

Appendix A

RF Test Data for BT V5.0 (BDR/EDR) (Conducted Measurement)

Product Name: Portable Party Speaker

Trade Mark: STARLINE

Test Model: EL181/PS003

Environmental Conditions

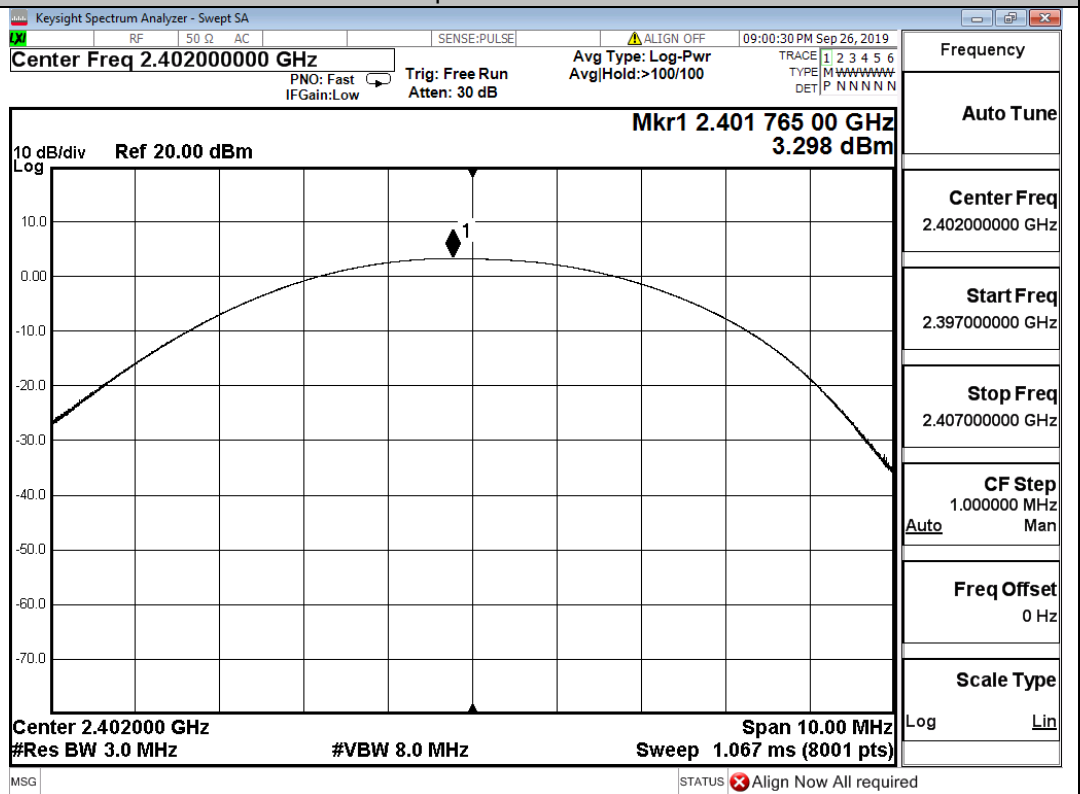
| | |
|--------------------|-------------|
| Temperature: | 23.4 ° C |
| Relative Humidity: | 55% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | CHUANG WANG |
| Supervised by: | JAYDEN ZHUO |

A.1 Maximum Conducted Peak Output Power

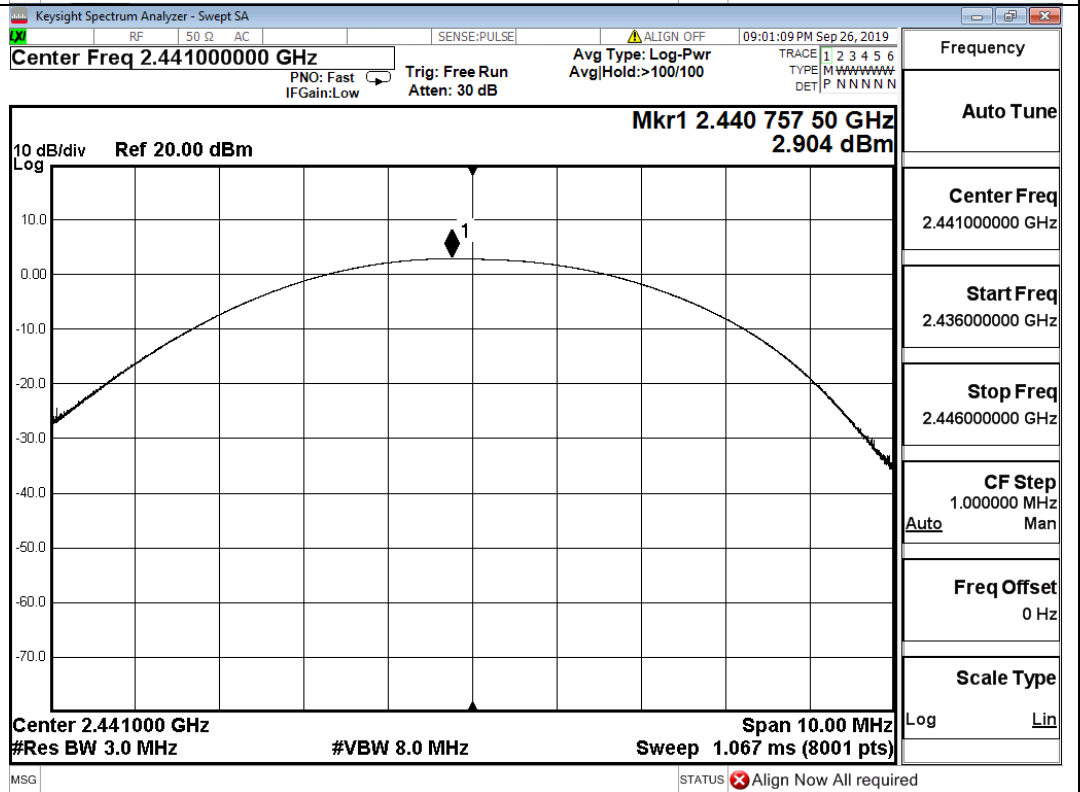
| Mode | Channel. | Maximum Peak Output Power [dBm] | Limit [dBm] | Verdict |
|---------------|----------|---------------------------------|-------------|---------|
| GFSK | LCH | 3.298 | 21 | PASS |
| | MCH | 2.904 | 21 | PASS |
| | HCH | 2.207 | 21 | PASS |
| $\pi/4$ DQPSK | LCH | 3.983 | 21 | PASS |
| | MCH | 3.598 | 21 | PASS |
| | HCH | 2.903 | 21 | PASS |

Test Graphs

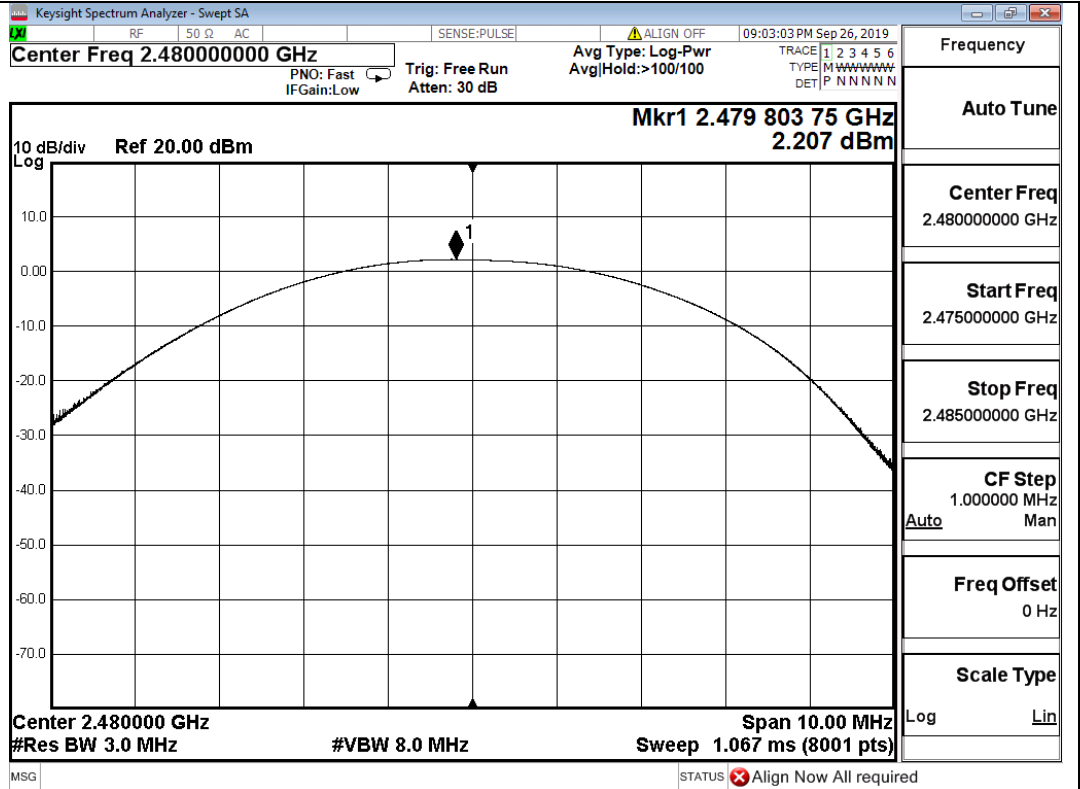
GFSK/LCH



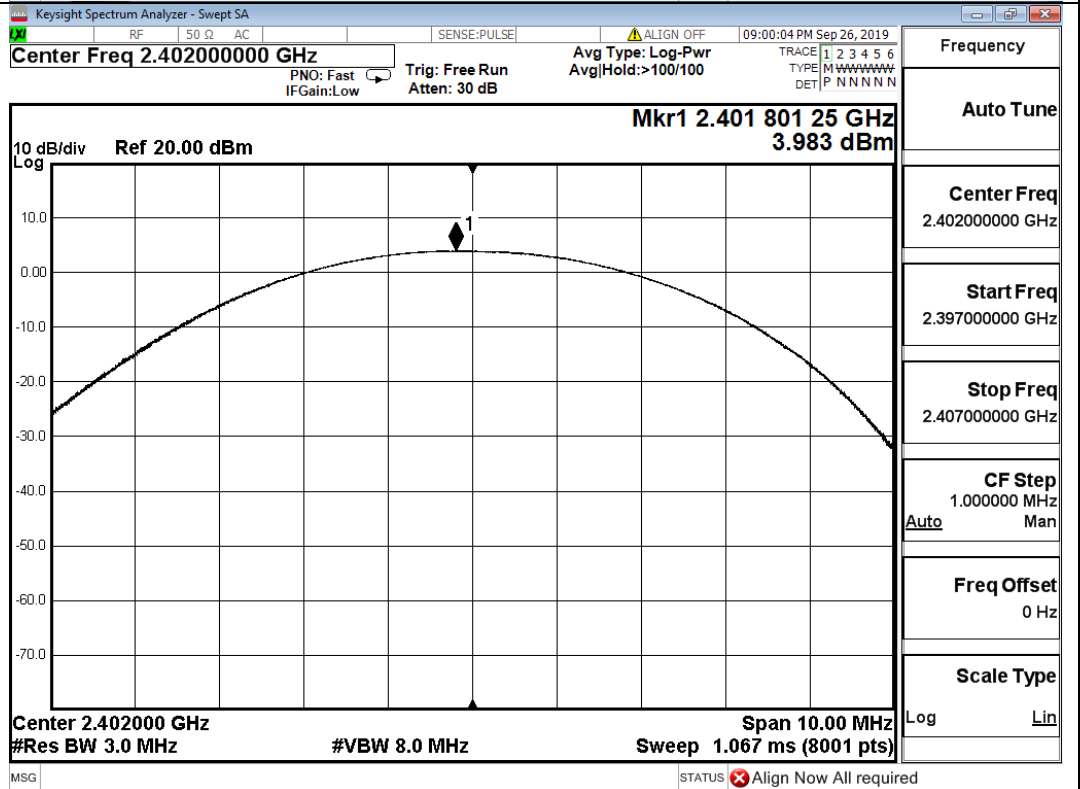
GFSK/MCH



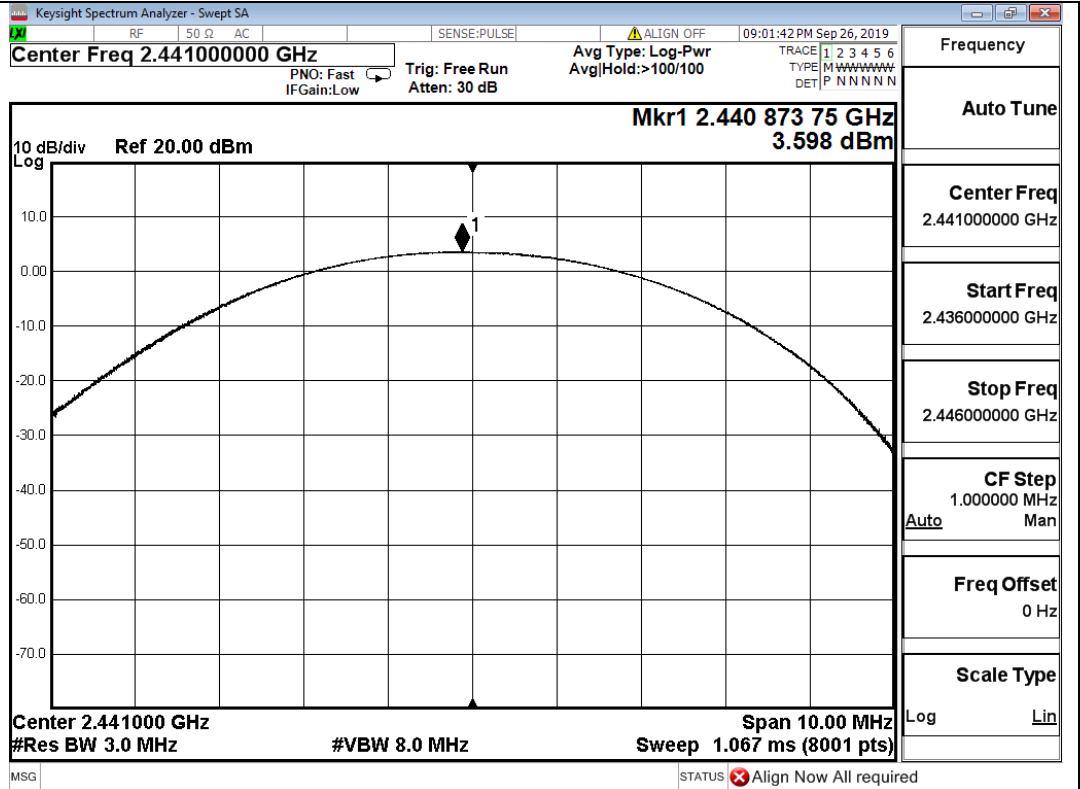
GFSK/HCH



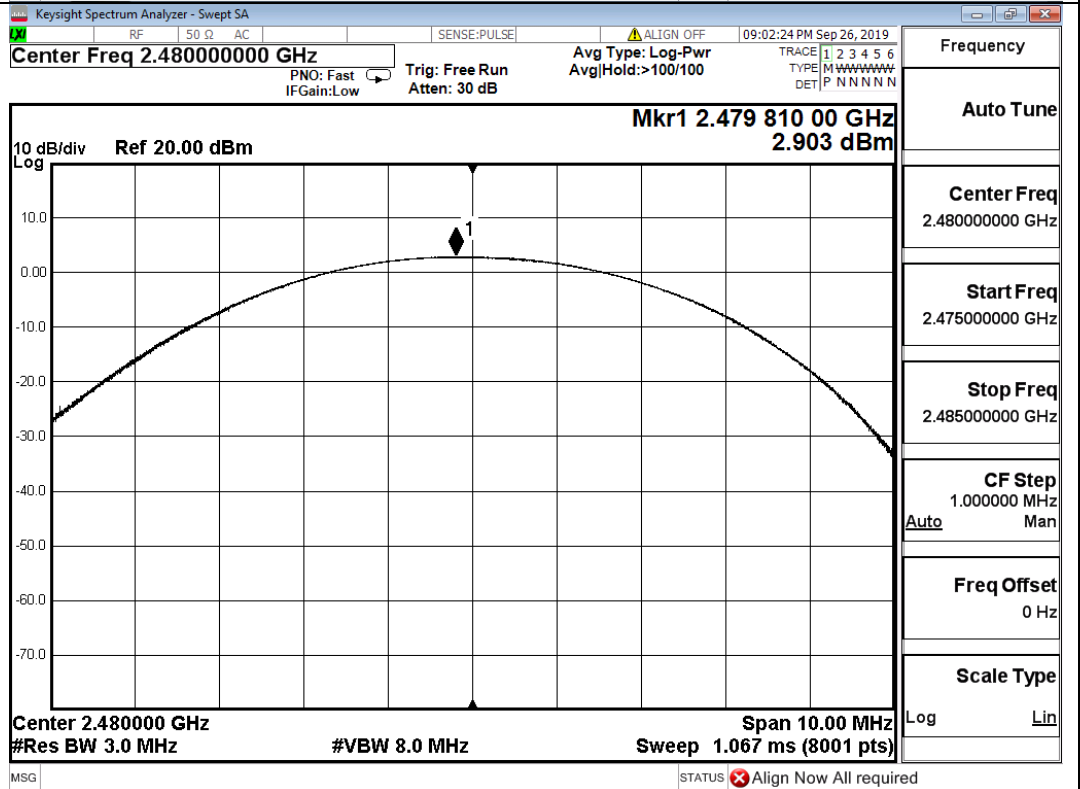
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH

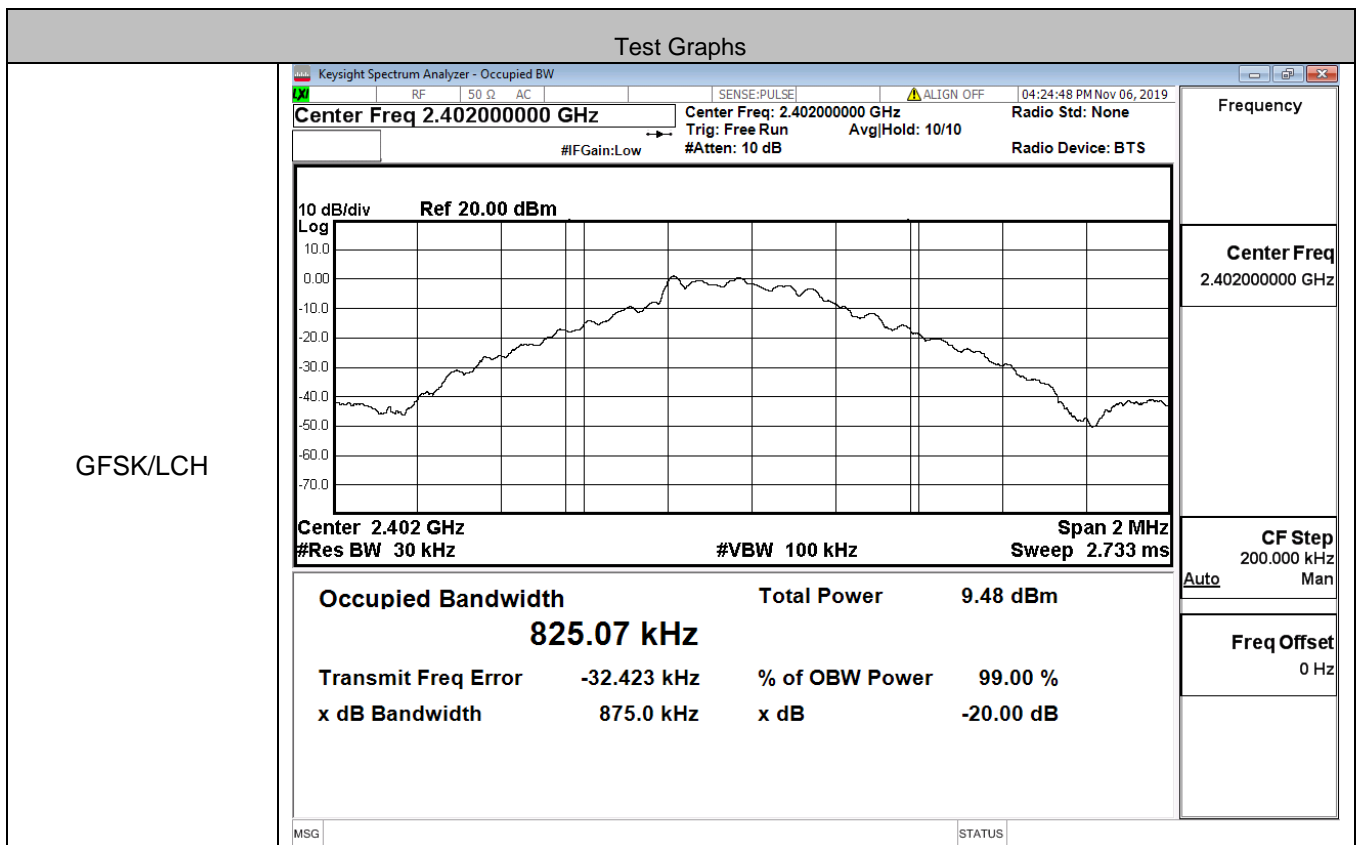


$\pi/4$ DQPSK/HCH

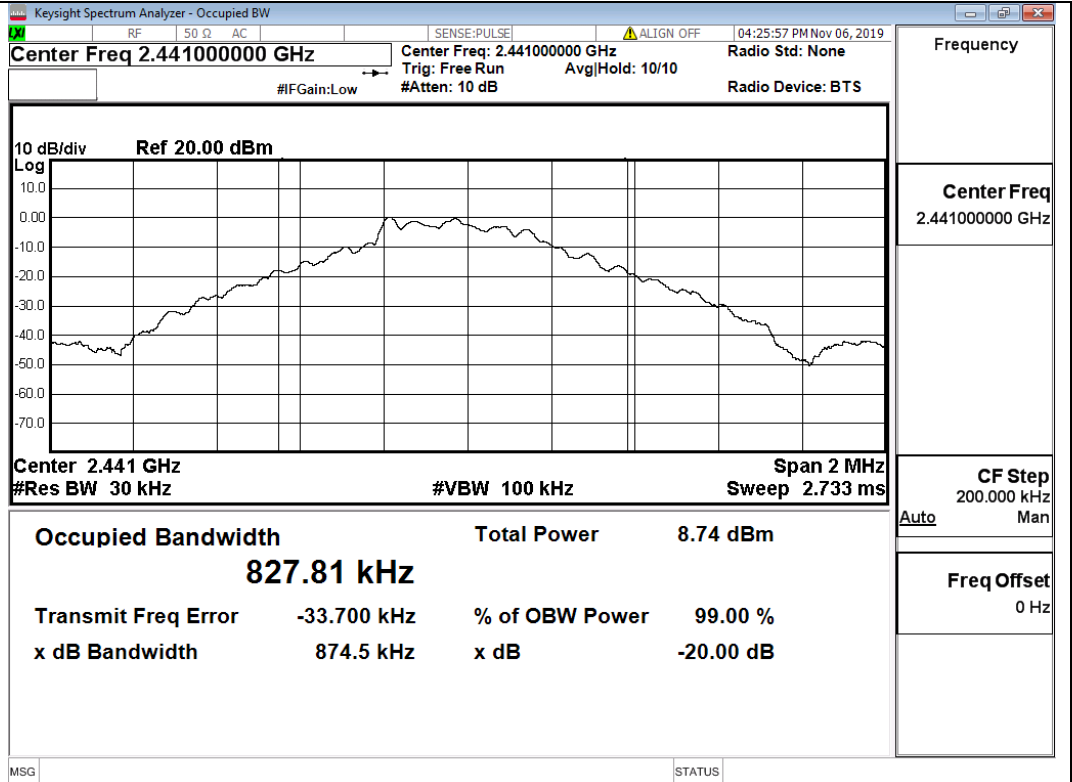


A.2 99% and 20dB Bandwidth

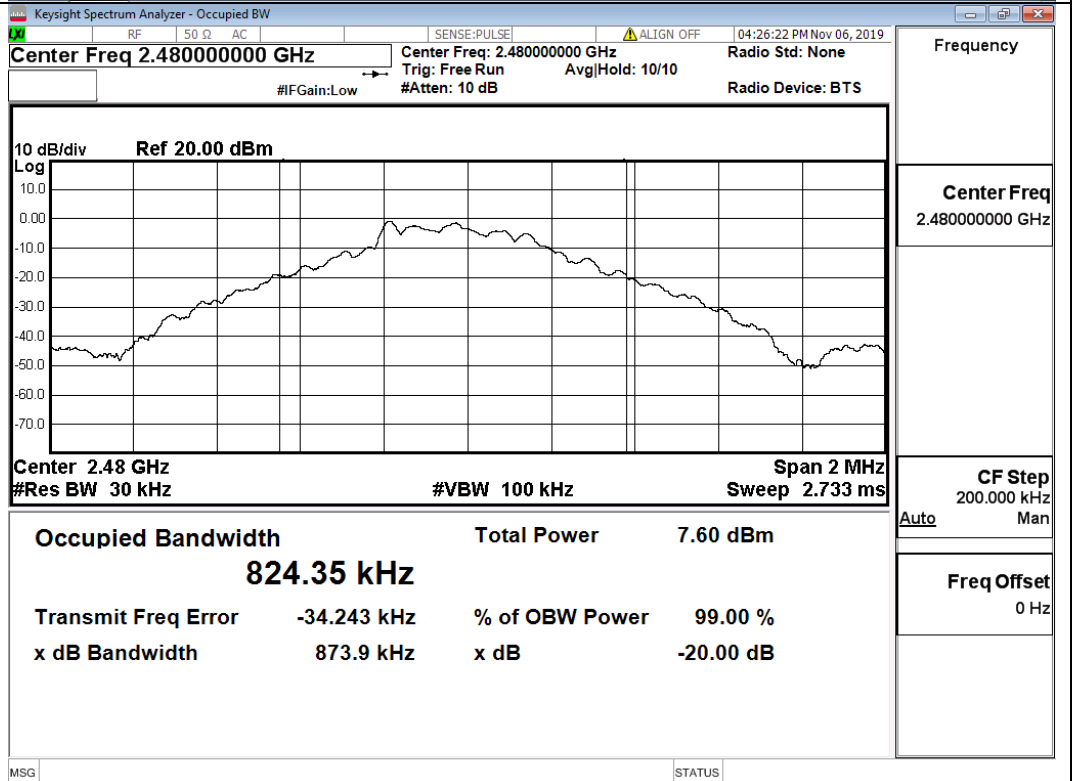
| Mode | Channel. | 99% Bandwidth [MHz] | 20dB Bandwidth [MHz] | Limit [MHz] | Verdict |
|----------|----------|---------------------|----------------------|---------------|---------|
| GFSK | LCH | 0.82507 | 0.8750 | Not Specified | PASS |
| | MCH | 0.82781 | 0.8745 | Not Specified | PASS |
| | HCH | 0.82435 | 0.8739 | Not Specified | PASS |
| π/4DQPSK | LCH | 1.1678 | 1.255 | Not Specified | PASS |
| | MCH | 1.1679 | 1.254 | Not Specified | PASS |
| | HCH | 1.1672 | 1.252 | Not Specified | PASS |



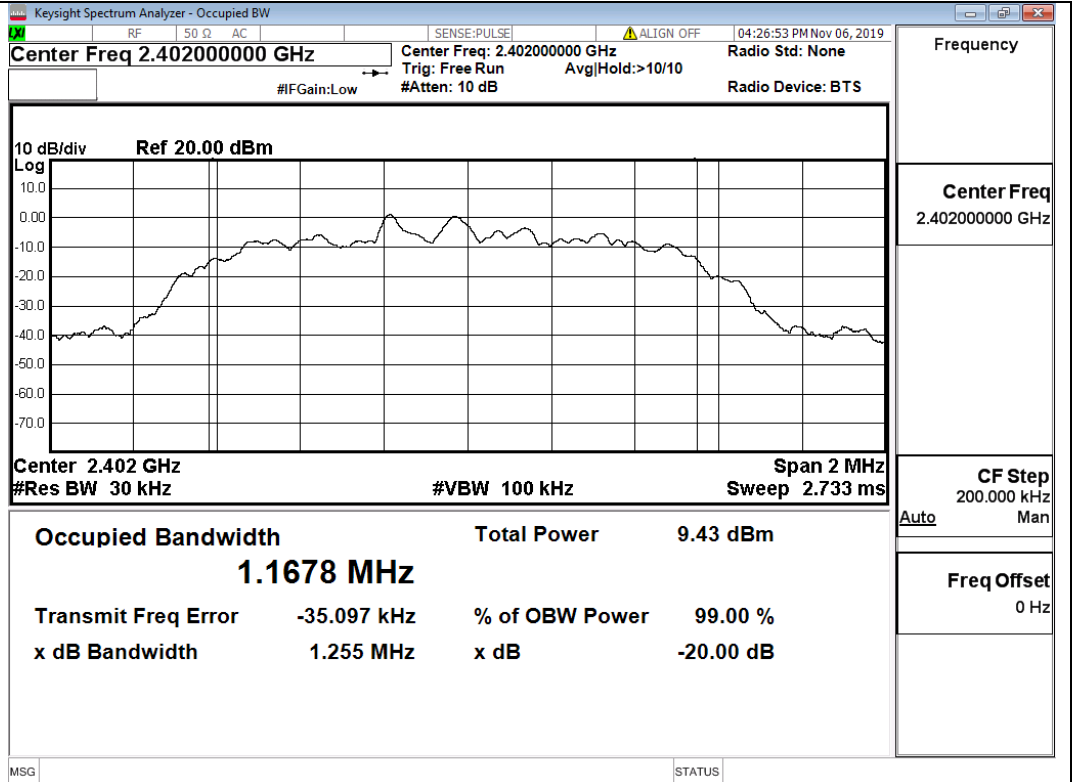
GFSK/MCH



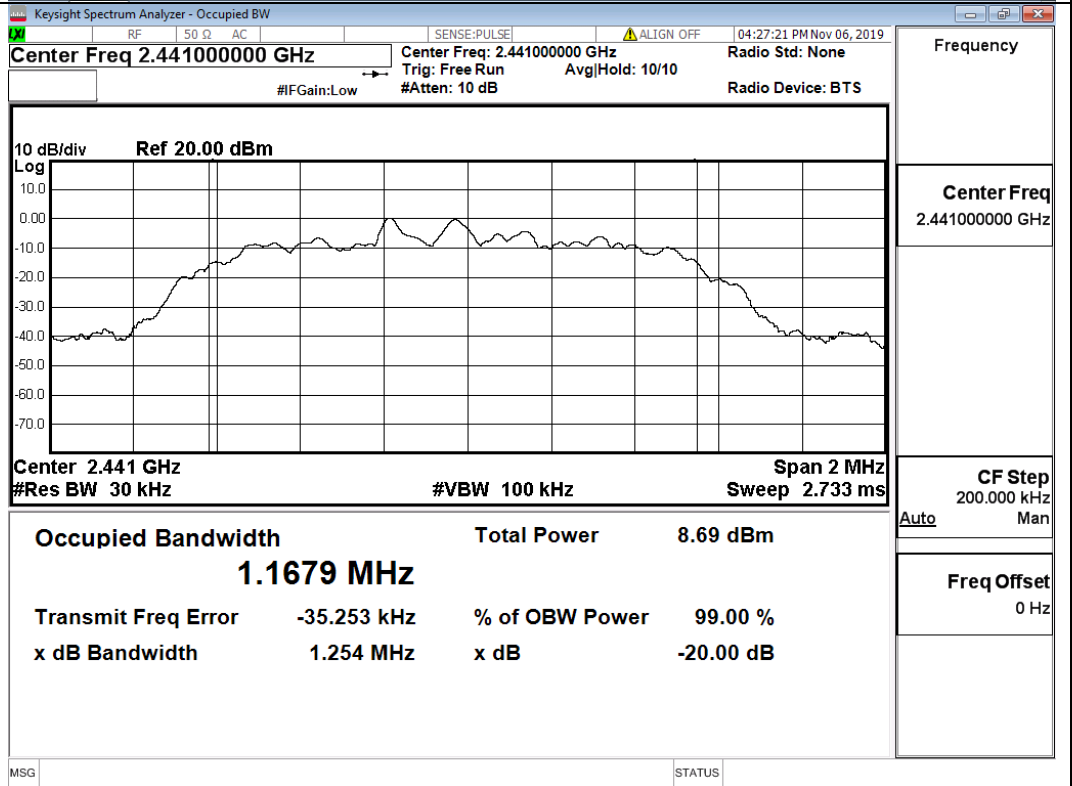
GFSK/HCH



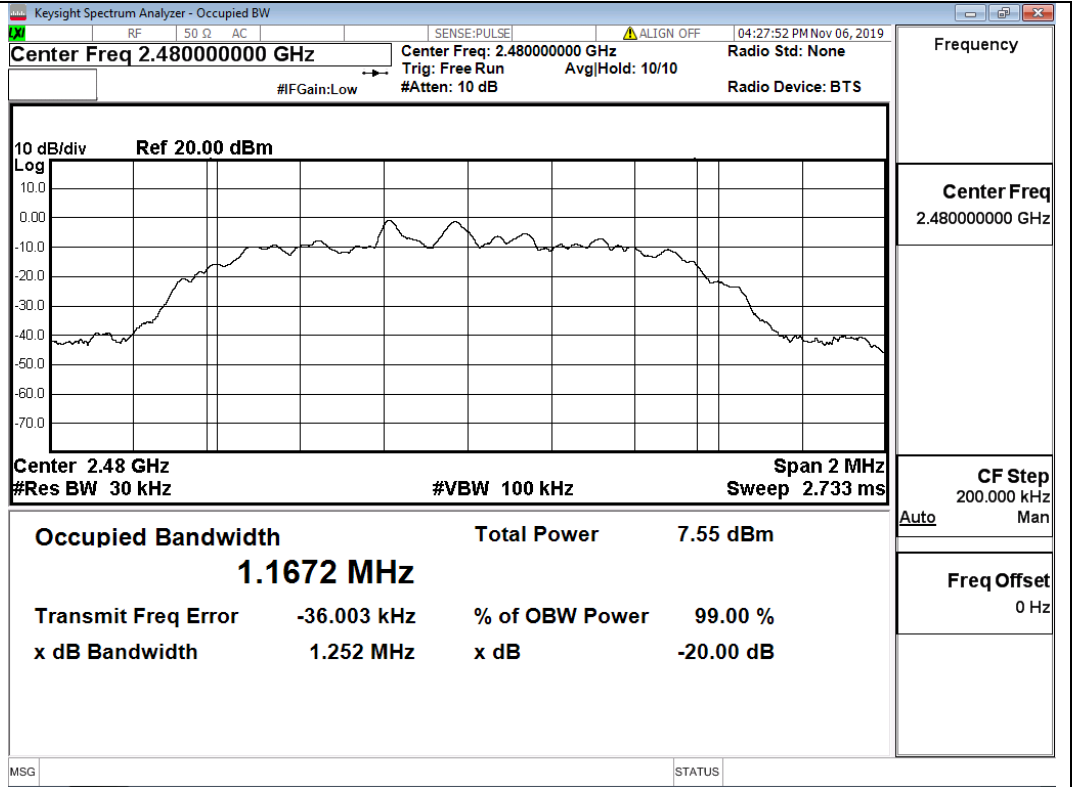
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH

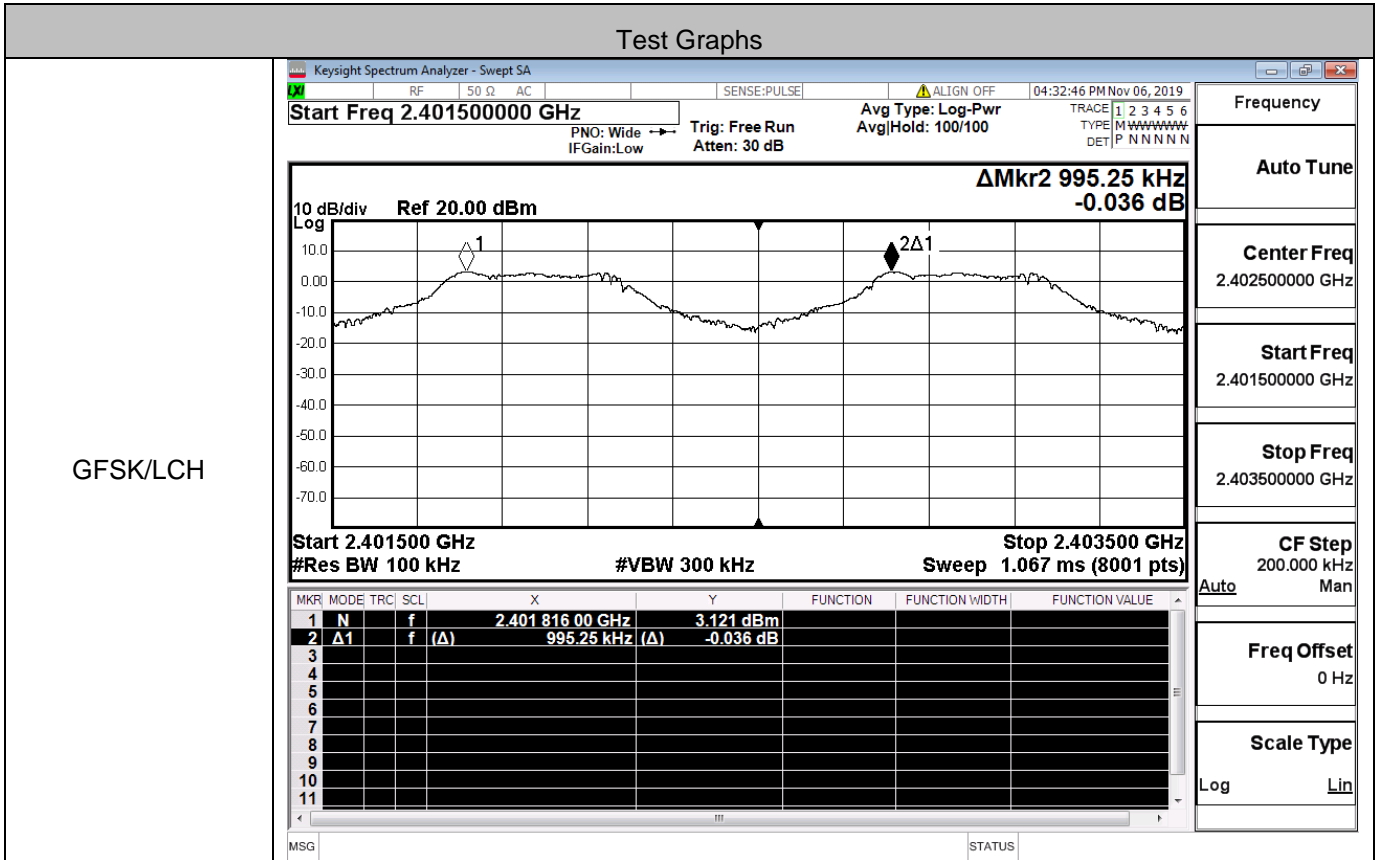


$\pi/4$ DQPSK/HCH

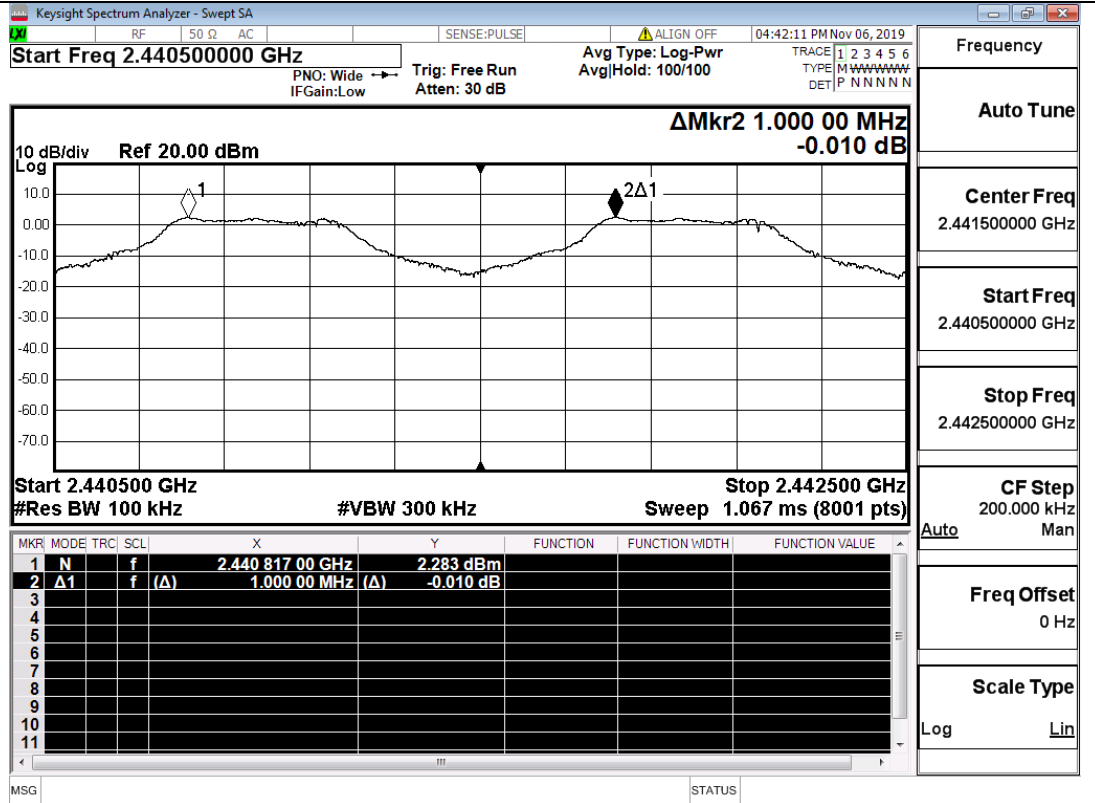


A.3 Carrier Frequency Separation

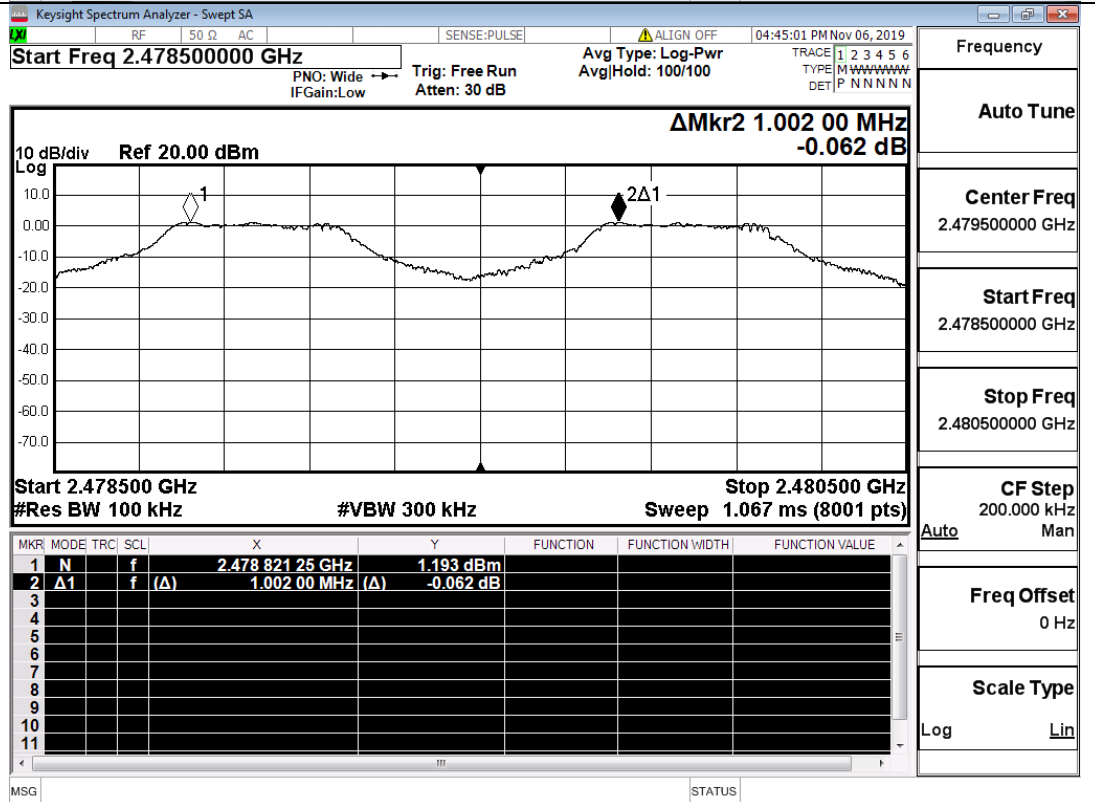
| Mode | Channel. | Carrier Frequency Separation [MHz] | Limit [MHz] 2/3*20dB Bandwidth | Verdict |
|----------|----------|------------------------------------|--------------------------------------|---------|
| GFSK | LCH | 0.995 | 0.583 | PASS |
| | MCH | 1.000 | 0.583 | PASS |
| | HCH | 1.002 | 0.583 | PASS |
| π/4DQPSK | LCH | 0.998 | 0.837 | PASS |
| | MCH | 1.000 | 0.836 | PASS |
| | HCH | 1.006 | 0.835 | PASS |



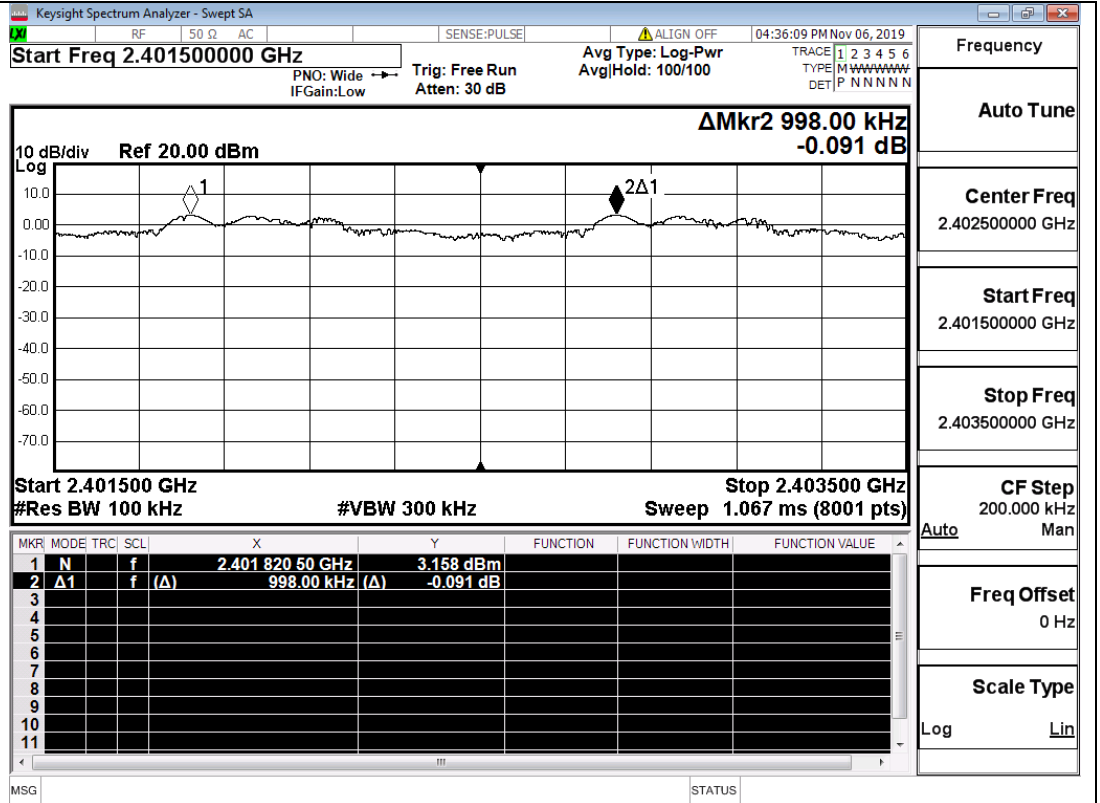
GFSK/MCH



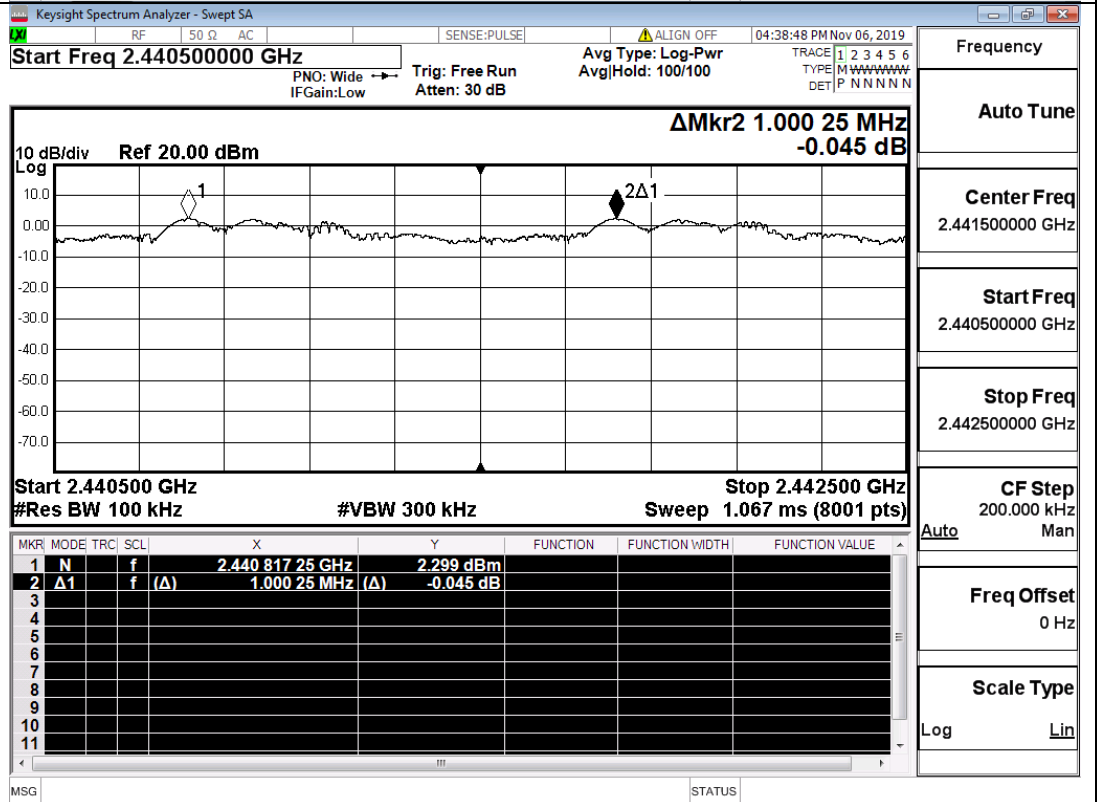
GFSK/HCH



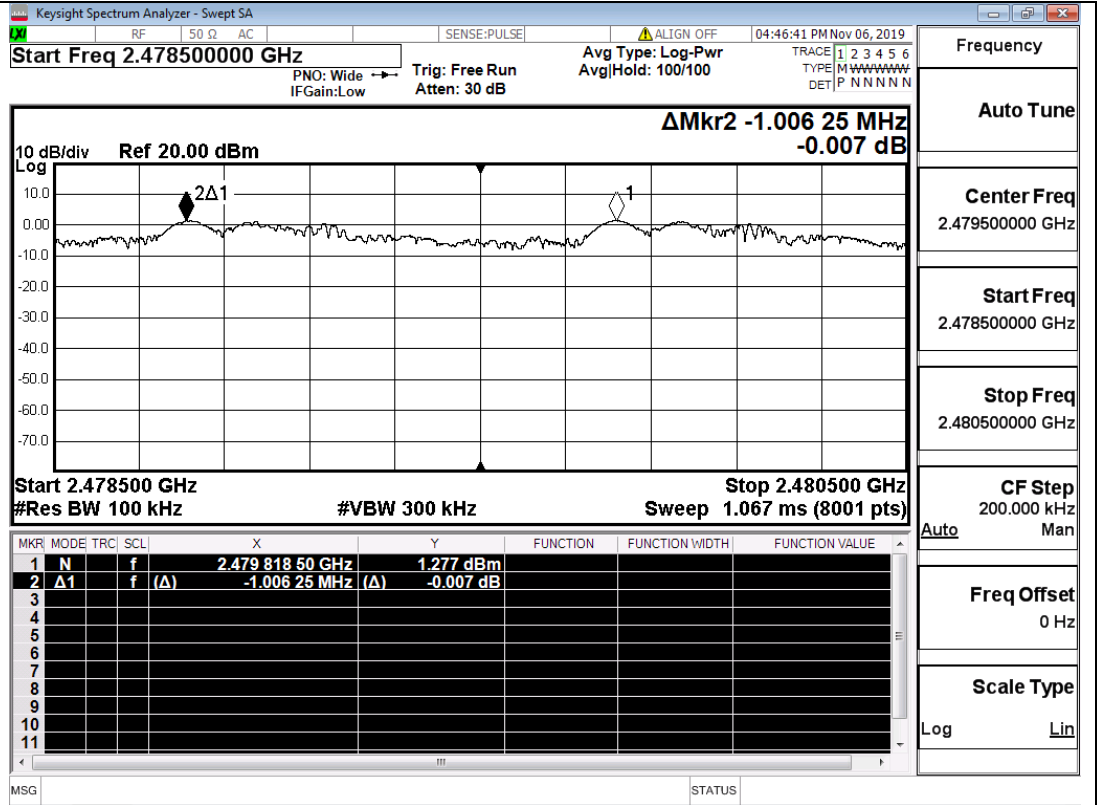
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH

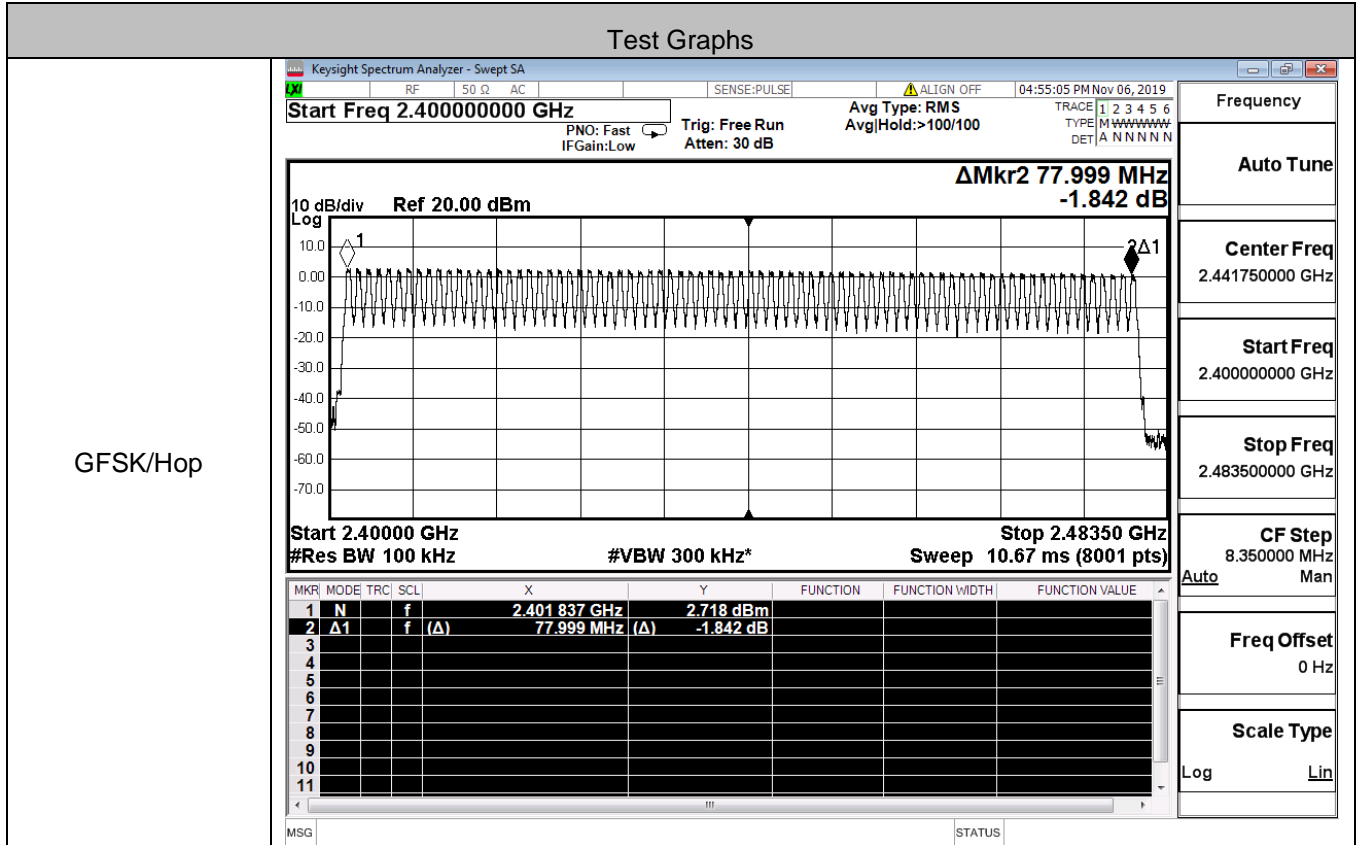


$\pi/4$ DQPSK/HCH

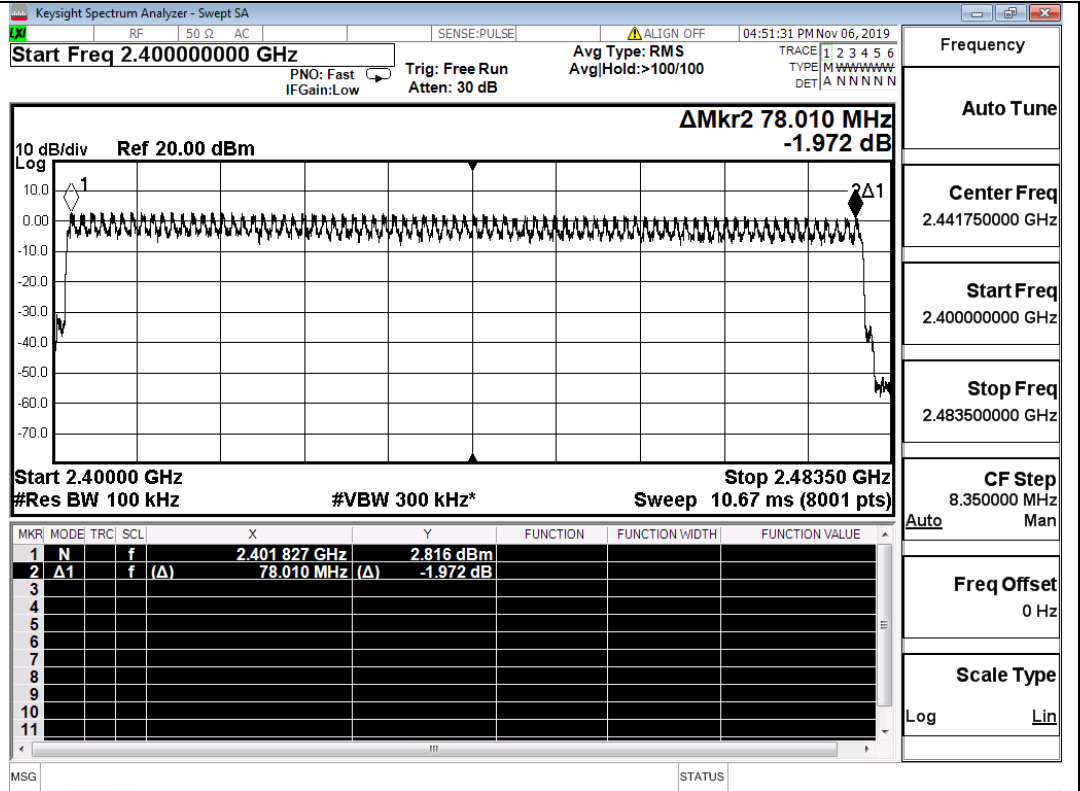


A.4 Hopping Channel Number

| Mode | Channel. | Number of Hopping Channel [N] | Limit [N] | Verdict |
|---------------|----------|-------------------------------|-----------|---------|
| GFSK | Hop | 79 | >=15 | PASS |
| $\pi/4$ DQPSK | Hop | 79 | >=15 | PASS |

