



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:	BATTERY-POWERED SUBWOOFER
Model Number:	THUMP SUB GO
Trade Name:	
Date of Receipt:	May 21, 2025
Date of Test:	May 21~Jul. 08, 2025
FCC ID:	2AD4XSUBGO
IC:	12714A-SUBGO



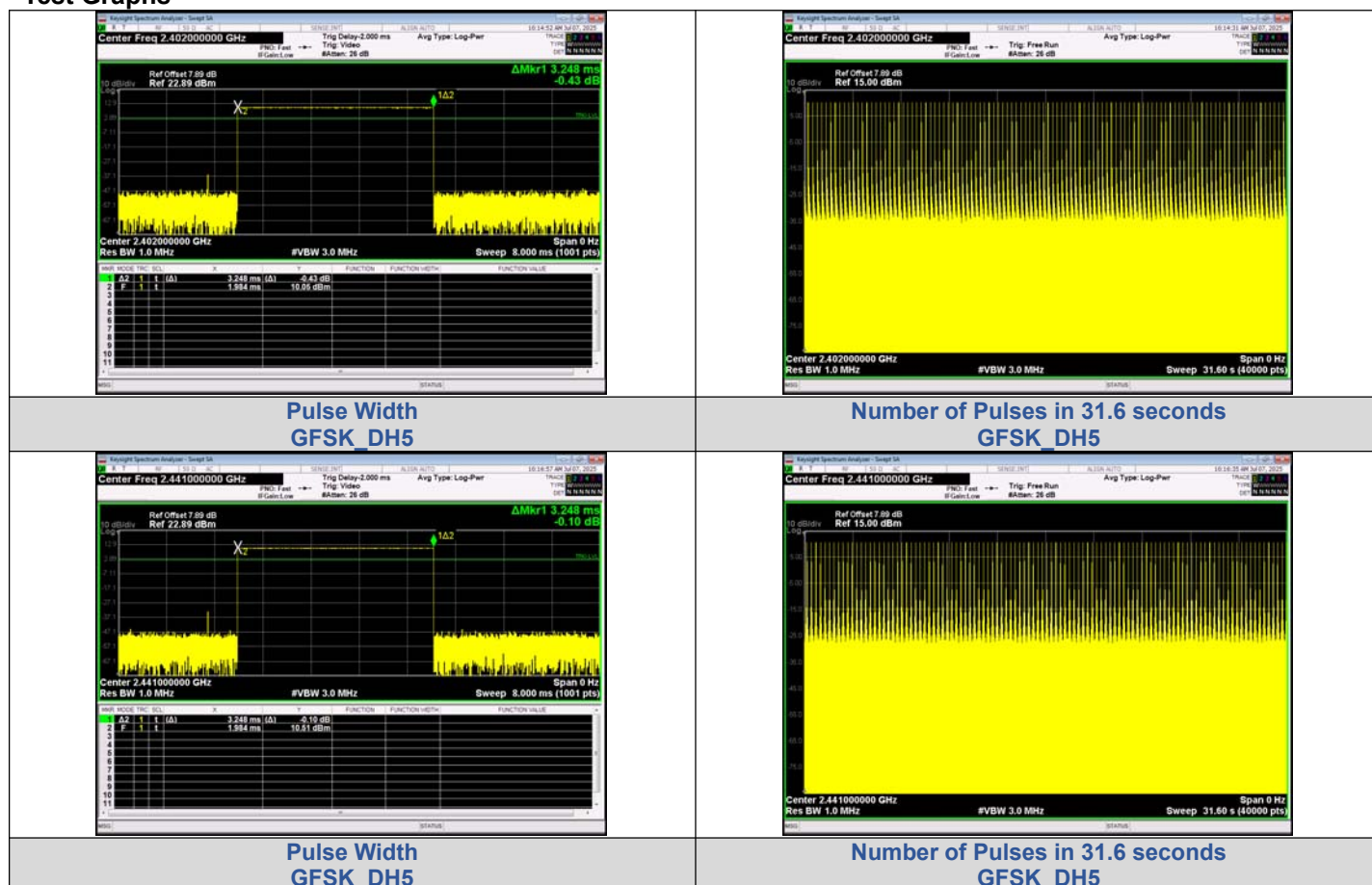
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of Tangxia District,Dongshen Road,Tangxia Town,Dongguan City,Guangdong,China

A.1 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	CH0 (2402MHz)	3.248	106	344.29	< 400	PASS
	DH5	CH39 (2441MHz)	3.248	107	347.54		PASS
	DH5	CH78 (2480MHz)	3.248	107	347.54		PASS
$\pi/4$ DQPSK	2-DH5	CH0 (2402MHz)	3.264	107	349.25		PASS
	2-DH5	CH39 (2441MHz)	3.248	106	344.29		PASS
	2-DH5	CH78 (2480MHz)	3.248	106	344.29		PASS
8DPSK	3-DH5	CH0 (2402MHz)	3.240	107	346.68		PASS
	3-DH5	CH39 (2441MHz)	3.248	107	347.54		PASS
	3-DH5	CH78 (2480MHz)	3.264	106	345.98		PASS

Test Graphs

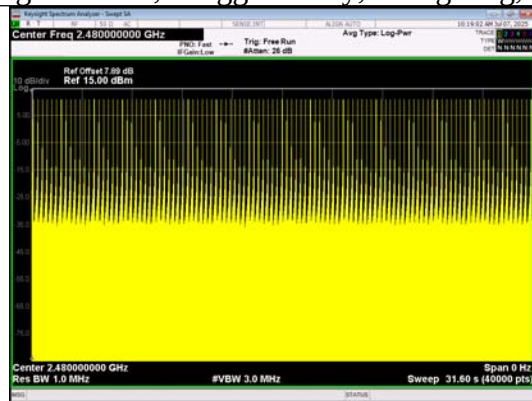




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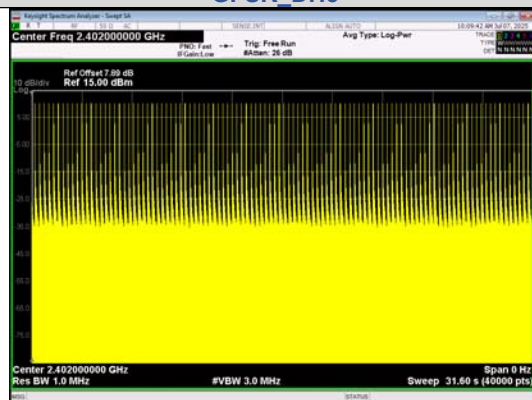
Pulse Width
GFSK DH5



Number of Pulses in 31.6 seconds
GFSK DH5



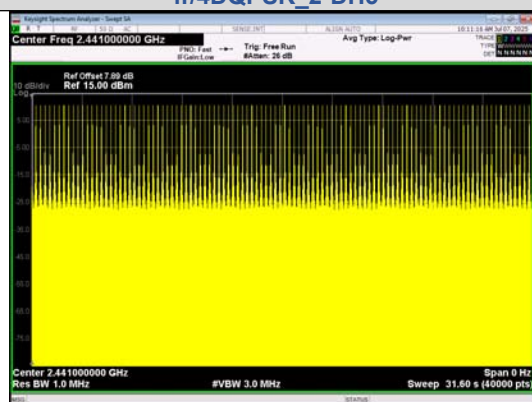
Pulse Width
 $\pi/4$ DQPSK 2-DH5



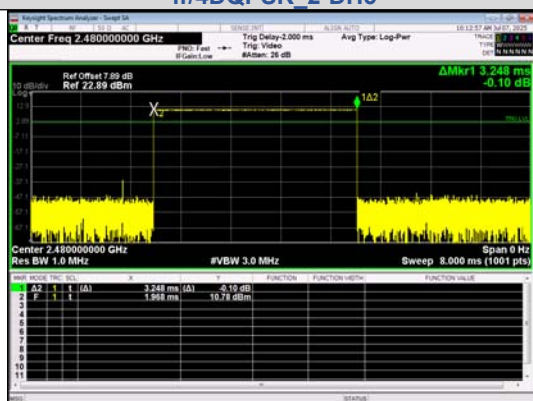
Number of Pulses in 31.6 seconds
 $\pi/4$ DQPSK 2-DH5



