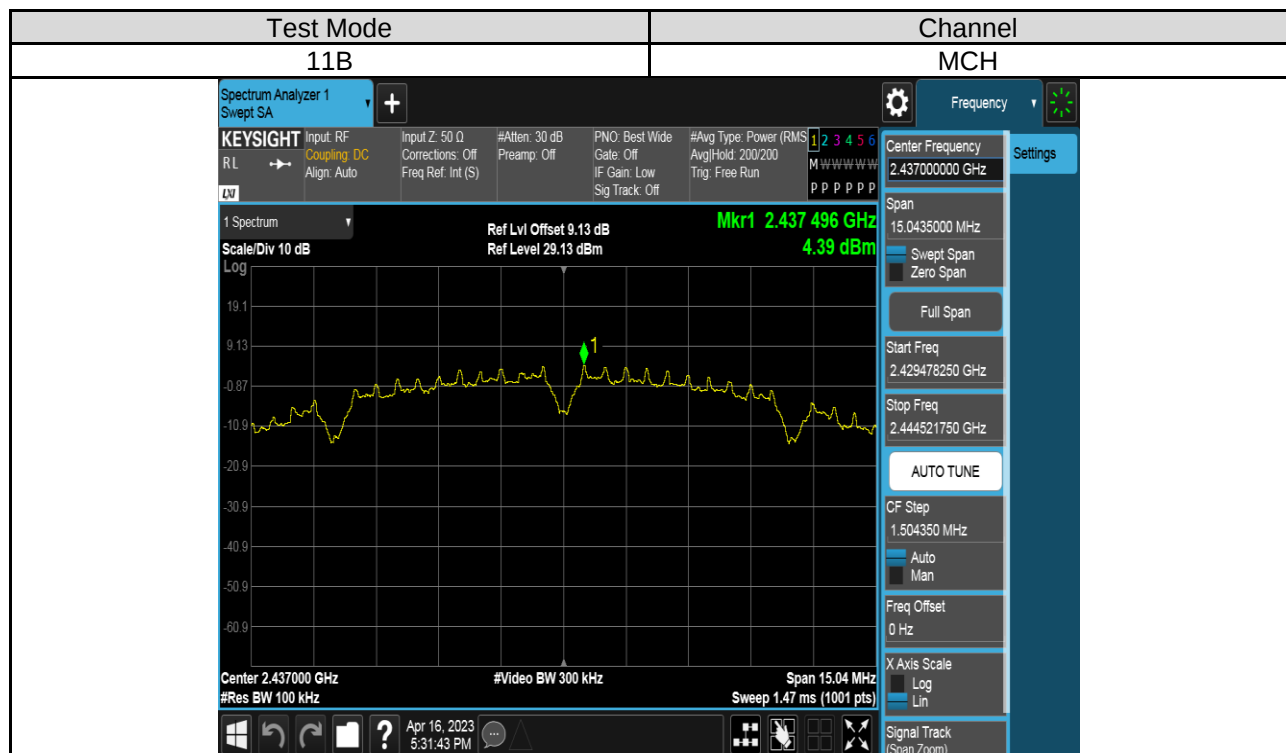
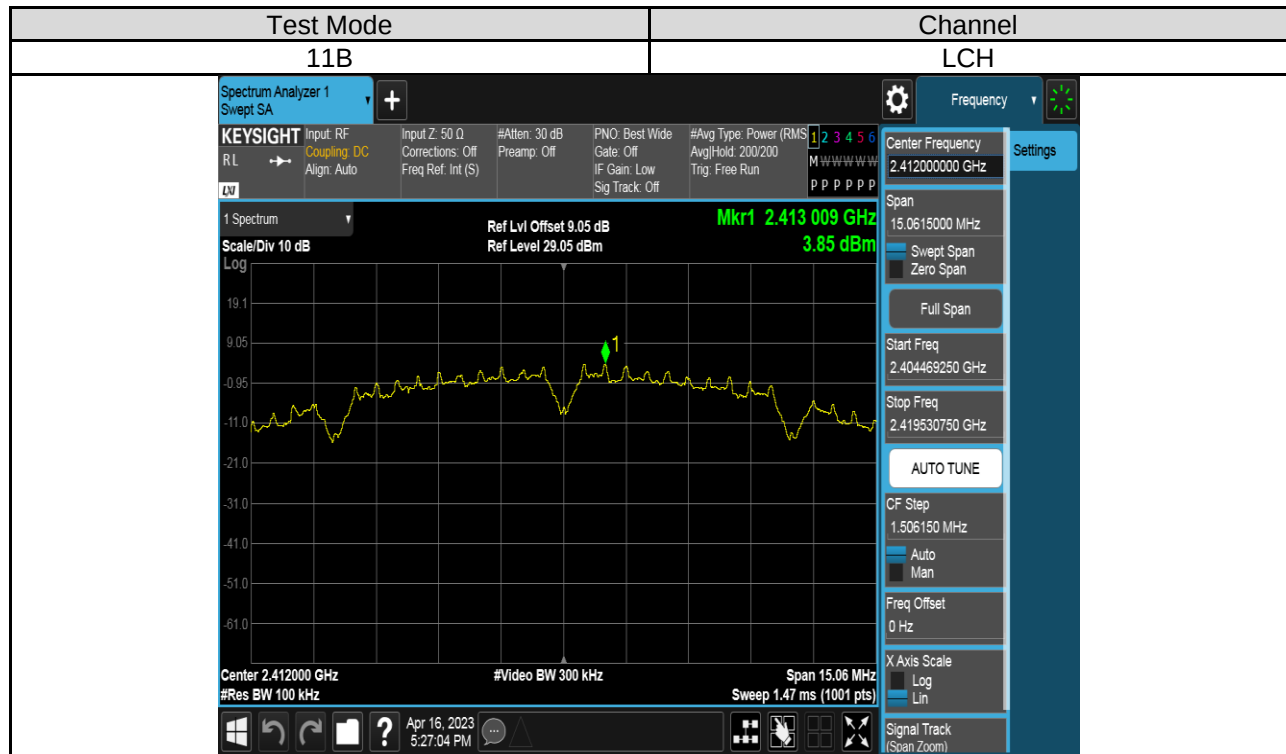
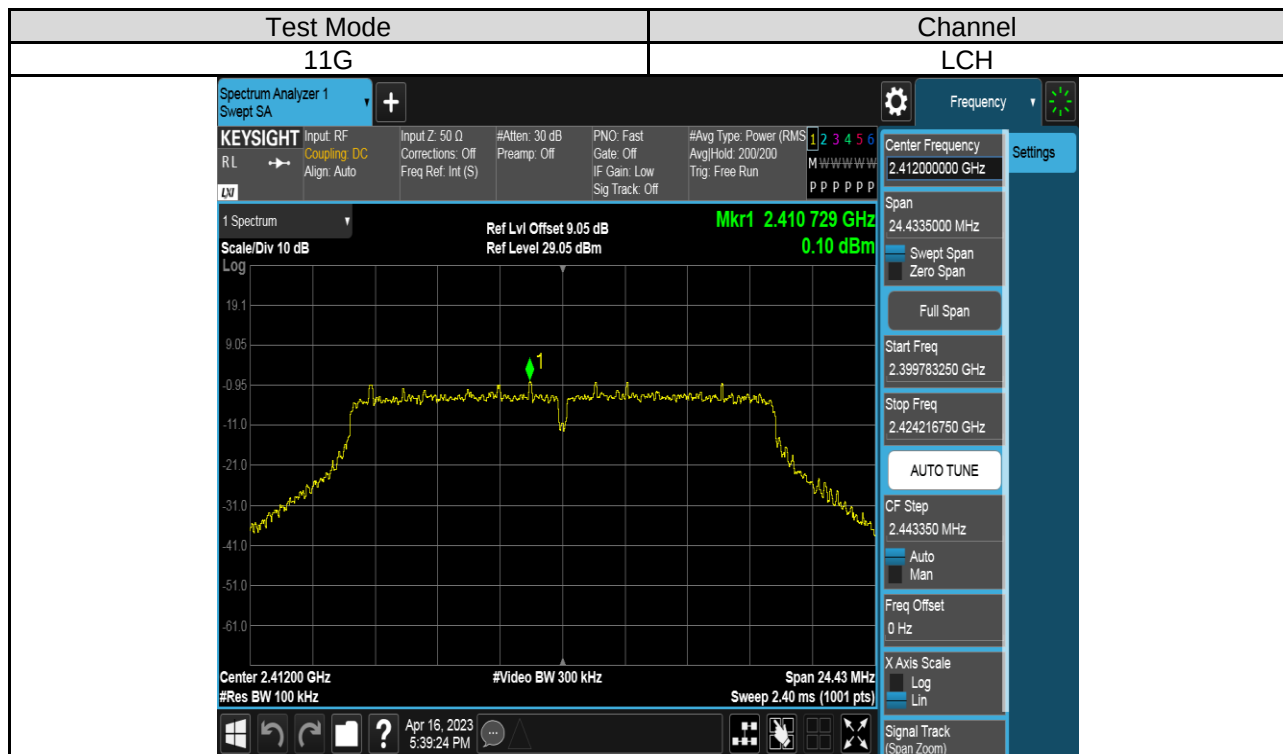
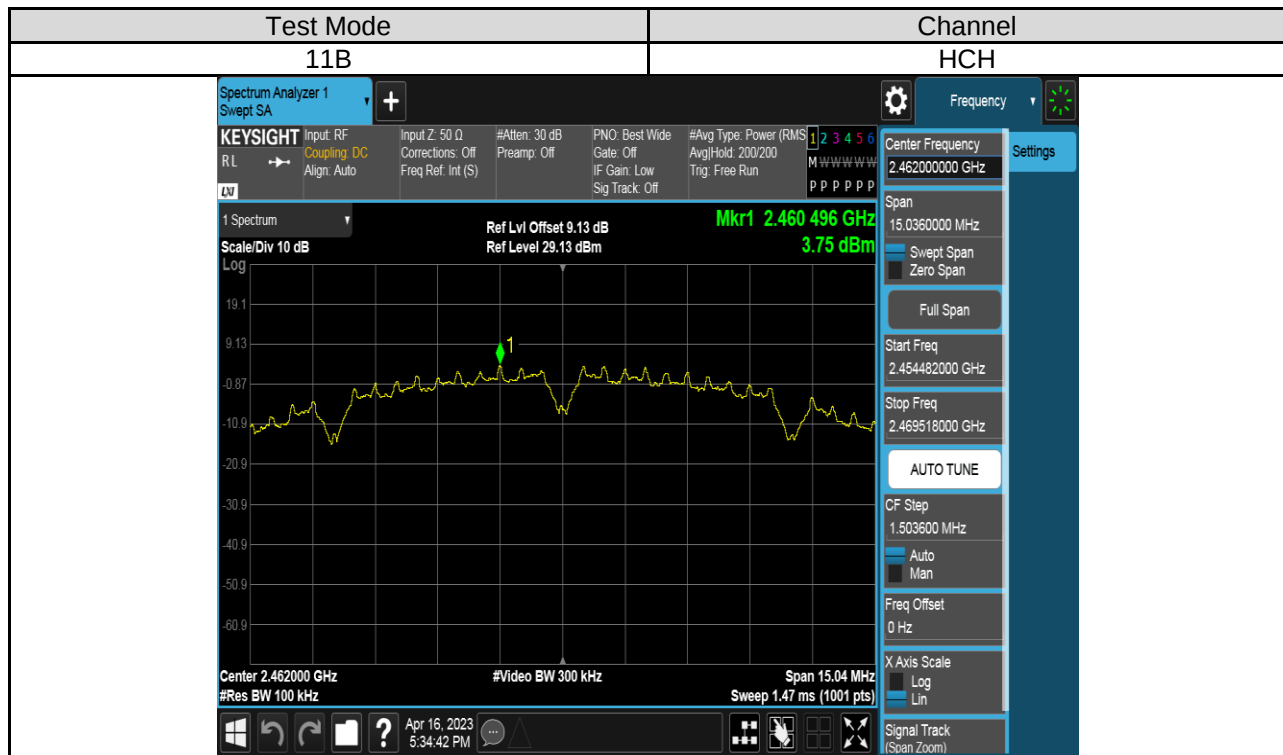
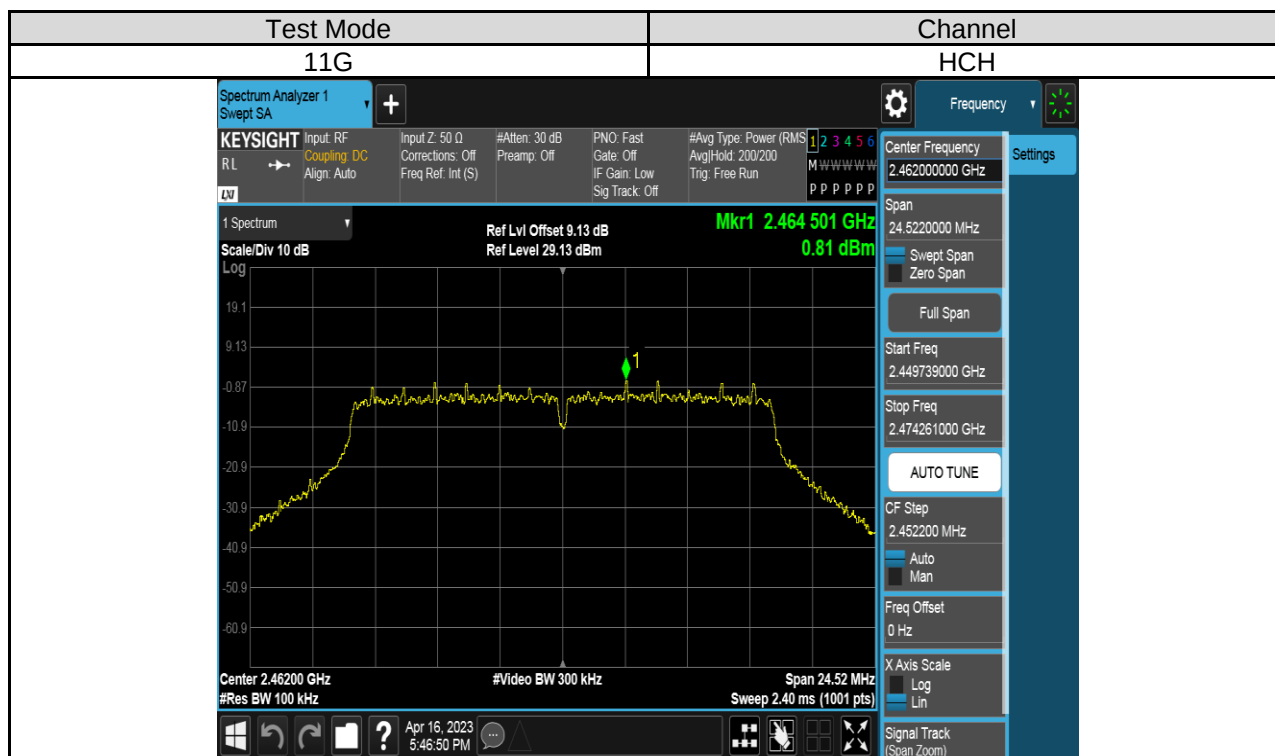
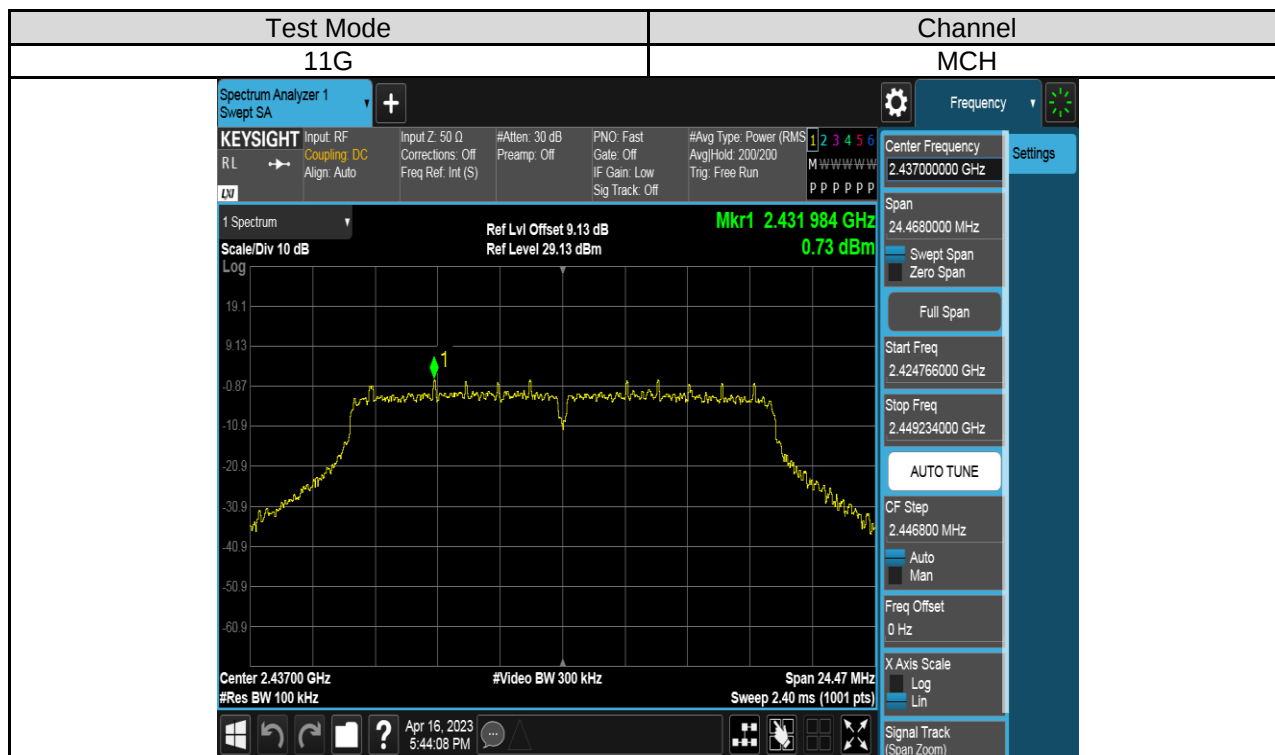
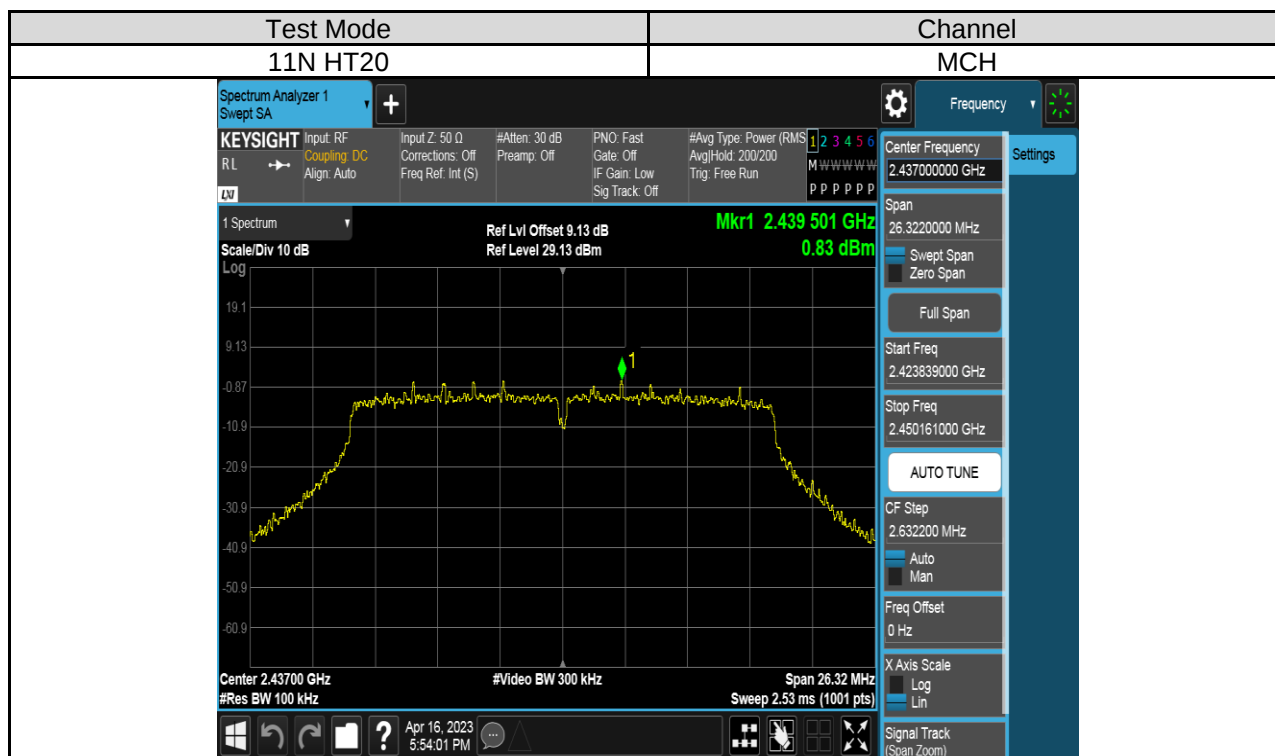
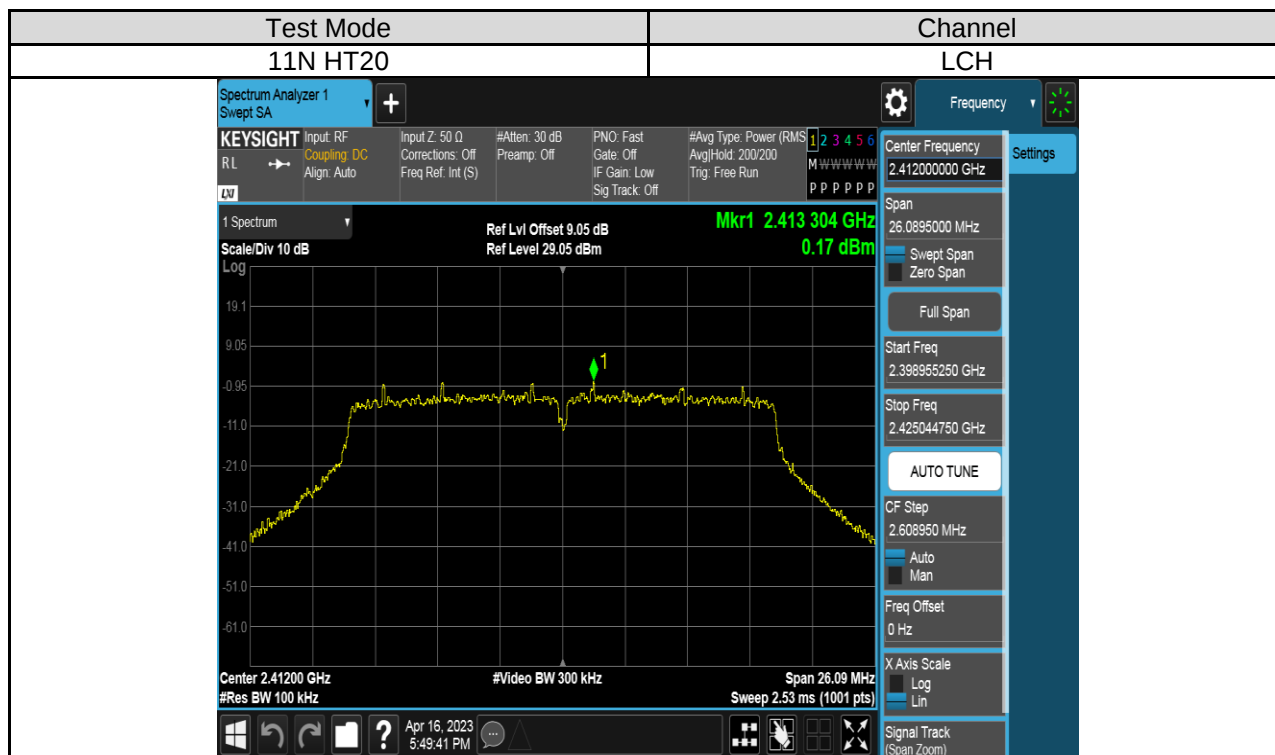