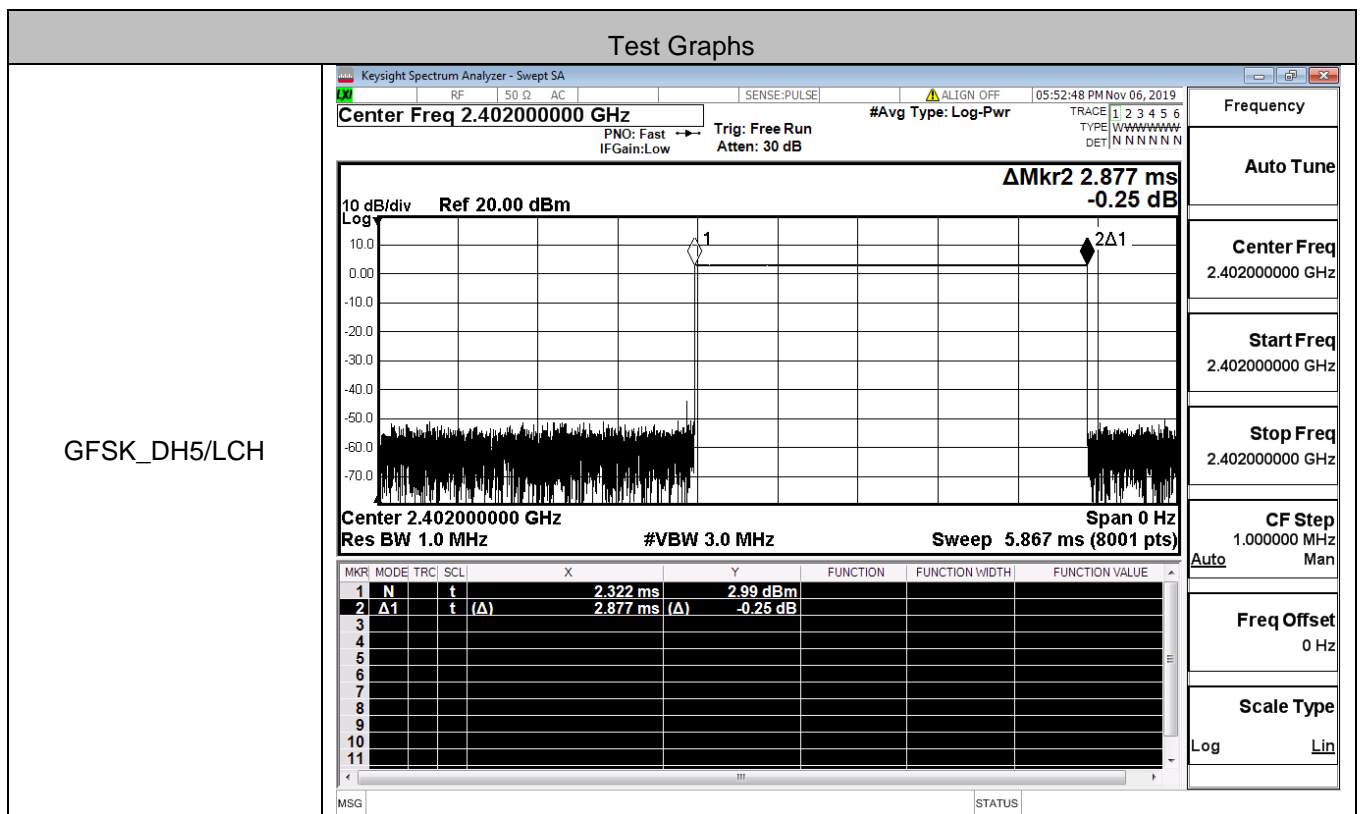


$\pi/4$ DQPSK/Hop

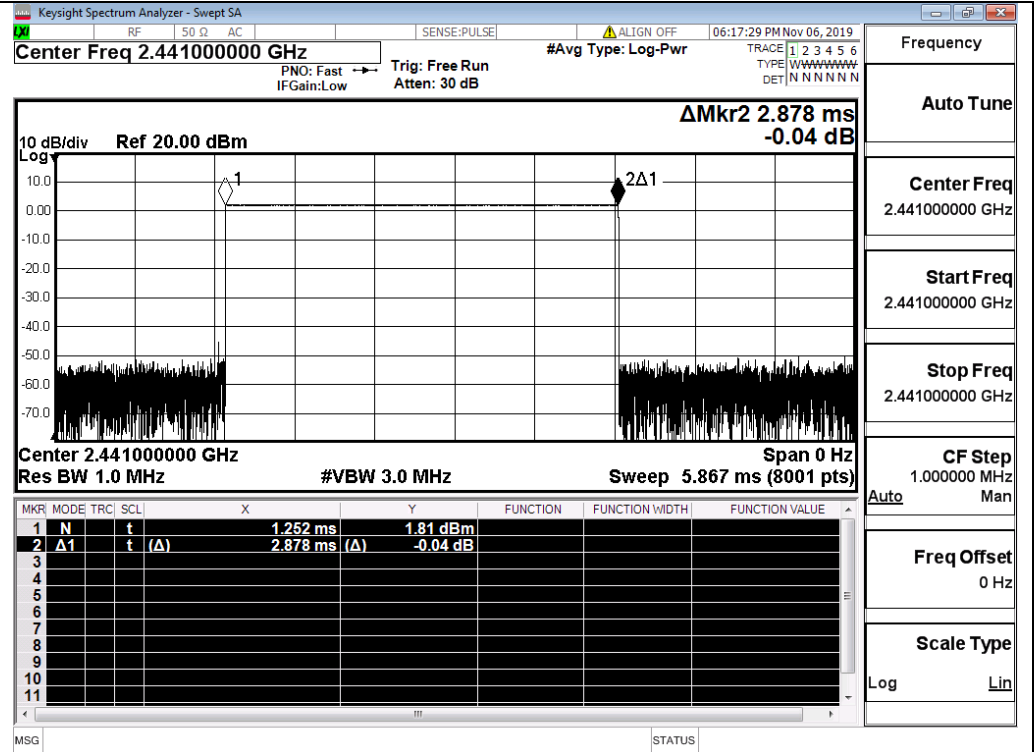


A.5 Dwell Time

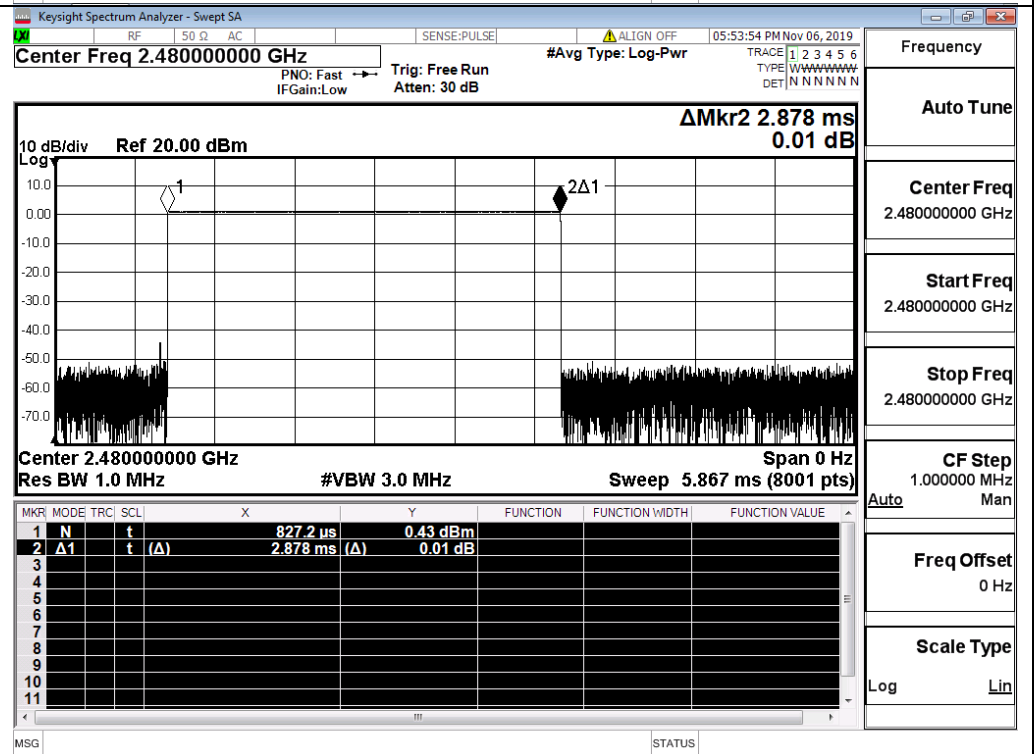
| Mode | Packet | Channel | Burst Width [ms/hop/ch] | Total Hops[hop*ch] | Dwell Time[s] | Limit [s] | Verdict |
|---------------|--------|---------|-------------------------|--------------------|---------------|-----------|---------|
| GFSK | DH5 | LCH | 2.88 | 106.7 | 0.307 | 0.4 | PASS |
| | DH5 | MCH | 2.88 | 106.7 | 0.307 | 0.4 | PASS |
| | DH5 | HCH | 2.88 | 106.7 | 0.307 | 0.4 | PASS |
| $\pi/4$ DQPSK | 2DH5 | LCH | 2.88 | 106.7 | 0.307 | 0.4 | PASS |
| | 2DH5 | MCH | 2.87 | 106.7 | 0.306 | 0.4 | PASS |
| | 2DH5 | HCH | 2.88 | 106.7 | 0.307 | 0.4 | PASS |



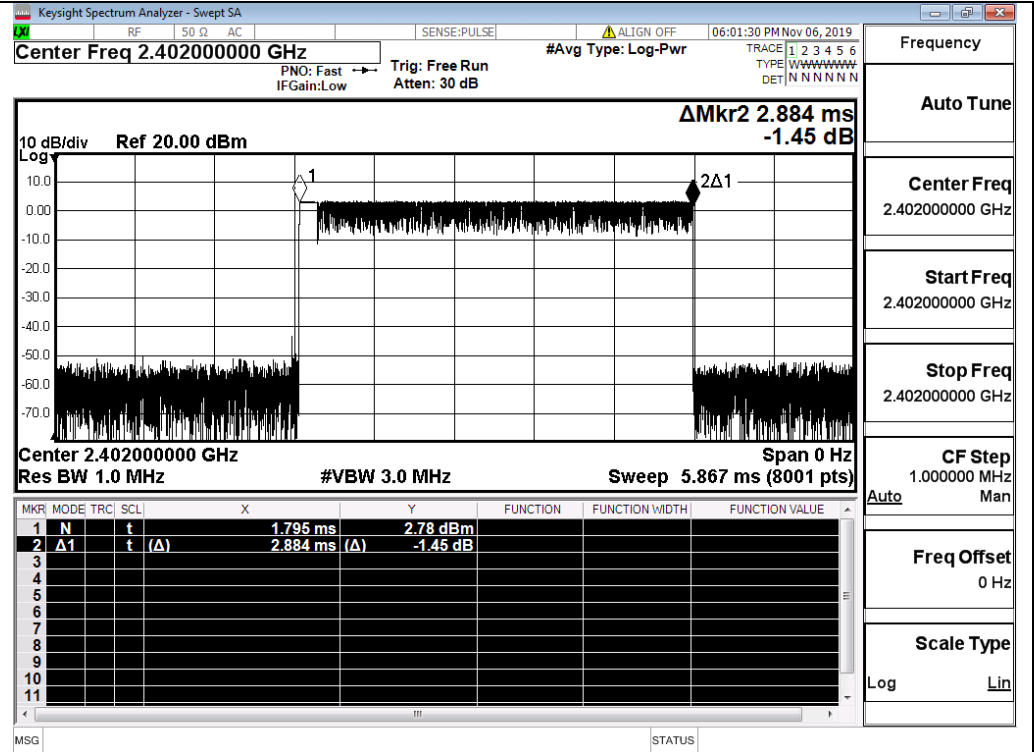
GFSK_DH5/MCH



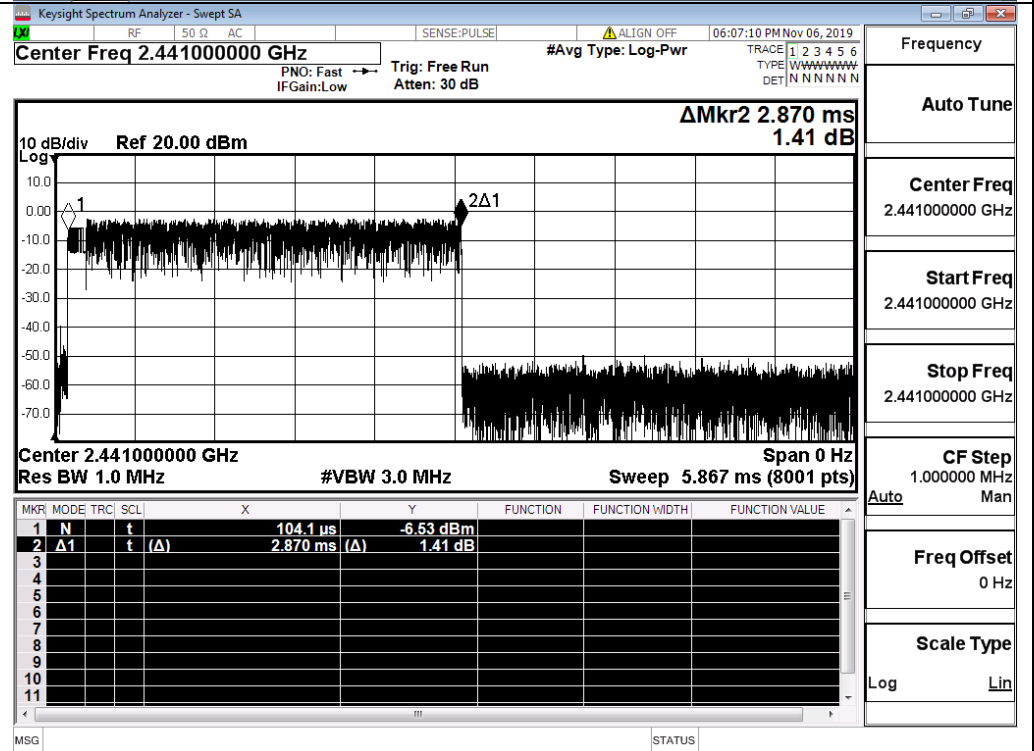
GFSK_DH5/HCH



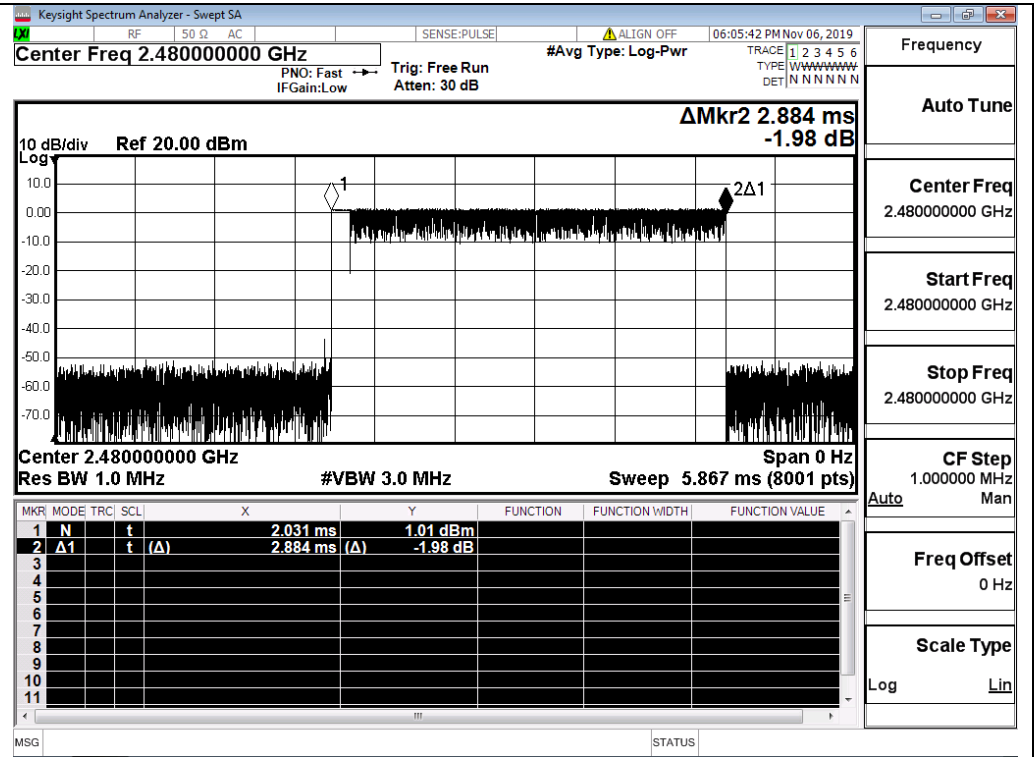
$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH



$\pi/4$ DQPSK
_2DH5/HCH

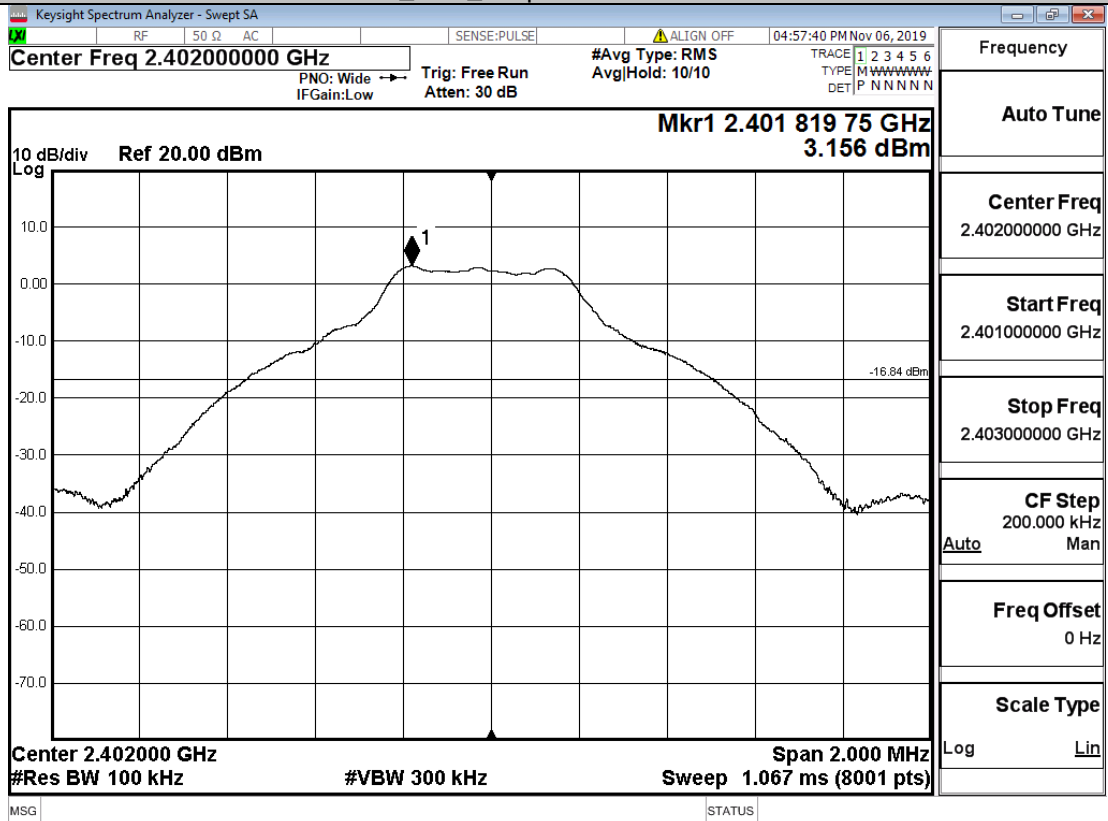


A.6 RF Conducted Spurious Emissions

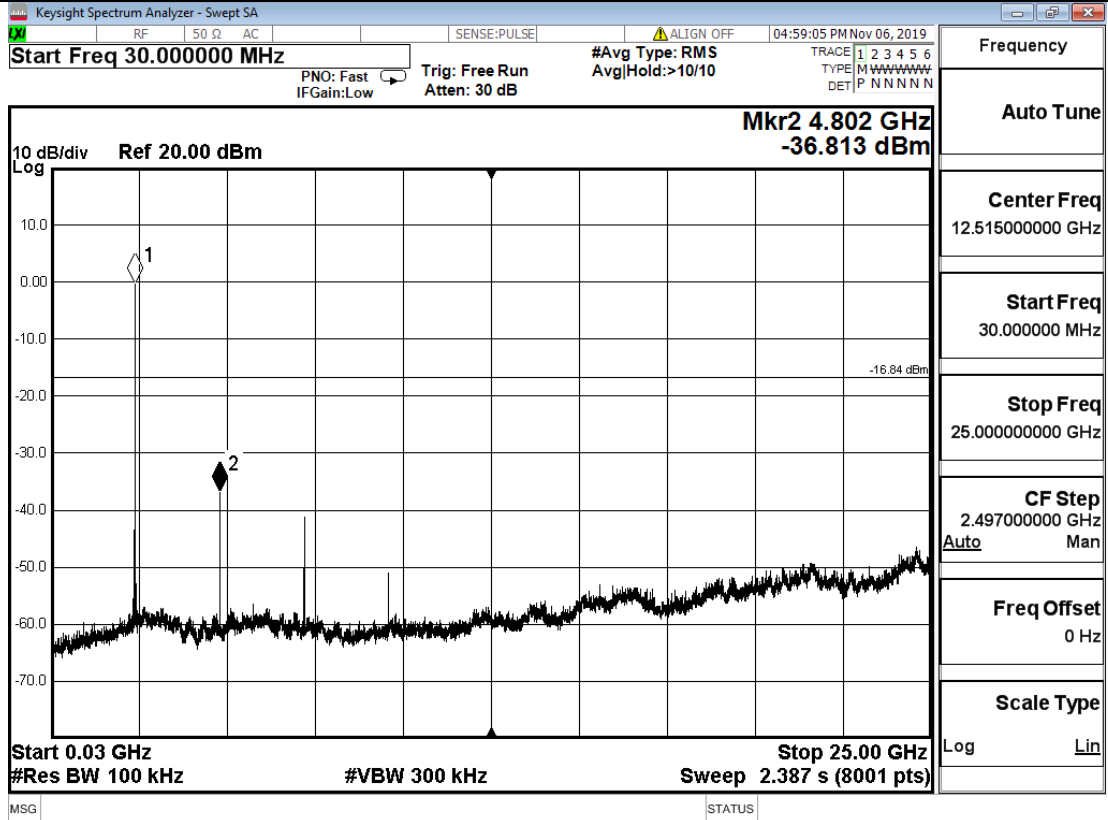
| Mode | Channel | Pref [dBm] | Max. Level [dBm] | Limit [dBm] | Verdict |
|---------------|---------|------------|------------------|-------------|---------|
| GFSK | LCH | 3.156 | -36.813 | -16.84 | PASS |
| | MCH | 2.302 | -38.371 | -17.70 | PASS |
| | HCH | 1.189 | -38.597 | -18.81 | PASS |
| $\pi/4$ DQPSK | LCH | 3.133 | -34.699 | -16.87 | PASS |
| | MCH | 2.279 | -40.512 | -17.72 | PASS |
| | HCH | 1.187 | -38.479 | -18.81 | PASS |