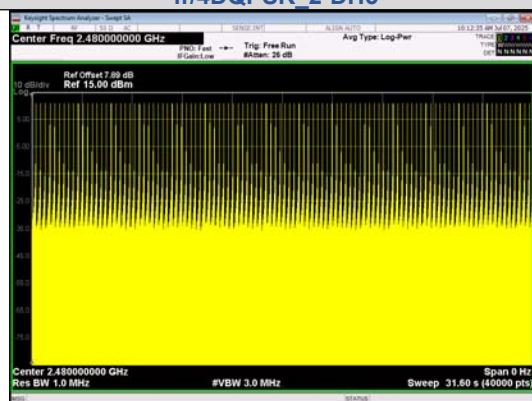
Pulse Width
 $\pi/4$ DQPSK 2-DH5



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



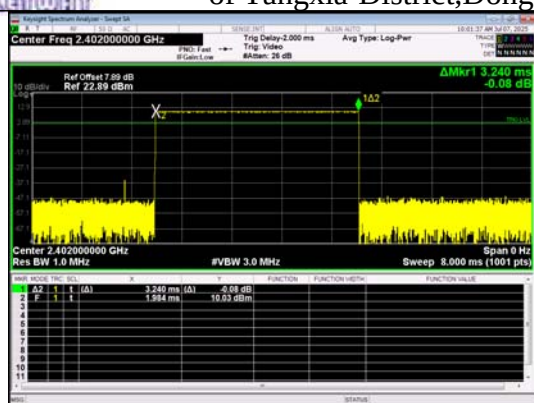
Pulse Width
 $\pi/4$ DQPSK 2-DH5



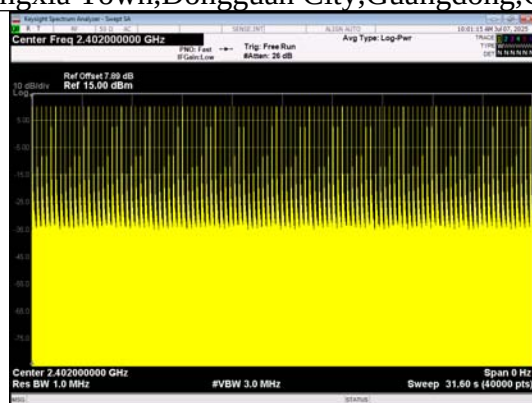
Number of Pulses in 31.6 seconds
 $\pi/4$ DQPSK 2-DH5



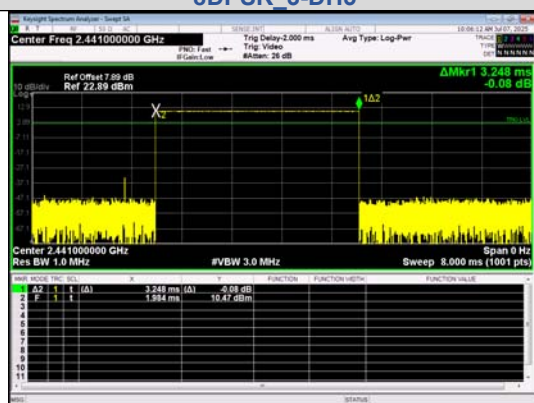
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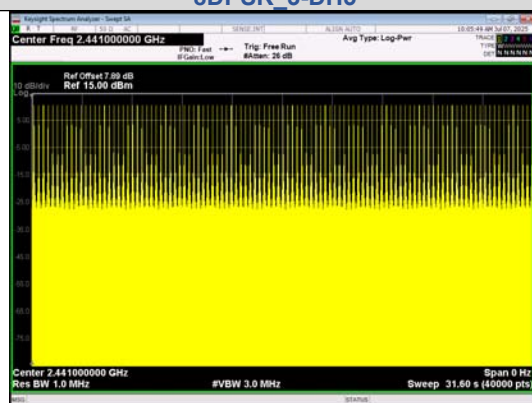
Pulse Width
8DPSK_3-DH5



Number of Pulses in 31.6 seconds
8DPSK_3-DH5



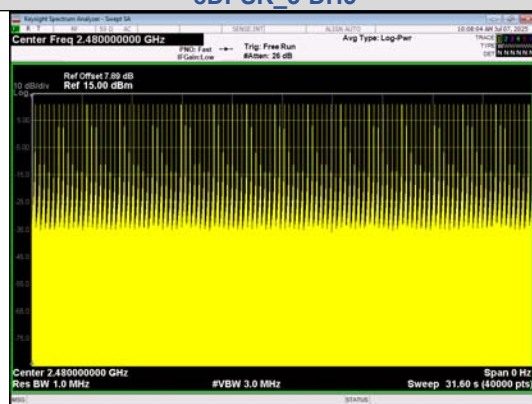
Pulse Width
8DPSK_3-DH5



Number of Pulses in 31.6 seconds
8DPSK_3-DH5



Pulse Width
8DPSK_3-DH5



Number of Pulses in 31.6 seconds
8DPSK_3-DH5



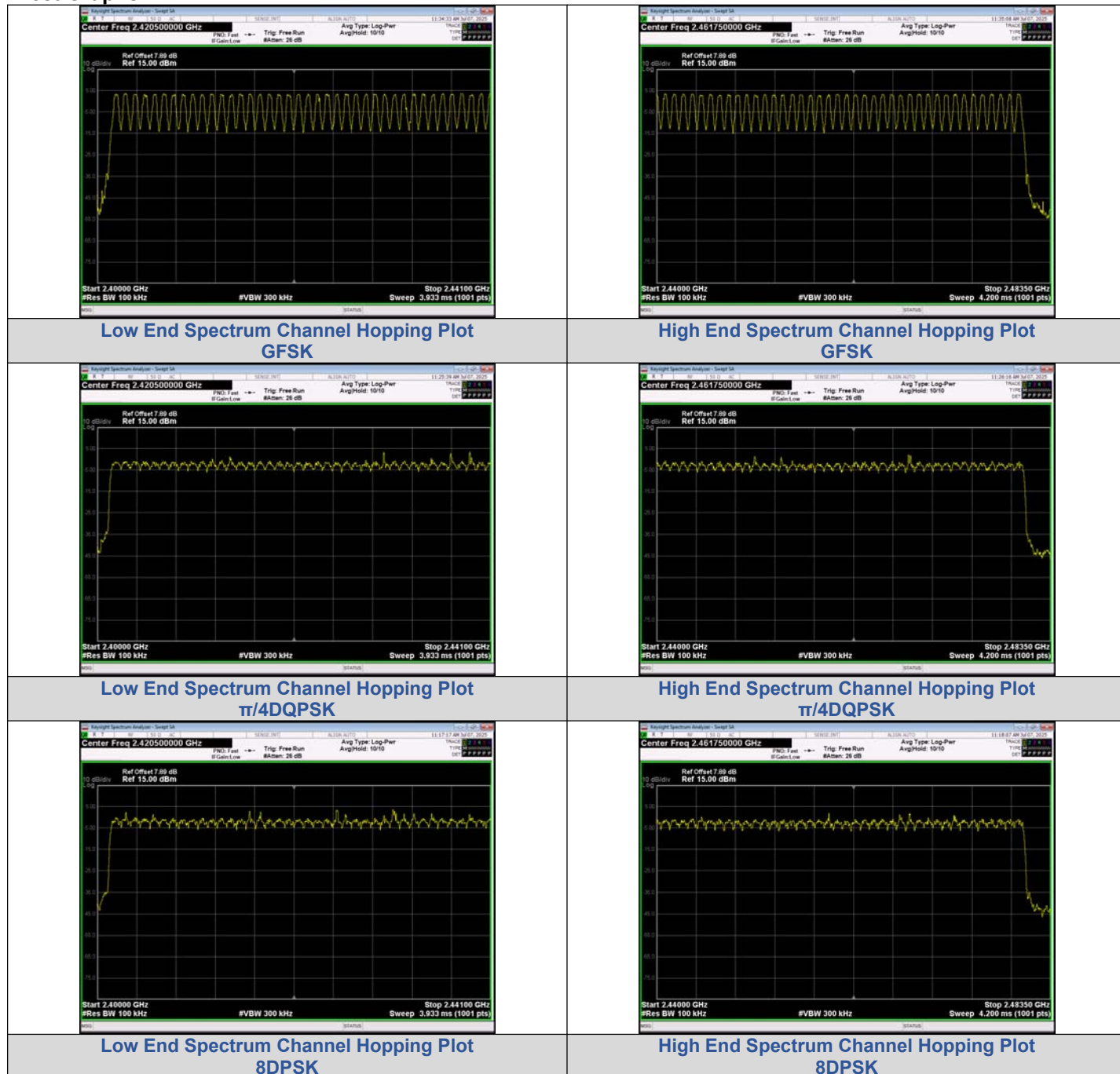
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A.2 NUMBER OF HOPPING CHANNEL

