

## Appendix A

### RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: shoplight

Trade Mark: Bravoled, Atomi

Test Model: BL-LKSE4F-42W-XX-(WIFI)

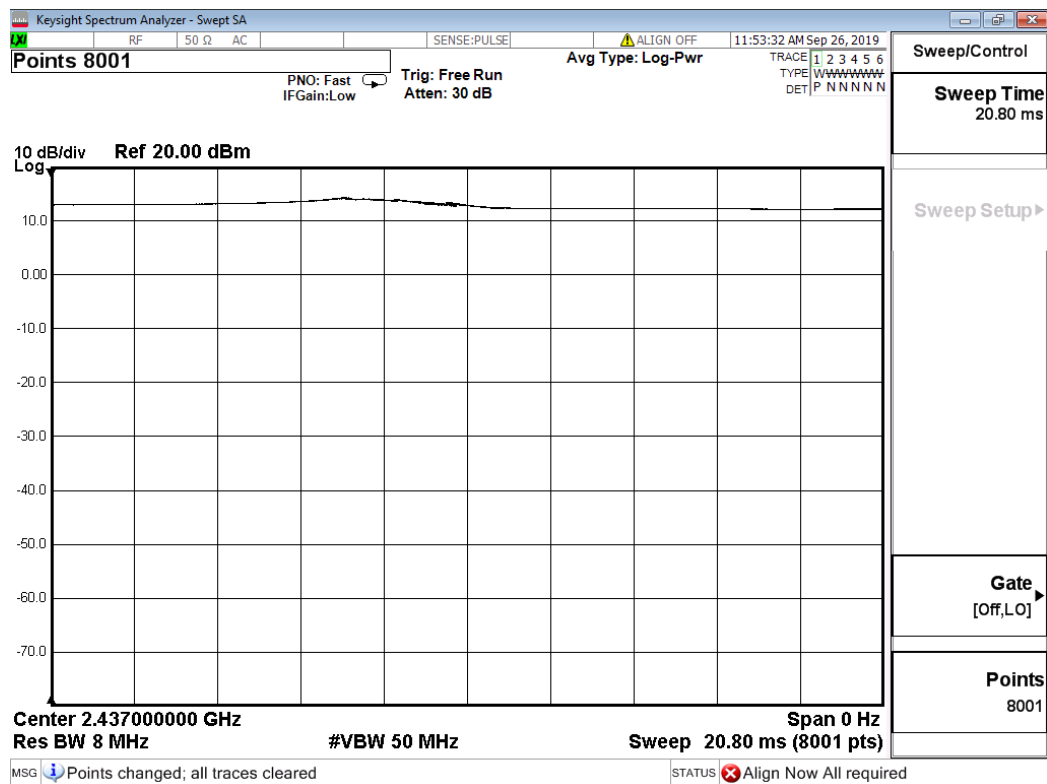
#### Environmental Conditions

|                    |             |
|--------------------|-------------|
| Temperature:       | 23.6 ° C    |
| Relative Humidity: | 56%         |
| ATM Pressure:      | 100.0 kPa   |
| Test Engineer:     | CHUANG WANG |
| Supervised by:     | JAYDEN ZHUO |

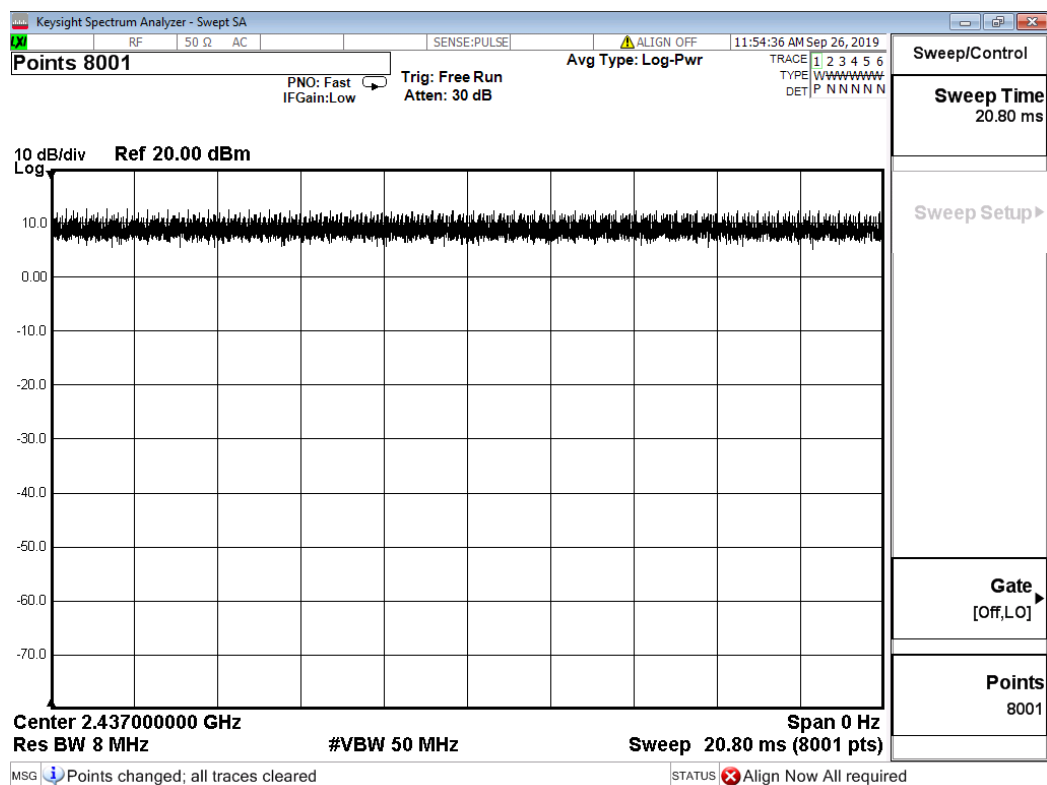
#### A.1 Duty Cycle

| Test Mode | Test Channel | Ant  | Duty Cycle[%] | Verdict |
|-----------|--------------|------|---------------|---------|
| 11B       | 2412         | Ant1 | 100           | PASS    |
| 11G       | 2412         | Ant1 | 100           | PASS    |
| 11N20SISO | 2412         | Ant1 | 100           | PASS    |
| 11N40SISO | 2412         | Ant1 | 100           | PASS    |

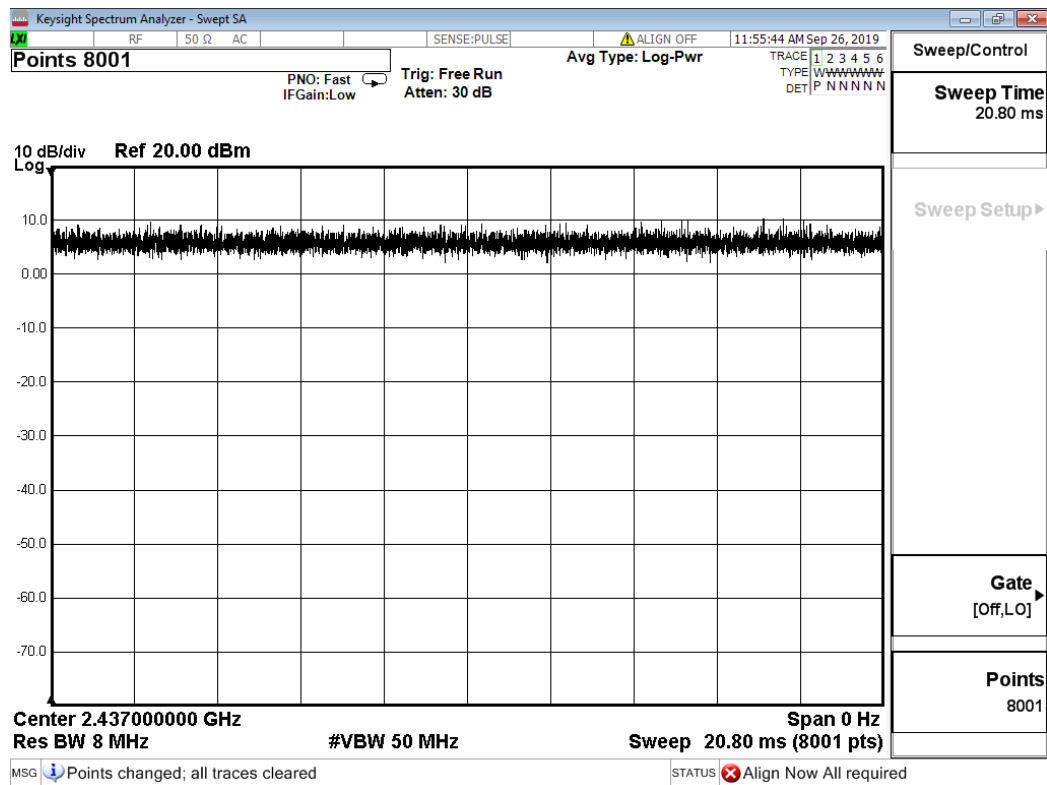
## Duty Cycle\_11B\_2437\_Ant1



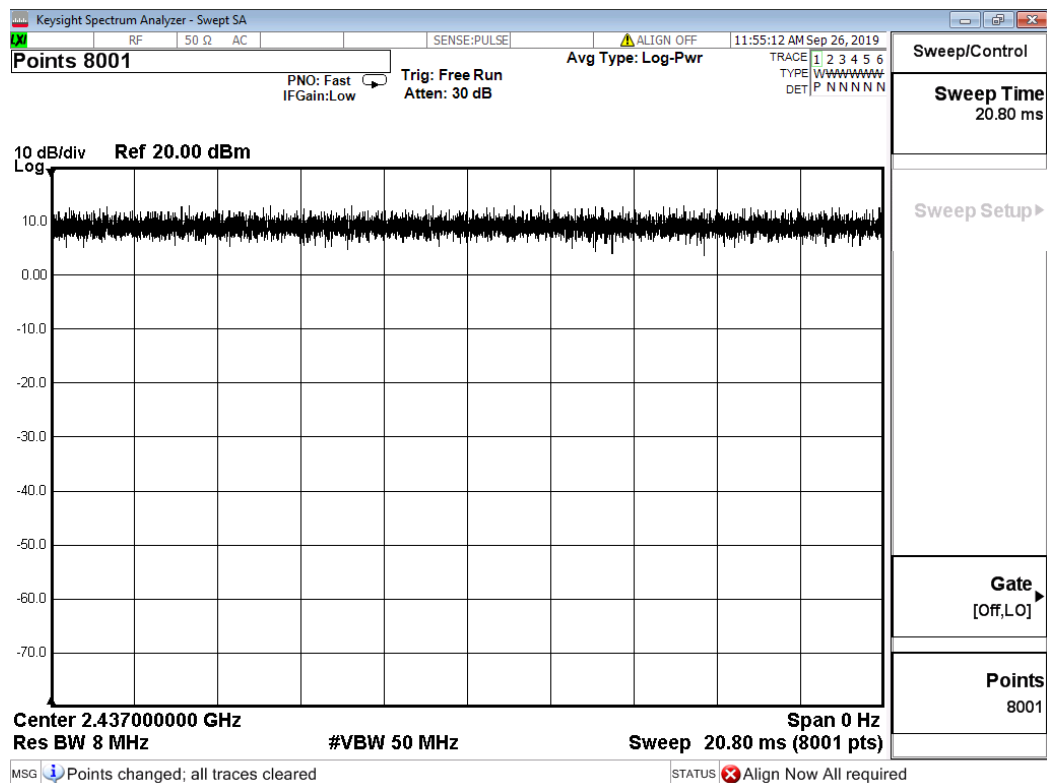
## Duty Cycle\_11G\_2437\_Ant1



## Duty Cycle\_11N20SISO\_2437\_Ant1



## Duty Cycle\_11N40SISO\_2437\_Ant1

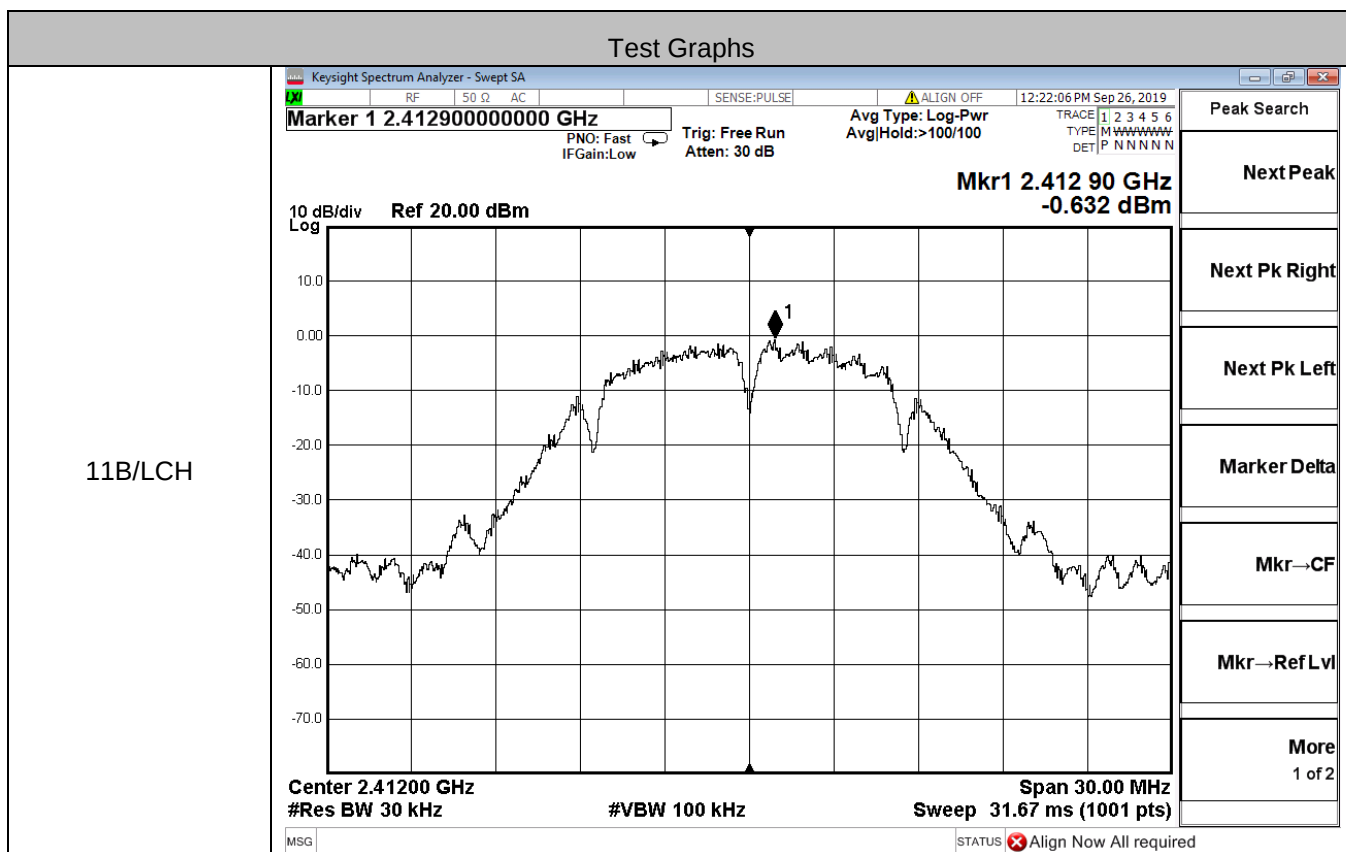


**A.2 Maximum Conducted Output Power**

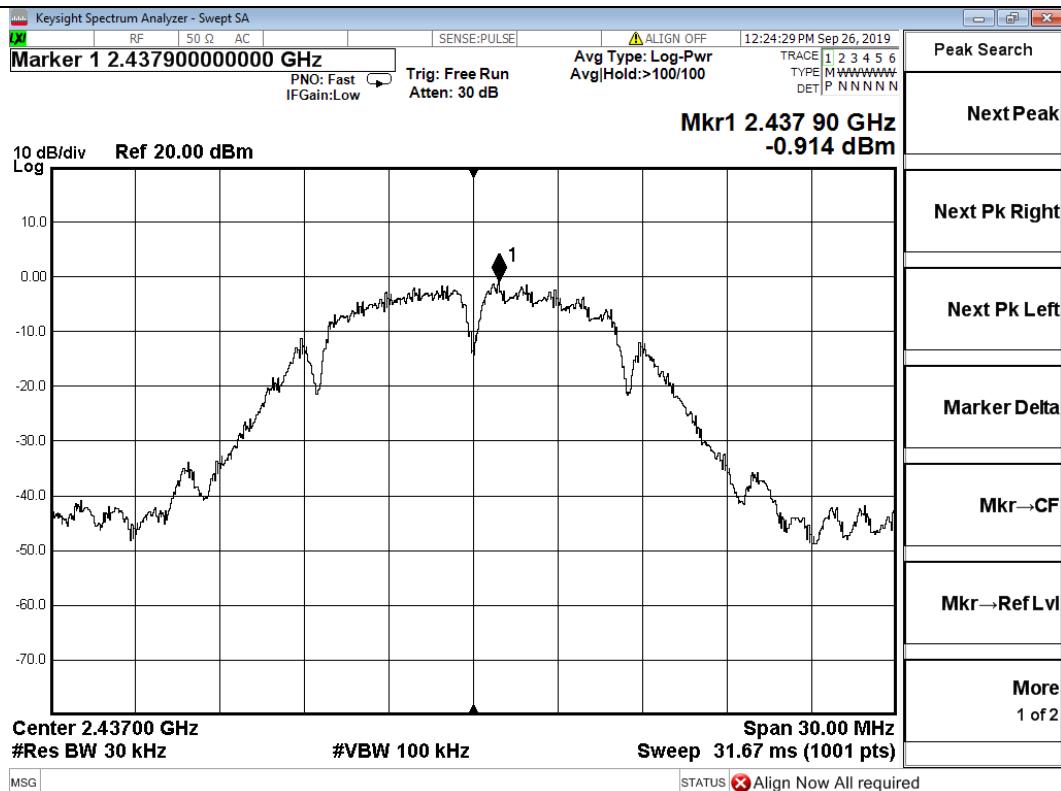
| Mode      | Channel | Meas. Peak Level<br>[dBm] | Limit [dBm] | Verdict |
|-----------|---------|---------------------------|-------------|---------|
| 11B       | LCH     | 13.69                     | 30          | PASS    |
|           | MCH     | 14.29                     | 30          | PASS    |
|           | HCH     | 14.04                     | 30          | PASS    |
| 11G       | LCH     | 13.81                     | 30          | PASS    |
|           | MCH     | 14.31                     | 30          | PASS    |
|           | HCH     | 14.71                     | 30          | PASS    |
| 11N20SISO | LCH     | 11.62                     | 30          | PASS    |
|           | MCH     | 10.86                     | 30          | PASS    |
|           | HCH     | 11.71                     | 30          | PASS    |
| 11N40SISO | LCH     | 13.93                     | 30          | PASS    |
|           | MCH     | 13.97                     | 30          | PASS    |
|           | HCH     | 14.13                     | 30          | PASS    |

### A.3 Maximum Power Spectral Density

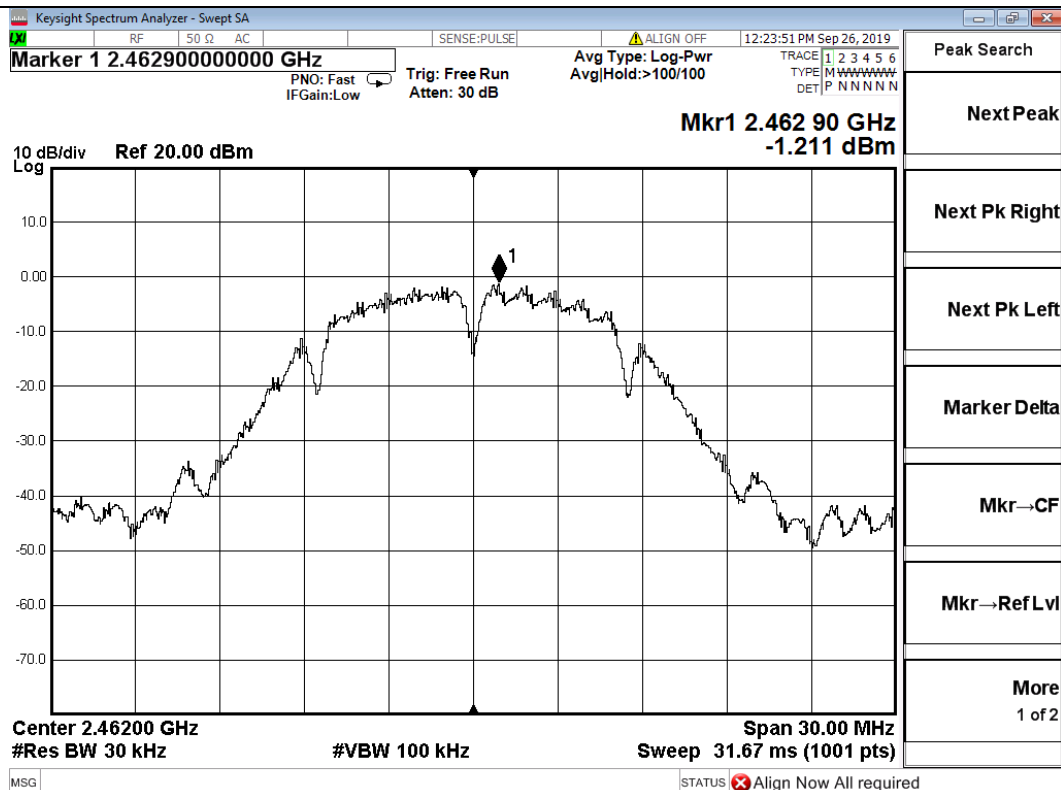
| Mode      | Channel | Meas.Level<br>[dBm/30KHz] | Limit<br>[dBm/3KHz] | Verdict |
|-----------|---------|---------------------------|---------------------|---------|
| 11B       | LCH     | -0.632                    | 8                   | PASS    |
|           | MCH     | -0.914                    | 8                   | PASS    |
|           | HCH     | -1.211                    | 8                   | PASS    |
| 11G       | LCH     | -6.341                    | 8                   | PASS    |
|           | MCH     | -5.896                    | 8                   | PASS    |
|           | HCH     | -6.394                    | 8                   | PASS    |
| 11N20SISO | LCH     | -5.677                    | 8                   | PASS    |
|           | MCH     | -5.585                    | 8                   | PASS    |
|           | HCH     | -5.278                    | 8                   | PASS    |
| 11N40SISO | LCH     | -7.946                    | 8                   | PASS    |
|           | MCH     | -7.358                    | 8                   | PASS    |
|           | HCH     | -8.516                    | 8                   | PASS    |



