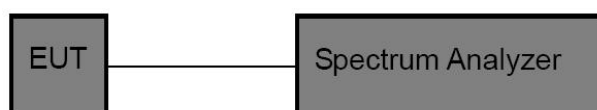


12 Dwell Time Test

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:

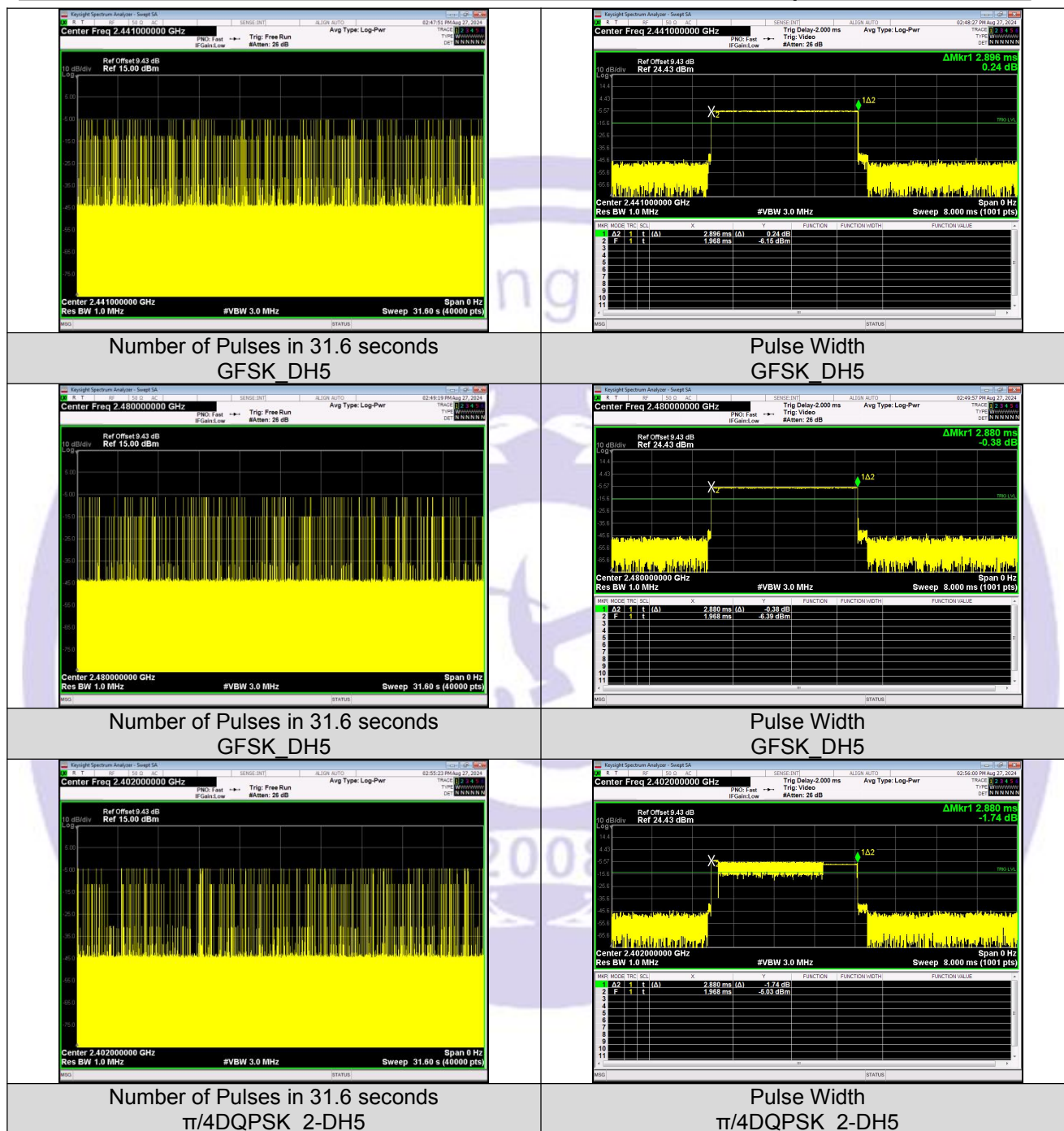
1. Span= zero span, centered on a hopping channel
2. Set the RBW = 1 MHz.
3. Set the VBW = 3 MHz.
4. Sweep time = as necessary to capture the entire dwell time per hopping channel.
5. Detector function = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.

