# Appendix Report

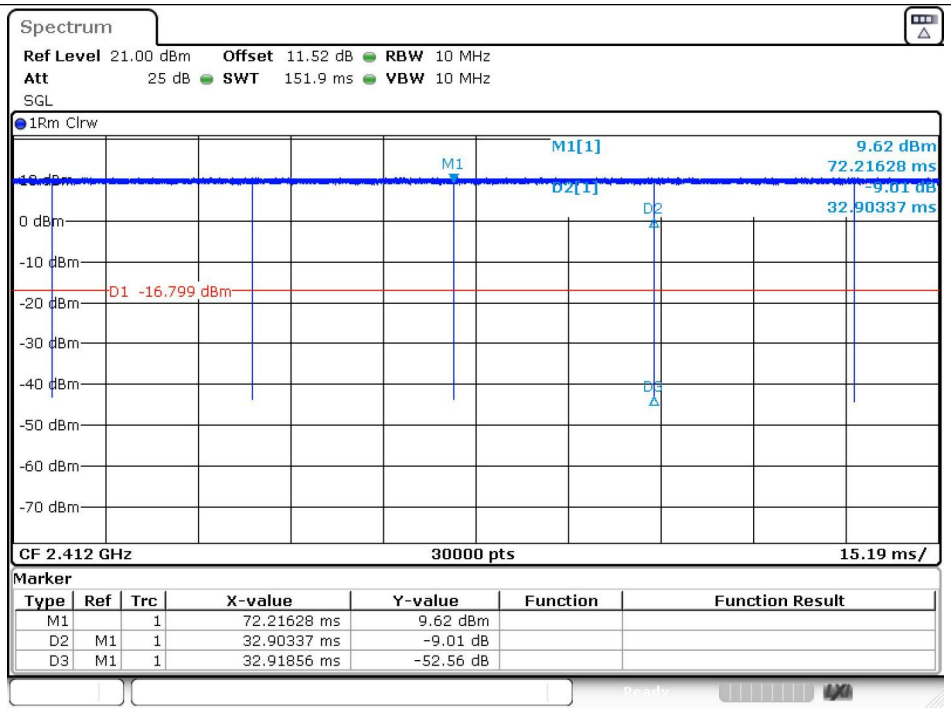
| | |
|---|---|
| Report No.: | CISRR25010803902 |
| Test Engineer: | Mark Fu |
| Supervised by: | Rory Huang |

## Duty Cycle

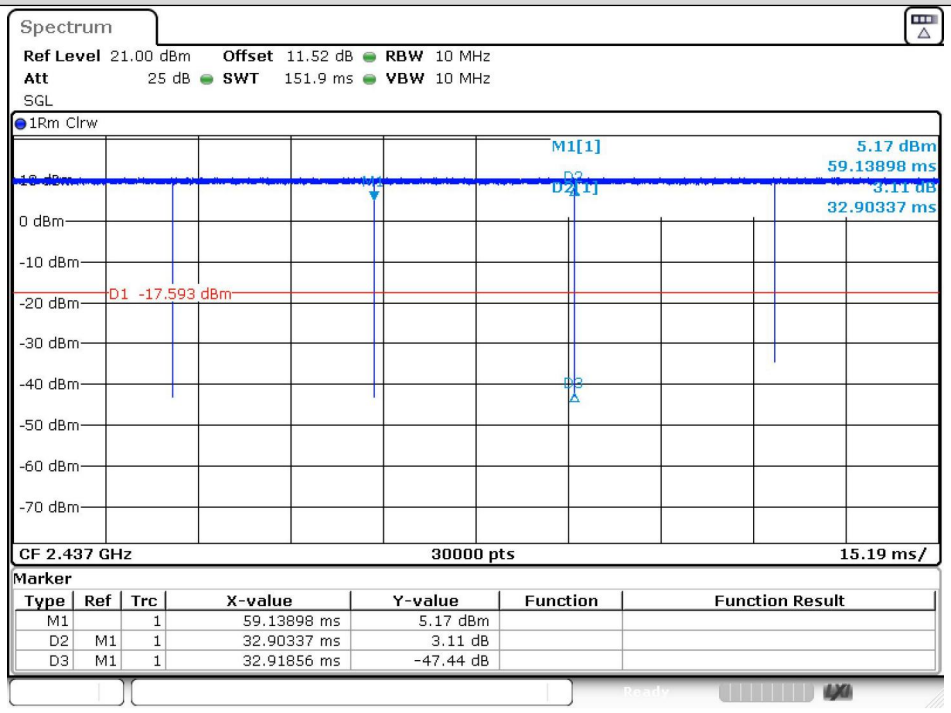
**Test Result**

| Mode | Data rates | Channel | Antenna | On Time (ms) | Period (ms) | Duty Cycle (%) | Duty Cycle (linear) | Duty Cycle Factor (dB) | 1/T |
|---|---|---|---|---|---|---|---|---|---|
| IEEE 802.11b | 1 | 1 | 1 | 32.903 | 32.919 | 99.95 | 0.9995 | 0.0022 | 0.0304 |
| | | 6 | | 32.903 | 32.919 | 99.95 | 0.9995 | 0.0022 | 0.0304 |
| | | 11 | | 32.903 | 32.919 | 99.95 | 0.9995 | 0.0022 | 0.0304 |
| IEEE 802.11g | | 1 | | 5.495 | 5.513 | 99.67 | 0.9967 | 0.0144 | 0.1820 |
| | | 6 | | 5.495 | 5.512 | 99.67 | 0.9967 | 0.0144 | 0.1820 |
| | | 11 | | 5.492 | 5.510 | 99.67 | 0.9967 | 0.0144 | 0.1821 |
| IEEE 802.11n_20 | MCS 0 | 1 | | 5.087 | 5.107 | 99.60 | 0.9960 | 0.0174 | 0.1966 |
| | | 6 | | 5.090 | 5.110 | 99.60 | 0.9960 | 0.0174 | 0.1965 |
| | | 11 | | 5.090 | 5.107 | 99.65 | 0.9965 | 0.0152 | 0.1965 |
| IEEE 802.11n_40 | | 3 | | 2.472 | 2.495 | 99.08 | 0.9908 | 0.0401 | 0.4045 |
| | | 6 | | 2.472 | 2.495 | 99.08 | 0.9908 | 0.0401 | 0.4045 |
| | | 9 | | 2.472 | 2.495 | 99.08 | 0.9908 | 0.0401 | 0.4045 |

