Modulation: FLORA

***Results***

The spurious frequencies detected at less than 20 dB below the limit:

| Freq Rng (GHz) | Freq (MHz) | Unwanted Freq (MHz) | Unwanted Lvl (dBµV/m) | Pol | Detector |
|---|---|---|---|---|---|
| [0.03, 1] | 2480.00000 | 930.058500 | 17.57 | V | QP |

* The spurious frequencies detected does not depend of the selected channel.

***Verdict***

Pass

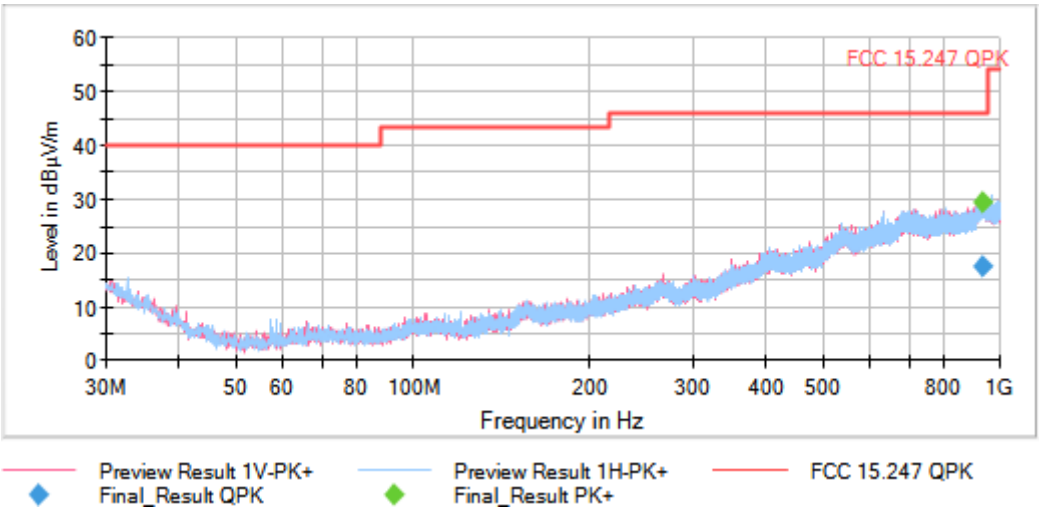
| | | |
|---|---|---|
| Approved by (name / position & signature) | Antonio José Jurado<br>Industrial & Automotive<br>EMC Lab. Manager | 80157242B ANTONIO JOSE JURADO (C:A29507456) Firmado digitalmente por 80157242B ANTONIO JOSE JURADO (C:A29507456) Fecha: 2024.07.18 07:49:24 +02'00' |

***Attachments***

Frequency MHz = 2480.00000 Modulation = FLORA

Frequency Range GHz = [0.03, 1]

**Images:**

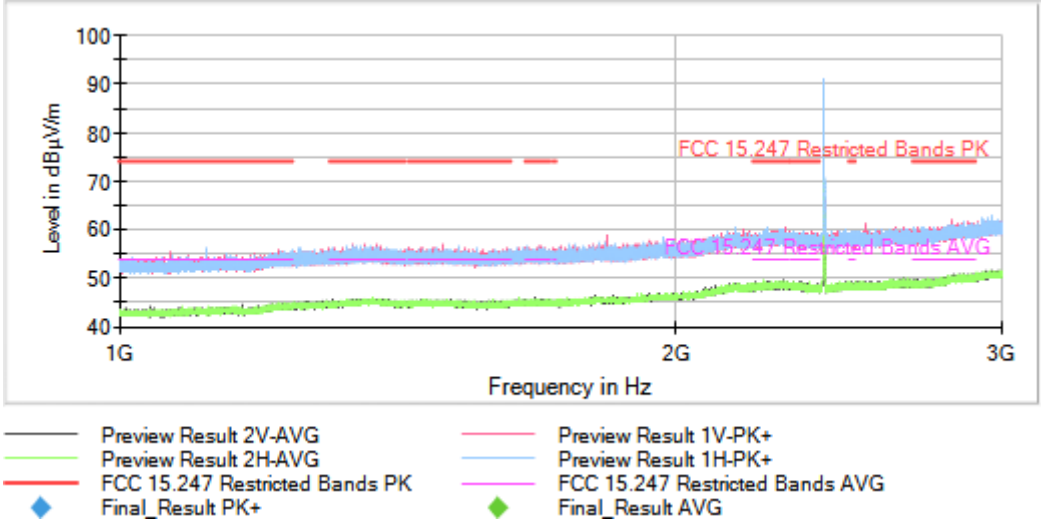



This plot is valid for all channels

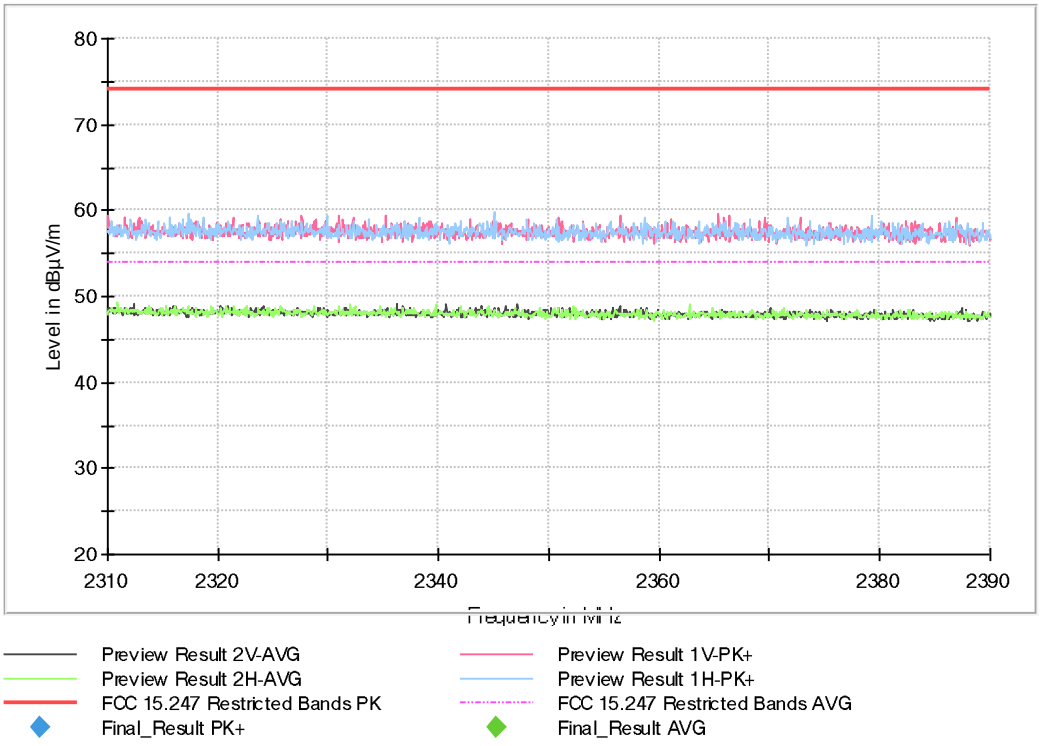
Frequency MHz = 2402.00000 Modulation = FLORA

Frequency Range GHz = [1, 3]

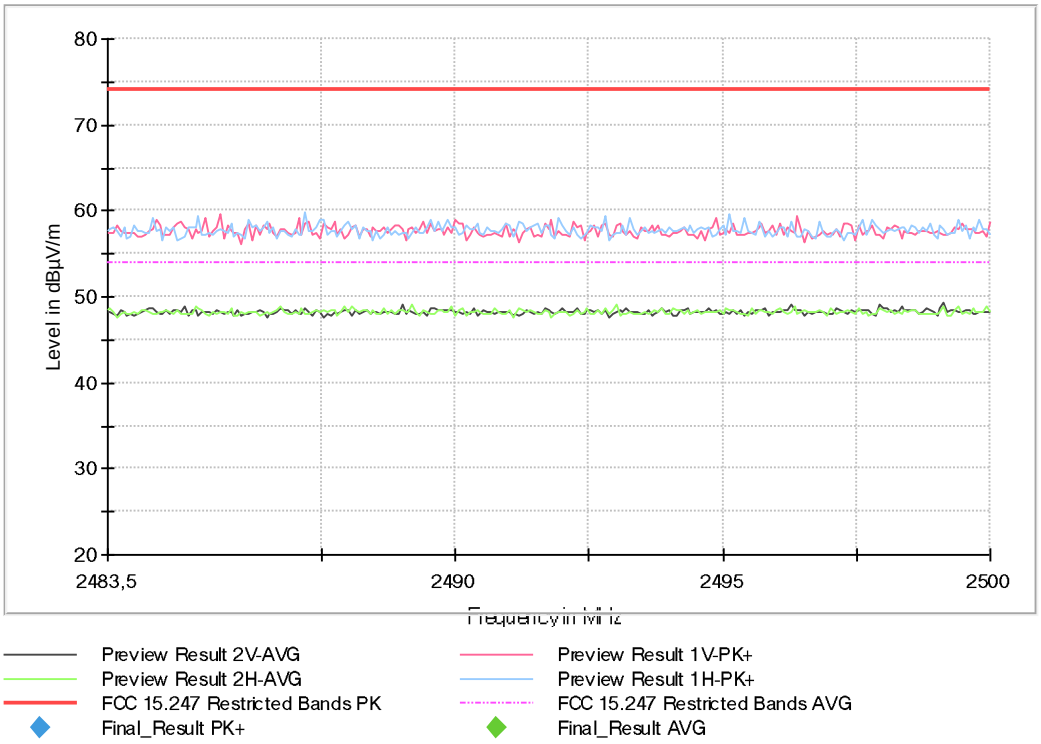
**Images:**



Full Spectrum




Full Spectrum

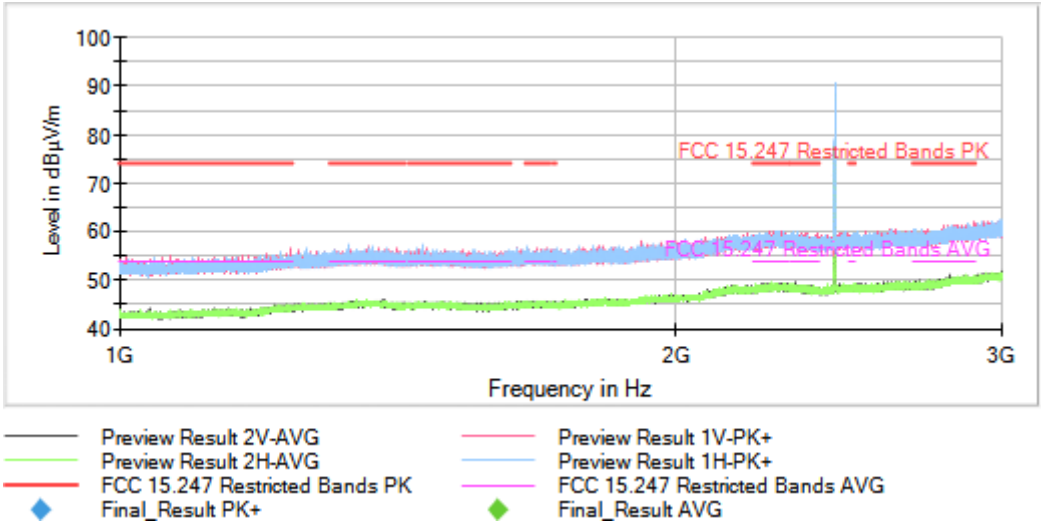


Operation Band MHz = [2400, 2483.5]

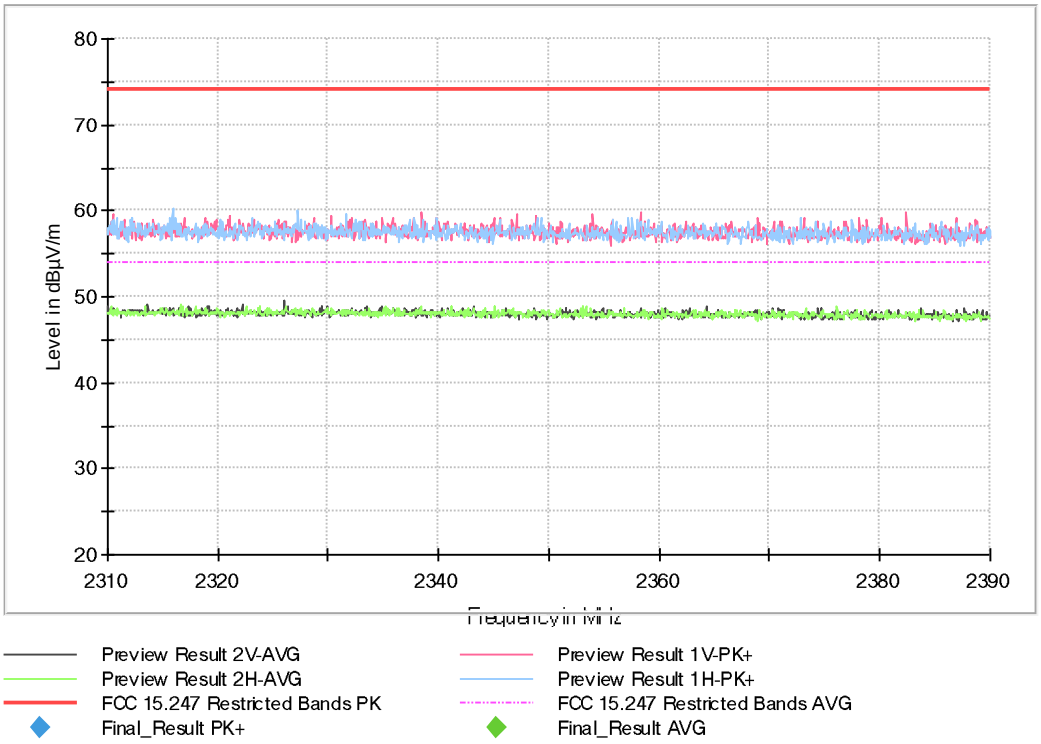
Frequency MHz = 2440.00000 Modulation = FLORA

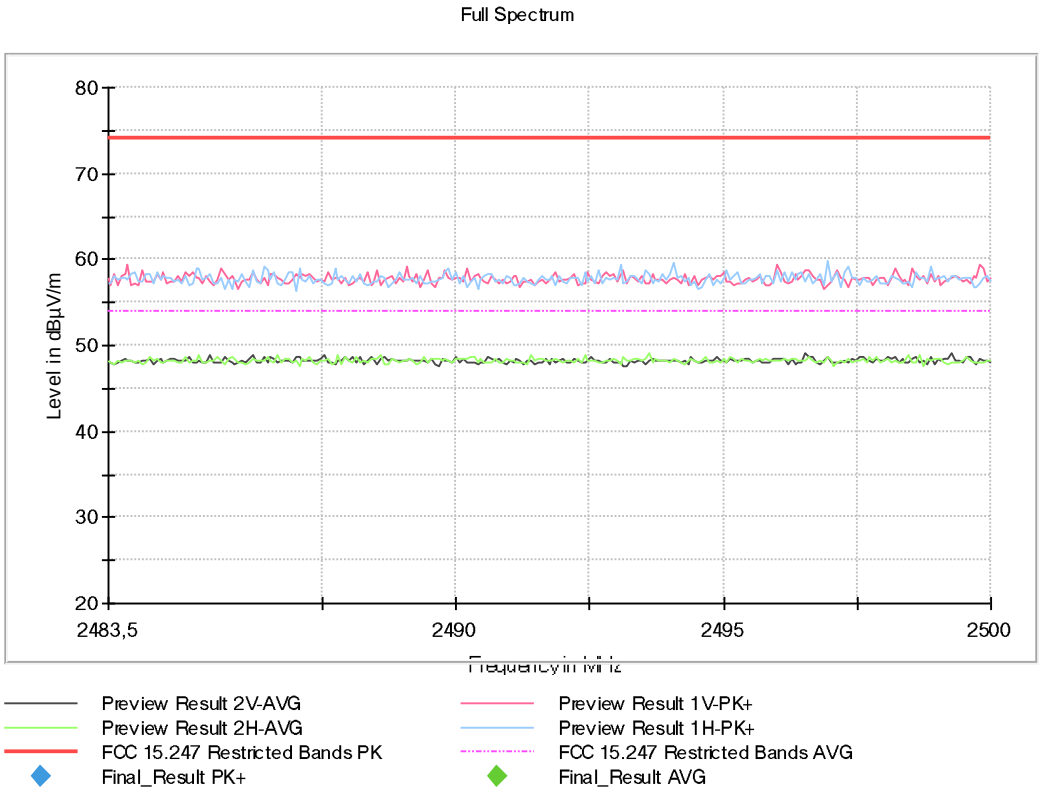
Frequency Range GHz = [1, 3]

**Images:**




Full Spectrum

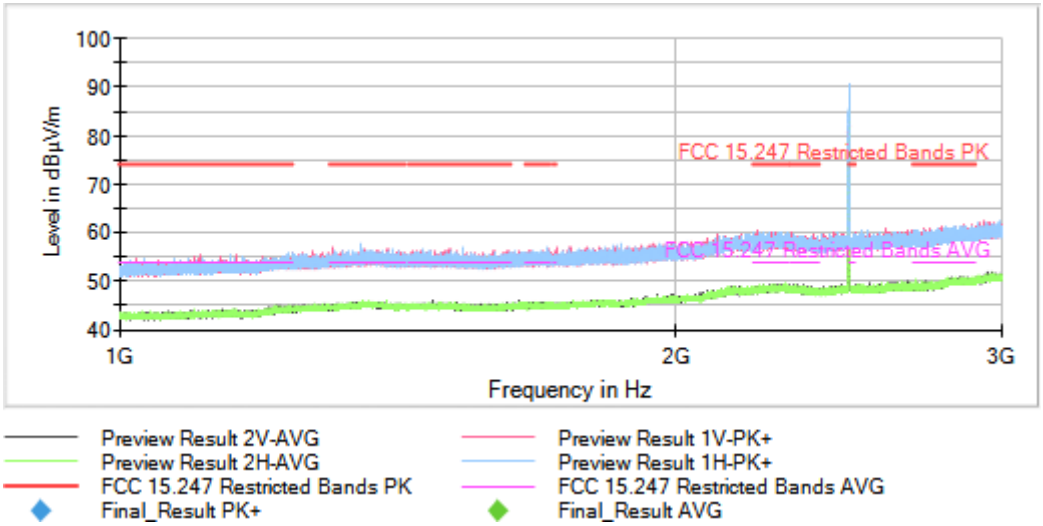




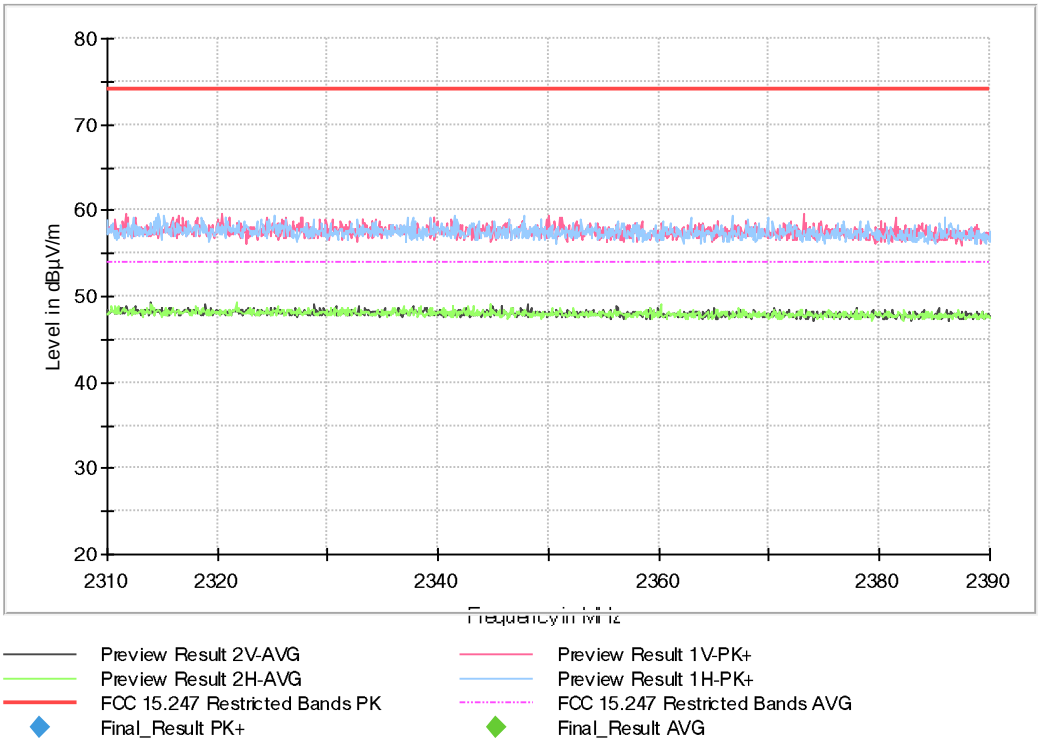

Frequency MHz = 2480.00000 Modulation = FLORA

Frequency Range GHz = [1, 3]

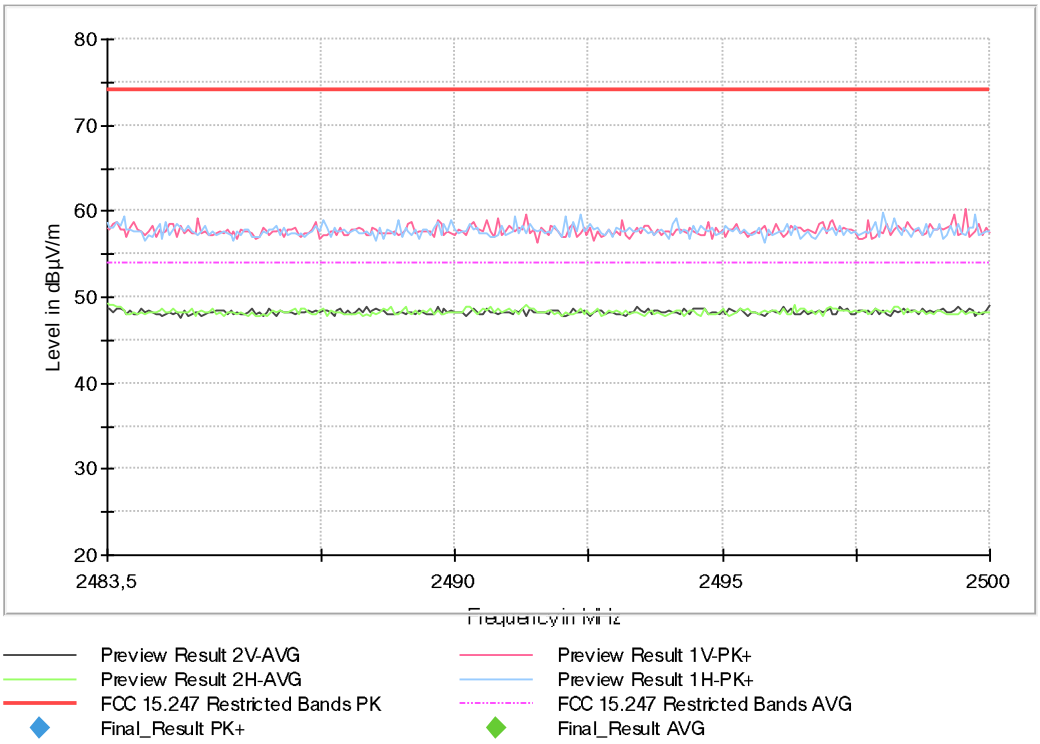
**Images:**



Full Spectrum



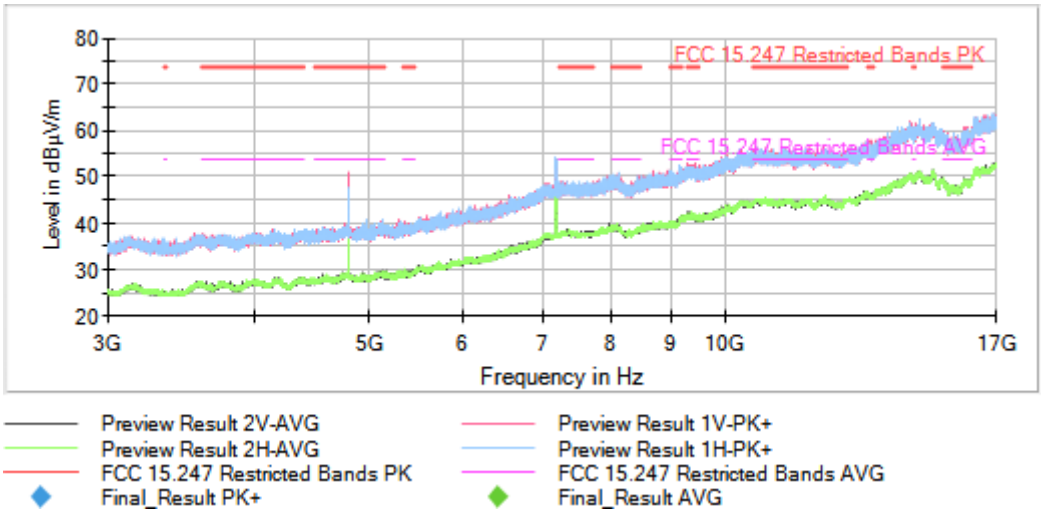

Full Spectrum



Frequency MHz = 2402.00000 Modulation = FLORA

Frequency Range GHz = [3, 17]

