

## Appendix A

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

Product Name: Internet Photo Frame

Trade Mark: LENKENG

Test Model: LMWFPP13-R

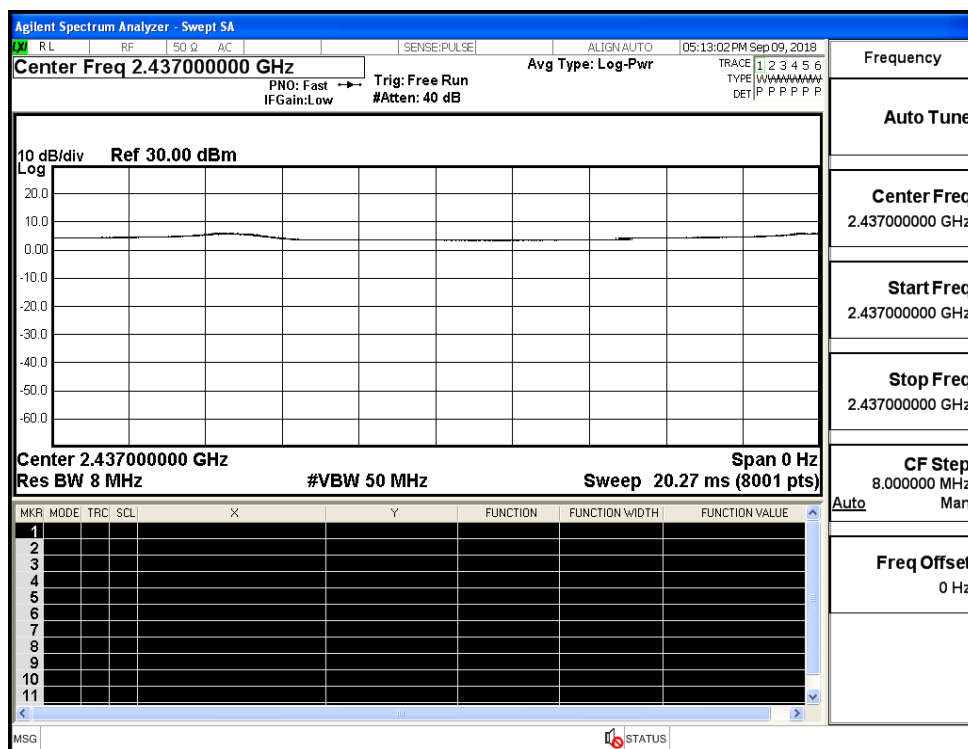
#### Environmental Conditions

|                    |             |
|--------------------|-------------|
| Temperature:       | 23.5 ° C    |
| Relative Humidity: | 52.3%       |
| ATM Pressure:      | 100.0 kPa   |
| Test Engineer:     | Tom Liu     |
| Supervised by:     | Jayden Zhuo |

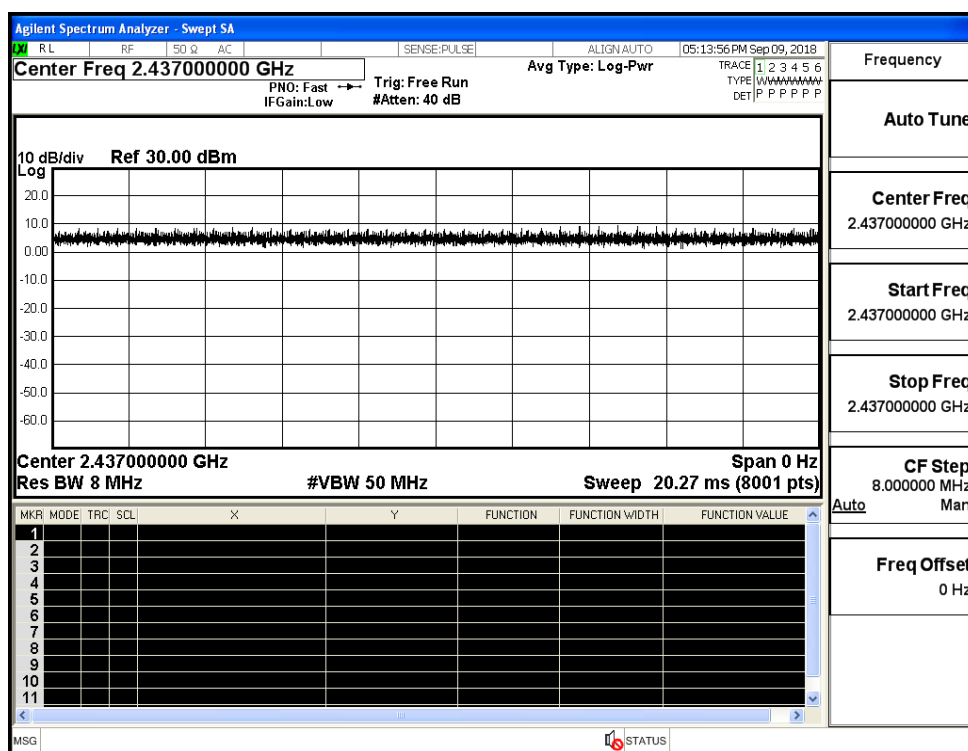
#### A.1 Duty Cycle

| Test Mode | Test Channel | Ant  | Duty Cycle[%] | Verdict |
|-----------|--------------|------|---------------|---------|
| 11B       | 2437         | Ant1 | 100           | PASS    |
| 11G       | 2437         | Ant1 | 100           | PASS    |
| 11N20SISO | 2437         | Ant1 | 100           | PASS    |
| 11N40SISO | 2437         | Ant1 | 100           | PASS    |

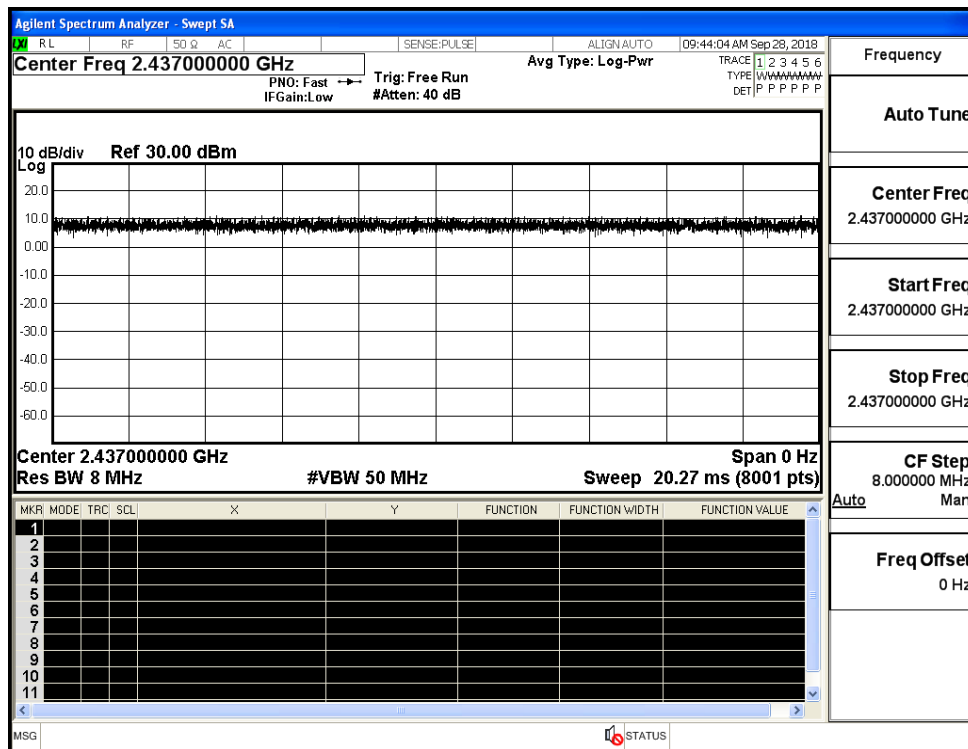
## Duty Cycle\_11B\_2437\_Ant1



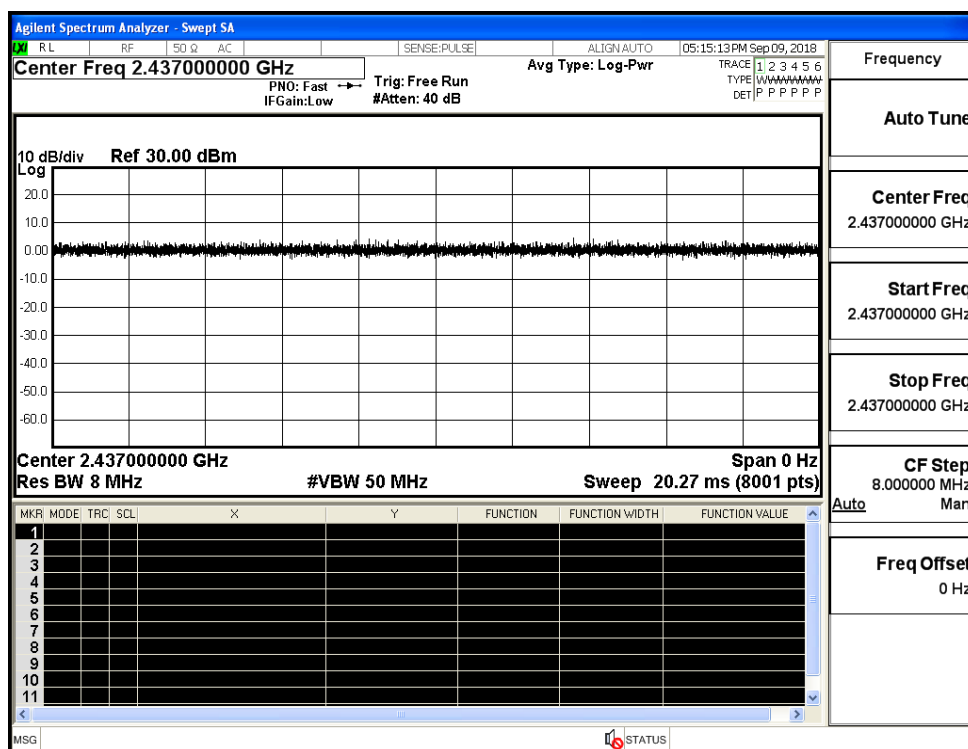
## Duty Cycle\_11G\_2437\_Ant1



## Duty Cycle\_11N20SISO\_2437\_Ant1



## Duty Cycle\_11N40SISO\_2437\_Ant1



**A.2 Maximum Conducted Output Power**

| Mode      | Channel | Meas. Peak Level [dBm] | Limit [dBm] | Verdict |
|-----------|---------|------------------------|-------------|---------|
| 11B       | LCH     | 13.07                  | 30          | PASS    |
|           | MCH     | 13.27                  | 30          | PASS    |
|           | HCH     | 12.87                  | 30          | PASS    |
| 11G       | LCH     | 13.25                  | 30          | PASS    |
|           | MCH     | 13.43                  | 30          | PASS    |
|           | HCH     | 12.42                  | 30          | PASS    |
| 11N20SISO | LCH     | 13.24                  | 30          | PASS    |
|           | MCH     | 13.31                  | 30          | PASS    |
|           | HCH     | 13.61                  | 30          | PASS    |
| 11N40SISO | LCH     | 13.77                  | 30          | PASS    |
|           | MCH     | 13.21                  | 30          | PASS    |
|           | HCH     | 13.31                  | 30          | PASS    |

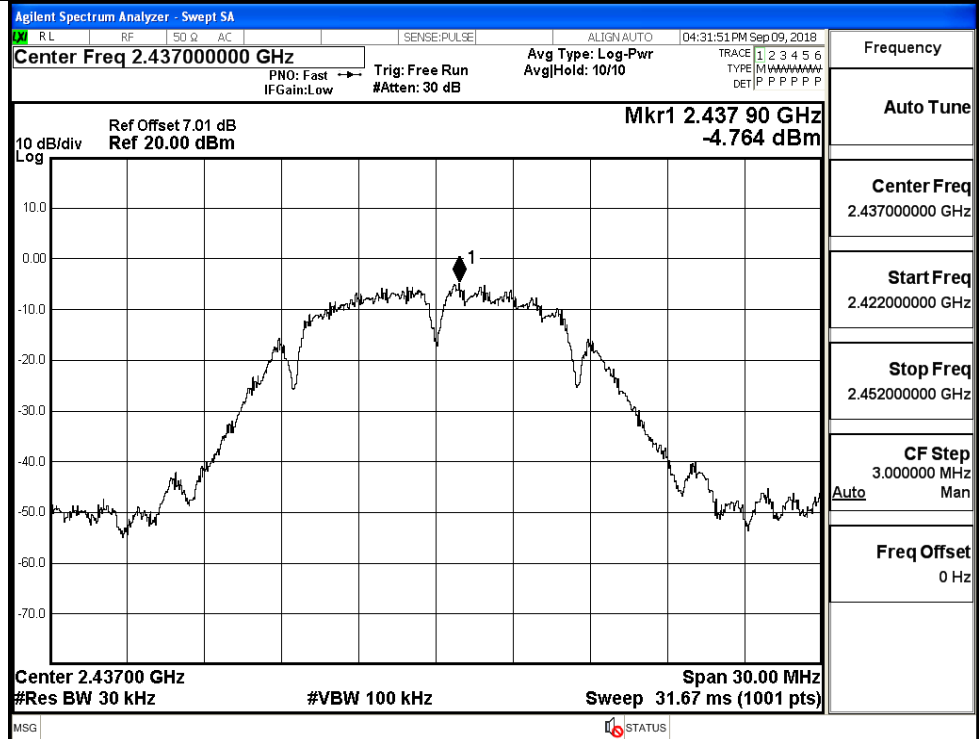
### A.3 Maximum Power Spectral Density

| Mode      | Channel | Meas.Level [dBm/30KHz] | Limit [dBm/3KHz] | Verdict |
|-----------|---------|------------------------|------------------|---------|
| 11B       | LCH     | -4.856                 | 8                | PASS    |
|           | MCH     | -4.764                 | 8                | PASS    |
|           | HCH     | -5.093                 | 8                | PASS    |
| 11G       | LCH     | -10.334                | 8                | PASS    |
|           | MCH     | -10.083                | 8                | PASS    |
|           | HCH     | -12.297                | 8                | PASS    |
| 11N20SISO | LCH     | -11.257                | 8                | PASS    |
|           | MCH     | -11.226                | 8                | PASS    |
|           | HCH     | -10.944                | 8                | PASS    |
| 11N40SISO | LCH     | -12.974                | 8                | PASS    |
|           | MCH     | -14.243                | 8                | PASS    |
|           | HCH     | -14.174                | 8                | PASS    |

