GFSK Ch 0 - Average

Frequency (MHz)	Measurement Result (dBµV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBµV)	Limit (dBµV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2484.103	46.68	2.9	32.7	11.01	54.0	7.3	H	155	16
2488.562	46.85	2.9	32.6	11.29	54.0	7.2	H	155	48
4804.000	39.51	-32.9	34.5	37.86	54.0	14.5	H	155	80
7206.000	32.25	-31.6	36.1	27.78	54.0	21.8	H	155	8
9608.000	34.17	-30.0	37.0	27.21	54.0	19.8	H	155	102
12010.000	35.17	-29.8	39.3	25.69	54.0	18.8	H	155	118

GFSK Ch 39 - Average

Frequency (MHz)	Measurement Result (dBµV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBµV)	Limit (dBµV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2380.170	46.56	2.9	32.1	11.64	54.0	7.4	H	155	28
2487.960	46.78	2.9	32.6	11.21	54.0	7.2	H	155	46
4882.000	41.65	-32.7	34.5	39.86	54.0	12.4	H	155	8
7323.000	31.62	-31.9	36.1	27.47	54.0	22.4	H	155	6
9764.000	33.42	-30.6	37.2	26.79	54.0	20.6	H	155	24
12205.000	35.22	-29.4	39.2	25.43	54.0	18.8	H	155	185

GFSK Ch 78 - Average

Frequency (MHz)	Measurement Result (dBµV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBµV)	Limit (dBµV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2483.910	47.11	2.9	32.7	11.43	54.0	6.9	H	155	28
2488.660	47.20	2.9	32.6	11.65	54.0	6.8	H	155	248
4959.000	45.45	-33.4	34.5	44.32	54.0	8.5	H	155	38
7440.000	30.23	-31.8	36.0	25.97	54.0	23.8	H	155	98
9920.000	33.45	-29.9	37.4	25.98	54.0	20.5	H	155	183
12400.000	34.60	-29.5	39.1	24.97	54.0	19.4	H	155	356

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GFSK Ch 0 – Peak

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2388.428	58.89	2.9	32.0	24.03	74.0	15.1	H	155	22
2385.026	59.46	2.9	32.0	24.58	74.0	14.5	H	155	44
4804.000	41.25	-32.9	34.5	39.60	74.0	32.8	V	155	88
7206.000	43.61	-31.6	36.1	39.14	74.0	30.4	V	155	0
9608.000	45.96	-30.0	37.0	39.01	74.0	28.0	H	155	110
12010.000	48.33	-29.8	39.3	38.86	74.0	25.7	H	155	132

GFSK Ch 39 - Peak

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2376.842	50.58	-26.5	32.1	45.02	74.0	23.4	H	155	22
2537.623	50.37	-26.8	32.9	44.28	74.0	23.6	H	155	44
4882.000	42.30	-32.7	34.5	40.52	74.0	31.7	V	155	0
7323.000	43.88	-31.9	36.1	39.72	74.0	30.1	H	155	0
9764.000	46.21	-30.6	37.2	39.58	74.0	27.8	V	155	22
12205.000	48.78	-29.4	39.2	38.99	74.0	25.2	H	155	176

GFSK Ch 78 - Peak

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2490.902	60.22	2.9	32.6	24.73	74.0	13.8	H	155	22
2485.336	59.50	2.9	32.7	23.85	74.0	14.5	H	155	242
4960.000	42.23	-33.4	34.5	41.10	74.0	31.8	V	155	44
7440.000	44.05	-31.8	36.0	39.79	74.0	29.9	H	155	88
9920.000	46.13	-29.9	37.4	38.66	74.0	27.9	V	155	176
12400.000	49.01	-29.5	39.1	39.38	74.0	25.0	H	155	0

