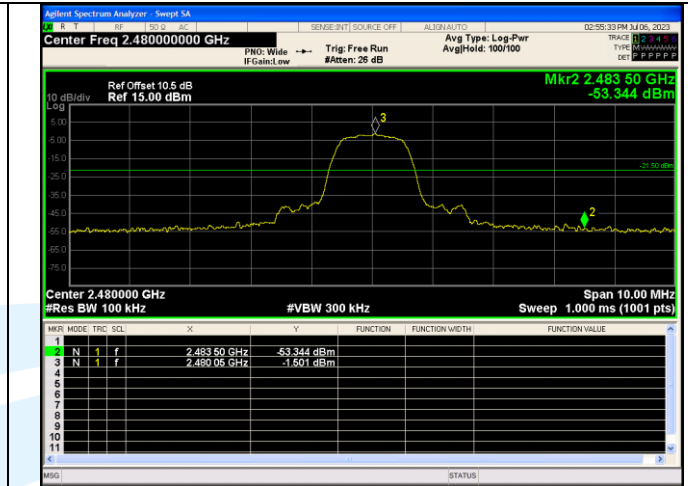
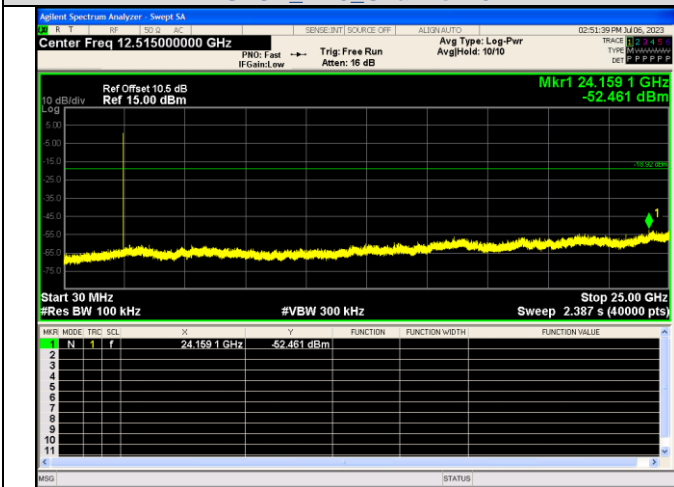


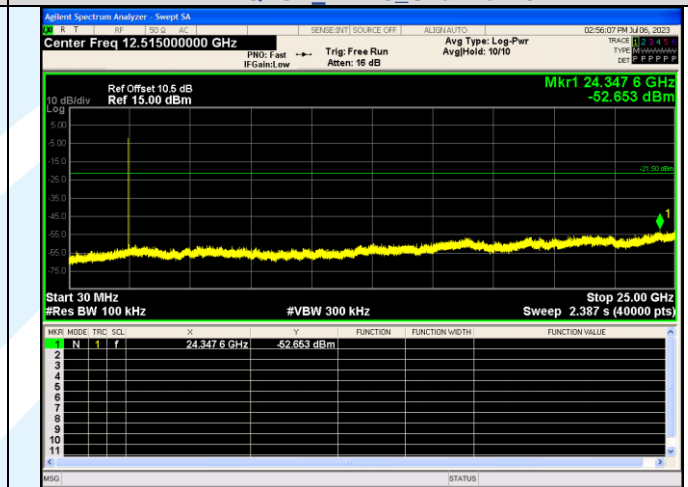
**Out Of Band Emission  
GFSK\_DH5\_Channel 78**



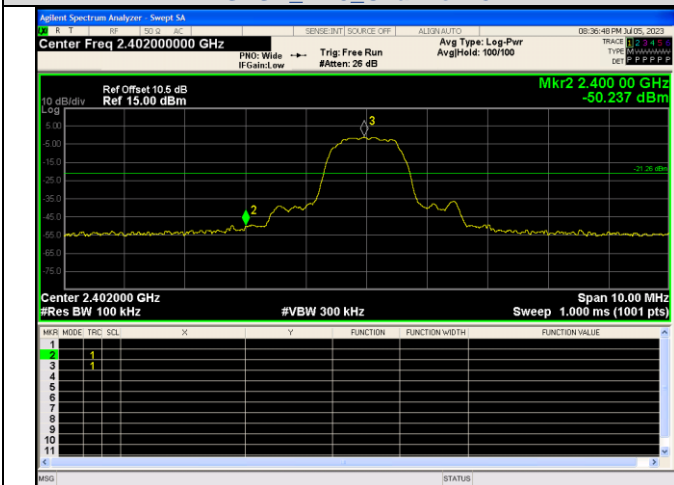
**Out Of Band Emission  
 $\pi/4$ DQPSK\_2-DH5\_Channel 78**



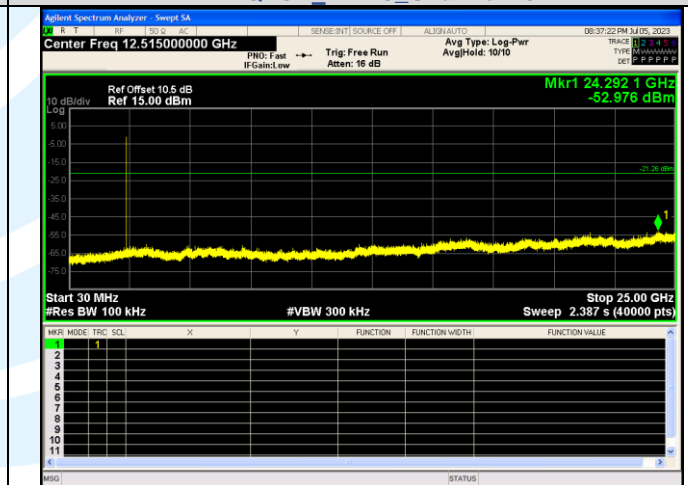
**Spurious Emission  
GFSK\_DH5\_Channel 78**



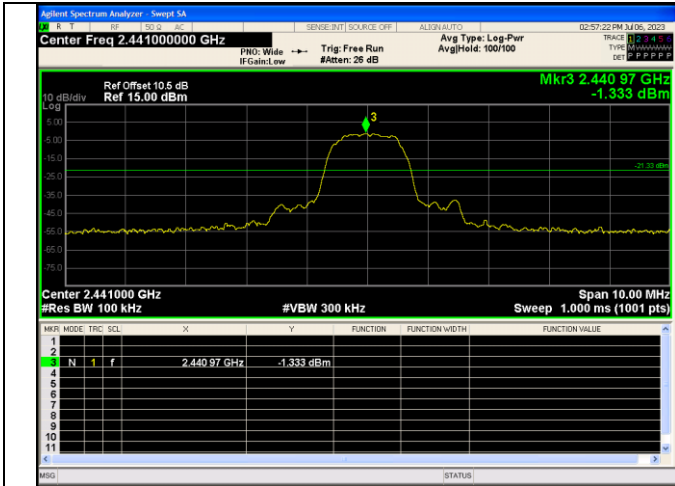
**Spurious Emission  
 $\pi/4$ DQPSK\_2-DH5\_Channel 78**



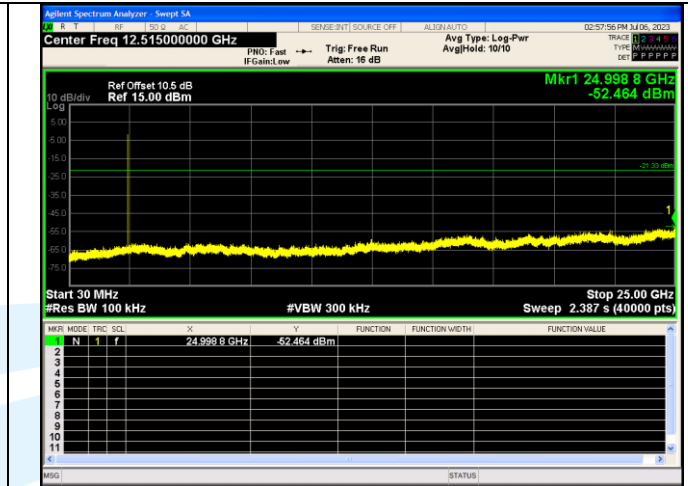
**Out Of Band Emission  
8DPSK\_3-DH5\_Channel 0**



