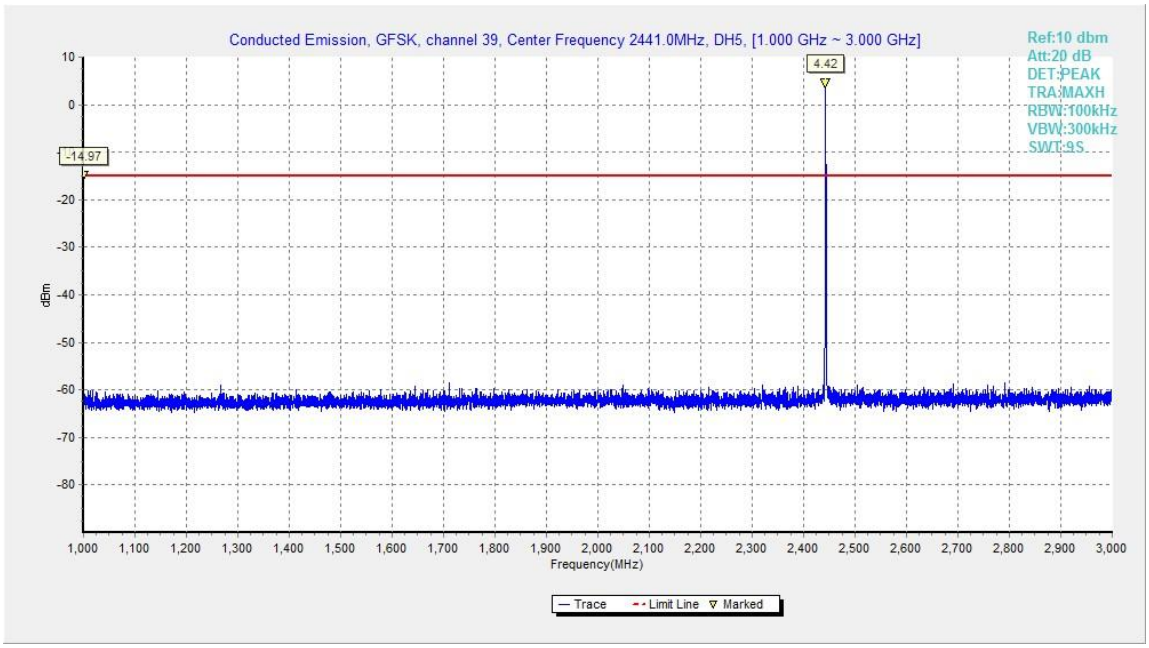

Fig.20. Conducted spurious emission: GFSK, Channel 39, 1GHz – 3GHz

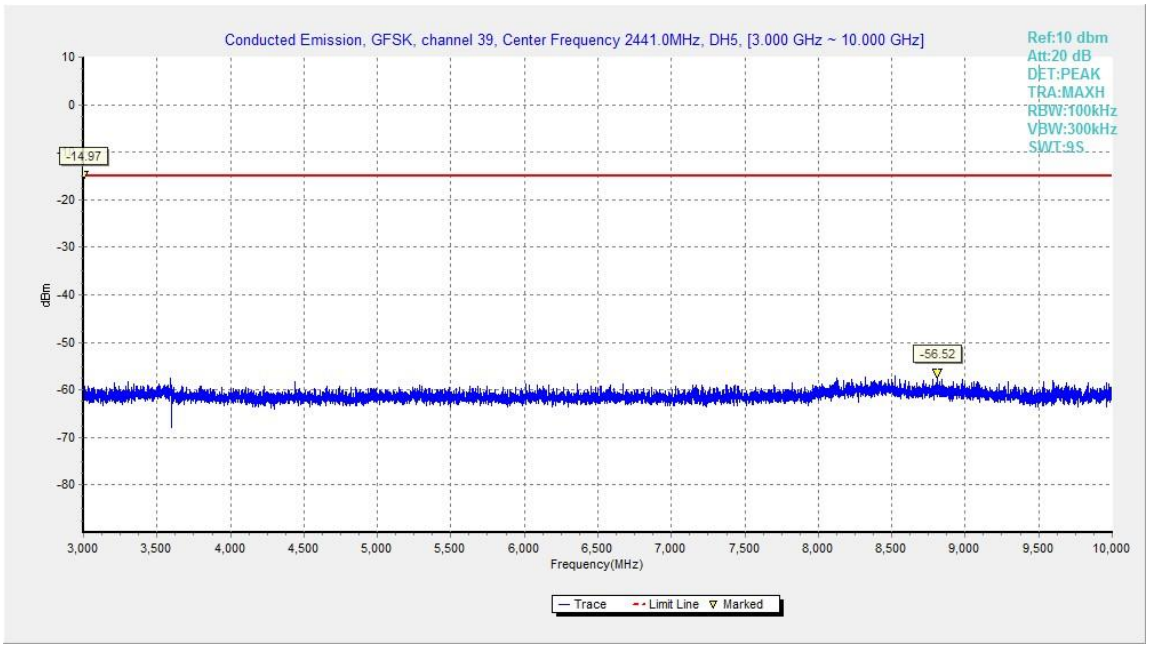

Fig.21. Conducted spurious emission: GFSK, Channel 39, 3GHz – 10GHz

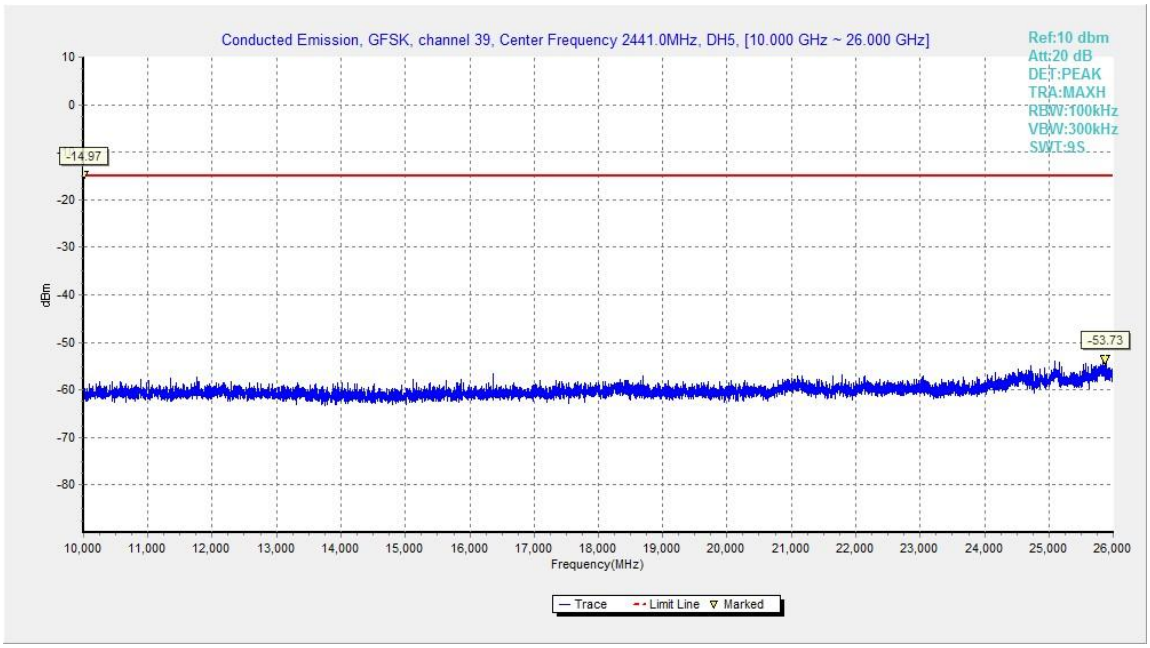

Fig.22. Conducted spurious emission: GFSK, Channel 39, 10GHz – 26GHz

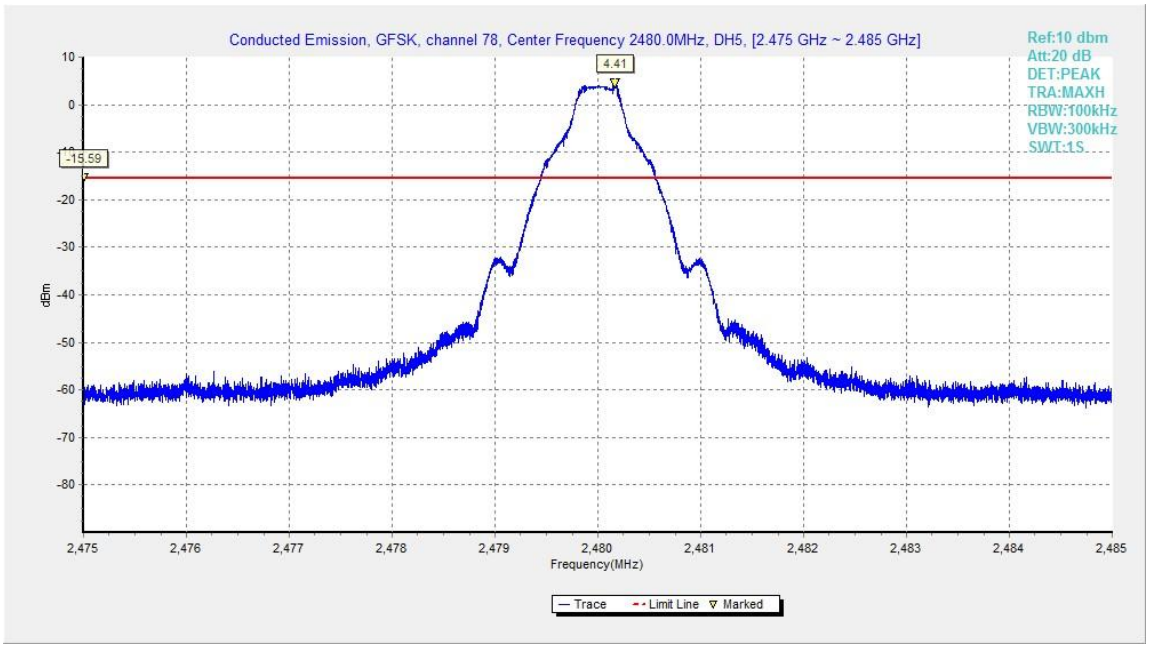

Fig.23. Conducted spurious emission: GFSK, Channel 78, 2480MHz

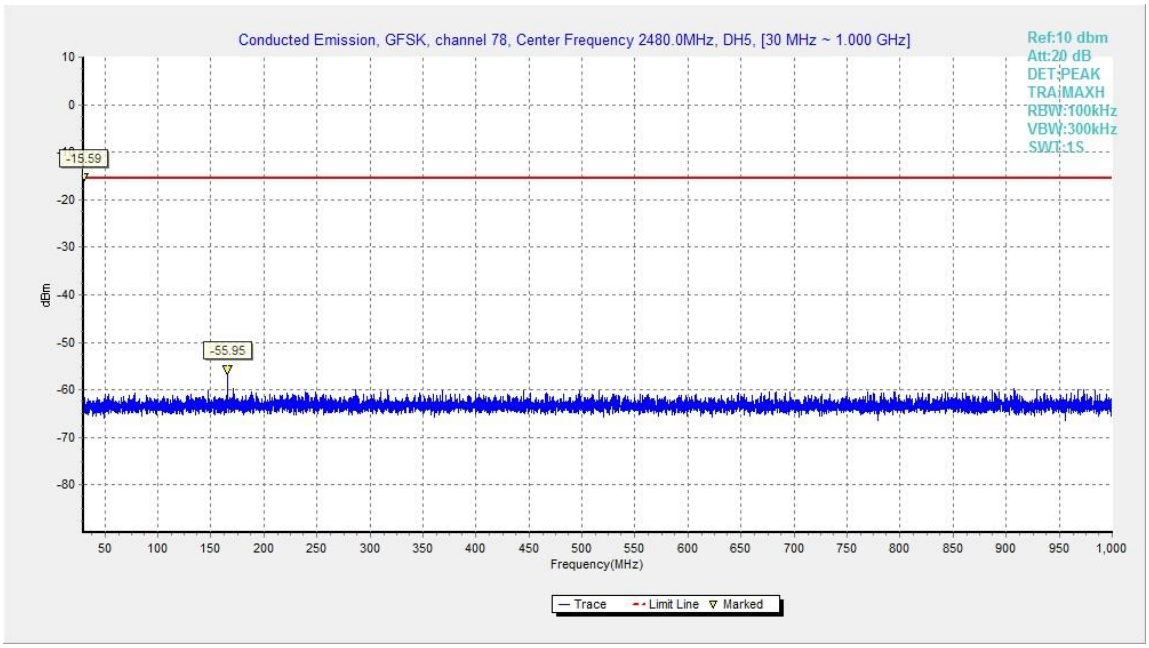

Fig.24. Conducted spurious emission: GFSK, Channel 78, 30MHz - 1GHz

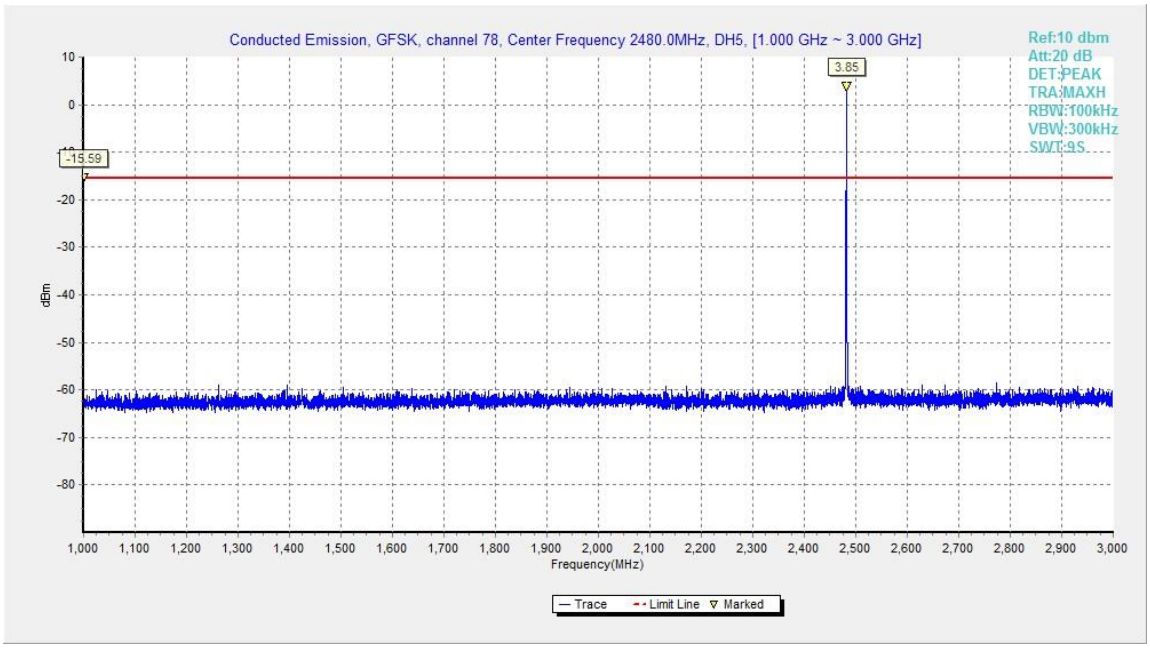

Fig.25. Conducted spurious emission: GFSK, Channel 78, 1GHz - 3GHz

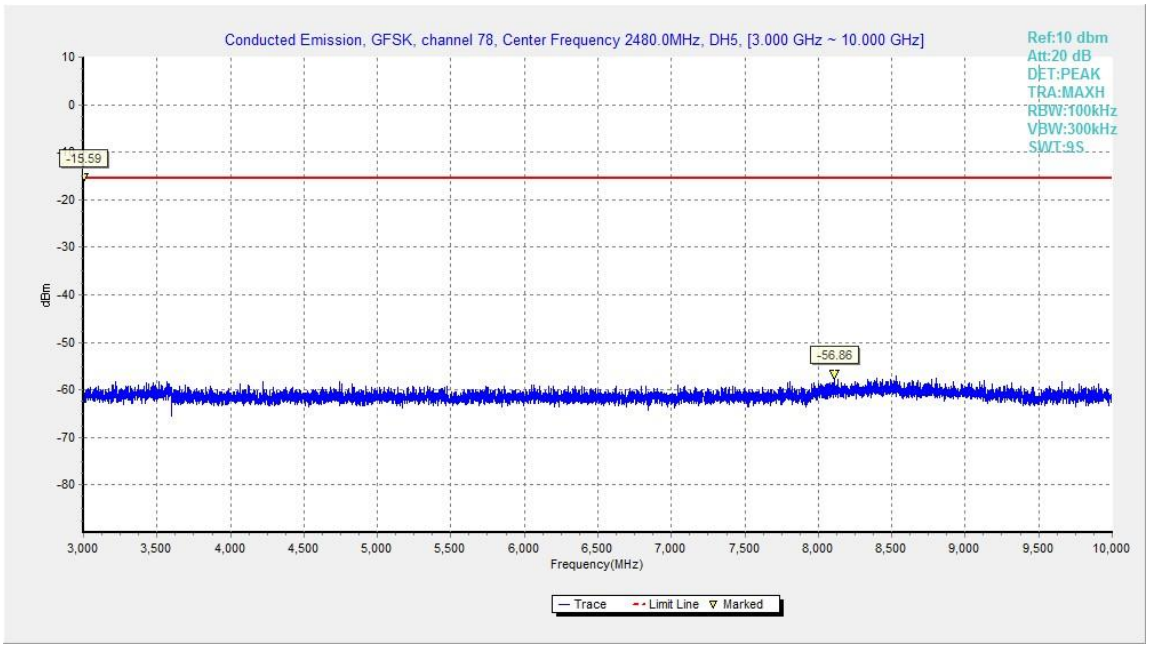

Fig.26. Conducted spurious emission: GFSK, Channel 78, 3GHz - 10GHz

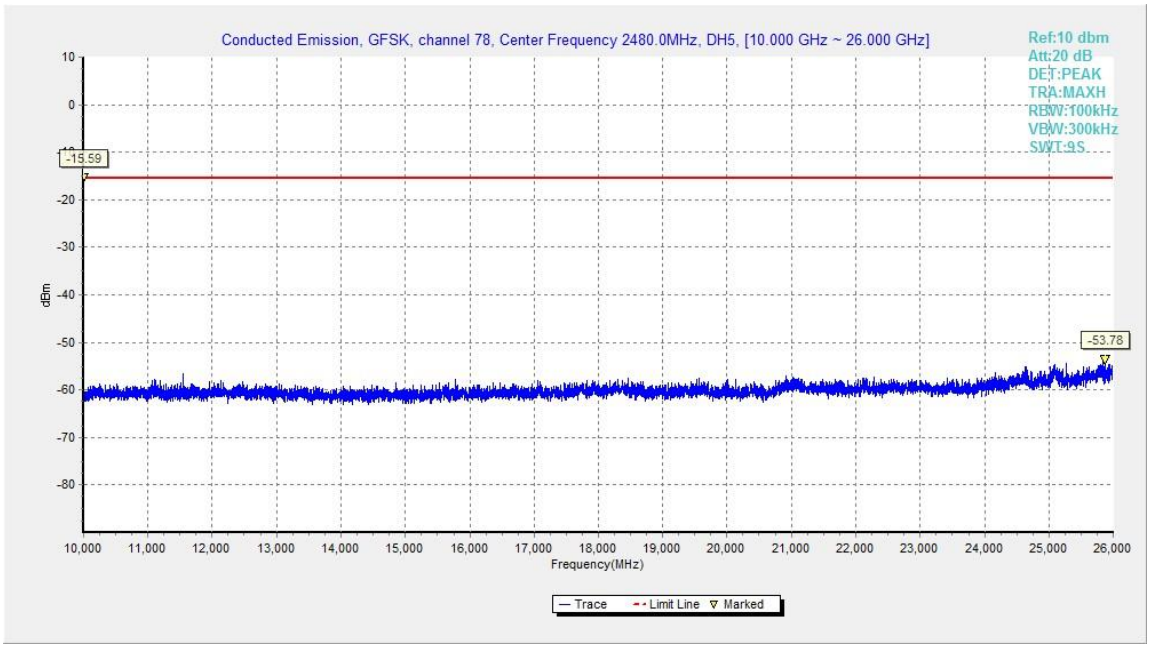

Fig.27. Conducted spurious emission: GFSK, Channel 78, 10GHz - 26GHz

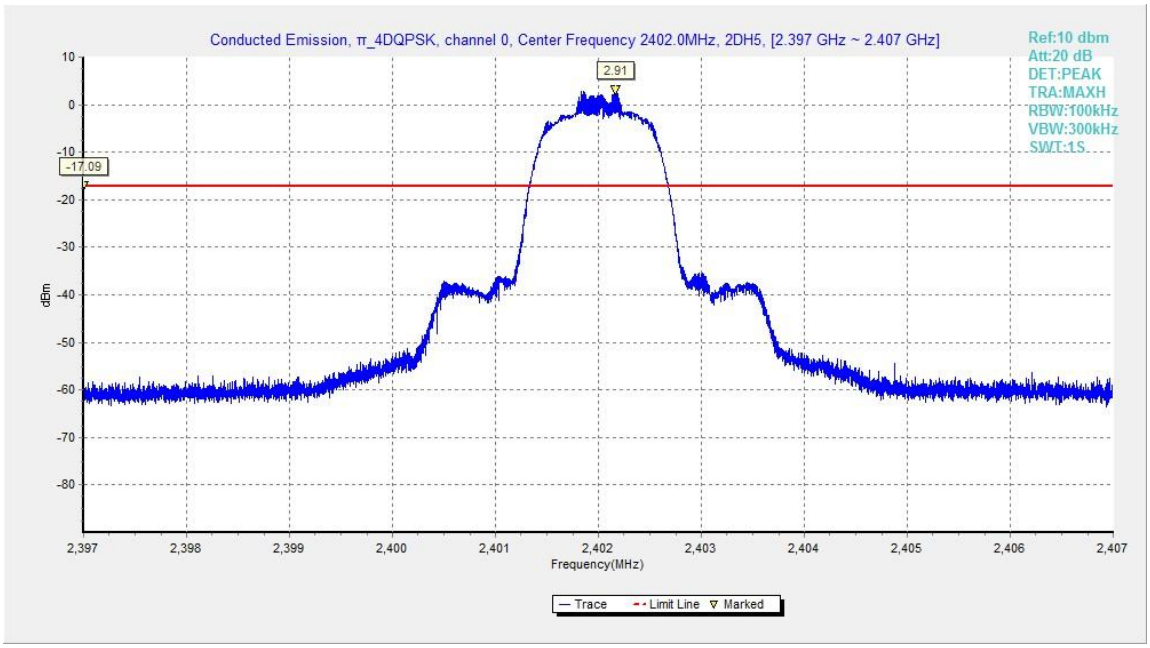

Fig.28. Conducted spurious emission: π/4 DQPSK, Channel 0,2402MHz

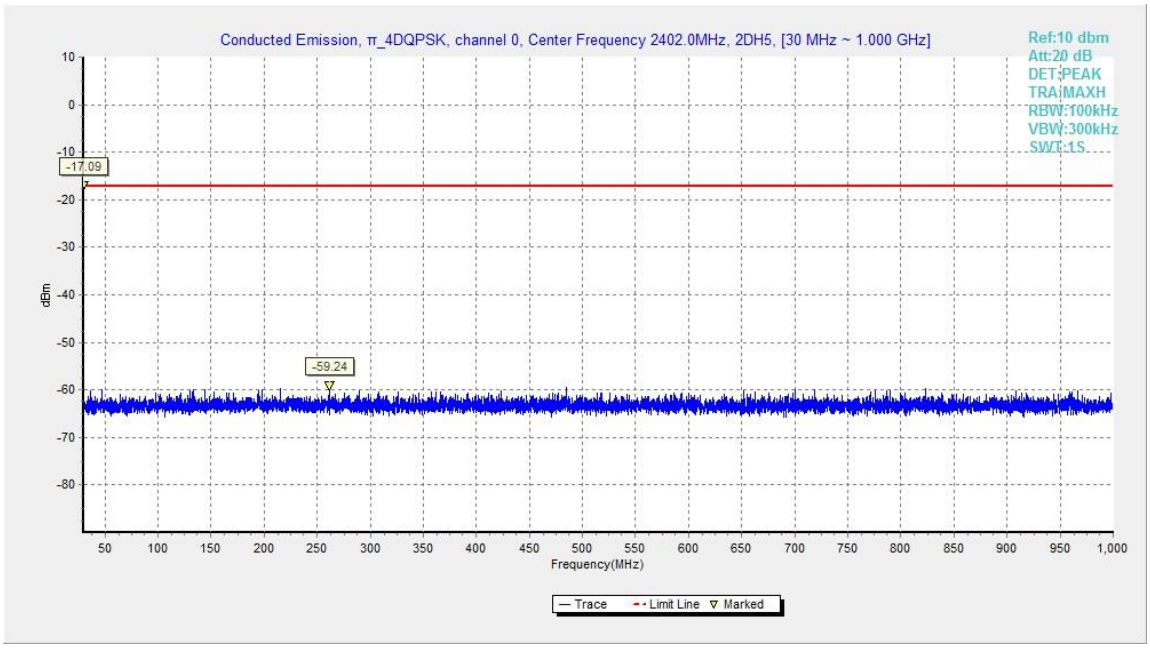

Fig.29. Conducted spurious emission: π/4 DQPSK, Channel 0, 30MHz - 1GHz

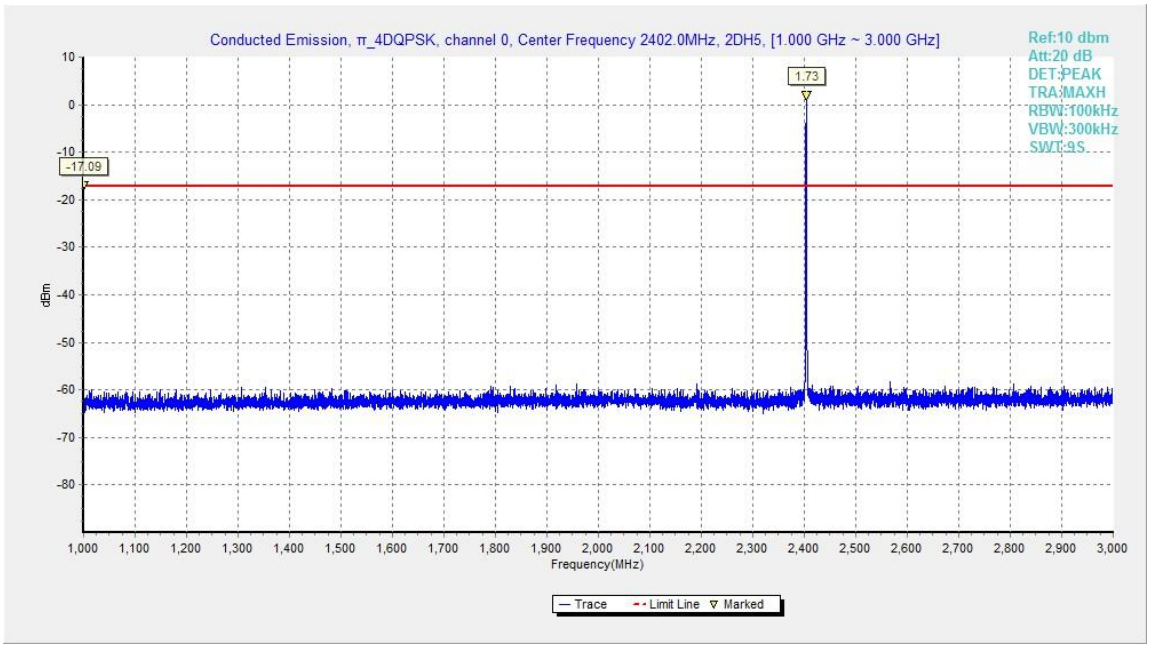

Fig.30. Conducted spurious emission: π/4 DQPSK, Channel 0, 1GHz - 3GHz

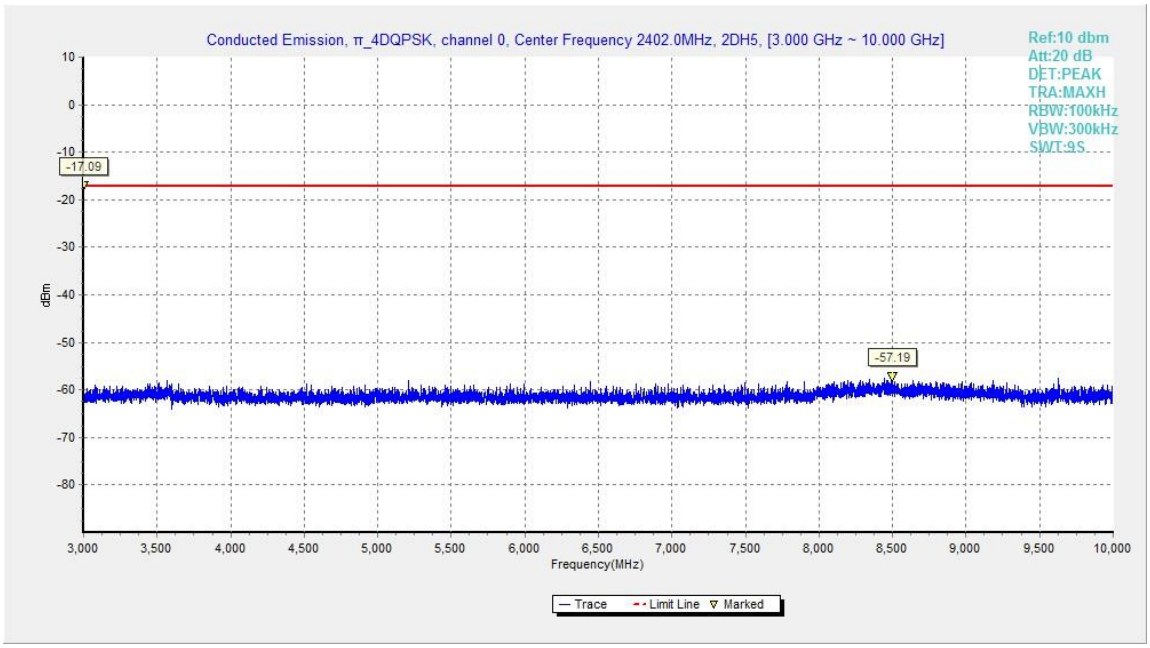

