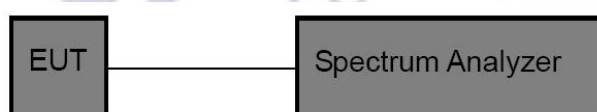


12 Dwell Time Test

12.1 Test Standard and Limit

Test Standard	FCC Part15 C Section 15.247 (a)(1) & RSS-247.5.1(4)
Test Limit	0.4 sec

12.2 Test Setup



12.3 Test Procedure

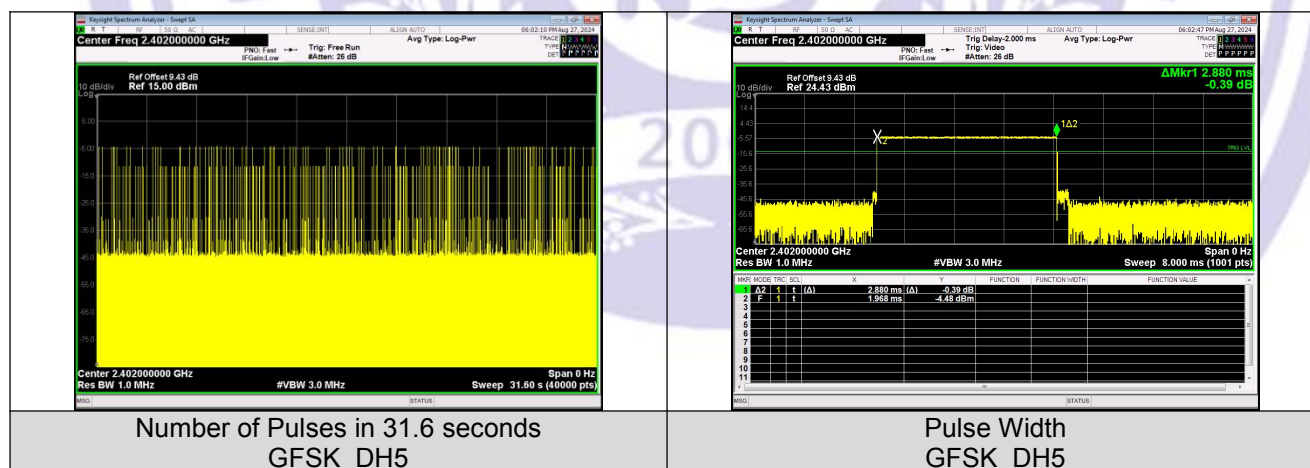
The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

1. Span= zero span, centered on a hopping channel
2. Set the RBW = 1 MHz.
3. Set the VBW = 3 MHz.
4. Sweep time = as necessary to capture the entire dwell time per hopping channel.
5. Detector function = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.