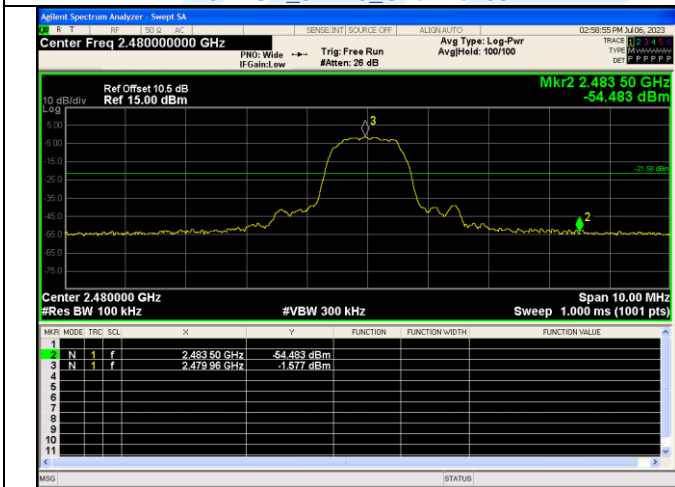
**Spurious Emission  
8DPSK\_3-DH5\_Channel 0**



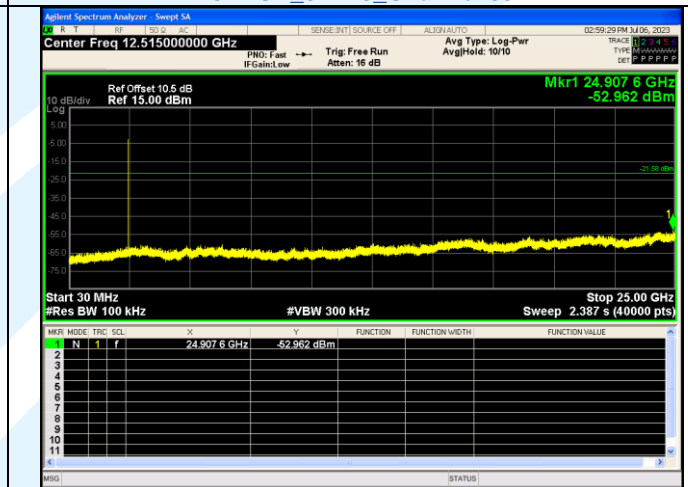
**Out Of Band Emission  
8DPSK 3-DH5 Channel 39**



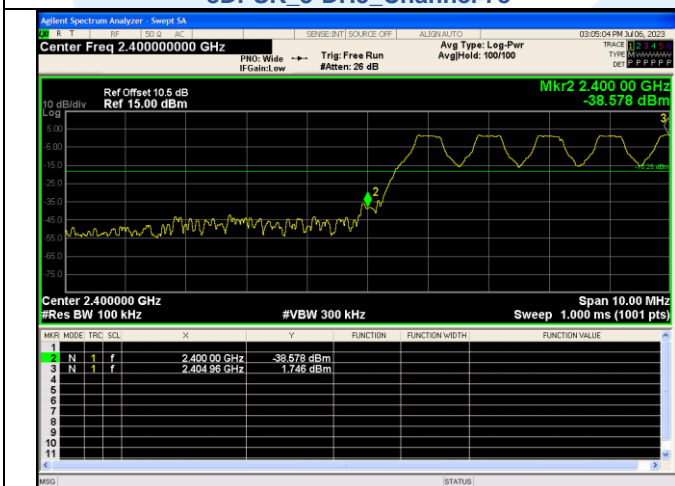
**Spurious Emissions  
8DPSK 3-DH5 Channel 39**



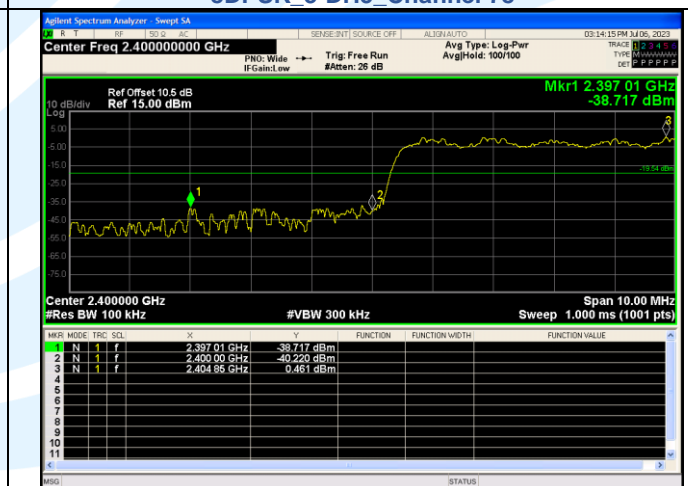
**Out Of Band Emission  
8DPSK 3-DH5 Channel 78**



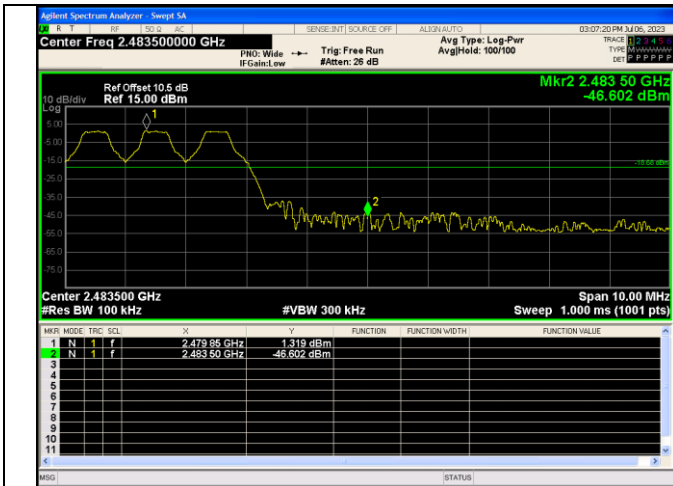
**Spurious Emission  
8DPSK 3-DH5 Channel 78**



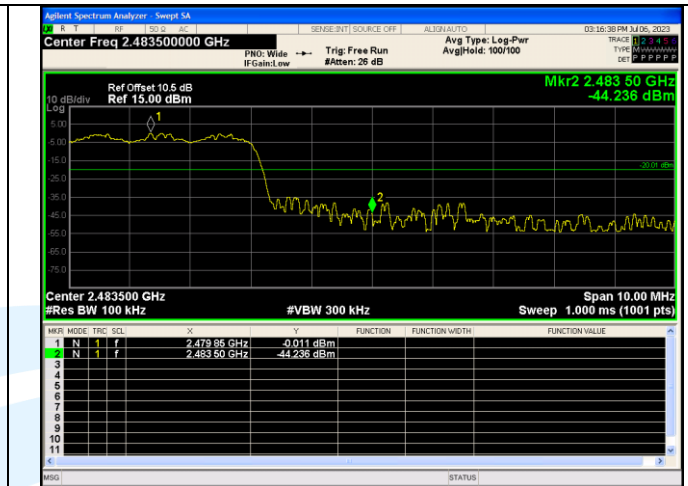
**Out Of Band Emission(Left)  
GFSK DH5 Channel Hopping**



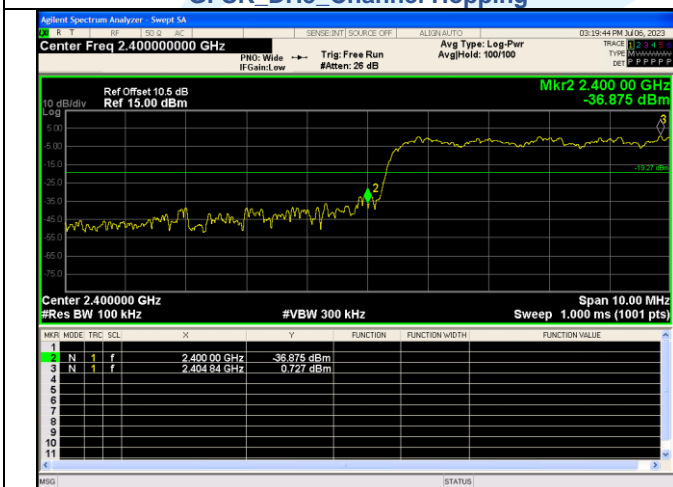
**Out Of Band Emission(Left)  
π/4DQPSK 2-DH5 Channel Hopping**



