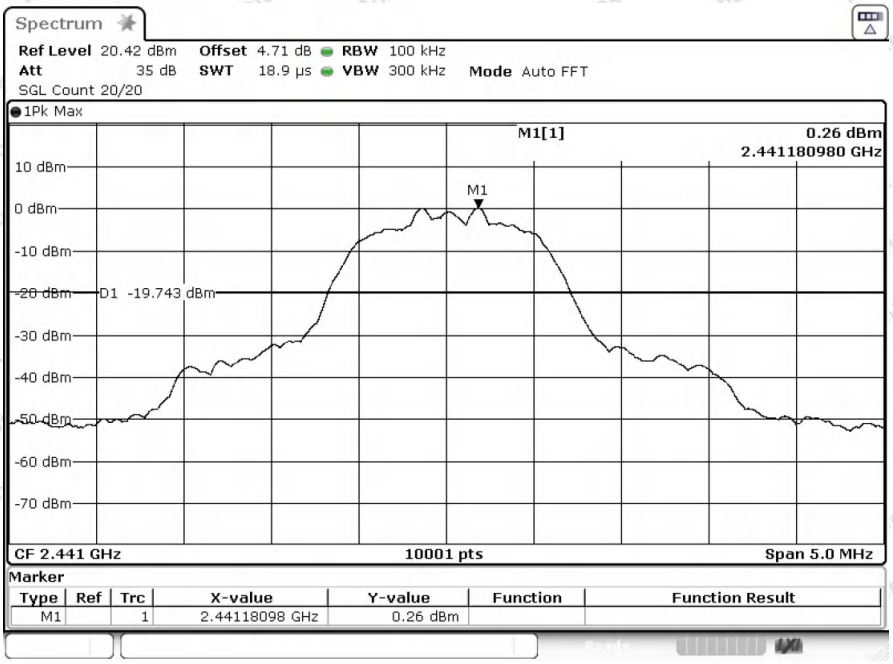

1_Reference_Level_NVNT_ANT1_2-DH5_2402



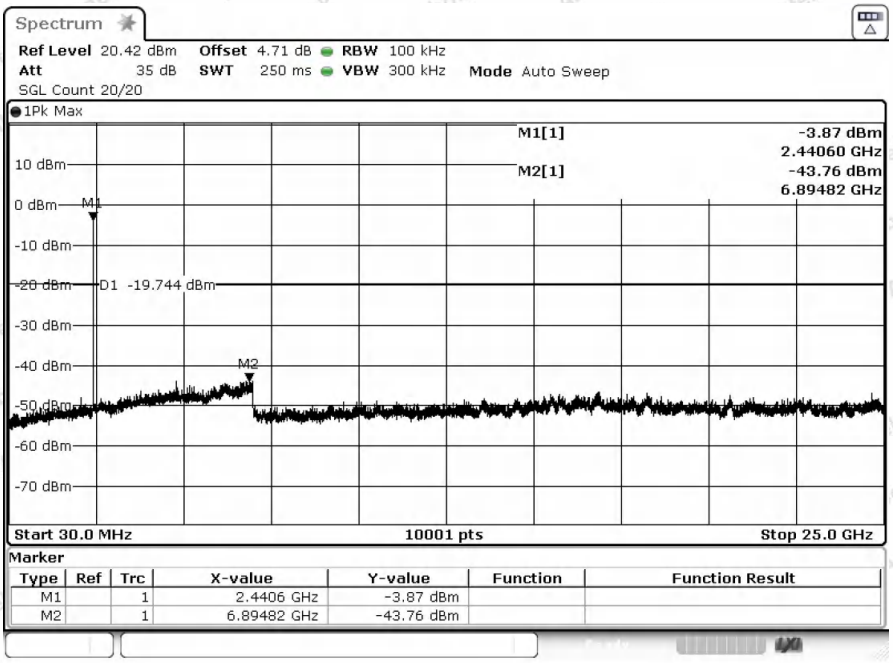

2_Spurious_Emissions_NVNT_ANT1_2-DH5_2402



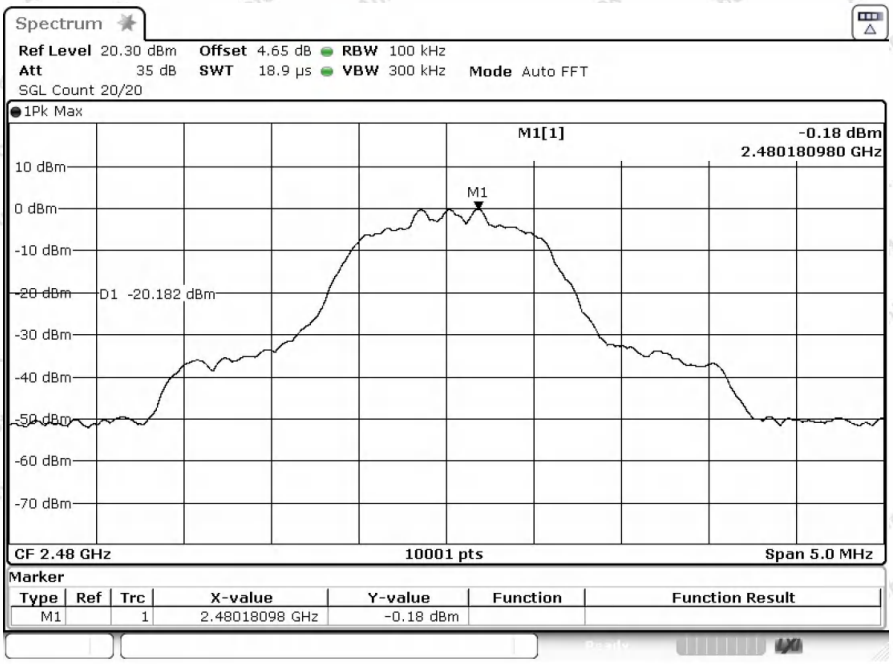

1_Reference_Level_NVNT_ANT1_2-DH5_2441



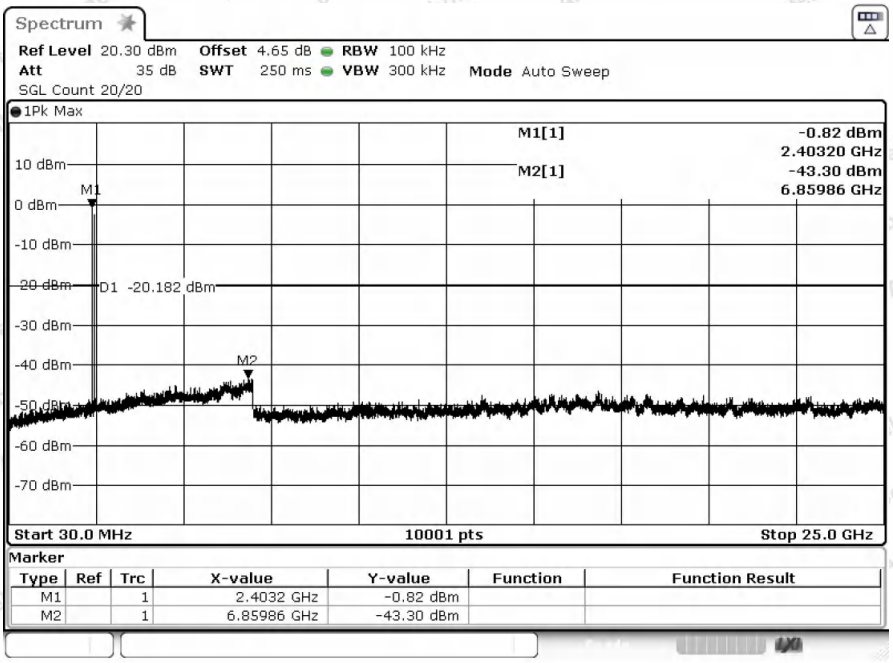

2_Spurious_Emissions_NVNT_ANT1_2-DH5_2441



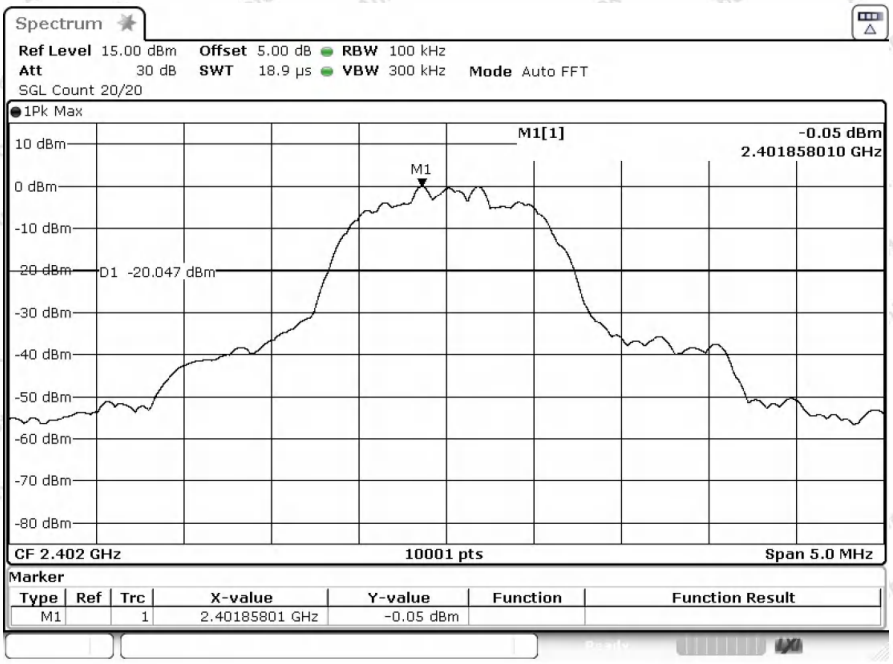

**1_Reference_Level_NVNT_ANT1_2-DH5_2480**



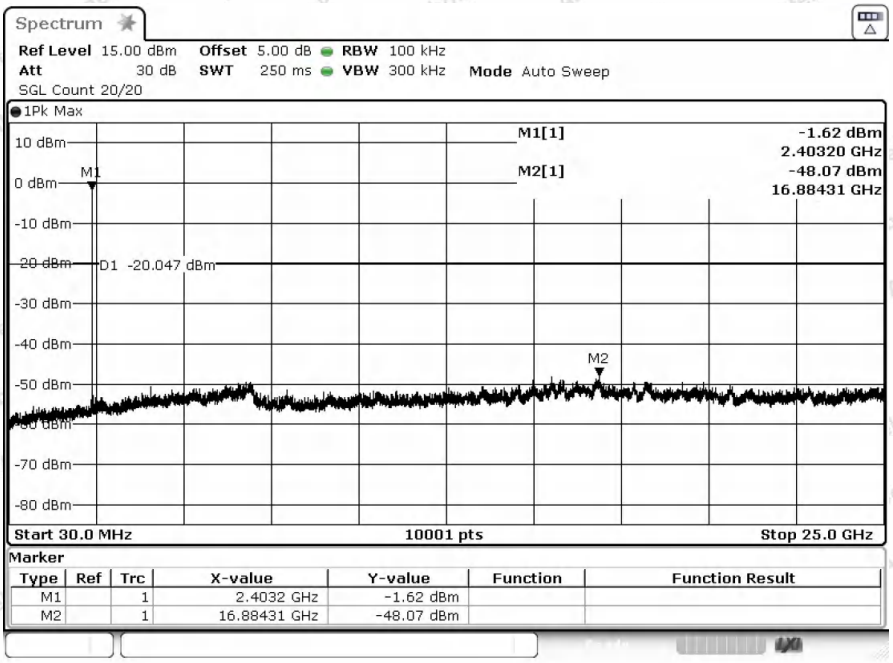

**2_Spurious_Emissions_NVNT_ANT1_2-DH5_2480**



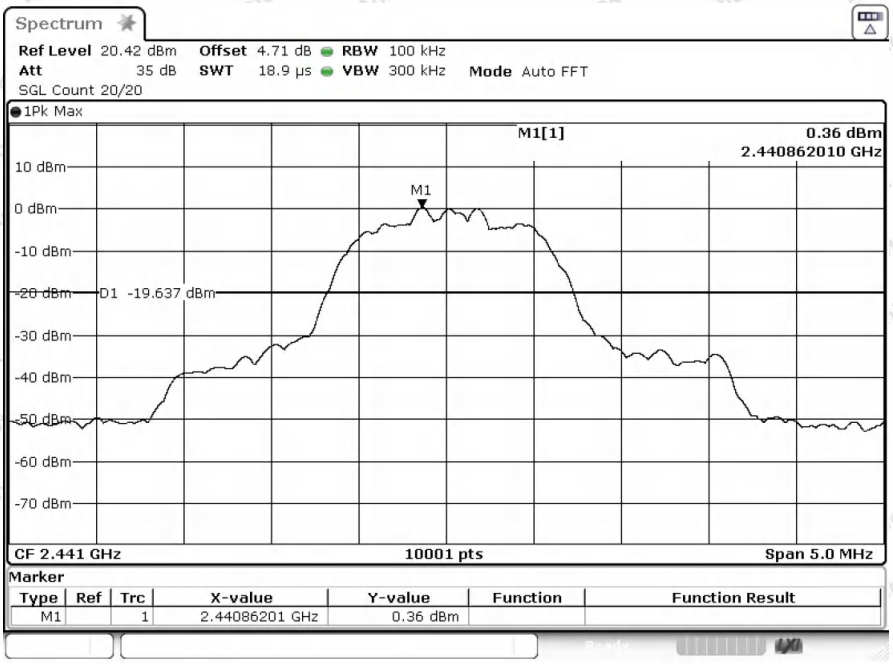

1_Reference_Level_NVNT_ANT1_3-DH5_2402



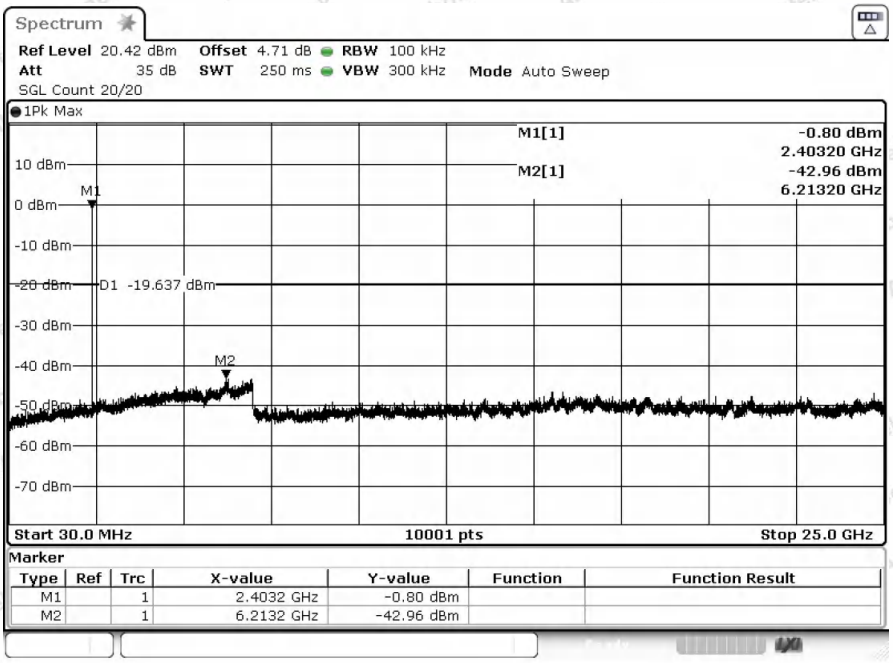

2_Spurious_Emissions_NVNT_ANT1_3-DH5_2402



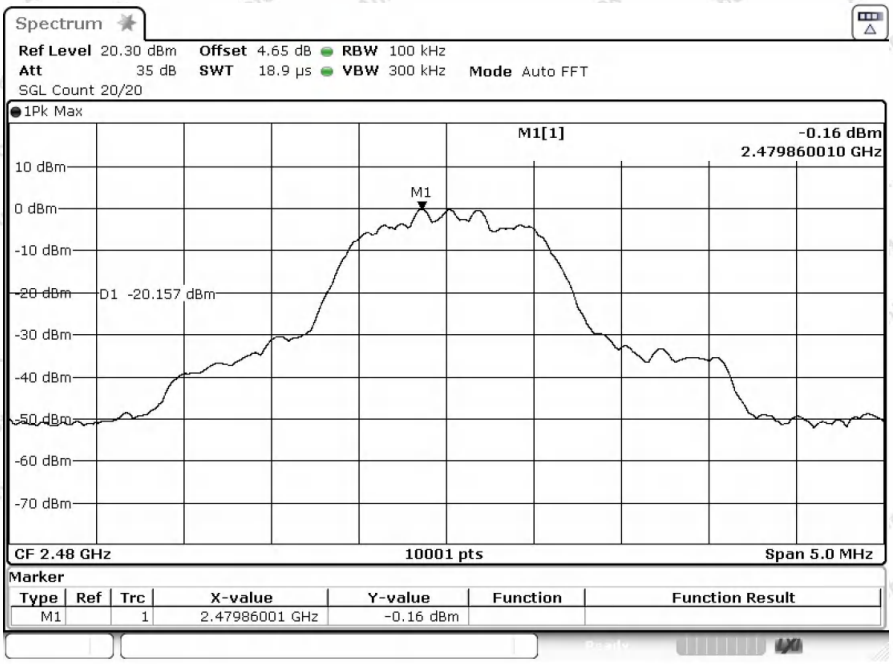

1_Reference_Level_NVNT_ANT1_3-DH5_2441



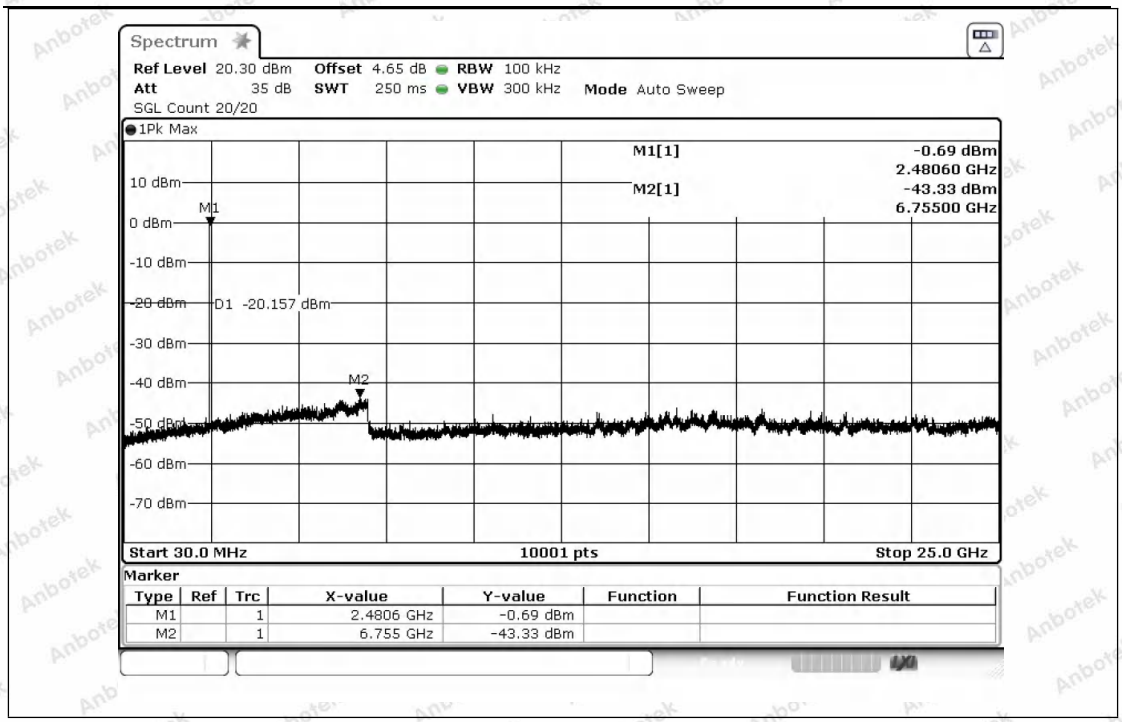

2_Spurious_Emissions_NVNT_ANT1_3-DH5_2441




1_Reference_Level_NVNT_ANT1_3-DH5_2480



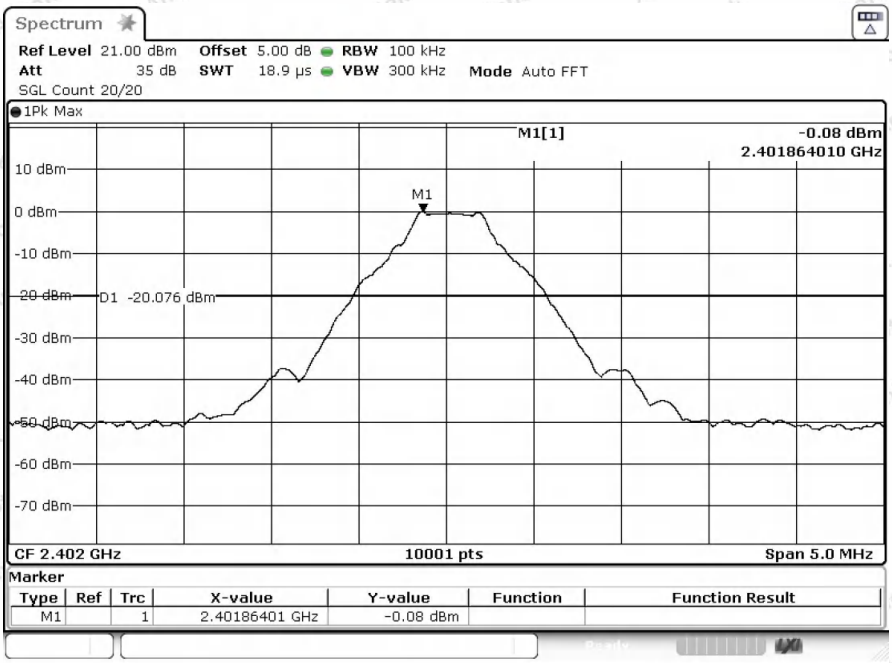

2_Spurious_Emissions_NVNT_ANT1_3-DH5_2480


Spectrum
Ref Level 20.30 dBm Offset 4.65 dB RBW 100 kHz
Att 35 dB SWT 250 ms VBW 300 kHz Mode Auto Sweep
SGL Count 20/20
1Pk Max
M1[1] -0.69 dBm 2.48060 GHz
M2[1] -43.33 dBm 6.75500 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
