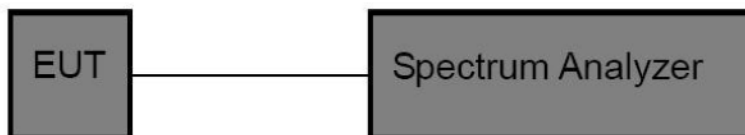


13 100kHz Bandwidth of Frequency Band Edge Requirement

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

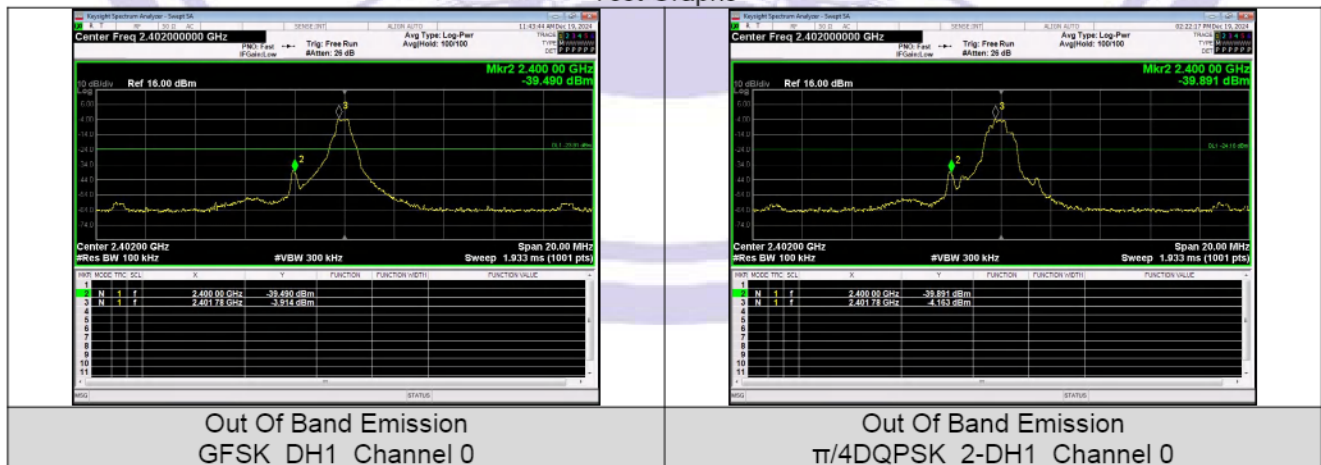
Non-Hopping

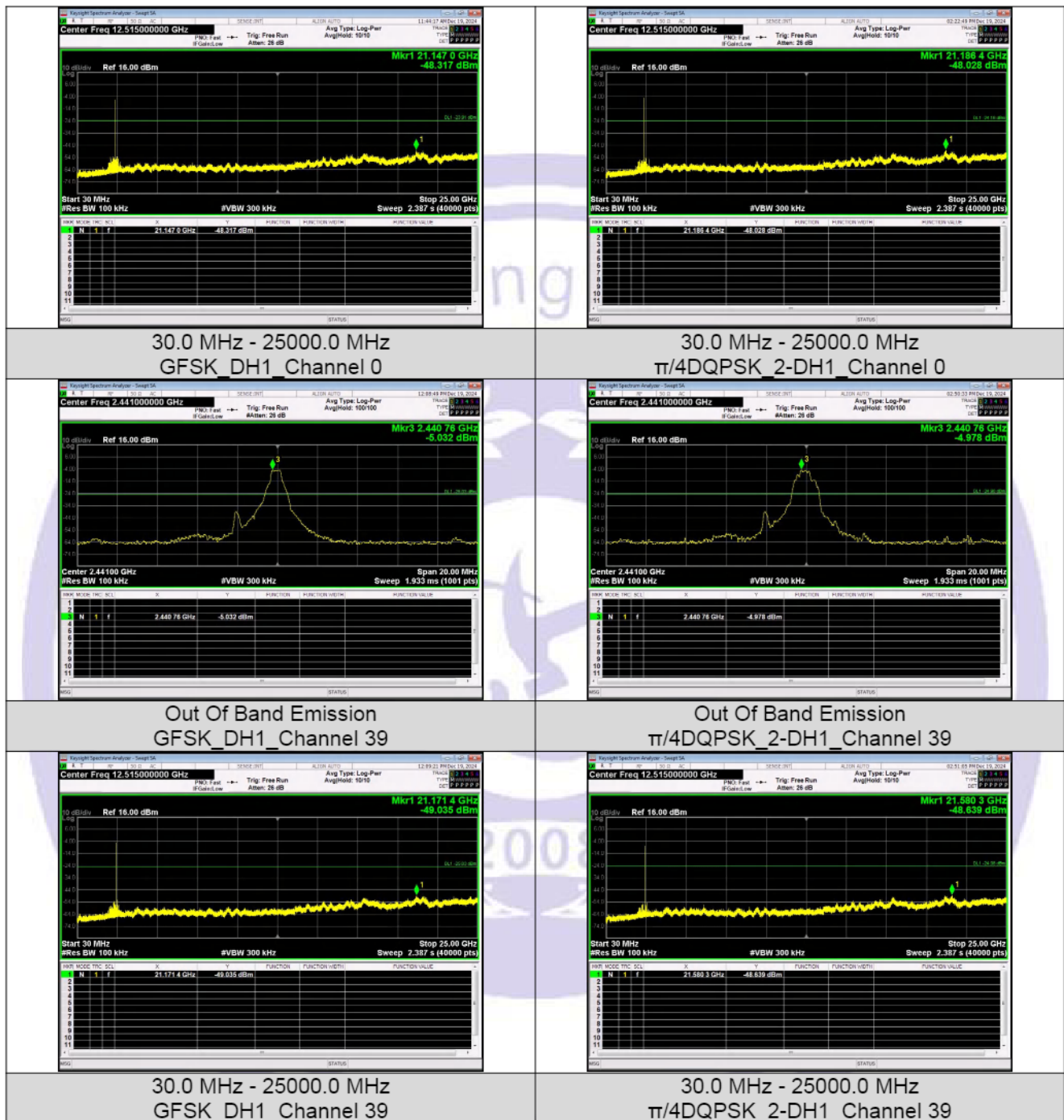
Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH1	0	2400.00	-39.490	-23.91	-15.580	PASS
			21147.0	-48.317	-23.91	-24.407	PASS
		39	21171.4	-49.035	-25.03	-24.005	PASS
		78	2483.50	-63.983	-25.66	-38.323	PASS
			21137.0	-48.810	-25.66	-23.150	PASS
$\pi/4$ DQPSK	2-DH1	0	2400.00	-39.891	-24.16	-15.731	PASS
			21186.4	-48.028	-24.16	-23.868	PASS
		39	21580.3	-48.639	-24.98	-23.659	PASS