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





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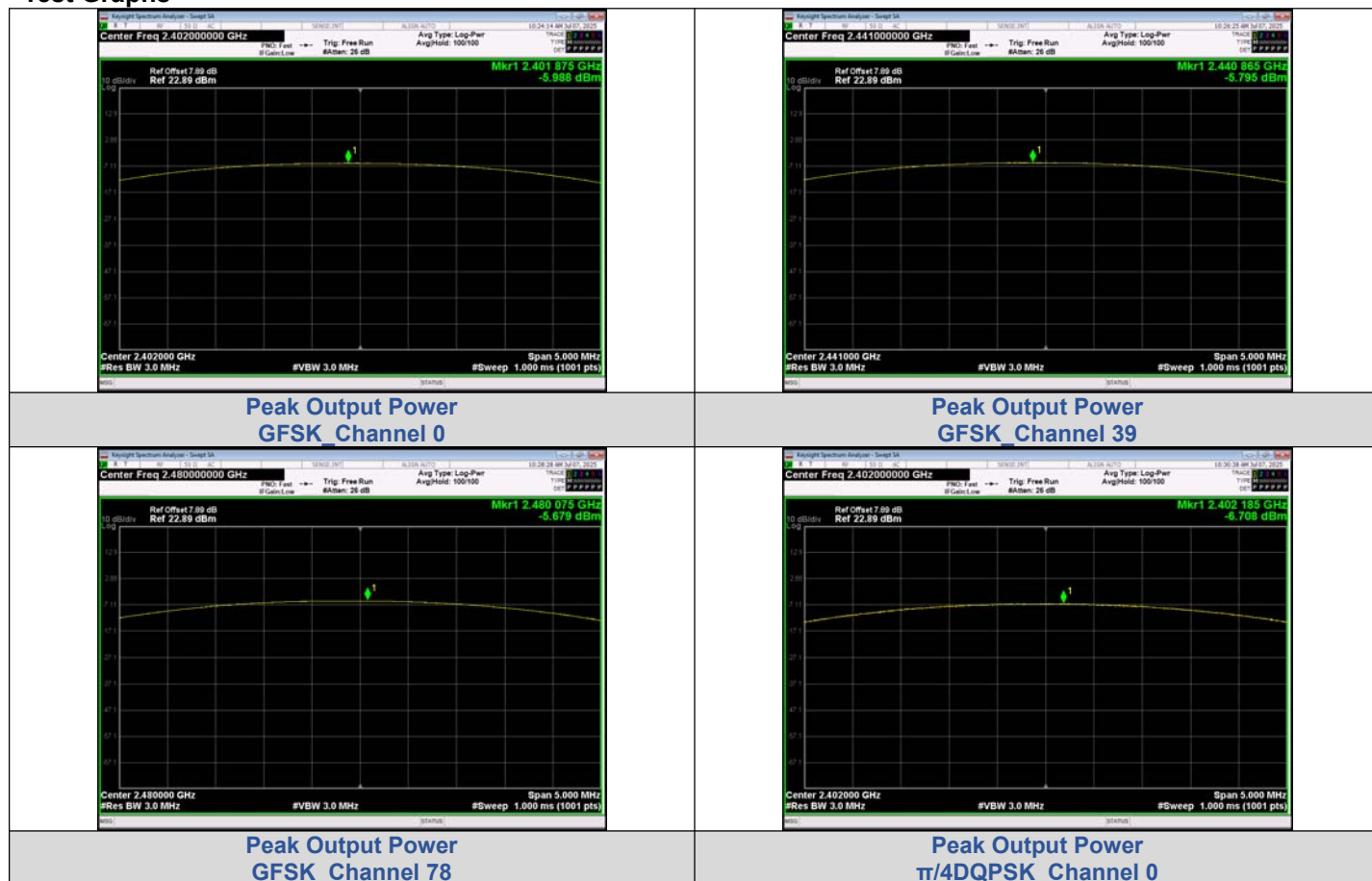
A.3 CONDUCTED PEAK OUTPUT POWER

Test Result

Modulation	Packet Type	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Max. Avg. Power (dBm)	Limit (dBm)	Result
GFSK	DH1	0	-5.99	0.25	None	≤30	PASS
		39	-5.79	0.26	None		PASS
		78	-5.68	0.27	None		PASS
$\pi/4$ DQPSK	2-DH1	0	-6.71	0.21	None	≤30	PASS
		39	-6.51	0.22	None		PASS
		78	-6.33	0.23	None		PASS
8DPSK	3-DH1	0	-6.17	0.24	None		PASS
		39	-6.03	0.25	None		PASS
		78	-5.86	0.26	None		PASS

Modulation	Packet Type	Channel	Peak Output Power (dBm)	Peak Power Limit (dBm)	ISED EIRP (dBm)	ISED EIRP Limit (dBm)	Max. Avg. Power (dBm)	Result
GFSK	DH1	0	-5.99	≤30	-2.448	≤36.02	None	PASS
		39	-5.79	≤30	-2.255	≤36.02	None	PASS
		78	-5.68	≤30	-2.139	≤36.02	None	PASS
$\pi/4$ DQPSK	2-DH1	0	-6.71	≤30	-3.168	≤36.02	None	PASS
		39	-6.51	≤30	-2.975	≤36.02	None	PASS
		78	-6.33	≤30	-2.790	≤36.02	None	PASS
8DPSK	3-DH1	0	-6.17	≤30	-2.634	≤36.02	None	PASS
		39	-6.03	≤30	-2.493	≤36.02	None	PASS
		78	-5.86	≤30	-2.320	≤36.02	None	PASS

