

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

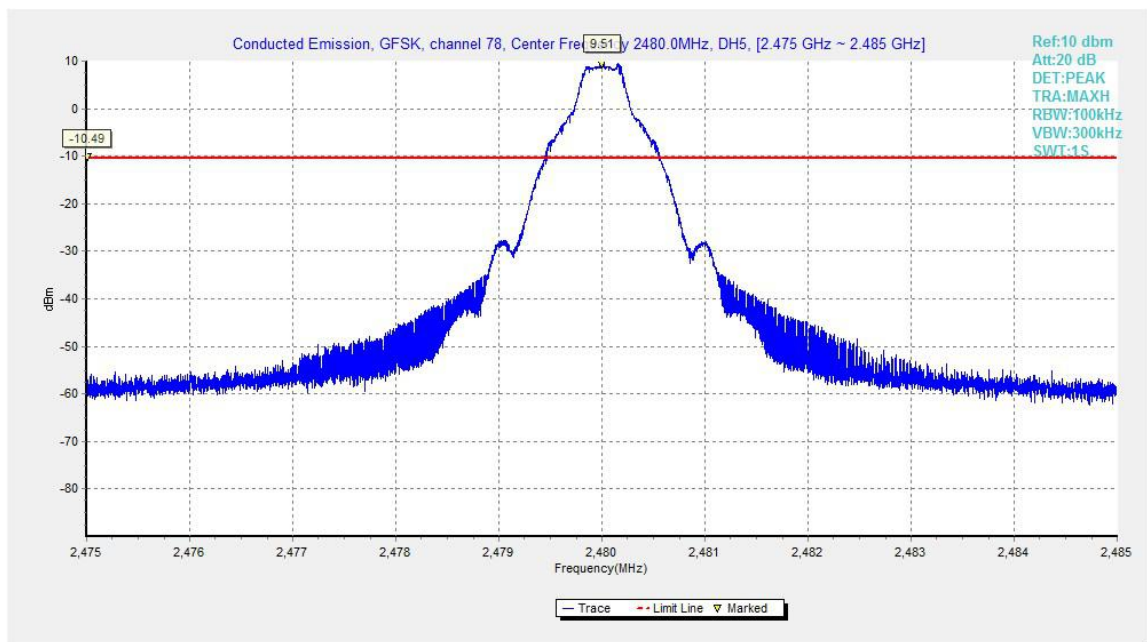


Fig.23. Conducted spurious emission: GFSK, Channel 78, 2480MHz

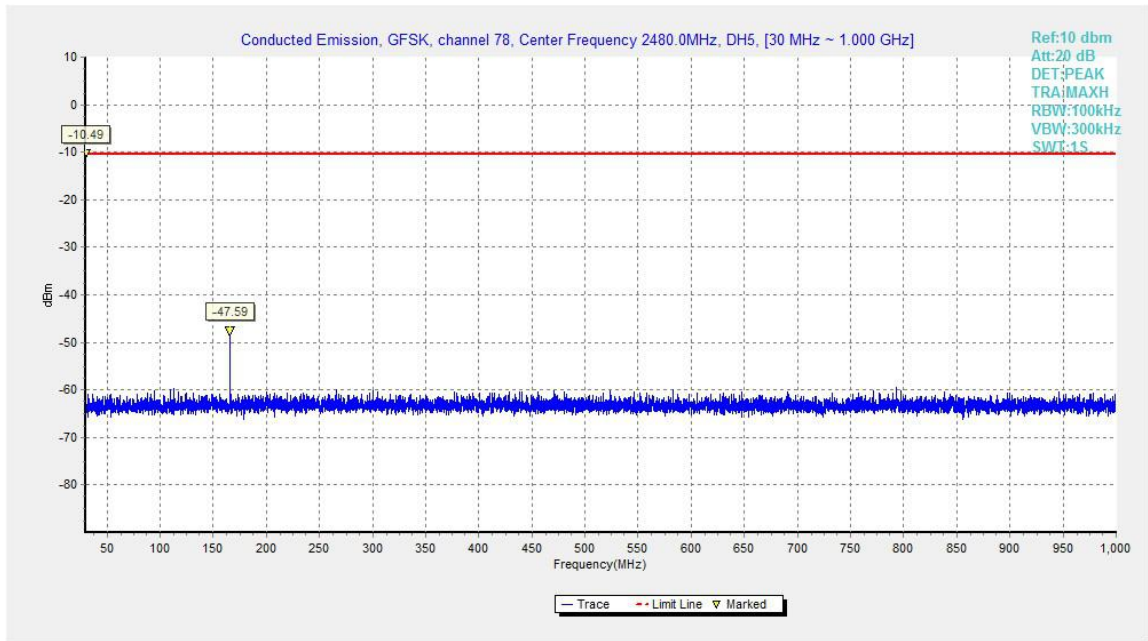


Fig.24. Conducted spurious emission: GFSK, Channel 78, 30MHz - 1GHz

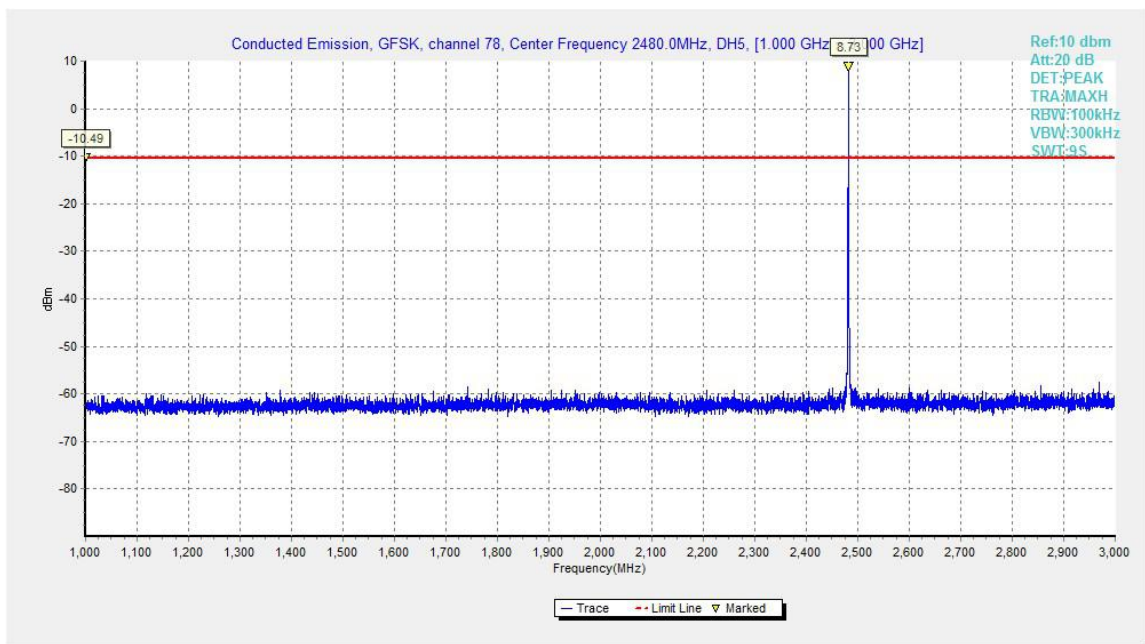


Fig.25. Conducted spurious emission: GFSK, Channel 78, 1GHz - 3GHz

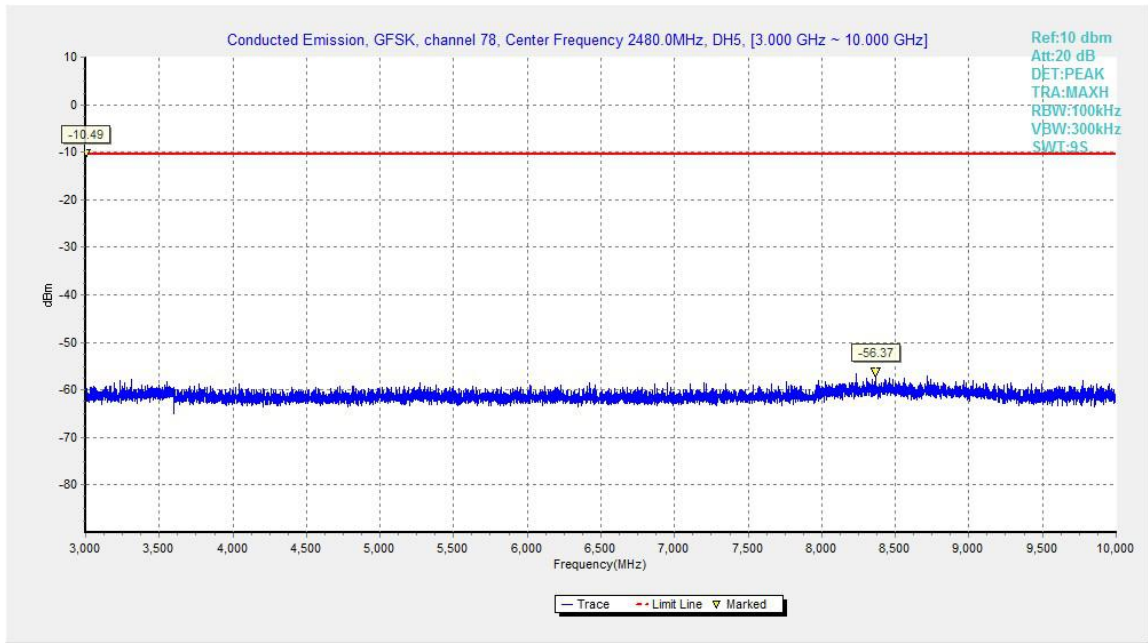


Fig.26. Conducted spurious emission: GFSK, Channel 78, 3GHz - 10GHz

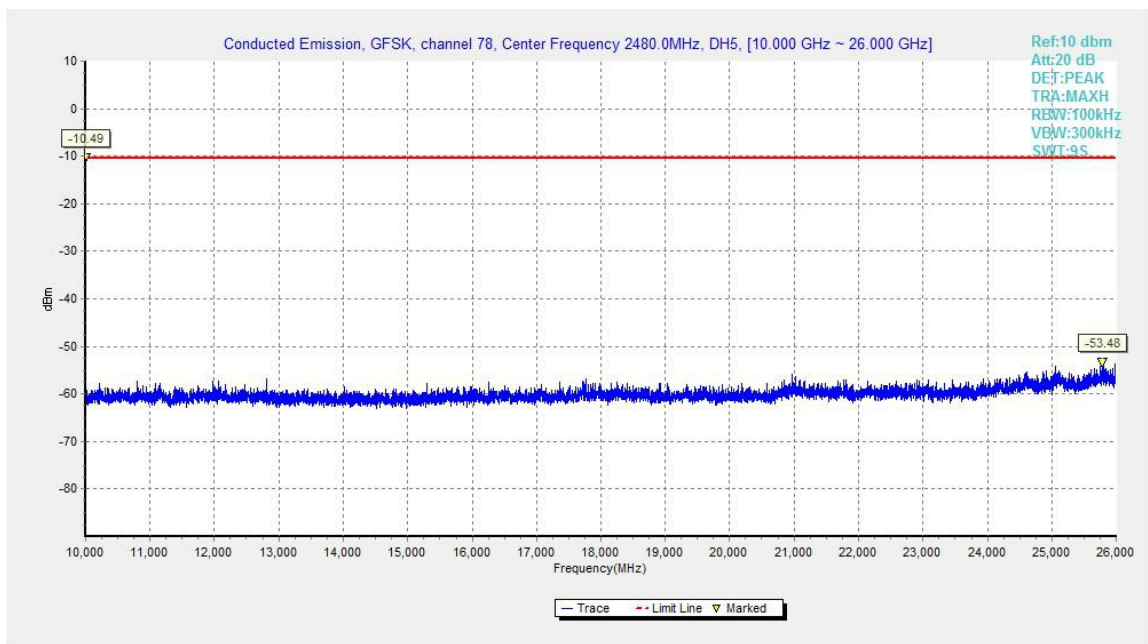


Fig.27. Conducted spurious emission: GFSK, Channel 78, 10GHz - 26GHz

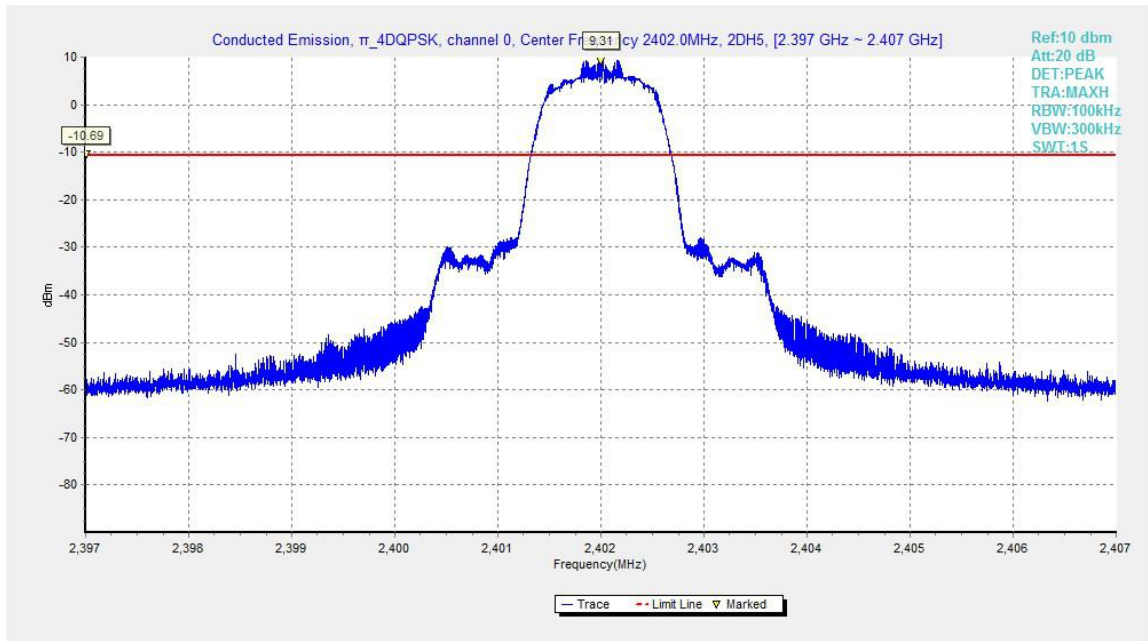


Fig.28. Conducted spurious emission: $\pi/4$ DQPSK, Channel 0,2402MHz

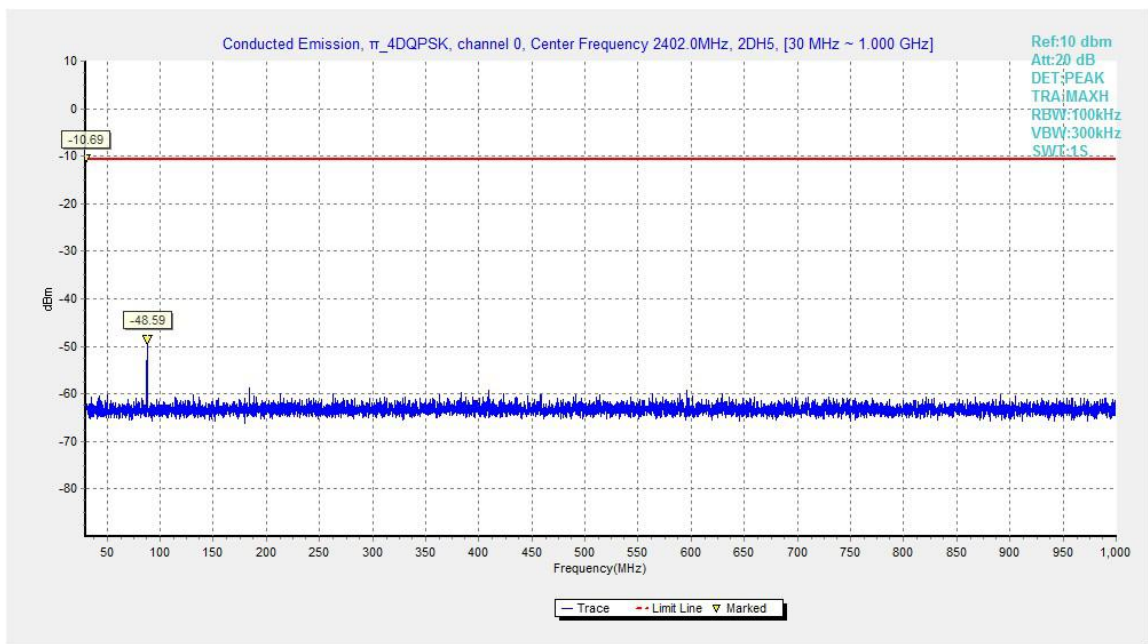


Fig.29. Conducted spurious emission: $\pi/4$ DQPSK, Channel 0, 30MHz - 1GHz

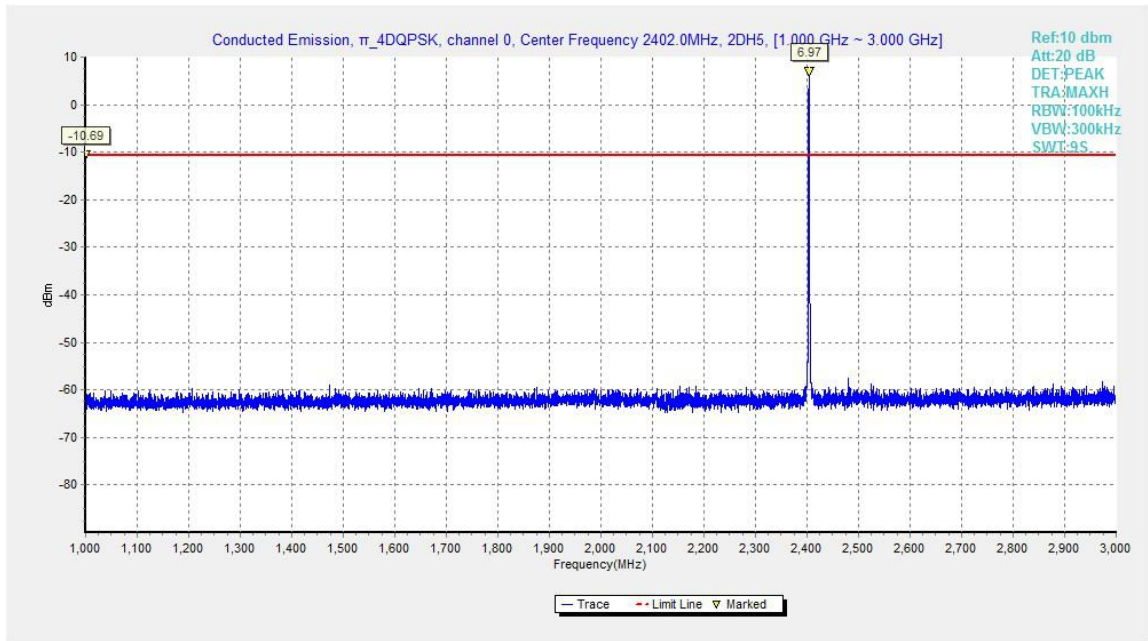


Fig.30. Conducted spurious emission: $\pi/4$ DQPSK, Channel 0, 1GHz - 3GHz

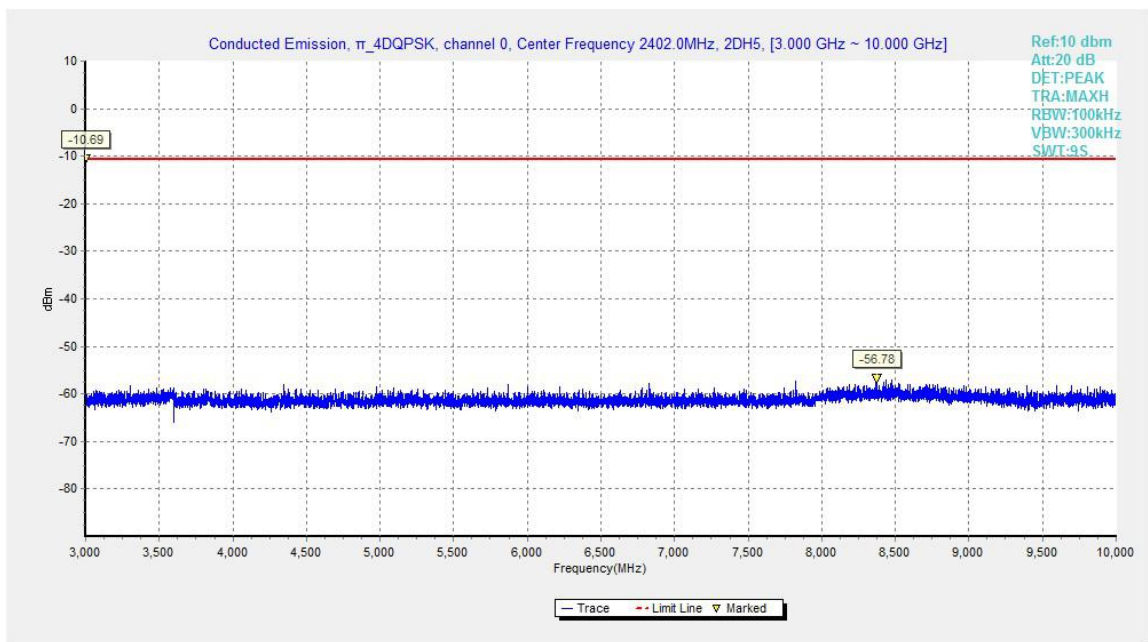


Fig.31. Conducted spurious emission: $\pi/4$ DQPSK, Channel 0, 3GHz - 10GHz

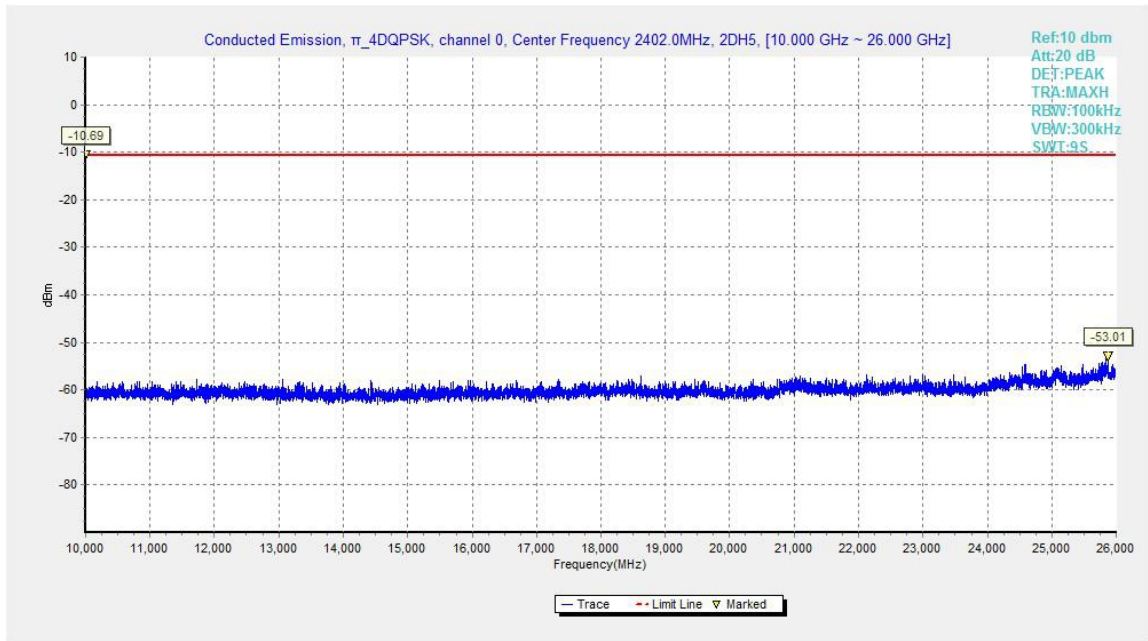


Fig.32. Conducted spurious emission: $\pi/4$ DQPSK, Channel 0, 10GHz - 26GHz

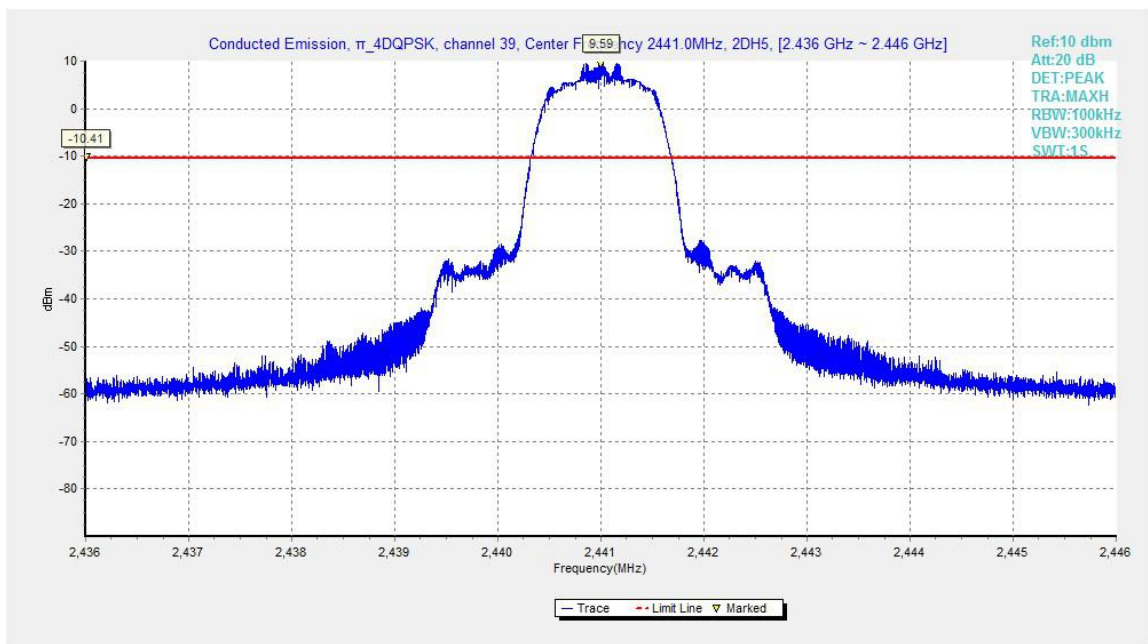


Fig.33. Conducted spurious emission: $\pi/4$ DQPSK, Channel 39, 2441MHz

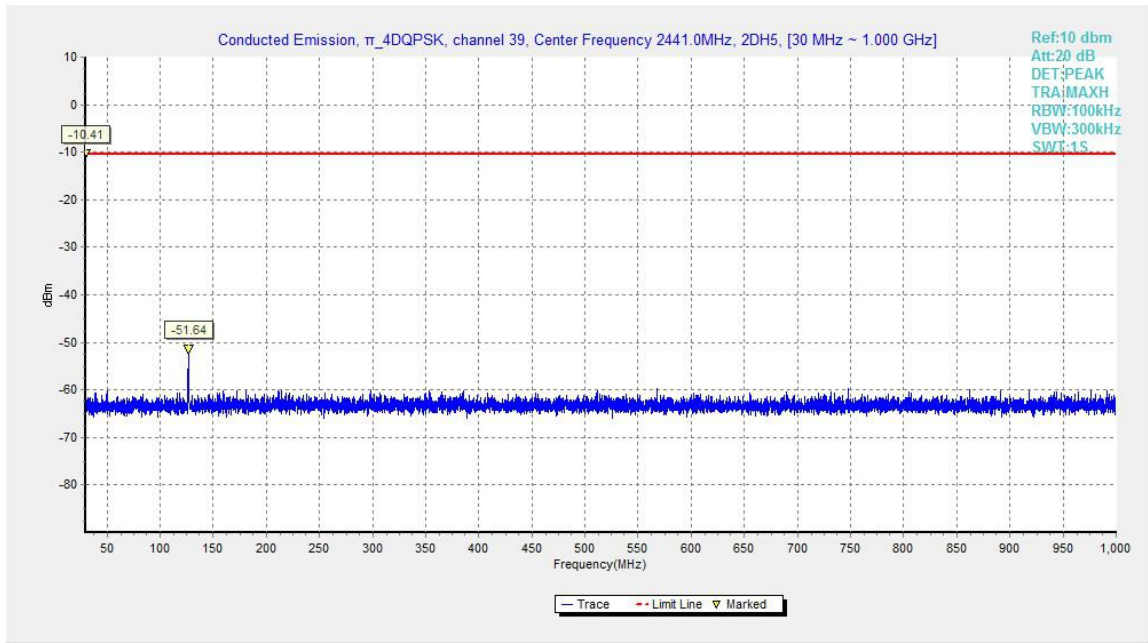