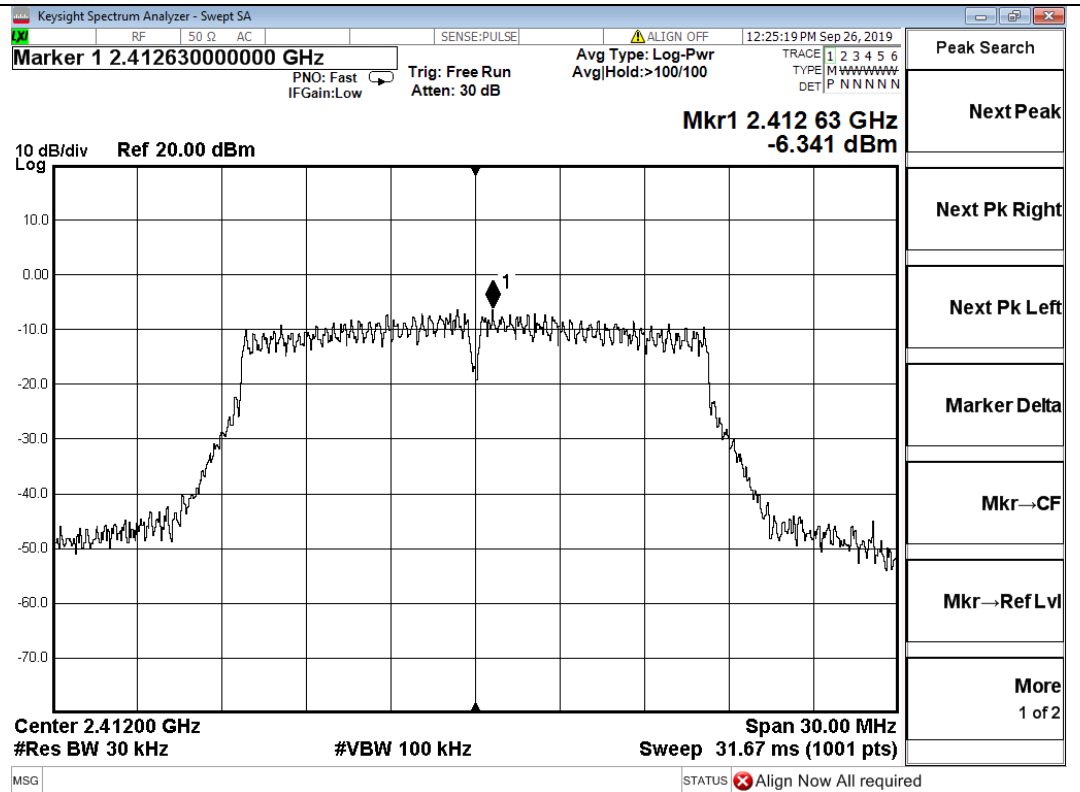
11B/MCH



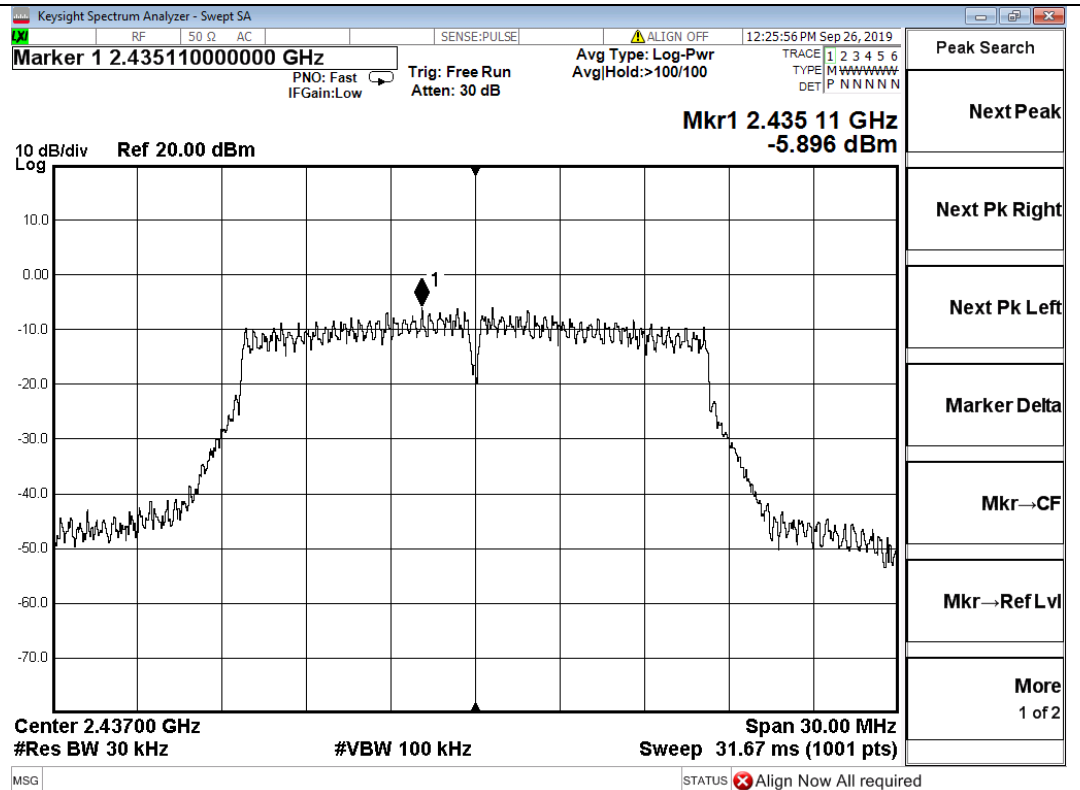
11B/HCH



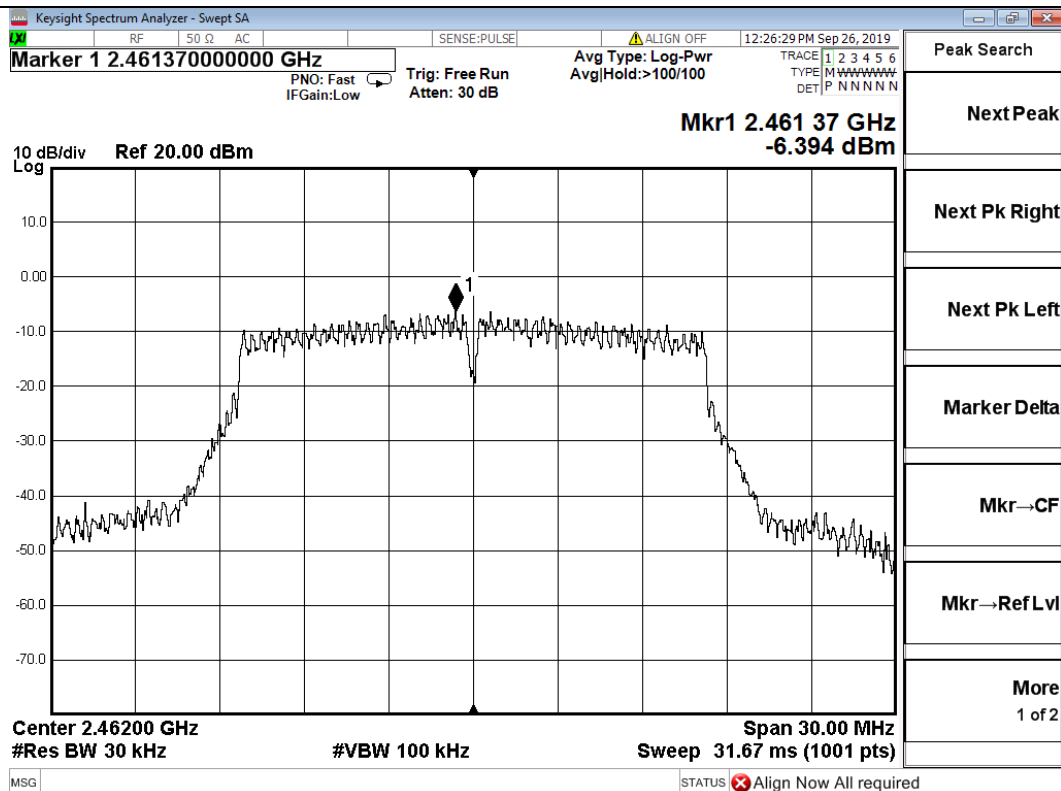
11G/LCH



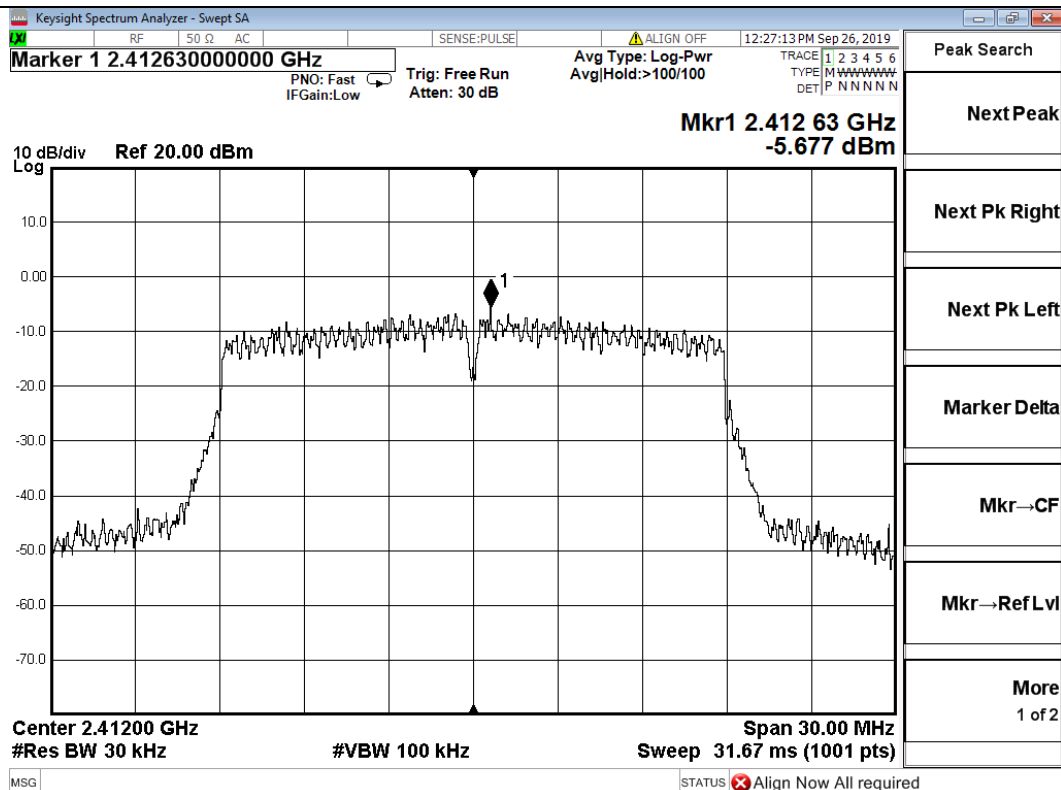
11G/MCH



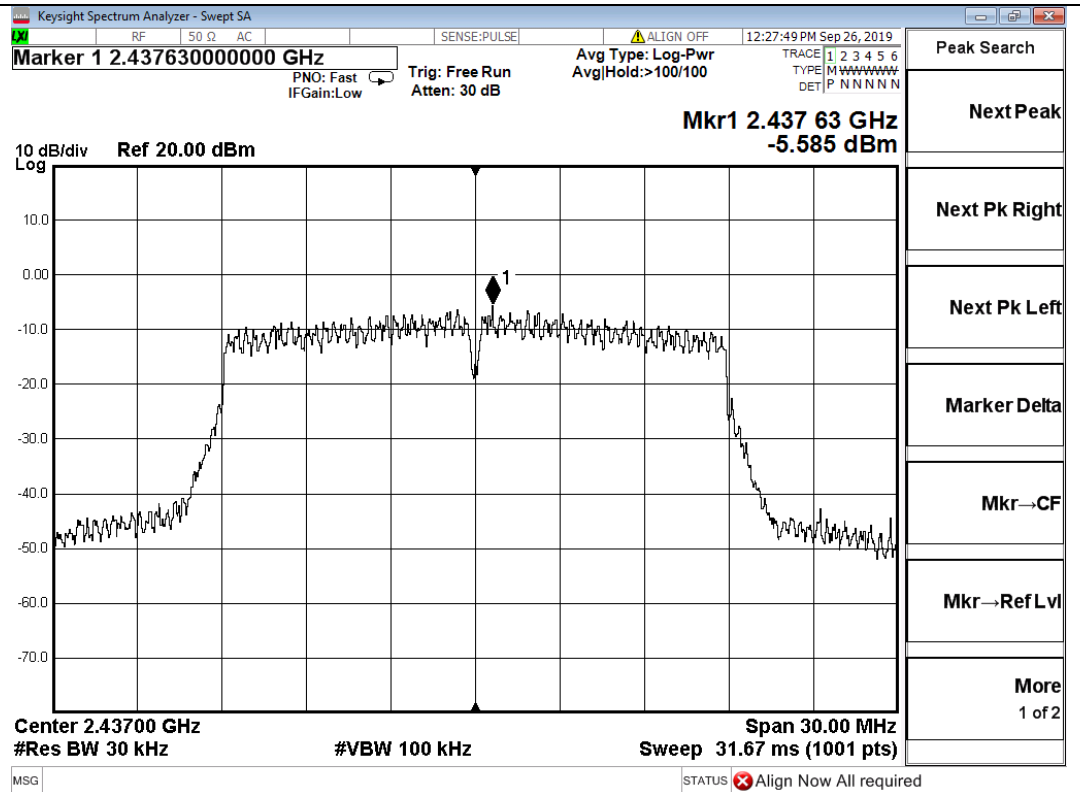
11G/HCH



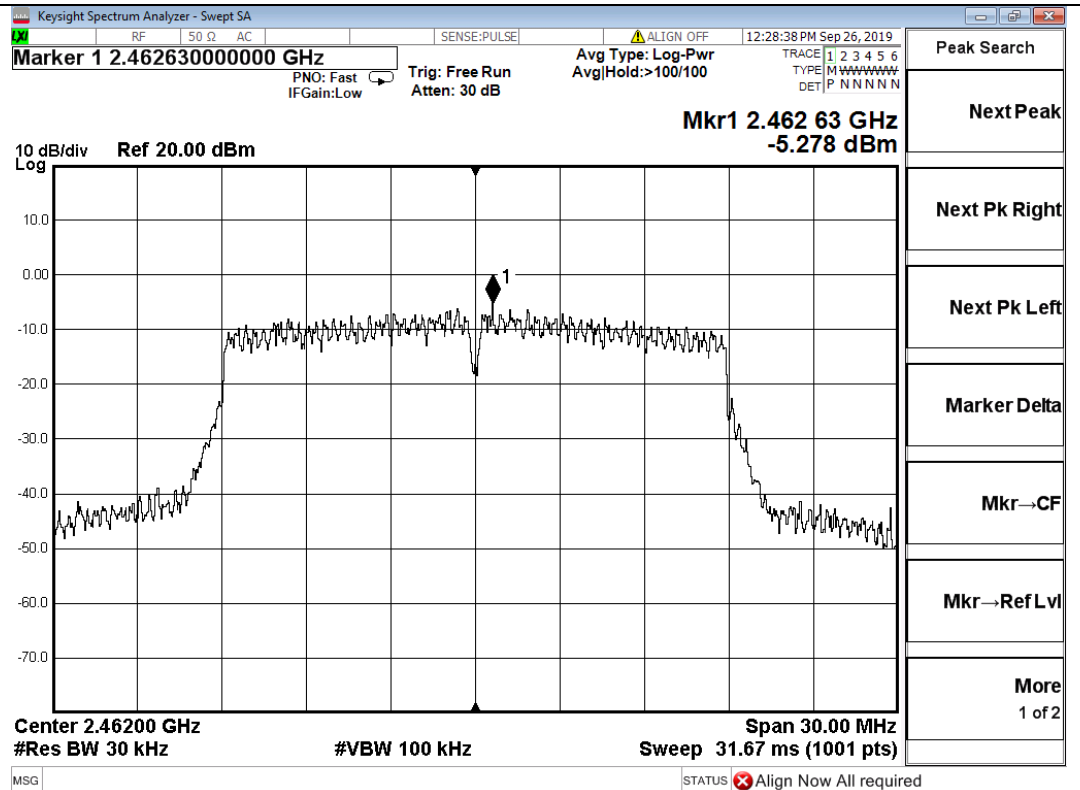
11N20SISO/LCH



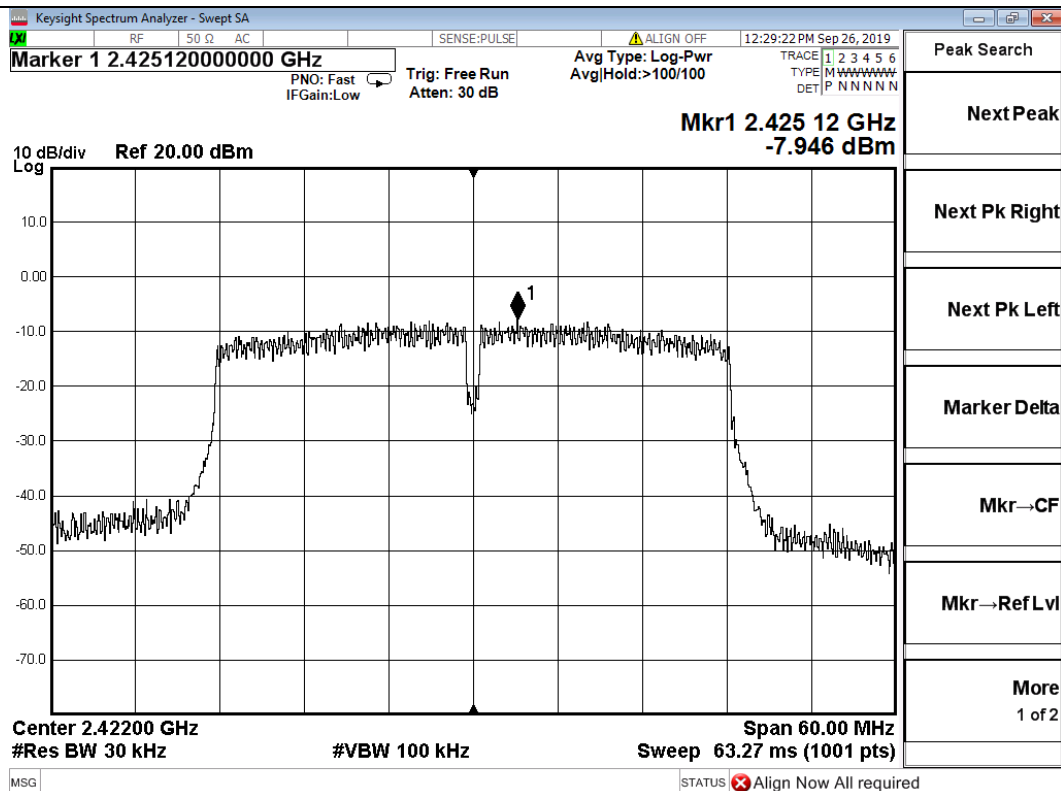
11N20SISO/MCH



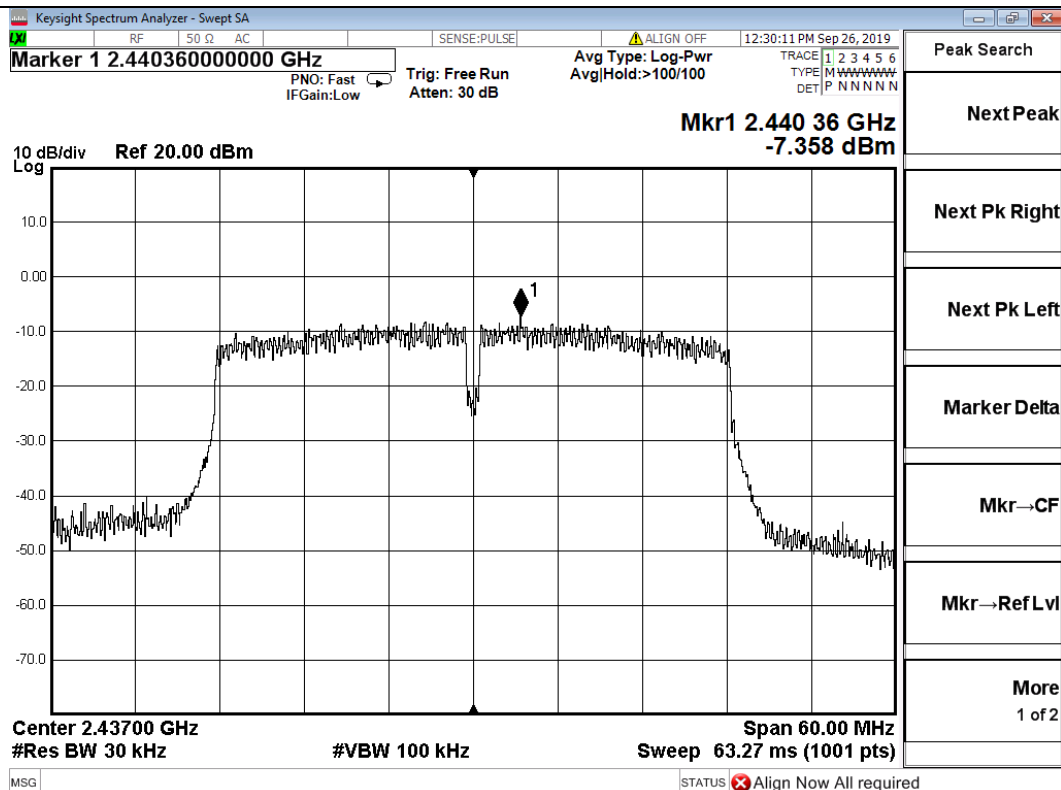
11N20SISO/HCH



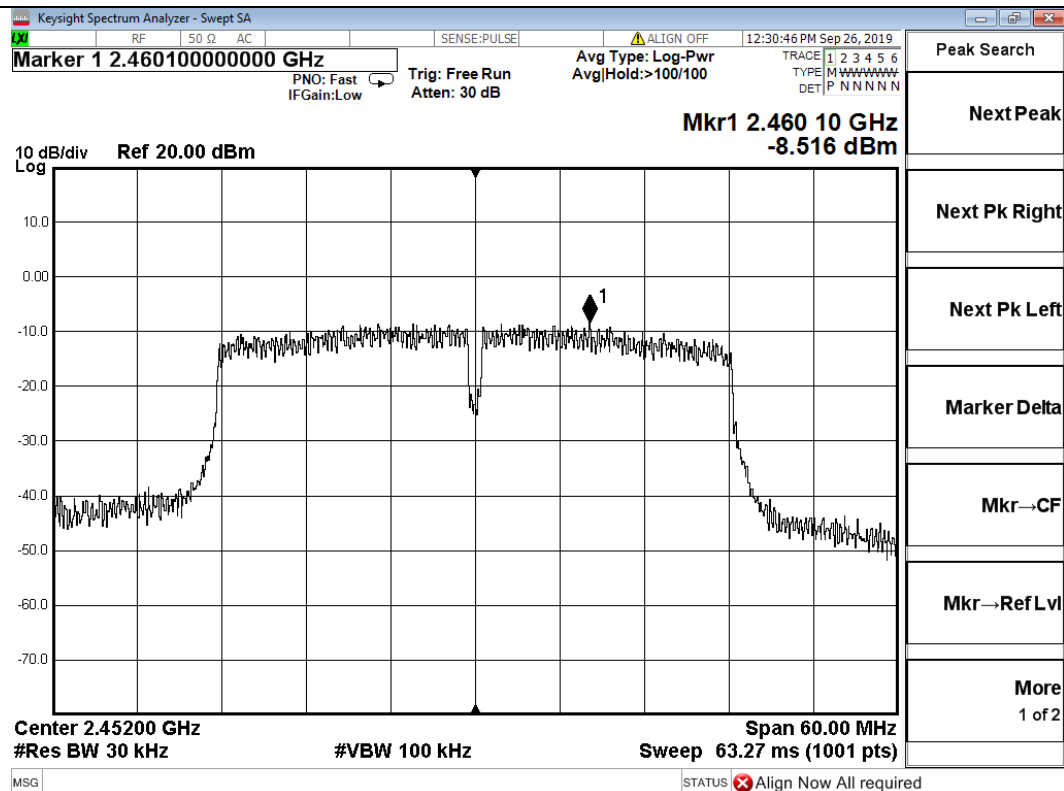
11N40SISO/LCH



11N40SISO/MCH

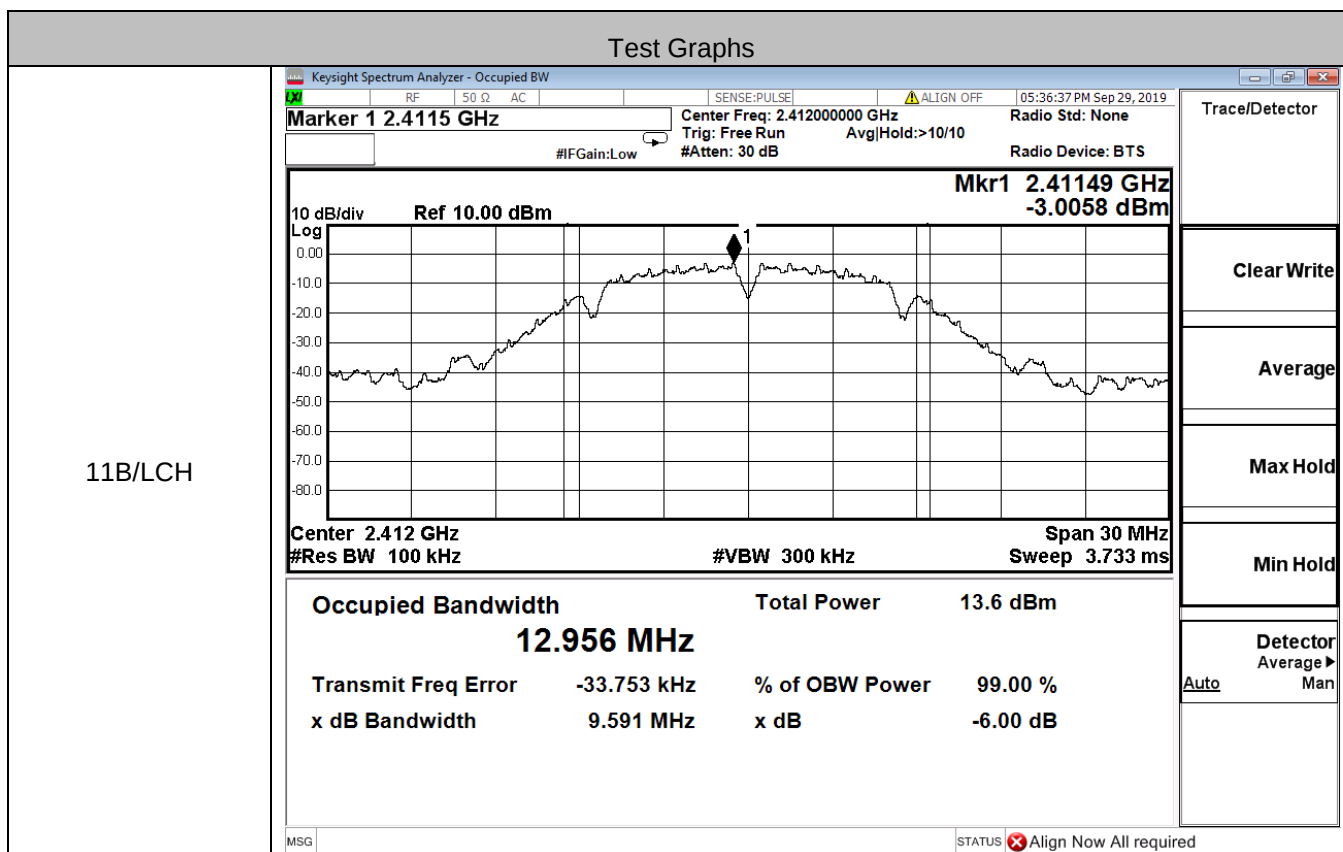


11N40SISO/HCH

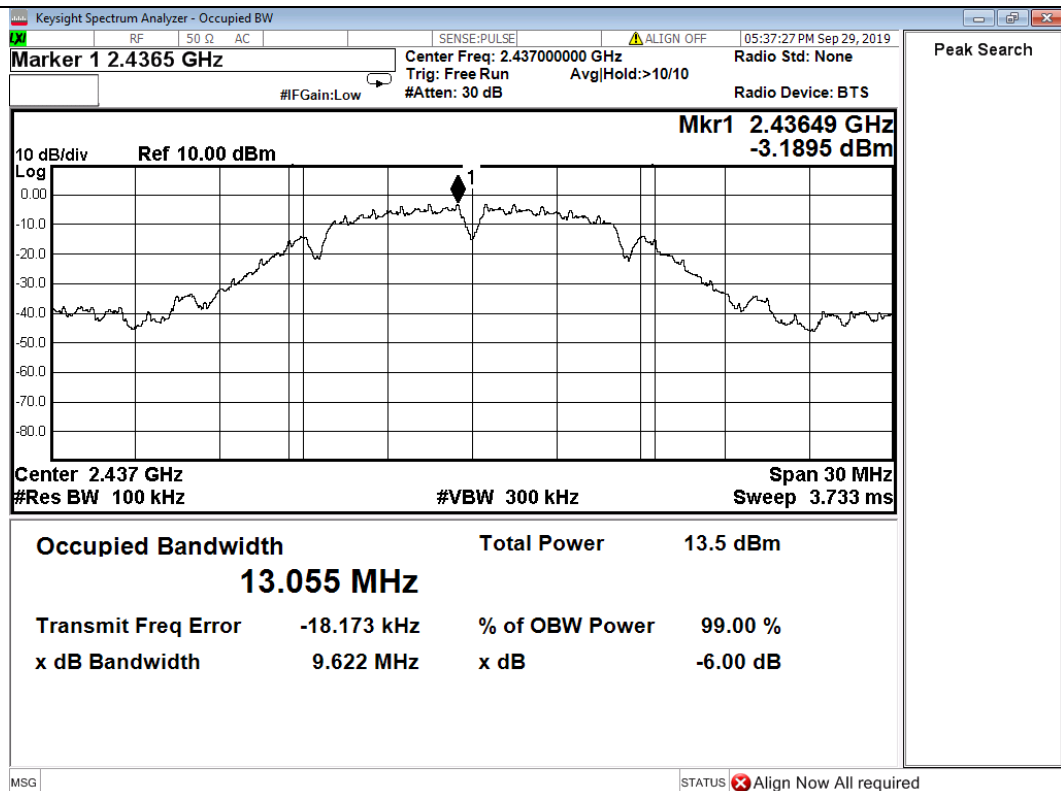


## A.4 6dB Bandwidth

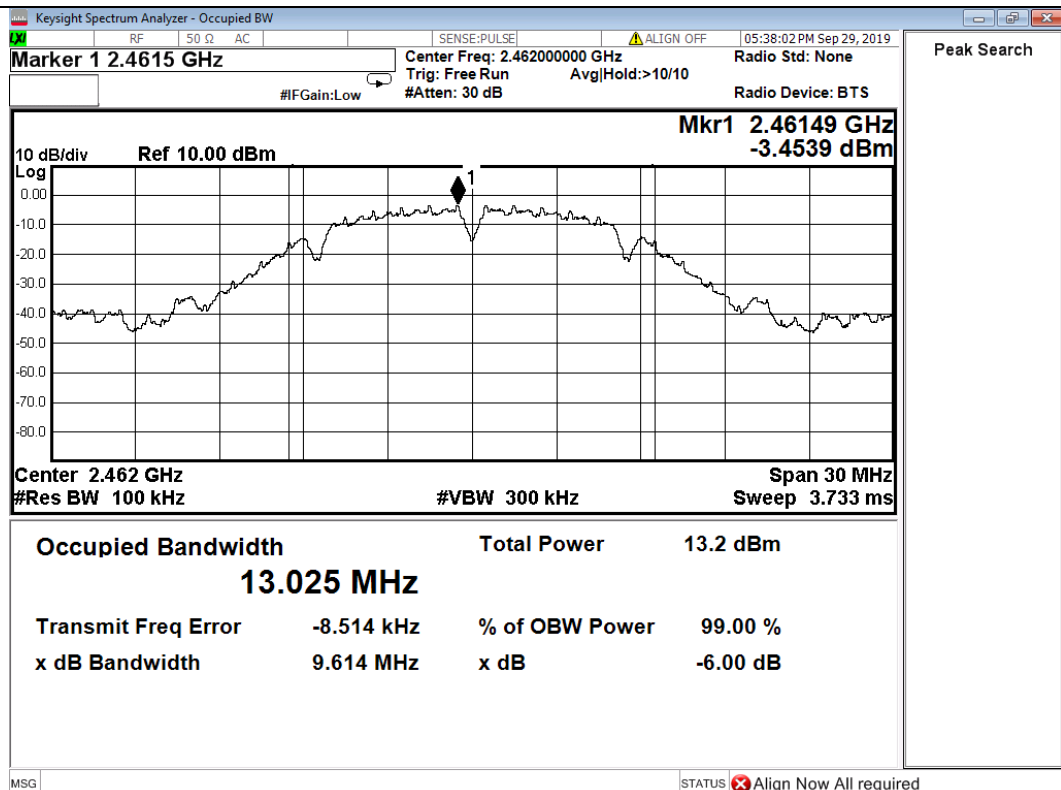
| Mode      | Channel | 6dB Bandwidth [MHz] | Limit [MHz] | Verdict |
|-----------|---------|---------------------|-------------|---------|
| 11B       | LCH     | 12.96               | $\geq 0.5$  | PASS    |
|           | MCH     | 13.06               | $\geq 0.5$  | PASS    |
|           | HCH     | 13.03               | $\geq 0.5$  | PASS    |
| 11G       | LCH     | 16.38               | $\geq 0.5$  | PASS    |
|           | MCH     | 16.42               | $\geq 0.5$  | PASS    |
|           | HCH     | 16.38               | $\geq 0.5$  | PASS    |
| 11N20SISO | LCH     | 17.56               | $\geq 0.5$  | PASS    |
|           | MCH     | 17.57               | $\geq 0.5$  | PASS    |
|           | HCH     | 17.57               | $\geq 0.5$  | PASS    |
| 11N40SISO | LCH     | 35.88               | $\geq 0.5$  | PASS    |
|           | MCH     | 35.88               | $\geq 0.5$  | PASS    |
|           | HCH     | 35.89               | $\geq 0.5$  | PASS    |



