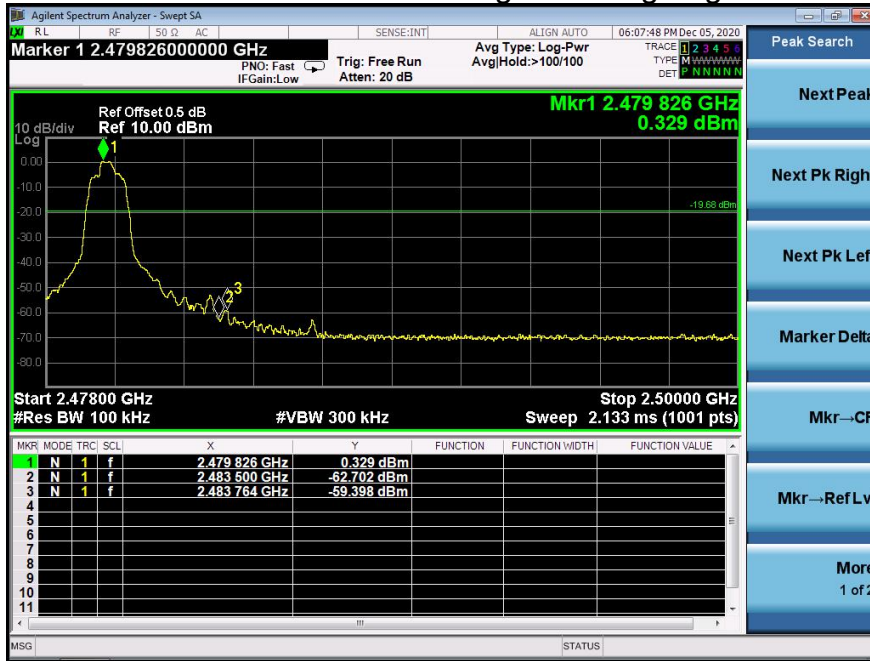
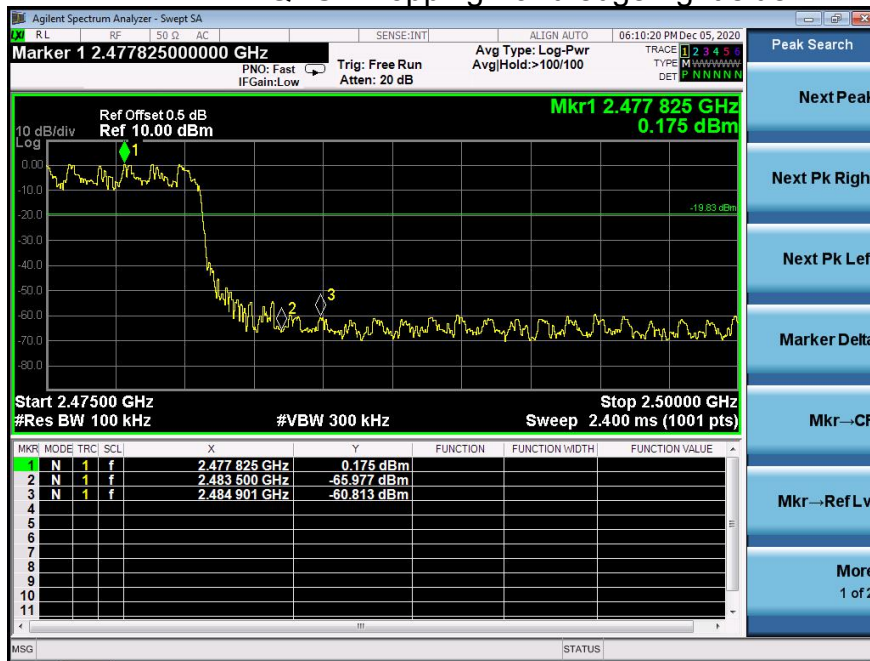


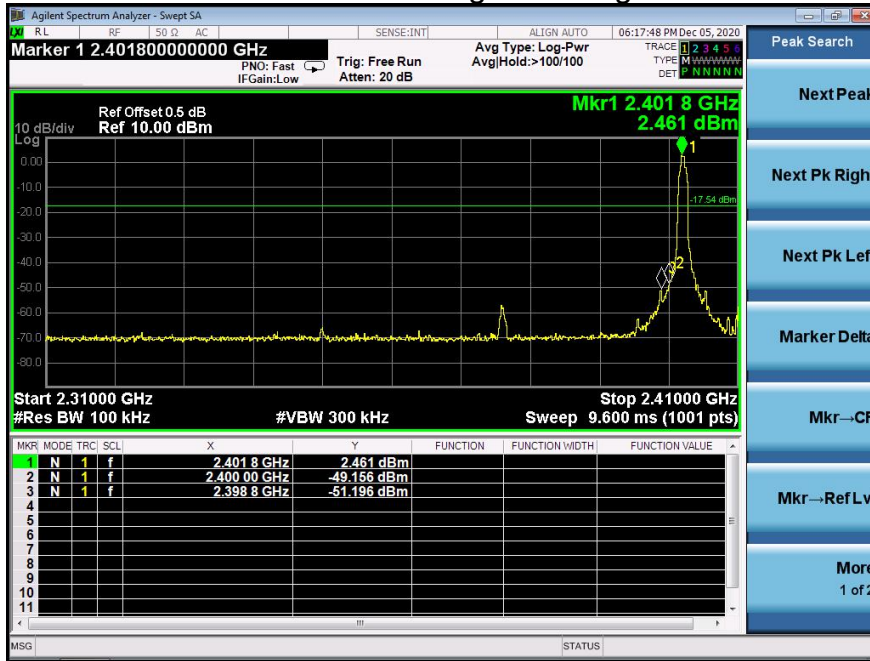
Pi/4 DQPSK Transmitting Band edge-right side