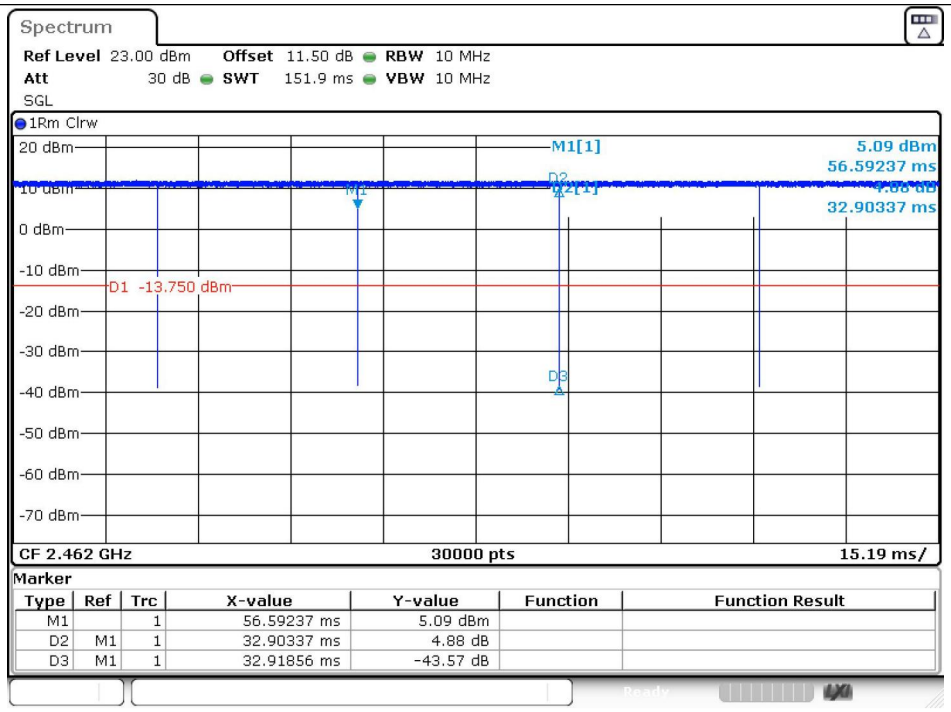
**Test Graphs**



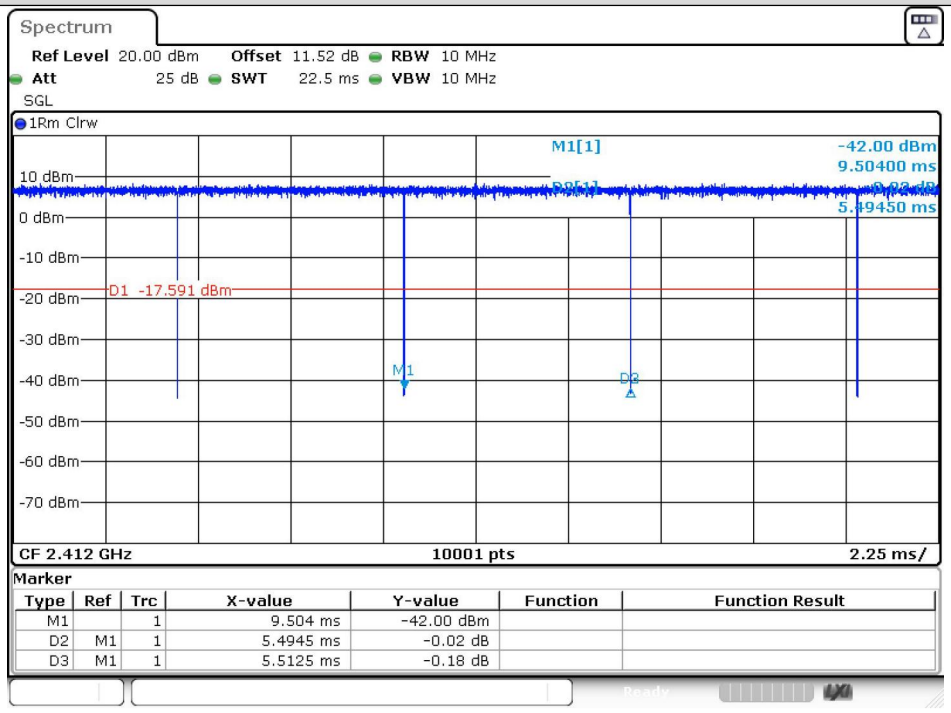

**IEEE 802.11b_20MHz_Channel 1**



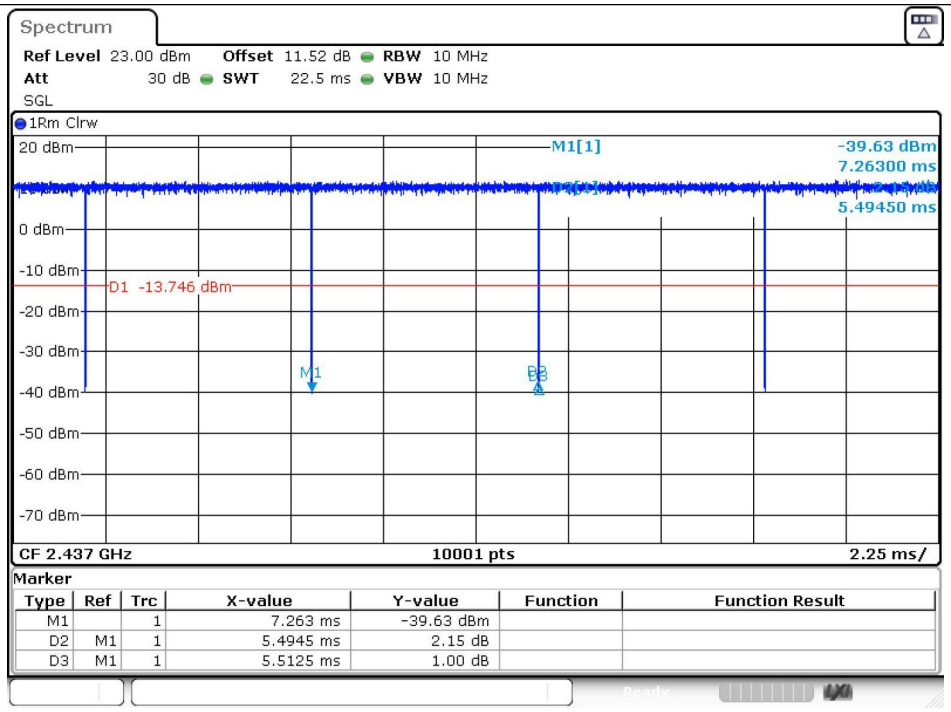

**IEEE 802.11b_20MHz_Channel 6**



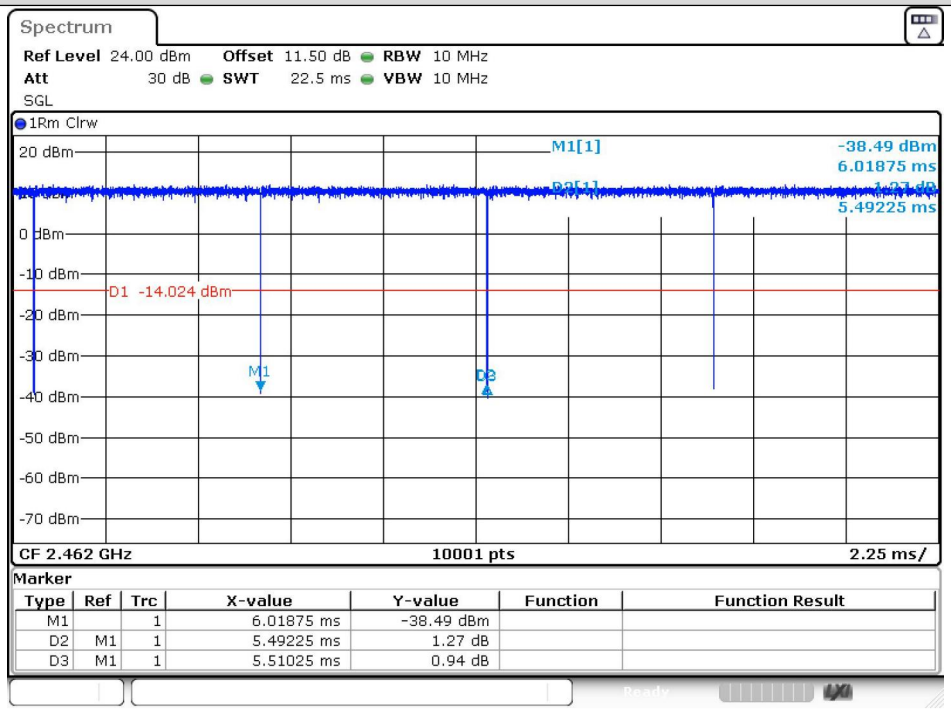

**IEEE 802.11b_20MHz_Channel 11**



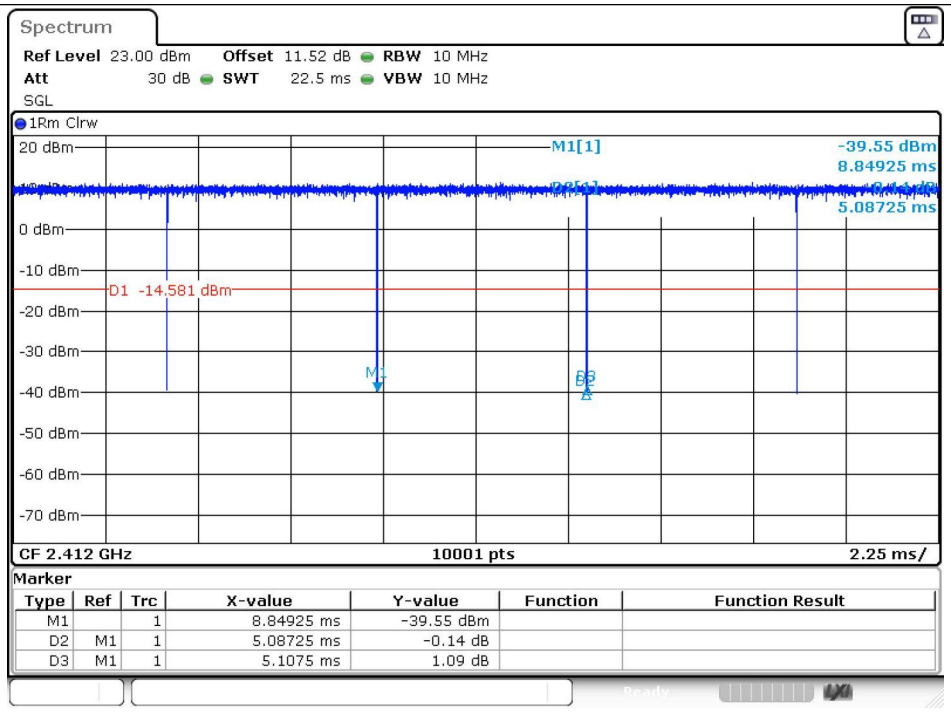

**IEEE 802.11g_20MHz_Channel 1**




**IEEE 802.11g_20MHz_Channel 6**

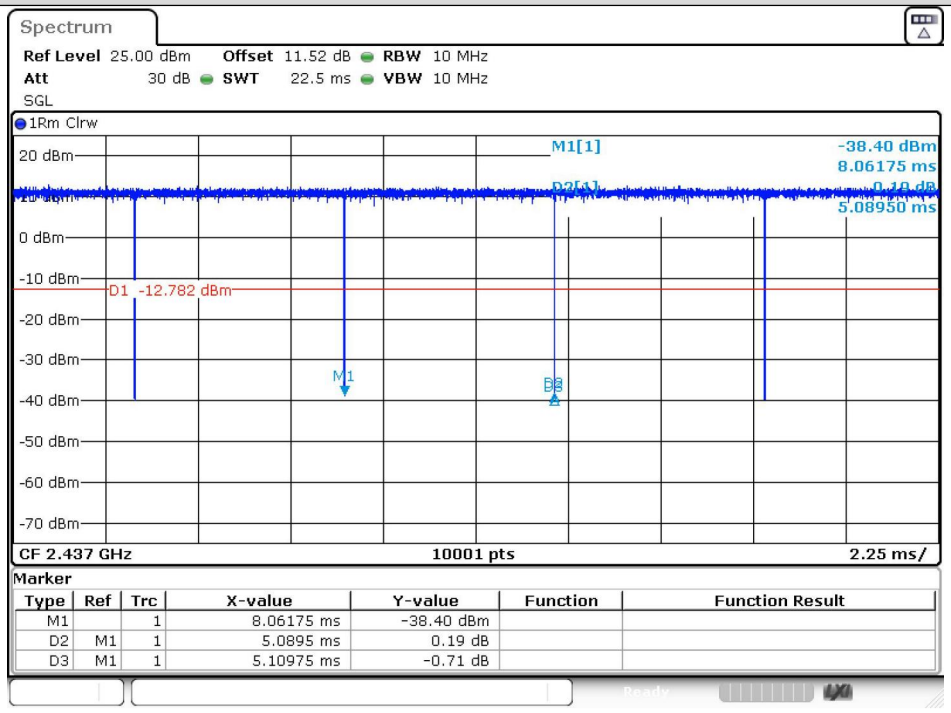



**IEEE 802.11g_20MHz_Channel 11**



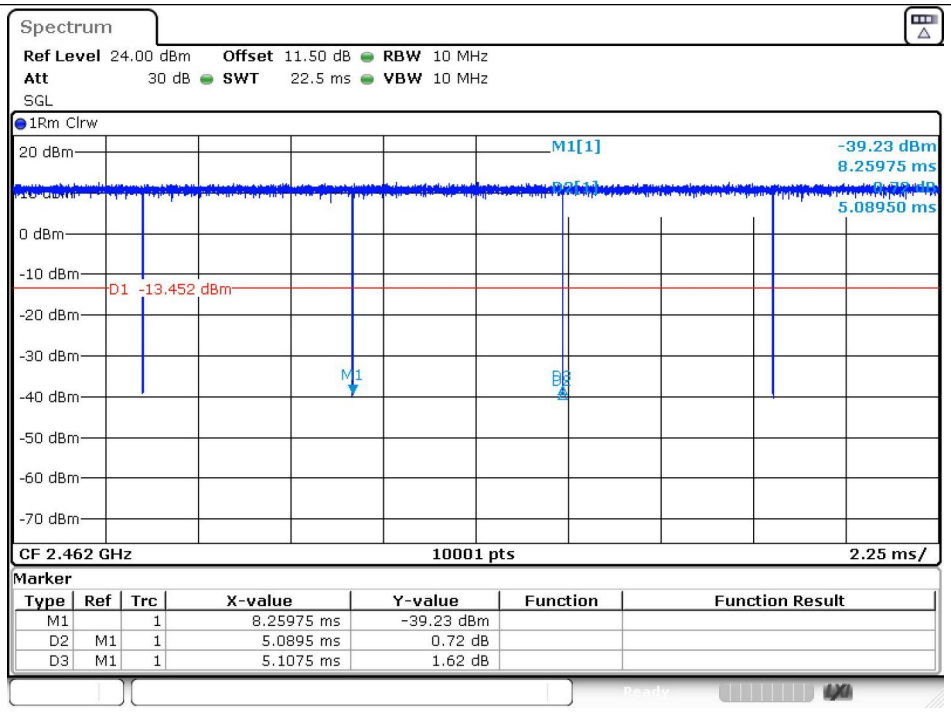

Date: 14.JAN.2025 16:25:40

**IEEE 802.11n_20MHz_Channel 1**

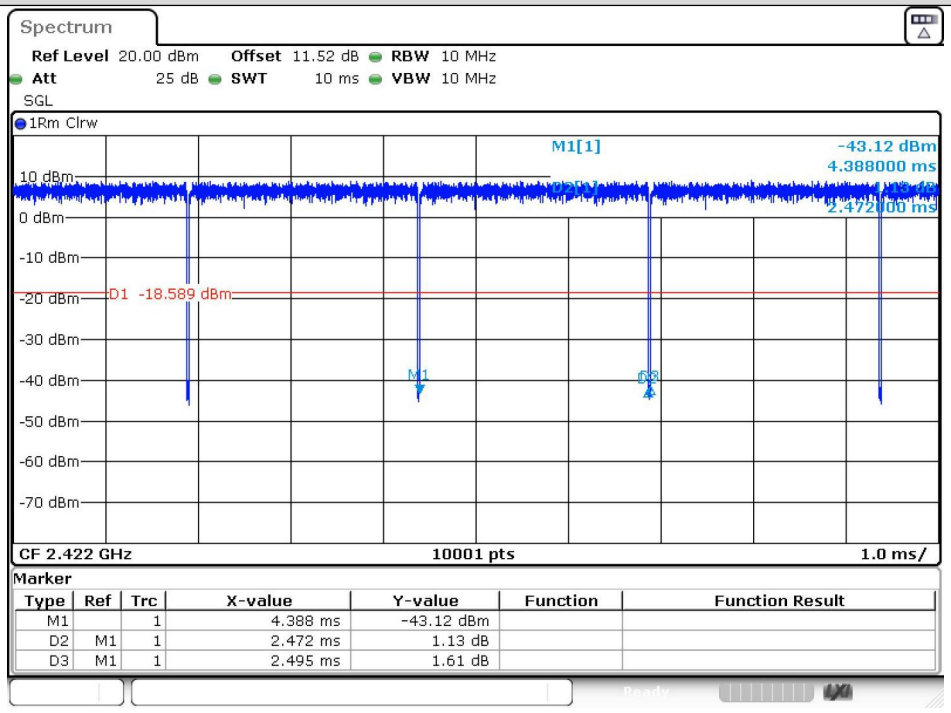



Date: 14.JAN.2025 16:29:01

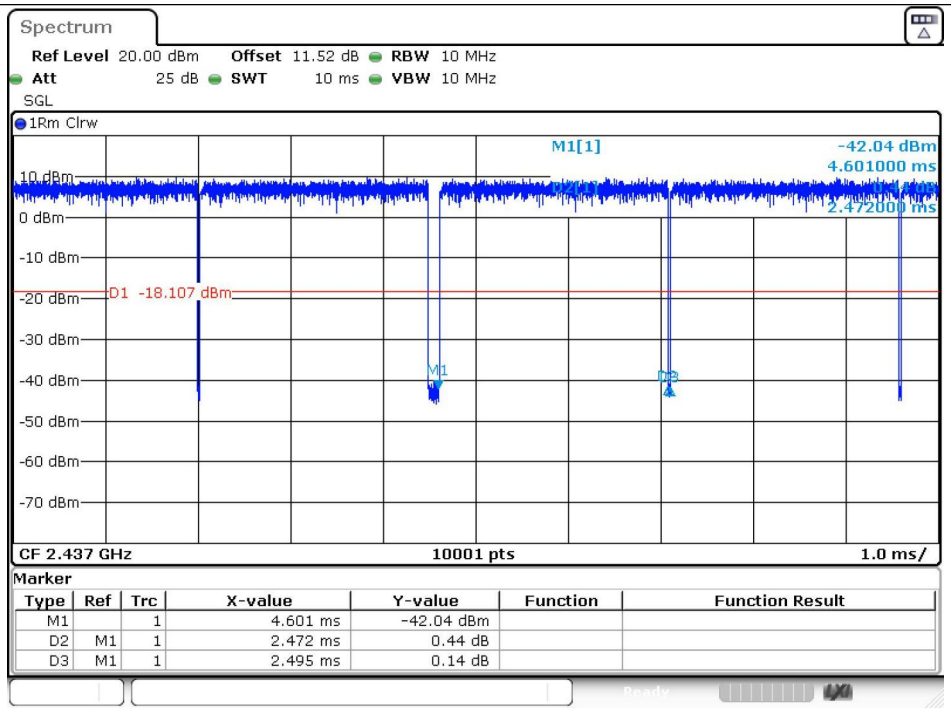
**IEEE 802.11n_20MHz_Channel 6**



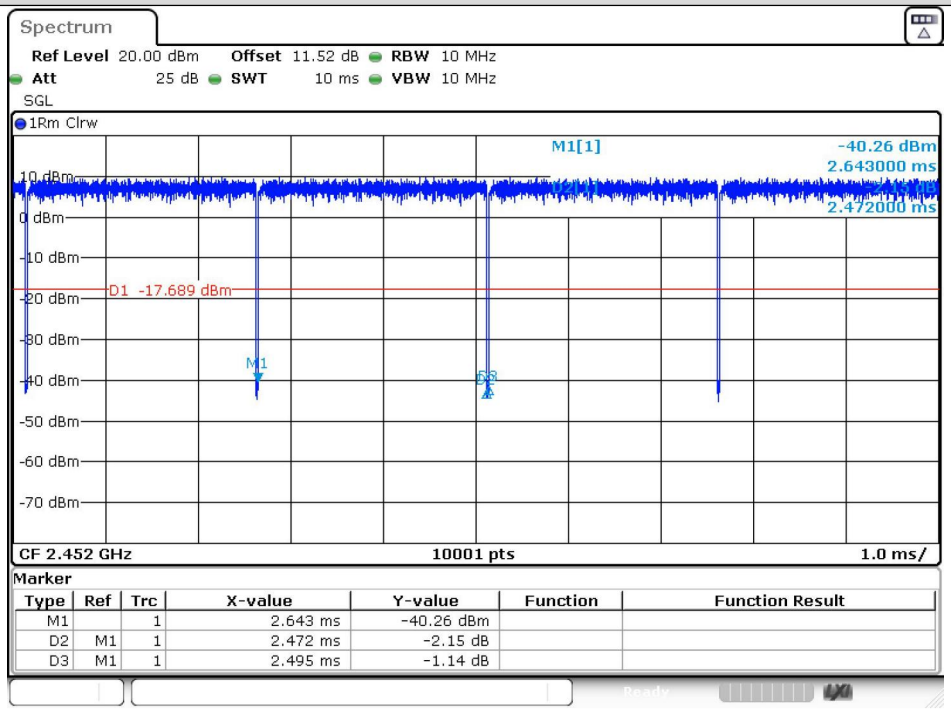