Test Graphs



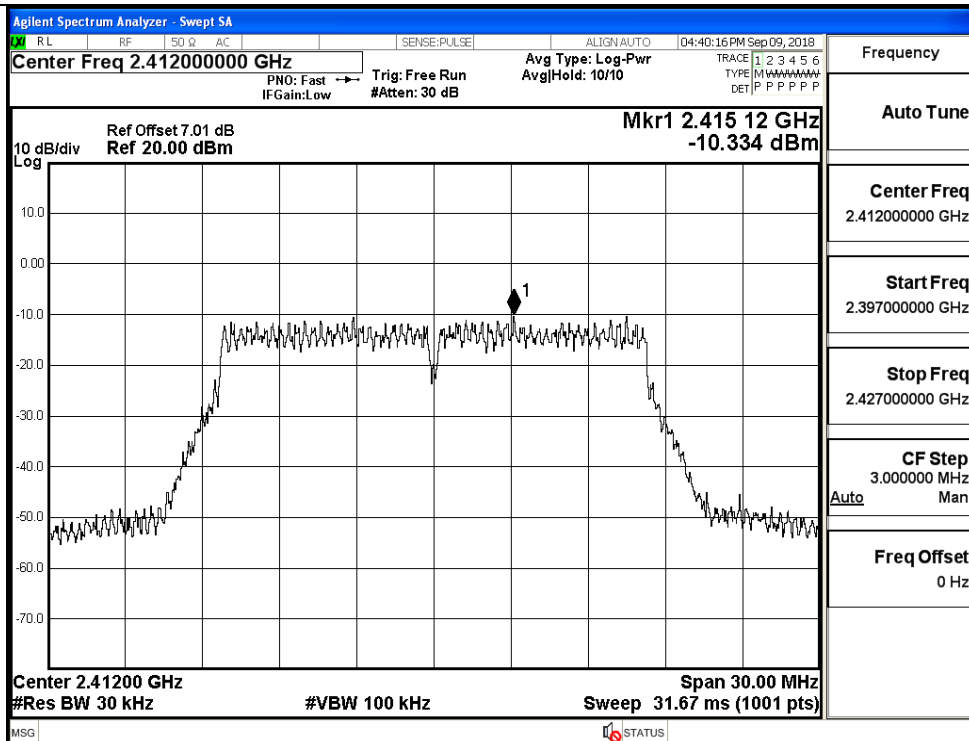
11B/MCH



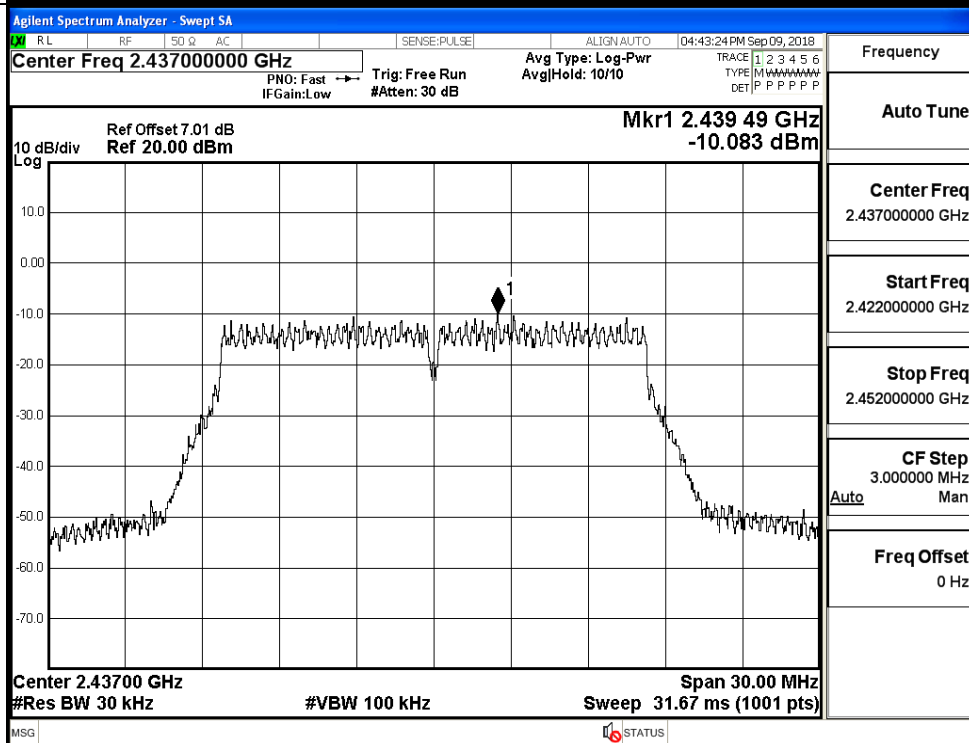
11B/HCH



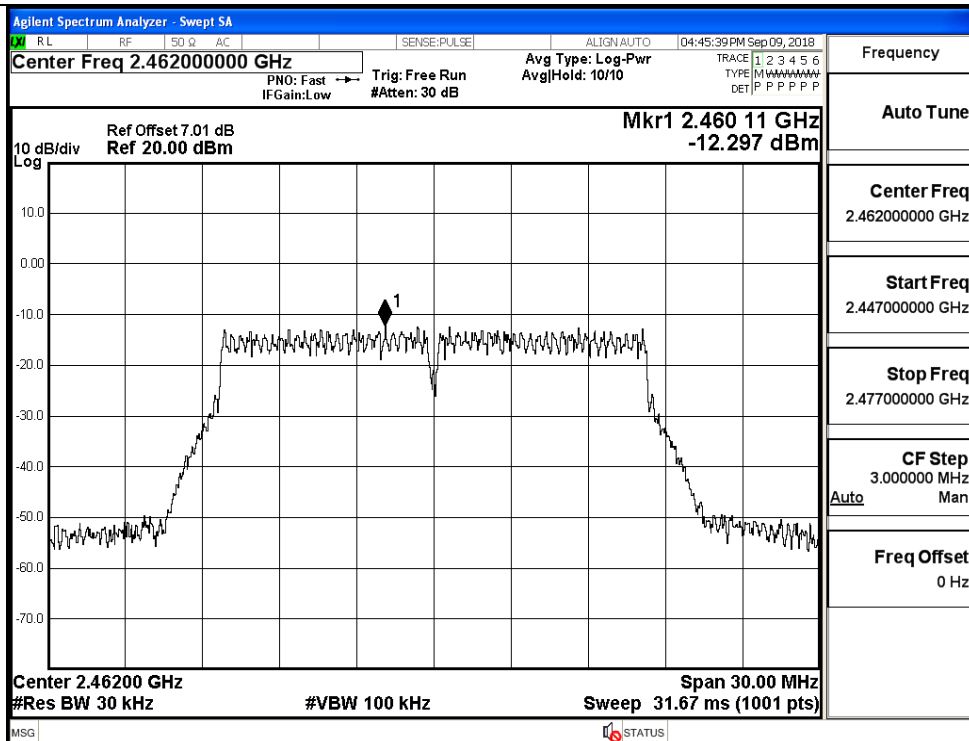
11G/LCH



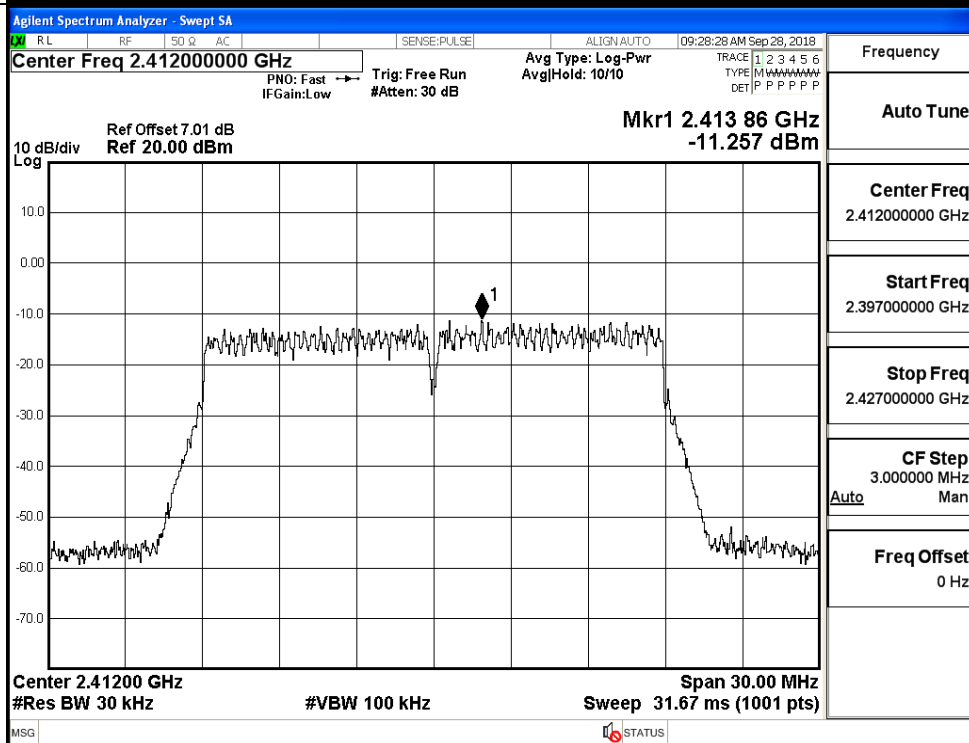
11G/MCH



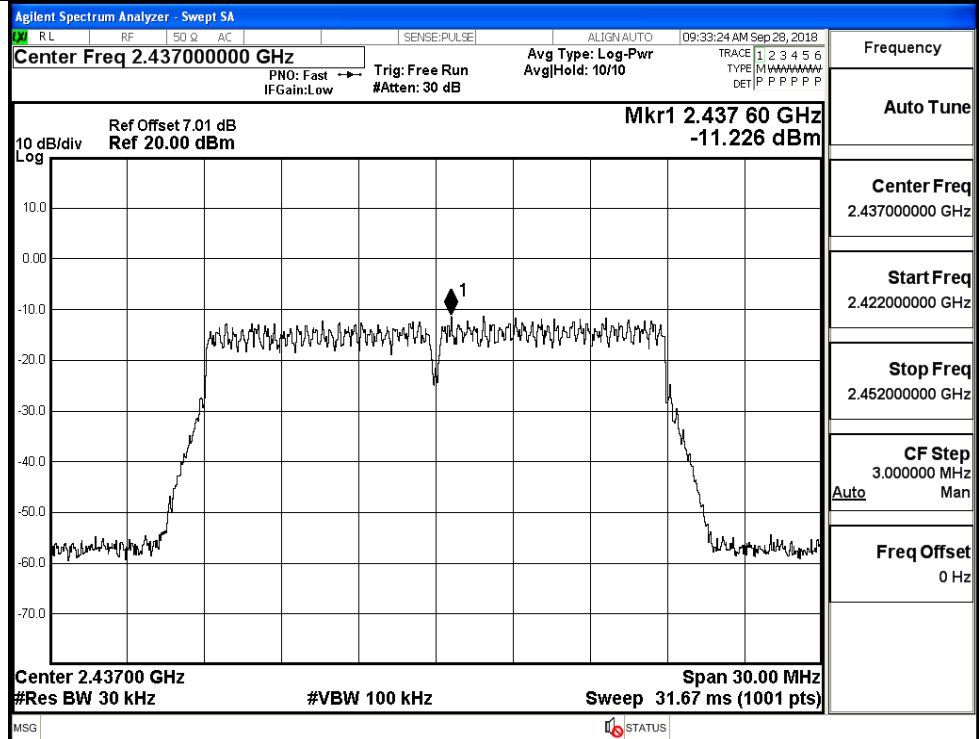
11G/HCH



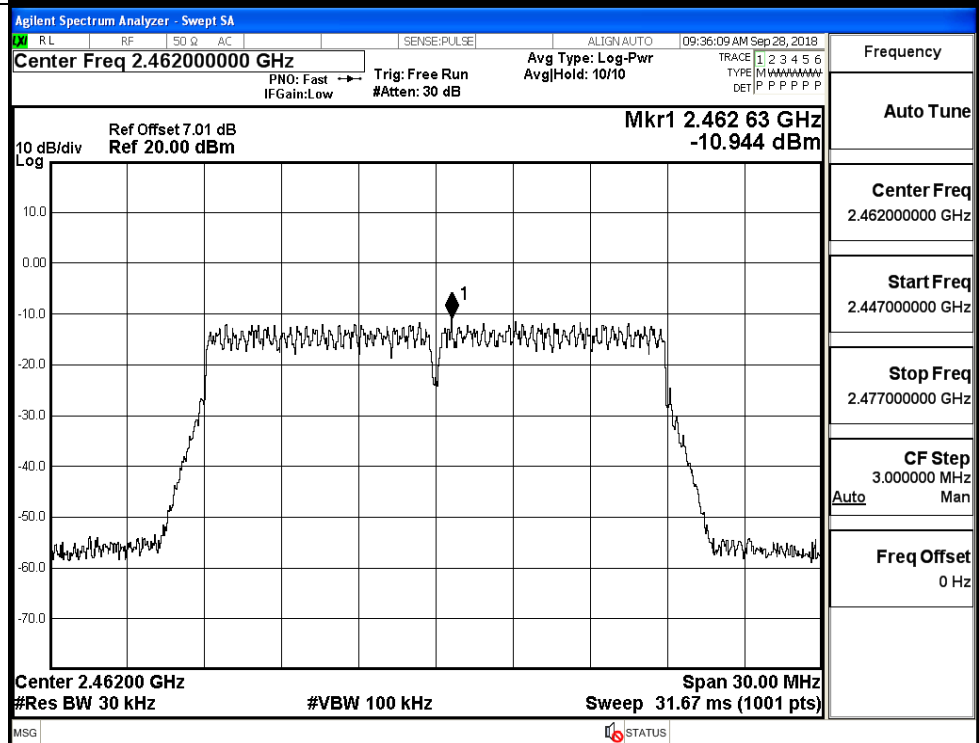
11N20SISO/LCH



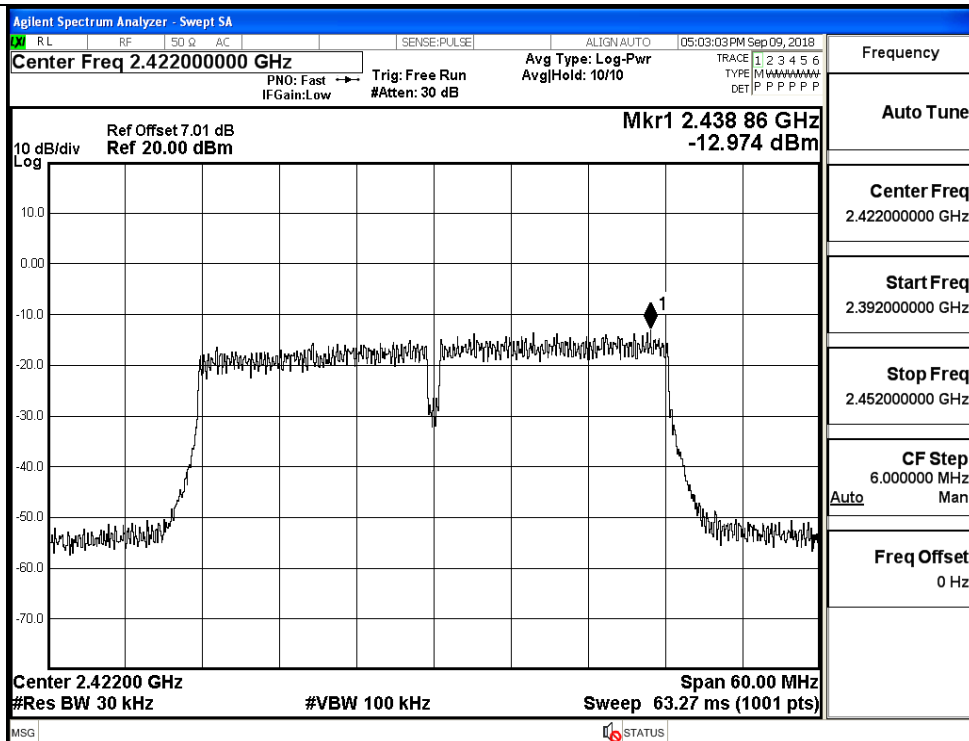
11N20SISO/MCH



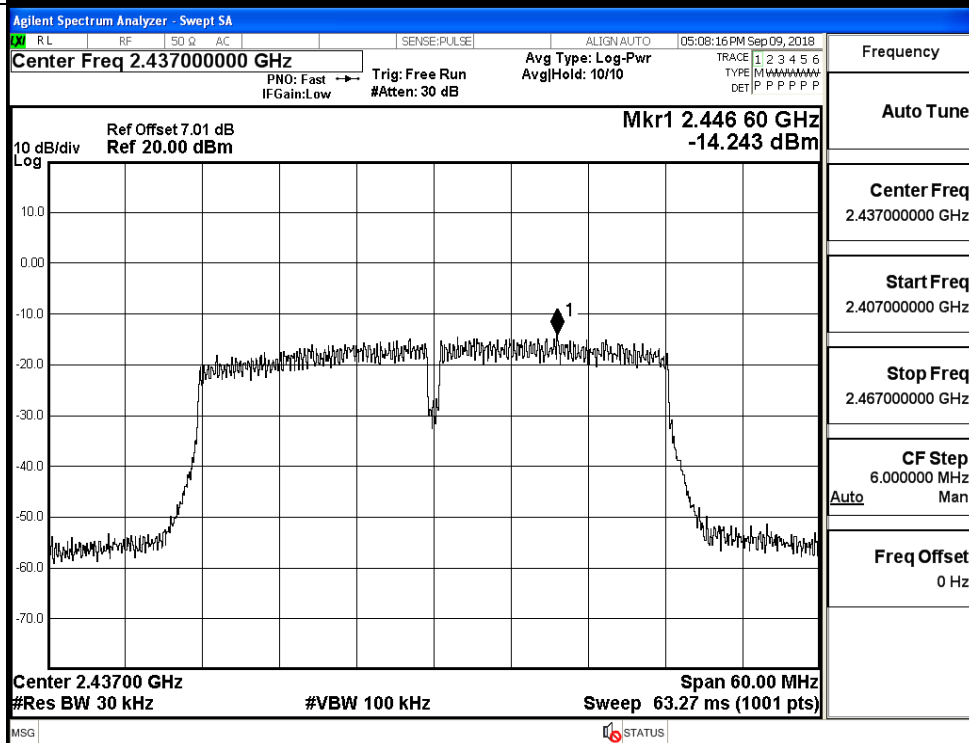
11N20SISO/HCH



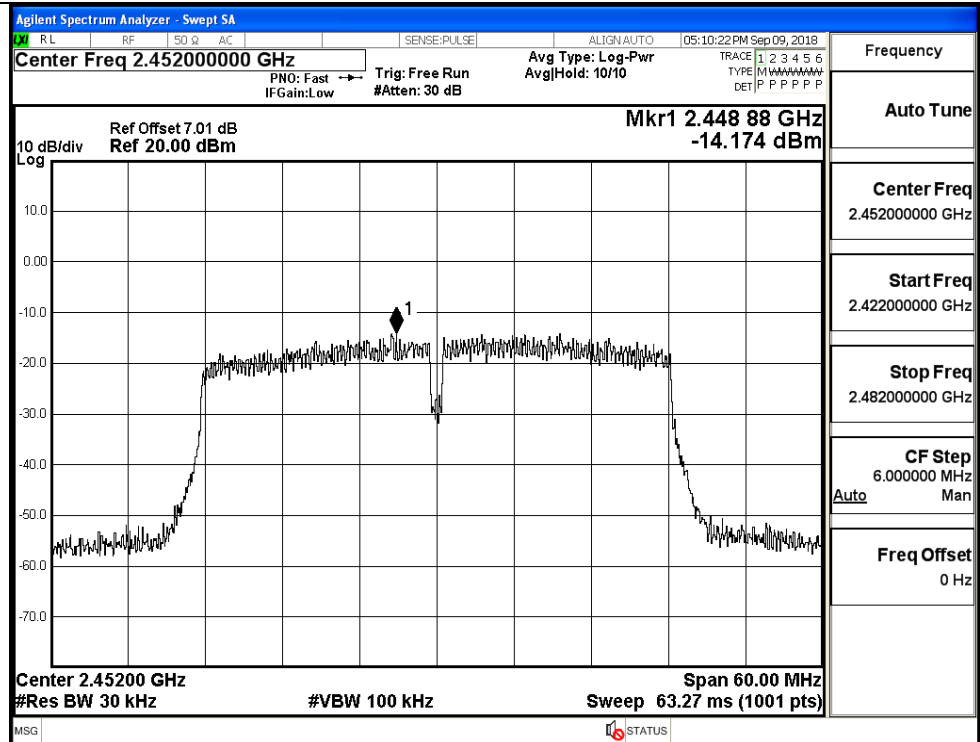
11N40SISO/LCH



11N40SISO/MCH



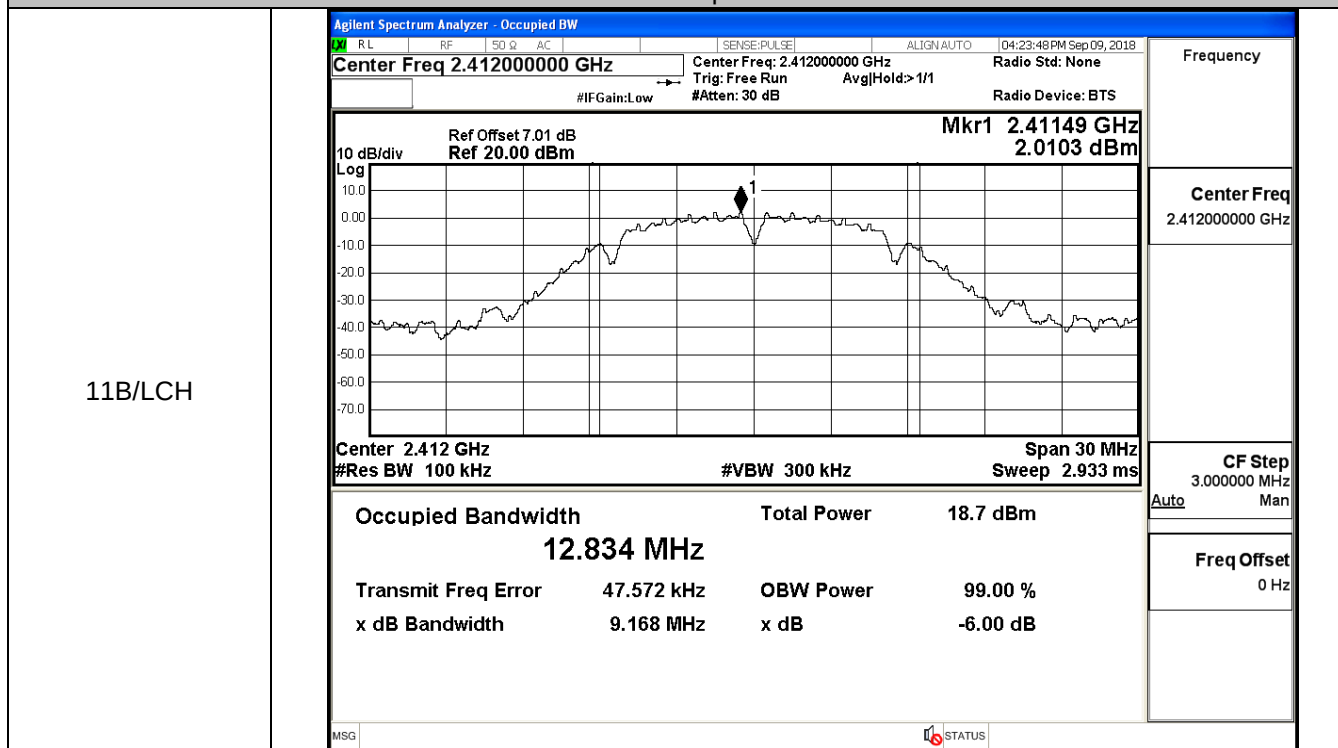
11N40SISO/HCH



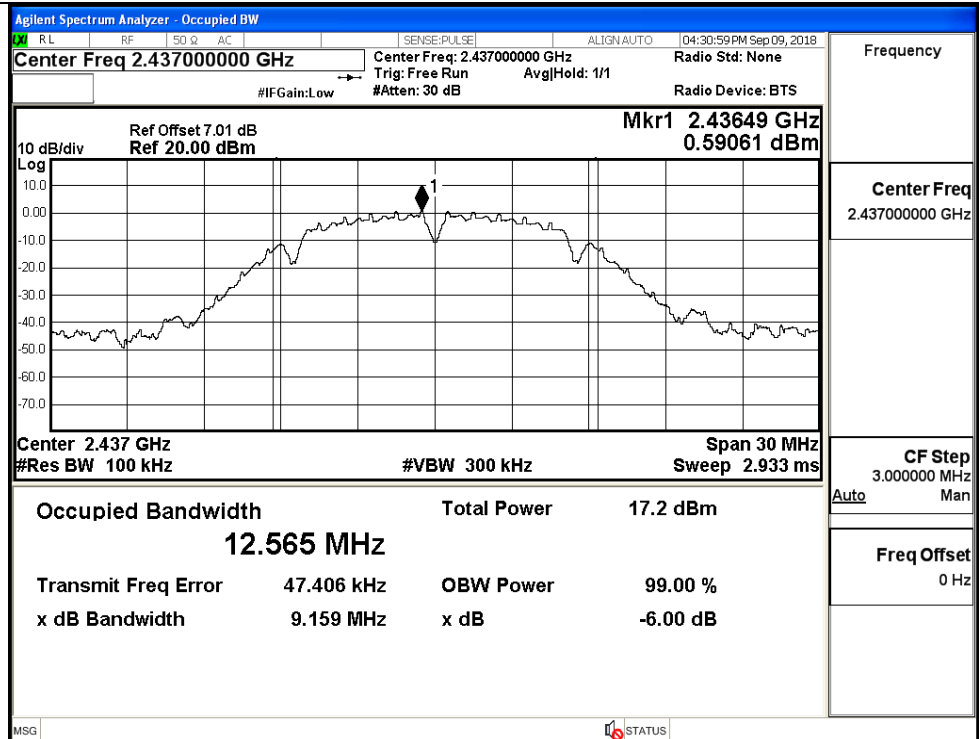
## A.4 6dB Bandwidth

| Mode      | Channel | 6dB Bandwidth [MHz] | Limit [MHz] | Verdict |
|-----------|---------|---------------------|-------------|---------|
| 11B       | LCH     | 9.168               | $\geq 0.5$  | PASS    |
|           | MCH     | 9.159               | $\geq 0.5$  | PASS    |
|           | HCH     | 9.159               | $\geq 0.5$  | PASS    |
| 11G       | LCH     | 15.14               | $\geq 0.5$  | PASS    |
|           | MCH     | 16.38               | $\geq 0.5$  | PASS    |
|           | HCH     | 16.61               | $\geq 0.5$  | PASS    |
| 11N20SISO | LCH     | 17.82               | $\geq 0.5$  | PASS    |
|           | MCH     | 17.80               | $\geq 0.5$  | PASS    |
|           | HCH     | 17.84               | $\geq 0.5$  | PASS    |
| 11N40SISO | LCH     | 36.00               | $\geq 0.5$  | PASS    |
|           | MCH     | 36.49               | $\geq 0.5$  | PASS    |
|           | HCH     | 35.98               | $\geq 0.5$  | PASS    |