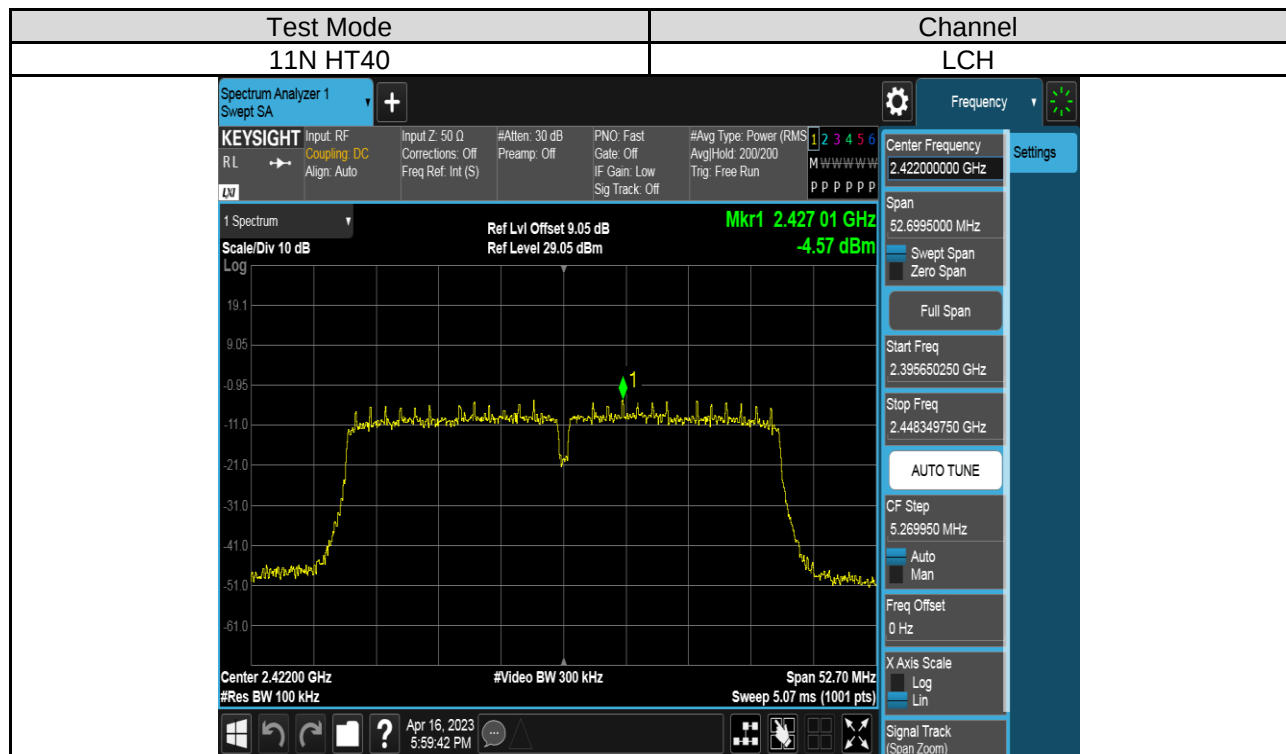
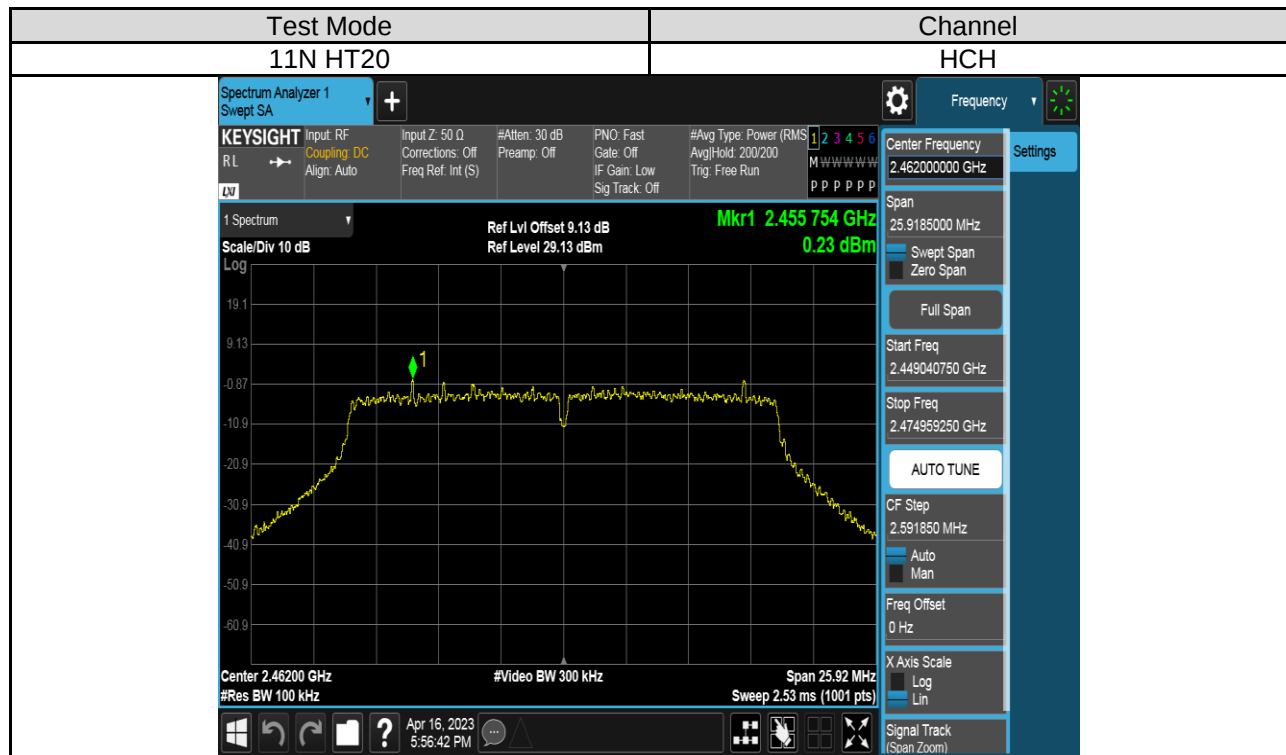
## TEST GRAPHS

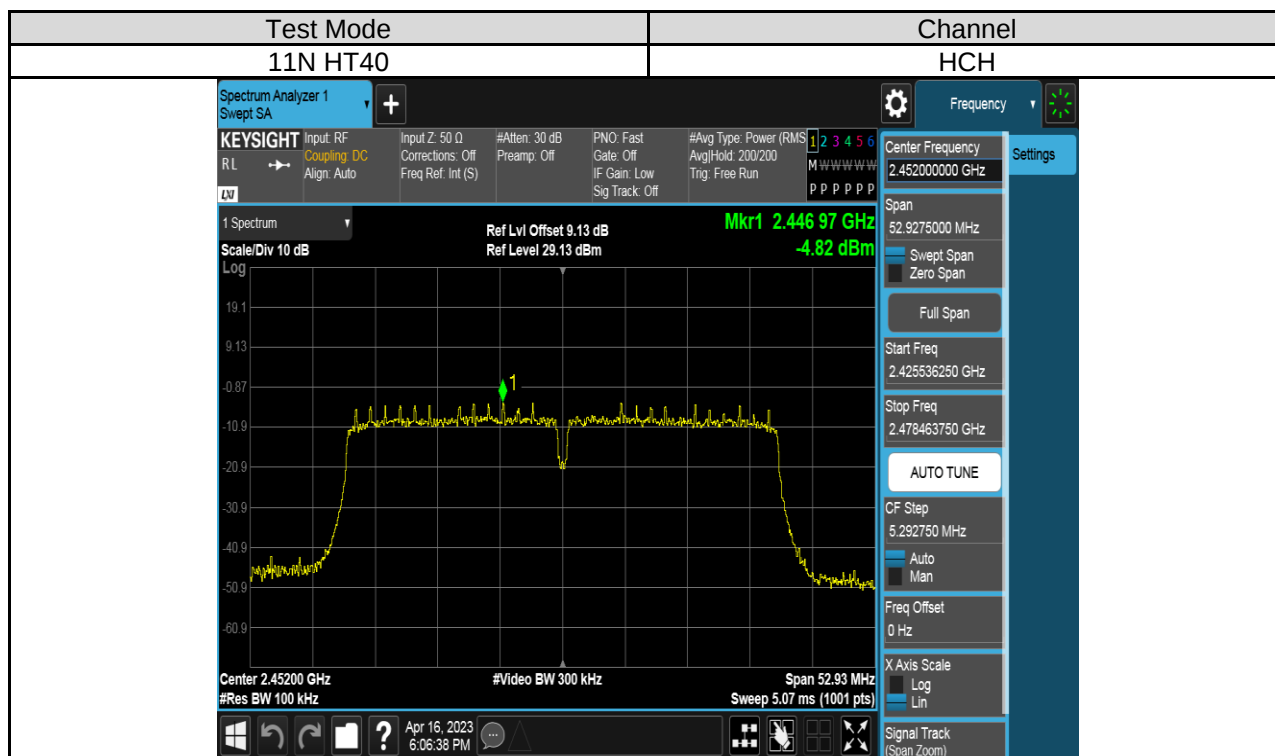
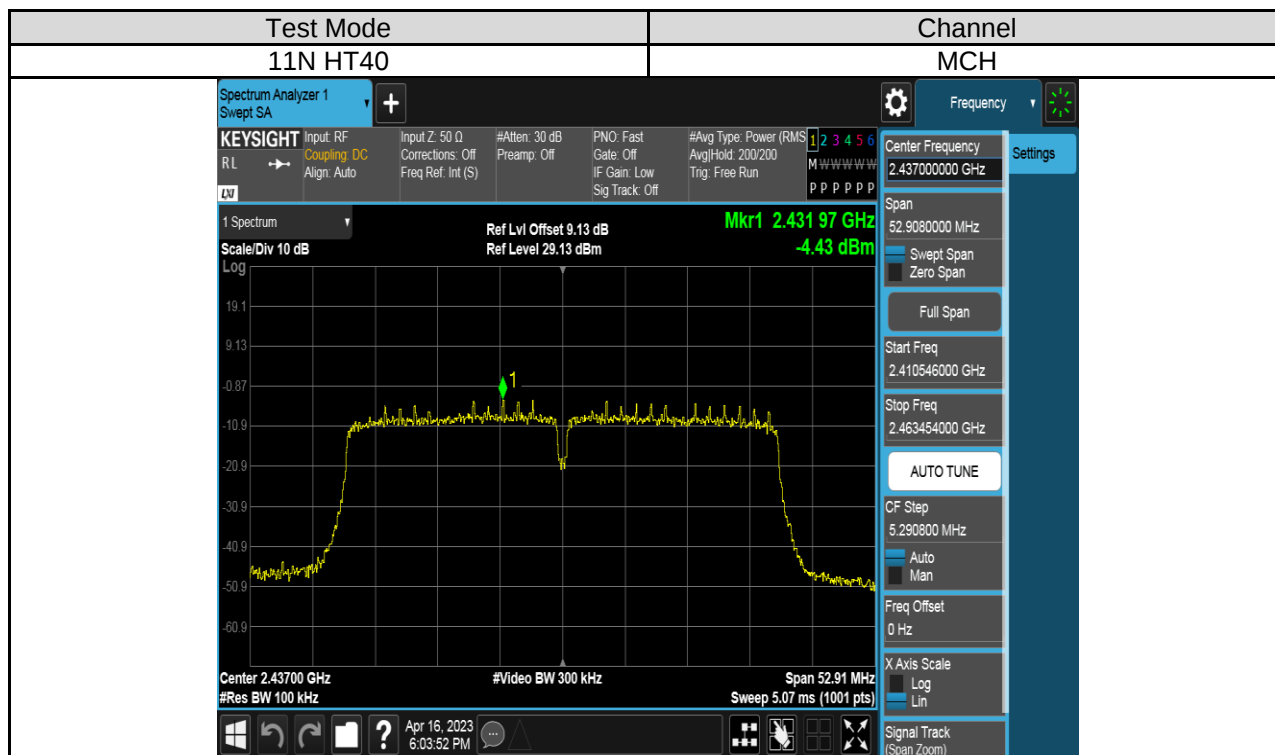