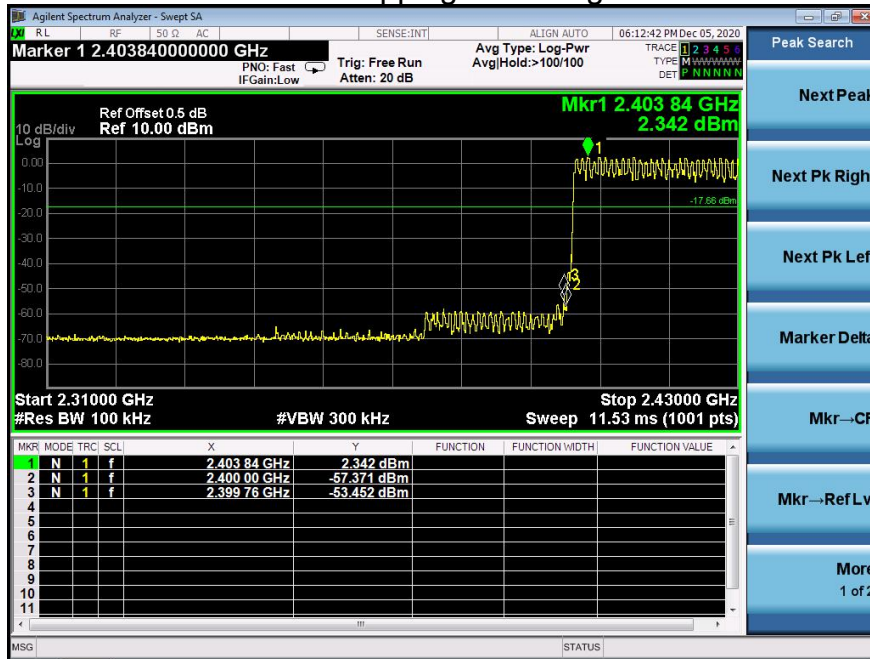
Pi/4 DQPSK Hopping Band edge-right side



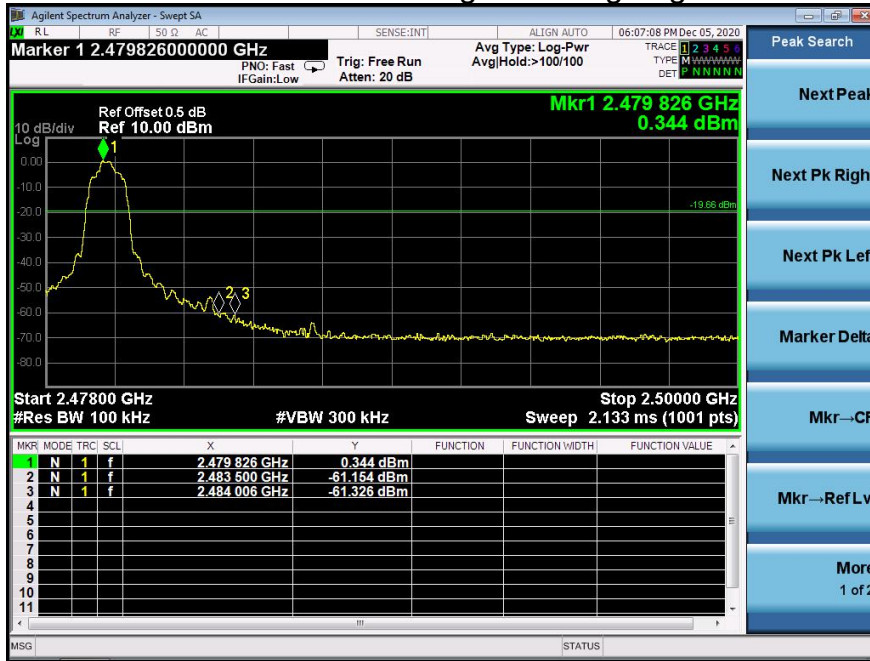
8DPSK Transmitting Band edge-left side



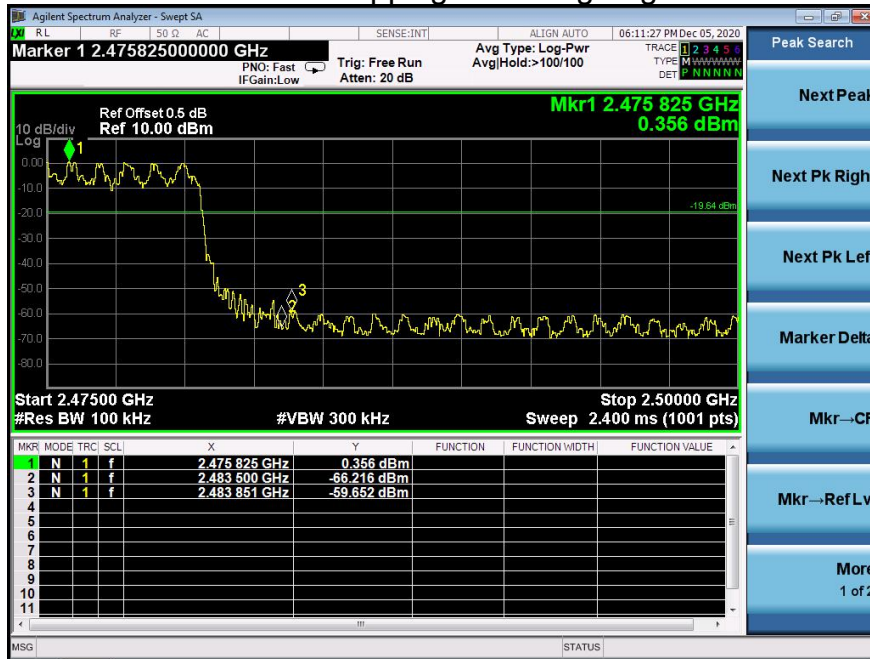
8DPSK Hopping Band edge-left side



8DPSK Transmitting Band edge-right side



8DPSK Hopping Band edge-right side



## 10. 20 DB BANDWIDTH

### 10.1 Block Diagram Of Test Setup



### 10.2 Limit

N/A

### 10.3 Test procedure

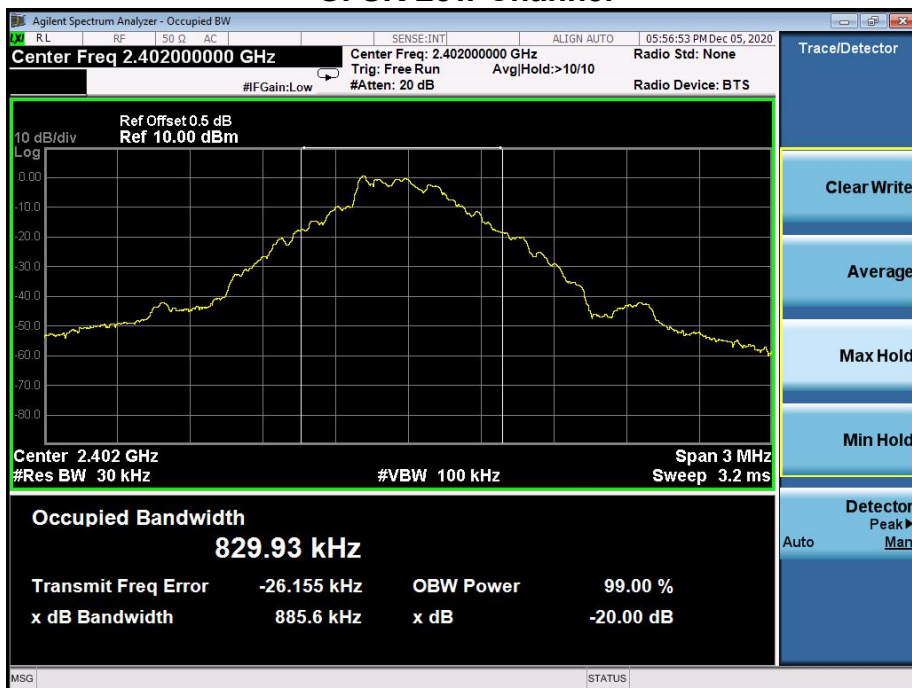
1. Set RBW = 30kHz.
2. Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

### 10.4 Test Result

Temperature :	26°C	Relative Humidity :	54%
Test Voltage :	DC 3.7V	Remark	N/A

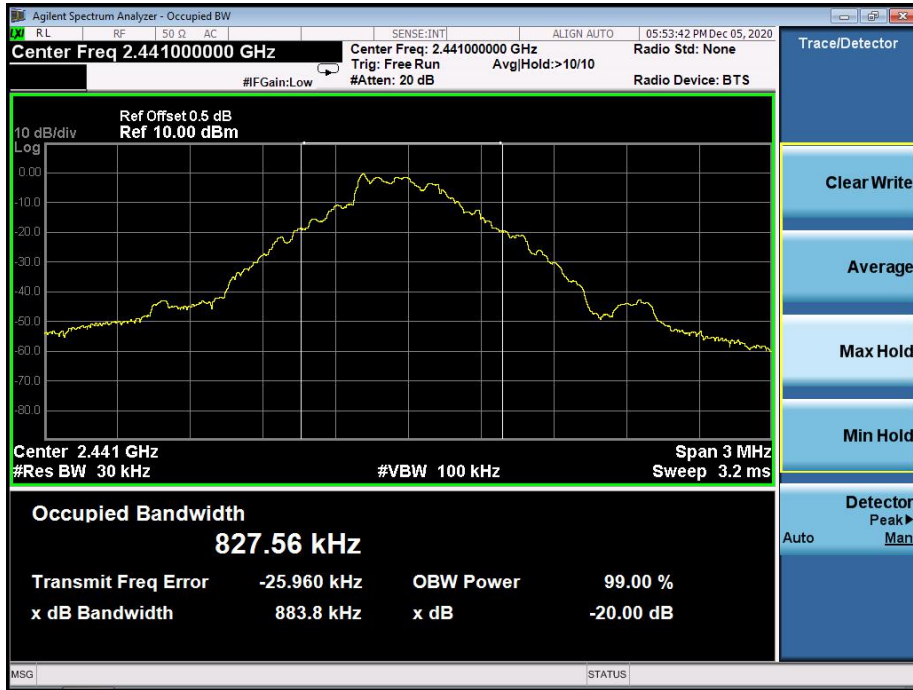
Modulation	Test Channel	Bandwidth(MHz)
GFSK	Low	0.886
GFSK	Middle	0.834
GFSK	High	0.887
Pi/4 DQPSK	Low	1.248
Pi/4 DQPSK	Middle	1.249
Pi/4 DQPSK	High	1.244
8DPSK	Low	1.221
8DPSK	Middle	1.224
8DPSK	High	1.224