D1 -20.157 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
M2
Start 30.0 MHz 10001 pts Stop 25.0 GHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.4806 GHz -0.69 dBm
M2 1 6.755 GHz -43.33 dBm

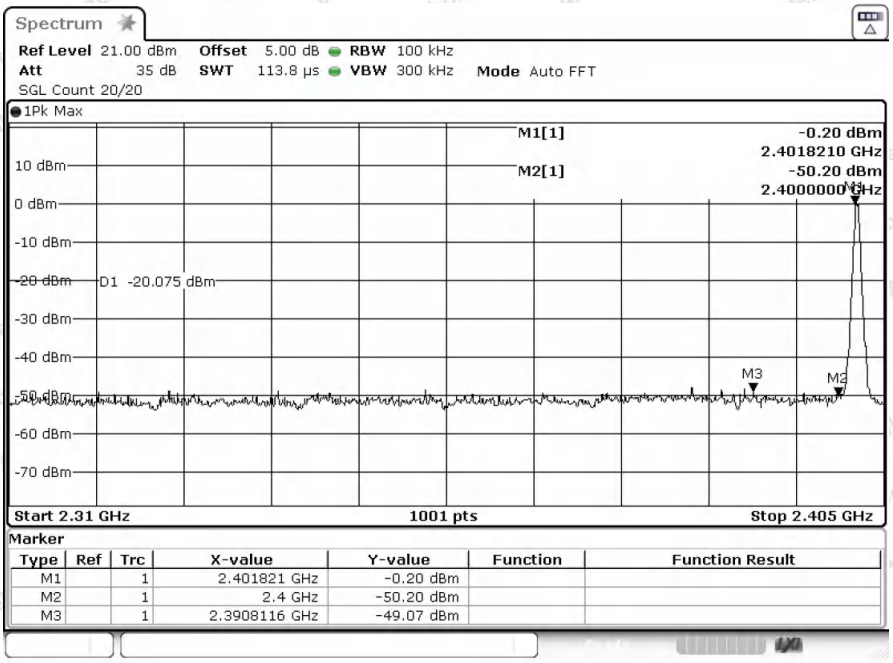
# Appendix E: Bandedge

| Condition | Antenna | Modulation | TX Mode | Bandedge MAX.Value | Limit | Result |
|---|---|---|---|---|---|---|
| NVNT | ANT1 | 1-DH5 | 2402.00 | -49.068 | -20.075 | Pass |
| NVNT | ANT1 | 1-DH5 | Hopping_LCH | -49.104 | -19.471 | Pass |
| NVNT | ANT1 | 1-DH5 | 2480.00 | -47.967 | -20.388 | Pass |
| NVNT | ANT1 | 1-DH5 | Hopping_HCH | -47.789 | -19.665 | Pass |
| NVNT | ANT1 | 2-DH5 | 2402.00 | -48.208 | -20.016 | Pass |
| NVNT | ANT1 | 2-DH5 | Hopping_LCH | -53.298 | -19.282 | Pass |
| NVNT | ANT1 | 2-DH5 | 2480.00 | -47.957 | -20.182 | Pass |
| NVNT | ANT1 | 2-DH5 | Hopping_HCH | -54.564 | -19.489 | Pass |
| NVNT | ANT1 | 3-DH5 | 2402.00 | -52.790 | -20.047 | Pass |
| NVNT | ANT1 | 3-DH5 | Hopping_LCH | -53.849 | -19.341 | Pass |
| NVNT | ANT1 | 3-DH5 | 2480.00 | -48.091 | -20.157 | Pass |
| NVNT | ANT1 | 3-DH5 | Hopping_HCH | -54.339 | -19.627 | Pass |

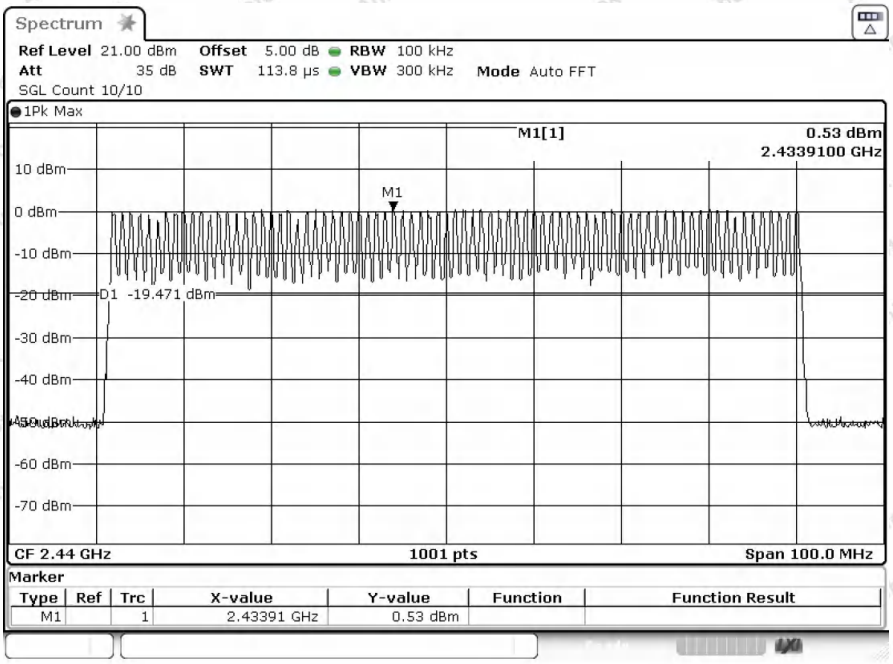
**1_Reference_Level_NVNT_ANT1_1-DH5_2402**