Out Of Band Emission(Right)  
GFSK\_DH5\_Channel Hopping



Out Of Band Emission(Right)  
 $\pi/4$ DQPSK\_2-DH5\_Channel Hopping



Out Of Band Emission(Left)  
8DPSK\_3-DH5\_Channel Hopping

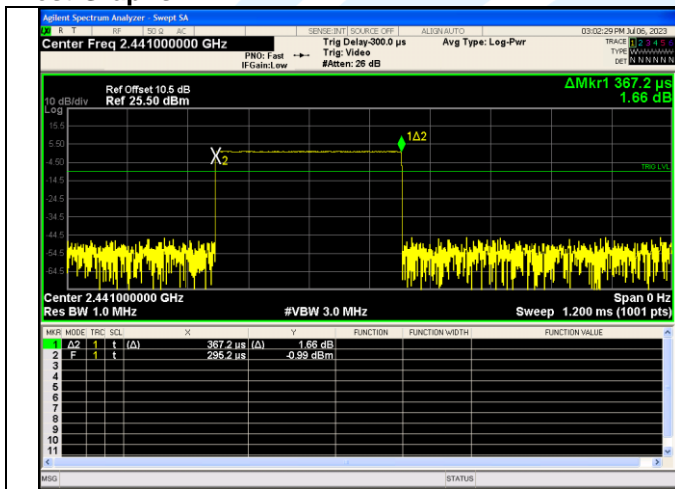


Out Of Band Emission(Right)  
8DPSK\_3-DH5\_Channel Hopping

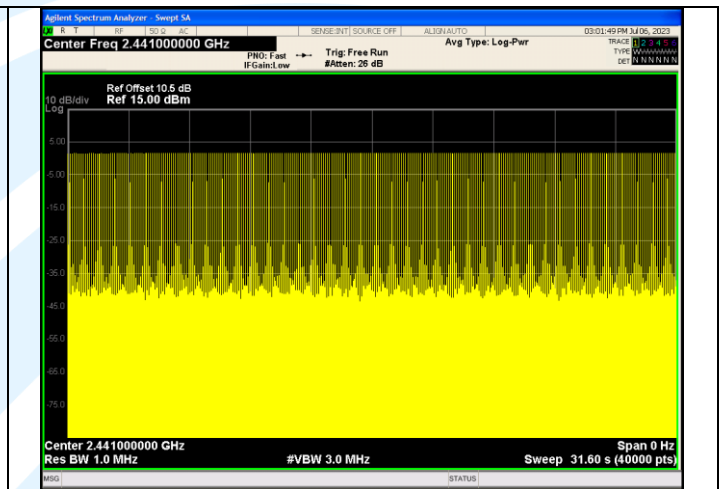
### A.5 DWELL TIME

Modulation	Packet	Channel	Pulse Width (ms)	Number of Pulses in 31.6 seconds	Dwell Time (ms)	Limit (ms)	Result
GFSK	DH1	CH39 (2441MHz)	0.3672	311	114.2	< 400	PASS
	DH3		1.620	156	252.72		PASS
	DH5		2.872	104	298.69		PASS
π/4DQPSK	2-DH1		0.3756	312	117.19		PASS
	2-DH3		1.626	156	253.66		PASS
	2-DH5		2.872	104	298.69		PASS
8DPSK	3-DH1		0.3756	312	117.19		PASS
	3-DH3		1.626	156	253.66		PASS
	3-DH5		2.880	104	299.52		PASS

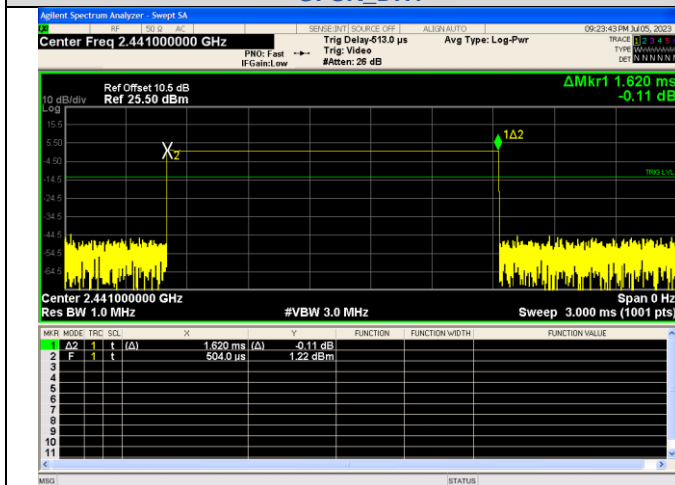
#### Test Graphs



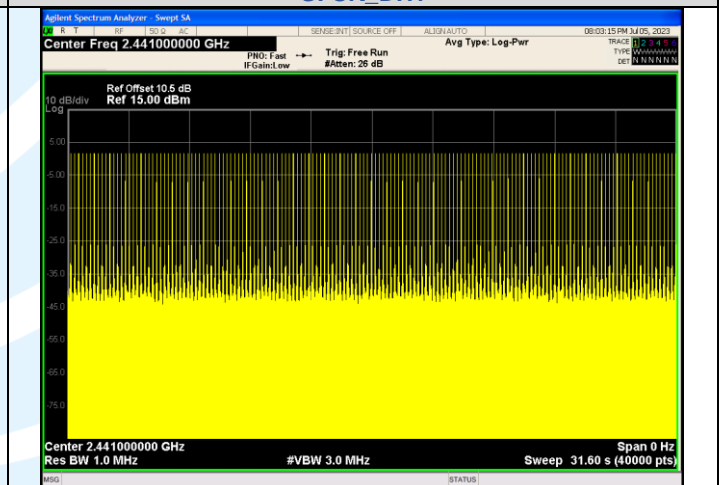
Pulse Width  
GFSK\_DH1



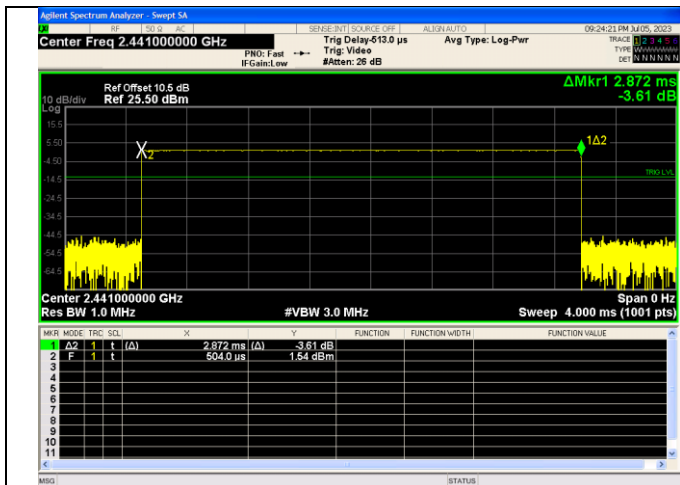
Number of Pulses in 31.6 seconds  
GFSK\_DH1



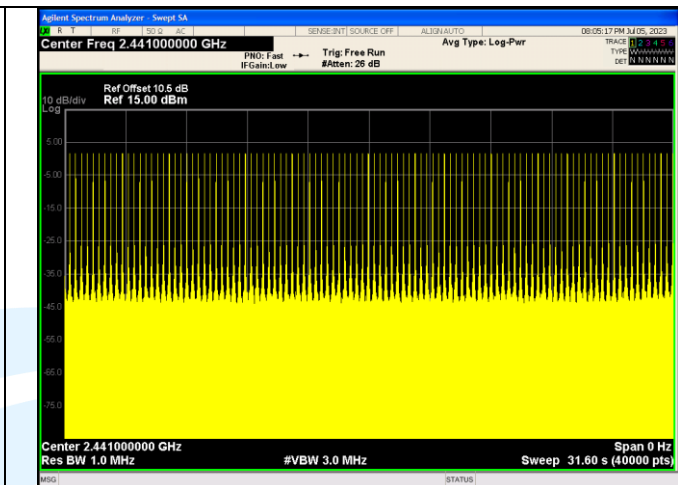
Pulse Width  
GFSK\_DH3



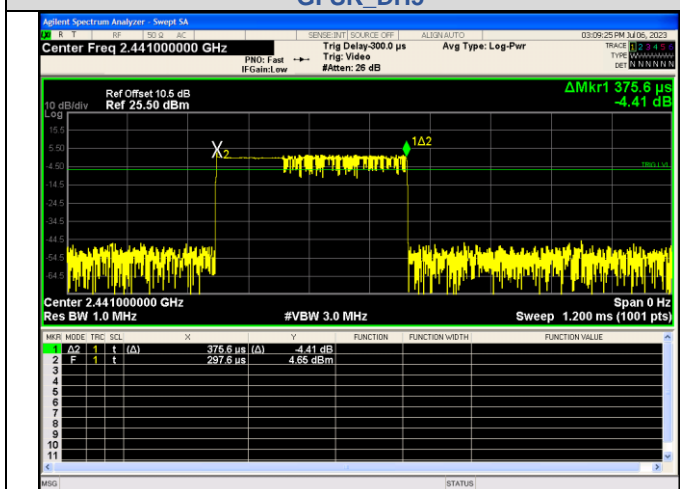
Number of Pulses in 31.6 seconds  
GFSK\_DH3



