



Keyway Testing Technology (Guangdong) Co., Ltd
21 Floor,Building 6,Dongyi Intelligent Equipment New Energy Vehicle Park,N.30
of Tangxia District,Dongshen Road,Tangxia Town,Dongguan City,Guangdong,China

E.U.T:	Stage One
Model Number:	S1
Trade Name:	SKAA
Sample Number:	250106084
Date of Receipt:	Feb. 28, 2025
Date of Test:	Feb. 28, 2025 ~ Aug. 29, 2025
FCC ID:	2BRDB-S1
IC:	34372-S1

A.1 CONDUCTED OUTPUT POWER

Test Result

Modulation	Packet Type	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Max. Avg. Power (dBm)	Limit (dBm)	Result
GFSK	DH1	0	-8.38	0.15	None	≤30	PASS
		39	-8.14	0.15	None		PASS
		78	-8.11	0.15	None		PASS
π/4DQPSK	2-DH1	0	-8.02	0.16	None		PASS
		39	-7.70	0.17	None		PASS
		78	-7.65	0.17	None		PASS
8DPSK	3-DH1	0	-7.81	0.17	None		PASS
		39	-7.46	0.18	None		PASS
		78	-7.43	0.18	None		PASS

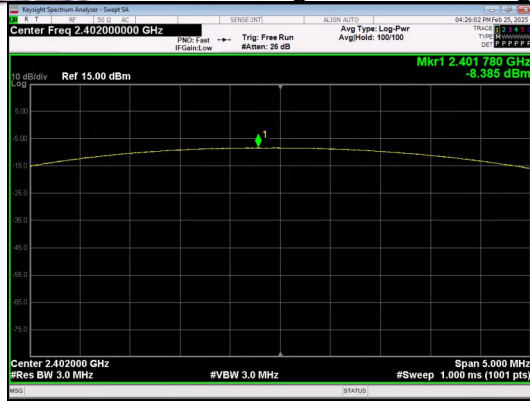
Modulation	Packet Type	Channel	Peak Output Power (dBm)	Peak Power Limit (dBm)	Antenna Gain (dBi)	ISED EIRP (dBm)	ISED EIRP Limit (dBm)	Max. Avg. Power (dBm)	Result
GFSK	DH1	0	-8.38	≤30	2.11	-6.27	≤36.02	None	PASS
		39	-8.14	≤30	2.11	-6.03	≤36.02	None	PASS
		78	-8.11	≤30	2.11	-6.00	≤36.02	None	PASS
π/4DQPSK	2-DH1	0	-8.02	≤30	2.11	-5.91	≤36.02	None	PASS
		39	-7.70	≤30	2.11	-5.59	≤36.02	None	PASS
		78	-7.65	≤30	2.11	-5.54	≤36.02	None	PASS
8DPSK	3-DH1	0	-7.81	≤30	2.11	-5.70	≤36.02	None	PASS
		39	-7.46	≤30	2.11	-5.35	≤36.02	None	PASS
		78	-7.43	≤30	2.11	-5.32	≤36.02	None	PASS

Note: ISED EIRP (dBm) =Peak Output Power (dBm) +Antenna Gain (dBi)

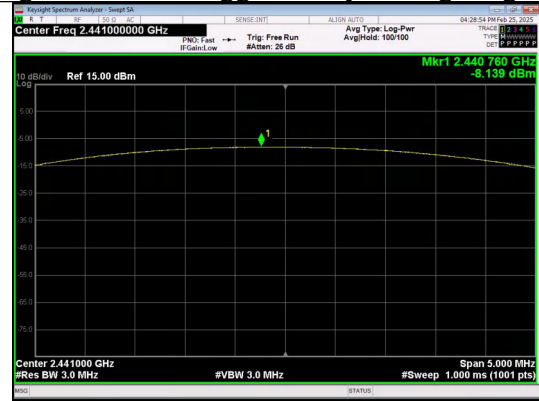
Test Graphs



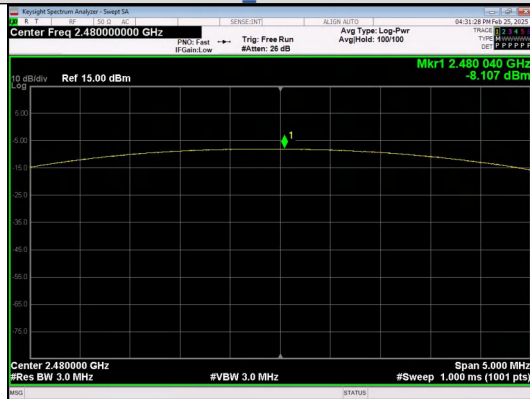
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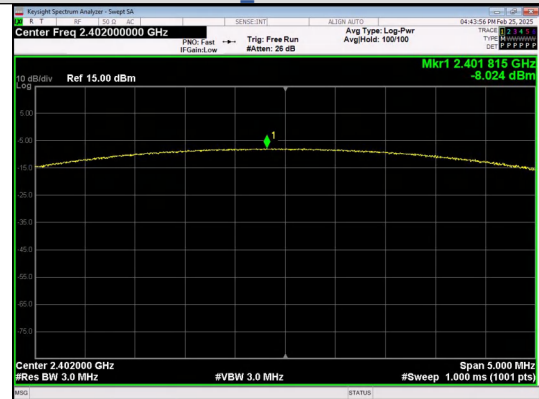
Peak Output Power
GFSK_Channel 0



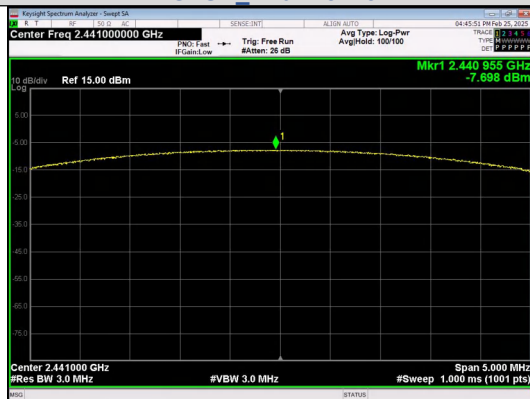
Peak Output Power
GFSK_Channel 39



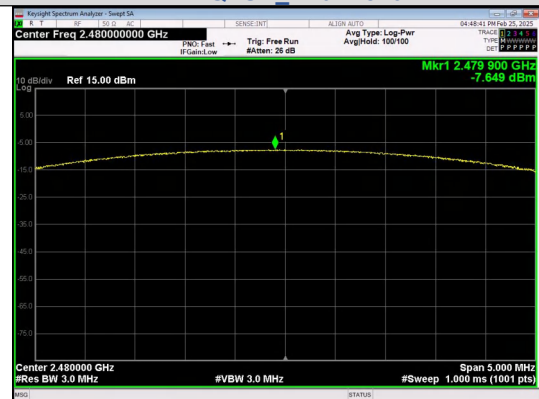
Peak Output Power
GFSK_Channel 78



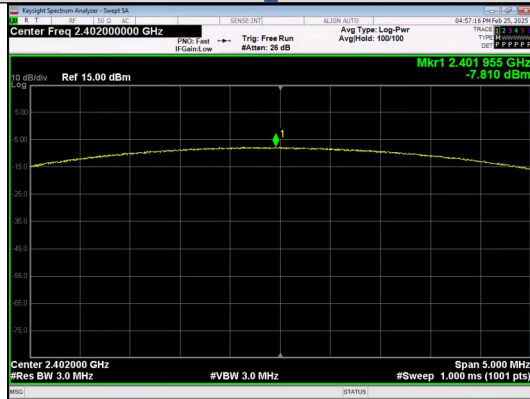
Peak Output Power
 $\pi/4$ DQPSK_Channel 0