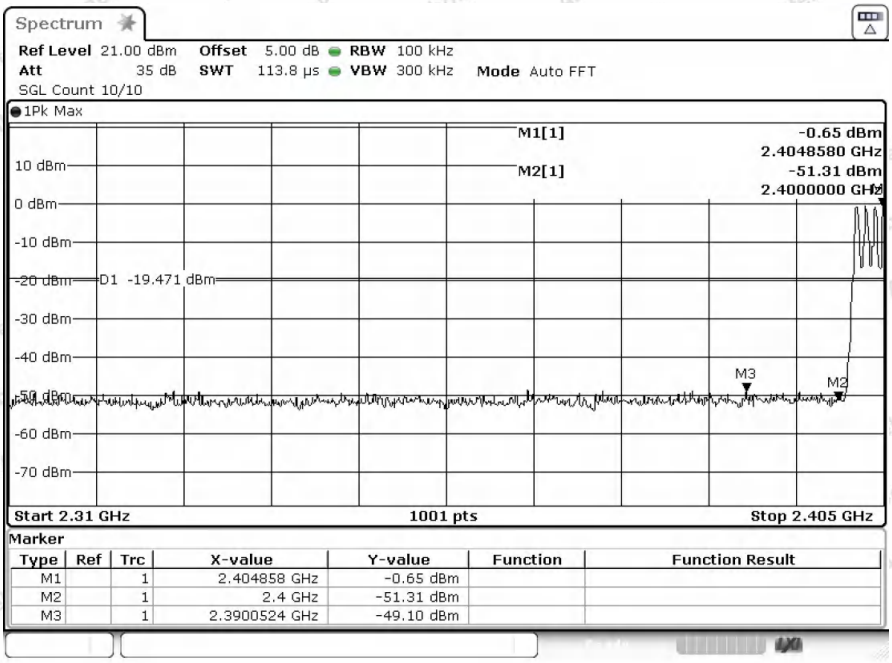

**2_Bandedge_NVNT_ANT1_1-DH5_2402**



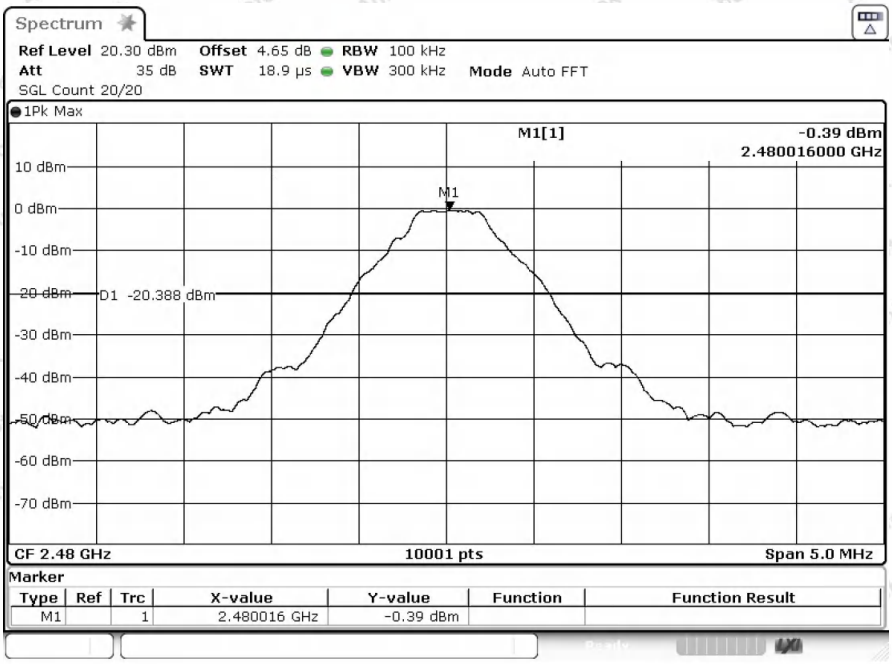

**1_Reference_Level_Hopping_NVNT_ANT1_1-DH5_Hopping**



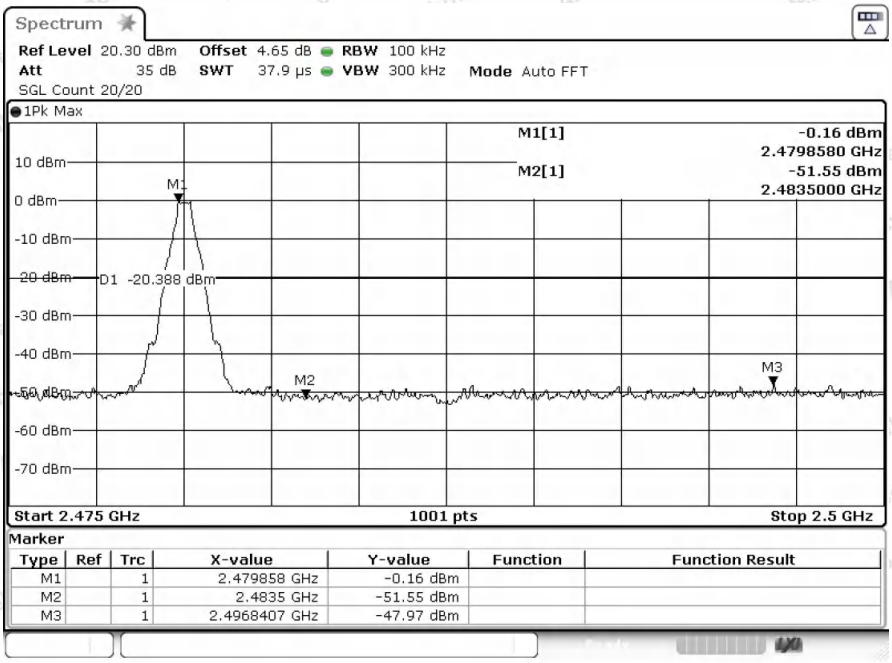

**2_Band_Edge_(Hopping)_NVNT_ANT1_1-DH5_Hopping**



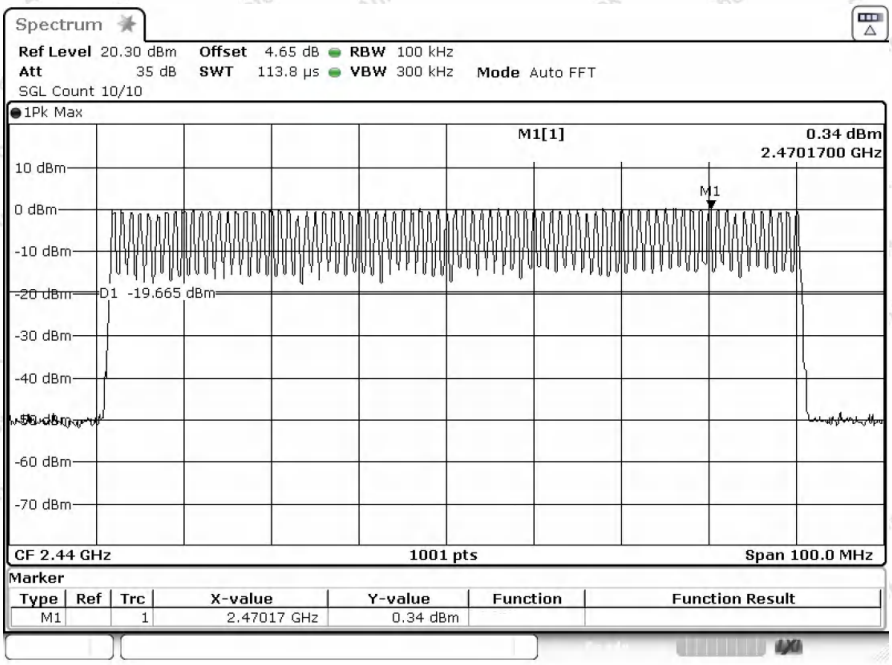

1_Reference_Level_NVNT_ANT1_1-DH5_2480



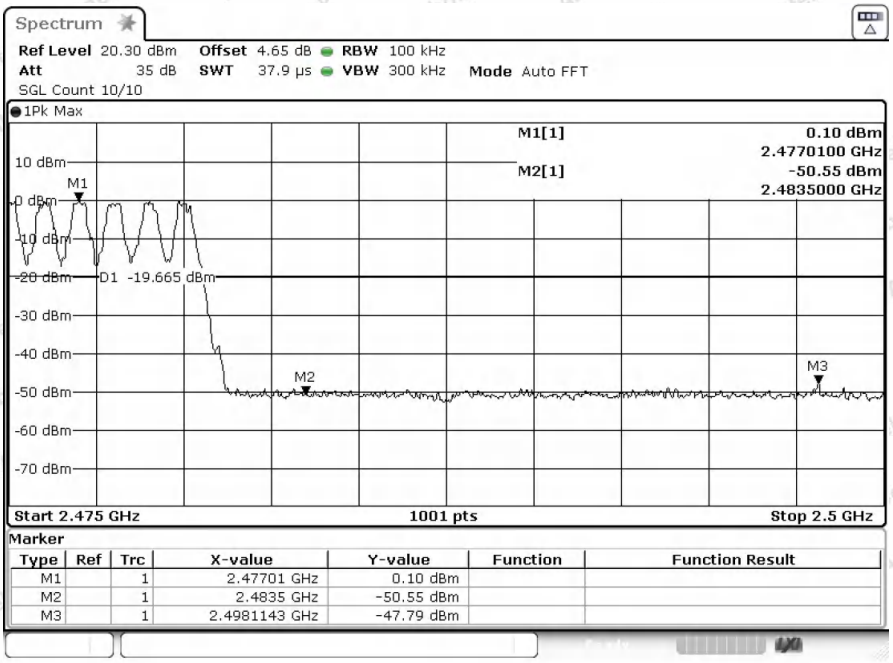

2_Bandedge_NVNT_ANT1_1-DH5_2480



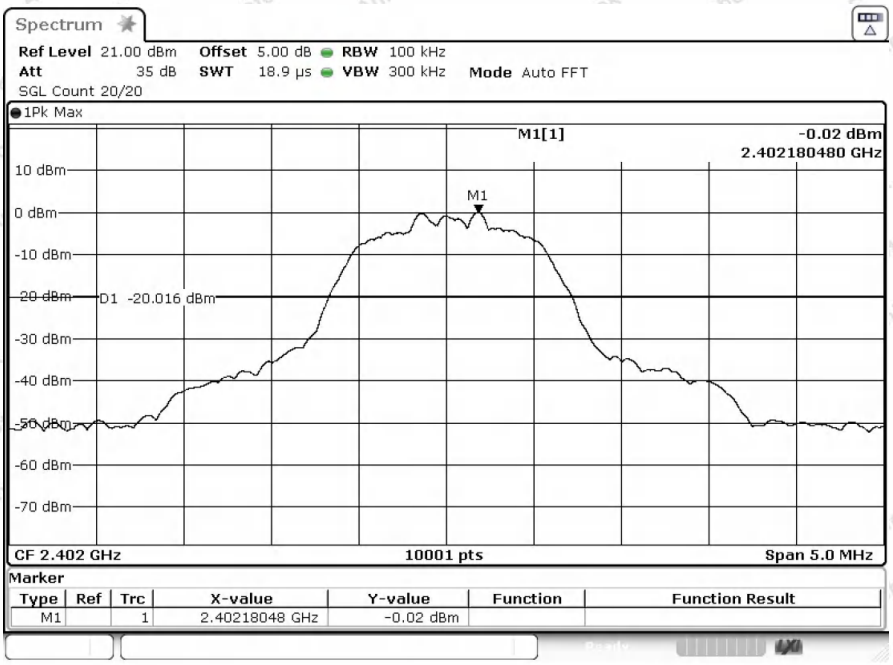

**1_Reference_Level_Hopping_NVNT_ANT1_1-DH5_Hopping**



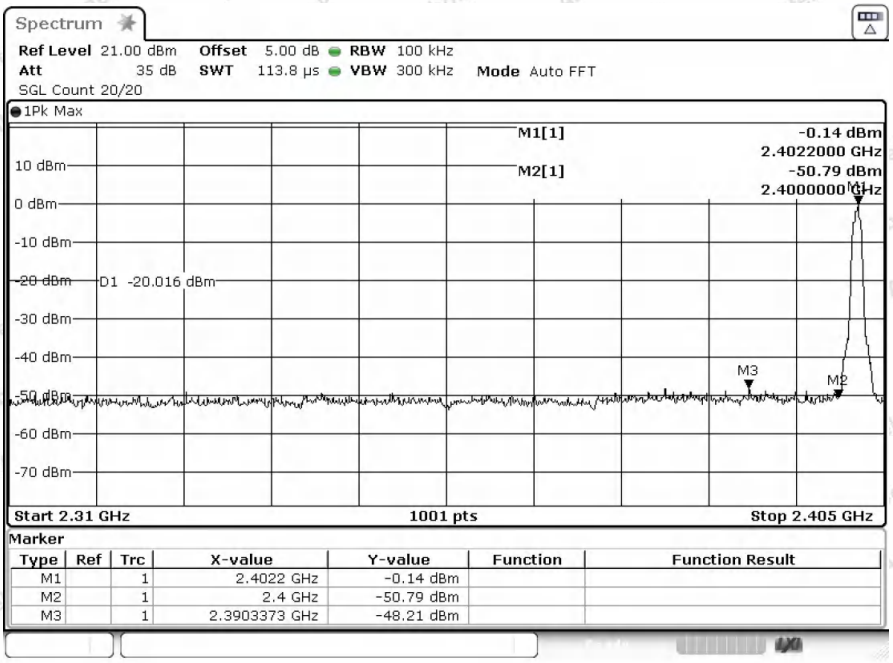

**2_Band_Edge_(Hopping)_NVNT_ANT1_1-DH5_Hopping**



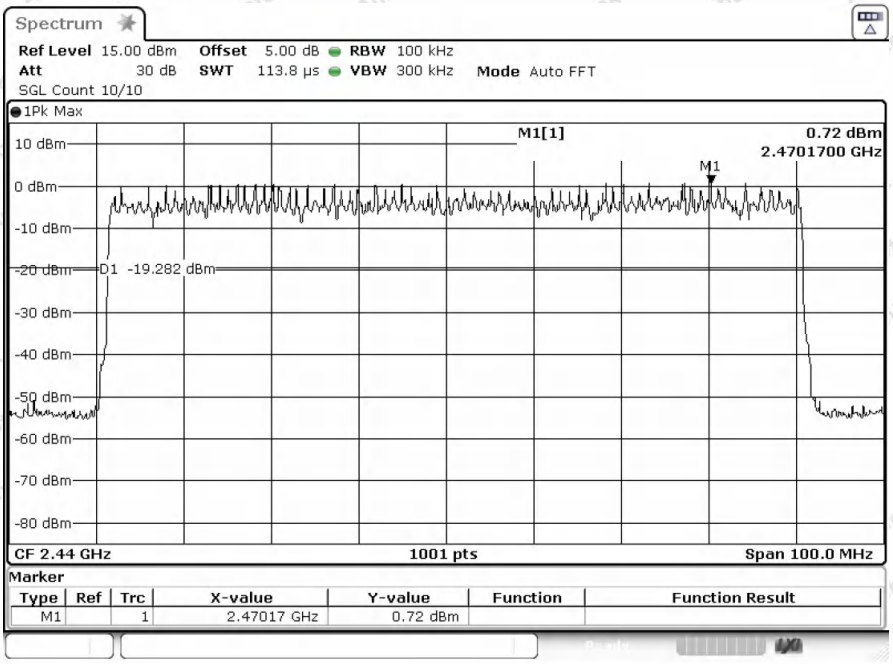

**1_Reference_Level_NVNT_ANT1_2-DH5_2402**



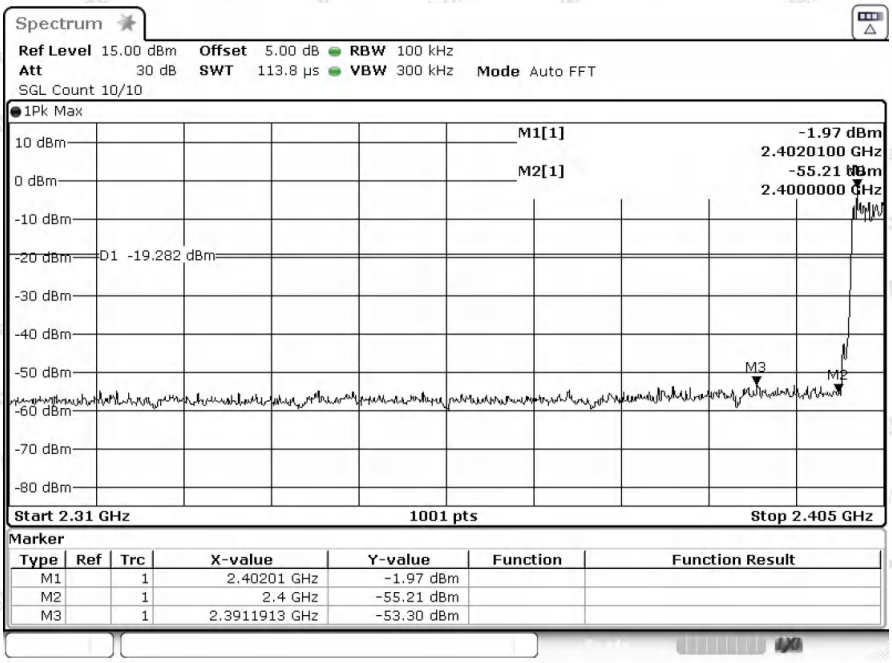

**2_Bandedge_NVNT_ANT1_2-DH5_2402**



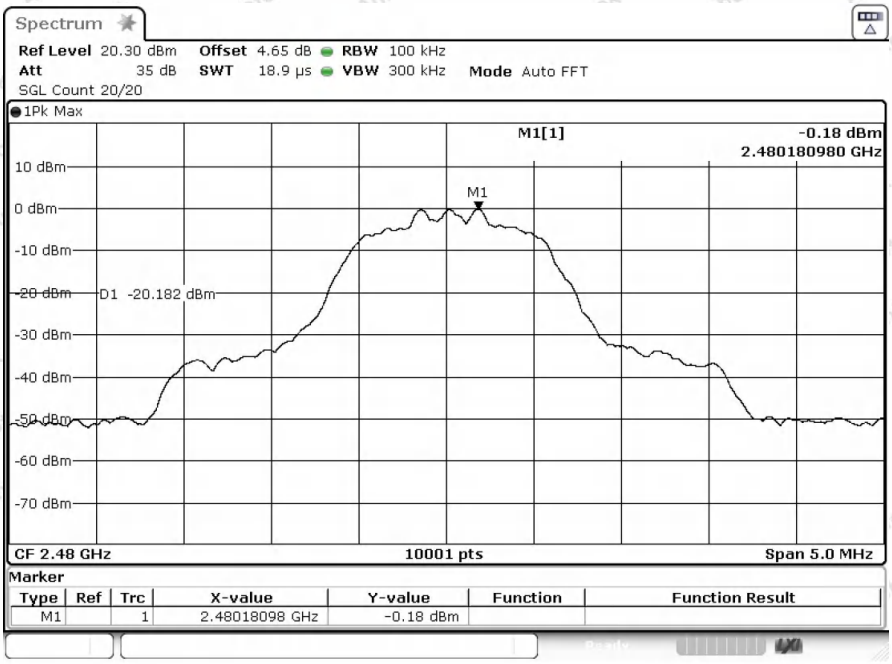

**1_Reference_Level_Hopping_NVNT_ANT1_2-DH5_Hopping**



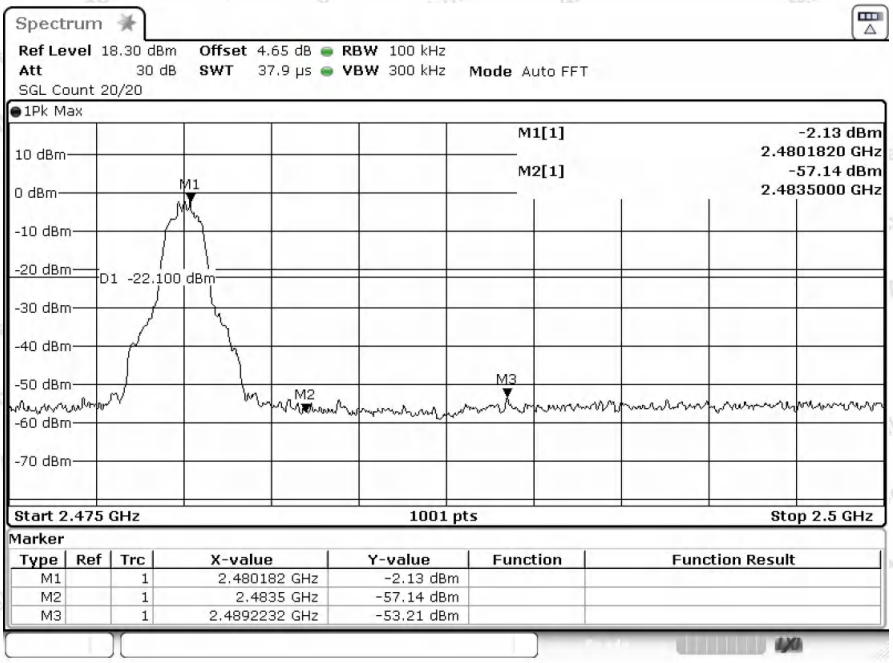

**2_Band_Edge_(Hopping)_NVNT_ANT1_2-DH5_Hopping**



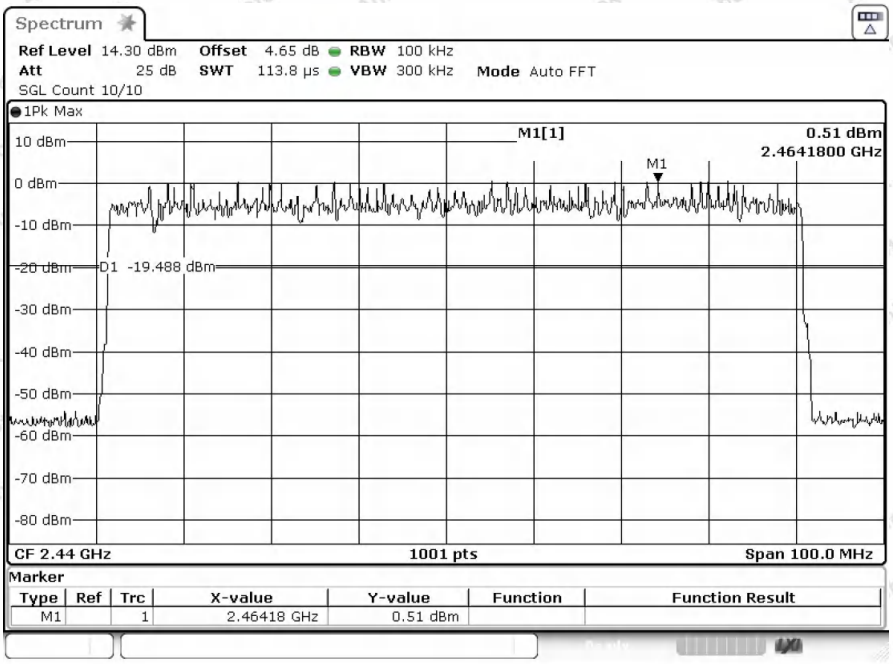