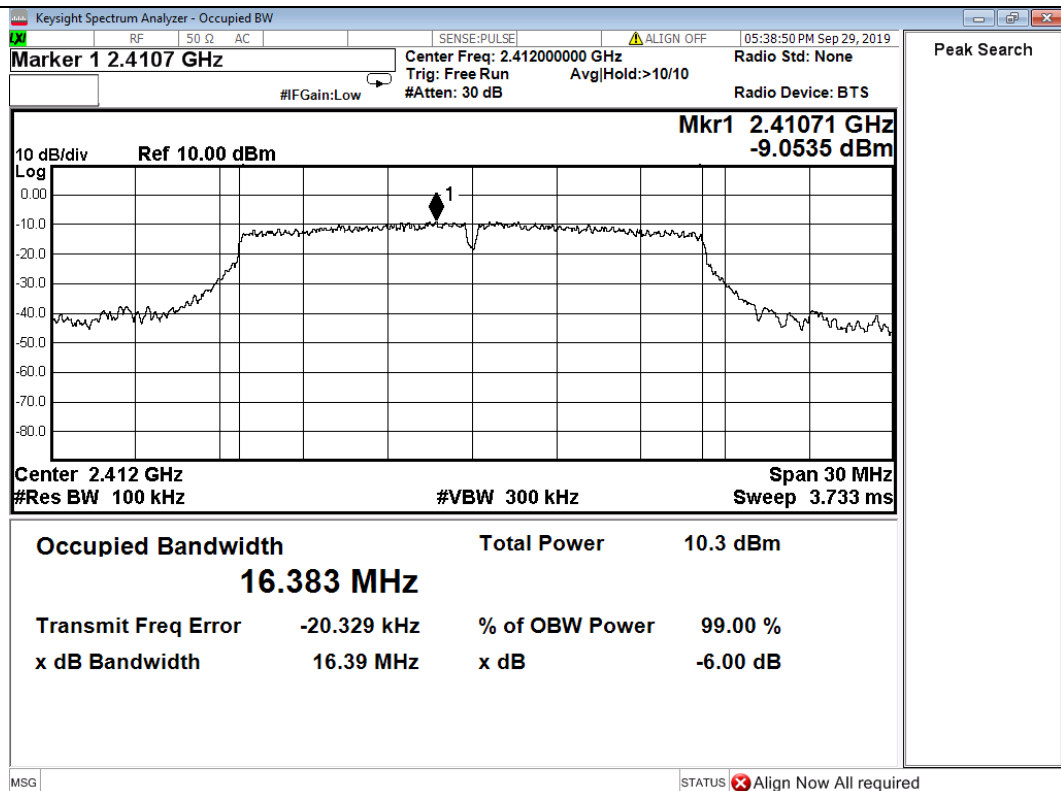
11B/MCH



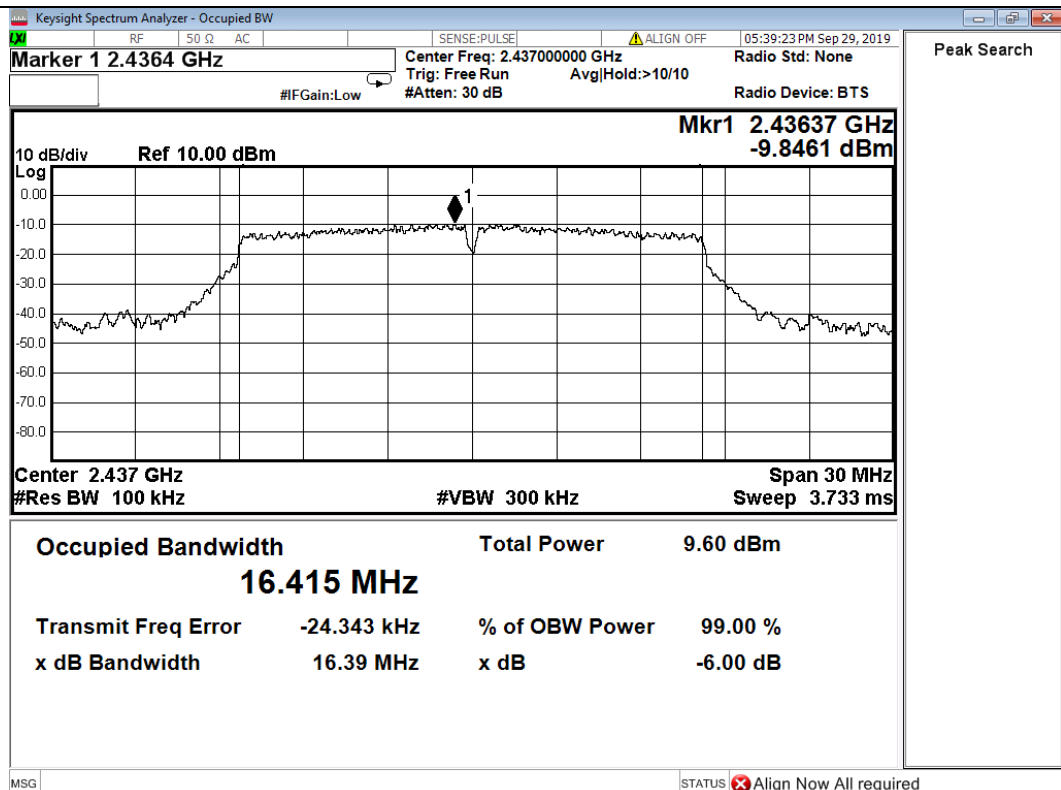
11B/HCH



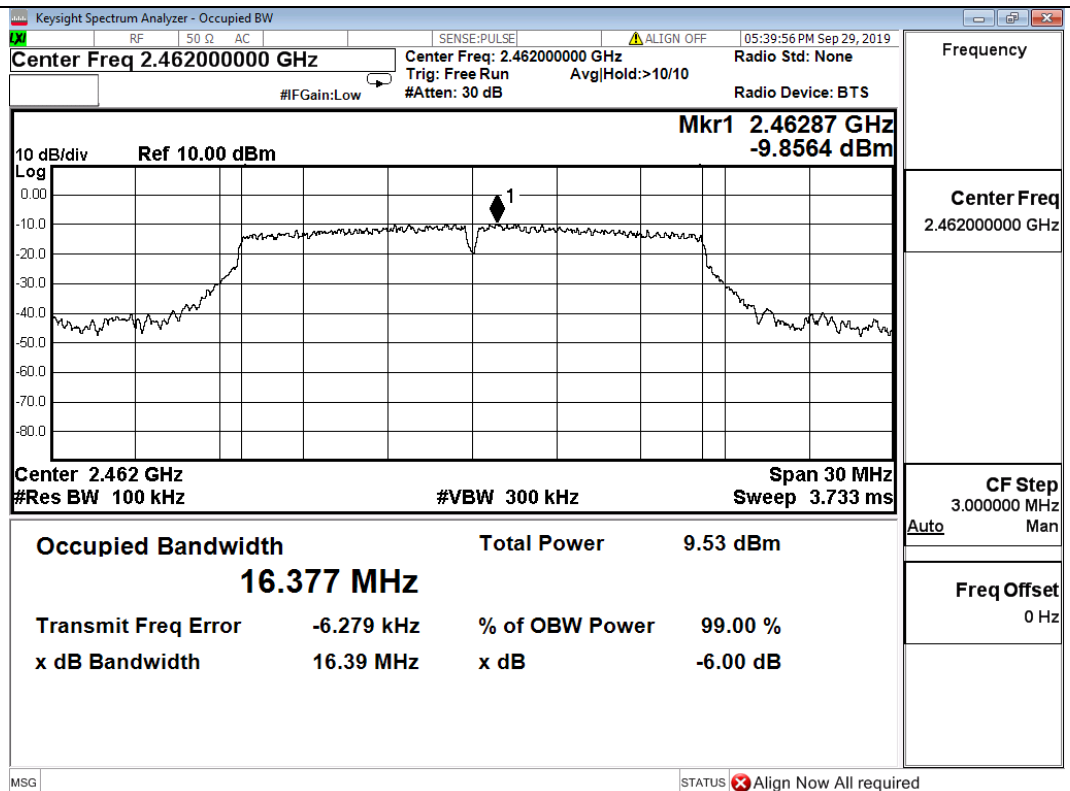
11G/LCH



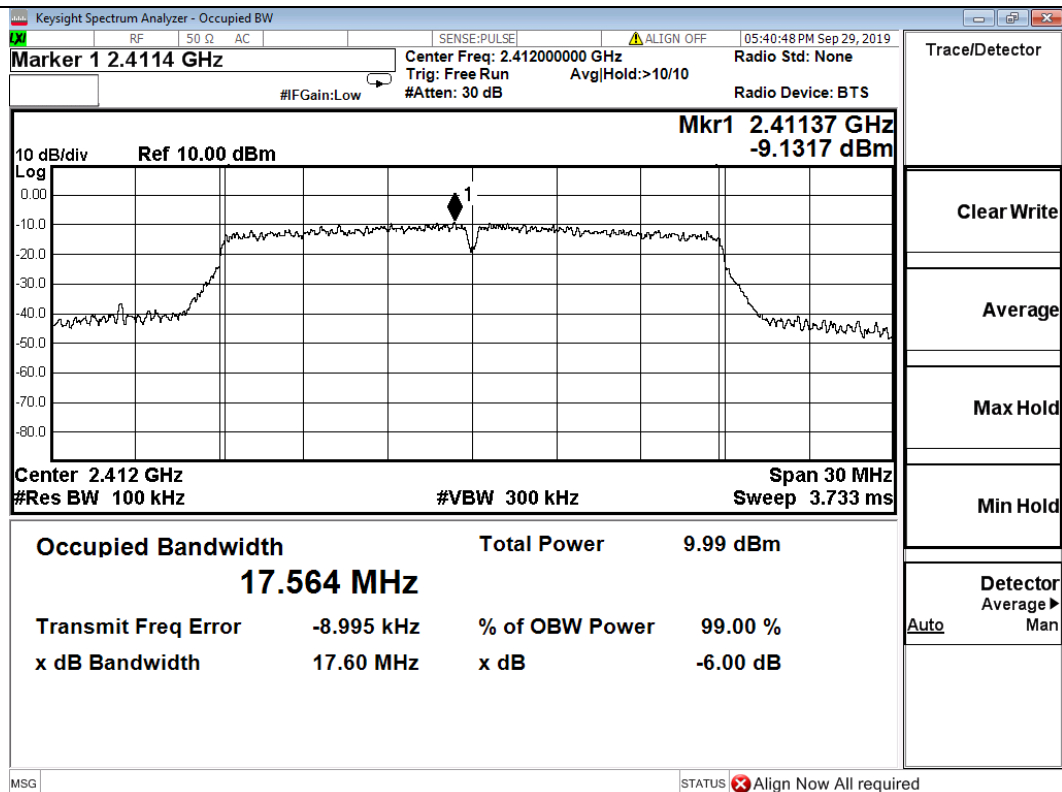
11G/MCH



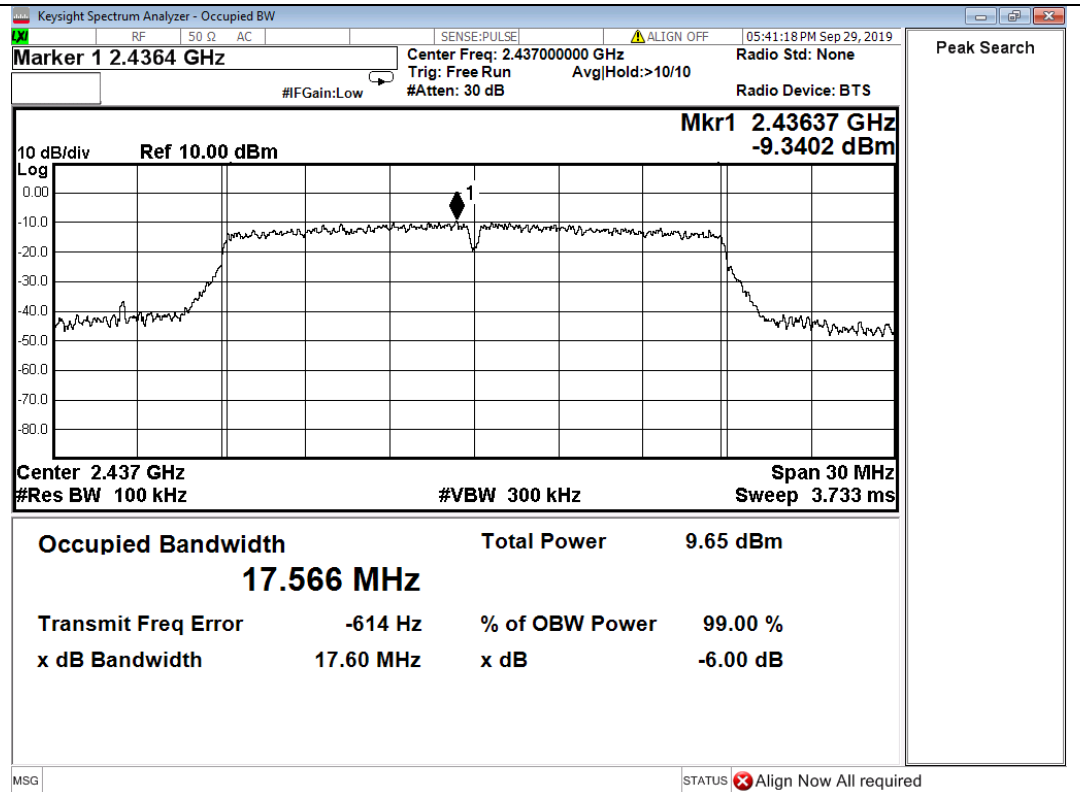
11G/HCH



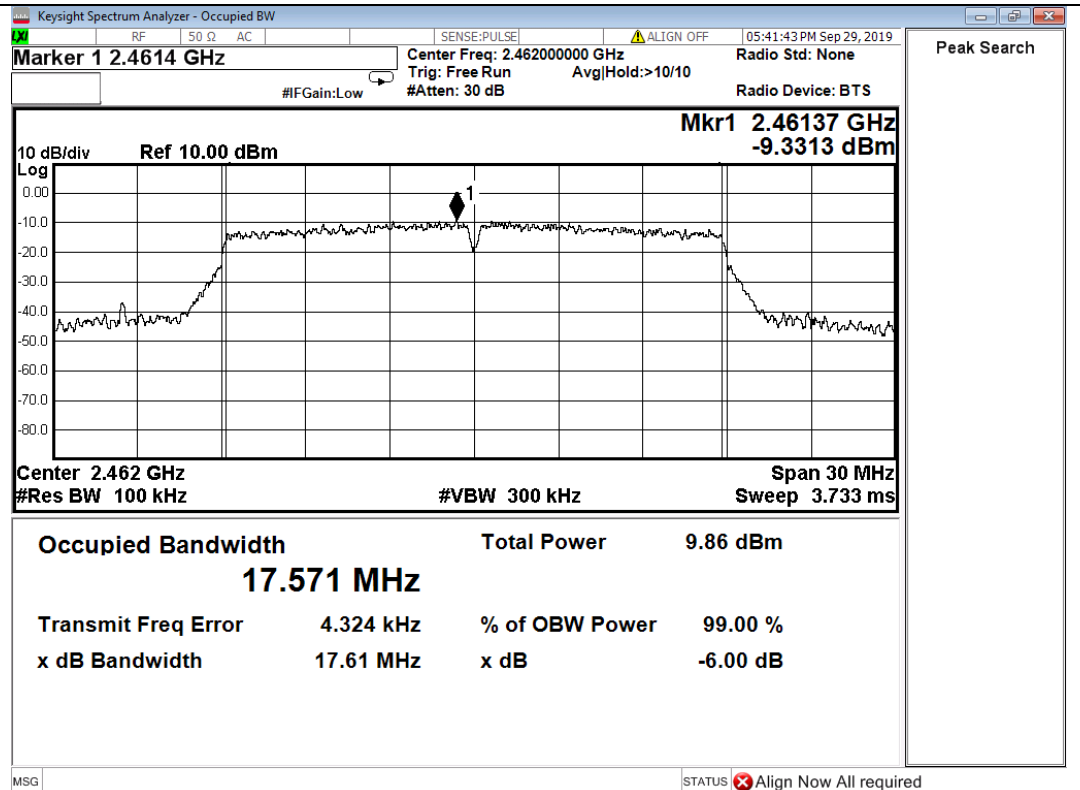
11N20SISO/LCH



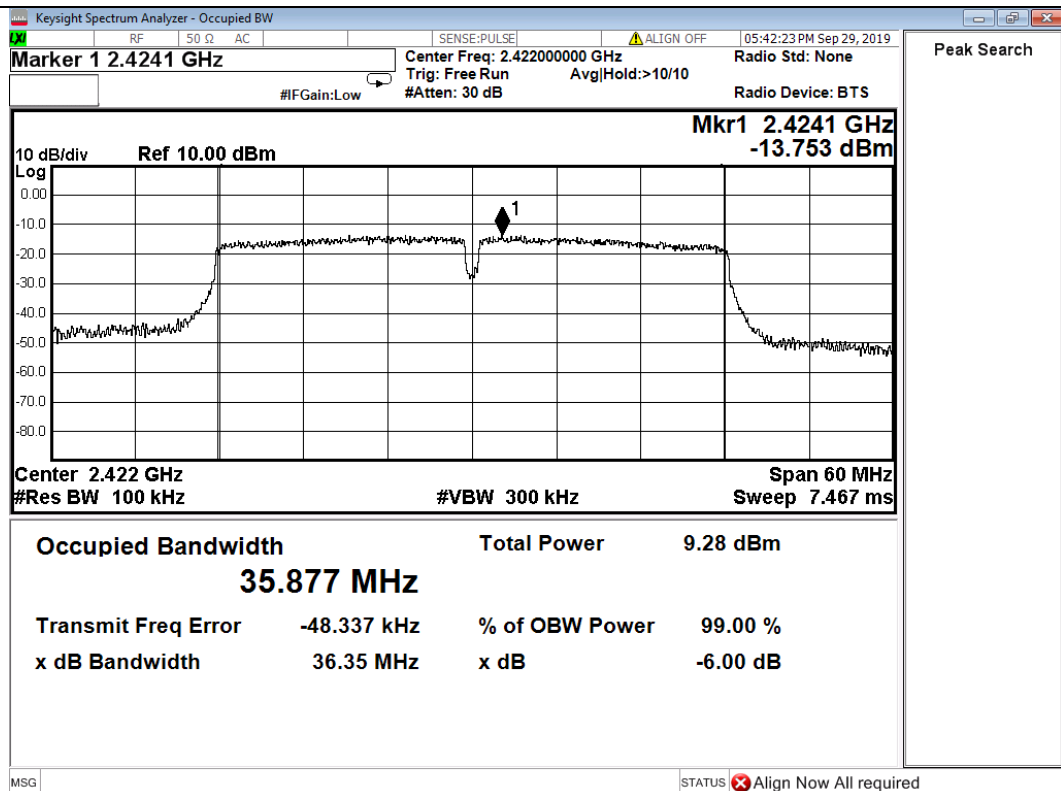
11N20SISO/MCH



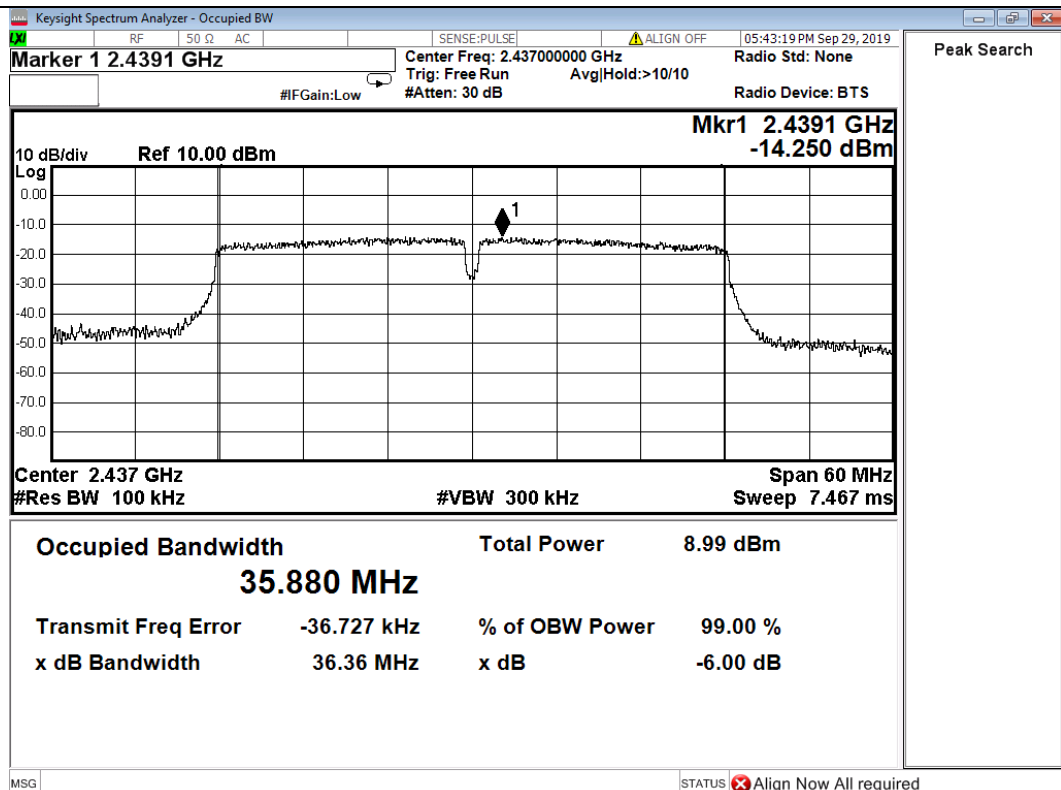
11N20SISO/HCH



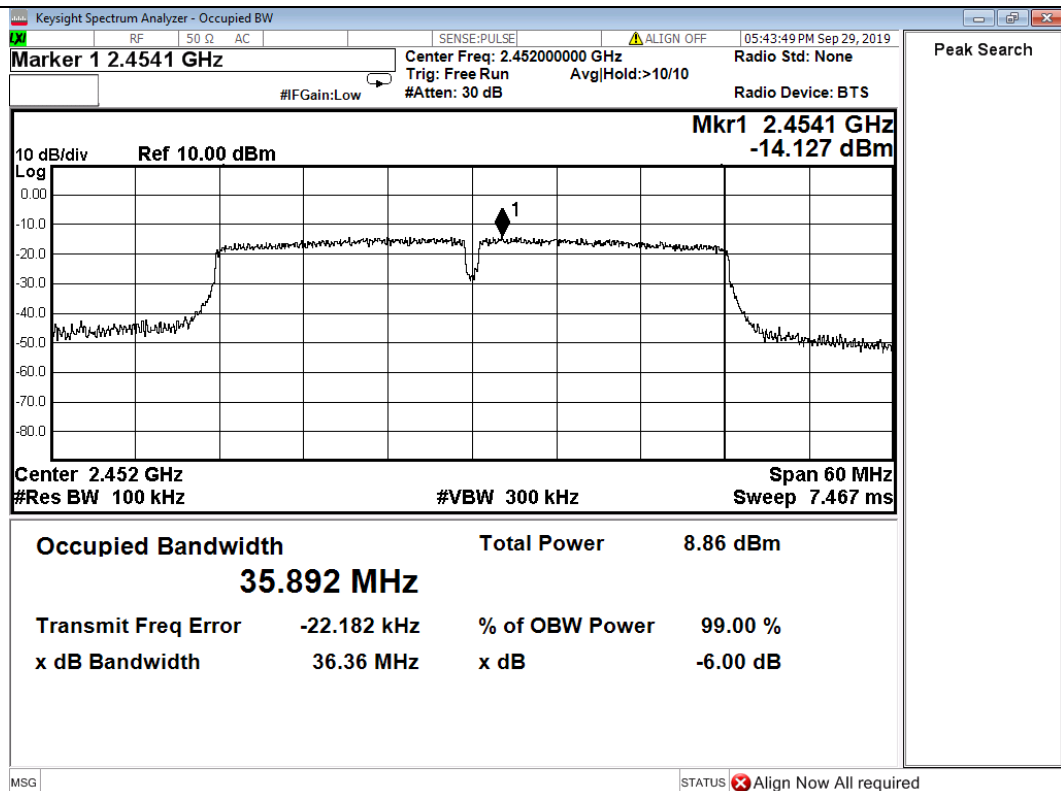
11N40SISO/LCH



11N40SISO/MCH



11N40SISO/HCH

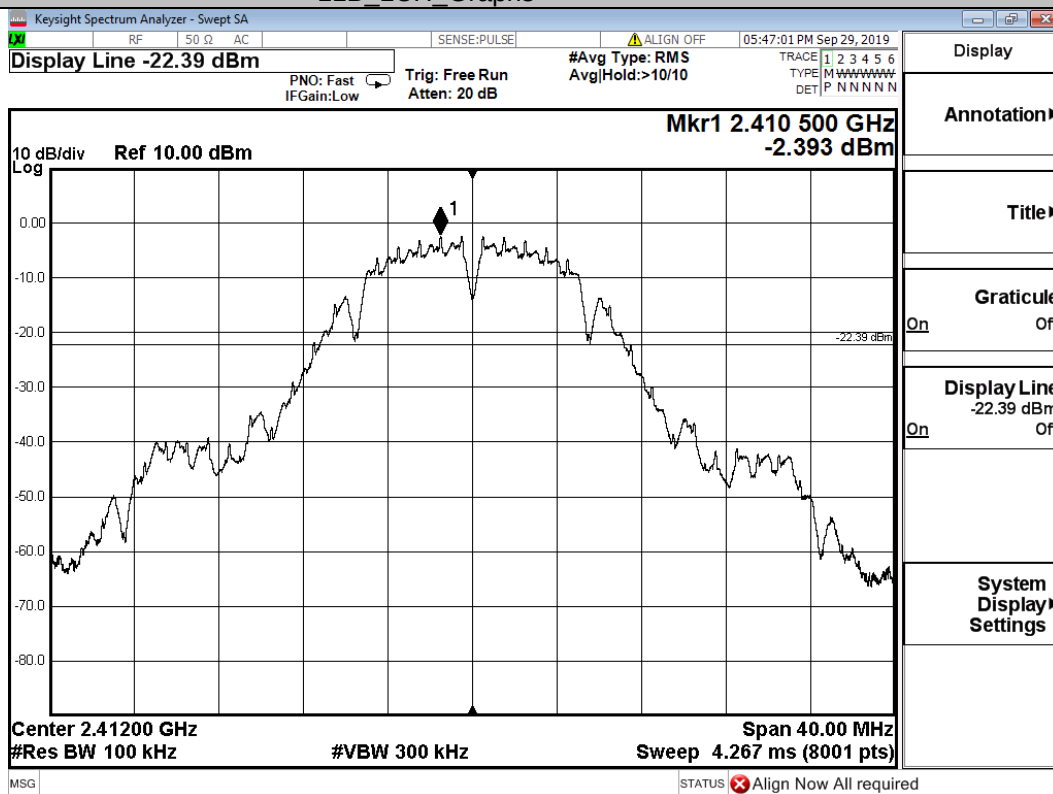


## A.5 RF Conducted Spurious Emissions

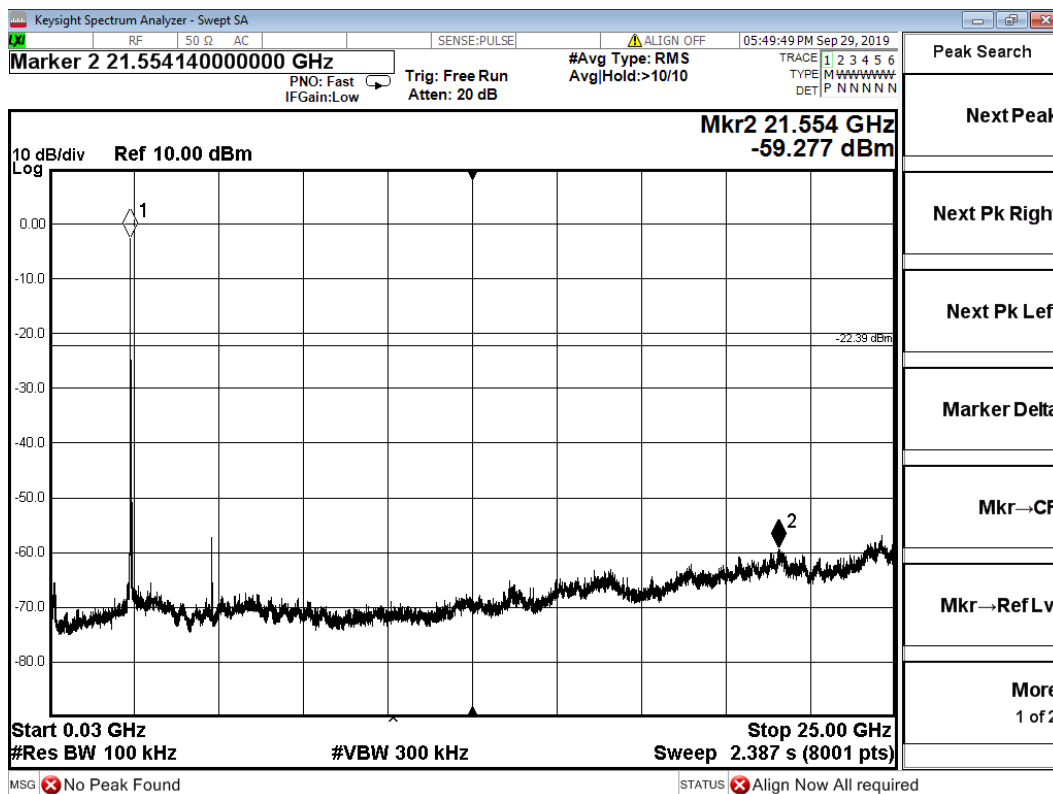
| Mode          | Channel | Pref [dBm] | Max. Level [dBm] | Limit [dBm] | Verdict |
|---------------|---------|------------|------------------|-------------|---------|
| 11B           | LCH     | -2.39      | -59.28           | -22.39      | PASS    |
|               | MCH     | -2.35      | -59.24           | -22.35      | PASS    |
|               | HCH     | -2.20      | -56.69           | -22.20      | PASS    |
| 11G           | LCH     | -8.19      | -59.12           | -28.19      | PASS    |
|               | MCH     | -8.61      | -58.21           | -28.61      | PASS    |
|               | HCH     | -9.14      | -58.56           | -29.14      | PASS    |
| 11N20<br>SISO | LCH     | -8.18      | -57.32           | -28.18      | PASS    |
|               | MCH     | -8.64      | -58.48           | -28.64      | PASS    |
|               | HCH     | -8.36      | -58.76           | -28.36      | PASS    |
| 11N40<br>SISO | LCH     | -12.32     | -56.32           | -32.32      | PASS    |
|               | MCH     | -12.35     | -59.08           | -32.35      | PASS    |
|               | HCH     | -12.20     | -56.74           | -32.20      | PASS    |