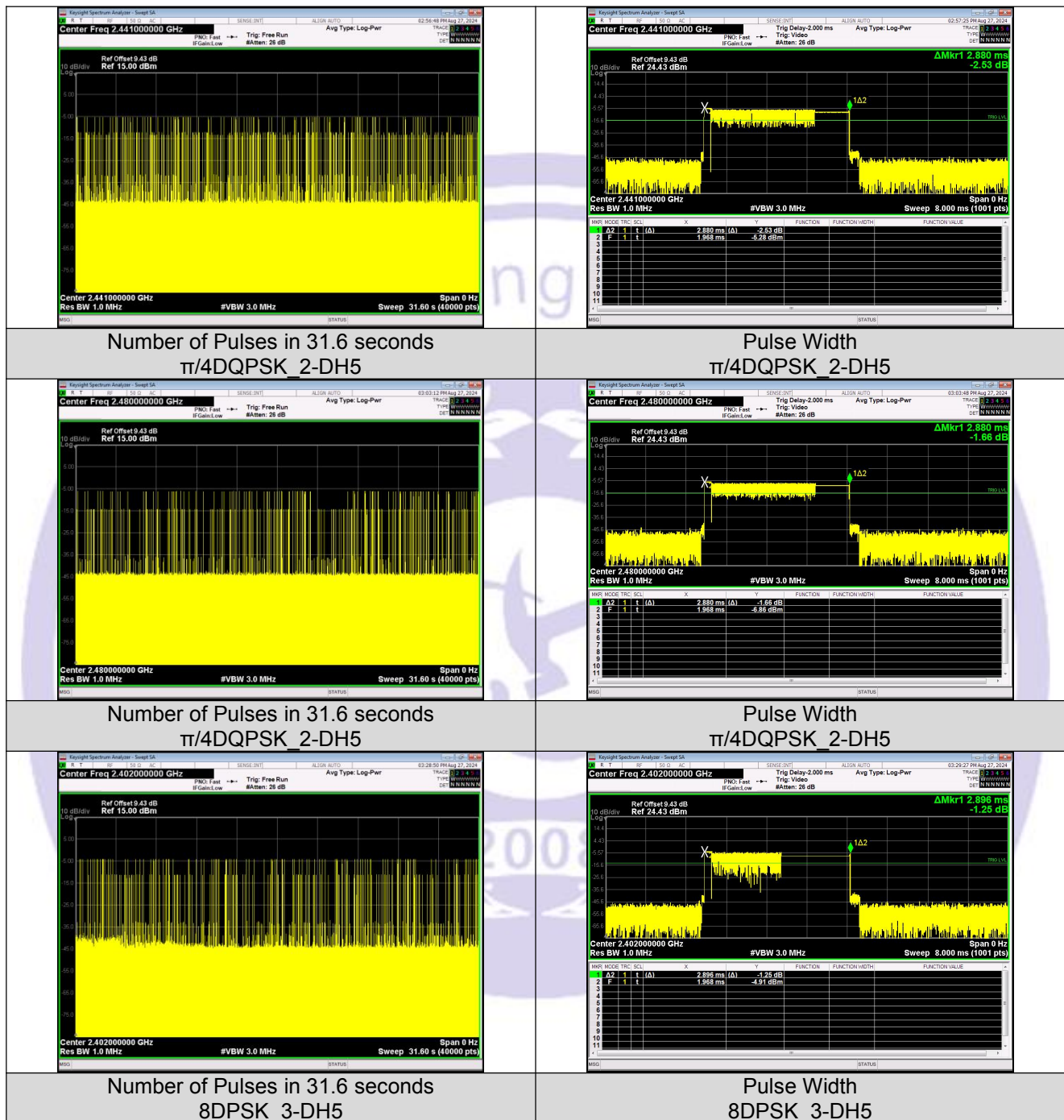
12.4 Test Data

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	94	270.72	< 400	PASS
	DH5	CH39 (2441MHz)	2.896	108	312.77		PASS
	DH5	CH78 (2480MHz)	2.880	106	305.28		PASS
π /4DQPSK	2-DH5	CH0 (2402MHz)	2.880	106	305.28		PASS
	2-DH5	CH39 (2441MHz)	2.880	107	308.16		PASS
	2-DH5	CH78 (2480MHz)	2.880	109	313.92		PASS
8DPSK	3-DH5	CH0 (2402MHz)	2.896	110	318.56		PASS
	3-DH5	CH39 (2441MHz)	2.896	104	301.18		PASS
	3-DH5	CH78 (2480MHz)	2.896	113	327.25		PASS

