

## Appendix A

### RF Test Data (Conducted Measurement)

Product Name: 2.4 GHz Wireless Controller

Trade Mark: N/A

Test Model: FBC340(P1)

#### Environmental Conditions

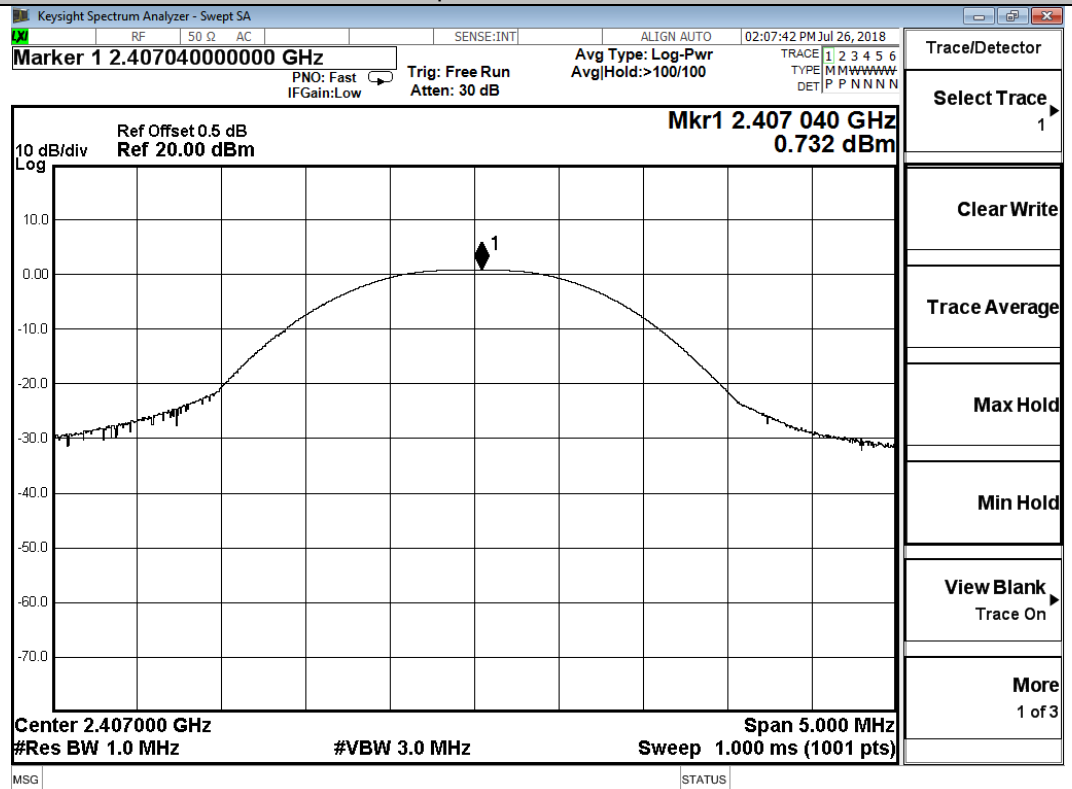
|                    |             |
|--------------------|-------------|
| Temperature:       | 22.6 ° C    |
| Relative Humidity: | 53.6%       |
| ATM Pressure:      | 100.0 kPa   |
| Test Engineer:     | Wilson Hong |
| Supervised by:     | Jayden.Zhuo |

#### A.1 Maximum Conducted Peak Output Power

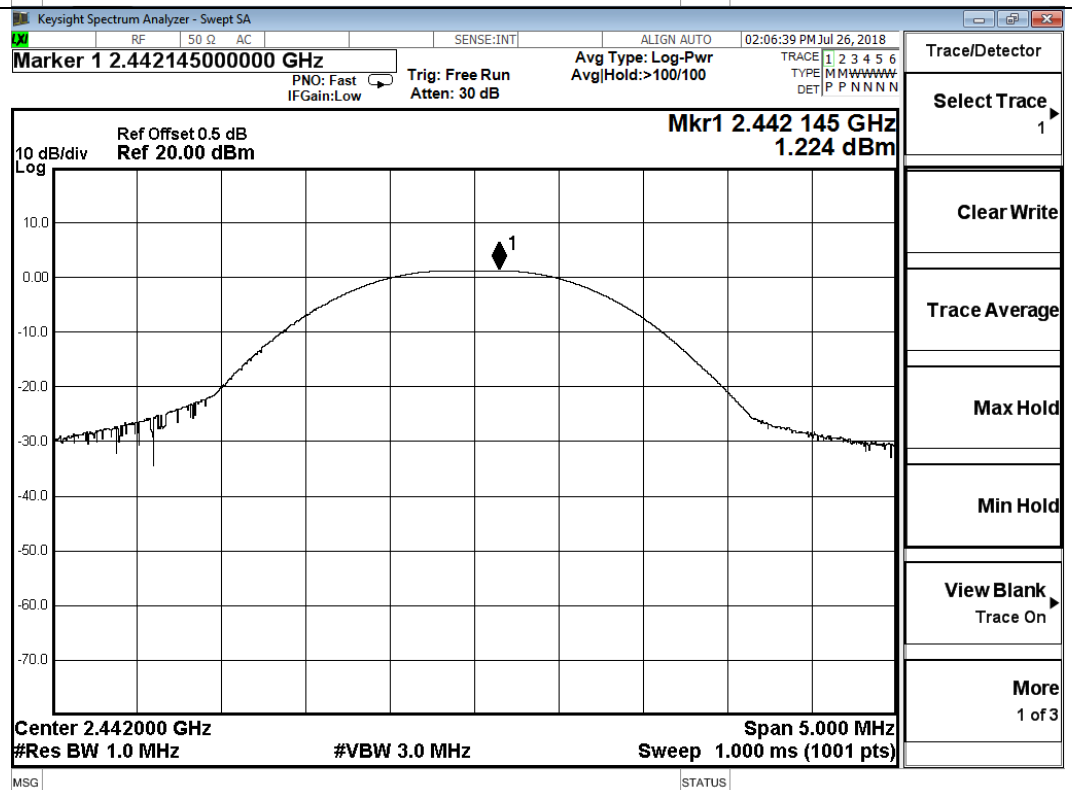
| Mode | Channel. | Maximum Peak Output Power [dBm] | Limit [dBm] | Verdict |
|------|----------|---------------------------------|-------------|---------|
| GFSK | LCH      | 0.732                           | 21          | PASS    |
|      | MCH      | 1.224                           | 21          | PASS    |
|      | HCH      | 2.037                           | 21          | PASS    |