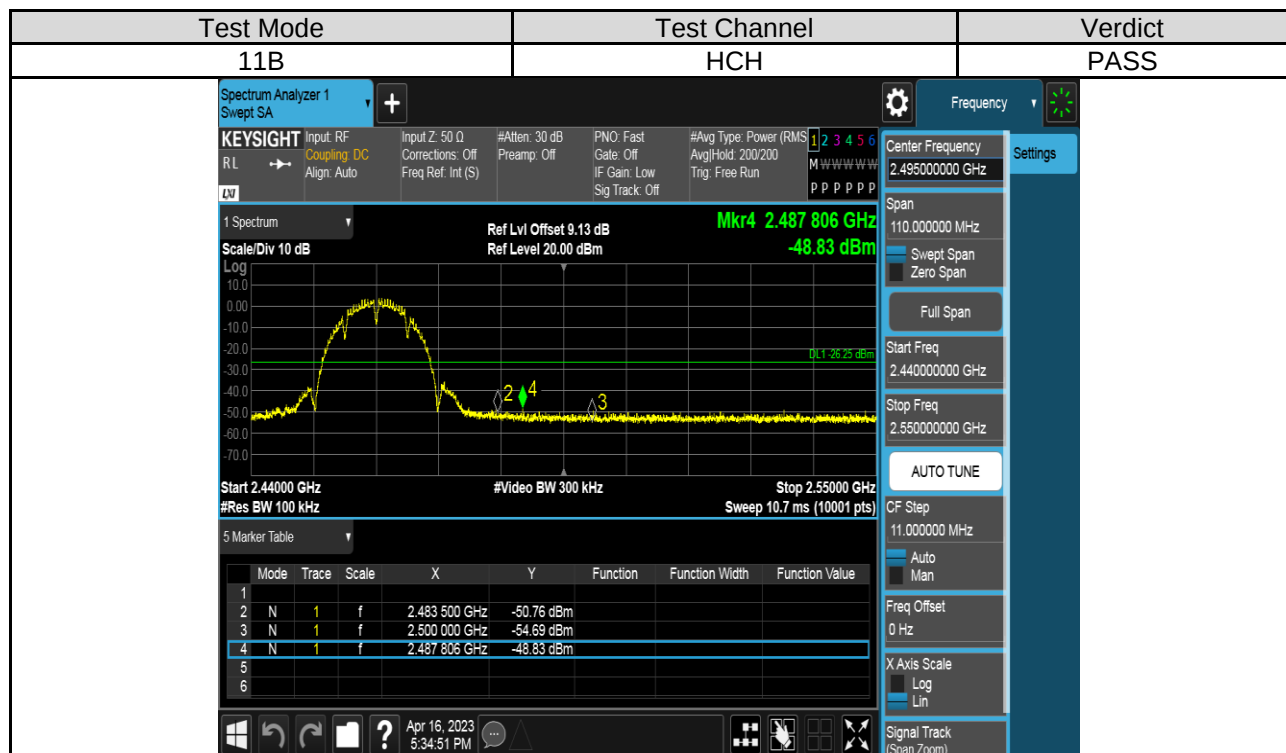
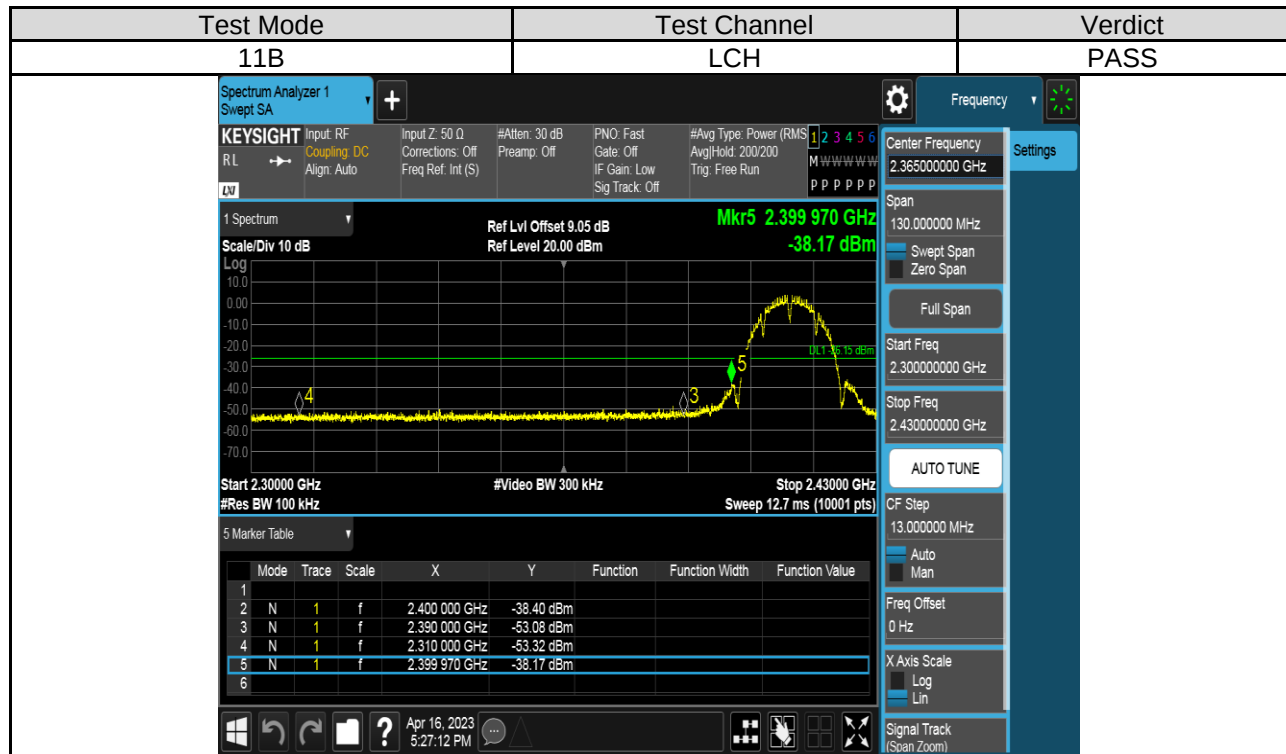


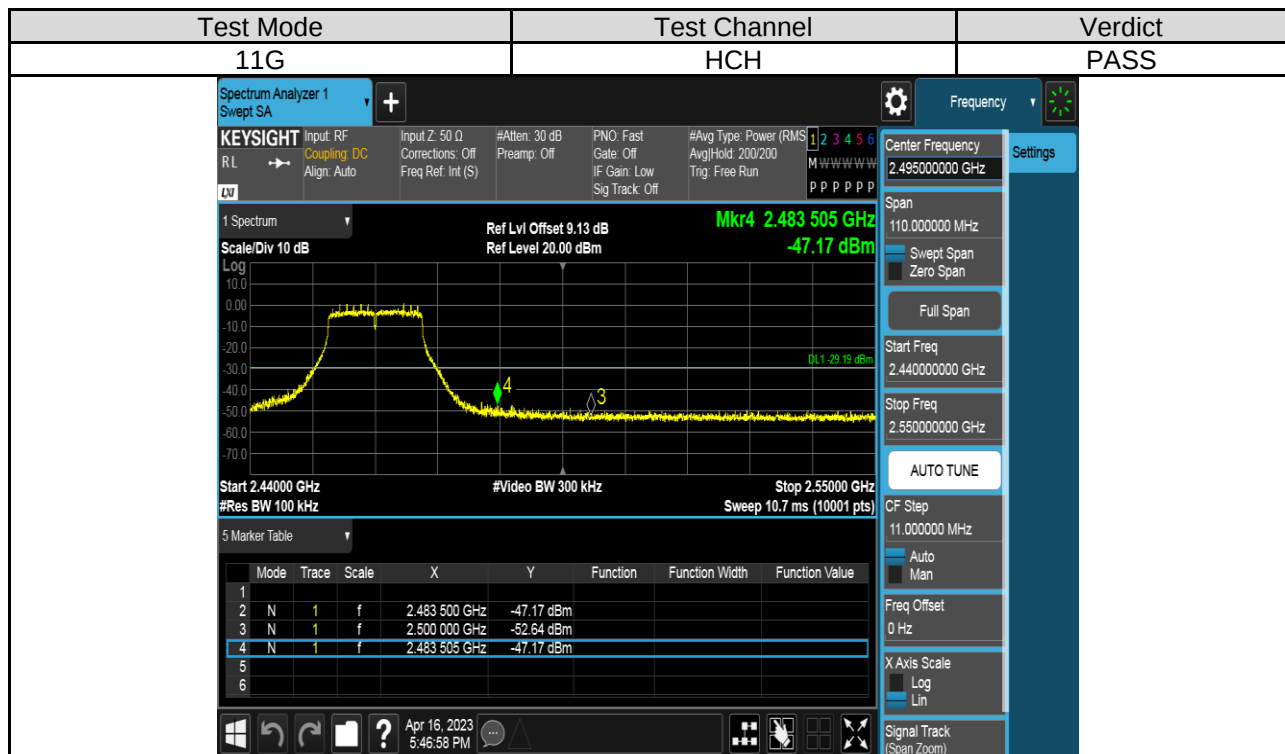
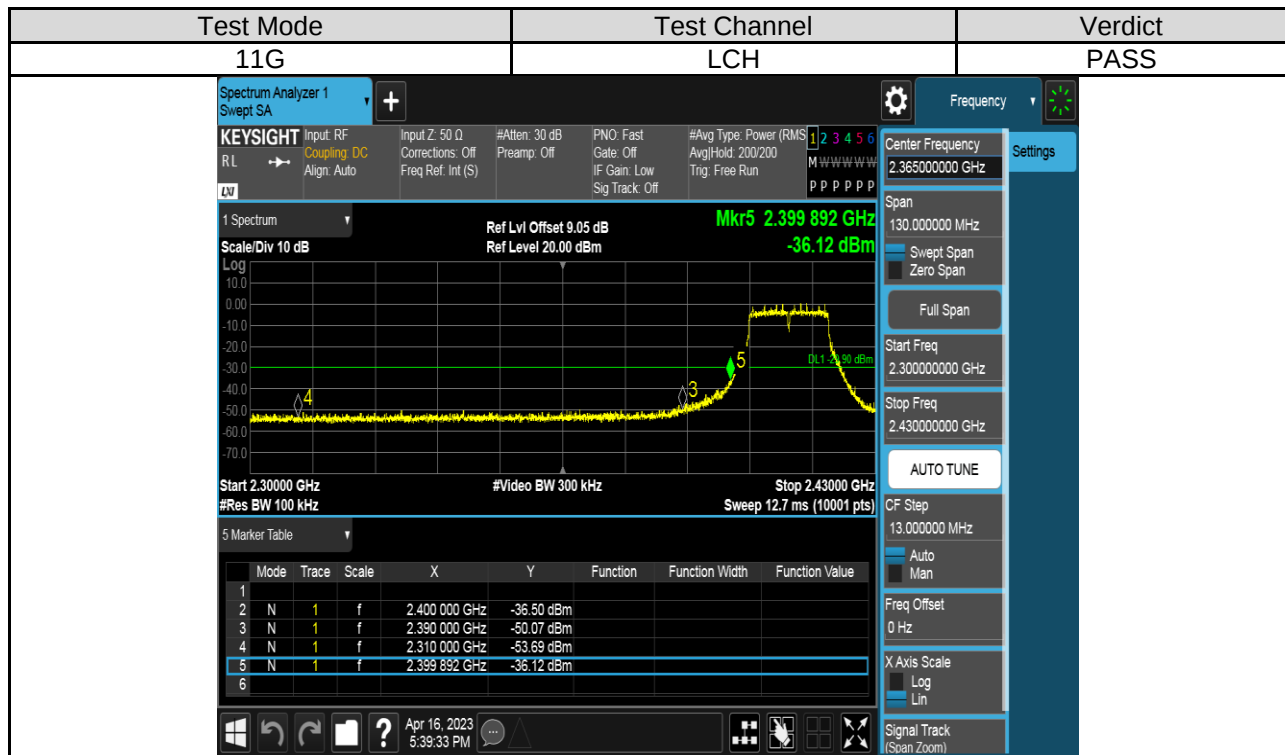


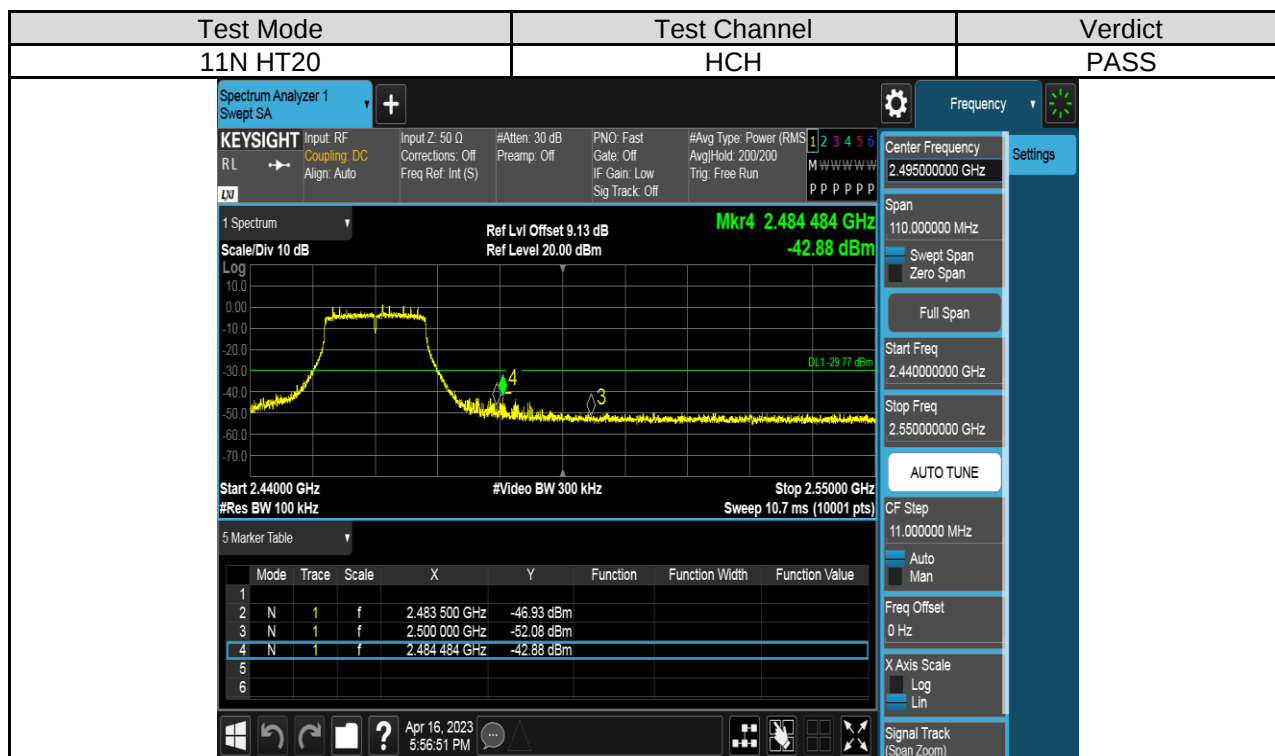
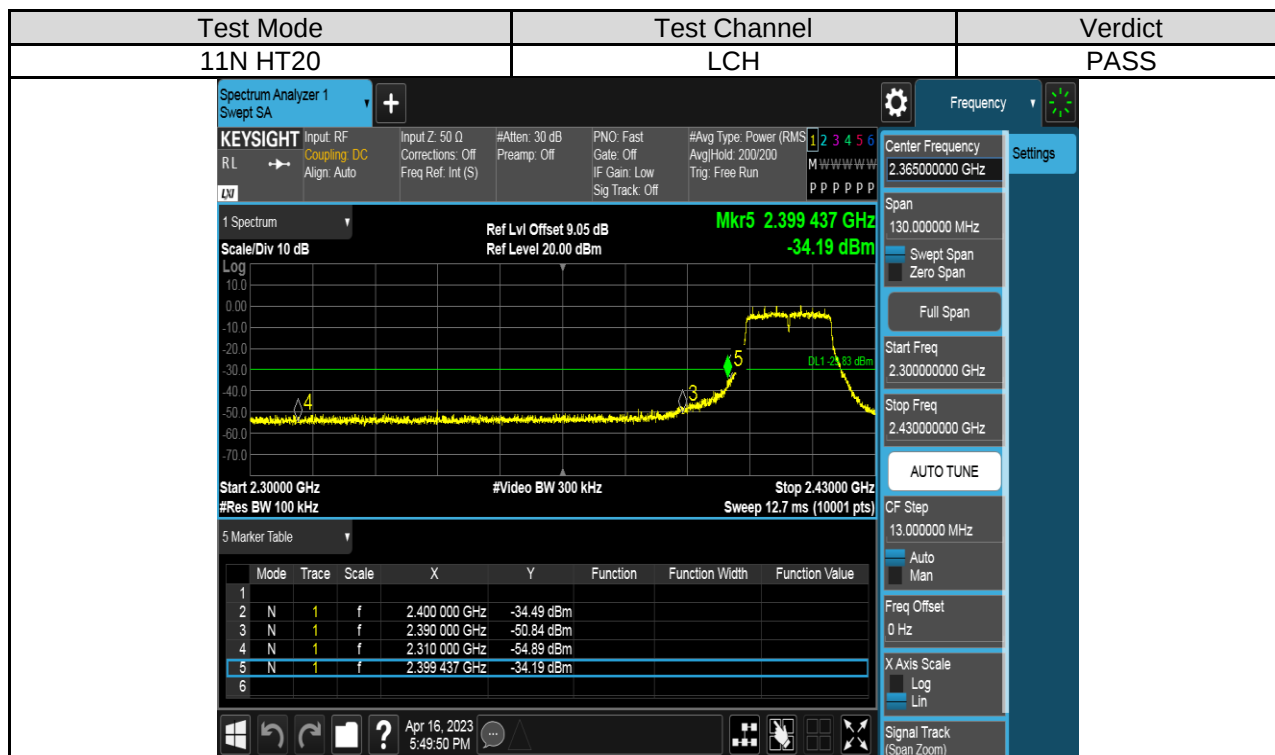
**PART 2: CONDUCTED BANDEDGE****TEST RESULTS TABLE**