Fig.31. Conducted spurious emission: π/4 DQPSK, Channel 0, 3GHz - 10GHz

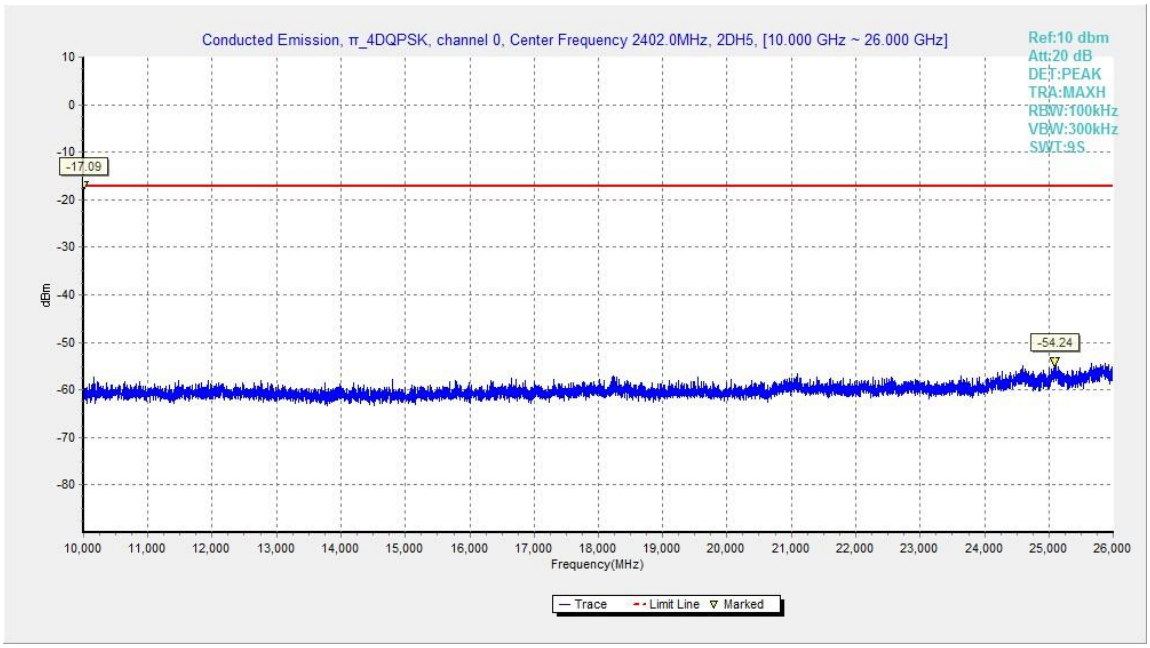

Fig.32. Conducted spurious emission: π/4 DQPSK, Channel 0,10GHz - 26GHz

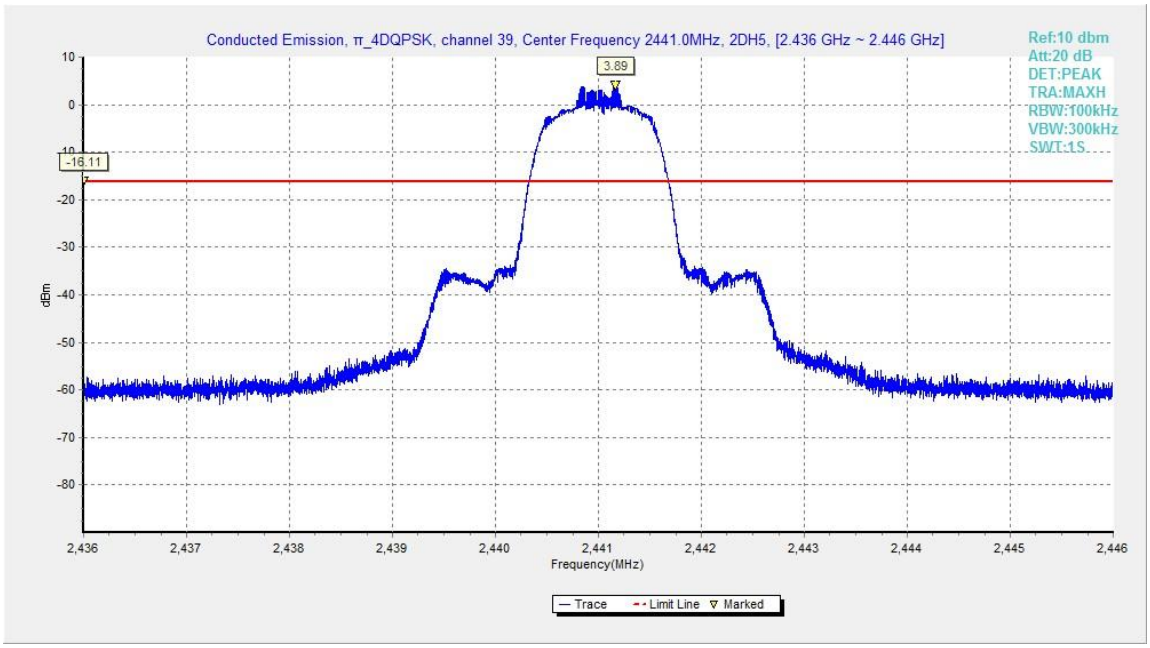

Fig.33. Conducted spurious emission: π/4 DQPSK, Channel 39, 2441MHz

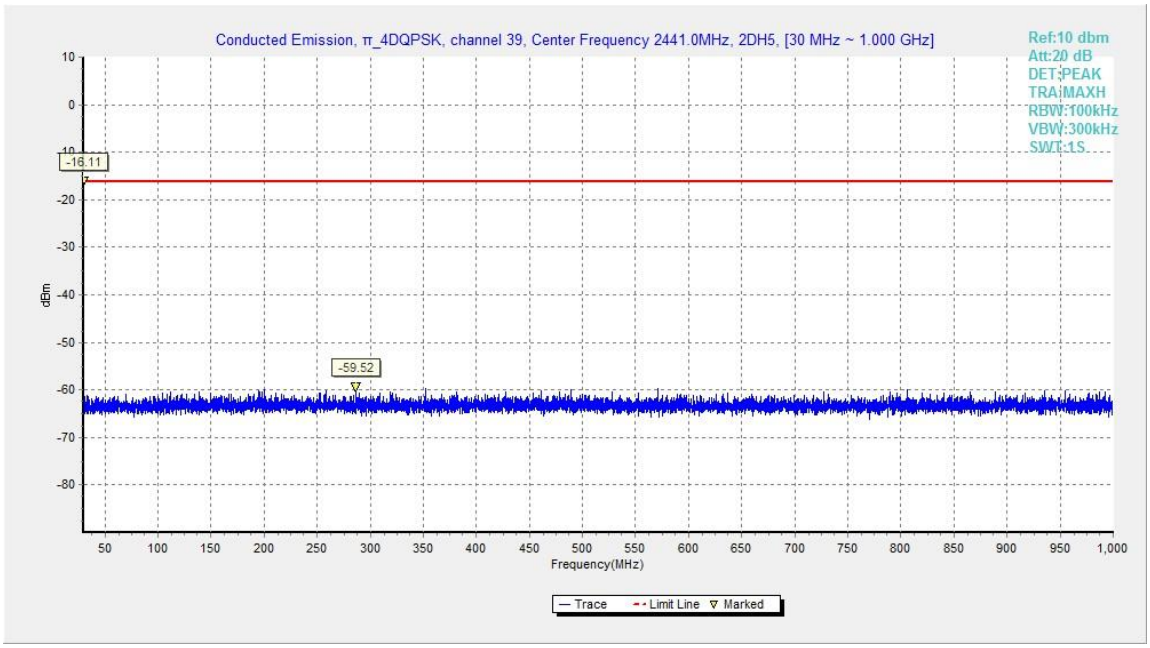

Fig.34. Conducted spurious emission: π/4 DQPSK, Channel 39, 30MHz - 1GHz

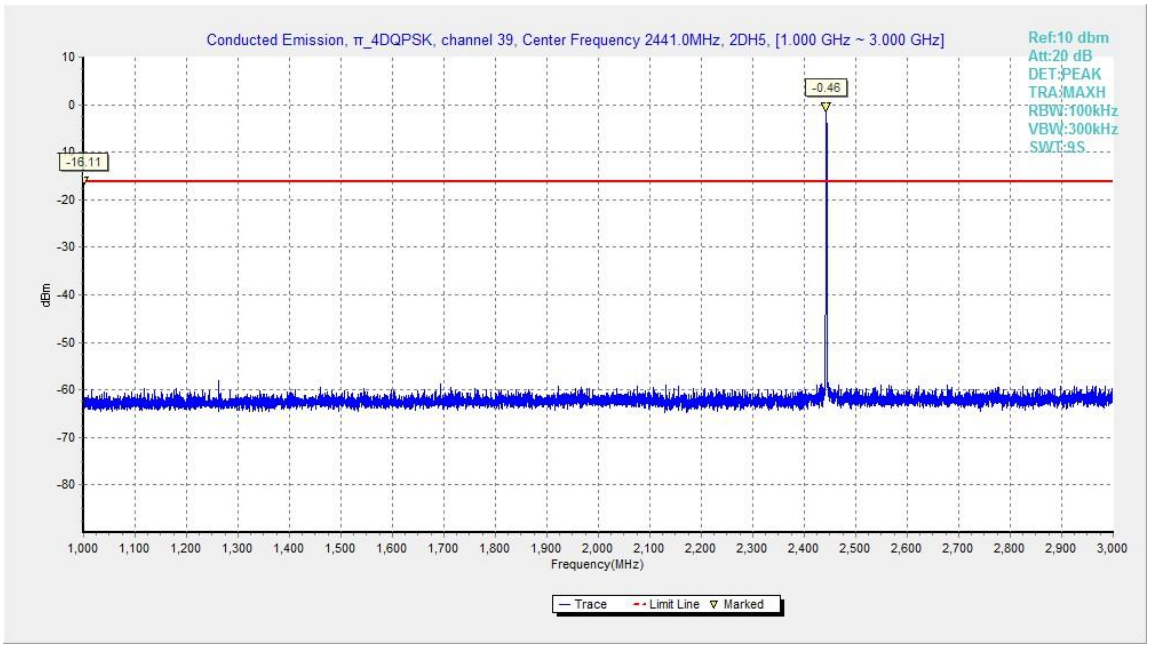

Fig.35. Conducted spurious emission: π/4 DQPSK, Channel 39, 1GHz - 3GHz

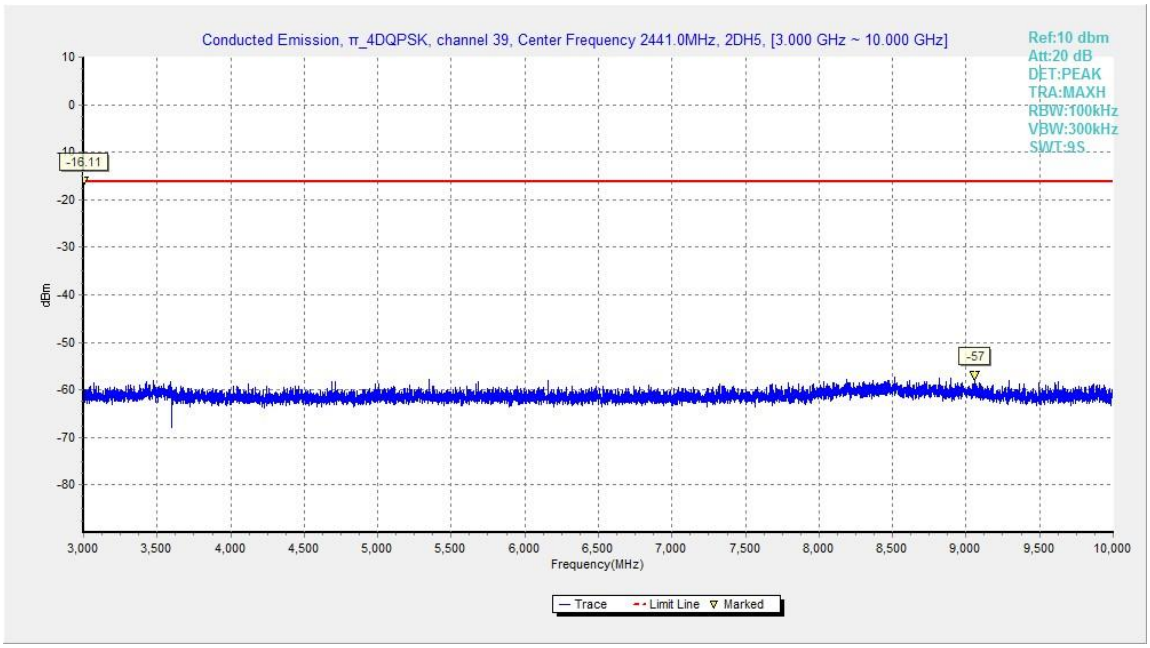

Fig.36. Conducted spurious emission: π/4 DQPSK, Channel 39, 3GHz - 10GHz

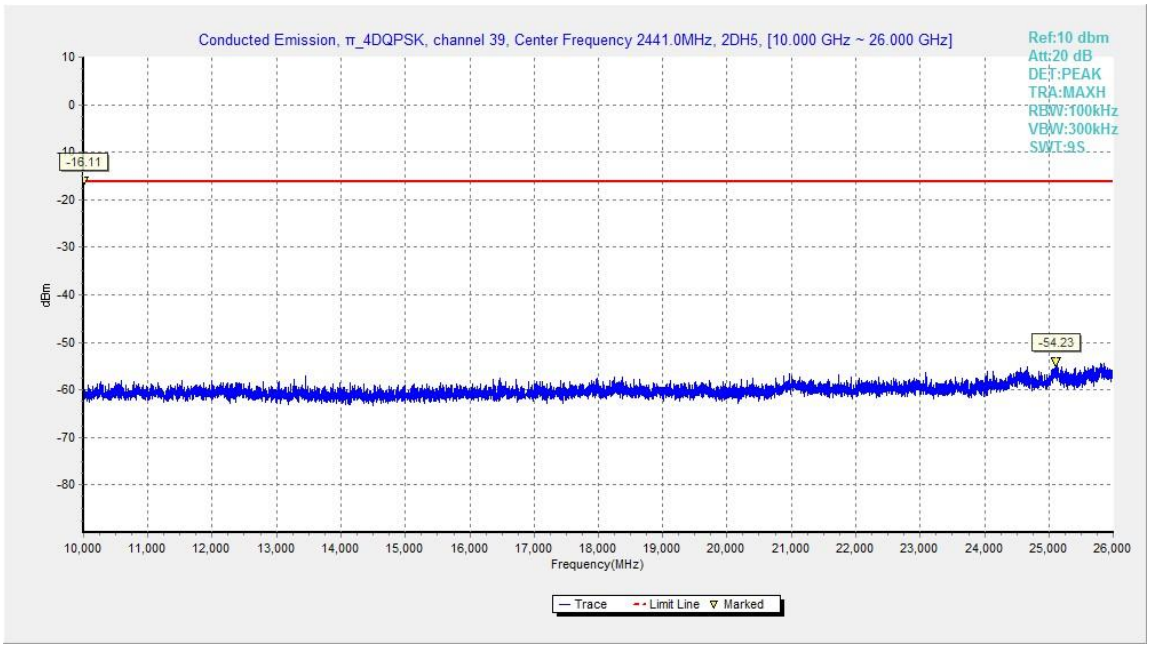

Fig.37. Conducted spurious emission: π/4 DQPSK, Channel 39, 10GHz – 26GHz

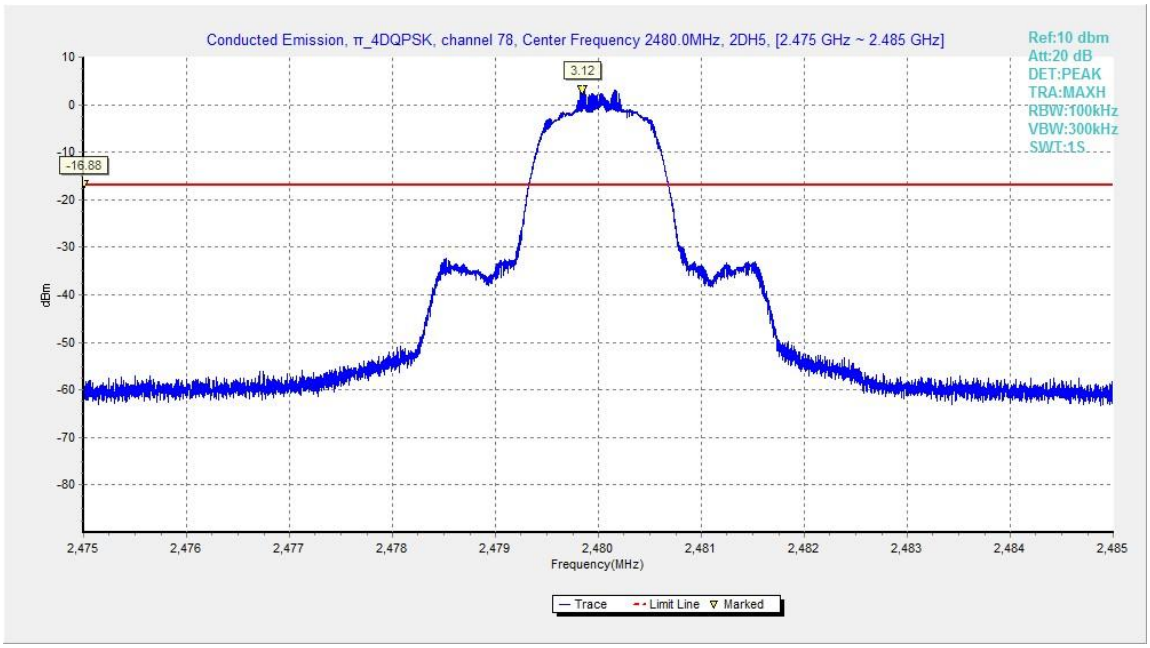

Fig.38. Conducted spurious emission: π/4 DQPSK, Channel 78, 2480MHz

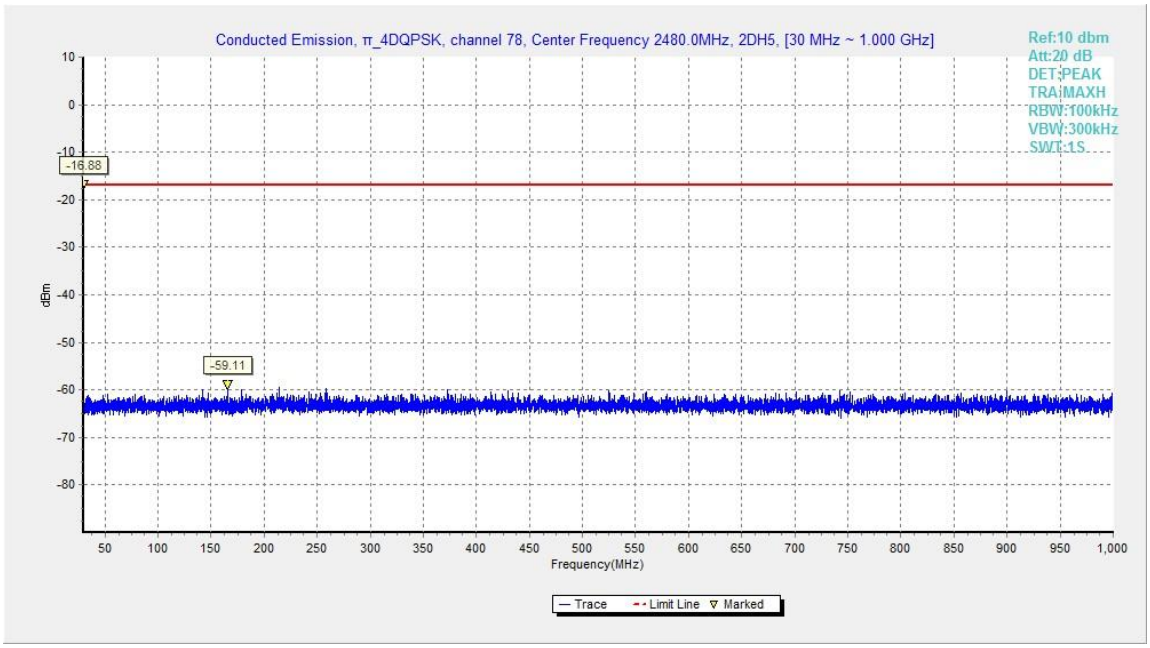

Fig.39. Conducted spurious emission: π/4 DQPSK, Channel 78, 30MHz - 1GHz

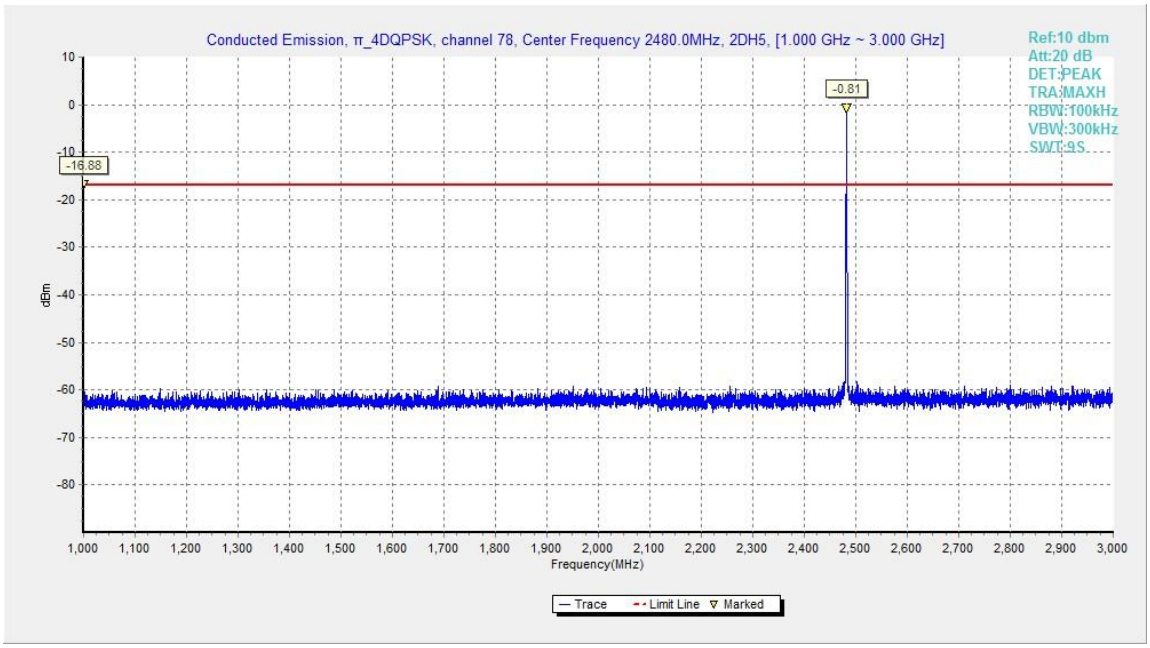

Fig.40. Conducted spurious emission: π/4 DQPSK, Channel 78, 1GHz - 3GHz

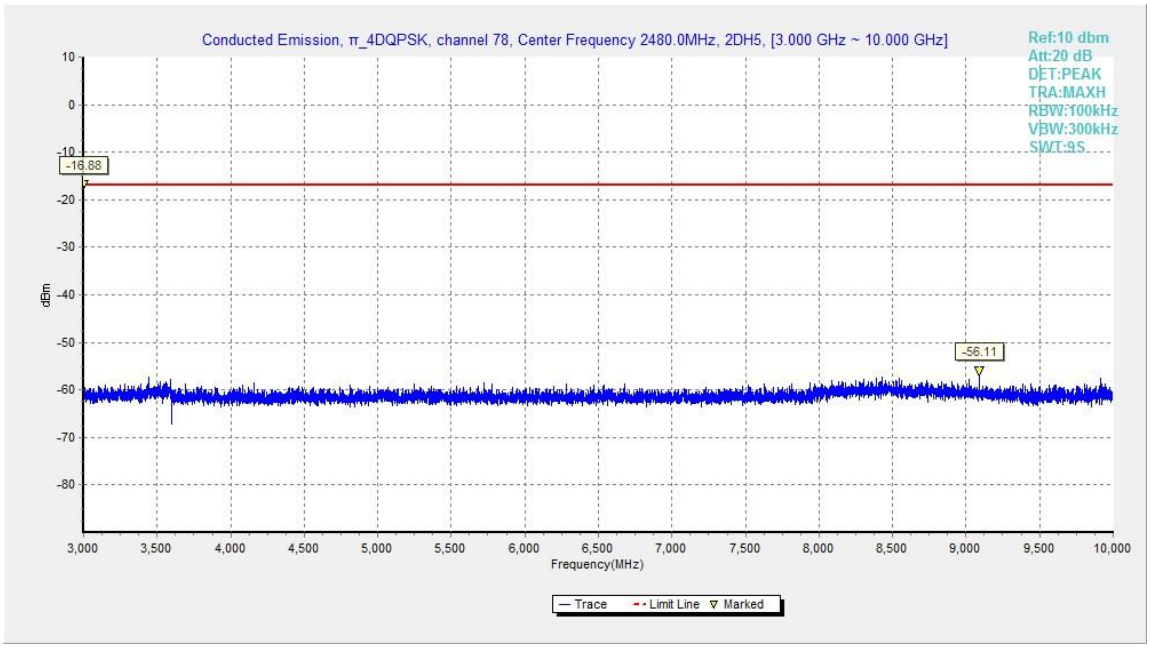

Fig.41. Conducted spurious emission: π/4 DQPSK, Channel 78, 3GHz - 10GHz

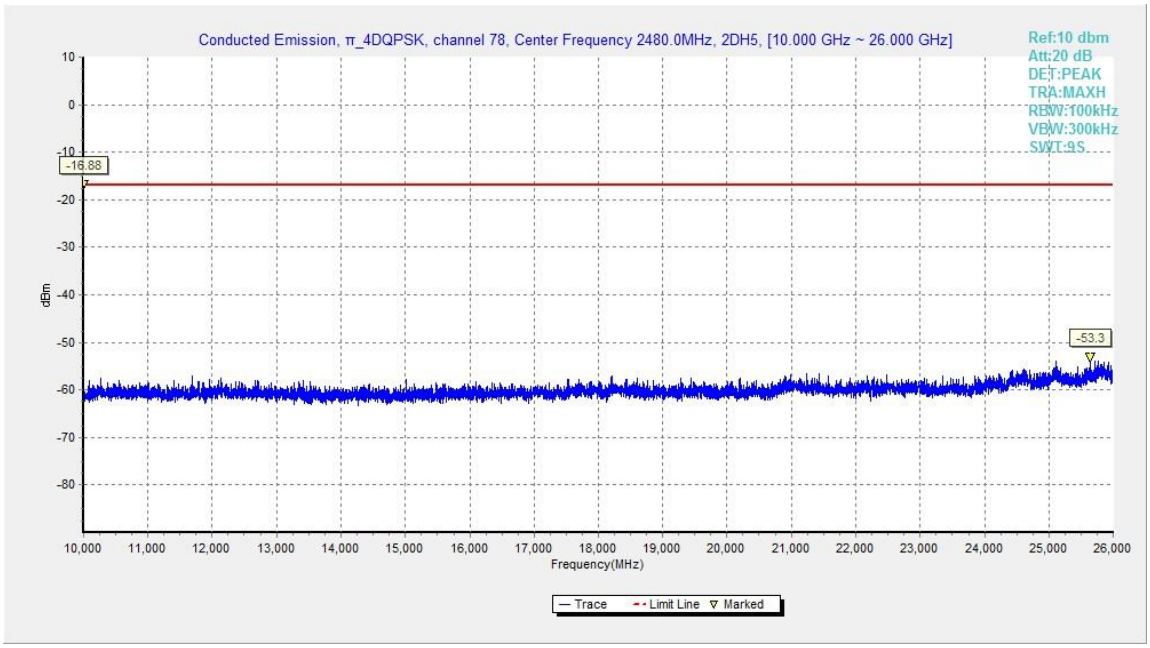

Fig.42. Conducted spurious emission: π/4 DQPSK, Channel 78, 10GHz - 26GHz