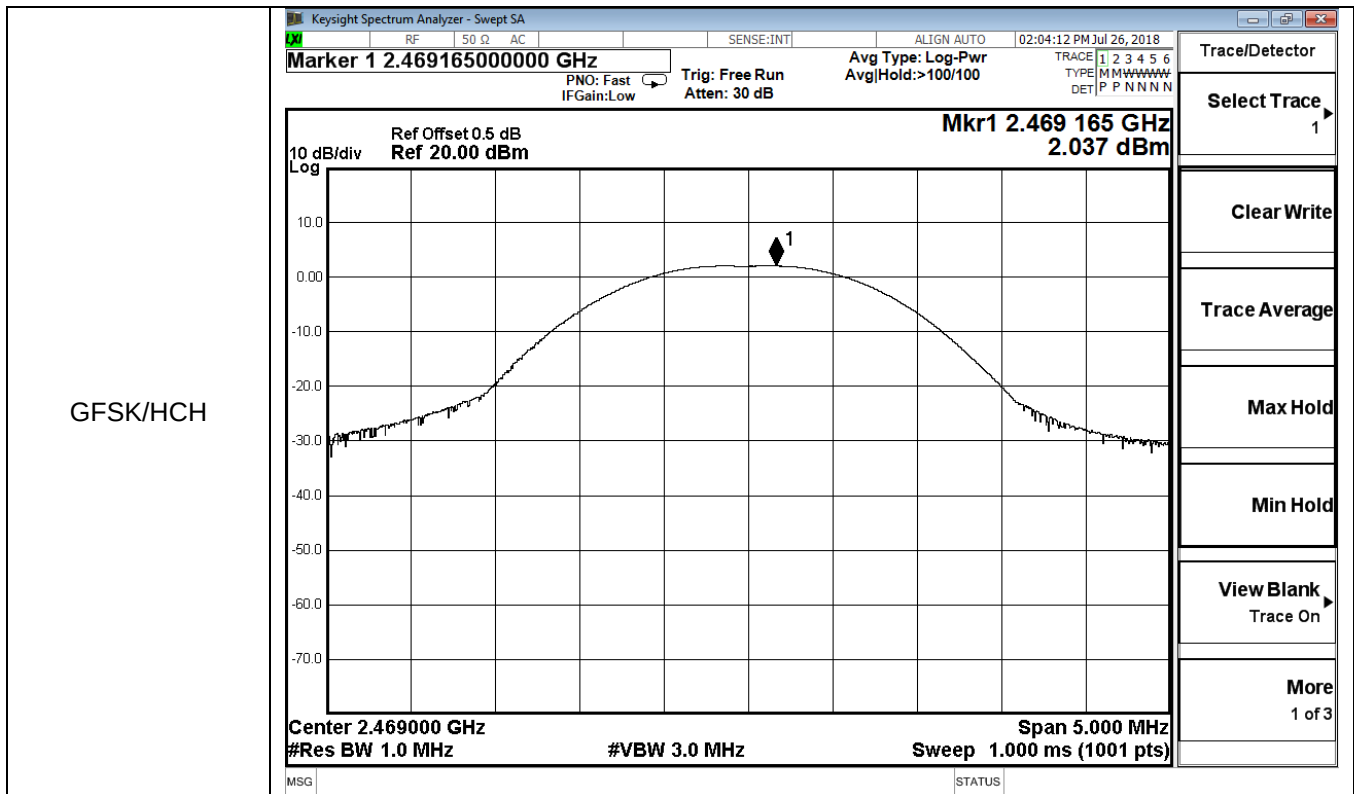
## Test Graphs

GFSK/LCH



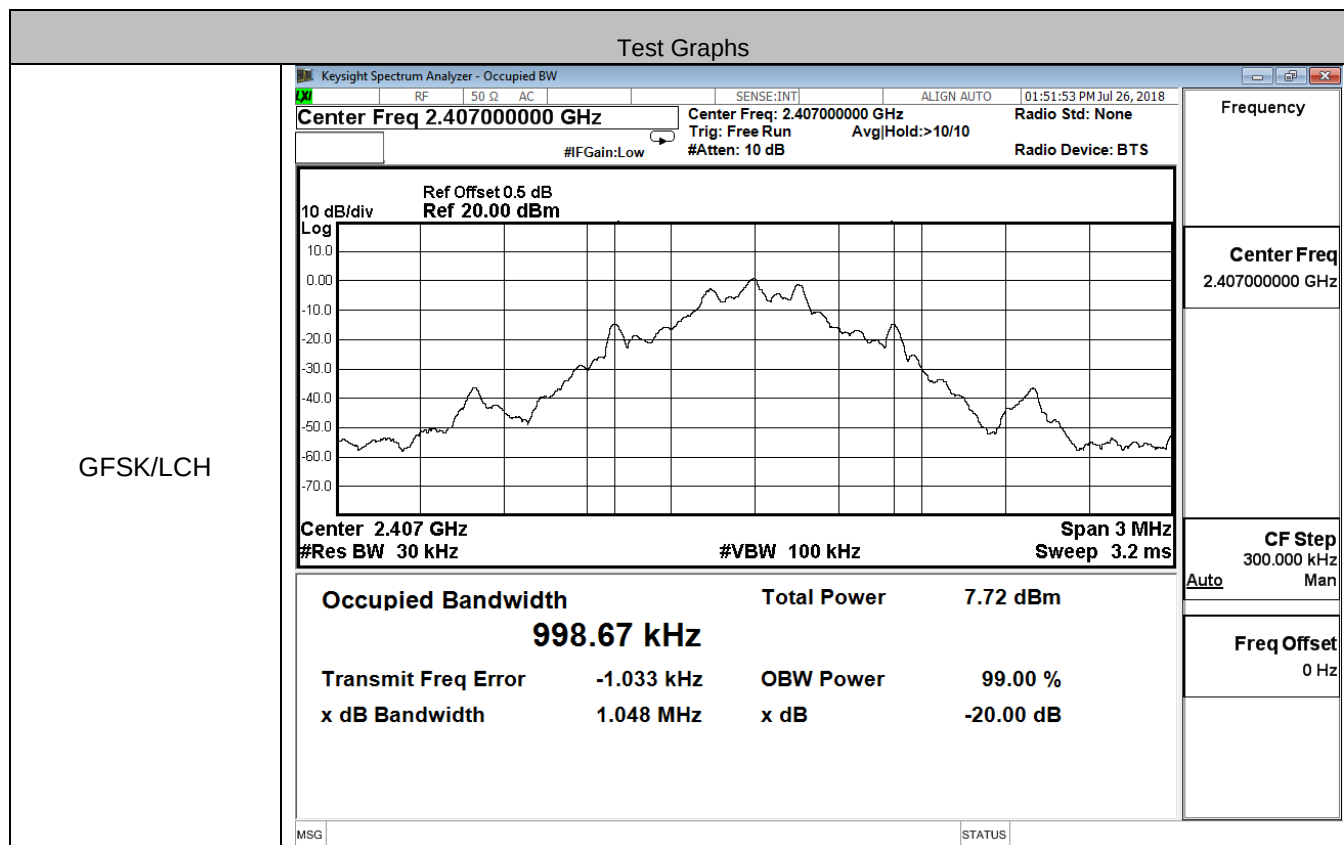
GFSK/MCH



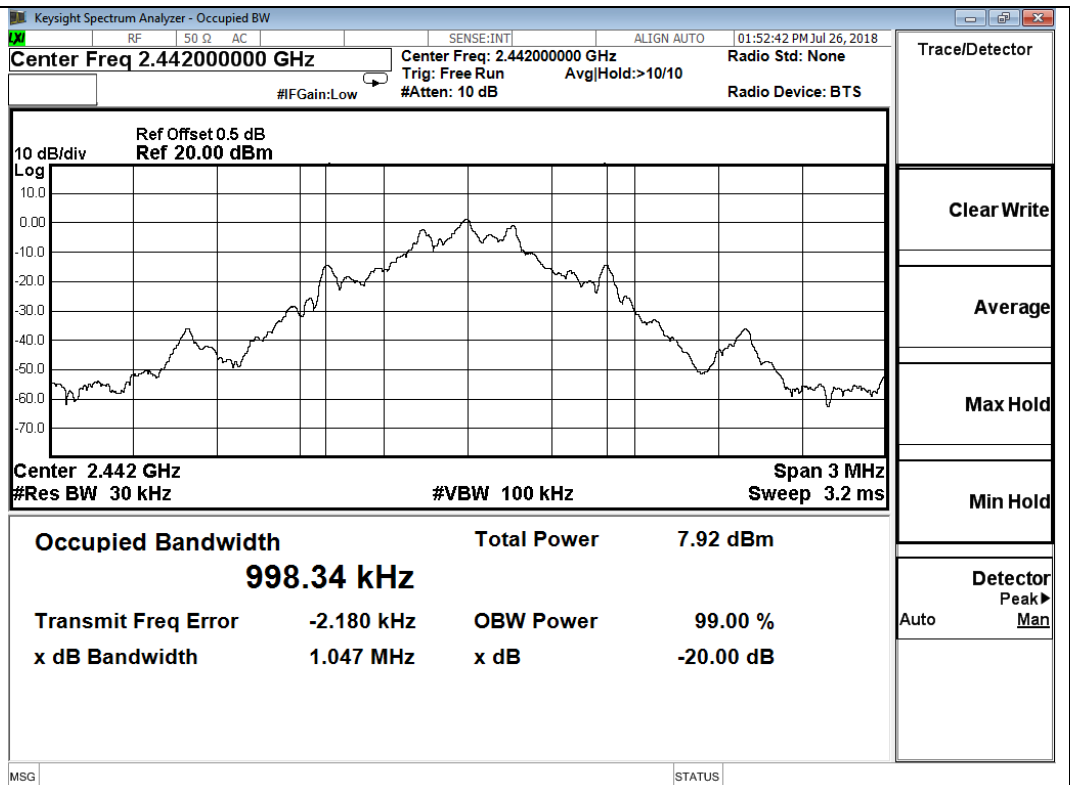


## A.2 99% and 20dB Bandwidth

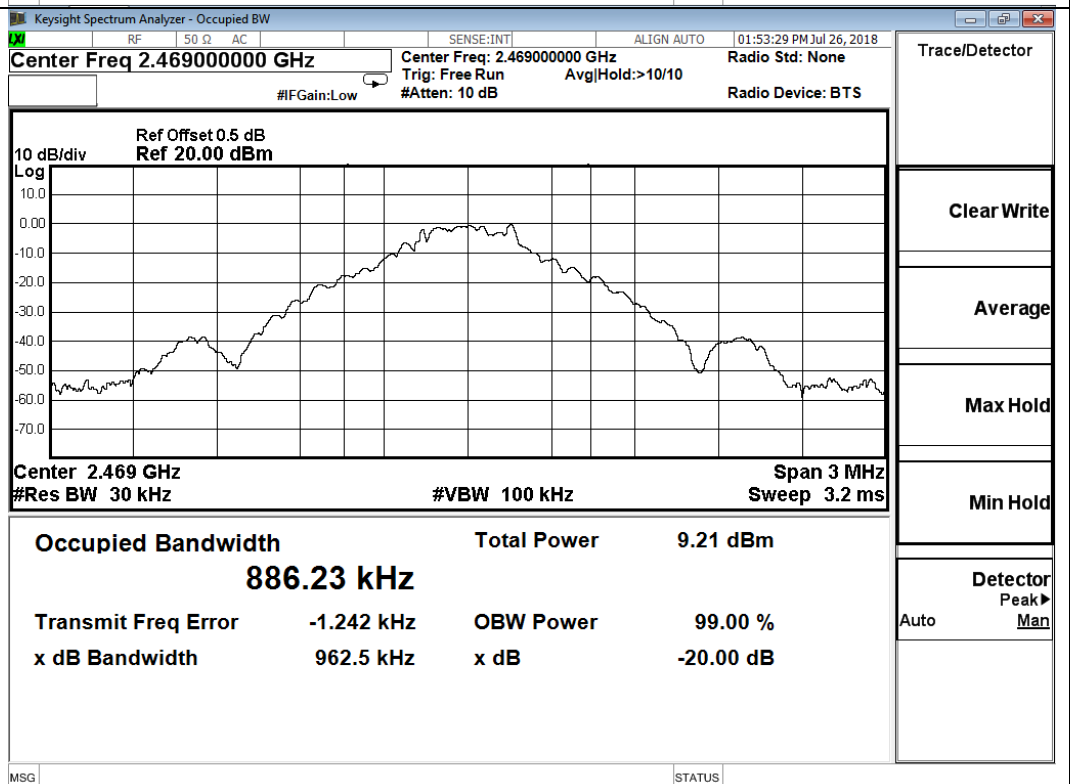
| Mode | Channel. | 20dB Bandwidth [MHz] | 99% Bandwidth [MHz] | Limit [MHz]   | Verdict |
|------|----------|----------------------|---------------------|---------------|---------|
| GFSK | LCH      | 1.048                | 0.99867             | Not Specified | PASS    |
|      | MCH      | 1.047                | 0.99834             | Not Specified | PASS    |
|      | HCH      | 0.9625               | 0.88623             | Not Specified | PASS    |