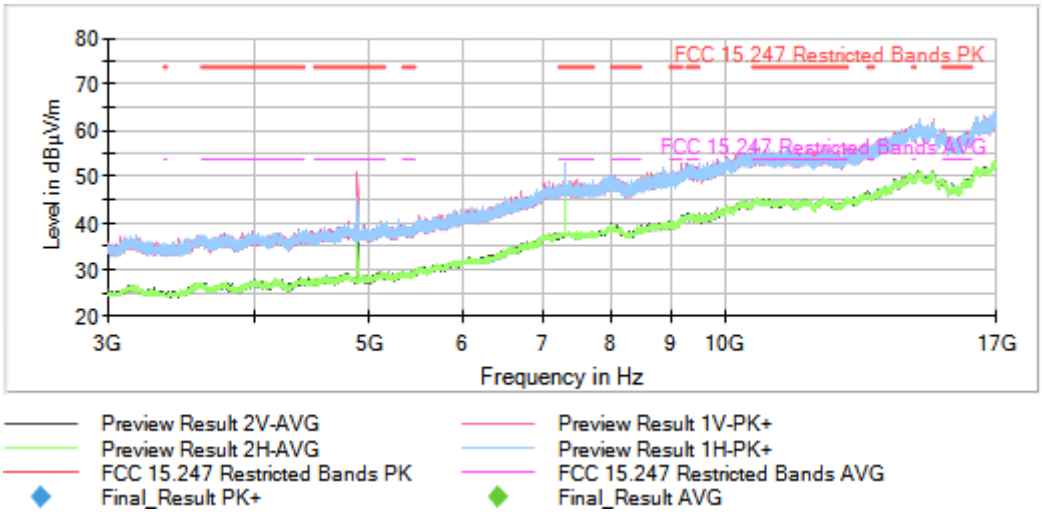
**Images:**




Frequency MHz = 2440.00000 Modulation = FLORA

Frequency Range GHz = [3, 17]

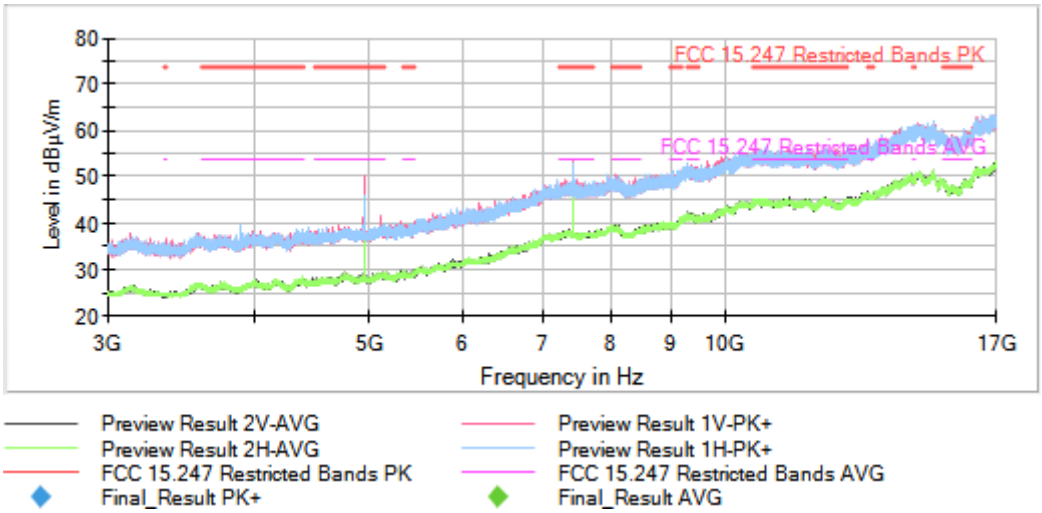
**Images:**



Frequency MHz = 2480.00000 Modulation = FLORA

Frequency Range GHz = [3, 17]

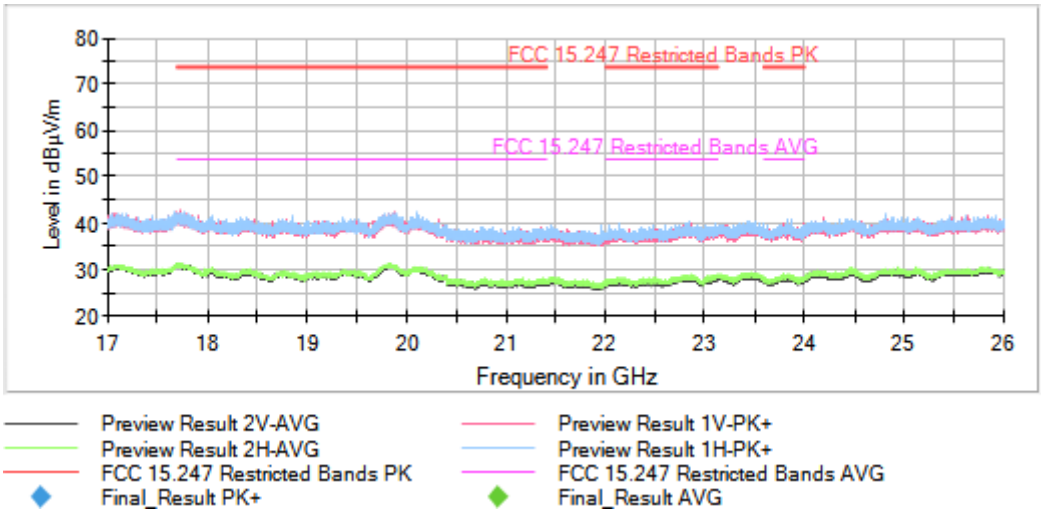
**Images:**




Frequency MHz = 2440.00000 Modulation = FLORA

Frequency Range GHz = [17, 26]

**Images:**




This plot is valid for all channels

### *Results for Sample 03*

No spurious frequencies detected at less than 20 dB below the limit.

### *Verdict*

Pass

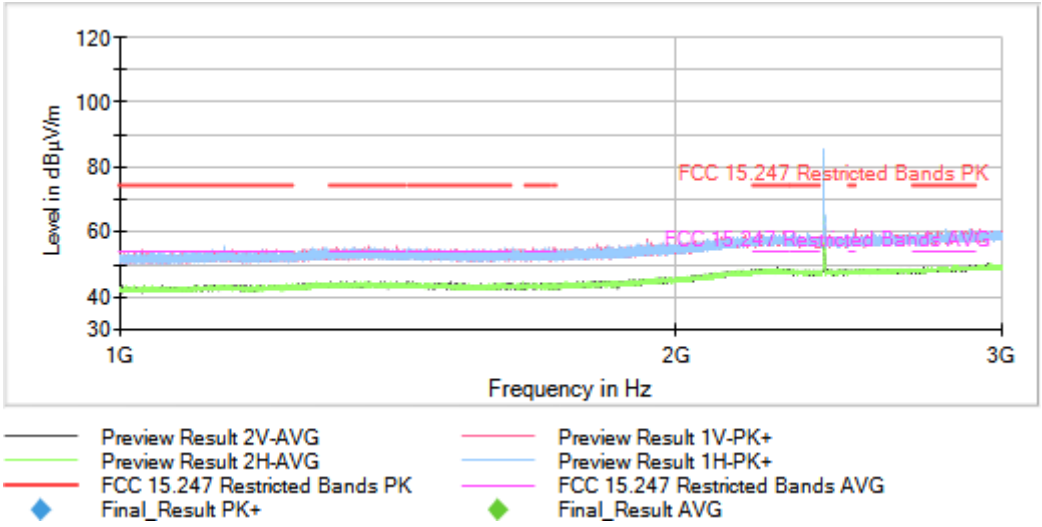
## Attachments

Operation Band MHz = [2400, 2483.5]

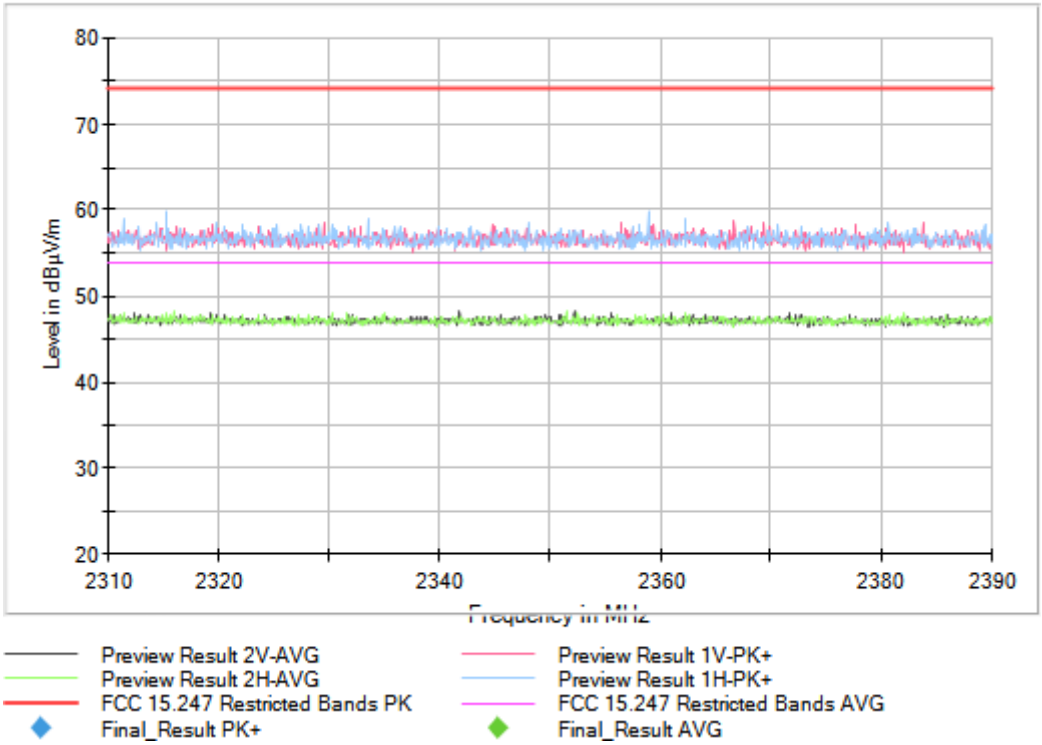
Frequency MHz = 2402.00000 Modulation = FLORA

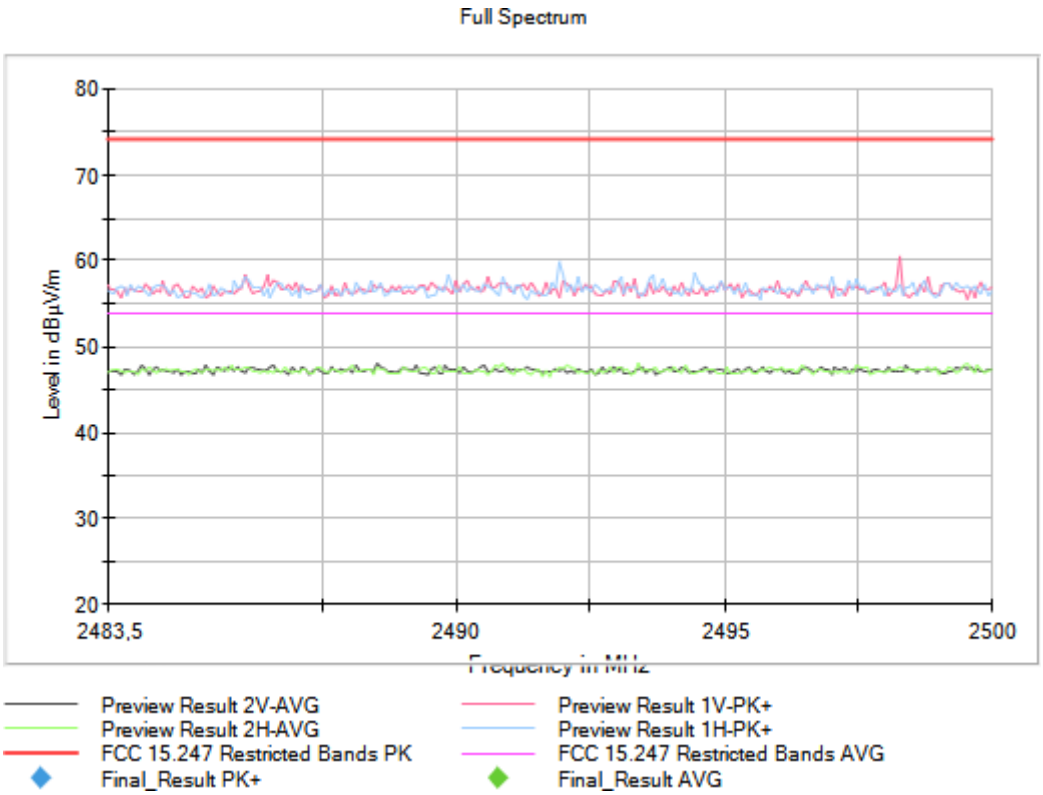
Frequency Range GHz = [1, 3]

**Images:**




Full Spectrum



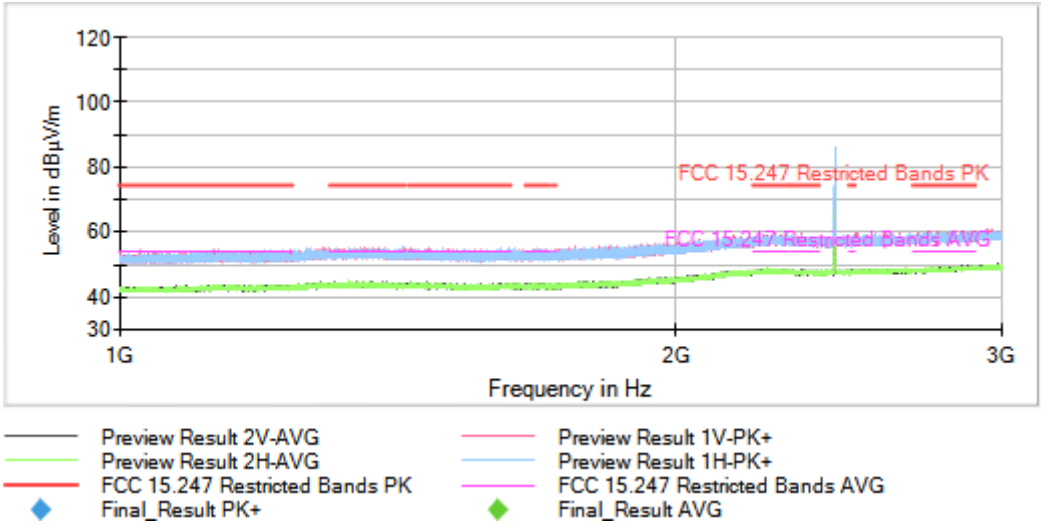


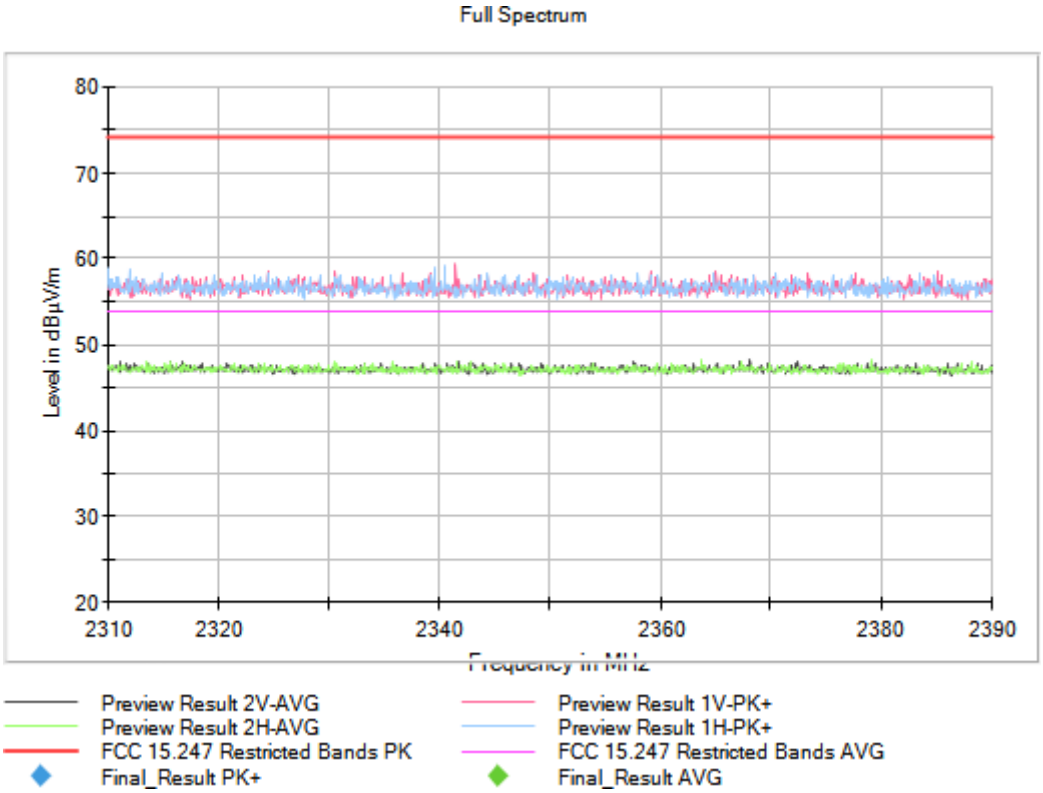

Operation Band MHz = [2400, 2483.5]

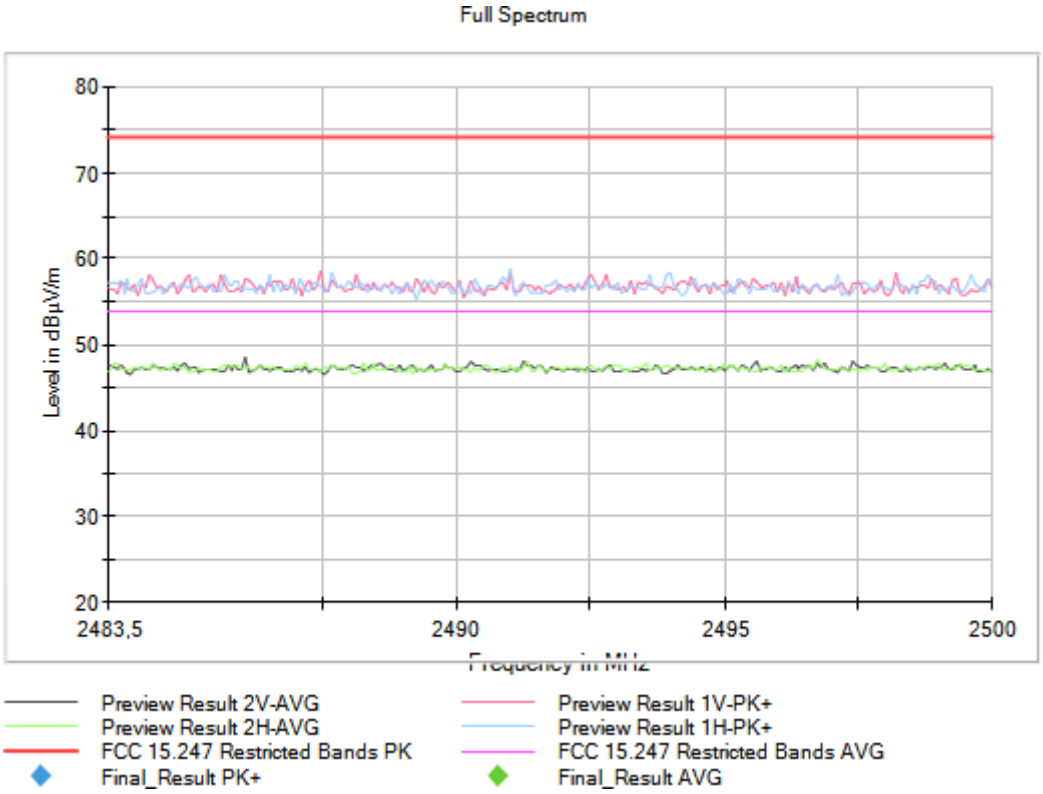
Frequency MHz = 2440.00000 Modulation = FLORA

Frequency Range GHz = [1, 3]

**Images:**




Full Spectrum
Level in dBµV/m
80
70
60
50
40
30
20
2310
2320
2340
2360
2380
2390
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 Restricted Bands PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

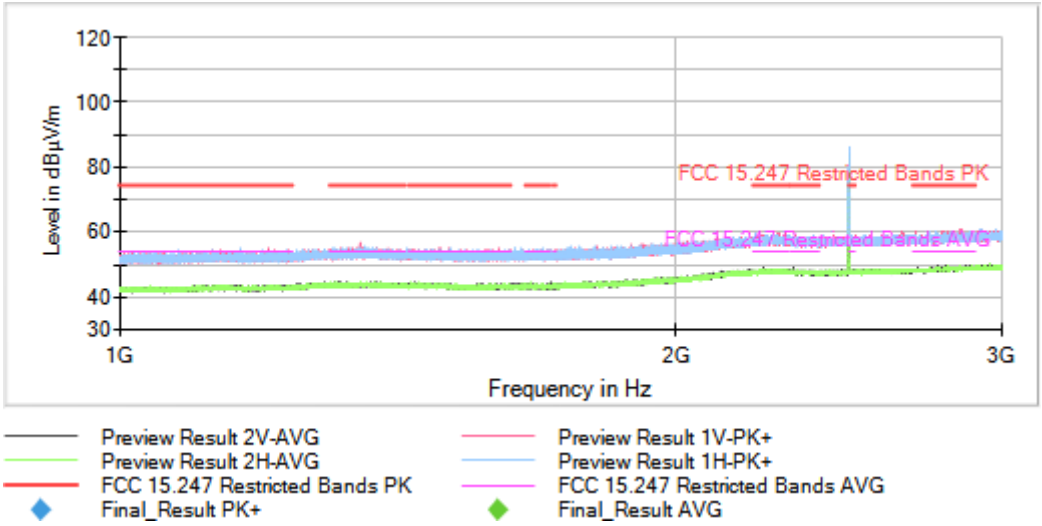

Full Spectrum
Level in dBµV/m
80
70
60
50
40
30
20
2483,5
2490
2495
2500
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 Restricted Bands PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