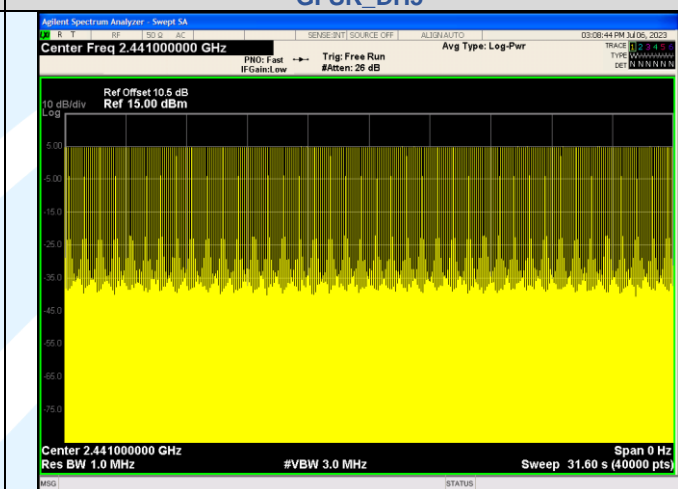
Pulse Width  
GFSK\_DH5



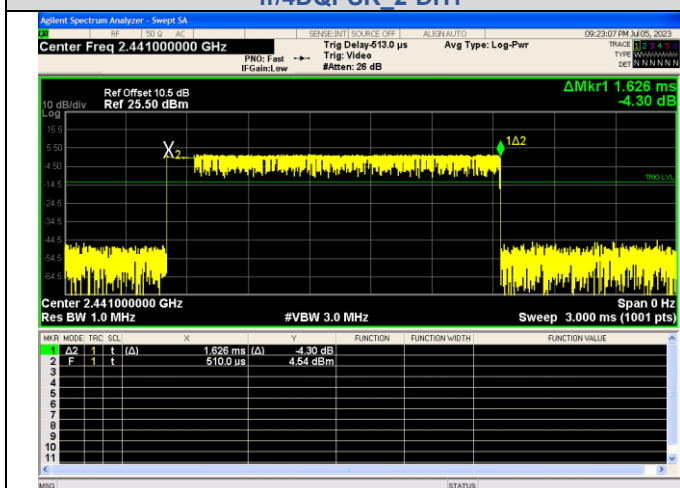
Number of Pulses in 31.6 seconds  
GFSK\_DH5



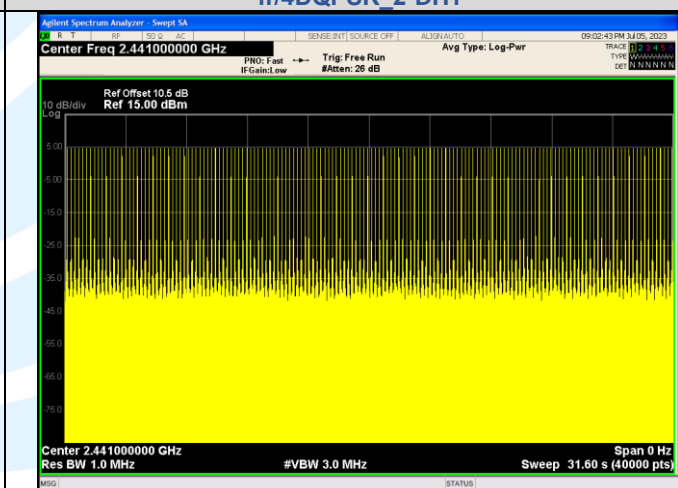
Pulse Width  
 $\pi/4$ DQPSK\_2-DH1



Number of Pulses in 31.6 seconds  
 $\pi/4$ DQPSK\_2-DH1

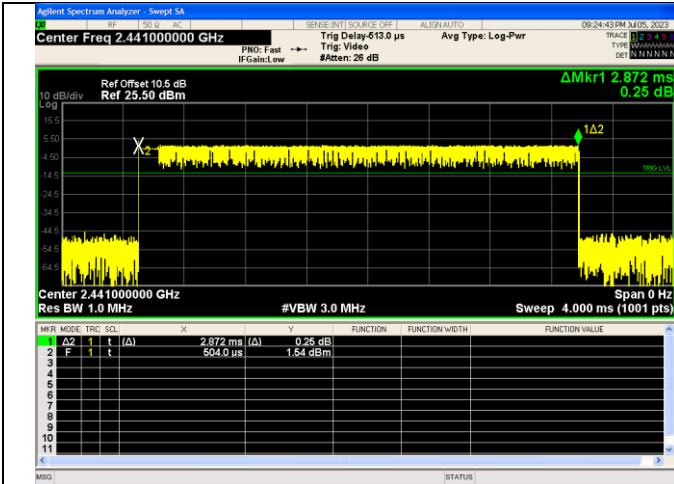


Pulse Width  
 $\pi/4$ DQPSK\_2-DH3

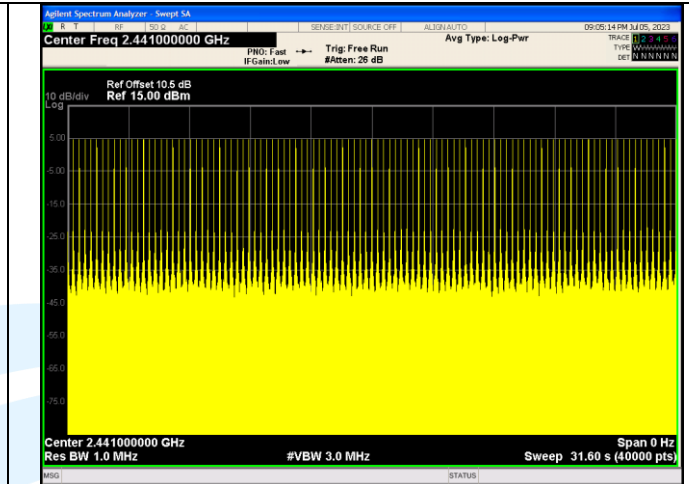


Number of Pulses in 31.6 seconds  
 $\pi/4$ DQPSK\_2-DH3

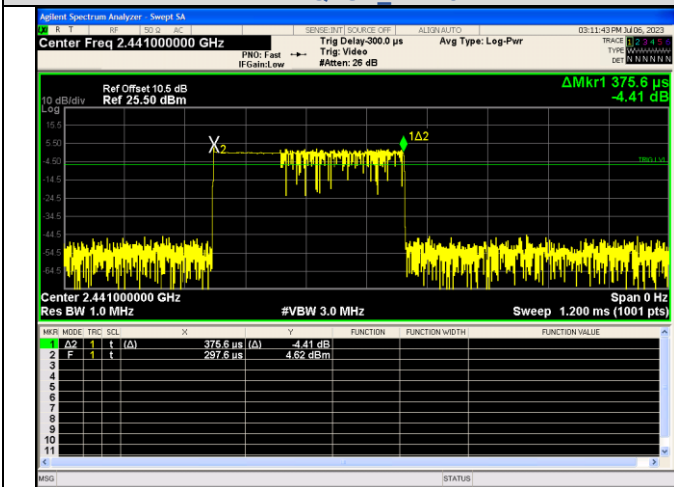




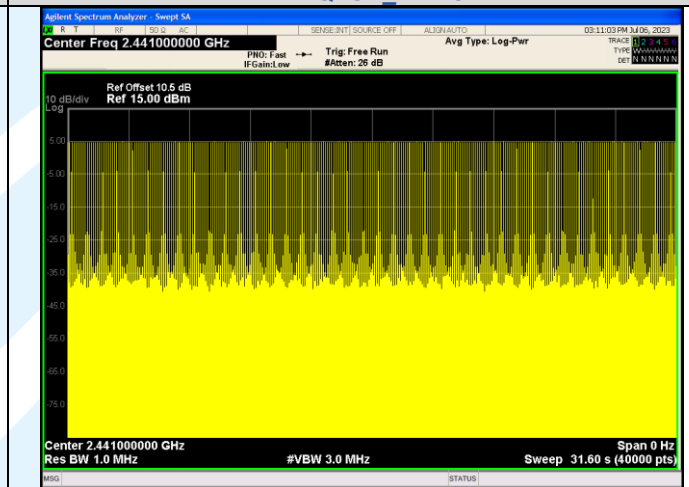
**Pulse Width**  
 **$\pi/4$ DQPSK 2-DH5**