## 11B LCH Graphs

Pref/11B/LCH

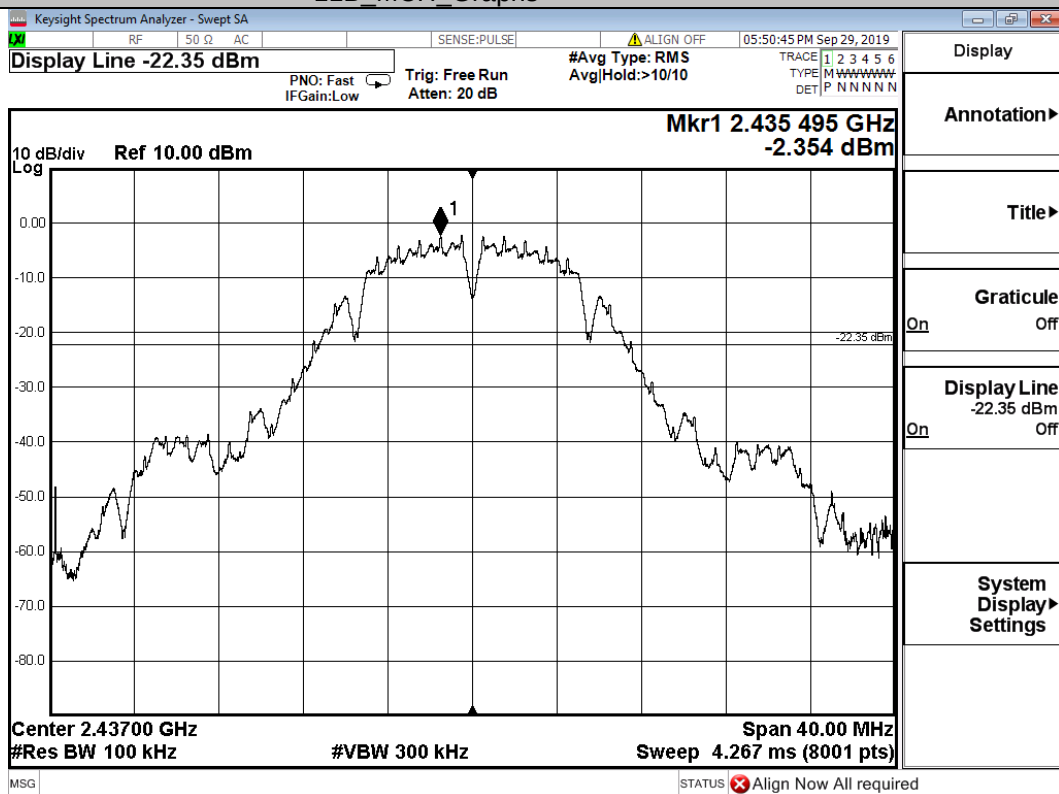


Puw/11B/LCH

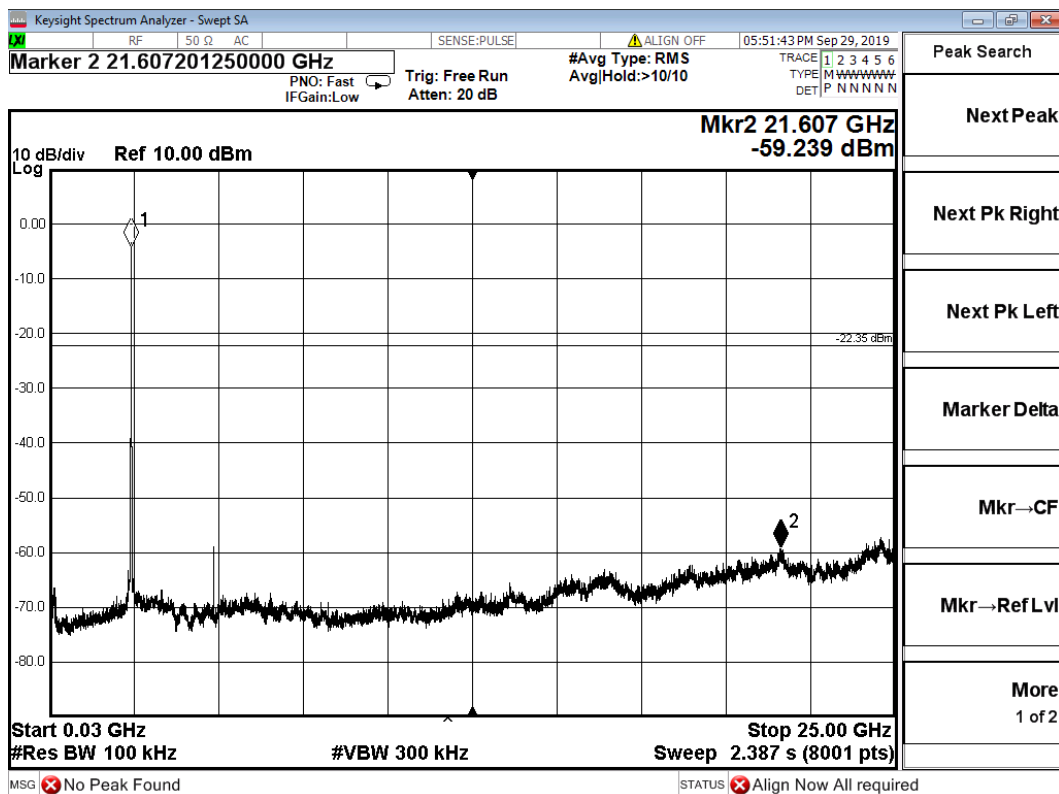


## 11B\_MCH\_Graphs

Pref/11B/MCH

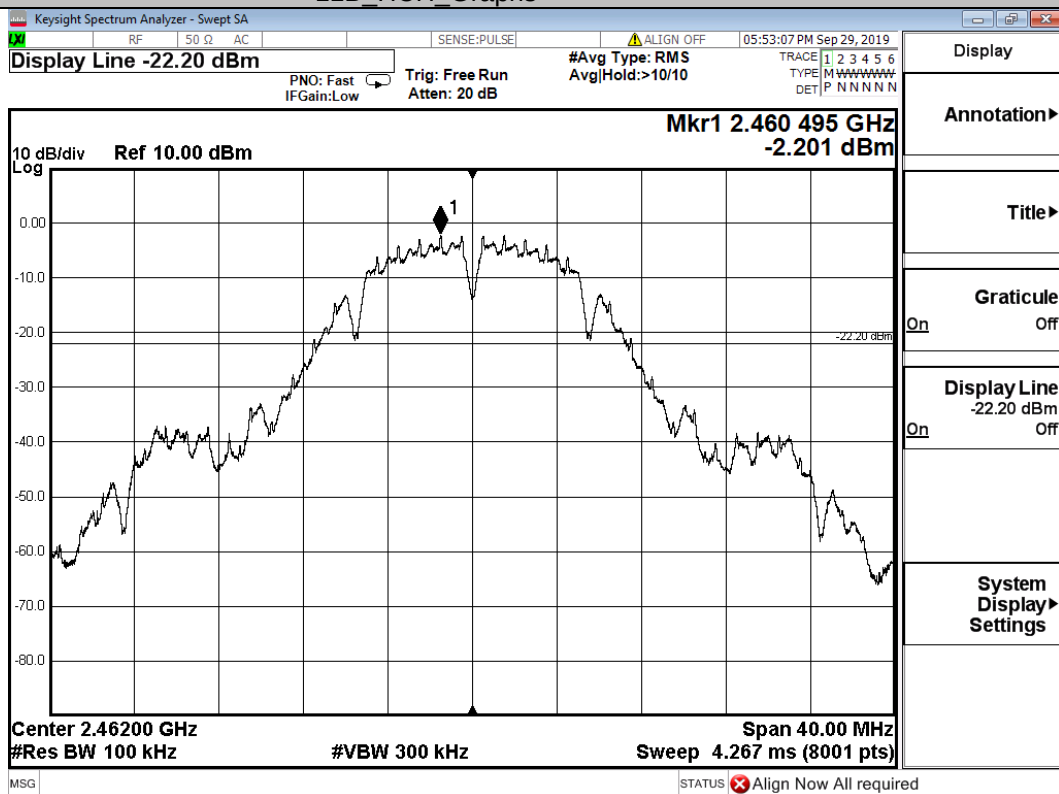


Puw/11B/MCH

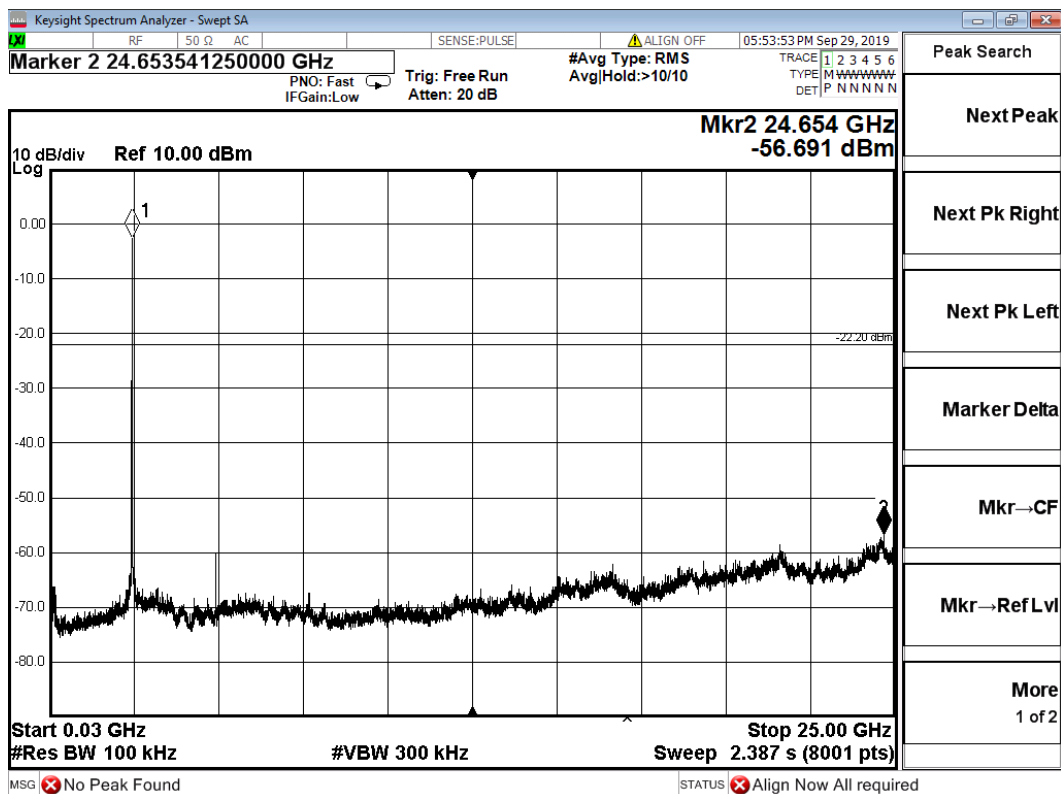


## 11B HCH Graphs

Pref/11B/HCH

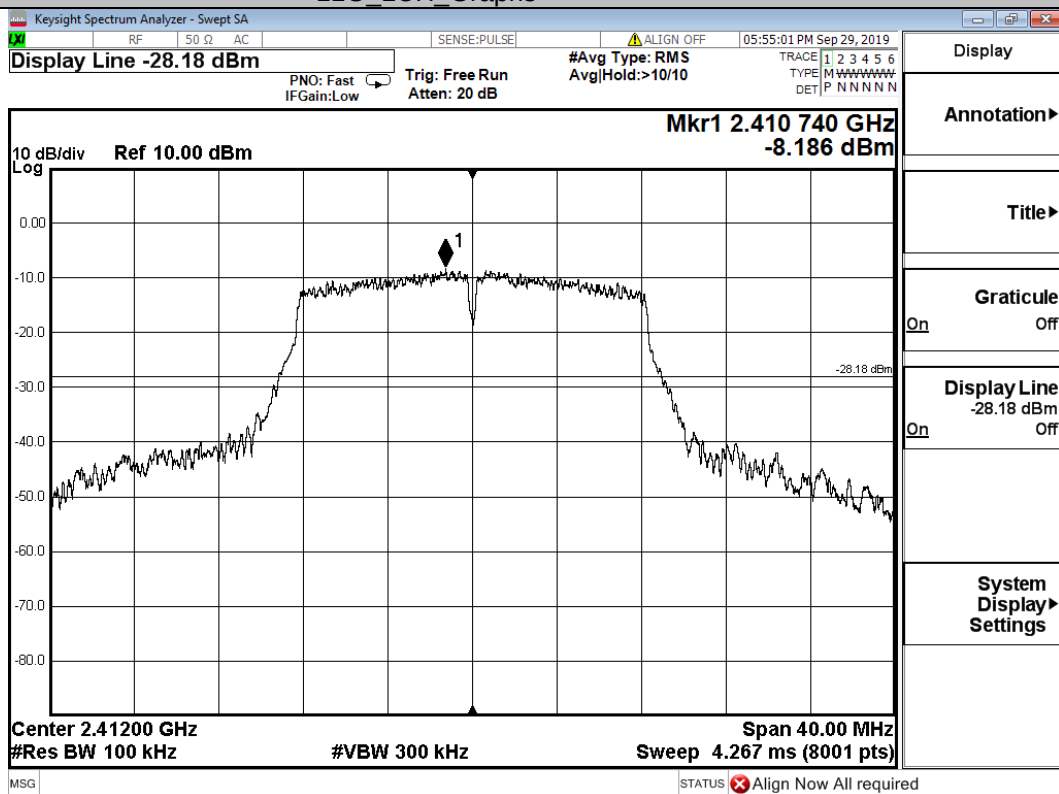


Puw/11B/HCH

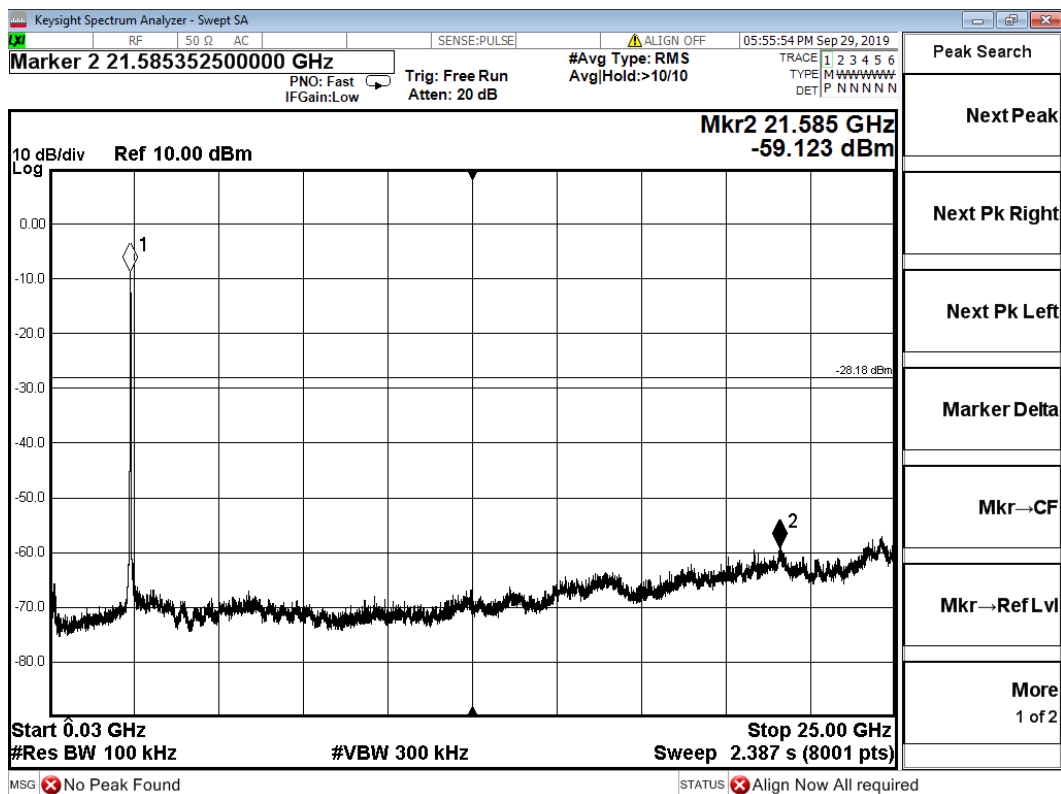


## 11G\_LCH\_Graphs

Pref/11G/LCH

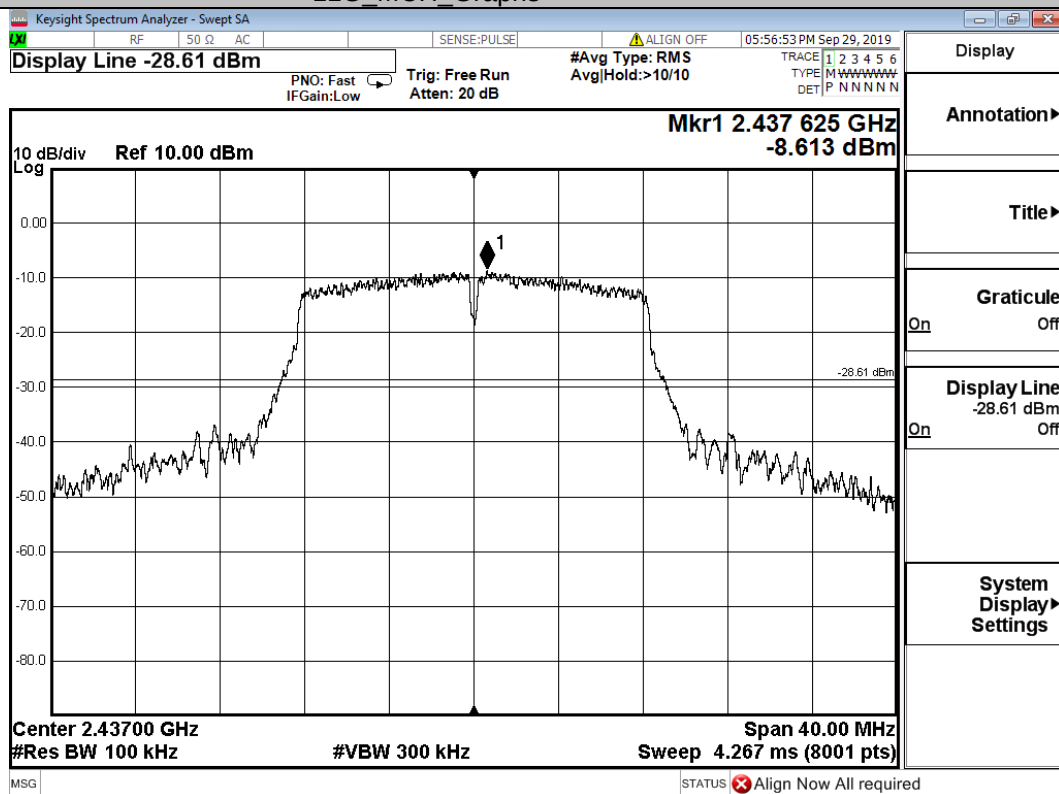


Puw/11G/LCH

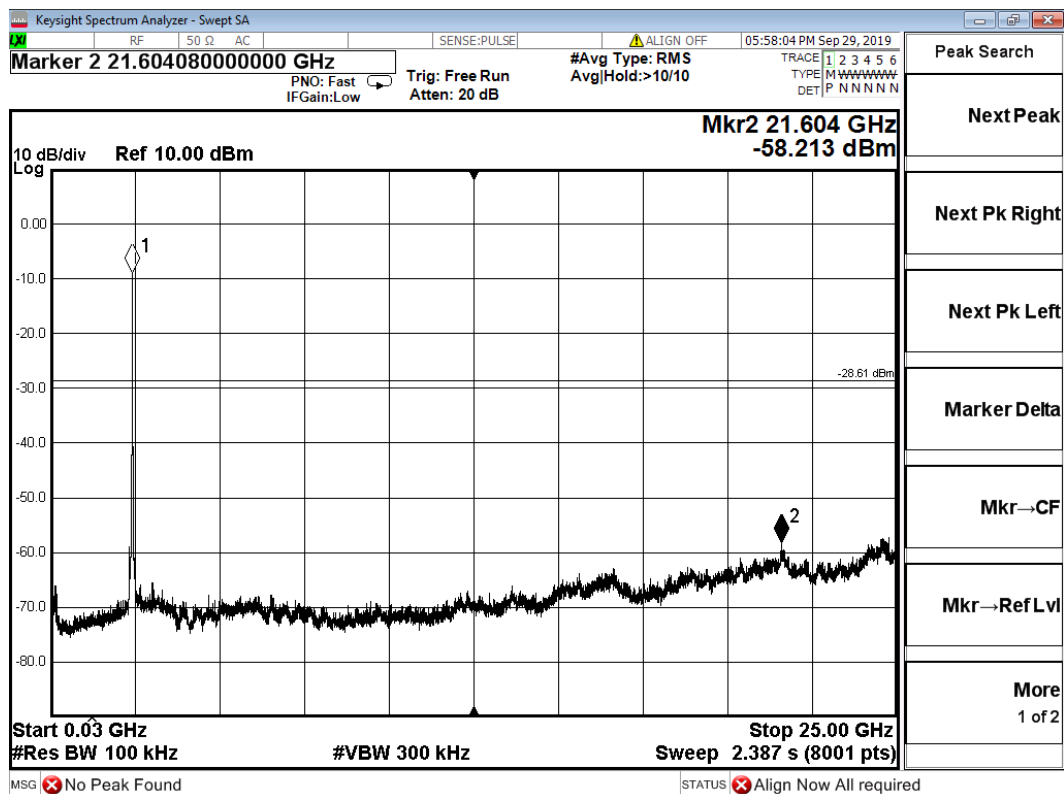


## 11G\_MCH\_Graphs

Pref/11G/MCH