Operation Band MHz = [2400, 2483.5]

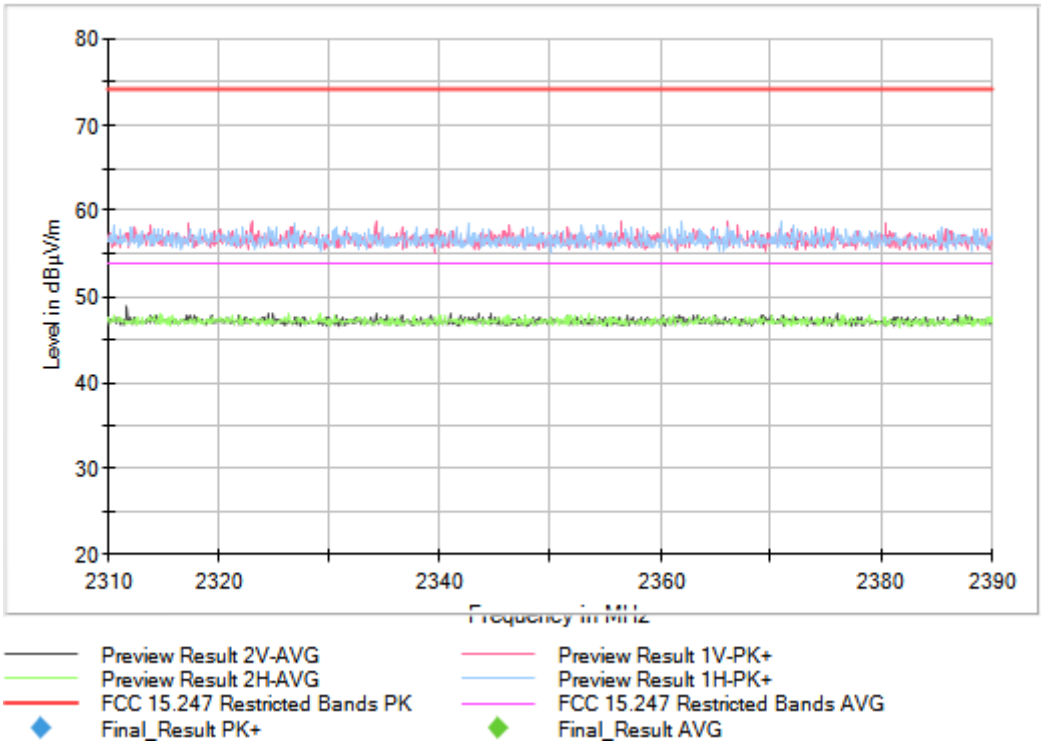
Frequency MHz = 2480.00000 Modulation = FLORA

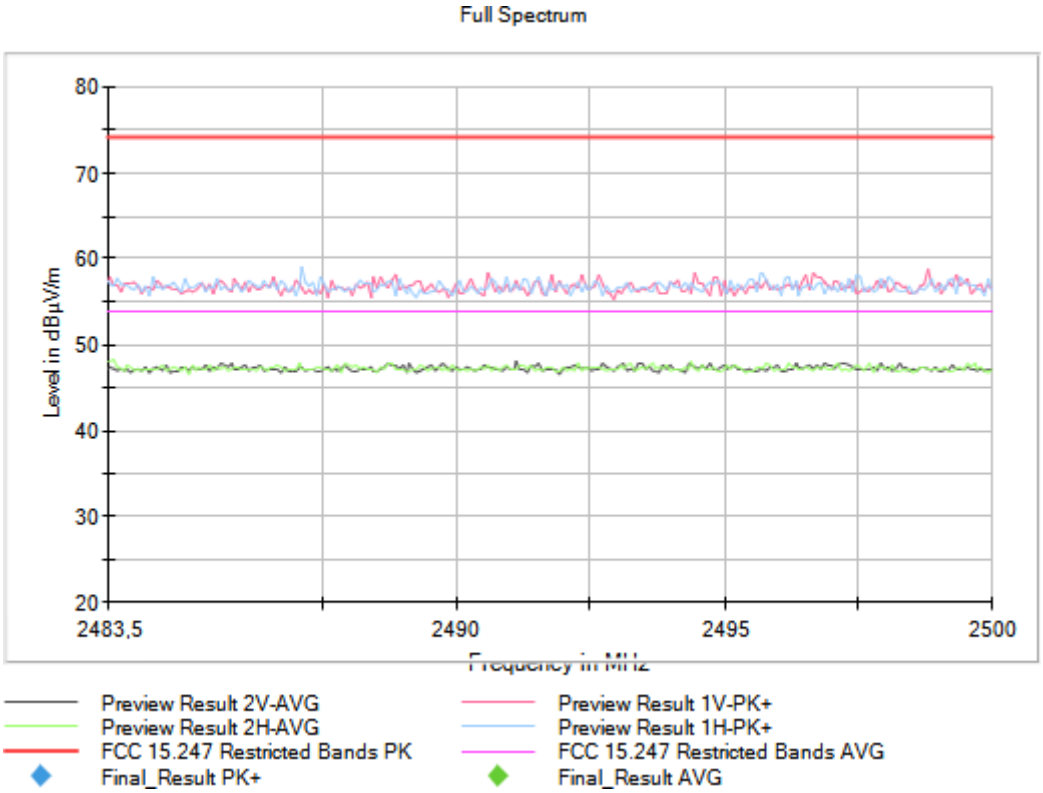
Frequency Range GHz = [1, 3]

**Images:**




Full Spectrum



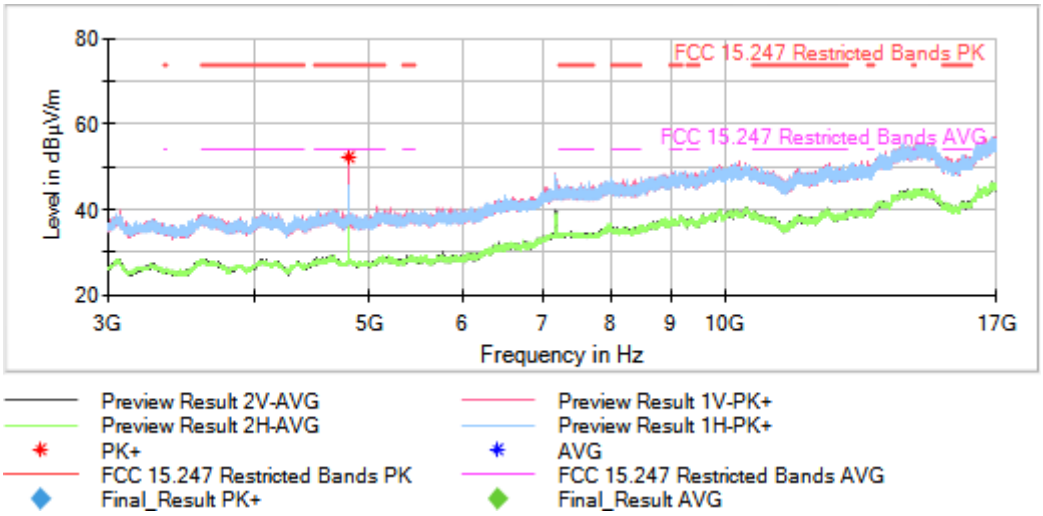



Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2402.00000 Modulation = FLORA

Frequency Range GHz = [3, 17]

**Images:**

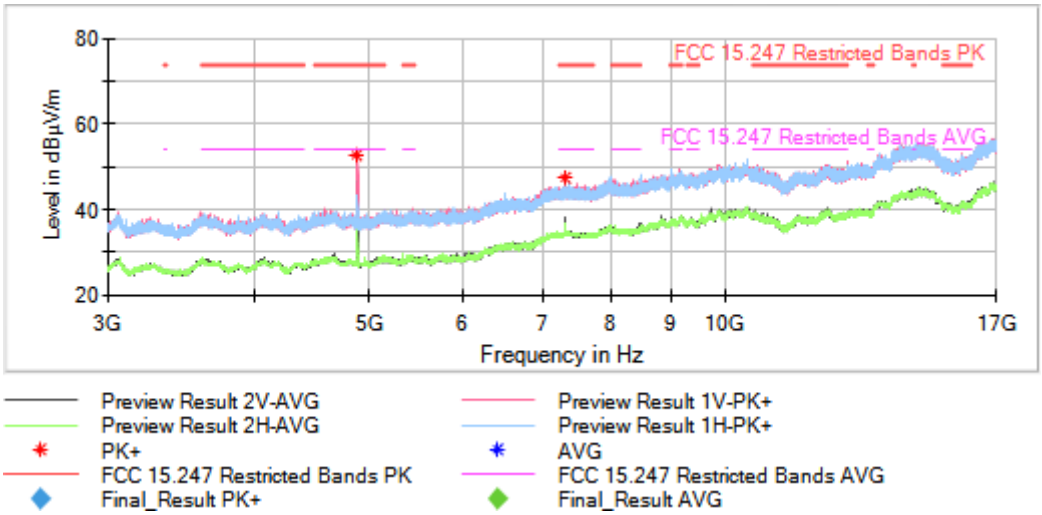


Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2440.00000 Modulation = FLORA

Frequency Range GHz = [3, 17]

**Images:**

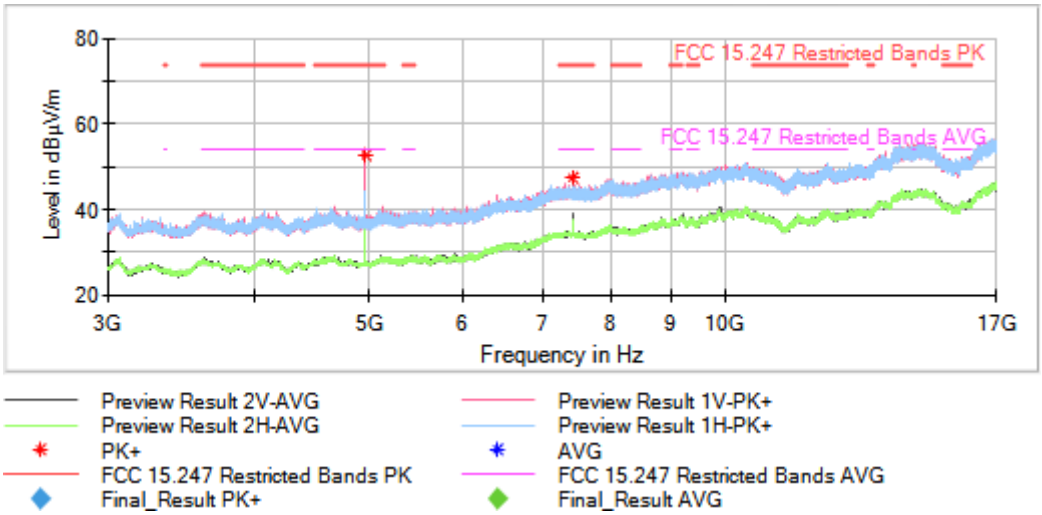



Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2480.00000 Modulation = FLORA

Frequency Range GHz = [3, 17]

**Images:**



# 99dBw Occupied Channel Bandwidth 99%

***Specification***

* RSS-Gen Issue 5, Clause 6.7 Occupied bandwidth (or 99% emission bandwidth) and x dB bandwidth:

The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

Modulation: BT (GFSK)

***Results***

| Operation Band (MHz) | Equipment | Freq (MHz) | 99OBW (MHz) |
|---|---|---|---|
| [2400, 2483.5] | Digital Transmission System (DTS) | 2402.00000 | 0.874 |
| | | 2441.00000 | 0.878 |
| | | 2480.00000 | 0.874 |

***Verdict***

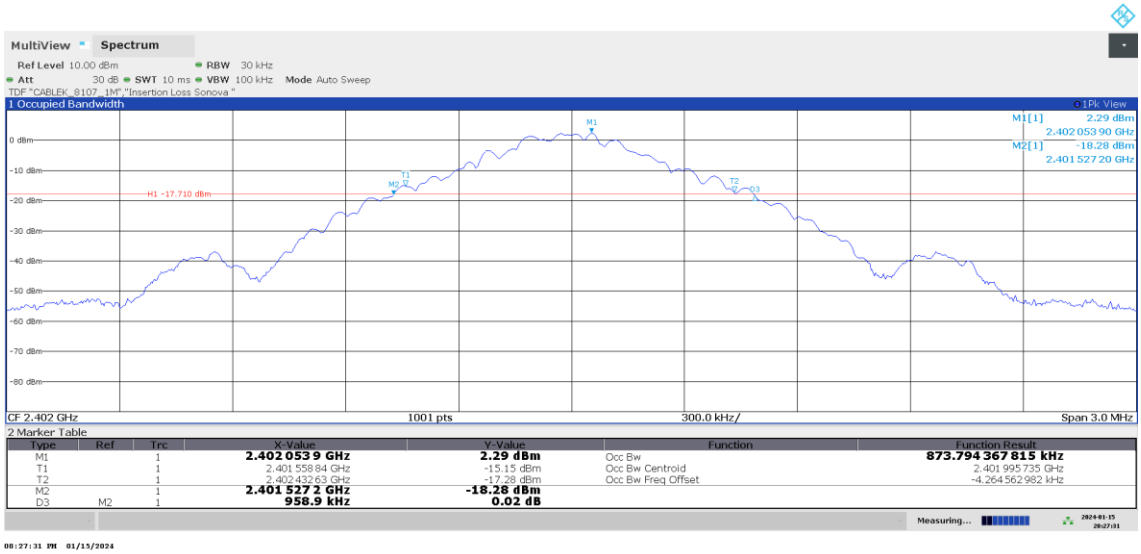
Pass

### *Attachments*

Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2402.00000 Modulation = BT (GFSK)

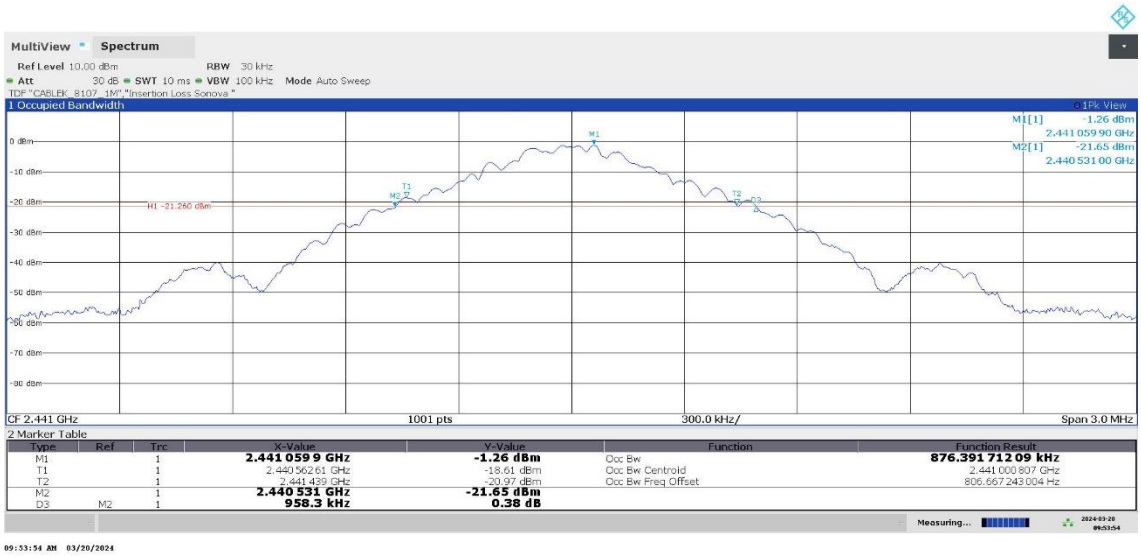
**Images:**




Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2441.00000 Modulation = BT (GFSK)

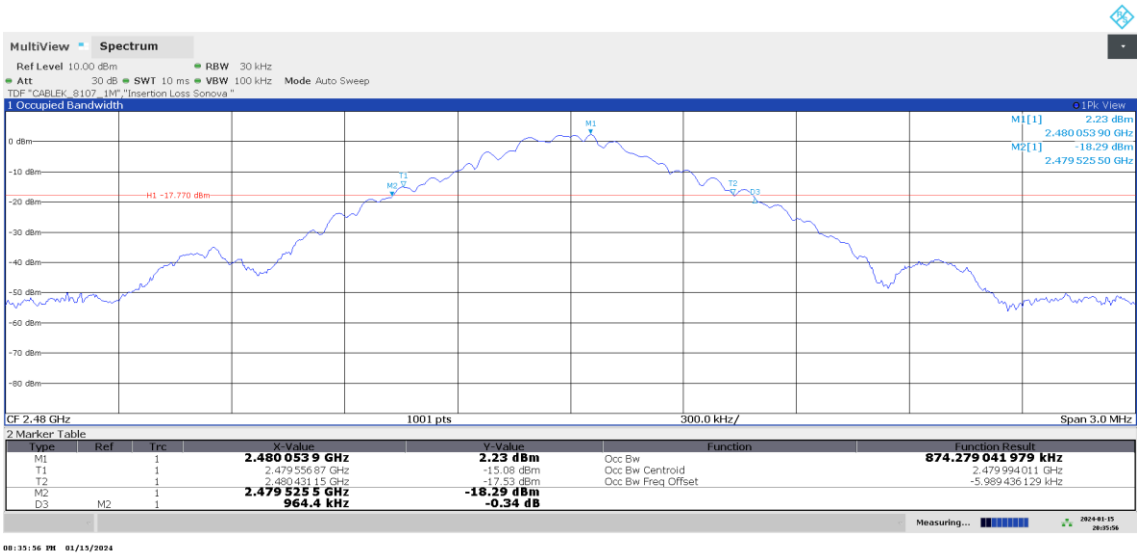
**Images:**



Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2480.00000 Modulation = BT (GFSK)

**Images:**



Modulation: BT (Pi/4 DQPSK 2-DH5)

***Results***

| Operation Band (MHz) | Equipment | Freq (MHz) | 99OBW (MHz) |
|---|---|---|---|
| [2400, 2483.5] | Digital Transmission System (DTS) | 2402.00000 | 1.201 |
| | | 2441.00000 | 1.201 |
| | | 2480.00000 | 1.201 |

***Verdict***

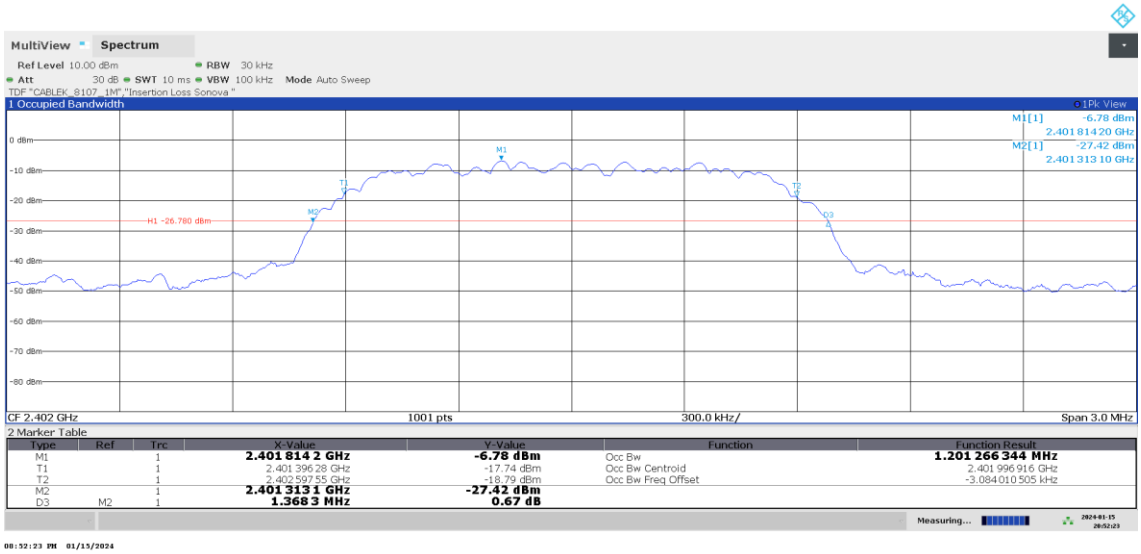
Pass

### *Attachments*

Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2402.00000 Modulation = BT (Pi/4 DQPSK 2-DH5)

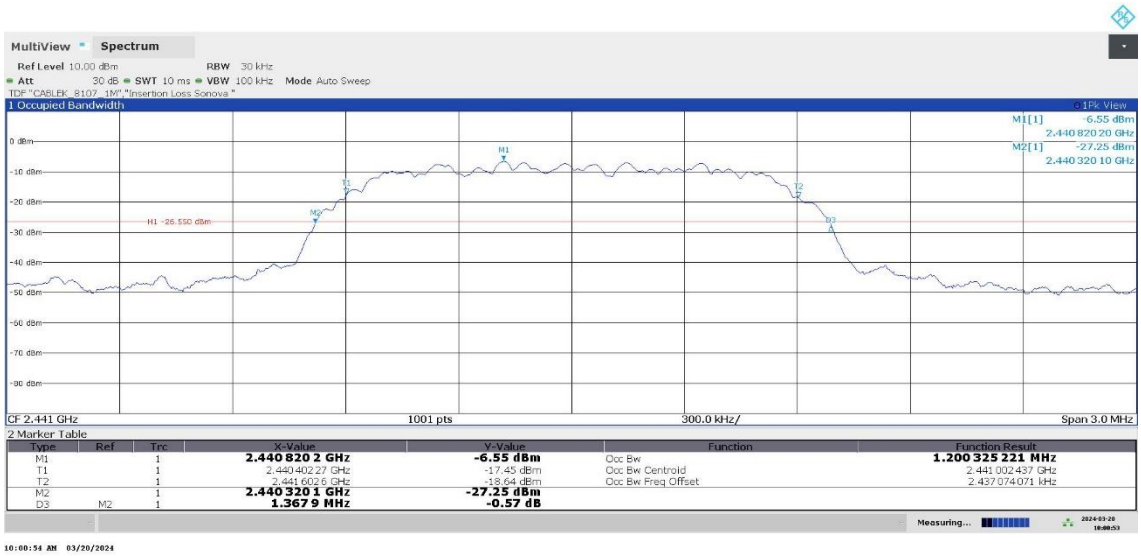
**Images:**




Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2441.00000 Modulation = BT (Pi/4 DQPSK 2-DH5)