Fig.34. Conducted spurious emission: $\pi/4$ DQPSK, Channel 39, 30MHz - 1GHz

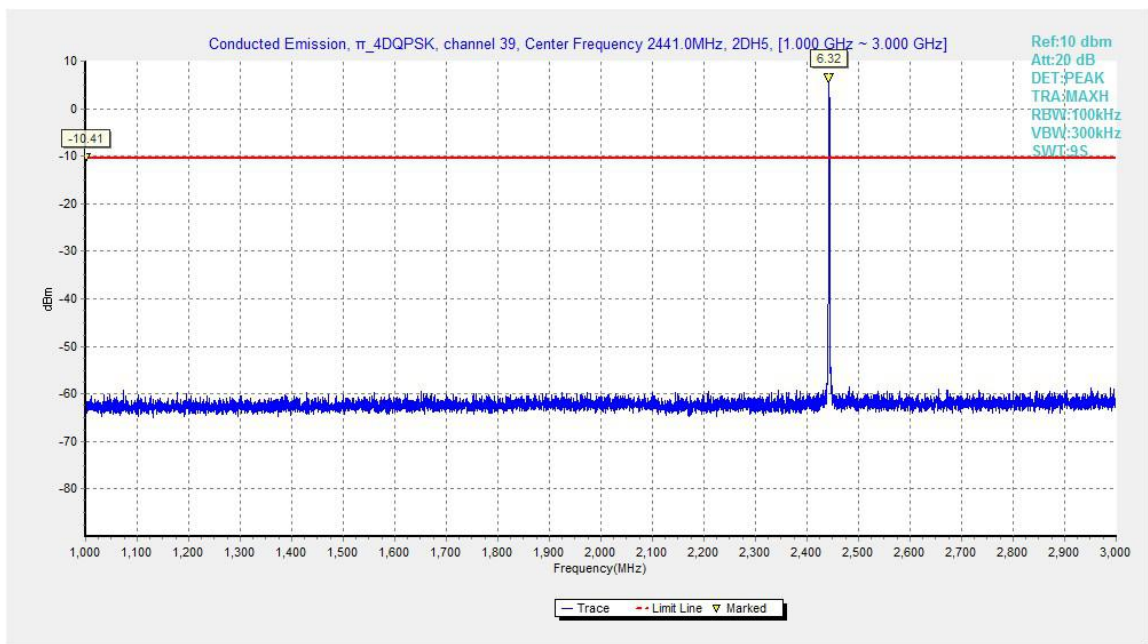


Fig.35. Conducted spurious emission: $\pi/4$ DQPSK, Channel 39, 1GHz - 3GHz

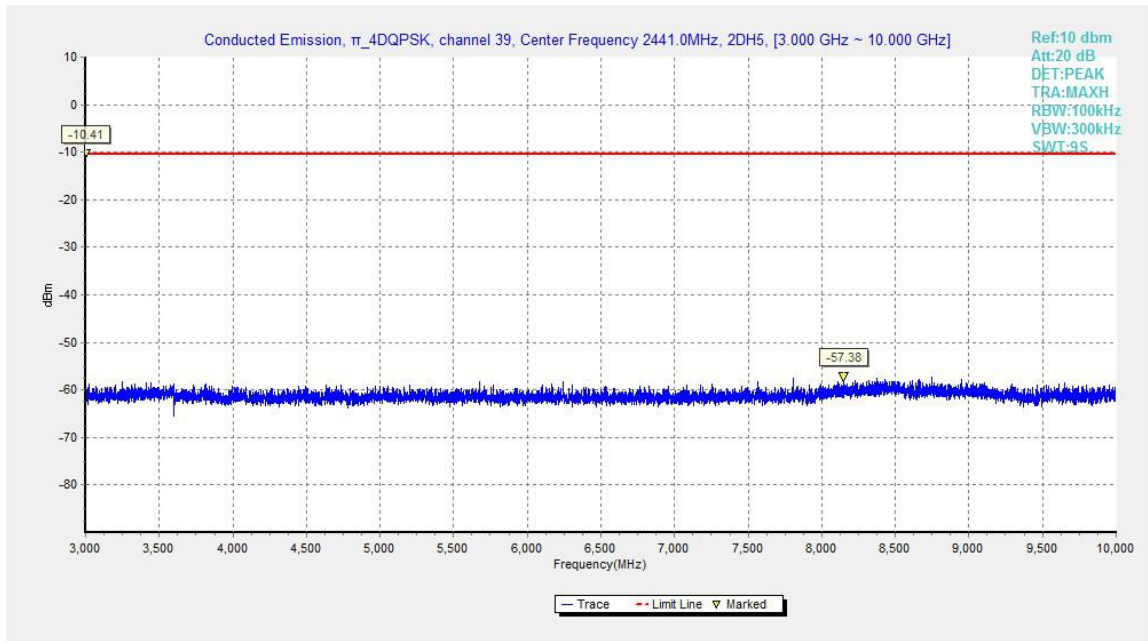


Fig.36. Conducted spurious emission: $\pi/4$ DQPSK, Channel 39, 3GHz - 10GHz

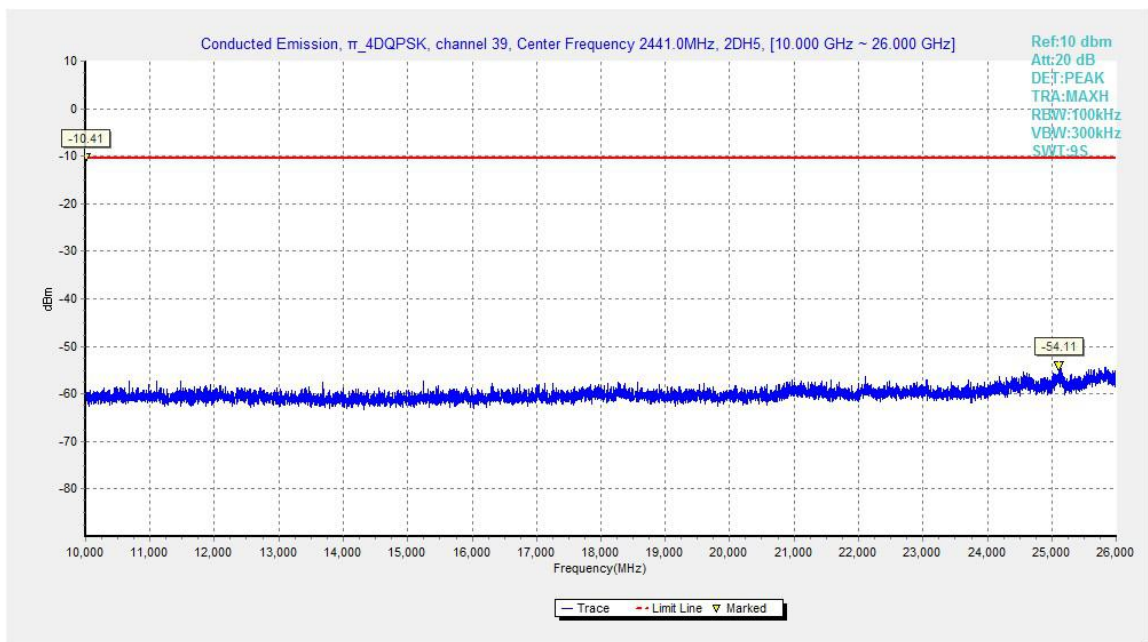


Fig.37. Conducted spurious emission: $\pi/4$ DQPSK, Channel 39, 10GHz – 26GHz

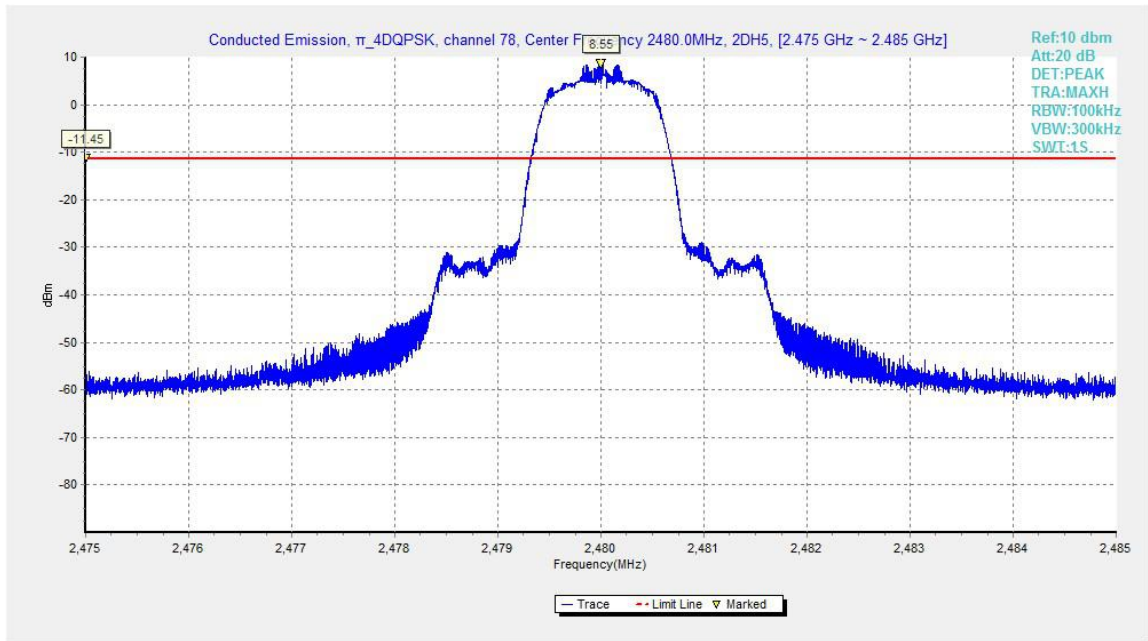


Fig.38. Conducted spurious emission: $\pi/4$ DQPSK, Channel 78, 2480MHz

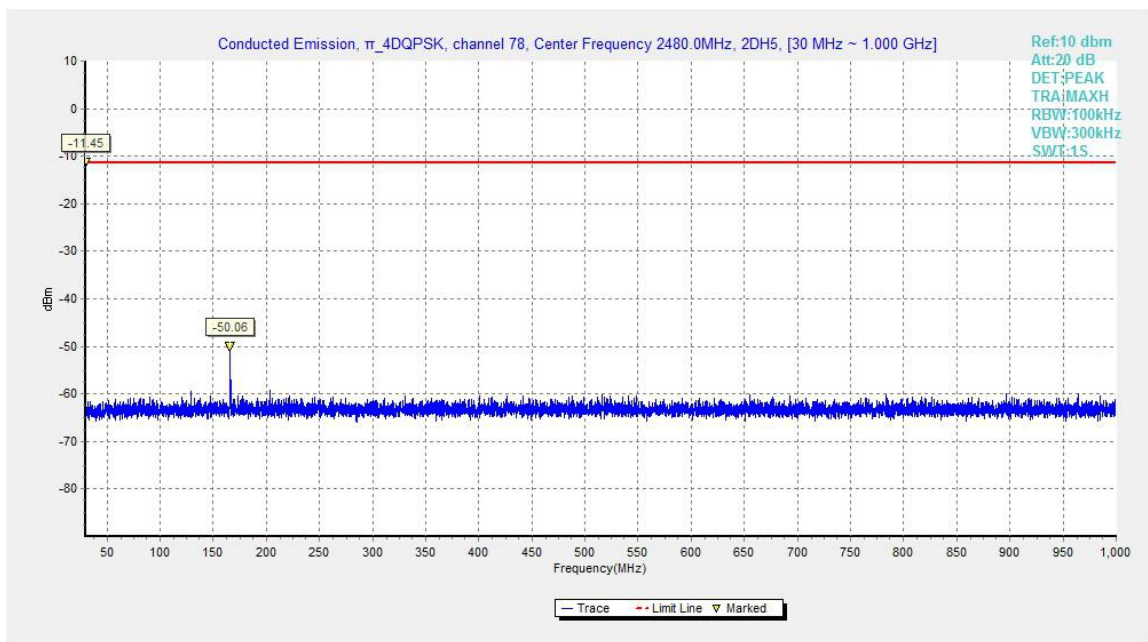


Fig.39. Conducted spurious emission: $\pi/4$ DQPSK, Channel 78, 30MHz - 1GHz

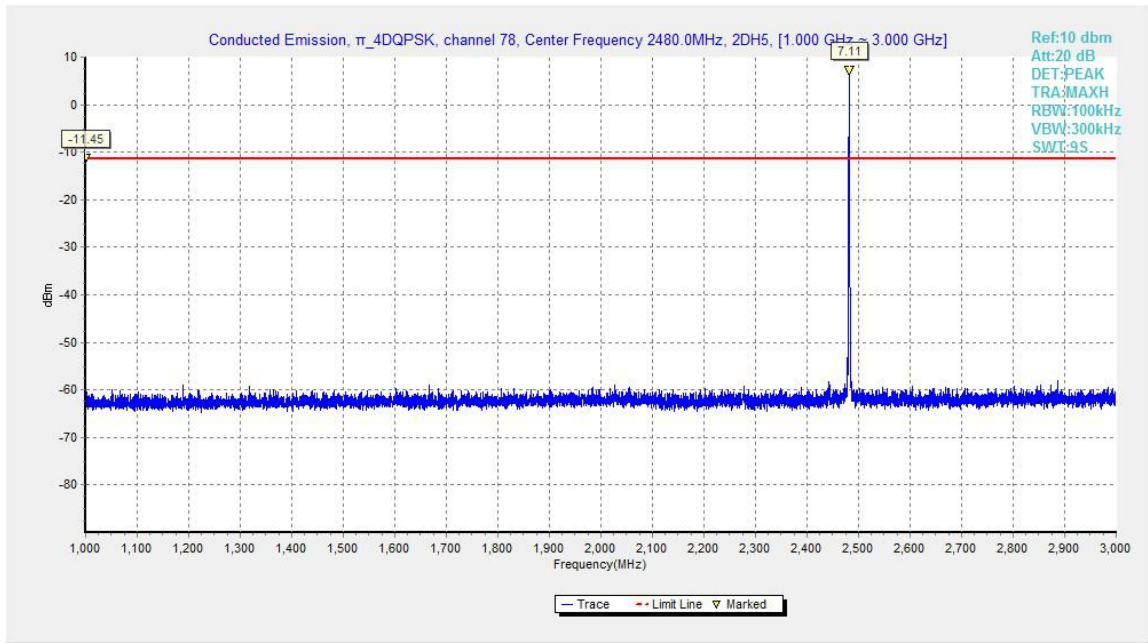


Fig.40. Conducted spurious emission: $\pi/4$ DQPSK, Channel 78, 1GHz - 3GHz

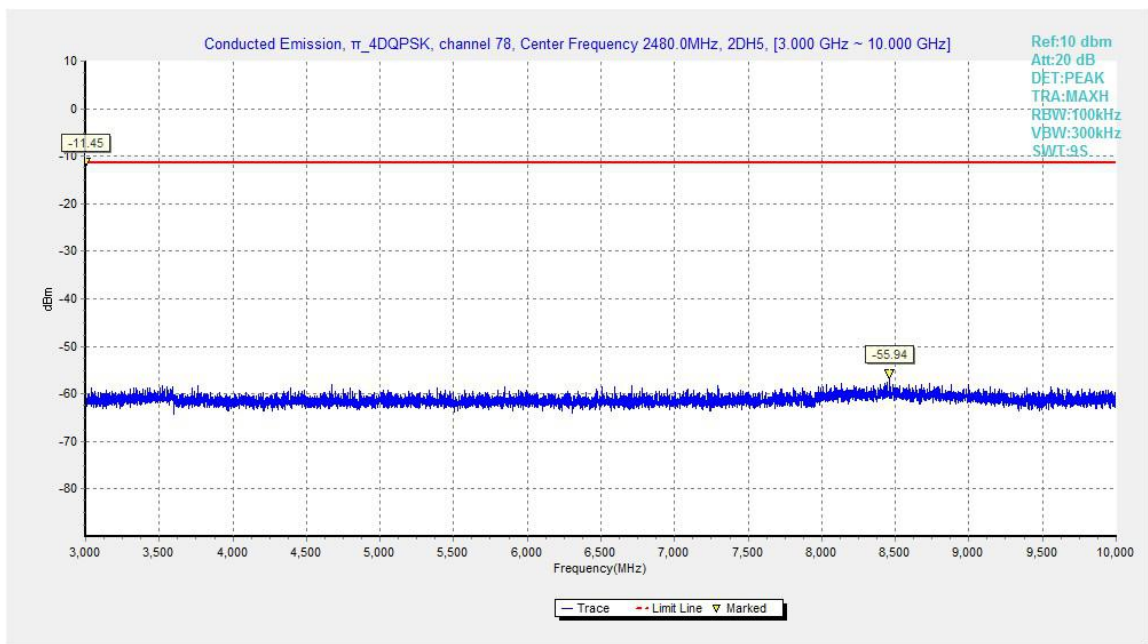


Fig.41. Conducted spurious emission: $\pi/4$ DQPSK, Channel 78, 3GHz - 10GHz

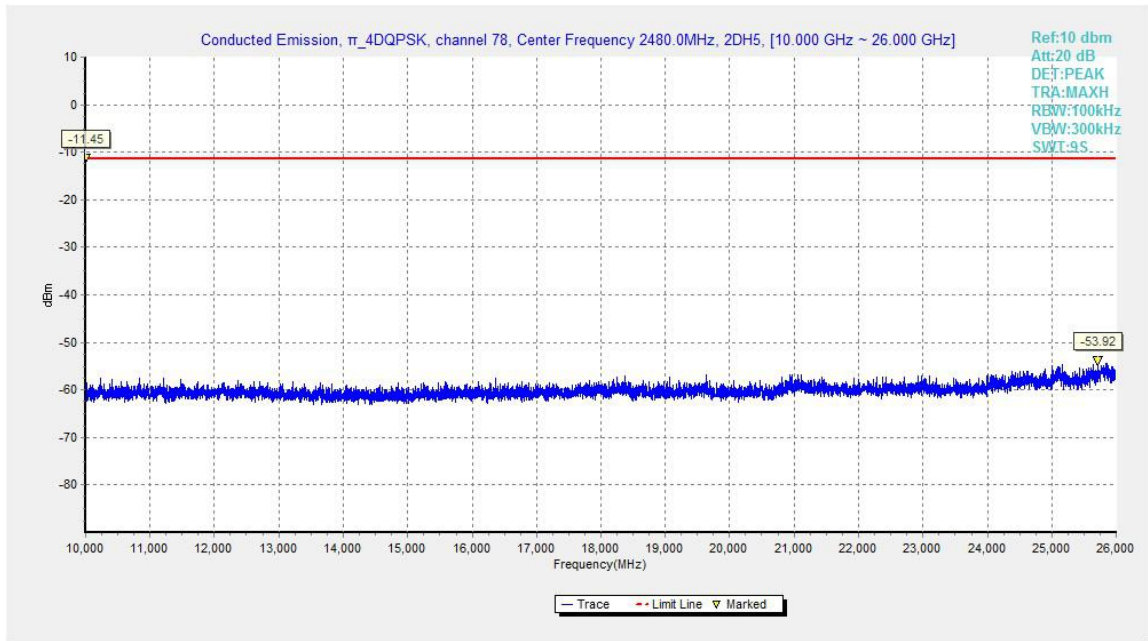


Fig.42. Conducted spurious emission: $\pi/4$ DQPSK, Channel 78, 10GHz - 26GHz

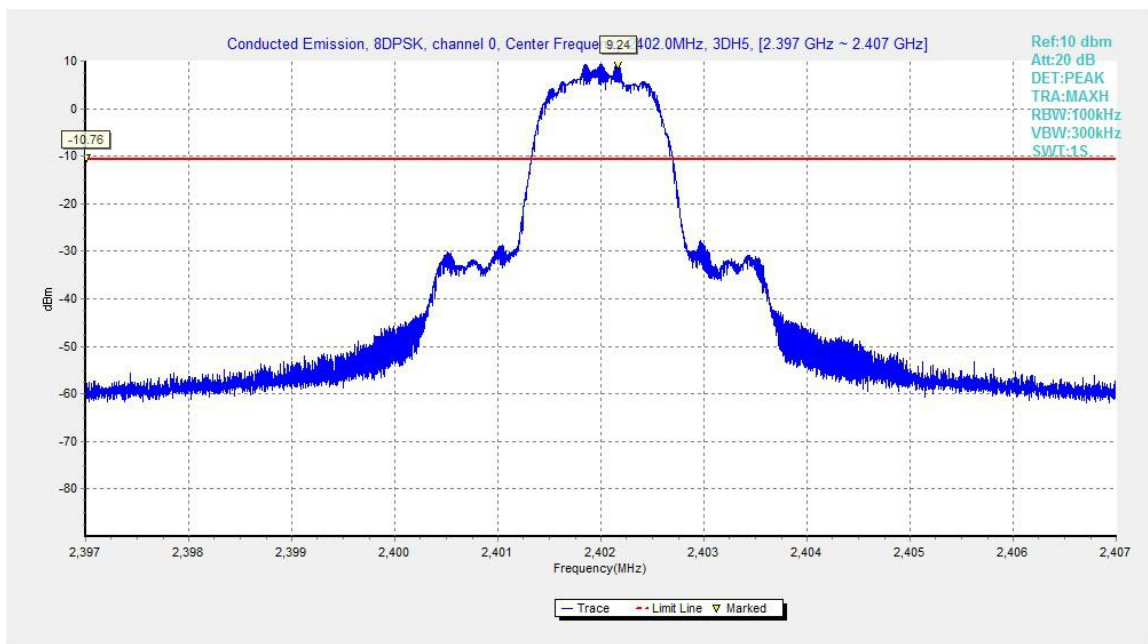


Fig.43. Conducted spurious emission: 8DPSK, Channel 0, 2,402MHz

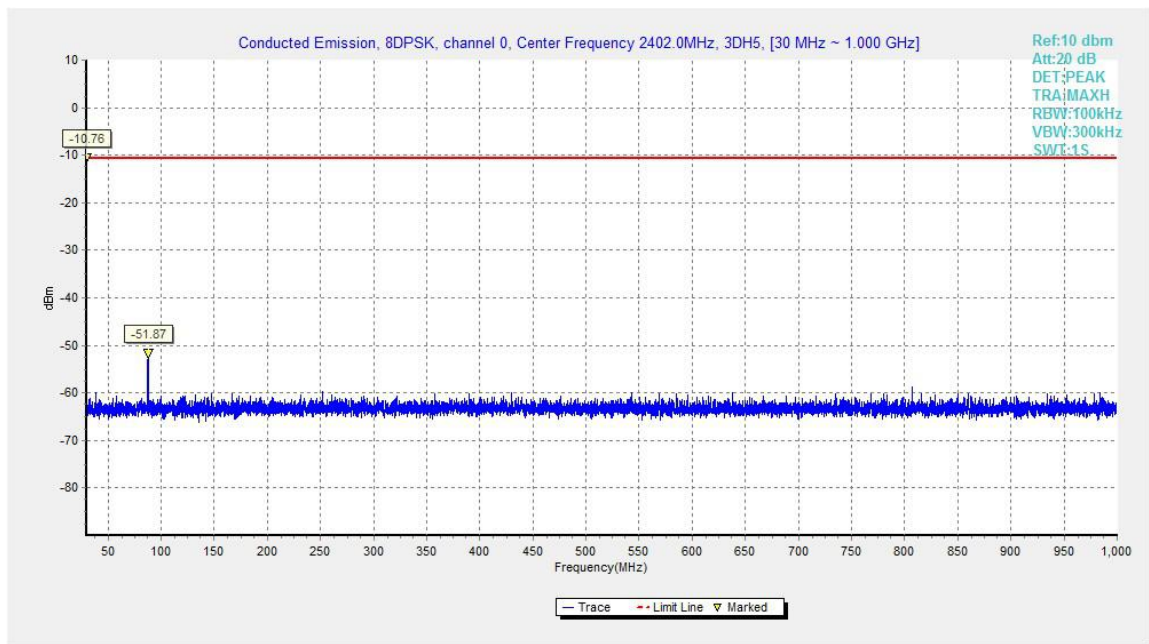


Fig.44. Conducted spurious emission: 8DPSK, Channel 0, 30MHz - 1GHz

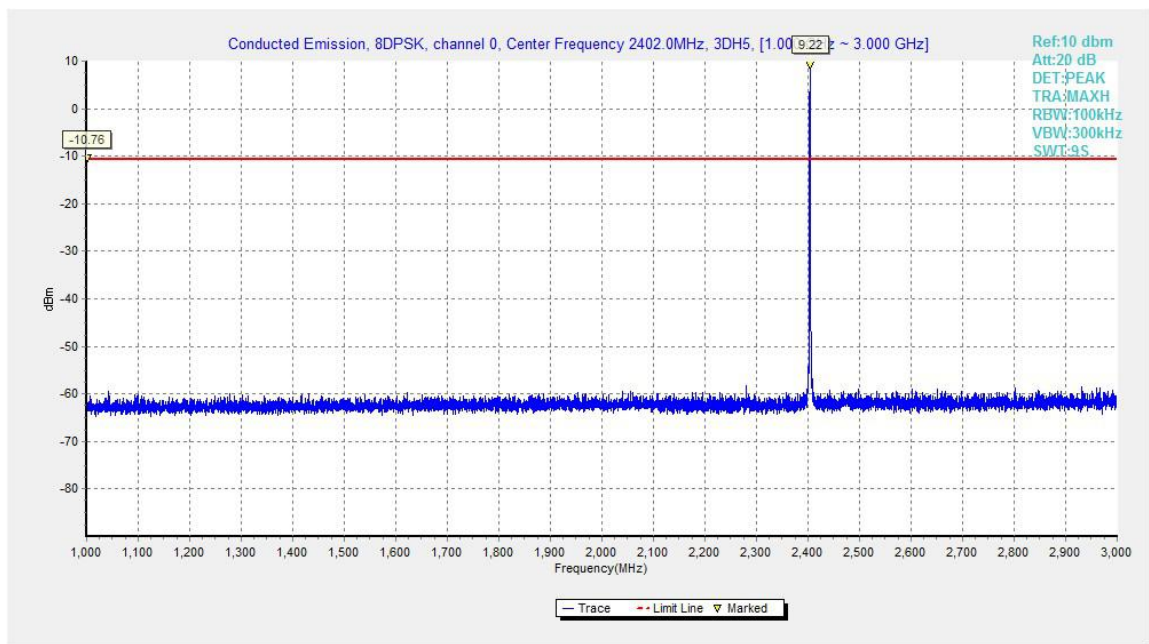


Fig.45. Conducted spurious emission: 8DPSK, Channel 0, 1GHz - 3GHz