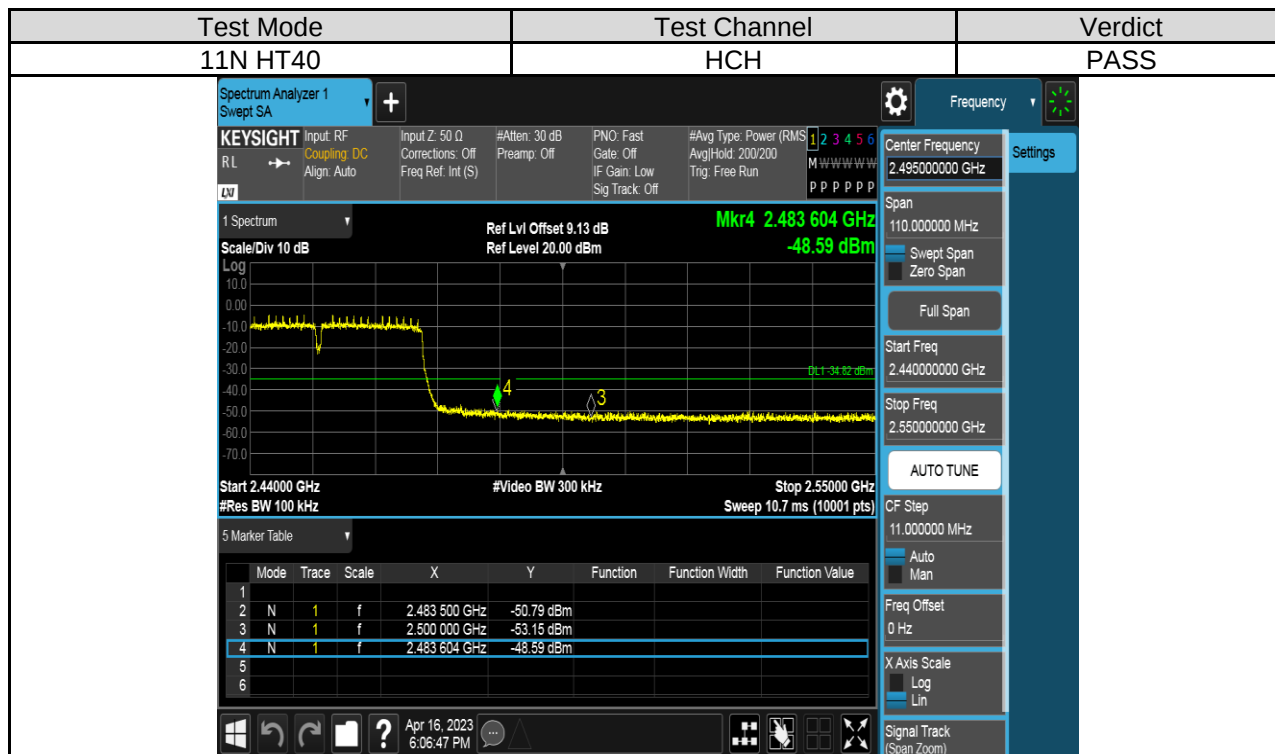
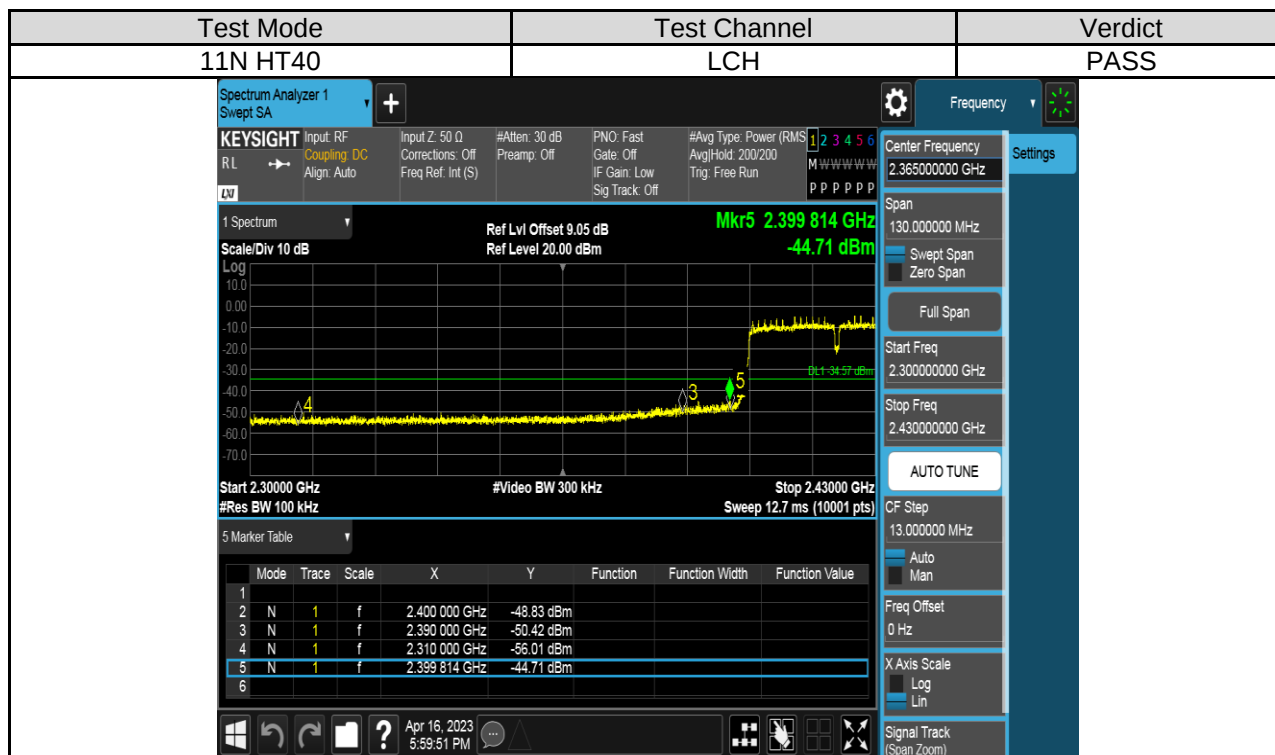
| Test Mode | Test Channel | Result                  | Verdict |
|-----------|--------------|-------------------------|---------|
| 11B       | LCH          | Refer to the Test Graph | PASS    |
|           | HCH          | Refer to the Test Graph | PASS    |
| 11G       | LCH          | Refer to the Test Graph | PASS    |
|           | HCH          | Refer to the Test Graph | PASS    |
| 11N HT20  | LCH          | Refer to the Test Graph | PASS    |
|           | HCH          | Refer to the Test Graph | PASS    |
| 11N HT40  | LCH          | Refer to the Test Graph | PASS    |
|           | HCH          | Refer to the Test Graph | PASS    |

### TEST GRAPHS







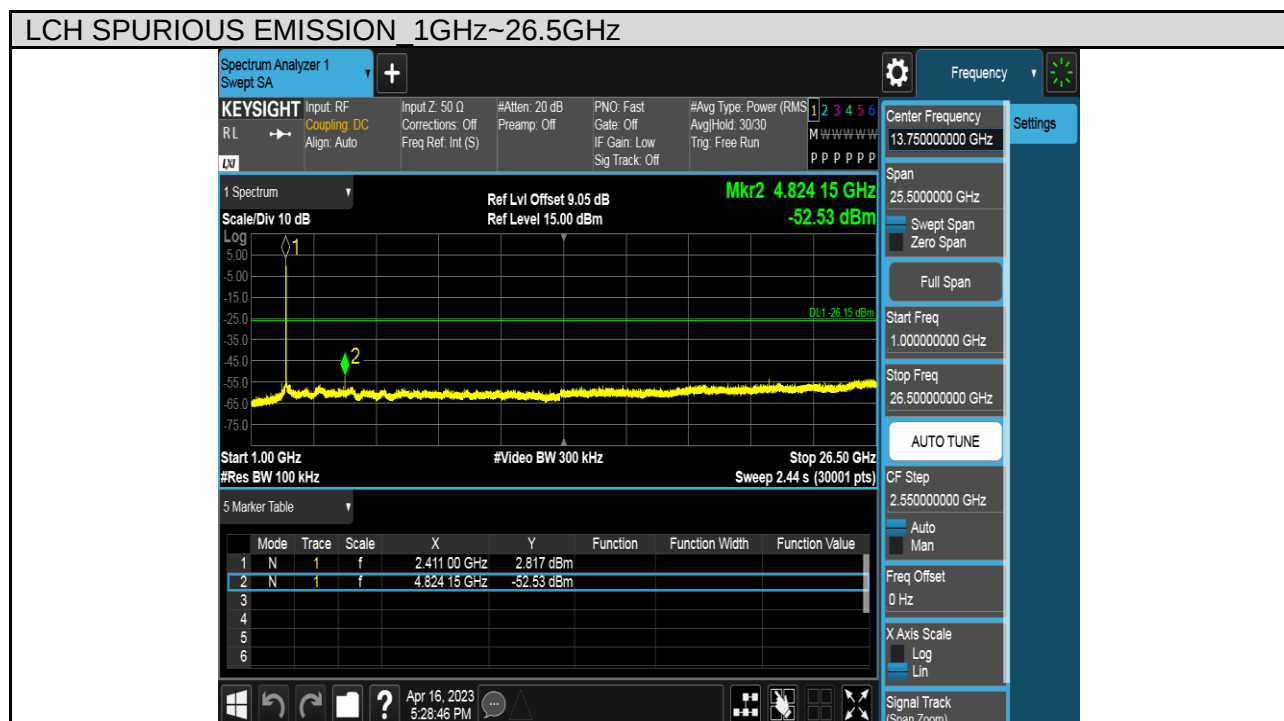
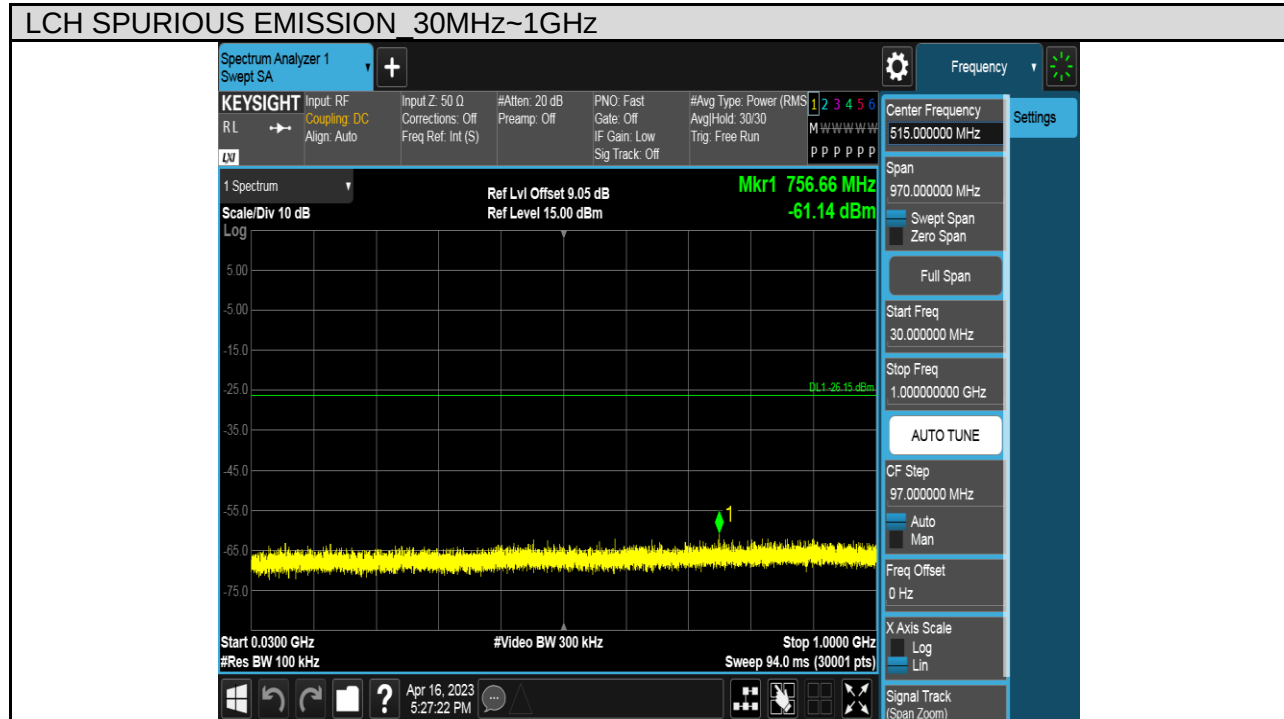


**PART 3: CONDUCTED SPURIOUS EMISSION****TEST RESULTS TABLE**

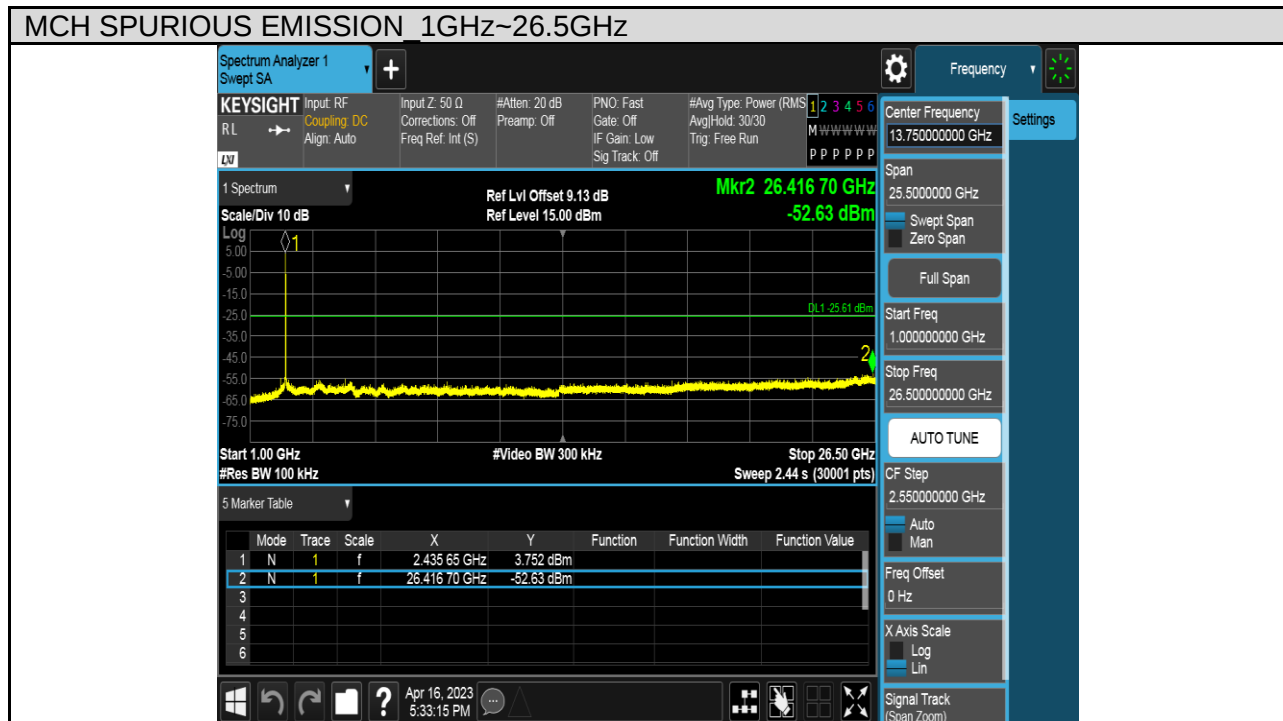
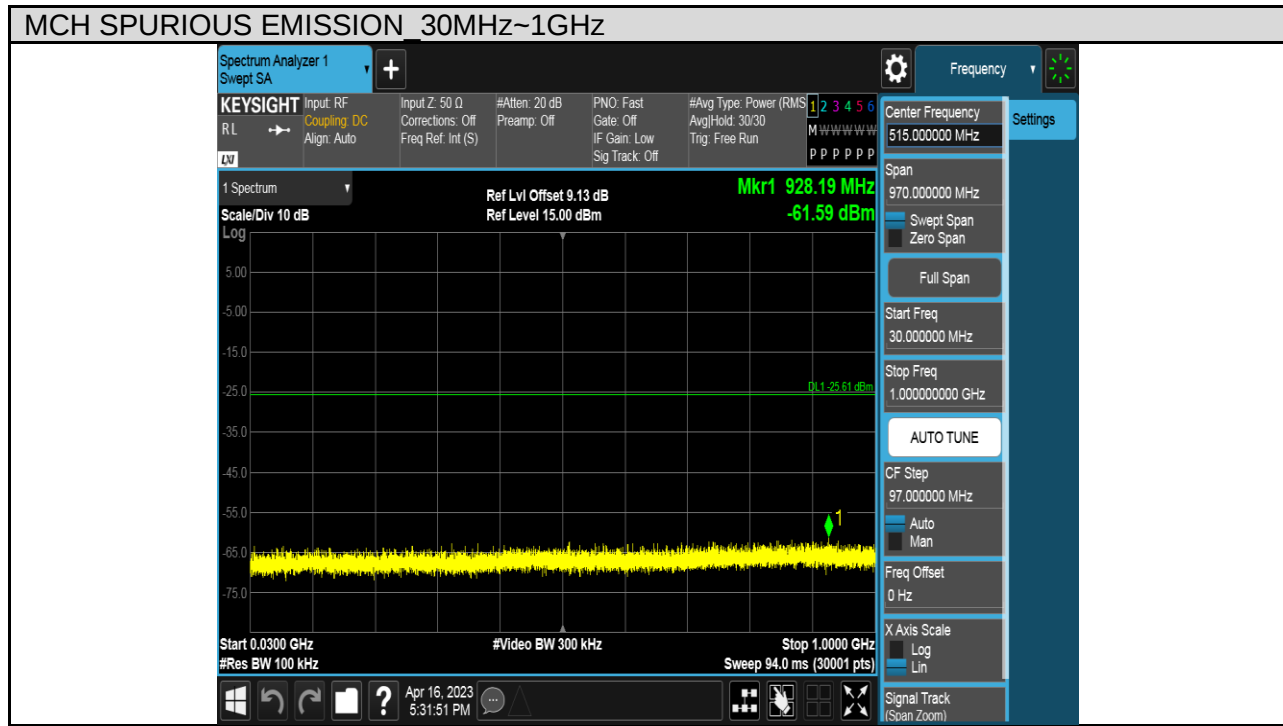
| Test Mode | Test Channel | Result                  | Verdict |
|-----------|--------------|-------------------------|---------|
| 11B       | LCH          | Refer to the Test Graph | PASS    |
|           | MCH          | Refer to the Test Graph | PASS    |
|           | HCH          | Refer to the Test Graph | PASS    |
| 11G       | LCH          | Refer to the Test Graph | PASS    |
|           | MCH          | Refer to the Test Graph | PASS    |
|           | HCH          | Refer to the Test Graph | PASS    |
| 11N HT20  | LCH          | Refer to the Test Graph | PASS    |
|           | MCH          | Refer to the Test Graph | PASS    |
|           | HCH          | Refer to the Test Graph | PASS    |
| 11N HT40  | LCH          | Refer to the Test Graph | PASS    |
|           | MCH          | Refer to the Test Graph | PASS    |
|           | HCH          | Refer to the Test Graph | PASS    |