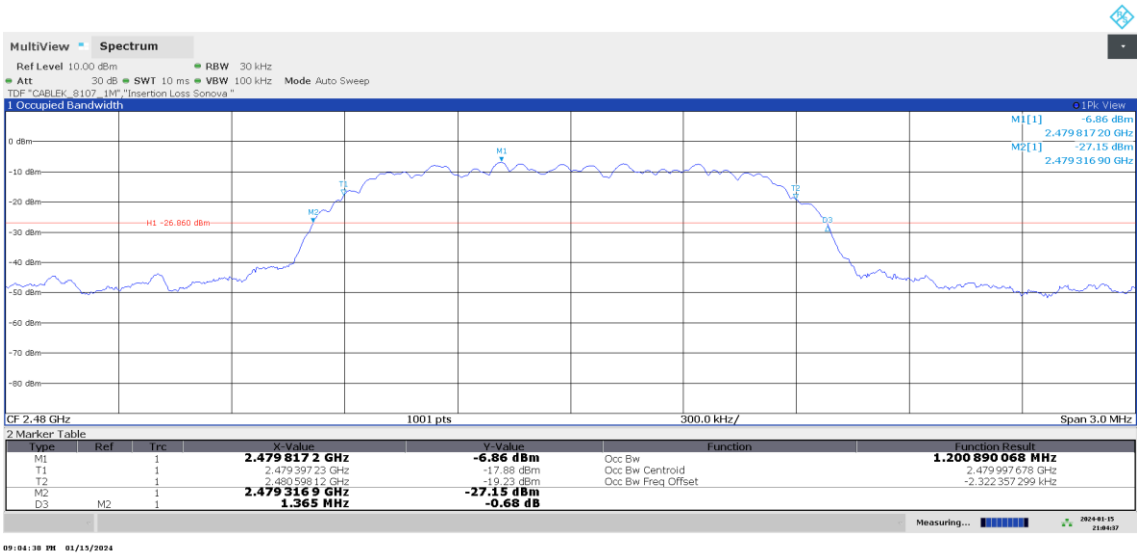
**Images:**



Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2480.00000 Modulation = BT (Pi/4 DQPSK 2-DH5)

**Images:**



Modulation: BT (8DPSK 3-DH5)

***Results***

| Operation Band (MHz) | Equipment | Freq (MHz) | 99OBW (MHz) |
|---|---|---|---|
| [2400, 2483.5] | Digital Transmission System (DTS) | 2402.00000 | 1.210 |
| | | 2441.00000 | 1.210 |
| | | 2480.00000 | 1.210 |

***Verdict***

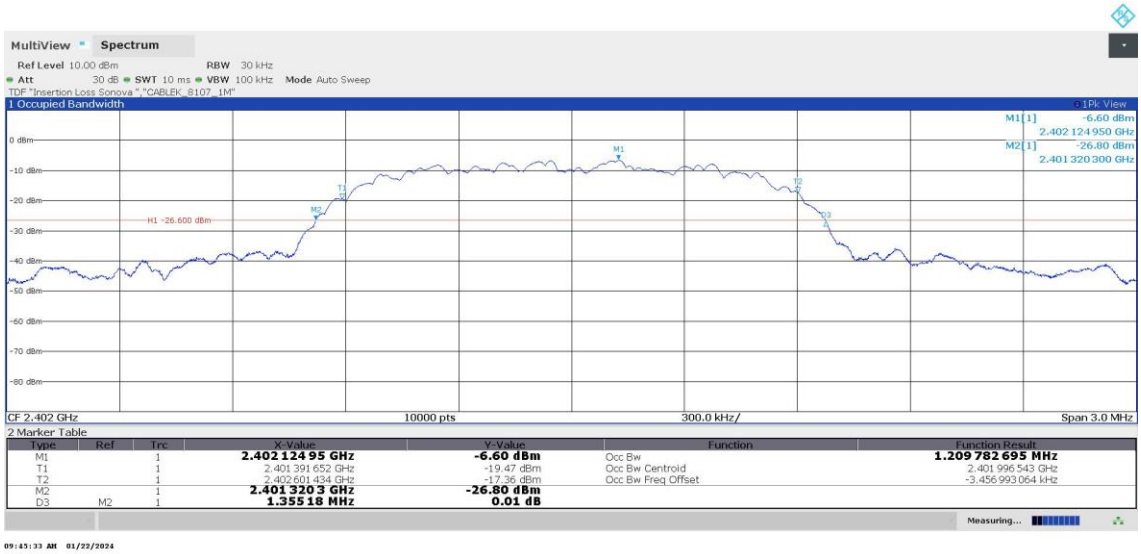
Pass

### *Attachments*

Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2402.00000 Modulation = BT (8DPSK 3-DH5)

**Images:**




Operation Band MHz = [2400, 2483.5]

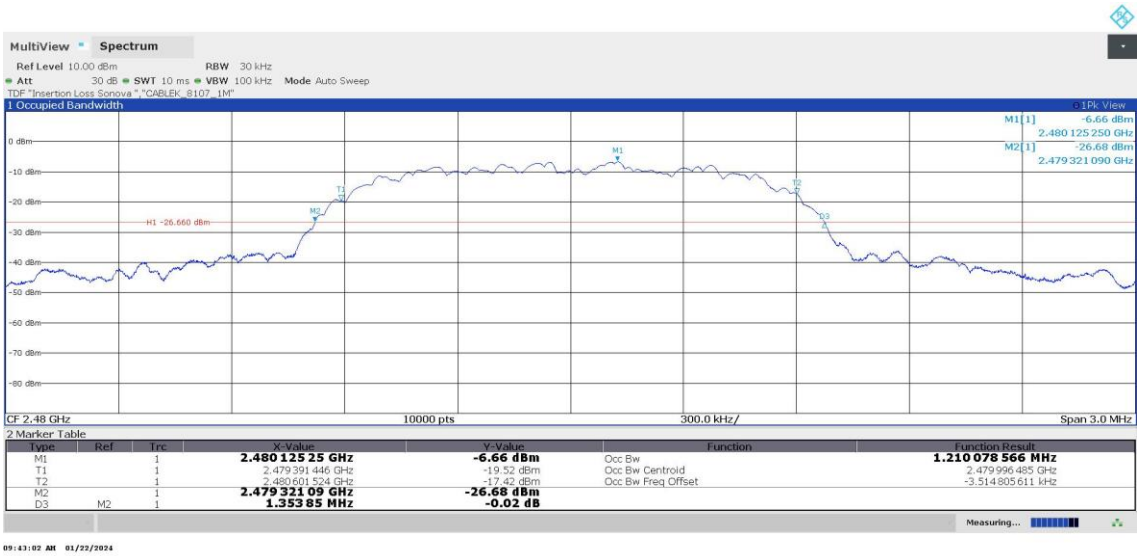
Frequency MHz = 2441.00000 Modulation = BT (8DPSK 3-DH5)

**Images:**

Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2480.00000 Modulation = BT (8DPSK 3-DH5)

**Images:**



Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

***Results***

| Operation Band (MHz) | Equipment | Freq (MHz) | 99OBW (MHz) |
|---|---|---|---|
| [2400, 2483.5] | Digital Transmission System (DTS) | 2402.00000 | 1.031 |
| | | 2440.00000 | 1.034 |
| | | 2480.00000 | 1.032 |

***Verdict***

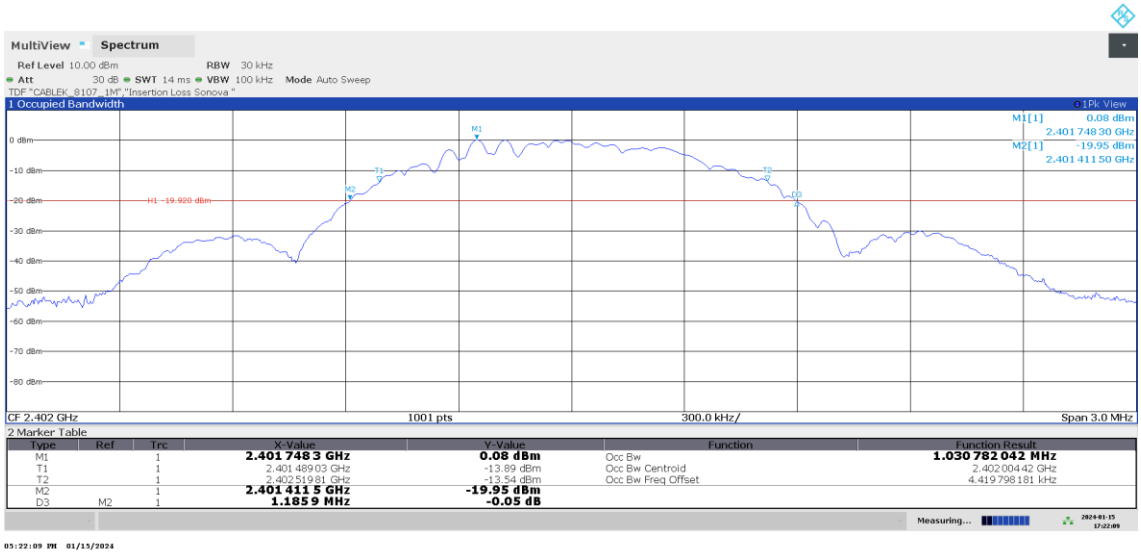
Pass

### *Attachments*

Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2402.00000 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

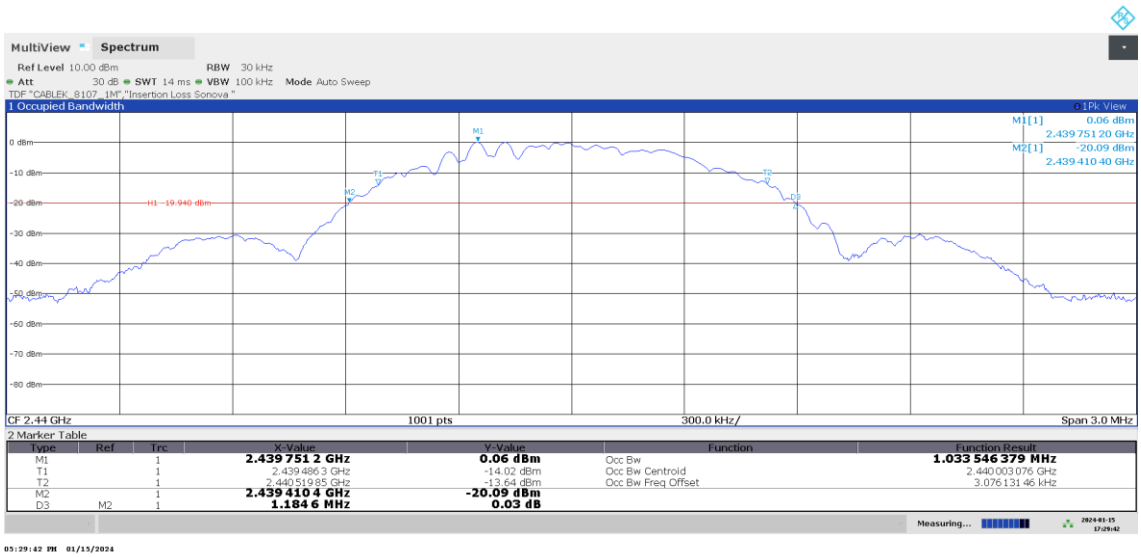
**Images:**




Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2440.00000 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

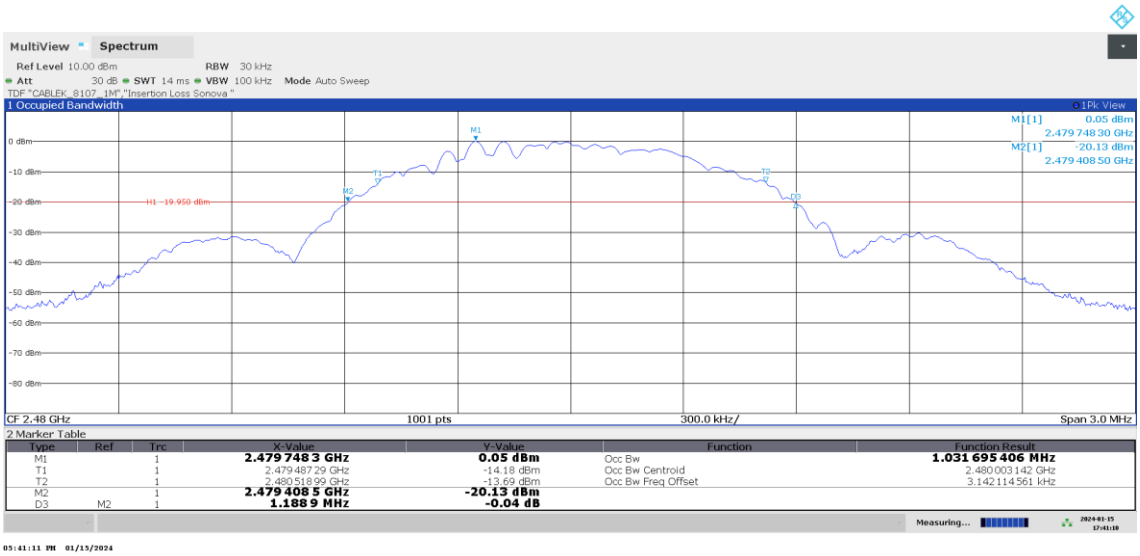
**Images:**



Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2480.00000 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

**Images:**



Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

***Results***

| Operation Band (MHz) | Equipment | Freq (MHz) | 99OBW (MHz) |
|---|---|---|---|
| [2400, 2483.5] | Digital Transmission System (DTS) | 2402.00000 | 2.062 |
| | | 2440.00000 | 2.061 |
| | | 2480.00000 | 2.062 |

***Verdict***

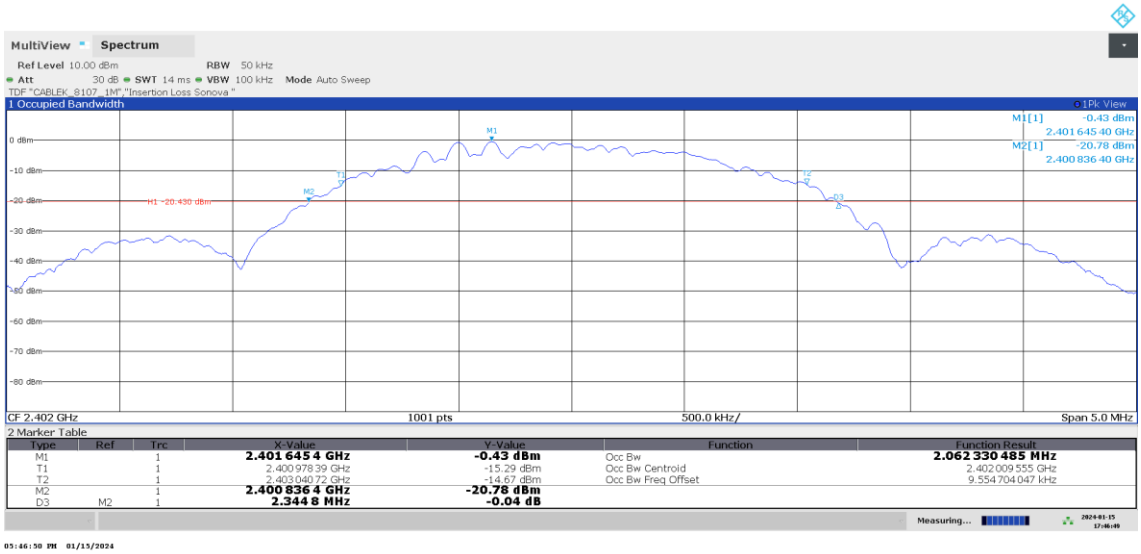
Pass

### *Attachments*

Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2402.00000 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

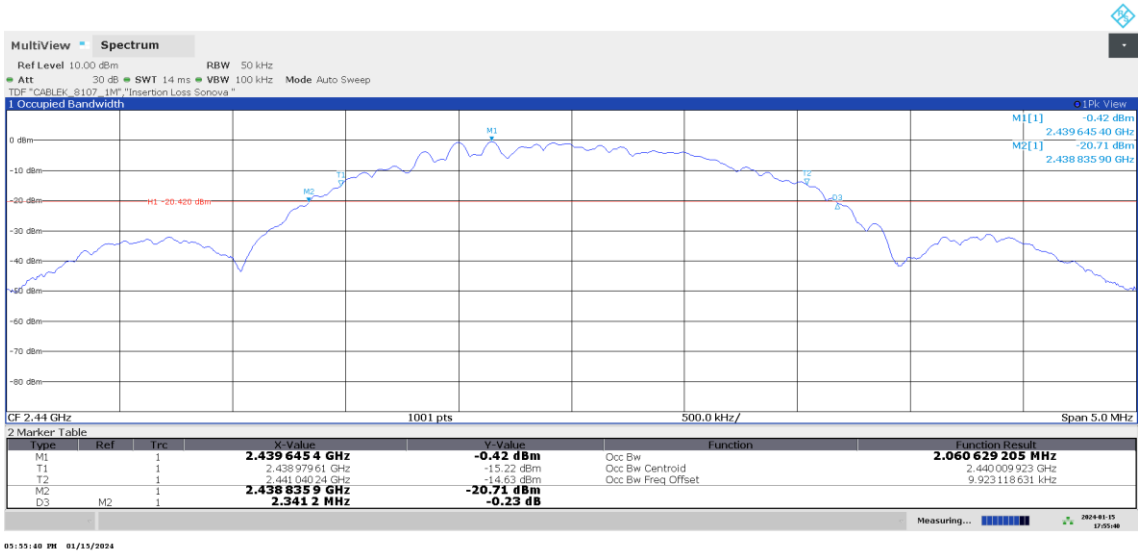
**Images:**




Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2440.00000 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

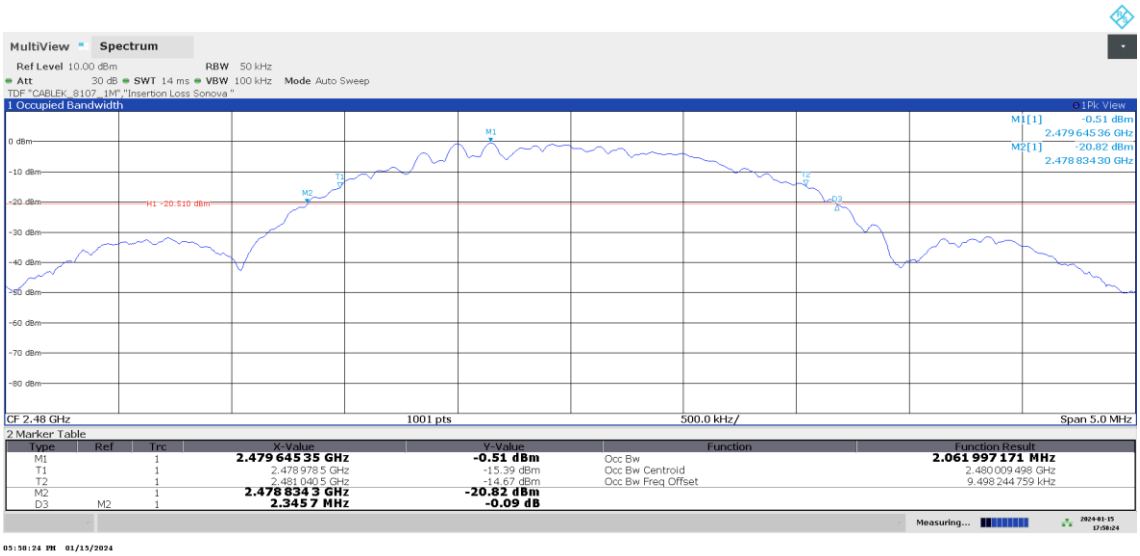
**Images:**



Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2480.00000 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

**Images:**



Modulation: DM

***Results***

| Operation Band (MHz) | Equipment | Freq (MHz) | 99OBW (MHz) |
|---|---|---|---|
| [2400, 2483.5] | Digital Transmission System (DTS) | 2402.00000 | 1.743 |
| | | 2440.00000 | 1.741 |
| | | 2480.00000 | 1.738 |

***Verdict***

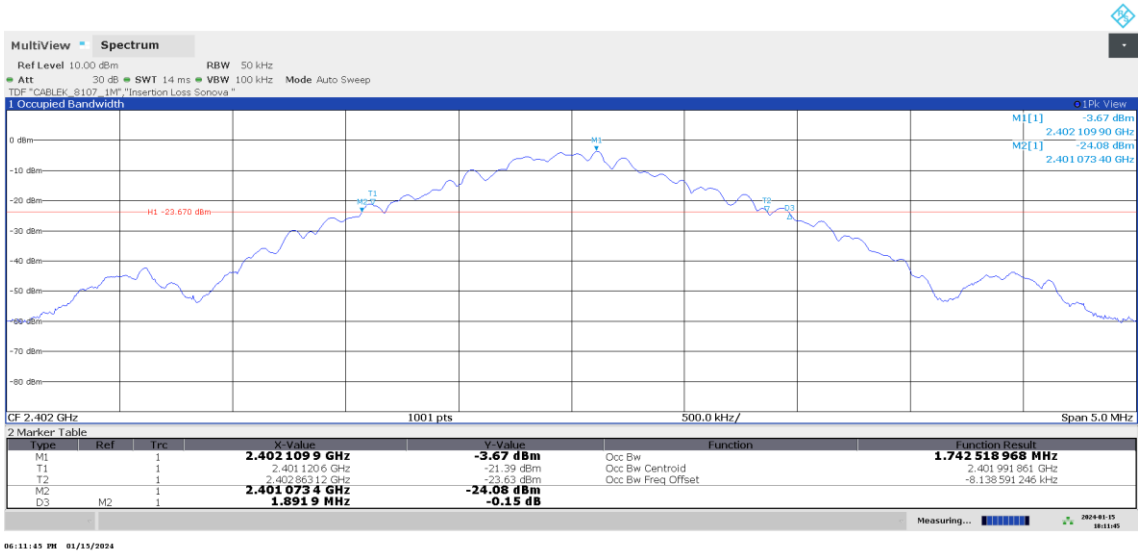
Pass

### *Attachments*

Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2402.00000 Modulation = DM

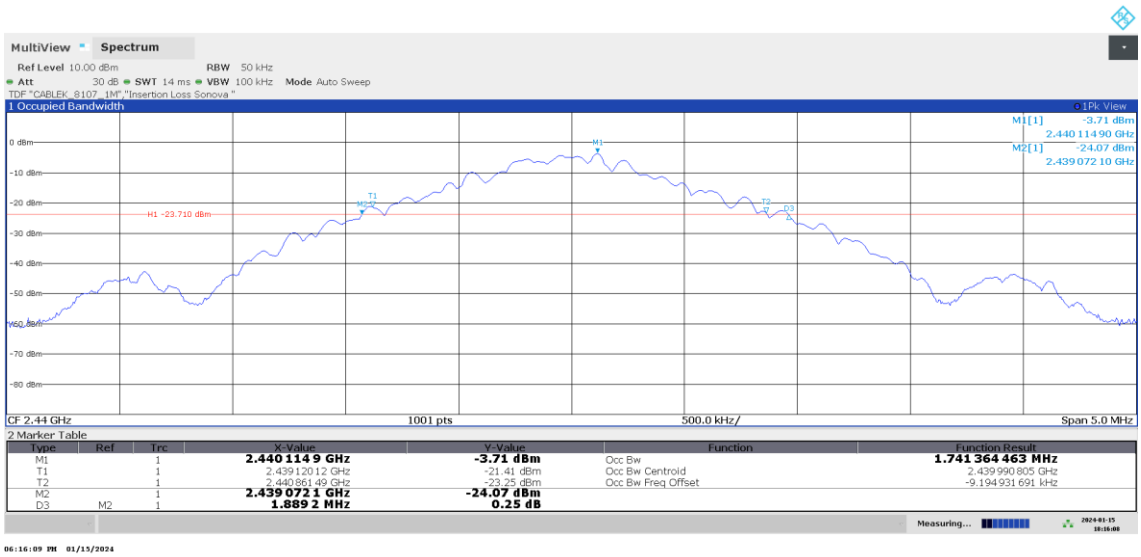
**Images:**




Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2440.00000 Modulation = DM

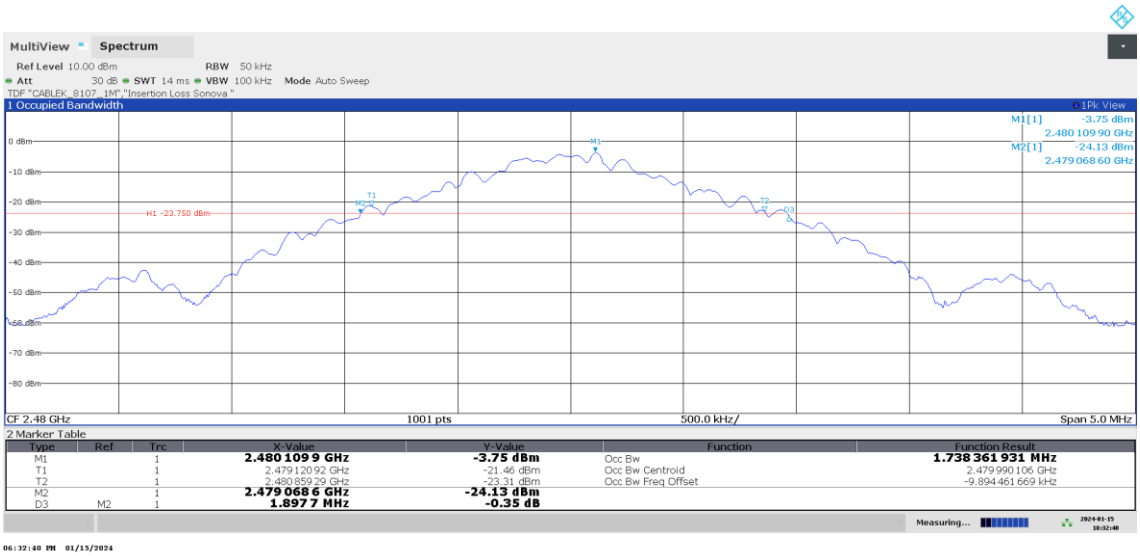
**Images:**



Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2480.00000 Modulation = DM

**Images:**



Modulation: FLORA

***Results***

| Operation Band (MHz) | Equipment | Freq (MHz) | 99OBW (MHz) |
|---|---|---|---|
| [2400, 2483.5] | Digital Transmission System (DTS) | 2402.00000 | 2.669 |
| | | 2440.00000 | 2.668 |
| | | 2480.00000 | 2.669 |