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π/4 DQPSK Ch 0 - Average

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2382.564	46.56	2.9	32.0	11.66	54.0	7.4	H	155	354
2388.716	46.58	2.9	32.0	11.72	54.0	7.4	H	155	28
4803.000	33.90	-32.9	34.5	32.25	54.0	20.1	H	155	348
7206.000	31.12	-31.6	36.1	26.65	54.0	22.9	H	155	345
9608.000	32.66	-30.0	37.0	25.71	54.0	21.3	H	155	184
12010.000	34.15	-29.8	39.3	24.68	54.0	19.8	H	155	182

π/4 DQPSK Ch 39 - Average

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2381.740	46.67	2.9	32.0	11.76	54.0	7.3	H	155	142
2487.282	46.74	2.9	32.7	11.15	54.0	7.3	H	155	168
4882.500	36.54	-32.7	34.5	34.75	54.0	17.5	H	155	90
7323.000	30.22	-31.9	36.1	26.07	54.0	23.8	H	155	102
9764.000	33.43	-30.6	37.2	26.80	54.0	20.6	H	155	118
12205.000	34.97	-29.4	39.2	25.18	54.0	19.0	H	155	94

π/4 DQPSK Ch 78 - Average

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2484.227	47.20	2.9	32.7	11.53	54.0	6.8	H	155	98
2488.663	47.23	2.9	32.6	11.67	54.0	6.8	H	155	135
4959.000	36.55	-33.4	34.5	35.42	54.0	17.4	H	155	4
7440.000	31.22	-31.8	36.0	26.96	54.0	22.8	H	155	74
9920.000	33.78	-29.9	37.4	26.31	54.0	20.2	H	155	48
12400.000	34.58	-29.5	39.1	24.95	54.0	19.4	H	155	246

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π/4 DQPSK Ch 0 – Peak

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2385.951	59.14	2.9	32.0	24.26	74.0	14.9	H	155	0
2388.864	58.87	2.9	32.0	24.01	74.0	15.1	H	155	22
4804.000	41.64	-32.9	34.5	39.99	74.0	32.4	V	155	352
7206.000	42.69	-31.6	36.1	38.22	74.0	31.3	V	155	352
9608.000	45.00	-30.0	37.0	38.04	74.0	29.0	V	155	176
12010.000	47.10	-29.8	39.3	37.63	74.0	26.9	V	155	176

π/4 DQPSK Ch 39 - Peak

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2371.020	49.81	-26.9	32.0	44.70	74.0	24.2	H	155	132
2824.843	52.98	-26.0	33.4	45.62	74.0	21.0	V	155	154
4882.000	40.13	-32.7	34.5	38.34	74.0	33.9	H	155	88
7323.000	43.01	-31.9	36.1	38.86	74.0	31.0	V	155	110
9764.000	45.21	-30.6	37.2	38.58	74.0	28.8	V	155	110
12205.000	46.55	-29.4	39.2	36.76	74.0	27.5	V	155	88

π/4 DQPSK Ch 78 - Peak

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2483.250	60.63	2.9	32.8	24.93	74.0	13.4	H	155	88
2484.623	59.78	2.9	32.7	24.11	74.0	14.2	H	155	132
4960.000	40.33	-33.4	34.5	39.21	74.0	33.7	H	155	0
7440.000	43.22	-31.8	36.0	38.96	74.0	30.8	V	155	66
9920.000	45.34	-29.9	37.4	37.87	74.0	28.7	V	155	44
12400.000	47.00	-29.5	39.1	37.37	74.0	27.0	H	155	242

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8DPSK Ch 0 - Average

Frequency (MHz)	Measurement Result (dBµV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBµV)	Limit (dBµV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2381.748	46.88	2.9	32.0	11.97	54.0	7.1	H	155	28
2389.619	46.63	2.9	32.0	11.78	54.0	7.4	H	155	49
4804.000	34.43	-32.9	34.5	32.78	54.0	19.6	H	155	246
7206.000	32.44	-31.6	36.1	27.97	54.0	21.6	H	155	182
9608.000	33.45	-30.0	37.0	26.50	54.0	20.5	H	155	94
12010.000	35.08	-29.8	39.3	25.61	54.0	18.9	H	155	42