12.4 Test Data

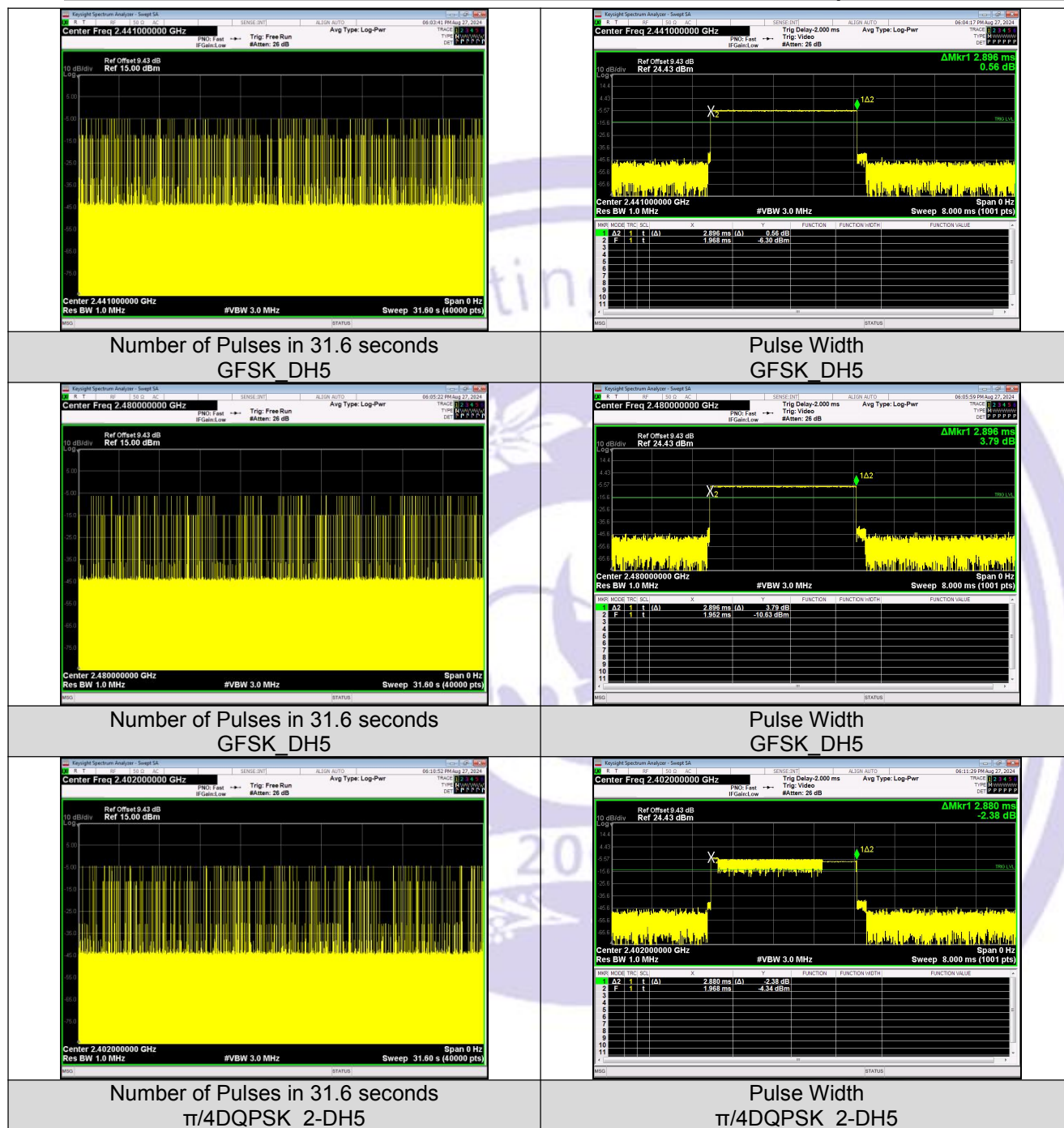
Modulation	Packet	Channel	Pulse Width (ms)	Number of Pulses in 31.6 seconds	Dwell Time (ms)	Limit (ms)	Result
GFSK	DH5	CH0 (2402MHz)	2.880	103	296.64	< 400	PASS
	DH5	CH39 (2441MHz)	2.896	105	304.08		PASS
	DH5	CH78 (2480MHz)	2.896	102	295.39		PASS
π /4DQPSK	2-DH5	CH0 (2402MHz)	2.880	103	296.64		PASS
	2-DH5	CH39 (2441MHz)	2.896	100	289.6		PASS
	2-DH5	CH78 (2480MHz)	2.896	104	301.18		PASS
8DPSK	3-DH5	CH0 (2402MHz)	2.880	109	313.92		PASS
	3-DH5	CH39 (2441MHz)	2.880	102	293.76		PASS
	3-DH5	CH78 (2480MHz)	2.880	98	282.24		PASS