1_Reference_Level_NVNT_ANT1_2-DH5_2480



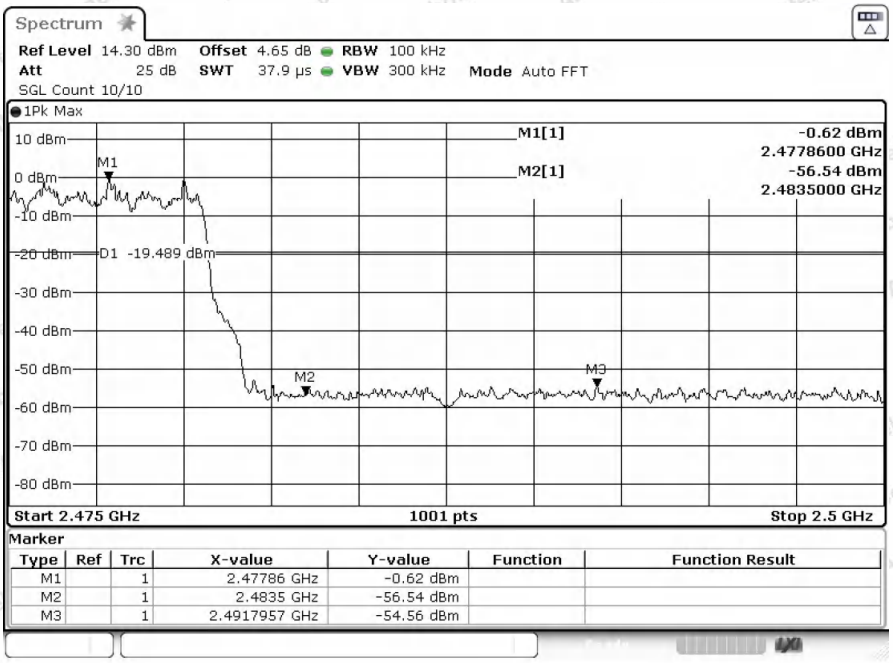

2_Bandedge_NVNT_ANT1_2-DH5_2480



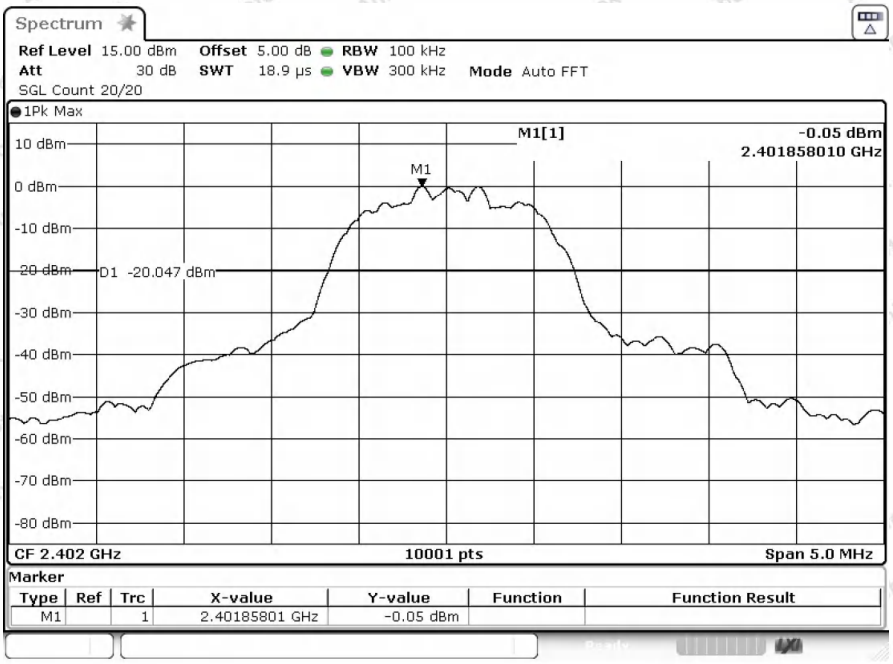

**1_Reference_Level_Hopping_NVNT_ANT1_2-DH5_Hopping**



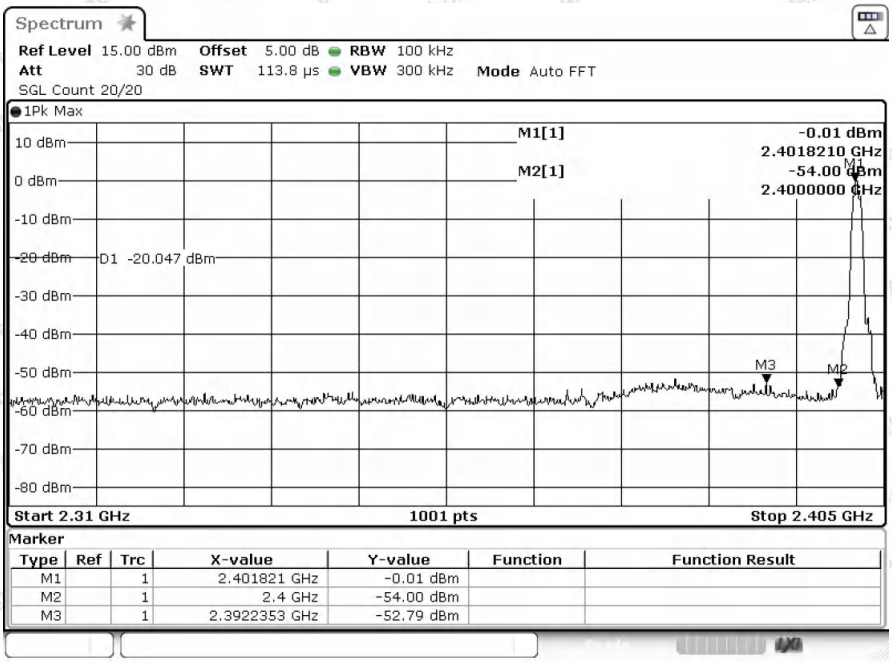

**2_Band_Edge_(Hopping)_NVNT_ANT1_2-DH5_Hopping**



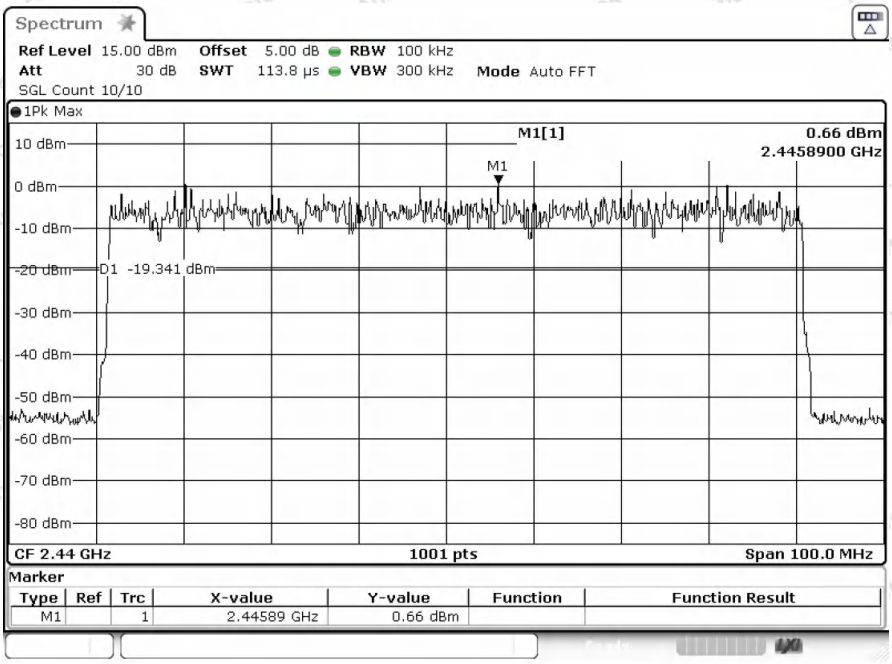

1_Reference_Level_NVNT_ANT1_3-DH5_2402



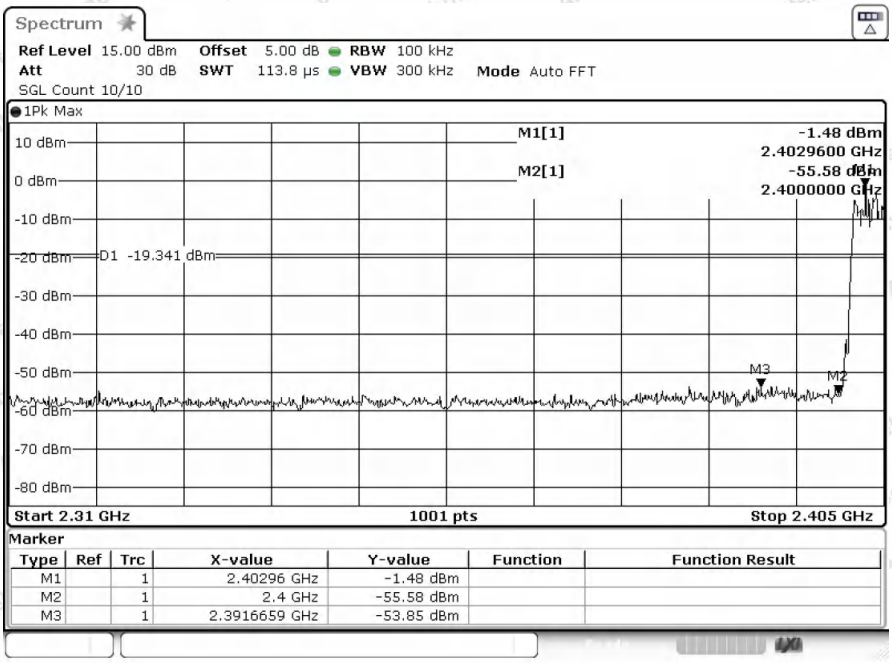

2_Bandedge_NVNT_ANT1_3-DH5_2402



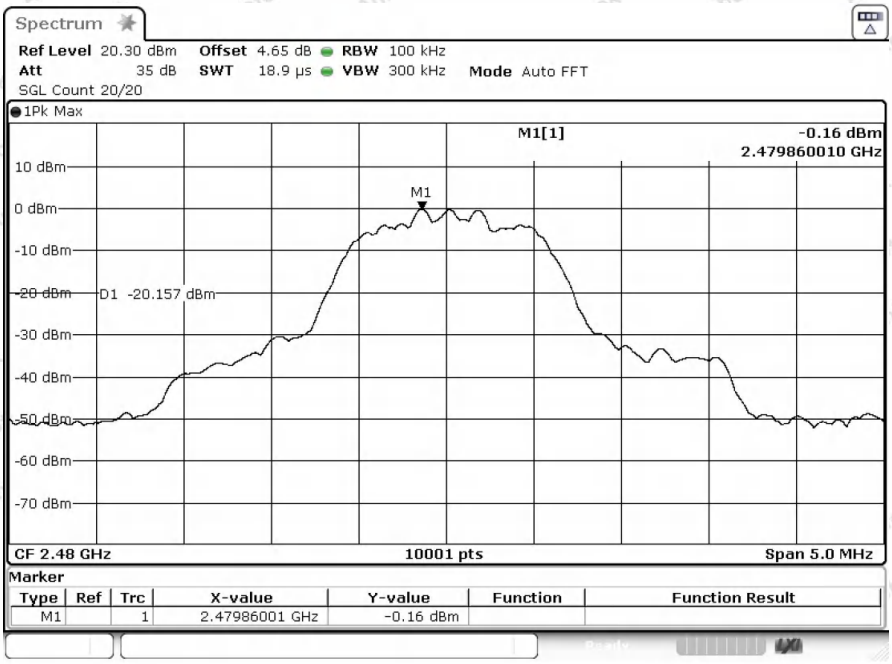

**1_Reference_Level_Hopping_NVNT_ANT1_3-DH5_Hopping**



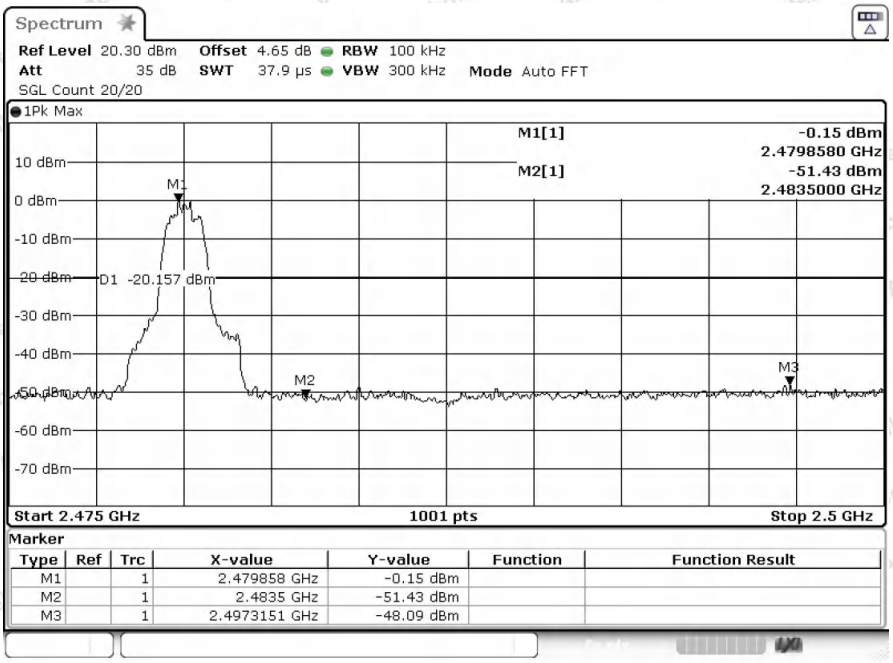

**2_Band_Edge_(Hopping)_NVNT_ANT1_3-DH5_Hopping**



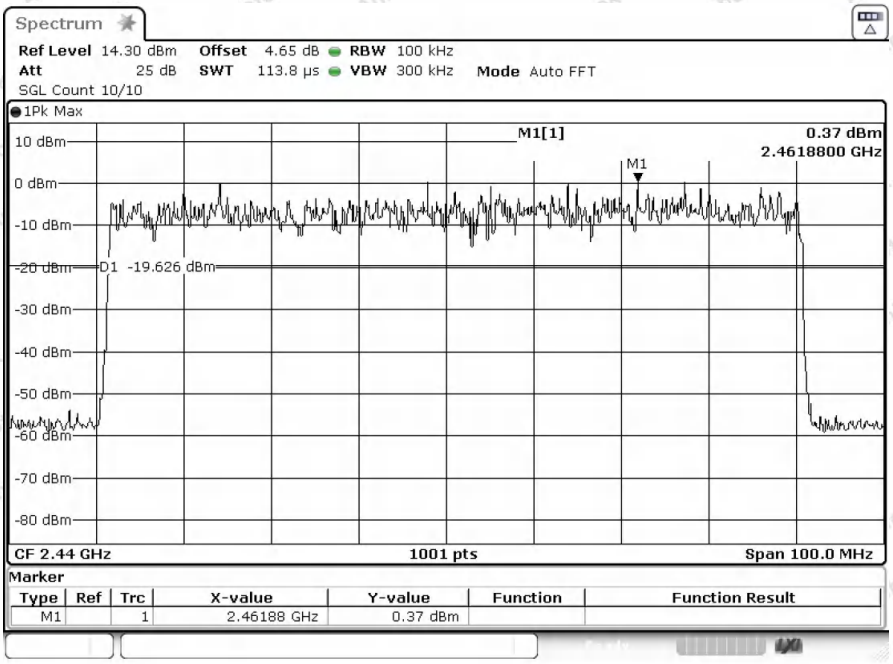

1_Reference_Level_NVNT_ANT1_3-DH5_2480



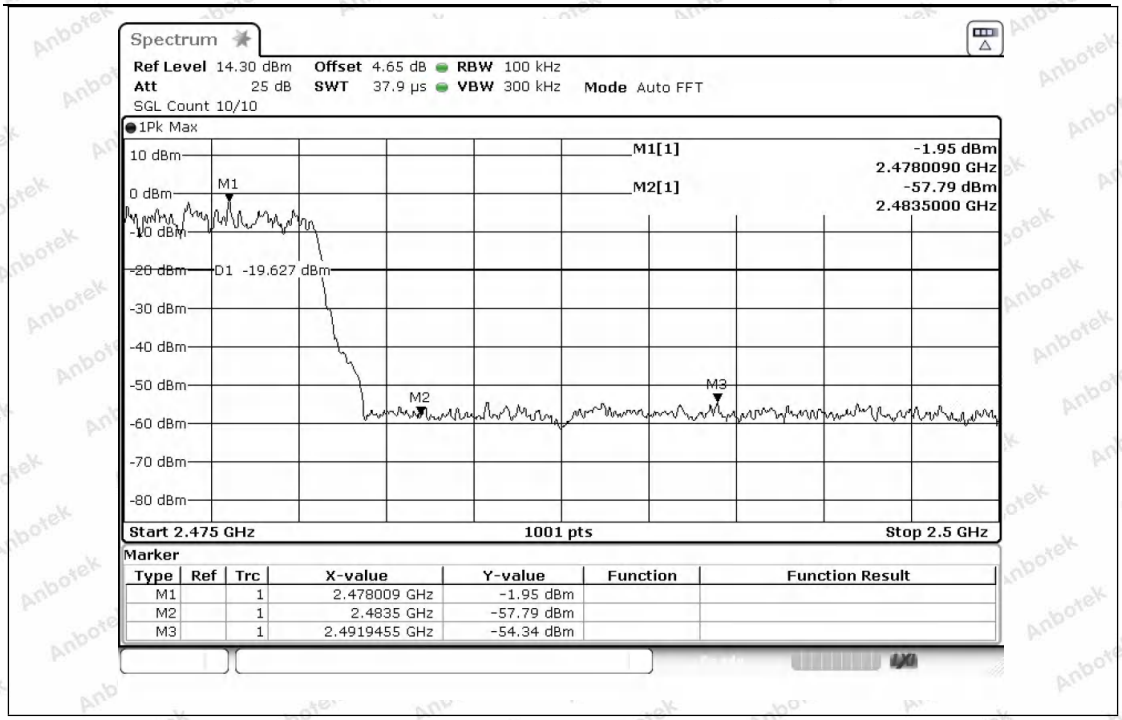

2_Bandedge_NVNT_ANT1_3-DH5_2480




**1_Reference_Level_Hopping_NVNT_ANT1_3-DH5_Hopping**



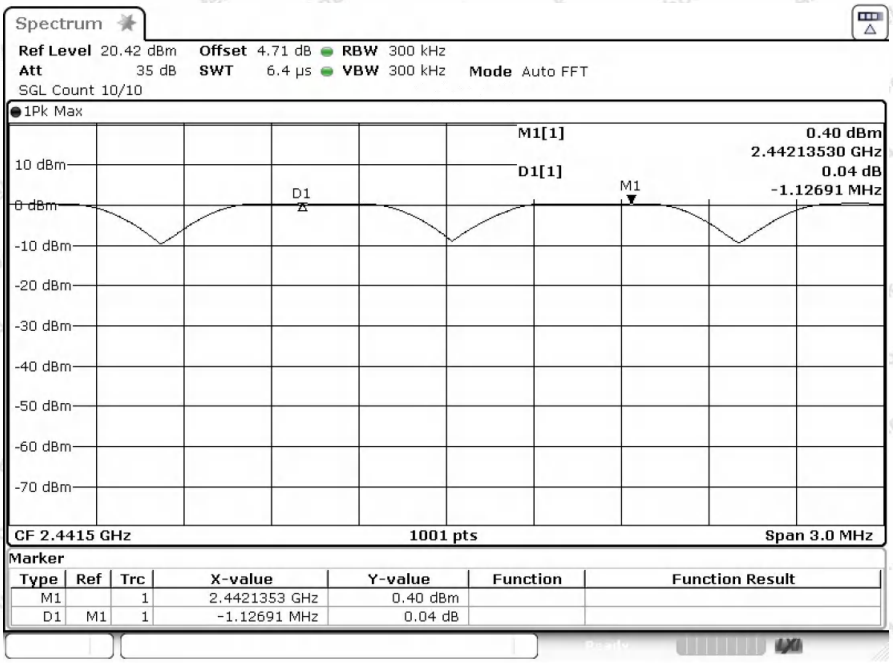