### TEST GRAPHS

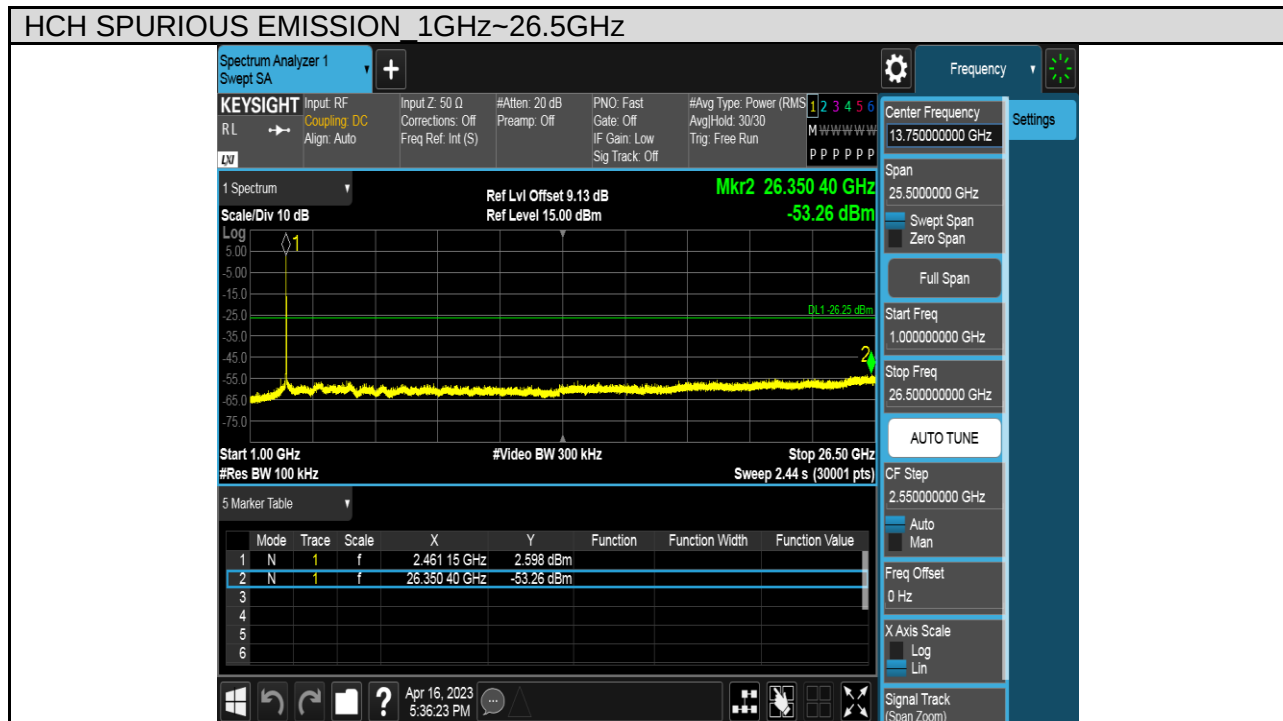
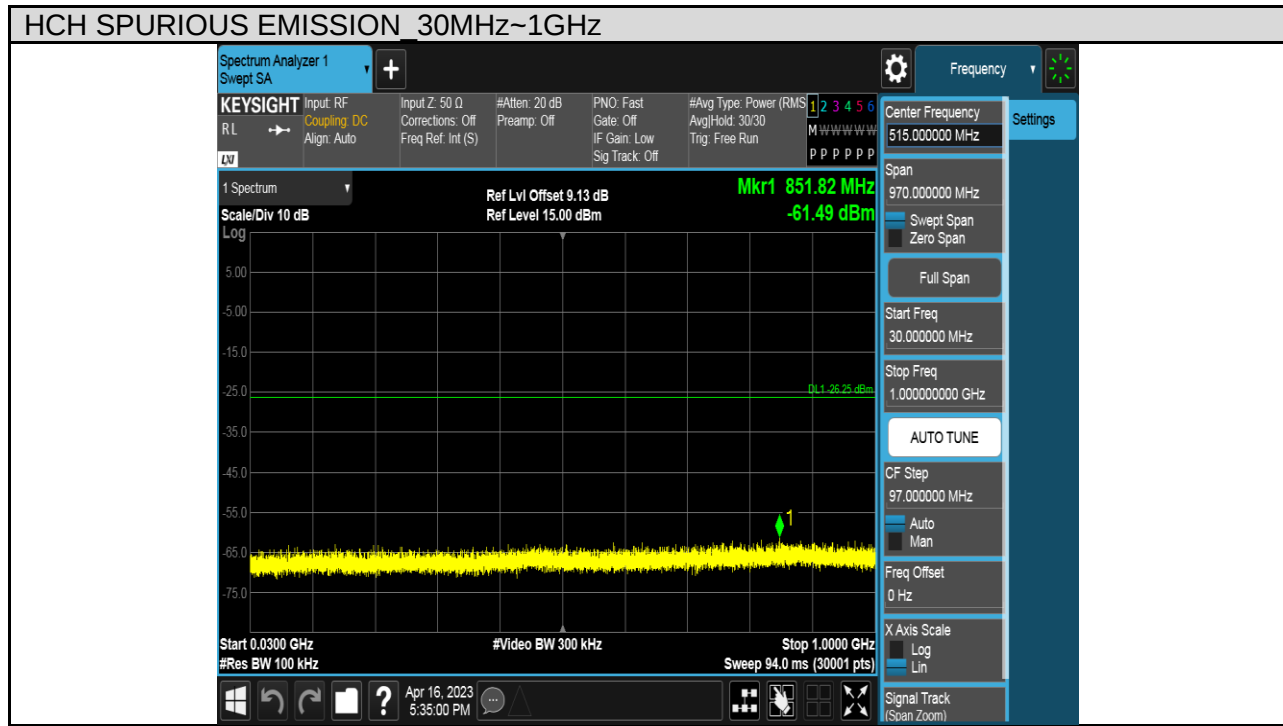
| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11B       | LCH     | PASS    |



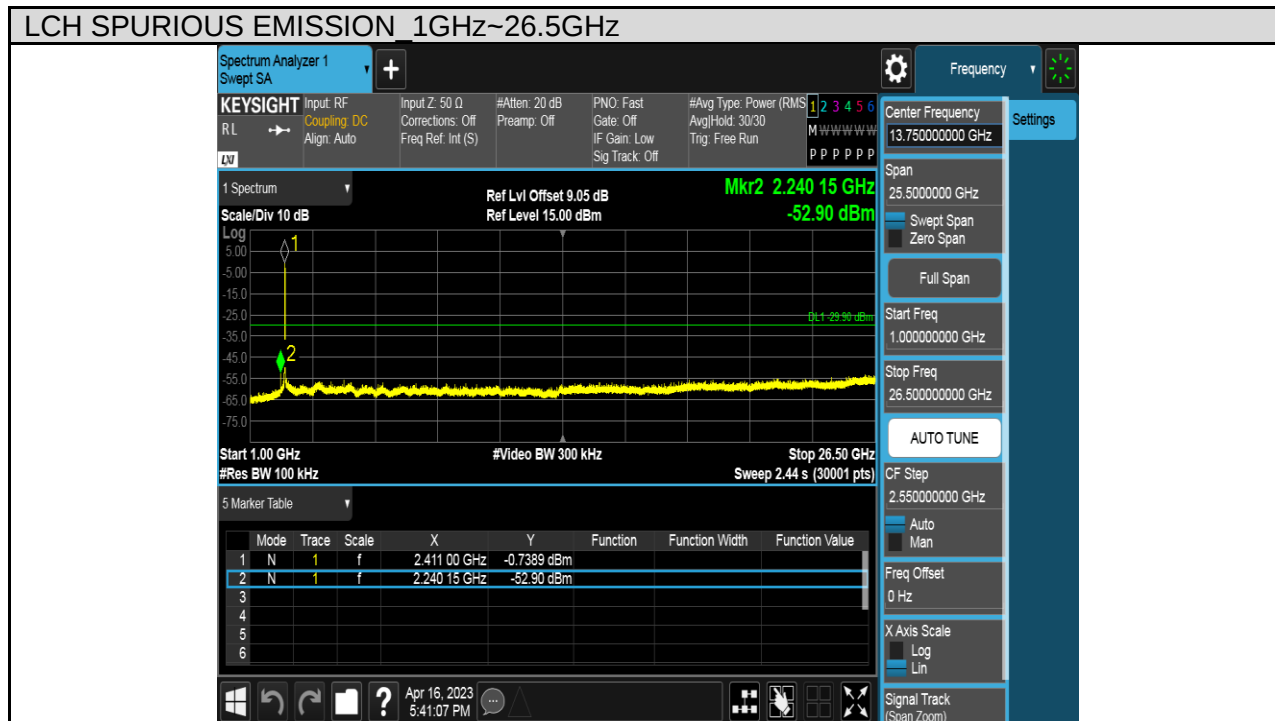
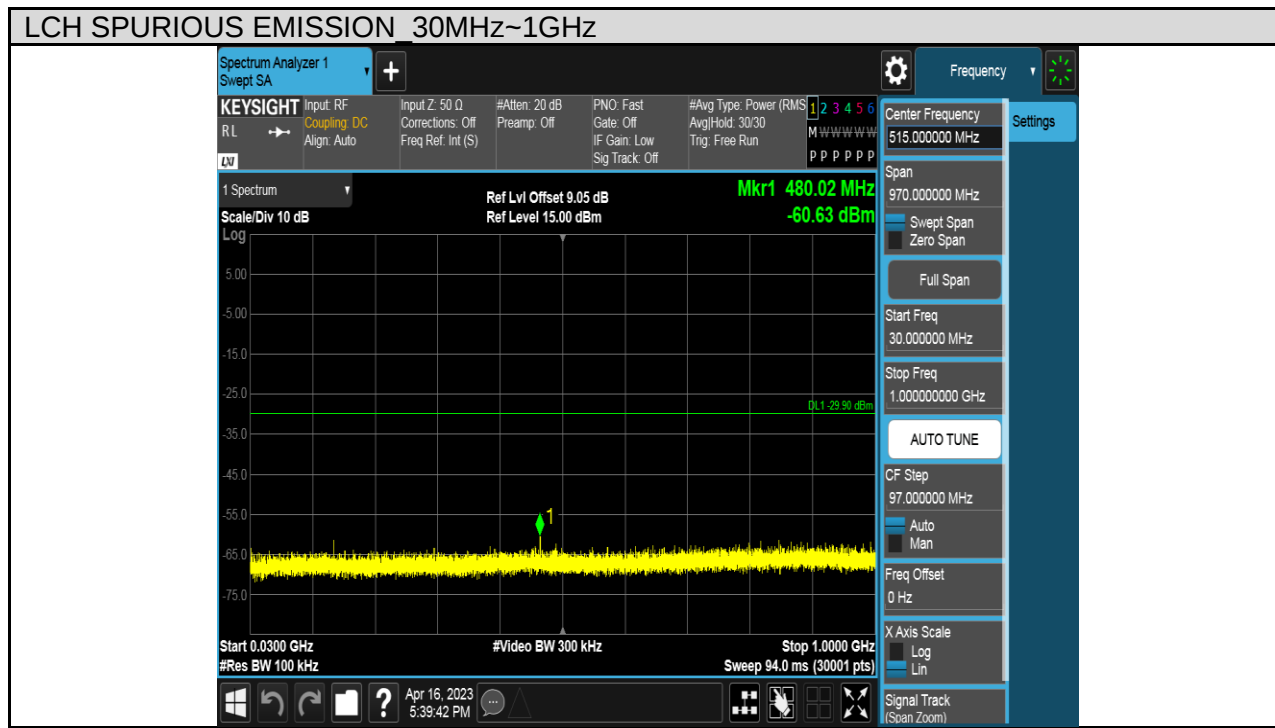
| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11B       | MCH     | PASS    |



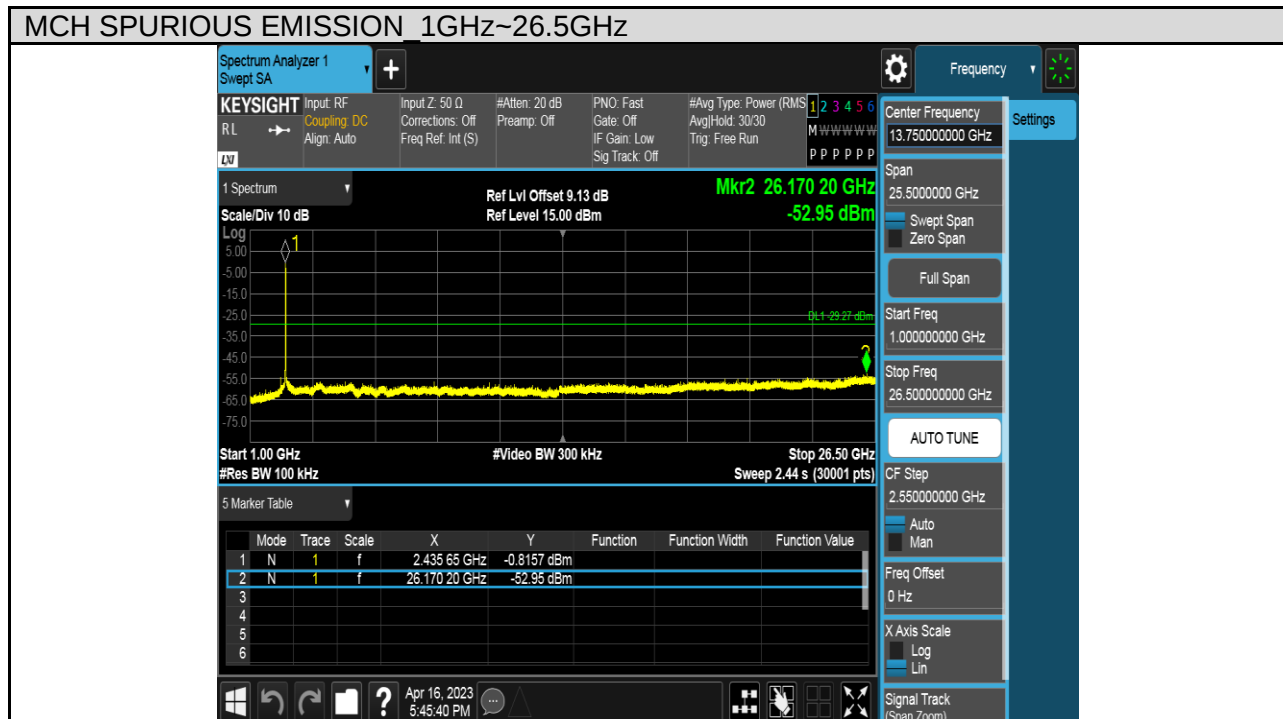
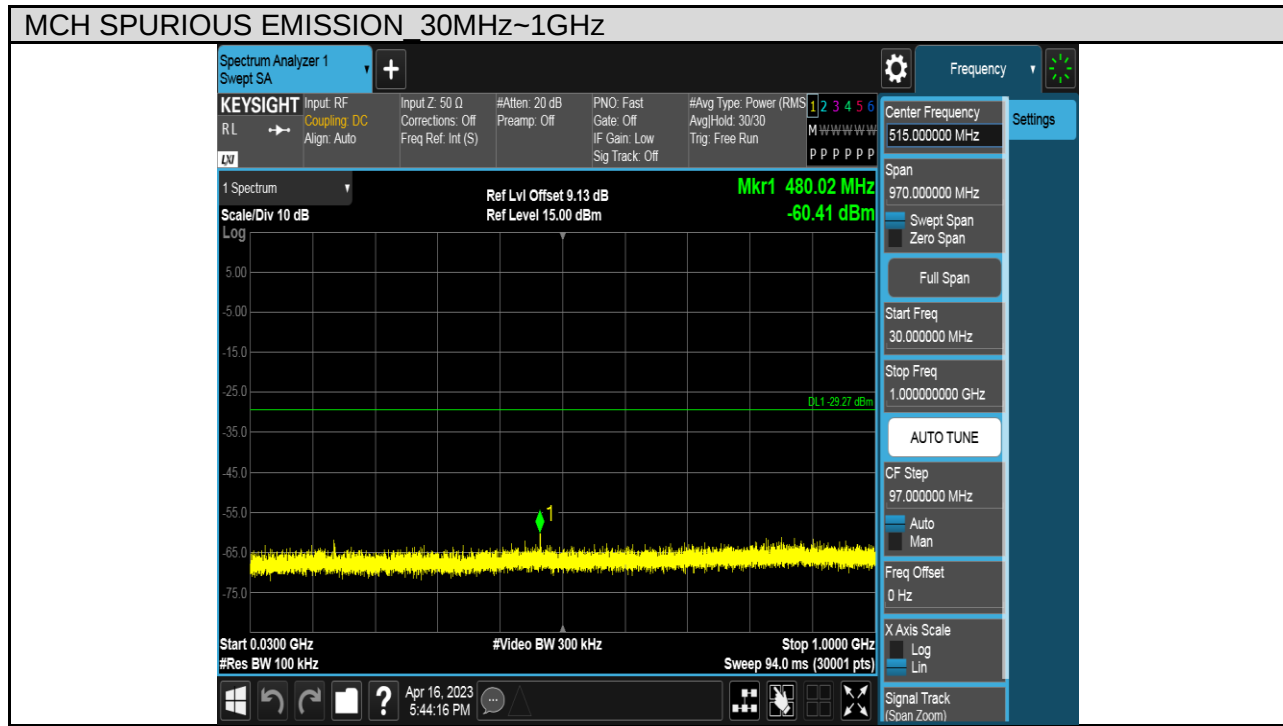
| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11B       | HCH     | PASS    |