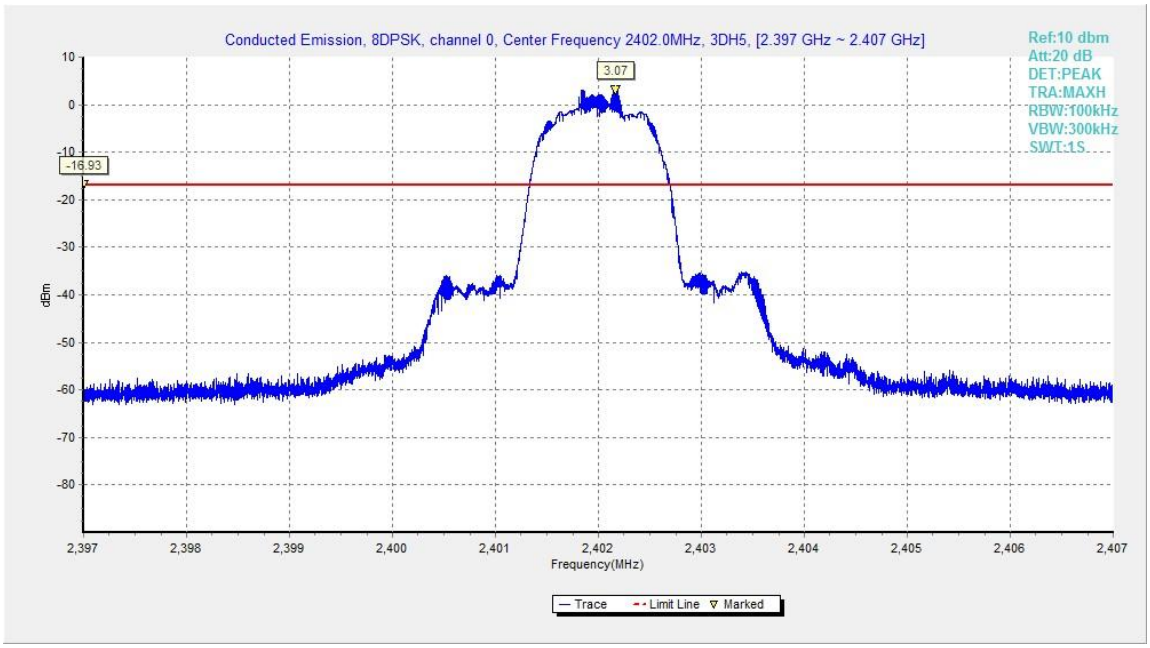

Fig.43. Conducted spurious emission: 8DPSK, Channel 0,2402MHz

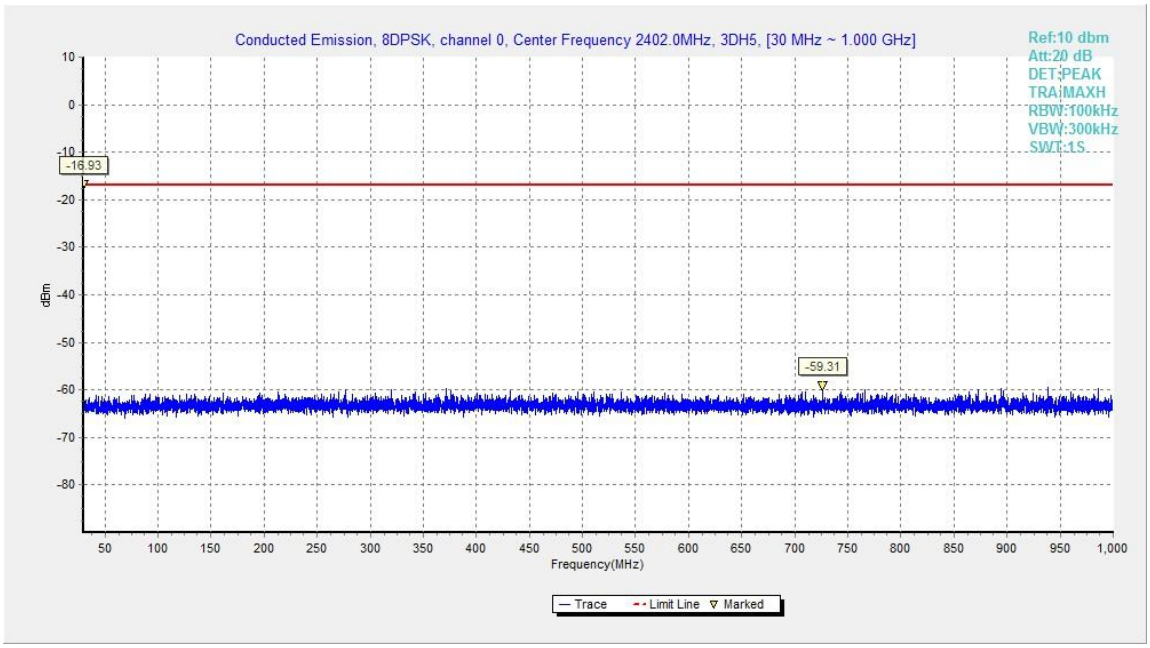

Fig.44. Conducted spurious emission: 8DPSK, Channel 0, 30MHz - 1GHz

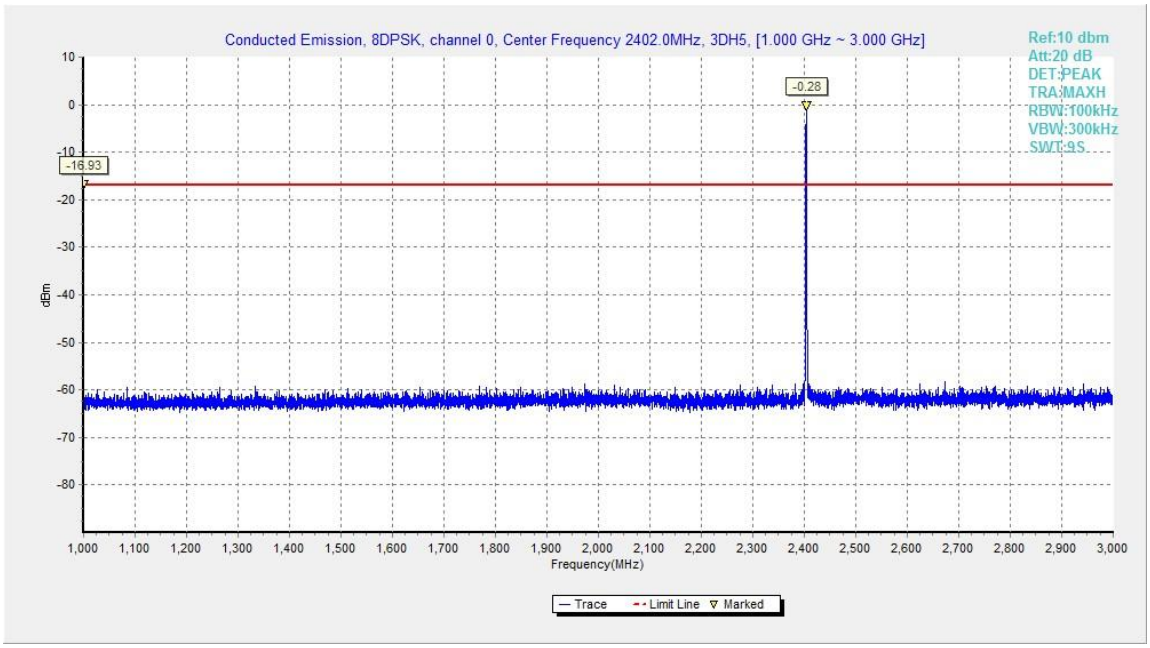

Fig.45. Conducted spurious emission: 8DPSK, Channel 0, 1GHz - 3GHz

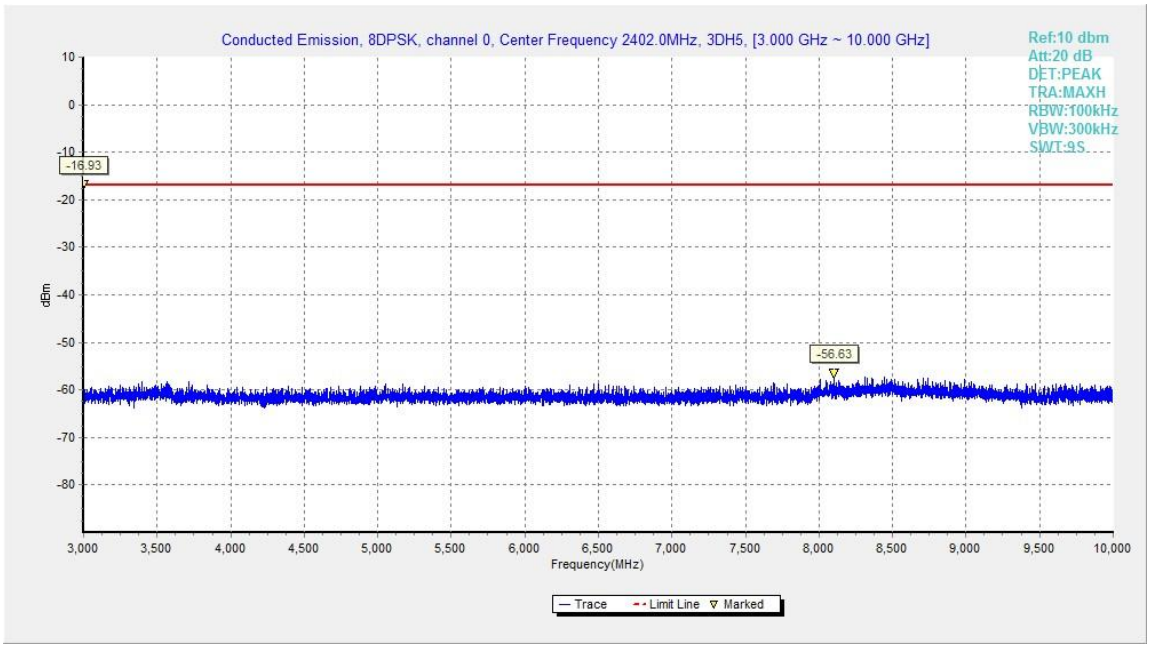

Fig.46. Conducted spurious emission: 8DPSK, Channel 0, 3GHz - 10GHz

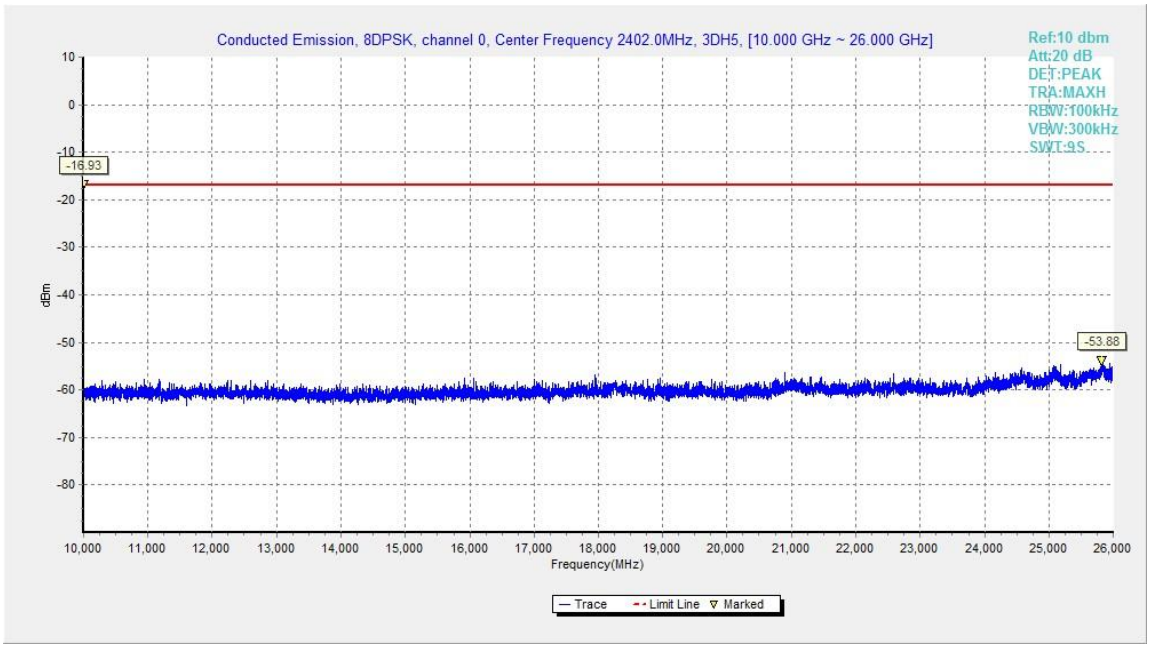

Fig.47. Conducted spurious emission: 8DPSK, Channel 0,10GHz - 26GHz

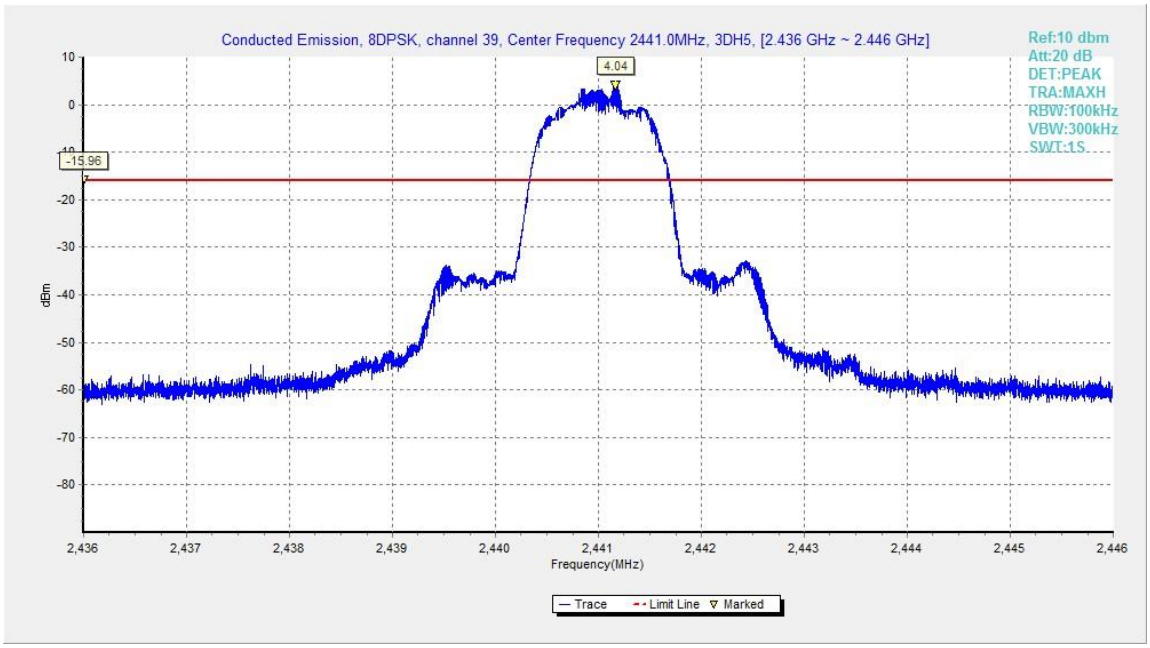

Fig.48. Conducted spurious emission: 8DPSK, Channel 39, 2441MHz

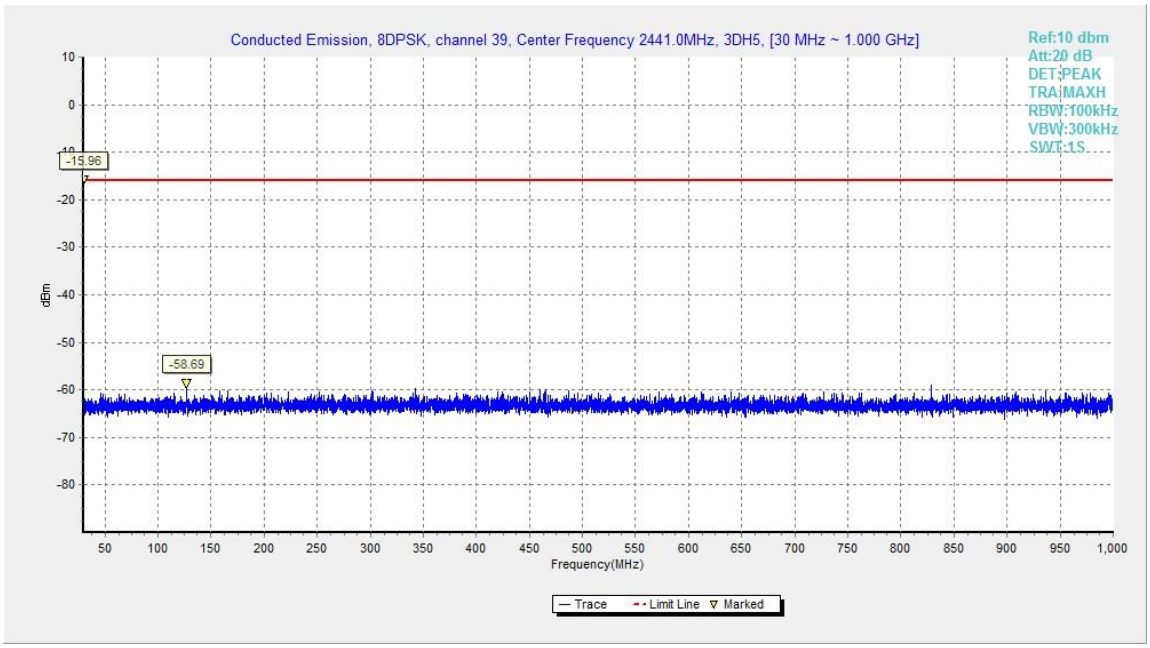

Fig.49. Conducted spurious emission: 8DPSK, Channel 39, 30MHz - 1GHz

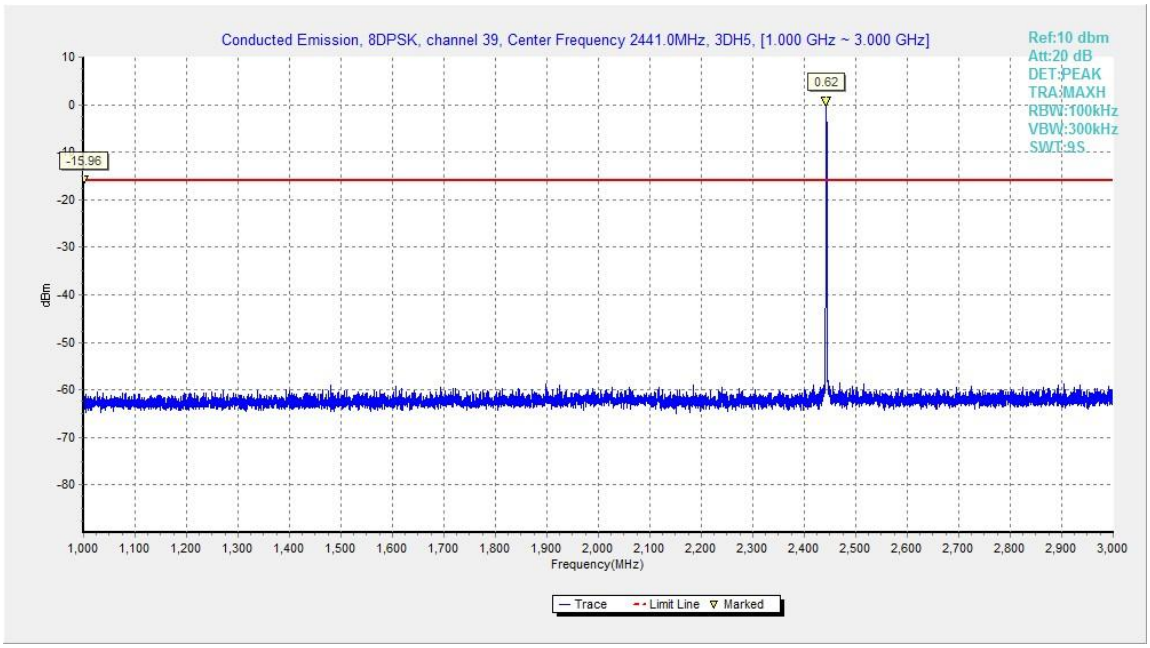

Fig.50. Conducted spurious emission: 8DPSK, Channel 39, 1GHz - 3GHz

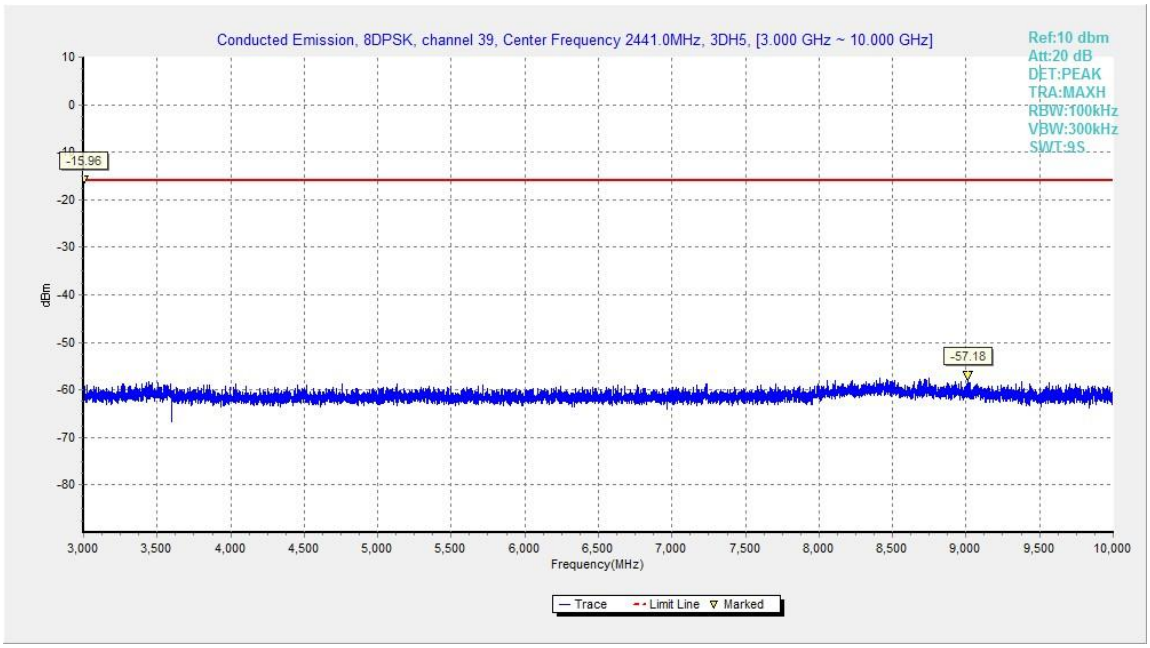

Fig.51. Conducted spurious emission: 8DPSK, Channel 39, 3GHz - 10GHz

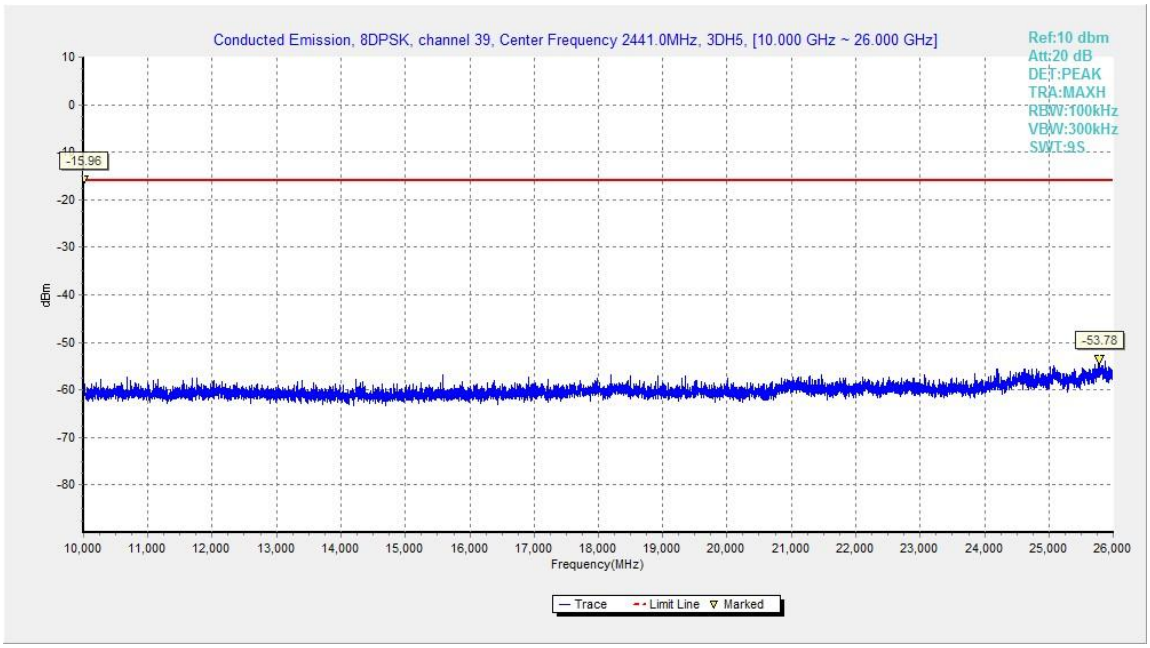

Fig.52. Conducted spurious emission: 8DPSK, Channel 39, 10GHz – 26GHz

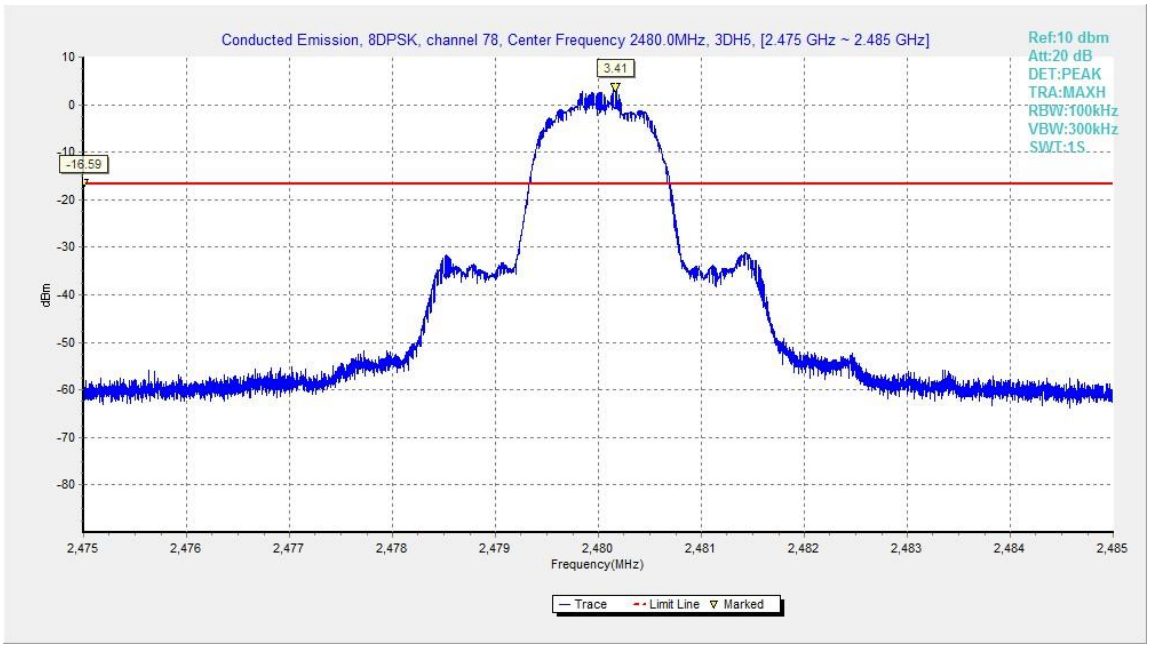

Fig.53. Conducted spurious emission: 8DPSK, Channel 78, 2480MHz

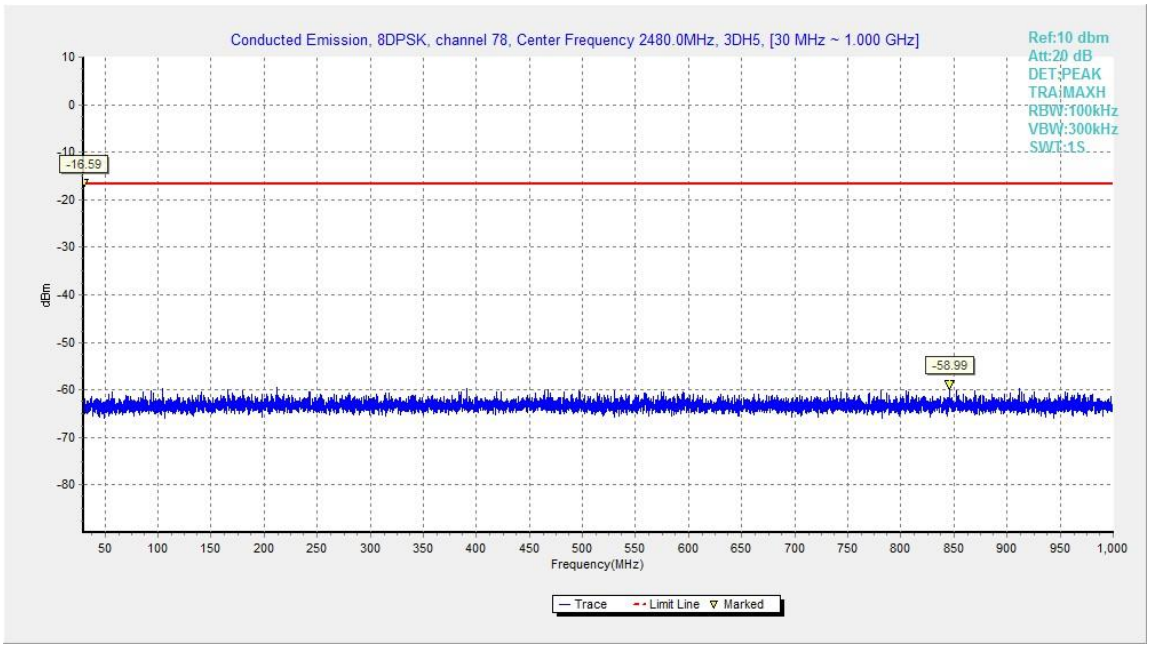