8DPSK Ch 39 - Average

Frequency (MHz)	Measurement Result (dBµV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBµV)	Limit (dBµV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2386.524	46.72	2.9	32.0	11.85	54.0	7.3	H	155	26
2487.880	46.81	2.9	32.6	11.24	54.0	7.2	H	155	48
4881.000	36.20	-32.7	34.5	34.42	54.0	17.8	H	155	68
7323.000	30.14	-31.9	36.1	25.98	54.0	23.9	H	155	44
9764.000	32.37	-30.6	37.2	25.74	54.0	21.6	H	155	8
12205.000	35.04	-29.4	39.2	25.25	54.0	19.0	H	155	102

8DPSK Ch 78 - Average

Frequency (MHz)	Measurement Result (dBµV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBµV)	Limit (dBµV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2485.425	47.10	2.9	32.7	11.46	54.0	6.9	H	155	132
2486.982	47.20	2.9	32.7	11.60	54.0	6.8	H	155	28
4959.000	33.56	-33.4	34.5	32.42	54.0	20.4	H	155	38
7440.000	32.66	-31.8	36.0	28.40	54.0	21.3	H	155	65
9920.000	33.49	-29.9	37.4	26.02	54.0	20.5	H	155	4
12400.000	34.53	-29.5	39.1	24.91	54.0	19.5	H	155	24

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8DPSK Ch 0 – Peak

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2386.862	59.35	2.9	32.0	24.48	74.0	14.7	H	155	22
2389.184	58.87	2.9	32.0	24.02	74.0	15.1	H	155	44
4804.000	41.02	-32.9	34.5	39.37	74.0	33.0	V	155	242
7206.000	42.79	-31.6	36.1	38.32	74.0	31.2	H	155	176
9608.000	45.05	-30.0	37.0	38.09	74.0	29.0	V	155	88
12010.000	46.77	-29.8	39.3	37.30	74.0	27.2	V	155	22

8DPSK Ch 39 - Peak

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2376.253	49.76	-26.6	32.1	44.23	74.0	24.2	H	155	22
2888.680	53.53	-25.5	33.8	45.21	74.0	20.5	H	155	44
4882.000	41.13	-32.7	34.5	39.34	74.0	32.9	V	155	66
7323.000	42.88	-31.9	36.1	38.73	74.0	31.1	V	155	22
9764.000	45.02	-30.6	37.2	38.39	74.0	29.0	V	155	0
12205.000	46.87	-29.4	39.2	37.08	74.0	27.1	V	155	88

8DPSK Ch 78 - Peak

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
2484.012	60.68	2.9	32.7	25.00	74.0	13.3	H	155	110
2486.073	60.46	2.9	32.7	24.84	74.0	13.5	H	155	22
4960.000	41.36	-33.4	34.5	40.23	74.0	32.6	V	155	44
7440.000	42.78	-31.8	36.0	38.52	74.0	31.2	V	155	66
9920.000	45.11	-29.9	37.4	37.64	74.0	28.9	V	155	0
12400.000	47.00	-29.5	39.1	37.37	74.0	27.0	H	155	22

Conclusion: PASS

Test graphs as below for Set.10:

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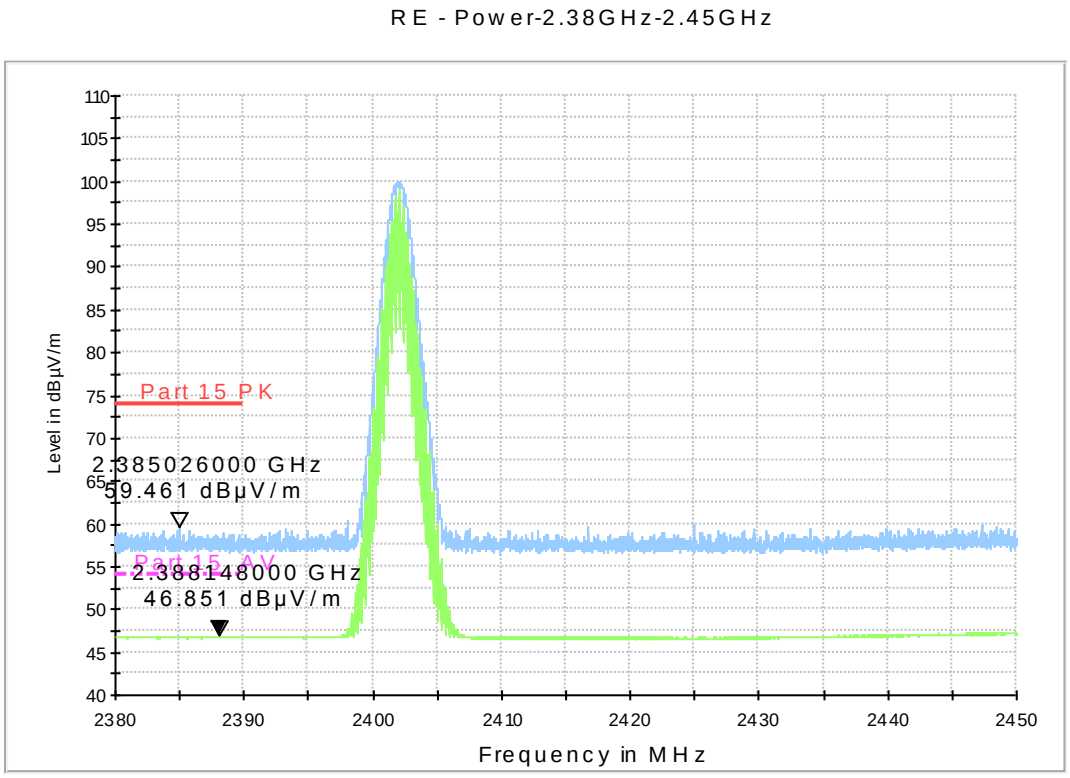