GFSK/MCH

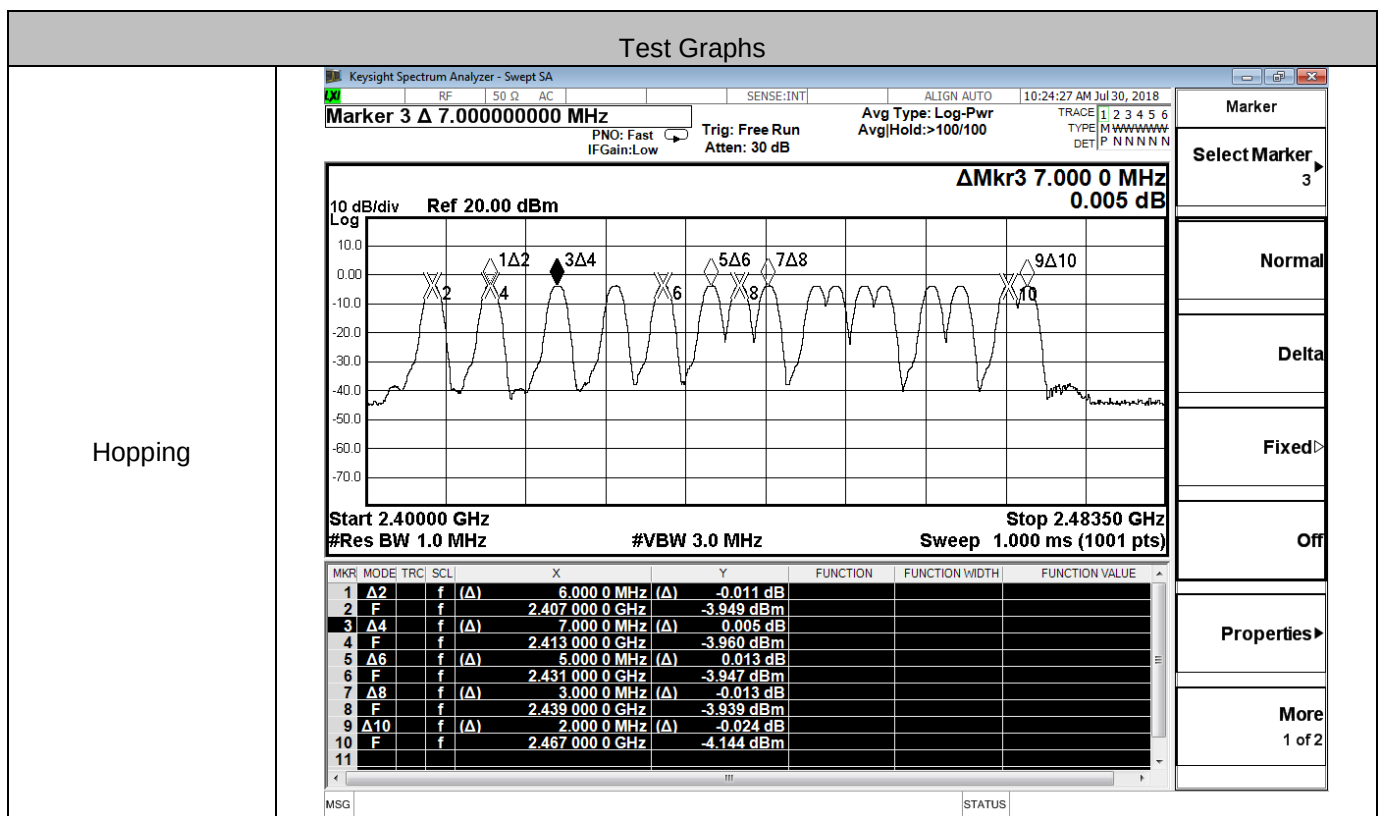


GFSK/HCH



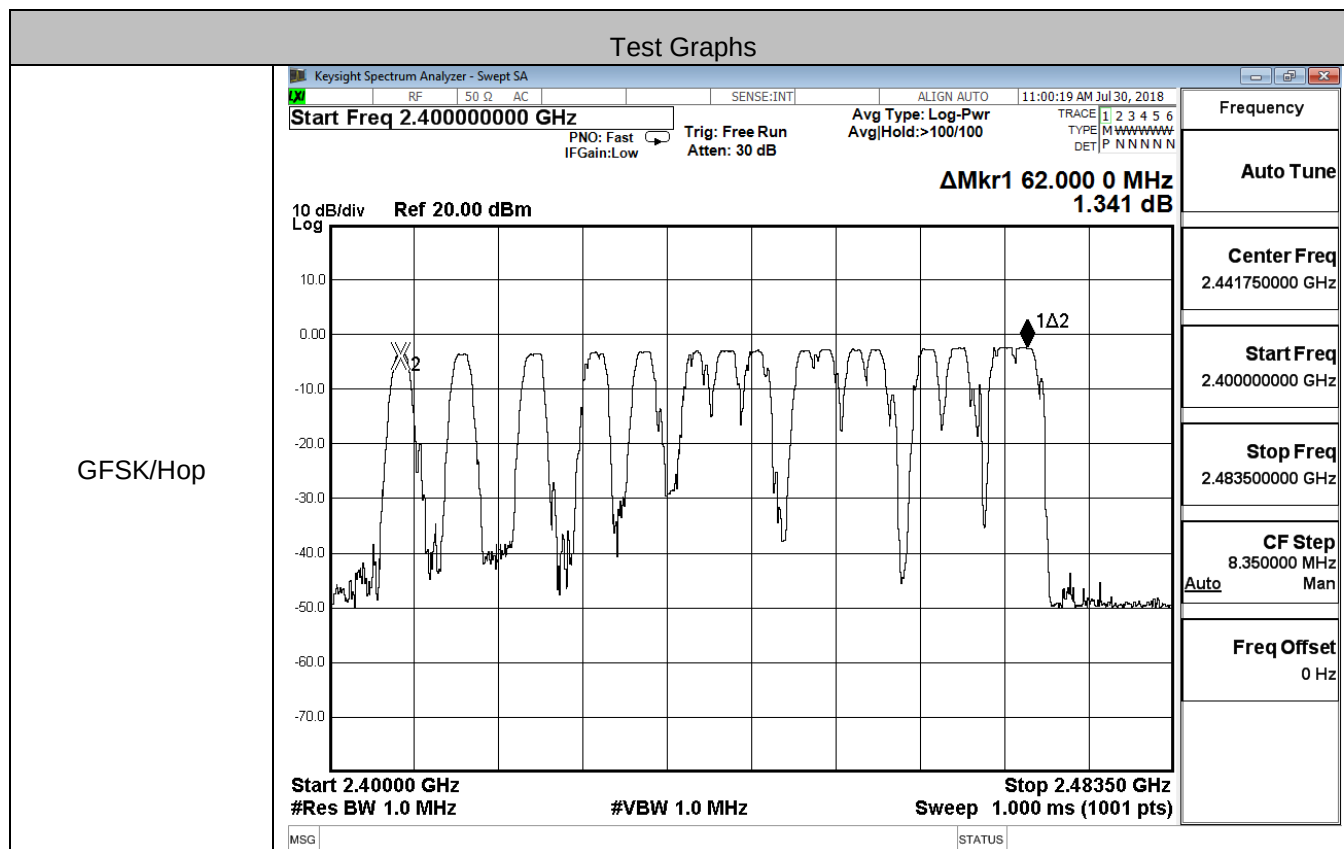
### A.3 Carrier Frequency Separation

| Mode | Channel Bandwidth [MHz] | Carrier Frequency Separation [MHz] | Limit [MHz] | Verdict |
|------|-------------------------|------------------------------------|-------------|---------|
| GFSK | 7                       | 7                                  | 1.048       | PASS    |
|      | 6                       | 6                                  | 1.048       | PASS    |
|      | 5                       | 5                                  | 1.048       | PASS    |
|      | 3                       | 3                                  | 1.048       | PASS    |
|      | 2                       | 2                                  | 1.048       | PASS    |



## A.4 Hopping Channel Number

| Mode | Channel. | Number of Hopping Channel [N] | Limit [N] | Verdict |
|------|----------|-------------------------------|-----------|---------|
| GFSK | Hop      | 16                            | >=15      | PASS    |