Test Graphs





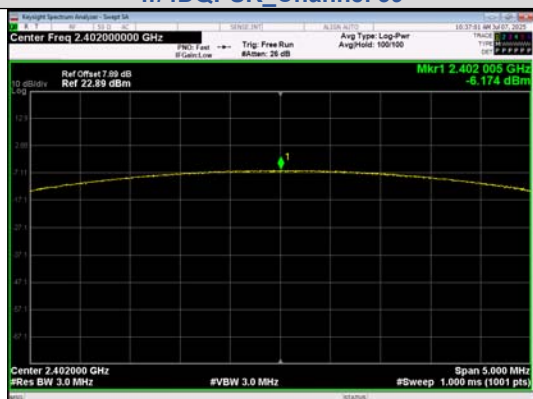
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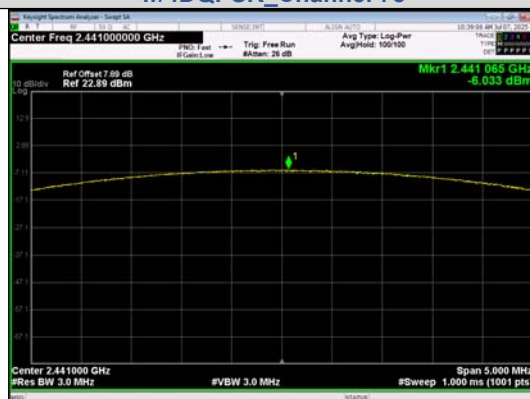
Peak Output Power
 $\pi/4$ DQPSK_Channel 39



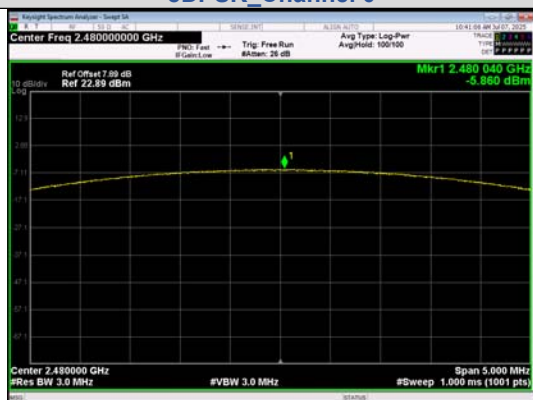
Peak Output Power
 $\pi/4$ DQPSK_Channel 78



Peak Output Power
8DPSK_Channel 0



Peak Output Power
8DPSK_Channel 39



Peak Output Power
8DPSK_Channel 78



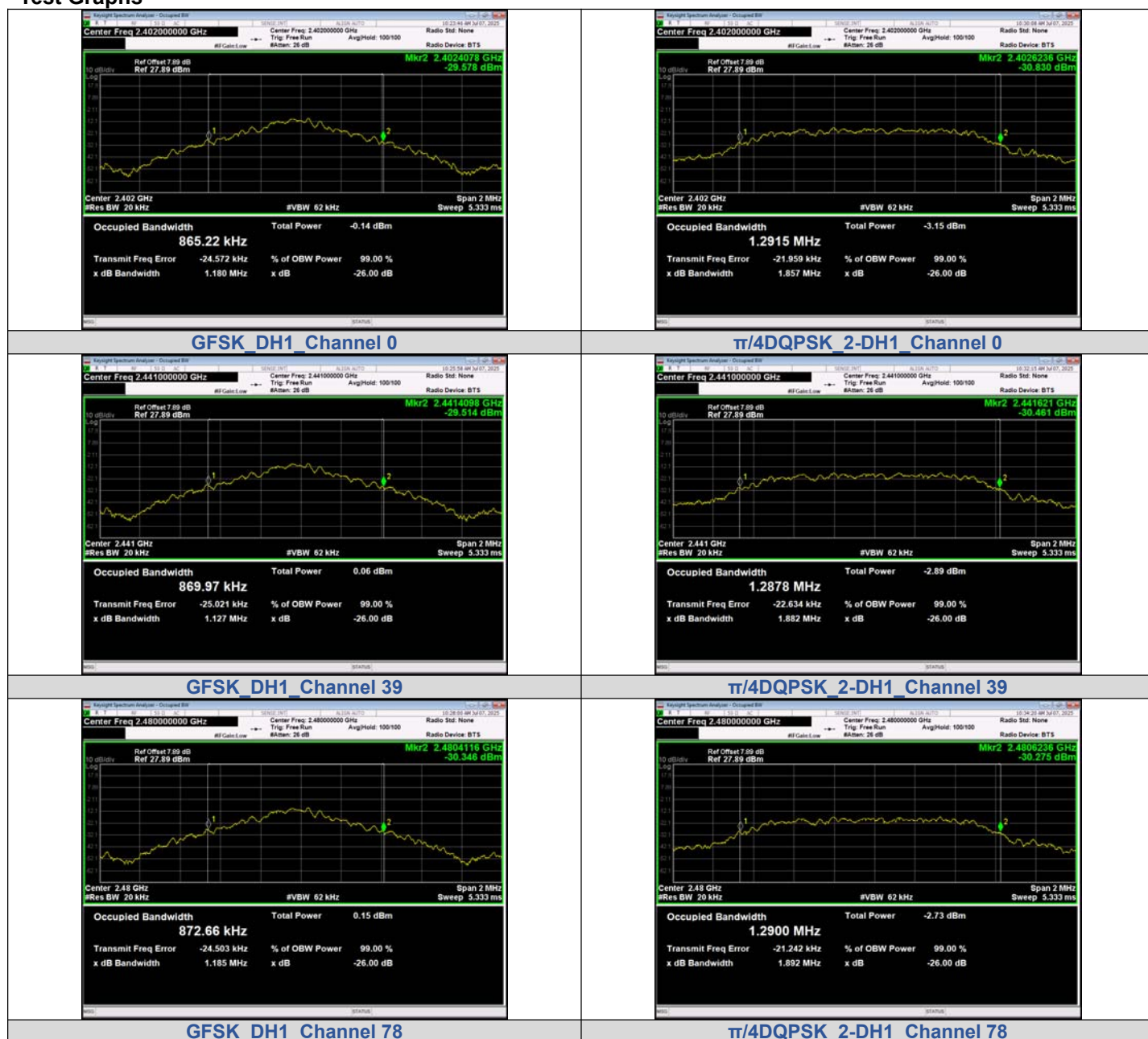
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A.4 99% BANDWIDTH

Test Result

Modulation	Channel	Center Frequency (MHz)	99% BW (MHz)
GFSK	0	2402	0.86522
	39	2441	0.86997
	78	2480	0.87266
π /4DQPSK	0	2402	1.2915
	39	2441	1.2878
	78	2480	1.2900
8DPSK	0	2402	1.2617
	39	2441	1.2609
	78	2480	1.2601

Test Graphs





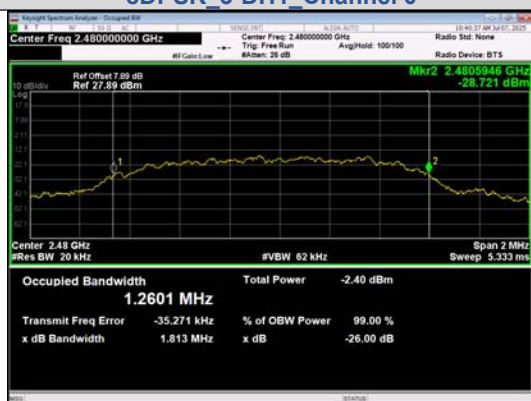
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8DPSK_3-DH1_Channel 0