**2_Band_Edge_(Hopping)_NVNT_ANT1_3-DH5_Hopping**


Spectrum
Ref Level 14.30 dBm Offset 4.65 dB RBW 100 kHz
Att 25 dB SWT 37.9 µs VBW 300 kHz Mode Auto FFT
SGL Count 10/10
1Pk Max
M1[1] -1.95 dBm 2.4780090 GHz
M2[1] -57.79 dBm 2.4835000 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
D1 -19.627 dBm
M2
M3
Start 2.475 GHz
1001 pts
Stop 2.5 GHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.478009 GHz -1.95 dBm
M2 1 2.4835 GHz -57.79 dBm
M3 1 2.4919455 GHz -54.34 dBm

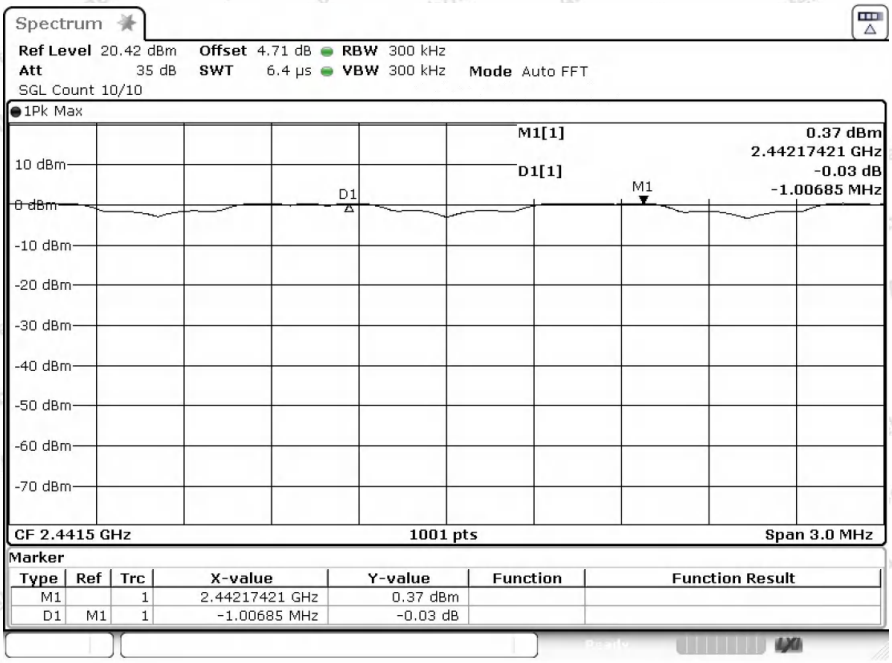
# Appendix F: Carrier Frequencies Separation (Hopping)

| Condition | Antenna | Modulation | Frequency(MHz) | Hopping NO.0 (MHz) | Hopping NO.1 (MHz) | Carrier Frequencies Separation(MHz) | Limit(MHz) | Result |
|---|---|---|---|---|---|---|---|---|
| NVNT | ANT1 | 1-DH5 | 2441.00 | 2441.008 | 2442.135 | 1.13 | 0.683 | Pass |
| NVNT | ANT1 | 2-DH5 | 2441.00 | 2441.167 | 2442.174 | 1.01 | 0.885 | Pass |
| NVNT | ANT1 | 3-DH5 | 2441.00 | 2440.850 | 2442.012 | 1.16 | 0.861 | Pass |