Fig.54. Conducted spurious emission: 8DPSK, Channel 78, 30MHz - 1GHz

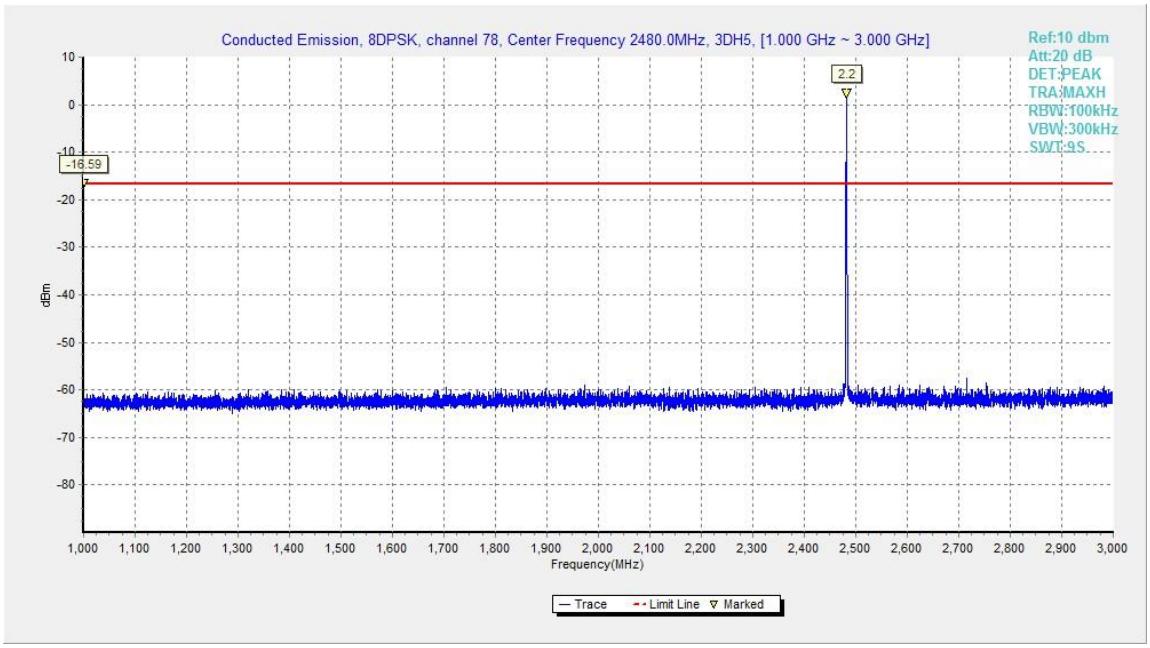

Fig.55. Conducted spurious emission: 8DPSK, Channel 78, 1GHz - 3GHz

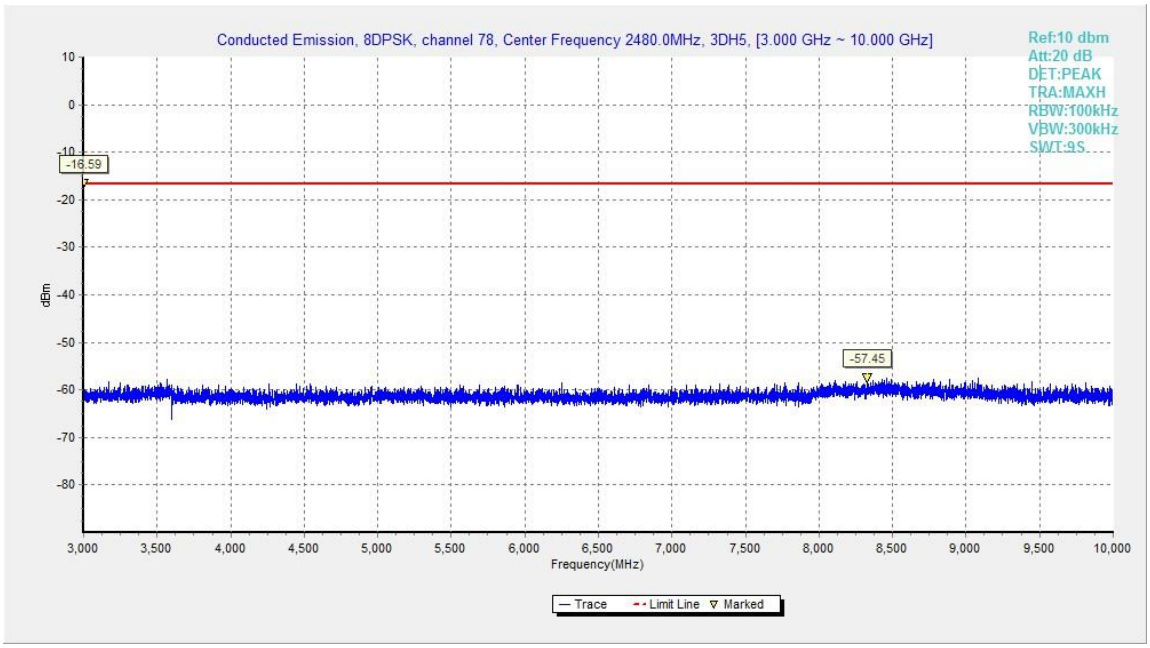

Fig.56. Conducted spurious emission: 8DPSK, Channel 78, 3GHz - 10GHz

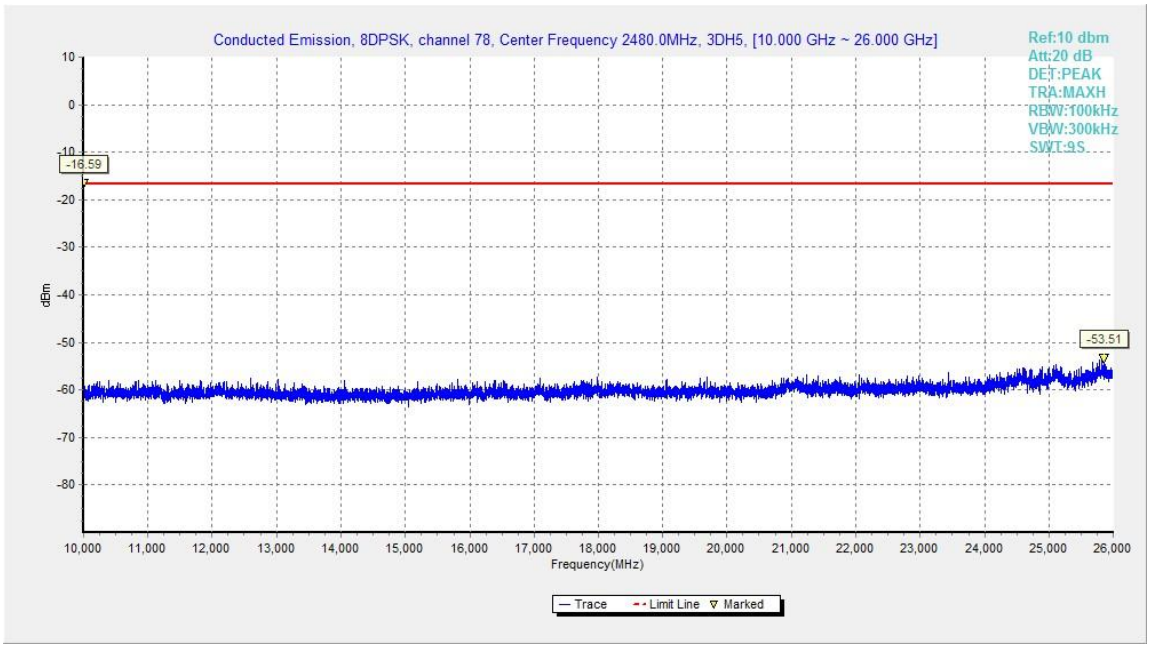

Fig.57. Conducted spurious emission: 8DPSK, Channel 78, 10GHz - 26GHz

A.5. Transmitter Spurious Emission - Radiated

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247, 15.205, 15.209	20dB below peak output 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) (see § 15.205(c)).

The measurement is made according to ANSI C63.10

Limit in restricted band:

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Test Condition

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	100KHz/300KHz	5
1000-4000	1MHz/1MHz	15
4000-18000	1MHz/1MHz	40
18000-26500	1MHz/1MHz	20

Measurement Results:

Result=P_{Mea}+ARPL

For GFSK

Channel	Frequency Range	Test Results	Conclusion
Power	2.38GHz~2.4GHz---L	Fig.58	P
Power	2.45GHz~2.5GHz---H	Fig.59	P

Forπ/4 DQPSK

Channel	Frequency Range	Test Results	Conclusion
Power	2.38GHz~2.4GHz---L	Fig.60	P
Power	2.45GHz~2.5GHz---H	Fig.61	P

For 8DPSK

Channel	Frequency Range	Test Results	Conclusion
Power	2.38GHz~2.4GHz---L	Fig.62	P