#### Test plots GFSK Low Channel

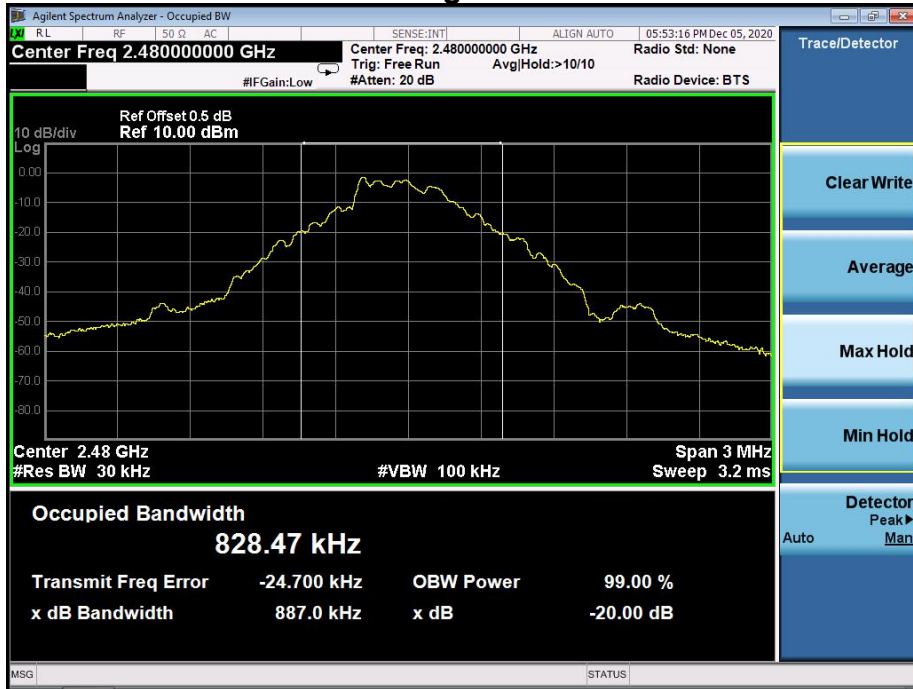




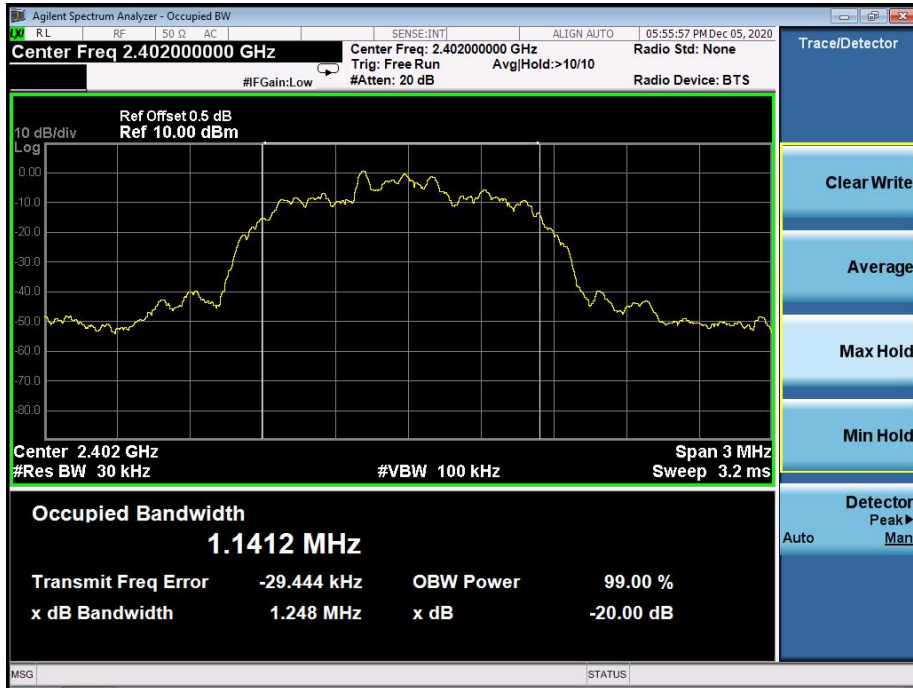
**GFSK Middle Channel**



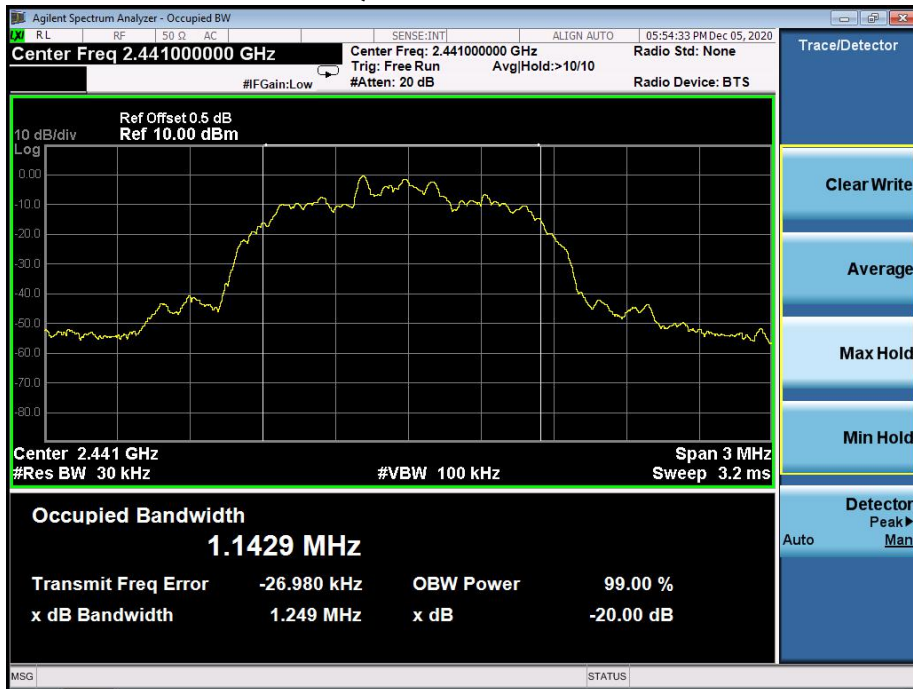
**GFSK High Channel**



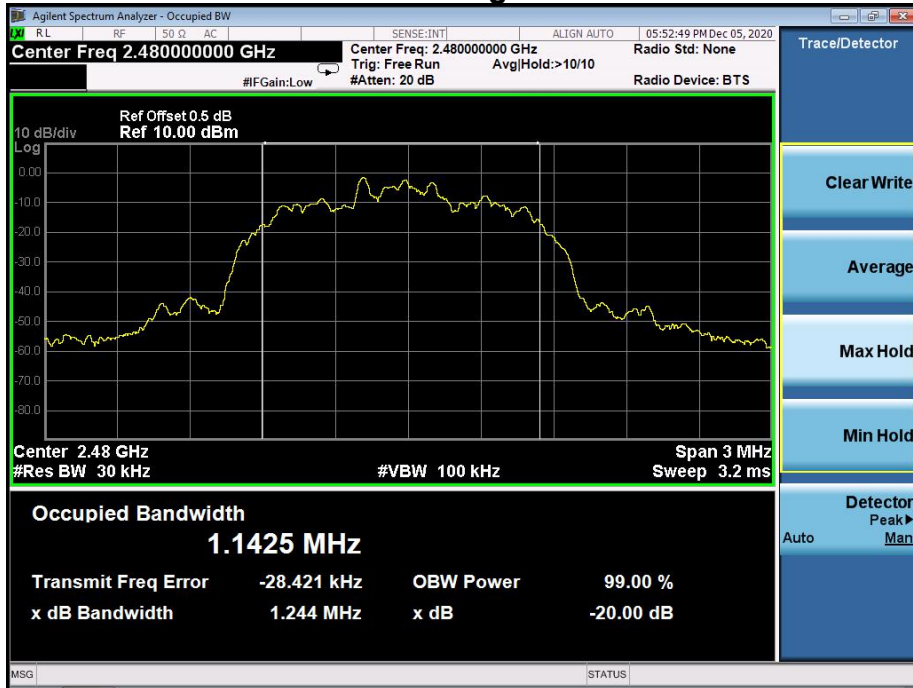
**Pi/4 DQPSK Low Channel**



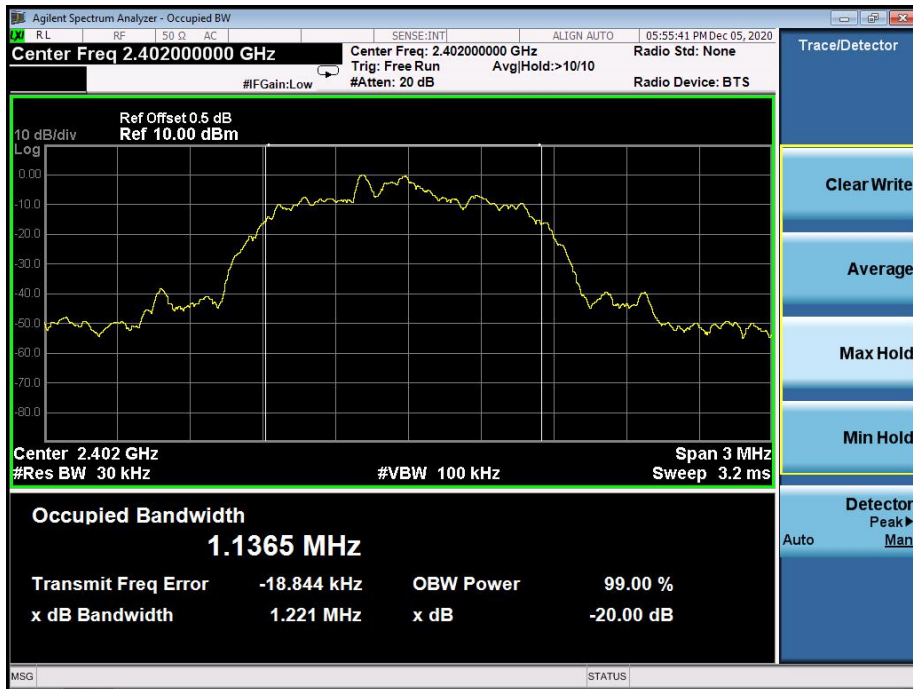
**Pi/4 DQPSK Middle Channel**



**Pi/4 DQPSK High Channel**

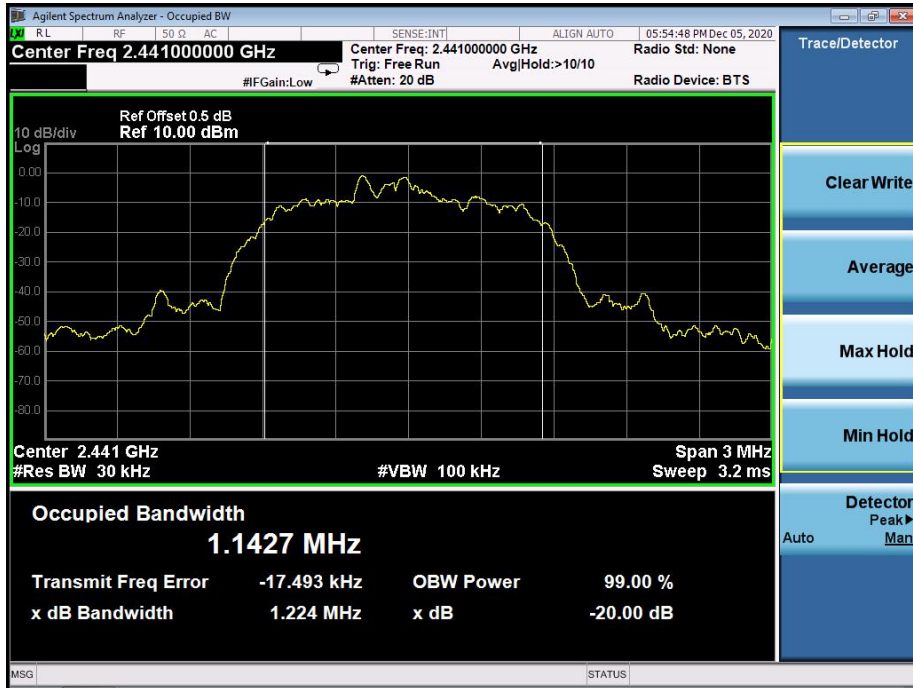


**8DPSK Low Channel**

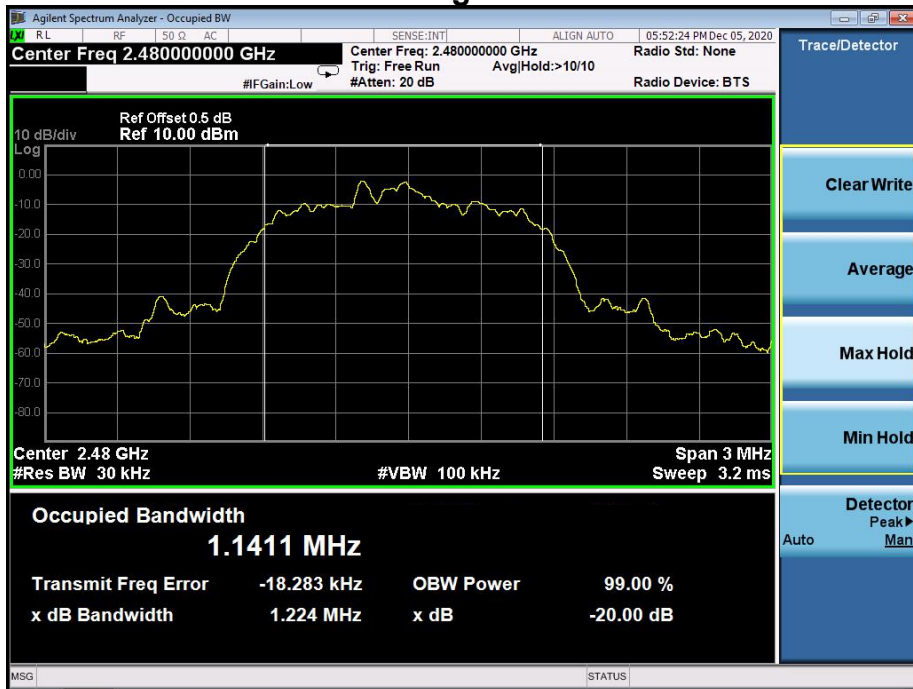




### 8DPSK Middle Channel



### 8DPSK High Channel



## 11. MAXIMUM PEAK OUTPUT POWER

### 11.1 Block Diagram Of Test Setup

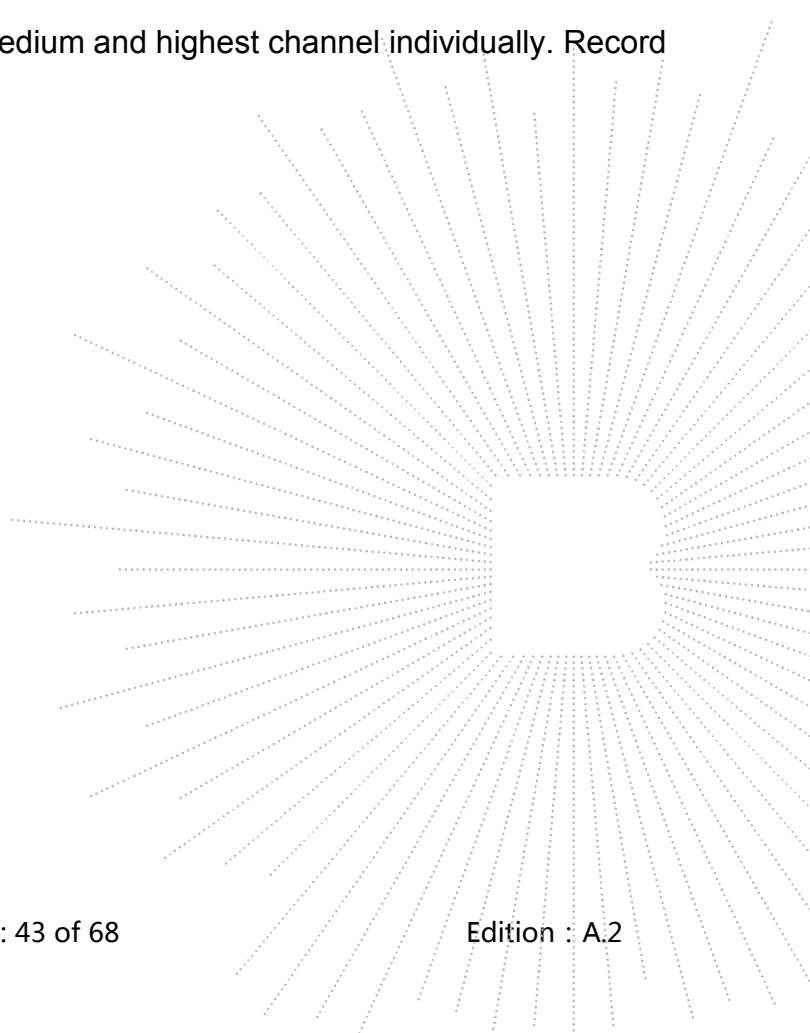