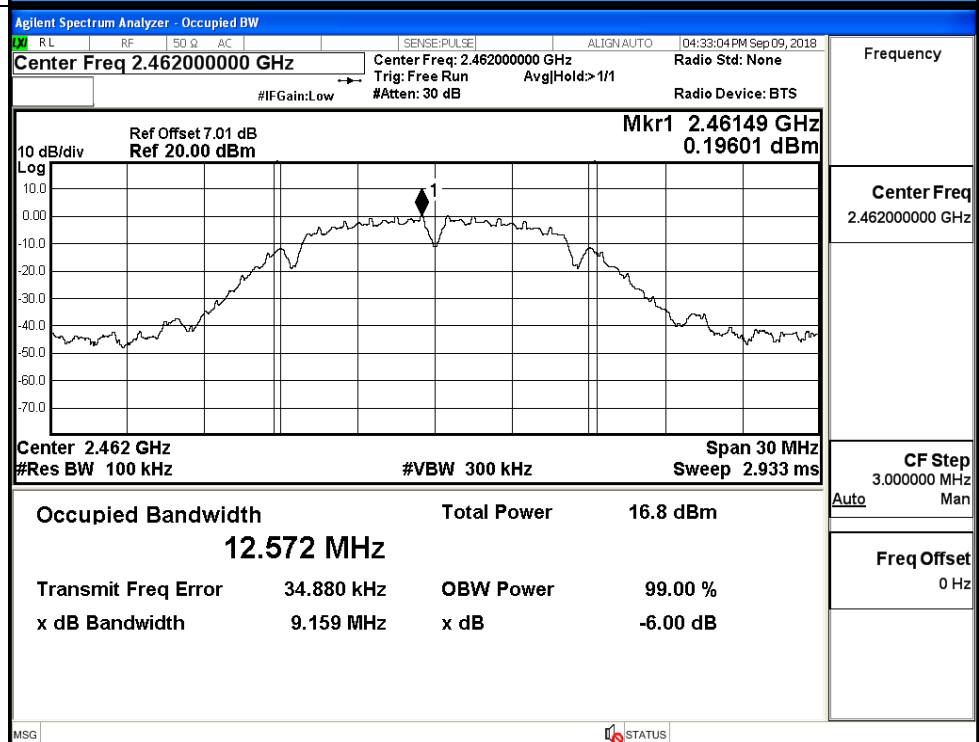
## Test Graphs



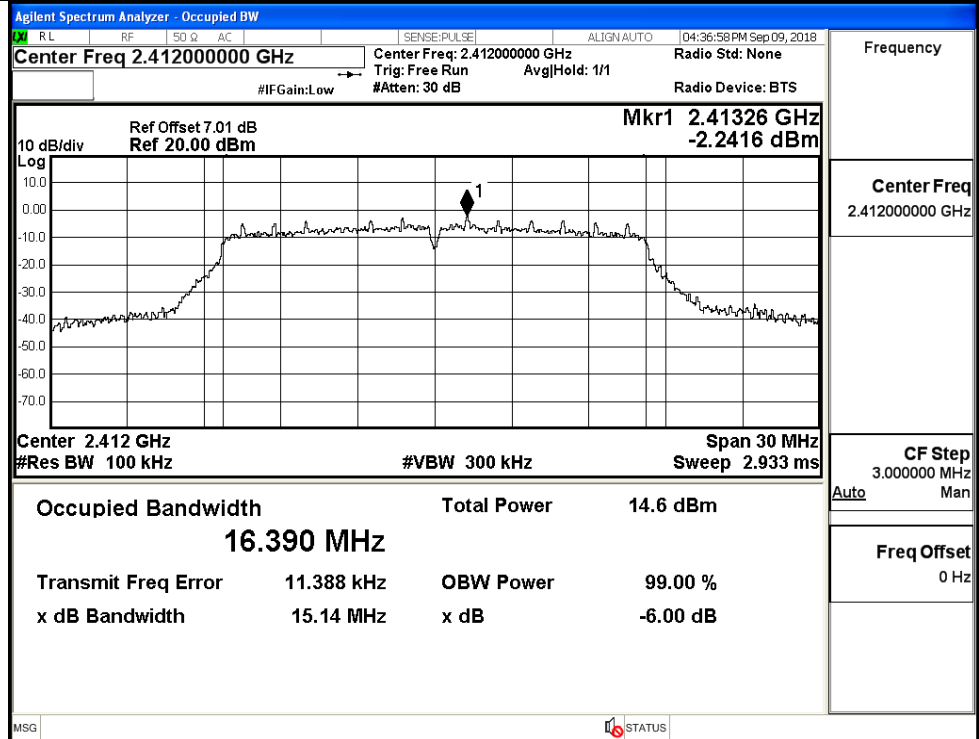
11B/MCH



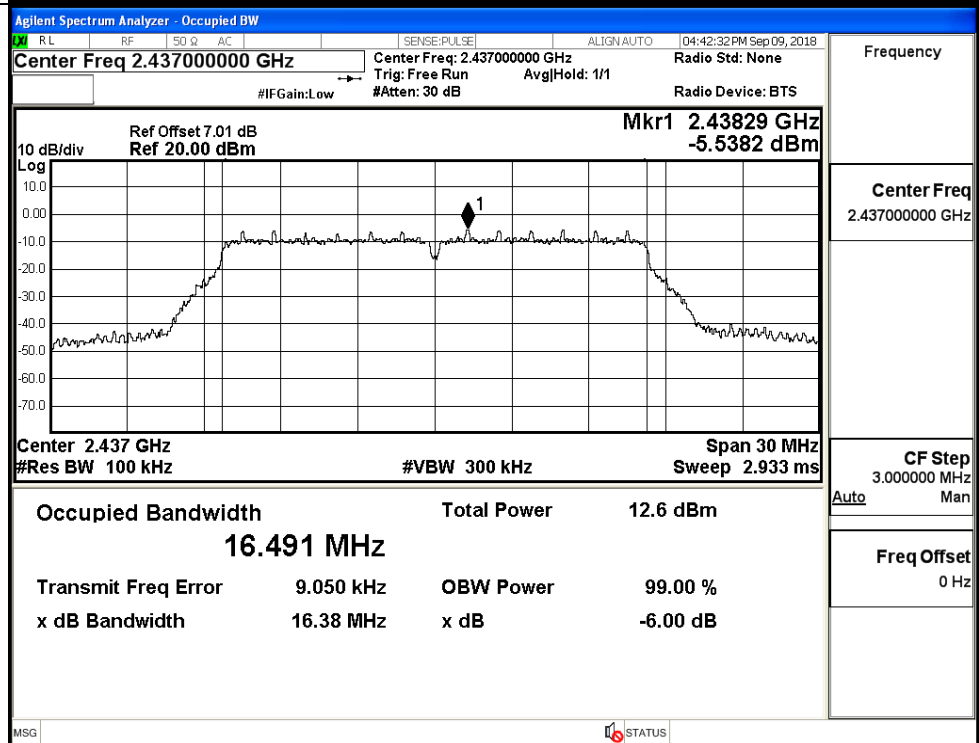
11B/HCH



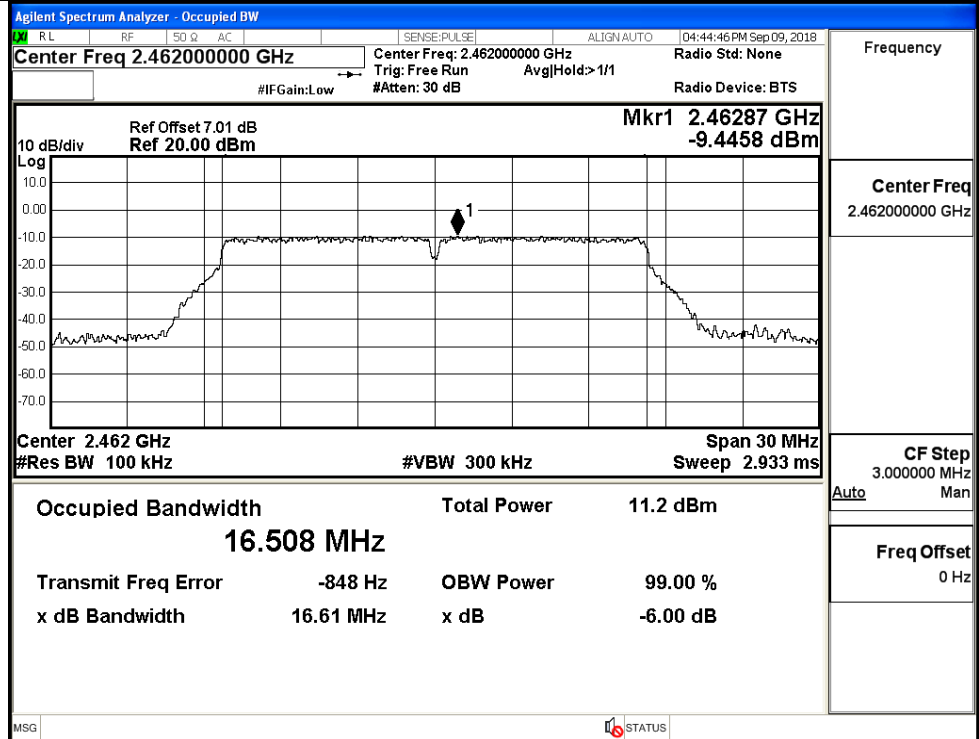
11G/LCH



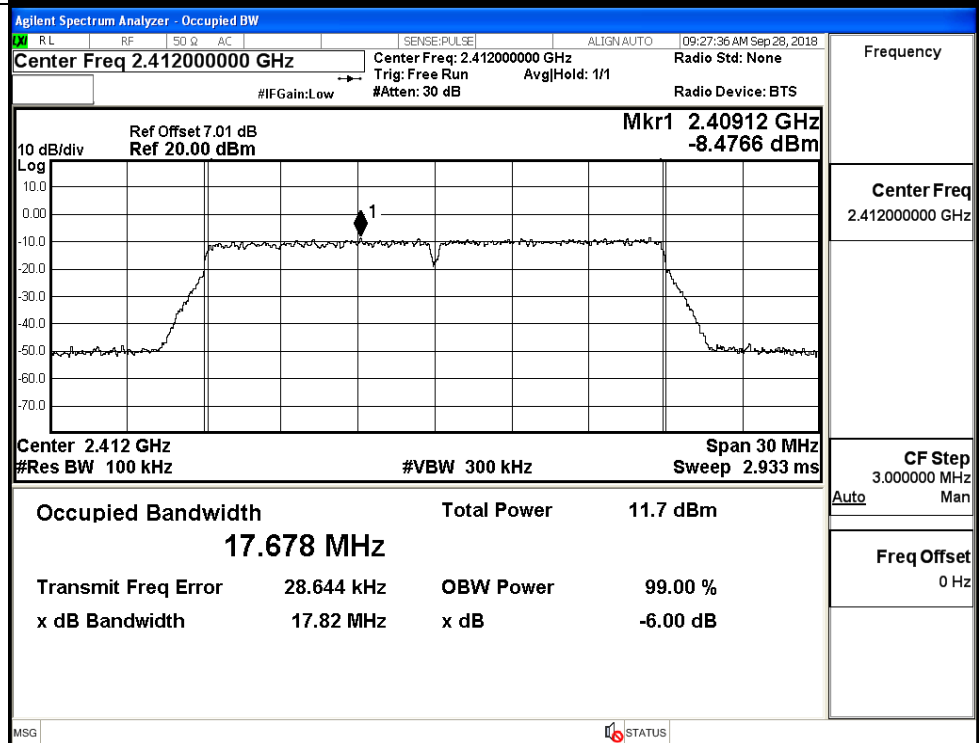
11G/MCH



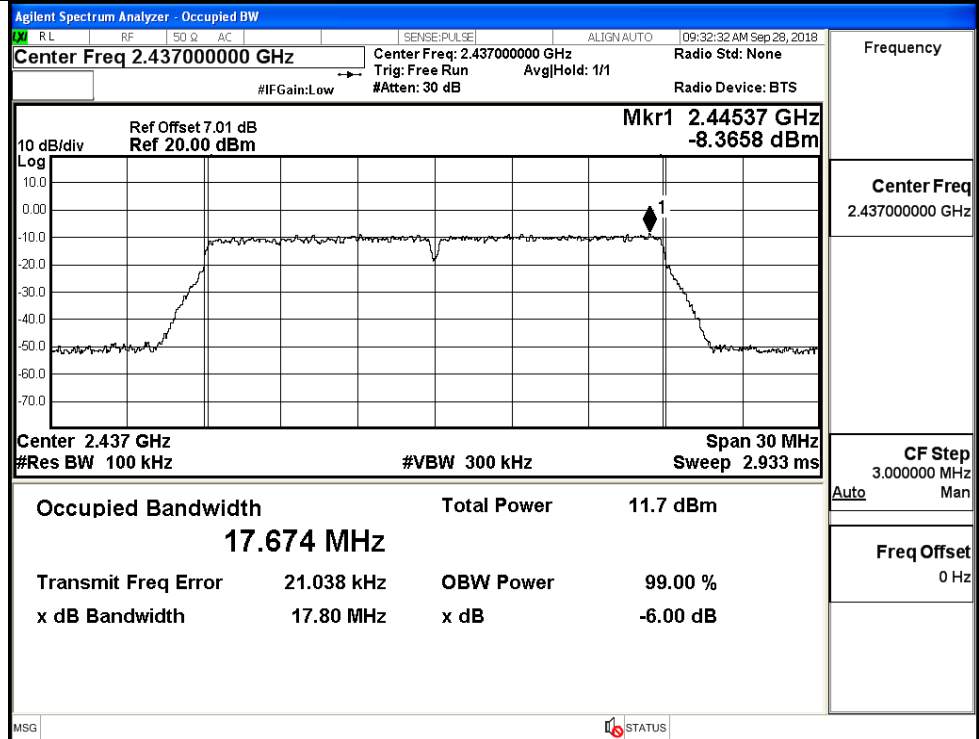
11G/HCH



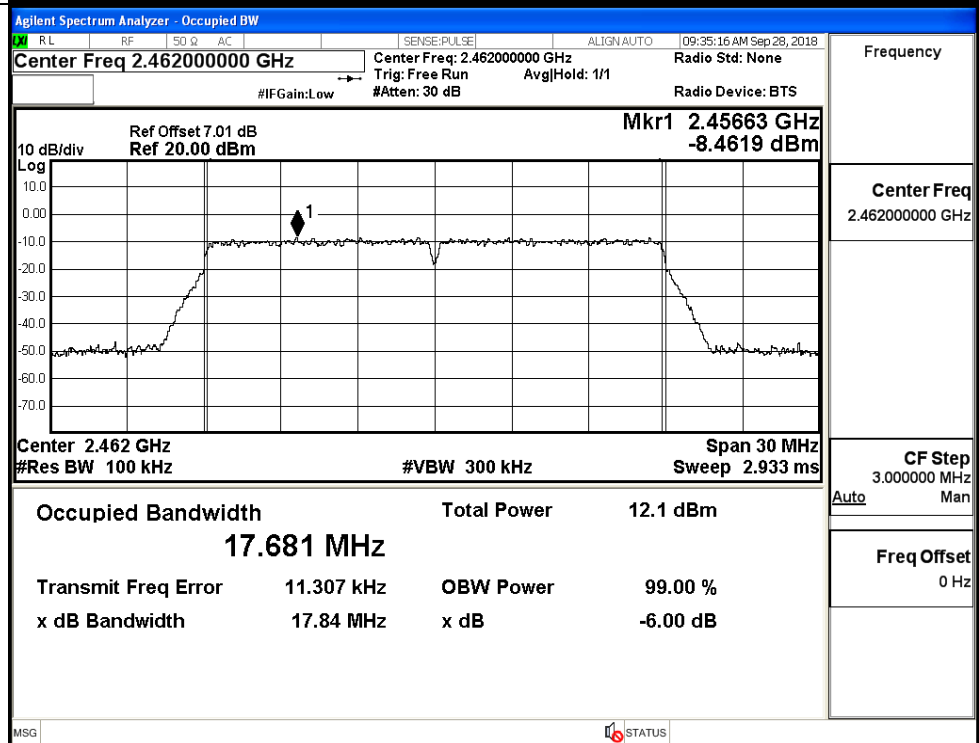
11N20SISO/LCH



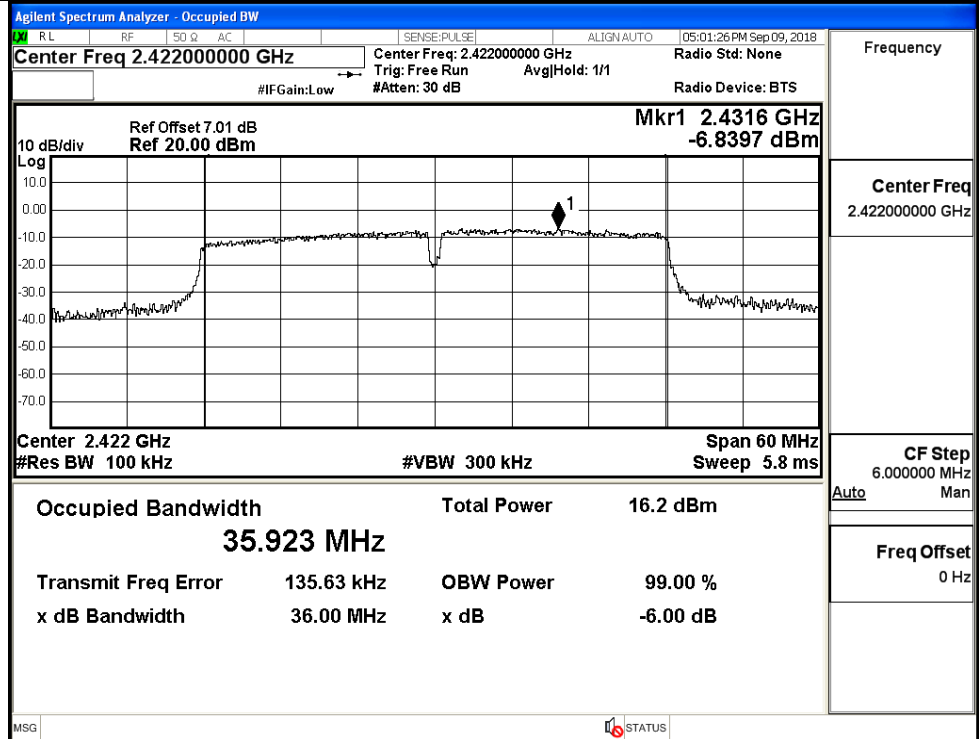
11N20SISO/MCH



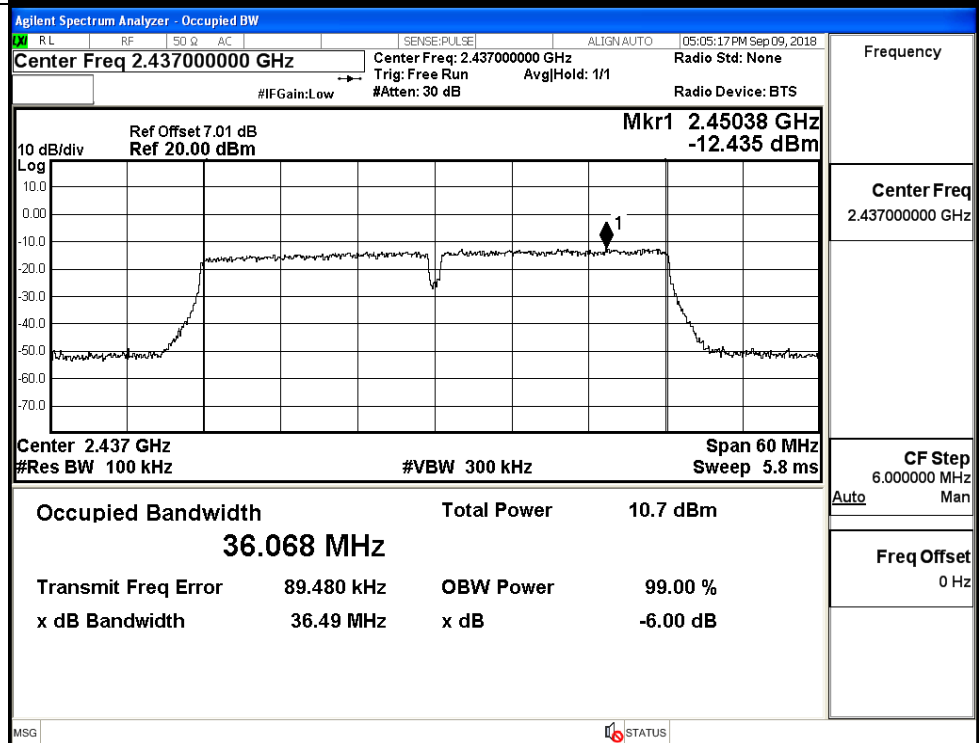
11N20SISO/HCH



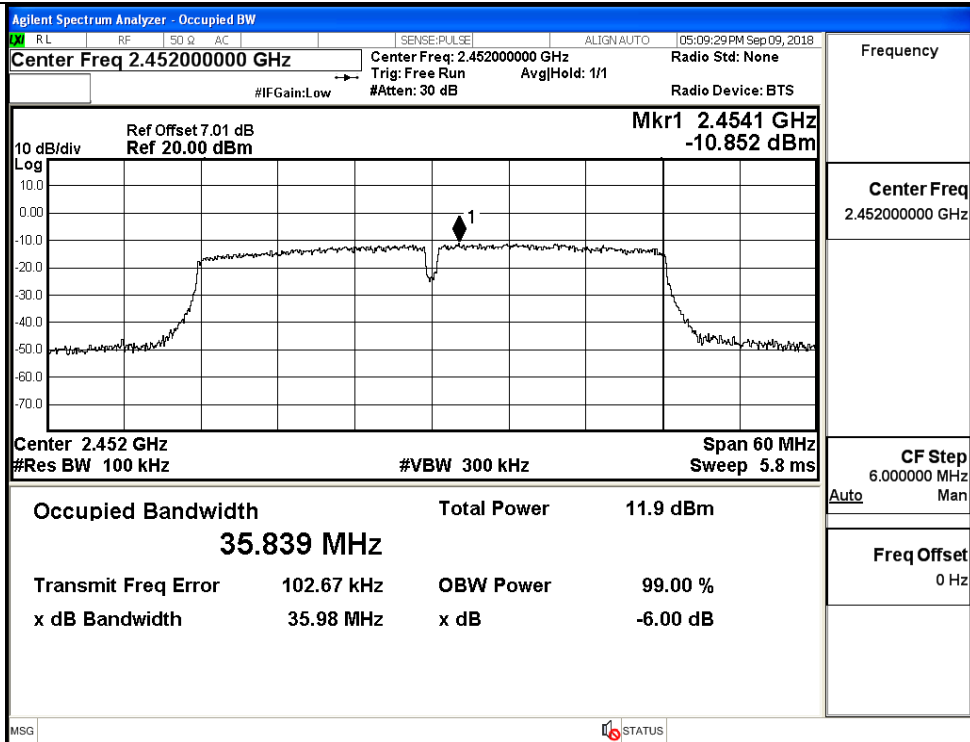
11N40SISO/LCH



11N40SISO/MCH



11N40SISO/HCH

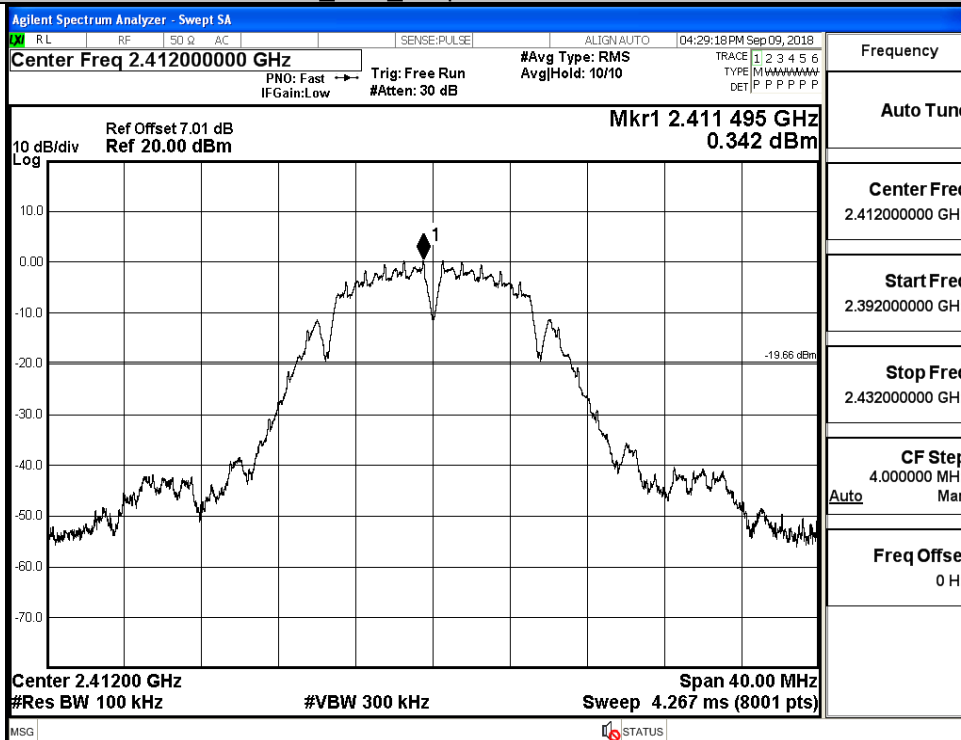


## A.5 RF Conducted Spurious Emissions

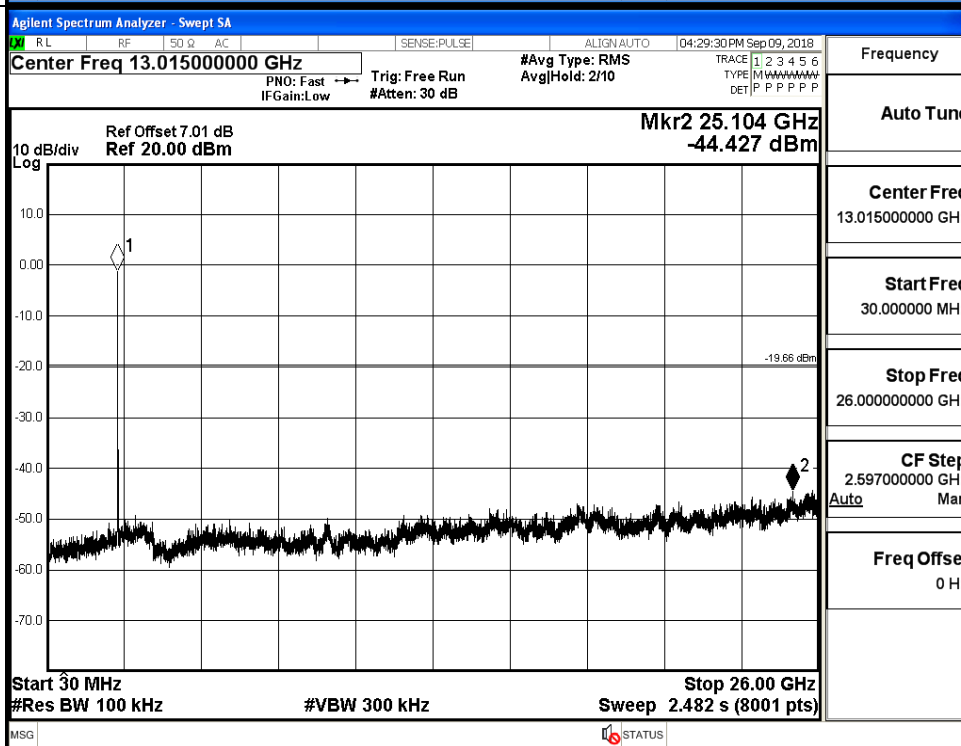
| Mode          | Channel | Pref [dBm] | Max. Level [dBm] | Limit [dBm] | Verdict |
|---------------|---------|------------|------------------|-------------|---------|
| 11B           | LCH     | 0.342      | -44.427          | -19.658     | PASS    |
|               | MCH     | 0.552      | -45.424          | -19.448     | PASS    |
|               | HCH     | 0.173      | -44.748          | -19.827     | PASS    |
| 11G           | LCH     | -5.651     | -44.365          | -25.651     | PASS    |
|               | MCH     | -5.31      | -44.898          | -25.310     | PASS    |
|               | HCH     | -9.645     | -45.327          | -29.645     | PASS    |
| 11N20<br>SISO | LCH     | -8.744     | -44.868          | -28.744     | PASS    |
|               | MCH     | -8.636     | -44.775          | -28.636     | PASS    |
|               | HCH     | -8.279     | -45.669          | -28.279     | PASS    |
| 11N40<br>SISO | LCH     | -10.707    | -44.020          | -30.707     | PASS    |
|               | MCH     | -11.171    | -44.898          | -31.171     | PASS    |
|               | HCH     | -10.913    | -44.026          | -30.913     | PASS    |