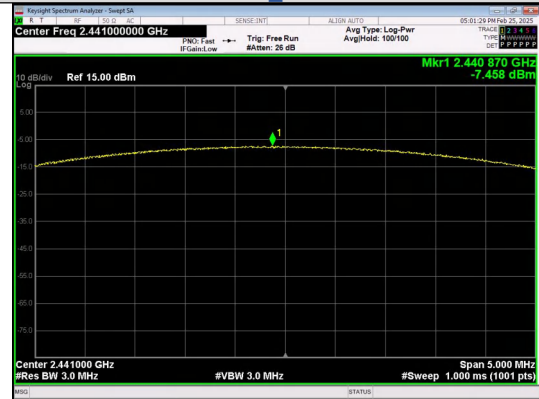
Peak Output Power
 $\pi/4$ DQPSK_Channel 39



Peak Output Power
 $\pi/4$ DQPSK_Channel 78



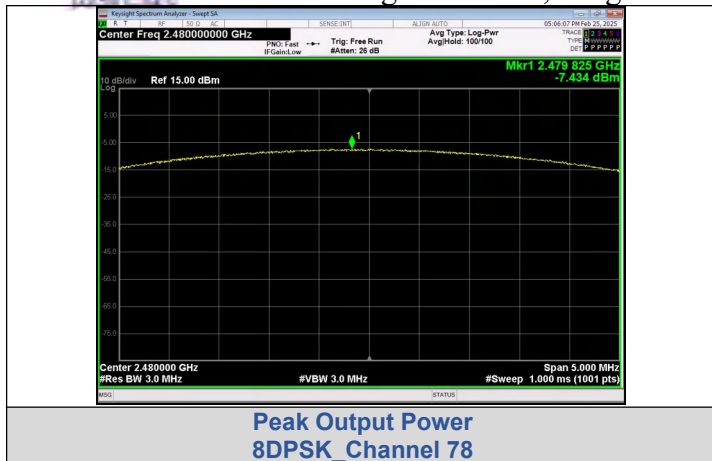
Peak Output Power
8DPSK_Channel 0



Peak Output Power
8DPSK_Channel 39



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A.2 99% BANDWIDTH

Test Result

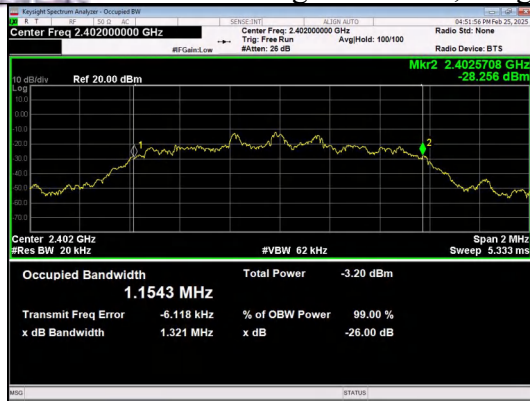
Modulation	Channel	Center Frequency (MHz)	99% BW (MHz)
GFSK	0	2402	0.90131
	39	2441	0.90715
	78	2480	0.88629
π /4DQPSK	0	2402	1.1626
	39	2441	1.1652
	78	2480	1.1559
8DPSK	0	2402	1.1543
	39	2441	1.1491
	78	2480	1.1411

Test Graphs





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8DPSK_3-DH1_Channel 0



8DPSK_3-DH1_Channel 39



8DPSK_3-DH1_Channel 78



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A.3 20DB BANDWIDTH

Test Result

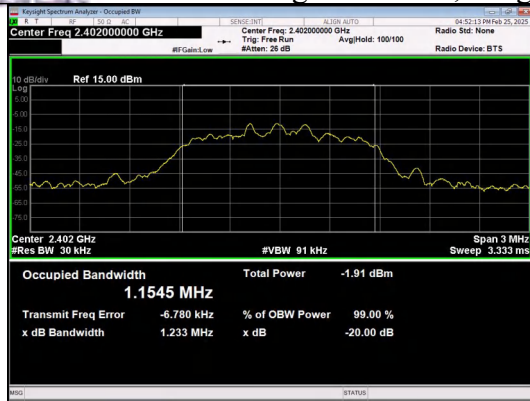
Modulation	Channel	Center Frequency (MHz)	20 dB Bandwidth (MHz)
GFSK	0	2402 MHz	1.002
	39	2441 MHz	0.9915
	78	2480 MHz	0.9927
π /4DQPSK	0	2402 MHz	1.253
	39	2441 MHz	1.252
	78	2480 MHz	1.252
8DPSK	0	2402 MHz	1.233
	39	2441 MHz	1.232
	78	2480 MHz	1.229

Test Graphs

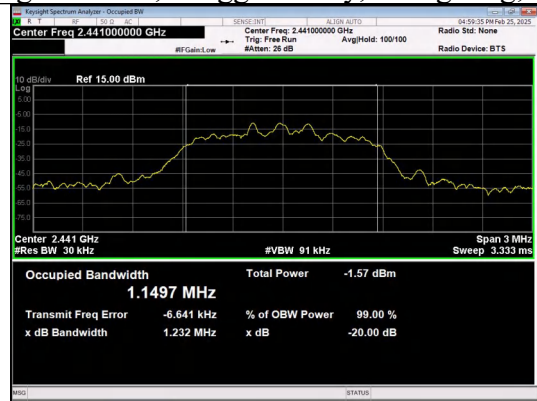




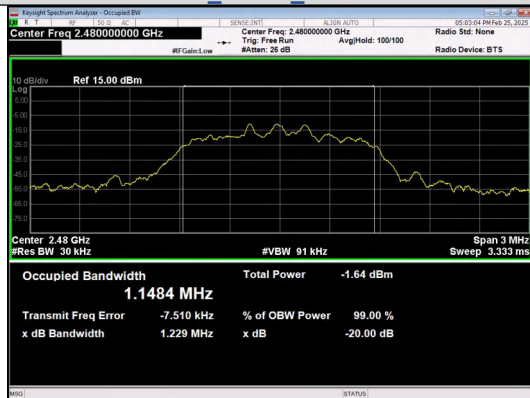
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8DPSK_3-DH1_Channel 0



