

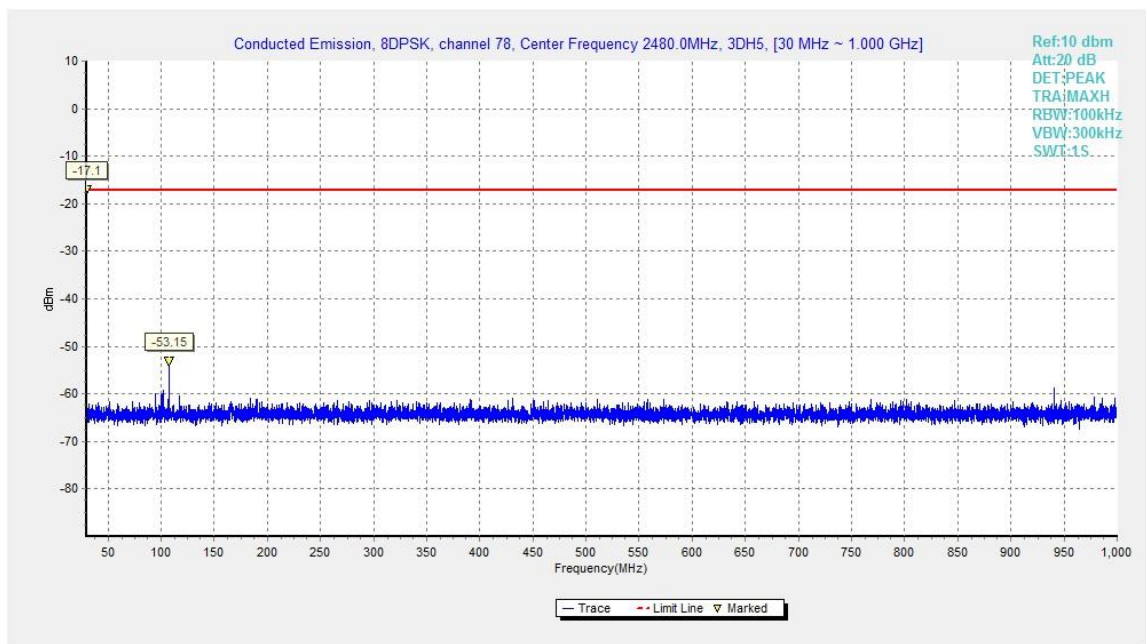


Fig.54. Conducted spurious emission: 8DPSK, Channel 78, 30MHz - 1GHz

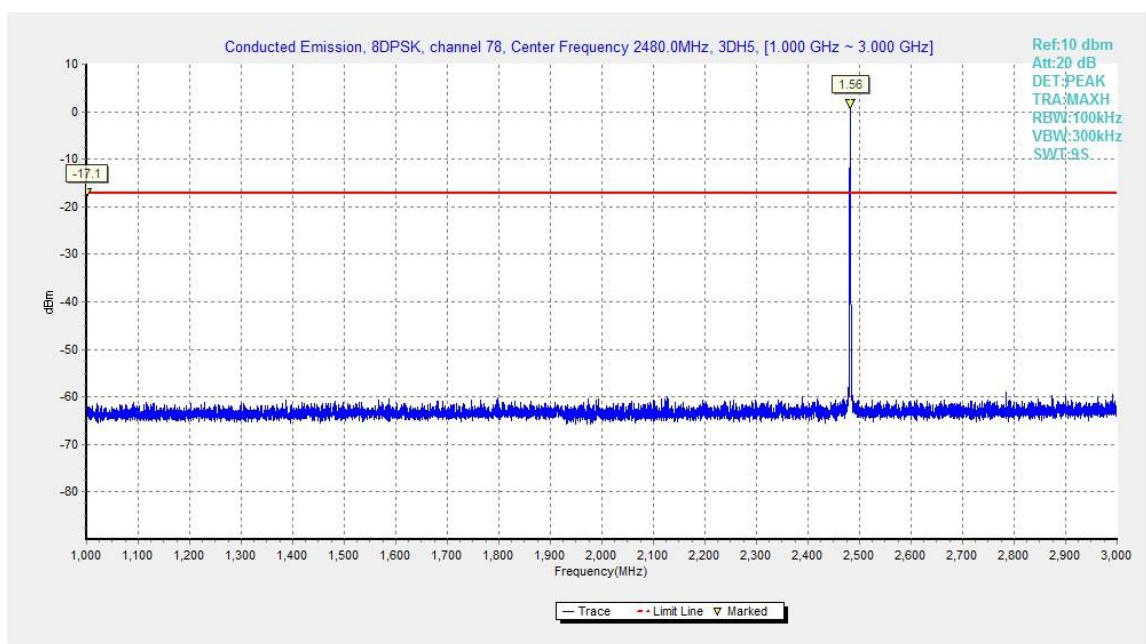


Fig.55. Conducted spurious emission: 8DPSK, Channel 78, 1GHz - 3GHz

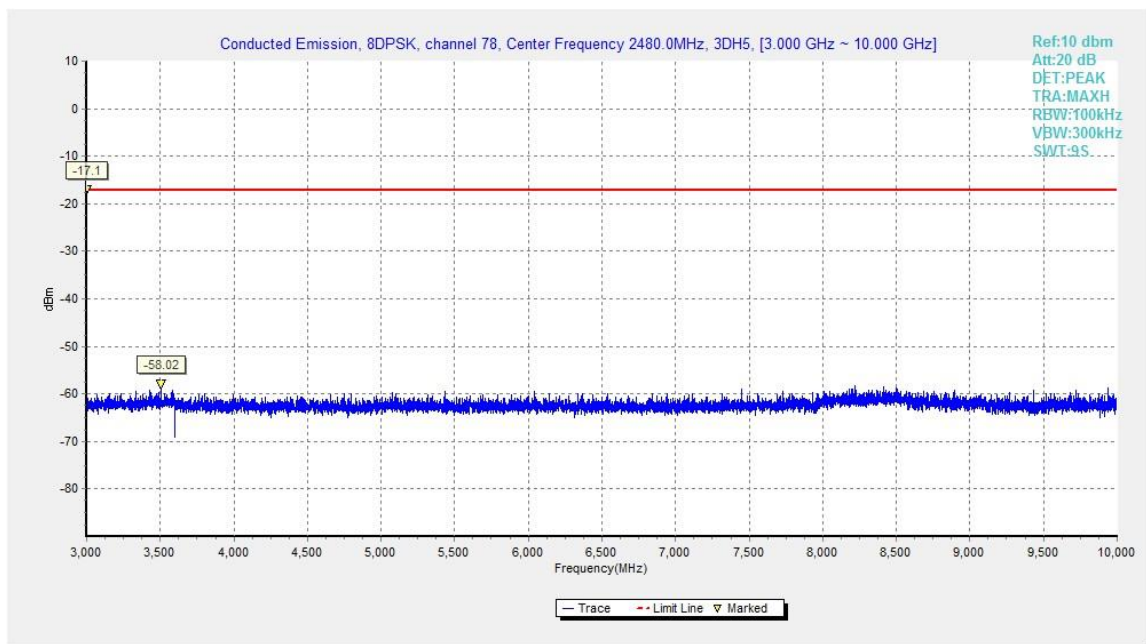


Fig.56. Conducted spurious emission: 8DPSK, Channel 78, 3GHz - 10GHz

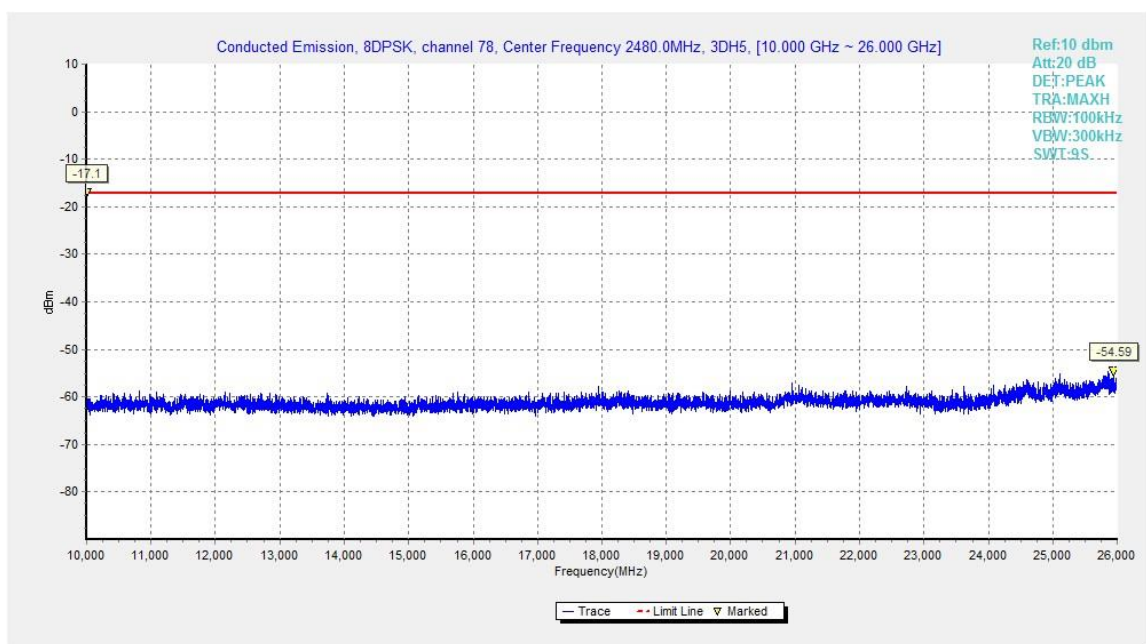


Fig.57. Conducted spurious emission: 8DPSK, Channel 78, 10GHz - 26GHz

A.5. Radiated Emission

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

For $\pi/4$ 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)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2382.000	46.3	2.9	32.0	11.37	54.0	7.7	V
2387.000	46.3	2.9	32.0	11.40	54.0	7.7	V
4804.500	28.1	-32.8	34.5	26.41	54.0	25.9	H
7206.000	30.3	-31.6	36.1	25.80	54.0	23.7	V
9607.500	32.8	-30.0	37.0	25.85	54.0	21.2	H
12010.500	35.3	-29.8	39.3	25.81	54.0	18.7	H

GFSK Ch 39 - Average

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2383.400	46.6	2.9	32.0	11.71	54.0	7.4	H
2517.700	46.5	3.0	32.6	10.96	54.0	7.5	V
4882.500	28.8	-32.7	34.5	27.01	54.0	25.2	H
7323.000	30.2	-31.9	36.1	26.05	54.0	23.8	V
9763.500	32.7	-30.6	37.2	26.07	54.0	21.3	H
12205.500	35.1	-29.4	39.2	25.36	54.0	18.9	H

GFSK Ch 78 - Average

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2483.800	47.3	2.9	32.8	11.60	54.0	6.7	H
2484.700	47.1	2.9	32.7	11.46	54.0	6.9	V
4960.500	27.7	-33.4	34.5	26.57	54.0	26.3	V
7440.000	30.2	-31.8	36.0	25.97	54.0	23.8	V
9919.500	33.8	-29.9	37.4	26.34	54.0	20.2	H
12400.500	34.7	-29.5	39.1	25.02	54.0	19.3	H

π/4 DQPSK Ch 0 - Average

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2383.600	46.3	2.9	32.0	11.40	54.0	7.7	V
2388.700	46.3	2.9	32.0	11.45	54.0	7.7	H
4804.500	28.6	-32.8	34.5	26.98	54.0	25.4	V
7206.000	30.6	-31.6	36.1	26.10	54.0	23.4	H
9607.500	33.1	-30.0	37.0	26.17	54.0	20.9	H
12010.500	35.4	-29.8	39.3	25.98	54.0	18.6	V

$\pi/4$ DQPSK Ch 39 - Average

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
2371.100	46.4	2.9	32.0	11.52	54.0	7.6	H
2533.800	46.4	3.0	32.8	10.54	54.0	7.7	V
4882.500	29.0	-32.7	34.5	27.24	54.0	25.0	V
7323.000	30.4	-31.9	36.1	26.29	54.0	23.6	H
9763.500	32.9	-30.6	37.2	26.30	54.0	21.1	H
12205.500	35.4	-29.4	39.2	25.56	54.0	18.7	V

 $\pi/4$ DQPSK Ch 78 - Average

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
2484.100	47.0	2.9	32.7	11.34	54.0	7.0	V
2485.600	47.0	2.9	32.7	11.33	54.0	7.0	H
4960.500	28.1	-33.4	34.5	26.99	54.0	25.9	H
7440.000	30.5	-31.8	36.0	26.25	54.0	23.5	V
9919.500	34.2	-29.9	37.4	26.68	54.0	19.8	H
12400.500	34.9	-29.5	39.1	25.25	54.0	19.1	H

8DPSK Ch 0 - Average

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
2382.400	46.3	2.9	32.0	11.38	54.0	7.7	V
2387.800	46.3	2.9	32.0	11.45	54.0	7.7	V
4804.500	28.6	-32.8	34.5	26.94	54.0	25.4	H
7206.000	30.6	-31.6	36.1	26.13	54.0	23.4	H
9607.500	33.1	-30.0	37.0	26.16	54.0	20.9	H
12010.500	35.5	-29.8	39.3	26.05	54.0	18.5	V

8DPSK Ch 39 - Average

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
2376.800	46.5	2.9	32.1	11.56	54.0	7.5	H
2516.800	46.5	3.0	32.6	11.01	54.0	7.5	V
4882.500	29.1	-32.7	34.5	27.34	54.0	24.9	H
7323.000	30.5	-31.9	36.1	26.34	54.0	23.5	H
9763.500	33.0	-30.6	37.2	26.35	54.0	21.0	V
12205.500	35.4	-29.4	39.2	25.63	54.0	18.6	H

8DPSK Ch 78 - Average

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2484.100	47.1	2.9	32.7	11.43	54.0	6.9	H
2486.300	47.0	2.9	32.7	11.41	54.0	7.0	H
4960.500	28.2	-33.4	34.5	27.06	54.0	25.8	H
7440.000	30.5	-31.8	36.0	26.23	54.0	23.5	V
9919.500	34.1	-29.9	37.4	26.59	54.0	19.9	H
12400.500	35.0	-29.5	39.1	25.32	54.0	19.0	V

GFSK Ch 0 – Peak

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2382.282	59.2	2.9	32.0	24.29	74.0	14.8	H
2389.394	59.1	2.9	32.0	24.28	74.0	14.9	V
4803.750	39.6	-32.9	34.5	37.93	74.0	34.4	V
7206.000	41.0	-31.6	36.1	36.57	74.0	33.0	V
9608.250	43.8	-30.0	37.0	36.83	74.0	30.2	V
12009.750	47.0	-29.8	39.3	37.57	74.0	27.0	V

GFSK Ch 39 - Peak

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2382.800	52.4	-25.1	32.0	45.45	74.0	21.6	H
2519.000	51.1	-26.7	32.6	45.15	74.0	22.9	H
4881.750	39.8	-32.7	34.5	38.01	74.0	34.2	V
7323.000	41.9	-31.9	36.1	37.74	74.0	32.1	V
9764.250	43.0	-30.6	37.2	36.33	74.0	31.0	H
12204.750	45.3	-29.4	39.2	35.49	74.0	28.7	H

GFSK Ch 78 - Peak

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2486.590	60.1	2.9	32.7	24.54	74.0	13.9	H
2487.560	60.0	2.9	32.6	24.39	74.0	14.0	V
4959.750	39.0	-33.4	34.5	37.90	74.0	35.0	H
7440.000	40.6	-31.8	36.0	36.38	74.0	33.4	H
9920.250	44.7	-29.9	37.4	37.22	74.0	29.3	H
12399.750	45.3	-29.5	39.1	35.64	74.0	28.7	H

$\pi/4$ DQPSK Ch 0 - Peak

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
2386.398	59.4	2.9	32.0	24.54	74.0	14.6	H
2387.784	59.5	2.9	32.0	24.60	74.0	14.5	H
4803.750	38.5	-32.9	34.5	36.84	74.0	35.5	V
7206.000	41.4	-31.6	36.1	36.97	74.0	32.6	V
9608.250	46.2	-30.0	37.0	39.24	74.0	27.8	V
12009.750	46.9	-29.8	39.3	37.46	74.0	27.1	V