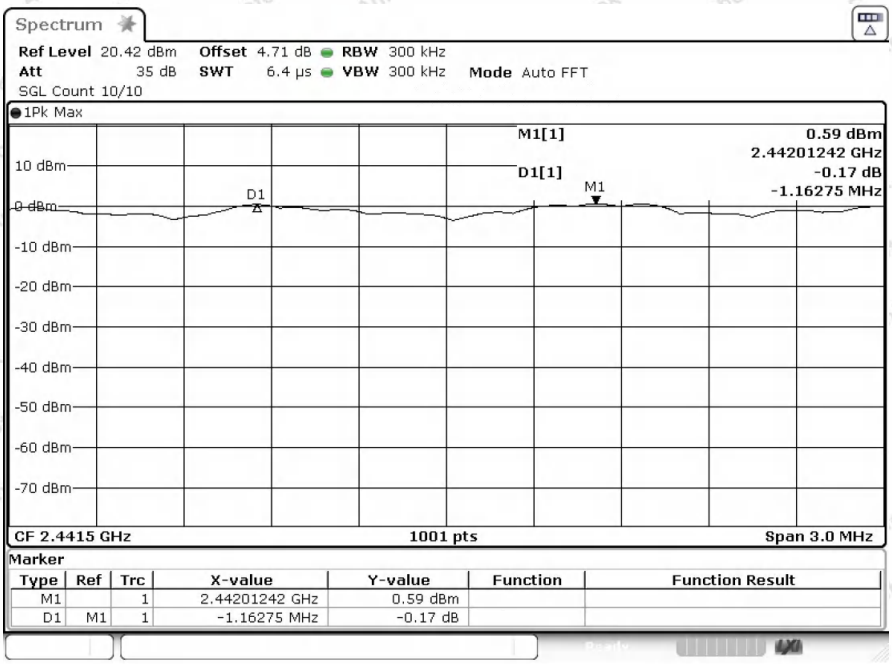
**Carrier_Frequencies_Separation_(Hopping)_NVNT_ANT1_1-DH5_Hopping**




**Carrier_Frequencies_Separation_(Hopping)_NVNT_ANT1_2-DH5_Hopping**



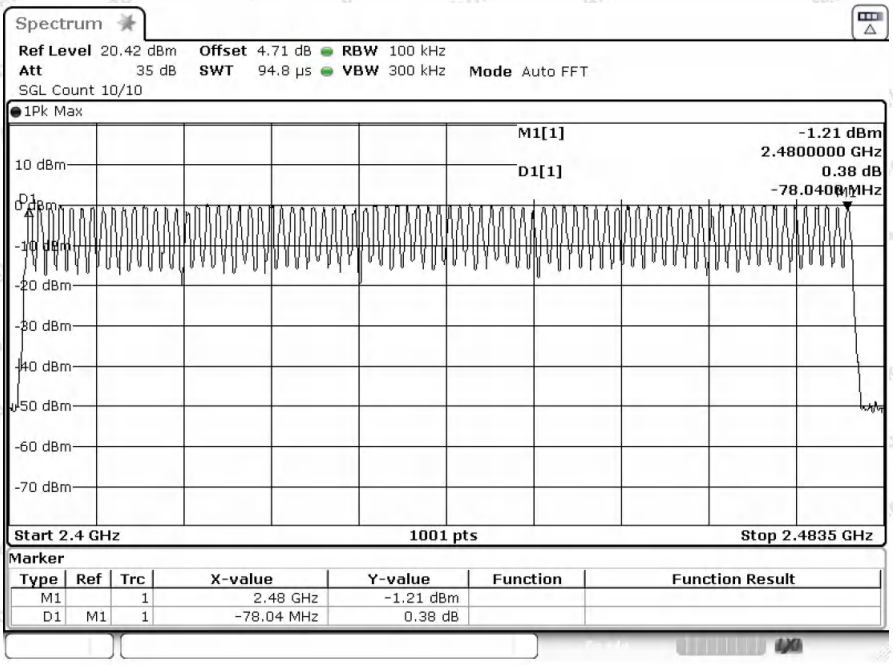

**Carrier_Frequencies_Separation_(Hopping)_NVNT_ANT1_3-DH5_Hopping**



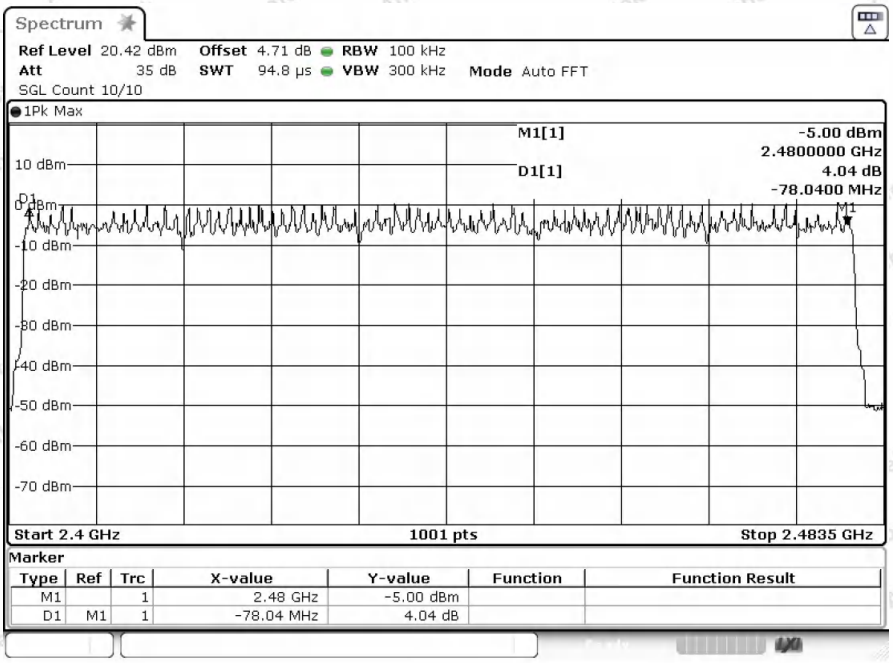
# Appendix G: Number of Hopping Channel (Hopping)

| Condition | Antenna | Modulation | Hopping Num | Limit | Result |
|---|---|---|---|---|---|
| NVNT | ANT1 | 1-DH5 | 79 | 15 | Pass |
| NVNT | ANT1 | 2-DH5 | 79 | 15 | Pass |
| NVNT | ANT1 | 3-DH5 | 79 | 15 | Pass |

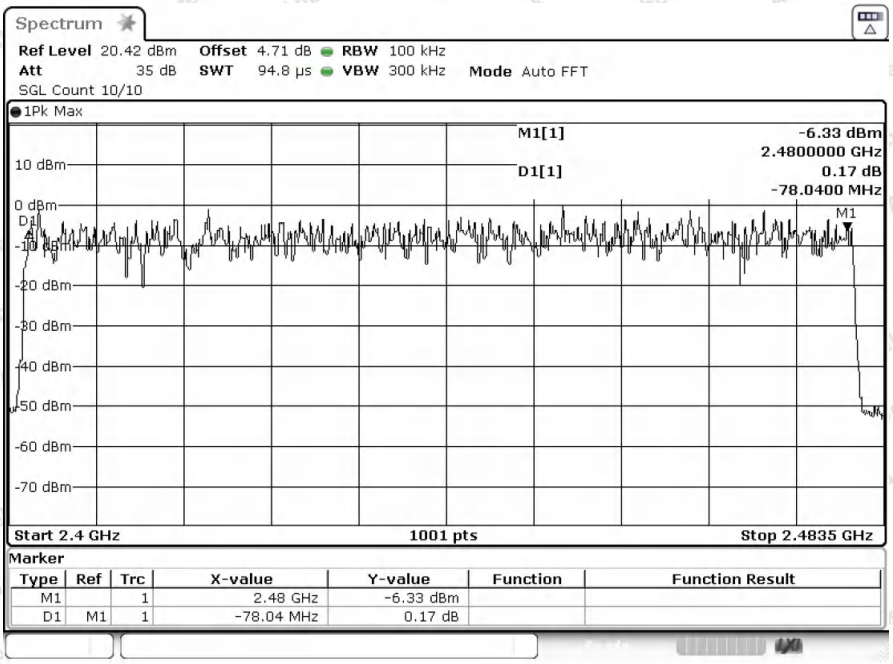
**Number_of_Hopping_Channel_(Hopping)_NVNT_ANT1_1-DH5_Hopping**




**Number_of_Hopping_Channel_(Hopping)_NVNT_ANT1_2-DH5_Hopping**



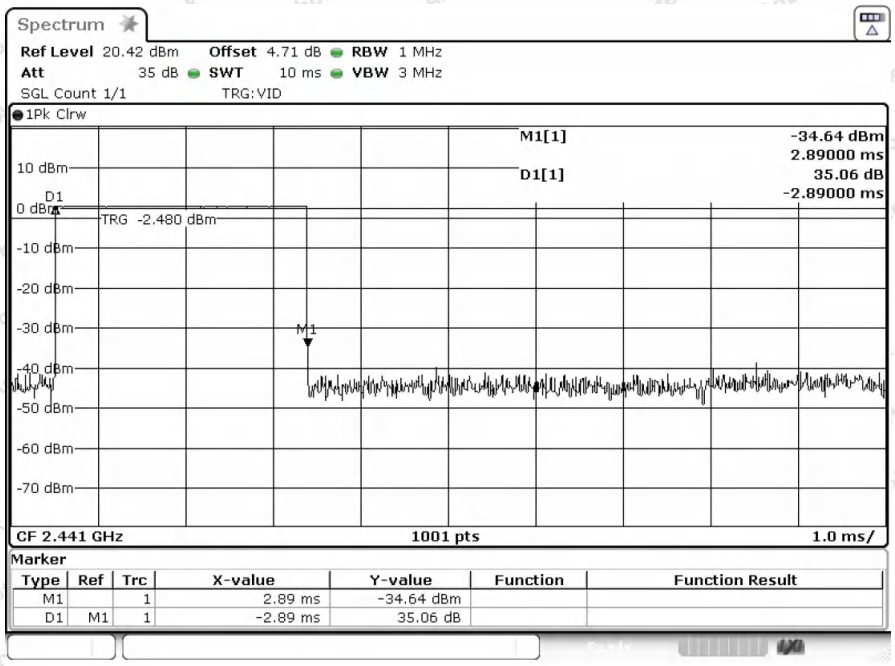
**Number_of_Hopping_Channel_(Hopping)_NVNT_ANT1_3-DH5_Hopping**



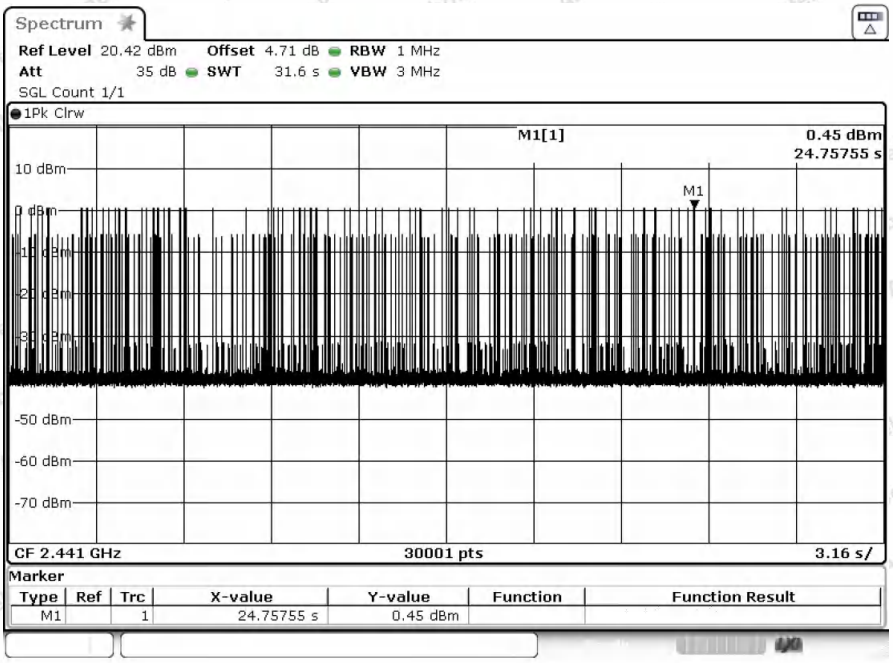
# Appendix H: Dwell Time (Hopping)

| Condition | Antenna | Packet Type | Pulse Time(ms) | Hops | Dwell Time(ms) | Limit(s) | Result |
|---|---|---|---|---|---|---|---|
| NVNT | ANT1 | 1-DH5 | 2.890 | 105.00 | 303.450 | 0.40 | Pass |
| NVNT | ANT1 | 2-DH5 | 2.890 | 96.00 | 277.440 | 0.40 | Pass |
| NVNT | ANT1 | 3-DH5 | 2.900 | 107.00 | 310.300 | 0.40 | Pass |
| NVNT | ANT1 | 1-DH1 | 0.390 | 319.00 | 124.410 | 0.40 | Pass |
| NVNT | ANT1 | 1-DH3 | 1.640 | 157.00 | 257.480 | 0.40 | Pass |
| NVNT | ANT1 | 2-DH1 | 0.400 | 320.00 | 128.000 | 0.40 | Pass |
| NVNT | ANT1 | 2-DH3 | 1.650 | 160.00 | 264.000 | 0.40 | Pass |
| NVNT | ANT1 | 3-DH1 | 0.400 | 317.00 | 126.800 | 0.40 | Pass |
| NVNT | ANT1 | 3-DH3 | 1.650 | 157.00 | 259.050 | 0.40 | Pass |

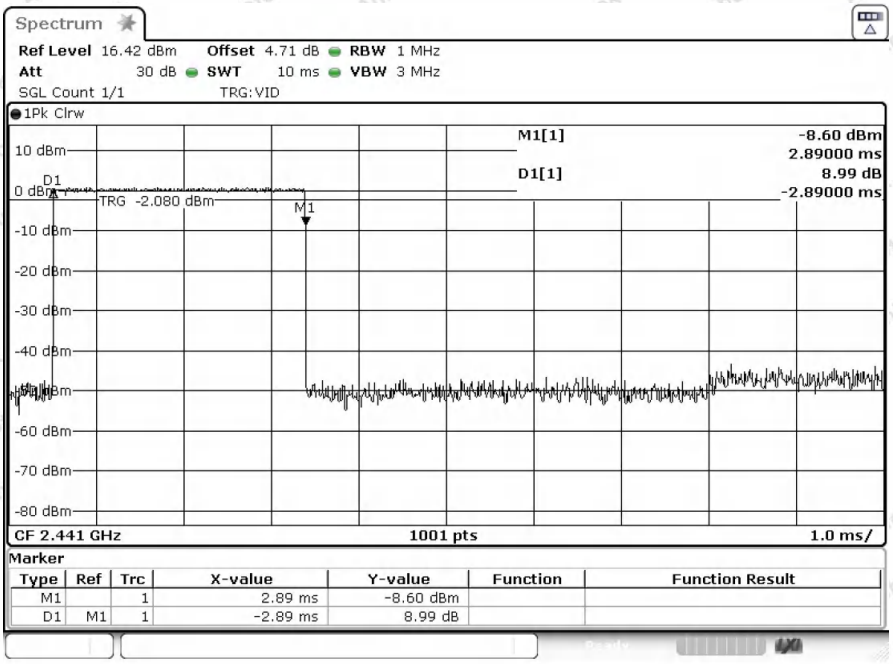
**Dwell_Time_(Hopping)_NVNT_ANT1_1-DH5_2441_One_Burst_Time**