Power	2.45GHz~2.5GHz---H	Fig.63	P

GFSK Ch 0 - Average

Frequency(MHz)	Result(dBuv/m)	ARPL (dB)	PMea(dBuv/m)	Polarization
2385.265	41.3	-38.8	27.7	V
17740.500	37.9	-18.5	45.6	H
17860.500	37.9	-18.5	45.6	V
17858.000	37.8	-18.5	45.6	H
17754.000	37.8	-18.5	45.6	V
17771.000	37.7	-18.5	45.6	V

GFSK Ch 39 - Average

Frequency(MHz)	Result(dBuv/m)	ARPL (dB)	Pmea(dBuv/m)	Polarization
17834.500	38.1	-18.5	45.6	H
17871.500	37.9	-18.5	45.6	V
17892.500	37.9	-18.5	45.6	V
17877.500	37.9	-18.5	45.6	H
17790.500	37.9	-18.5	45.6	V
17850.000	37.8	-18.5	45.6	V

GFSK Ch 78 - Average

Frequency(MHz)	Result(dBuv/m)	ARPL (dB)	Pmea(dBuv/m)	Polarization
2485.160	41.0	-38.9	27.7	V
17435.500	38.1	-19.2	41.5	H
17783.000	38.0	-18.5	45.6	H
17436.500	38.0	-19.2	41.5	H
17811.000	37.9	-18.5	45.6	V
17833.500	37.9	-18.5	45.6	V

π/4 DQPSK Ch 0 - Average

Frequency(MHz)	Result(dBuv/m)	ARPL (dB)	Pmea(dBuv/m)	Polarization
2386.910	41.2	-38.8	27.7	V
17857.000	38.4	-18.5	45.6	H
17364.000	38.3	-19.5	41.5	V
17847.500	38.2	-18.5	45.6	V
17755.500	38.2	-18.5	45.6	H
17747.000	38.1	-18.5	45.6	H

π/4 DQPSK Ch 39 - Average

Frequency(MHz)	Result(dBuv/m)	ARPL (dB)	Pmea(dBuv/m)	Polarization
17857.000	38.2	-18.5	45.6	V
17849.000	38.2	-18.5	45.6	V
17915.500	38.2	-17.7	45.6	H
17406.500	38.1	-19.2	41.5	V
17864.500	38.1	-18.5	45.6	V