Fig.58. Radiated emission (Power): GFSK, low channel

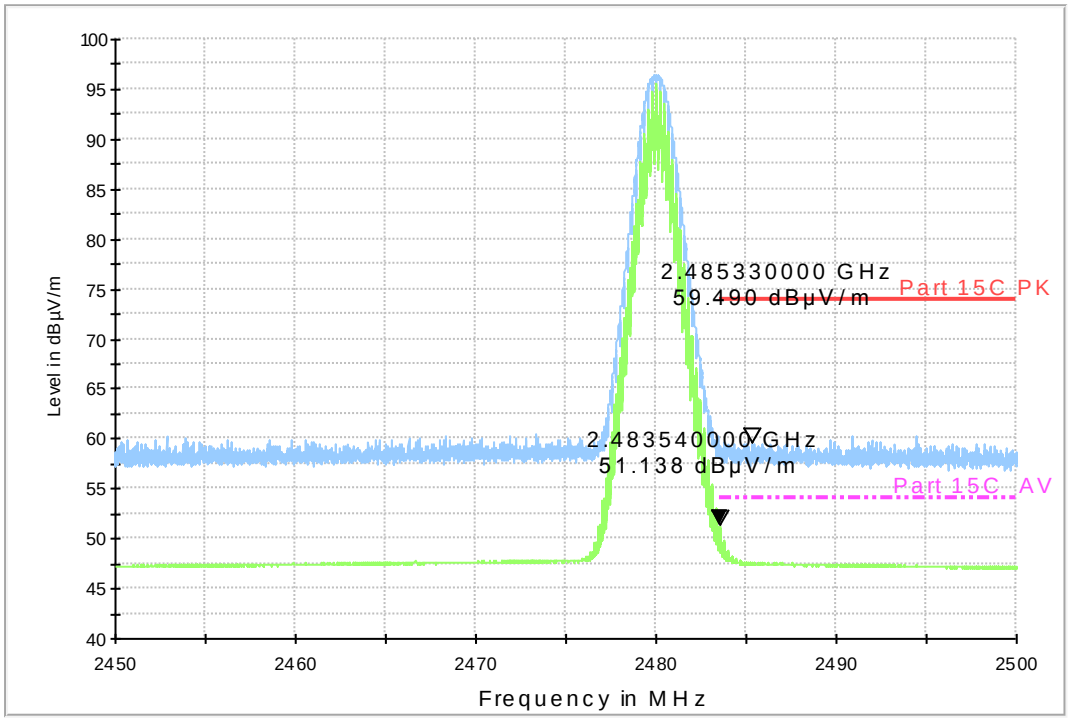

Fig.59. Radiated emission (Power) GFSK, high channel

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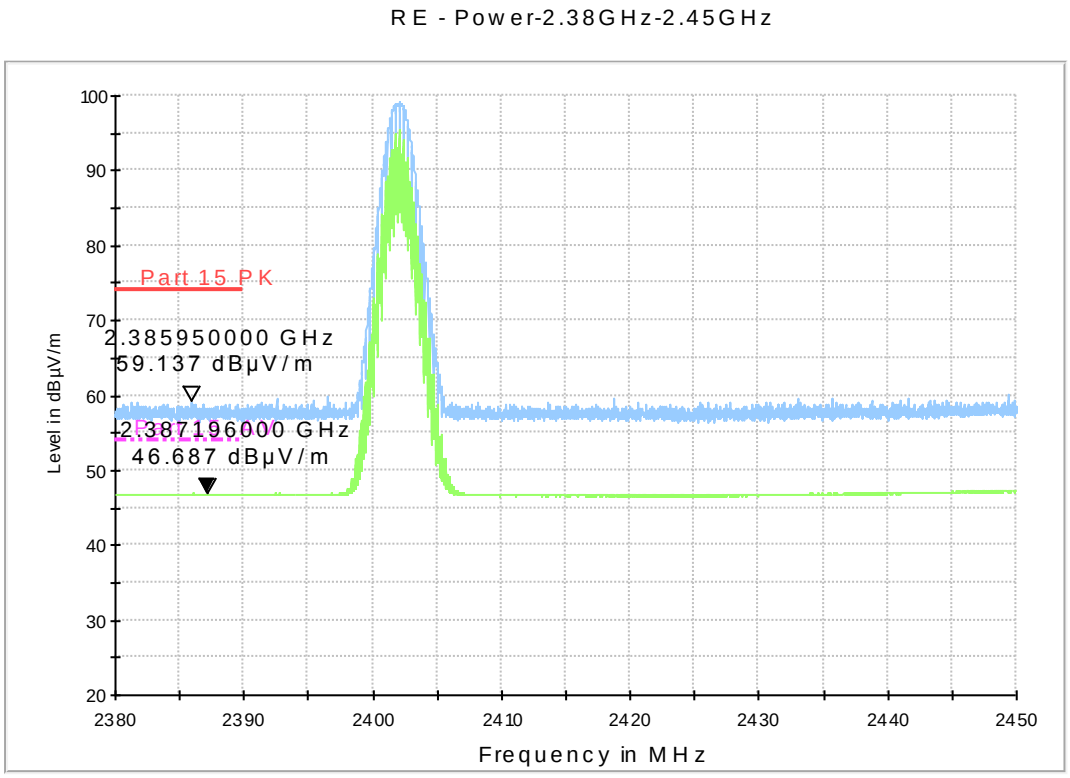