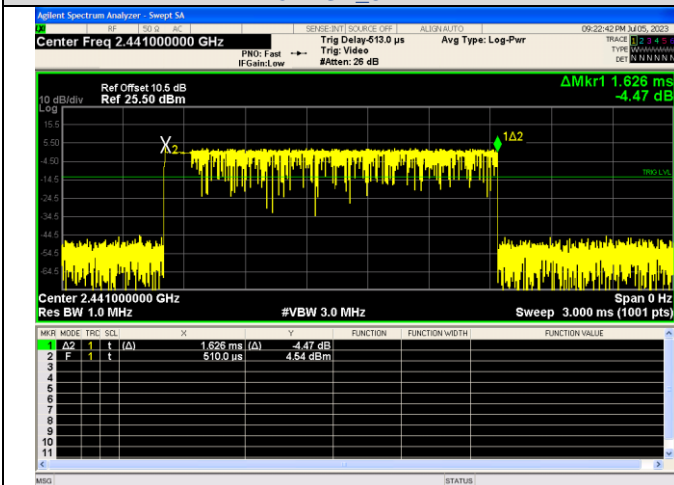
**Number of Pulses in 31.6 seconds**  
 **$\pi/4$ DQPSK 2-DH5**



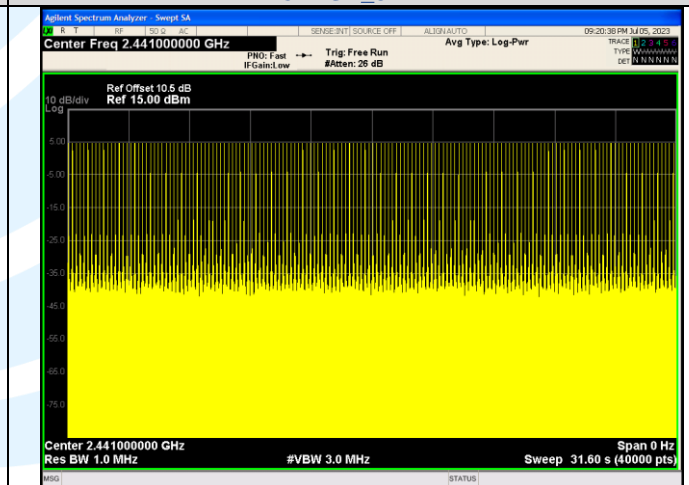
**Pulse Width**  
**8DPSK 3-DH1**



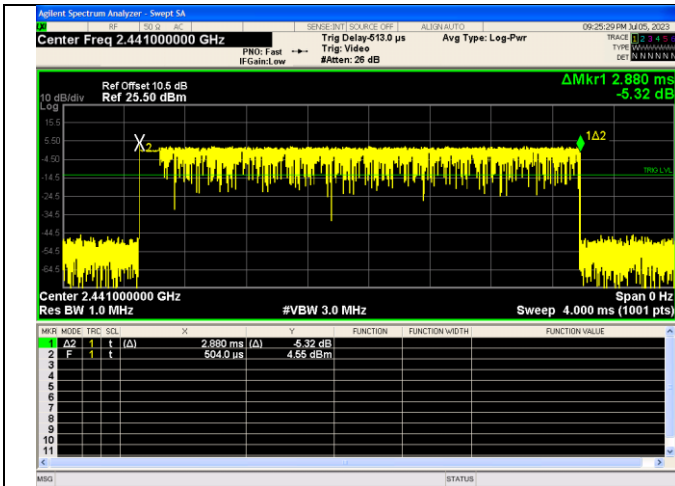
**Number of Pulses in 31.6 seconds**  
**8DPSK 3-DH1**