8DPSK_3-DH1_Channel 39



8DPSK_3-DH1_Channel 78



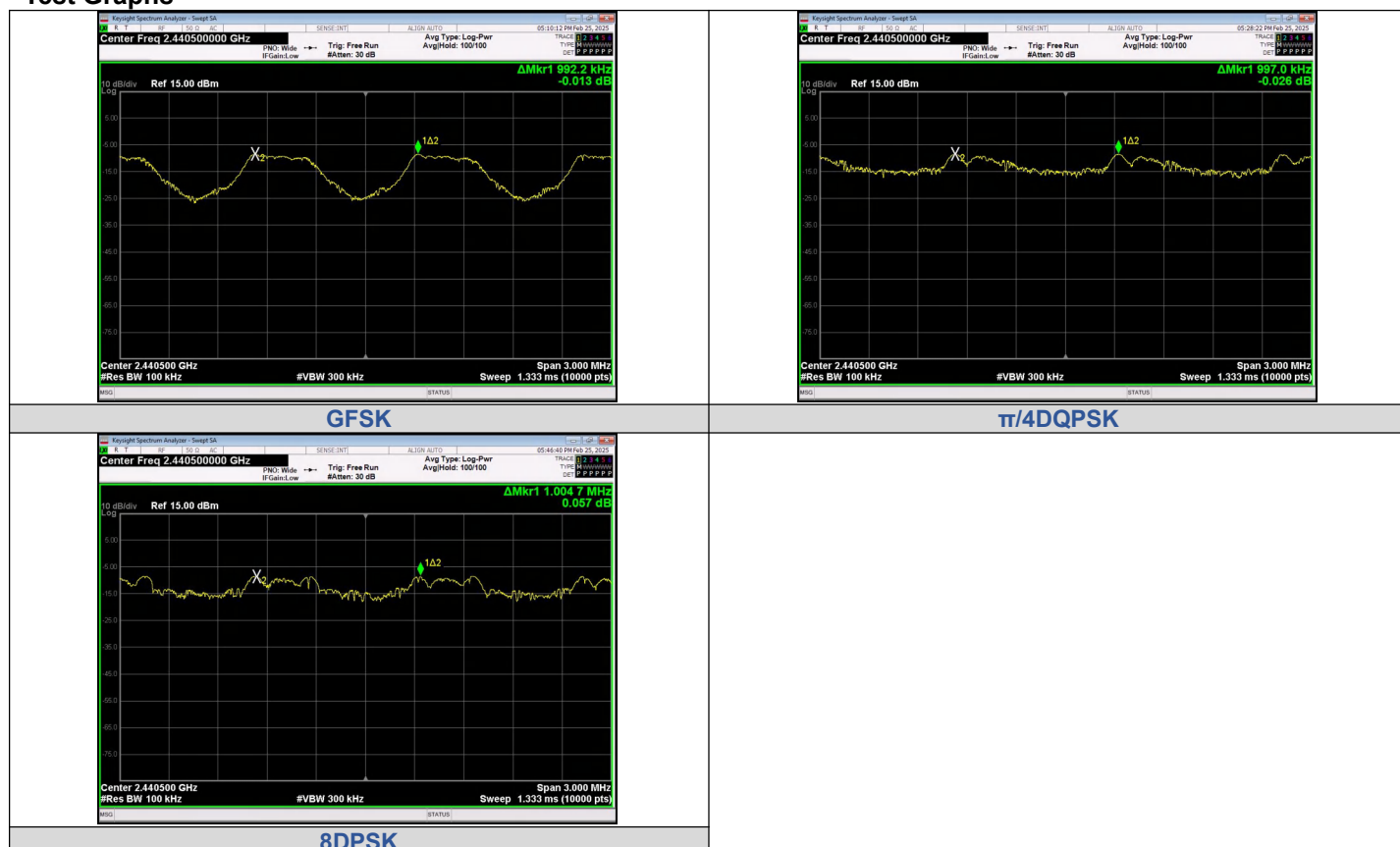
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A.4 CARRIER FREQUENCIES SEPARATION

Test Result

Modulation	Packet	Left Center frequency (MHz)	Right Center frequency (MHz)	Hopping Frequency Separation (MHz)	Limit (MHz)	Result
GFSK	DH1	2439.8278	2440.82	0.9922	0.668	PASS
$\pi/4$ DQPSK	2-DH1	2439.8266	2440.8236	0.9970	0.835	PASS
8DPSK	3-DH1	2439.8359	2440.8406	1.0047	0.822	PASS

Test Graphs





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A.5 CONDUCTED OUT OF BAND EMISSION

Test Result

Non-Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH1	0	2400.00	-61.150	-28.83	-32.320	PASS
			4804.89	-61.609	-28.83	-32.779	PASS
			7206.38	-63.276	-28.83	-34.446	PASS
			9608.49	-63.345	-28.83	-34.515	PASS
			21597.8	-48.627	-28.83	-19.797	PASS
		39	4881.67	-60.728	-28.52	-32.208	PASS
			7323.11	-62.550	-28.52	-34.029	PASS
			9763.31	-63.653	-28.52	-35.133	PASS
			21177.1	-48.789	-28.52	-20.269	PASS
			2483.50	-62.959	-28.51	-34.449	PASS
		78	4960.33	-61.128	-28.51	-32.618	PASS
			7439.22	-63.599	-28.51	-35.089	PASS
			9920.62	-60.639	-28.51	-32.129	PASS
			21590.3	-49.358	-28.51	-20.848	PASS
			21590.3	-49.358	-28.51	-20.848	PASS
$\pi/4$ DQPSK	2-DH1	0	2369.41	-61.460	-28.83	-32.630	PASS
			2400.00	-61.955	-28.83	-33.125	PASS
			4804.90	-59.786	-28.83	-30.956	PASS
			7205.80	-62.052	-28.83	-33.222	PASS
			9608.50	-63.145	-28.83	-34.315	PASS
		39	17934.7	-48.540	-28.83	-19.710	PASS
			4881.67	-59.581	-28.54	-31.041	PASS
			7322.49	-62.889	-28.54	-34.349	PASS
			9763.93	-63.481	-28.54	-34.941	PASS
			21579.7	-47.724	-28.54	-19.184	PASS
		78	2483.50	-64.012	-28.51	-35.502	PASS
			4960.33	-61.476	-28.51	-32.966	PASS
			7440.47	-61.109	-28.51	-32.599	PASS
			9919.37	-61.437	-28.51	-32.927	PASS
			24956.9	-48.885	-28.51	-20.375	PASS
8DPSK	3-DH1	0	2400.00	-62.368	-28.81	-33.558	PASS
			4803.02	-59.730	-28.81	-30.920	PASS
			7205.13	-62.984	-28.81	-34.174	PASS
			9608.49	-62.615	-28.81	-33.805	PASS
			21117.2	-48.898	-28.81	-20.088	PASS
		39	4882.30	-60.593	-28.51	-32.084	PASS
			7322.49	-62.805	-28.51	-34.295	PASS
			9764.55	-62.092	-28.51	-33.582	PASS
			21197.1	-48.952	-28.51	-20.442	PASS
		78	2483.50	-62.613	-28.47	-34.143	PASS
			4959.08	-62.831	-28.47	-34.361	PASS
			7440.47	-62.772	-28.47	-34.302	PASS
			9920.62	-61.733	-28.47	-33.263	PASS
			21258.9	-48.760	-28.47	-20.290	PASS