8DPSK_3-DH1_Channel 39



8DPSK_3-DH1_Channel 78



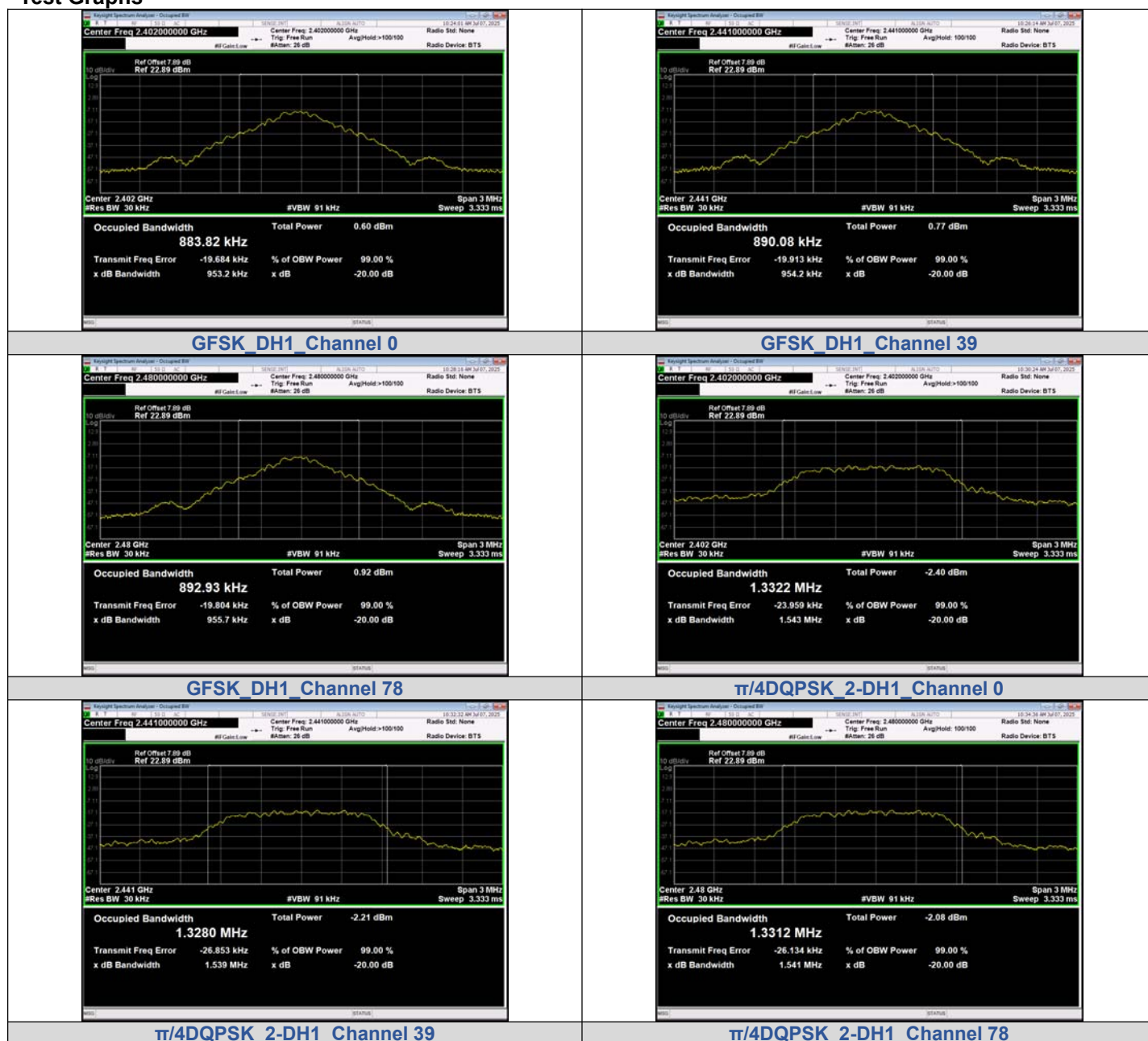
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A.5 20DB BANDWIDTH

Test Result

Modulation	Channel	Center Frequency (MHz)	20 dB Bandwidth (MHz)
GFSK	0	2402 MHz	0.9532
	39	2441 MHz	0.9542
	78	2480 MHz	0.9557
π /4DQPSK	0	2402 MHz	1.543
	39	2441 MHz	1.539
	78	2480 MHz	1.541
8DPSK	0	2402 MHz	1.394
	39	2441 MHz	1.390
	78	2480 MHz	1.388

Test Graphs





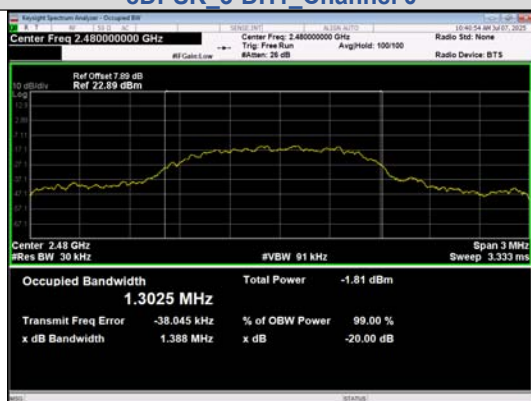
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8DPSK_3-DH1_Channel 0



8DPSK_3-DH1_Channel 39



8DPSK_3-DH1_Channel 78



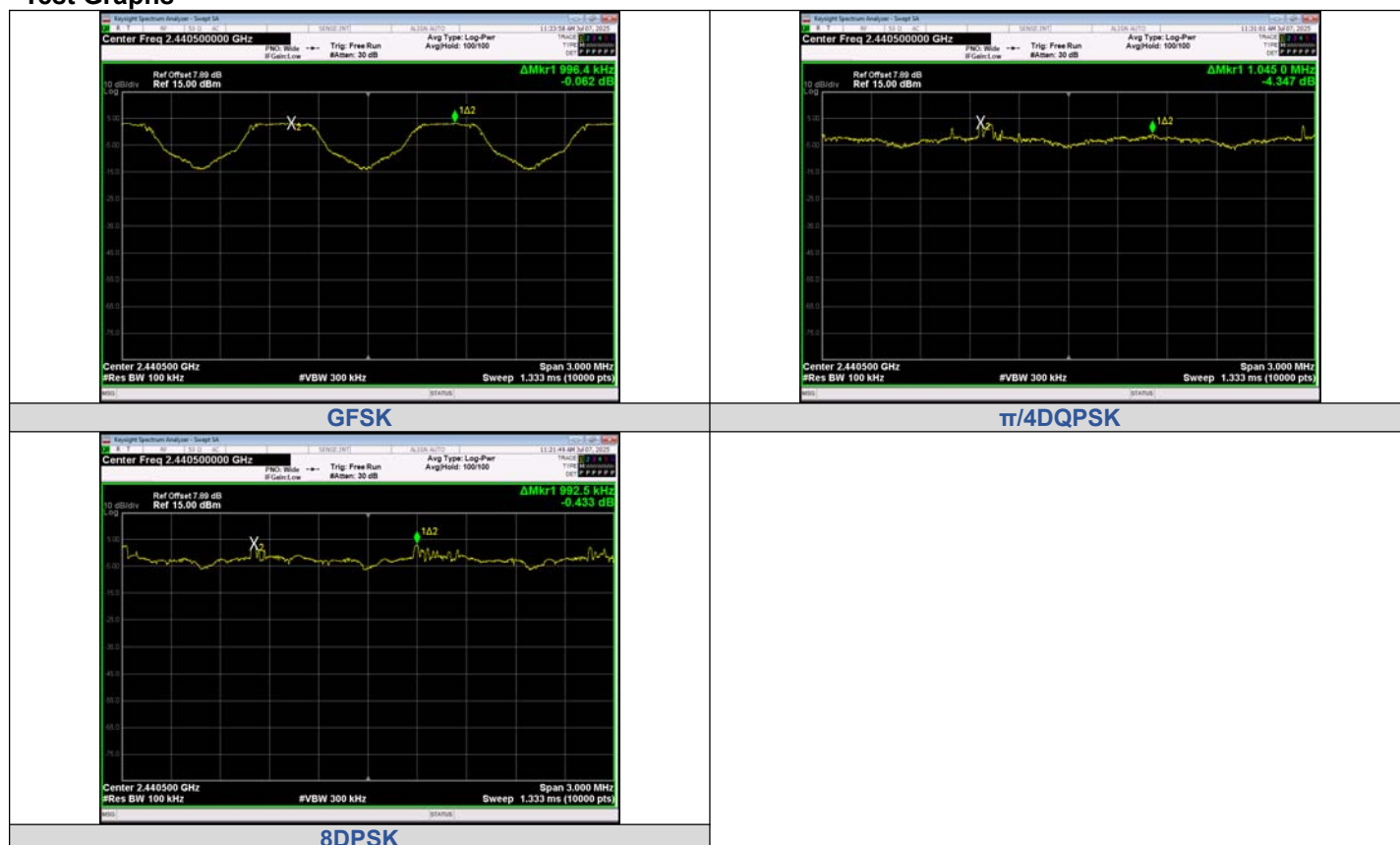
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A.6 CARRIER FREQUENCIES SEPARATION