Fig.60. Radiated emission (Power): π/4 DQPSK, low channel

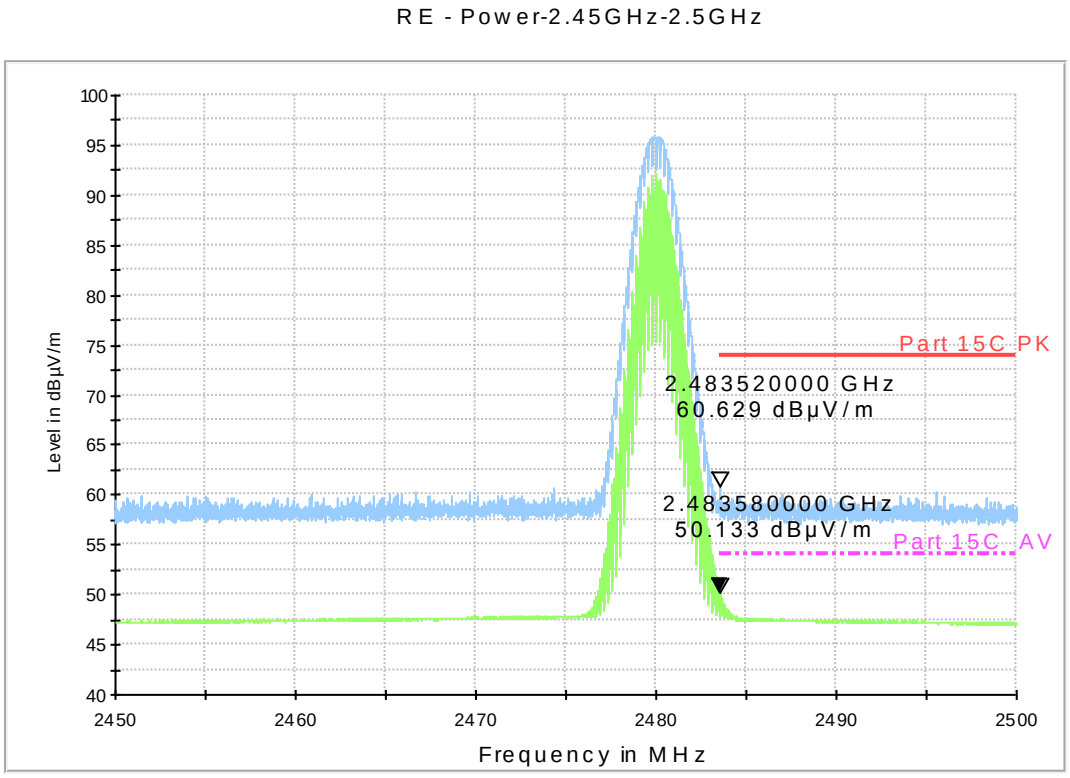

Fig.61. Radiated emission (Power): π/4 DQPSK, high channel

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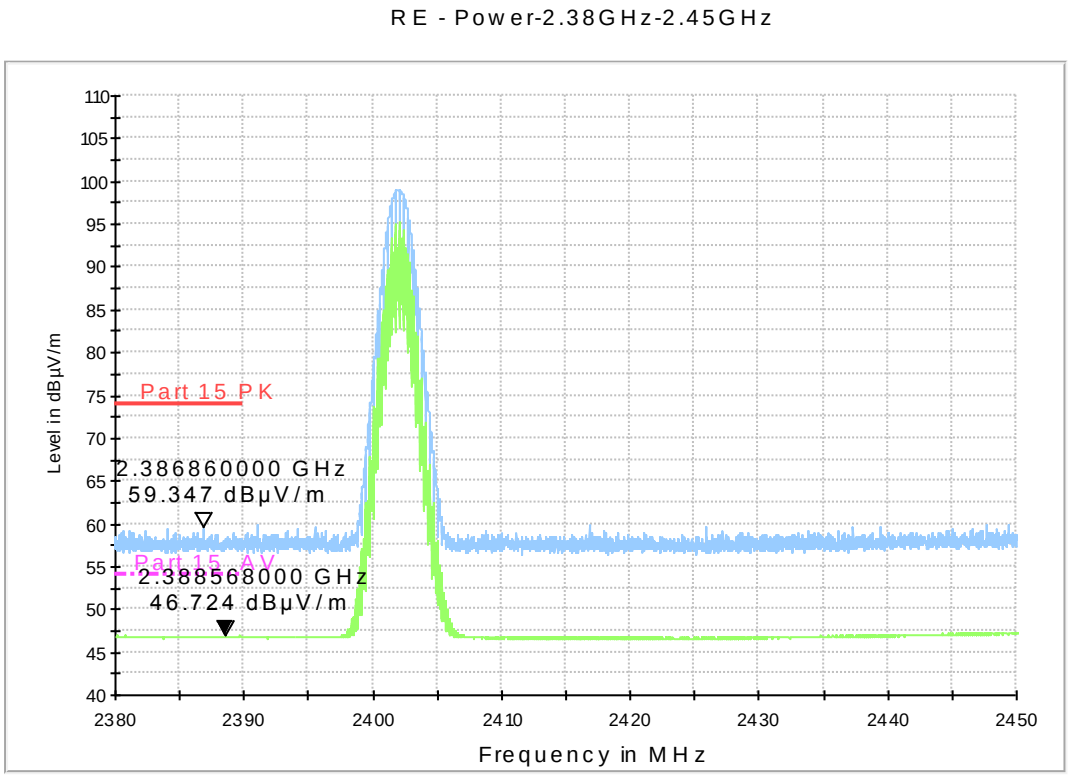