### 11.2 Limit

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(1)	Peak Output Power	0.125 watt or 21dBm	2400-2483.5	PASS

### 11.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 3MHz. VBW = 3MHz. Sweep = auto; Detector Function = Peak.
3. Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value.

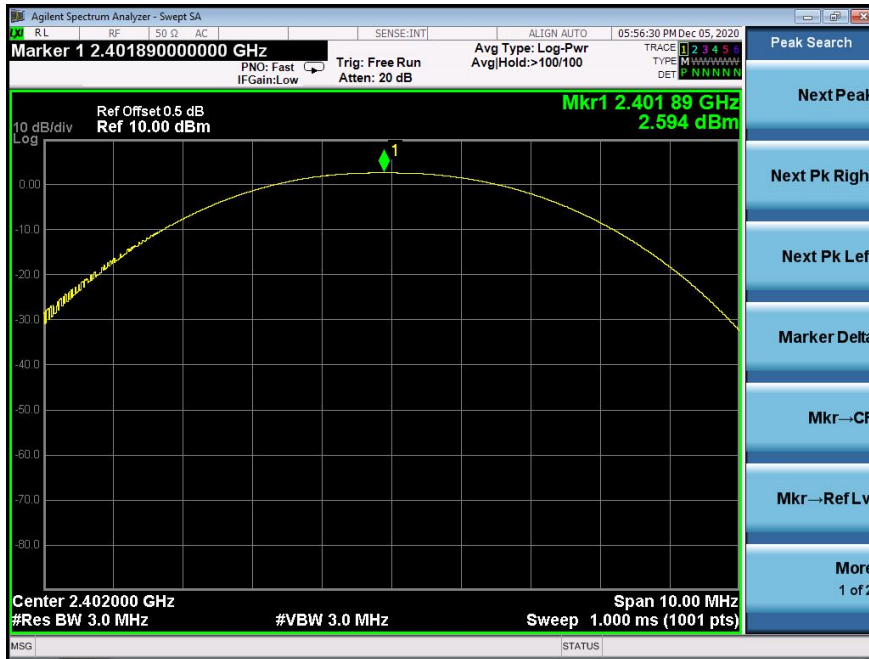


### 11.4 Test Result

Temperature :	26°C	Relative Humidity :	54%
Test Voltage :	DC 3.7V	Remark:	N/A

Modulation	Test Channel	Output Power (dBm)	Limit (dBm)
GFSK	Low	2.594	21
GFSK	Middle	1.613	21
GFSK	High	0.528	21
Pi/4 DQPSK	Low	3.286	21
Pi/4 DQPSK	Middle	2.284	21
Pi/4 DQPSK	High	1.226	21
8DPSK	Low	3.902	21
8DPSK	Middle	2.889	21
8DPSK	High	1.777	21