Test Plots









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

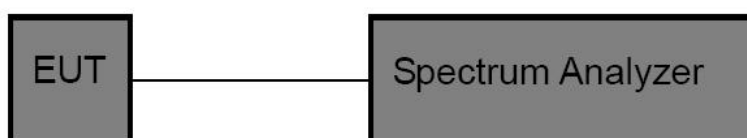
Pulse Width
8DPSK_3-DH5

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

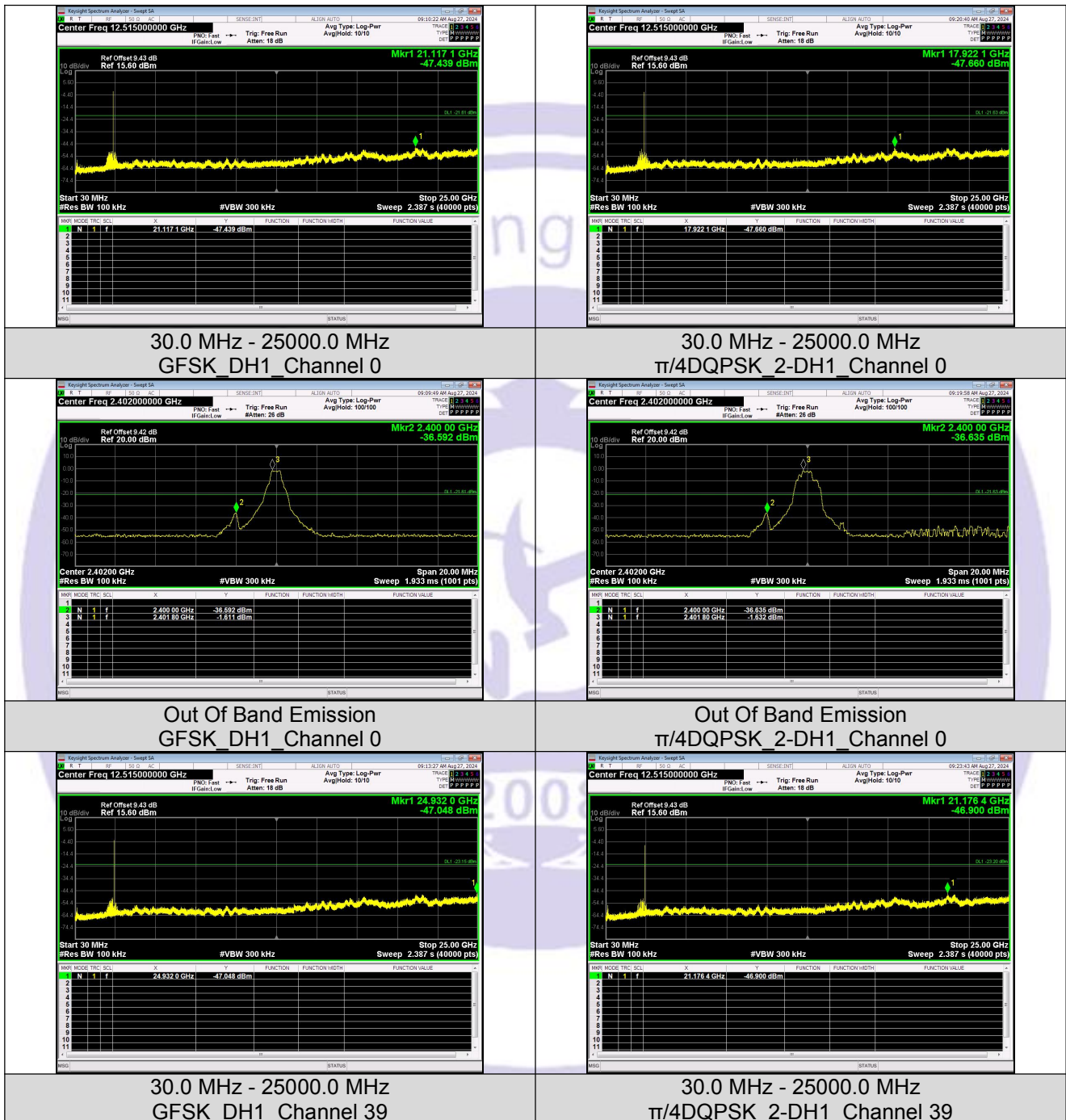
Non-Hopping

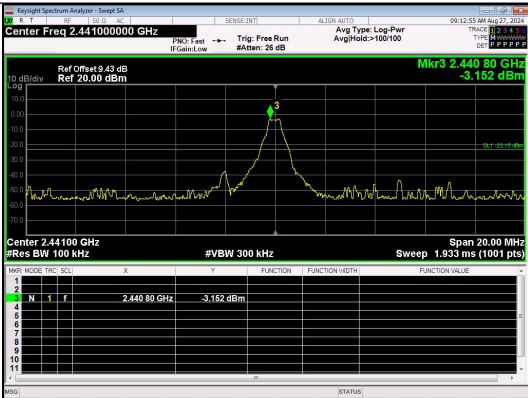
Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH1	0	2400.00	-36.592	-21.61	-14.982	PASS
			21117.1	-47.438	-21.61	-25.828	PASS
		39	24932.0	-47.048	-23.15	-23.898	PASS
		78	2483.50	-55.410	-24.88	-30.530	PASS
			21560.3	-46.417	-24.88	-21.537	PASS
$\pi/4$ DQPSK	2-DH1	0	2400.00	-36.635	-21.63	-15.005	PASS
			17922.1	-47.660	-21.63	-26.030	PASS
		39	21176.4	-46.900	-23.2	-23.700	PASS