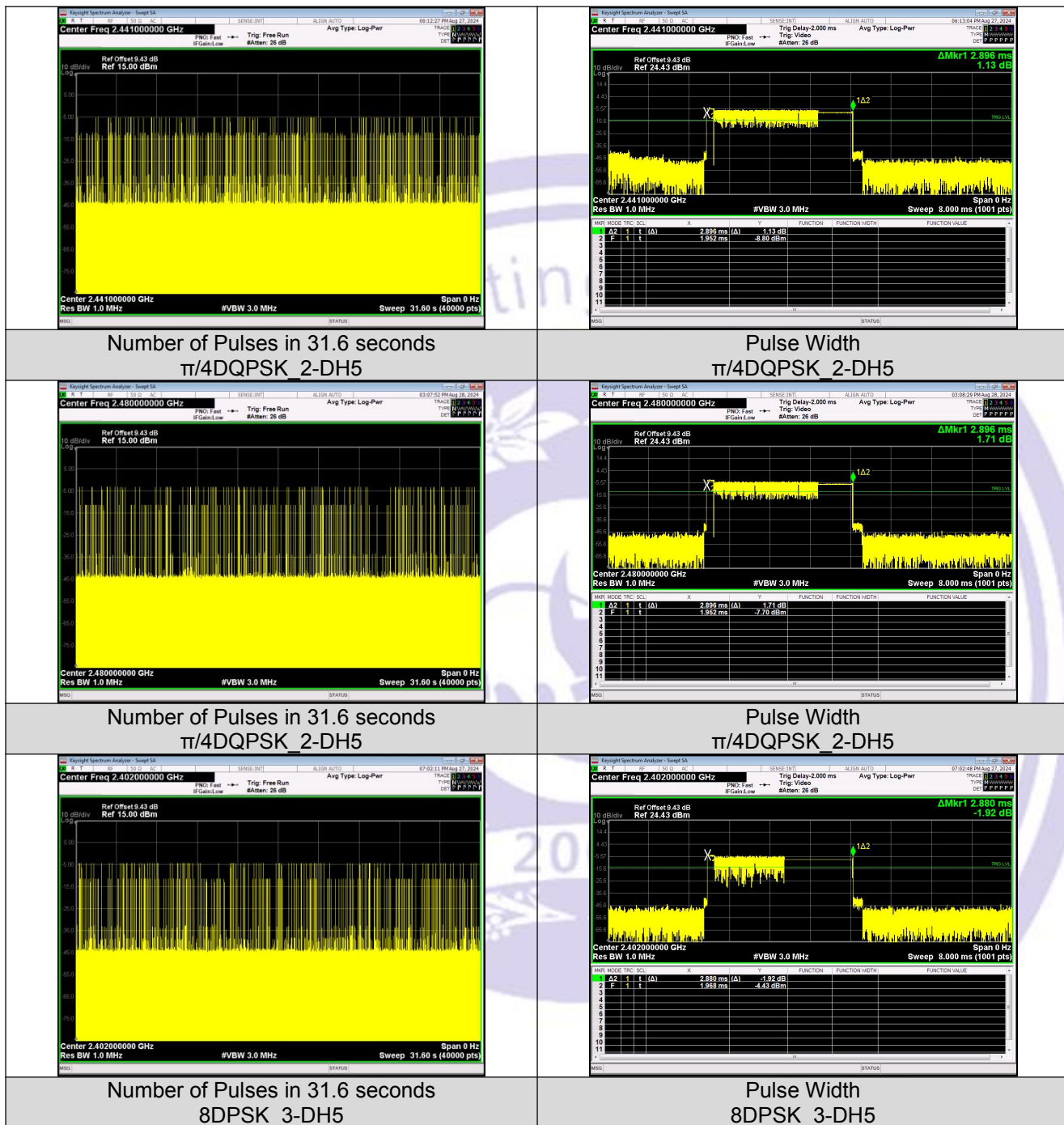
Test Plots

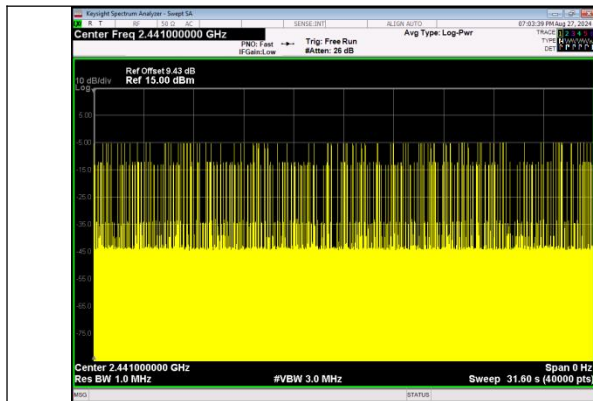


Number of Pulses in 31.6 seconds
GFSK_DH5

Pulse Width
GFSK_DH5



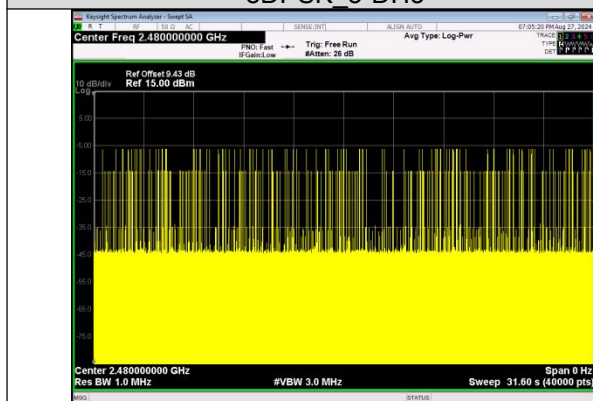




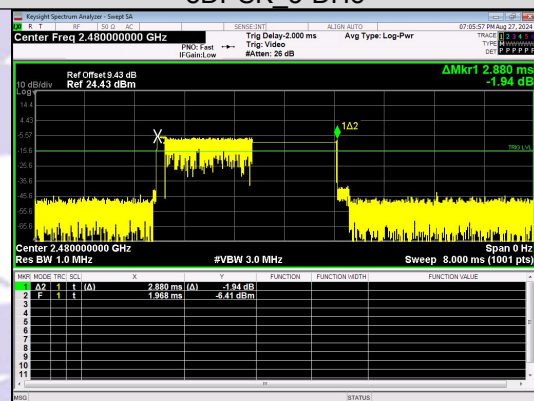
Number of Pulses in 31.6 seconds
8DPSK_3-DH5



Pulse Width
8DPSK_3-DH5



Number of Pulses in 31.6 seconds
8DPSK_3-DH5



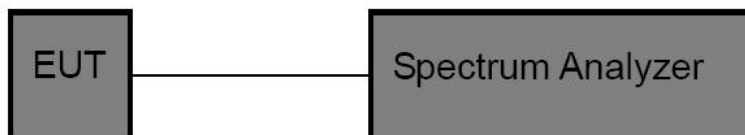
Pulse Width
8DPSK_3-DH5

13 100kHz Bandwidth of Frequency Band Edge Requirement

13.1 Test Standard and Limit

Test Standard	FCC Part15 C Section 15.247 (d) & RSS-247 5.5
Test Limit	in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a).

13.2 Test Setup



13.3 Test Procedure

The EUT must have its hopping/Non-hopping function enabled. Using the following spectrum analyzer setting:

1. Set the RBW = 100kHz.
2. Set the VBW = 300kHz.
3. Sweep time = auto couple.
4. Detector function = peak.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.