17826.500	38.1	-18.5	45.6	H

π/4 DQPSK Ch 78 - Average

Frequency(MHz)	Result(dBuv/m)	ARPL (dB)	Pmea(dBuv/m)	Polarization
2484.785	40.8	-38.9	27.7	V
17762.000	38.2	-18.5	45.6	H
17443.500	38.1	-19.2	41.5	V
17800.000	38.1	-18.5	45.6	V
17446.500	38.1	-19.2	41.5	H
17802.500	38.1	-18.5	45.6	H

8DPSK Ch 0 - Average

Frequency(MHz)	Result(dBuv/m)	ARPL (dB)	Pmea(dBuv/m)	Polarization
2388.125	41.2	-38.8	27.7	V
17880.000	38.3	-18.5	45.6	H
17840.000	38.3	-18.5	45.6	H
17884.500	38.2	-18.5	45.6	V
17807.500	38.2	-18.5	45.6	V
17848.000	38.1	-18.5	45.6	H

8DPSK Ch 39 - Average

Frequency(MHz)	Result(dBuv/m)	ARPL (dB)	Pmea(dBuv/m)	Polarization
17823.500	38.3	-18.5	45.6	H
17823.000	38.3	-18.5	45.6	H
17893.500	38.3	-18.5	45.6	V
17853.500	38.3	-18.5	45.6	V
17736.000	38.2	-18.9	45.6	V
17850.500	38.2	-18.5	45.6	H

8DPSK Ch 78 - Average

Frequency(MHz)	Result(dBuv/m)	ARPL (dB)	Pmea(dBuv/m)	Polarization
2483.915	41.0	-38.9	27.7	V
17877.500	38.4	-18.5	45.6	H
17862.000	38.3	-18.5	45.6	V
17819.000	38.3	-18.5	45.6	V
17854.000	38.3	-18.5	45.6	H
17405.000	38.2	-19.2	41.5	V

GFSK Ch 0 – Peak

Frequency(MHz)	Result(dBuv/m)	ARPL (dB)	PMea(dBuv/m)	Polarization
2385.280	54.2	-38.8	27.7	V
17722.000	49.8	-18.9	45.6	H
17766.500	49.2	-18.5	45.6	V
17866.000	49.1	-18.5	45.6	H
17676.500	49.0	-18.9	45.6	V
17434.000	48.9	-19.2	41.5	V