		78	2483.50	-54.732	-24.93	-29.802	PASS
			21233.8	-47.143	-24.93	-22.213	PASS
8DPSK	3-DH1	0	2400.00	-36.805	-21.54	-15.265	PASS
			21230.1	-46.751	-21.54	-25.211	PASS
		39	21533.5	-47.413	-23.07	-24.343	PASS
		78	2483.50	-55.269	-24.81	-30.459	PASS
			21200.7	-47.542	-24.81	-22.732	PASS

Hopping

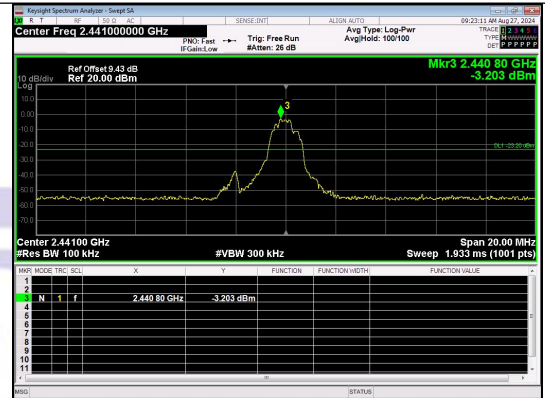
Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH1	Hopping	2400.00	-36.877	-21.73	-15.147	PASS
			2483.50	-53.875	-24.75	-29.125	PASS
π/4DQPSK	2-DH1		2400.00	-37.325	-22.04	-15.285	PASS
			2483.50	-53.420	-24.98	-28.440	PASS
8DPSK	3-DH1		2400.00	-41.438	-24.42	-17.018	PASS
			2483.50	-53.903	-26.14	-27.763	PASS