**IEEE 802.11n_20MHz_Channel 11**




**IEEE 802.11n_40MHz_Channel 3**




IEEE 802.11n_40MHz_Channel 6



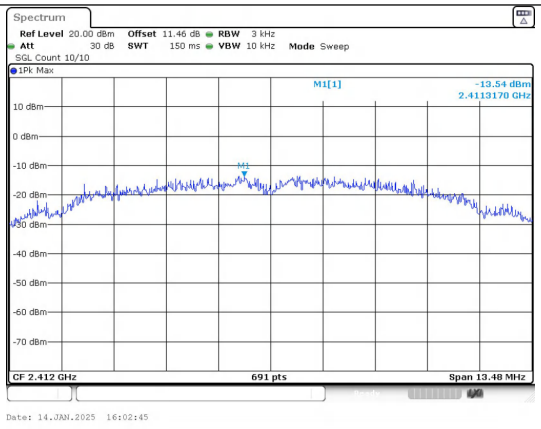

IEEE 802.11n_40MHz_Channel 9

## Power Spectral Density

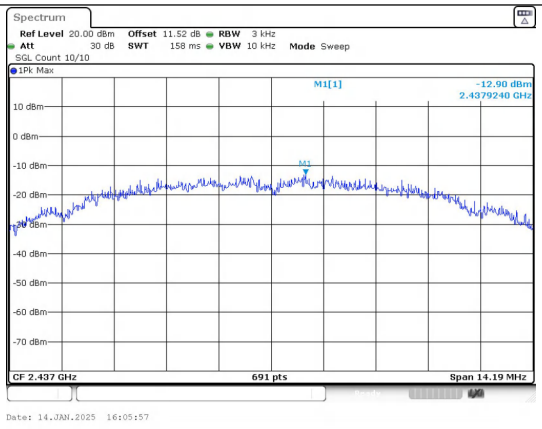
### Test Result

| Mode | Channel | PSD (dBm/3kHz) Ant. 0 | Limit (dBm/3kHz) | Result |
|---|---|---|---|---|
| IEEE 802.11b | 1 | -13.540 | ≤8 | PASS |
| | 6 | -12.900 | | PASS |
| | 11 | -11.560 | | PASS |
| IEEE 802.11g | 1 | -17.610 | | PASS |
| | 6 | -13.400 | | PASS |
| | 11 | -13.250 | | PASS |
| IEEE 802.11n_20 | 1 | -13.960 | | PASS |
| | 6 | -10.860 | | PASS |
| | 11 | -11.890 | | PASS |
| IEEE 802.11n_40 | 3 | -16.450 | | PASS |
| | 6 | -15.210 | | PASS |
| | 9 | -15.050 | | PASS |