Test Result

Modulation	Packet	Left Center frequency (MHz)	Right Center frequency (MHz)	Hopping Frequency Separation (MHz)	Limit (MHz)	Result
GFSK	DH1	2440.0321	2441.0285	0.9964	0.954	PASS
$\pi/4$ DQPSK	2-DH1	2439.9649	2441.0099	1.0450	1.029	PASS
8DPSK	3-DH1	2439.8053	2440.7978	0.9925	0.929	PASS

Test Graphs





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A.7 CONDUCTED OUT OF BAND EMISSION

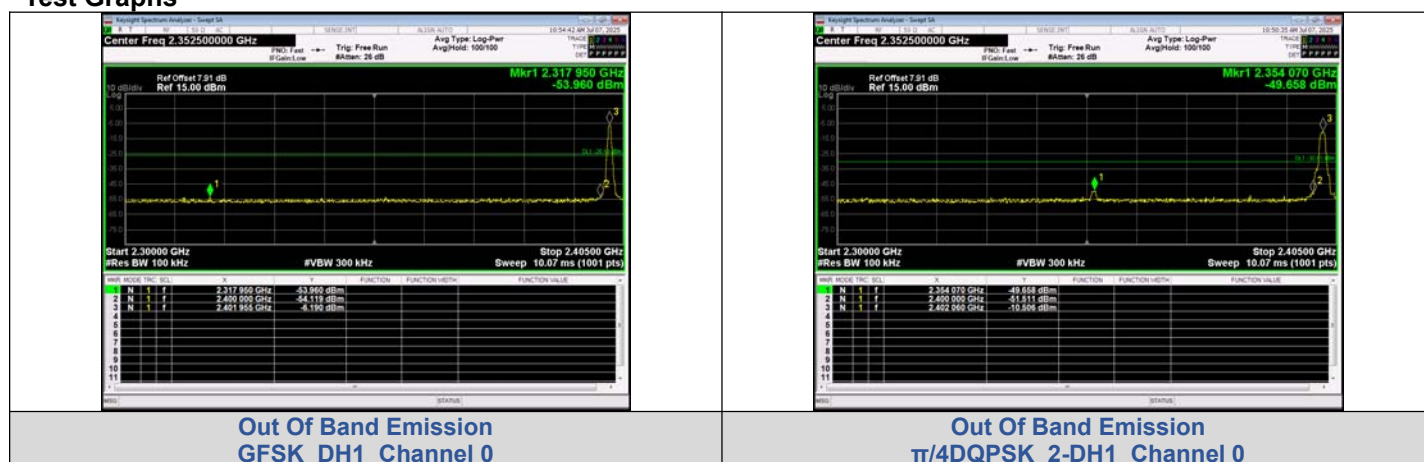
Test Result
Non-Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH1	0	2317.95	-53.960	-26.19	-27.770	PASS
			2400.00	-54.119	-26.19	-27.929	PASS
			21559.8	-52.774	-26.19	-26.584	PASS
		39	21138.4	-52.623	-26.08	-26.543	PASS
		78	2483.50	-53.910	-25.87	-28.040	PASS
			21587.2	-52.558	-25.87	-26.688	PASS
$\pi/4$ DQPSK	2-DH1	0	2353.50	-52.742	-30.51	-22.232	PASS
			2354.07	-49.658	-30.51	-19.148	PASS
			2400.00	-51.511	-30.51	-21.001	PASS
		39	2488.92	-50.625	-30.23	-20.395	PASS
		78	2483.50	-54.936	-30.15	-24.786	PASS
			2528.25	-52.716	-30.15	-22.566	PASS
8DPSK	3-DH1	0	2353.97	-48.309	-30.41	-17.899	PASS
			2354.10	-51.118	-30.41	-20.708	PASS
			2400.00	-51.046	-30.41	-20.636	PASS
		39	21227.7	-52.577	-30.24	-22.337	PASS
		78	2483.50	-52.325	-30.05	-22.275	PASS
			24511.8	-52.209	-30.05	-22.159	PASS

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

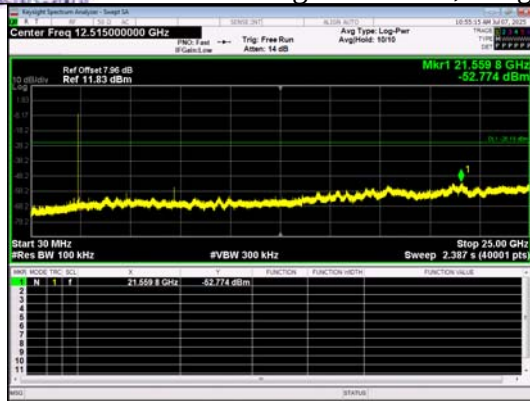
Hopping							
Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH1	Hopping	2396.81	-45.350	-16.22	-29.130	PASS
			2400.00	-47.118	-16.22	-30.898	PASS
			2483.50	-51.536	-16.52	-35.016	PASS
π/4DQPSK	2-DH1		2388.83	-39.864	-17.09	-22.774	PASS
			2400.00	-41.711	-17.09	-24.621	PASS
			2483.50	-45.307	-18.28	-27.027	PASS
8DPSK	3-DH1		2355.97	-37.814	-16.23	-21.584	PASS
			2400.00	-39.240	-16.23	-23.010	PASS
			2483.50	-45.381	-17.31	-28.071	PASS

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

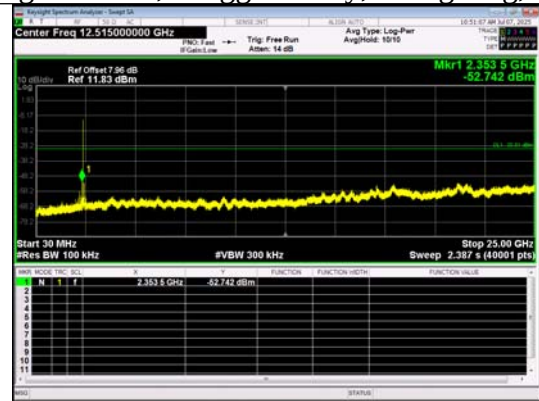




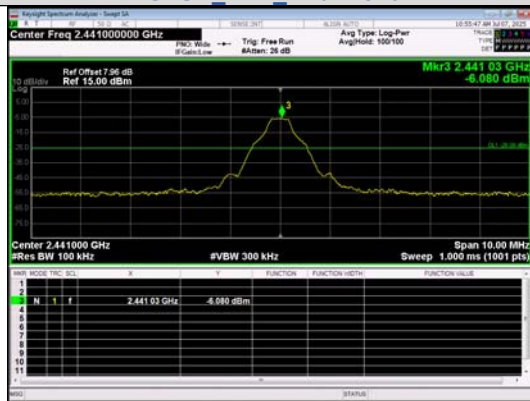
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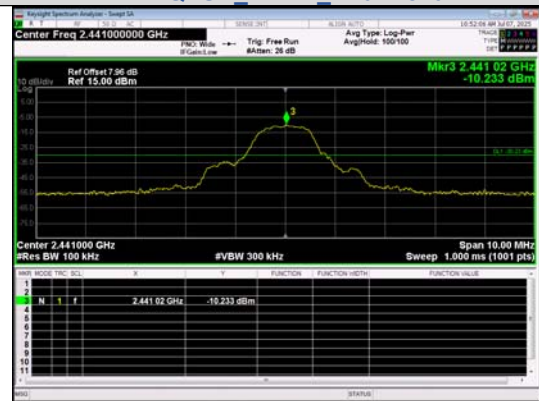
30.0 MHz - 25000.0 MHz
GFSK_DH1_Channel 0