Test Graphs

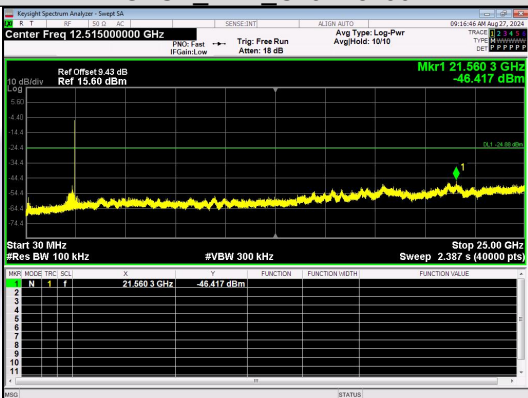




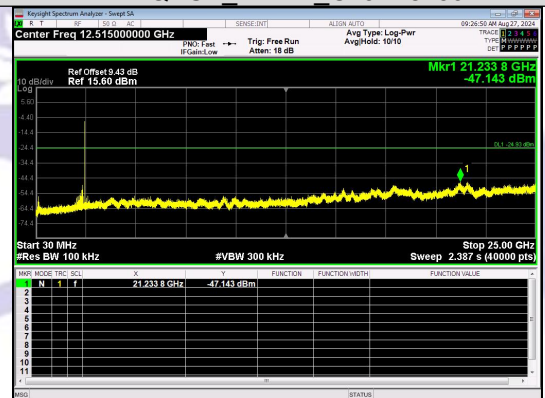
Out Of Band Emission
GFSK_DH1_Channel 39



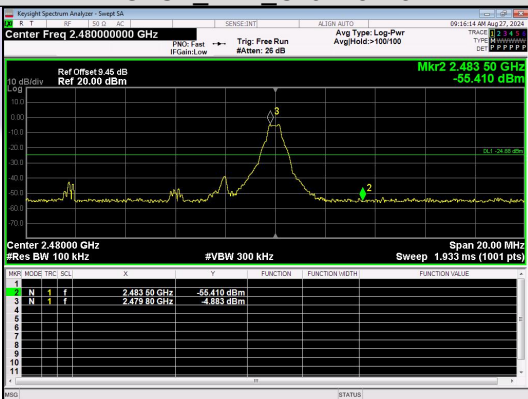
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH1_Channel 39



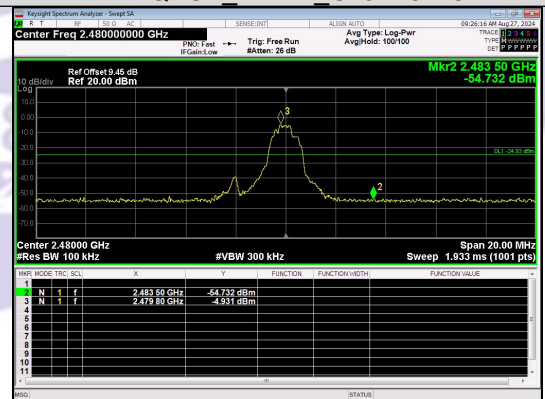
30.0 MHz - 25000.0 MHz
GFSK_DH1_Channel 78