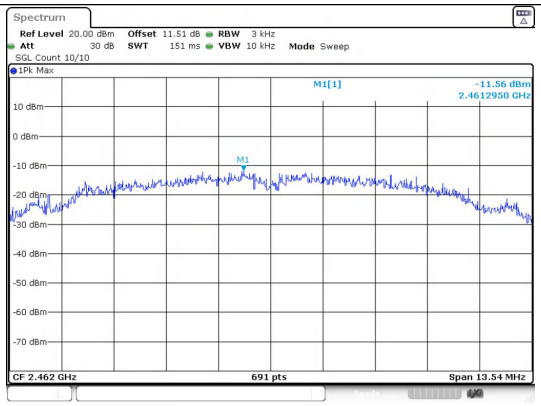
### Test Graphs



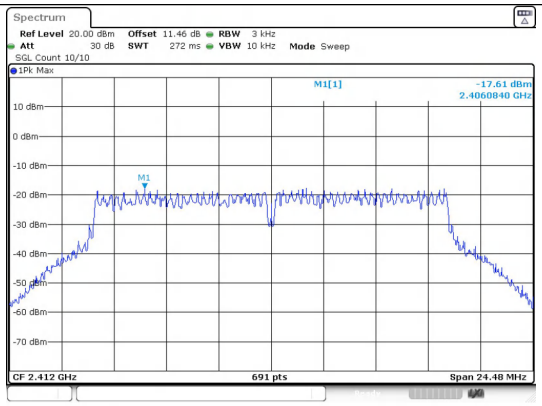

IEEE 802.11b_Channel 1_20MHz_Antenna 0



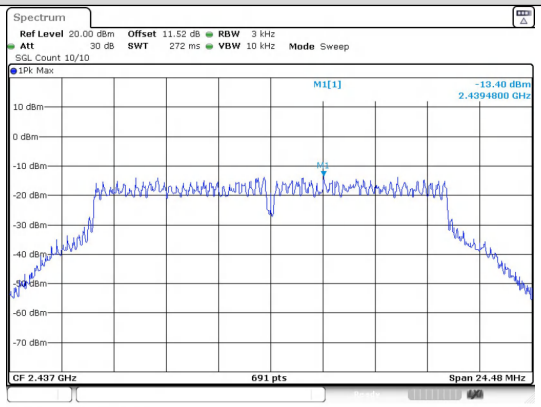

IEEE 802.11b_Channel 6_20MHz_Antenna 0



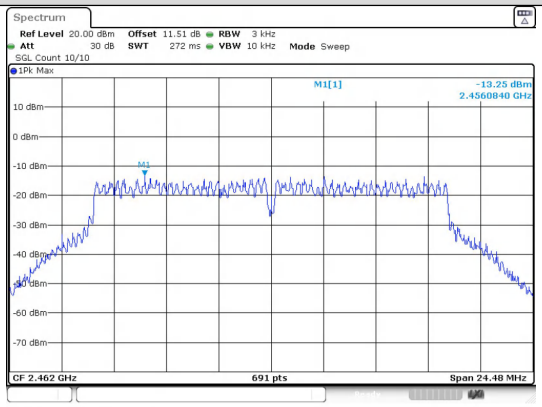

IEEE 802.11b_Channel 11_20MHz_Antenna 0



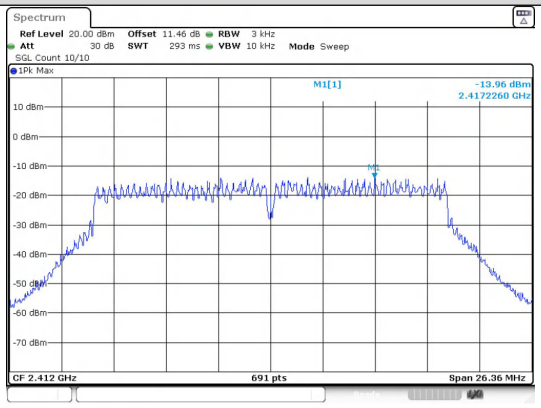

IEEE 802.11g_Channel 1_20MHz_Antenna 0



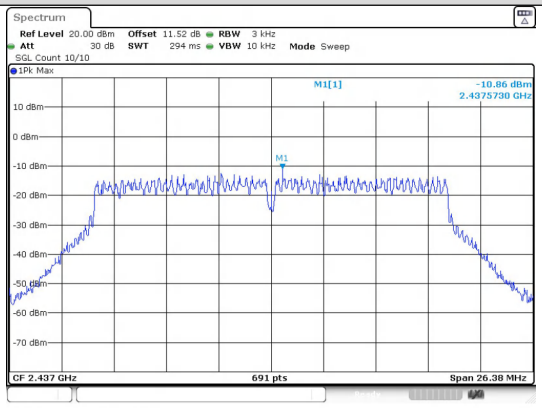

IEEE 802.11g_Channel 6_20MHz_Antenna 0



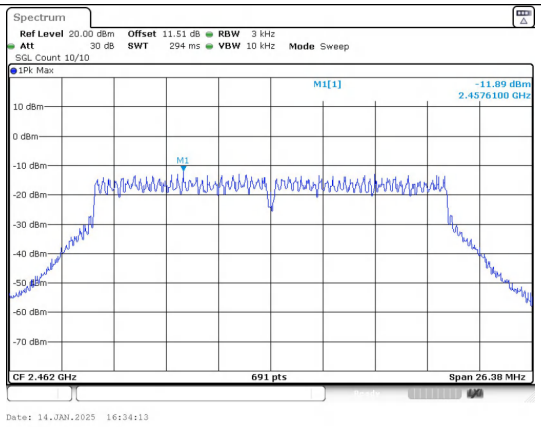

IEEE 802.11g_Channel 11_20MHz_Antenna 0



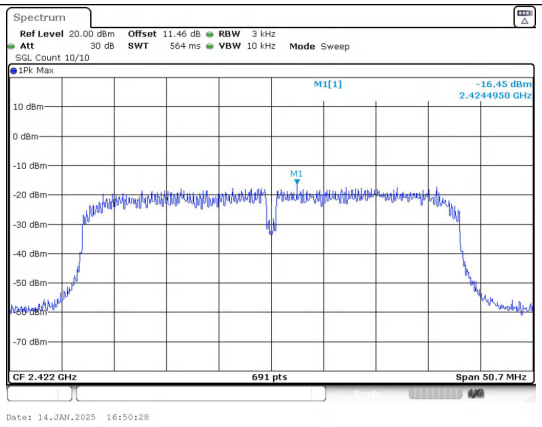

IEEE 802.11n_Channel 1_20MHz_Antenna 0



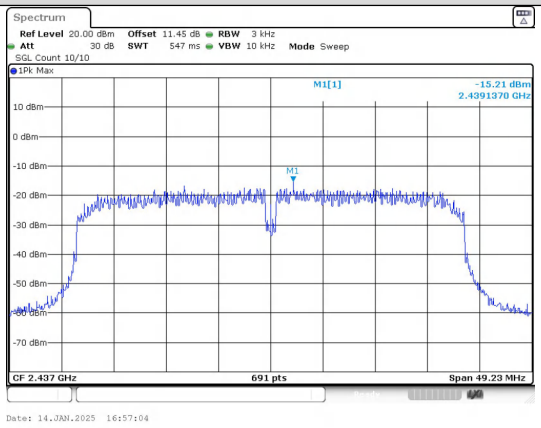

IEEE 802.11n_Channel 6_20MHz_Antenna 0



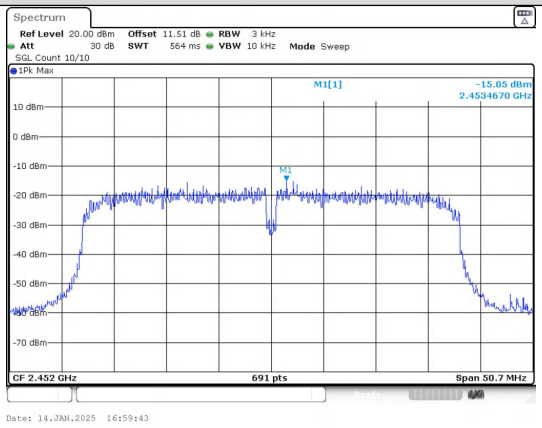

IEEE 802.11n_Channel 11_20MHz_Antenna 0




IEEE 802.11n_Channel 3_40MHz_Antenna 0




IEEE 802.11n_Channel 6_40MHz_Antenna 0




IEEE 802.11n_Channel 9_40MHz_Antenna 0

## Conducted Peak Output Power

**Test Result**

Conducted Output Power

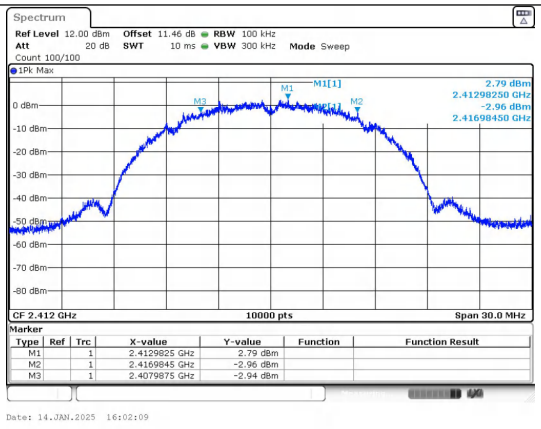
| Mode | Channel | Ant. 0 (dBm) | Limit (dBm) | Result |
|---|---|---|---|---|
| IEEE 802.11b | 1 | 17.03 | ≤30 | PASS |
| | 6 | 17.08 | ≤30 | PASS |
| | 11 | 18.57 | ≤30 | PASS |
| IEEE 802.11g | 1 | 16.54 | ≤30 | PASS |
| | 6 | 20.31 | ≤30 | PASS |
| | 11 | 20.40 | ≤30 | PASS |
| IEEE 802.11n_20 | 1 | 19.90 | ≤30 | PASS |
| | 6 | 21.41 | ≤30 | PASS |
| | 11 | 21.31 | ≤30 | PASS |
| IEEE 802.11n_40 | 3 | 19.63 | ≤30 | PASS |
| | 6 | 19.63 | ≤30 | PASS |
| | 9 | 19.96 | ≤30 | PASS |