***Verdict***

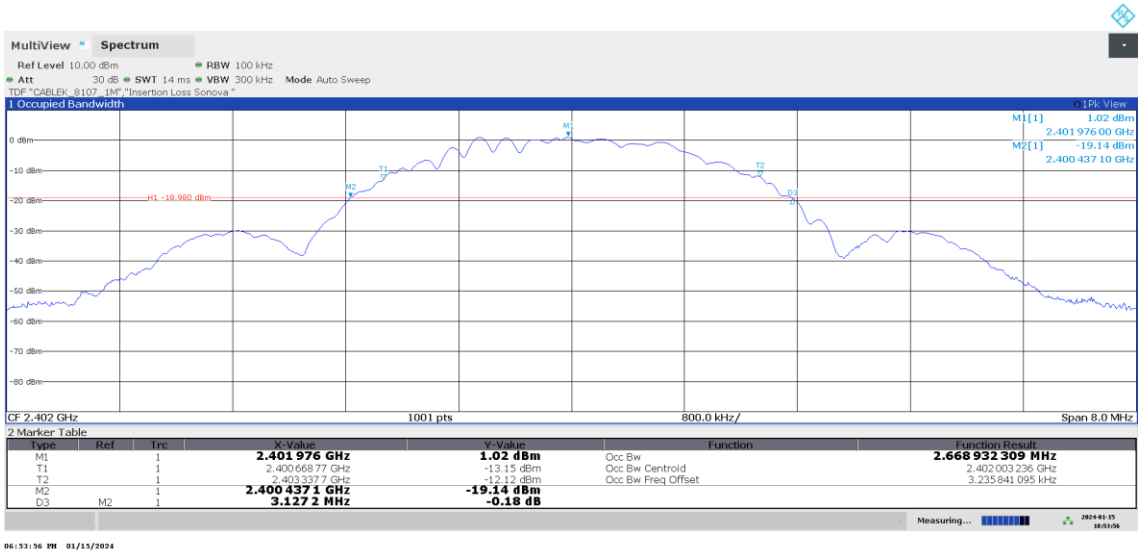
Pass

### *Attachments*

Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2402.00000 Modulation = FLORA

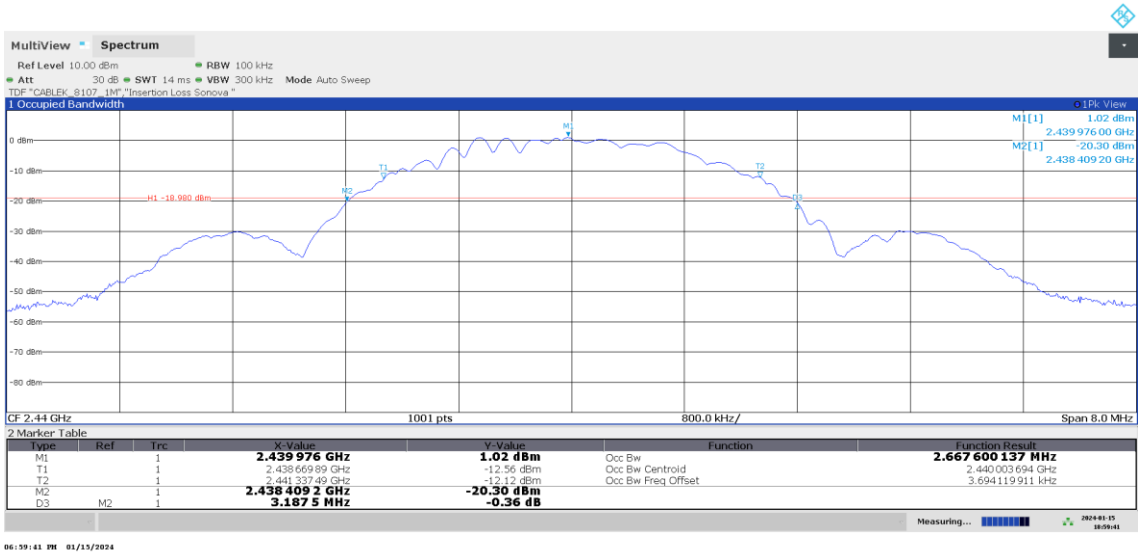
**Images:**




Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2440.00000 Modulation = FLORA

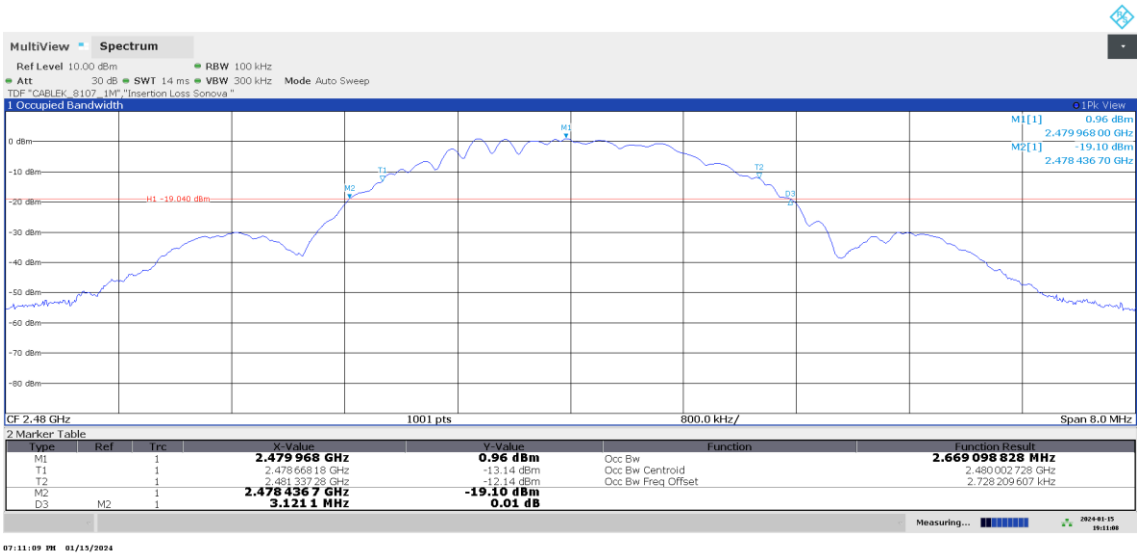
**Images:**



Operation Band MHz = [2400, 2483.5]

Frequency MHz = 2480.00000 Modulation = FLORA

**Images:**



# FCC 15.249 (b) / RSS-210 B.10 (a) Field strength of fundamental and harmonics emissions

***Limits***

The field strength of emissions from intentional radiators shall comply with the following:

| Fundamental frequency (MHz) | Field strength of fundamental (mV/m) | Field strength (dBµV/m) | Measurement distance (m) |
|---|---|---|---|
| 902 - 928 | 50 | 93.98 | 3 |
| 2400 - 2483.5 | 50 | 93.98 | 3 |
| 5725 - 5875 | 50 | 93.98 | 3 |
| 24000 - 24250 | 250 | 107.96 | 3 |

For frequencies above 1000 MHz, the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

***Results***

| Operation Band (MHz) | Freq (MHz) | Pk Field (dBµV/m) | Avg Field (dBµV/m) |
|---|---|---|---|
| [2400, 2483.5] | 2402.00 | 91.54 | 91.01 |
| | 2440.00 | 91.59 | 91.09 |
| | 2480.00 | 91.25 | 92.67 |

***Verdict***

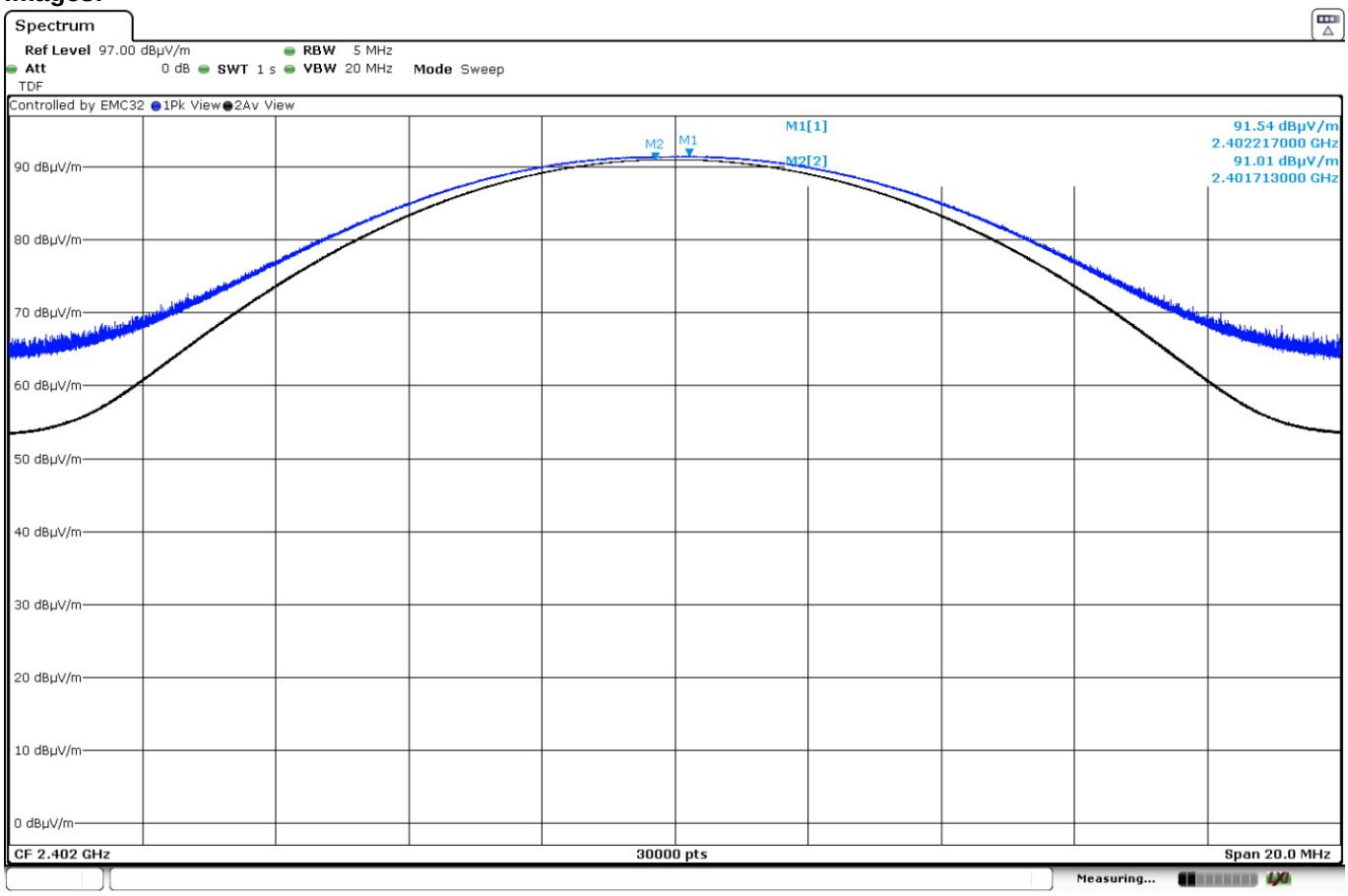
Pass

### *Attachments*

Operation Band MHz = [2400, 2483.5] Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

Frequency MHz = 2402.00000

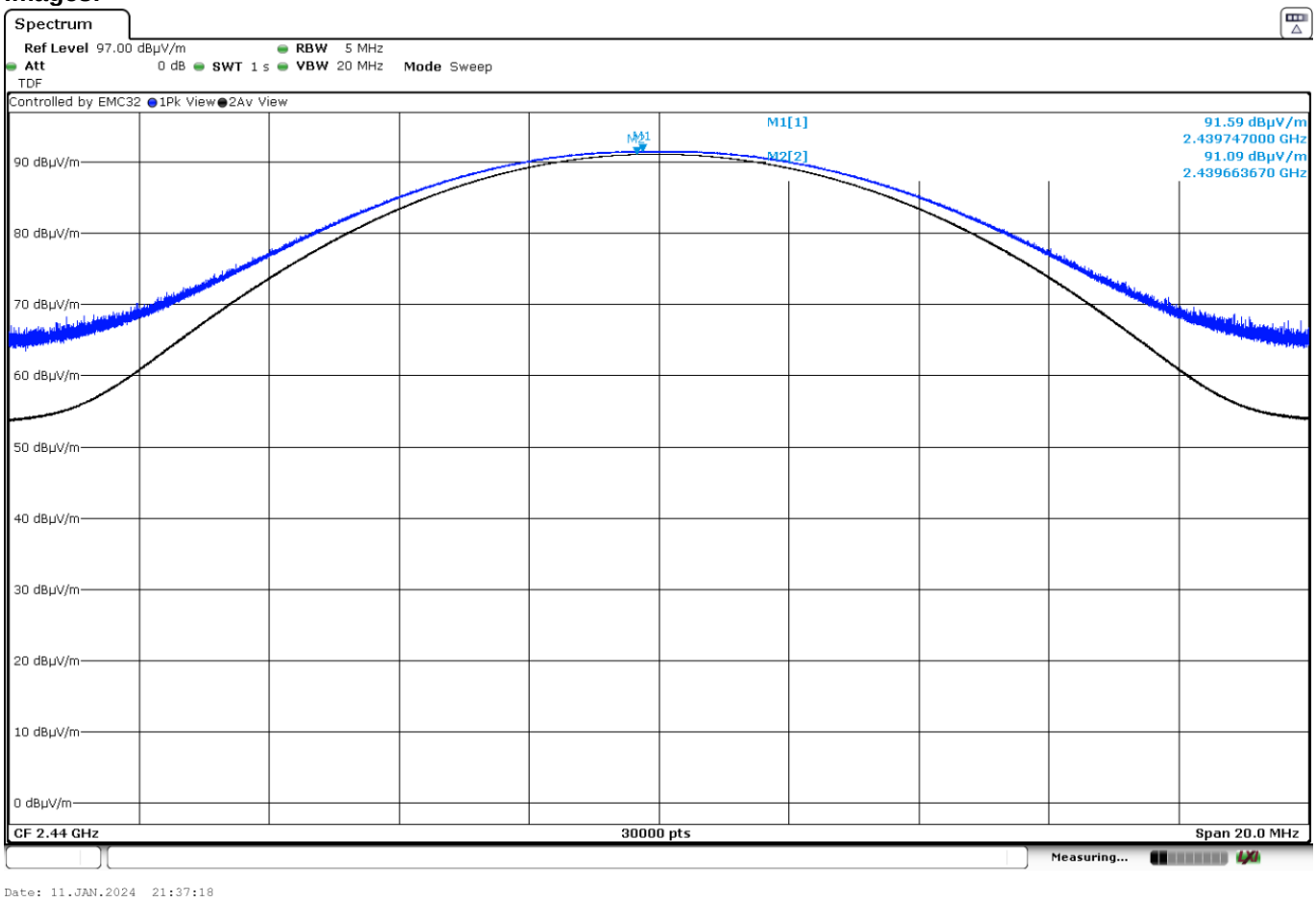
**Images:**



Operation Band MHz = [2400, 2483.5] Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

Frequency MHz = 2440.00000

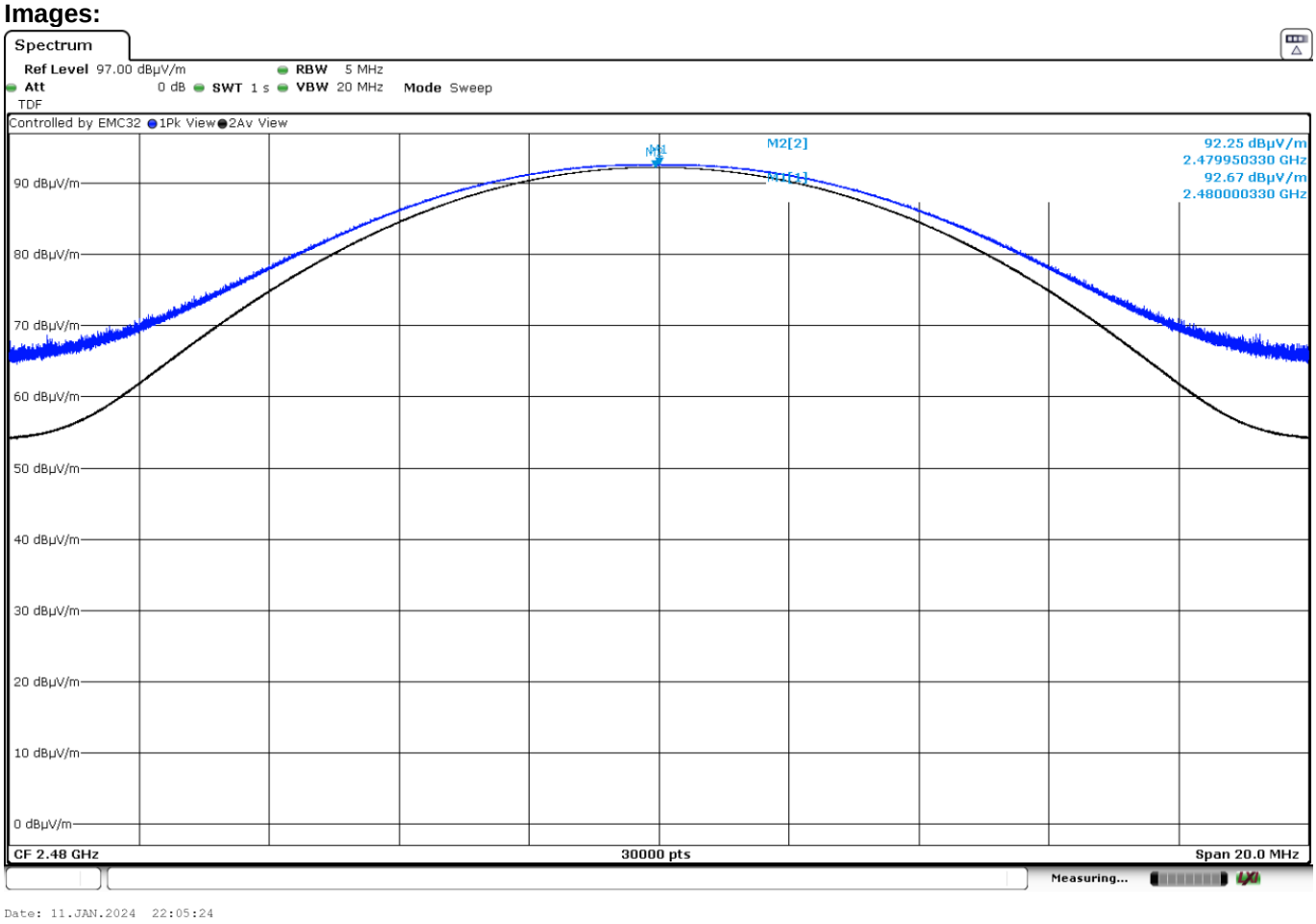
**Images:**



Operation Band MHz = [2400, 2483.5] Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

Frequency MHz = 2480.00000

**Images:**



Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

***Results***

| Operation Band (MHz) | Freq (MHz) | Pk Field (dBµV/m) | Avg Field (dBµV/m) |
|---|---|---|---|
| [2400, 2483.5] | 2402.00 | 90.43 | 89.81 |
| | 2440.00 | 91.24 | 90.36 |
| | 2480.00 | 92.87 | 92.37 |