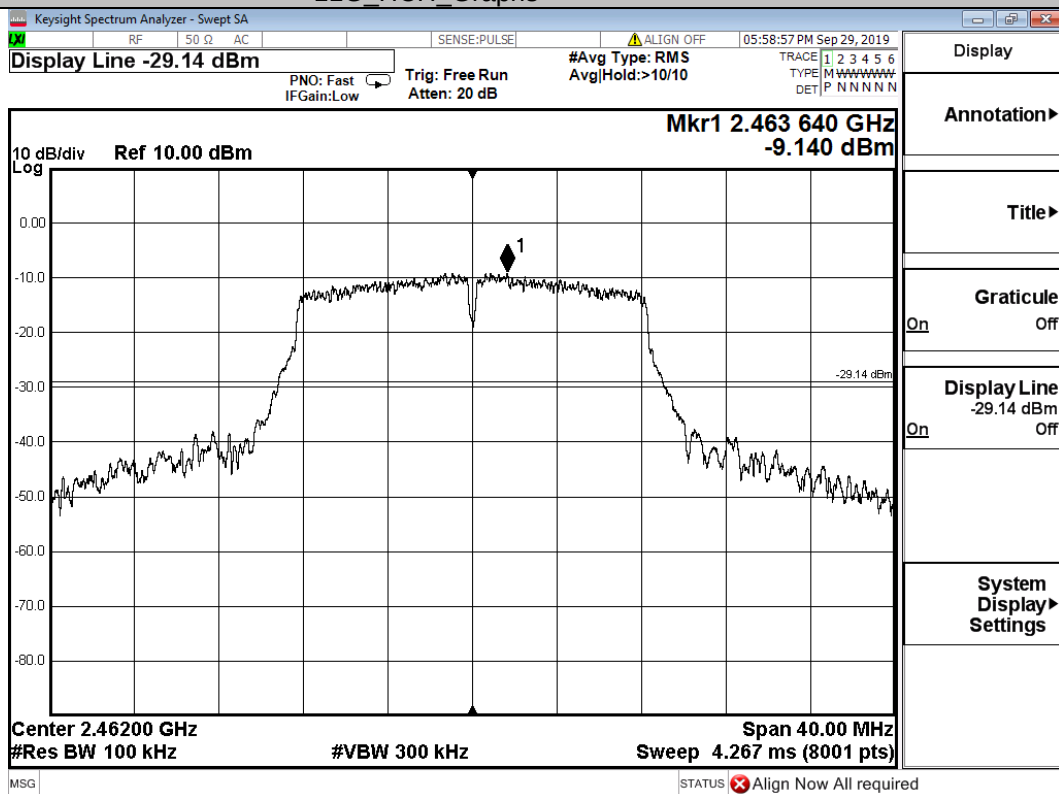


Puw/11G/MCH

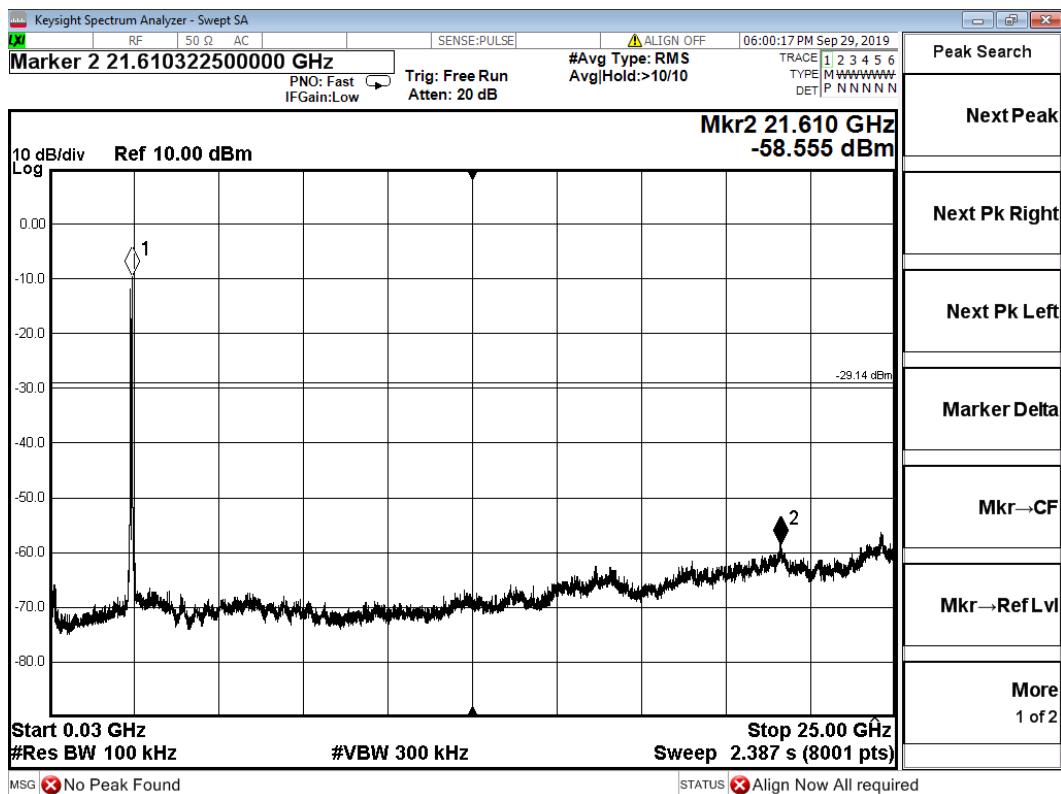


## 11G HCH Graphs

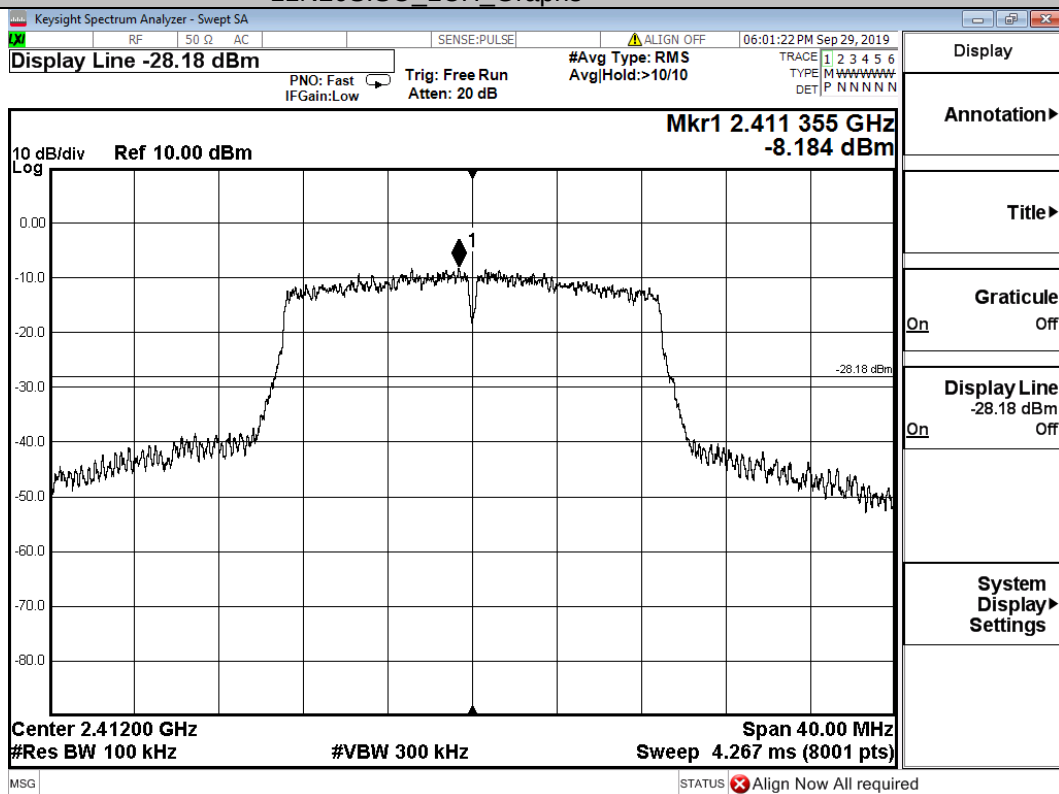
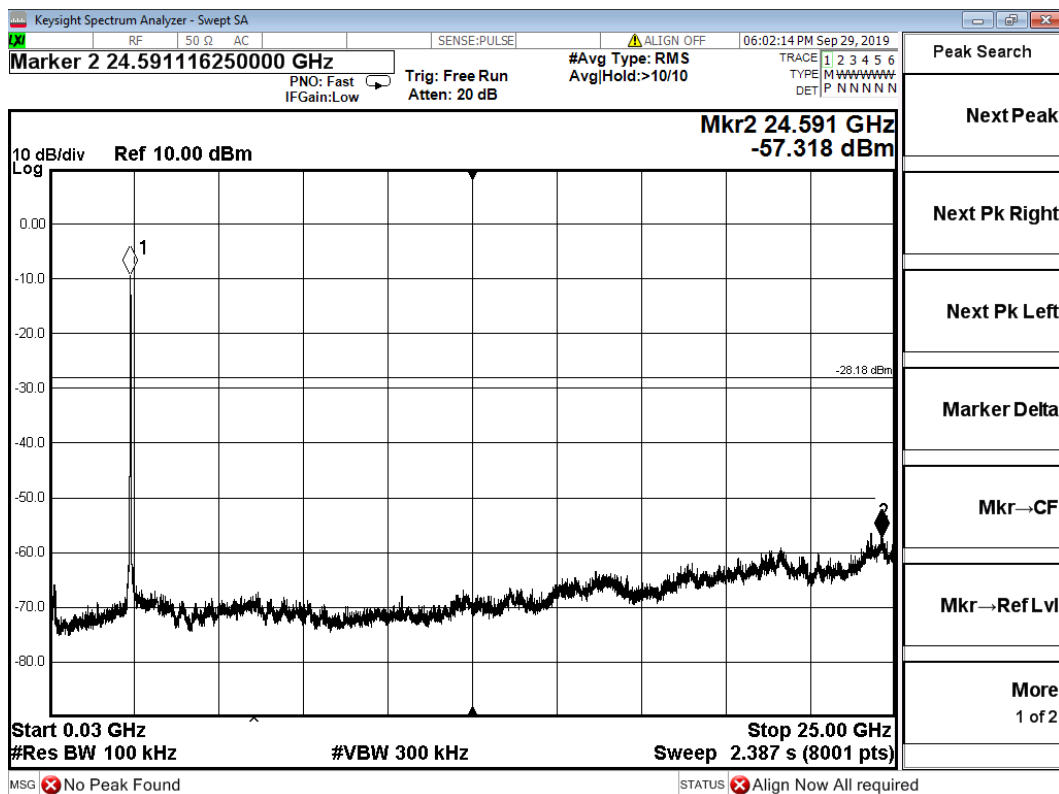
Pref/11G/HCH



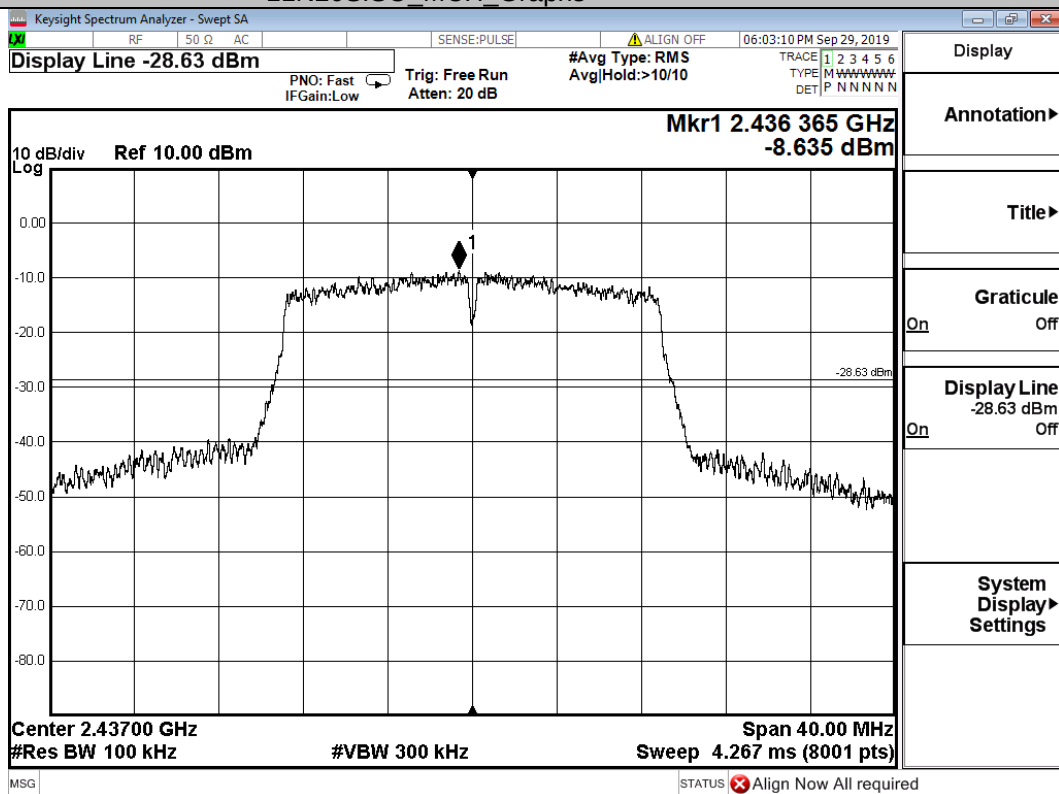
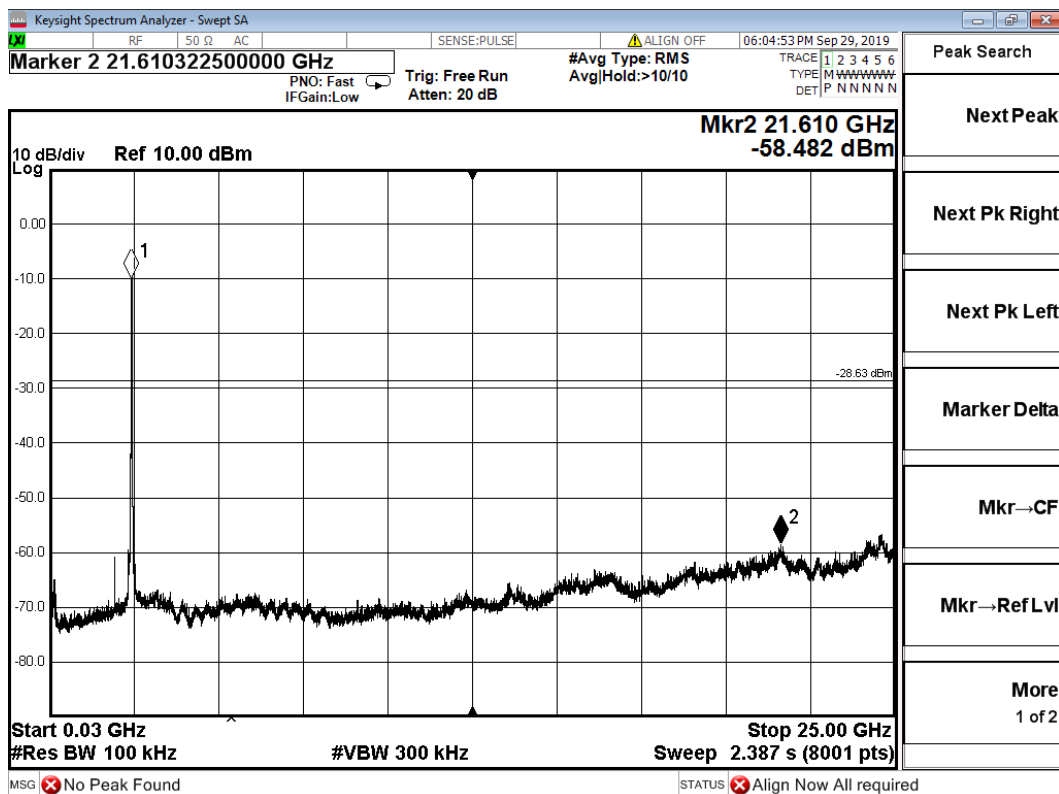
Puw/11G/HCH



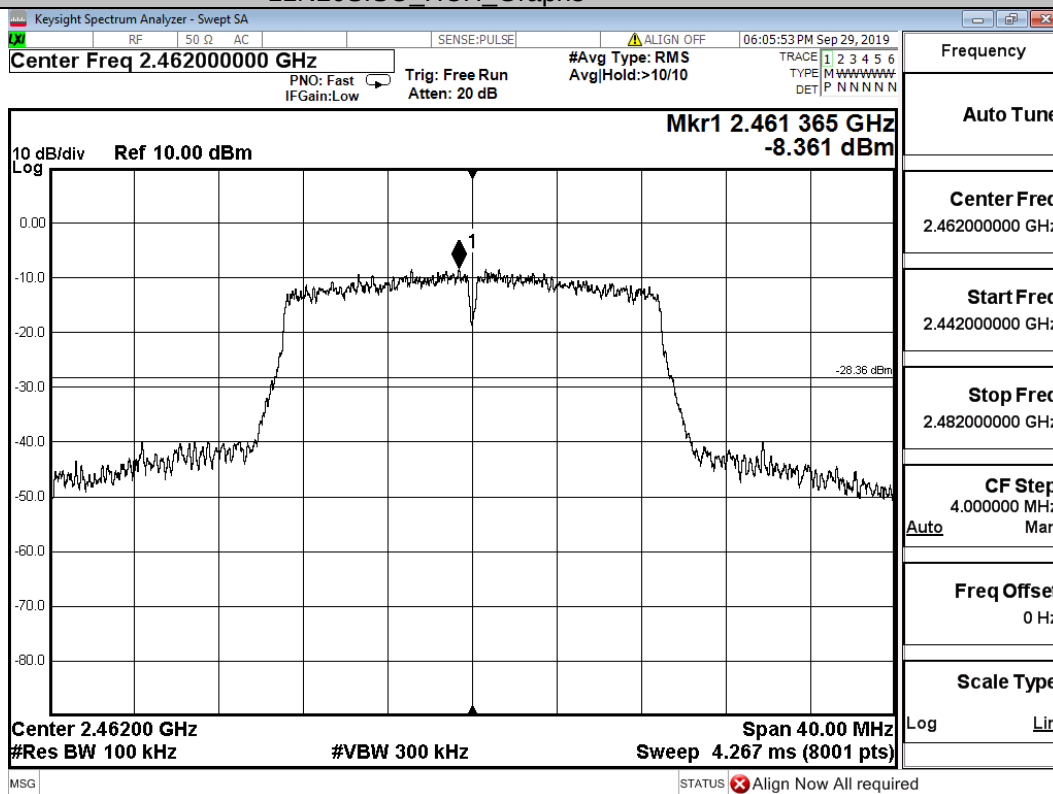
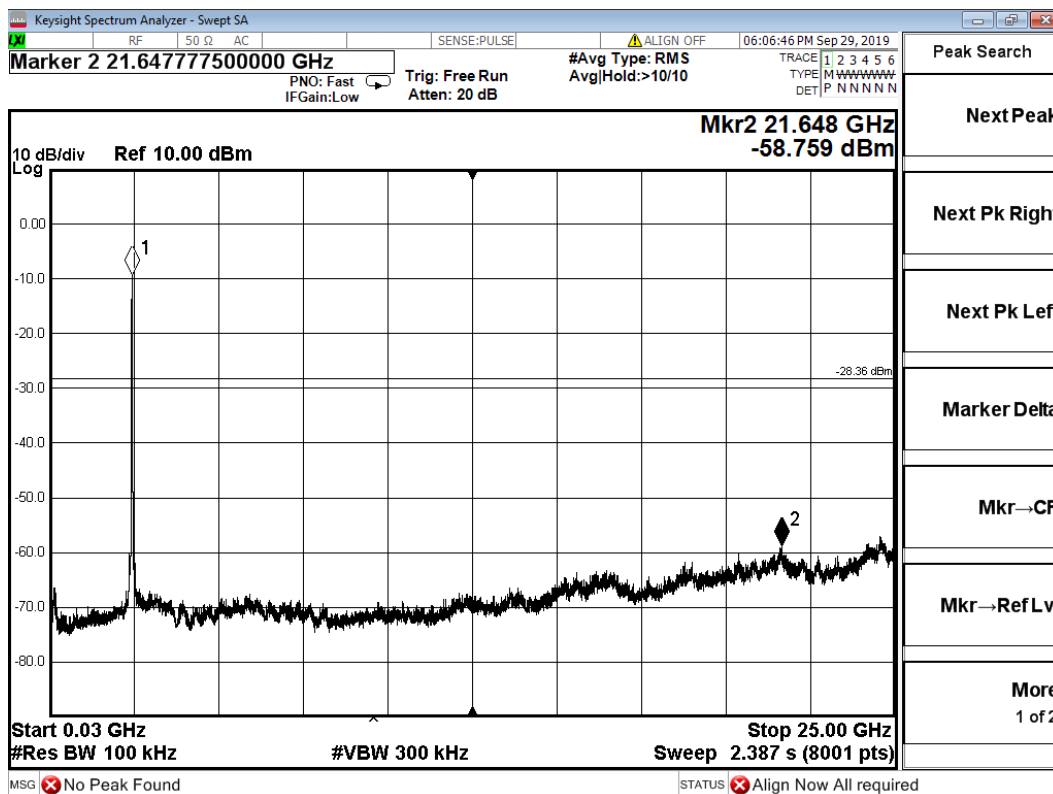
## 11N20SISO LCH Graphs

Pref/11N20SIS  
O/LCHPuw/11N20  
SISO/LCH

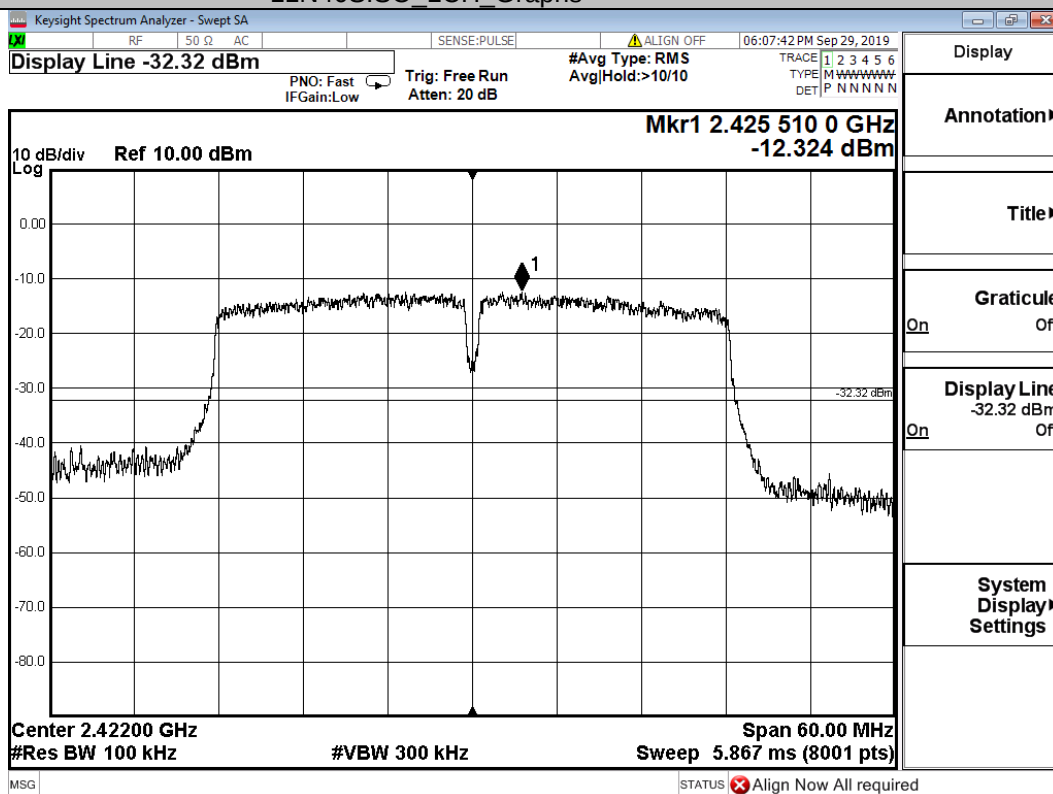
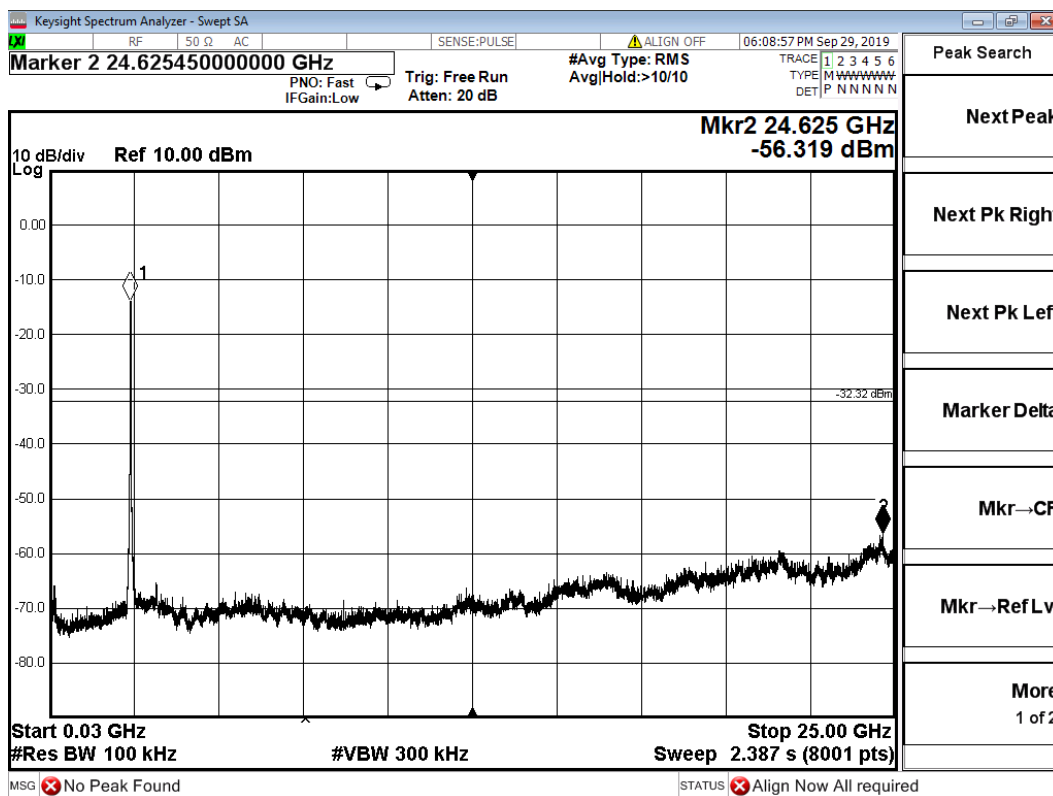
## 11N20SISO\_MCH\_Graphs