		78	2483.50	-64.411	-25.68	-38.731	PASS
			21170.8	-49.413	-25.68	-23.733	PASS
8DPSK	3-DH1	0	2400.00	-40.013	-24.15	-15.863	PASS
			21582.8	-48.405	-24.15	-24.255	PASS
		39	21155.8	-48.856	-25.0	-23.856	PASS
		78	2483.50	-63.896	-25.72	-38.176	PASS
			21141.4	-49.092	-25.72	-23.372	PASS

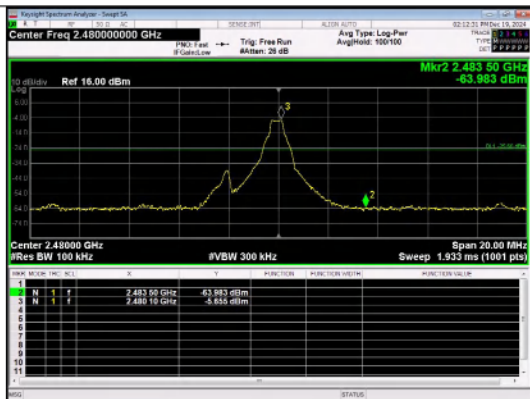
Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH1	Hopping	2400.00	-40.285	-24.17	-16.115	PASS
			2483.50	-56.324	-25.67	-30.654	PASS
π/4DQPSK	2-DH1		2400.00	-40.128	-24.34	-15.788	PASS
			2483.50	-57.509	-25.71	-31.799	PASS
8DPSK	3-DH1		2400.00	-40.044	-24.33	-15.714	PASS
			2483.50	-57.880	-25.7	-32.180	PASS