***Verdict***

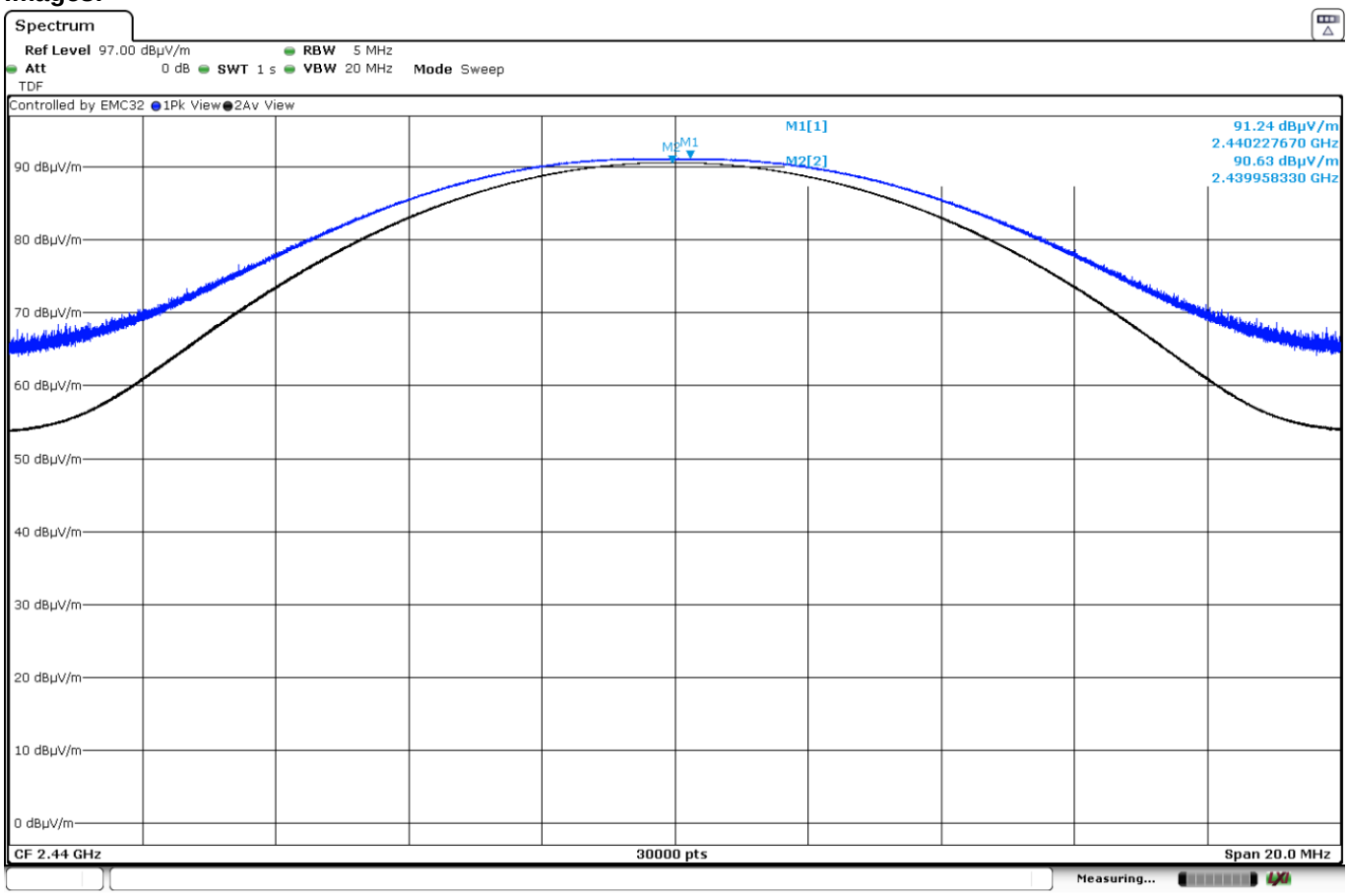
Pass

### *Attachments*

Operation Band MHz = [2400, 2483.5] Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Frequency MHz = 2402.00000

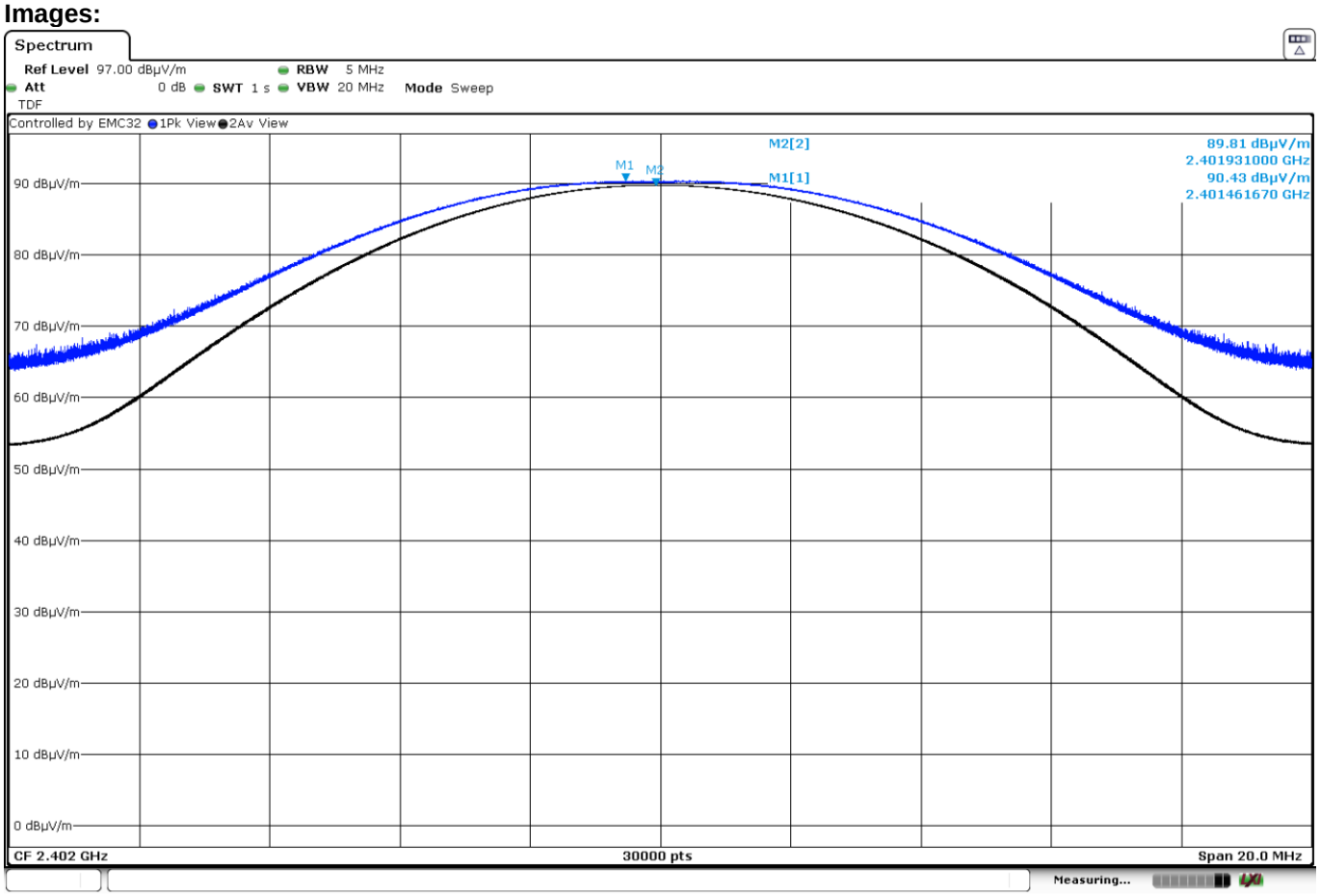
**Images:**



Operation Band MHz = [2400, 2483.5] Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Frequency MHz = 2440.00000

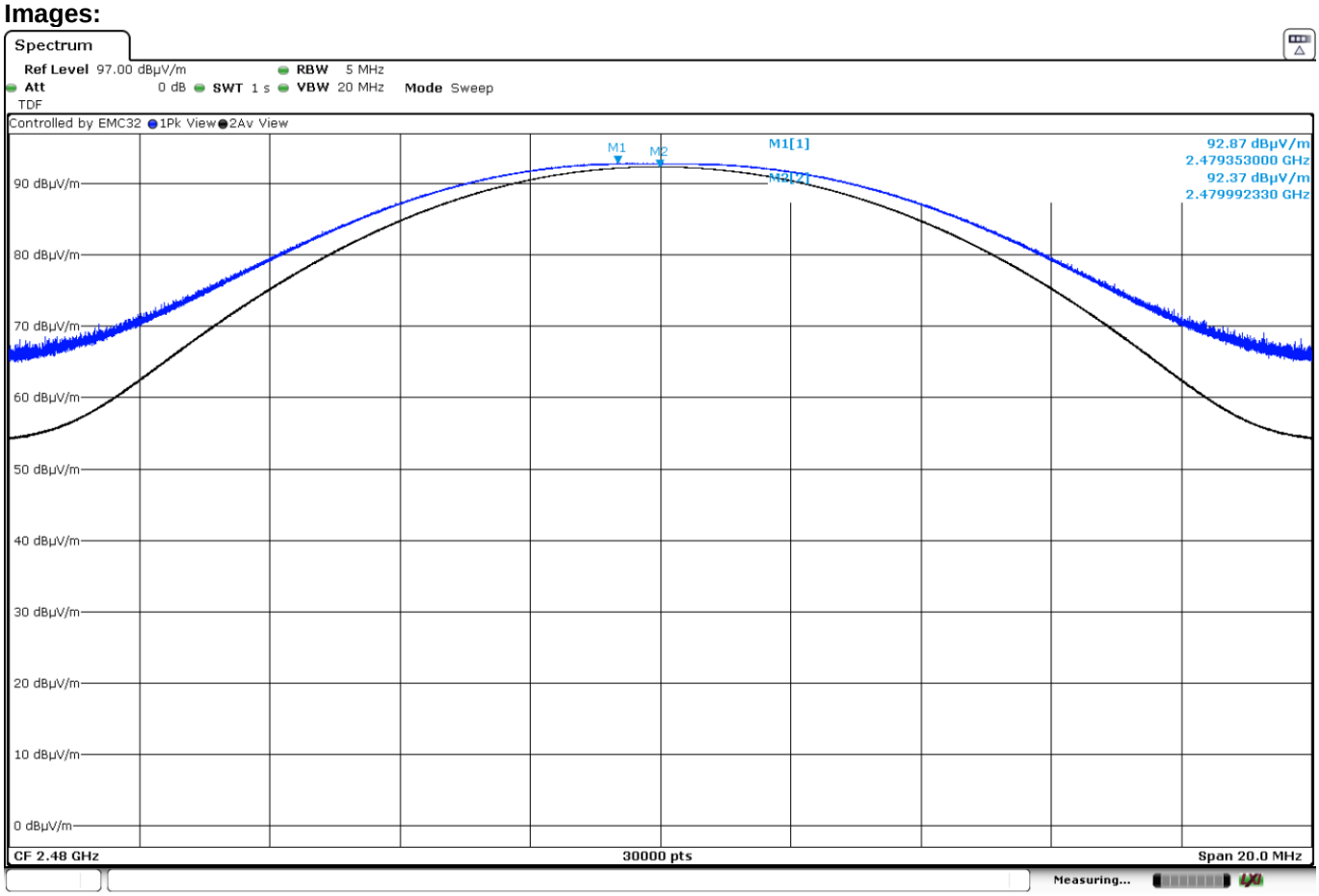
**Images:**



Operation Band MHz = [2400, 2483.5] Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Frequency MHz = 2480.00000

**Images:**



Modulation: BT (GFSK)

***Results***

| Operation Band (MHz) | Freq (MHz) | Pk Field (dBµV/m) | Avg Field (dBµV/m) |
|---|---|---|---|
| [2400, 2483.5] | 2402.00 | 90.43 | 89.92 |
| | 2441.00 | 91.58 | 91.06 |
| | 2480.00 | 92.79 | 92.29 |

***Verdict***

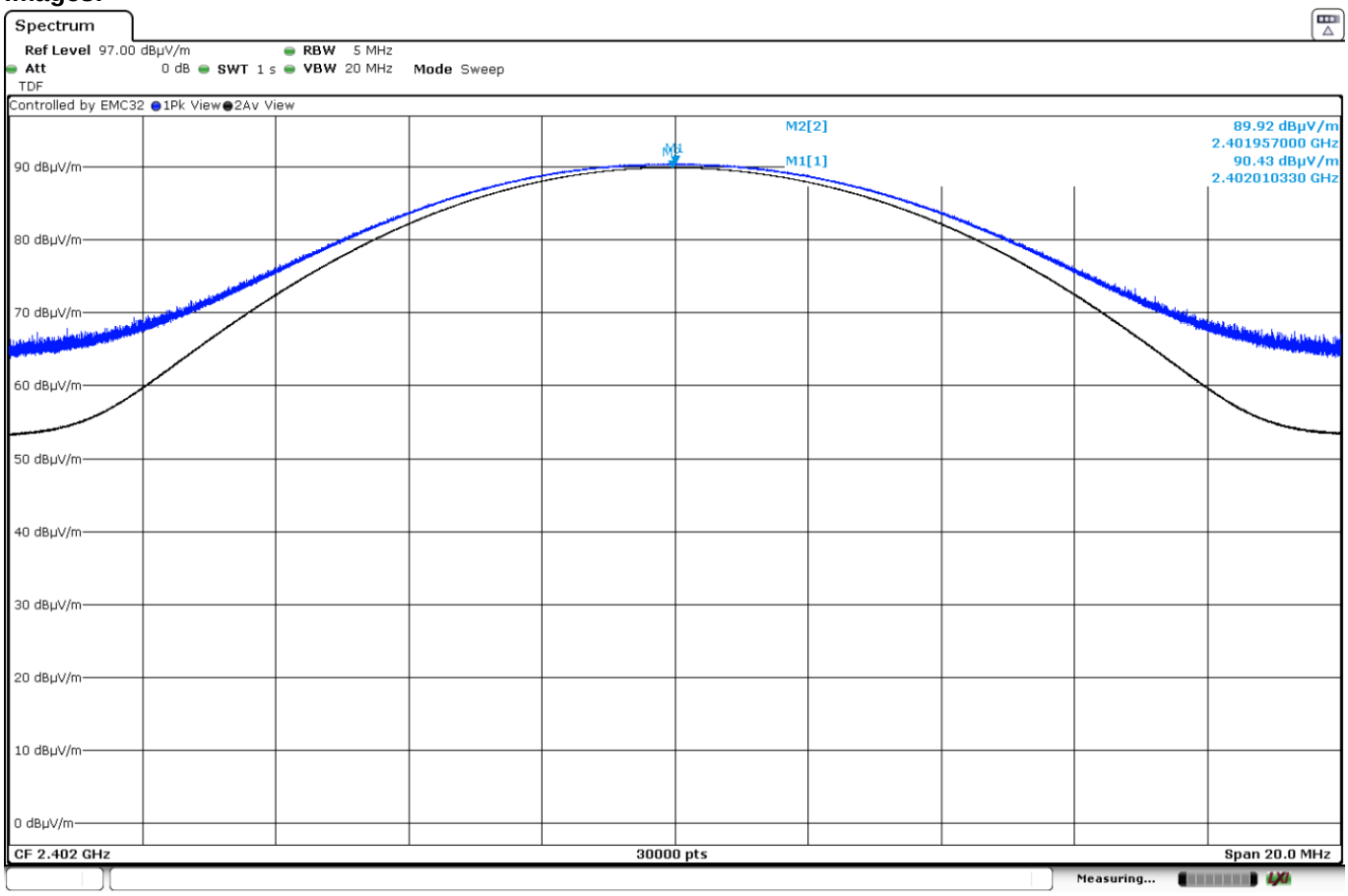
Pass

### *Attachments*

Operation Band MHz = [2400, 2483.5] Modulation = BT (GFSK)

Frequency MHz = 2402.00000

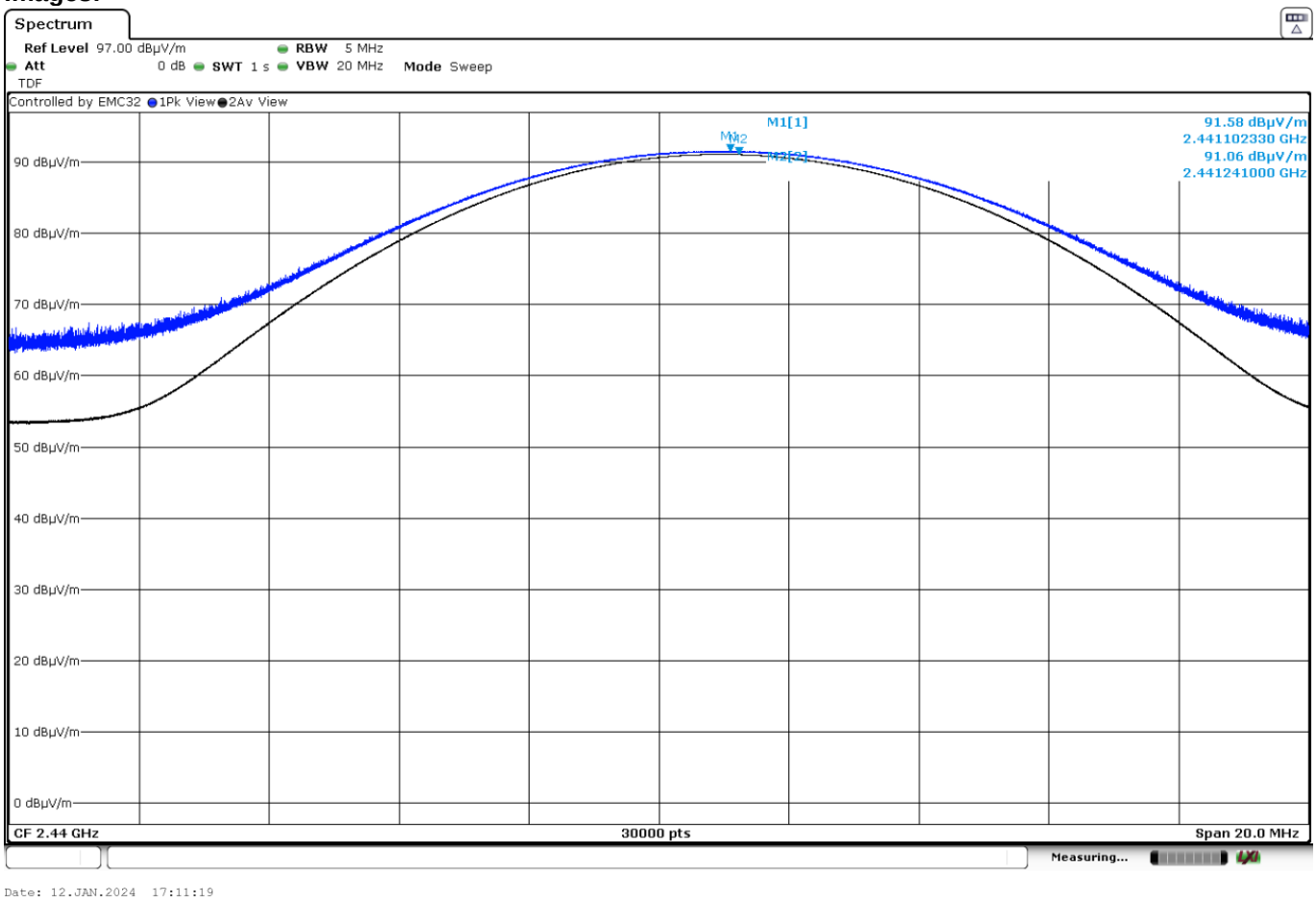
**Images:**



Operation Band MHz = [2400, 2483.5] Modulation = BT (GFSK)

Frequency MHz = 2441.00000

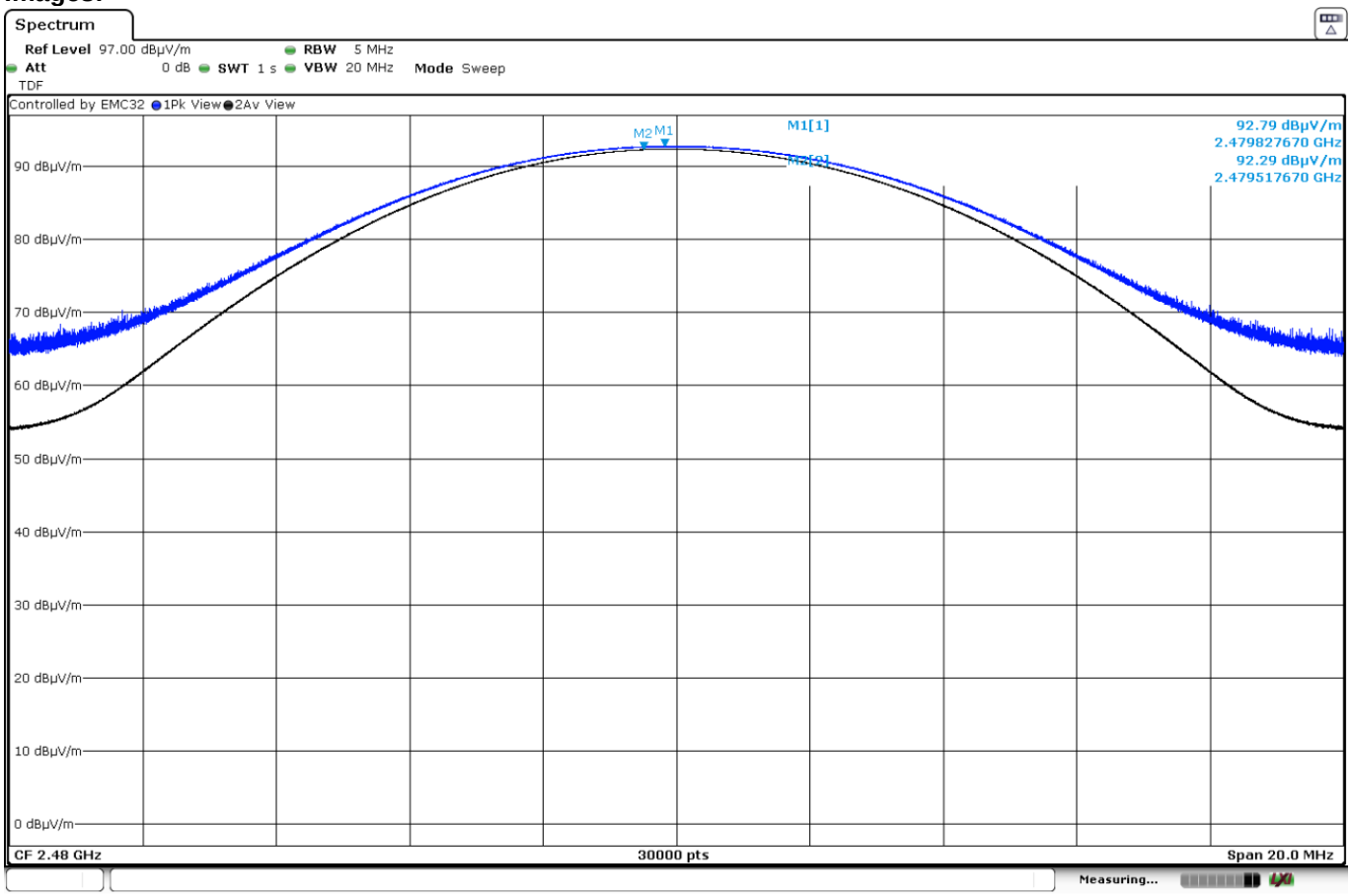
**Images:**



Operation Band MHz = [2400, 2483.5] Modulation = BT (GFSK)

Frequency MHz = 2480.00000

**Images:**



Modulation: BT (Pi/4 DQPSK 2-DH5)

***Results***

| Operation Band (MHz) | Freq (MHz) | Pk Field (dBµV/m) | Avg Field (dBµV/m) |
|---|---|---|---|
| [2400, 2483.5] | 2402.00 | 88.70 | 85.46 |
| | 2441.00 | 89.10 | 85.68 |
| | 2480.00 | 90.08 | 86.87 |