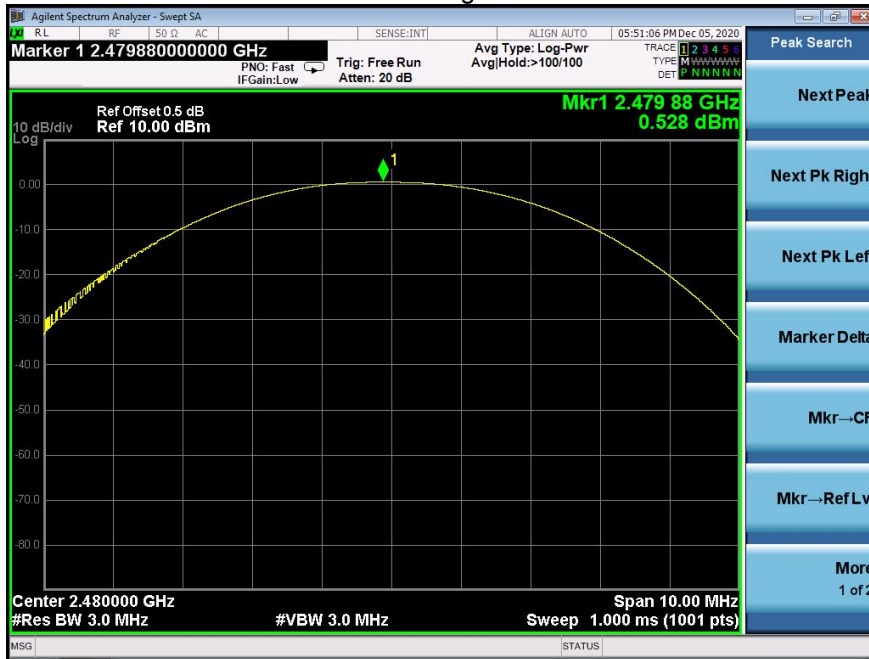
Test plots  
GFSK Low Channel



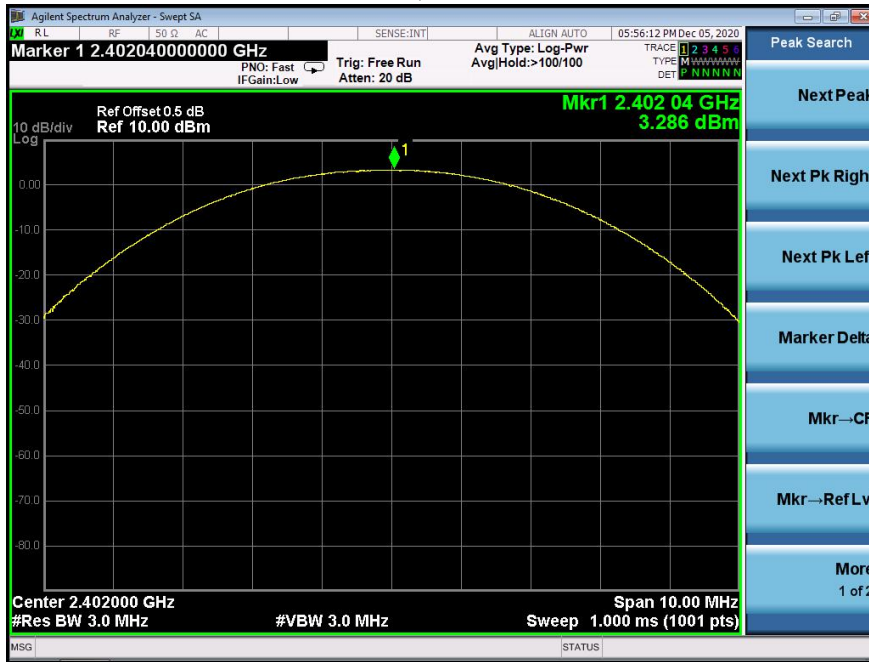
GFSK Middle Channel



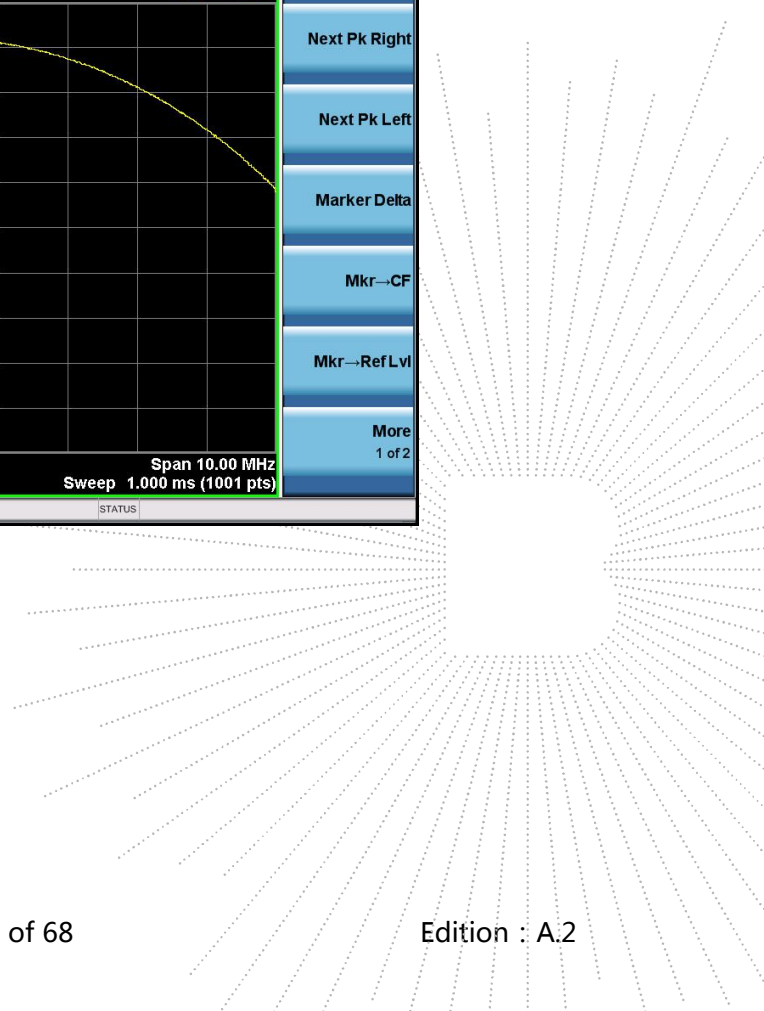