 $\pi/4$ DQPSK Ch 39 -Peak

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
2372.400	49.9	-26.8	32.1	44.66	74.0	24.1	H
2520.600	51.0	-26.7	32.6	45.06	74.0	23.0	H
4881.750	39.9	-32.7	34.5	38.07	74.0	34.1	H
7323.000	41.4	-31.9	36.1	37.26	74.0	32.6	H
9764.250	43.4	-30.6	37.2	36.77	74.0	30.6	H
12204.750	45.9	-29.4	39.2	36.08	74.0	28.1	V

 $\pi/4$ DQPSK Ch 78 - Peak

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
2495.260	60.4	2.9	32.4	25.05	74.0	13.6	H
2497.980	60.4	2.9	32.4	25.07	74.0	13.6	H
4959.750	40.0	-33.4	34.5	38.86	74.0	34.0	V
7440.000	41.4	-31.8	36.0	37.15	74.0	32.6	V
9920.250	44.6	-29.9	37.4	37.12	74.0	29.4	V
12399.750	45.3	-29.5	39.1	35.72	74.0	28.7	V

8DPSK Ch 0 -Peak

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
2381.890	59.2	2.9	32.0	24.31	74.0	14.8	H
2387.742	59.4	2.9	32.0	24.57	74.0	14.6	H
4803.750	39.2	-32.9	34.5	37.53	74.0	34.8	V
7206.000	41.6	-31.6	36.1	37.16	74.0	32.4	H
9608.250	44.4	-30.0	37.0	37.43	74.0	29.6	H
12009.750	46.2	-29.8	39.3	36.69	74.0	27.8	H

8DPSK Ch 39 - Peak

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2376.000	50.4	-26.6	32.1	44.92	74.0	23.6	H
2536.400	50.9	-26.8	32.9	44.78	74.0	23.1	H
4881.750	38.6	-32.7	34.5	36.79	74.0	35.4	V
7323.000	40.9	-31.9	36.1	36.75	74.0	33.1	H
9764.250	45.3	-30.6	37.2	38.67	74.0	28.7	V
12204.750	46.5	-29.4	39.2	36.69	74.0	27.5	V

8DPSK Ch 78 - Peak

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver eading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
2480.420	60.2	2.9	32.8	24.40	74.0	13.8	H
2492.200	60.0	2.9	32.5	24.53	74.0	14.0	H
4959.750	39.3	-33.4	34.5	38.20	74.0	34.7	H
7440.000	41.7	-31.8	36.0	37.43	74.0	32.3	V
9920.250	44.4	-29.9	37.4	36.90	74.0	29.6	V
12399.750	45.4	-29.5	39.1	35.82	74.0	28.6	V

Conclusion: PASS

Test graphs as below:

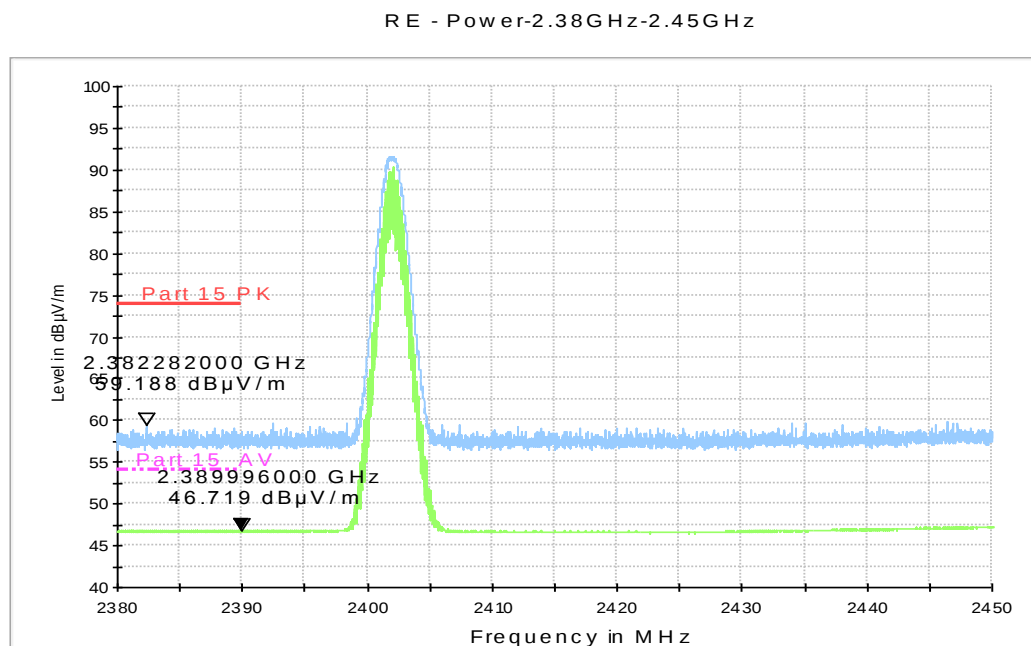


Fig.58. Radiated emission (Power): GFSK, low channel

RE - Power-2.45GHz-2.5GHz

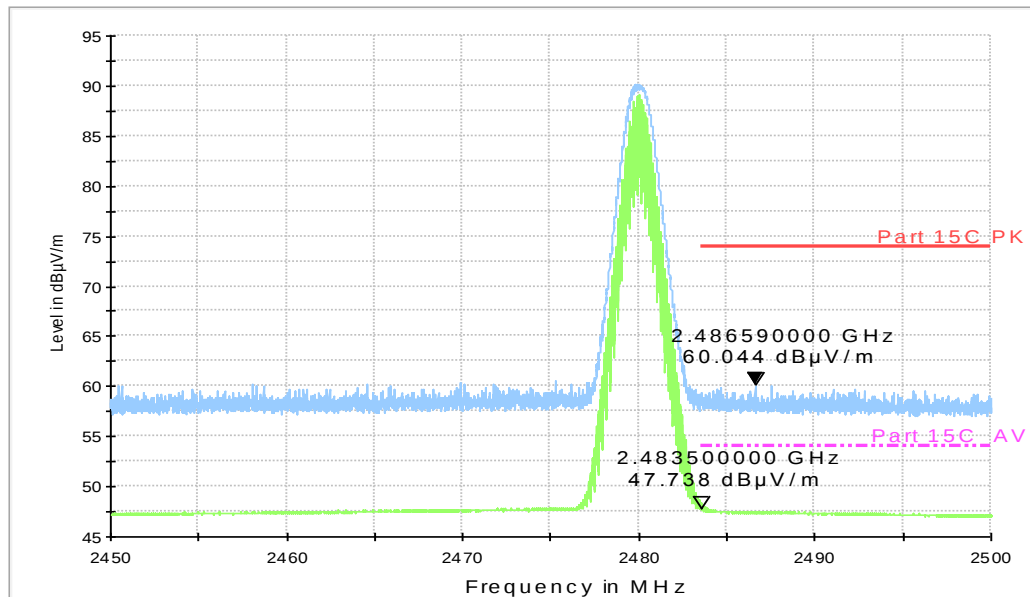


Fig.59. Radiated emission (Power) GFSK, high channel

RE - Power-2.38GHz-2.45GHz

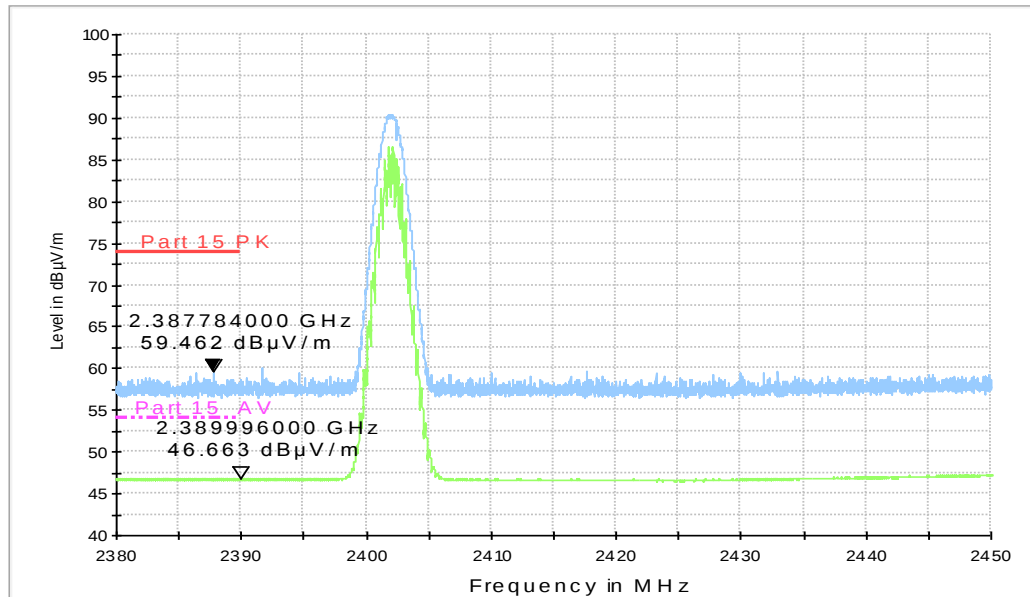


Fig.60. Radiated emission (Power): $\pi/4$ DQPSK, low channel

RE - Power-2.45GHz-2.5GHz

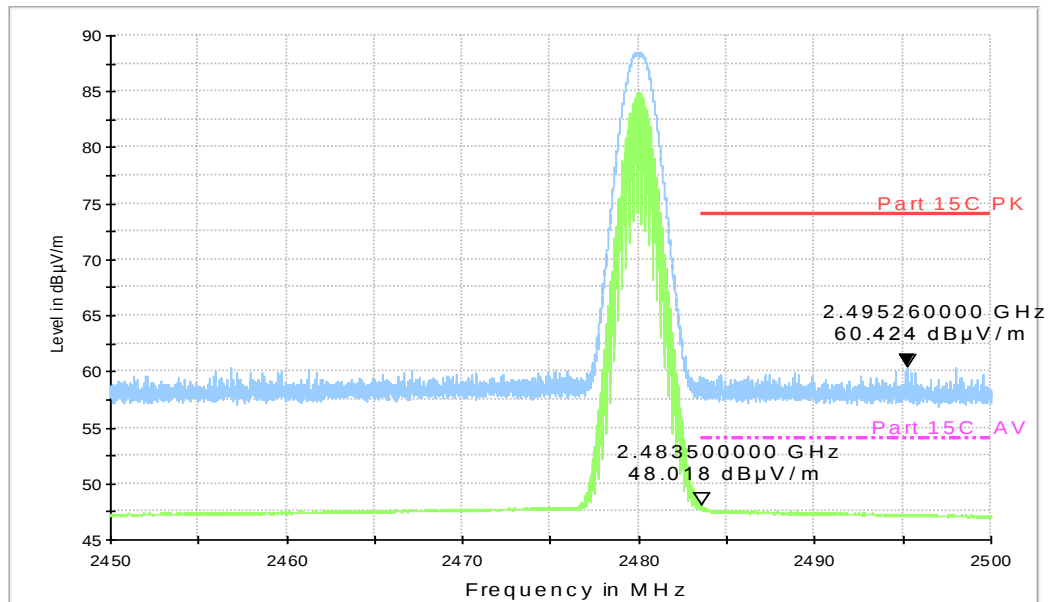


Fig.61. Radiated emission (Power): $\pi/4$ DQPSK, high channel

RE - Power-2.38GHz-2.45GHz

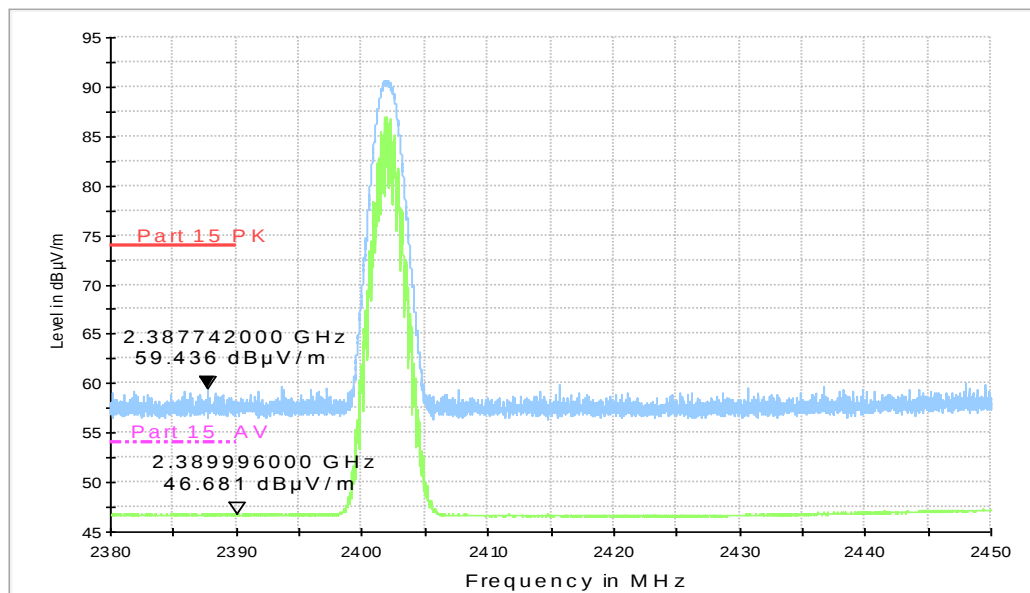


Fig.62. Radiated emission (Power): 8DPSK, low channel

RE - Power-2.45GHz-2.5GHz

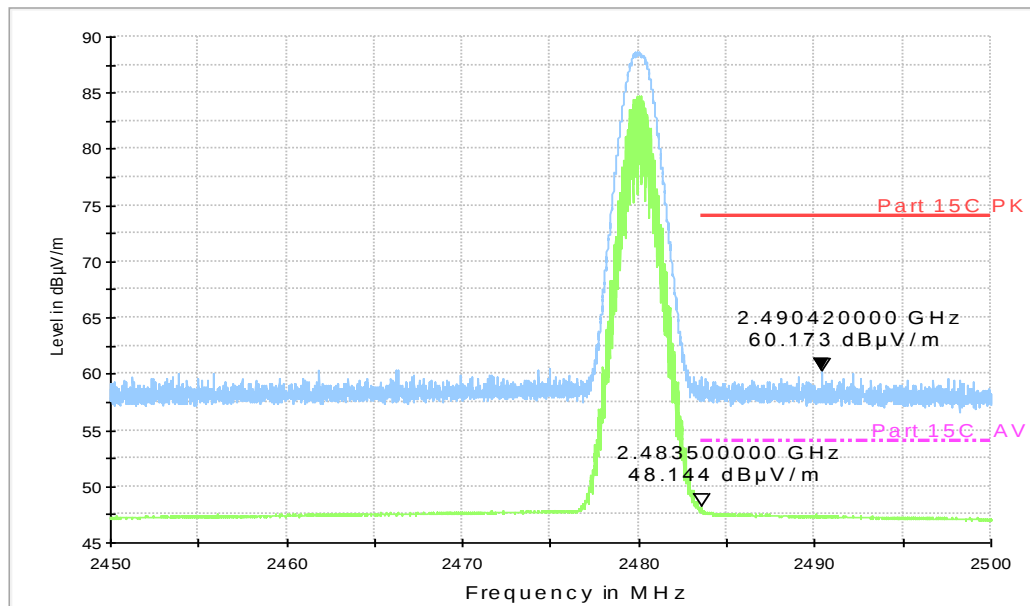


Fig.63. Radiated emission (Power): 8DPSK, high channel

A.6. Time of Occupancy (Dwell Time)

Method of Measurement: See ANSI C63.10-clause 7.8.4

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

- Span = zero span, centered on a hopping channel
- RBW = 1 MHz
- VBW $\geq$ RBW
- Sweep = as necessary to capture the entire dwell time per hopping channel
- Detector function = peak
- Trace = max hold

Measure a pulse time in time domain at middle frequency and then count the hopping number in 31.6s(which equals with 0.4 multiply 79) of middle frequency ,then multiply the pulse time and hopping number and record them.