***Verdict***

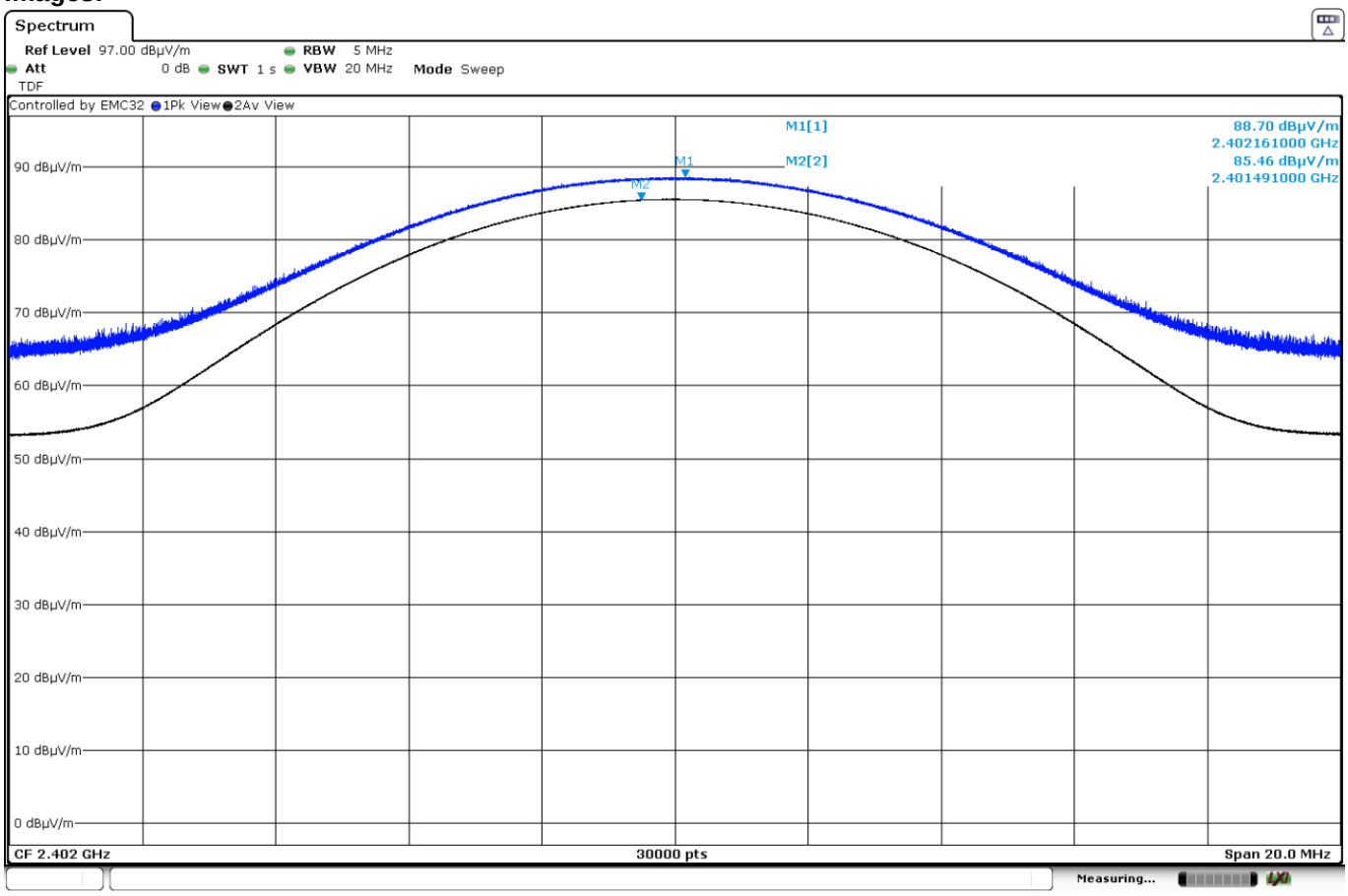
Pass

### *Attachments*

Operation Band MHz = [2400, 2483.5] Modulation = BT (Pi/4 DQPSK 2-DH5)

Frequency MHz = 2402.00000

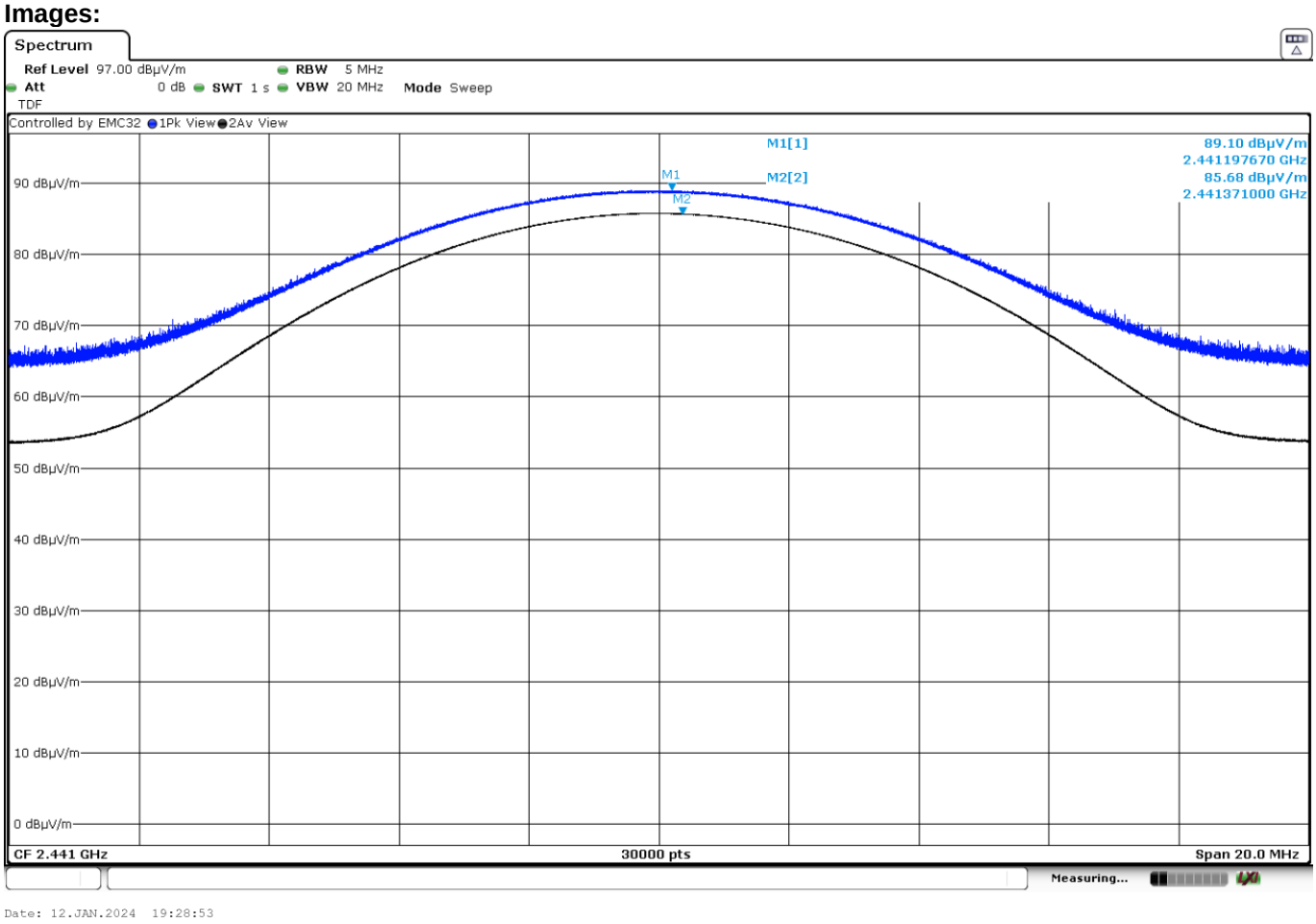
**Images:**



Operation Band MHz = [2400, 2483.5] Modulation = BT (Pi/4 DQPSK 2-DH5)

Frequency MHz = 2441.00000

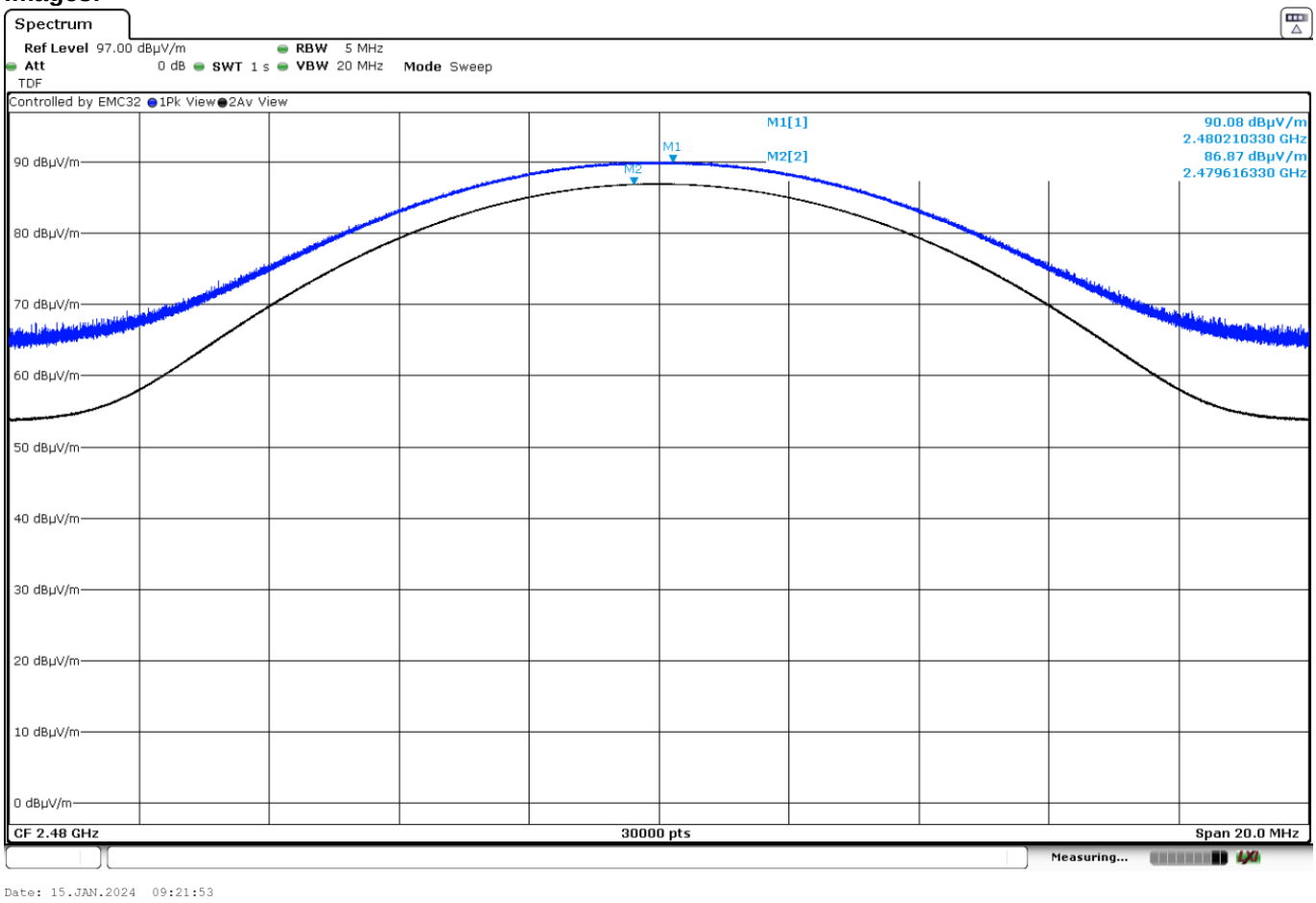
**Images:**



Operation Band MHz = [2400, 2483.5] Modulation = BT (Pi/4 DQPSK 2-DH5)

Frequency MHz = 2480.00000

**Images:**



Modulation: BT (8DPSK 3-DH5)

***Results***

| Operation Band (MHz) | Freq (MHz) | Pk Field (dBµV/m) | Avg Field (dBµV/m) |
|---|---|---|---|
| [2400, 2483.5] | 2402.00 | 89.65 | 86.21 |
| | 2441.00 | 88.57 | 84.99 |
| | 2480.00 | 90.31 | 86.63 |

***Verdict***

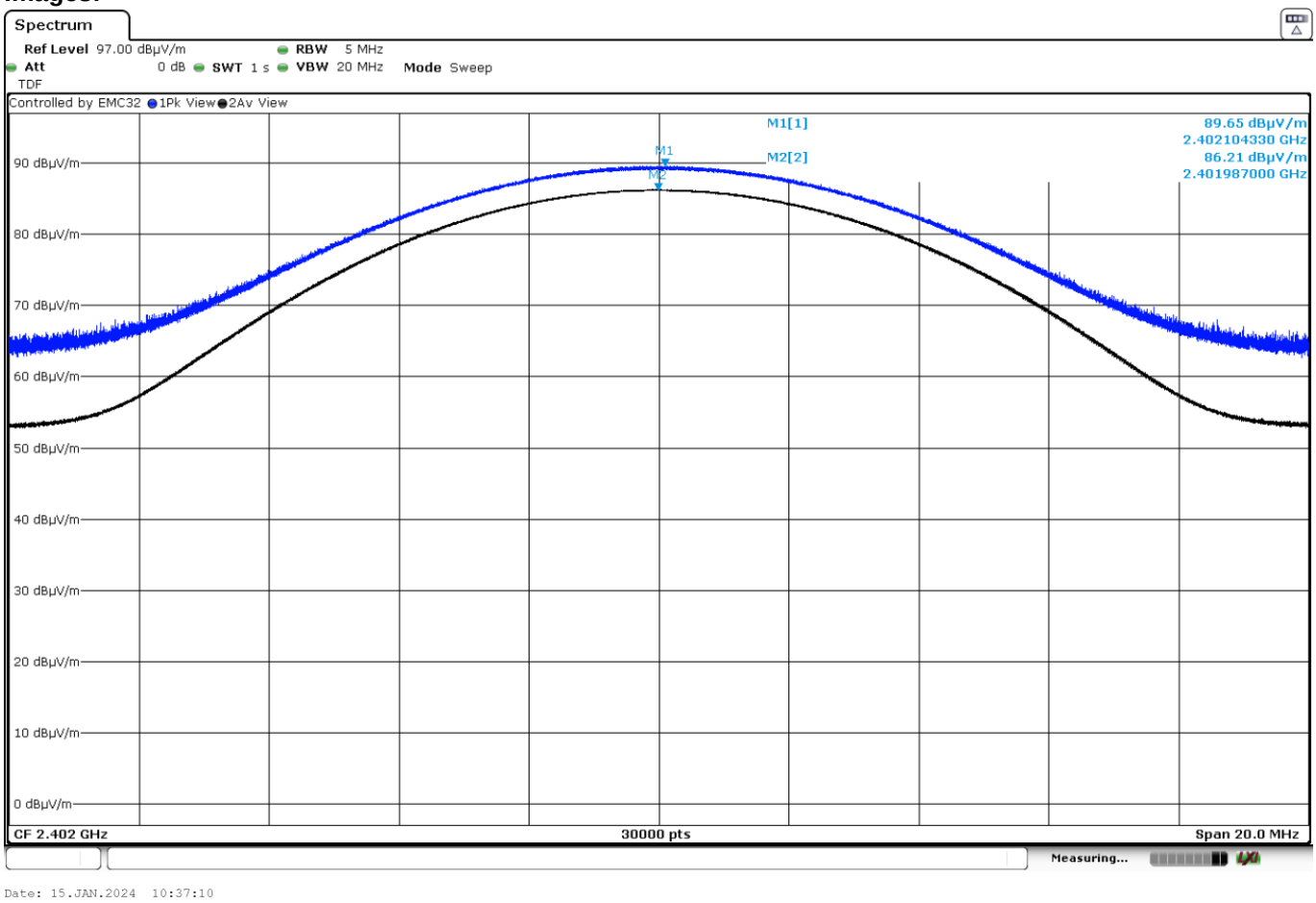
Pass

### *Attachments*

Operation Band MHz = [2400, 2483.5] Modulation = BT (8DPSK 3-DH5)

Frequency MHz = 2402.00000

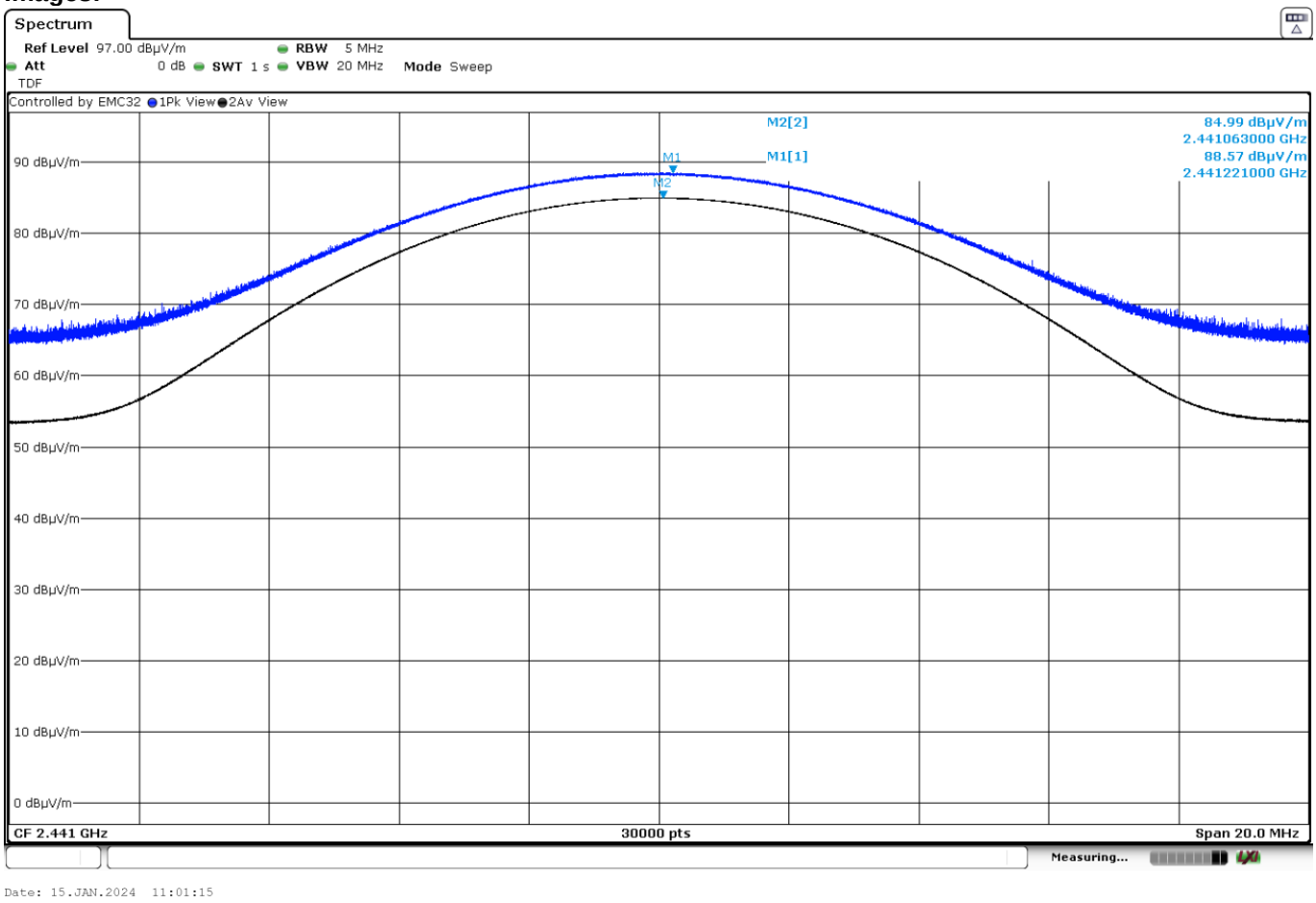
**Images:**



Operation Band MHz = [2400, 2483.5] Modulation = BT (8DPSK 3-DH5)

Frequency MHz = 2441.00000

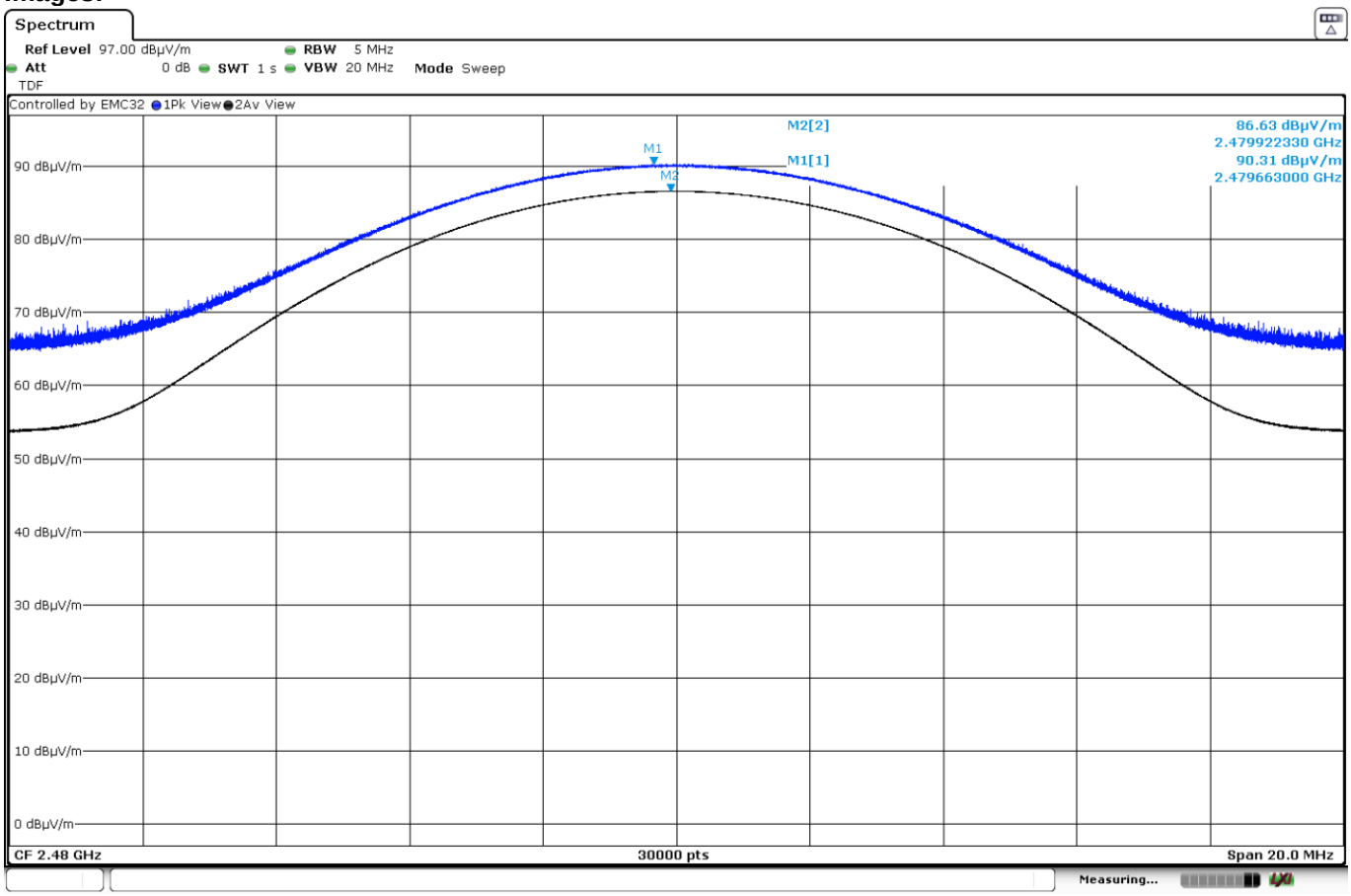
**Images:**



Operation Band MHz = [2400, 2483.5] Modulation = BT (8DPSK 3-DH5)

Frequency MHz = 2480.00000

**Images:**



Modulation: DM

***Results***

| Operation Band (MHz) | Freq (MHz) | Pk Field (dBµV/m) | Avg Field (dBµV/m) |
|---|---|---|---|
| [2400, 2483.5] | 2402.00 | 82.35 | 80.88 |
| | 2440.00 | 82.74 | 81.23 |
| | 2480.00 | 85.12 | 84.01 |