## 11B LCH Graphs

Pref/11B/LCH

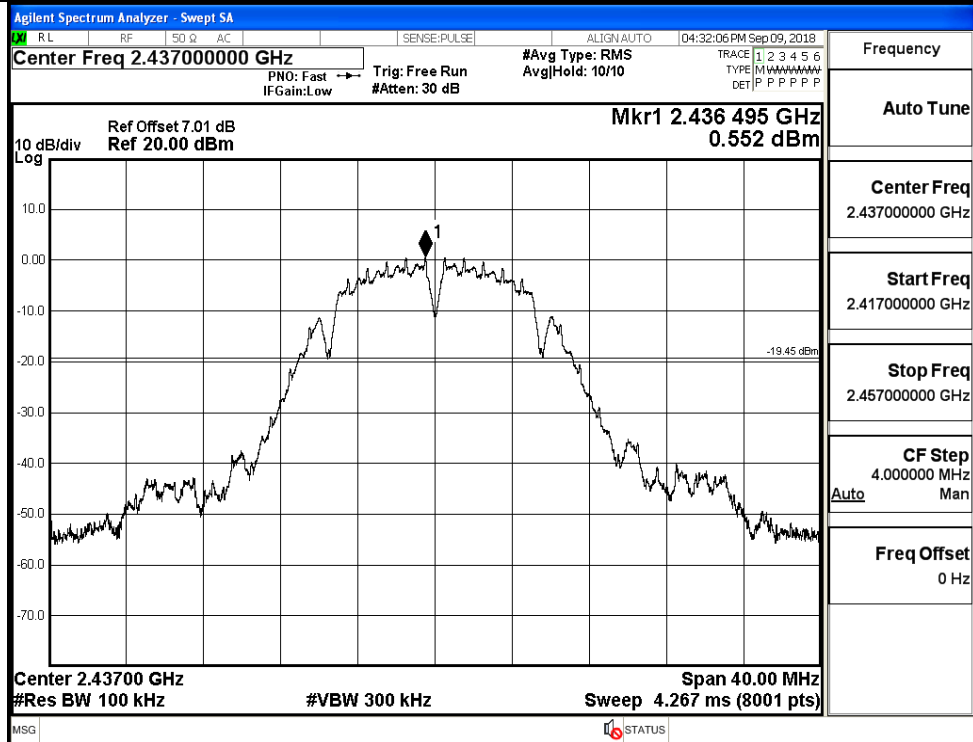


Puw/11B/LCH

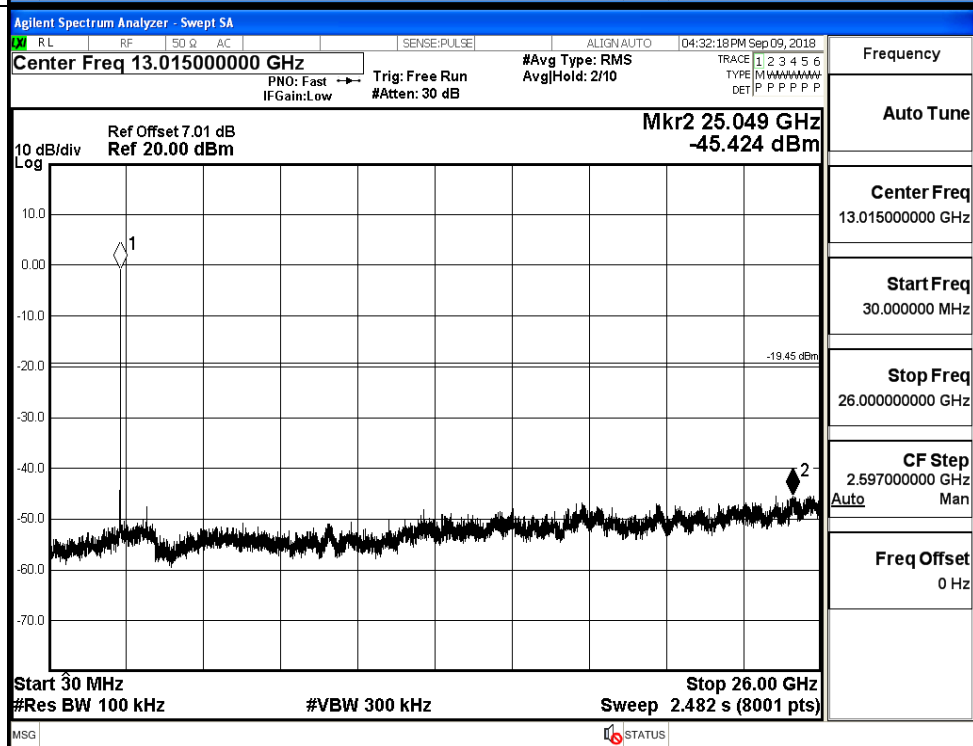


## 11B MCH Graphs

Pref/11B/MCH

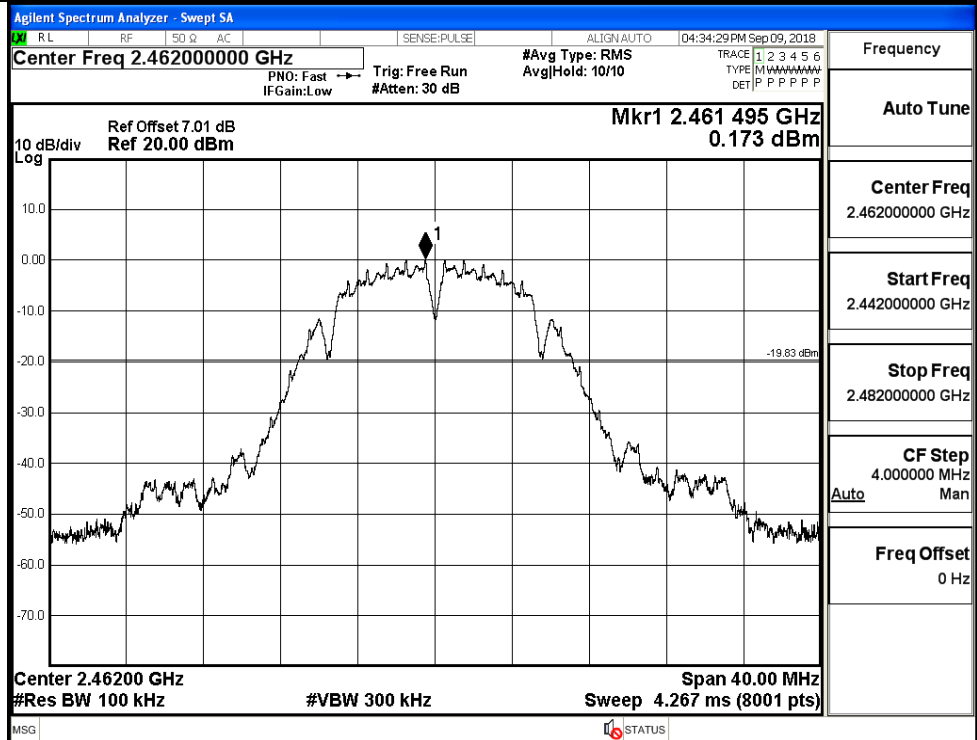


Puw/11B/MCH

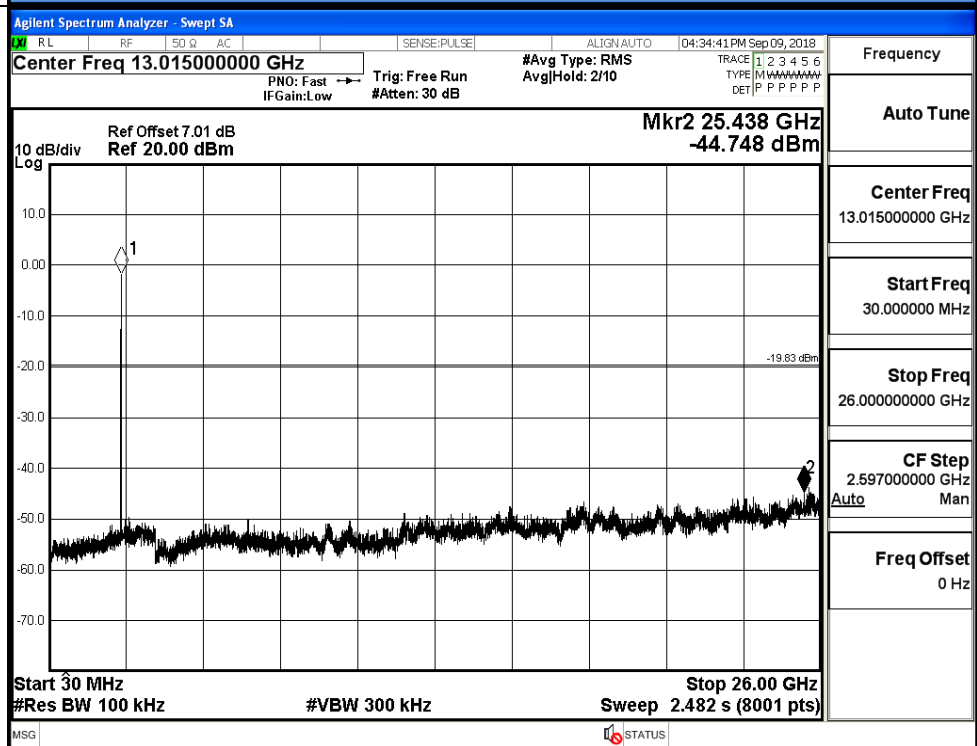


## 11B HCH Graphs

Pref/11B/HCH

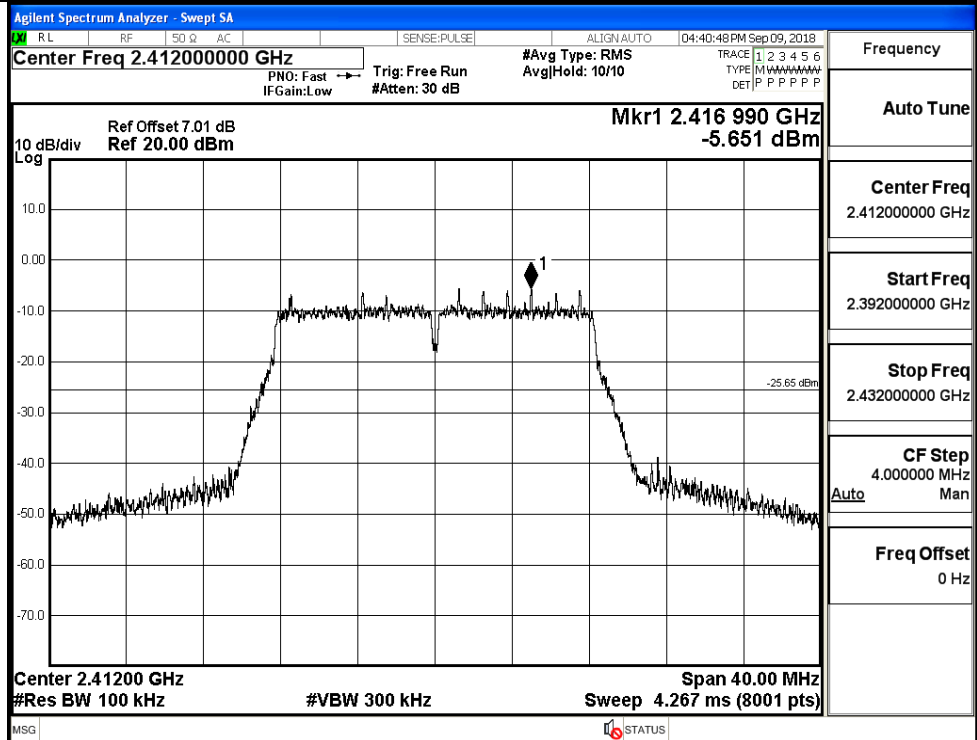


Puw/11B/HCH

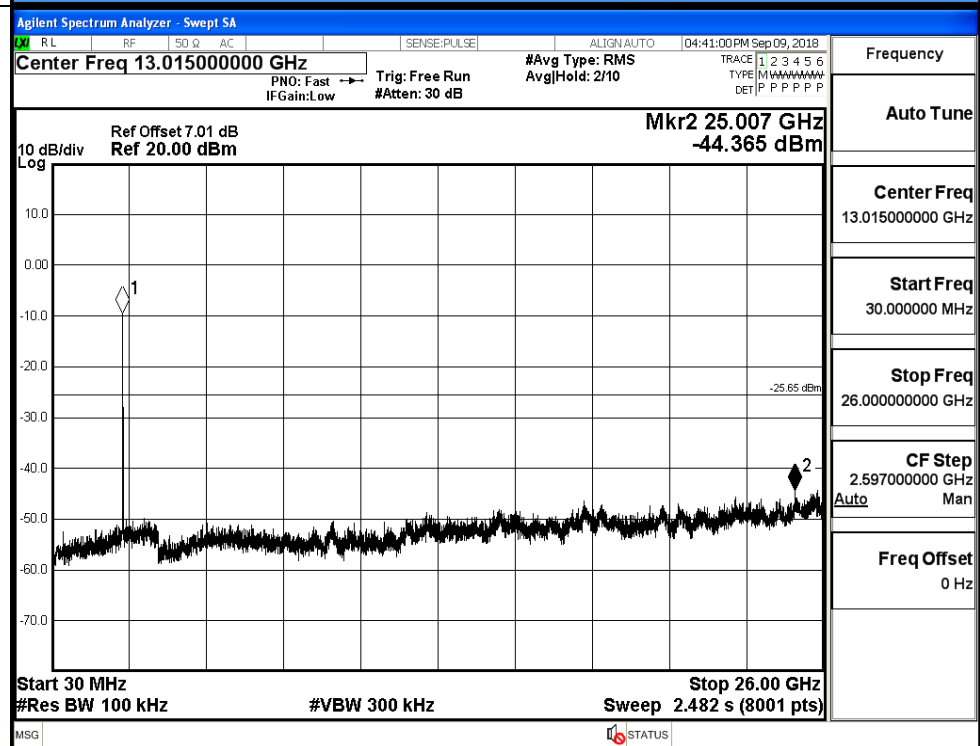


## 11G LCH Graphs

Pref/11G/LCH

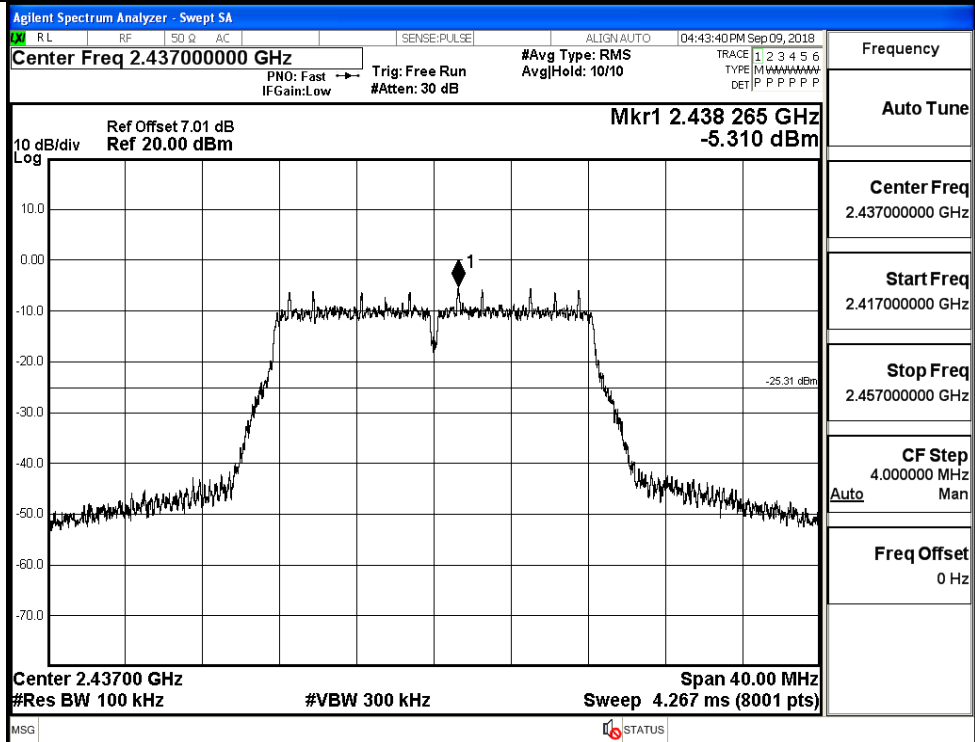


Puw/11G/LCH

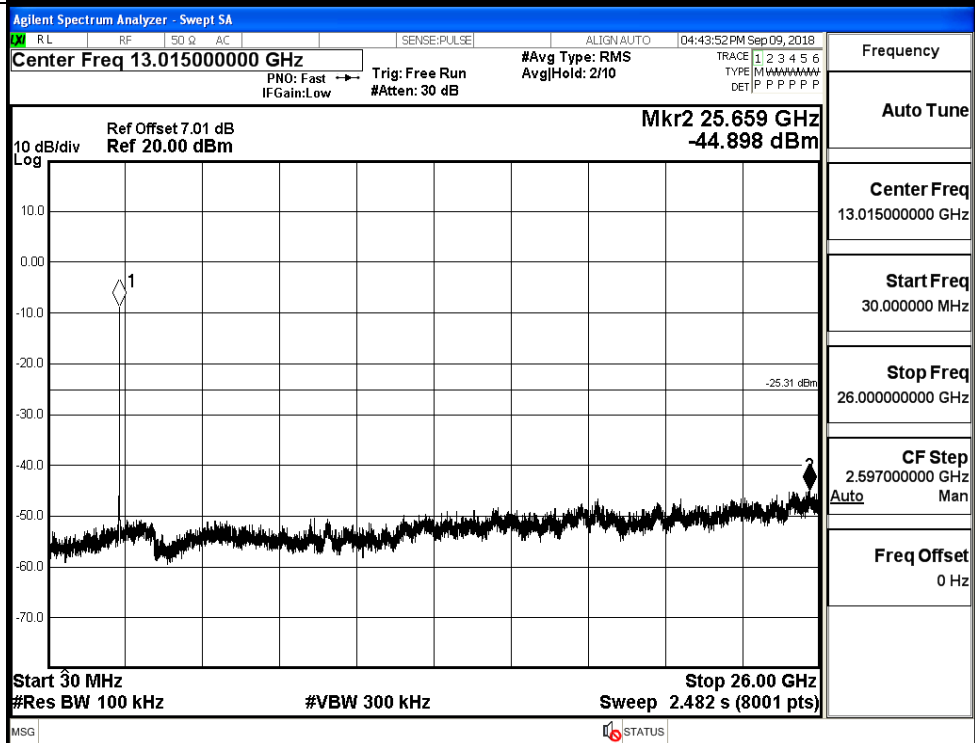


## 11G MCH Graphs

Pref/11G/MCH