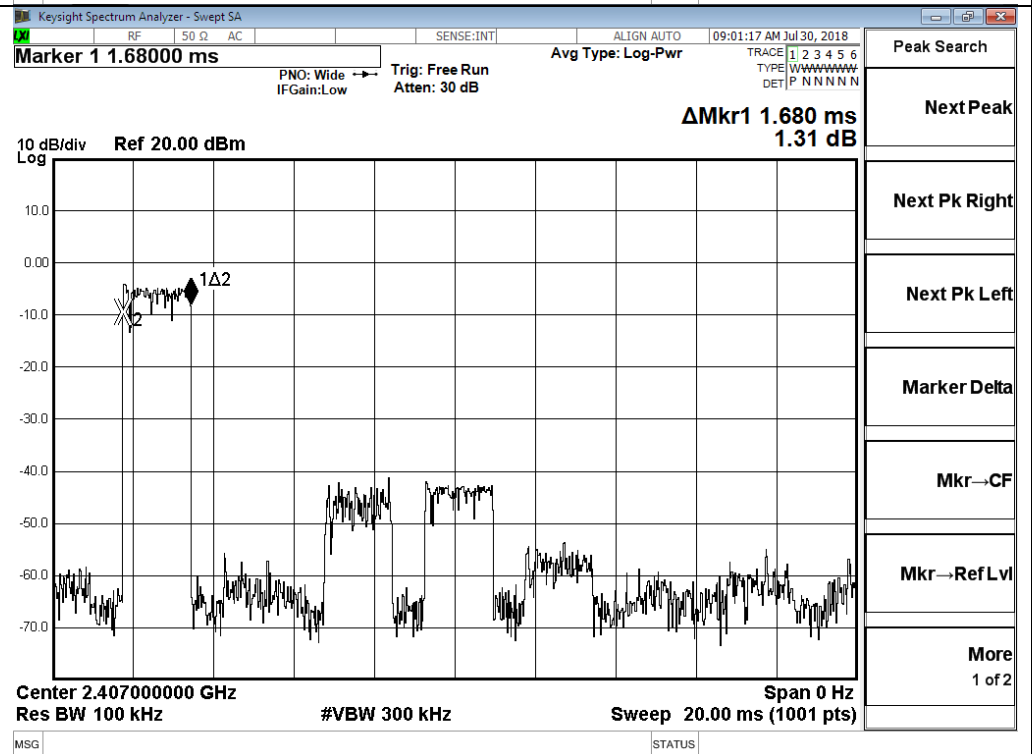
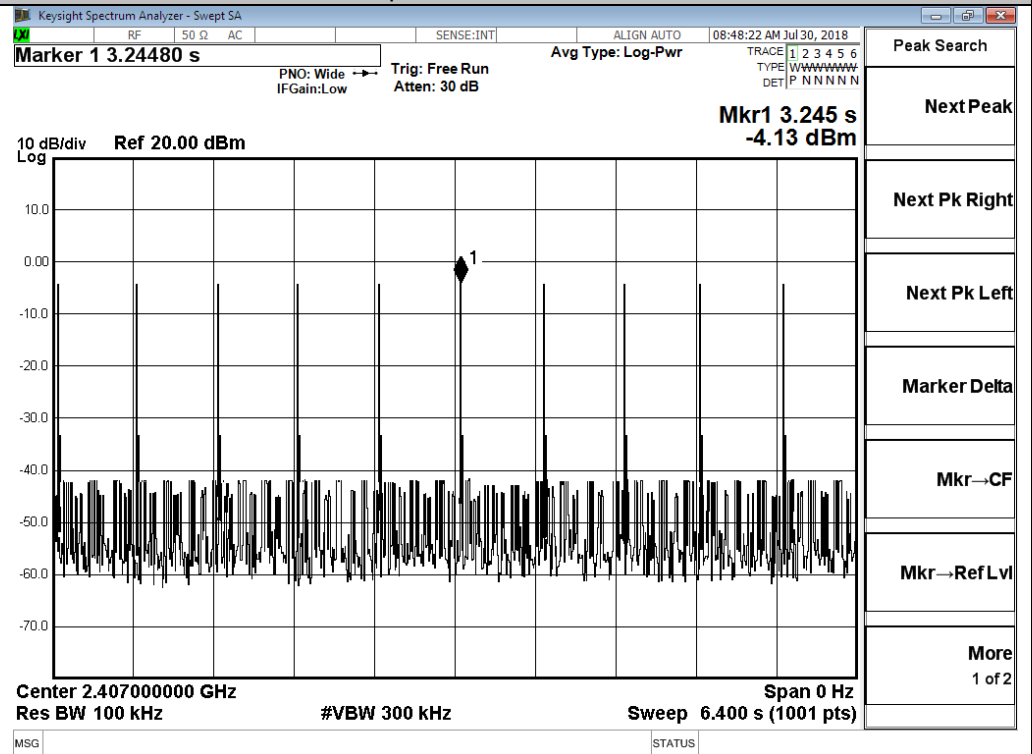


## A.5 Dwell Time

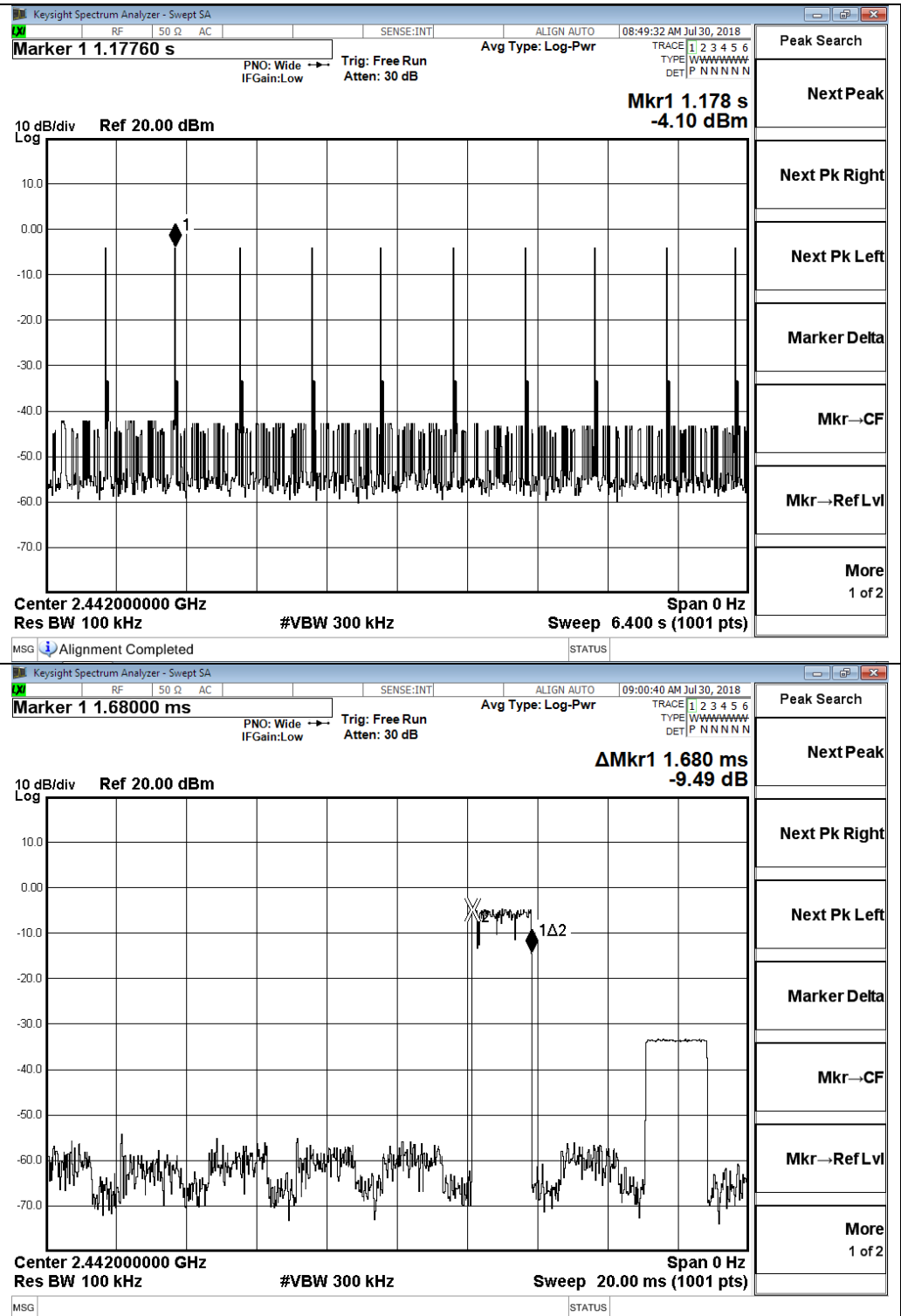
| Mode | Channel | Burst Width<br>[ms/hop/ch] | Total<br>Hops[hop*ch] | Dwell Time[s] | Limit [s] | Verdict |
|------|---------|----------------------------|-----------------------|---------------|-----------|---------|
| GFSK | LCH     | 1.680                      | 10                    | 0.0168        | 0.4       | PASS    |
|      | MCH     | 1.680                      | 10                    | 0.0168        | 0.4       | PASS    |
|      | HCH     | 1.660                      | 10                    | 0.0166        | 0.4       | PASS    |