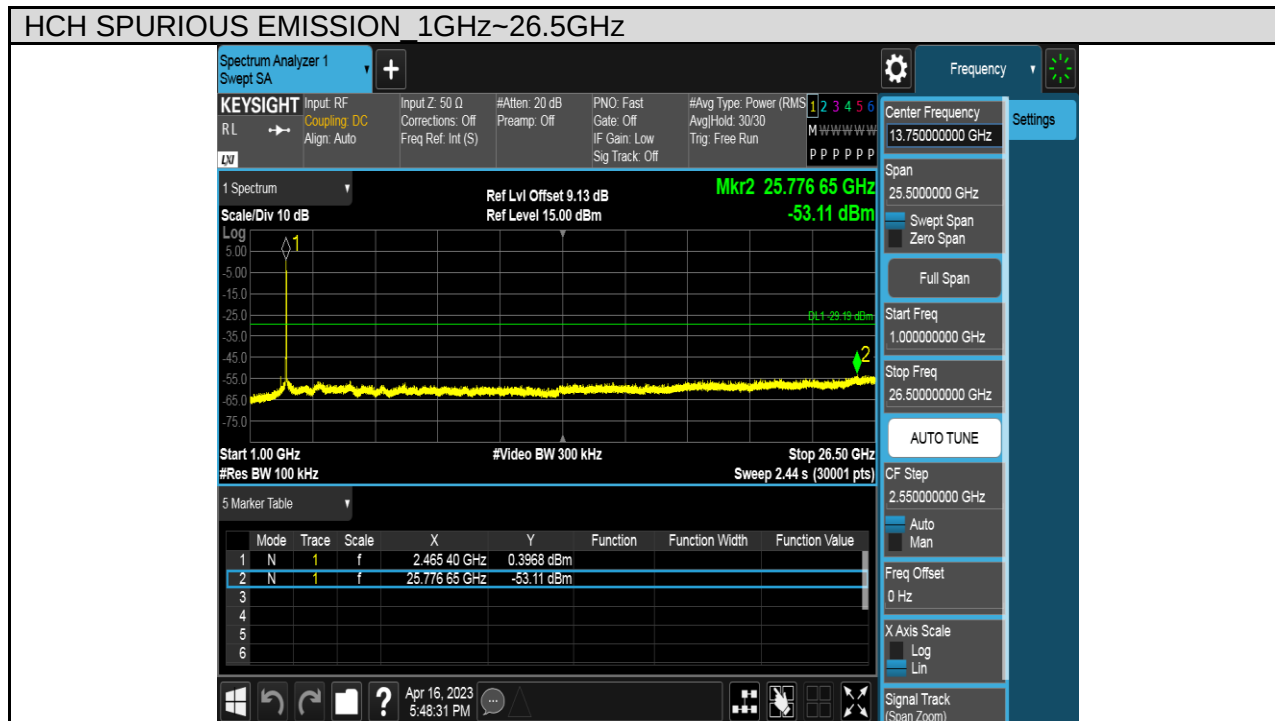
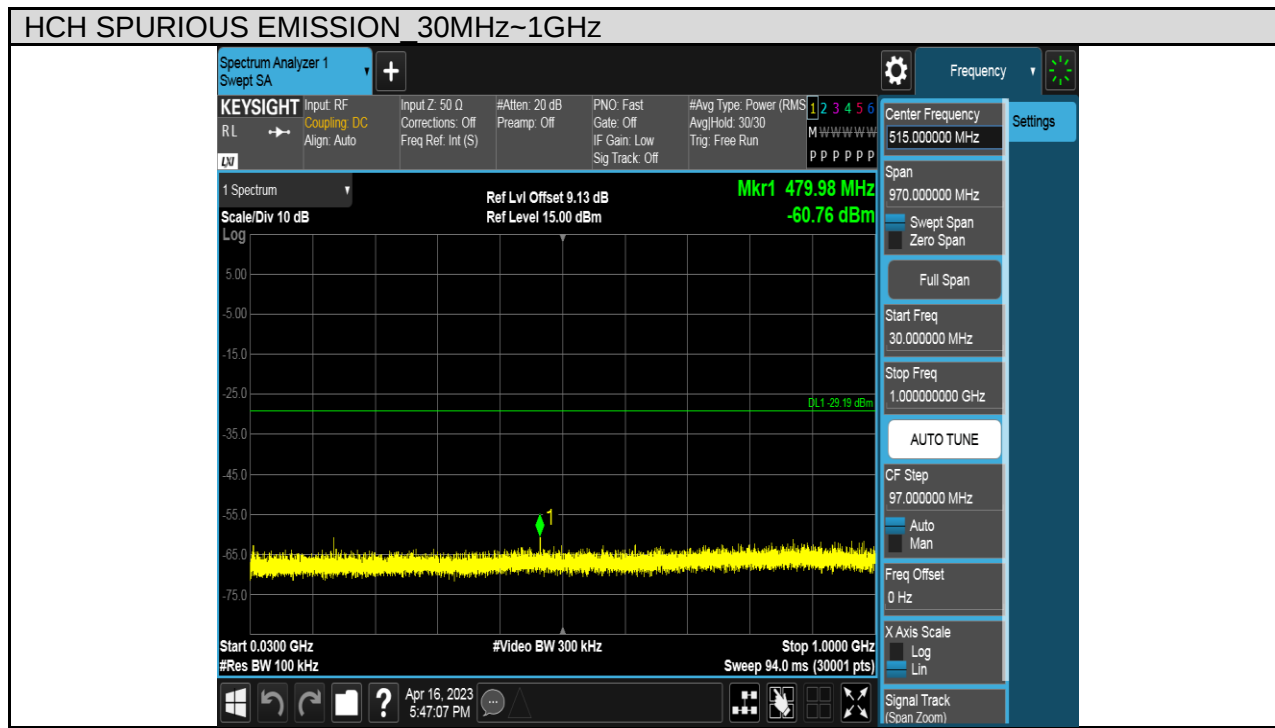
| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11G       | LCH     | PASS    |



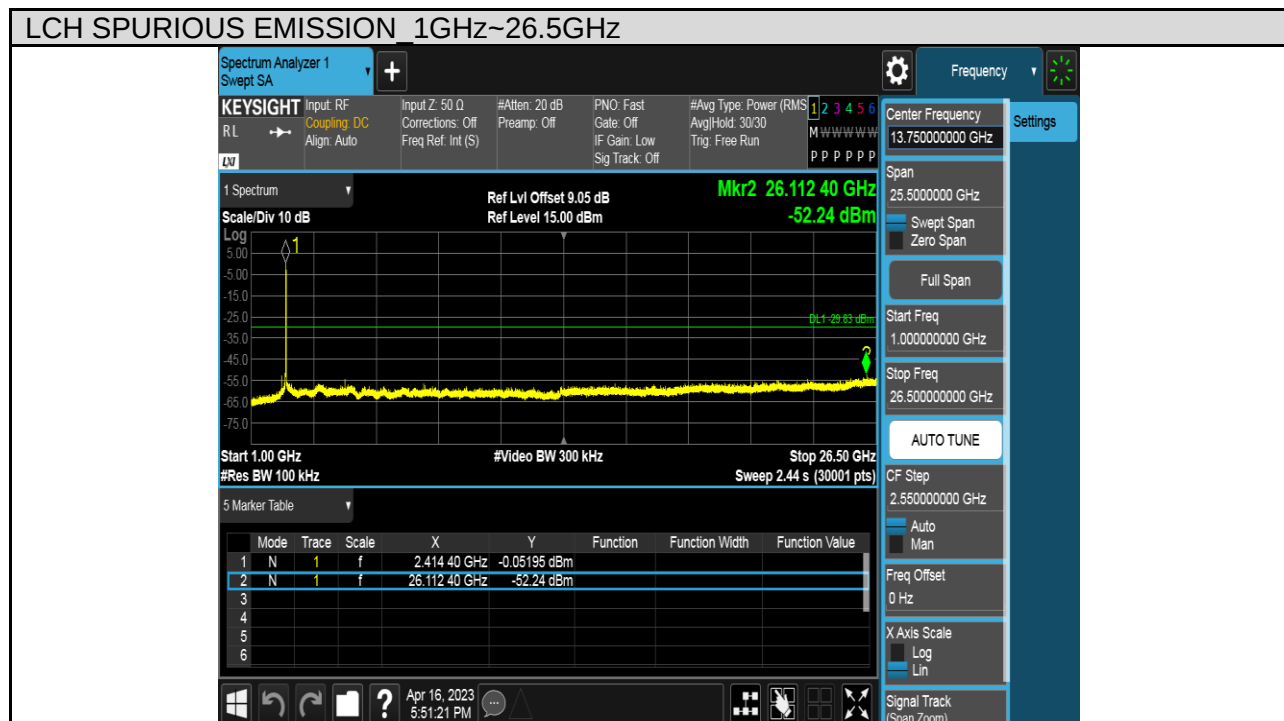
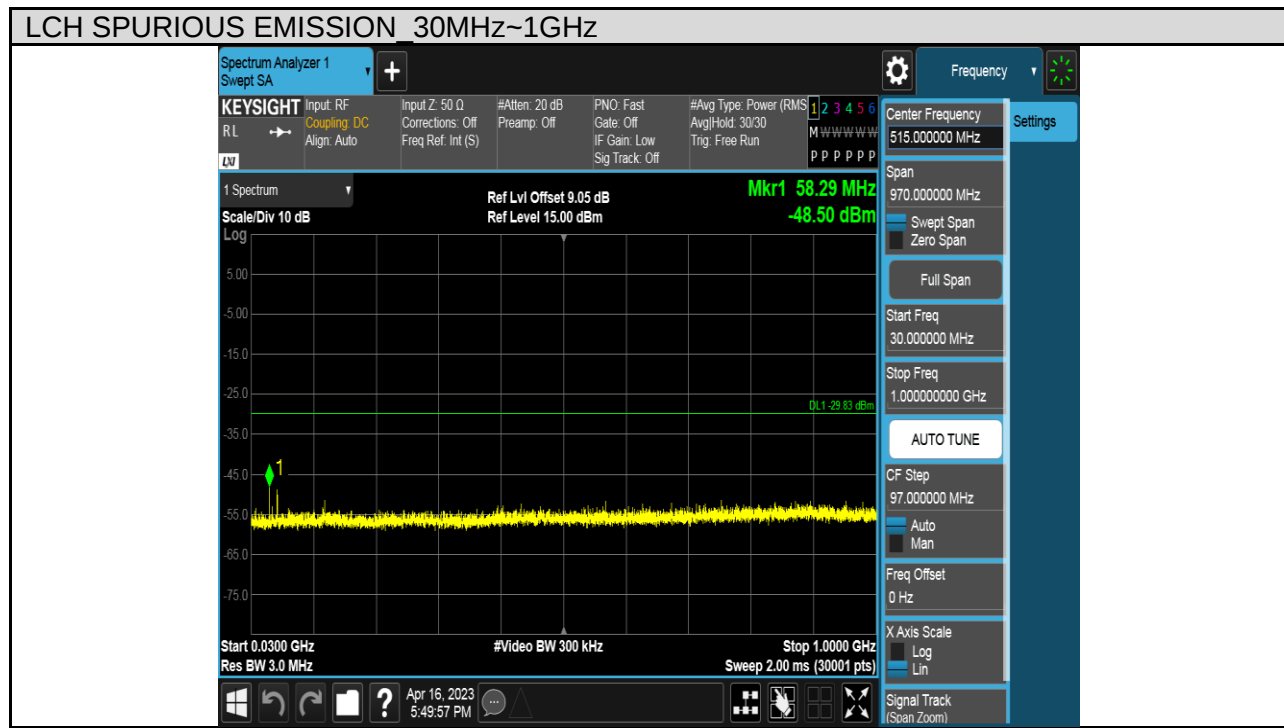
| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11G       | MCH     | PASS    |



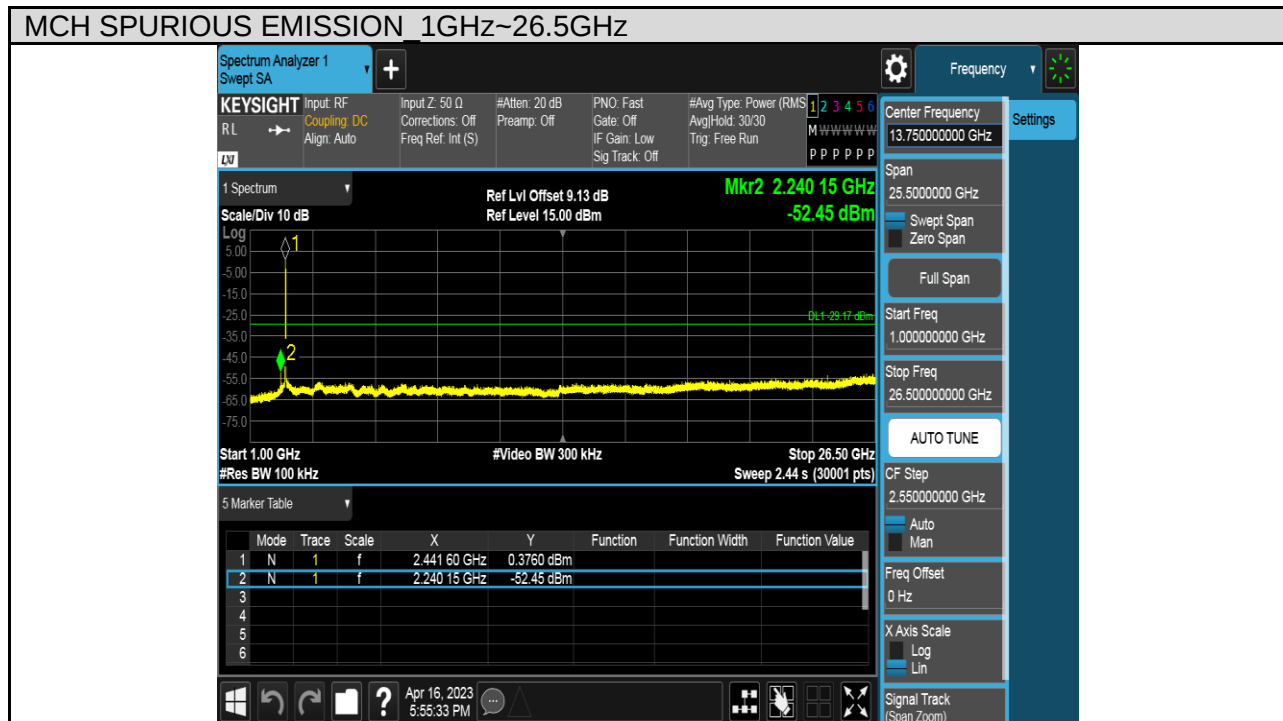
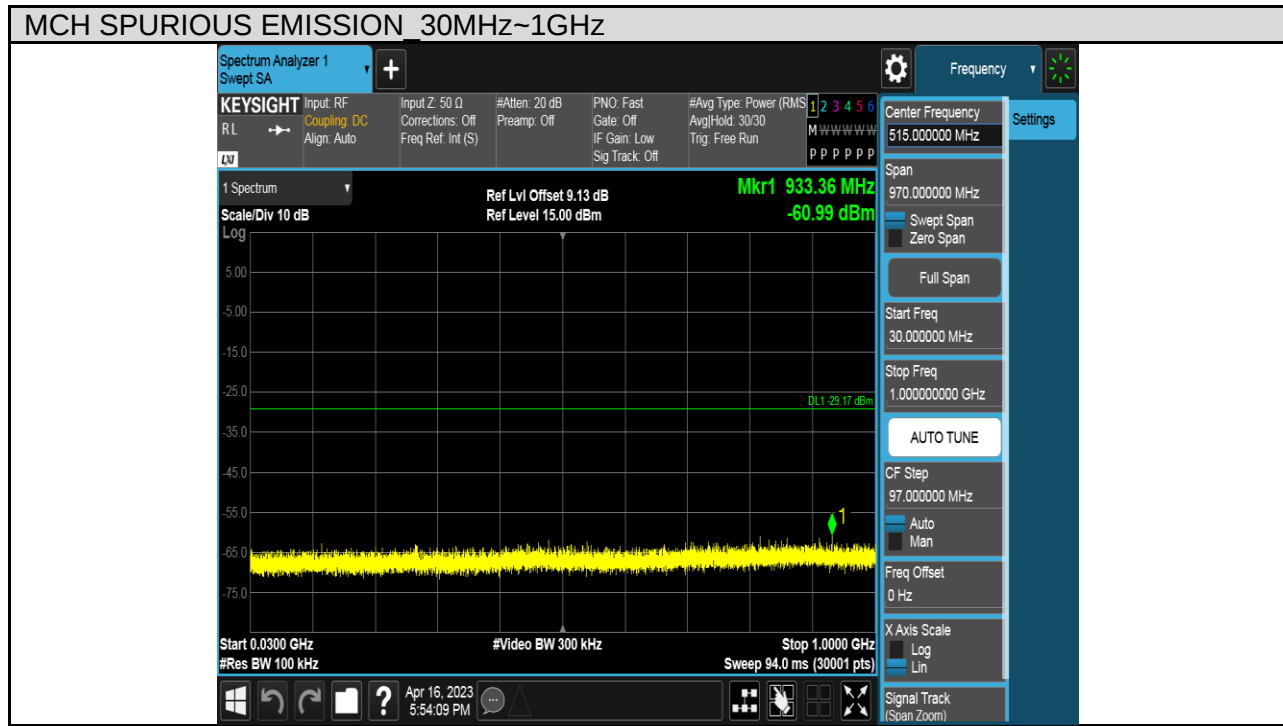
| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11G       | HCH     | PASS    |