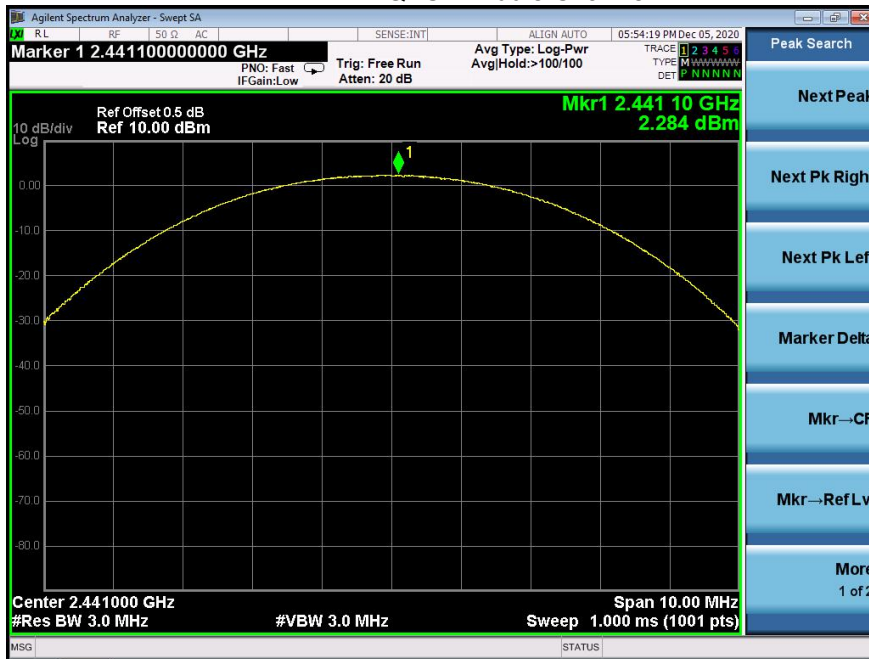
GFSK High Channel



Pi/4 DQPSK Low Channel



Pi/4 DQPSK Middle Channel

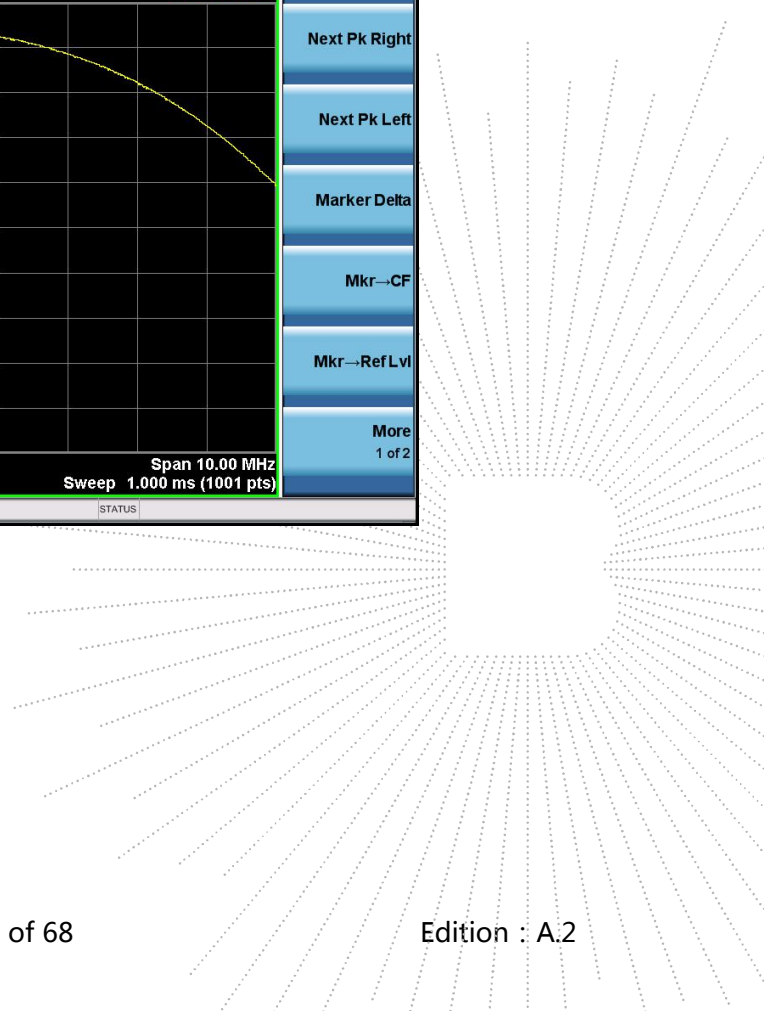
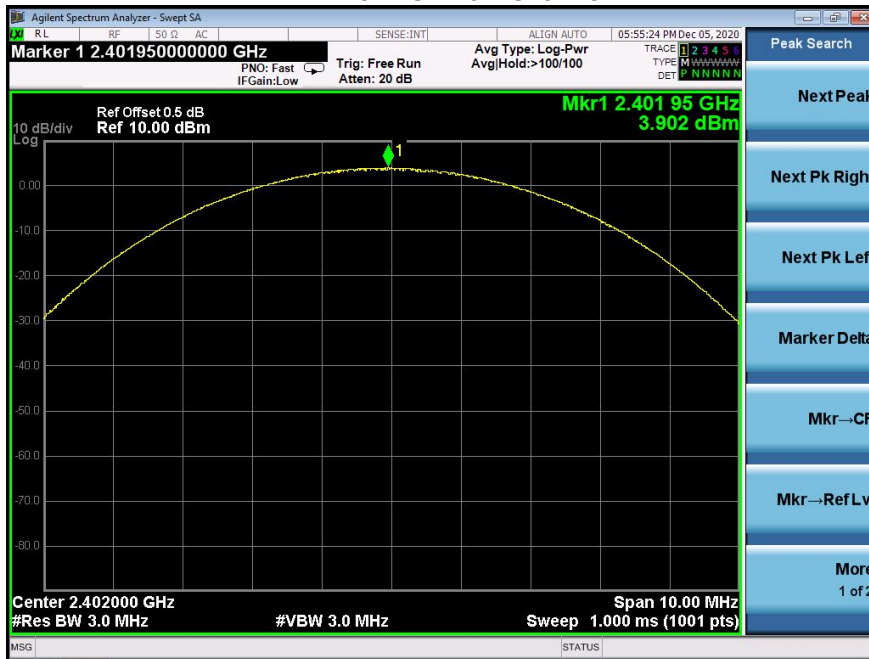