## Test Graphs

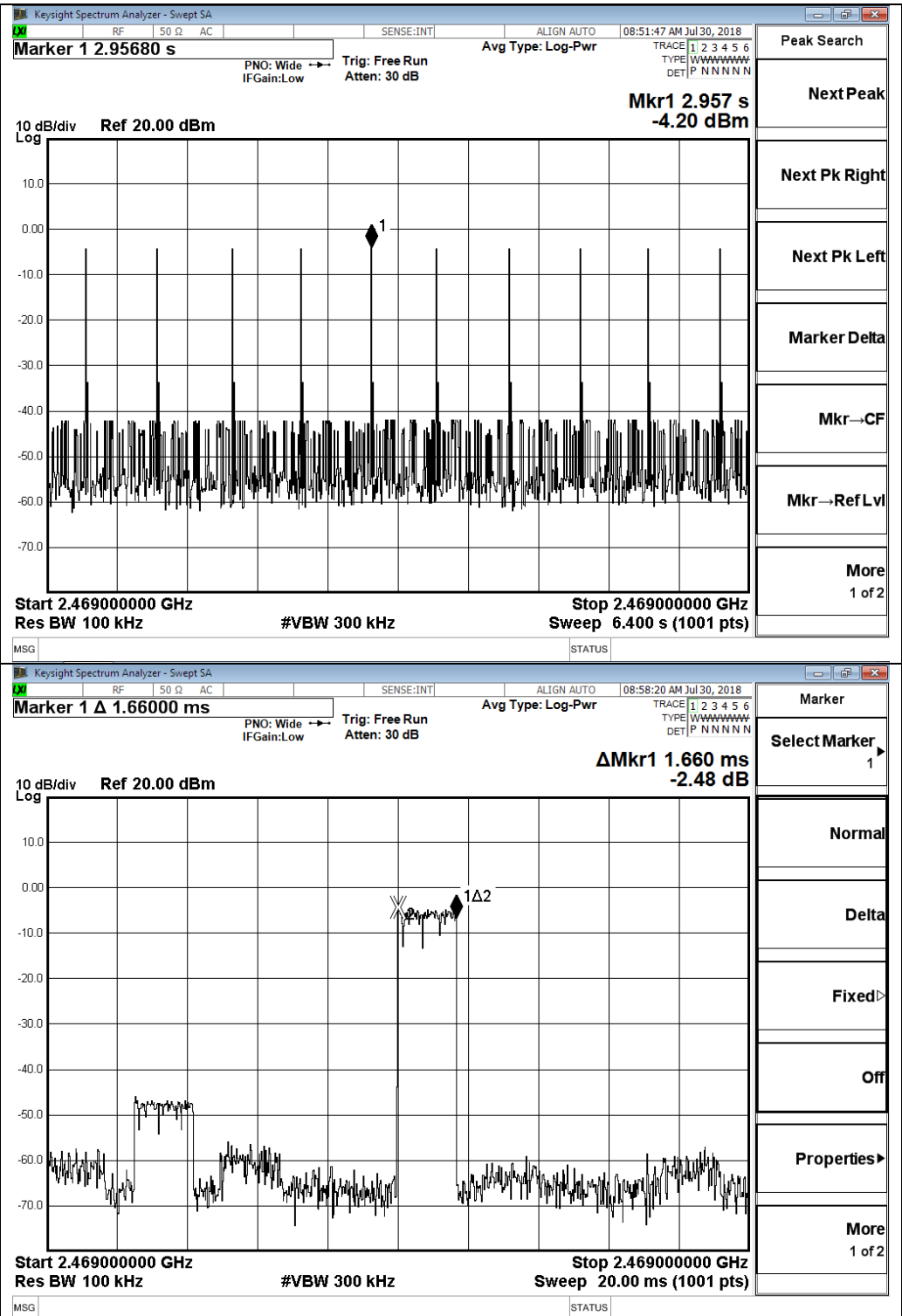
GFSK / LCH



GFSK / MCH



GFSK / HCH

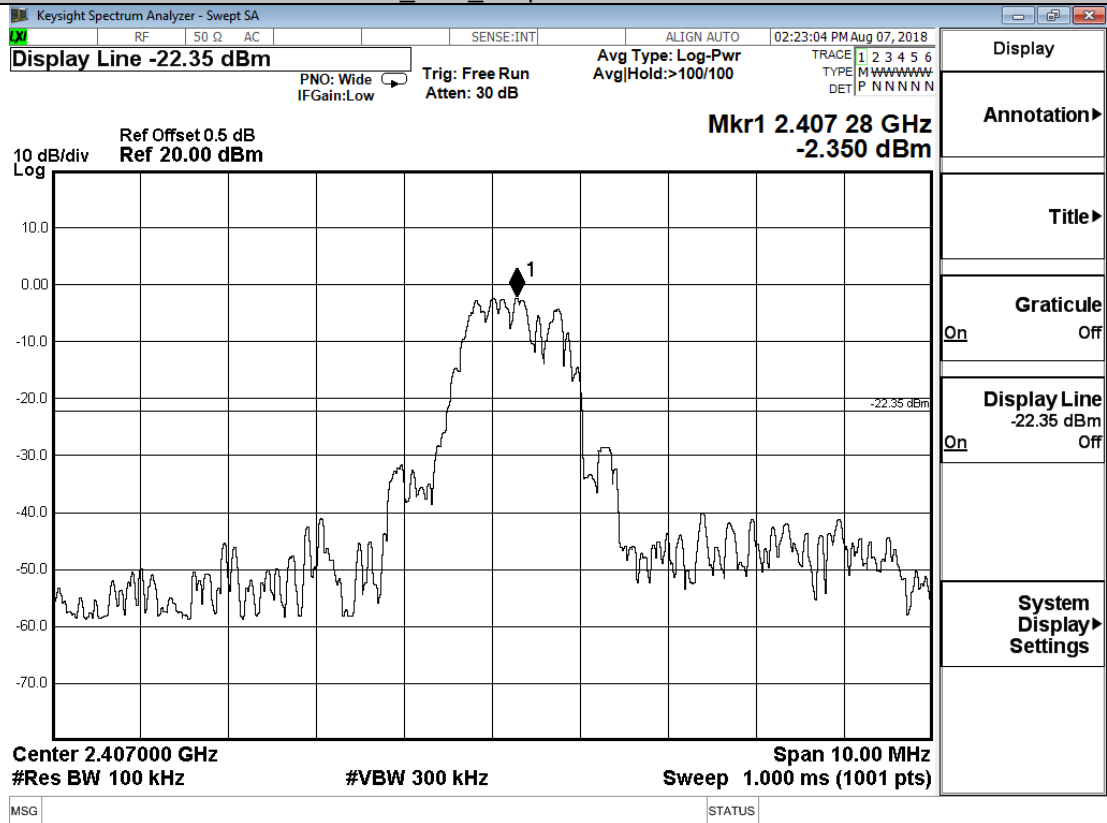


**A.6 RF Conducted Spurious Emissions**

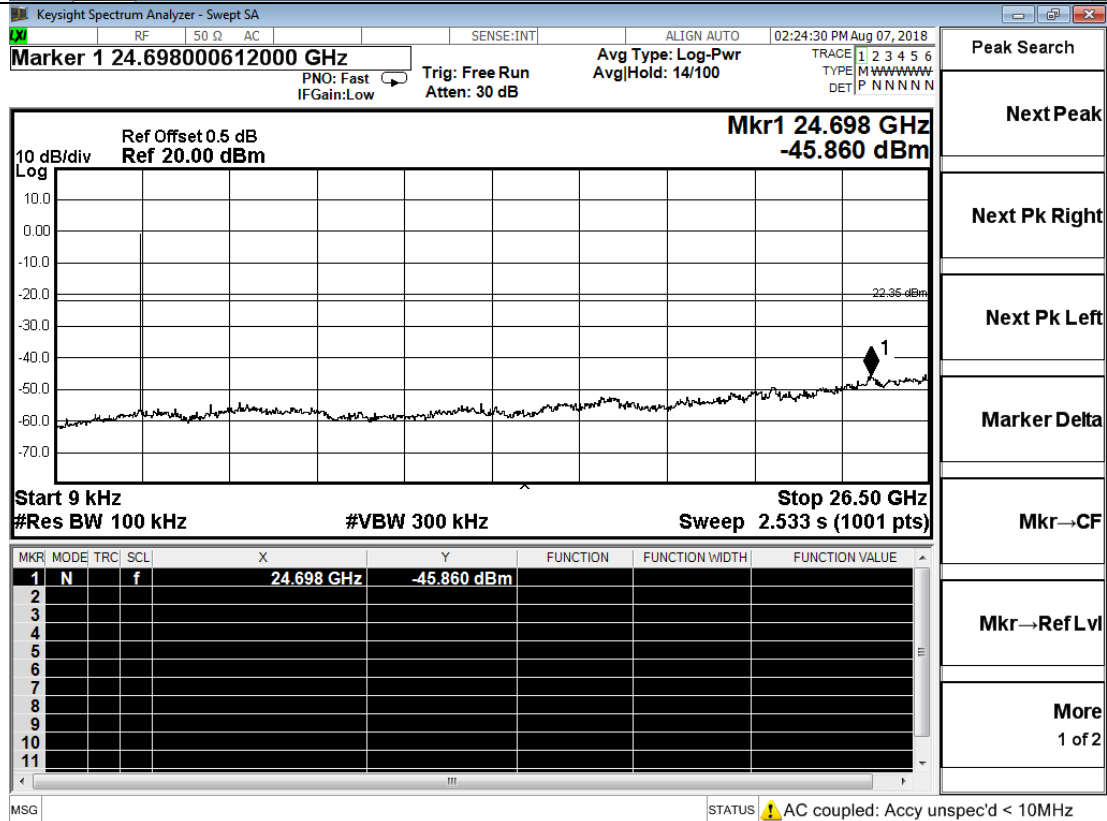
| Mode | Channel | Max. Level [dBm] | Limit [dBm] | Verdict |
|------|---------|------------------|-------------|---------|
| GFSK | LCH     | -45.860          | -22.35      | PASS    |
|      | MCH     | -45.695          | -23.18      | PASS    |
|      | HCH     | -41.994          | -23.17      | PASS    |