## 6dB Bandwidth

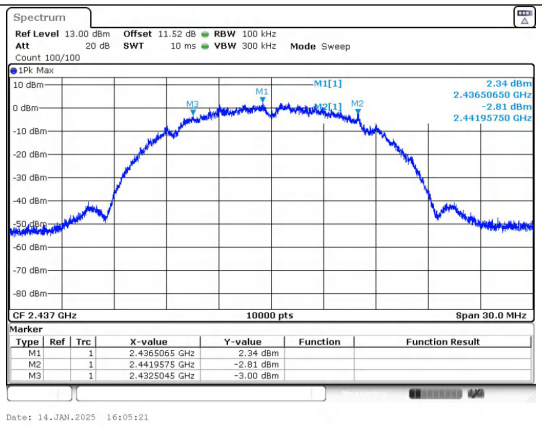
### Test Result

| Mode | Channel | Ant. | Center Frequency (MHz) | 6 dB Bandwidth (MHz) | Limit (MHz) | Result |
|---|---|---|---|---|---|---|
| IEEE 802.11b | 1 | 0 | 2412 | 8.990 | ≥0.5 | PASS |
| | 6 | | 2437 | 9.460 | | PASS |
| | 11 | | 2462 | 9.030 | | PASS |
| IEEE 802.11g | 1 | | 2412 | 16.32 | | PASS |
| | 6 | | 2437 | 16.32 | | PASS |
| | 11 | | 2462 | 16.32 | | PASS |
| IEEE 802.11n_20 | 1 | | 2412 | 17.57 | | PASS |
| | 6 | | 2437 | 17.59 | | PASS |
| | 11 | | 2462 | 17.59 | | PASS |
| IEEE 802.11n_40 | 3 | | 2422 | 33.80 | | PASS |
| | 6 | | 2437 | 32.82 | | PASS |
| | 9 | | 2452 | 33.80 | | PASS |