Fig.62. Radiated emission (Power): 8DPSK, low channel

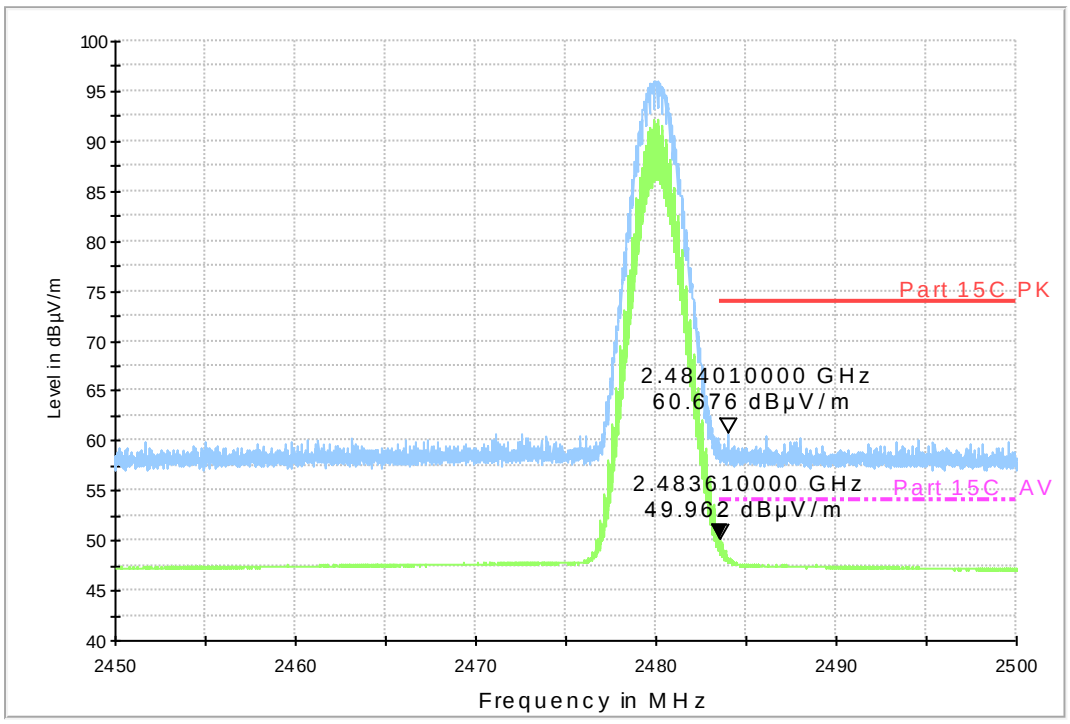

Fig.63. Radiated emission (Power): 8DPSK, high channel

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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 ≥ 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	120.77	P
		Fig.65		
	DH3	Fig.66	170.26	P
		Fig.67		
	DH5	Fig.68	184.64	P
		Fig.69		

For π/4 DQPSK

Channel	Packet	Dwell Time (ms)		Conclusion