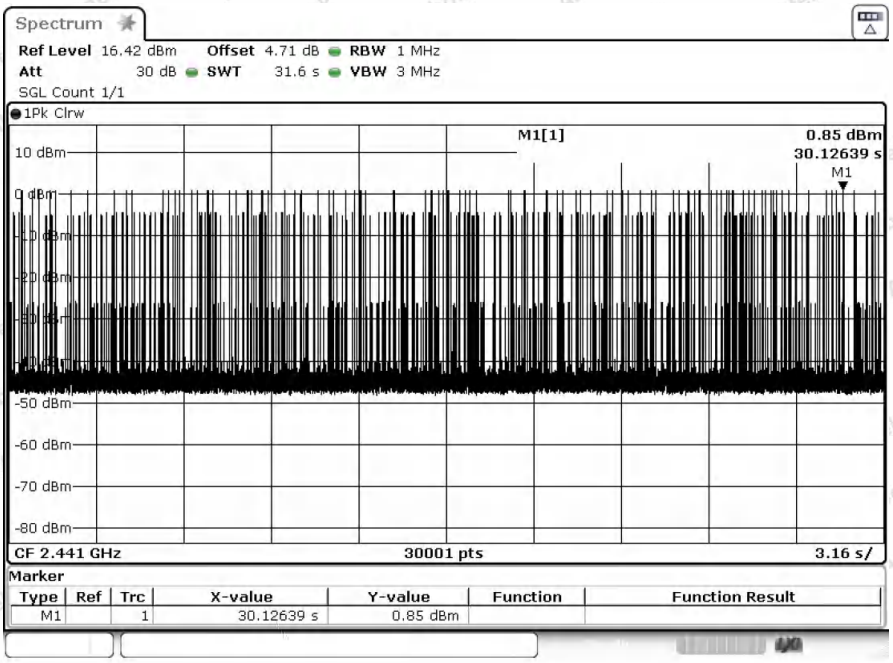

**Dwell_Time_(Hopping)_NVNT_ANT1_1-DH5_2441_Accumulated**



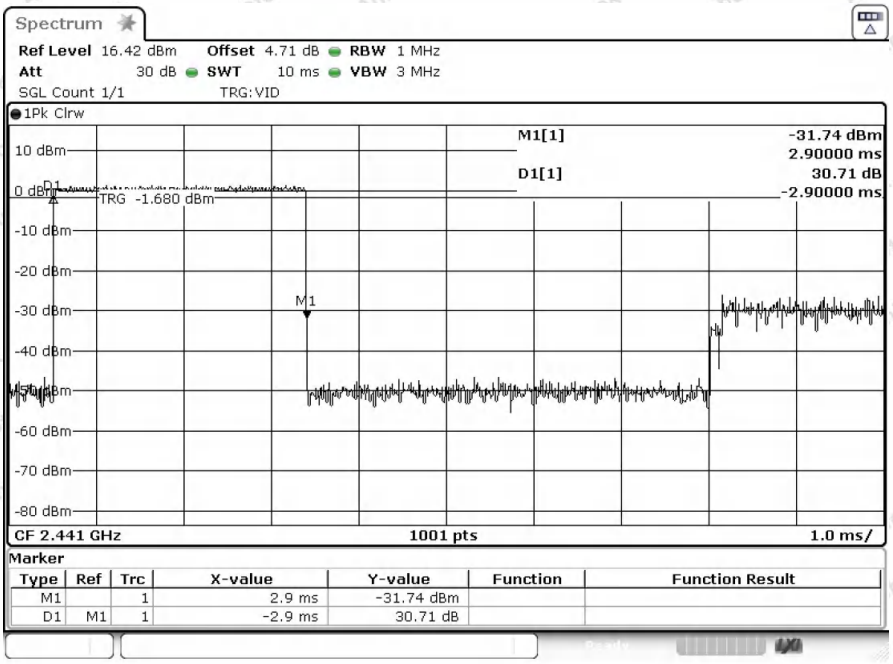

**Dwell_Time_(Hopping)_NVNT_ANT1_2-DH5_2441_One_Burst_Time**



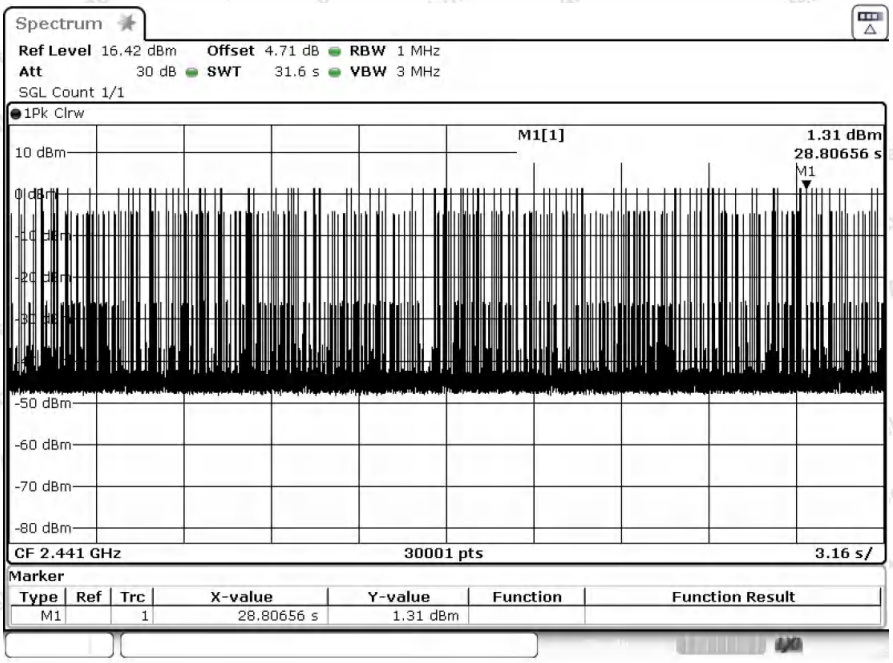

**Dwell_Time_(Hopping)_NVNT_ANT1_2-DH5_2441_Accumulated**



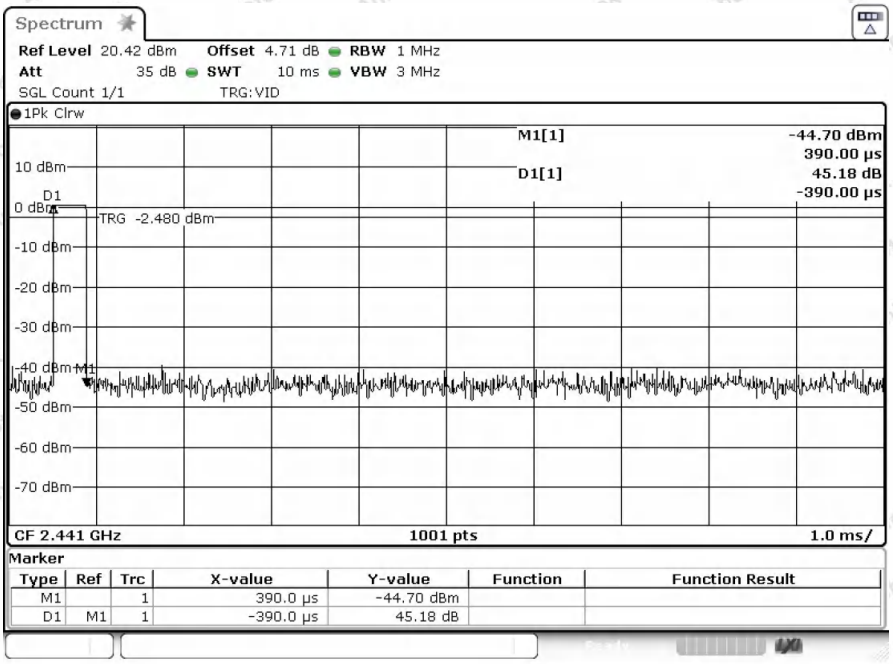

**Dwell_Time_(Hopping)_NVNT_ANT1_3-DH5_2441_One_Burst_Time**



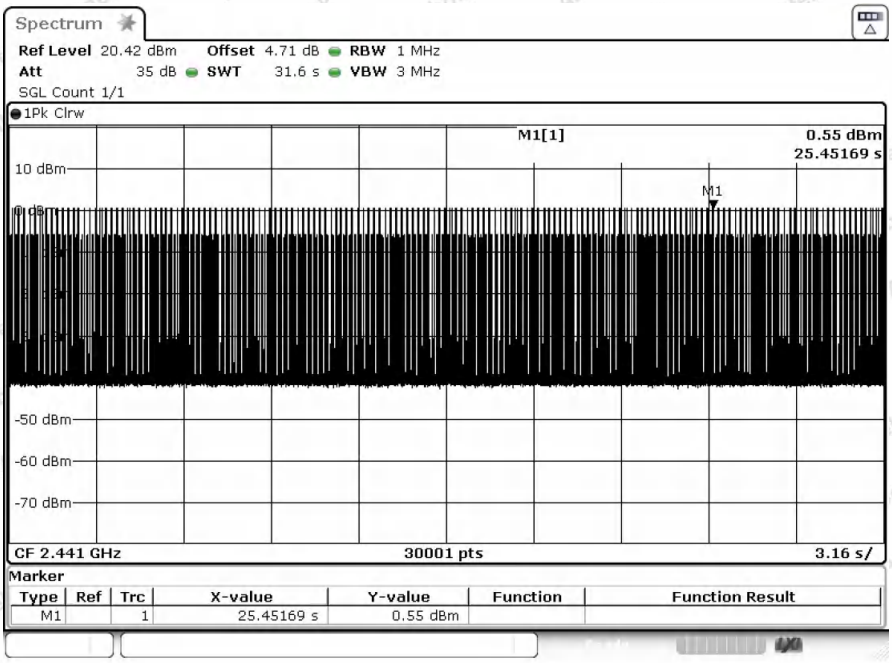

**Dwell_Time_(Hopping)_NVNT_ANT1_3-DH5_2441_Accumulated**



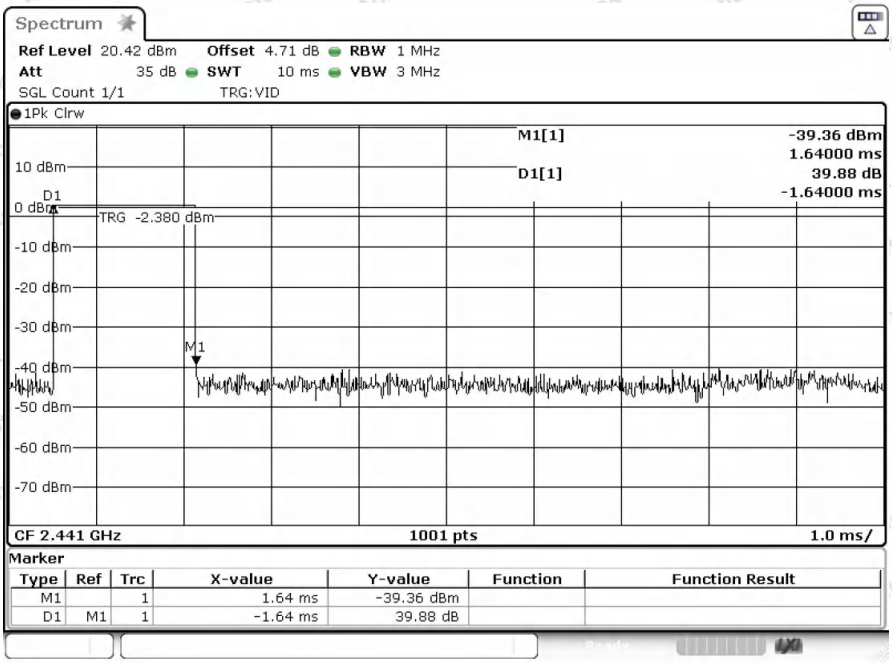

**Dwell_Time_(Hopping)_NVNT_ANT1_1-DH1_2441_One_Burst_Time**



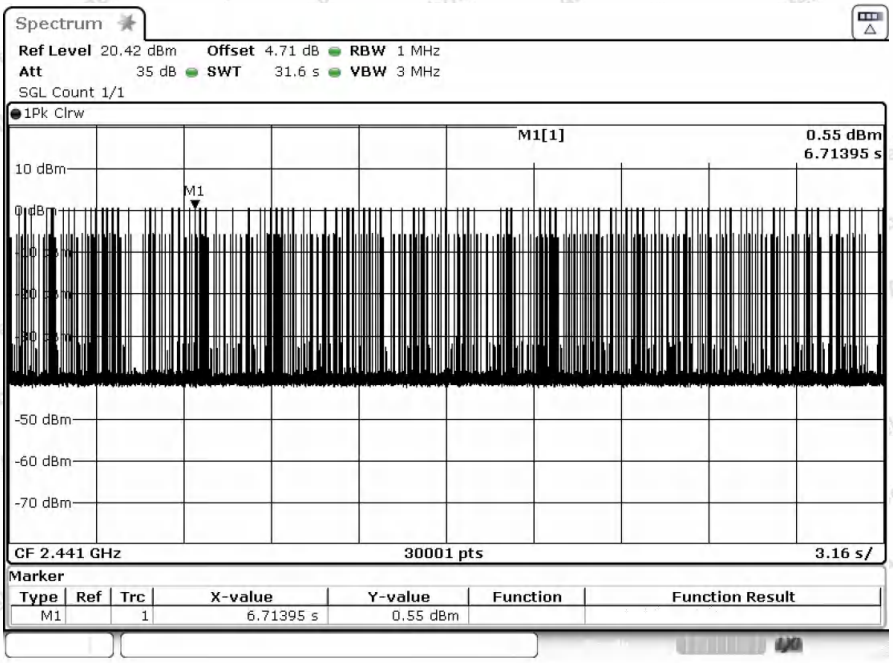

**Dwell_Time_(Hopping)_NVNT_ANT1_1-DH1_2441_Accumulated**



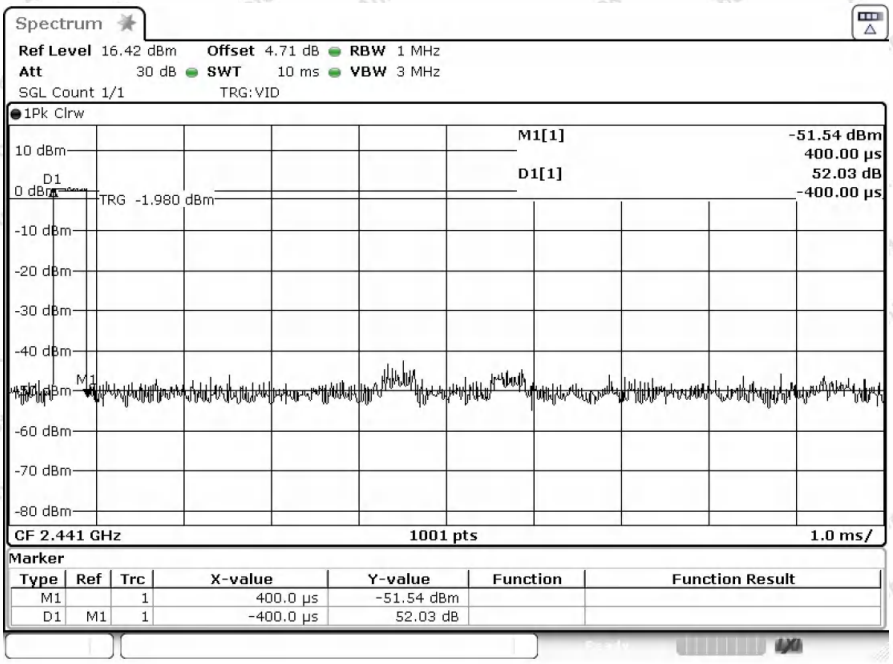

**Dwell_Time_(Hopping)_NVNT_ANT1_1-DH3_2441_One_Burst_Time**



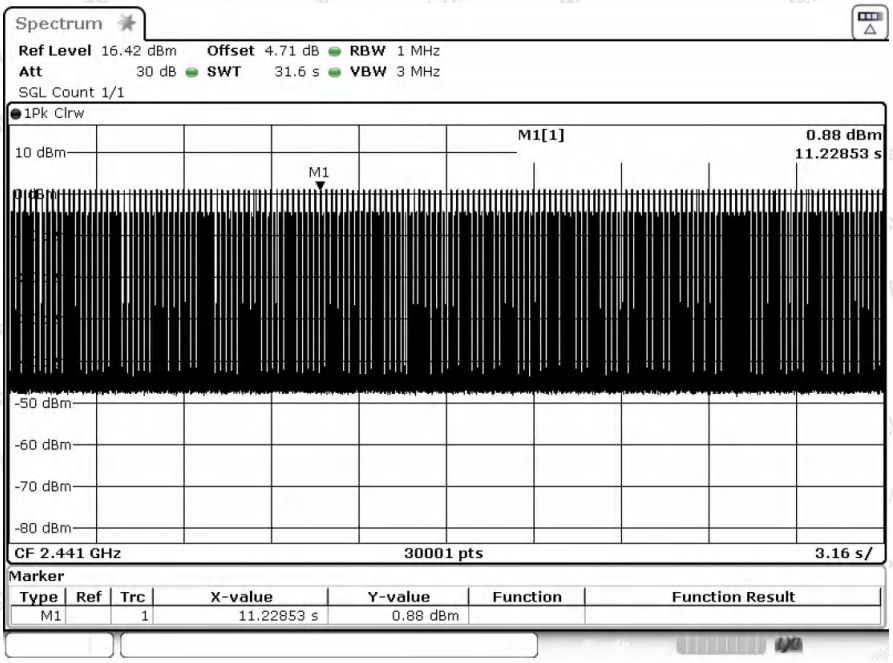

**Dwell_Time_(Hopping)_NVNT_ANT1_1-DH3_2441_Accumulated**



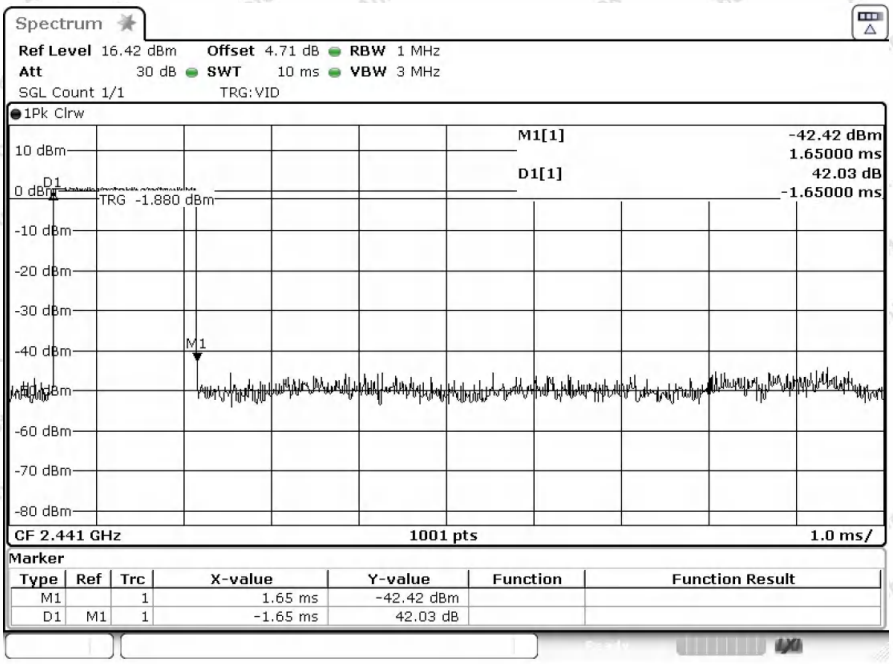