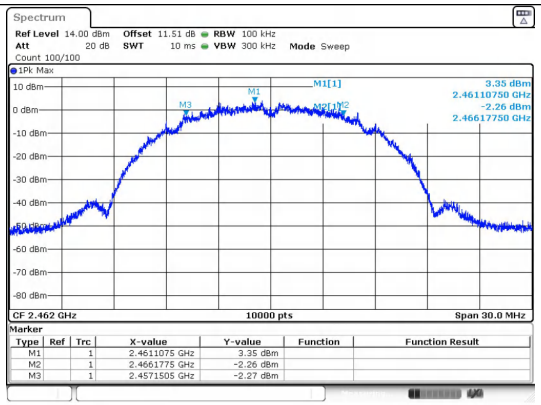
### Test Graphs



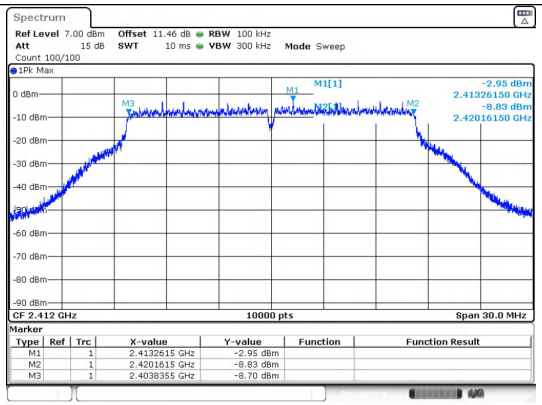

IEEE 802.11b_Channel 1_20MHz_Antenna 0



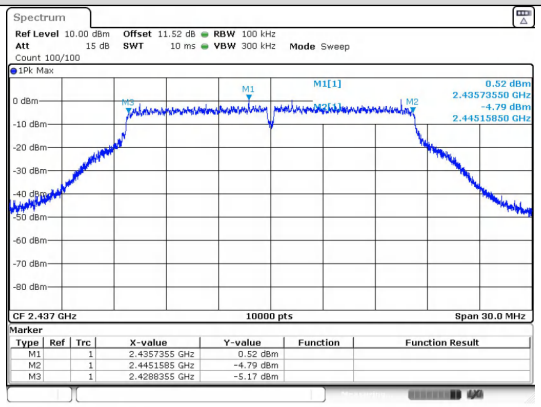

IEEE 802.11b_Channel 6_20MHz_Antenna 0



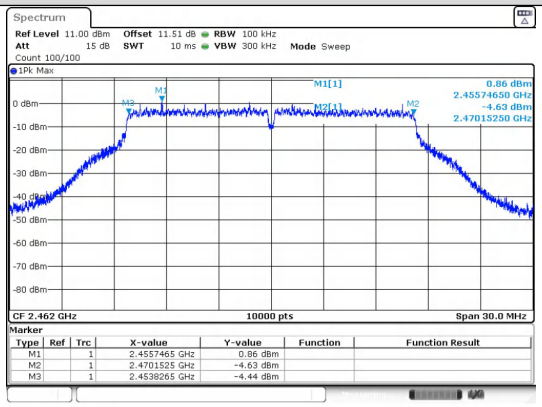

IEEE 802.11b_Channel 11_20MHz_Antenna 0



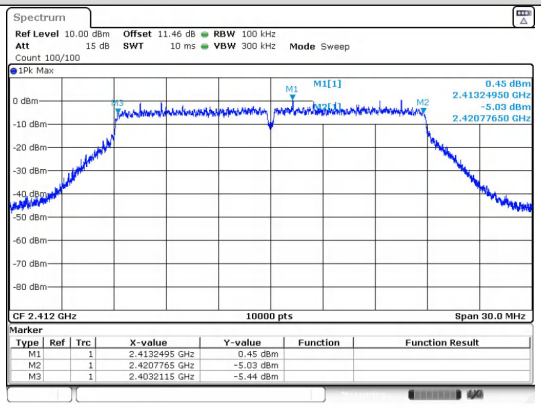

IEEE 802.11g_Channel 1_20MHz_Antenna 0



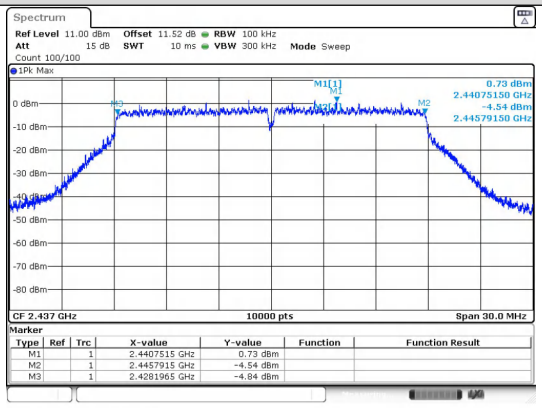

IEEE 802.11g_Channel 6_20MHz_Antenna 0



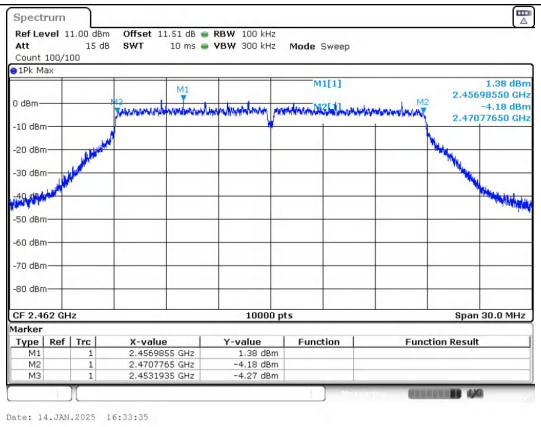

IEEE 802.11g_Channel 11_20MHz_Antenna 0



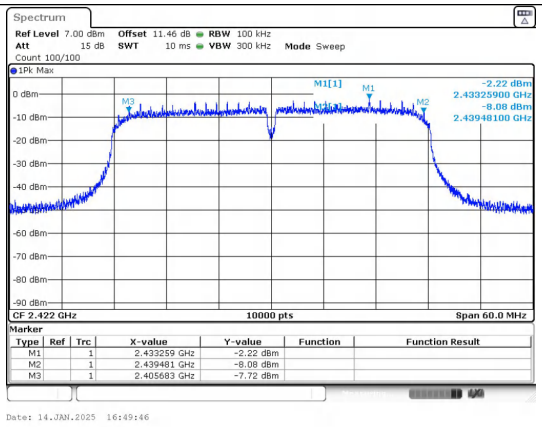

IEEE 802.11n_Channel 1_20MHz_Antenna 0



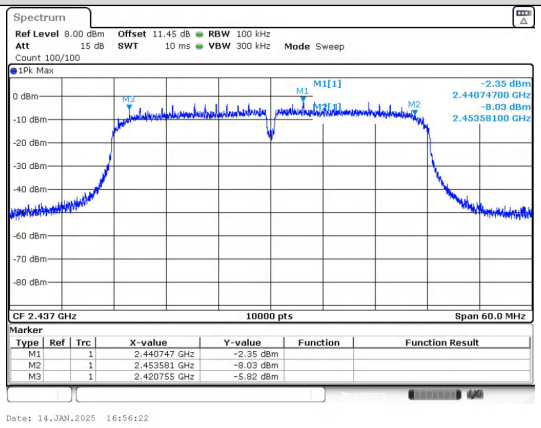

IEEE 802.11n_Channel 6_20MHz_Antenna 0



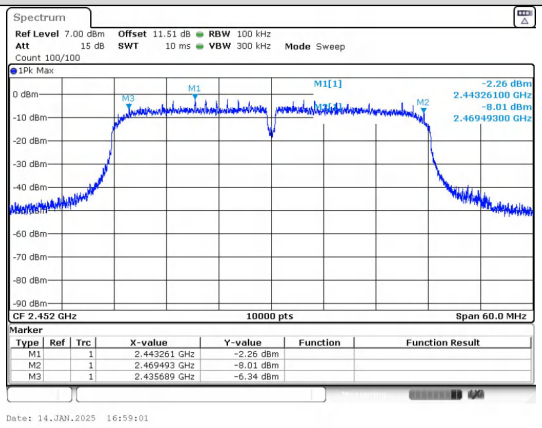

IEEE 802.11n_Channel 11_20MHz_Antenna 0




IEEE 802.11n_Channel 3_40MHz_Antenna 0




IEEE 802.11n_Channel 6_40MHz_Antenna 0



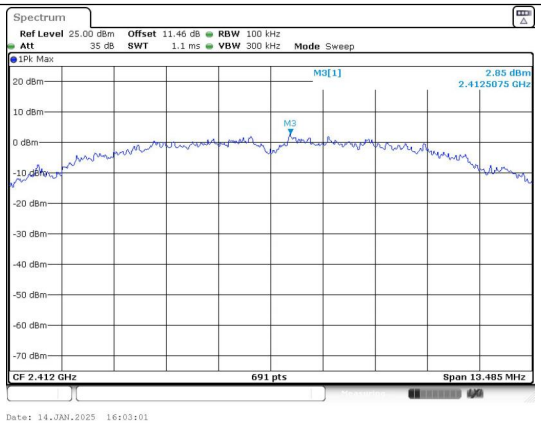

IEEE 802.11n_Channel 9_40MHz_Antenna 0

## Conducted Out Of Band Emission

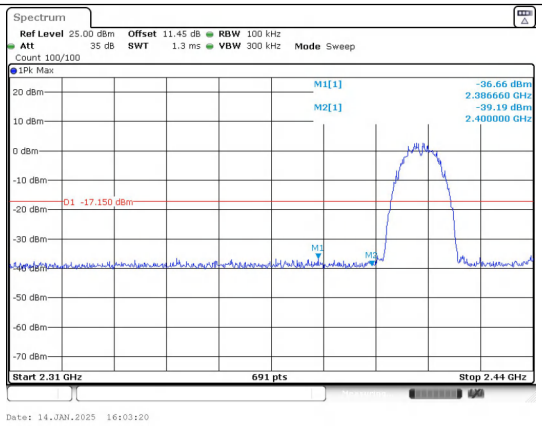
**Test Result**

| Mode | Channel | Ant. | OOB Emission Frequency (MHz) | OOB Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result |
|---|---|---|---|---|---|---|---|
| IEEE 802.11b | 1 | 0 | 2386.66 | -36.659 | -17.15 | -19.509 | PASS |
| | | | 2400.00 | -39.190 | -17.15 | -22.040 | PASS |
| | | | 5845.10 | -43.645 | -17.15 | -26.495 | PASS |
| | 6 | | 6913.81 | -43.374 | -17.07 | -26.304 | PASS |
| | 11 | | 2483.50 | -38.110 | -15.55 | -22.560 | PASS |
| | | | 6346.16 | -42.672 | -15.55 | -27.122 | PASS |
| IEEE 802.11g | 1 | | 2398.33 | -36.935 | -23.05 | -13.885 | PASS |
| | | | 2400.00 | -37.350 | -23.05 | -14.300 | PASS |
| | | | 6940.40 | -43.572 | -23.05 | -20.522 | PASS |
| | 6 | | 22053.1 | -42.191 | -19.92 | -22.271 | PASS |
| | 11 | | 2483.50 | -38.170 | -19.26 | -18.910 | PASS |
| | | | 6997.88 | -42.758 | -19.26 | -23.498 | PASS |
| IEEE 802.11n_20 | 1 | | 2400.00 | -33.630 | -19.91 | -13.720 | PASS |
| | | | 6893.00 | -43.894 | -19.91 | -23.984 | PASS |
| | 6 | | 1784.14 | -30.736 | -18.26 | -12.476 | PASS |
| | 11 | | 2483.50 | -38.150 | -18.75 | -19.400 | PASS |
| | | | 6926.30 | -43.266 | -18.75 | -24.516 | PASS |
| IEEE 802.11n_40 | 3 | | 915.20 | -41.189 | -22.29 | -18.899 | PASS |
| | | | 2391.37 | -35.737 | -22.29 | -13.447 | PASS |
| | | | 2400.00 | -37.020 | -22.29 | -14.730 | PASS |
| | 6 | | 6242.12 | -42.626 | -22.41 | -20.216 | PASS |
| | 9 | | 1760.84 | -41.604 | -22.07 | -19.534 | PASS |
| | | | 2483.50 | -38.540 | -22.07 | -16.470 | PASS |