Note: input compensation coefficient (dB)= Cable Loss (dB)

Hopping

Hopping							
Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH1	Hopping	2390.61	-59.703	-28.8	-30.903	PASS
			2400.00	-60.835	-28.8	-32.035	PASS
			2483.50	-62.225	-28.44	-33.785	PASS
$\pi/4$ DQPSK	2-DH1		2398.39	-61.450	-28.79	-32.660	PASS
			2400.00	-61.827	-28.79	-33.037	PASS
			2483.50	-62.635	-28.46	-34.175	PASS
8DPSK	3-DH1		2394.39	-60.663	-28.75	-31.913	PASS
			2400.00	-63.104	-28.75	-34.354	PASS
			2483.50	-61.561	-28.4	-33.161	PASS



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Note: input compensation coefficient (dB)= Cable Loss (dB)

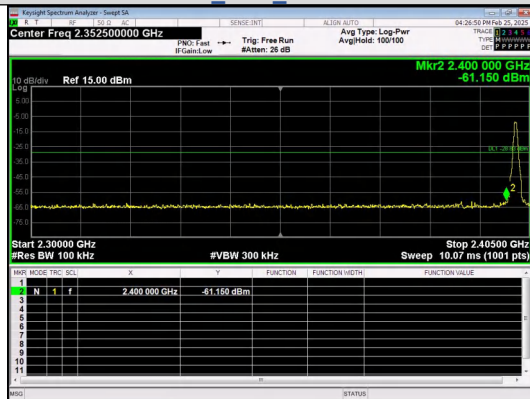
Test Graphs



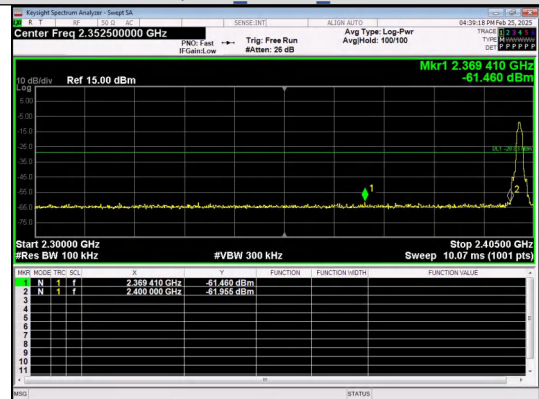
In-Band Reference Level
GFSK DH1 Channel 0



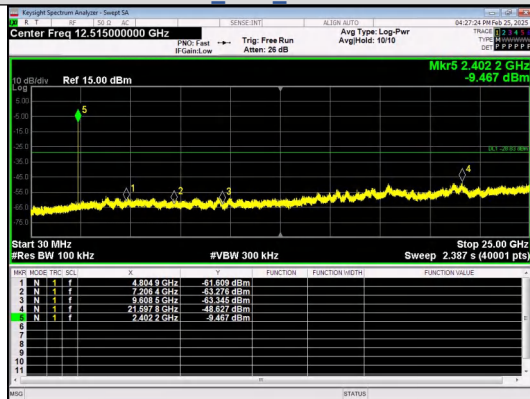
In-Band Reference Level
 $\pi/4$ DQPSK 2-DH1 Channel 0



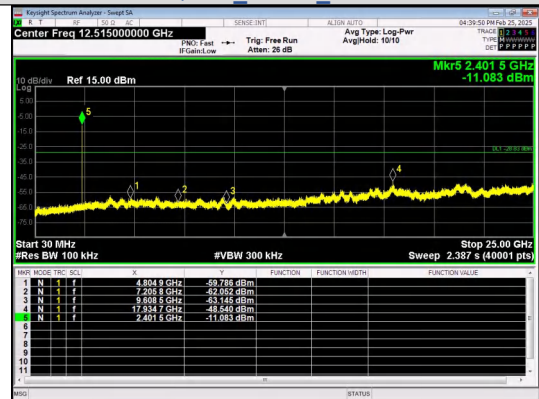
Out Of Band Emission
GFSK DH1 Channel 0



Out Of Band Emission
 $\pi/4$ DQPSK 2-DH1 Channel 0



30.0 MHz - 25000.0 MHz
GFSK DH1 Channel 0



30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK 2-DH1 Channel 0



In-Band Reference Level

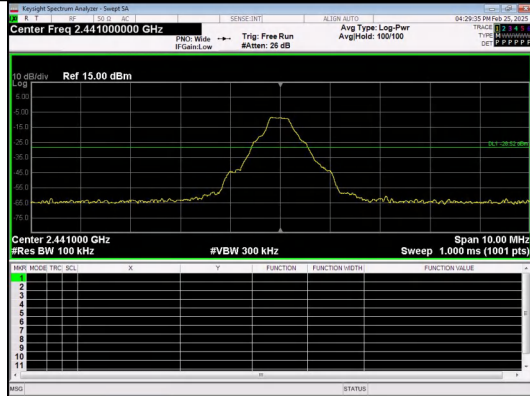


In-Band Reference Level

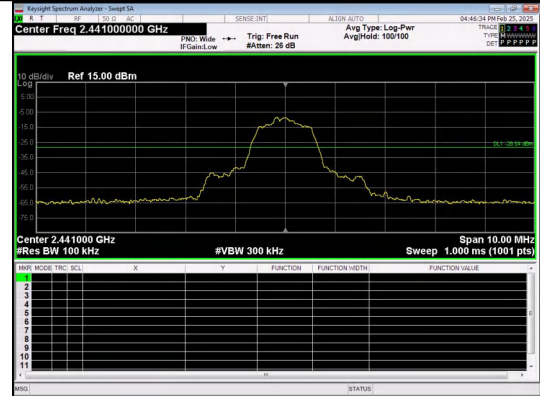


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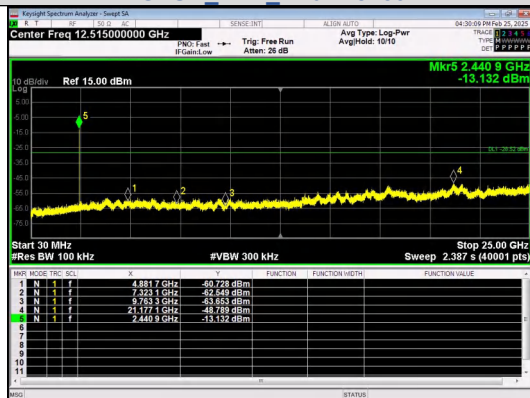
GFSK_DH1_Channel 39