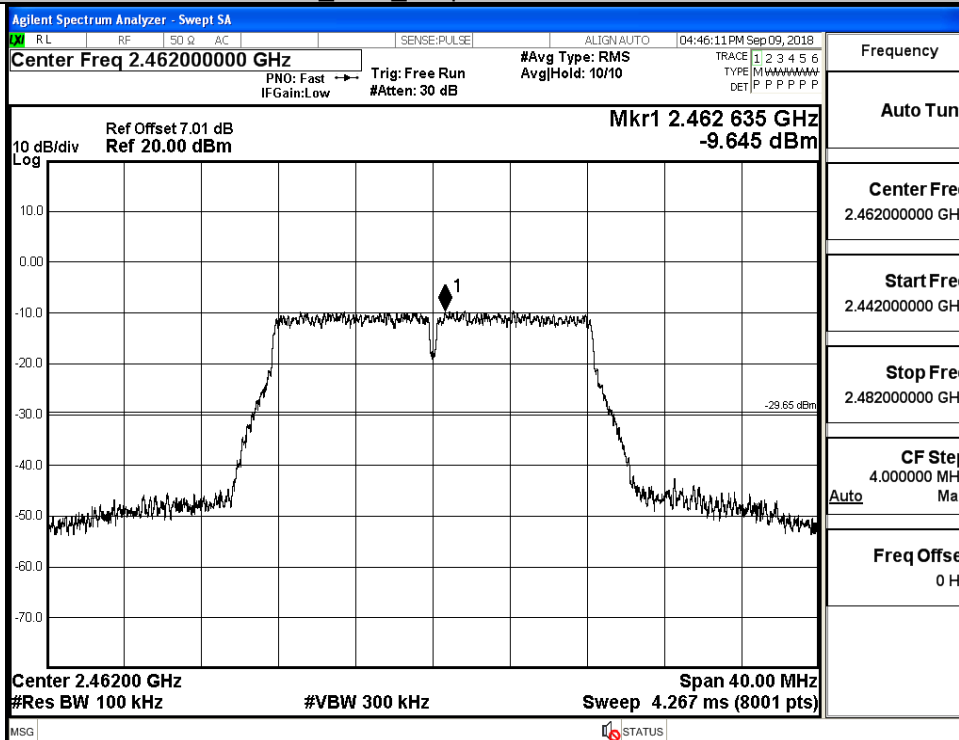


Puw/11G/MCH

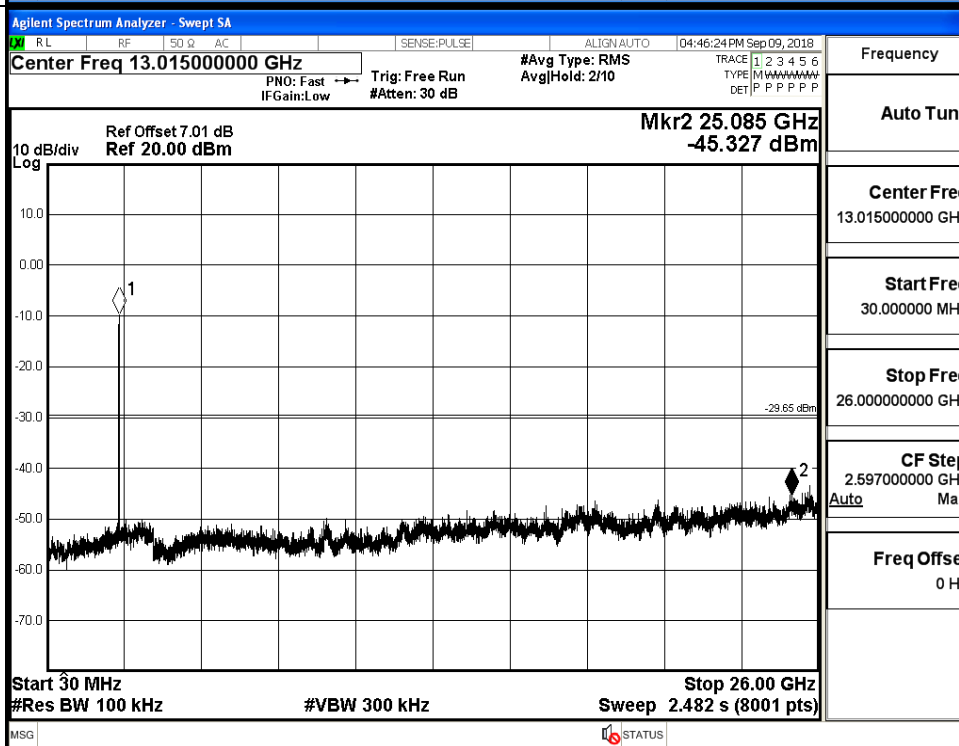


## 11G HCH Graphs

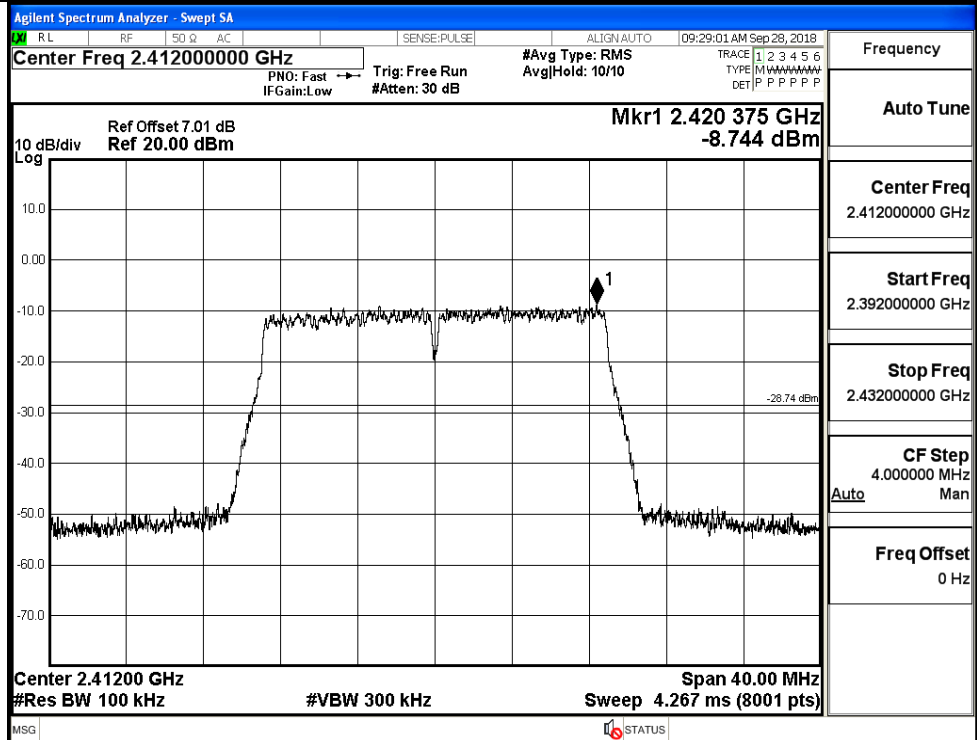
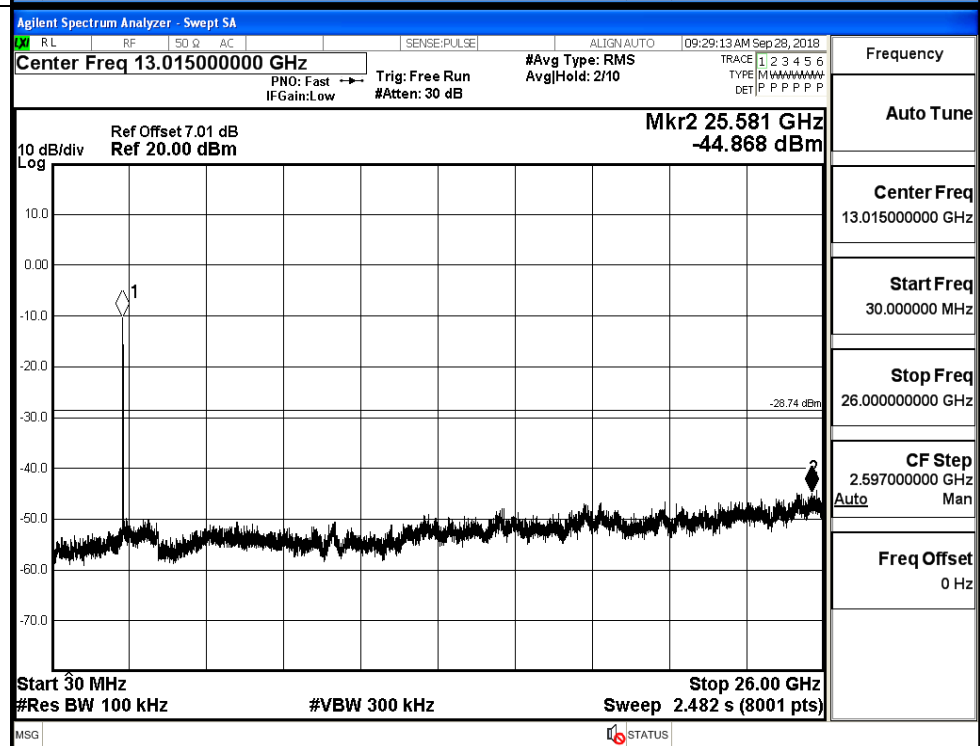
Pref/11G/HCH



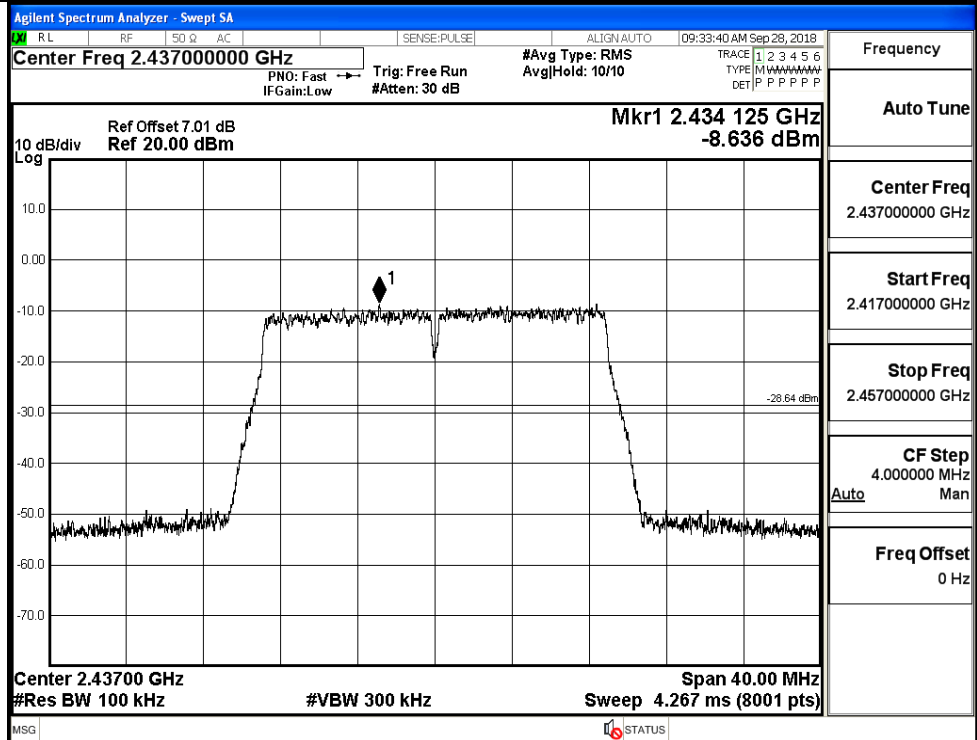
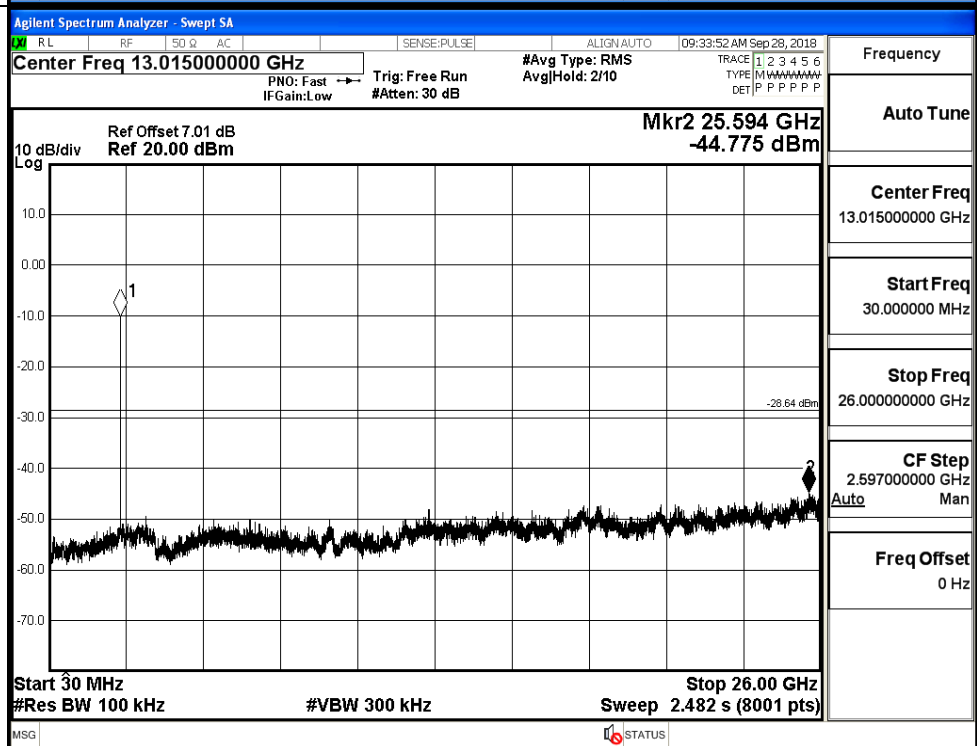
Puw/11G/HCH



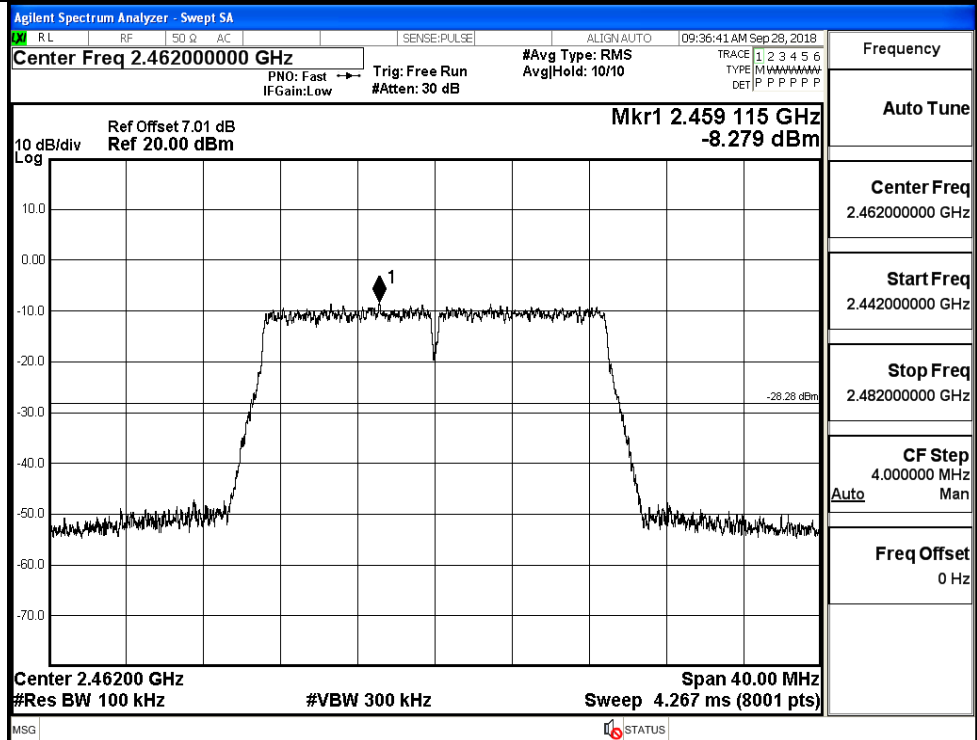
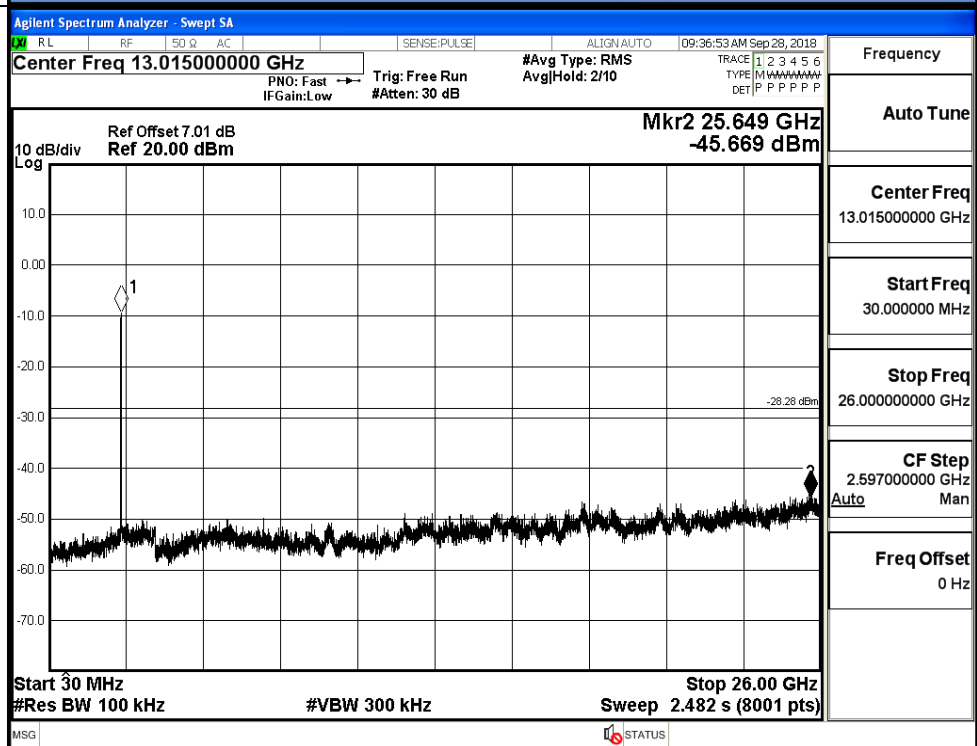
## 11N20SISO LCH Graphs

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

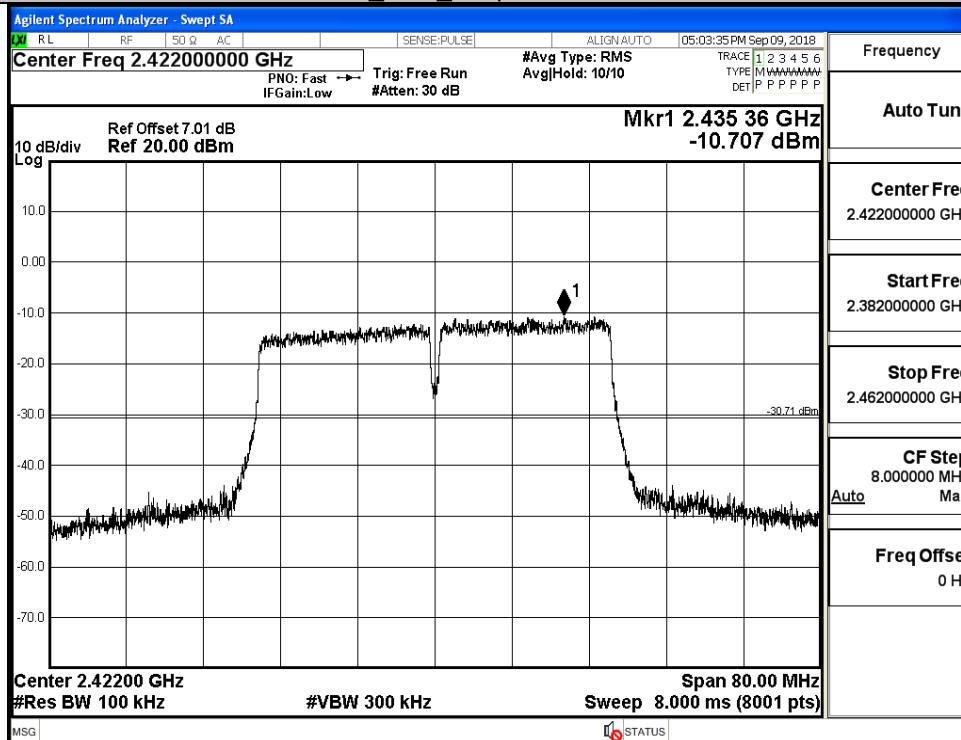
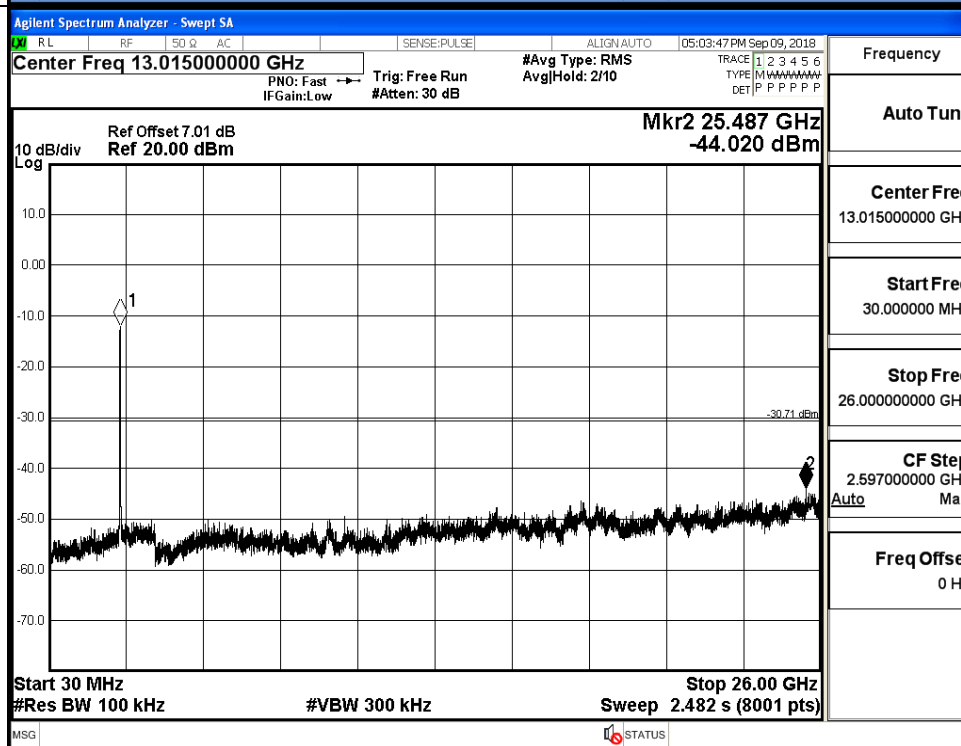
## 11N20SISO\_MCH\_Graphs