Pref/11N20  
SISO/MCHPuw/11N20  
SISO/MCH

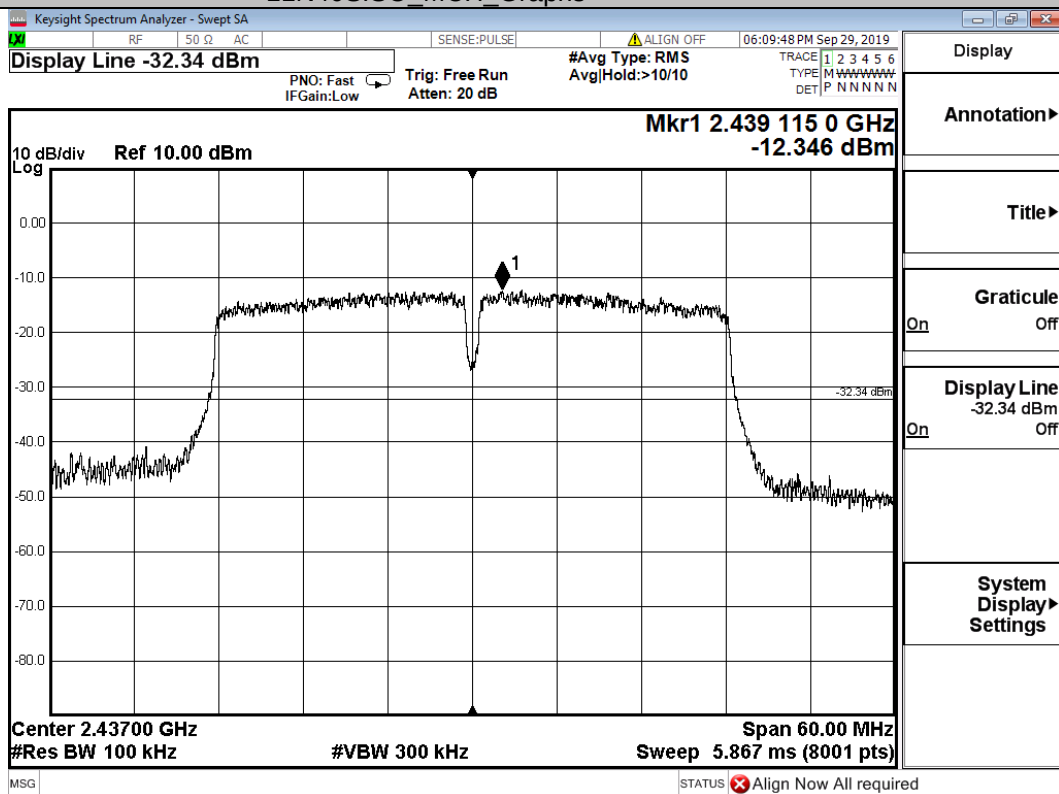
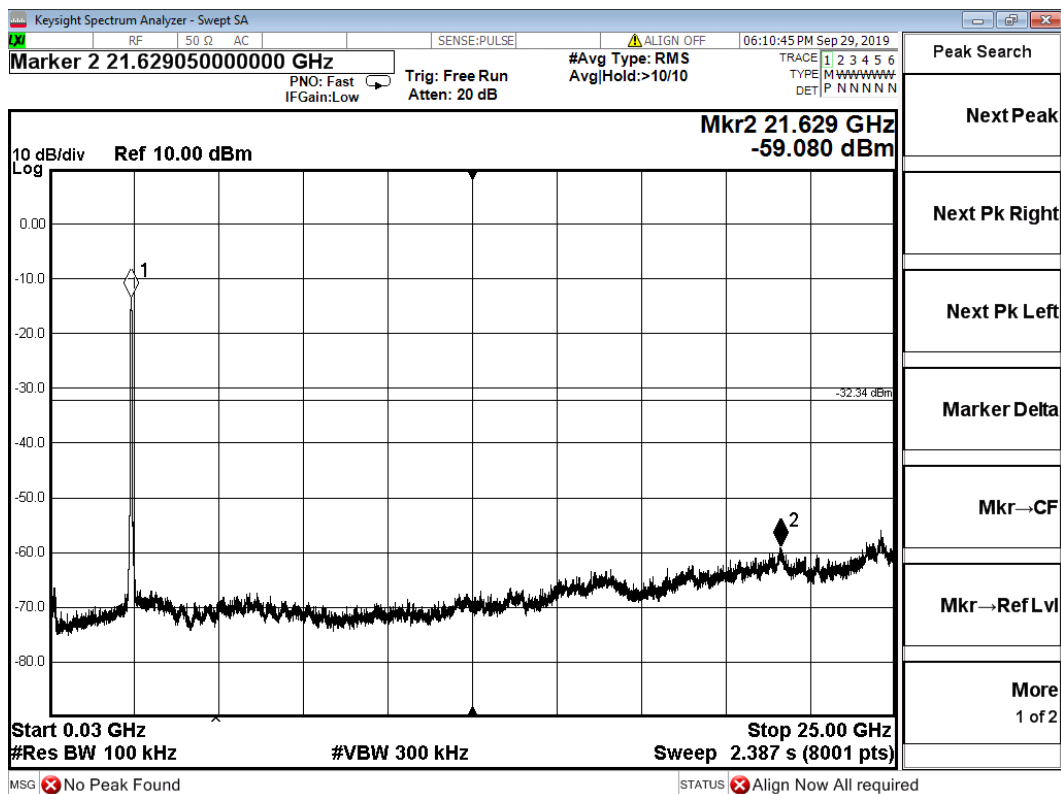
## 11N20SISO\_HCH\_Graphs

Pref/11N20  
SISO/HCHPuw/11N20  
SISO/HCH

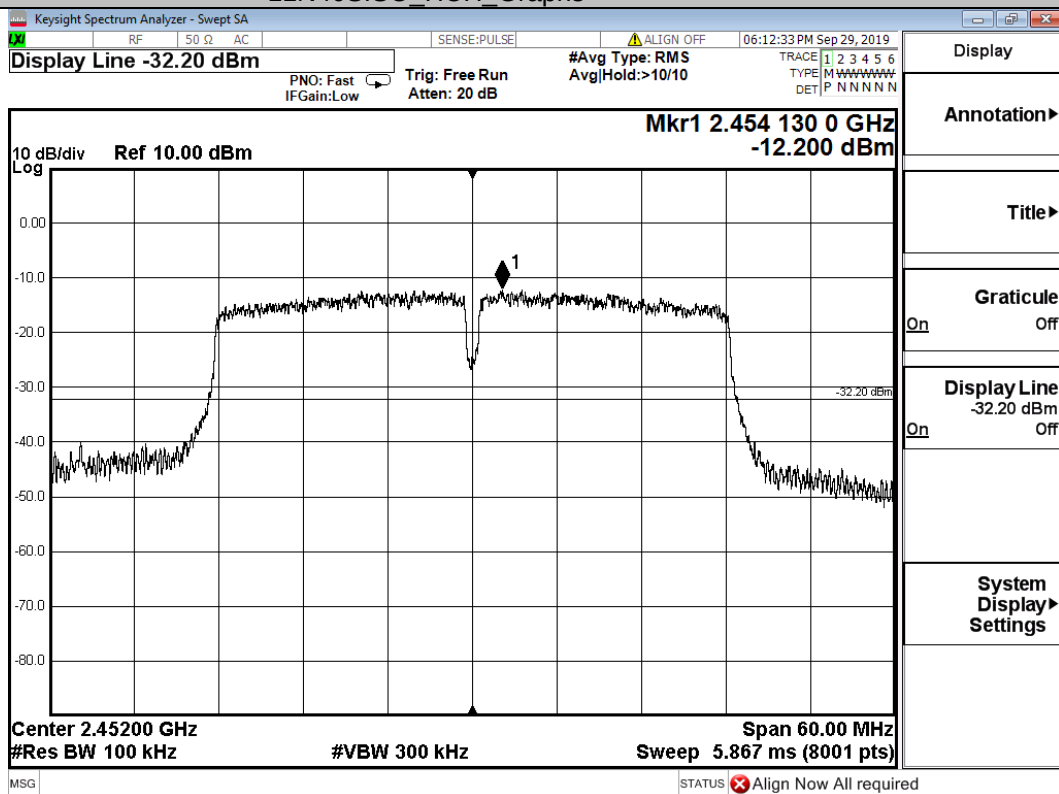
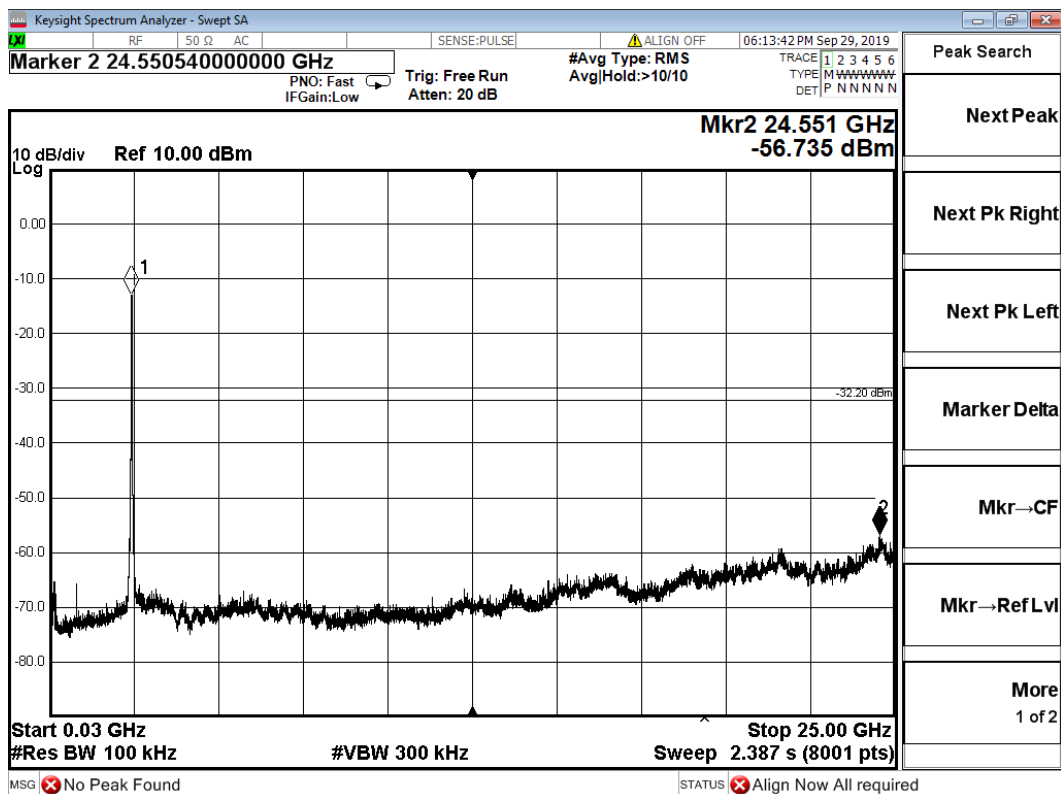
## 11N40SISO\_LCH\_Graphs

Pref/11N40SIS  
O/LCHPuw/11N40  
SISO/LCH

## 11N40SISO\_MCH\_Graphs

Pref/11N40  
SISO/MCHPuw/11N40  
SISO/MCH

## 11N40SISO\_HCH\_Graphs

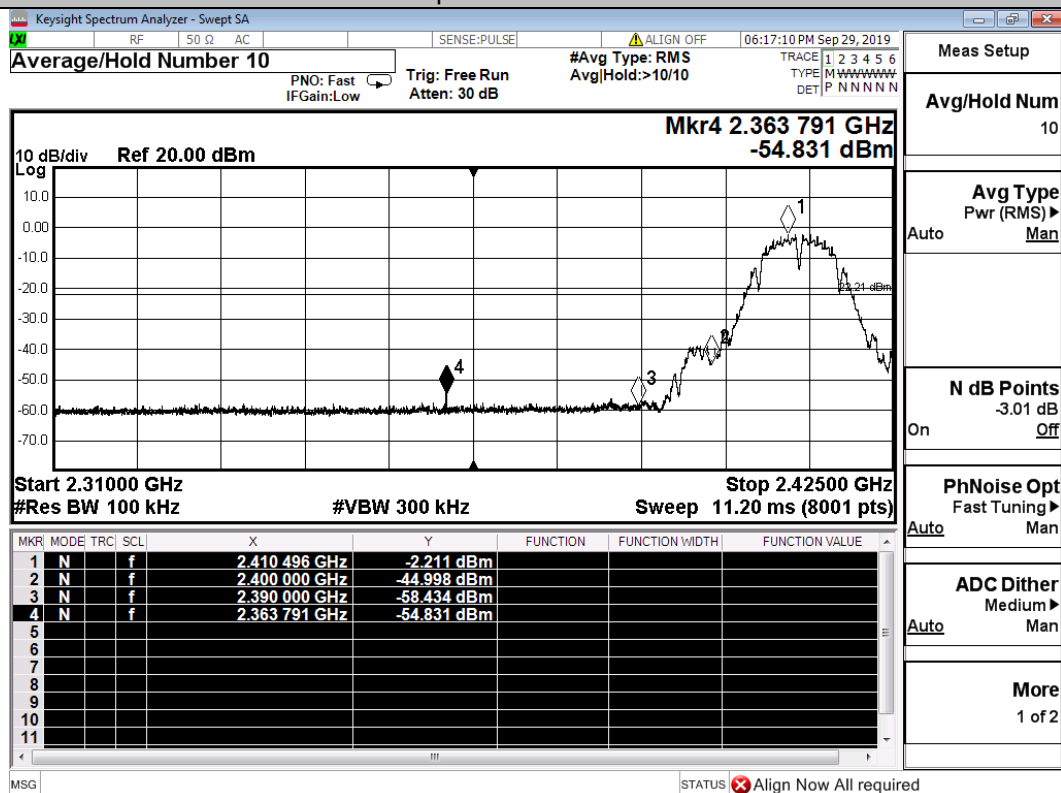
Pref/11N40  
SISO/HCHPuw/11N40  
SISO/HCH

**A.6 Band-edge for RF Conducted Emissions**

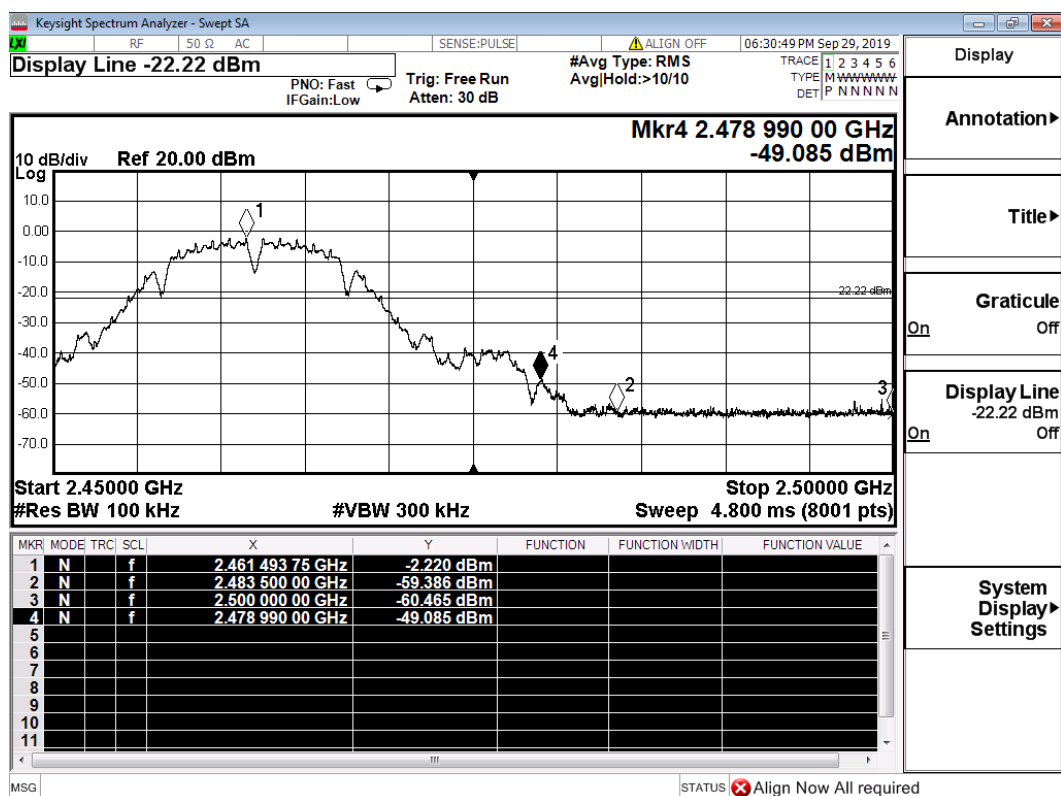
| Mode      | Channel | Carrier Power[dBm] | Max.Spurious Level [dBm] | Limit [dBm] | Verdict |
|-----------|---------|--------------------|--------------------------|-------------|---------|
| 11B       | LCH     | -2.211             | -44.998                  | -22.21      | PASS    |
|           | HCH     | -2.220             | -49.085                  | -22.22      | PASS    |
| 11G       | LCH     | -8.635             | -41.174                  | -28.64      | PASS    |
|           | HCH     | -8.417             | -38.134                  | -28.42      | PASS    |
| 11N20SISO | LCH     | -8.276             | -41.920                  | -28.28      | PASS    |
|           | HCH     | -8.377             | -42.865                  | -28.38      | PASS    |
| 11N40SISO | LCH     | -12.417            | -47.377                  | -32.42      | PASS    |
|           | HCH     | -12.524            | -44.753                  | -32.52      | PASS    |