13.4 Test Data

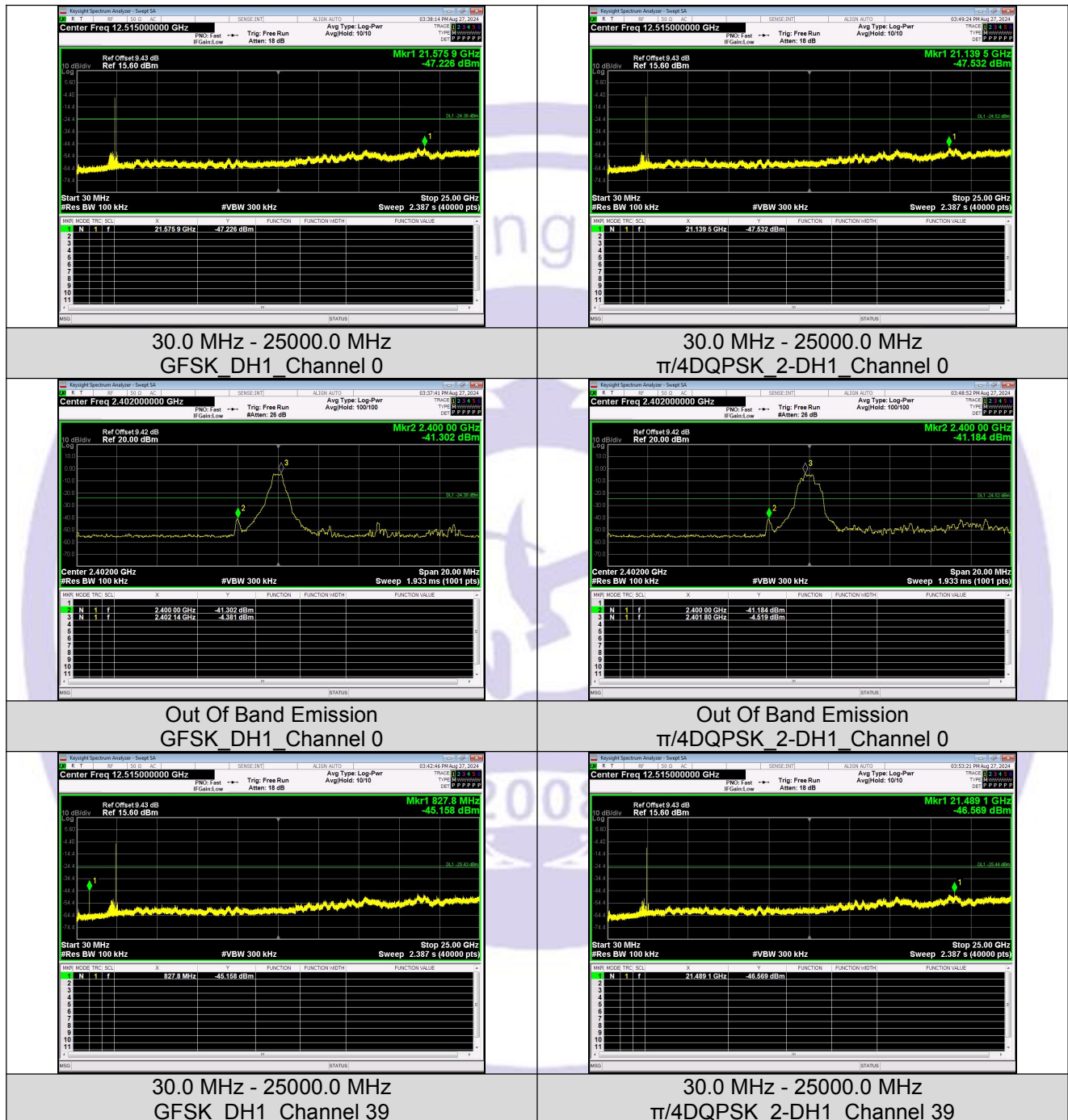
Non-Hopping

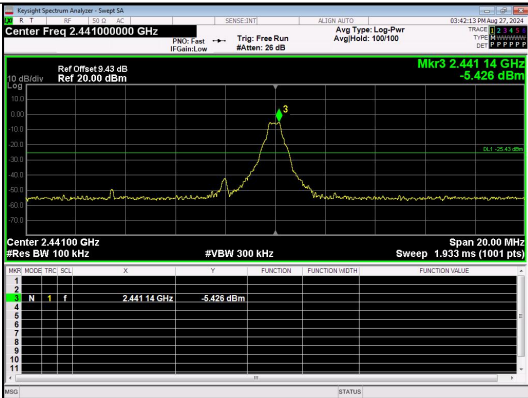
Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH1	0	2400.00	-41.302	-24.38	-16.922	PASS
			21575.9	-47.226	-24.38	-22.846	PASS
		39	827.81	-45.158	-25.43	-19.728	PASS
		78	2483.50	-55.802	-26.46	-29.342	PASS
			23712.1	-47.689	-26.46	-21.229	PASS
$\pi/4$ DQPSK	2-DH1	0	2400.00	-41.184	-24.52	-16.664	PASS
			21139.5	-47.532	-24.52	-23.012	PASS
		39	21489.1	-46.569	-25.44	-21.129	PASS
		78	2483.50	-55.203	-26.36	-28.843	PASS
			21135.2	-47.005	-26.36	-20.645	PASS
8DPSK	3-DH1	0	2400.00	-41.319	-24.3	-17.019	PASS
			21113.3	-47.271	-24.3	-22.971	PASS
		39	21150.2	-46.873	-25.2	-21.673	PASS
		78	2483.50	-54.867	-26.26	-28.607	PASS
			21129.5	-46.435	-26.26	-20.175	PASS

Hopping

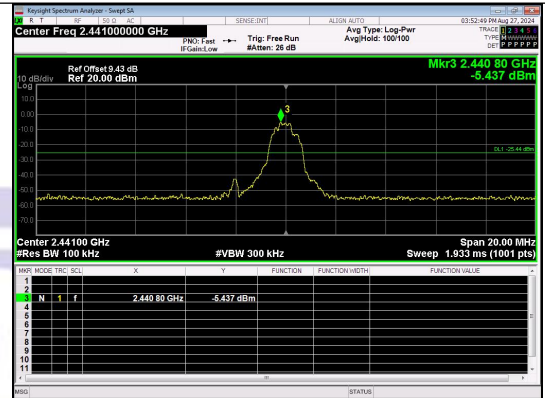
Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH1	Hopping	2400.00	-41.104	-24.21	-16.894	PASS
			2483.50	-53.188	-25.85	-27.338	PASS
π/4DQPSK	2-DH1		2400.00	-41.780	-24.49	-17.290	PASS
			2483.50	-53.931	-26.16	-27.771	PASS
8DPSK	3-DH1		2400.00	-40.867	-24.3	-16.567	PASS
			2483.50	-52.549	-26.02	-26.529	PASS