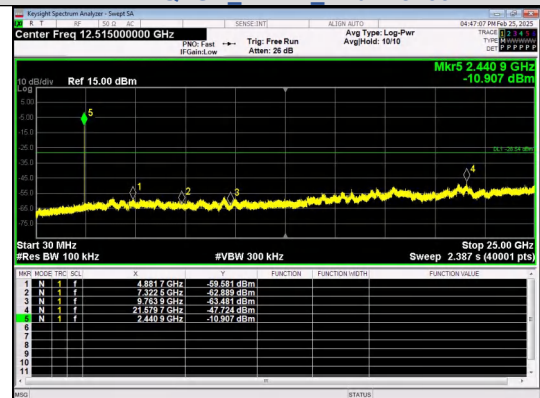
$\pi/4$ DQPSK_2-DH1_Channel 39



Out Of Band Emission
GFSK_DH1_Channel 39



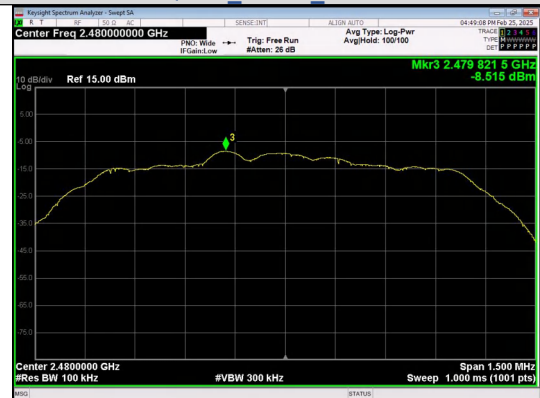
Out Of Band Emission
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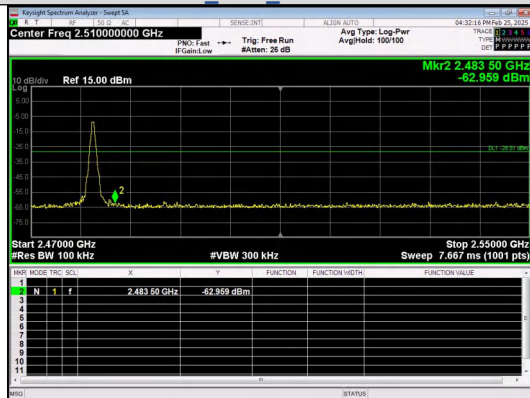
30.0 MHz - 25000.0 MHz
GFSK_DH1_Channel 39



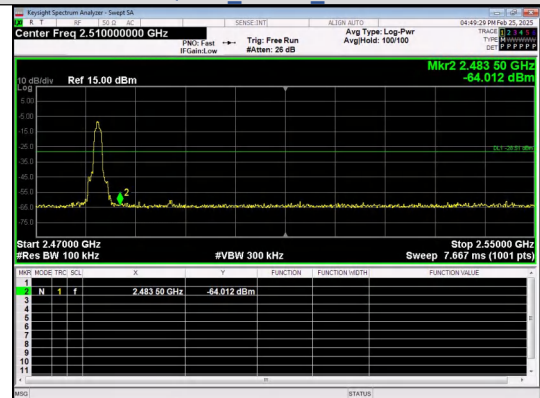
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH1_Channel 39



In-Band Reference Level
GFSK_DH1_Channel 78



In-Band Reference Level
 $\pi/4$ DQPSK_2-DH1_Channel 78



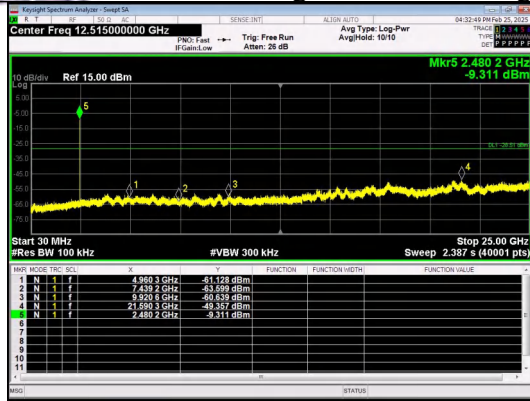
Out Of Band Emission
GFSK_DH1_Channel 78

Out Of Band Emission
 $\pi/4$ DQPSK_2-DH1_Channel 78

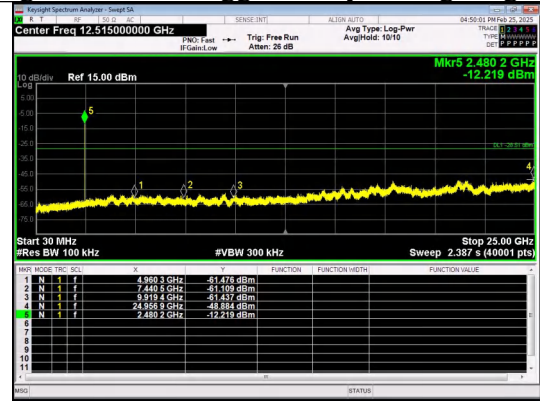




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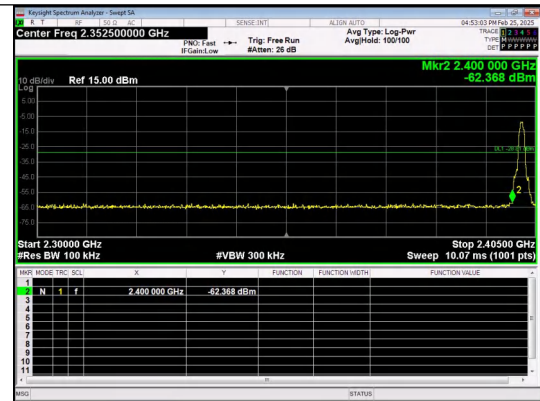
30.0 MHz - 25000.0 MHz
GFSK_DH1_Channel 78



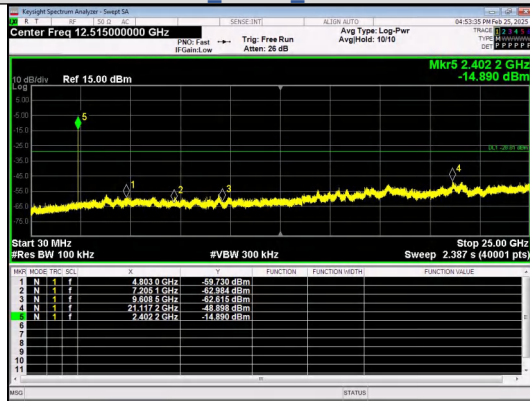
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH1_Channel 78



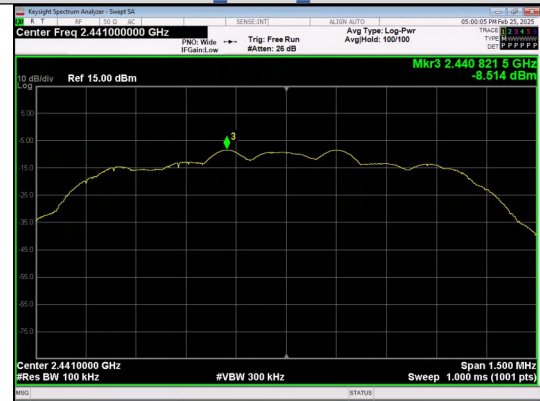
In-Band Reference Level
8DPSK_3-DH1_Channel 0