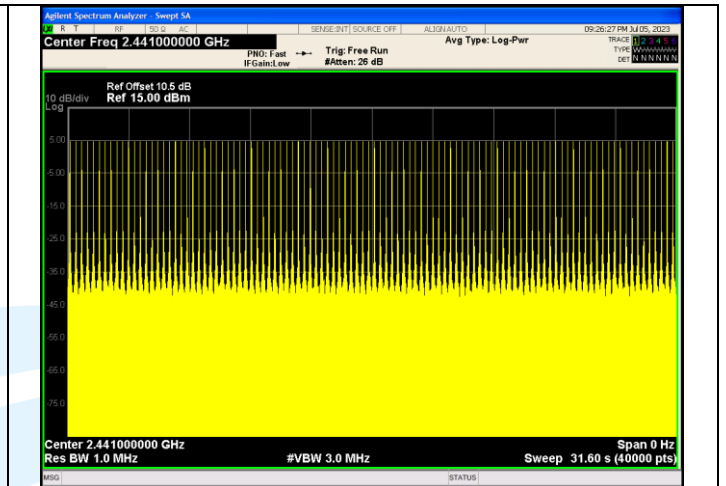
**Pulse Width**  
**8DPSK 3-DH3**



**Number of Pulses in 31.6 seconds**  
**8DPSK 3-DH3**



**Pulse Width  
8DPSK\_3-DH5**



**Number of Pulses in 31.6 seconds  
8DPSK\_3-DH5**

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E-mail: info@uttlab.com

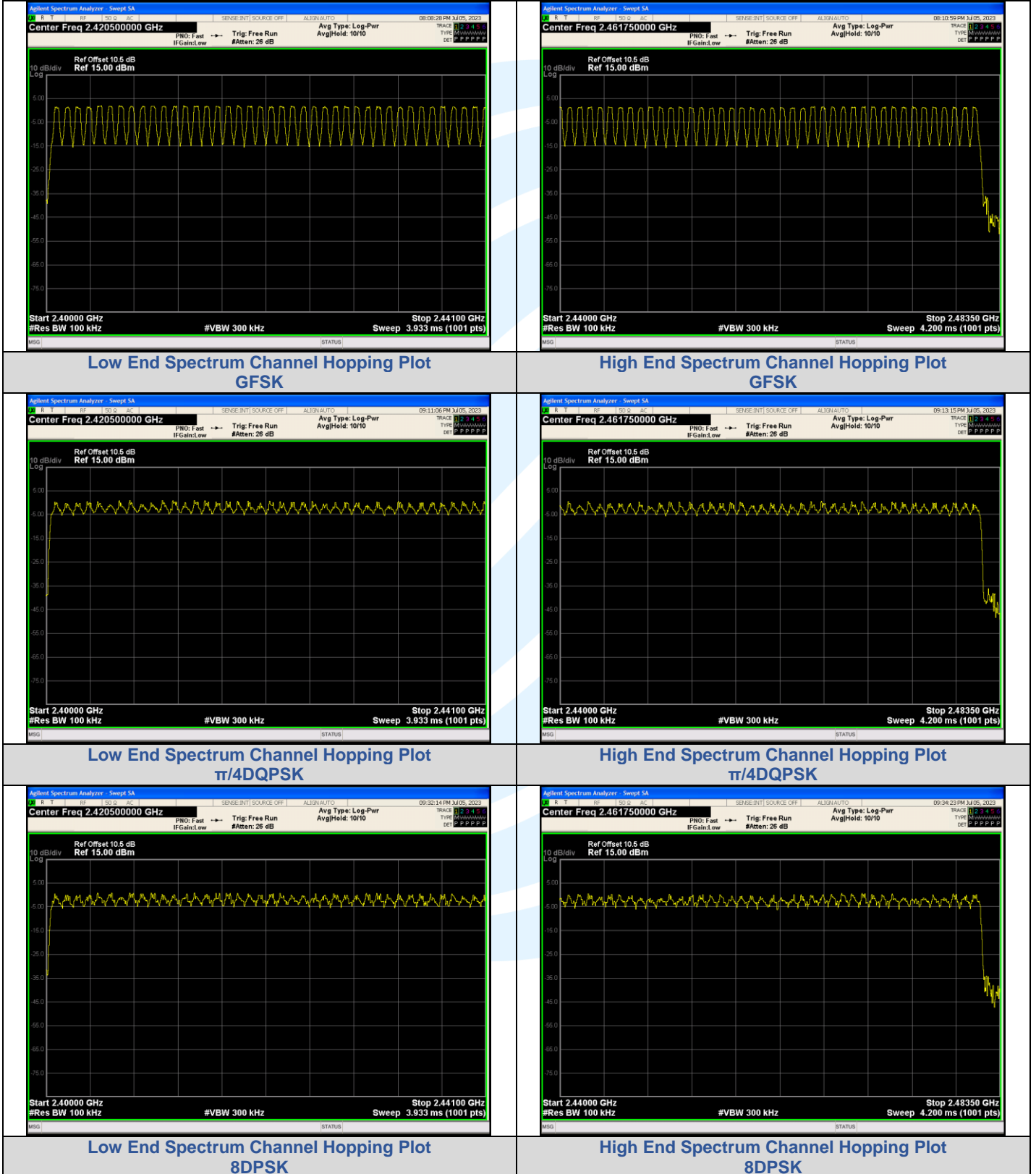
<http://www.uttlab.com>

UTTR-RF-RSS247-V1.1

### A.6 NUMBER OF HOPPING CHANNEL

Modulation	Packet	Number of Hopping Channel	Limit	Result
GFSK	DH5	79	15	PASS
$\pi/4$ DQPSK	2-DH5	79	15	PASS
8DPSK	3-DH5	79	15	PASS

#### Test Graphs



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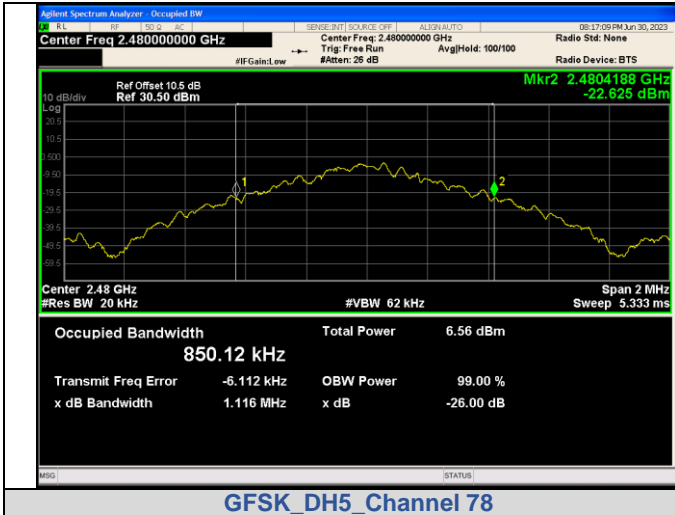
## APPENDIX B RF TEST DATA\_FOR RIGHT EAR

### B.1 99% BANDWIDTH

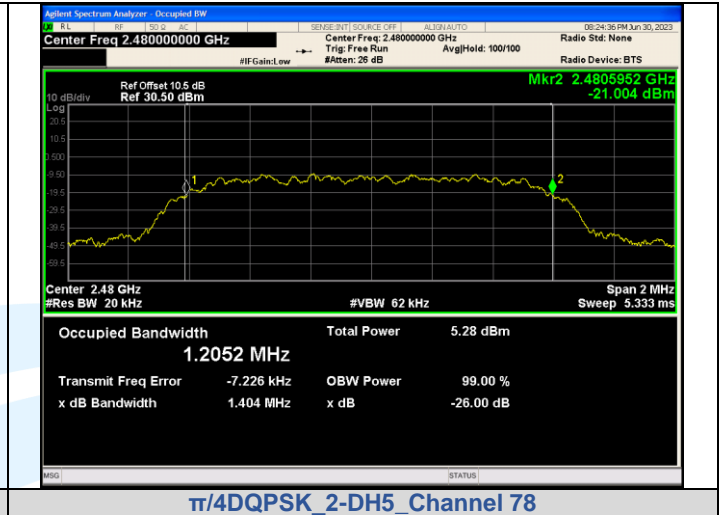
Modulation	Channel	99% BW (MHz)
GFSK	0	0.85536
	39	0.85603
	78	0.85012
$\pi/4$ DQPSK	0	1.2030
	39	1.2038
	78	1.2052
8DPSK	0	1.2108
	39	1.2104
	78	1.2096