**Dwell_Time_(Hopping)_NVNT_ANT1_2-DH1_2441_One_Burst_Time**



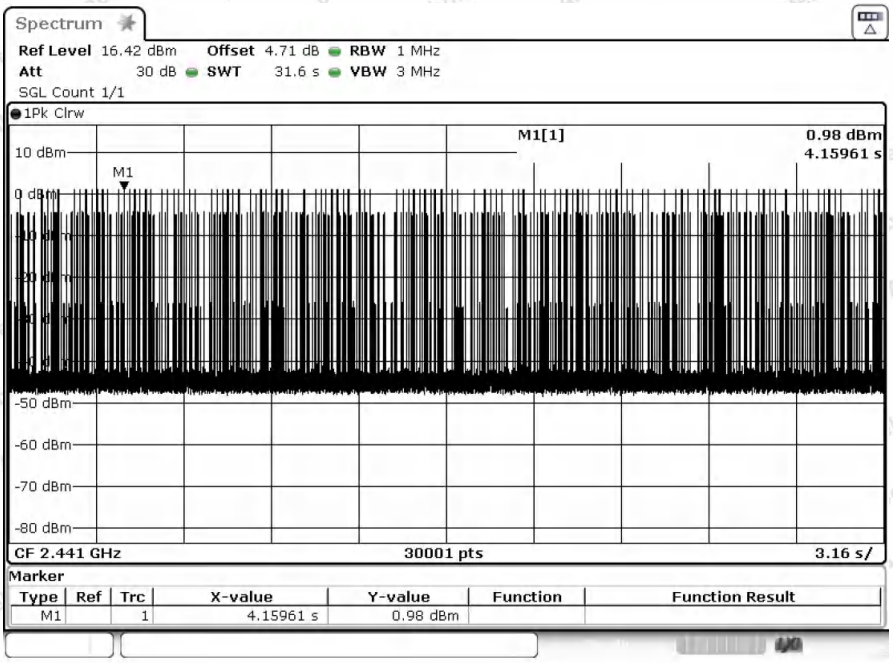

**Dwell_Time_(Hopping)_NVNT_ANT1_2-DH1_2441_Accumulated**



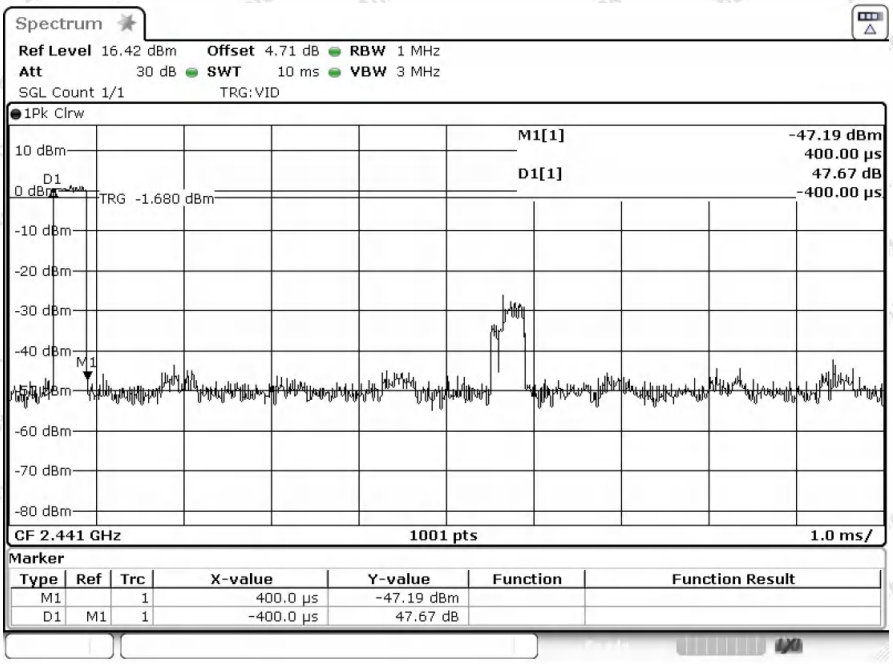

**Dwell_Time_(Hopping)_NVNT_ANT1_2-DH3_2441_One_Burst_Time**



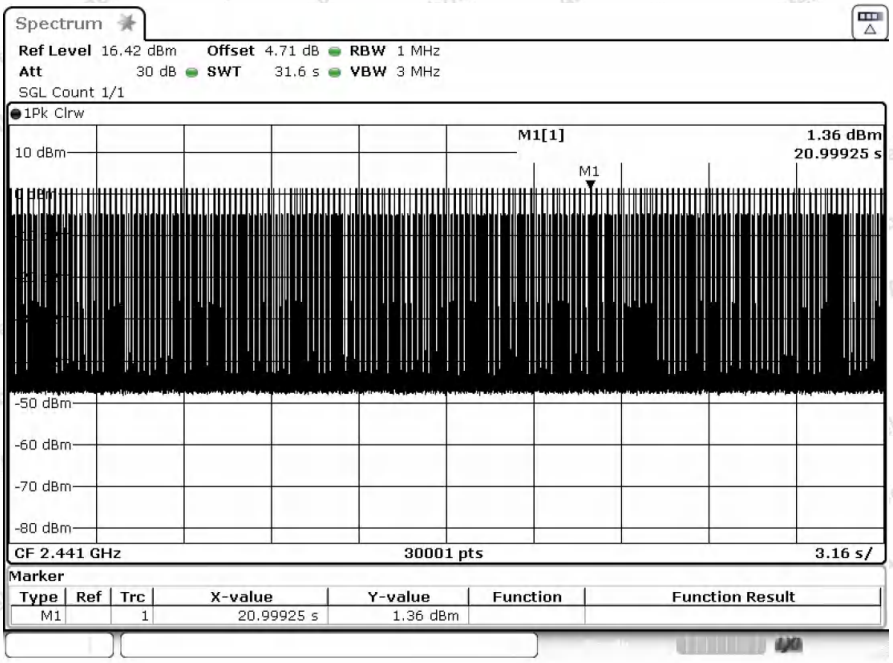

**Dwell_Time_(Hopping)_NVNT_ANT1_2-DH3_2441_Accumulated**



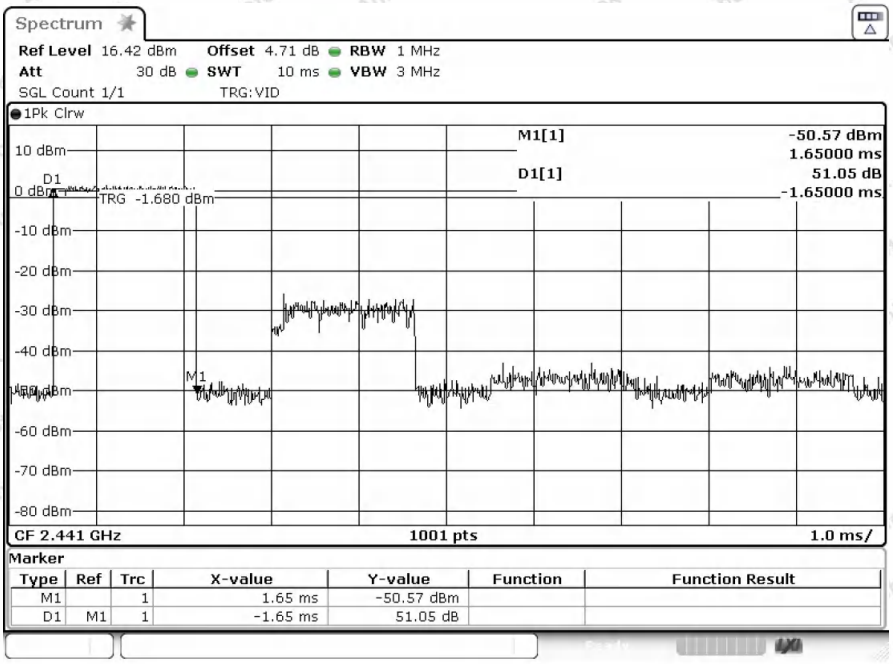

**Dwell_Time_(Hopping)_NVNT_ANT1_3-DH1_2441_One_Burst_Time**



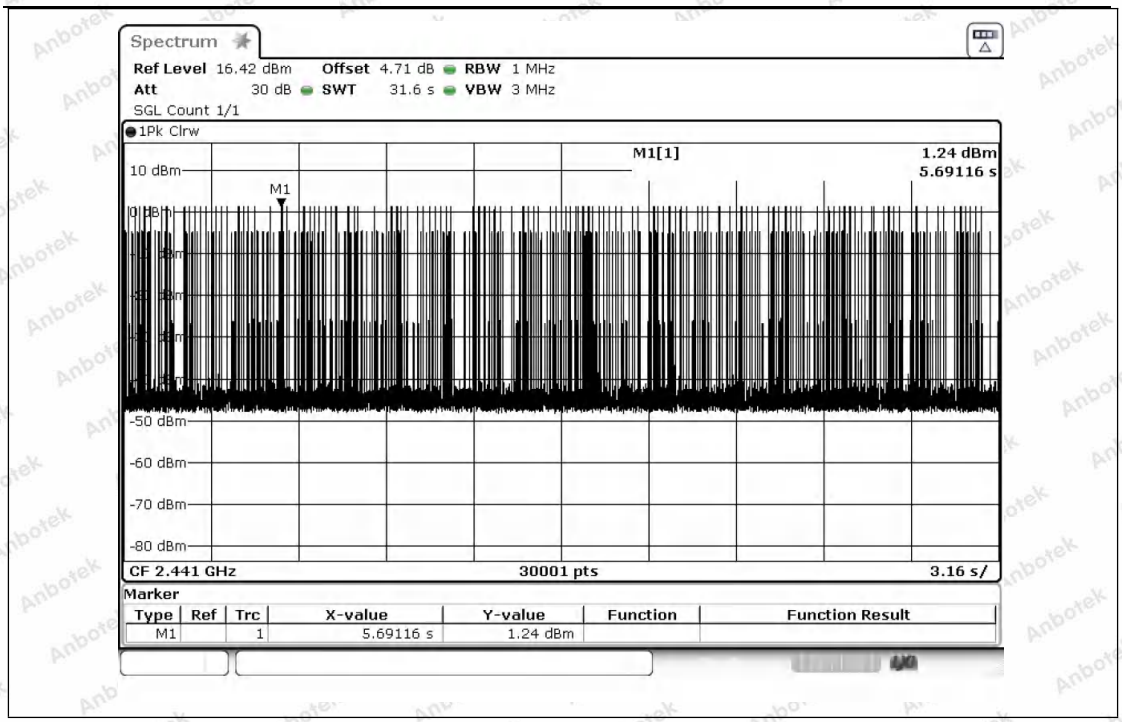

**Dwell_Time_(Hopping)_NVNT_ANT1_3-DH1_2441_Accumulated**




**Dwell_Time_(Hopping)_NVNT_ANT1_3-DH3_2441_One_Burst_Time**




**Dwell_Time_(Hopping)_NVNT_ANT1_3-DH3_2441_Accumulated**


Spectrum
Ref Level 16.42 dBm Offset 4.71 dB RBW 1 MHz
Att 30 dB SWT 31.6 s VBW 3 MHz
SGL Count 1/1
1Pk Clrw
M1[1] 1.24 dBm
5.69116 s
10 dBm
M1
0 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
CF 2.441 GHz
30001 pts
3.16 s/
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.69116 s 1.24 dBm

**---End---**