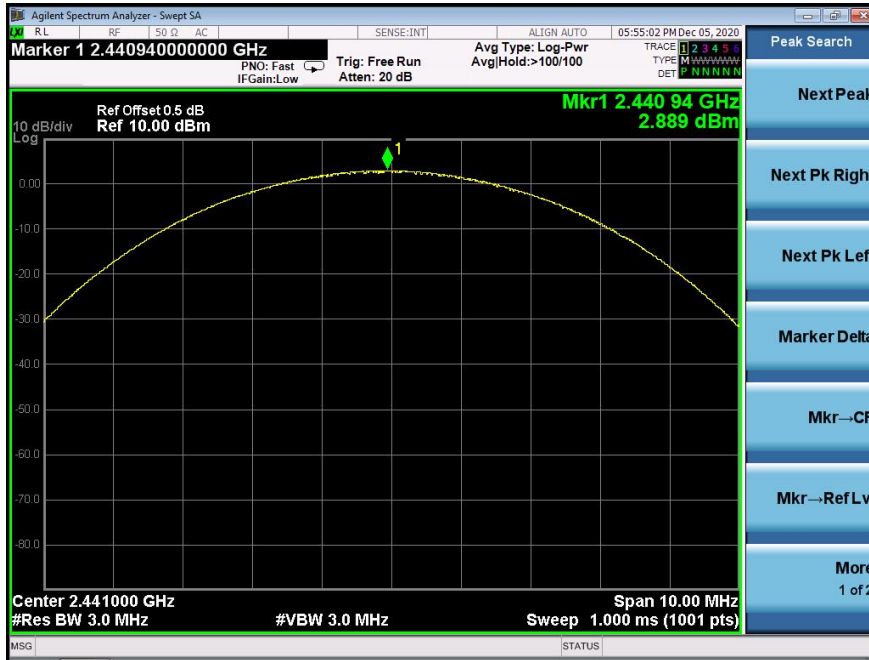
Pi/4 DQPSK High Channel



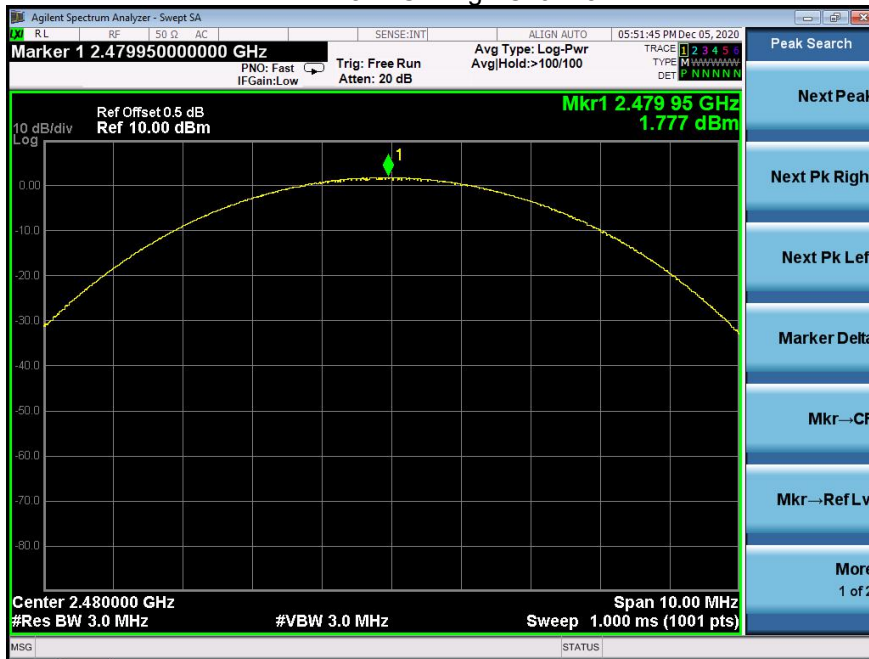
8DPSK Low Channel



8DPSK Middle Channel

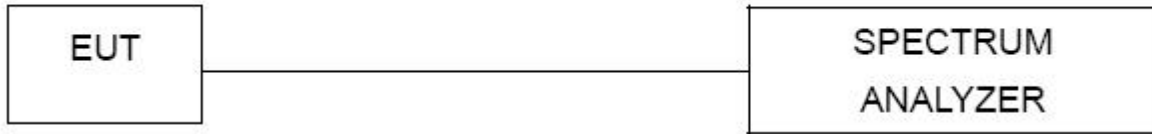


8DPSK High Channel



## 12. HOPPING CHANNEL SEPARATION

### 12.1 Block Diagram Of Test Setup

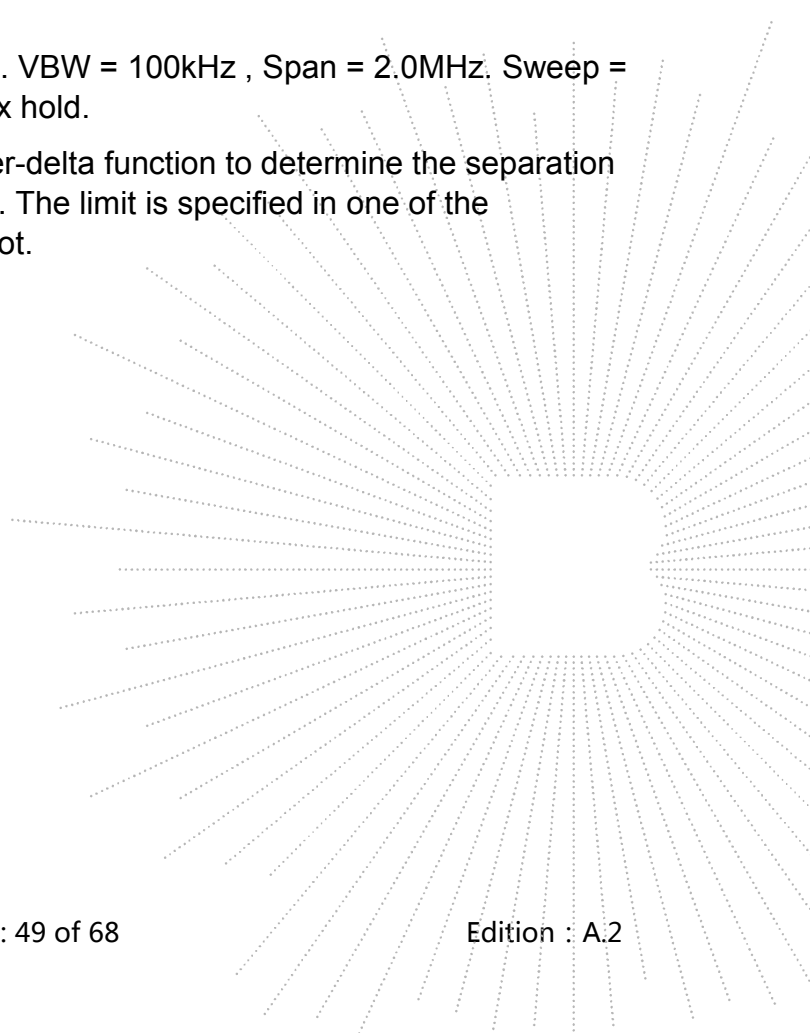


### 12.2 Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 0.125W.

### 12.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 30kHz. VBW = 100kHz , Span = 2.0MHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.
3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.