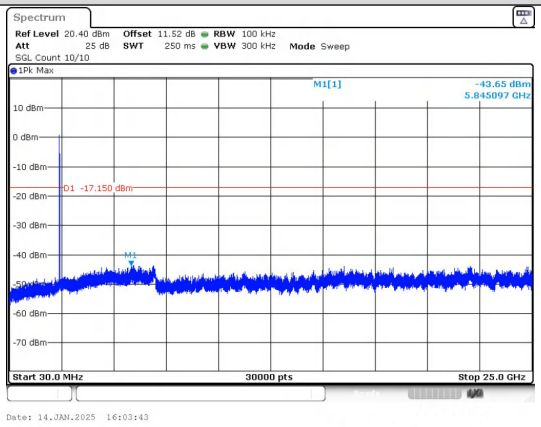
## Test Graphs



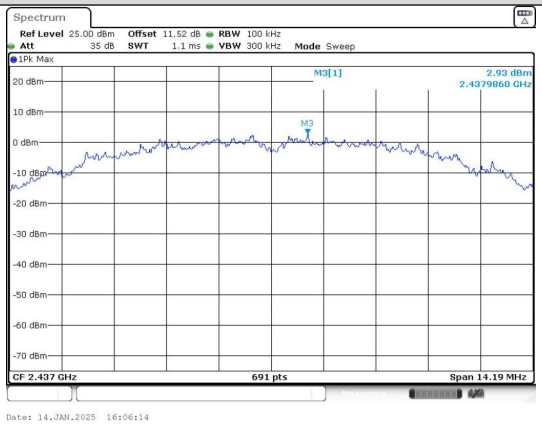

In-Band Reference Level
IEEE 802.11b_Channel 1_20MHz_Antenna 0



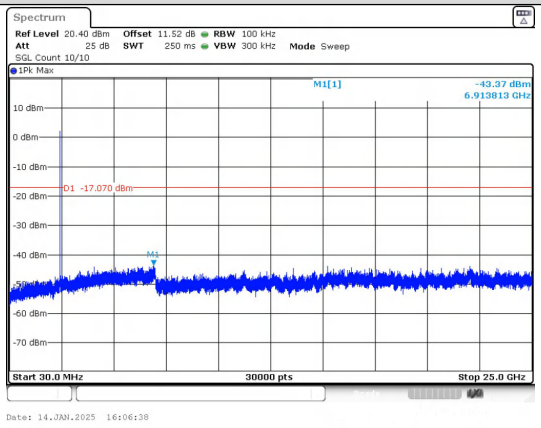

Out Of Band Emission
IEEE 802.11b_Channel 1_20MHz_Antenna 0



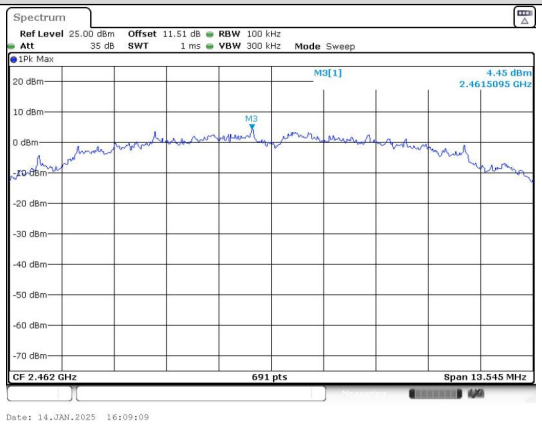

30.0 MHz - 25000.0 MHz
IEEE 802.11b_Channel 1_20MHz_Antenna 0



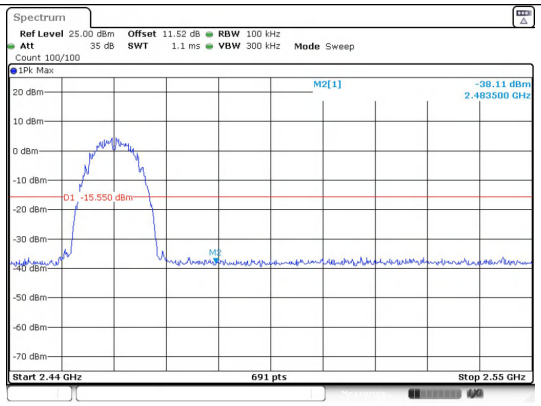

In-Band Reference Level
IEEE 802.11b_Channel 6_20MHz_Antenna 0



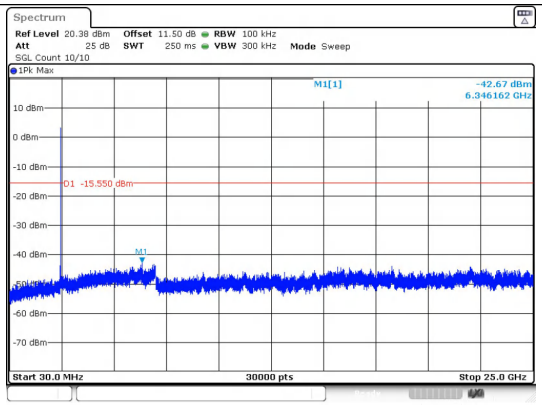

30.0 MHz - 25000.0 MHz
IEEE 802.11b_Channel 6_20MHz_Antenna 0



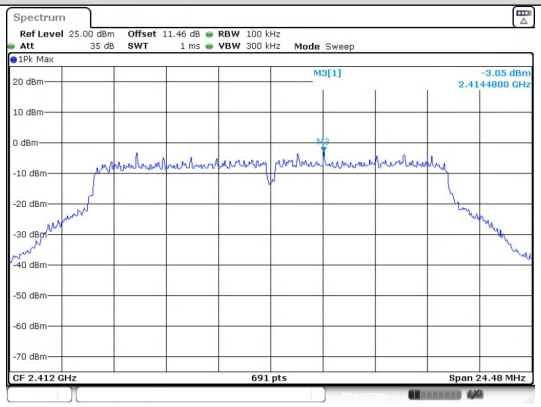

In-Band Reference Level
IEEE 802.11b_Channel 11_20MHz_Antenna 0



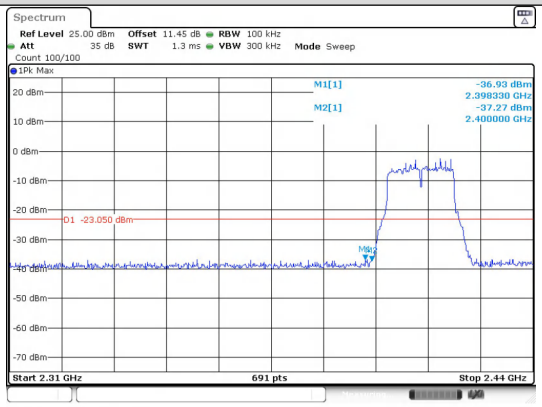

**Out Of Band Emission**
**IEEE 802.11b_Channel 11_20MHz_Antenna 0**



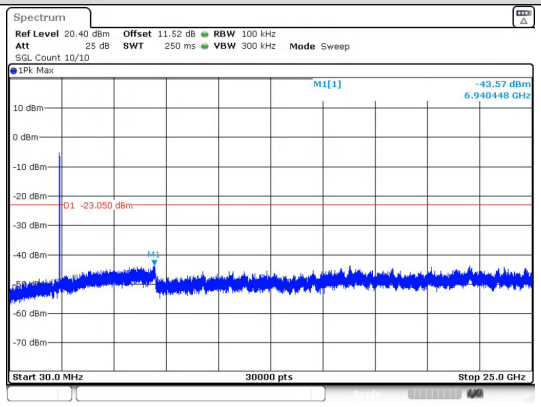

**30.0 MHz - 25000.0 MHz**
**IEEE 802.11b_Channel 11_20MHz_Antenna 0**



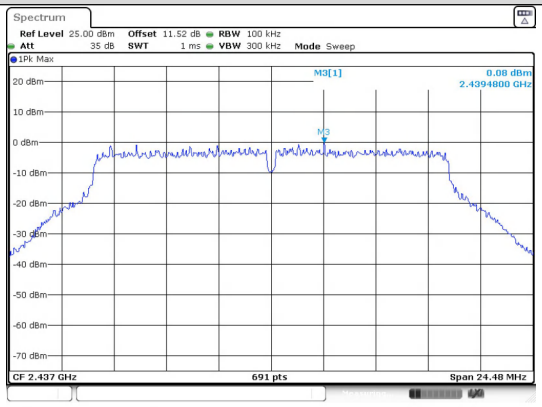

**In-Band Reference Level**
**IEEE 802.11g_Channel 1_20MHz_Antenna 0**



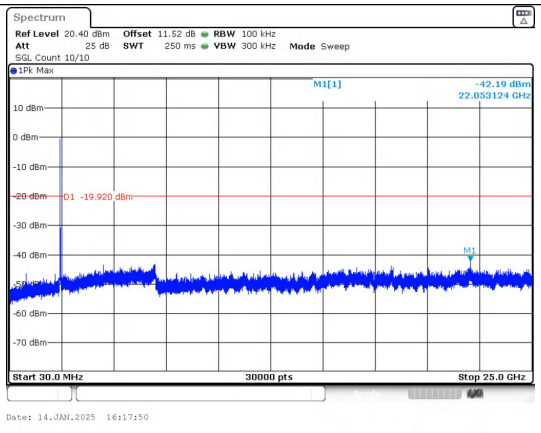

**Out Of Band Emission**
**IEEE 802.11g_Channel 1_20MHz_Antenna 0**



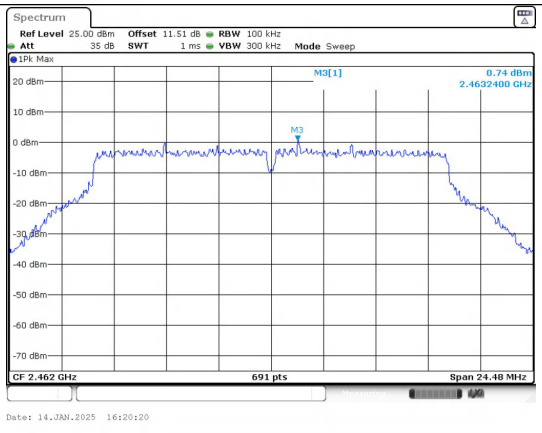

**30.0 MHz - 25000.0 MHz**
**IEEE 802.11g_Channel 1_20MHz_Antenna 0**



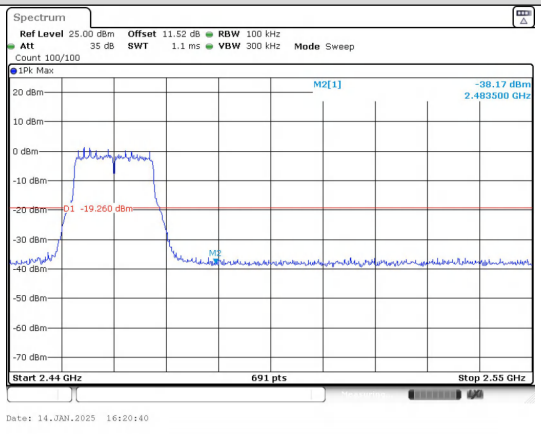

**In-Band Reference Level**
**IEEE 802.11g_Channel 6_20MHz_Antenna 0**



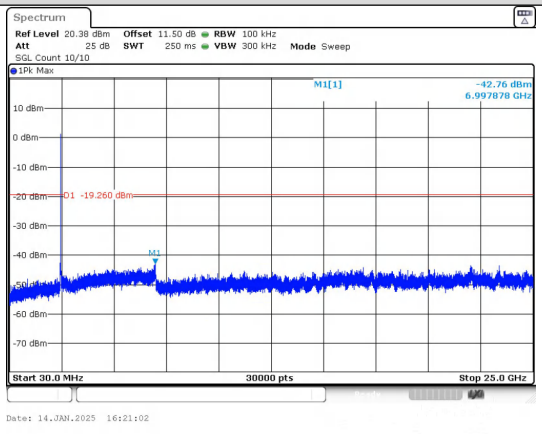

**30.0 MHz - 25000.0 MHz**
**IEEE 802.11g_Channel 6_20MHz_Antenna 0**



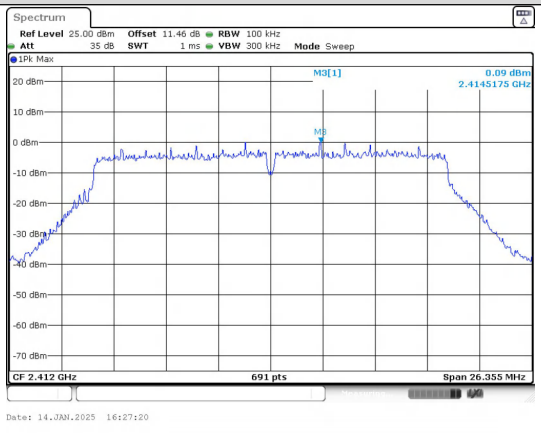

**In-Band Reference Level**
**IEEE 802.11g_Channel 11_20MHz_Antenna 0**



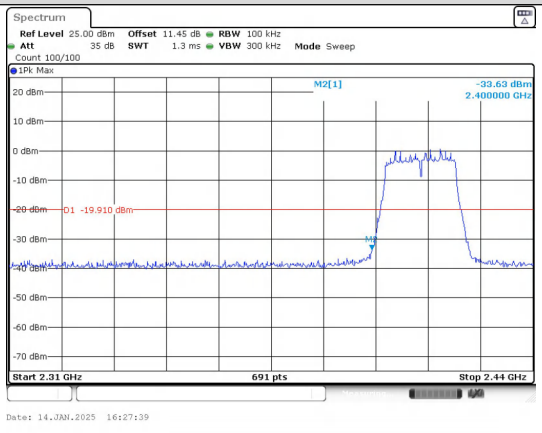

**Out Of Band Emission**
**IEEE 802.11g_Channel 11_20MHz_Antenna 0**



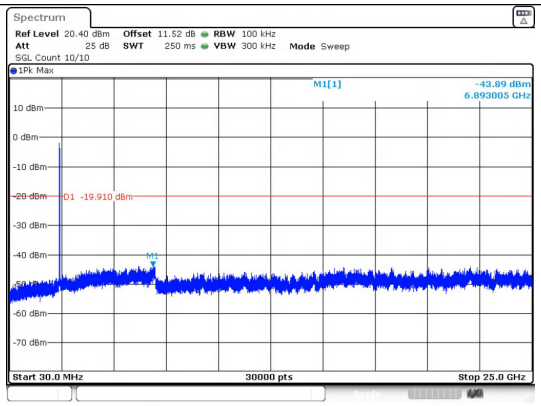