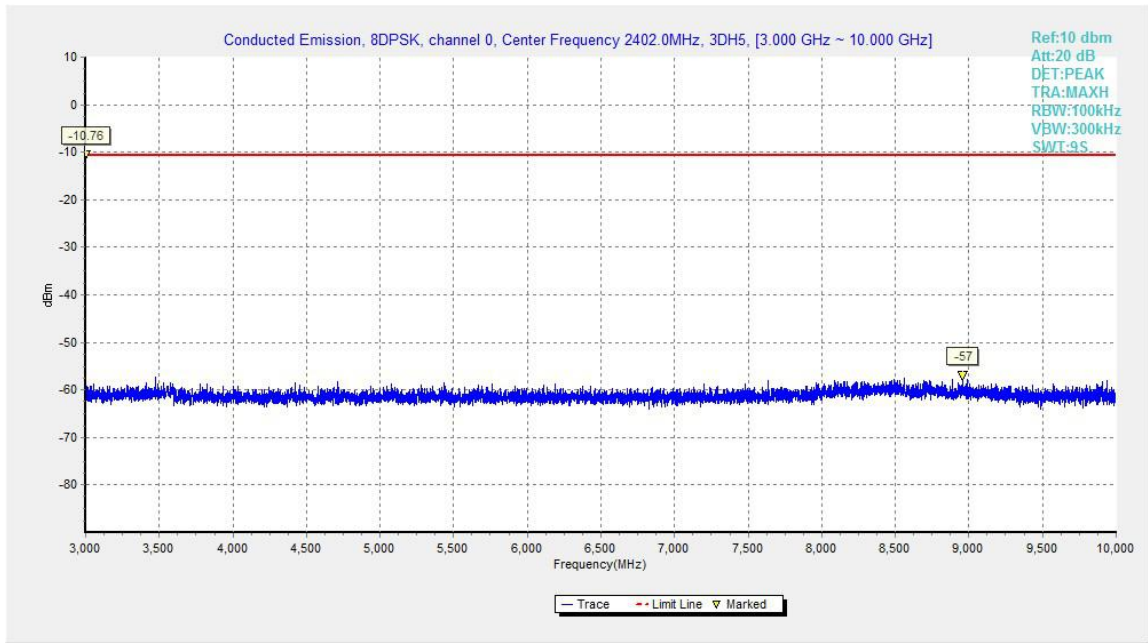


Fig.46. Conducted spurious emission: 8DPSK, Channel 0, 3GHz - 10GHz

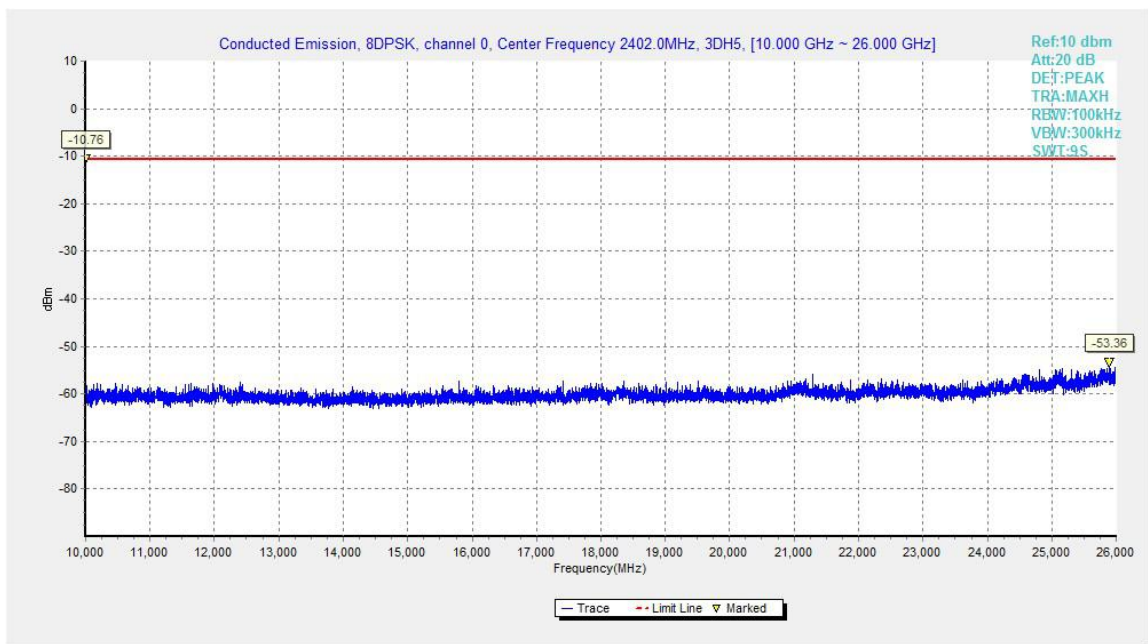


Fig.47. Conducted spurious emission: 8DPSK, Channel 0, 10GHz - 26GHz

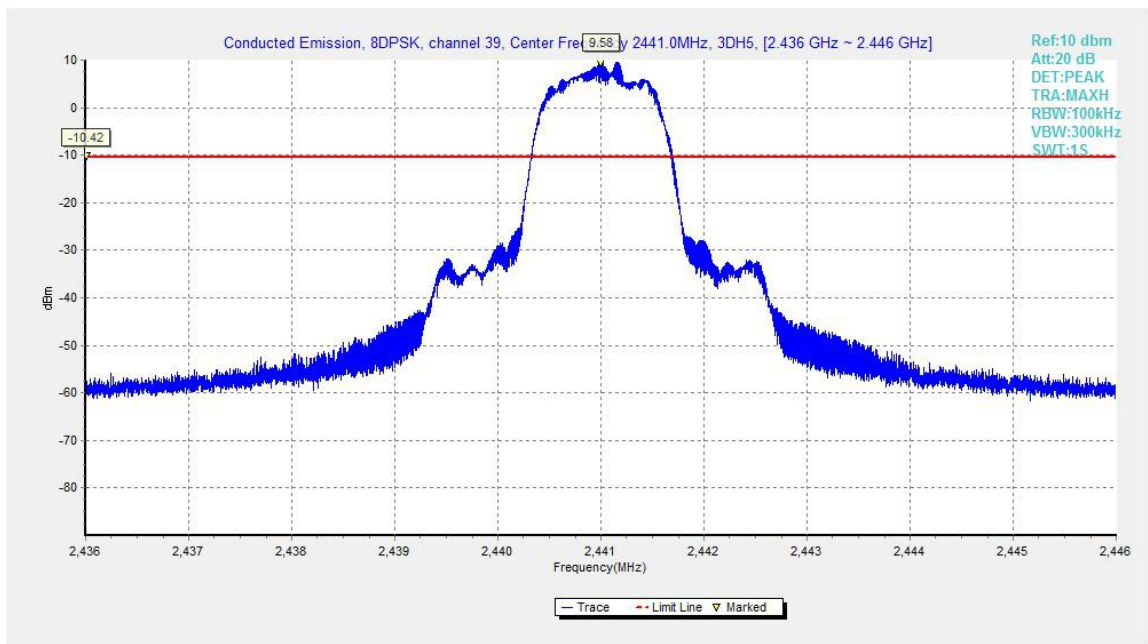


Fig.48. Conducted spurious emission: 8DPSK, Channel 39, 2441MHz

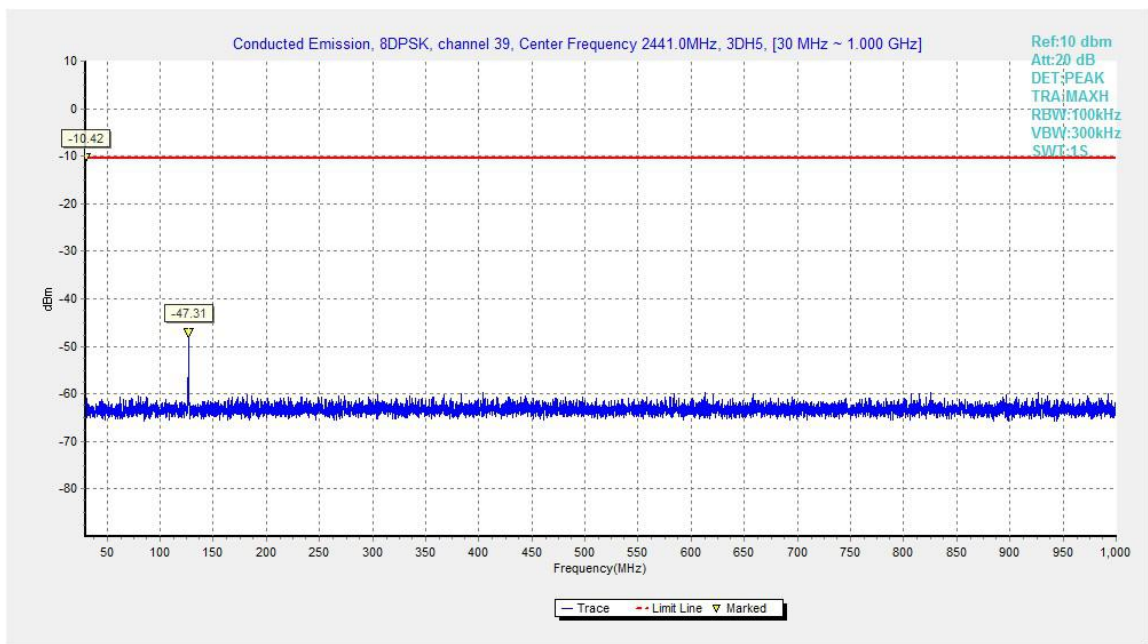


Fig.49. Conducted spurious emission: 8DPSK, Channel 39, 30MHz - 1GHz

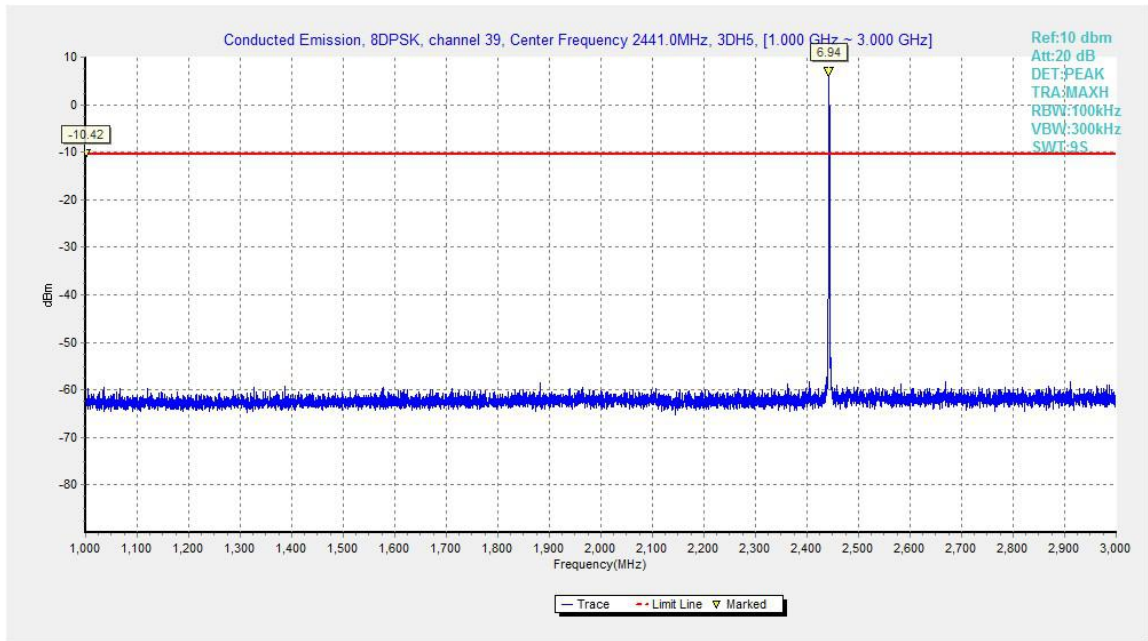


Fig.50. Conducted spurious emission: 8DPSK, Channel 39, 1GHz - 3GHz

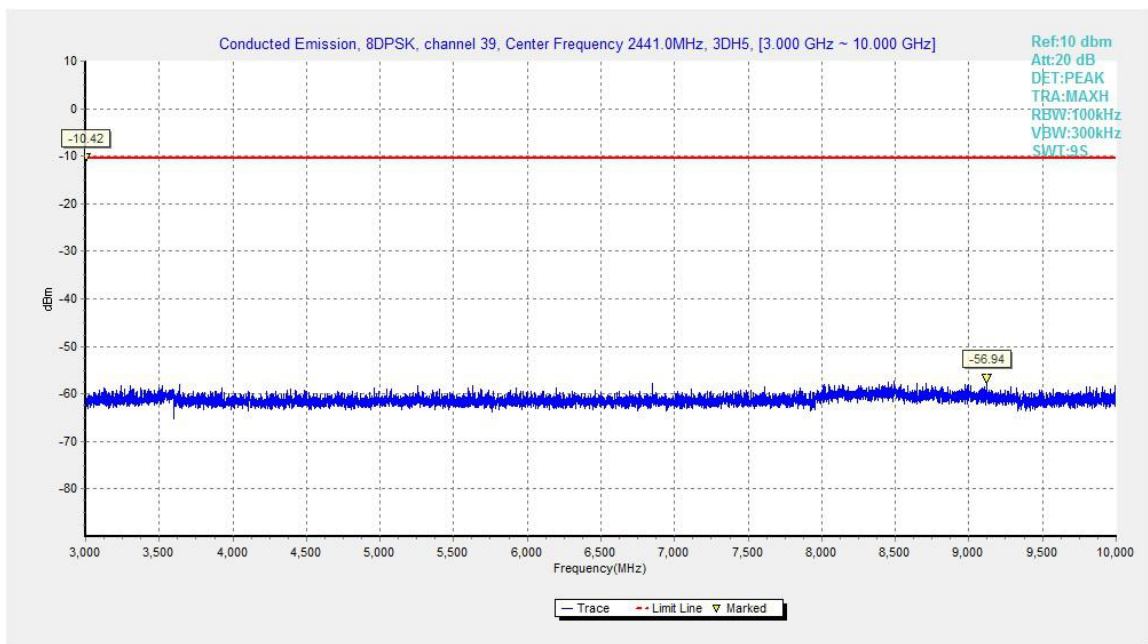


Fig.51. Conducted spurious emission: 8DPSK, Channel 39, 3GHz - 10GHz

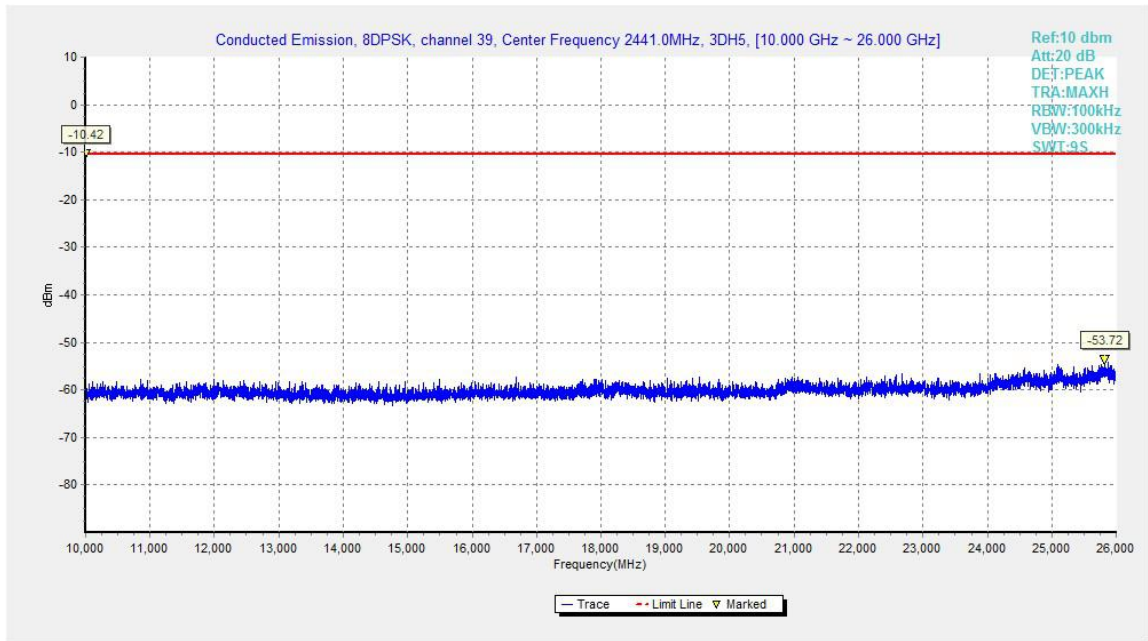


Fig.52. Conducted spurious emission: 8DPSK, Channel 39, 10GHz – 26GHz

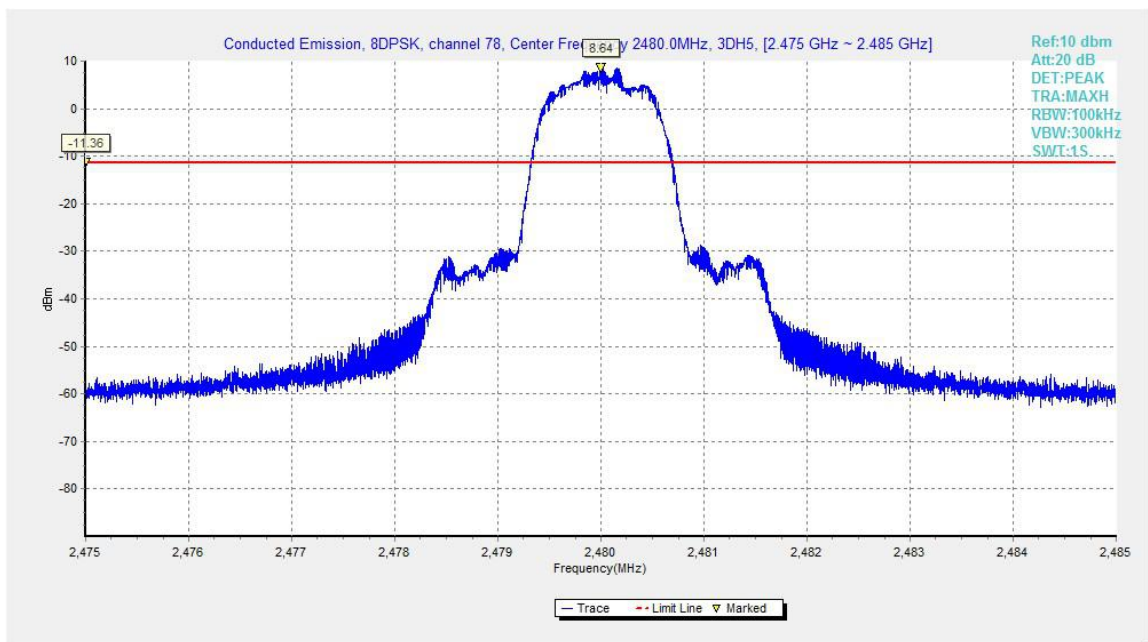


Fig.53. Conducted spurious emission: 8DPSK, Channel 78, 2480MHz

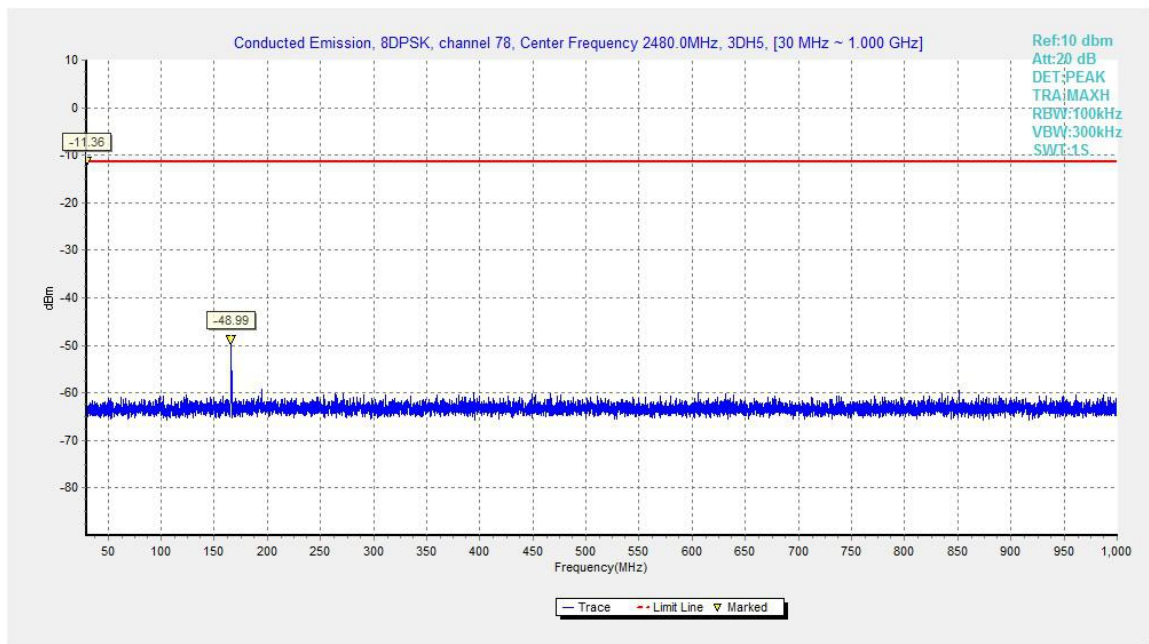


Fig.54. Conducted spurious emission: 8DPSK, Channel 78, 30MHz - 1GHz

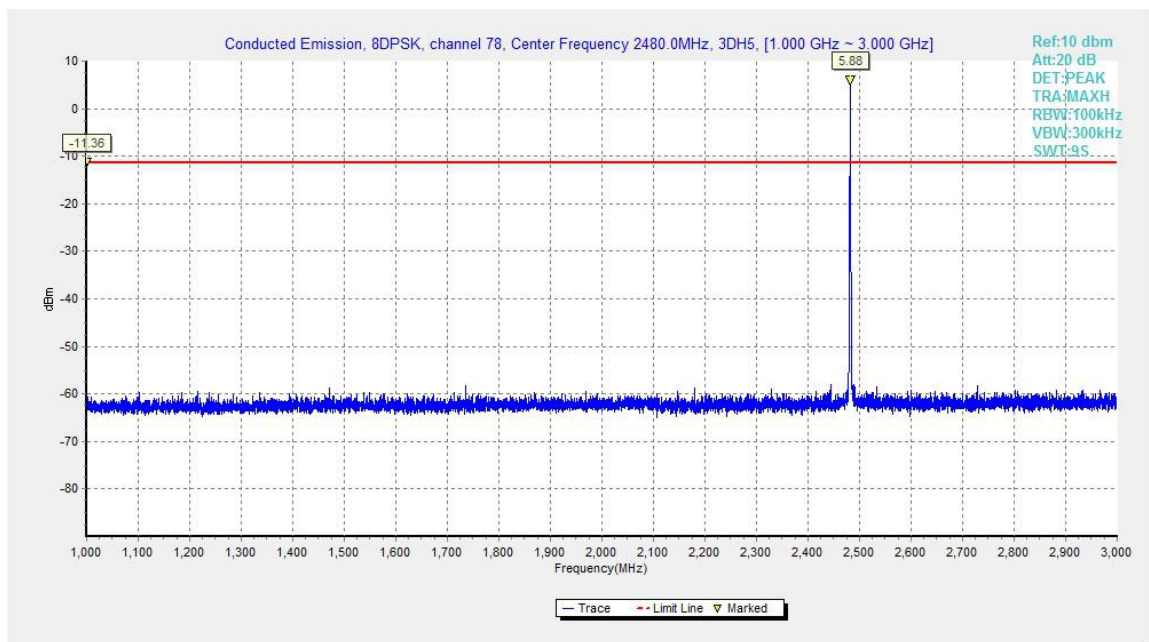


Fig.55. Conducted spurious emission: 8DPSK, Channel 78, 1GHz - 3GHz

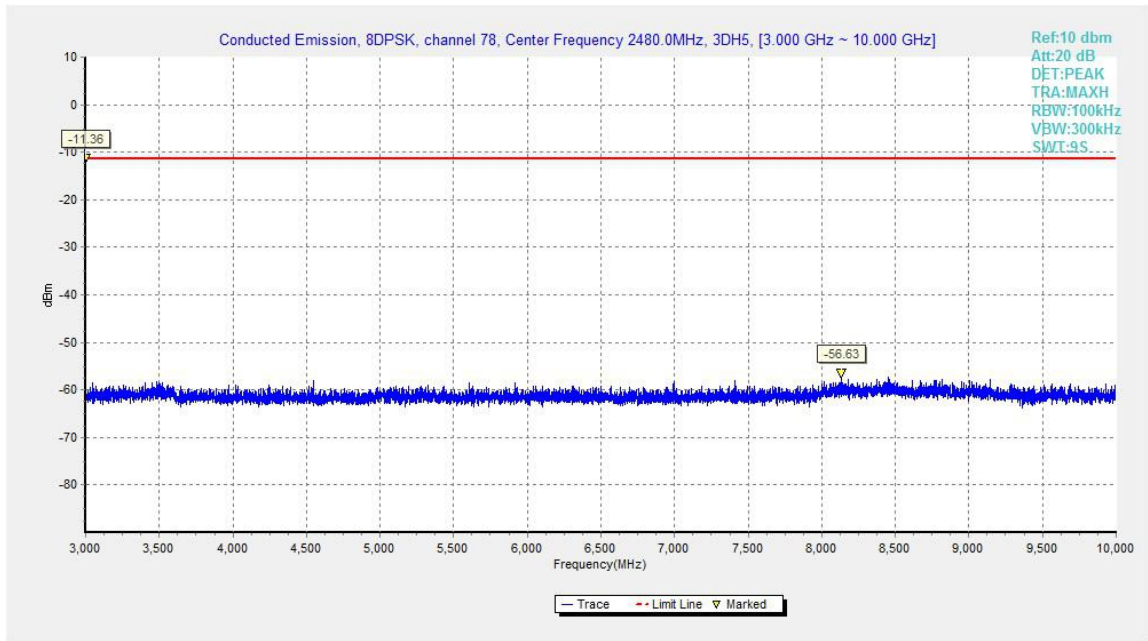


Fig.56. Conducted spurious emission: 8DPSK, Channel 78, 3GHz - 10GHz

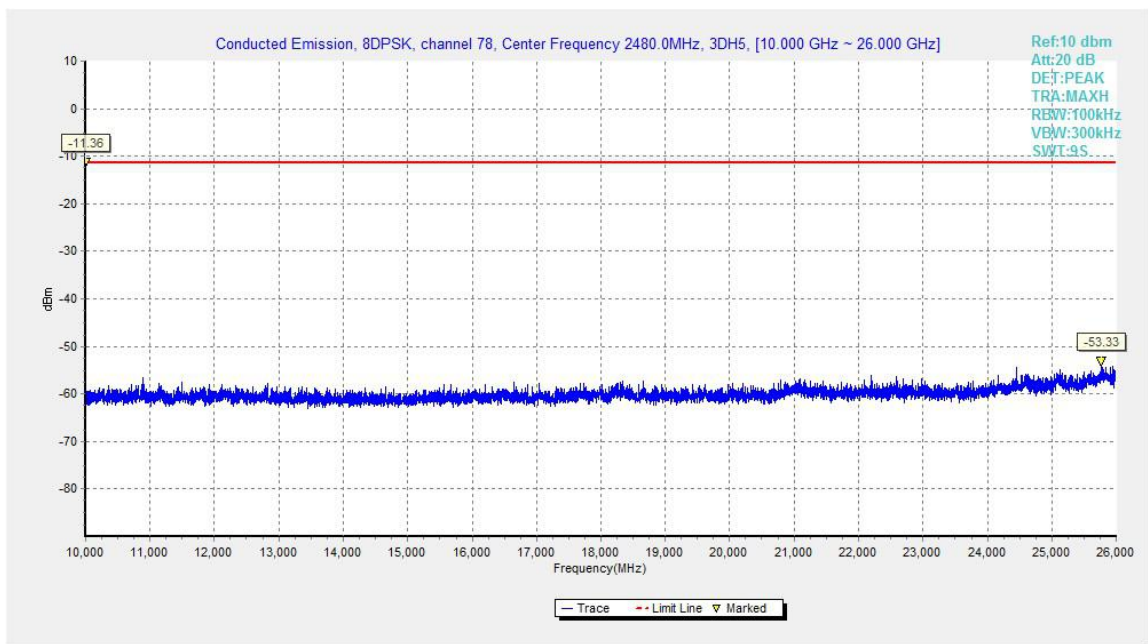


Fig.57. Conducted spurious emission: 8DPSK, Channel 78, 10GHz - 26GHz