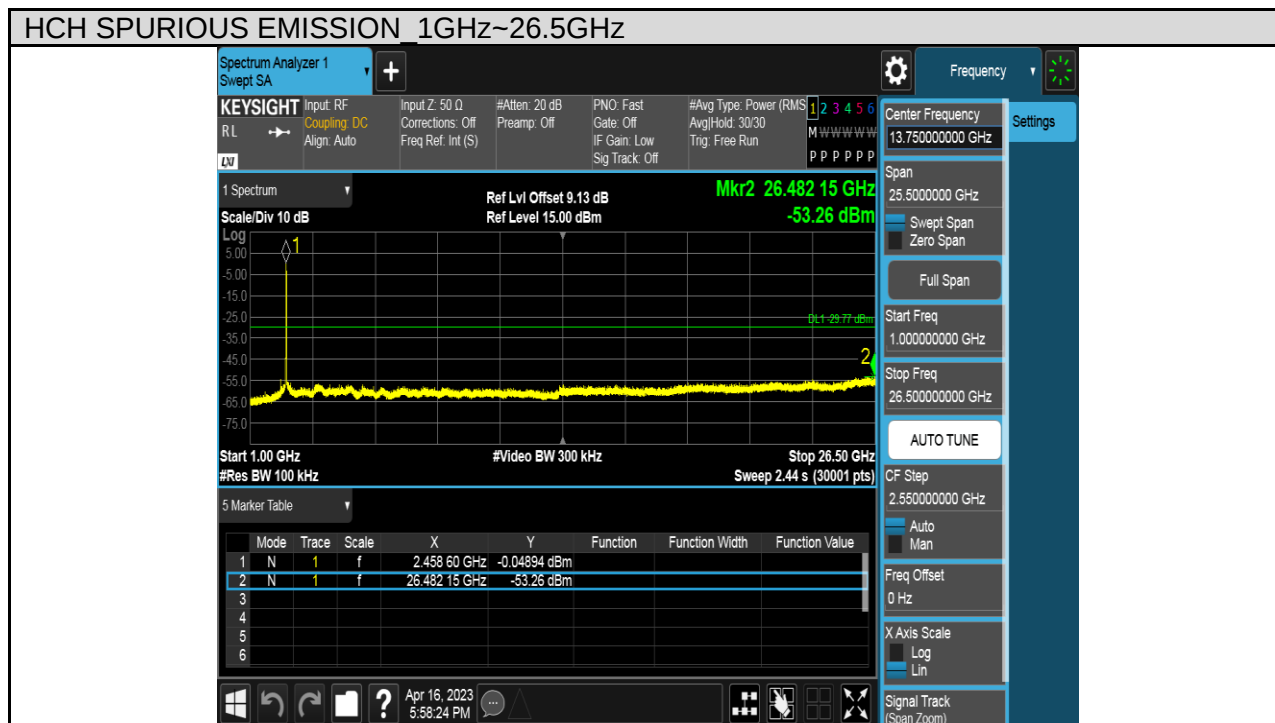
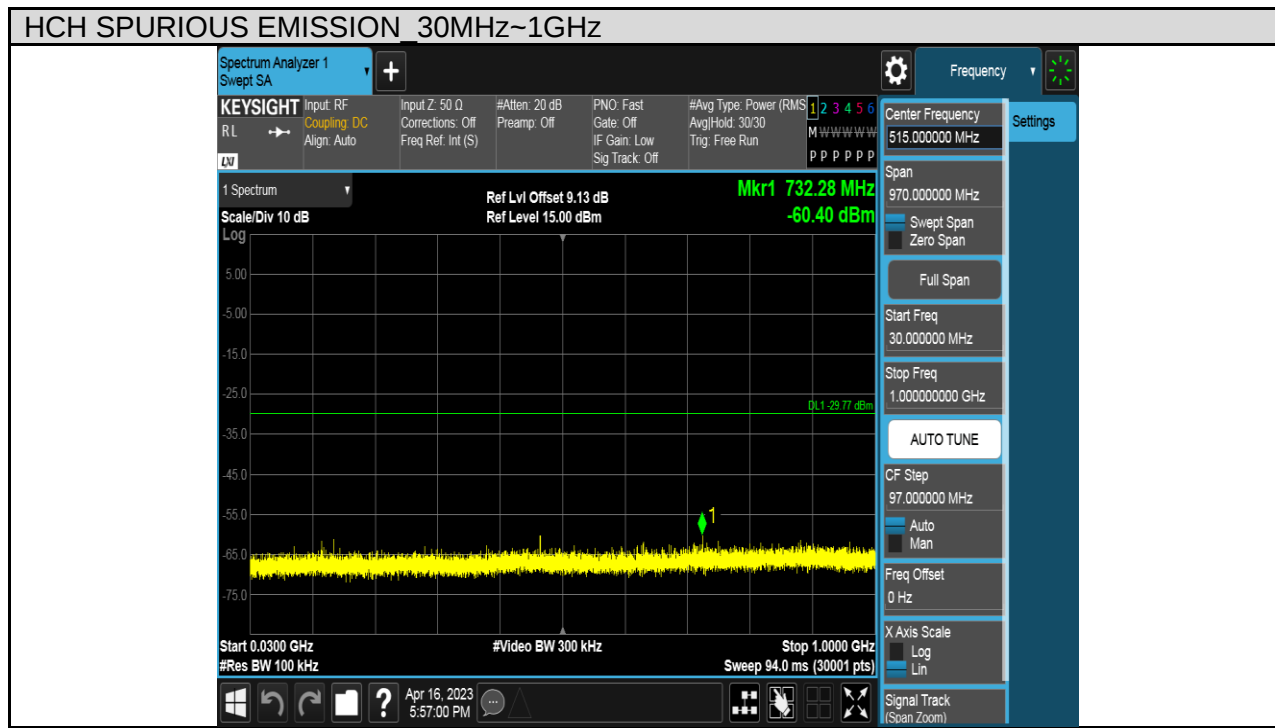
| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11N HT20  | LCH     | PASS    |



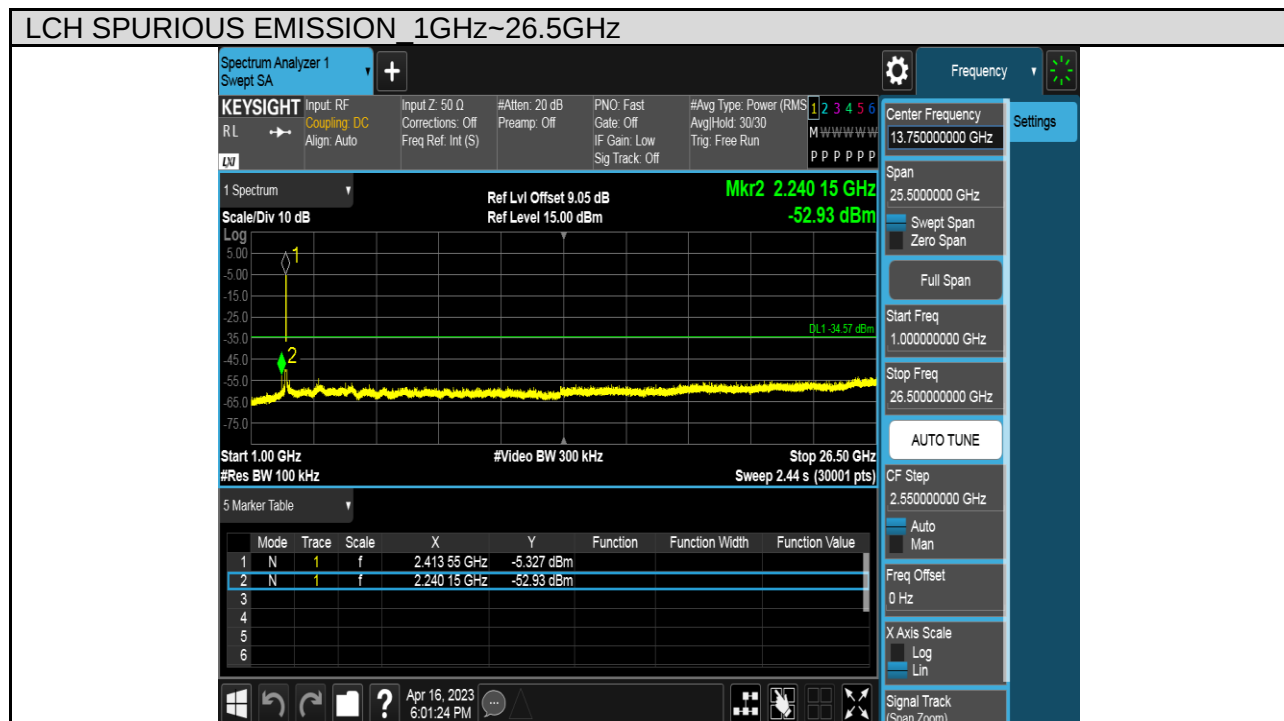
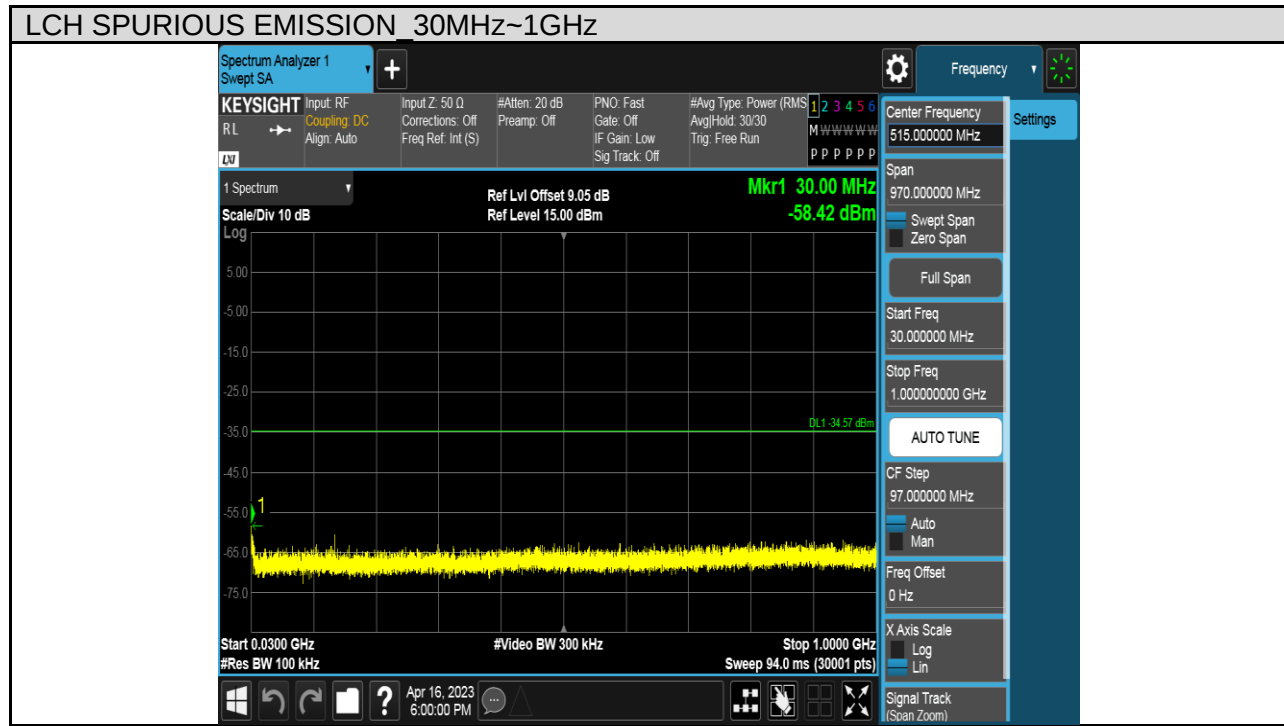
| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11N HT20  | MCH     | PASS    |



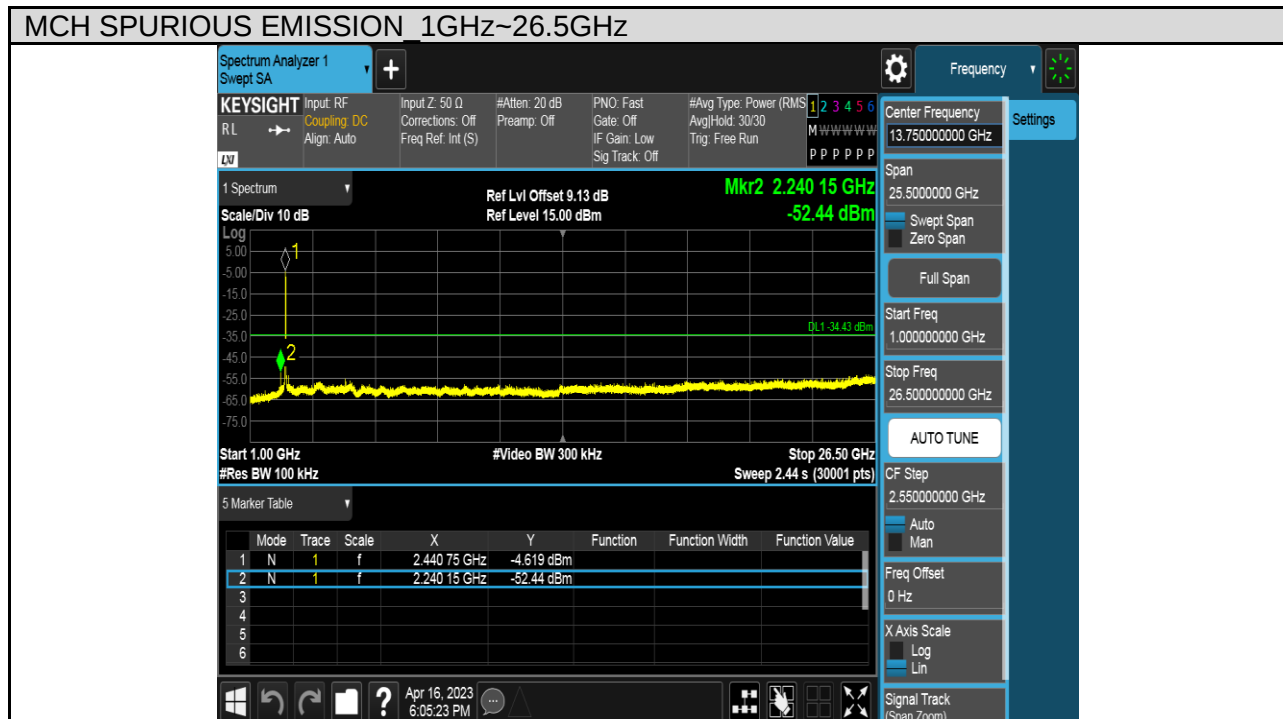
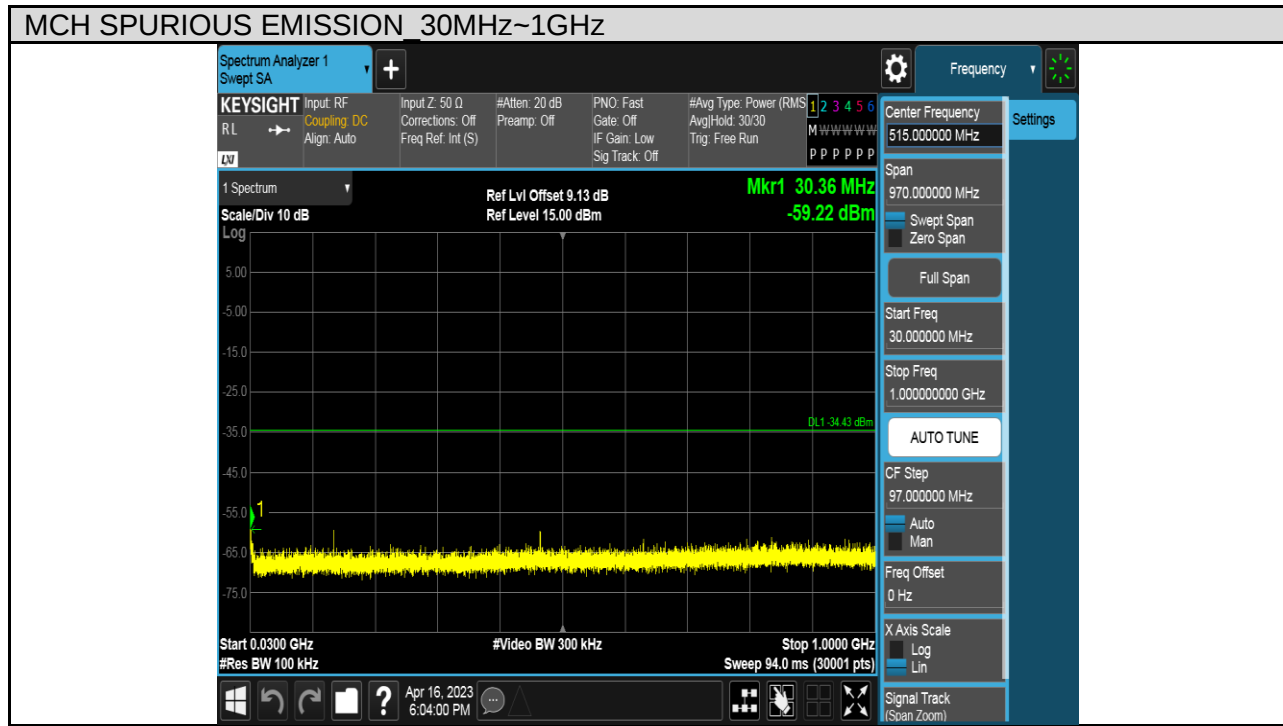
| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11N HT20  | HCH     | PASS    |