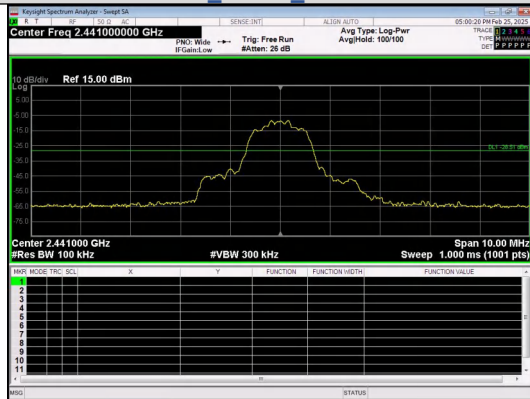
Out Of Band Emission
8DPSK_3-DH1_Channel 0



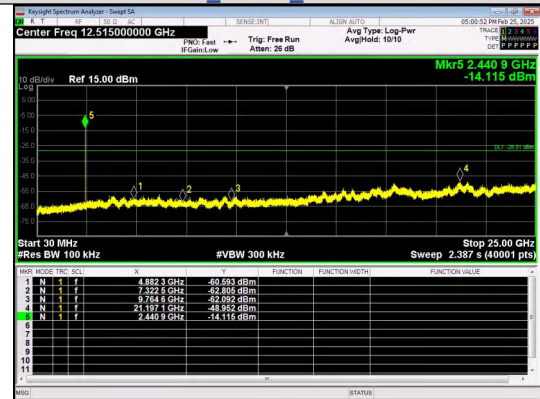
30.0 MHz - 25000.0 MHz
8DPSK_3-DH1_Channel 0



In-Band Reference Level
8DPSK_3-DH1_Channel 39



Out Of Band Emission
8DPSK_3-DH1_Channel 39



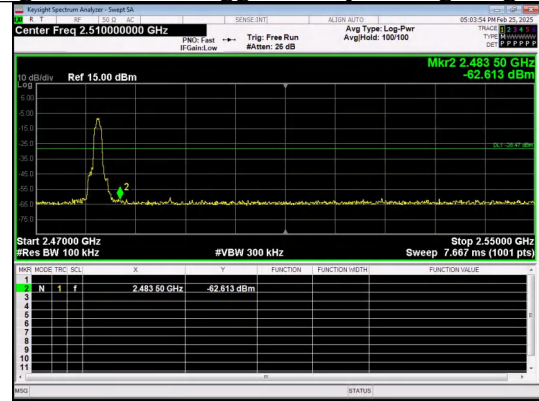
30.0 MHz - 25000.0 MHz
8DPSK_3-DH1_Channel 39



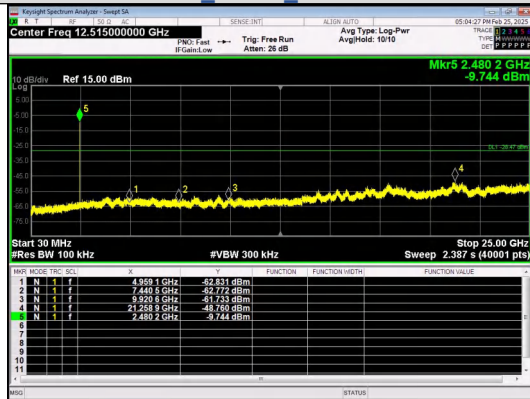
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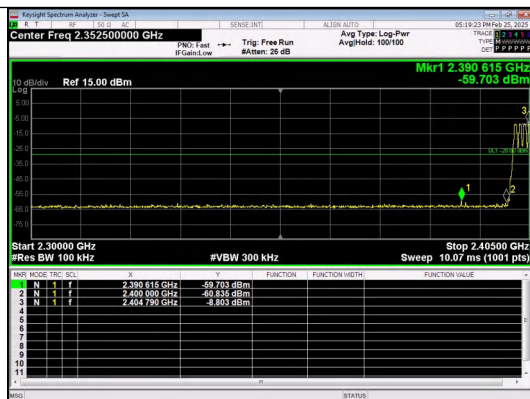
In-Band Reference Level
8DPSK 3-DH1 Channel 78



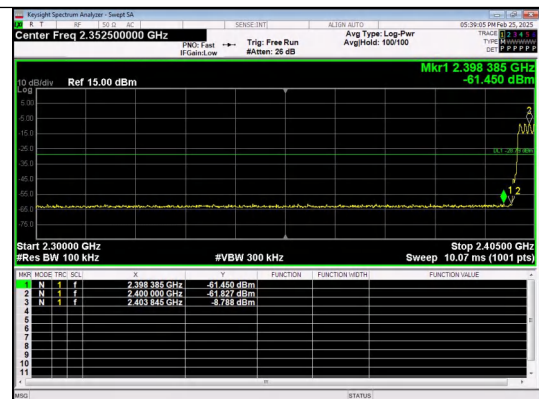
Out Of Band Emission
8DPSK 3-DH1 Channel 78



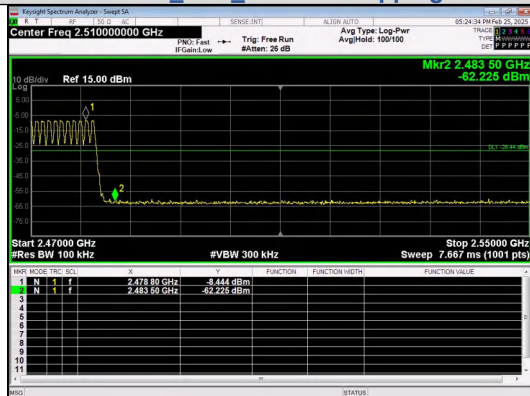
30.0 MHz - 25000.0 MHz
8DPSK 3-DH1 Channel 78



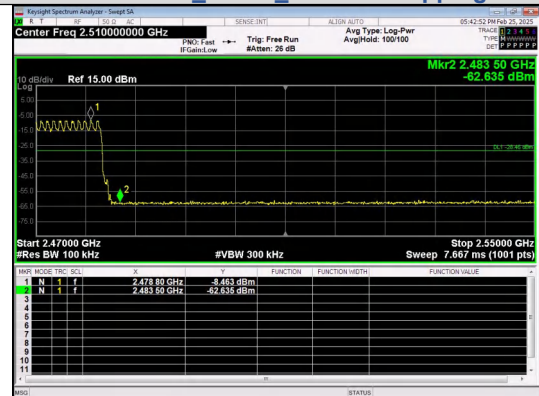
Out Of Band Emission(Left)
GFSK DH1 Channel Hopping



Out Of Band Emission(Left)
 $\pi/4$ DQPSK 2-DH1 Channel Hopping



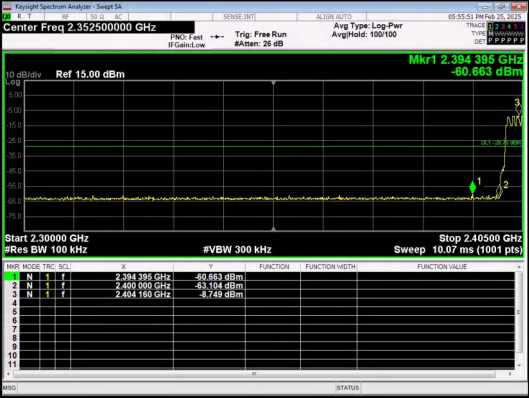
Out Of Band Emission(Right)
GFSK DH1 Channel Hopping