***Verdict***

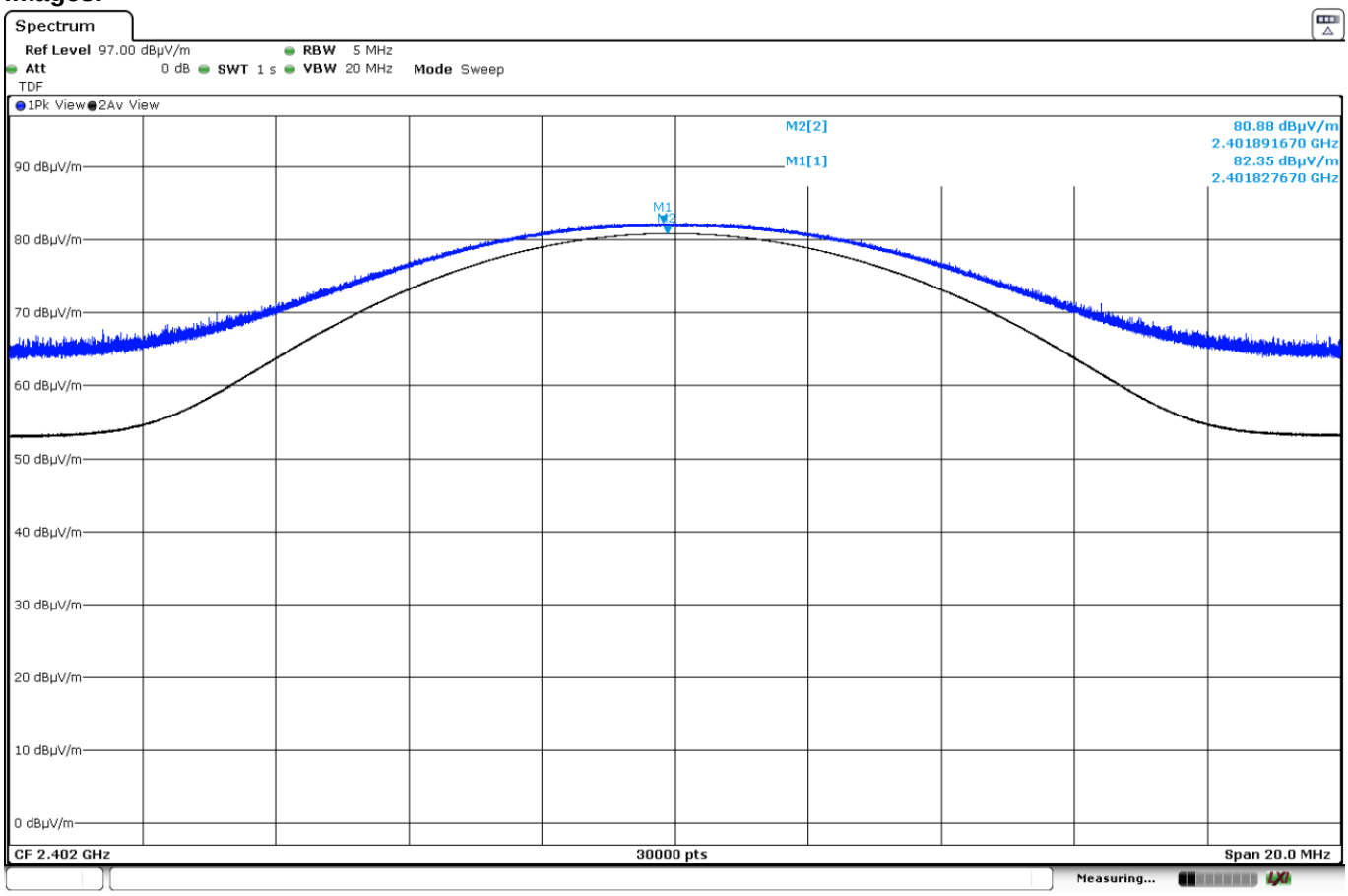
Pass

### *Attachments*

Operation Band MHz = [2400, 2483.5] Modulation = DM

Frequency MHz = 2402.00000

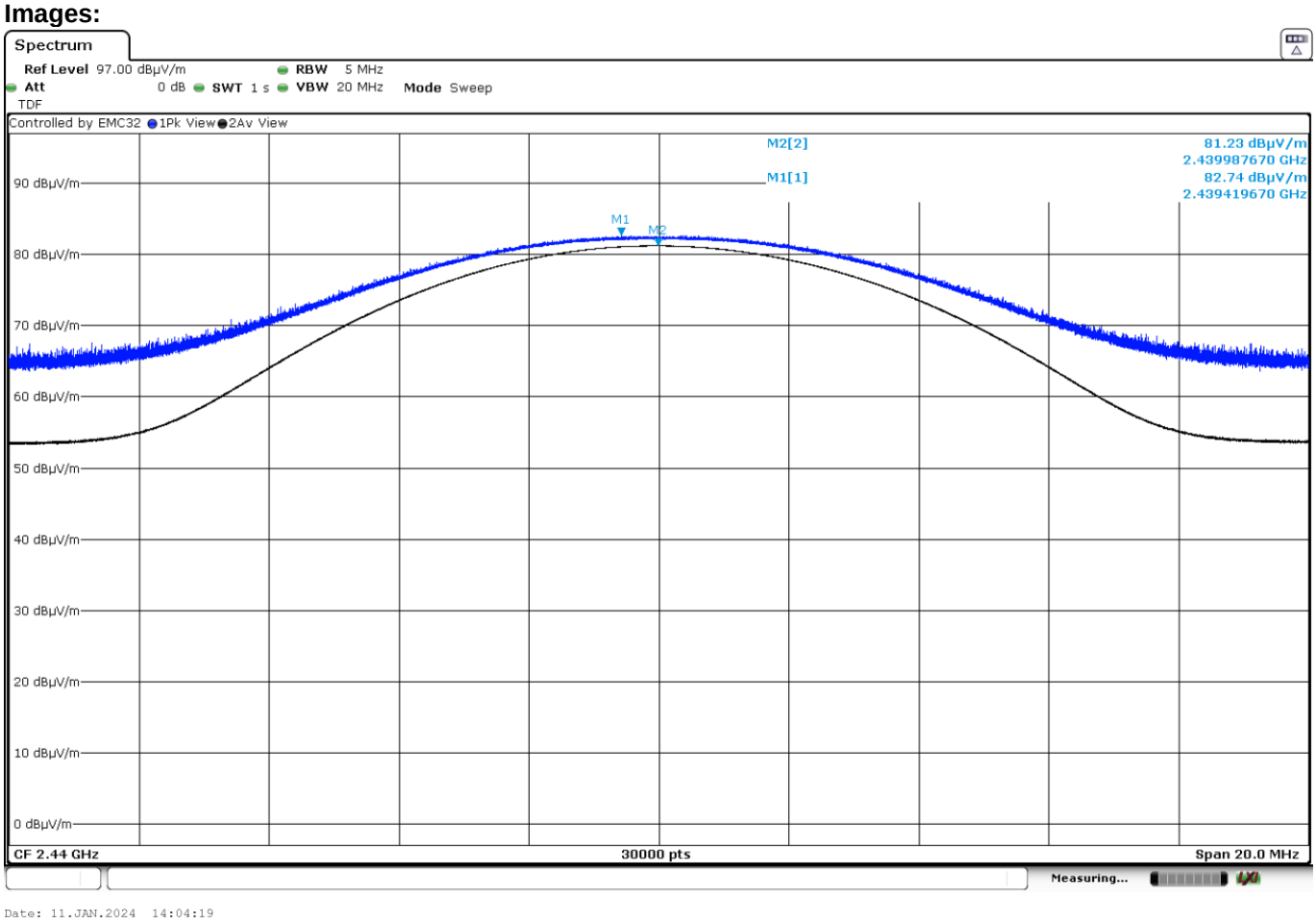
**Images:**



Operation Band MHz = [2400, 2483.5] Modulation = DM

Frequency MHz = 2440.00000

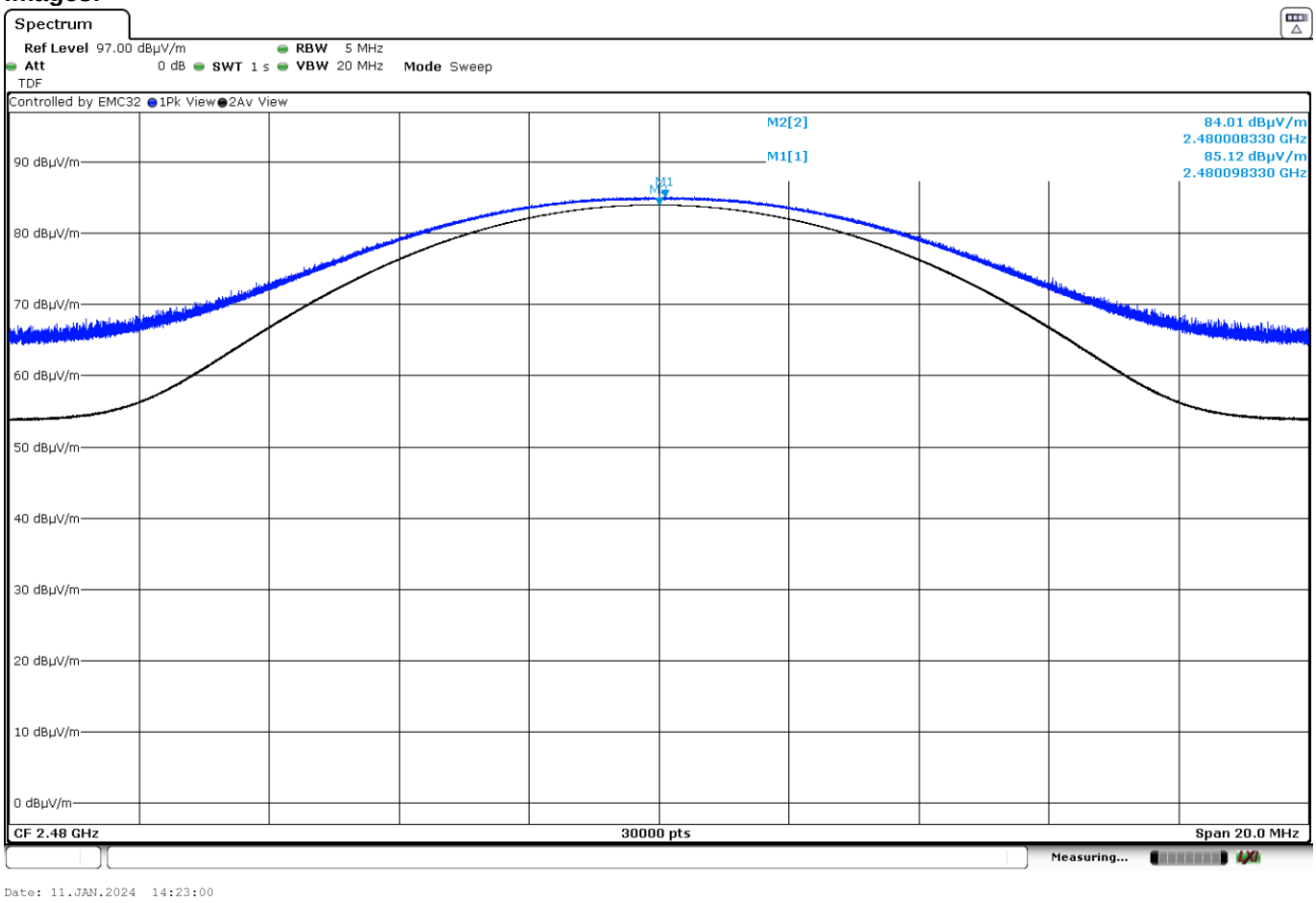
**Images:**



Operation Band MHz = [2400, 2483.5] Modulation = DM

Frequency MHz = 2480.00000

**Images:**



Modulation: FLORA

***Results***

| Operation Band (MHz) | Freq (MHz) | Pk Field (dBµV/m) | Avg Field (dBµV/m) |
|---|---|---|---|
| [2400, 2483.5] | 2402.00 | 92.22 | 92.07 |
| | 2440.00 | 91.43 | 90.51 |
| | 2480.00 | 91.66 | 91.04 |

***Verdict***

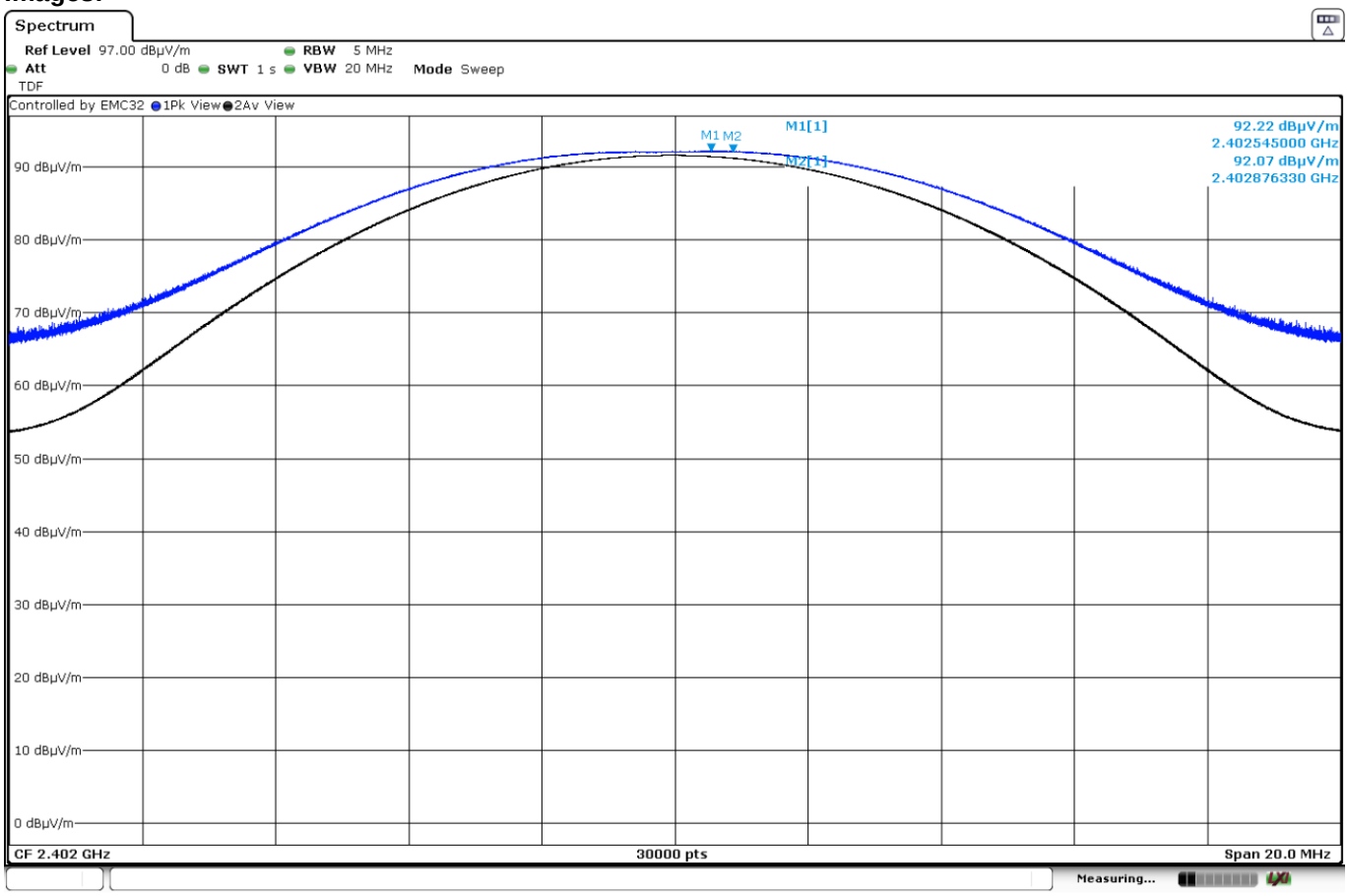
Pass

### *Attachments*

Operation Band MHz = [2400, 2483.5] Modulation = FLORA

Frequency MHz = 2402.00000

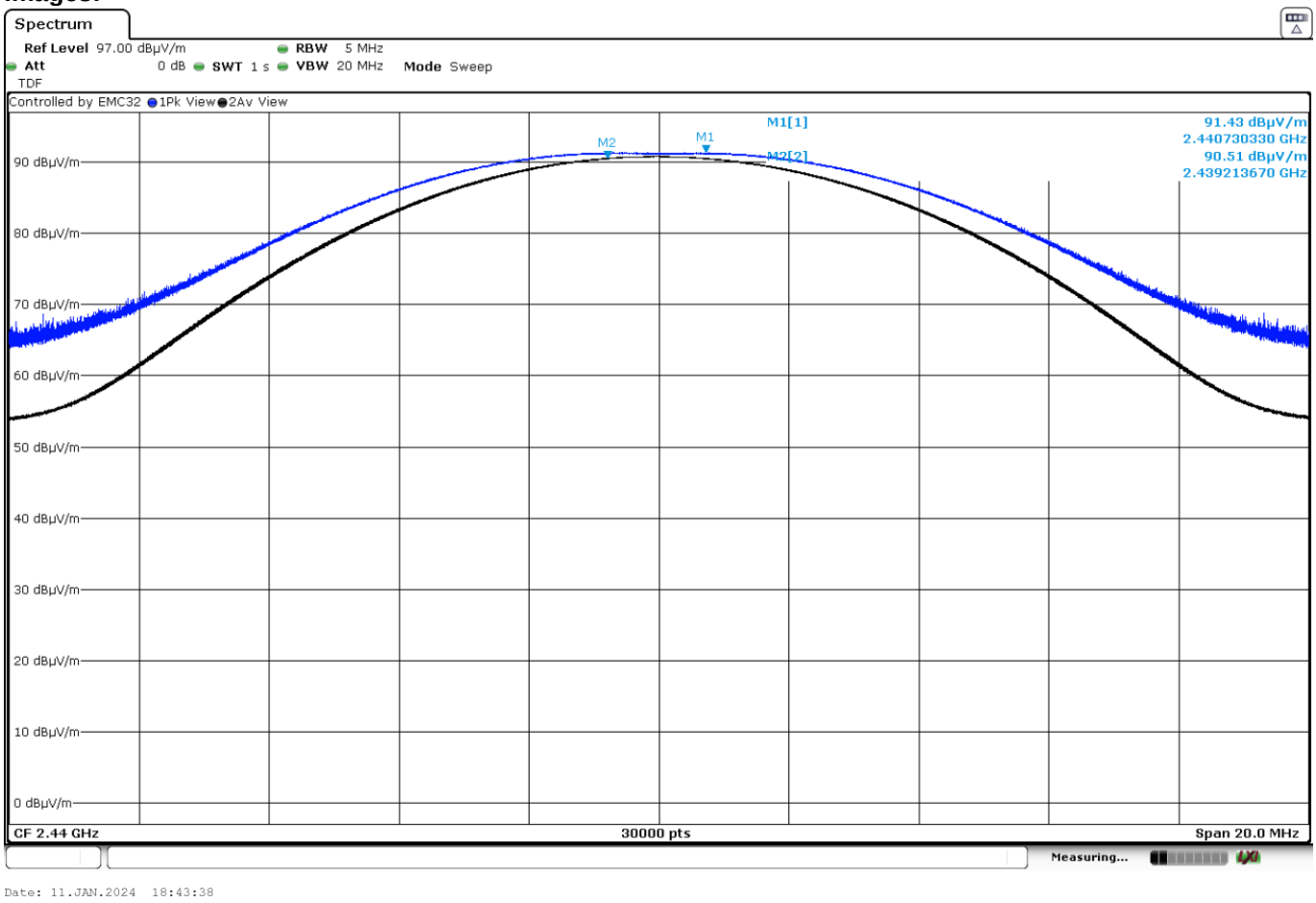
**Images:**



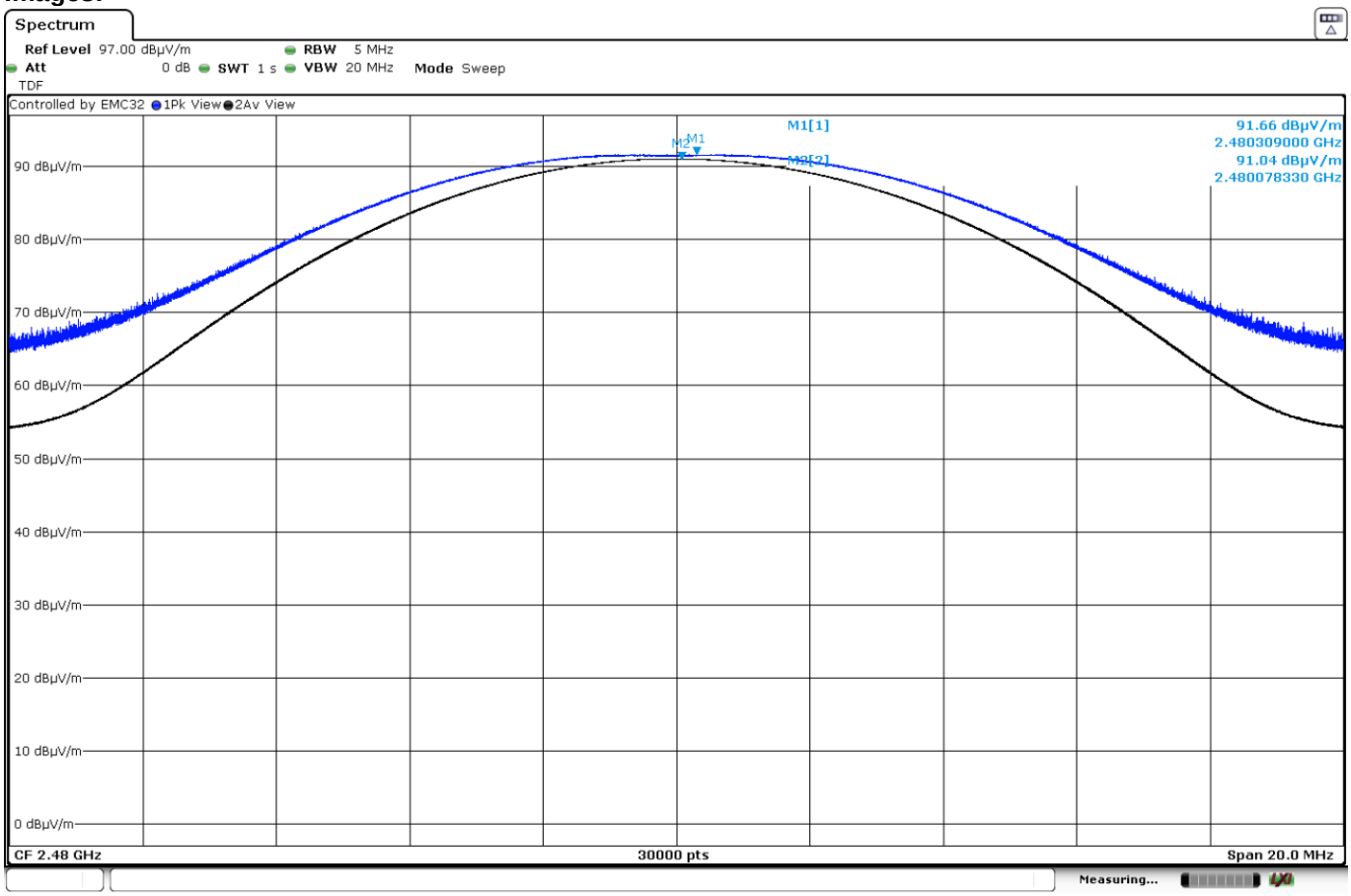
Operation Band MHz = [2400, 2483.5] Modulation = FLORA

Frequency MHz = 2440.00000

**Images:**



Operation Band MHz = [2400, 2483.5] Modulation = FLORA

Frequency MHz = 2480.00000

**Images:**