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
Ch 0 2402 MHz	1 GHz ~ 3 GHz		P
	3 GHz ~ 18 GHz		P
Ch 39 2441 MHz	9 kHz ~ 30 MHz		P
	30 MHz ~ 1 GHz		P
	1 GHz ~ 3 GHz		P
	3 GHz ~ 18 GHz		P
Ch 78 2480 MHz	1 GHz ~ 3 GHz		P
	3 GHz ~ 18 GHz		P
Power	2.38GHz~2.4GHz---L	Fig.58	P
Power	2.45GHz~2.5GHz---H	Fig.59	P
For all channels	18 GHz ~ 26 GHz		P



Forπ/4 DQPSK

Channel	Frequency Range	Test Results	Conclusion
Ch 0 2402 MHz	1 GHz ~ 3 GHz		P
	3 GHz ~ 18 GHz		P
Ch 39 2441 MHz	30 MHz ~ 1 GHz		P
	1 GHz ~ 3 GHz		P
	3 GHz ~ 18 GHz		P
Ch 78 2480 MHz	1 GHz ~ 3 GHz		P
	3 GHz ~ 18 GHz		P
Power	2.38GHz~2.4GHz---L	Fig.60	P
Power	2.45GHz~2.5GHz---H	Fig.61	P
For all channels	18 GHz ~ 26 GHz		P

For 8DPSK

Channel	Frequency Range	Test Results	Conclusion
Ch 0 2402 MHz	1 GHz ~ 3 GHz		P
	3 GHz ~ 18 GHz		P
Ch 39 2441 MHz	30 MHz ~ 1 GHz		P
	1 GHz ~ 3 GHz		P
	3 GHz ~ 18 GHz		P
Ch 78 2480 MHz	1 GHz ~ 3 GHz		P
	3 GHz ~ 18 GHz		P
Power	2.38GHz~2.4GHz---L	Fig.62	P
Power	2.45GHz~2.5GHz---H	Fig.63	P
For all channels	18 GHz ~ 26 GHz		P

GFSK Ch 0 - Average

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	Receiver Reading (dBμV)	Polarization
2385.360	41.2	-38.8	27.7	52.300	H
17748.000	38.0	-18.5	45.6	10.900	H
17842.500	38.0	-18.5	45.6	10.900	V
17874.500	37.9	-18.5	45.6	10.800	H
17869.500	37.9	-18.5	45.6	10.800	H
17447.500	37.9	-19.2	41.5	15.600	H

GFSK Ch 39 - Average