GFSK Ch 39 - Peak

Frequency(MHz)	Result(dBuv/m)	ARPL (dB)	Pmea(dBuv/m)	Polarization
17885.500	50.1	-18.5	45.6	H
17780.500	50.1	-18.5	45.6	V
17836.500	49.4	-18.5	45.6	V
17290.000	49.3	-19.5	41.5	H
17319.500	49.3	-19.5	41.5	V
17856.500	49.2	-18.5	45.6	V

GFSK Ch 78 - Peak

Frequency(MHz)	Result(dBuv/m)	ARPL (dB)	Pmea(dBuv/m)	Polarization
2485.400	53.6	-38.9	27.7	V
17672.500	49.4	-18.9	45.6	H
17364.000	49.4	-19.5	41.5	H
17411.000	49.3	-19.2	41.5	H
17415.000	49.3	-19.2	41.5	V
17906.000	49.3	-18.5	45.6	V

π/4 DQPSK Ch 0 - Peak

Frequency(MHz)	Result(dBuv/m)	ARPL (dB)	Pmea(dBuv/m)	Polarization
2384.530	54.1	-38.8	27.7	V
17971.000	50.2	-17.7	45.6	H
17954.500	50.1	-17.7	45.6	V
17877.500	50.0	-18.5	45.6	V
17833.500	49.7	-18.5	45.6	H
17364.500	49.7	-19.5	41.5	H

π/4 DQPSK Ch 39 - Peak

Frequency(MHz)	Result(dBuv/m)	ARPL (dB)	Pmea(dBuv/m)	Polarization
17840.000	50.4	-18.5	45.6	V
17356.000	49.5	-19.5	41.5	V
17936.000	49.4	-17.7	45.6	H
17931.500	49.3	-17.7	45.6	V
17886.500	49.3	-18.5	45.6	V
17818.000	49.3	-18.5	45.6	H

π/4 DQPSK Ch 78 - Peak

Frequency(MHz)	Result(dBuv/m)	ARPL (dB)	Pmea(dBuv/m)	Polarization
2484.890	52.9	-38.9	27.7	V
17710.500	49.9	-18.9	45.6	H
17833.000	49.6	-18.5	45.6	V
17758.000	49.5	-18.5	45.6	V
17843.500	49.4	-18.5	45.6	H
17827.500	49.4	-18.5	45.6	H