**30.0 MHz - 25000.0 MHz**
**IEEE 802.11g_Channel 11_20MHz_Antenna 0**



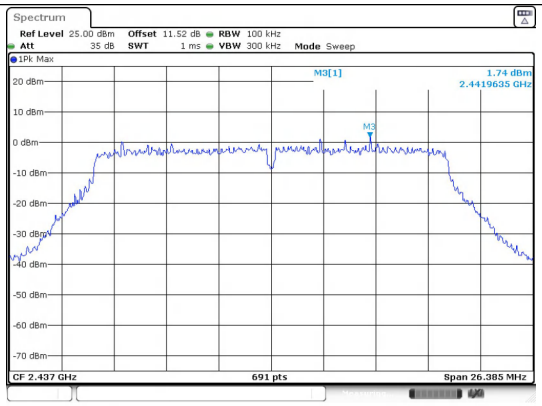

**In-Band Reference Level**
**IEEE 802.11n_Channel 1_20MHz_Antenna 0**



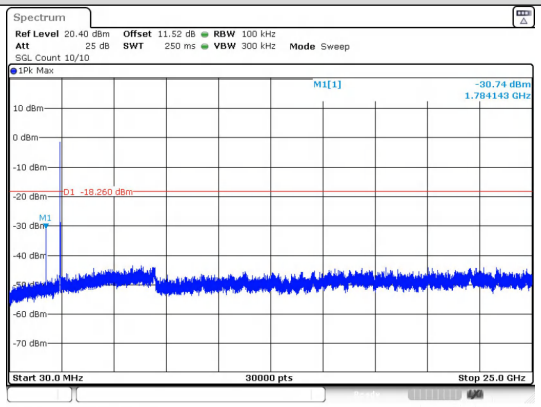

**Out Of Band Emission**
**IEEE 802.11n_Channel 1_20MHz_Antenna 0**



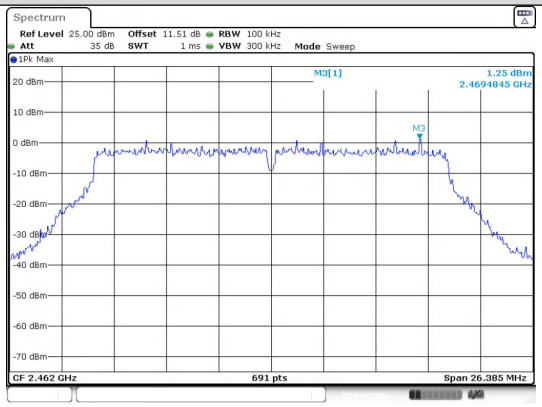

30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 1_20MHz_Antenna 0



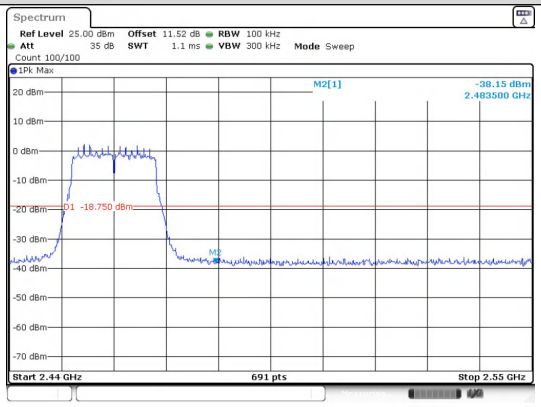

In-Band Reference Level
IEEE 802.11n_Channel 6_20MHz_Antenna 0



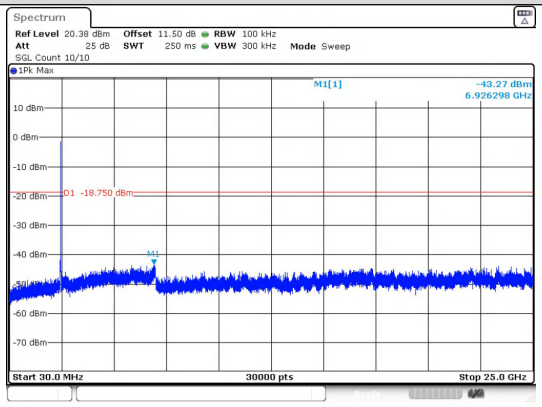

30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 6_20MHz_Antenna 0



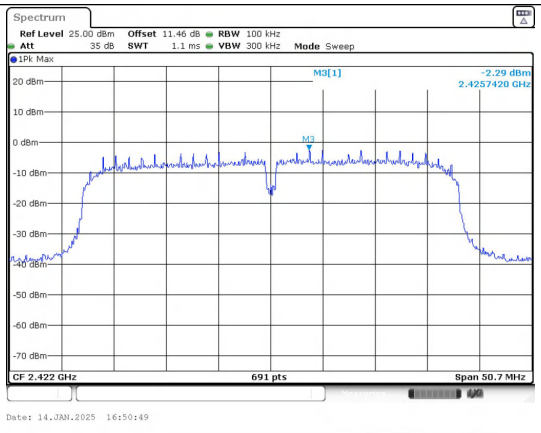

In-Band Reference Level
IEEE 802.11n_Channel 11_20MHz_Antenna 0



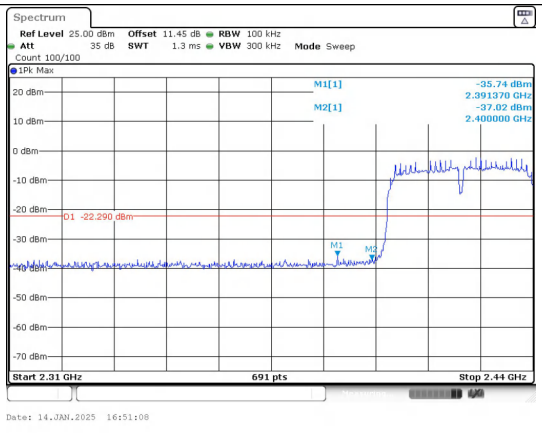

Out Of Band Emission
IEEE 802.11n_Channel 11_20MHz_Antenna 0



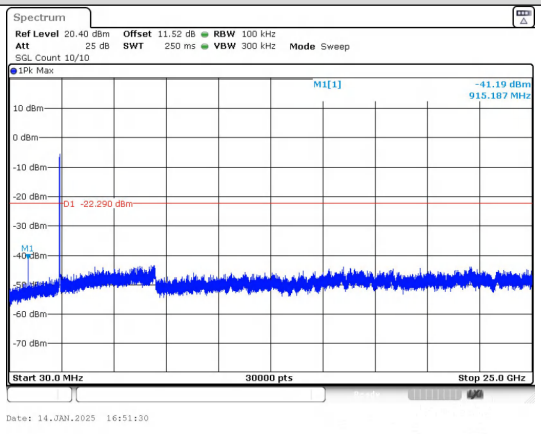

30.0 MHz - 25000.0 MHz
IEEE 802.11n_Channel 11_20MHz_Antenna 0



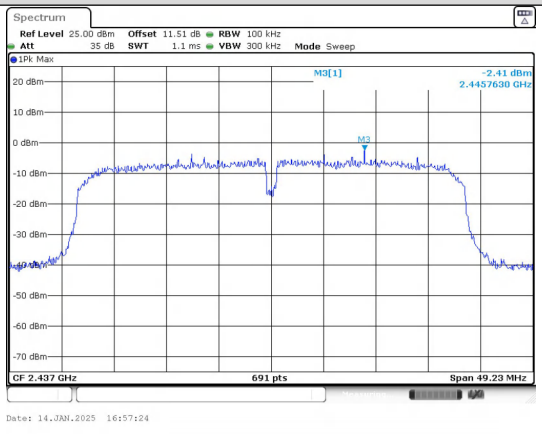

**In-Band Reference Level**
**IEEE 802.11n_Channel 3_40MHz_Antenna 0**



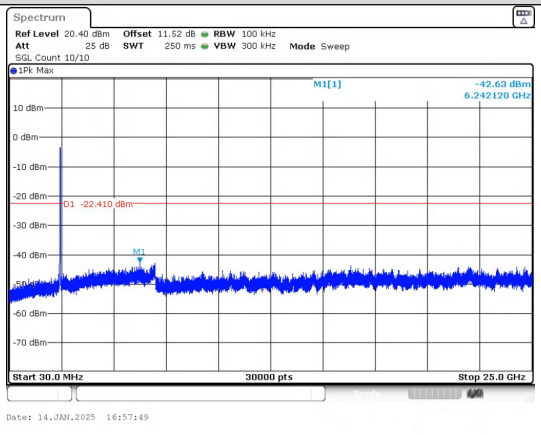

**Out Of Band Emission**
**IEEE 802.11n_Channel 3_40MHz_Antenna 0**



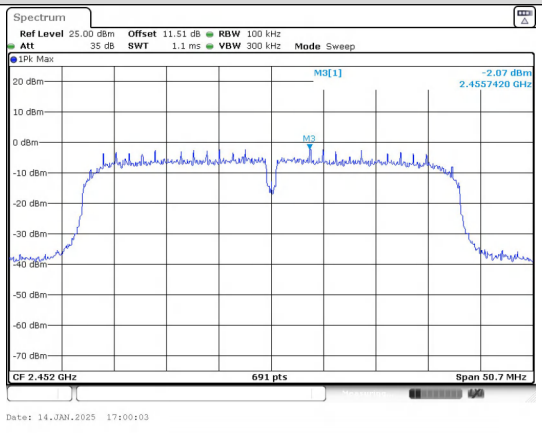

**30.0 MHz - 25000.0 MHz**
**IEEE 802.11n_Channel 3_40MHz_Antenna 0**



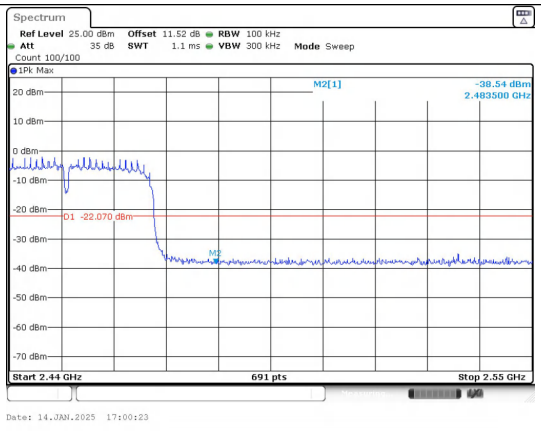
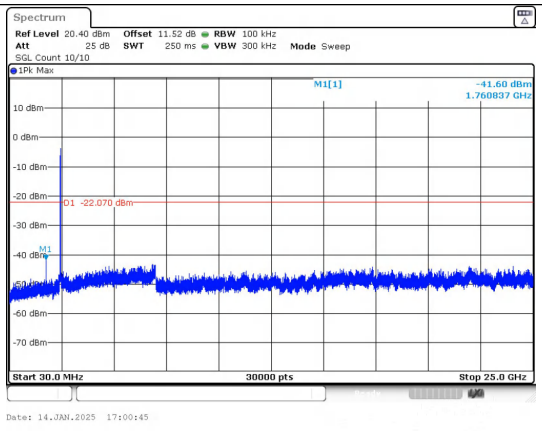

**In-Band Reference Level**
**IEEE 802.11n_Channel 6_40MHz_Antenna 0**




**30.0 MHz - 25000.0 MHz**
**IEEE 802.11n_Channel 6_40MHz_Antenna 0**




**In-Band Reference Level**
**IEEE 802.11n_Channel 9_40MHz_Antenna 0**

| | |
|---|---|
|  |  |
| **Out Of Band Emission**<br>**IEEE 802.11n_Channel 9_40MHz_Antenna 0** | **30.0 MHz - 25000.0 MHz**<br>**IEEE 802.11n_Channel 9_40MHz_Antenna 0** |

------End of the report-----