Test Graphs

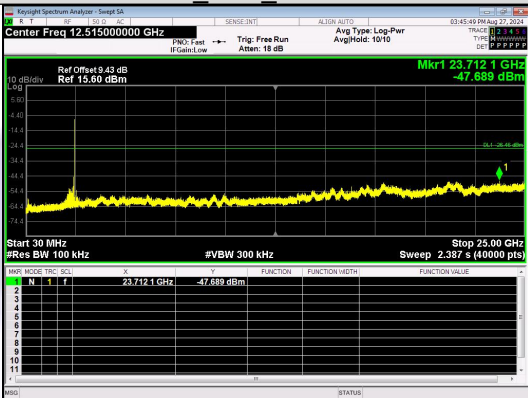




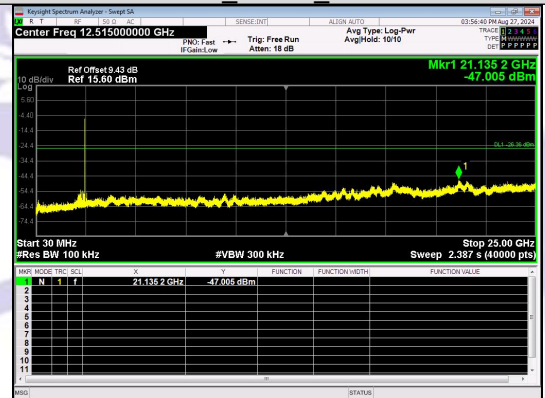
Out Of Band Emission
GFSK_DH1_Channel 39



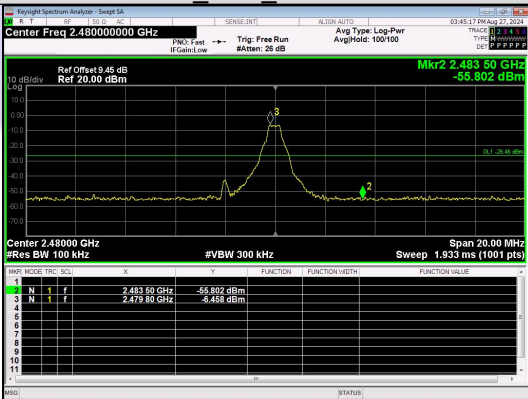
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH1_Channel 39



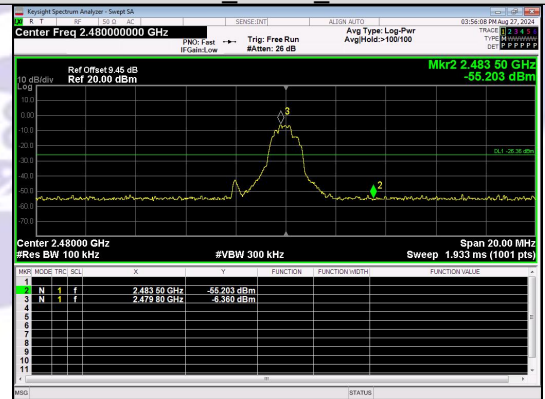
30.0 MHz - 25000.0 MHz
GFSK_DH1_Channel 78