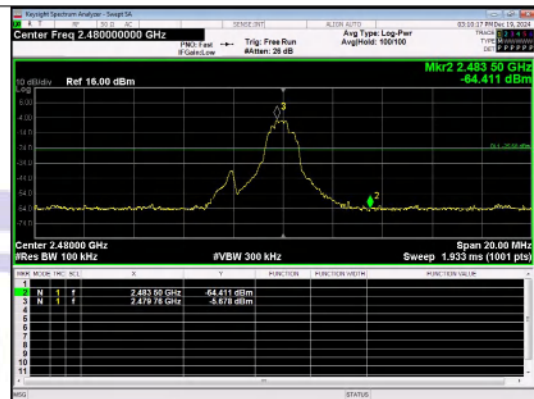
Test Graphs



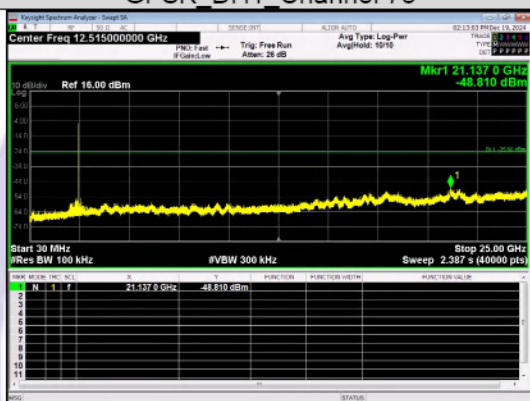




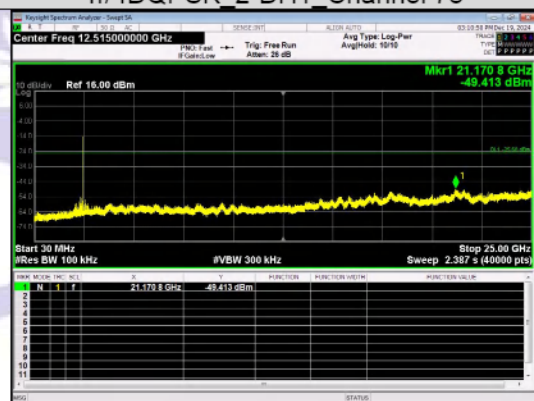
Out Of Band Emission
GFSK_DH1_Channel 78



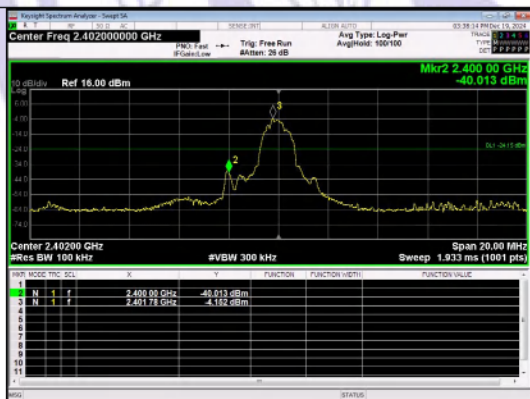
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH1_Channel 78



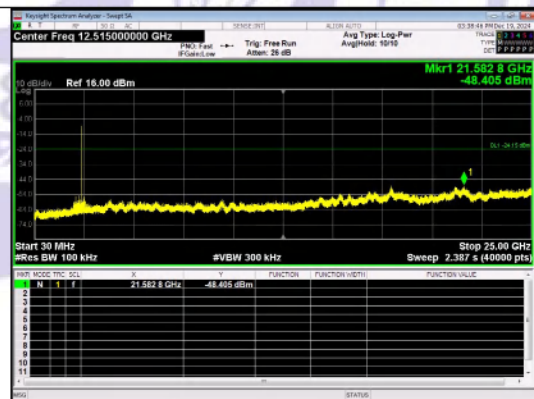
30.0 MHz - 25000.0 MHz
GFSK_DH1_Channel 78



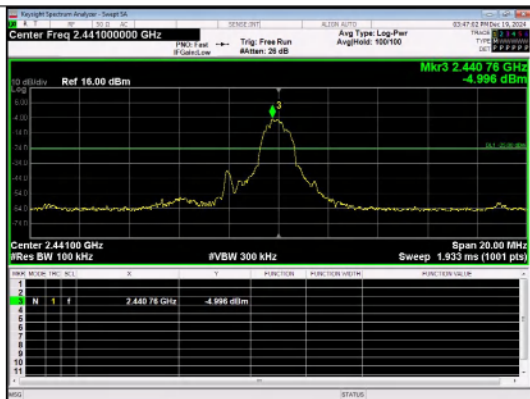
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH1_Channel 78



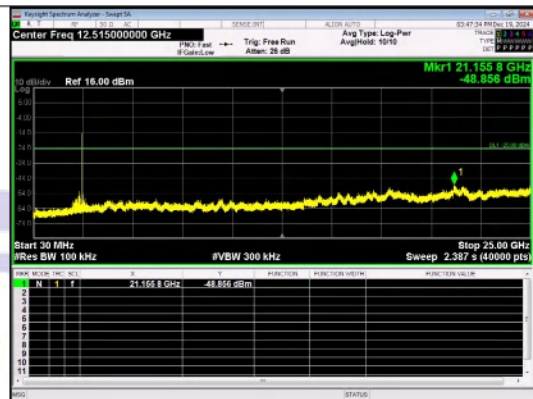
Out Of Band Emission
8DPSK_3-DH1_Channel 0