8DPSK Ch 0 - Peak

Frequency(MHz)	Result(dBuv/m)	ARPL (dB)	Pmea(dBuv/m)	Polarization
2388.305	51.0	-38.8	27.7	V
17849.500	50.4	-18.5	45.6	H
17482.500	50.3	-19.2	41.5	H
17759.000	50.0	-18.5	45.6	V
17367.000	49.7	-19.5	41.5	V
17884.000	49.6	-18.5	45.6	H

8DPSK Ch 39 - Peak

Frequency(MHz)	Result(dBuv/m)	ARPL (dB)	Pmea(dBuv/m)	Polarization
17806.000	50.0	-18.5	45.6	H
17371.500	50.0	-19.5	41.5	H
17776.500	50.0	-18.5	45.6	V
17774.500	49.7	-18.5	45.6	V
17819.500	49.6	-18.5	45.6	V
16972.000	49.5	-19.9	39.9	H

8DPSK Ch 78 - Peak

Frequency(MHz)	Result(dBuv/m)	ARPL (dB)	Pmea(dBuv/m)	Polarization
2484.455	52.2	-38.9	27.7	V
17372.500	50.2	-19.5	41.5	H
17312.500	49.9	-19.5	41.5	V
17946.000	49.8	-17.7	45.6	V
17919.000	49.6	-17.7	45.6	H
17337.000	49.4	-19.5	41.5	V

Conclusion: PASS

Test graphs as below:

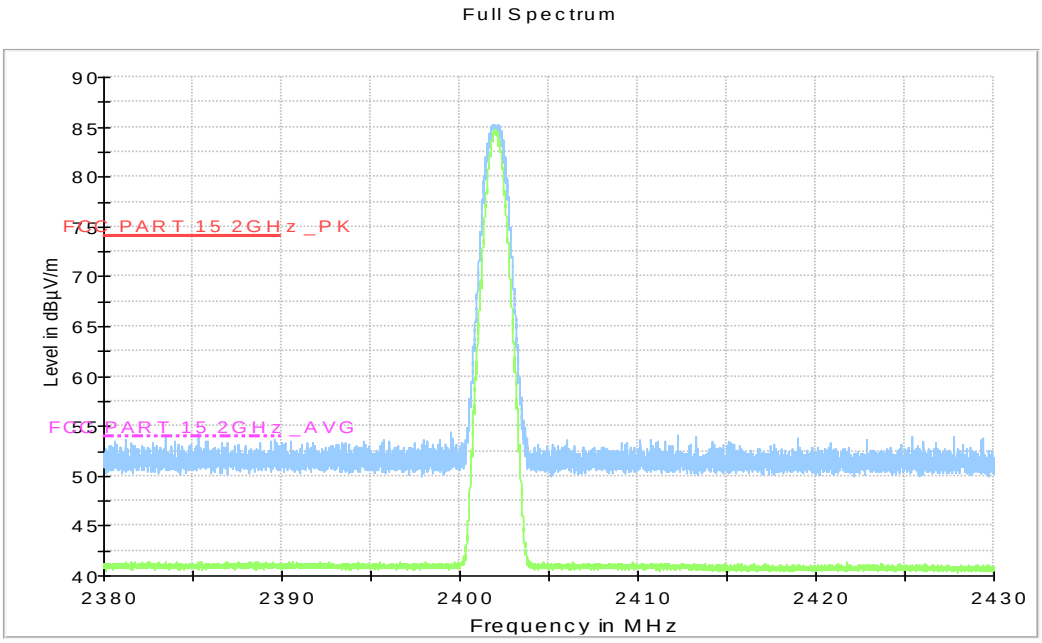

Fig.58. Radiated emission (Power): GFSK, low channel

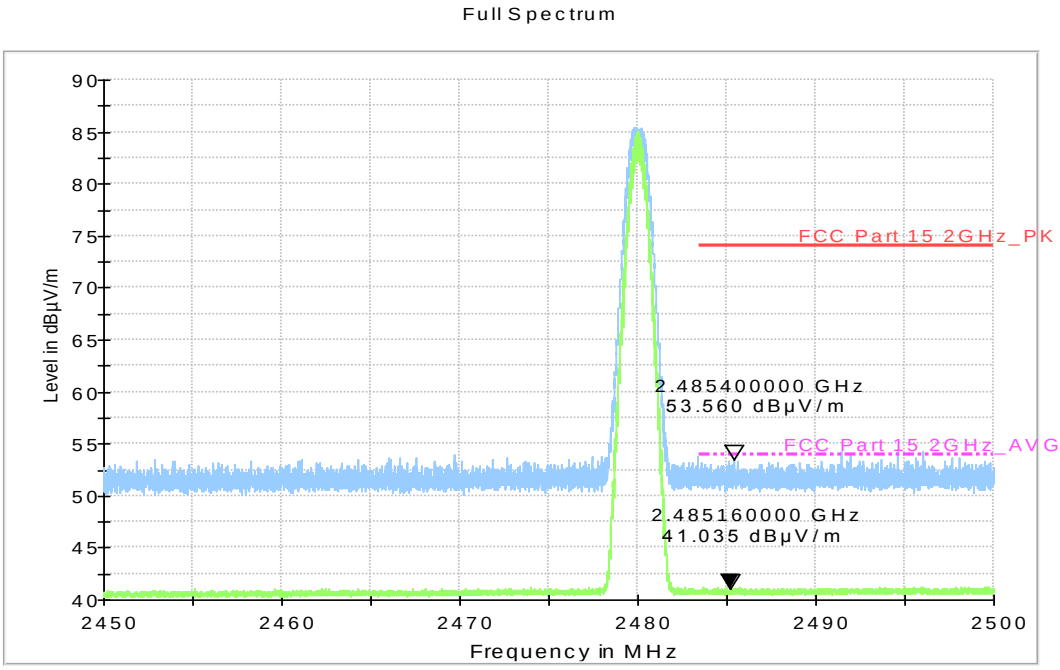

Fig.59. Radiated emission (Power) GFSK, high channel

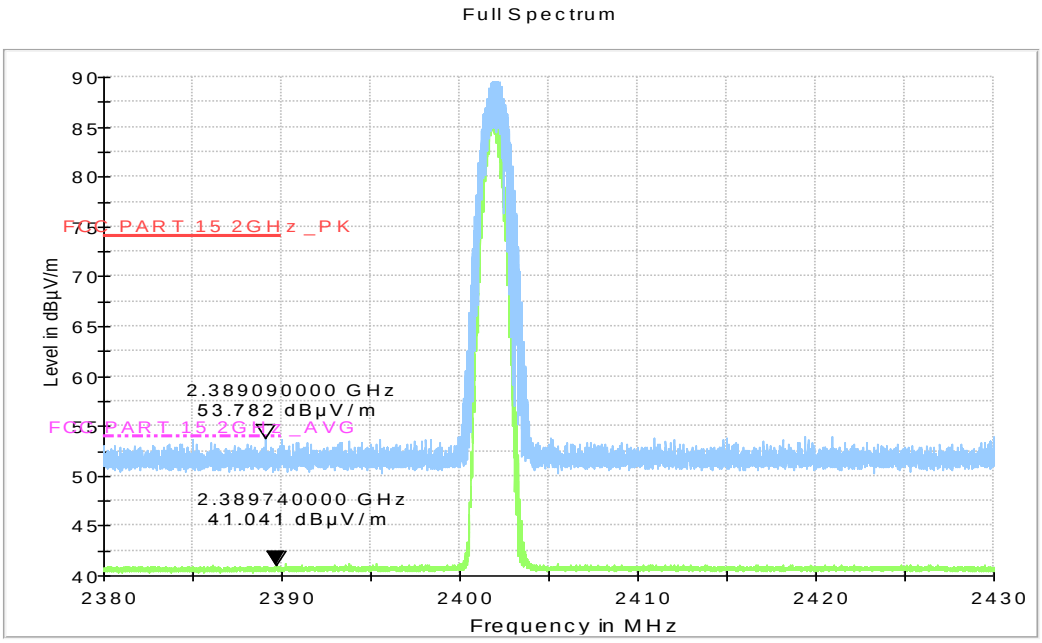

Fig.60. Radiated emission (Power): π/4 DQPSK, low channel

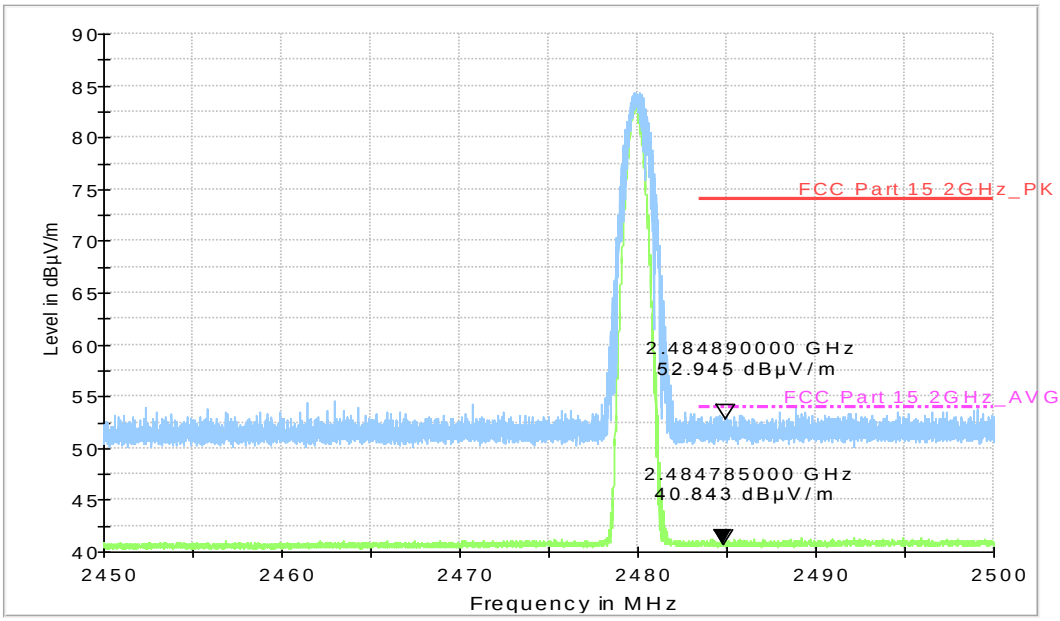

Fig.61. Radiated emission (Power): π/4 DQPSK, high channel

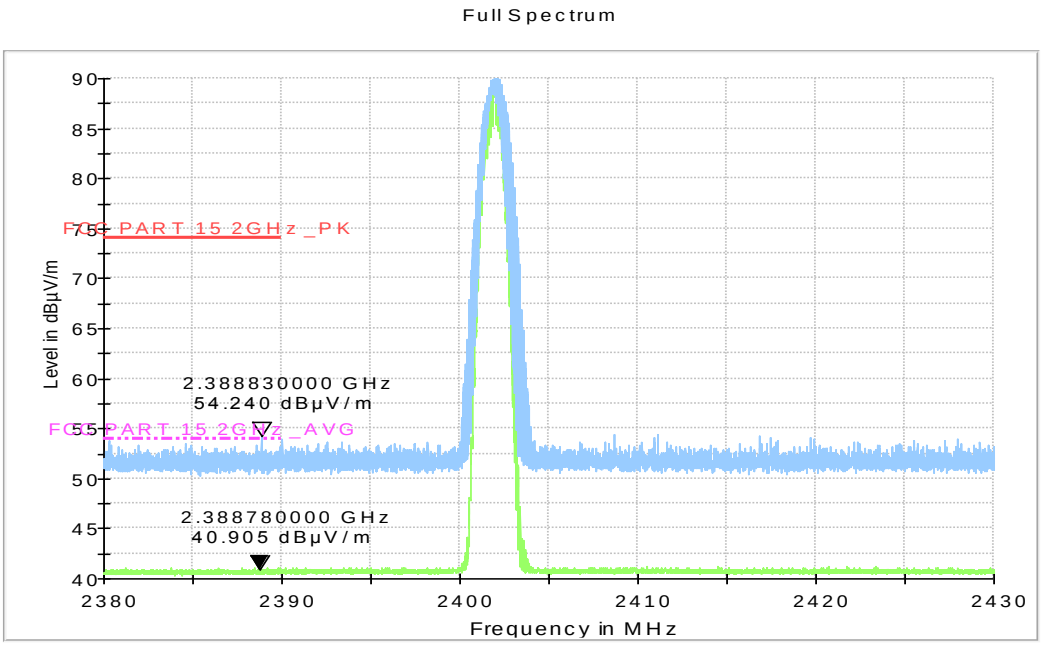

Fig.62. Radiated emission (Power): 8DPSK, low channel

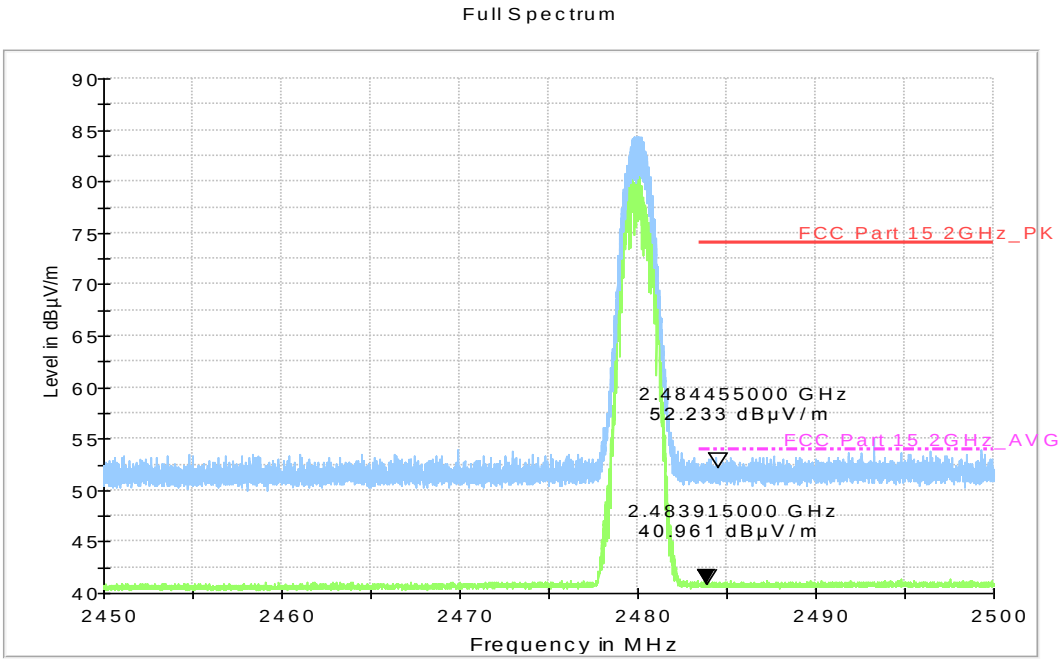

Fig.63. Radiated emission (Power): 8DPSK, high channel