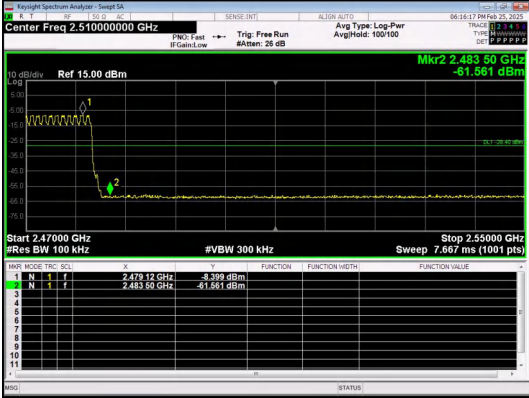
Out Of Band Emission(Right)
 $\pi/4$ DQPSK 2-DH1 Channel Hopping



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Out Of Band Emission(Left)
8DPSK_3-DH1_Channel Hopping



Out Of Band Emission(Right)
8DPSK_3-DH1_Channel Hopping



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A.6 DUTY CYCLE

Test Result

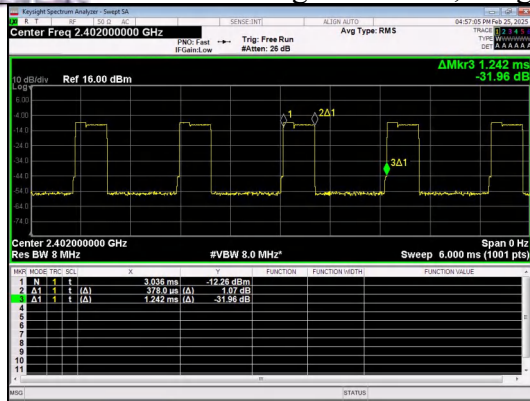
Modulation	Packets	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
GFSK	DH1	0	0.372	1.249	29.78	0.2978	5.2608	2.6882
		39	0.372	1.250	29.76	0.2976	5.2637	2.6882
		78	0.373	1.250	29.81	0.2981	5.2564	2.6810
π /4DQPSK	2-DH1	0	0.378	1.242	30.43	0.3043	5.167	2.6455
		39	0.378	1.248	30.29	0.3029	5.187	2.6455
		78	0.378	1.248	30.29	0.3029	5.187	2.6455
8DPSK	3-DH1	0	0.378	1.242	30.43	0.3043	5.167	2.6455
		39	0.378	1.248	30.29	0.3029	5.187	2.6455
		78	0.378	1.242	30.43	0.3043	5.167	2.6455

Test Graphs

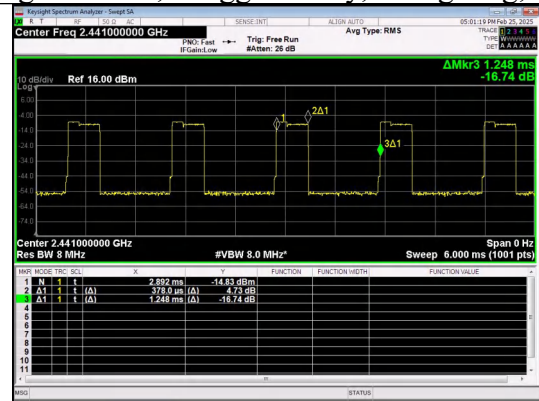




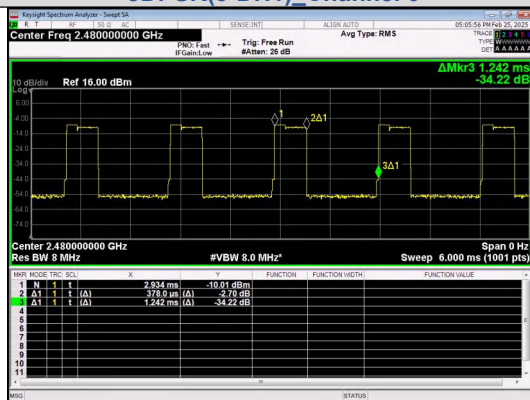
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8DPSK(3-DH1)_Channel 0



8DPSK(3-DH1)_Channel 39



8DPSK(3-DH1)_Channel 78



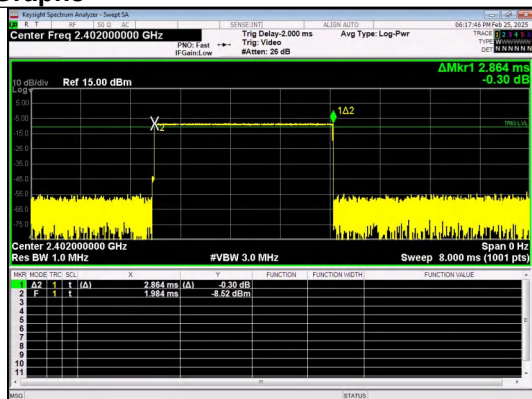
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A.7 DWELL TIME

Test Result

Modulation	Packet	Channel	Pulse Width (ms)	Number of Pulses in 31.6 seconds	Dwell Time (ms)	Limit (ms)	Result
GFSK	DH5	Hopping	2.864	107	306.45	< 400	PASS
	DH5		2.864	107	306.45		PASS
	DH5		2.880	107	308.16		PASS
$\pi/4$ DQPSK	2-DH5		2.880	106	305.28		PASS
	2-DH5		2.880	106	305.28		PASS
	2-DH5		2.880	107	308.16		PASS
8DPSK	3-DH5		2.880	106	305.28		PASS
	3-DH5		2.880	107	308.16		PASS
	3-DH5		2.880	107	308.16		PASS

Test Graphs



Pulse Width
GFSK_DH5



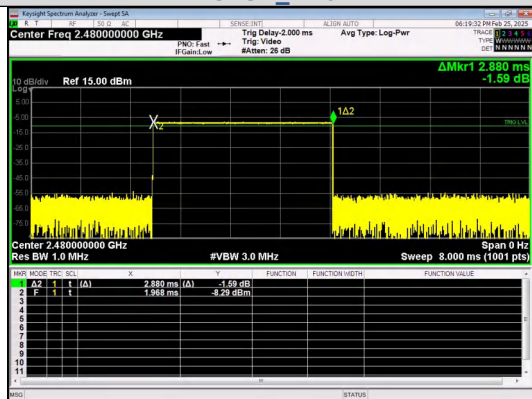
Number of Pulses in 31.6 seconds
GFSK_DH5