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

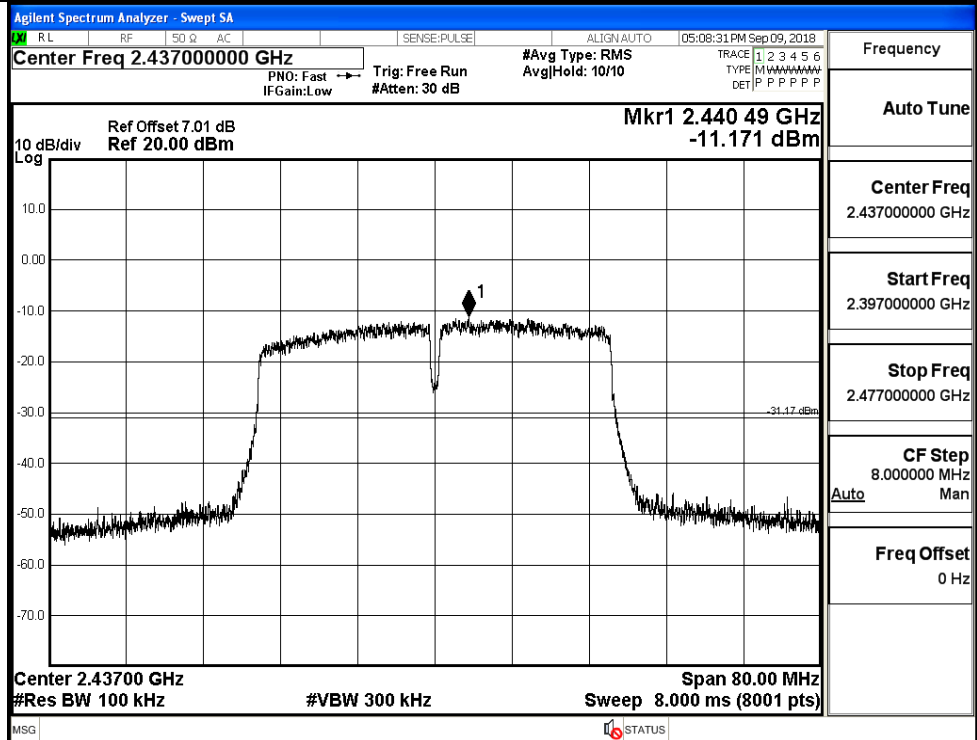
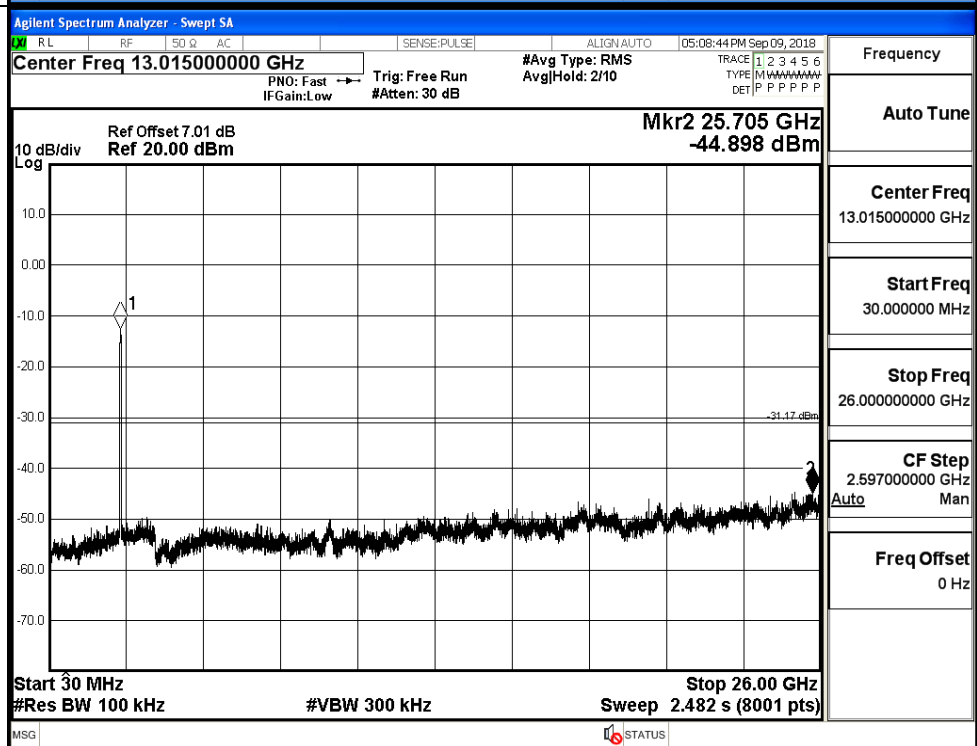
## 11N20SISO HCH Graphs

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

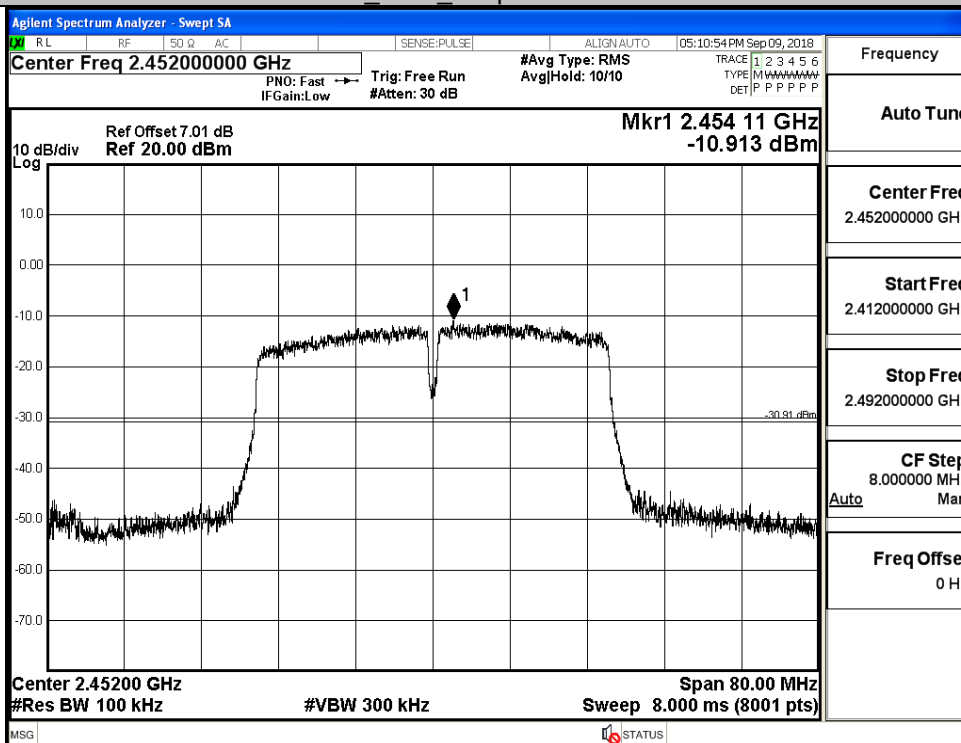
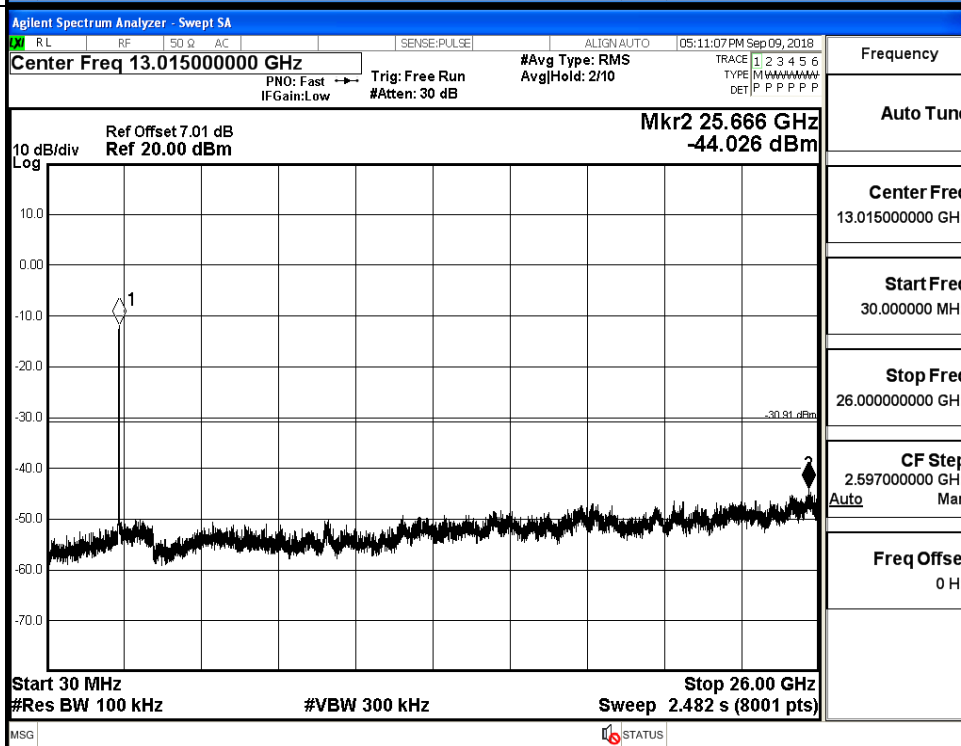
## 11N40SISO LCH Graphs

Pref/11N40  
SISO/LCHPuw/11N40  
SISO/LCH

## 11N40SISO\_MCH\_Graphs

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

## 11N40SISO HCH Graphs

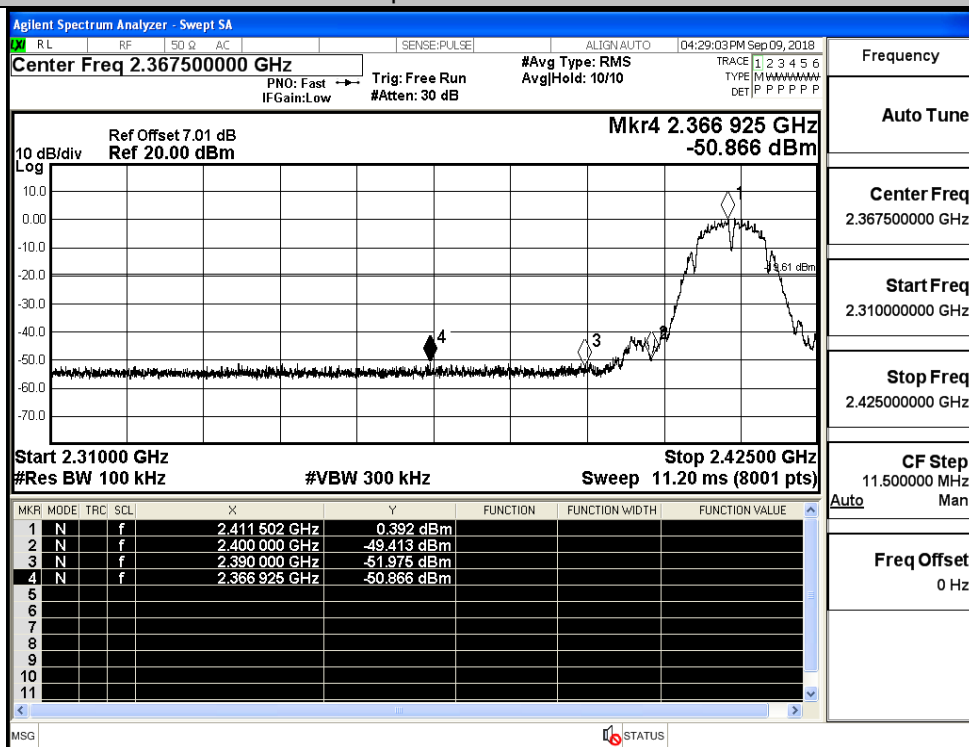
Pref/11N40  
SISO/HCHPuw/11N40  
SISO/HCH

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

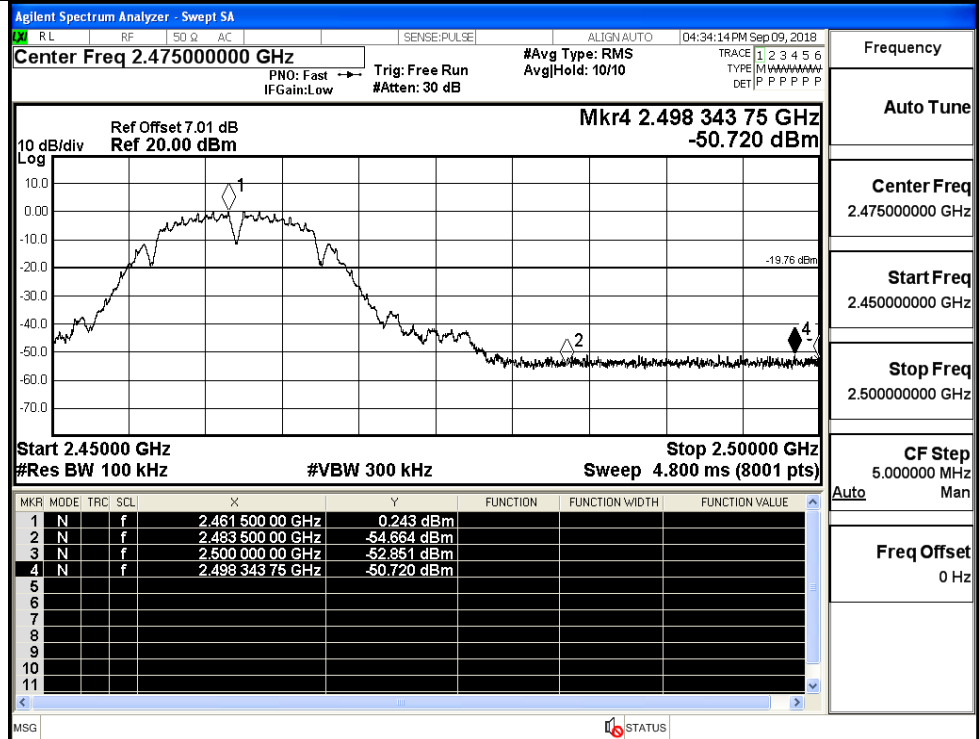
| Mode      | Channel | Carrier Power[dBm] | Max.Spurious Level [dBm] | Limit [dBm] | Verdict |
|-----------|---------|--------------------|--------------------------|-------------|---------|
| 11B       | LCH     | 0.392              | -50.866                  | -19.61      | PASS    |
|           | HCH     | 0.243              | -50.720                  | -19.76      | PASS    |
| 11G       | LCH     | -5.477             | -50.621                  | -25.48      | PASS    |
|           | HCH     | -9.510             | -49.908                  | -29.51      | PASS    |
| 11N20SISO | LCH     | -8.538             | -50.075                  | -28.54      | PASS    |
|           | HCH     | -8.197             | -50.270                  | -28.2       | PASS    |
| 11N40SISO | LCH     | -10.791            | -48.406                  | -30.79      | PASS    |
|           | HCH     | -11.406            | -47.150                  | -31.41      | PASS    |