Measurement Limit:

Standard	Limit (ms)
FCC 47 CFR Part 15.247(a) (1)(iii)	< 400

Measurement Result:

For GFSK

Channel	Packet	Dwell Time (ms)		Conclusion
39	DH1	Fig.64	117.74	P
		Fig.65		
	DH3	Fig.66	174.03	P
		Fig.67		
	DH5	Fig.68	181.08	P
		Fig.69		

For $\pi/4$ DQPSK

Channel	Packet	Dwell Time (ms)		Conclusion
39	DH1	Fig.70	120.43	P
		Fig.71		
	DH3	Fig.72	161.34	P
		Fig.73		
	DH5	Fig.74	187.04	P
		Fig.75		

For 8DPSK

Channel	Packet	Dwell Time (ms)		Conclusion
39	DH1	Fig.76	121.07	P
		Fig.77		
	DH3	Fig.78	154.71	P

	DH5	Fig.79	161.26	P
		Fig.80		
		Fig.81		

Conclusion: PASS

Test graphs as below:

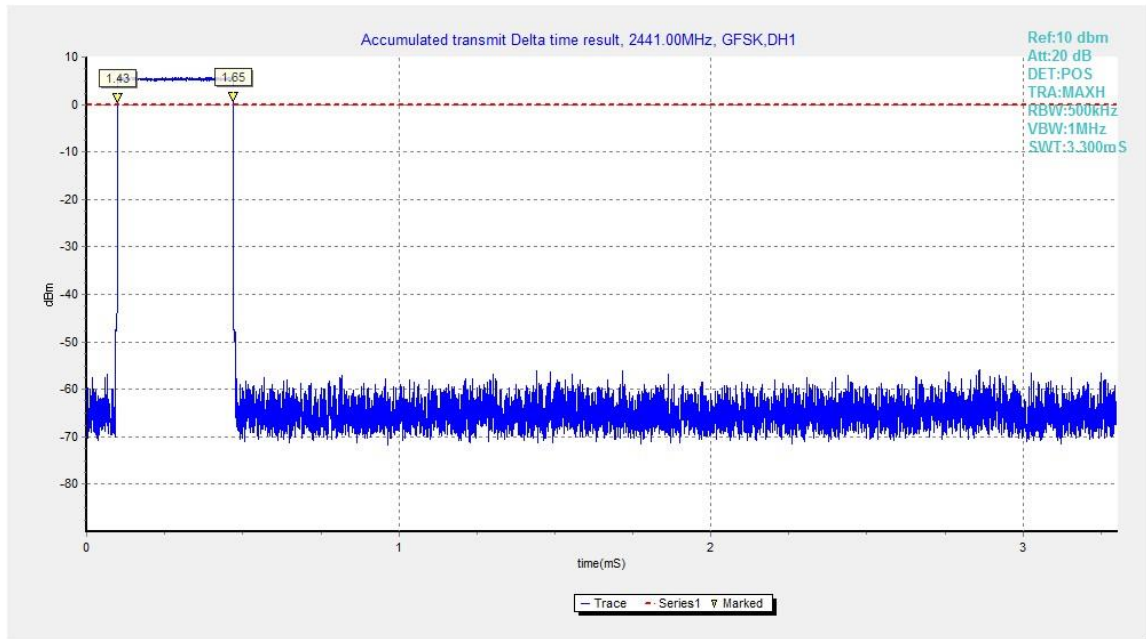


Fig.64. Time of occupancy (Dwell Time): Channel 39, Packet DH1

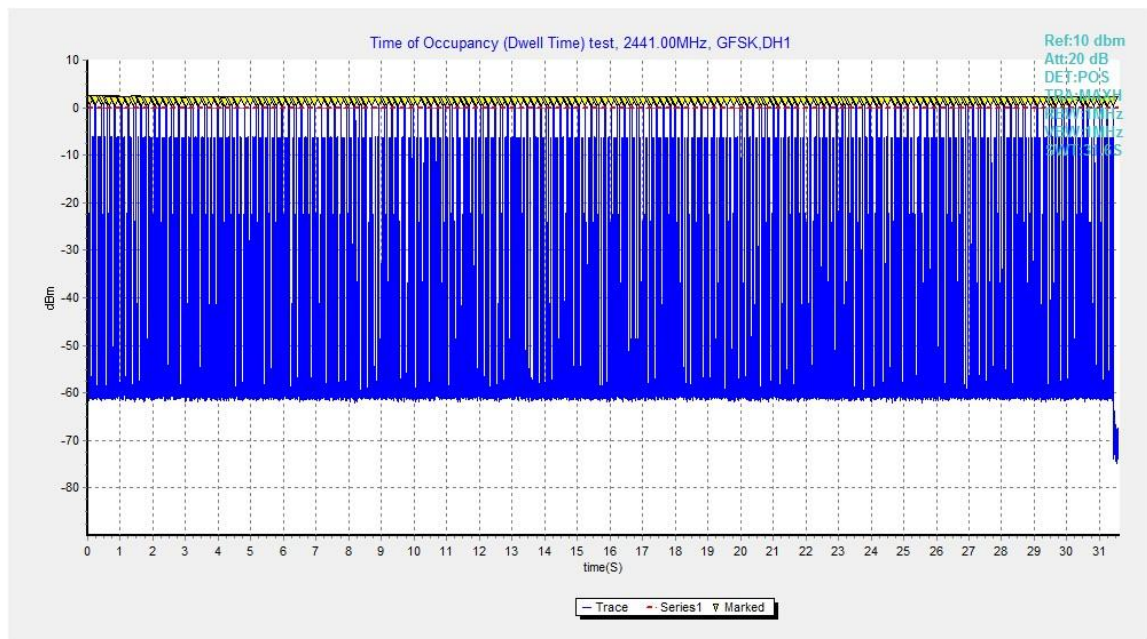


Fig.65. Number of Transmissions Measurement:Channel 39,Packet DH1

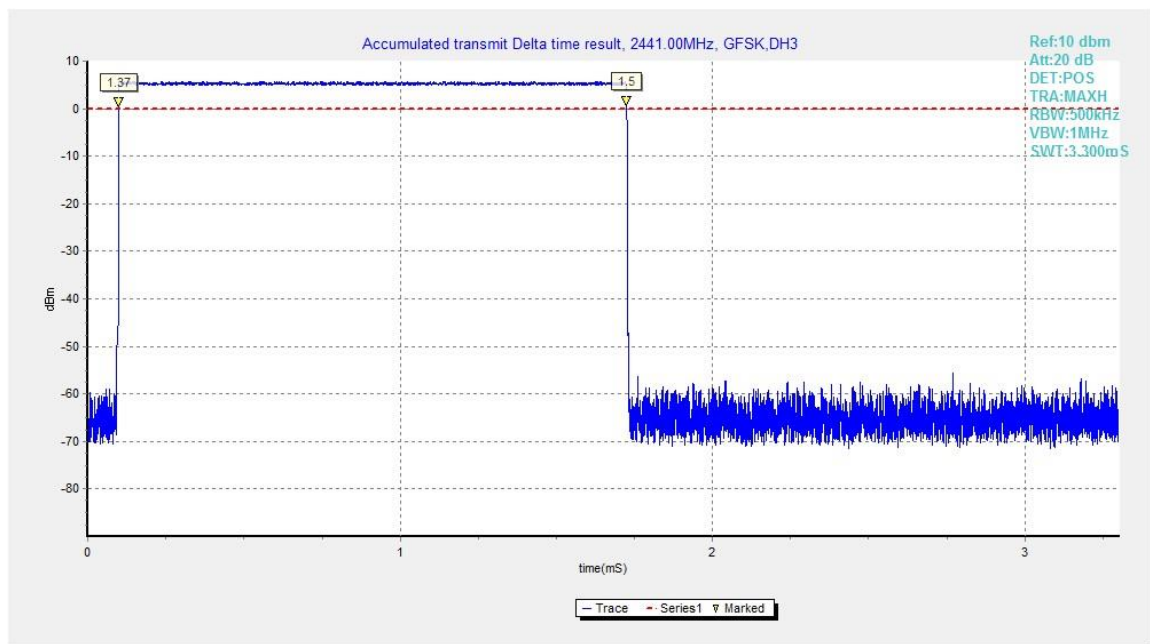


Fig.66. Time of occupancy (Dwell Time): Channel 39, Packet DH3

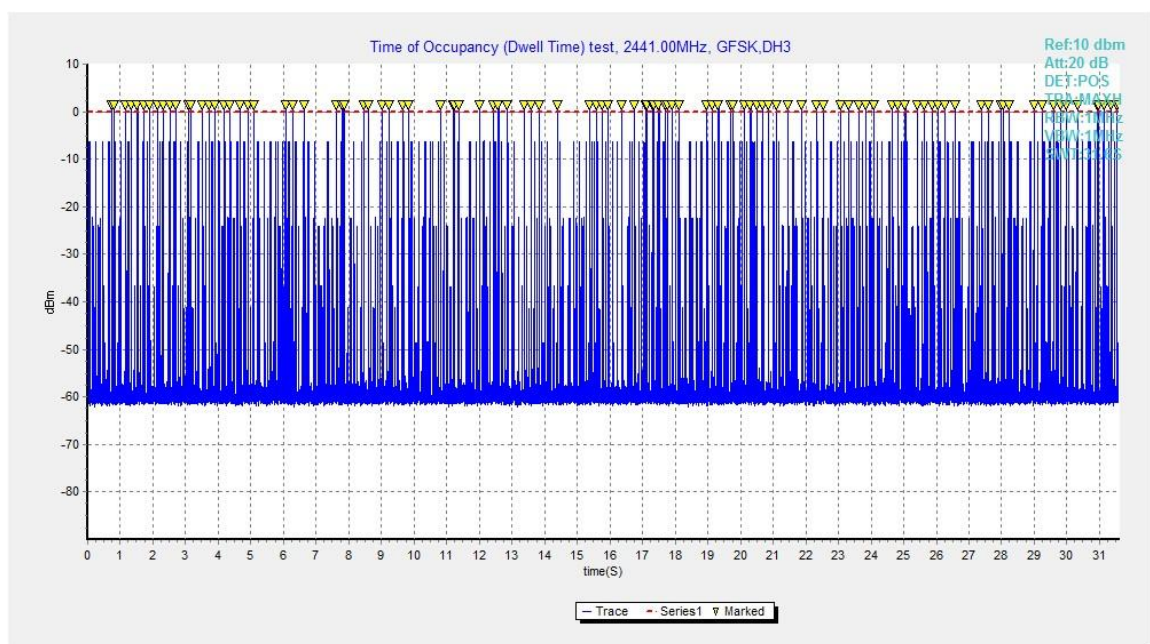


Fig.67. Number of Transmissions Measurement:Channel 39,Packet DH3



Fig.68. Time of occupancy (Dwell Time): Channel 39, Packet DH5

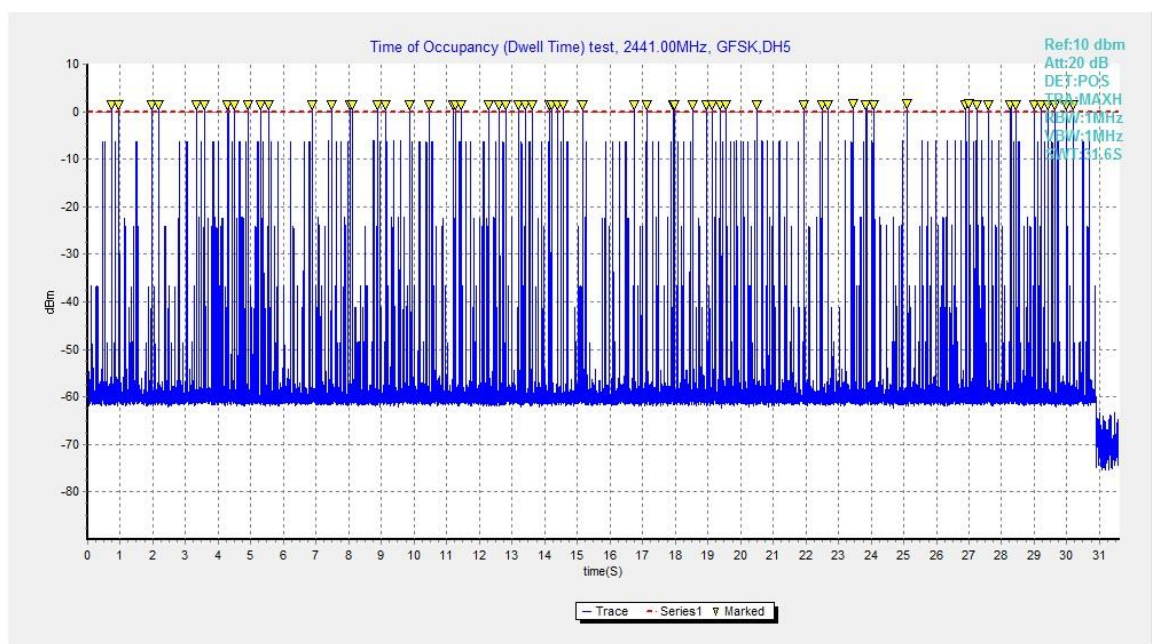


Fig.69. Number of Transmissions Measurement:Channel 39,Packet DH5