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	Receiver Reading (dBμV)	Polarization
17738.000	38.2	-18.5	45.6	11.100	H
17829.500	38.2	-18.5	45.6	11.100	H
17869.500	38.1	-18.5	45.6	11.000	V
17436.000	38.1	-19.2	41.5	15.800	H
17837.500	38.1	-18.5	45.6	11.000	H
17840.000	38.0	-18.5	45.6	10.900	H

GFSK Ch 78 - Average

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	Receiver Reading (dBμV)	Polarization
2486.630	47.4	-38.9	27.7	58.6	H
17409.000	38.1	-19.2	41.5	15.8	H
17768.000	38.0	-18.5	45.6	10.9	V
17774.000	38.0	-18.5	45.6	10.9	H
17941.000	38.0	-17.7	45.6	10.1	H
17758.500	38.0	-18.5	45.6	10.9	H

π/4 DQPSK Ch 0 - Average

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	Receiver Reading (dBμV)	Polarization
2385.395	41.5	-38.8	27.7	52.6	H
17843.000	38.1	-18.5	45.6	11.0	H
17308.500	38.1	-19.5	41.5	16.1	V
17776.000	38.0	-18.5	45.6	10.9	H
17770.500	38.0	-18.5	45.6	10.9	H
17788.000	38.0	-18.5	45.6	10.9	H

π/4 DQPSK Ch 39 - Average

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	Receiver Reading (dBμV)	Polarization
17410.500	38.3	-19.2	41.5	16.0	H
17397.500	38.3	-19.2	41.5	16.0	H
17855.500	38.2	-18.5	45.6	11.1	V
17825.500	38.0	-18.5	45.6	10.9	H
17842.500	38.0	-18.5	45.6	10.9	H
17850.500	38.0	-18.5	45.6	10.9	H

π/4 DQPSK Ch 78 - Average

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	Receiver Reading (dBμV)	Polarization