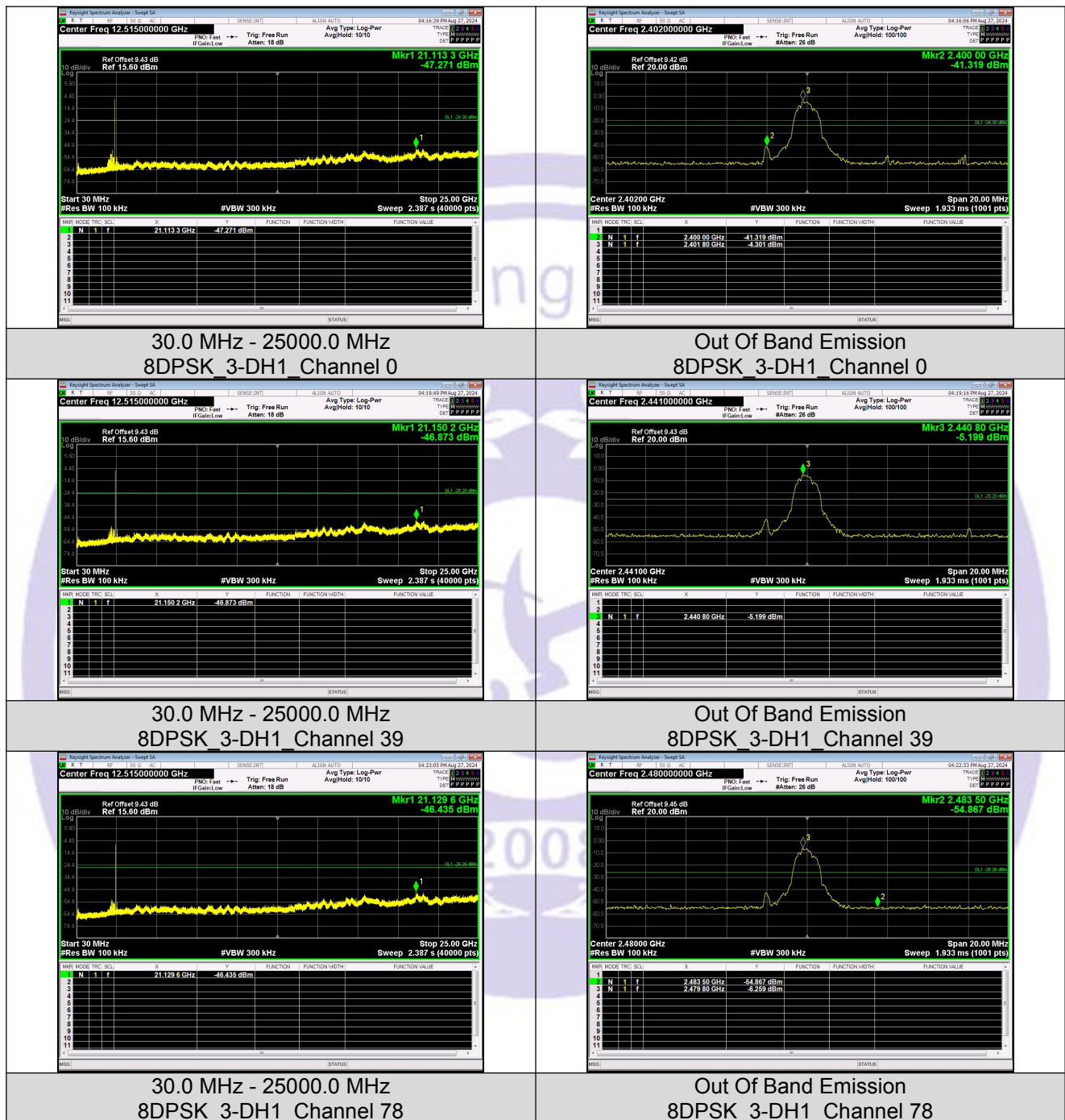
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH1_Channel 78