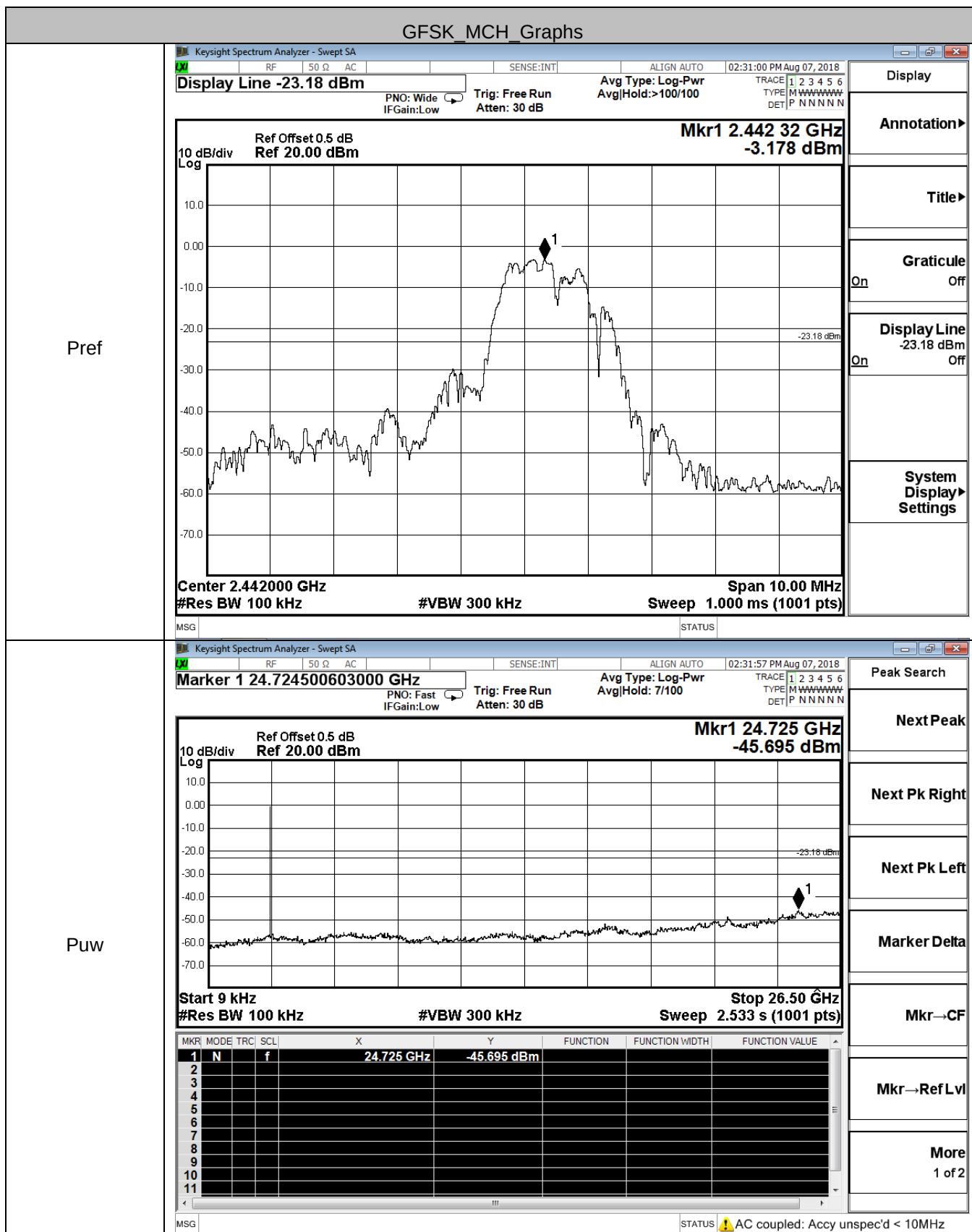
## GFSK\_LCH\_Graphs

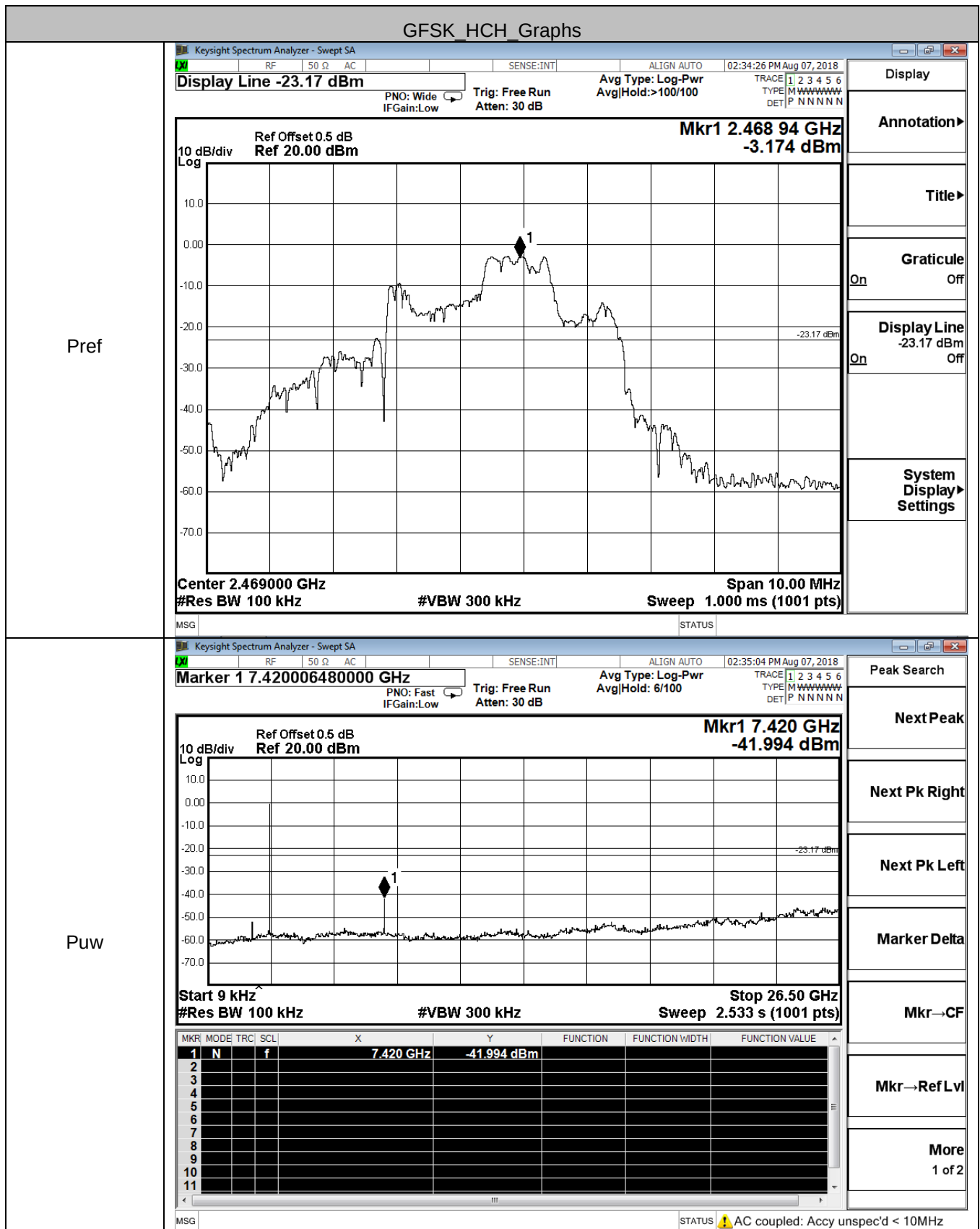
Pref



Puw





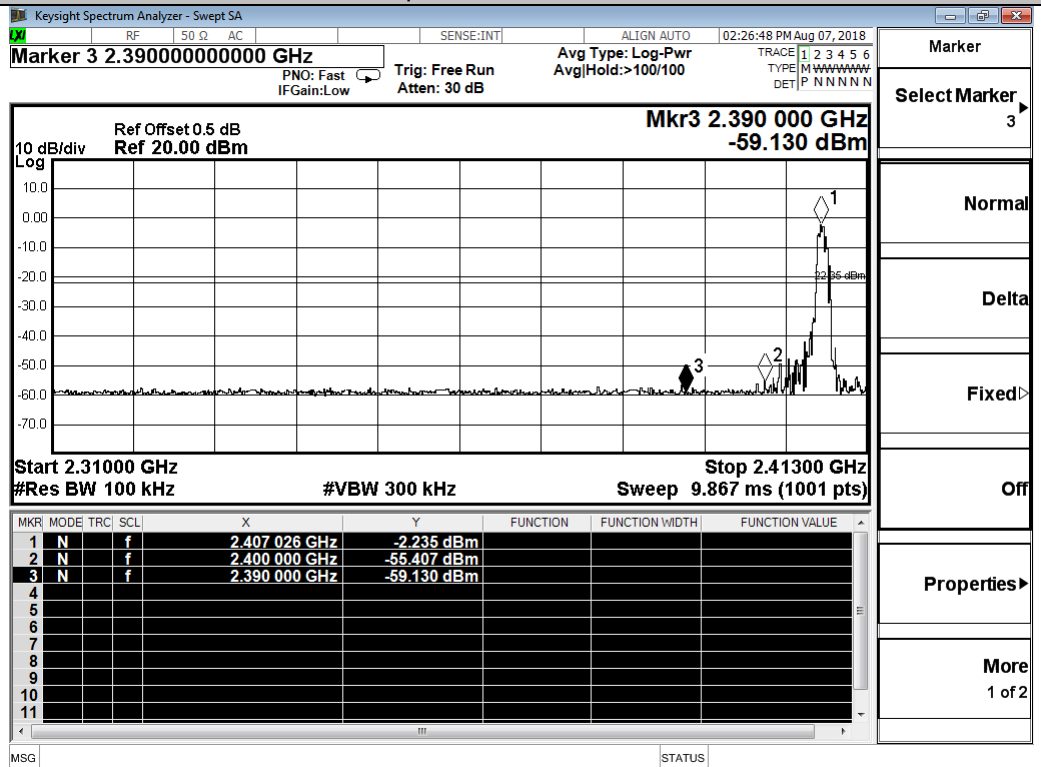


**A.7 Band-edge for RF Conducted Emissions**

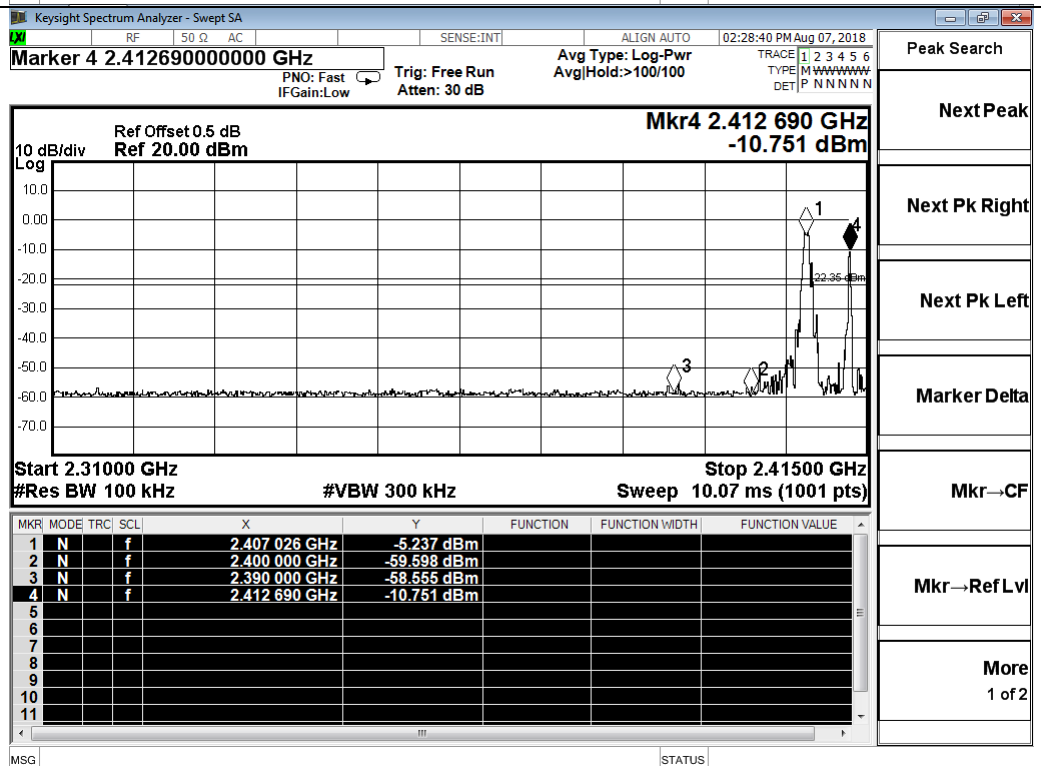
| Mode | Channel | Carrier Frequency [MHz] | Carrier Power [dBm] | Frequency Hopping | Max Spurious Level [dBm] | Limit [dBm] | Verdict |
|------|---------|-------------------------|---------------------|-------------------|--------------------------|-------------|---------|
| GFSK | LCH     | 2402                    | -2.235              | Off               | -55.407                  | -22.35      | PASS    |
|      |         |                         | -5.237              | On                | -58.555                  | -22.35      | PASS    |
|      | HCH     | 2480                    | -2.146              | Off               | -58.140                  | -23.10      | PASS    |
|      |         |                         | -2.145              | On                | -58.135                  | -23.17      | PASS    |