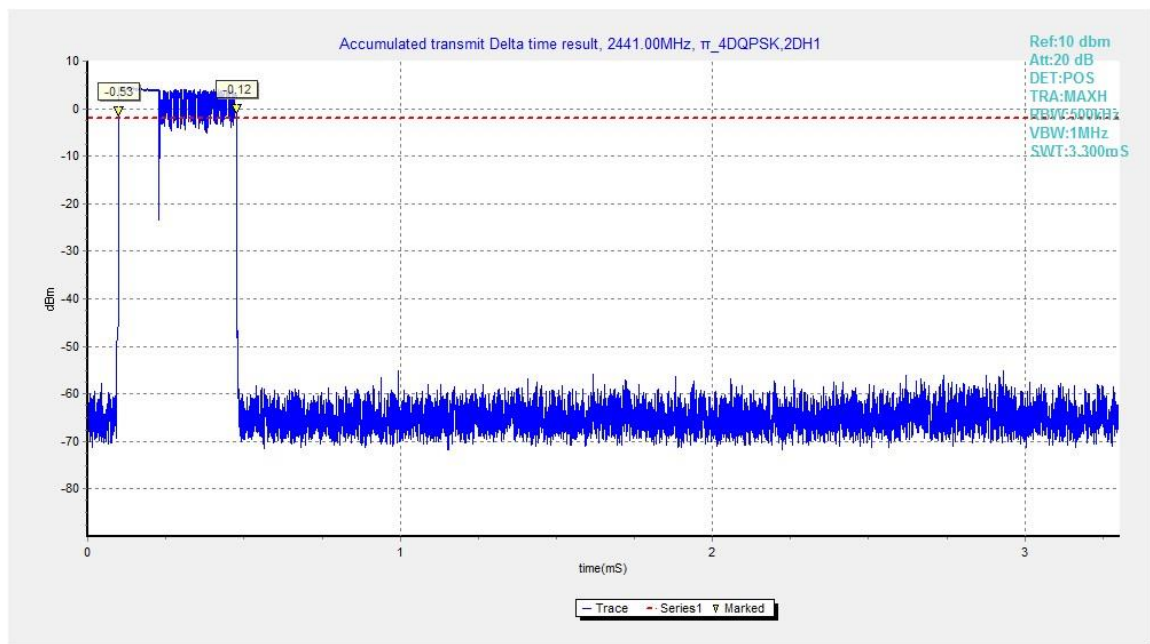


Fig.70. Time of occupancy (Dwell Time): Channel 39, Packet 2-DH1

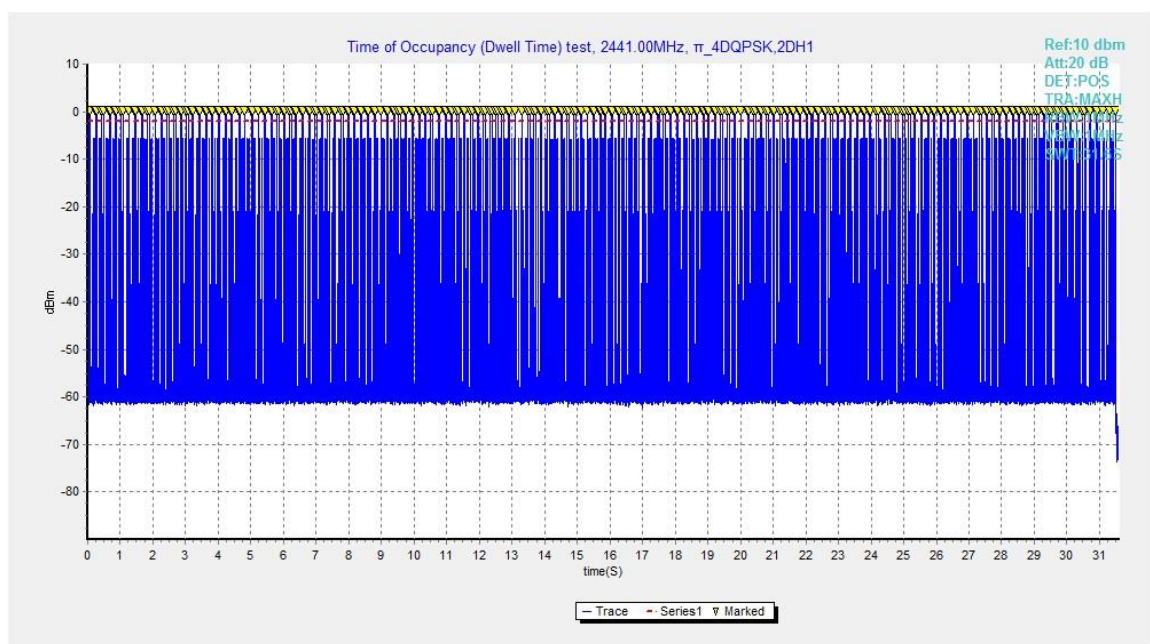


Fig.71. Number of Transmissions Measurement:Channel 39,Packet 2-DH1

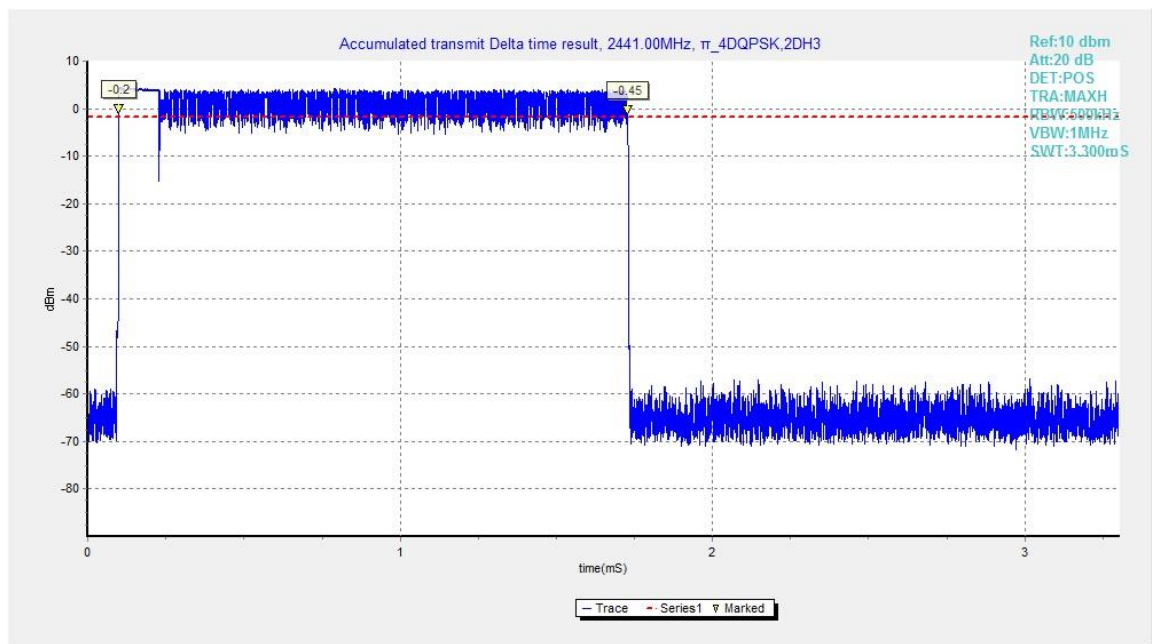


Fig.72. Time of occupancy (Dwell Time): Channel 39, Packet 2-DH3

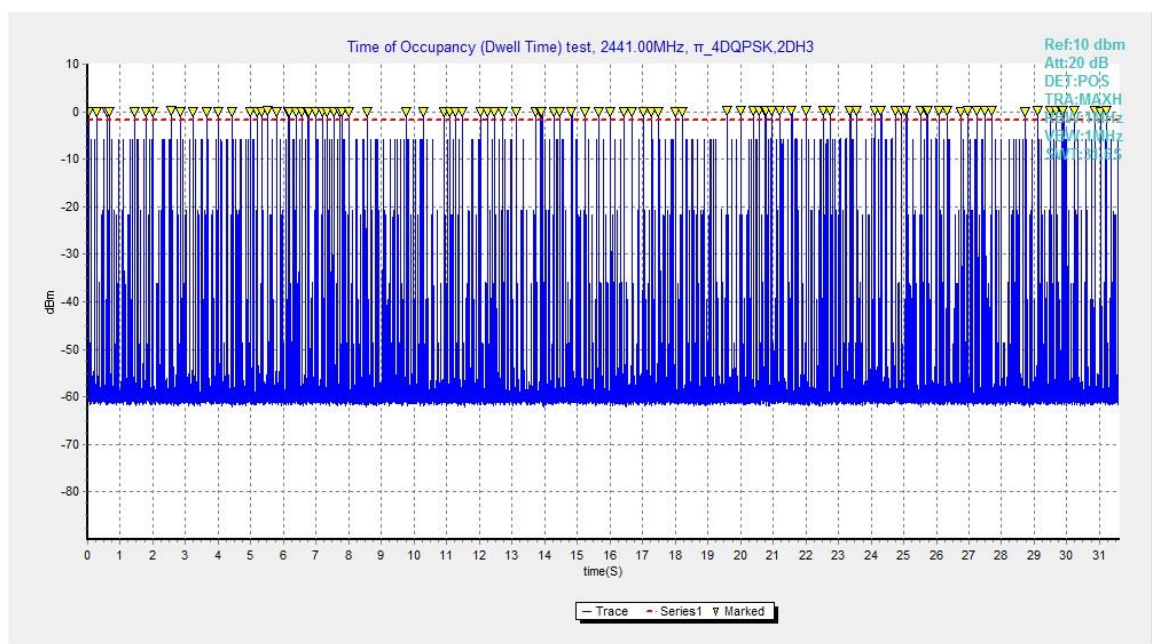


Fig.73. Number of Transmissions Measurement:Channel 39,Packet 2-DH3

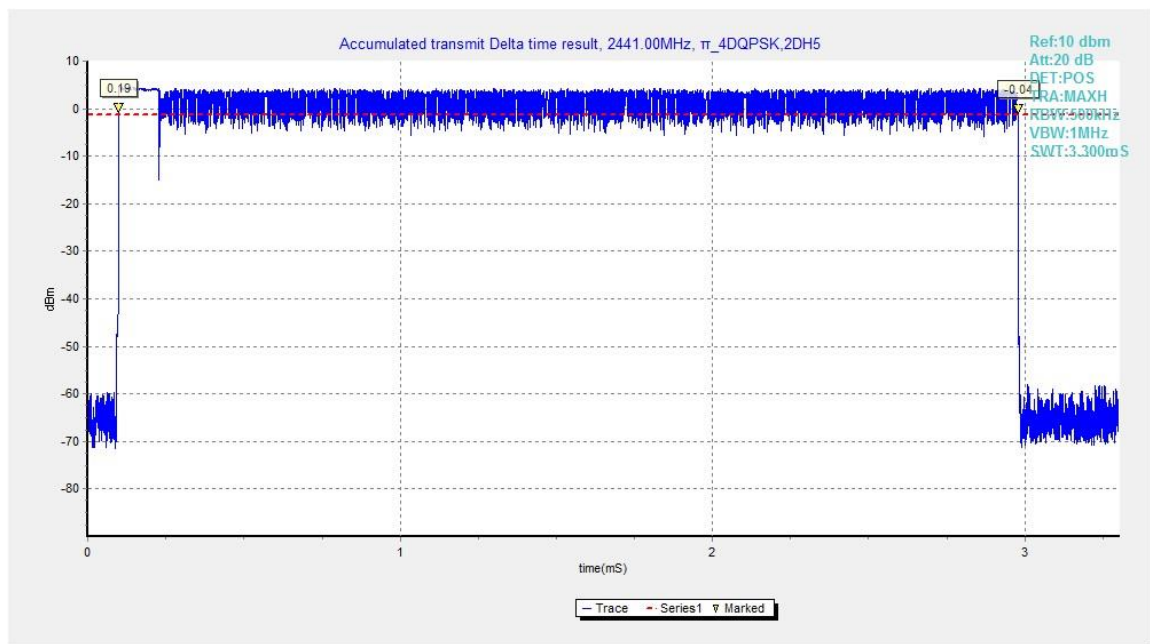


Fig.74. Time of occupancy (Dwell Time): Channel 39, Packet 2-DH5

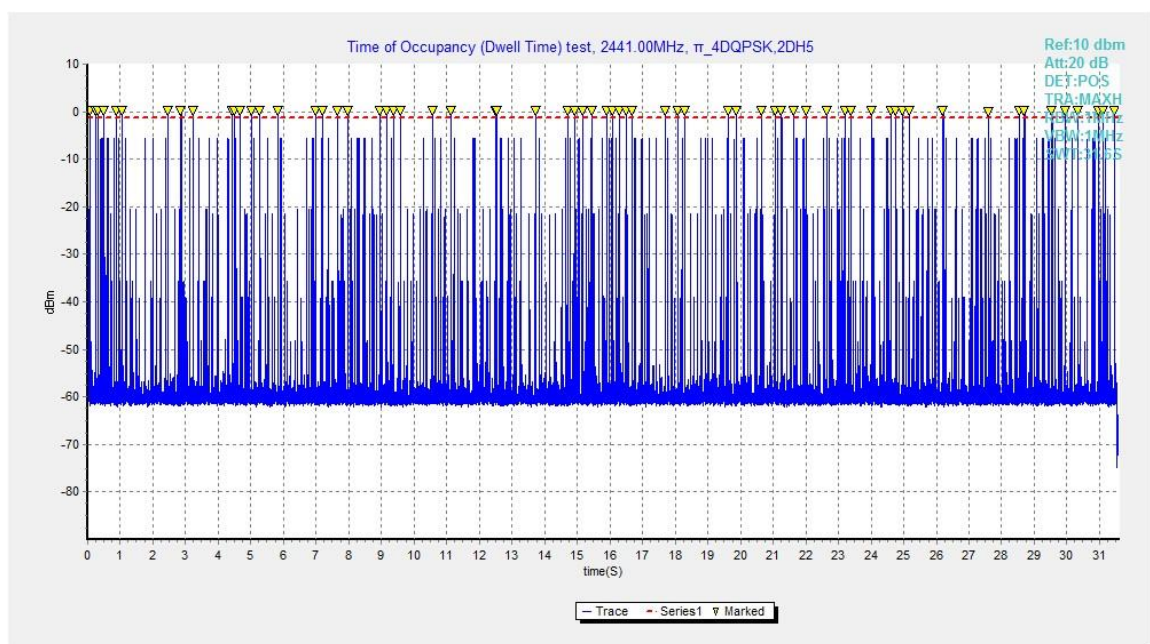


Fig.75. Number of Transmissions Measurement:Channel 39,Packet 2-DH5

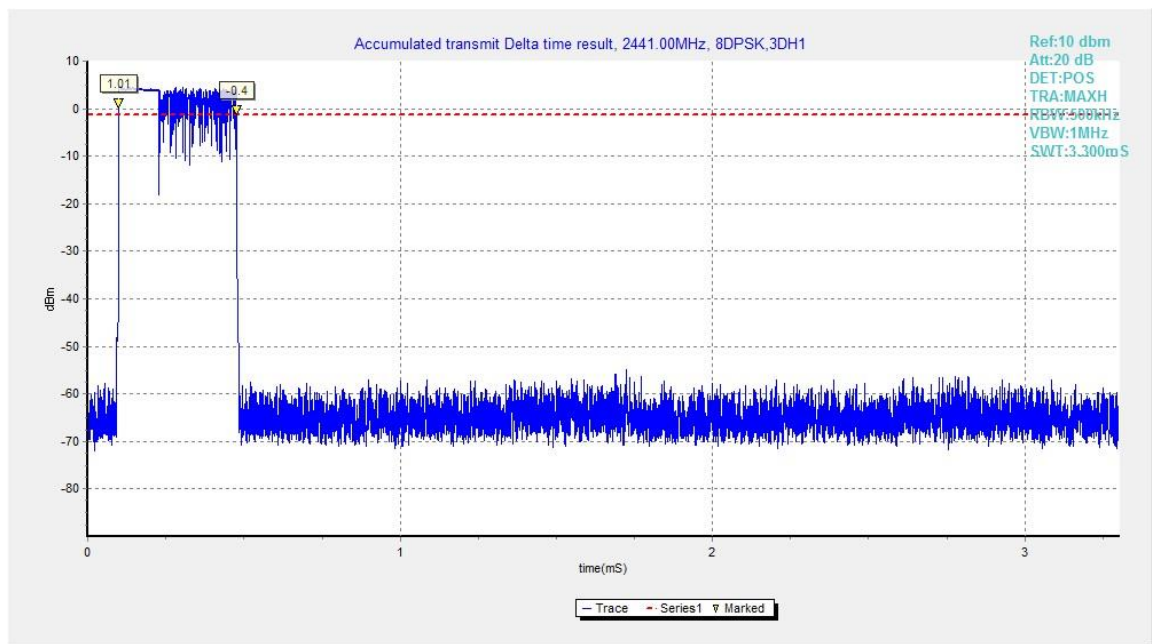


Fig.76. Time of occupancy (Dwell Time): Channel 39, Packet 3-DH1

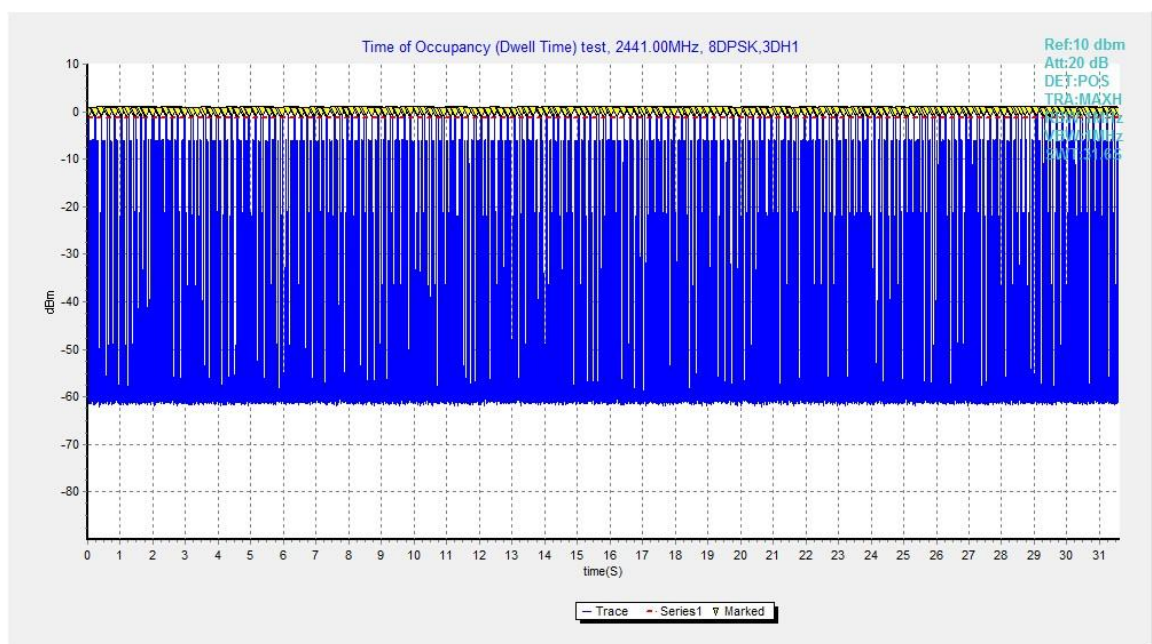


Fig.77. Number of Transmissions Measurement:Channel 39,Packet 3-DH1

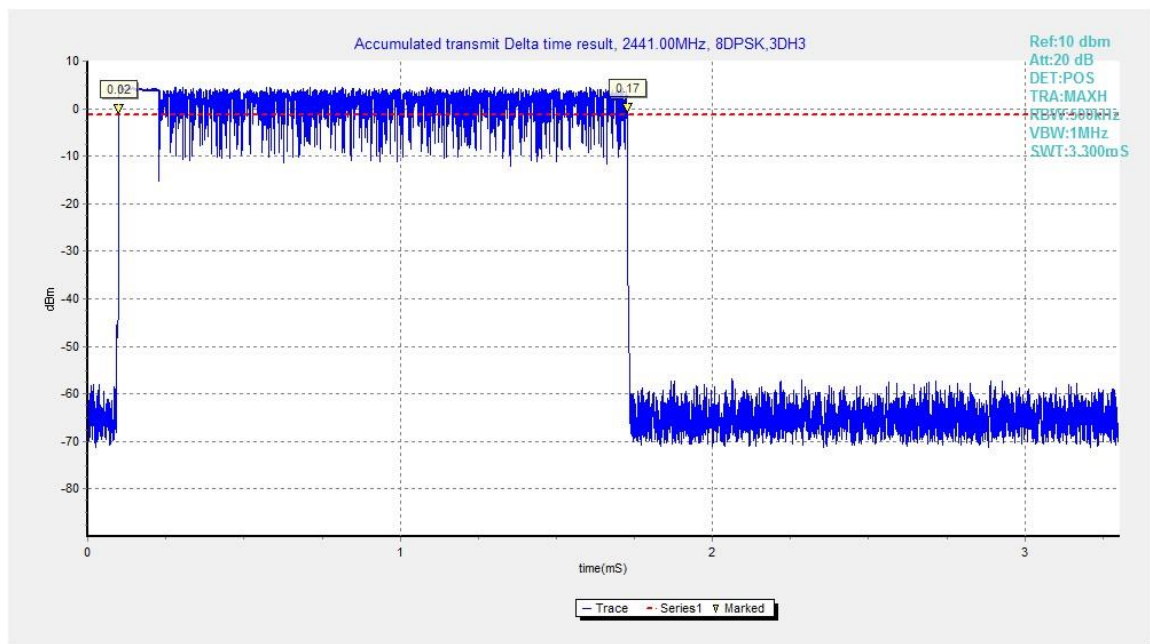


Fig.78. Time of occupancy (Dwell Time): Channel 39, Packet 3-DH3

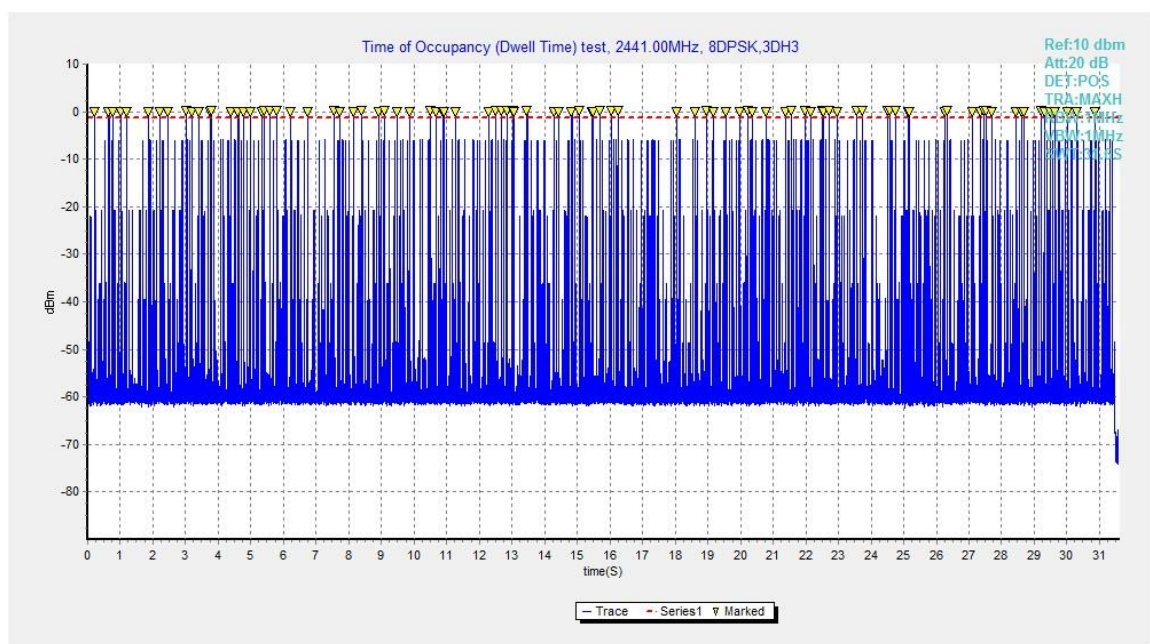


Fig.79. Number of Transmissions Measurement:Channel 39,Packet 3-DH3

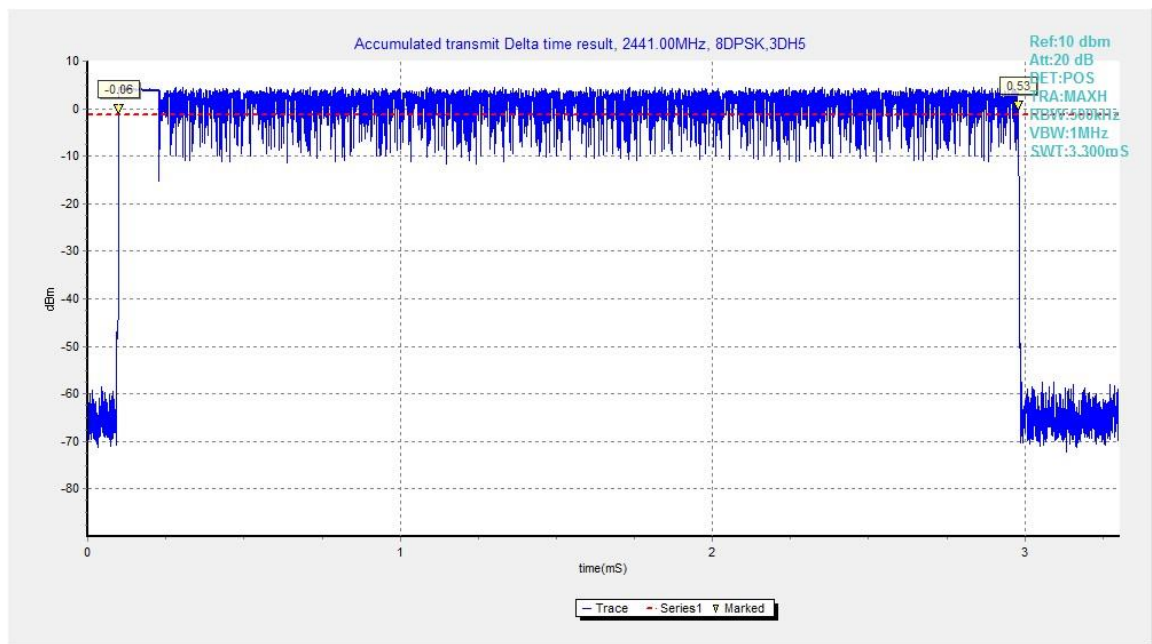


Fig.80. Time of occupancy (Dwell Time): Channel 39, Packet 3-DH5