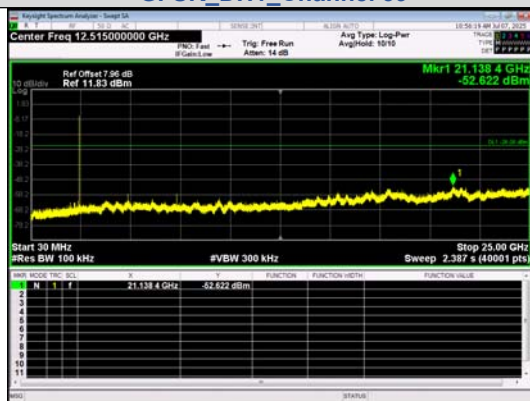
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH1_Channel 0



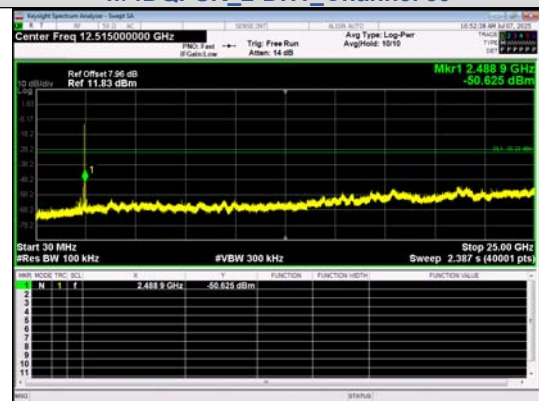
Out Of Band Emission
GFSK_DH1_Channel 39



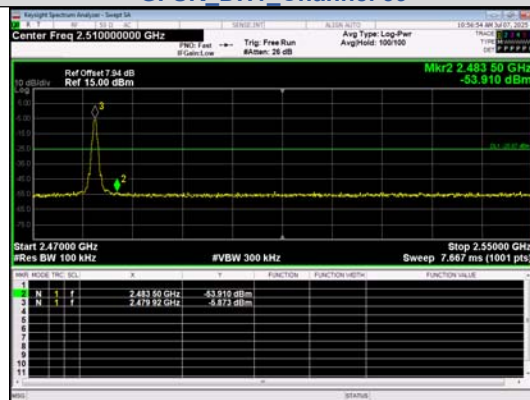
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH1_Channel 39



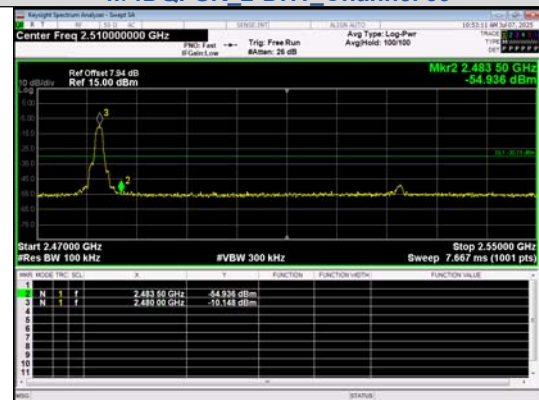
30.0 MHz - 25000.0 MHz
GFSK_DH1_Channel 39



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



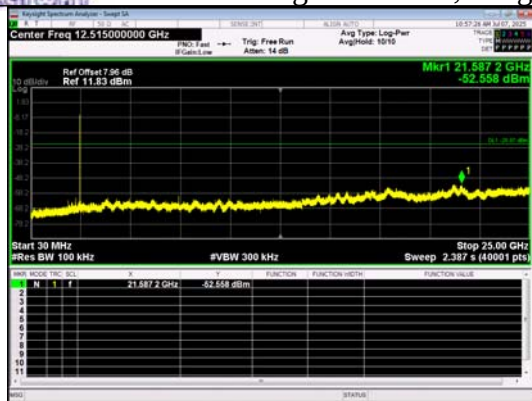
Out Of Band Emission
GFSK_DH1_Channel 78



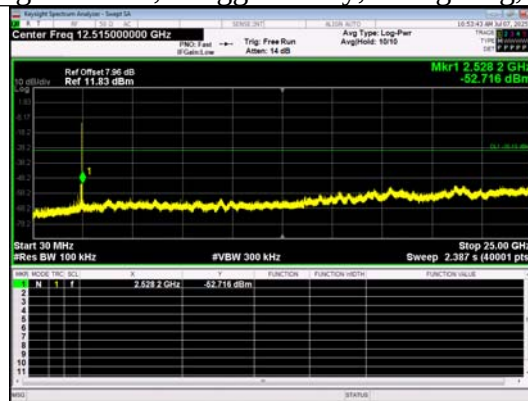
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH1_Channel 78



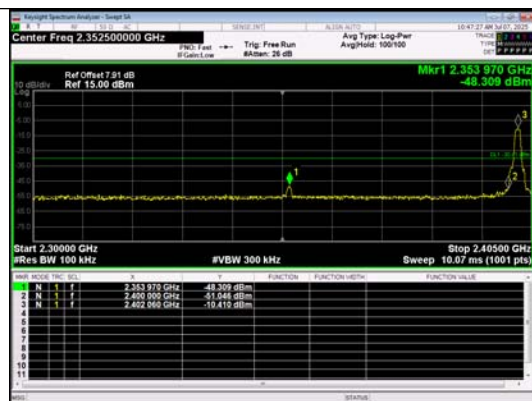
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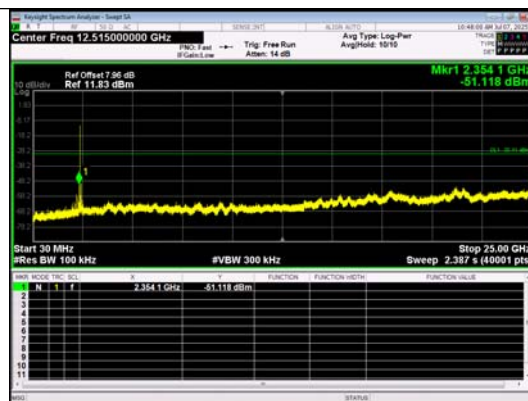
30.0 MHz - 25000.0 MHz
GFSK_DH1_Channel 78



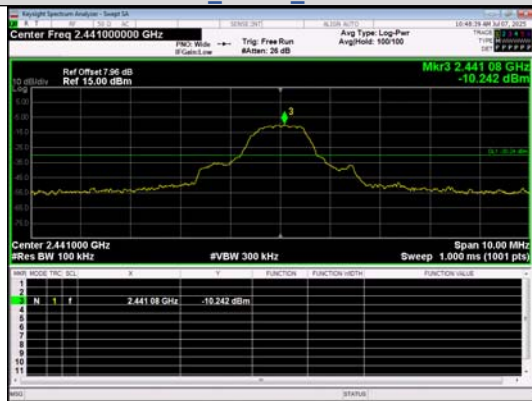
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH1_Channel 78