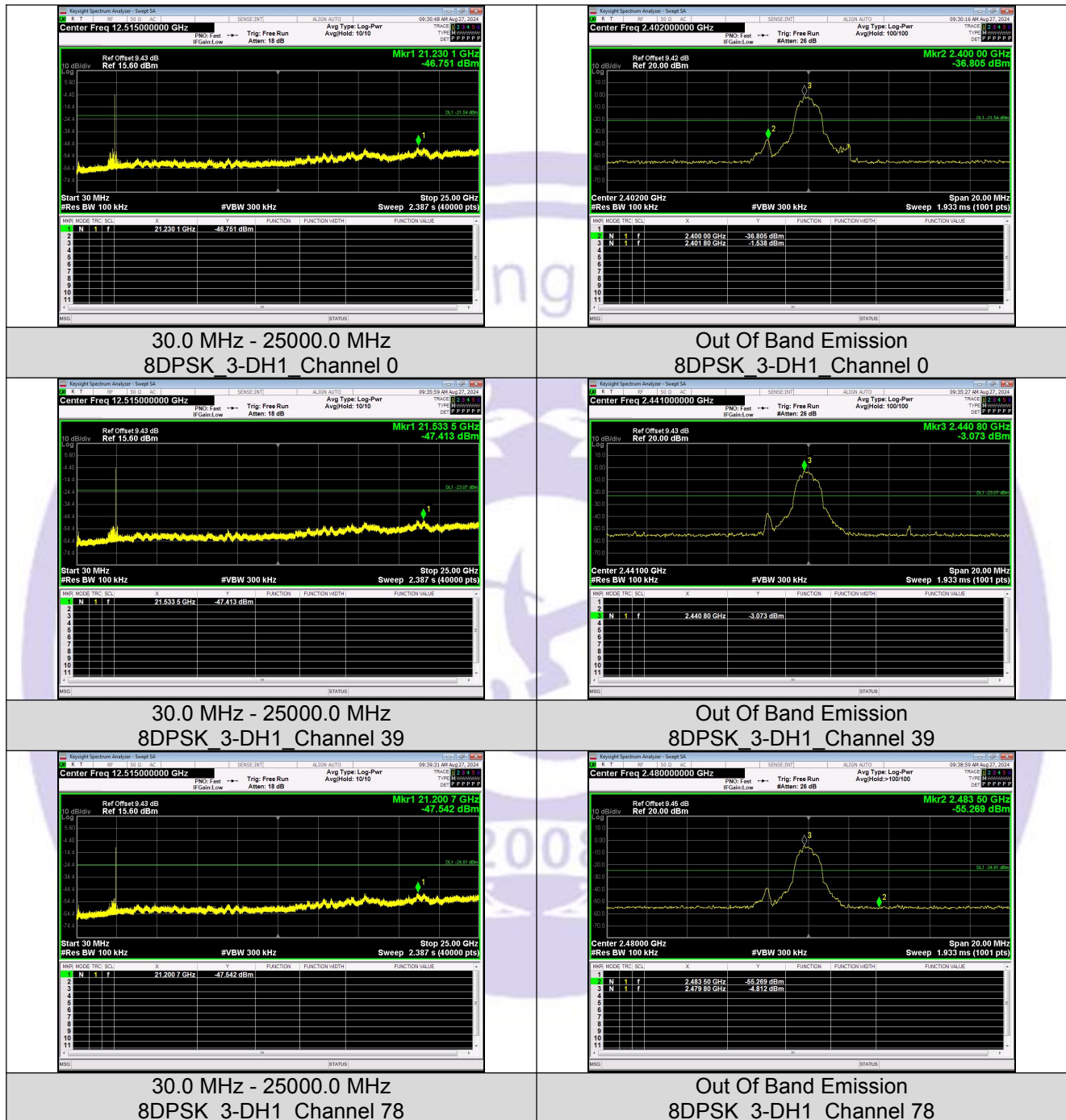
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH1_Channel 78