## 12.4 Test Result

Modulation	Test Channel	Separation (MHz)	Limit(MHz)	Result
GFSK	Low	1.008	0.591	PASS
GFSK	Middle	1.004	0.556	PASS
GFSK	High	1.000	0.591	PASS
Pi/4 DQPSK	Low	1.002	0.832	PASS
Pi/4 DQPSK	Middle	1.002	0.833	PASS
Pi/4 DQPSK	High	0.996	0.829	PASS
8DPSK	Low	0.996	0.814	PASS
8DPSK	Middle	1.002	0.816	PASS
8DPSK	High	0.998	0.816	PASS

**Test plots**  
GFSK Low Channel



GFSK Middle Channel



GFSK High Channel





Pi/4 DQPSK Low Channel



Pi/4 DQPSK Middle Channel



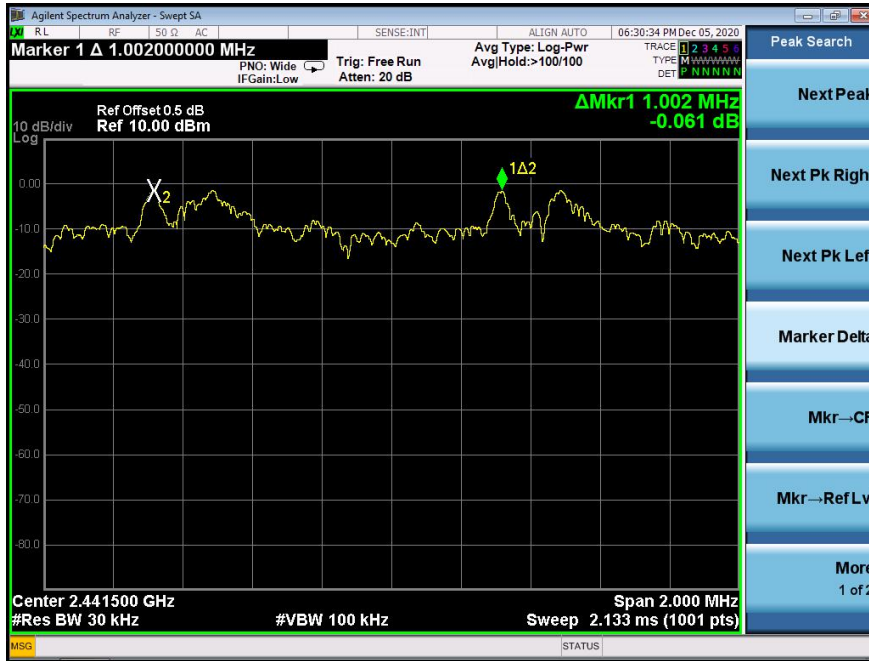
Pi/4 DQPSK High Channel



8DPSK Low Channel



8DPSK Middle Channel

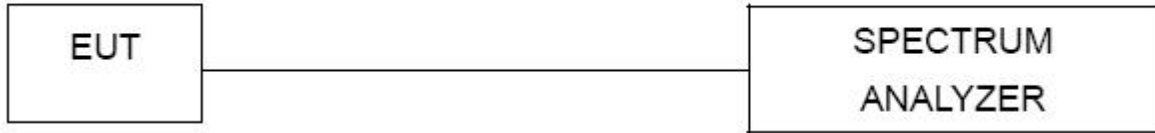


8DPSK High Channel



## 13. NUMBER OF HOPPING FREQUENCY

### 13.1 Block Diagram Of Test Setup

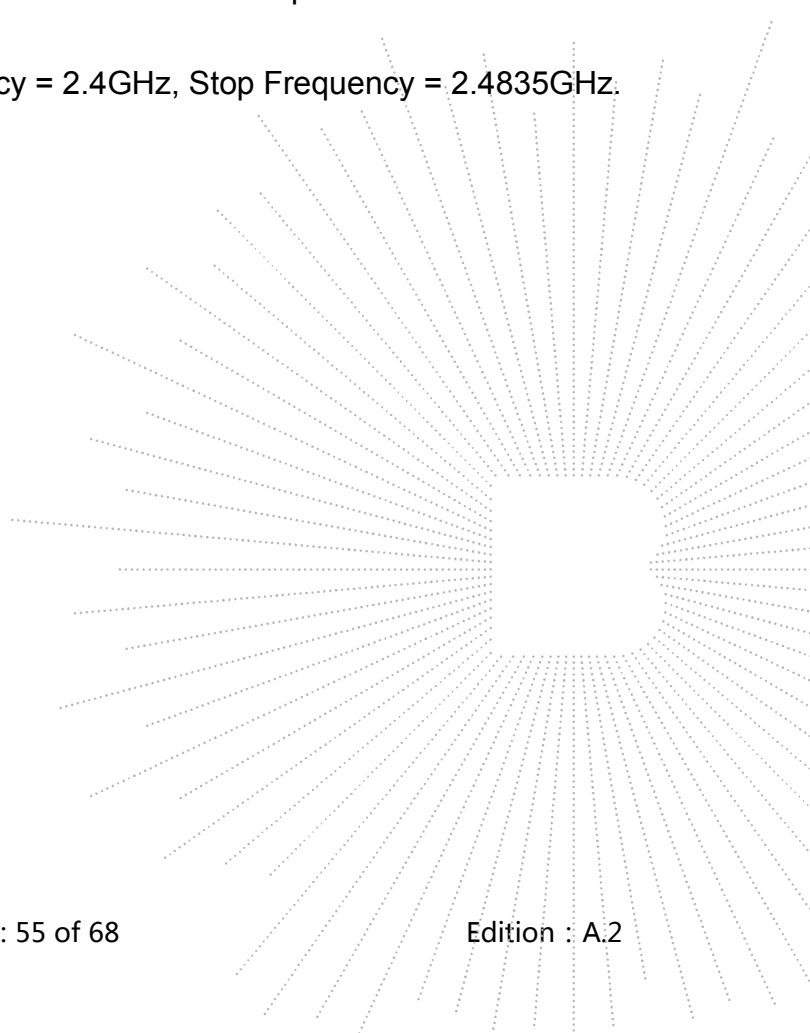


### 13.2 Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

### 13.3 Test procedure

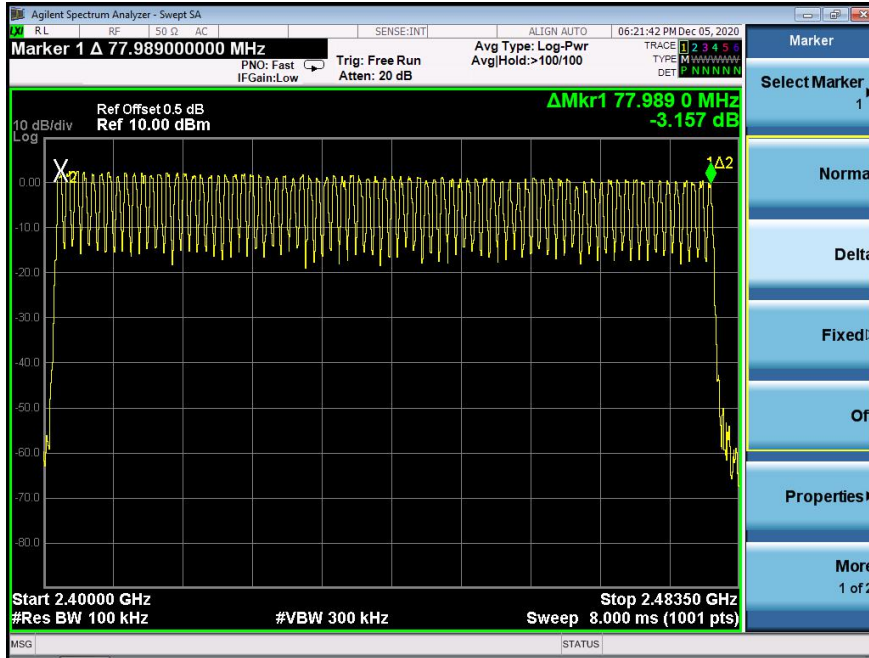
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 100kHz. VBW = 300kHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.
3. Allow the trace to stabilize. It may prove necessary to break the span up to sections. in order to clearly show all of the hopping frequencies. The limit is specified in one of the subparagraphs of this Section.
4. Set the spectrum analyzer: Start Frequency = 2.4GHz, Stop Frequency = 2.4835GHz. Sweep=auto;



13.4 Test Result

**Test Plots:**

79 Channels in total  
GFSK



Pi/4 DQPSK