### Test Graphs

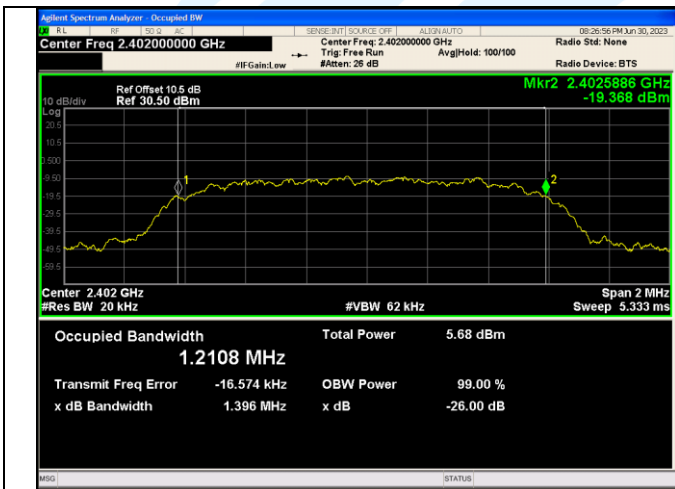




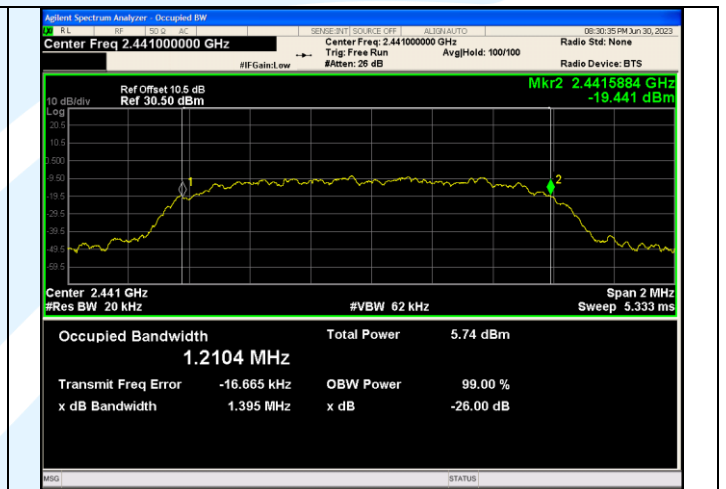
GFSK\_DH5\_Channel 78



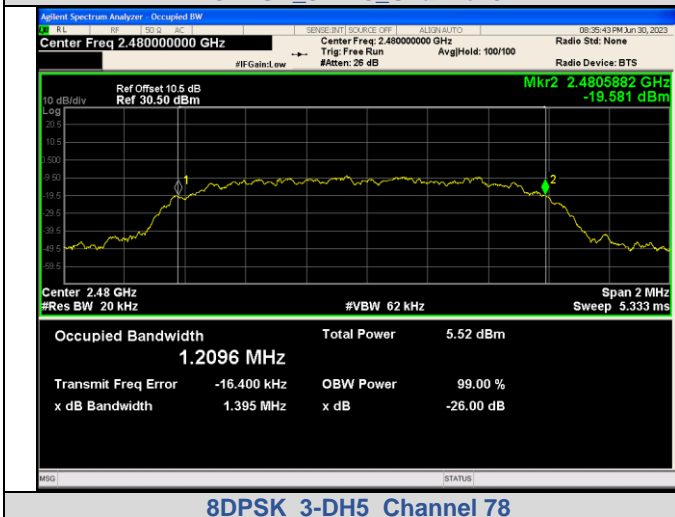
$\pi/4$ DQPSK\_2-DH5\_Channel 78



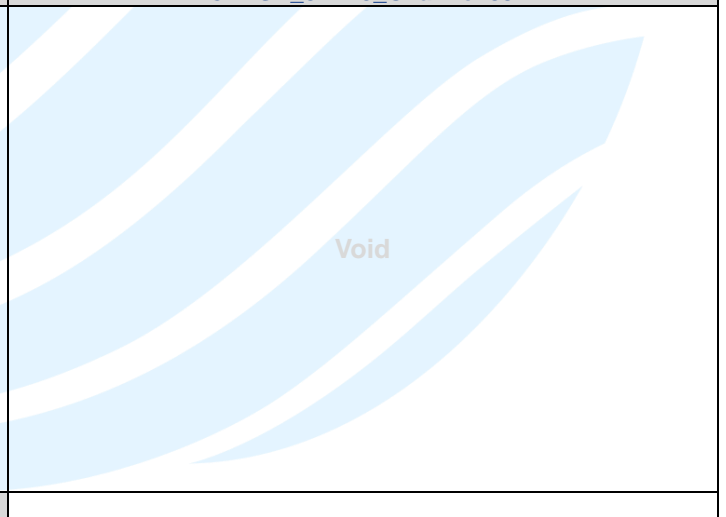
8DPSK\_3-DH5\_Channel 0



8DPSK\_3-DH5\_Channel 39



8DPSK\_3-DH5\_Channel 78

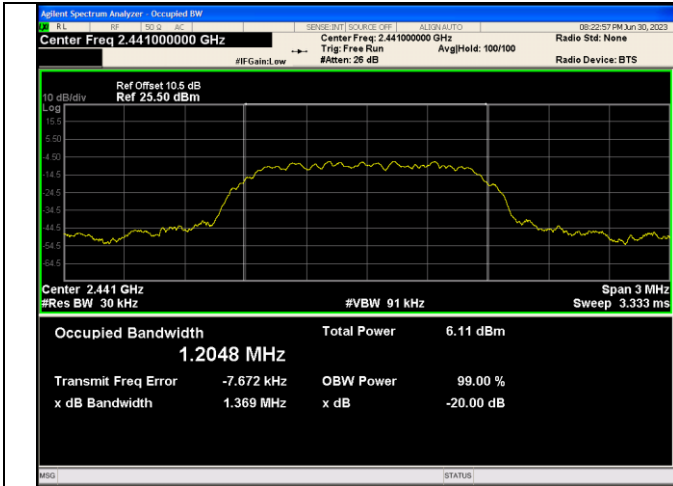


## B.2 20DB BANDWIDTH

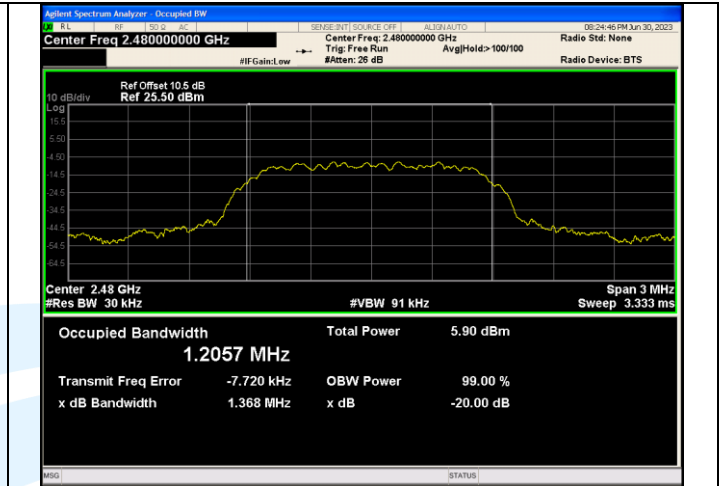
Modulation	Channel	Center Frequency (MHz)	20 dB Bandwidth (MHz)
GFSK	0	2402 MHz	0.9520
	39	2441 MHz	0.9532
	78	2480 MHz	0.9494
$\pi/4$ DQPSK	0	2402 MHz	1.369
	39	2441 MHz	1.369
	78	2480 MHz	1.368
8DPSK	0	2402 MHz	1.349
	39	2441 MHz	1.349
	78	2480 MHz	1.350