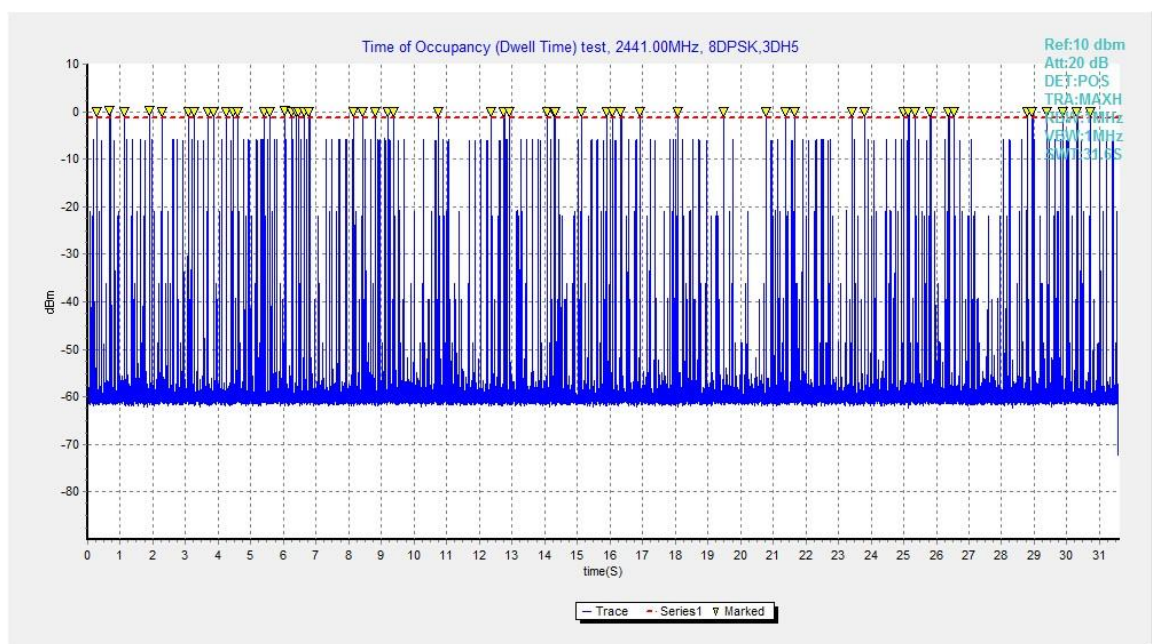


Fig.81. Number of Transmissions Measurement:Channel 39,Packet 3-DH5

A.7. 20dB Bandwidth

Method of Measurement: See ANSI C63.10-clause 6.9.2

Measurement Procedure - Unwanted Emissions

1. Set RBW = 30kHz.
2. Set VBW = 100 kHz.
3. Set span to 3MHz
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.
7. Allow the trace to stabilize (this may take some time, depending on the extent of the span).

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247(a)(1)	NA *

Use NdB Down function of the SA to measure the 20dB Bandwidth

* Comment: This test case is not required according to the latest FCC 47 CFR Part 15.247. But the test results are necessary for “carrier frequency separation” test case, in Annex A.8.

Measurement Results:

For GFSK

Channel	20dB Bandwidth (kHz)		Conclusion
0	Fig.82	950.25	NA
39	Fig.83	946.50	NA
78	Fig.84	950.25	NA

For $\pi/4$ DQPSK

Channel	20dB Bandwidth (kHz)		Conclusion
0	Fig.85	1268.25	NA
39	Fig.86	1289.25	NA
78	Fig.87	1281.00	NA

For 8DPSK

Channel	20dB Bandwidth (kHz)		Conclusion
0	Fig.88	1293.00	NA
39	Fig.89	1269.75	NA
78	Fig.90	1267.50	NA

Conclusion: NA

Test graphs as below:

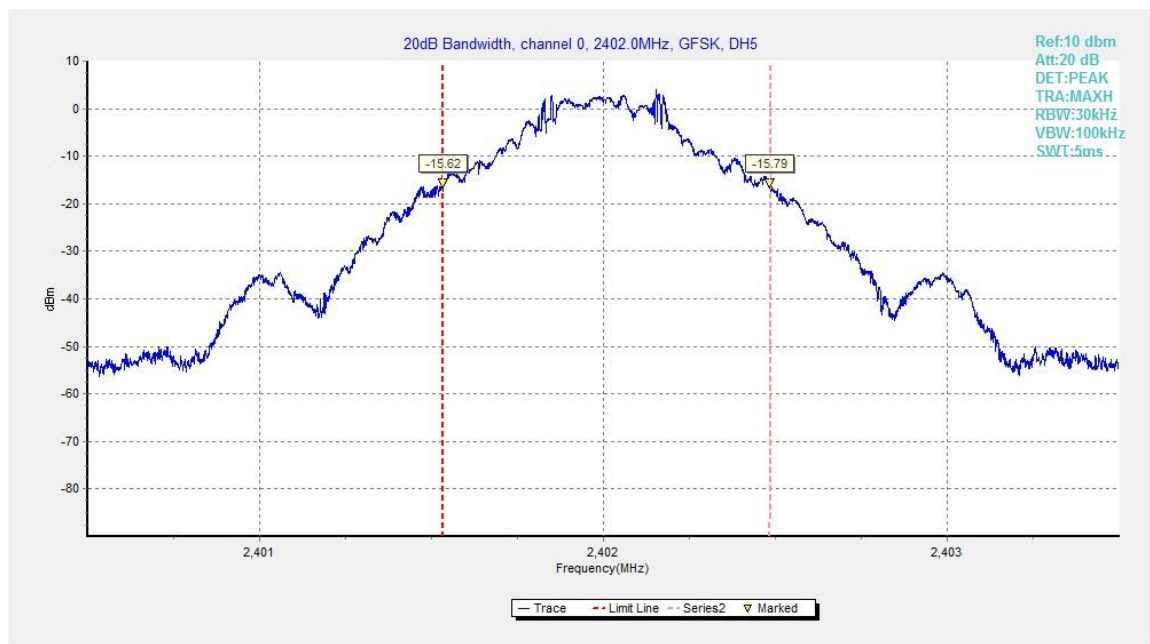


Fig.82. 20dB Bandwidth: GFSK, Channel 0

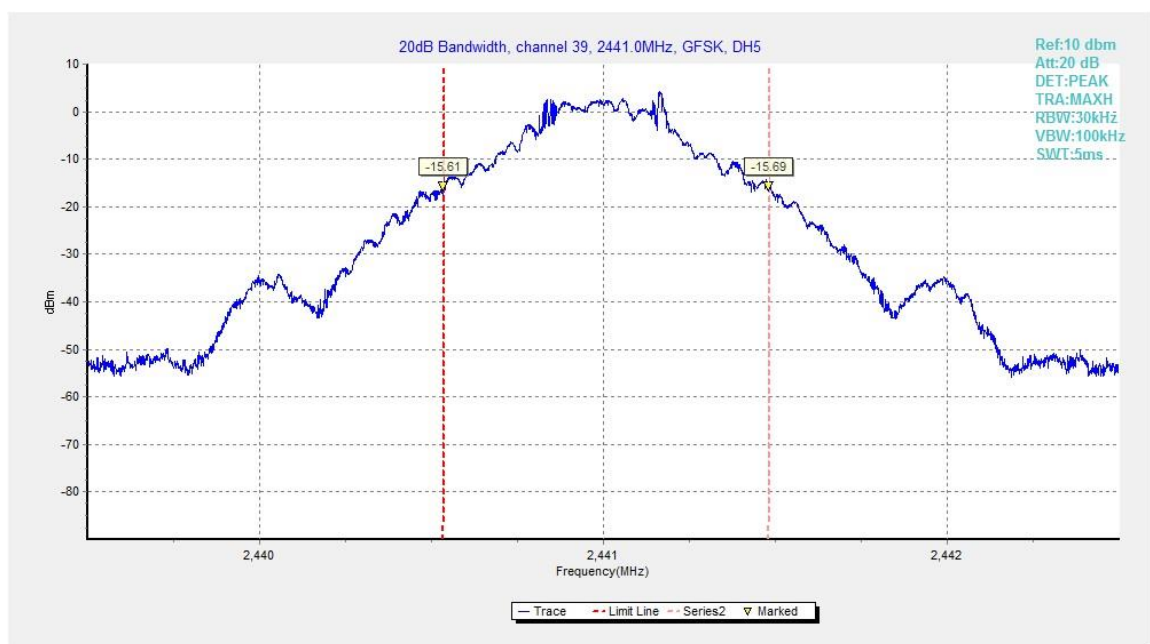


Fig.83. 20dB Bandwidth: GFSK, Channel 39

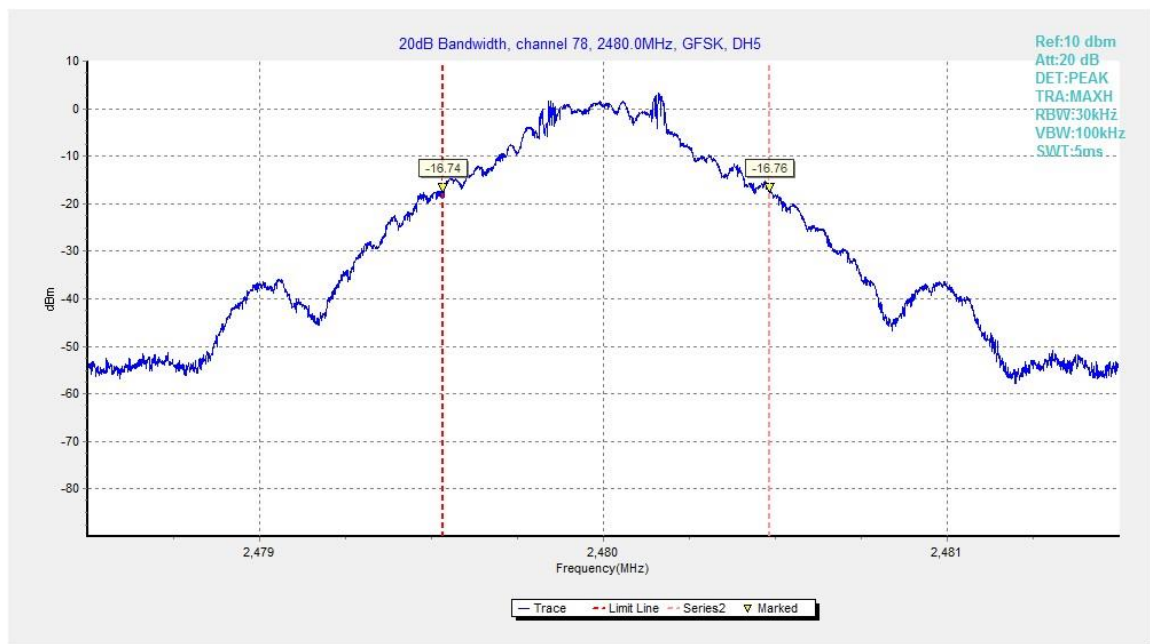


Fig.84. 20dB Bandwidth: GFSK, Channel 78

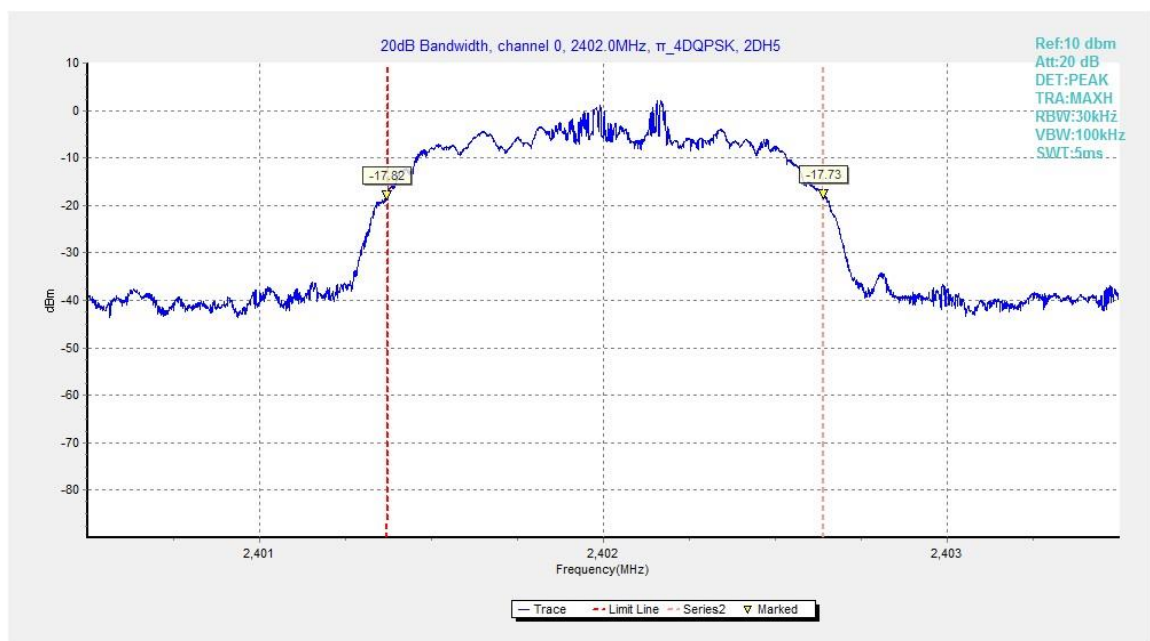


Fig.85. 20dB Bandwidth: $\pi/4$ DQPSK, Channel 0

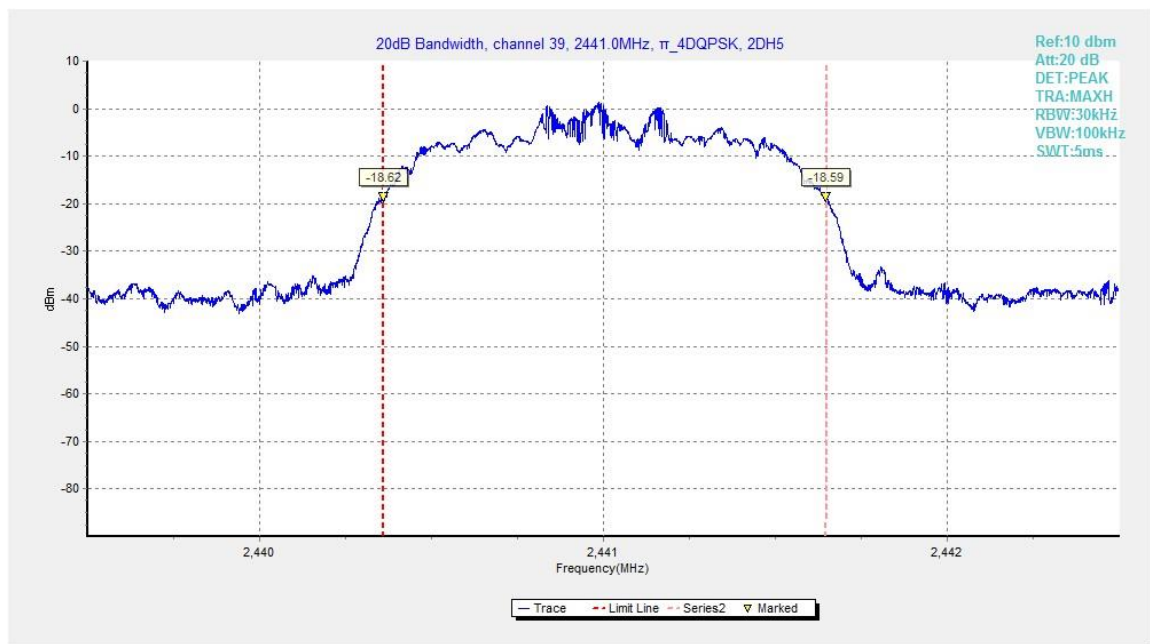


Fig.86. 20dB Bandwidth: $\pi/4$ DQPSK, Channel 39

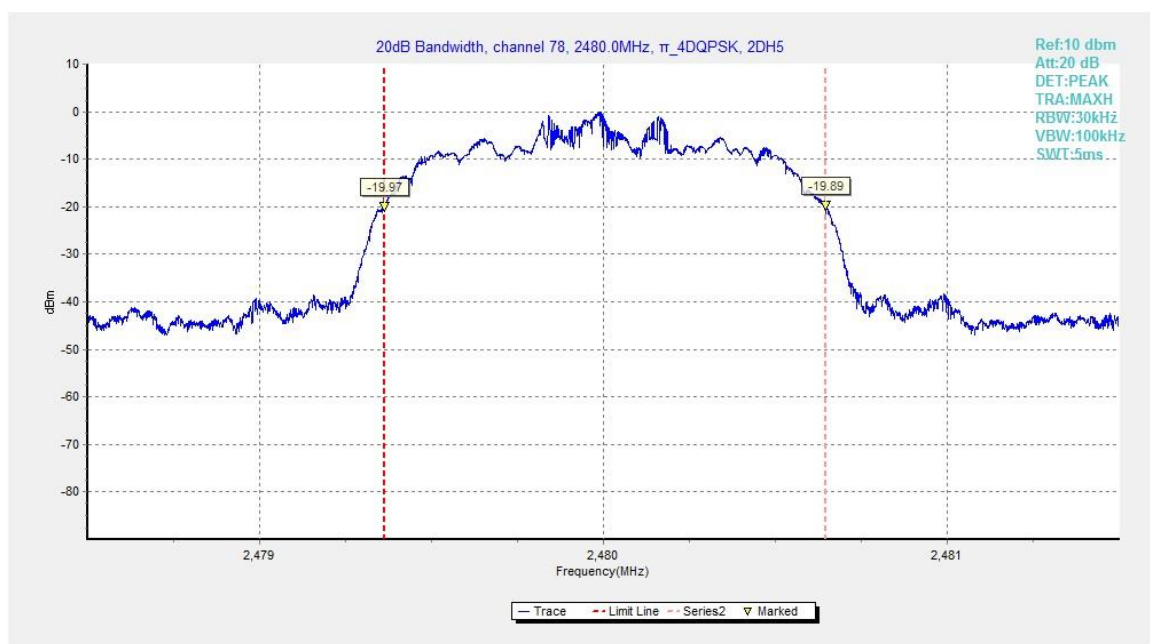


Fig.87. 20dB Bandwidth: $\pi/4$ DQPSK, Channel 78

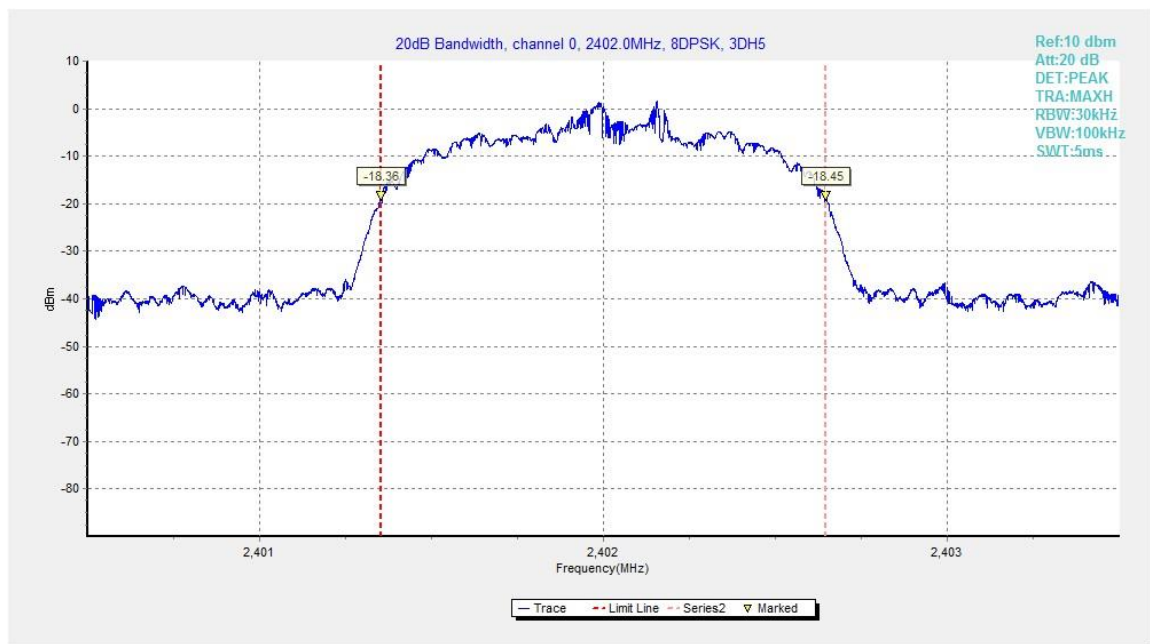


Fig.88. 20dB Bandwidth: 8DPSK, Channel 0

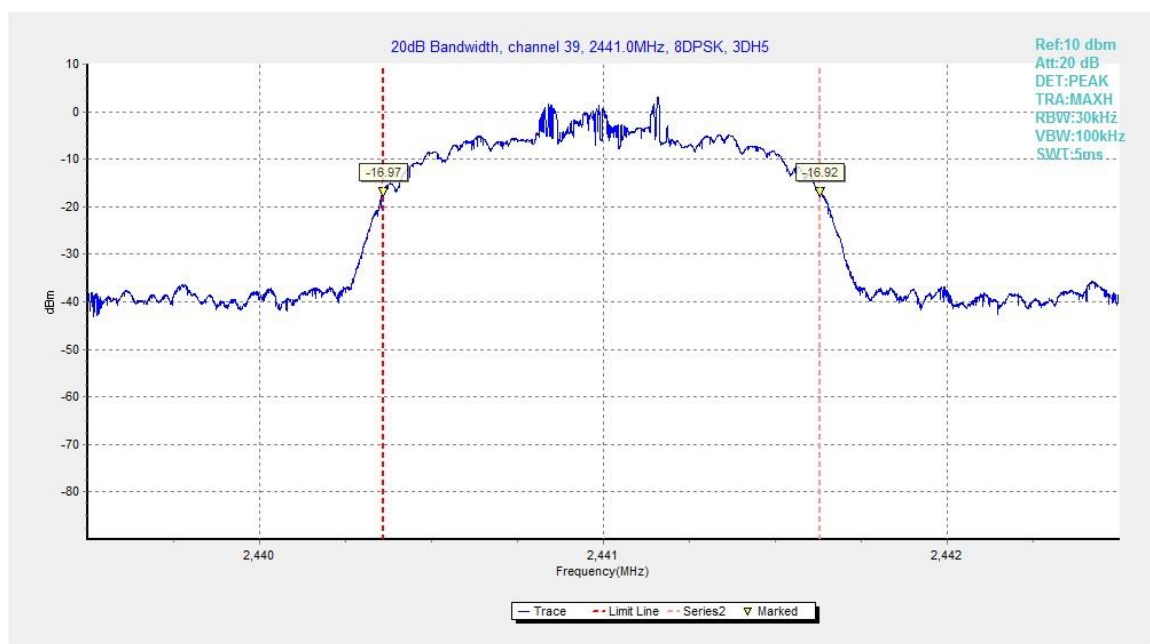


Fig.89. 20dB Bandwidth: 8DPSK, Channel 39

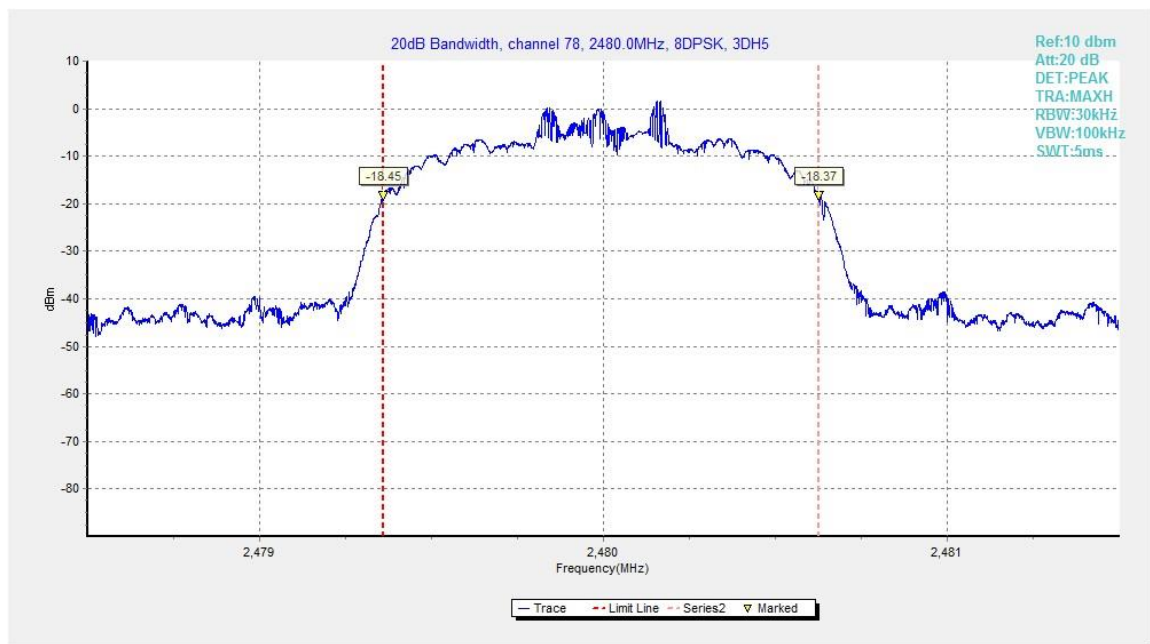


Fig.90. 20dB Bandwidth: 8DPSK, Channel 78

A.8. Carrier Frequency Separation

Method of Measurement: See ANSI C63.10-clause 7.8.2

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

- Span = 3MHz
- RBW=300kHz
- VBW=300kHz
- Sweep = auto
- Detector function = peak
- Trace = max hold
- Allow the trace to stabilize

Search the peak marks of the middle frequency and adjacent channel, then record the separation between them.