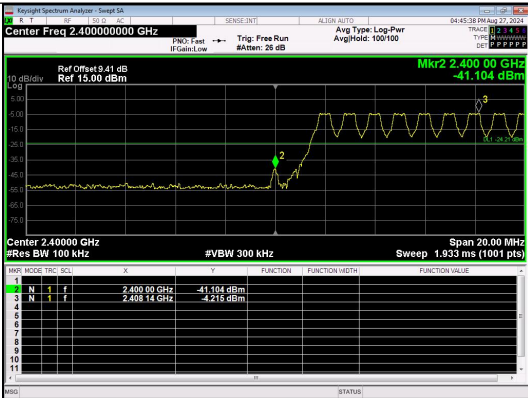


Out Of Band Emission
GFSK_DH1_Channel 78

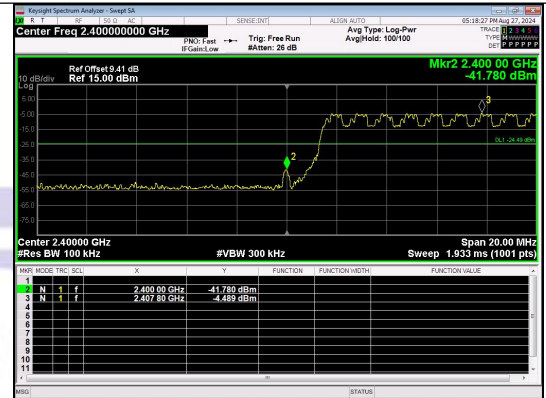


Out Of Band Emission
 $\pi/4$ DQPSK_2-DH1_Channel 78

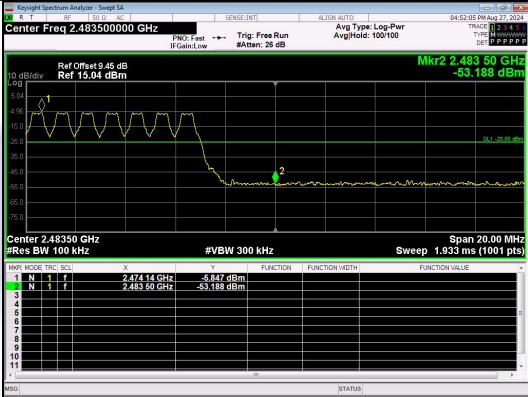




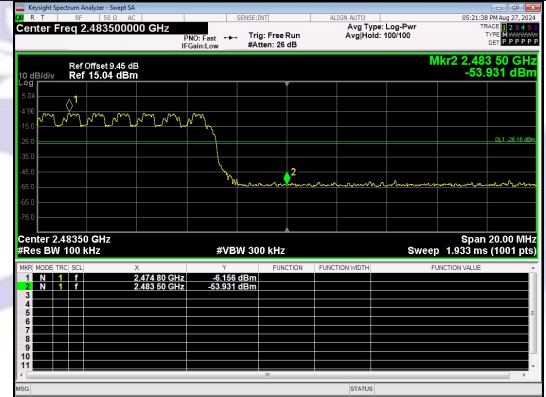
Out Of Band Emission(Left)
GFSK_DH1_Channel Hopping



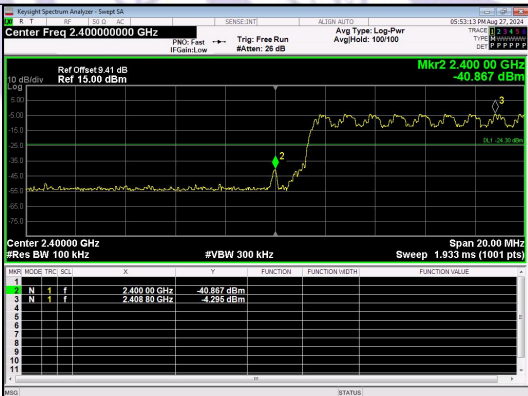
Out Of Band Emission(Left)
 $\pi/4$ DQPSK_2-DH1_Channel Hopping



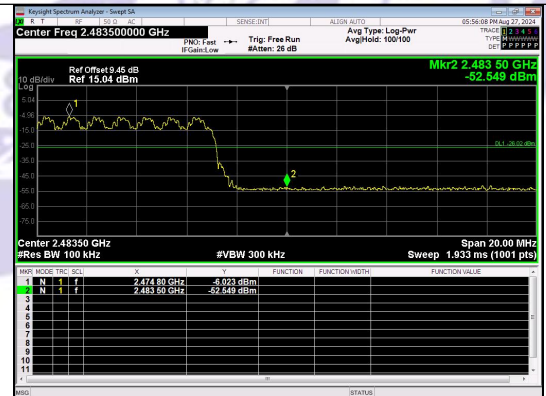
Out Of Band Emission(Right)
GFSK_DH1_Channel Hopping



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

14 Antenna Requirement

14.1 Test Standard and Requirement

Test Standard	FCC Part15 Section 15.203 /247(c)
Requirement	1) 15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 2) 15.247(c) (1)(i) requirement: Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

14.2 Antenna Connected Construction

The antenna is PCB Antenna which permanently attached, and the best case gain of the antenna is -0.58dBi. It complies with the standard requirement.

15 APPENDIX I -- TEST SETUP PHOTOGRAPH

Please see the attachment for details.



16 APPENDIX II -- EUT PHOTOGRAPH

Please see the attachment for details.

----- End of Report -----