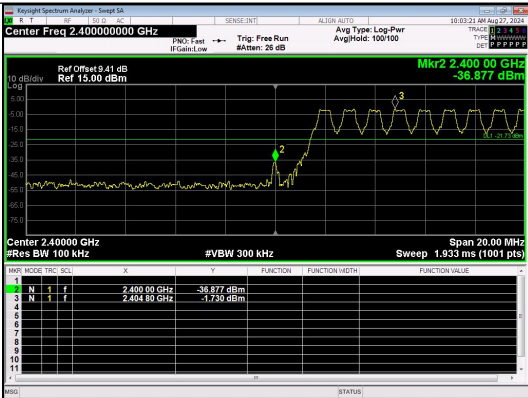


Out Of Band Emission
GFSK_DH1_Channel 78

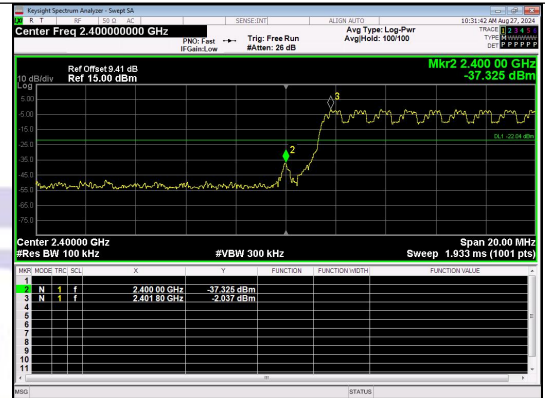


Out Of Band Emission
 $\pi/4$ DQPSK_2-DH1_Channel 78

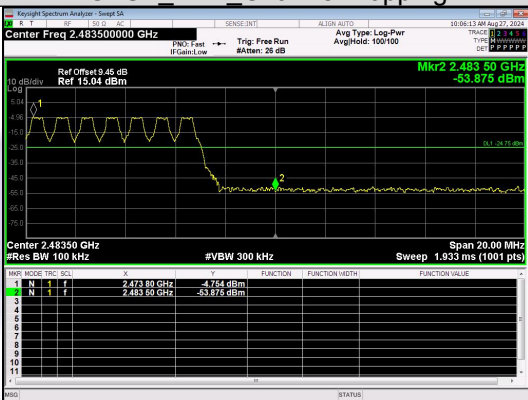




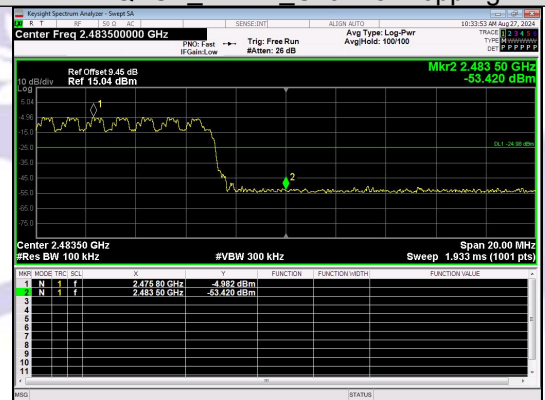
Out Of Band Emission(Left)
GFSK_DH1_Channel Hopping



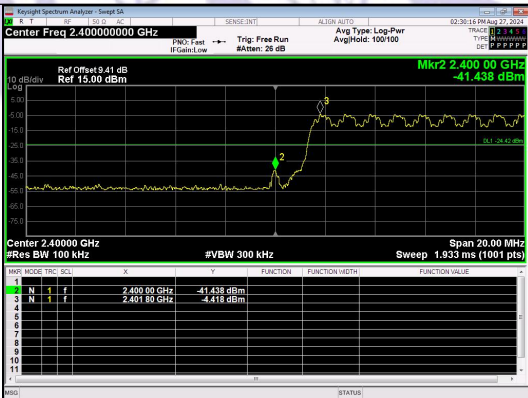
Out Of Band Emission(Left)
 $\pi/4$ DQPSK_2-DH1_Channel Hopping



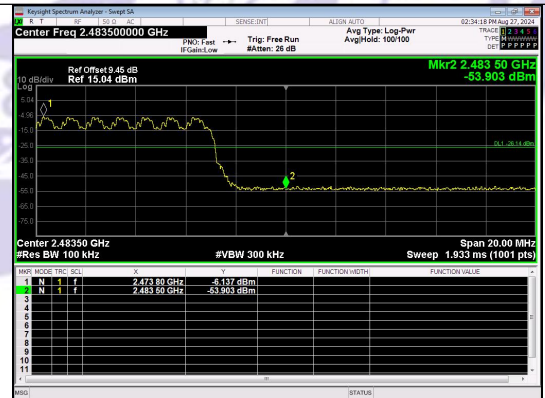
Out Of Band Emission(Right)
GFSK_DH1_Channel Hopping



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 -----