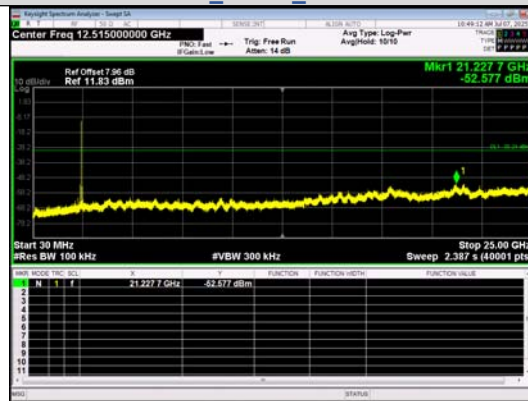
Out Of Band Emission
8DPSK_3-DH1_Channel 0



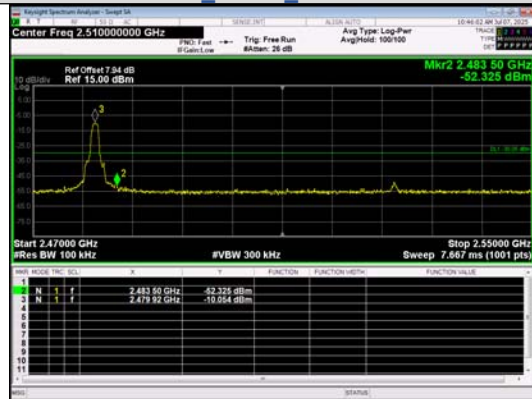
30.0 MHz - 25000.0 MHz
8DPSK_3-DH1_Channel 0



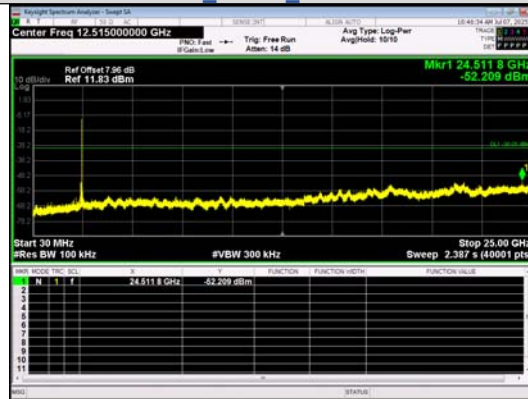
Out Of Band Emission
8DPSK_3-DH1_Channel 39



30.0 MHz - 25000.0 MHz
8DPSK_3-DH1_Channel 39



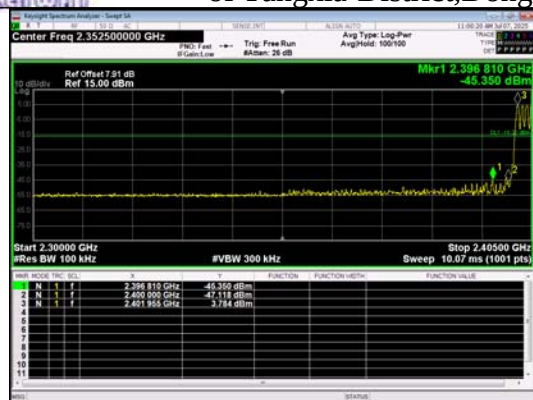
Out Of Band Emission
8DPSK_3-DH1_Channel 78



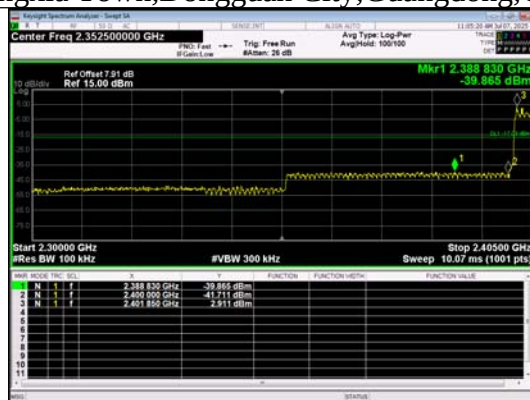
30.0 MHz - 25000.0 MHz
8DPSK_3-DH1_Channel 78



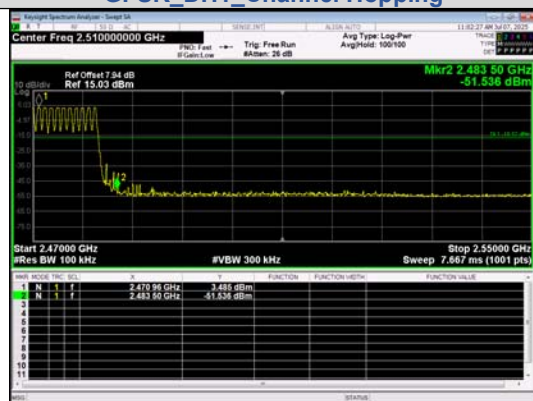
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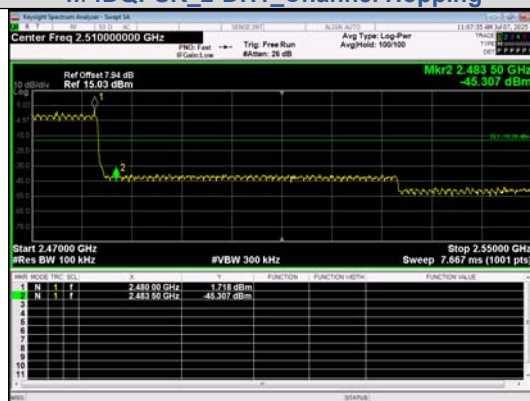
Out Of Band Emission(Left)
GFSK_DH1_Channel Hopping



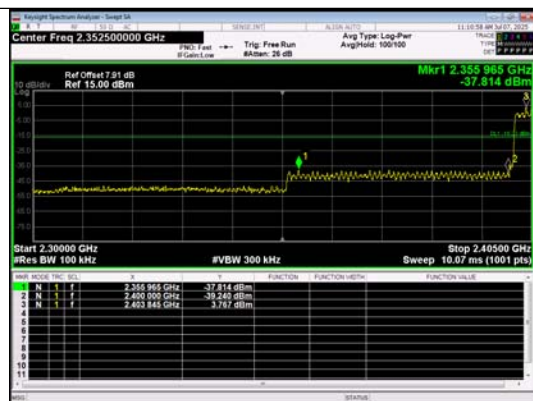
Out Of Band Emission(Left)
 $\pi/4$ DQPSK_2-DH1_Channel Hopping



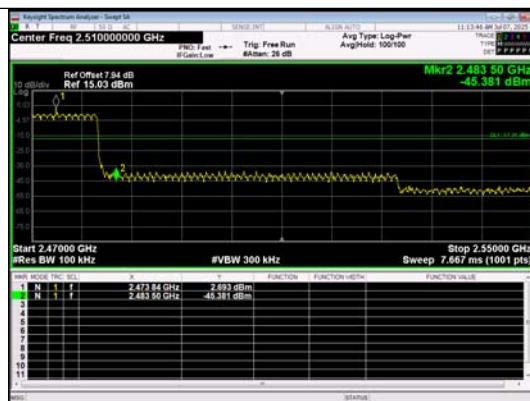
Out Of Band Emission(Right)
GFSK_DH1_Channel Hopping



Out Of Band Emission(Right)
 $\pi/4$ DQPSK_2-DH1_Channel Hopping



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



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