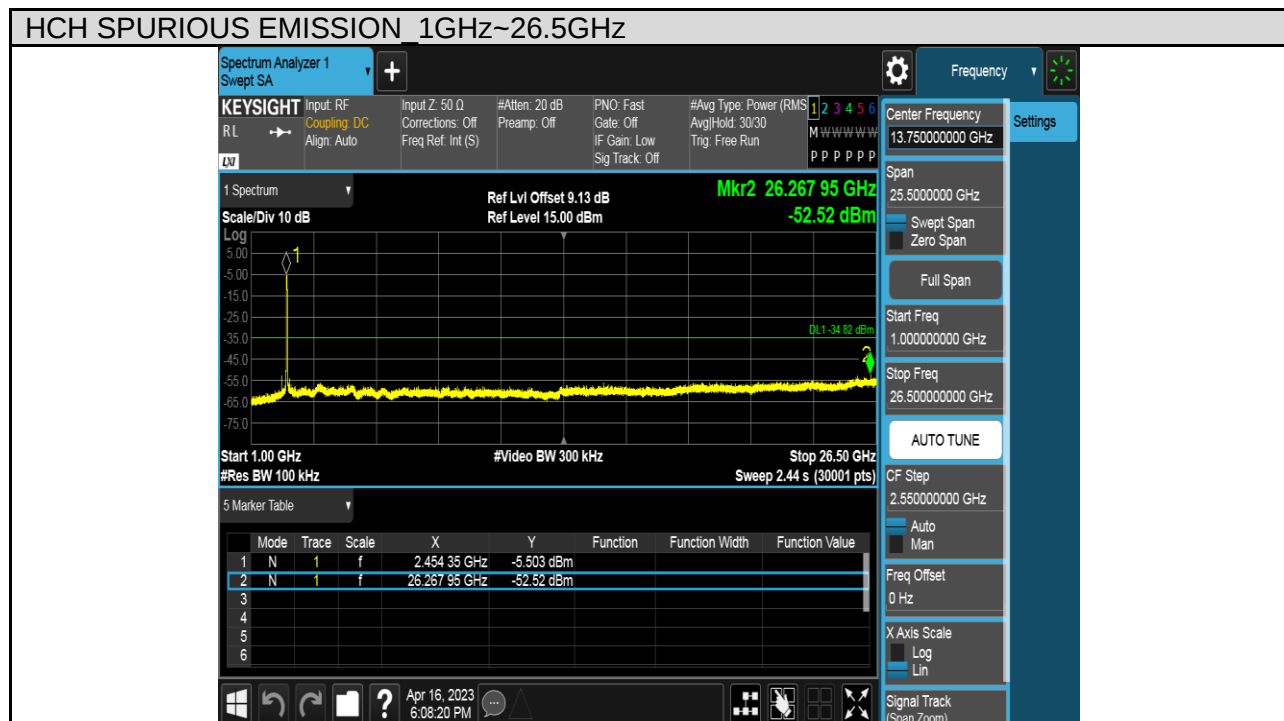
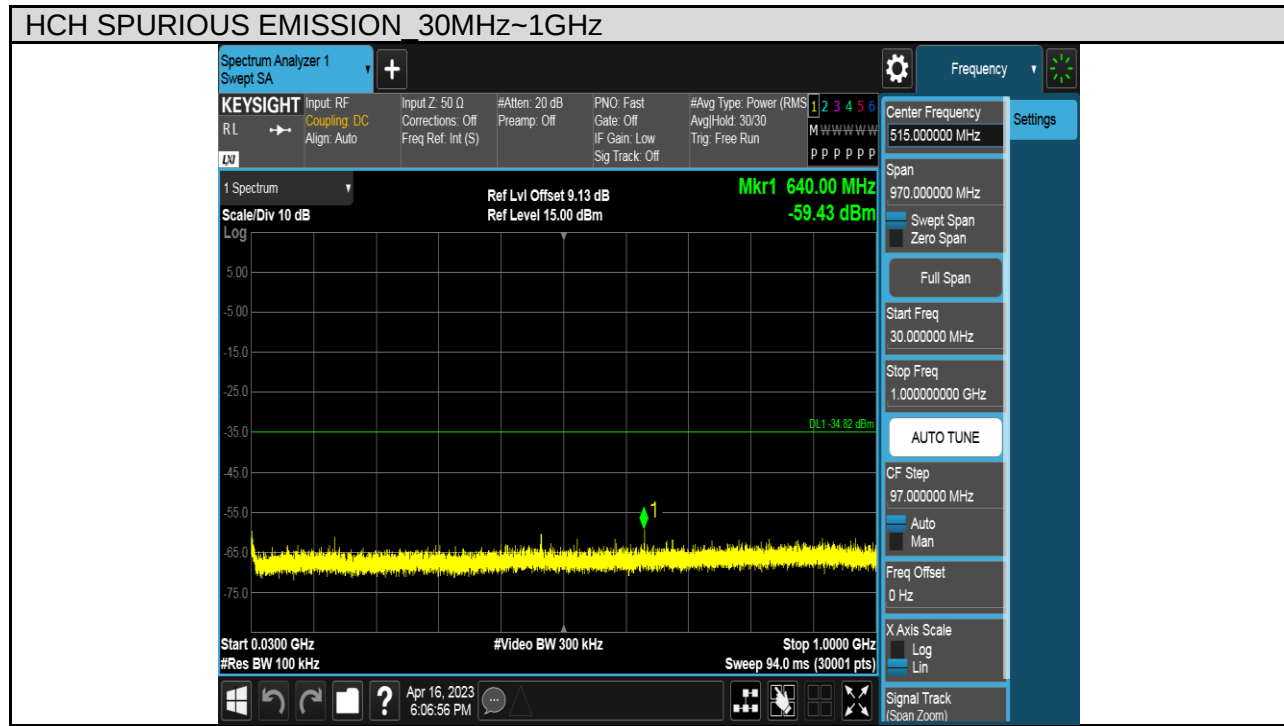
| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11N HT40  | LCH     | PASS    |



| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11N HT40  | MCH     | PASS    |



| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11N HT40  | HCH     | PASS    |



## 8. RADIATED TEST RESULTS

### 8.1. LIMITS AND PROCEDURE

#### LIMITS

Please refer to FCC §15.205 and §15.209, ISSED RSS-247 Clause 5.5, ISSED RSS-GEN Clause 8.9&6.13 (Transmitter)

Radiation Disturbance Test Limit for ISSED (9kHz-1GHz)

Except where otherwise indicated in the applicable RSS, radiated emissions shall comply with the field strength limits shown in table 5 and table 6. Additionally, the level of any transmitter unwanted emission shall not exceed the level of the transmitter's fundamental emission.

| Table 5 – General field strength limits at frequencies above 30 MHz |                                                 |
|---------------------------------------------------------------------|-------------------------------------------------|
| Frequency (MHz)                                                     | Field strength ( $\mu\text{V}/\text{m}$ at 3 m) |
| 30 – 88                                                             | 100                                             |
| 88 – 216                                                            | 150                                             |
| 216 – 960                                                           | 200                                             |
| Above 960                                                           | 500                                             |

| Table 6 – General field strength limits at frequencies below 30 MHz |                                                              |                          |
|---------------------------------------------------------------------|--------------------------------------------------------------|--------------------------|
| Frequency                                                           | Magnetic field strength (H-Field) ( $\mu\text{A}/\text{m}$ ) | Measurement distance (m) |
| 9 - 490 kHz <sup>Note 1</sup>                                       | 6.37/F (F in kHz)                                            | 300                      |
| 490 - 1705 kHz                                                      | 63.7/F (F in kHz)                                            | 30                       |
| 1.705 - 30 MHz                                                      | 0.08                                                         | 30                       |

**Note 1:** The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

Please refer to FCC KDB 558074

Radiation Disturbance Test Limit for FCC (Class B) (9kHz-1GHz)

| Frequency (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|-----------------|-----------------------------------|-------------------------------|
| 0.009~0.490     | 2400/F(kHz)                       | 300                           |
| 0.490~1.705     | 24000/F(kHz)                      | 30                            |
| 1.705~30.0      | 30                                | 30                            |
| 30~88           | 100                               | 3                             |
| 88~216          | 150                               | 3                             |
| 216~960         | 200                               | 3                             |
| 960~1000        | 500                               | 3                             |

Note: 1) At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

(2) At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). This paragraph (f) shall not apply to Access BPL devices operating below 30 MHz.

## Radiation Disturbance Test Limit for FCC (Above 1G)

| Frequency (MHz) | dB(uV/m) (at 3 meters) |         |
|-----------------|------------------------|---------|
|                 | Peak                   | Average |
| Above 1000      | 74                     | 54      |

## Restricted bands of operation

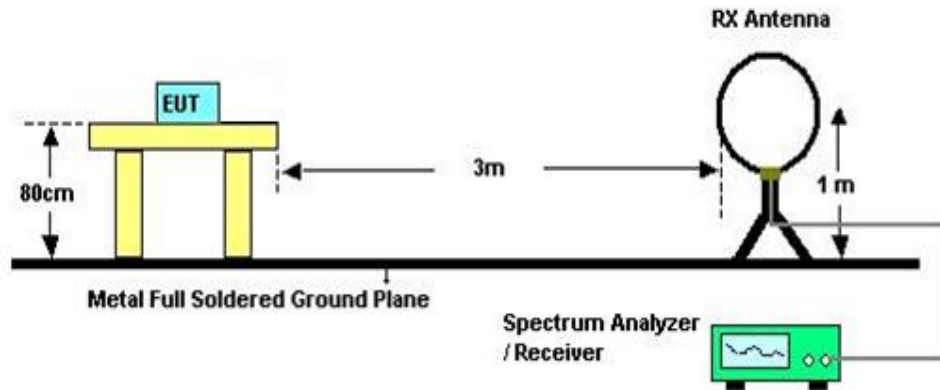
| MHz                      | MHz                 | MHz           | GHz              |
|--------------------------|---------------------|---------------|------------------|
| 0.090-0.110              | 16.42-16.423        | 399.9-410     | 4.5-5.15         |
| <sup>1</sup> 0.495-0.505 | 16.69475-16.69525   | 608-614       | 5.35-5.46        |
| 2.1735-2.1905            | 16.80425-16.80475   | 960-1240      | 7.25-7.75        |
| 4.125-4.128              | 25.5-25.67          | 1300-1427     | 8.025-8.5        |
| 4.17725-4.17775          | 37.5-38.25          | 1435-1626.5   | 9.0-9.2          |
| 4.20725-4.20775          | 73-74.6             | 1645.5-1646.5 | 9.3-9.5          |
| 6.215-6.218              | 74.8-75.2           | 1660-1710     | 10.6-12.7        |
| 6.26775-6.26825          | 108-121.94          | 1718.8-1722.2 | 13.25-13.4       |
| 6.31175-6.31225          | 123-138             | 2200-2300     | 14.47-14.5       |
| 8.291-8.294              | 149.9-150.05        | 2310-2390     | 15.35-16.2       |
| 8.362-8.366              | 156.52475-156.52525 | 2483.5-2500   | 17.7-21.4        |
| 8.37625-8.38675          | 156.7-156.9         | 2690-2900     | 22.01-23.12      |
| 8.41425-8.41475          | 162.0125-167.17     | 3260-3267     | 23.6-24.0        |
| 12.29-12.293             | 167.72-173.2        | 3332-3339     | 31.2-31.8        |
| 12.51975-12.52025        | 240-285             | 3345.8-3358   | 36.43-36.5       |
| 12.57675-12.57725        | 322-335.4           | 3600-4400     | ( <sup>2</sup> ) |
| 13.36-13.41              |                     |               |                  |

Note: <sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup>Above 38.6c

## TEST SETUP AND PROCEDURE

Below 30MHz

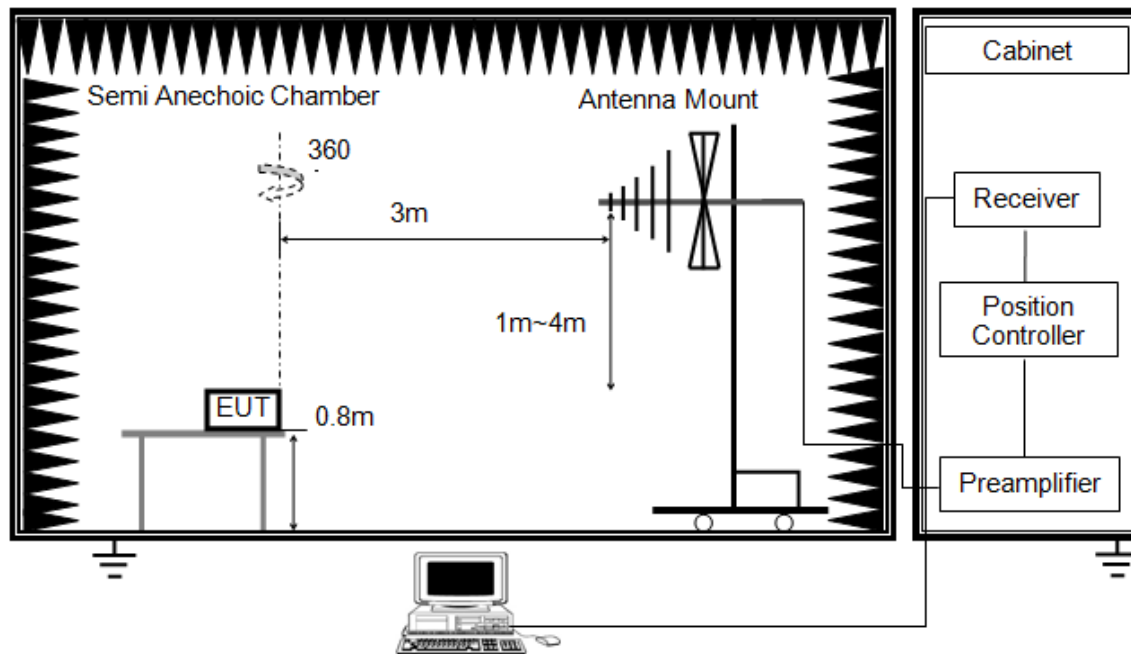


The setting of the spectrum analyser

|          |                                                            |
|----------|------------------------------------------------------------|
| RBW      | 200Hz (From 9kHz to 0.15MHz)/ 9kHz (From 0.15MHz to 30MHz) |
| VBW      | 200Hz (From 9kHz to 0.15MHz)/ 9kHz (From 0.15MHz to 30MHz) |
| Sweep    | Auto                                                       |
| Detector | Peak/QP/ Average                                           |
| Trace    | Max hold                                                   |

1. The testing follows the guidelines in ANSI C63.10-2013
2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 0.8 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1m height antenna tower.
5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector
6. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. For the actual test configuration, please refer to the related item in this test report (Photographs of the Test Configuration)

Below 1G

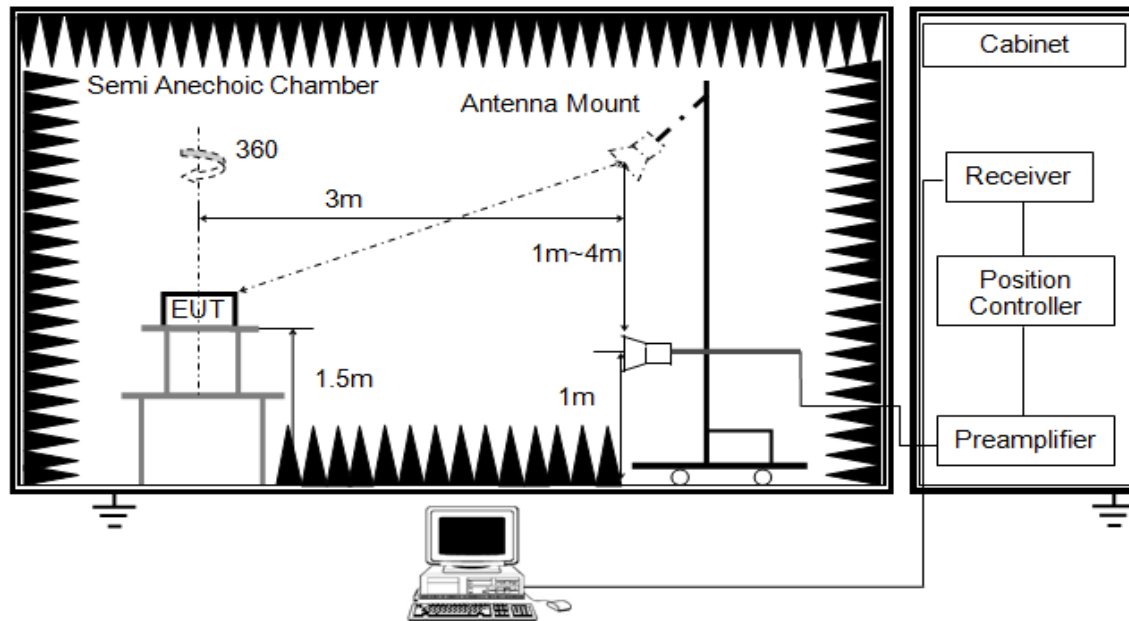


The setting of the spectrum analyser

|          |          |
|----------|----------|
| RBW      | 120K     |
| VBW      | 300K     |
| Sweep    | Auto     |
| Detector | Peak/QP  |
| Trace    | Max hold |

1. The testing follows the guidelines in ANSI C63.10-2013.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 0.8 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
6. For the actual test configuration, please refer to the related item in this test report (Photographs of the Test Configuration)

Above 1G

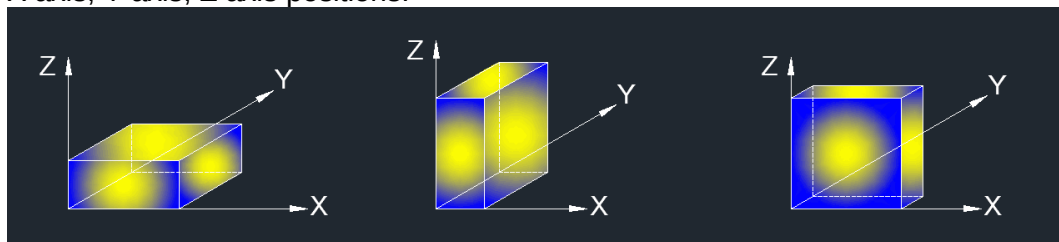


The setting of the spectrum analyser

|          |                           |
|----------|---------------------------|
| RBW      | 1M                        |
| VBW      | PEAK:3M<br>AVG: See note6 |
| Sweep    | Auto                      |
| Detector | Peak                      |
| Trace    | Max hold                  |

1. The testing follows the guidelines in ANSI C63.10-2013.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 1.5m above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. For measurement above 1GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.
6. For measurements above 1 GHz, the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements; and 1 MHz resolution bandwidth with video bandwidth  $\geq 1/T$  but not less than the setting list in section 7.1 when use peak detector, max hold to be run for at least  $[50 \times (1/\text{Duty Cycle})]$  traces for average measurements. For the Duty Cycle need to refer the results in section 7.1.
7. For the actual test configuration, please refer to the related item in this test report (Photographs of the Test Configuration)

X axis, Y axis, Z axis positions:



Note: For all radiated test, EUT in one orthogonal axis (X axis) emissions had been tested and recorded in the report.

## 8.2. TEST ENVIRONMENT

|                     |        |                   |         |
|---------------------|--------|-------------------|---------|
| Temperature         | 22°C   | Relative Humidity | 56%     |
| Atmosphere Pressure | 101kPa | Test Voltage      | AC 120V |

## 8.3. RESTRICTED BANDEDGE

### TEST RESULT TABLE

| Test Mode | Channel | Puw(dBm) | Verdict |
|-----------|---------|----------|---------|
| 11B       | LCH     | <Limit   | PASS    |
|           | MCH     | <Limit   | PASS    |
|           | HCH     | <Limit   | PASS    |
| 11G       | LCH     | <Limit   | PASS    |
|           | MCH     | <Limit   | PASS    |
|           | HCH     | <Limit   | PASS    |
| 11N HT20  | LCH     | <Limit   | PASS    |
|           | MCH     | <Limit   | PASS    |
|           | HCH     | <Limit   | PASS    |
| 11N HT40  | LCH     | <Limit   | PASS    |
|           | MCH     | <Limit   | PASS    |
|           | HCH     | <Limit   | PASS    |