## Test Graphs

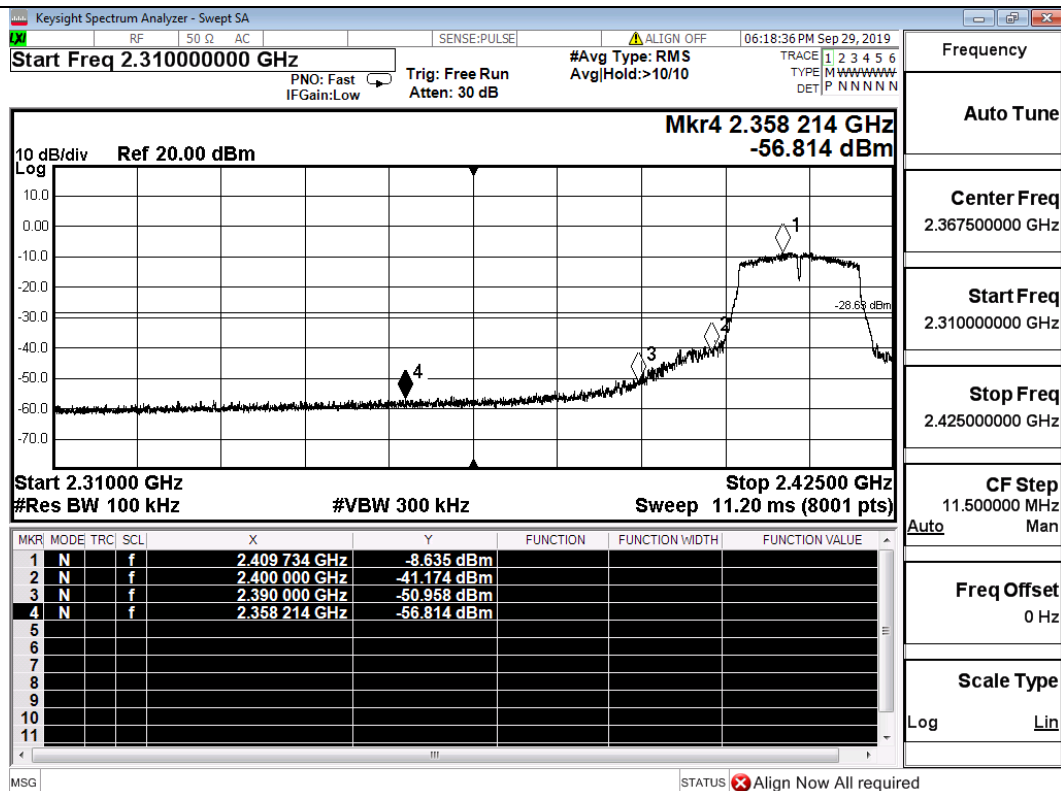
11B/LCH



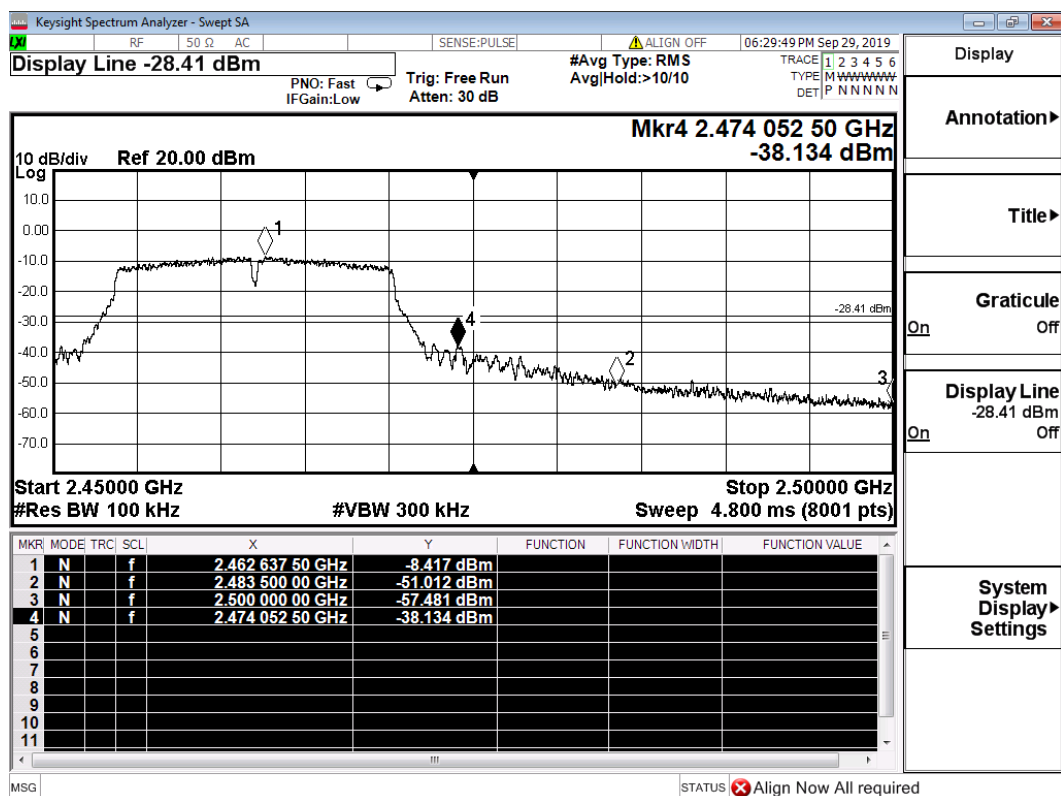
11B/HCH



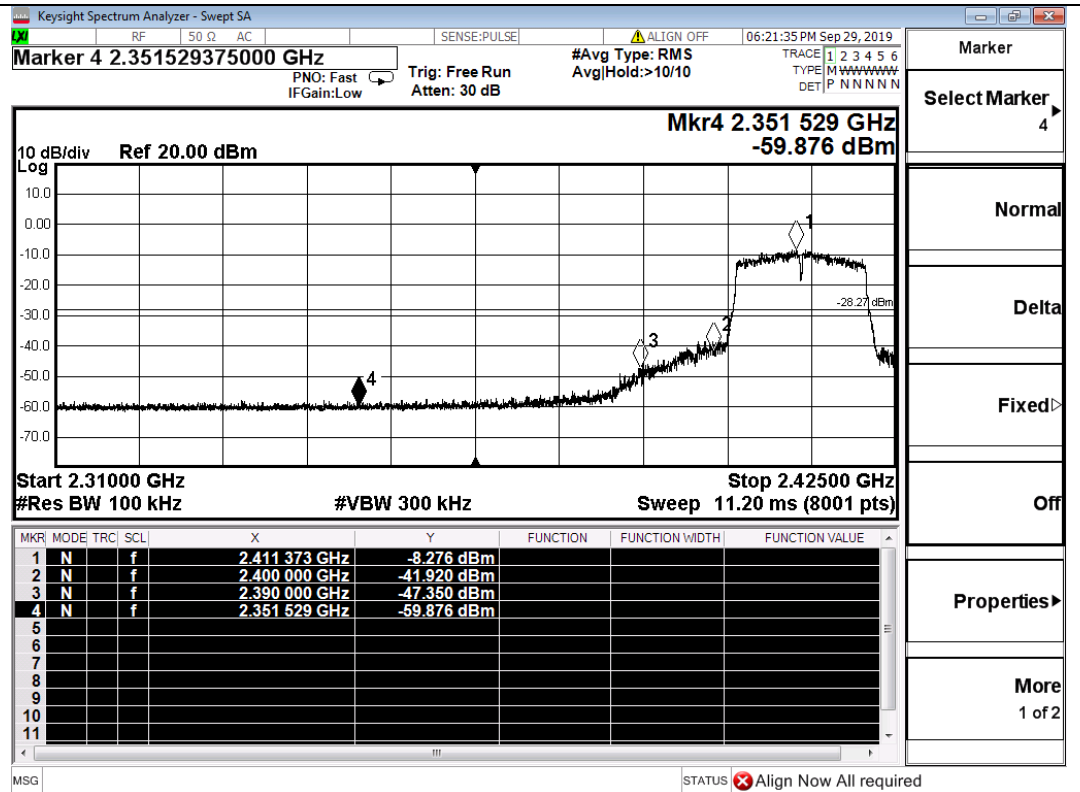
11G/LCH



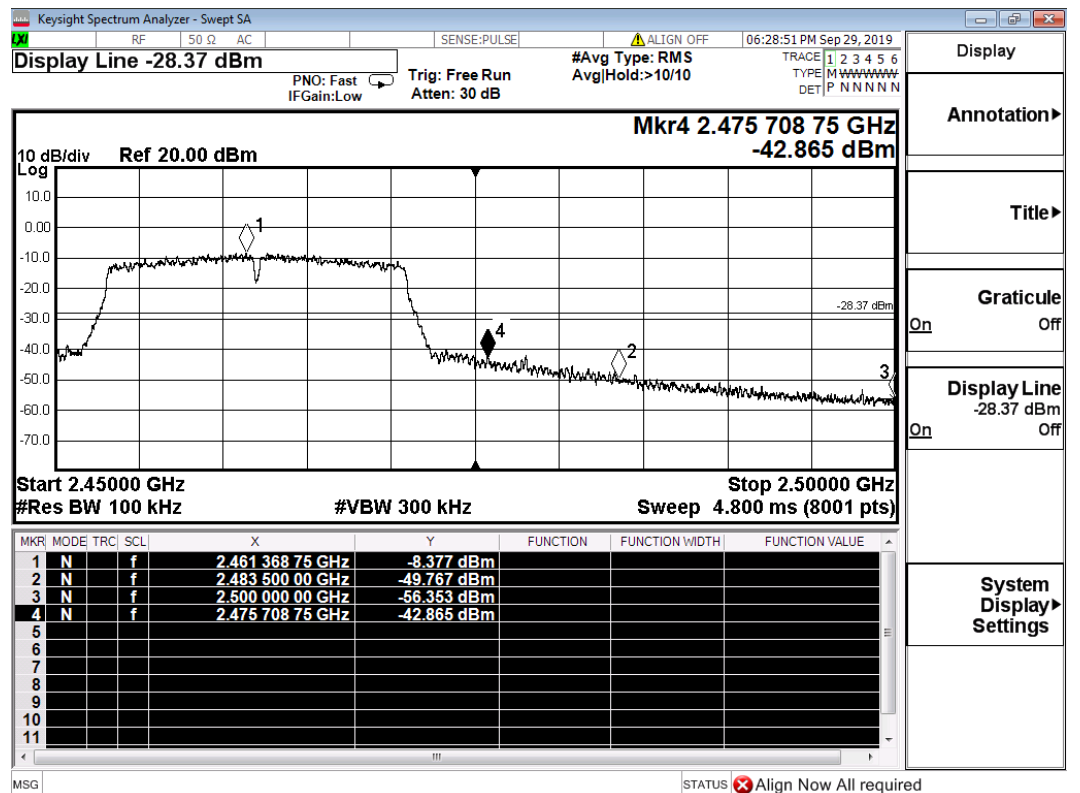
11G/HCH



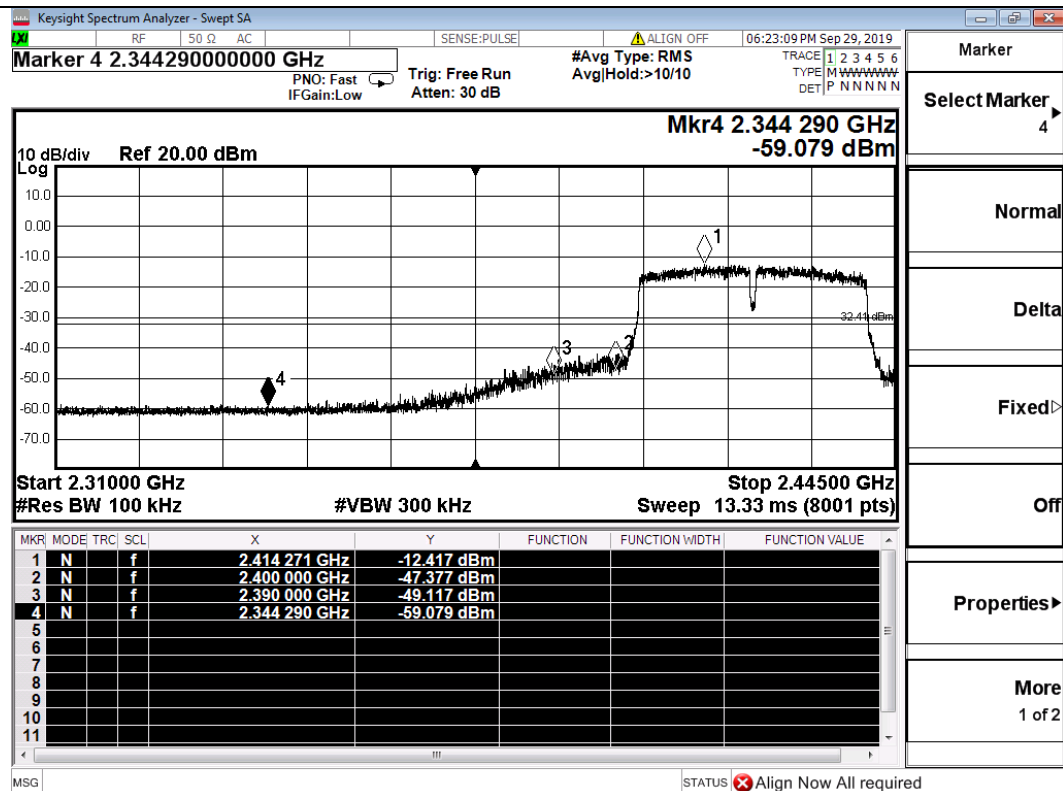
11N20SISO/LCH



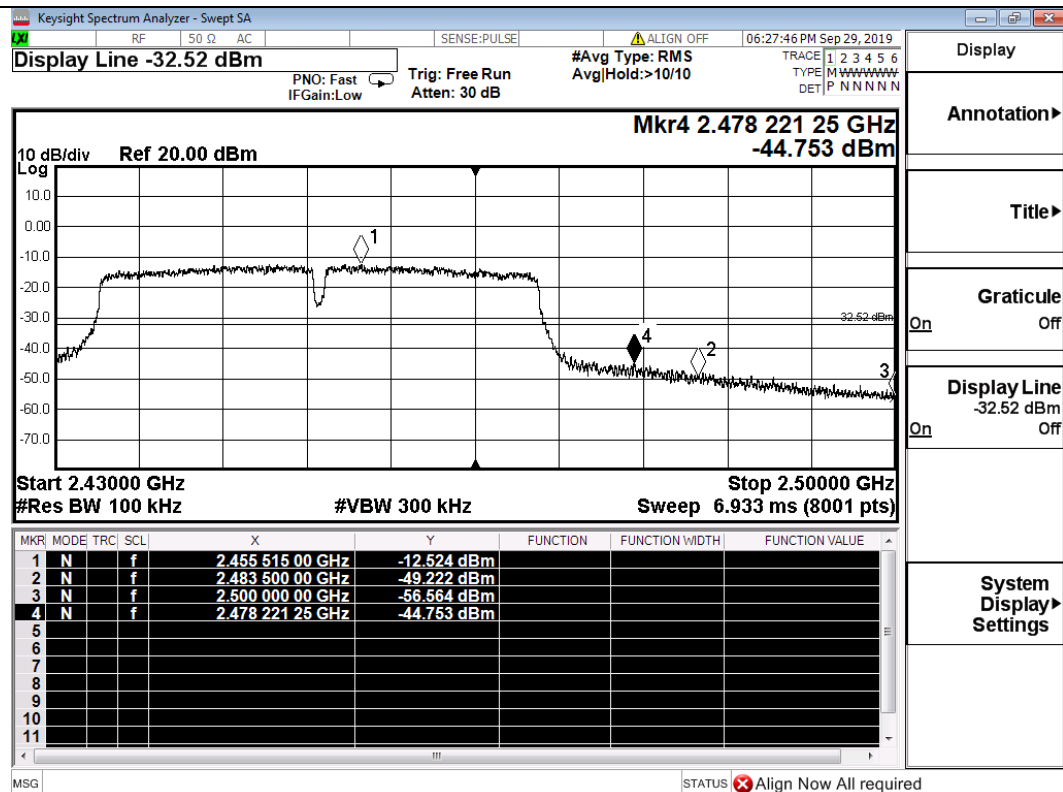
11N20SISO/HCH



11N40SISO/LCH



11N40SISO/HCH

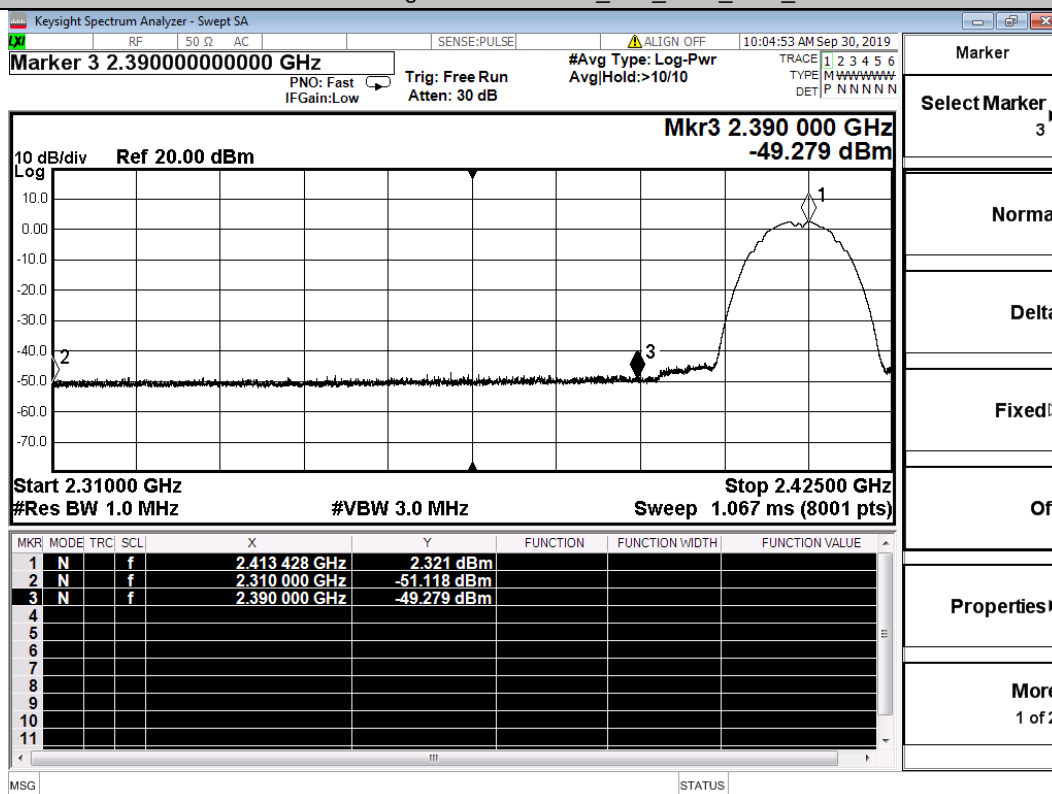


## A.7 Restrict-band band-edge measurements

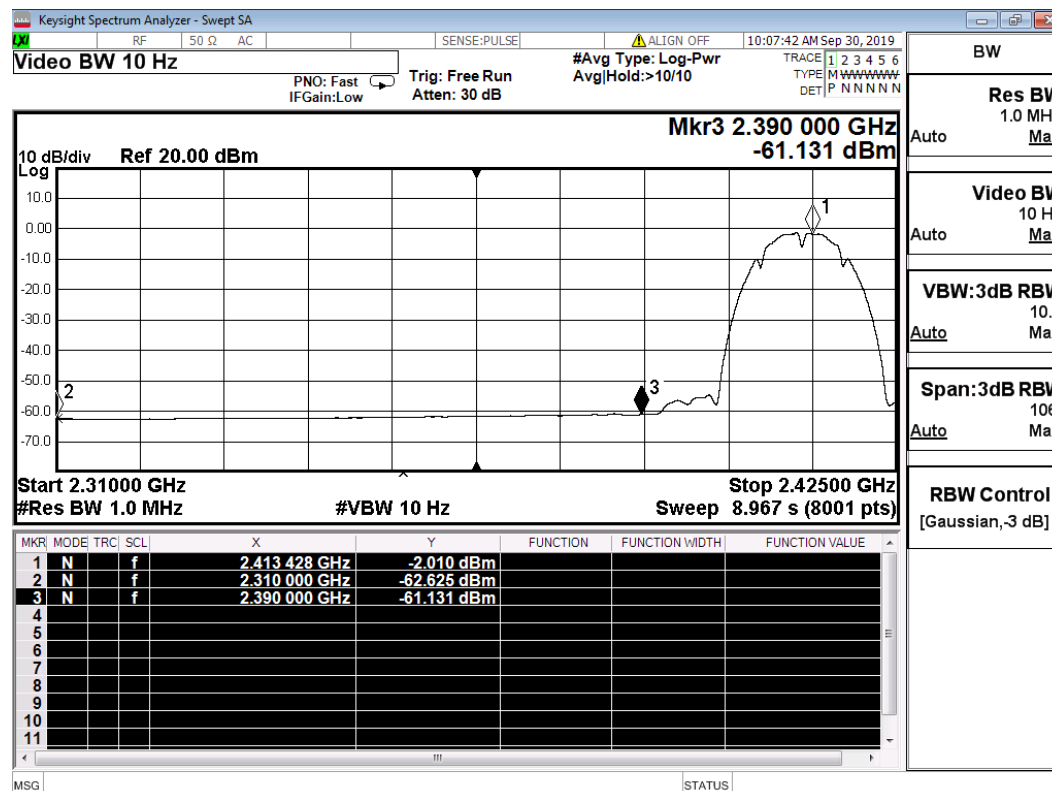
| Test Mode     | Test Channel | Ant  | Freq.  | Power [dBm] | Gain | Ground Factor | E [dBuV/m] | Detector | Limit [dBuV/m] | Verdict |
|---------------|--------------|------|--------|-------------|------|---------------|------------|----------|----------------|---------|
| 11B           | 2412         | Ant1 | 2310.0 | -51.12      | 2.5  | 0             | 46.63      | PEAK     | 74             | PASS    |
|               | 2412         | Ant1 | 2310.0 | -62.63      | 2.5  | 50            | 35.12      | AV       | 54             | PASS    |
|               | 2412         | Ant1 | 2390.0 | -49.28      | 2.5  | 0             | 48.47      | PEAK     | 74             | PASS    |
|               | 2412         | Ant1 | 2390.0 | -61.13      | 2.5  | 0             | 36.62      | AV       | 54             | PASS    |
|               | 2462         | Ant1 | 2483.5 | -49.30      | 2.5  | 0             | 48.45      | PEAK     | 74             | PASS    |
|               | 2462         | Ant1 | 2483.5 | -60.81      | 2.5  | 0             | 36.94      | AV       | 54             | PASS    |
|               | 2462         | Ant1 | 2500.0 | -48.61      | 2.5  | 0             | 49.14      | PEAK     | 74             | PASS    |
|               | 2462         | Ant1 | 2500.0 | -60.16      | 2.5  | 0             | 37.59      | AV       | 54             | PASS    |
| 11G           | 2412         | Ant1 | 2310.0 | -50.61      | 2.5  | 0             | 47.14      | PEAK     | 74             | PASS    |
|               | 2412         | Ant1 | 2310.0 | -62.40      | 2.5  | 0             | 35.35      | AV       | 54             | PASS    |
|               | 2412         | Ant1 | 2390.0 | -43.58      | 2.5  | 0             | 54.17      | PEAK     | 74             | PASS    |
|               | 2412         | Ant1 | 2390.0 | -57.72      | 2.5  | 0             | 40.03      | AV       | 54             | PASS    |
|               | 2462         | Ant1 | 2483.5 | -37.87      | 2.5  | 0             | 59.88      | PEAK     | 74             | PASS    |
|               | 2462         | Ant1 | 2483.5 | -53.48      | 2.5  | 0             | 44.27      | AV       | 54             | PASS    |
|               | 2462         | Ant1 | 2500.0 | -46.90      | 2.5  | 0             | 50.85      | PEAK     | 74             | PASS    |
|               | 2462         | Ant1 | 2500.0 | -58.93      | 2.5  | 0             | 38.82      | AV       | 54             | PASS    |
| 11N20<br>SISO | 2412         | Ant1 | 2310.0 | -50.42      | 2.5  | 0             | 47.33      | PEAK     | 74             | PASS    |
|               | 2412         | Ant1 | 2310.0 | -62.41      | 2.5  | 0             | 35.34      | AV       | 54             | PASS    |
|               | 2412         | Ant1 | 2390.0 | -42.97      | 2.5  | 0             | 54.78      | PEAK     | 74             | PASS    |
|               | 2412         | Ant1 | 2390.0 | -57.09      | 2.5  | 0             | 40.66      | AV       | 54             | PASS    |
|               | 2462         | Ant1 | 2483.5 | -35.78      | 2.5  | 0             | 61.97      | PEAK     | 74             | PASS    |
|               | 2462         | Ant1 | 2483.5 | -52.18      | 2.5  | 0             | 45.57      | AV       | 54             | PASS    |
|               | 2462         | Ant1 | 2500.0 | -47.19      | 2.5  | 0             | 50.56      | PEAK     | 74             | PASS    |
|               | 2462         | Ant1 | 2500.0 | -58.49      | 2.5  | 0             | 46.63      | AV       | 54             | PASS    |
| 11N40<br>SISO | 2412         | Ant1 | 2310.0 | -50.89      | 2.5  | 0             | 46.86      | PEAK     | 74             | PASS    |
|               | 2412         | Ant1 | 2310.0 | -62.45      | 2.5  | 0             | 35.30      | AV       | 54             | PASS    |

|  |      |      |        |        |     |   |       |      |    |      |
|--|------|------|--------|--------|-----|---|-------|------|----|------|
|  | 2412 | Ant1 | 2390.0 | -41.51 | 2.5 | 0 | 56.24 | PEAK | 74 | PASS |
|  | 2412 | Ant1 | 2390.0 | -54.44 | 2.5 | 0 | 43.31 | AV   | 54 | PASS |
|  | 2462 | Ant1 | 2483.5 | -36.66 | 2.5 | 0 | 61.09 | PEAK | 74 | PASS |
|  | 2462 | Ant1 | 2483.5 | -48.46 | 2.5 | 0 | 49.29 | AV   | 54 | PASS |
|  | 2462 | Ant1 | 2500.0 | -44.36 | 2.5 | 0 | 53.39 | PEAK | 74 | PASS |
|  | 2462 | Ant1 | 2500.0 | -57.58 | 2.5 | 0 | 40.17 | AV   | 54 | PASS |