Test Graphs

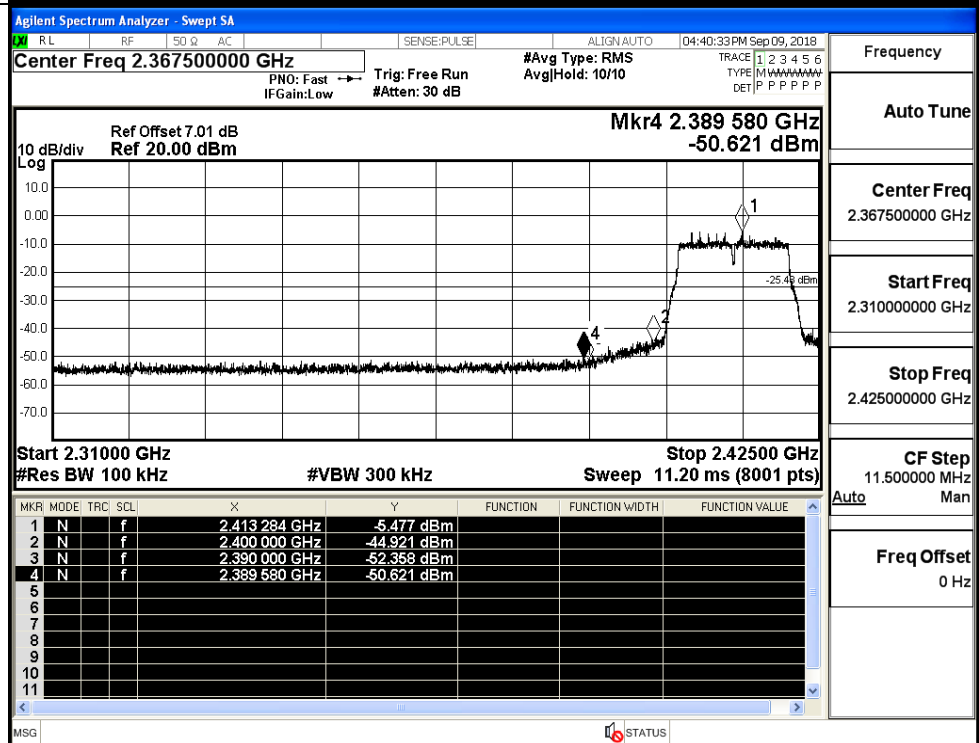
11B/LCH



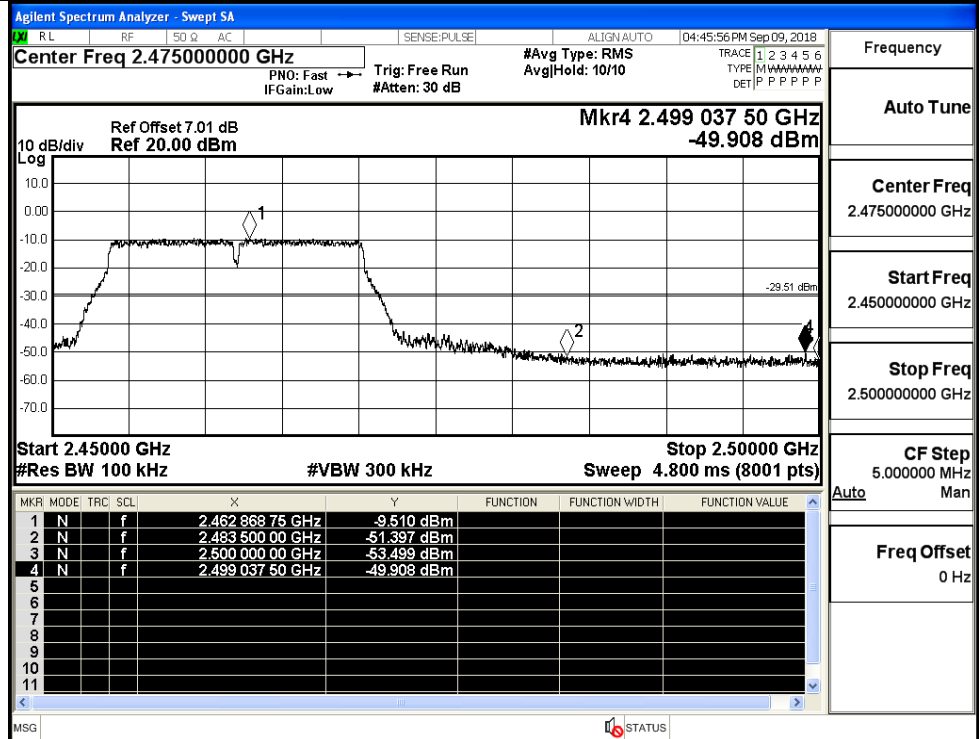
11B/HCH



11G/LCH



11G/HCH



Frequency

Auto Tune

Center Freq

2.475000000 GHz

Start Freq

2.450000000 GHz

Stop Freq

2.500000000 GHz

CF Step

5.000000 MHz

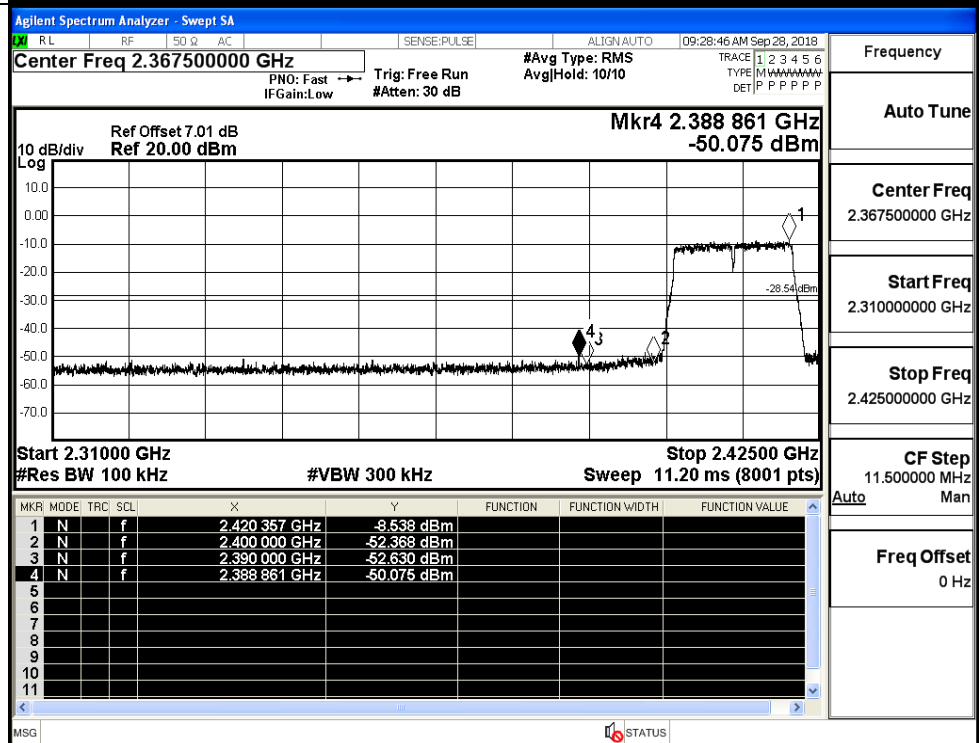
Auto

Man

Freq Offset

0 Hz

11N20SISO/LCH



Frequency

Auto Tune

Center Freq

2.367500000 GHz

Start Freq

2.310000000 GHz

Stop Freq

2.425000000 GHz

CF Step

11.500000 MHz

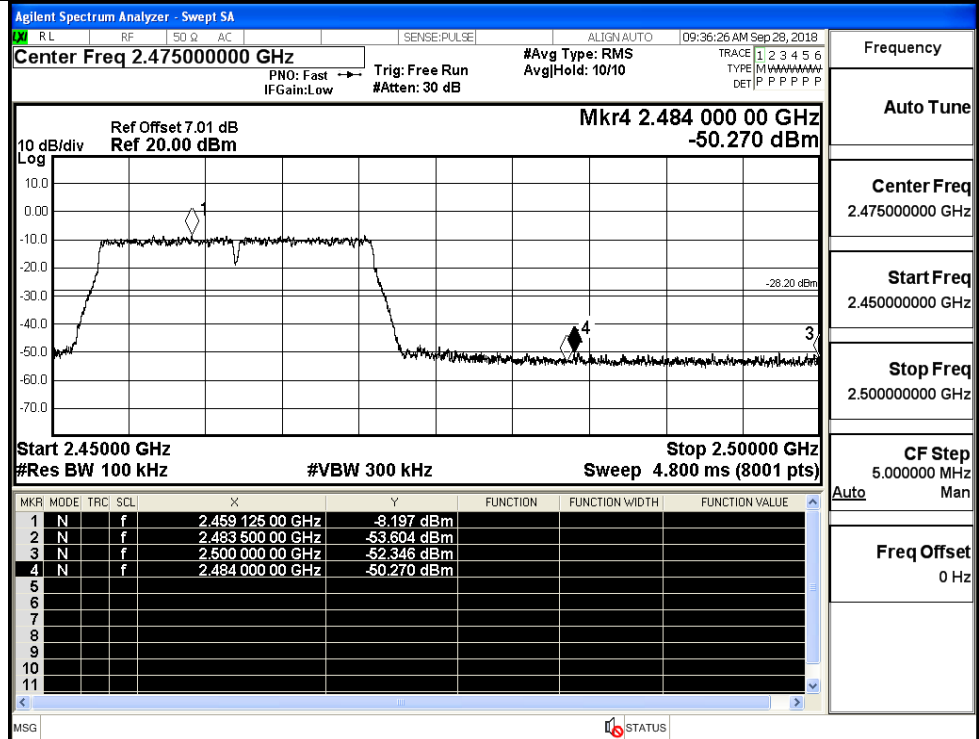
Auto

Man

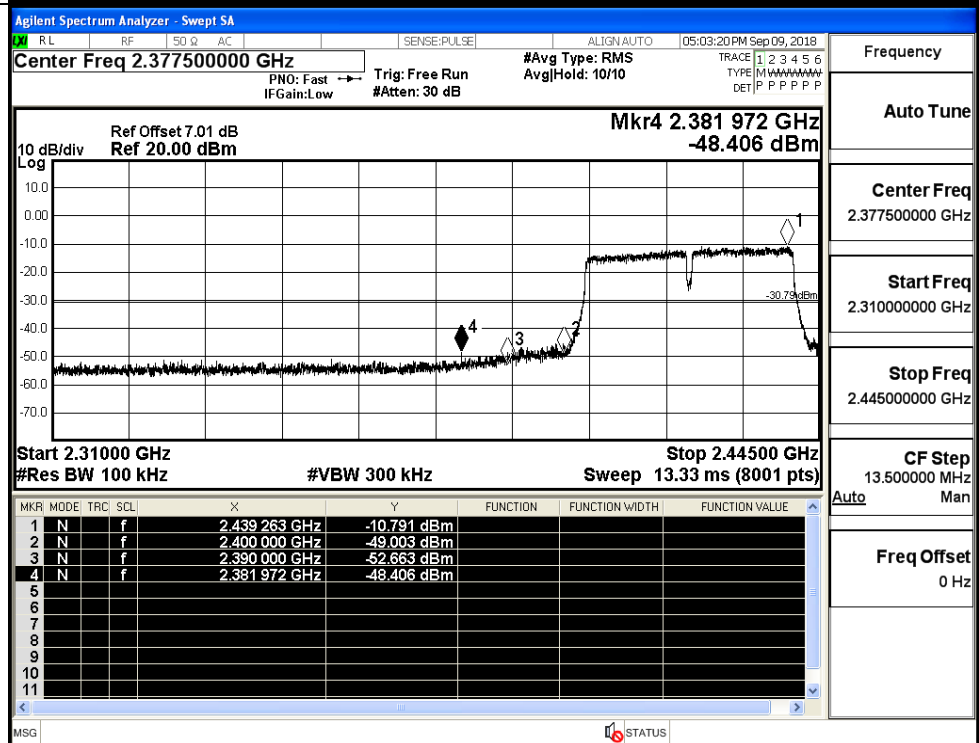
Freq Offset

0 Hz

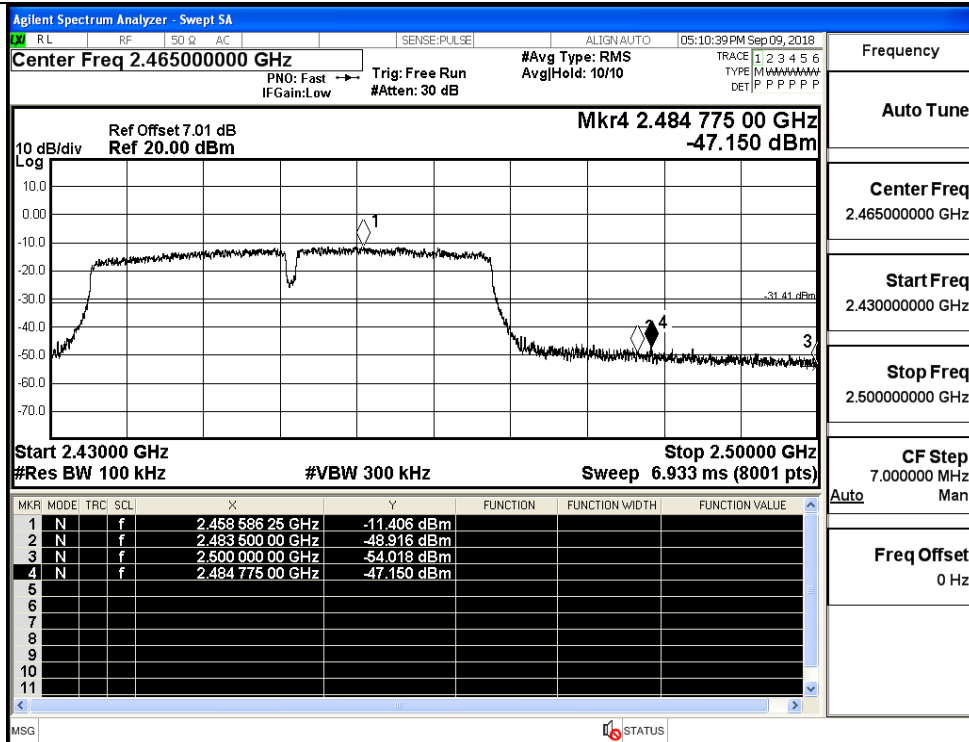
11N20SISO/HCH



11N40SISO/LCH



11N40SISO/HCH

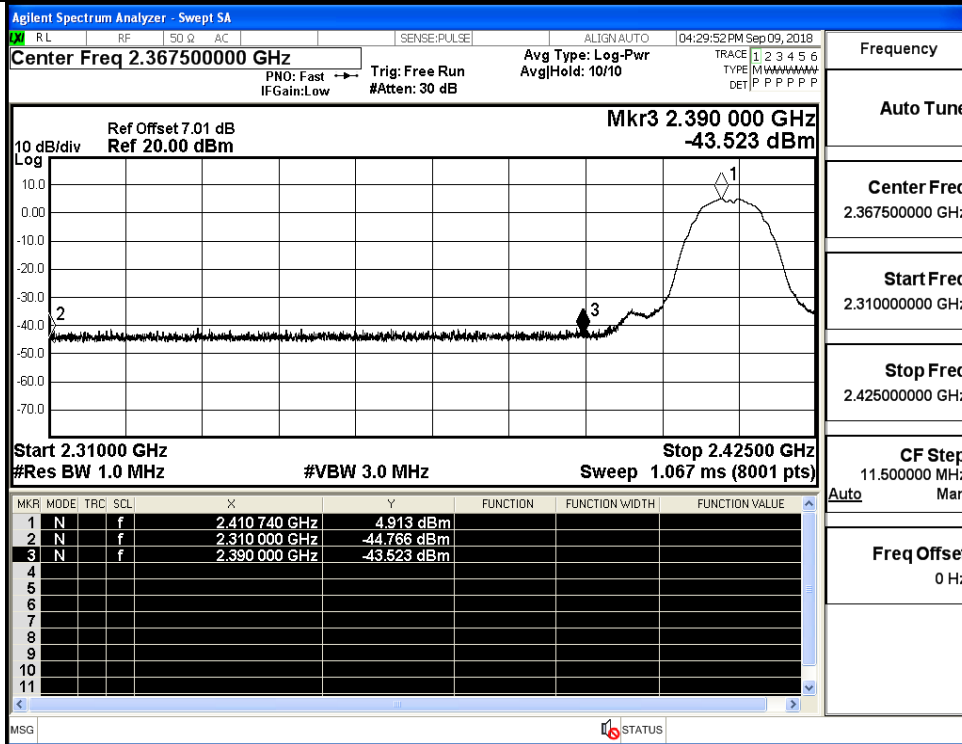


## A.7 Restrict-band band-edge measurements

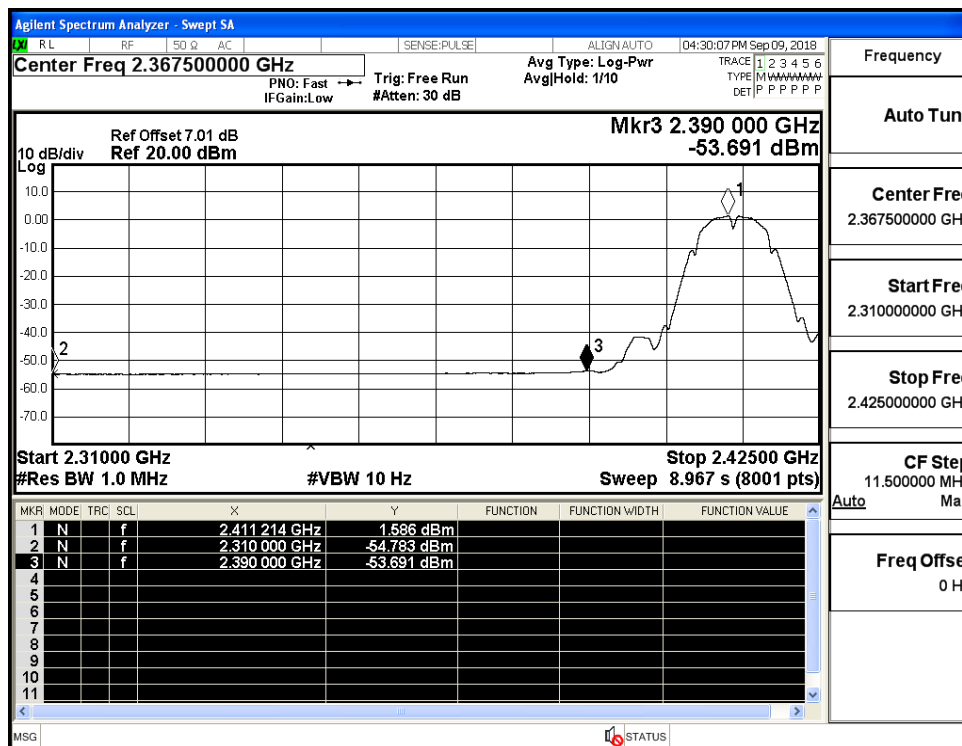
| Test Mode  | Test Channel | Ant  | Freq.  | Power [dBm] | Gain | Ground Factor | E [dBuV/m] | Detector | Limit [dBuV/m] | Verdict |
|------------|--------------|------|--------|-------------|------|---------------|------------|----------|----------------|---------|
| 11B        | 2412         | Ant1 | 2310.0 | -44.77      | 2.0  | 0             | 50.49      | PEAK     | 74             | PASS    |
|            | 2412         | Ant1 | 2310.0 | -54.78      | 2.0  | 0             | 40.47      | AV       | 54             | PASS    |
|            | 2412         | Ant1 | 2390.0 | -43.52      | 2.0  | 0             | 51.73      | PEAK     | 74             | PASS    |
|            | 2412         | Ant1 | 2390.0 | -53.69      | 2.0  | 0             | 41.57      | AV       | 54             | PASS    |
|            | 2462         | Ant1 | 2483.5 | -44.20      | 2.0  | 0             | 51.05      | PEAK     | 74             | PASS    |
|            | 2462         | Ant1 | 2483.5 | -54.08      | 2.0  | 0             | 41.18      | AV       | 54             | PASS    |
|            | 2462         | Ant1 | 2500.0 | -44.00      | 2.0  | 0             | 51.26      | PEAK     | 74             | PASS    |
|            | 2462         | Ant1 | 2500.0 | -53.99      | 2.0  | 0             | 41.27      | AV       | 54             | PASS    |
| 11G        | 2412         | Ant1 | 2310.0 | -44.45      | 2.0  | 0             | 50.80      | PEAK     | 74             | PASS    |
|            | 2412         | Ant1 | 2310.0 | -54.80      | 2.0  | 0             | 40.46      | AV       | 54             | PASS    |
|            | 2412         | Ant1 | 2390.0 | -39.52      | 2.0  | 0             | 55.74      | PEAK     | 74             | PASS    |
|            | 2412         | Ant1 | 2390.0 | -52.92      | 2.0  | 0             | 42.33      | AV       | 54             | PASS    |
|            | 2462         | Ant1 | 2483.5 | -41.22      | 2.0  | 0             | 54.04      | PEAK     | 74             | PASS    |
|            | 2462         | Ant1 | 2483.5 | -53.02      | 2.0  | 0             | 42.24      | AV       | 54             | PASS    |
|            | 2462         | Ant1 | 2500.0 | -43.82      | 2.0  | 0             | 51.43      | PEAK     | 74             | PASS    |
|            | 2462         | Ant1 | 2500.0 | -53.79      | 2.0  | 0             | 41.47      | AV       | 54             | PASS    |
| 11N20 SISO | 2412         | Ant1 | 2310.0 | -45.37      | 2.0  | 0             | 49.89      | PEAK     | 74             | PASS    |
|            | 2412         | Ant1 | 2310.0 | -54.97      | 2.0  | 0             | 40.29      | AV       | 54             | PASS    |
|            | 2412         | Ant1 | 2390.0 | -43.44      | 2.0  | 0             | 51.82      | PEAK     | 74             | PASS    |
|            | 2412         | Ant1 | 2390.0 | -53.80      | 2.0  | 0             | 41.46      | AV       | 54             | PASS    |
|            | 2462         | Ant1 | 2483.5 | -41.73      | 2.0  | 0             | 53.53      | PEAK     | 74             | PASS    |
|            | 2462         | Ant1 | 2483.5 | -53.47      | 2.0  | 0             | 41.79      | AV       | 54             | PASS    |
|            | 2462         | Ant1 | 2500.0 | -42.70      | 2.0  | 0             | 52.56      | PEAK     | 74             | PASS    |
|            | 2462         | Ant1 | 2500.0 | -53.70      | 2.0  | 0             | 41.56      | AV       | 54             | PASS    |
| 11N40 SISO | 2422         | Ant1 | 2310.0 | -43.86      | 2.0  | 0             | 51.40      | PEAK     | 74             | PASS    |
|            | 2422         | Ant1 | 2310.0 | -54.79      | 2.0  | 0             | 40.47      | AV       | 54             | PASS    |

|  |      |      |        |        |     |   |       |      |    |      |
|--|------|------|--------|--------|-----|---|-------|------|----|------|
|  | 2422 | Ant1 | 2390.0 | -41.04 | 2.0 | 0 | 54.21 | PEAK | 74 | PASS |
|  | 2422 | Ant1 | 2390.0 | -51.30 | 2.0 | 0 | 43.96 | AV   | 54 | PASS |
|  | 2452 | Ant1 | 2483.5 | -38.65 | 2.0 | 0 | 56.60 | PEAK | 74 | PASS |
|  | 2452 | Ant1 | 2483.5 | -50.99 | 2.0 | 0 | 44.27 | AV   | 54 | PASS |
|  | 2452 | Ant1 | 2500.0 | -41.32 | 2.0 | 0 | 53.94 | PEAK | 74 | PASS |
|  | 2452 | Ant1 | 2500.0 | -52.92 | 2.0 | 0 | 42.34 | AV   | 54 | PASS |

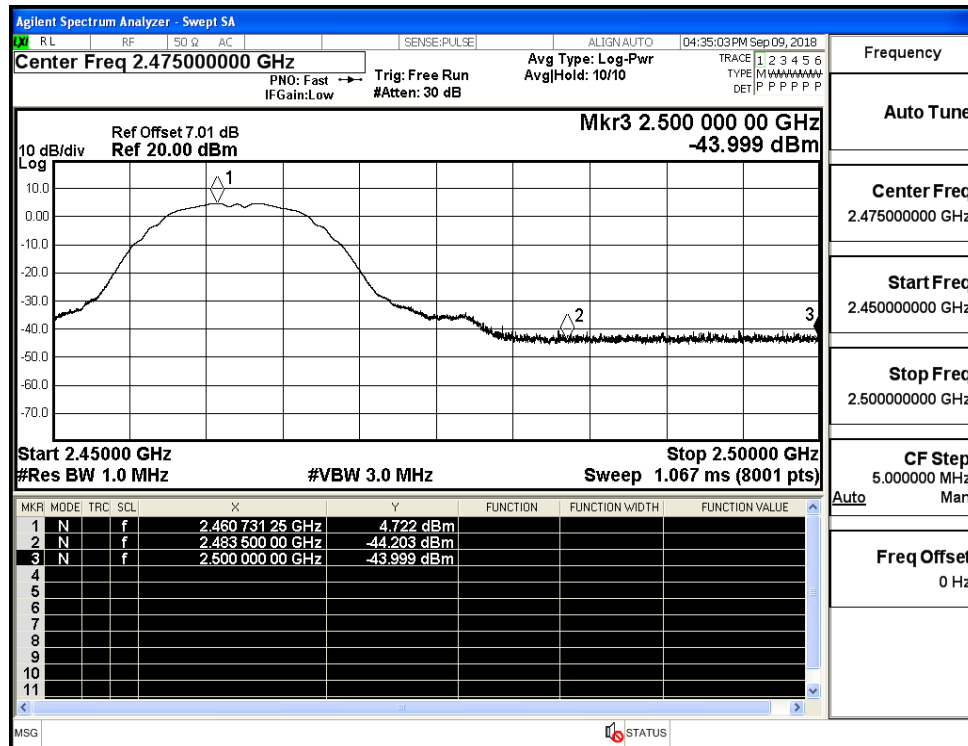
## Restrict-band band-edge measurements\_11B\_2412\_Ant1\_PEAK