2487.705	40.8	-38.9	27.7	52.0	H
17841.000	38.2	-18.5	45.6	11.1	H
17875.500	38.2	-18.5	45.6	11.1	V
17821.500	38.2	-18.5	45.6	11.1	H
17417.500	38.1	-19.2	41.5	15.8	H
17757.000	38.1	-18.5	45.6	11.0	H

8DPSK Ch 0 - Average

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	Receiver Reading (dBμV)	Polarization
2385.175	41.0	-38.8	27.7	52.1	H
17760.000	38.2	-18.5	45.6	11.1	H
17904.500	38.2	-18.5	45.6	11.1	V
17875.500	38.2	-18.5	45.6	11.1	H
17819.000	38.1	-18.5	45.6	11.0	H
17751.000	38.0	-18.5	45.6	10.9	H

8DPSK Ch 39 - Average

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	Receiver Reading (dBμV)	Polarization
17863.500	38.4	-18.5	45.6	11.3	H
17835.500	38.3	-18.5	45.6	11.2	H
17851.500	38.3	-18.5	45.6	11.2	V
17874.000	38.2	-18.5	45.6	11.1	H
17845.000	38.1	-18.5	45.6	11.0	H
17870.500	38.1	-18.5	45.6	11.0	H

8DPSK Ch 78 - Average

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	Receiver Reading (dBμV)	Polarization
2486.450	41.1	-38.9	27.7	52.3	H
17848.500	38.4	-18.5	45.6	11.3	H
17950.500	38.3	-17.7	45.6	10.4	V
17856.000	38.3	-18.5	45.6	11.2	H
17766.500	38.3	-18.5	45.6	11.2	H
17923.000	38.2	-17.7	45.6	10.3	H

GFSK Ch 0 – Peak



Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	Receiver Reading (dBμV)	Polarization
2385.340	53.1	-38.8	27.7	64.2	H
17779.000	49.7	-18.5	45.6	22.6	H
17938.500	49.4	-17.7	45.6	21.5	V