## Test Graphs

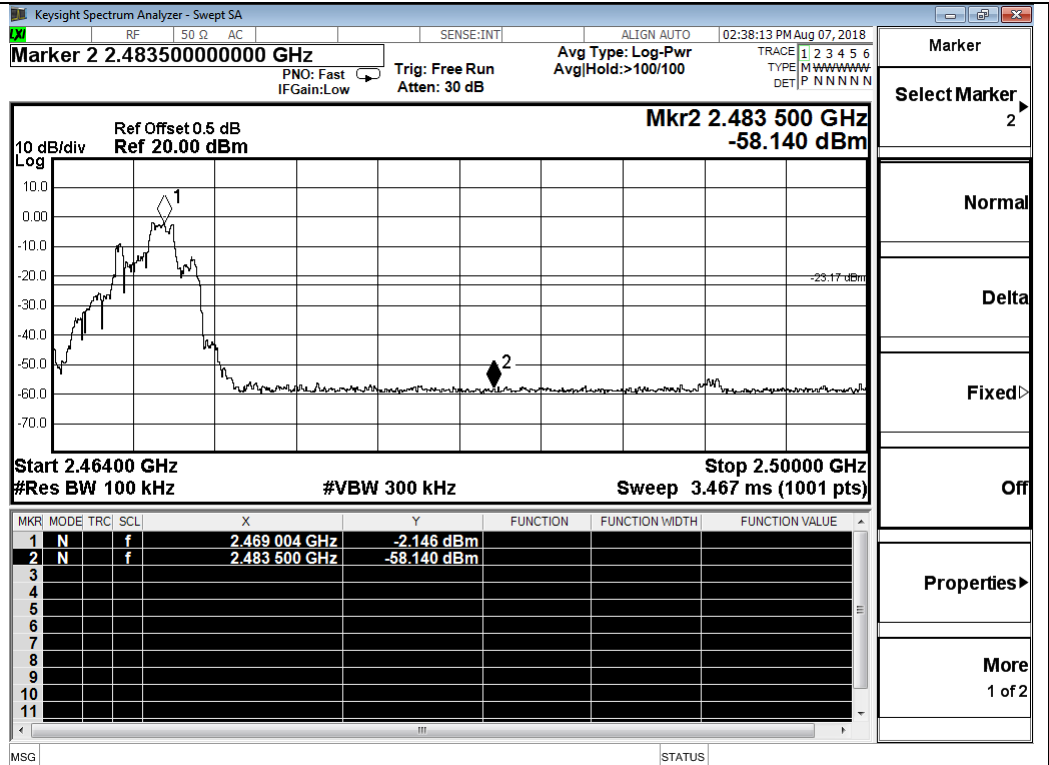
GFSK/LCH/No Hop



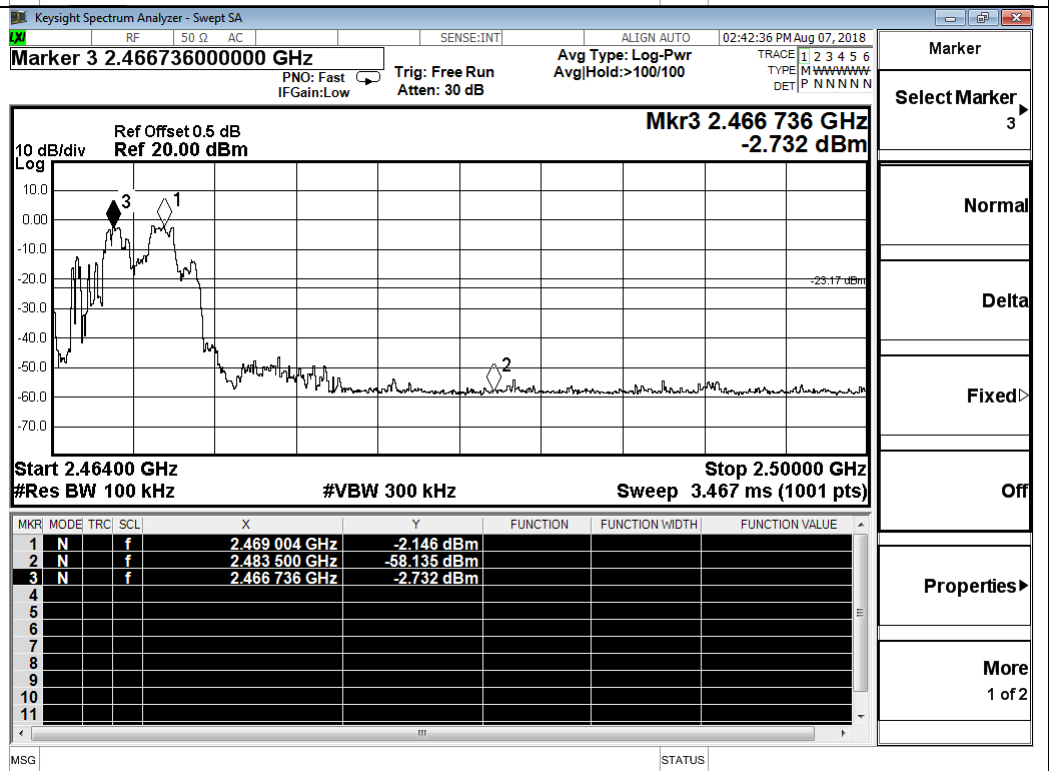
GFSK/LCH/Hop



GFSK/HCH/No Hop



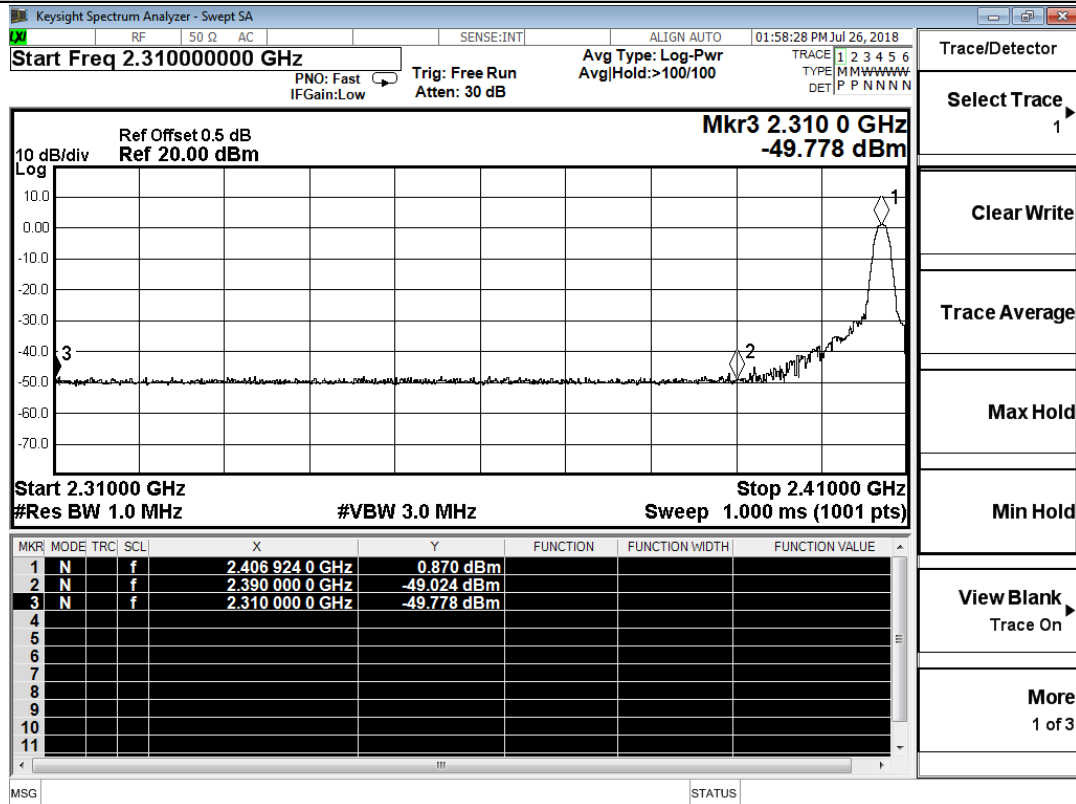
GFSK/HCH/Hop



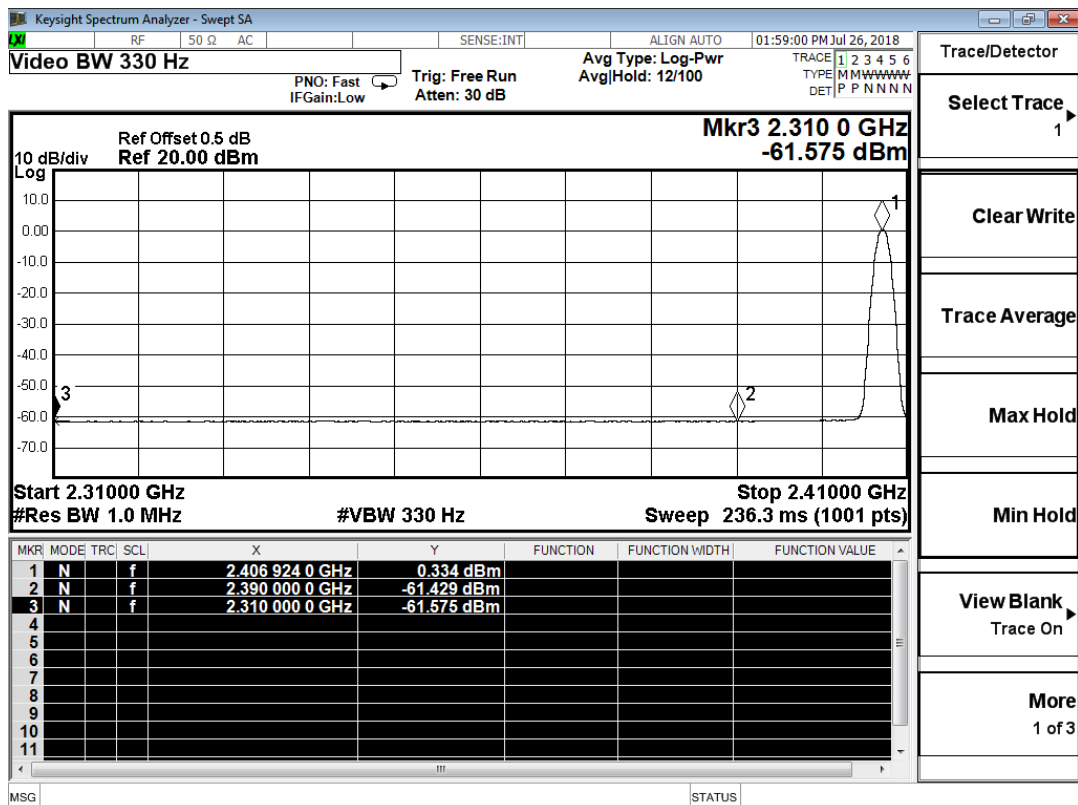
## A.8 Restrict-band band-edge measurements

| Test Mode | Hopping | Freq.  | Power [dBm] | Gain | Ground Factor | E [dBuV/m] | Detector | Limit [dBuV/m] | Verdict |
|-----------|---------|--------|-------------|------|---------------|------------|----------|----------------|---------|
| GFSK      | Off     | 2310.0 | -49.778     | 2.0  | 0             | 47.450     | PEAK     | 74             | PASS    |
|           | Off     | 2310.0 | -61.429     | 2.0  | 0             | 35.799     | AV       | 54             | PASS    |
|           | Off     | 2390.0 | -49.778     | 2.0  | 0             | 47.450     | PEAK     | 74             | PASS    |