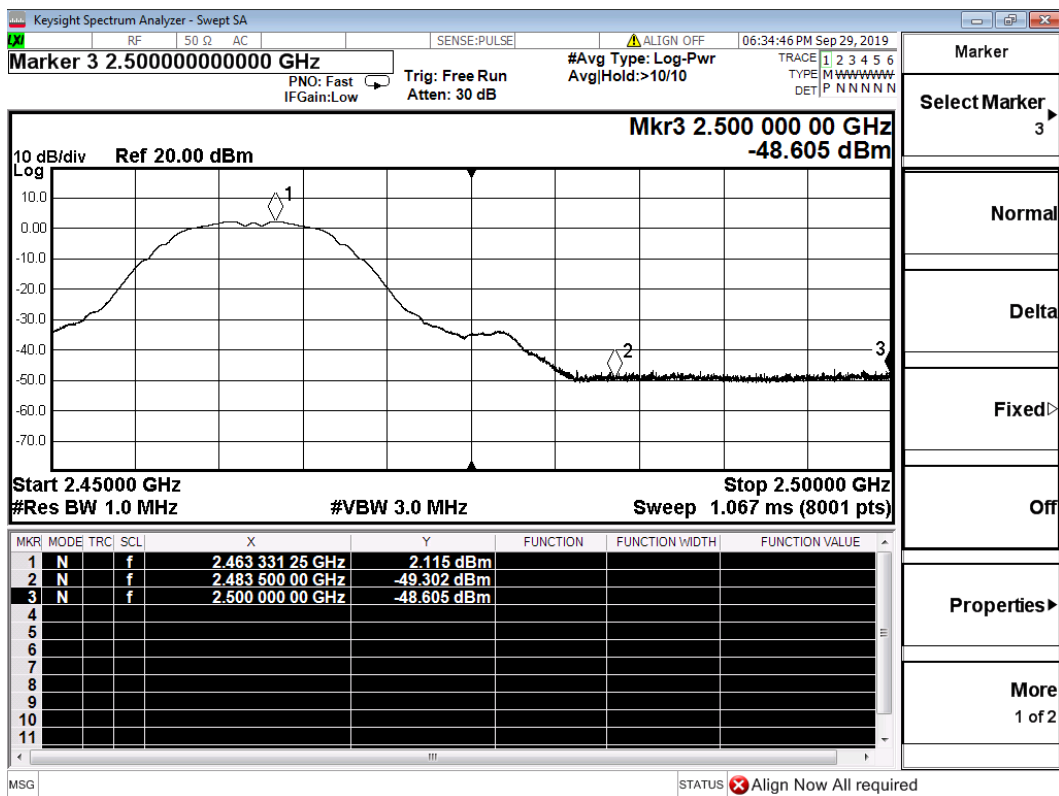
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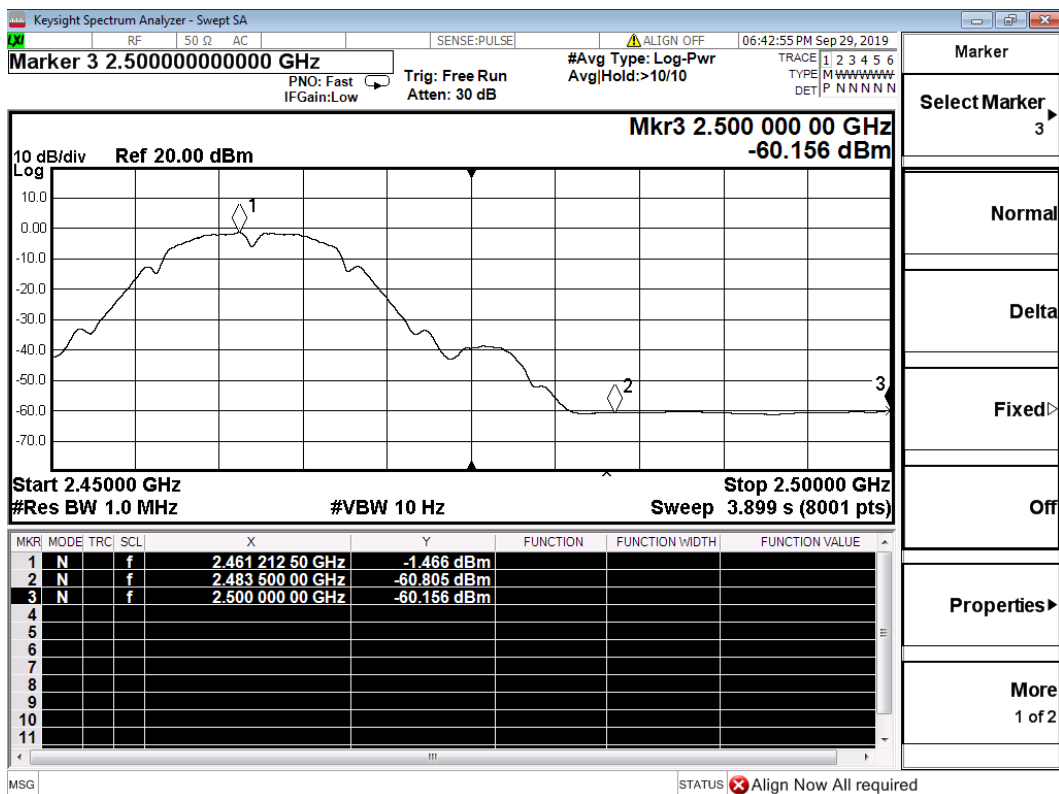
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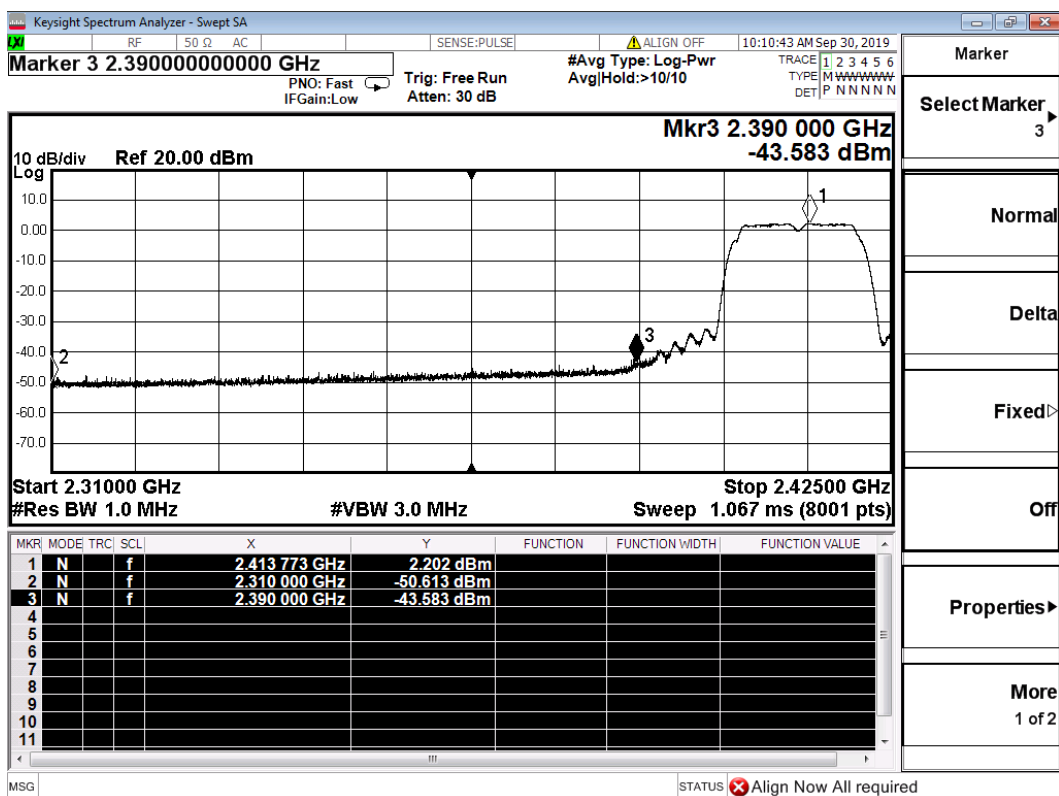
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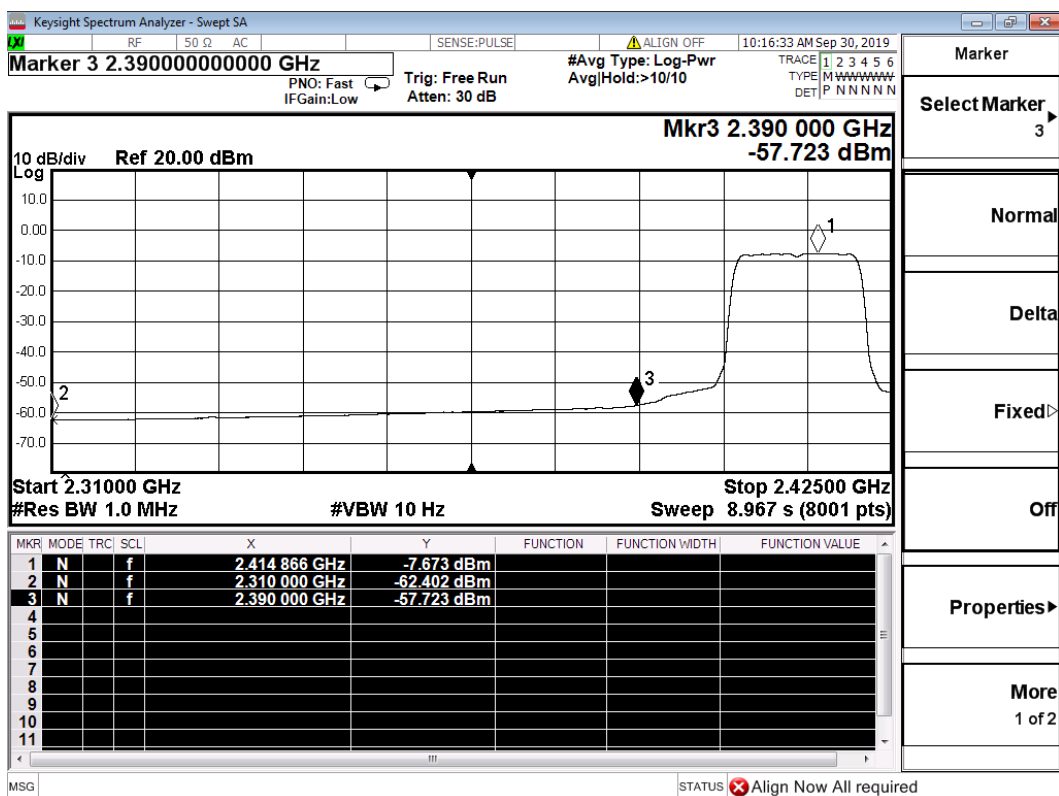
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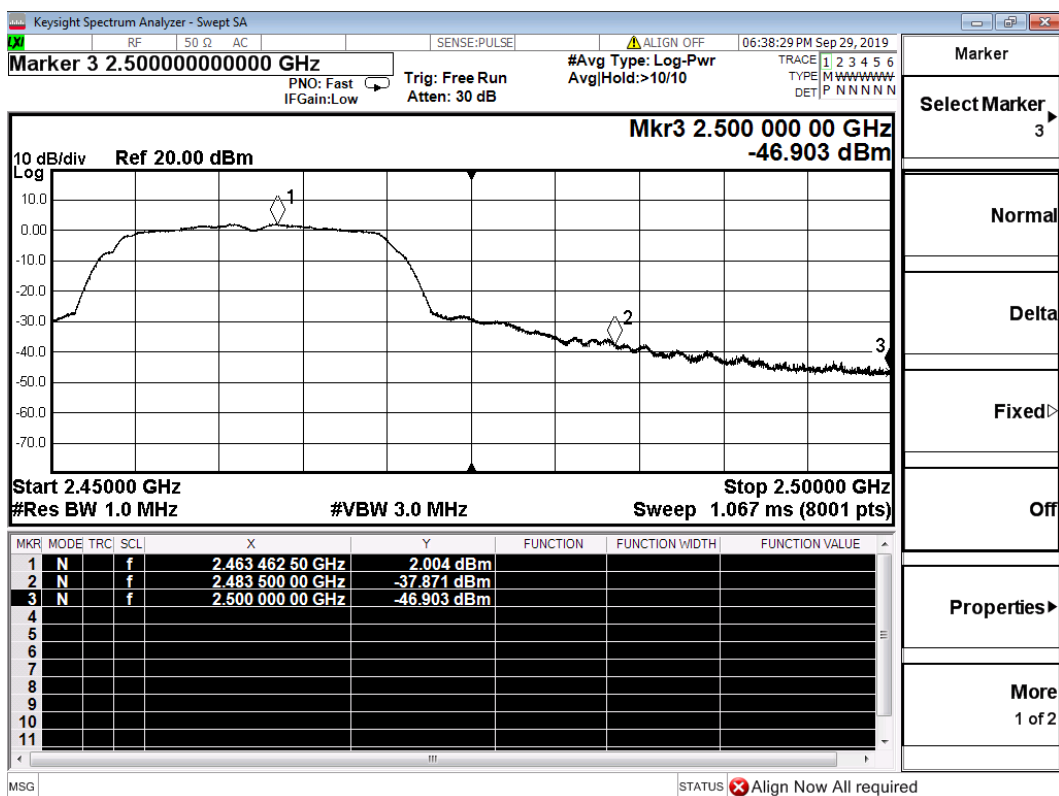
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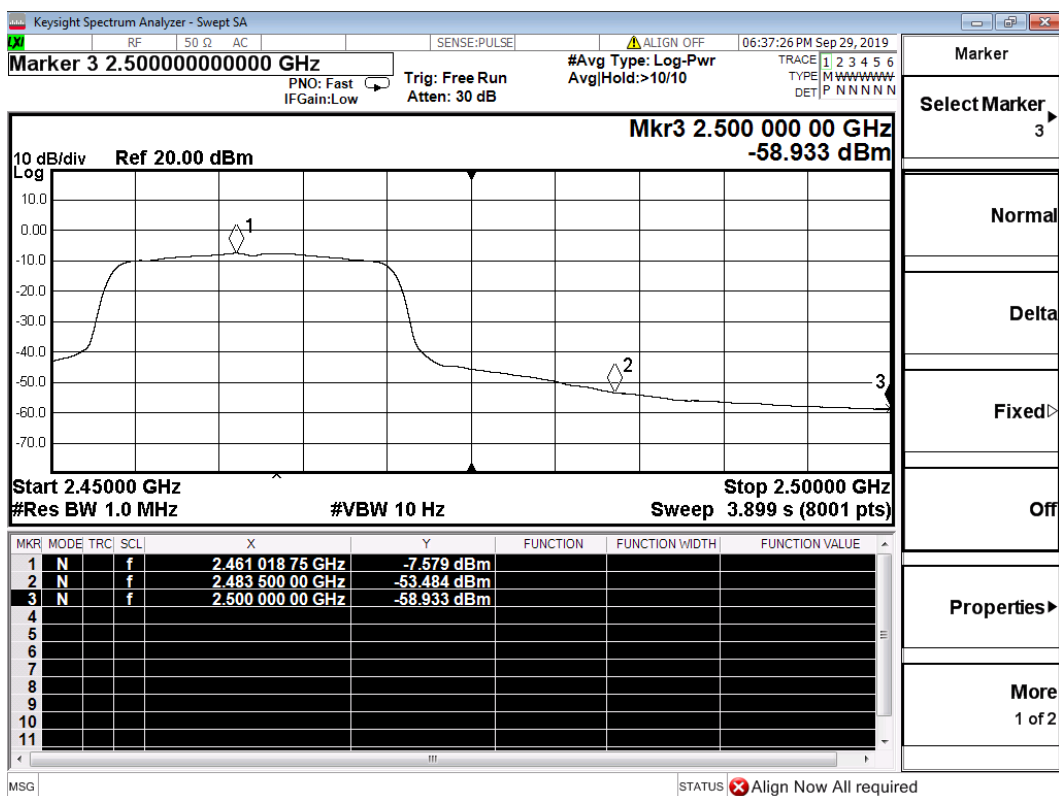
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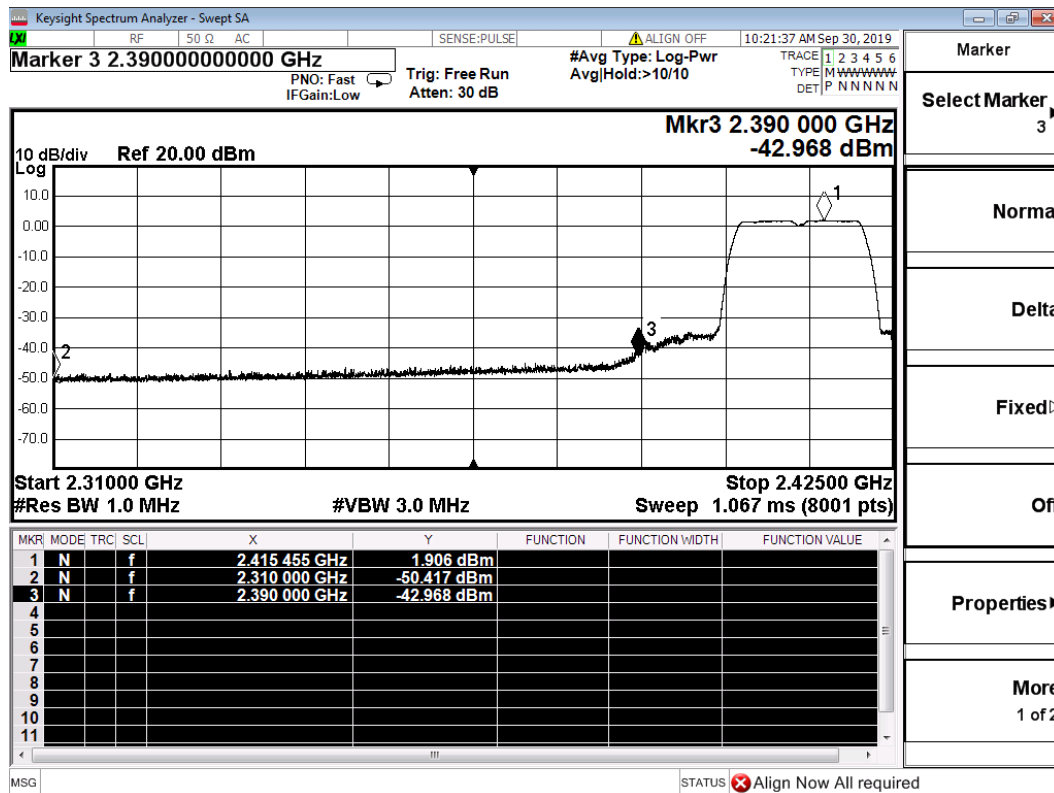
## Restrict-band band-edge measurements\_11G\_2462\_Ant1\_PEAK



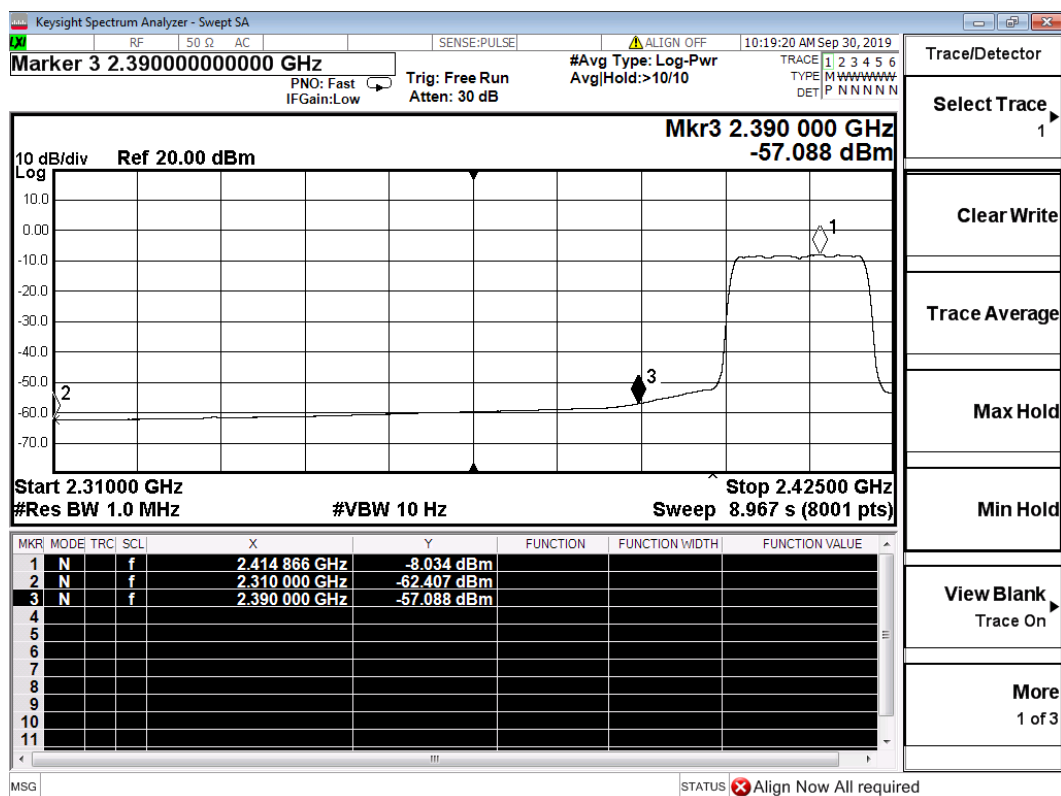
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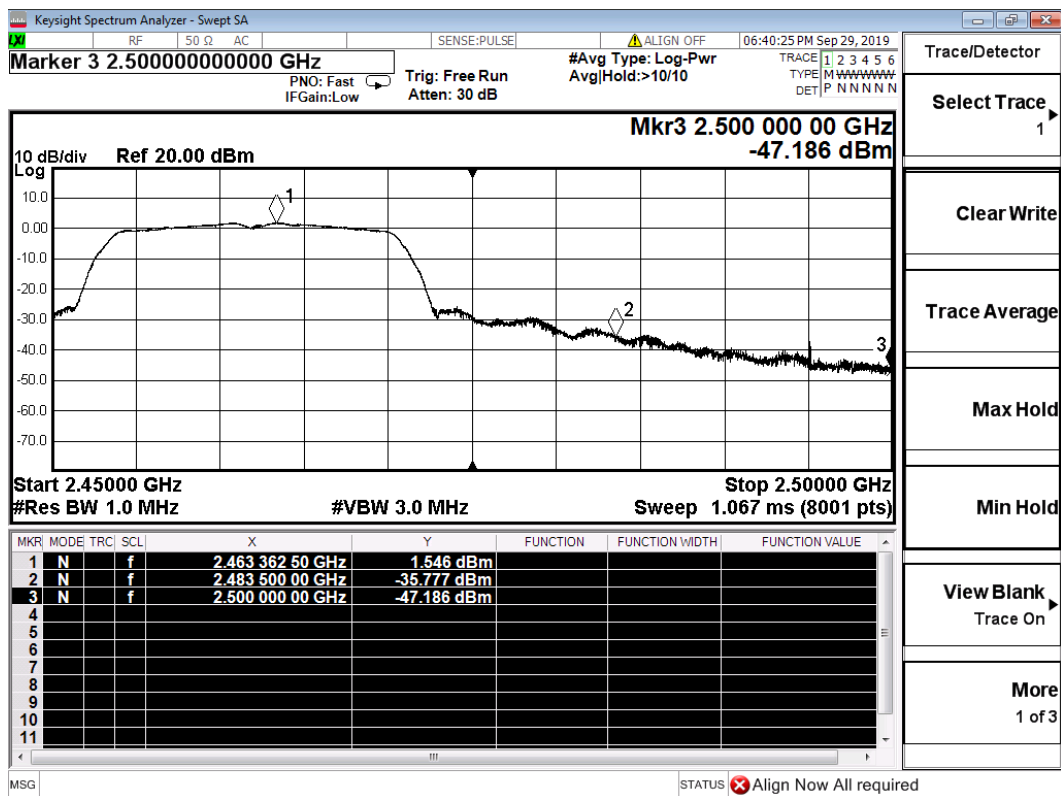
## Restrict-band band-edge measurements\_11N20SISO\_2412\_Ant1\_PEAK



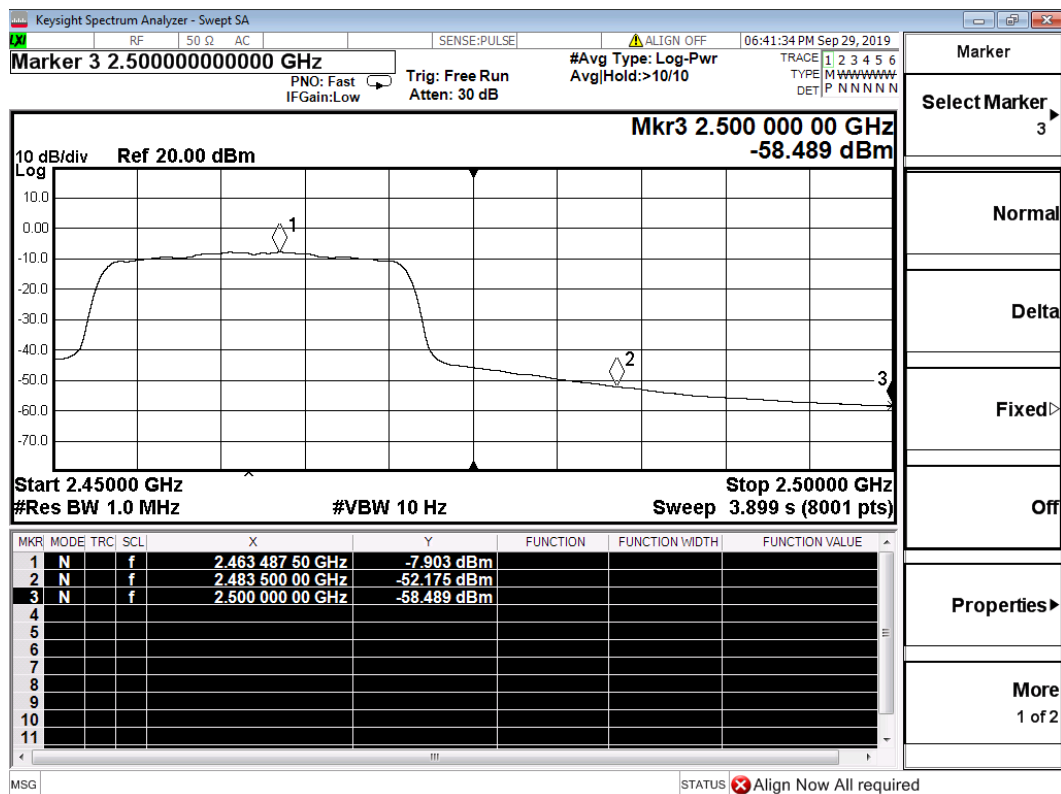
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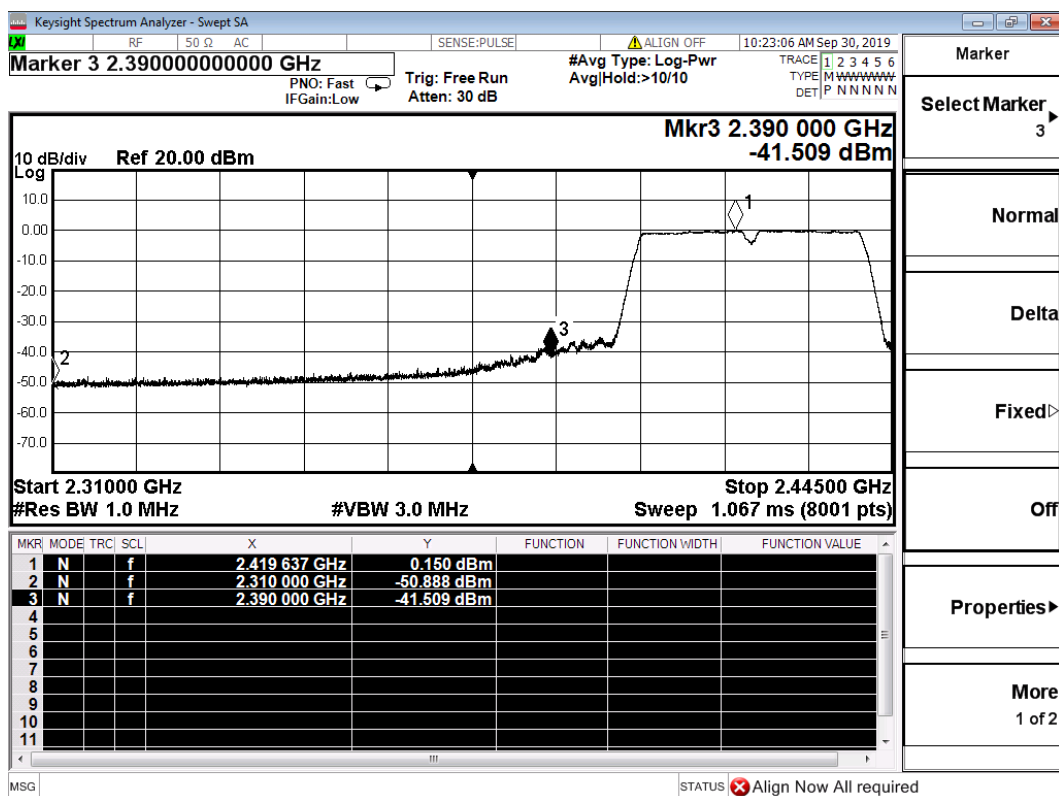
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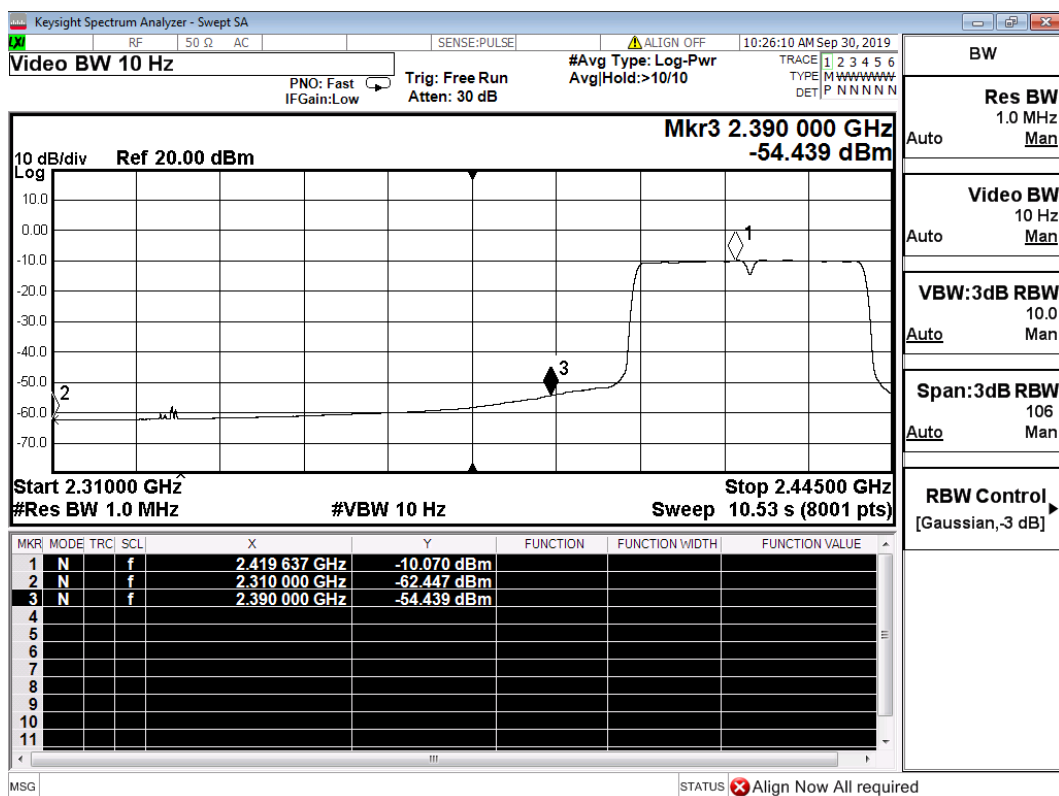
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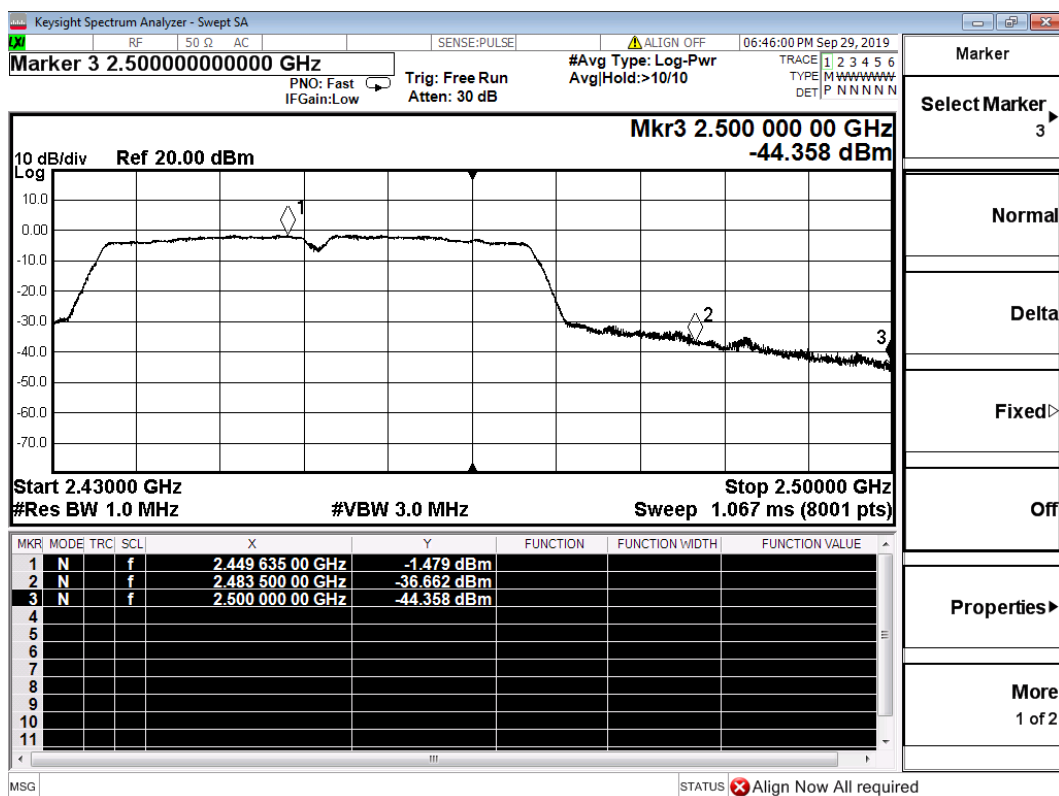
## Restrict-band band-edge measurements\_11N40SISO\_2422\_Ant1\_PEAK



## Restrict-band band-edge measurements\_11N40SISO\_2422\_Ant1\_AV



## Restrict-band band-edge measurements\_11N40SISO\_2452\_Ant1\_PEAK



## Restrict-band band-edge measurements\_11N40SISO\_2452\_Ant1\_AV