17390.500	49.4	-19.2	41.5	27.1	H
17881.500	49.3	-18.5	45.6	22.2	H
17854.000	49.3	-18.5	45.6	22.2	H

GFSK Ch 39 - Peak

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	Receiver Reading (dBμV)	Polarization
17434.000	49.9	-19.2	41.5	27.6	H
17332.500	49.7	-19.5	41.5	27.7	H
17399.000	49.6	-19.2	41.5	27.3	V
17903.500	49.4	-18.5	45.6	22.3	H
17825.000	49.2	-18.5	45.6	22.1	H
17374.000	49.2	-19.5	41.5	27.2	H

GFSK Ch 78 - Peak

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	Receiver Reading (dBμV)	Polarization
2486.630	54.5	-38.9	27.7	65.7	H
17694.000	50.3	-18.9	45.6	23.6	H
17941.500	49.7	-17.7	45.6	21.8	V
17846.000	49.6	-18.5	45.6	22.5	H
17944.000	49.4	-17.7	45.6	21.5	H
17840.000	49.3	-18.5	45.6	22.2	H

$\pi/4$ DQPSK Ch 0 - Peak

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	Receiver Reading (dBμV)	Polarization
2385.385	54.6	-38.8	27.7	65.700	H
17406.000	49.8	-19.2	41.5	27.500	H
17725.000	49.4	-18.9	45.6	22.700	V
17494.000	49.2	-19.2	41.5	26.900	H
17372.000	49.1	-19.5	41.5	27.100	H
17741.000	49.1	-18.5	45.6	22.000	H

$\pi/4$ DQPSK Ch 39 - Peak

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	Receiver Reading (dBμV)	Polarization
17578.500	50.0	-18.9	45.6	23.300	H
17743.500	49.7	-18.5	45.6	22.600	H
17946.500	49.5	-17.7	45.6	21.600	V
17663.000	49.5	-18.9	45.6	22.800	H
17755.500	49.4	-18.5	45.6	22.300	H
17423.500	49.3	-19.2	41.5	27.000	H