|           | Off     | 2390.0 | -61.575     | 2.0  | 0             | 35.653     | AV       | 54             | PASS    |
|           | Off     | 2483.5 | -49.531     | 2.0  | 0             | 47.697     | PEAK     | 74             | PASS    |
|           | Off     | 2483.5 | -61.352     | 2.0  | 0             | 35.876     | AV       | 54             | PASS    |
|           | Off     | 2500.0 | -49.236     | 2.0  | 0             | 47.992     | PEAK     | 74             | PASS    |
|           | Off     | 2500.0 | -61.358     | 2.0  | 0             | 35.870     | AV       | 54             | PASS    |

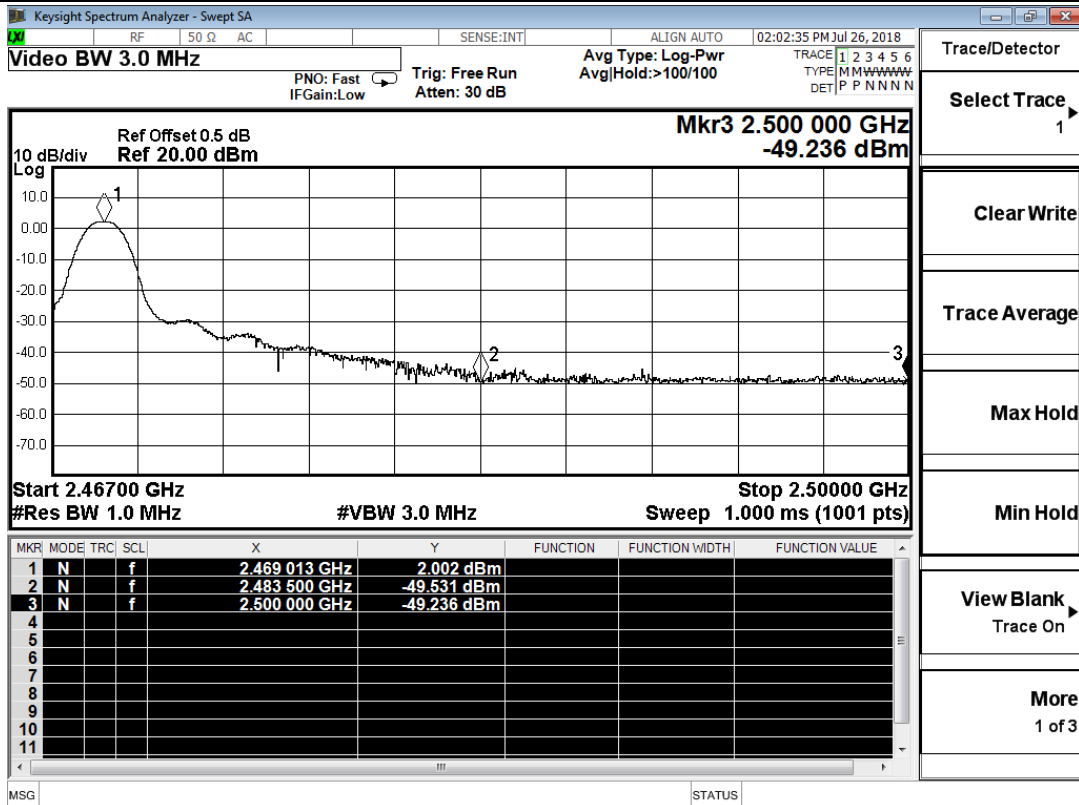
## Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (Low Channel)



## Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (Low Channel)



## Restrict-band band-edge measurements\_Hopping Off\_ GFSK\_PEAK (High Channel)



## Restrict-band band-edge measurements\_Hopping Off\_ GFSK\_Average (High Channel)