GFSK_LCH_Graphs

Pref

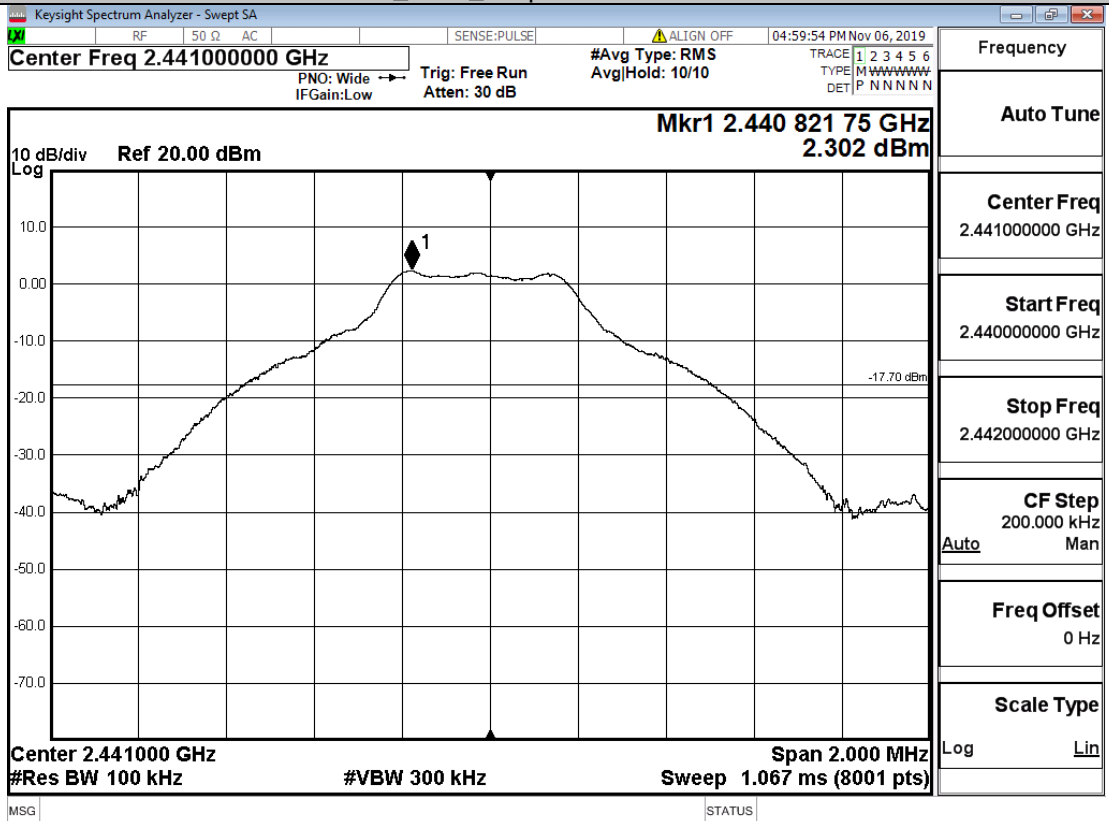


Puw

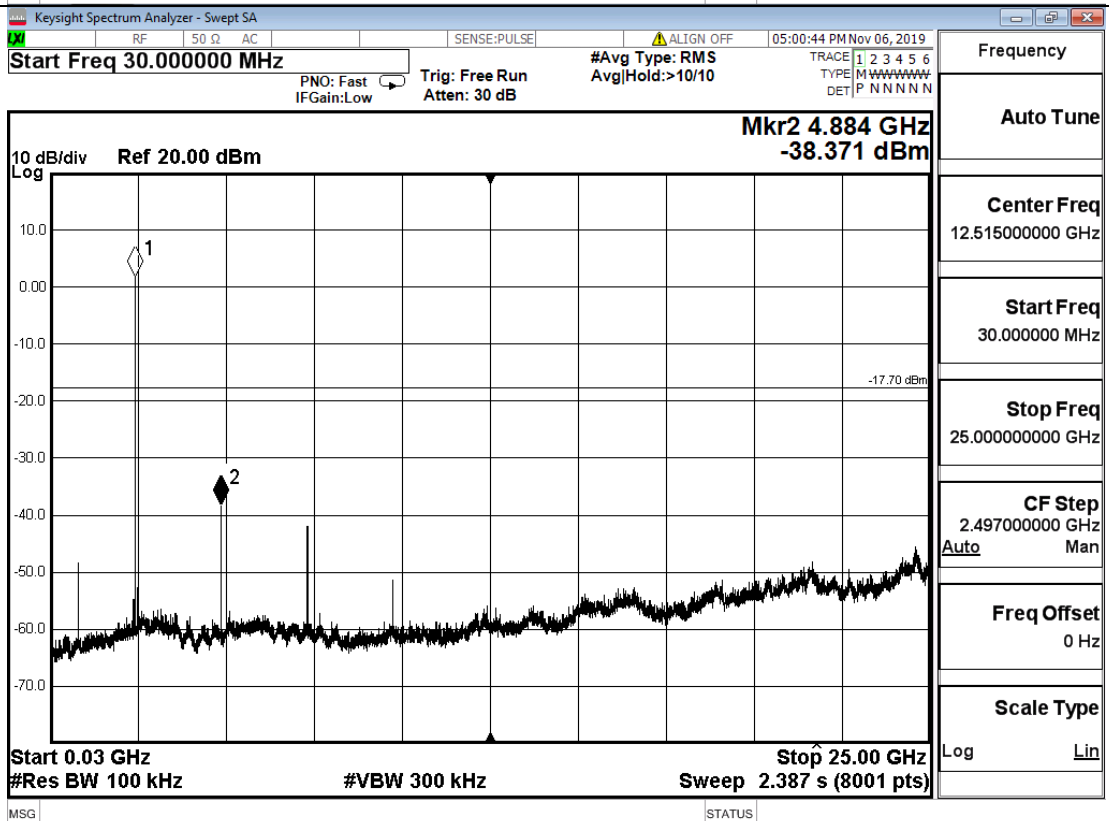


GFSK_MCH_Graphs

Pref

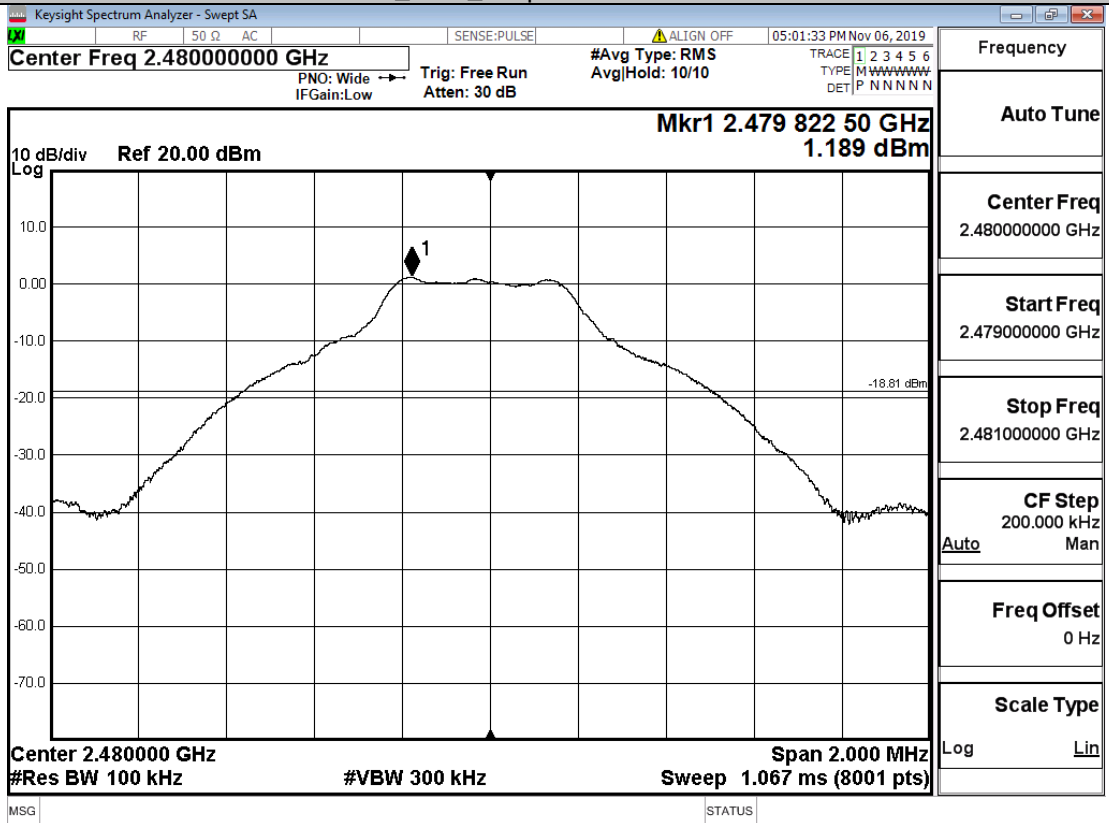


Puw

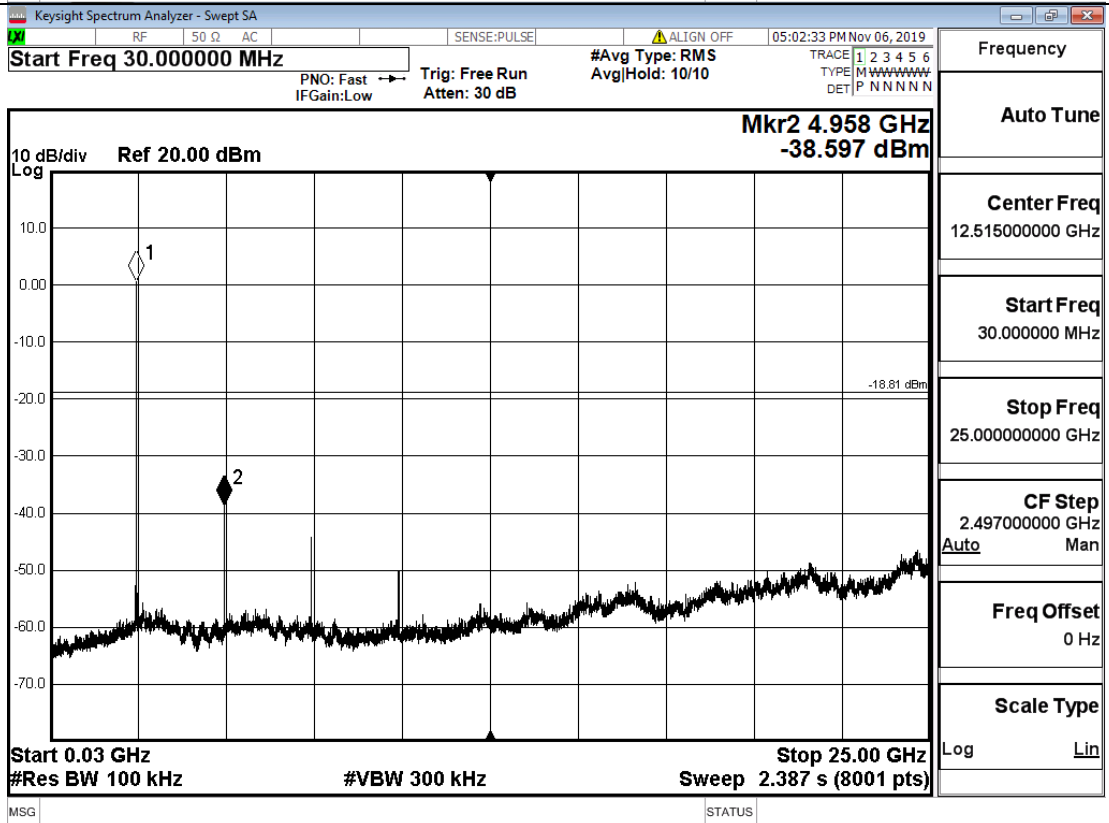


GFSK_HCH_Graphs

Pref

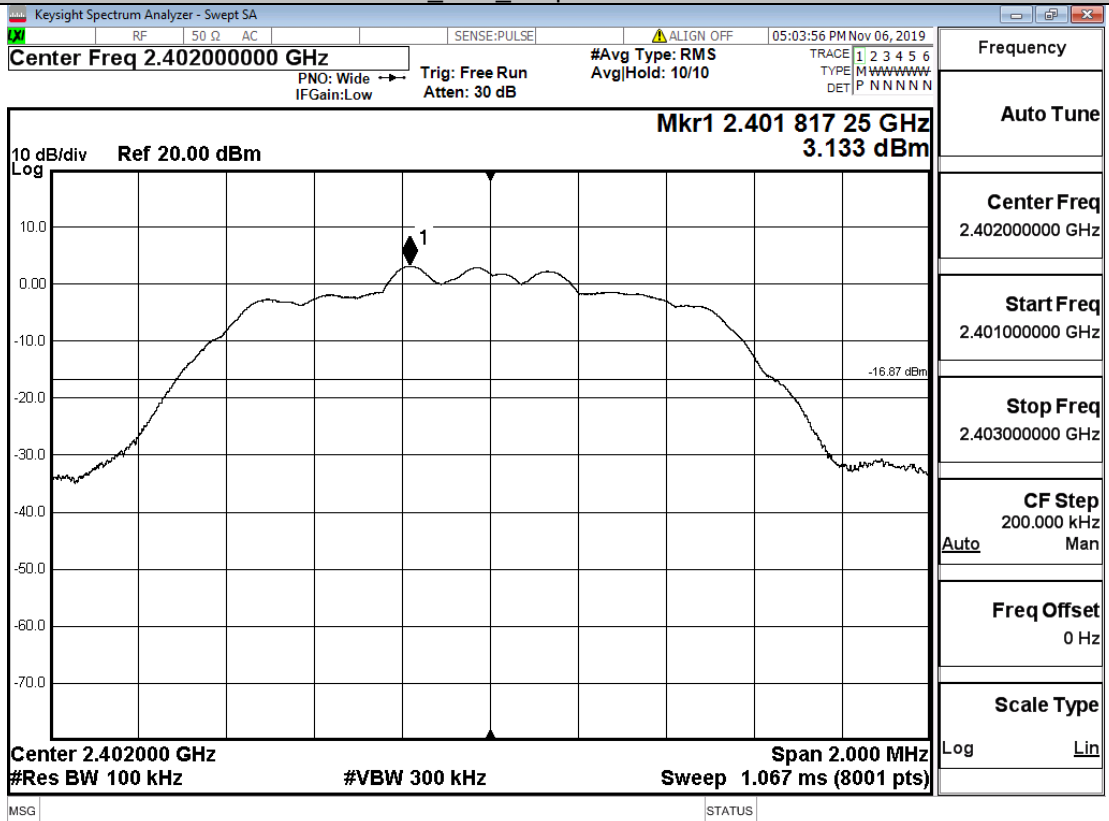


Puw

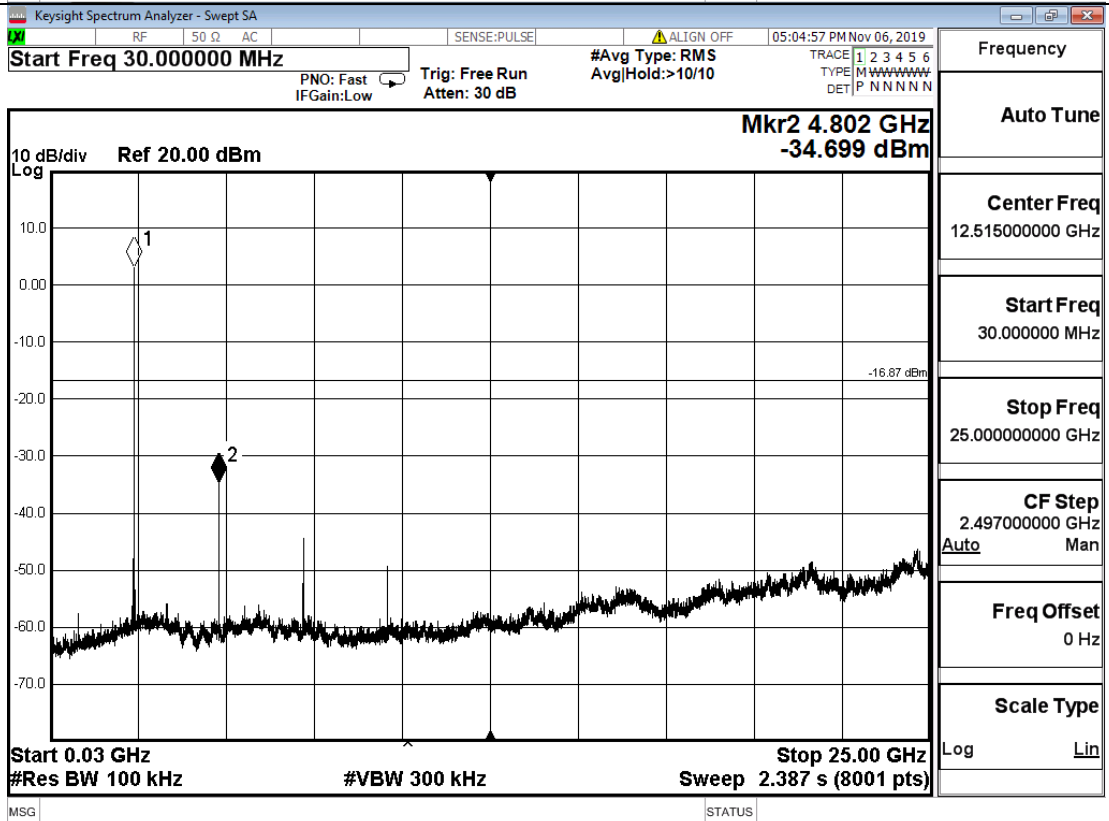


$\pi/4$ DQPSK_LCH_Graphs

Pref

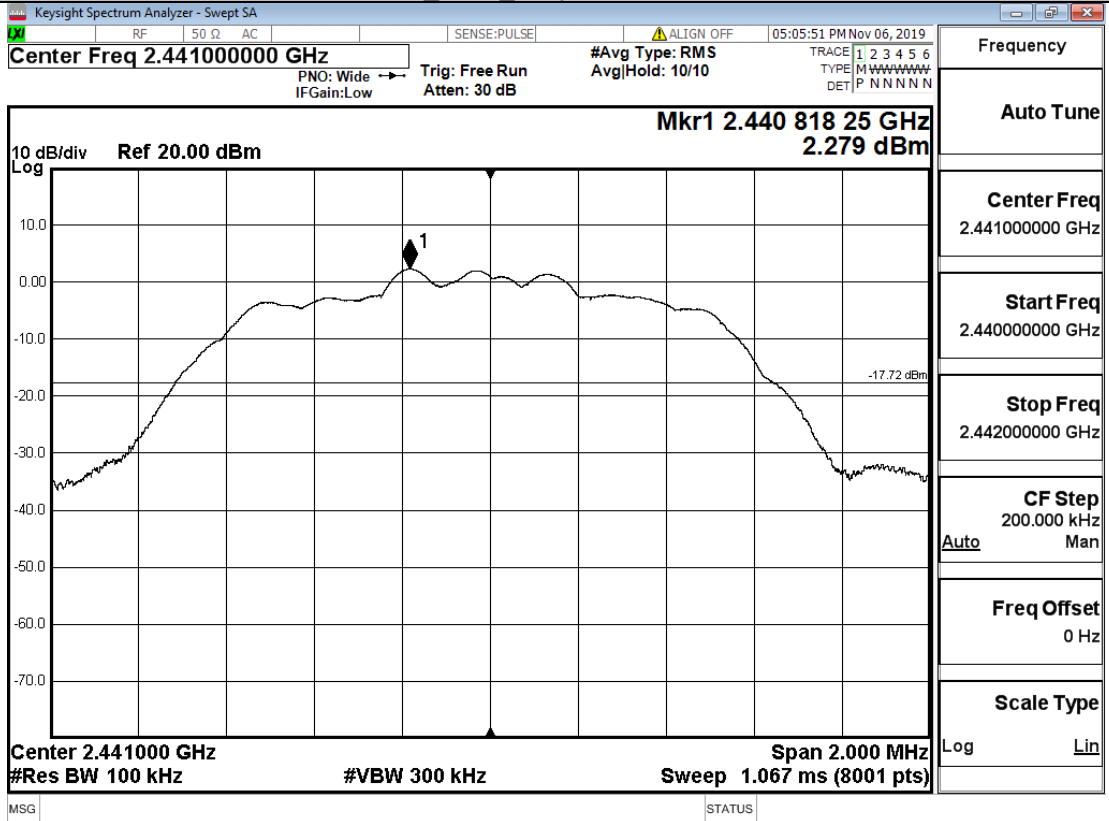


Puw

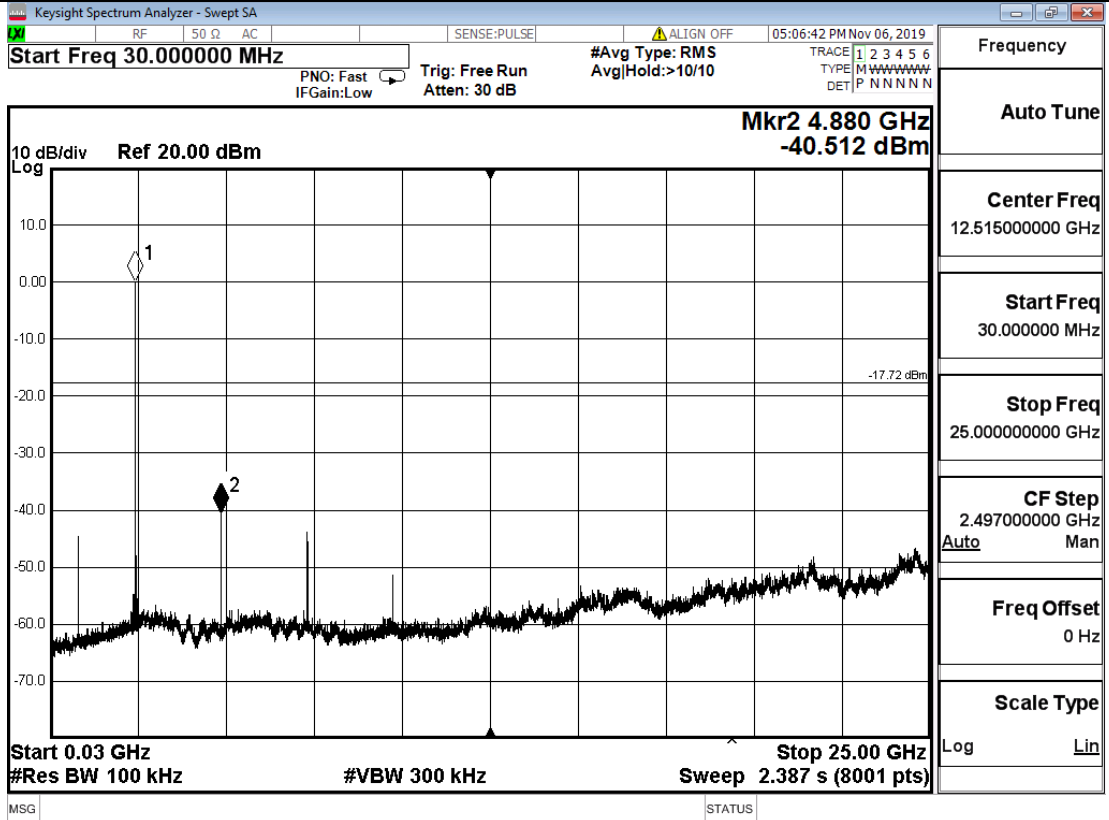


$\pi/4$ DQPSK_MCH_Graphs

Pref

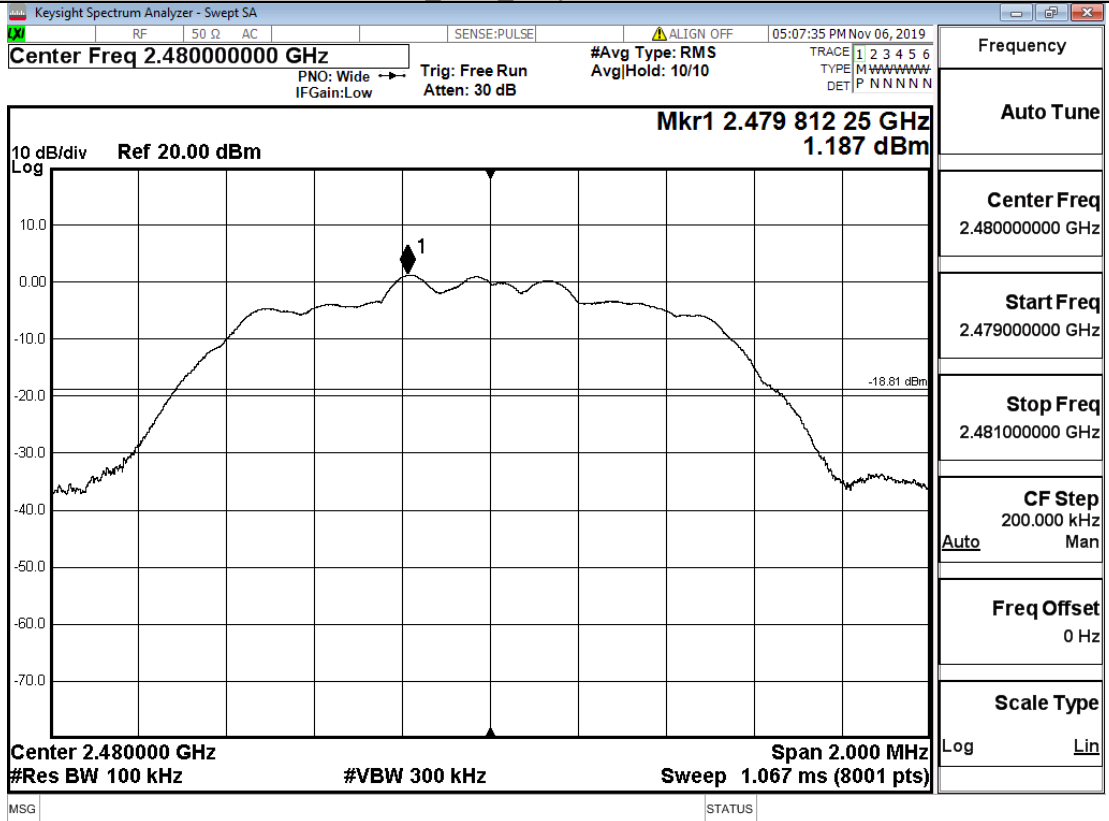


Puw

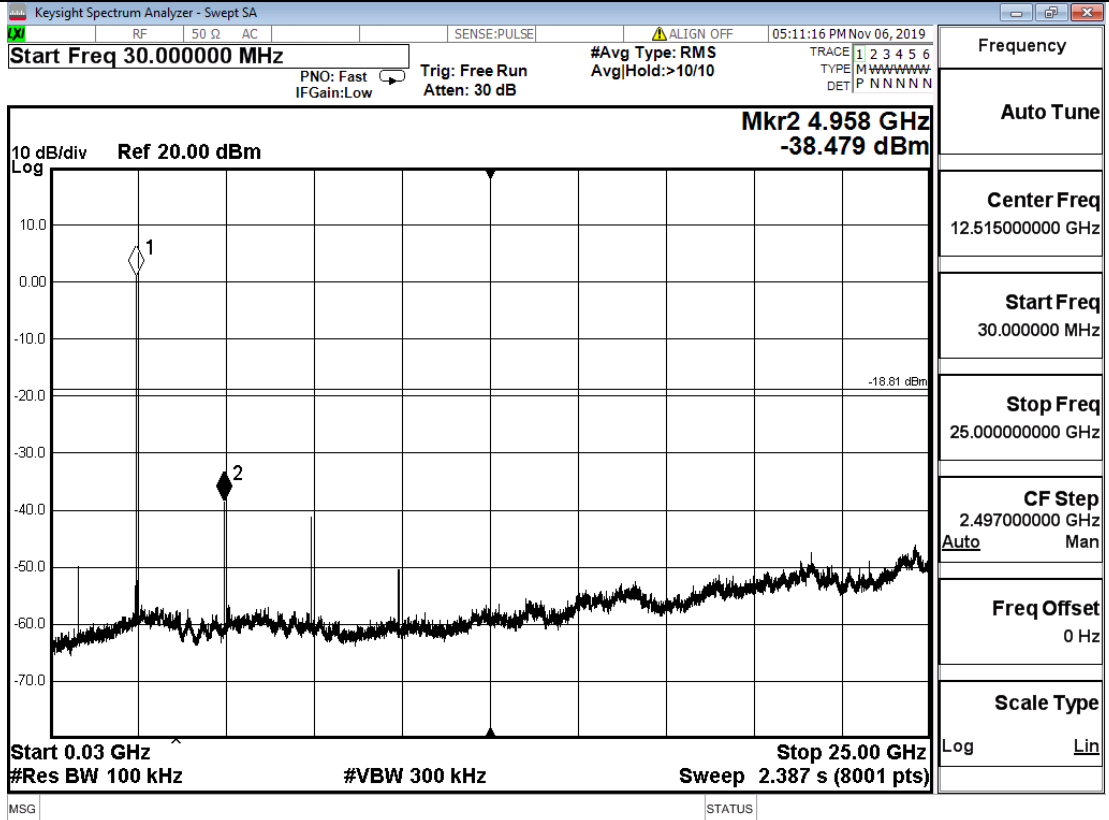


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

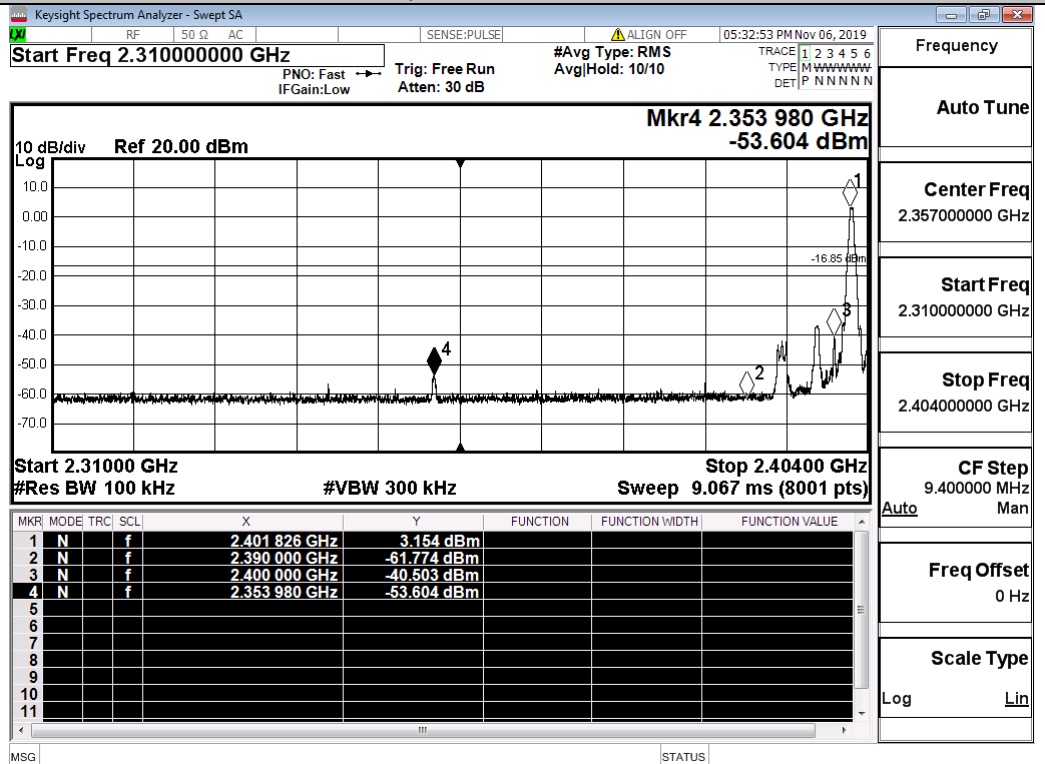


A.7 Band-edge for RF Conducted Emissions

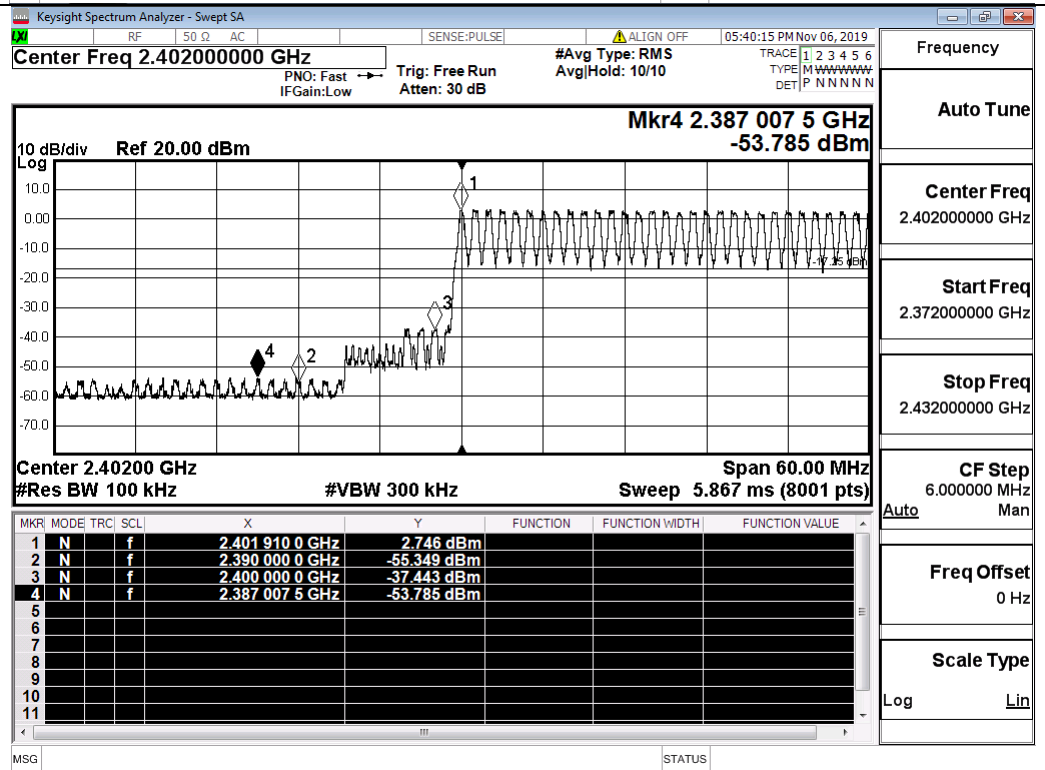
| Mode | Channel | Carrier Frequency [MHz] | Carrier Power [dBm] | Frequency Hopping | Max Spurious Level [dBm] | Limit [dBm] | Verdict |
|---------------|---------|-------------------------|---------------------|-------------------|--------------------------|-------------|---------|
| GFSK | LCH | 2402 | 3.154 | Off | -40.503 | -16.85 | PASS |
| | | | 2.746 | On | -37.443 | -17.25 | PASS |
| | HCH | 2480 | 1.228 | Off | -50.143 | -18.77 | PASS |
| | | | 1.195 | On | -51.853 | -18.81 | PASS |
| $\pi/4$ DQPSK | LCH | 2402 | 3.137 | Off | -40.052 | -16.86 | PASS |
| | | | 1.944 | On | -38.234 | -18.06 | PASS |
| | HCH | 2480 | 1.284 | Off | -49.587 | -18.72 | PASS |
| | | | 1.199 | On | -52.066 | -18.80 | PASS |