### Test Graphs

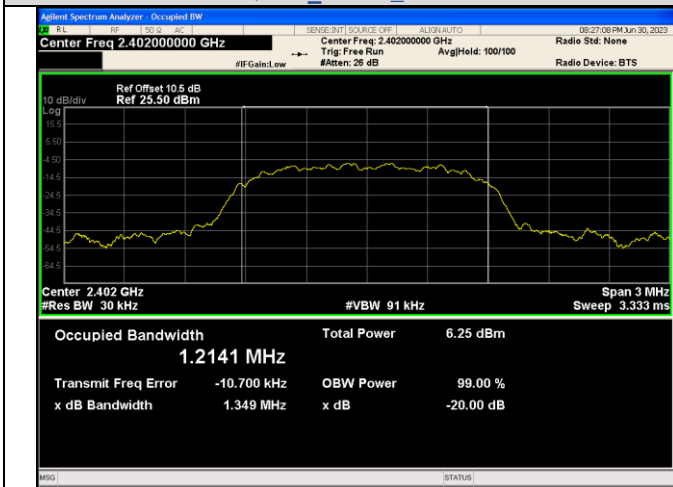




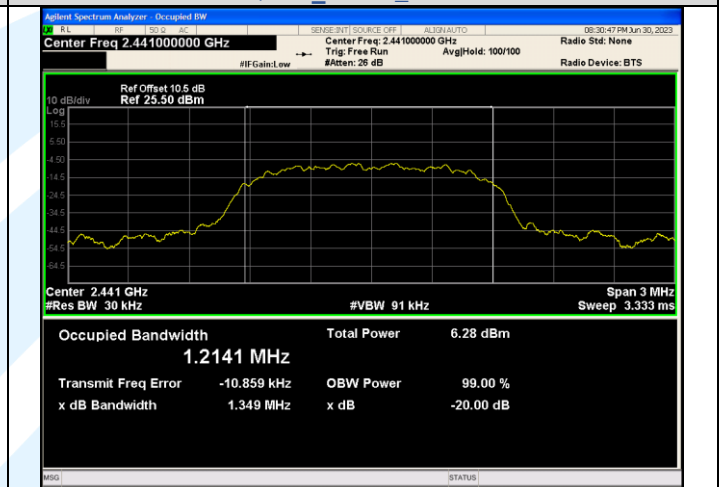
$\pi/4$ DQPSK\_2-DH5\_Channel 39



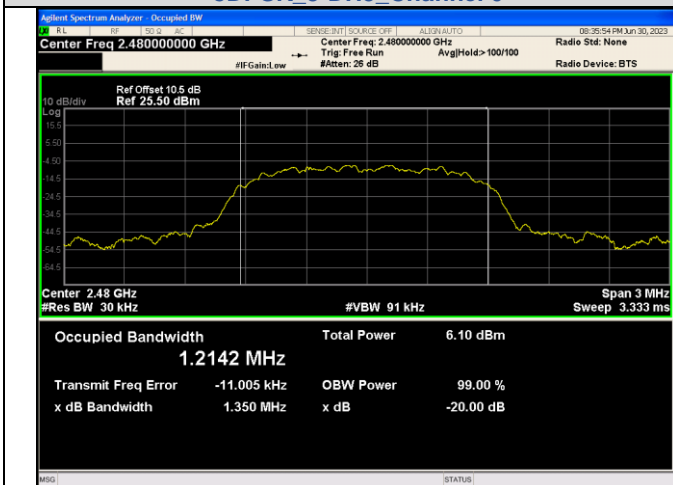
$\pi/4$ DQPSK\_2-DH5\_Channel 78



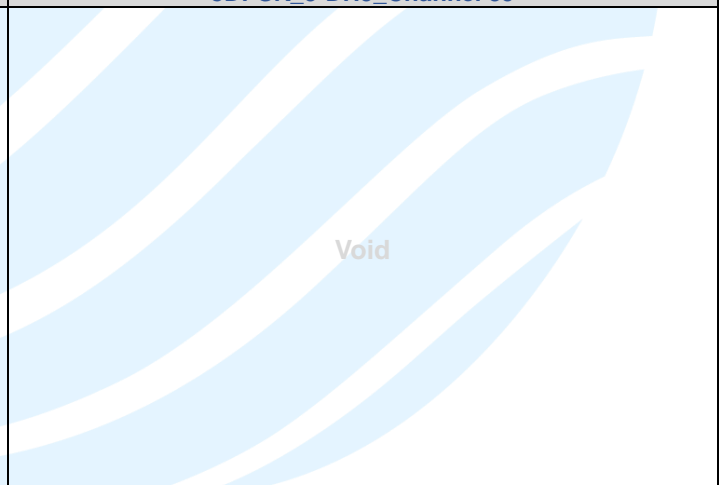
8DPSK\_3-DH5\_Channel 0



8DPSK\_3-DH5\_Channel 39



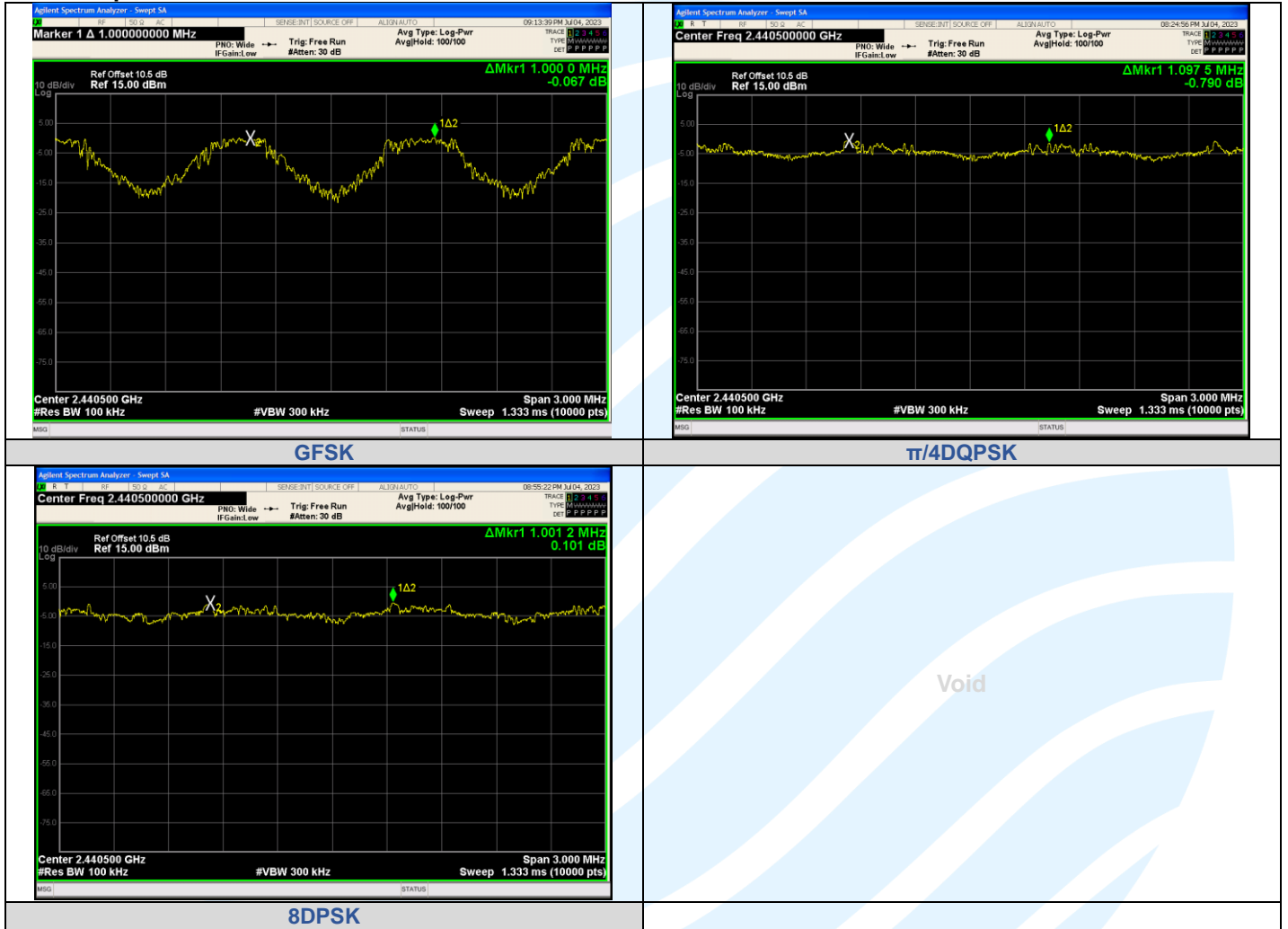
8DPSK\_3-DH5\_Channel 78



### B.3 CARRIER FREQUENCIES SEPARATION

Modulation	Packet	Left Center frequency (MHz)	Right Center frequency (MHz)	Hopping Frequency Separation (MHz)	Limit (MHz)	Result
GFSK	DH5	2440.0612	2441.0612	1.0000	0.6329	PASS
$\pi/4$ DQPSK	2-DH5	2439.8353	2440.9328	1.0975	0.9120	PASS
8DPSK	3-DH5	2439.8305	2440.8317	1.0012	0.8993	PASS

#### Test Graphs



### B.4 CONDUCTED OUT OF BAND EMISSION

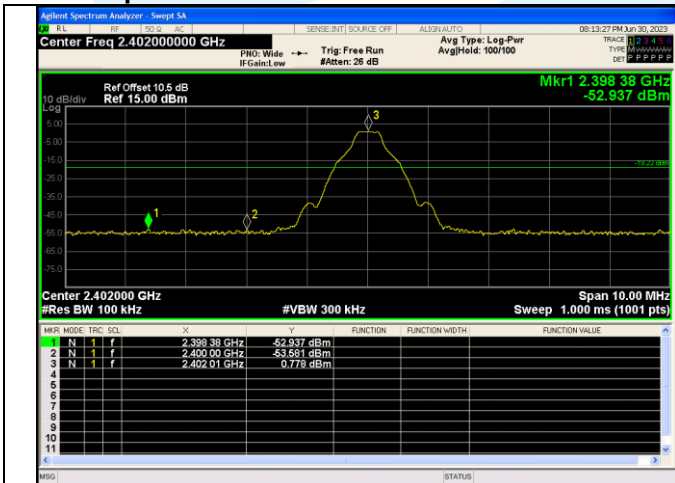
Non-Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	0	2400.00	-53.581	-19.22	-34.361	PASS
			2398.38	-52.937	-19.22	-33.717	PASS
			24917.6	-53.373	-19.22	-34.153	PASS
		78	24946.9	-53.168	-19.32	-33.848	PASS
			2483.50	-55.120	-19.59	-36	PASS
			24260.2	-53.119	-19.59	-33.529	PASS
$\pi/4$ DQPSK	2-DH5	0	2400.00	-52.135	-22.13	-30	PASS
			24359.5	-52.999	-22.13	-30.869	PASS
		39	24922.0	-52.204	-22.14	-30.064	PASS
			2483.50	-54.312	-22.38	-32	PASS
		78	24267.1	-52.355	-22.38	-29.975	PASS
			2400.00	-51.531	-22.02	-30	PASS
8DPSK	3-DH5	0	24695.4	-53.007	-22.02	-30.987	PASS
			24181.6	-52.641	-22.01	-30.631	PASS
		39	2483.50	-54.641	-22.21	-32	PASS
			24751.5	-52.885	-22.21	-30.675	PASS

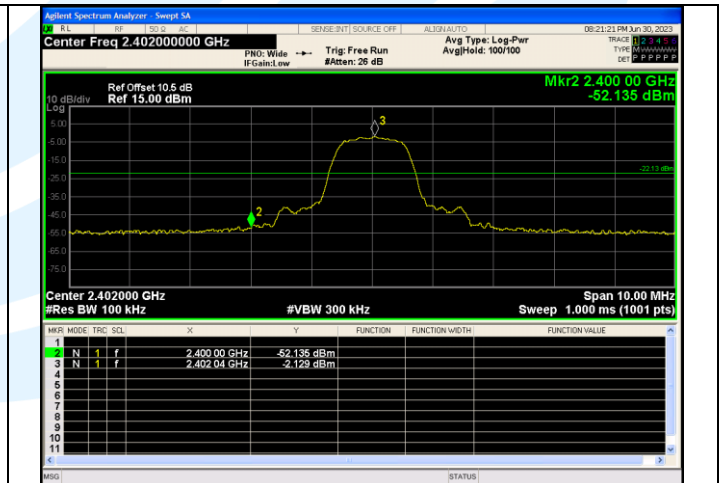
Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	Hopping	2400.00	-38.373	-18.87	-19.503	PASS
			2483.50	-48.677	-19.62	-29.057	PASS
$\pi/4$ DQPSK	2-DH5		2398.02	-39.565	-20.23	-19.335	PASS
			2400.00	-40.544	-20.23	-20.314	PASS
8DPSK	3-DH5		2483.50	-47.223	-20.63	-26.593	PASS
			2397.18	-39.092	-20.36	-18.732	PASS
			2400.00	-40.528	-20.36	-20.168	PASS
			2483.50	-42.386	-20.6	-21.786	PASS

Test Graphs



Out Of Band Emission  
GFSK\_DH5\_Channel 0



Out Of Band Emission  
 $\pi/4$ DQPSK\_2-DH5\_Channel 0