Pulse Width
GFSK_DH5



Number of Pulses in 31.6 seconds
GFSK_DH5



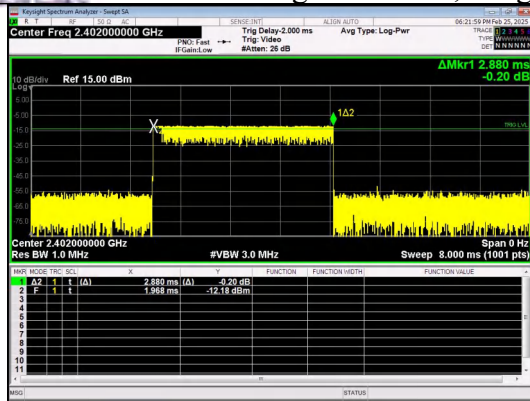
Pulse Width
GFSK_DH5



Number of Pulses in 31.6 seconds
GFSK_DH5



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Pulse Width
 $\pi/4$ DQPSK_2-DH5



Number of Pulses in 31.6 seconds
 $\pi/4$ DQPSK_2-DH5



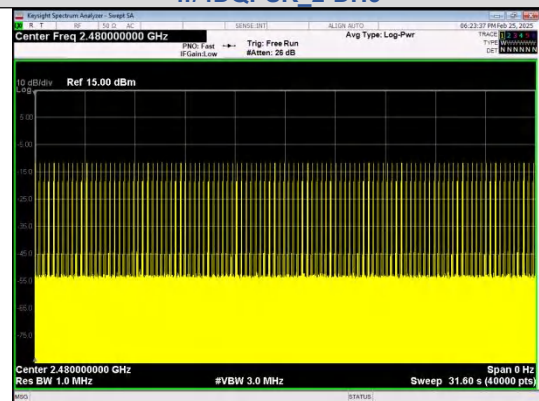
Pulse Width
 $\pi/4$ DQPSK_2-DH5



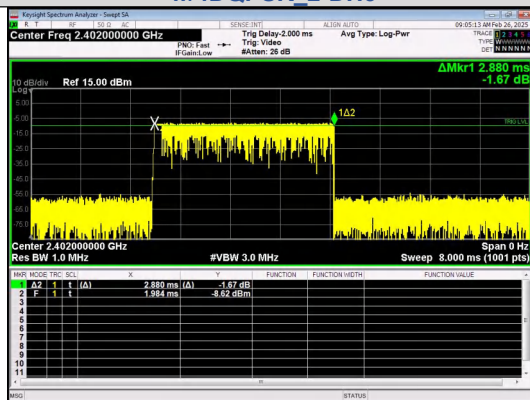
Number of Pulses in 31.6 seconds
 $\pi/4$ DQPSK_2-DH5



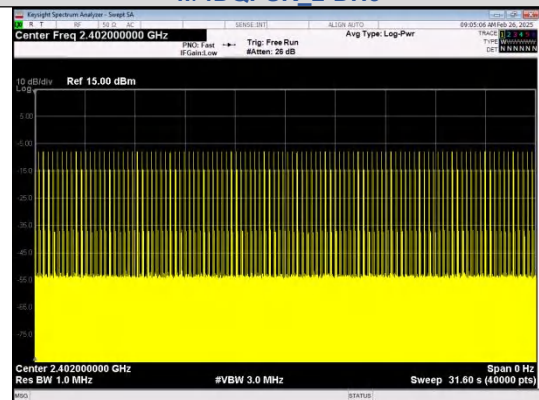
Pulse Width
 $\pi/4$ DQPSK_2-DH5



Number of Pulses in 31.6 seconds
 $\pi/4$ DQPSK_2-DH5



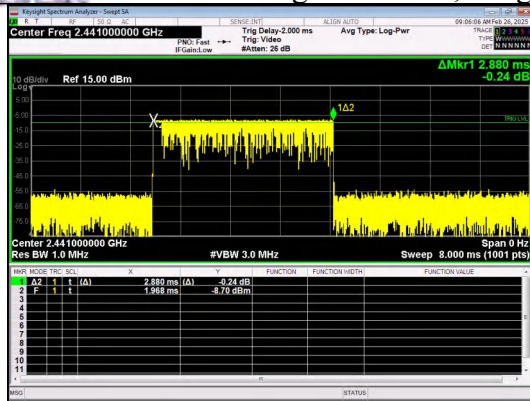
Pulse Width
8DPSK_3-DH5



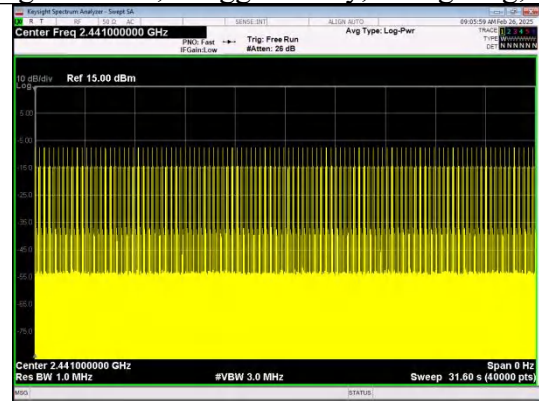
Number of Pulses in 31.6 seconds
8DPSK_3-DH5



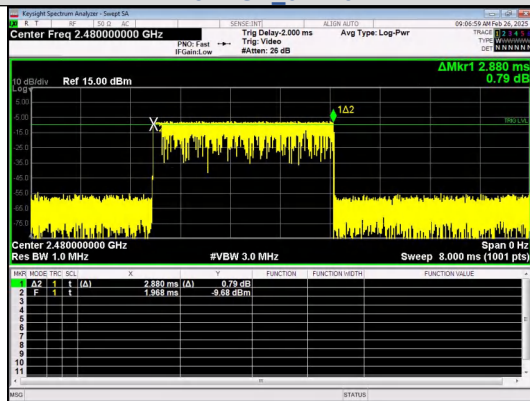
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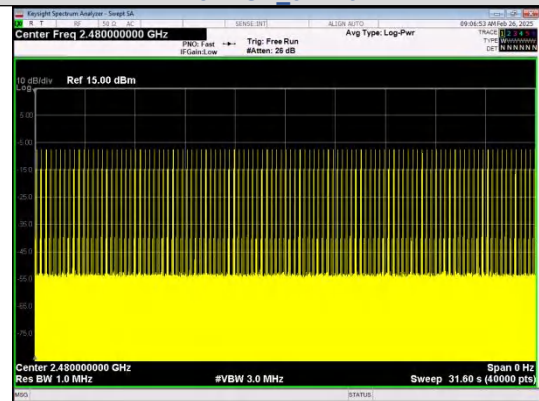
Pulse Width
8DPSK_3-DH5



Number of Pulses in 31.6 seconds
8DPSK_3-DH5



Pulse Width
8DPSK_3-DH5



Number of Pulses in 31.6 seconds
8DPSK_3-DH5



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A.8 NUMBER OF HOPPING CHANNEL

Test Result

Modulation	Packet	Number of Hopping Channel	Limit	Result
GFSK	DH1	79	15	PASS
$\pi/4$ DQPSK	2-DH1	79	15	PASS
8DPSK	3-DH1	79	15	PASS

Test Graphs