Test Graphs

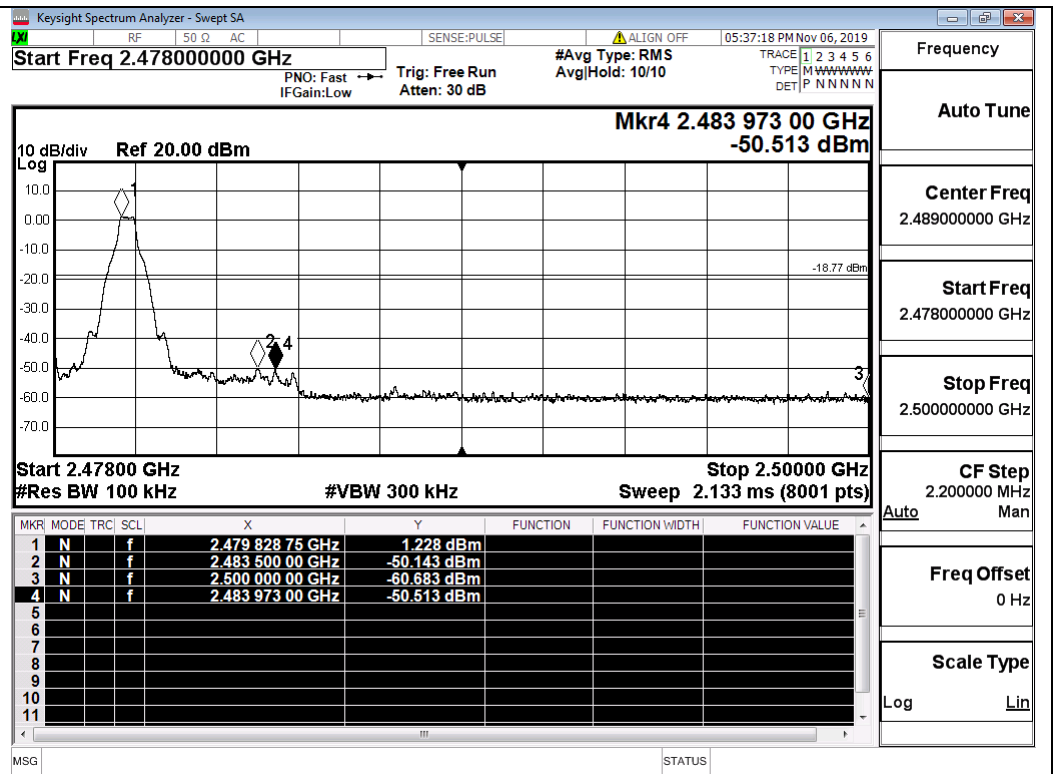
GFSK/LCH/No Hop



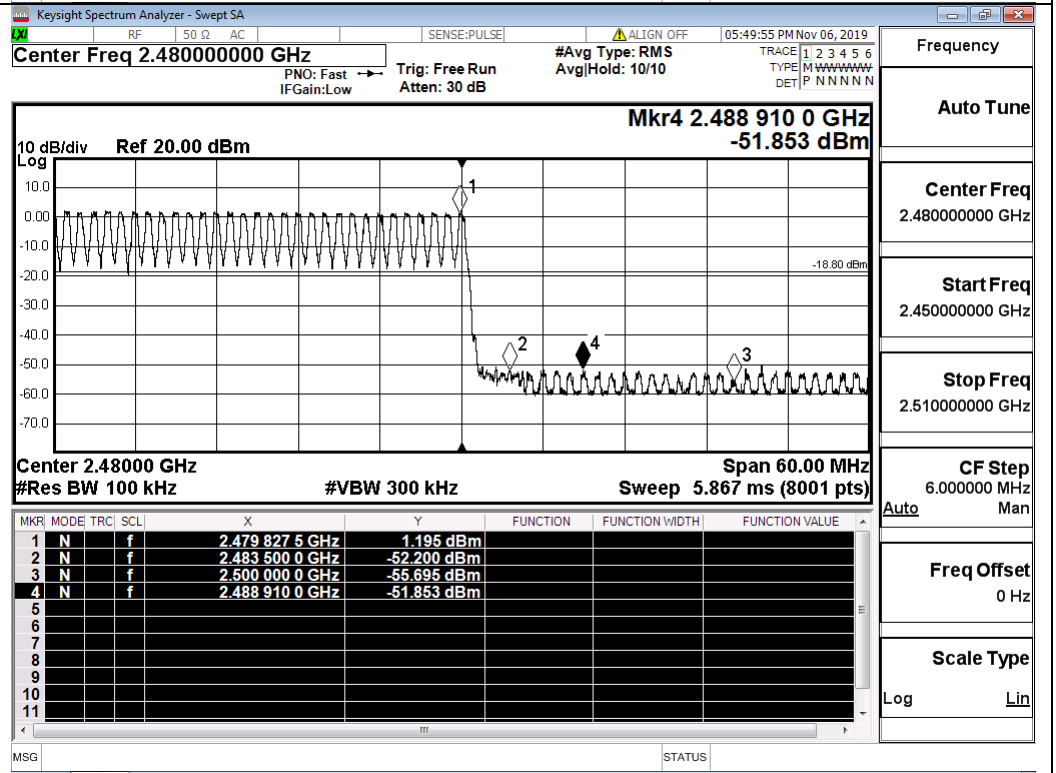
GFSK/LCH/Hop



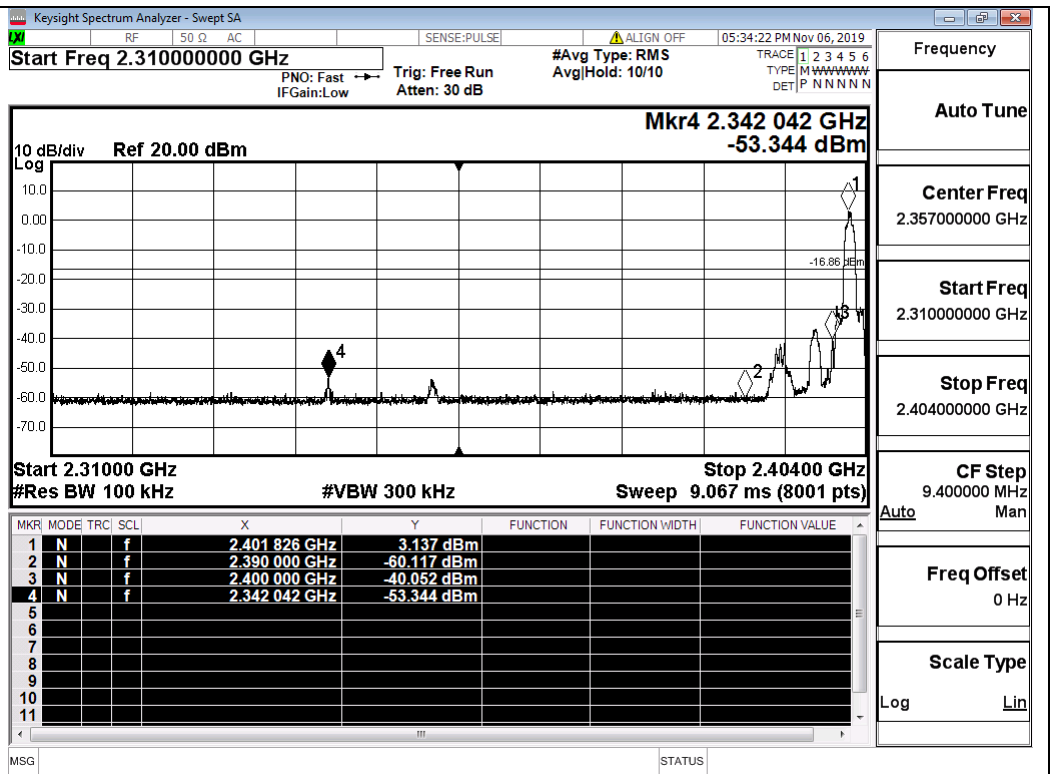
GFSK/HCH/No Hop



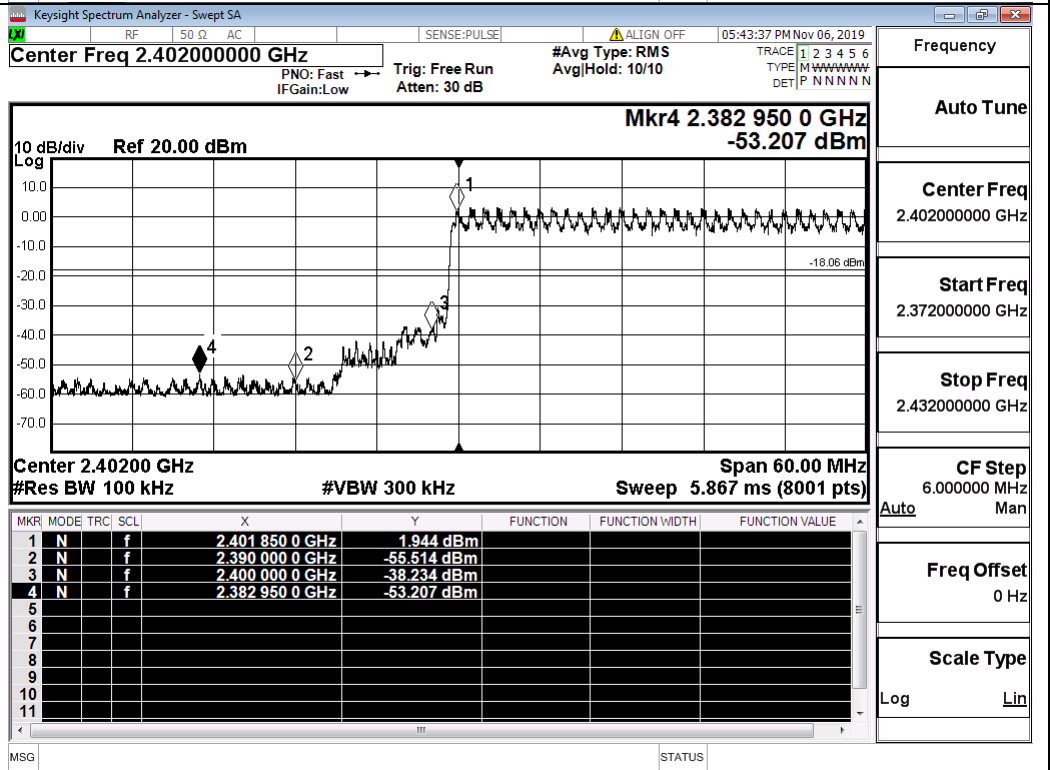
GFSK/HCH/Hop



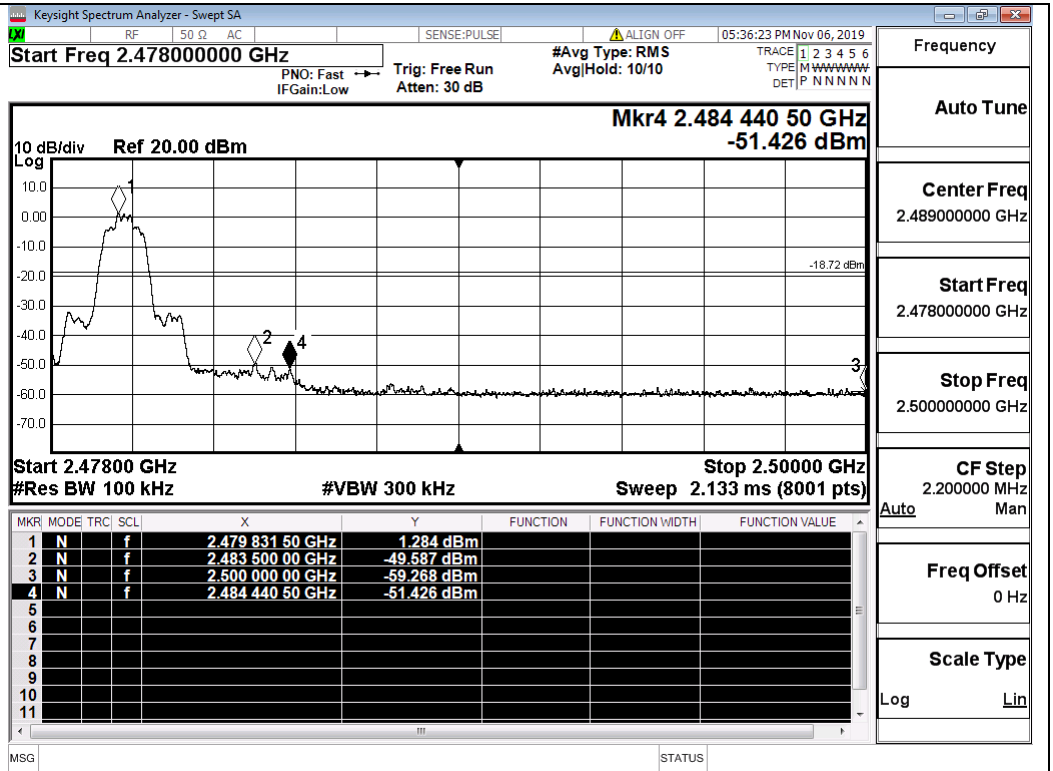
$\pi/4$ DQPSK/LCH/No Hop



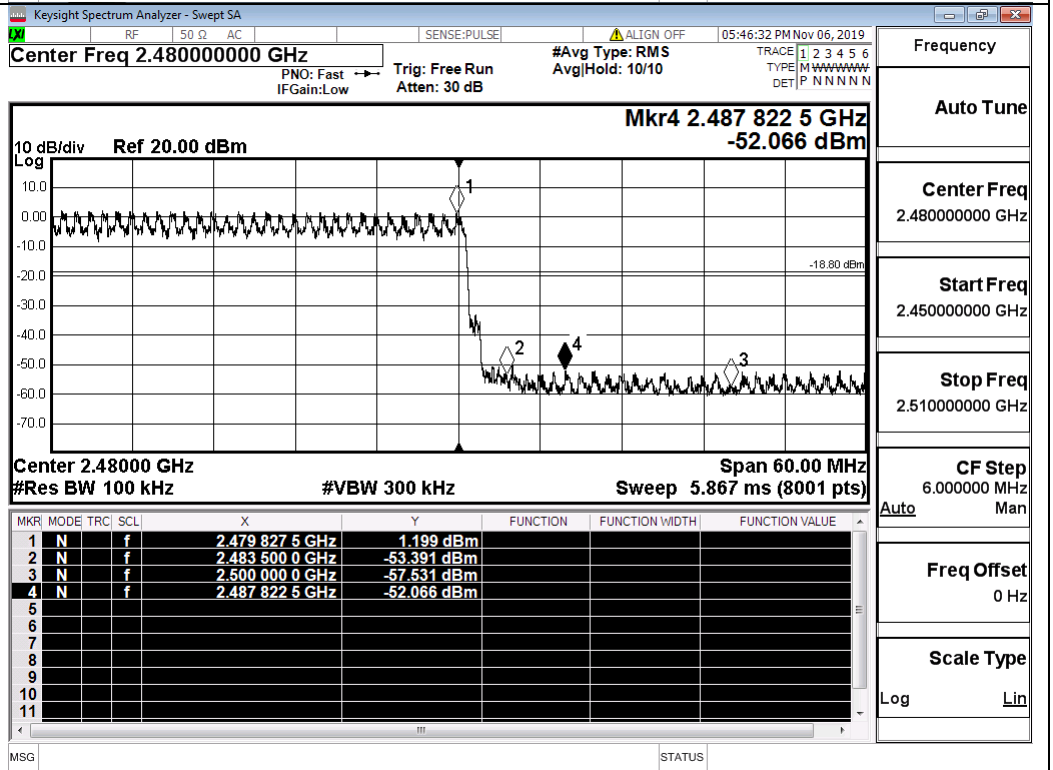
$\pi/4$ DQPSK/LCH/Hop



$\pi/4$ DQPSK/HCH/No Hop



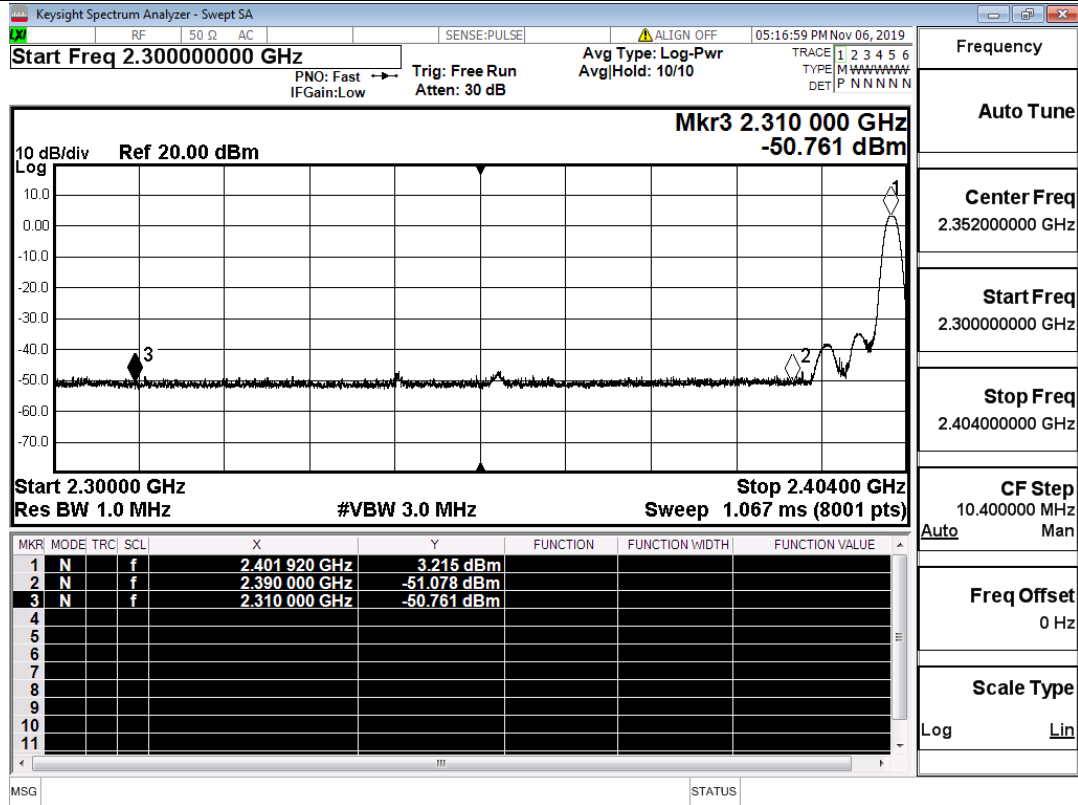
$\pi/4$ DQPSK/HCH/Hop



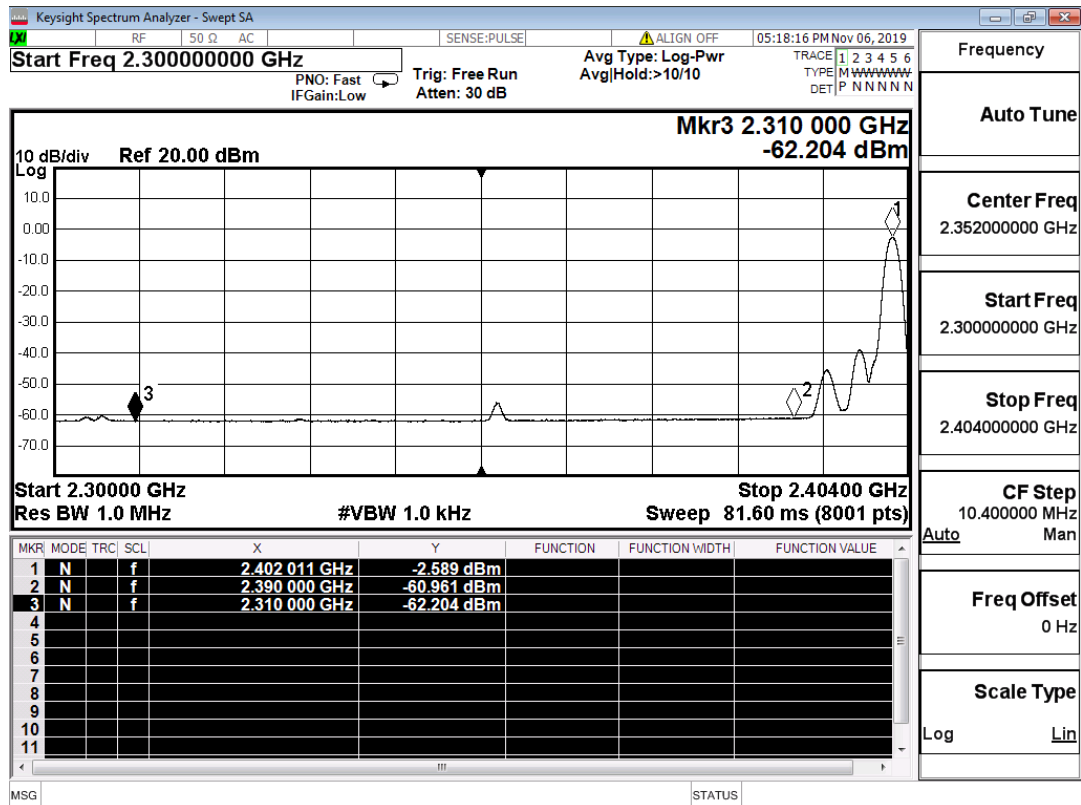
A.8 Restrict-band band-edge measurements

| Test Mode | Hopping | Freq. | Power [dBm] | Gain | Ground Factor | E [dBuV/m] | Detector | Limit [dBuV/m] | Verdict |
|---------------|---------|--------|-------------|-------|---------------|------------|----------|----------------|---------|
| GFSK | Off | 2310.0 | -50.761 | 2.000 | 0 | 46.47 | PEAK | 74 | PASS |
| | Off | 2310.0 | -62.204 | 2.000 | 0 | 35.03 | AV | 54 | PASS |
| | Off | 2390.0 | -51.078 | 2.000 | 0 | 46.15 | PEAK | 74 | PASS |
| | Off | 2390.0 | -60.961 | 2.000 | 0 | 36.27 | AV | 54 | PASS |
| | Off | 2483.5 | -44.264 | 2.000 | 0 | 52.97 | PEAK | 74 | PASS |
| | Off | 2483.5 | -53.576 | 2.000 | 0 | 43.65 | AV | 54 | PASS |