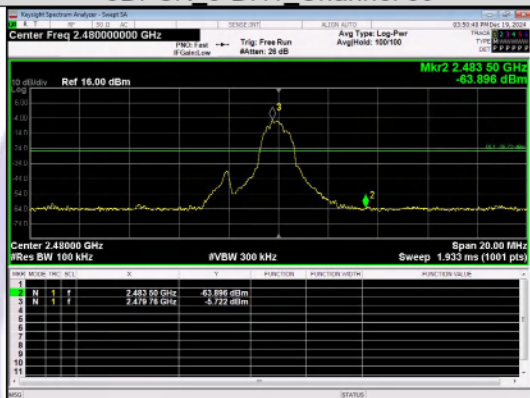
30.0 MHz - 25000.0 MHz
8DPSK_3-DH1_Channel 0



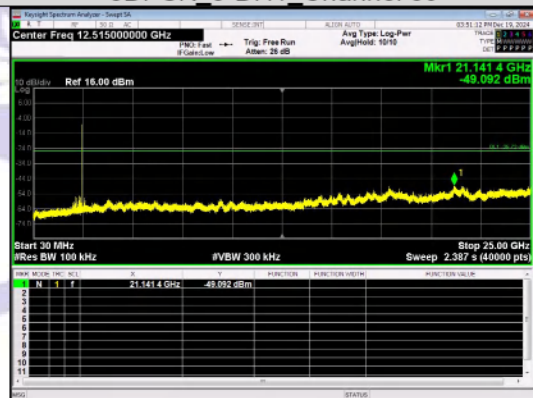
Out Of Band Emission
8DPSK_3-DH1_Channel 39



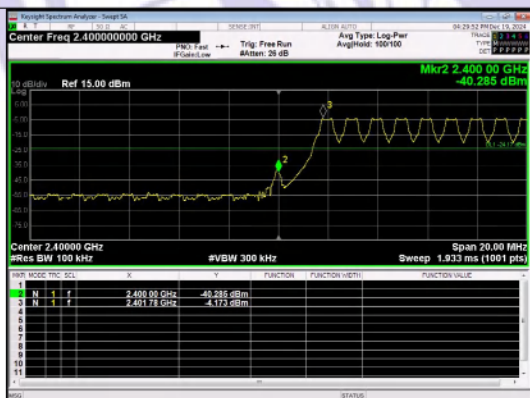
30.0 MHz - 25000.0 MHz
8DPSK_3-DH1_Channel 39



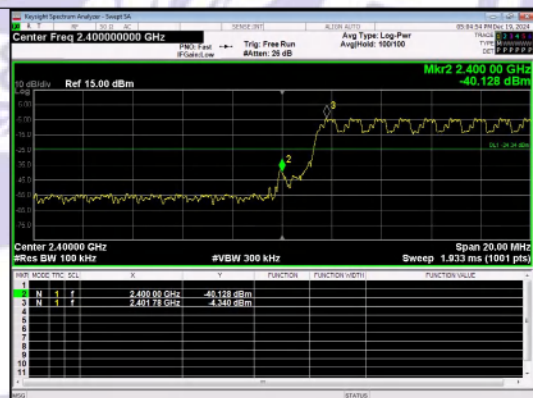
Out Of Band Emission
8DPSK_3-DH1_Channel 78



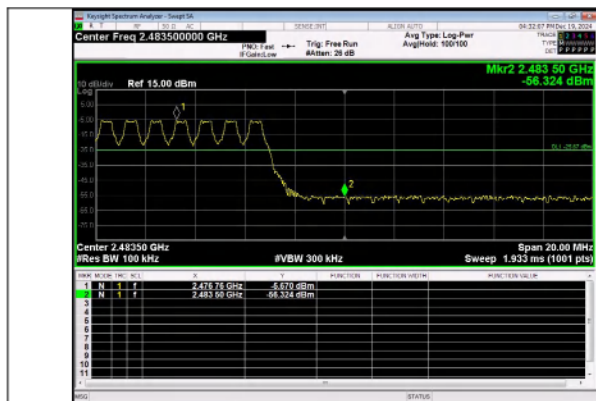
30.0 MHz - 25000.0 MHz
8DPSK_3-DH1_Channel 78



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) & RSS-Gen 6.8
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. 3) According to RSS-GEN section 6.8 The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list. For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below). When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer. The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

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 -----