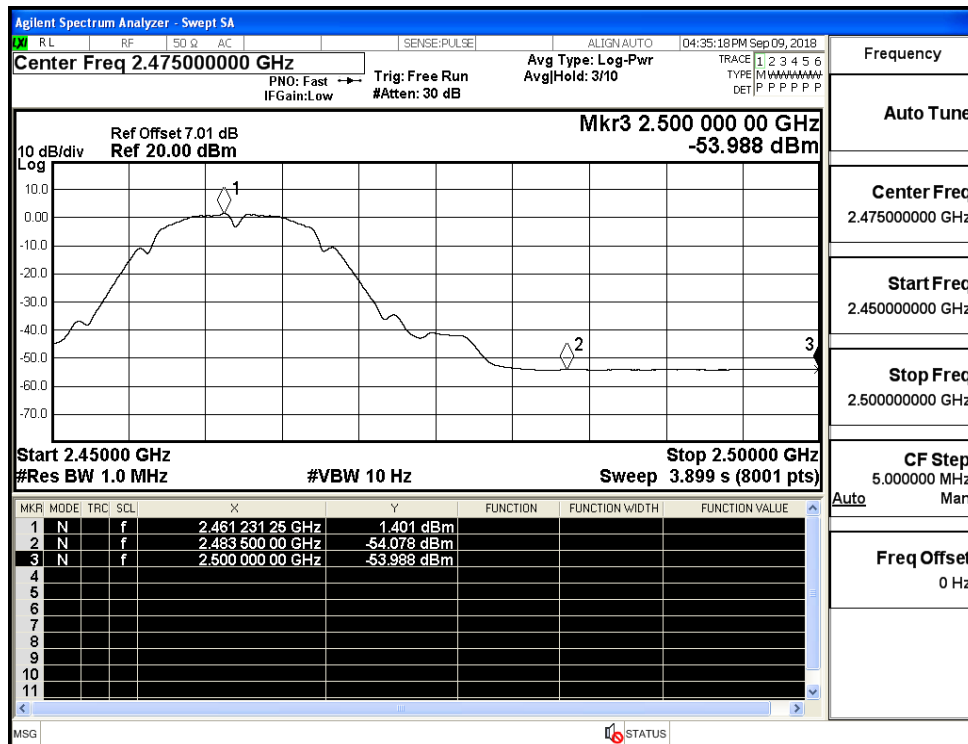
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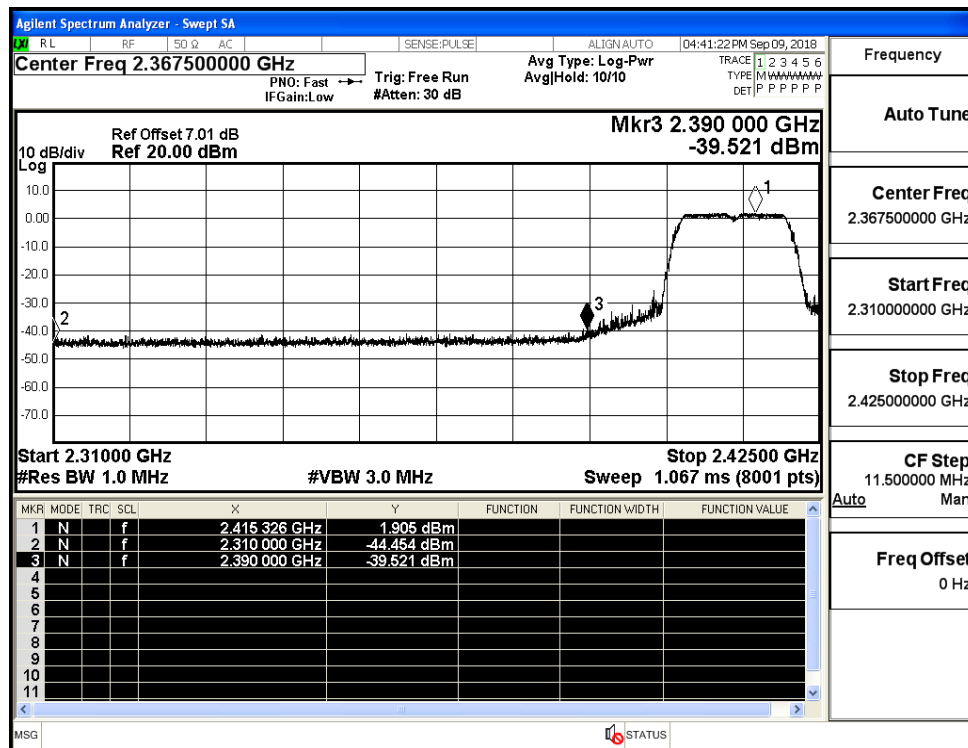
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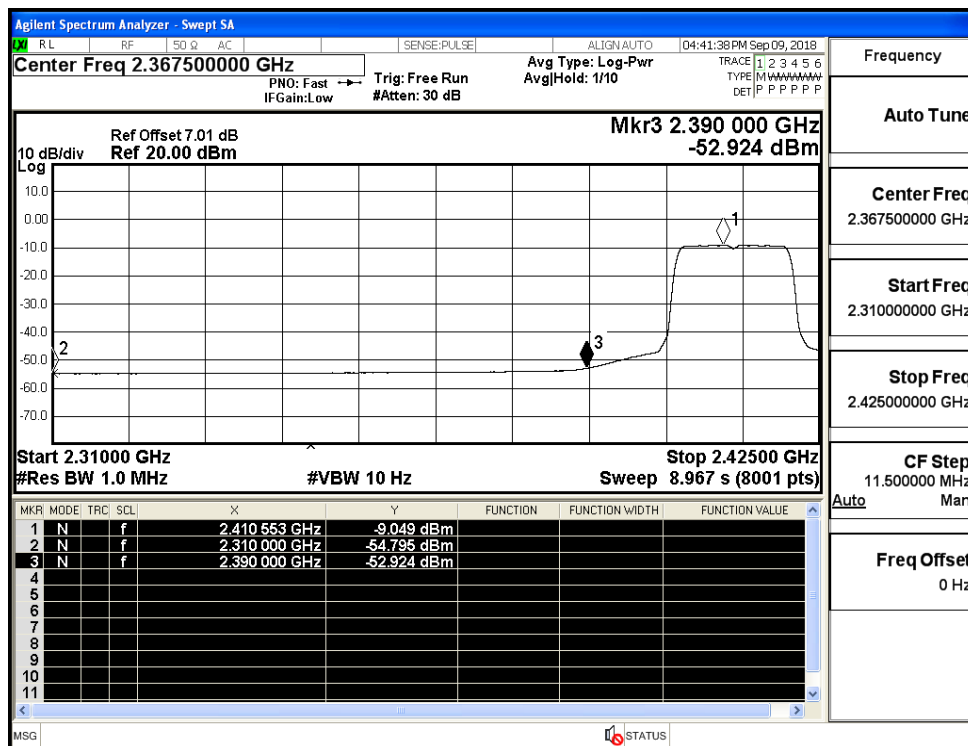
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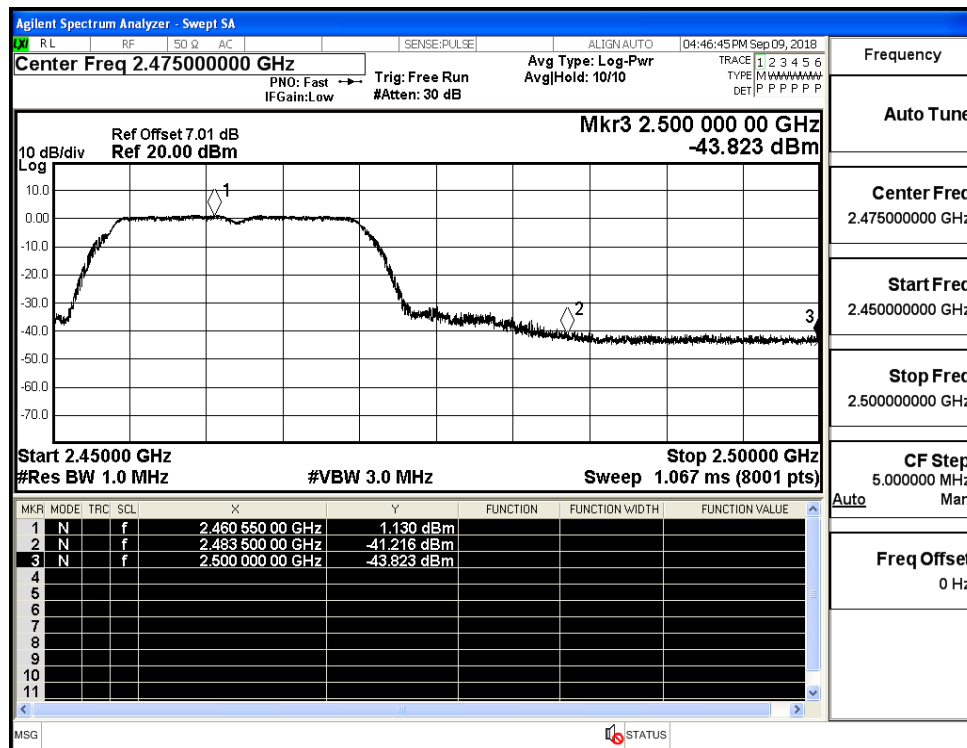
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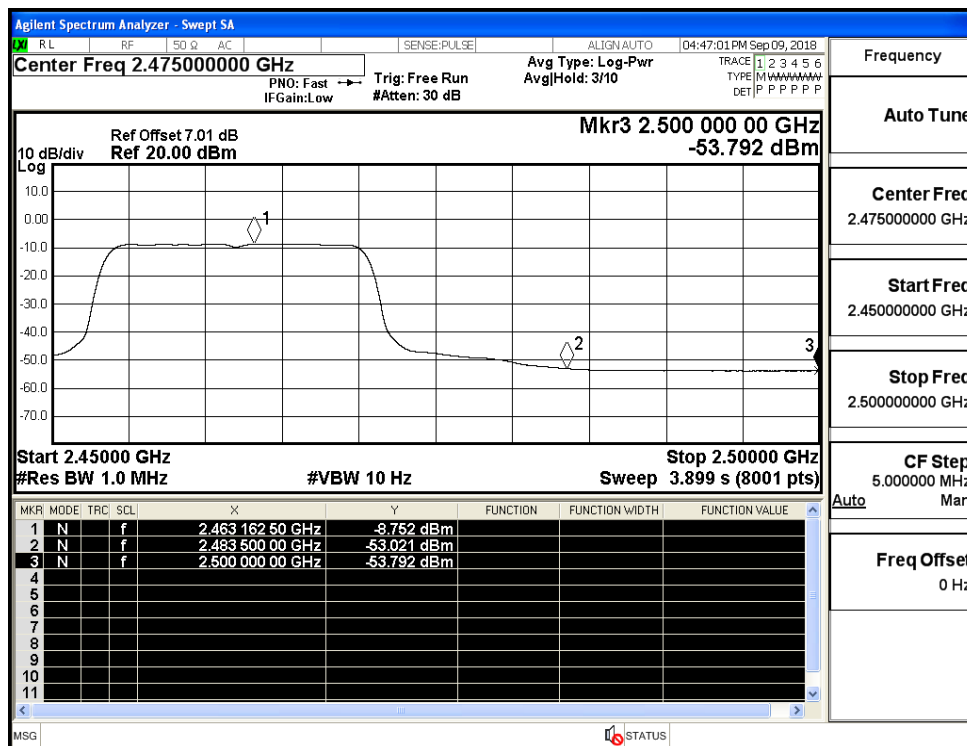
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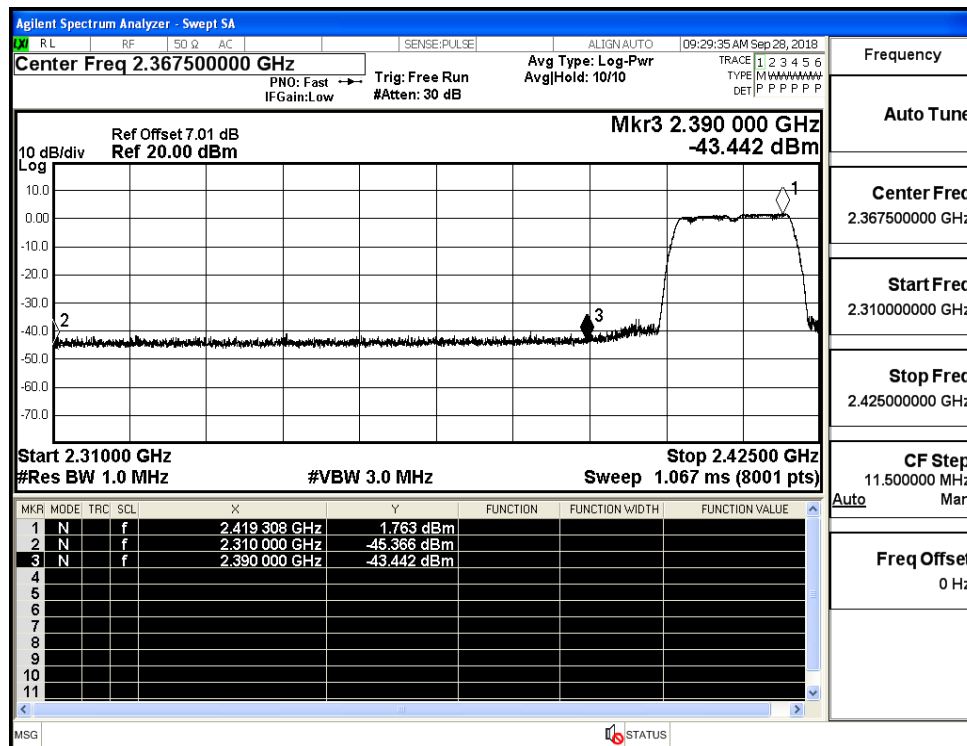
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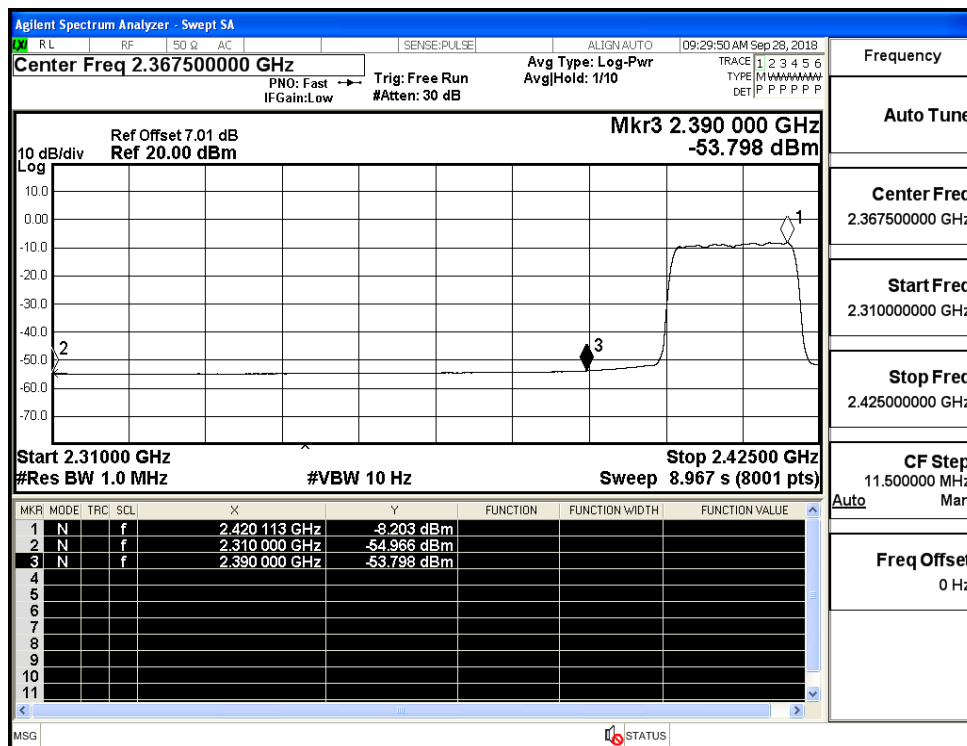
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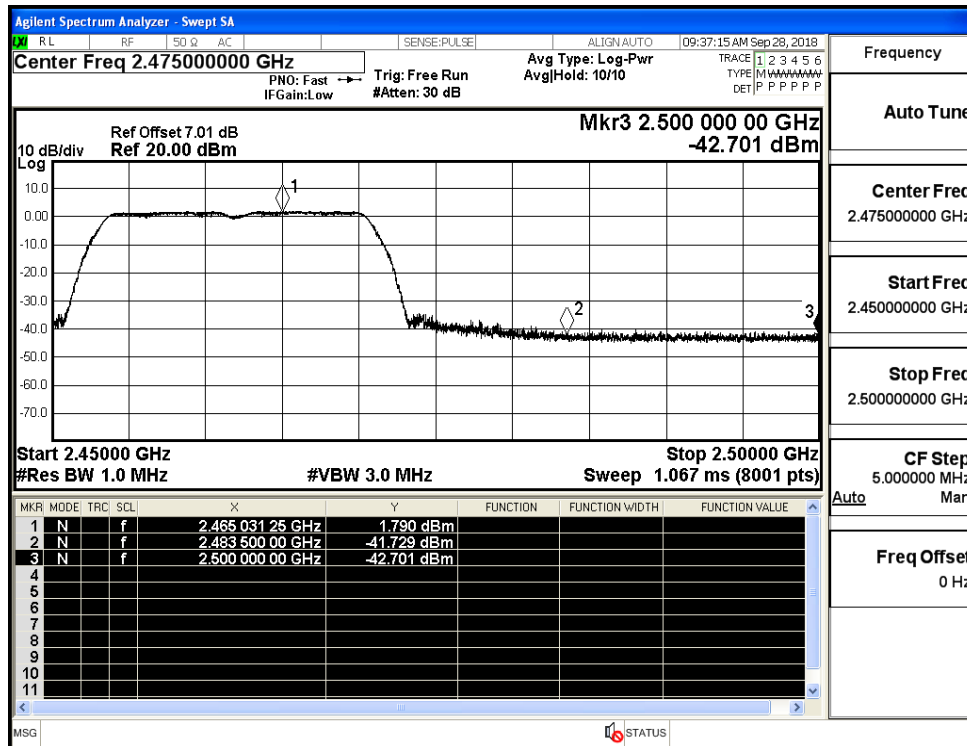
## Restrict-band band-edge measurements\_11N20SISO\_2412\_Ant1\_PEAK



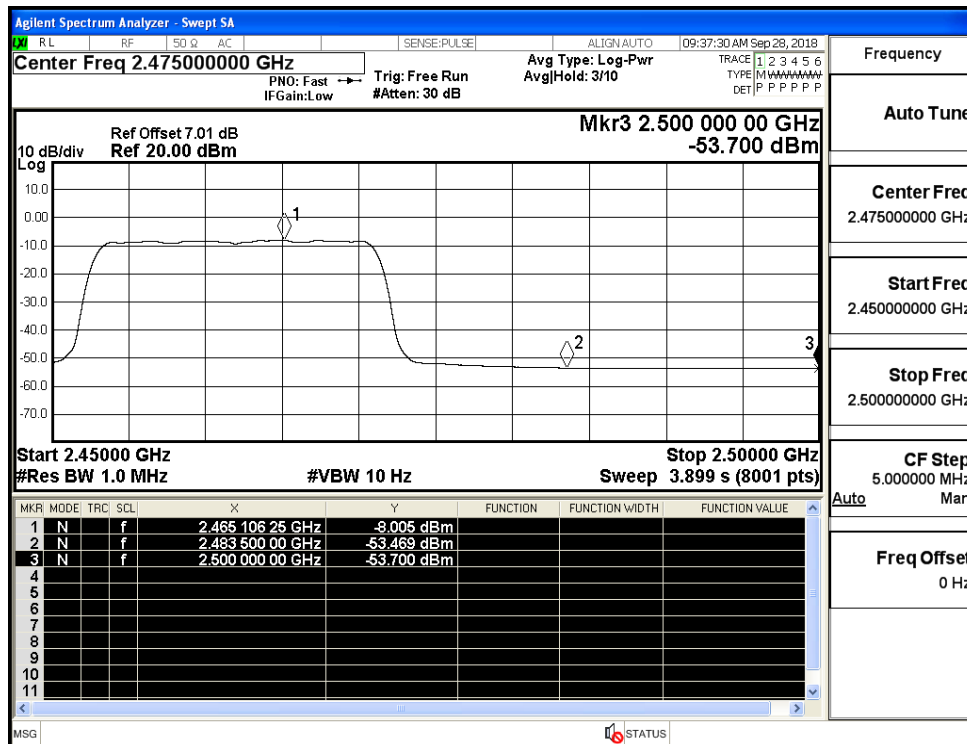
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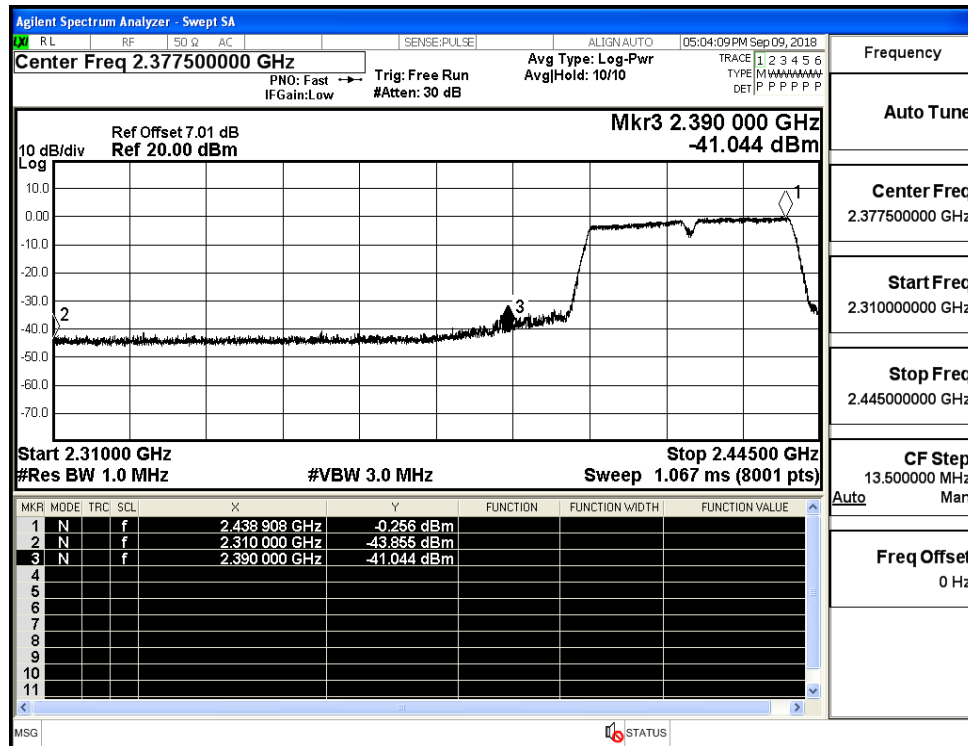
## Restrict-band band-edge measurements\_11N20SISO\_2462\_Ant1\_PEAK



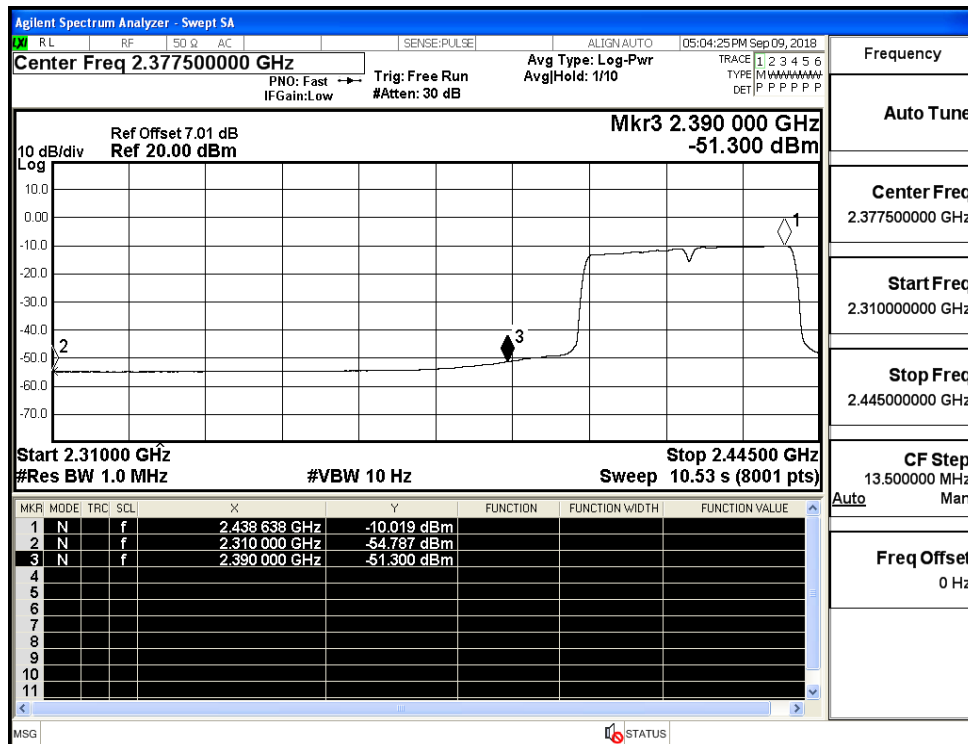
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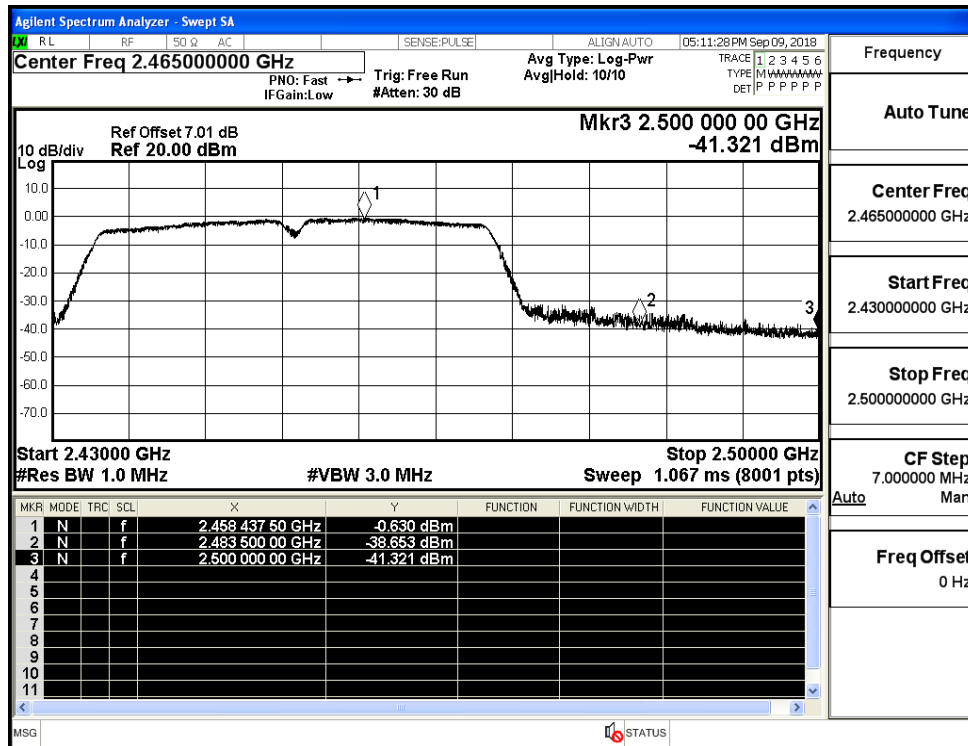
## Restrict-band band-edge measurements\_11N40SISO\_2422\_Ant1\_PEAK



## 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