| | Off | 2500.0 | -51.035 | 2.000 | 0 | 46.20 | PEAK | 74 | PASS |
| | Off | 2500.0 | -61.182 | 2.000 | 0 | 36.05 | AV | 54 | PASS |
| $\pi/4$ DQPSK | Off | 2310.0 | -51.037 | 2.000 | 0 | 46.19 | PEAK | 74 | PASS |
| | Off | 2310.0 | -61.067 | 2.000 | 0 | 36.16 | AV | 54 | PASS |
| | Off | 2390.0 | -52.037 | 2.000 | 0 | 45.19 | PEAK | 74 | PASS |
| | Off | 2390.0 | -61.991 | 2.000 | 0 | 35.24 | AV | 54 | PASS |
| | Off | 2483.5 | -43.475 | 2.000 | 0 | 53.76 | PEAK | 74 | PASS |
| | Off | 2483.5 | -55.236 | 2.000 | 0 | 41.99 | AV | 54 | PASS |
| | Off | 2500.0 | -50.336 | 2.000 | 0 | 46.89 | PEAK | 74 | PASS |
| | Off | 2500.0 | -61.157 | 2.000 | 0 | 36.07 | AV | 54 | PASS |

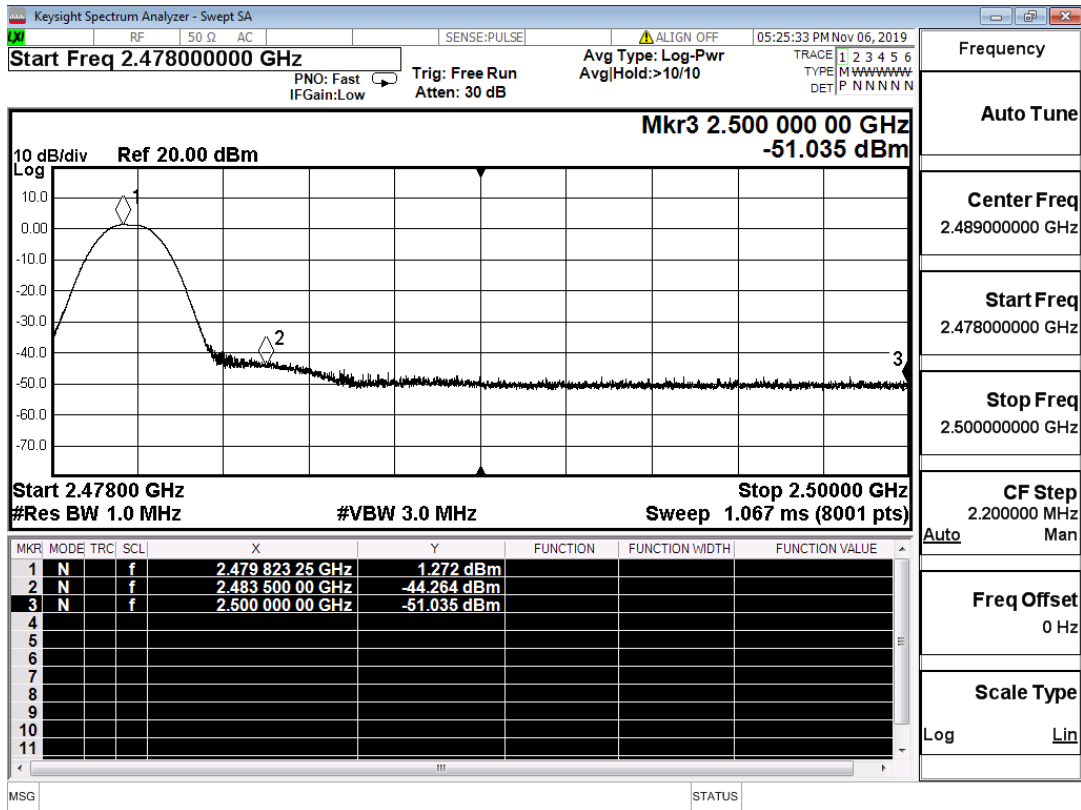
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



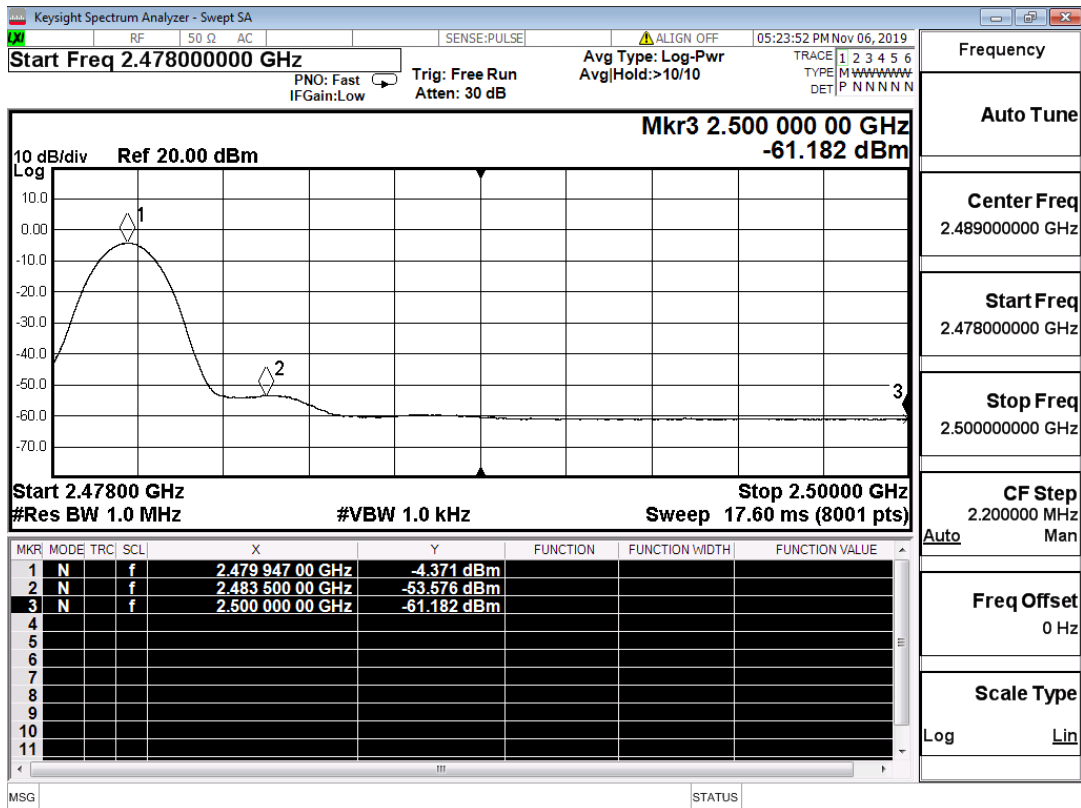
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



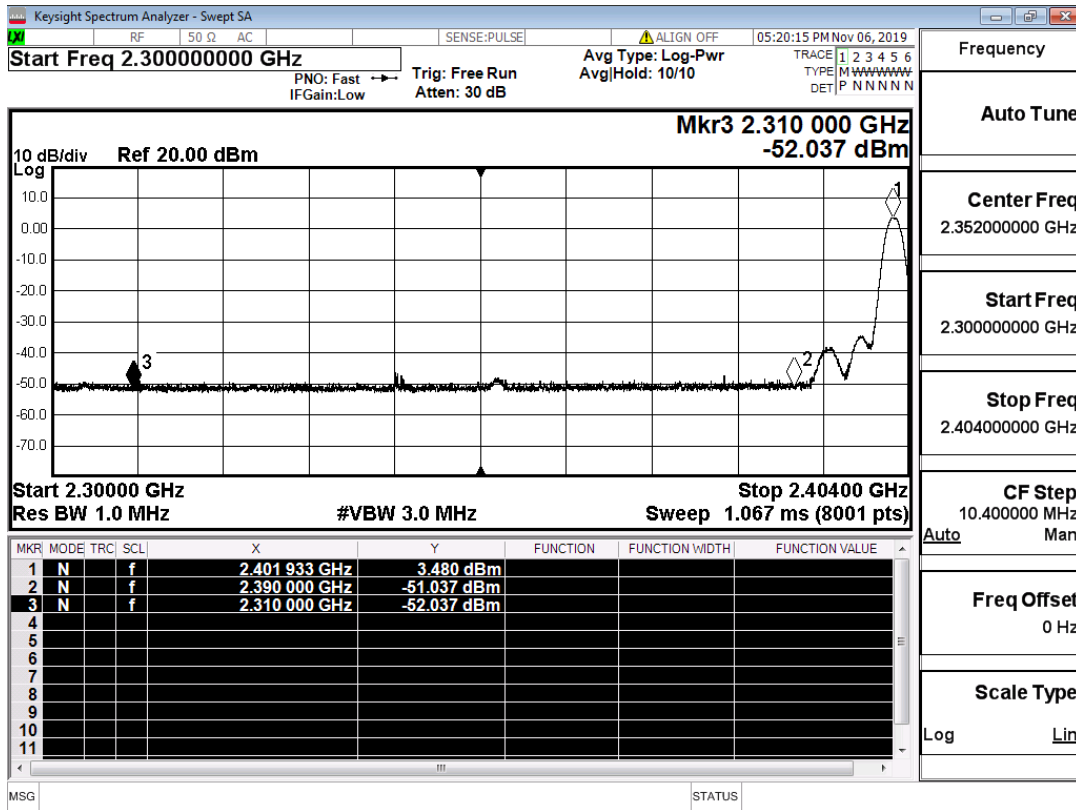
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



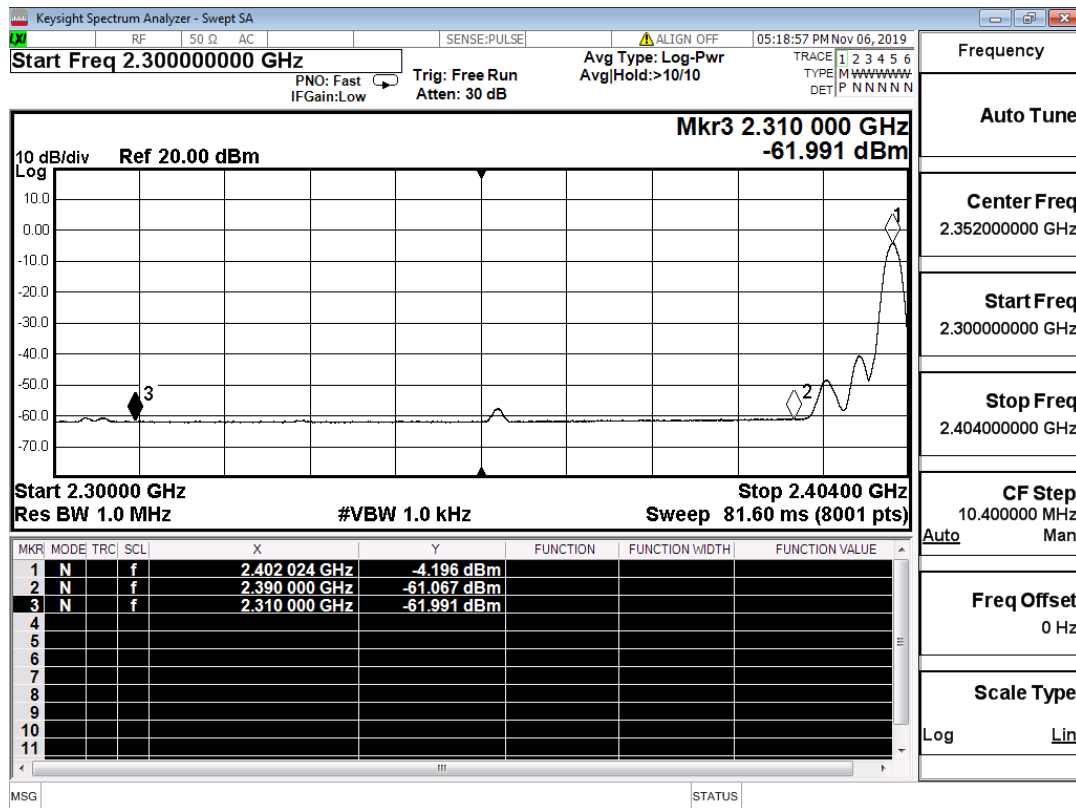
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



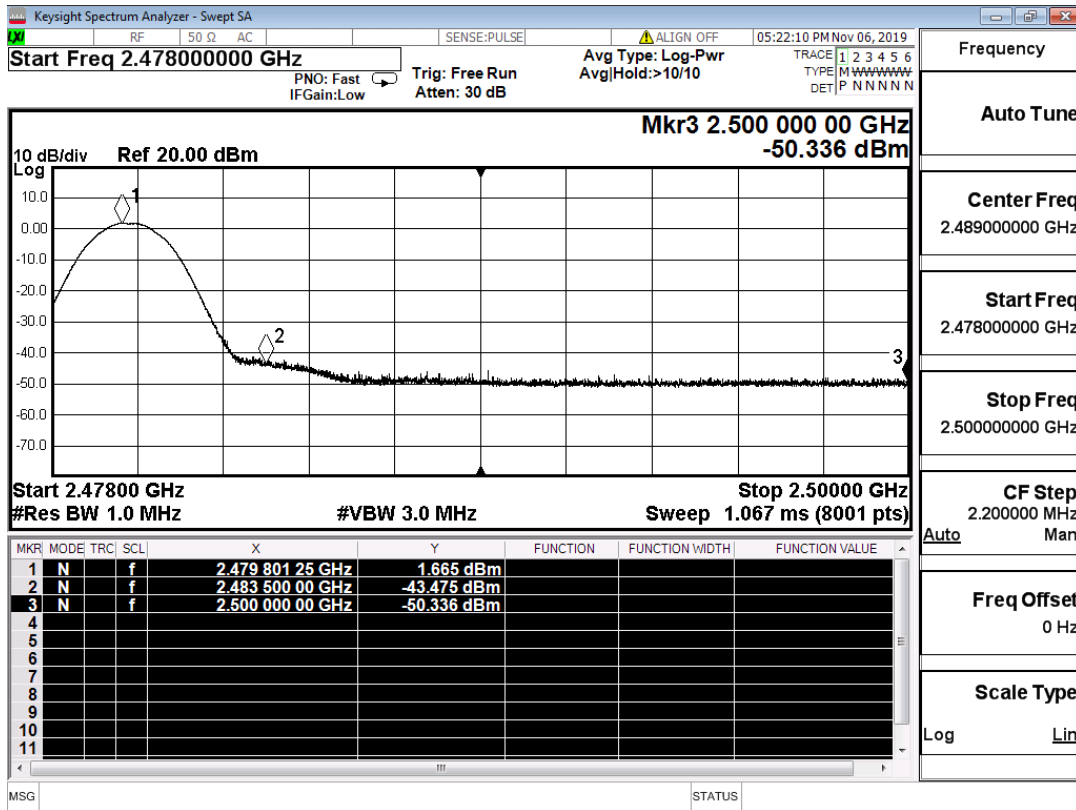
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)



Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)