π/4 DQPSK Ch 78 - Peak

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	Receiver Reading (dBμV)	Polarization
2487.755	53.8	-38.9	27.7	65.0	H
17827.500	49.5	-18.5	45.6	22.4	H
17706.000	49.5	-18.9	45.6	22.8	V
17790.500	49.5	-18.5	45.6	22.4	H
17638.500	49.4	-18.9	45.6	22.7	H
17389.500	49.4	-19.2	41.5	27.1	H

8DPSK Ch 0 - Peak

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	Receiver Reading (dBμV)	Polarization
2385.125	53.9	-38.8	27.7	65.0	H
17402.500	49.7	-19.2	41.5	27.4	H
17347.000	49.5	-19.5	41.5	27.5	V
17572.000	49.4	-18.9	45.6	22.7	H
17913.500	49.4	-18.5	45.6	22.3	H
17902.500	49.4	-18.5	45.6	22.3	H

8DPSK Ch 39 - Peak

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	Receiver Reading (dBμV)	Polarization
17304.000	50.4	-19.5	41.5	28.4	H
17841.000	49.7	-18.5	45.6	22.6	H
17454.500	49.6	-19.2	41.5	27.3	V
17334.000	49.4	-19.5	41.5	27.4	H
17647.500	49.4	-18.9	45.6	22.7	H
17886.000	49.4	-18.5	45.6	22.3	H

8DPSK Ch 78 - Peak

Frequency(MHz)	Result (dBuV/m)	Cable Loss(dB)	Antenna Factor	Receiver Reading (dBμV)	Polarization
2486.475	54.1	-38.9	27.7	65.3	H
17346.500	49.9	-19.5	41.5	27.9	H
17916.000	49.8	-17.7	45.6	21.9	V
17945.000	49.7	-17.7	45.6	21.8	H
17323.500	49.7	-19.5	41.5	27.7	H
17771.500	49.7	-18.5	45.6	22.6	H

Conclusion: PASS

Test graphs as below:

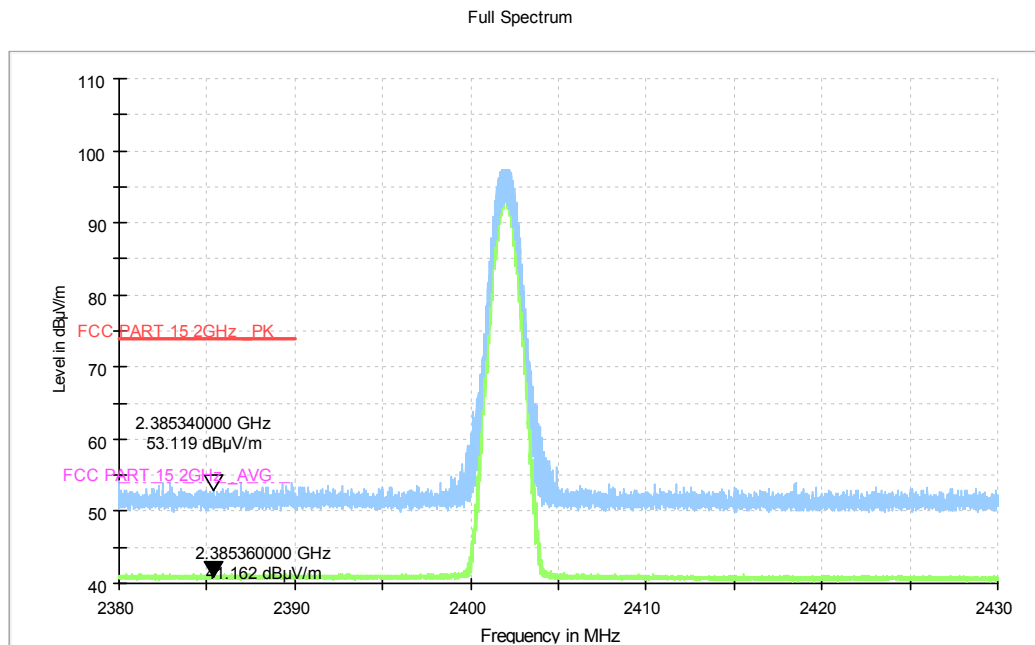


Fig.58. Radiated emission (Power): GFSK, low channel

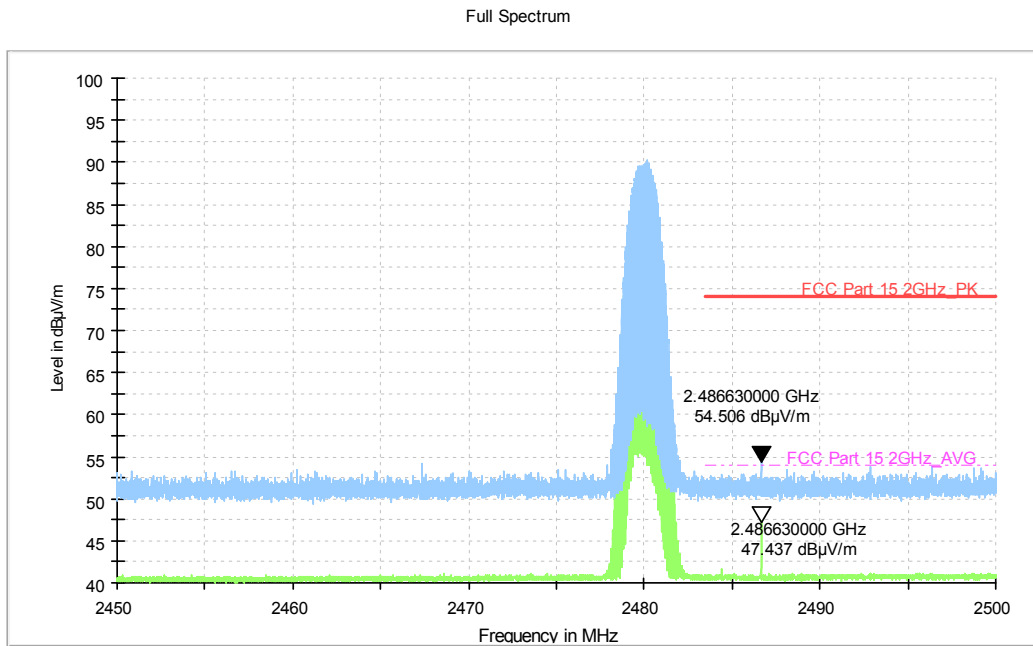


Fig.59. Radiated emission (Power) GFSK, high channel



Fig.60. Radiated emission (Power): $\pi/4$ DQPSK, low channel

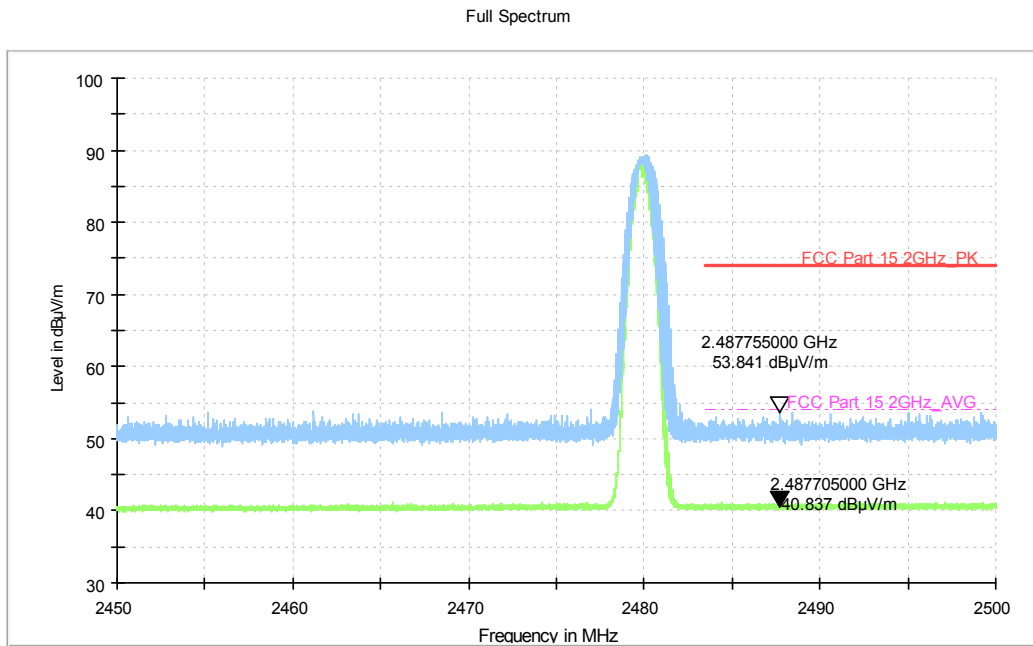


Fig.61. Radiated emission (Power): $\pi/4$ DQPSK, high channel

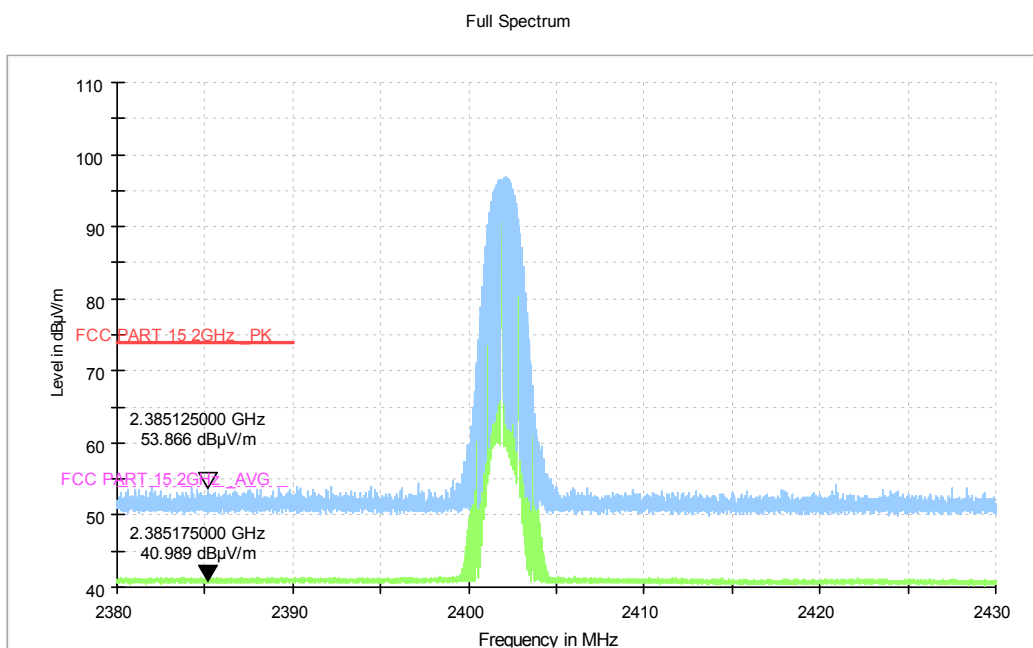


Fig.62. Radiated emission (Power): 8DPSK, low channel

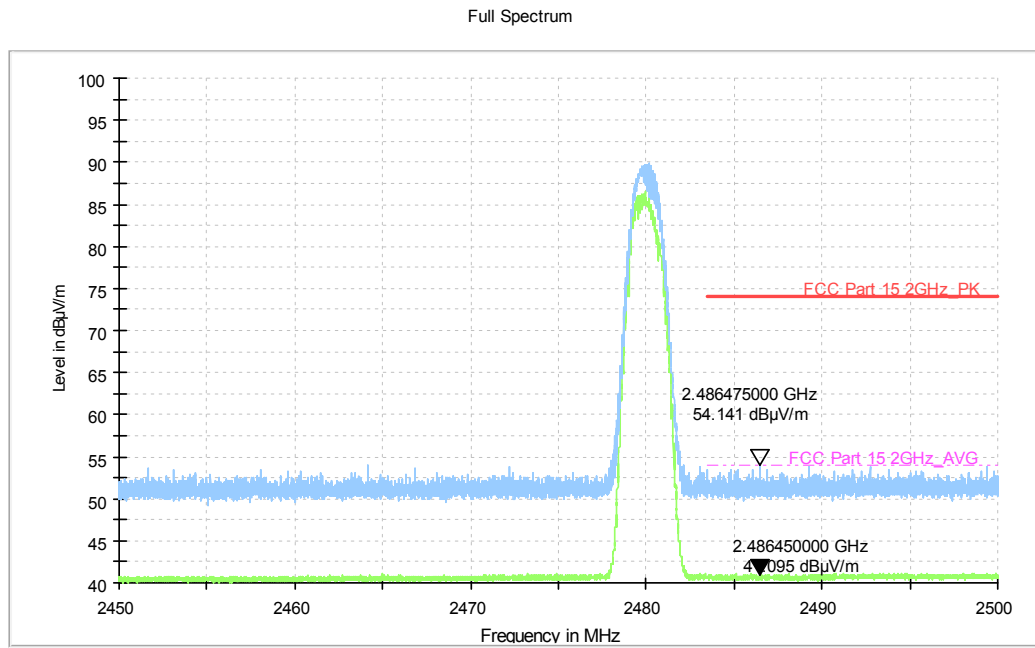


Fig.63. Radiated emission (Power): 8DPSK, high channel