* Comment: This limit should be over 25 kHz or $(2/3) * 20\text{dB}$ bandwidth, whichever is greater.

Measurement Limit:

Standard	Limit(kHz)
FCC 47 CFR Part 15.247(a)(1)	over 25 kHz or $(2/3) * 20\text{dB}$ bandwidth

Measurement Result:

For GFSK

Channel	Carrier frequency separation (kHz)		Conclusion
39	Fig.91	1309.50	P

For $\pi/4$ DQPSK

Channel	Carrier frequency separation (kHz)		Conclusion
39	Fig.92	1029.00	P

For 8DPSK

Channel	Carrier frequency separation (kHz)		Conclusion
39	Fig.93	1358.25	P

Conclusion: PASS

Test graphs as below:

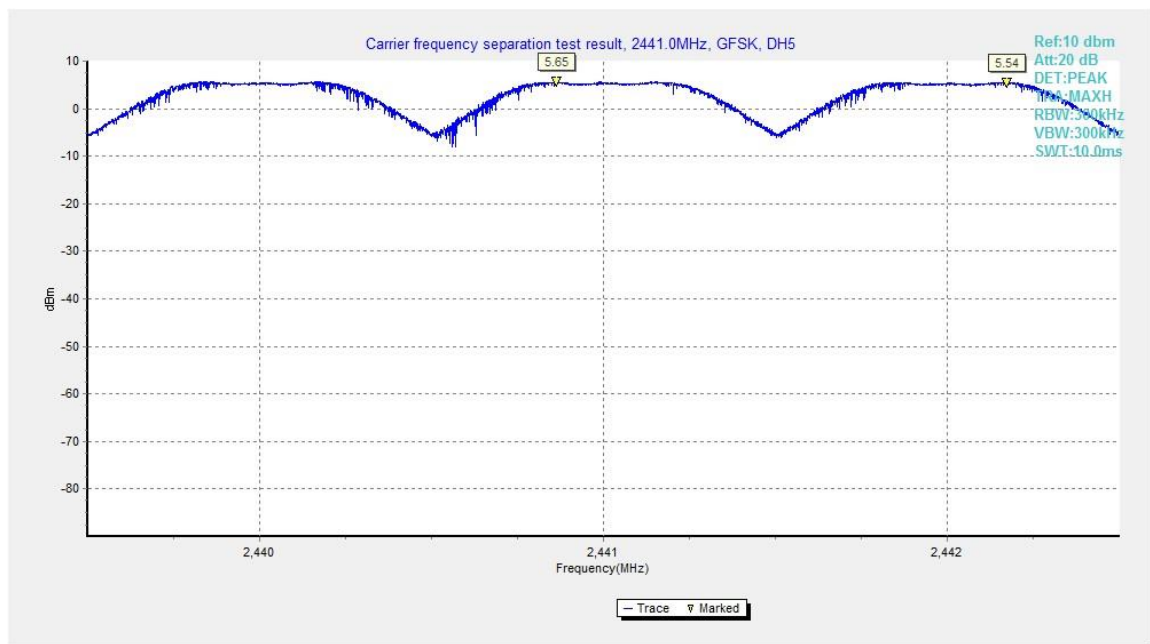


Fig.91. Carrier frequency separation measurement: GFSK, Channel 39

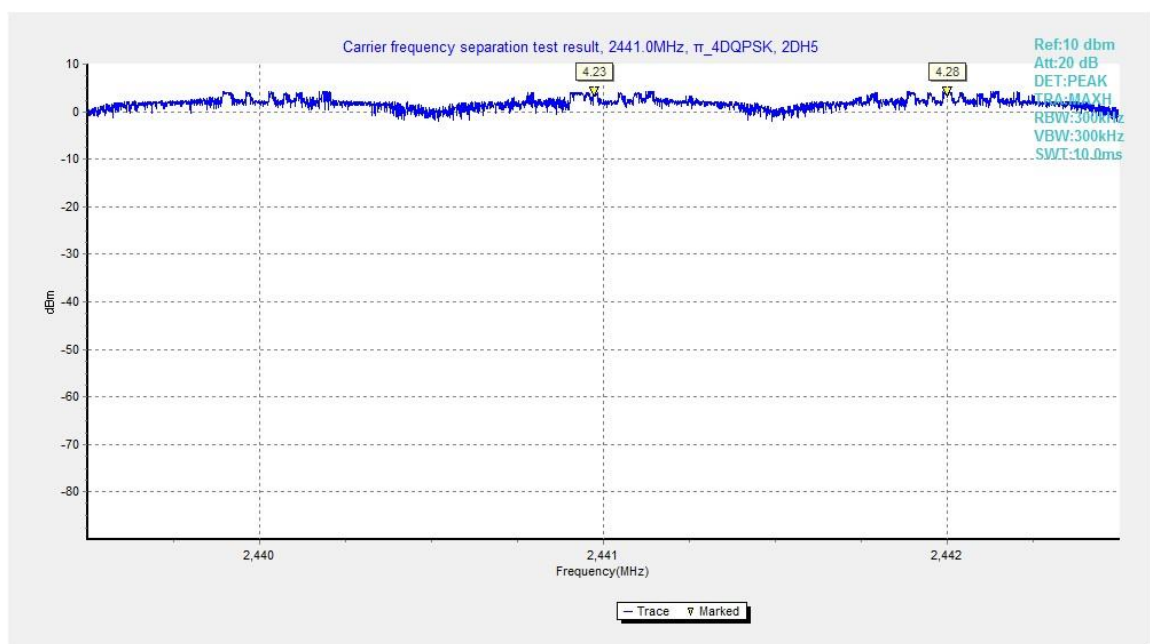


Fig.92. Carrier frequency separation measurement: $\pi/4$ DQPSK, Channel 39

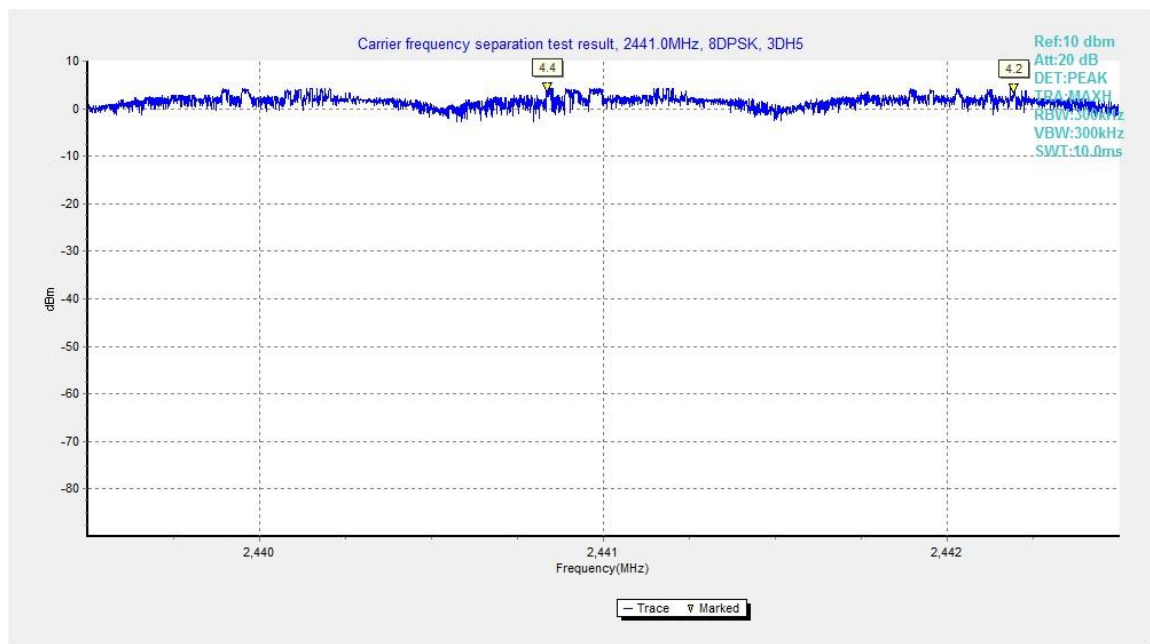


Fig.93. Carrier frequency separation measurement: 8DPSK, Channel 39

A.9. Number of Hopping Channels

Method of Measurement: See ANSI C63.10-clause 7.8.3

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

- Span = the frequency band of operation
- RBW = 500kHz
- VBW = 500kHz
- Sweep = auto
- Detector function = peak
- Trace = max hold
- Allow the trace to stabilize

It might prove necessary to break the span up into subranges to show clearly all of the hopping frequencies. Compliance of an EUT with the appropriate regulatory limit shall be determined for the number of hopping channels. A plot of the data shall be included in the test report.

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247(a) (1)(iii)	At least 15 non-overlapping channels

Measurement Result:

For GFSK

Channel	Number of hopping channels		Conclusion
0~39	Fig.94	79	P
40~78	Fig.95		

For $\pi/4$ DQPSK

Channel	Number of hopping channels		Conclusion
0~39	Fig.96	79	P
40~78	Fig.97		

For 8DPSK

Channel	Number of hopping channels		Conclusion
0~39	Fig.98	79	P
40~78	Fig.99		

Conclusion: PASS

Test graphs as below:

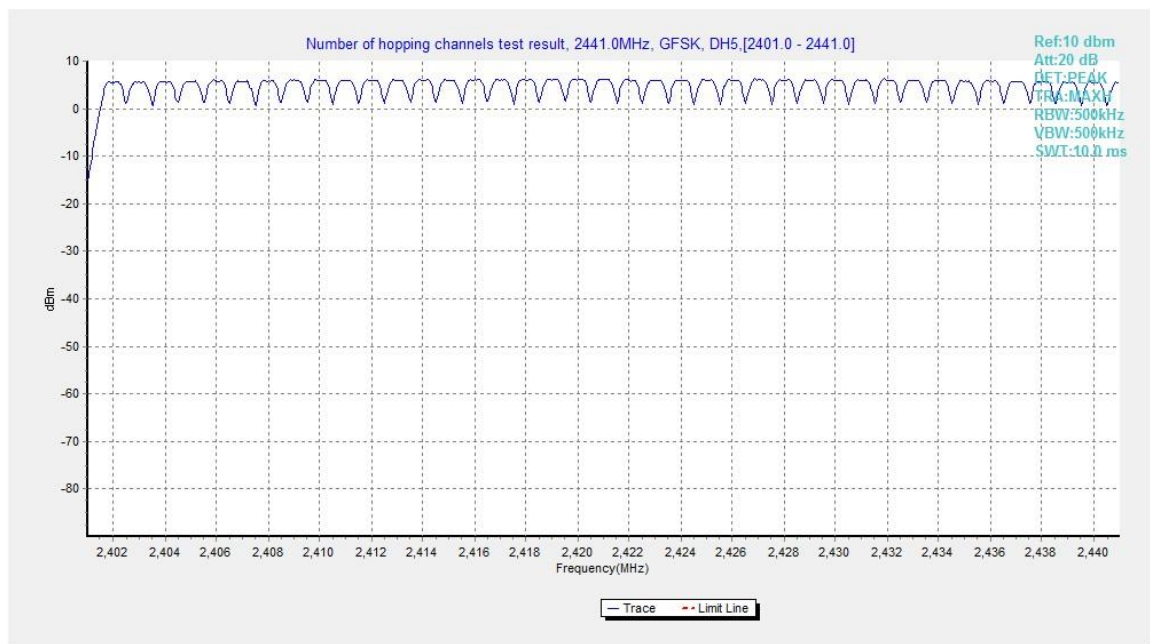


Fig.94. Number of hopping frequencies: GFSK, Channel 0 - 39

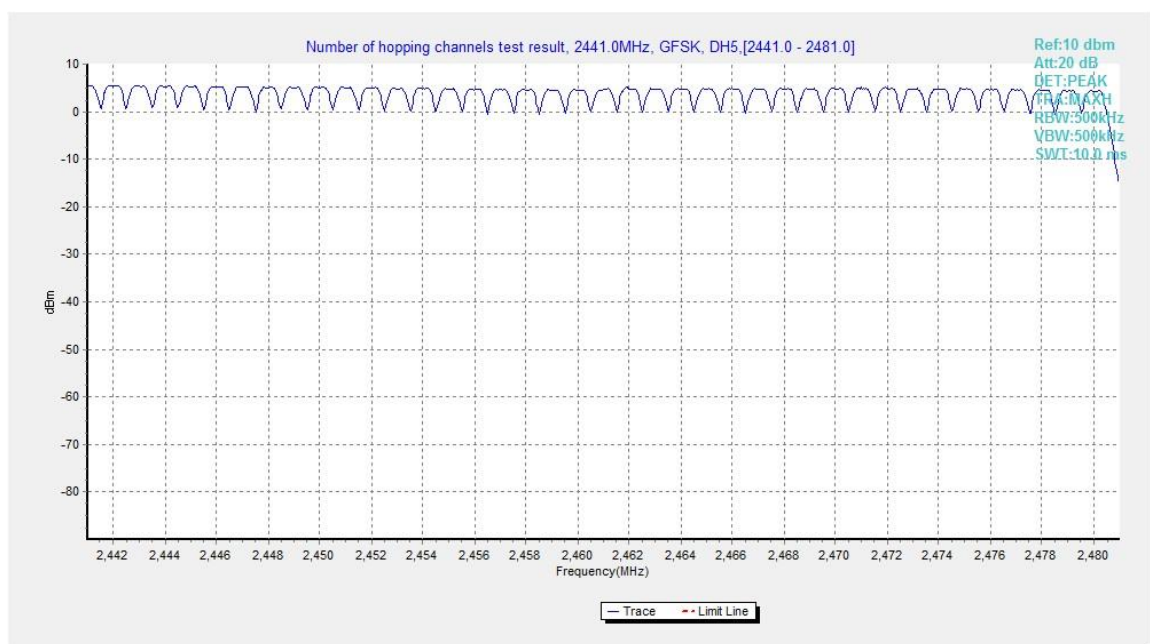


Fig.95. Number of hopping frequencies: GFSK, Channel 40 - 78

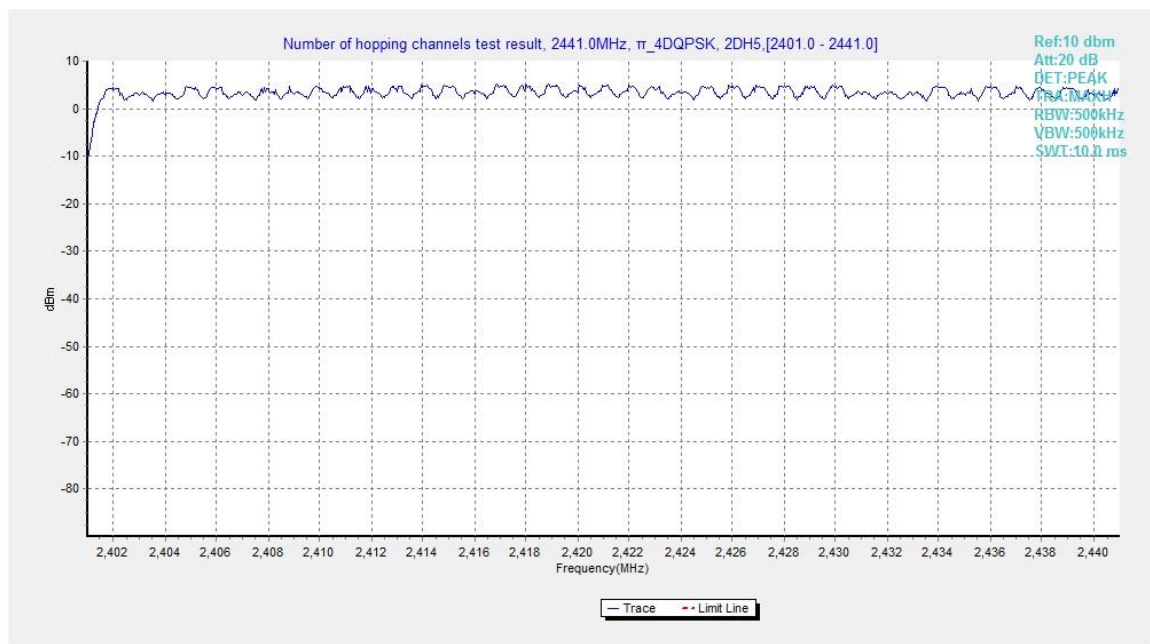


Fig.96. Number of hopping frequencies: $\pi/4$ DQPSK, Channel 0 - 39

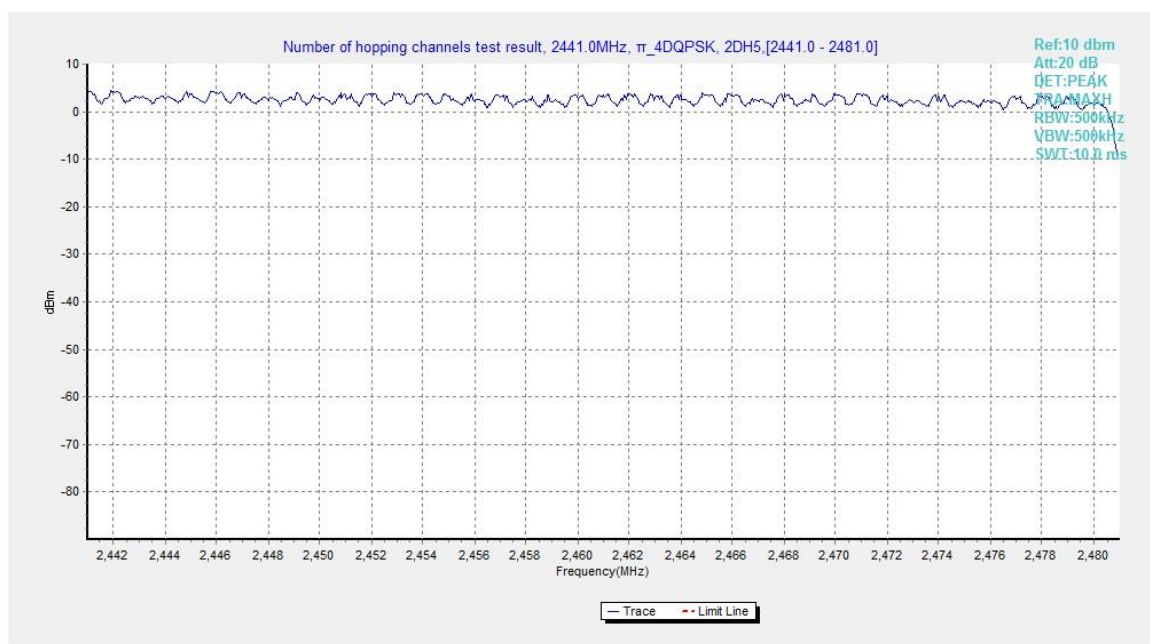


Fig.97. Number of hopping frequencies: $\pi/4$ DQPSK, Channel 40 - 78

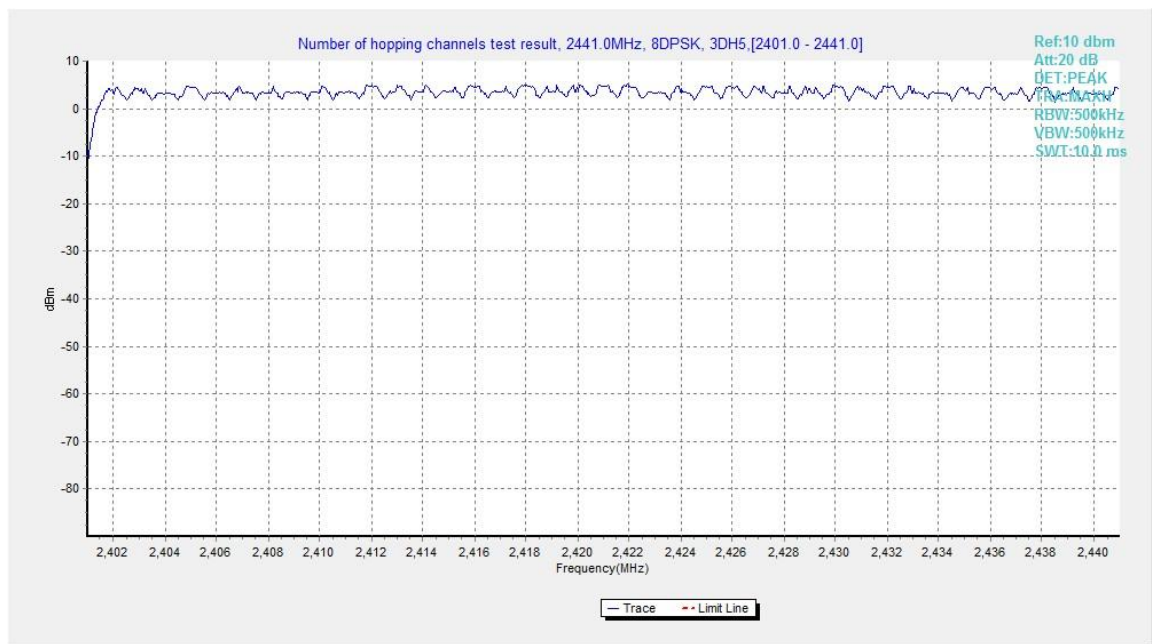


Fig.98. Number of hopping frequencies: 8DPSK, Channel 0 - 39

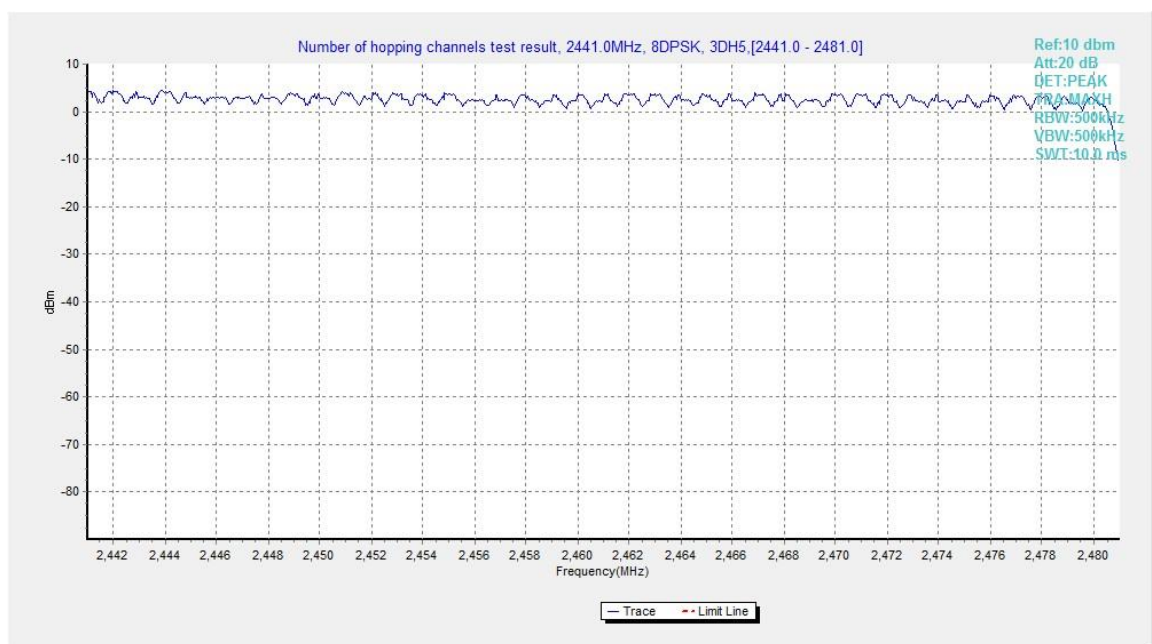


Fig.99. Number of hopping frequencies: 8DPSK, Channel 40 - 78

A.10. AC Powerline Conducted Emission**Test Condition**

Voltage (V)	Frequency (Hz)
120	60

Measurement Result and limit:**Bluetooth (Quasi-peak Limit)**

Frequency range (MHz)	Quasi-peak Limit (dB μ V)	Conclusion
0.15 to 0.5	66 to 56	P
0.5 to 5	56	
5 to 30	60	

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

Bluetooth (Average Limit)

Frequency range (MHz)	Average Limit (dB μ V)	Conclusion
0.15 to 0.5	56 to 46	P
0.5 to 5	46	
5 to 30	50	

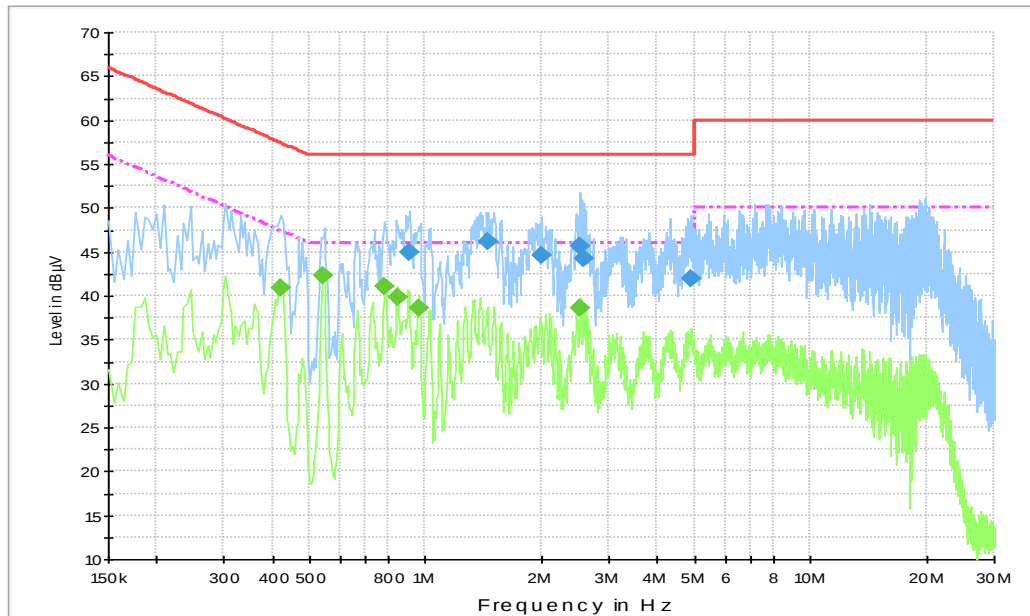
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

The measurement is made according to ANSI C63.10

Conclusion: PASS

Test graphs as below:

Traffic:



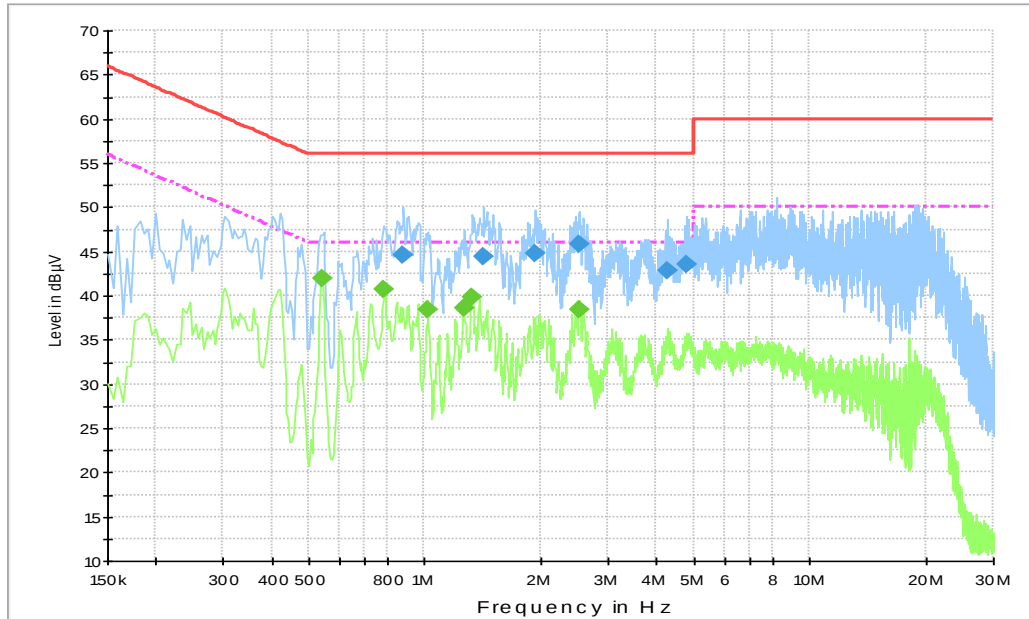
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.910500	44.9	GND	L1	10.2	11.1	56.0
1.450500	46.1	GND	L1	10.2	9.9	56.0
1.999500	44.5	GND	L1	10.3	11.5	56.0
2.530500	45.6	GND	L1	10.3	10.4	56.0
2.589000	44.2	GND	L1	10.3	11.8	56.0
4.879500	42.0	GND	L1	10.4	14.0	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.420000	40.9	GND	L1	10.2	6.6	47.4
0.541500	42.3	GND	L1	10.2	3.7	46.0
0.784500	41.1	GND	L1	10.2	4.9	46.0
0.847500	39.9	GND	L1	10.2	6.1	46.0
0.960000	38.6	GND	L1	10.2	7.4	46.0
2.530500	38.7	GND	L1	10.3	7.3	46.0

Idle:



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.879000	44.6	GND	L1	10.2	11.4	56.0
1.423500	44.3	GND	L1	10.2	11.7	56.0
1.932000	44.8	GND	L1	10.3	11.2	56.0
2.517000	45.7	GND	L1	10.3	10.3	56.0
4.263000	42.9	GND	L1	10.4	13.1	56.0
4.803000	43.6	GND	L1	10.4	12.4	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.541500	42.0	GND	L1	10.2	4.0	46.0
0.784500	40.7	GND	L1	10.2	5.3	46.0
1.018500	38.3	GND	L1	10.2	7.7	46.0
1.266000	38.6	GND	L1	10.2	7.4	46.0
1.324500	39.9	GND	L1	10.2	6.1	46.0
2.526000	38.4	GND	L1	10.3	7.6	46.0

END OF REPORT