39	DH1	Fig.70	123.04	P
		Fig.71		
	DH3	Fig.72	183.54	P
		Fig.73		
	DH5	Fig.74	155.89	P
		Fig.75		

For 8DPSK

Channel	Packet	Dwell Time (ms)		Conclusion
39	DH1	Fig.76	123.43	P
		Fig.77		
	DH3	Fig.78	190.02	P

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		Fig.79		
	DH5	Fig.80	199.35	P
		Fig.81		

Conclusion: PASS

Test graphs as below:

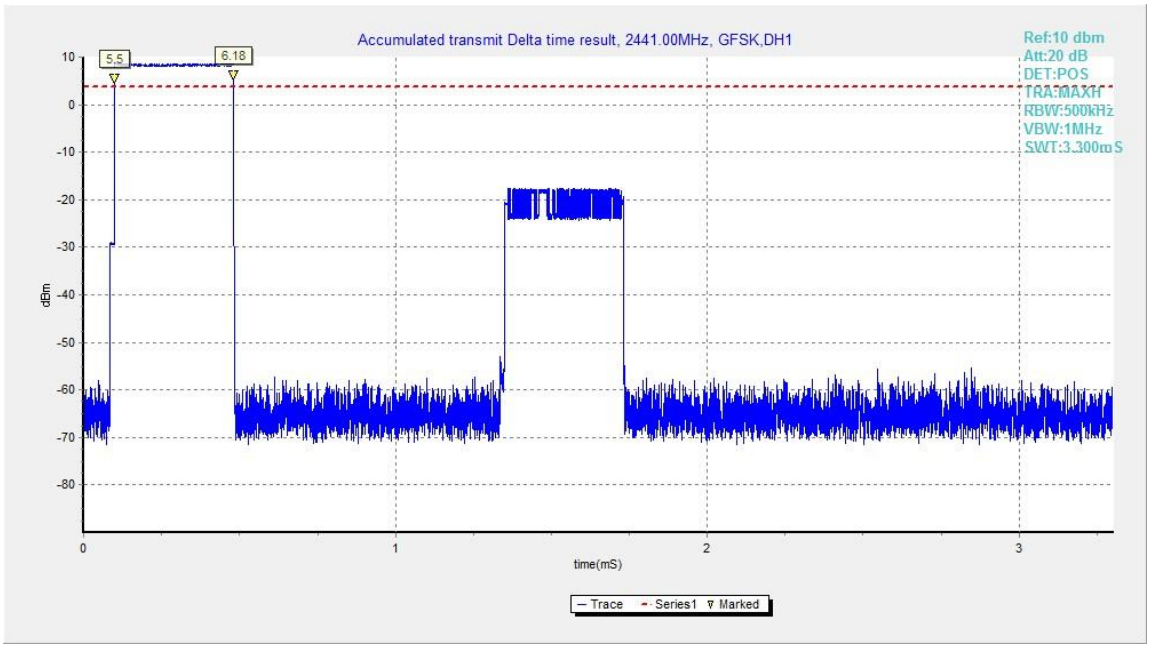

Fig.64. Time of occupancy (Dwell Time): Channel 39, Packet DH1

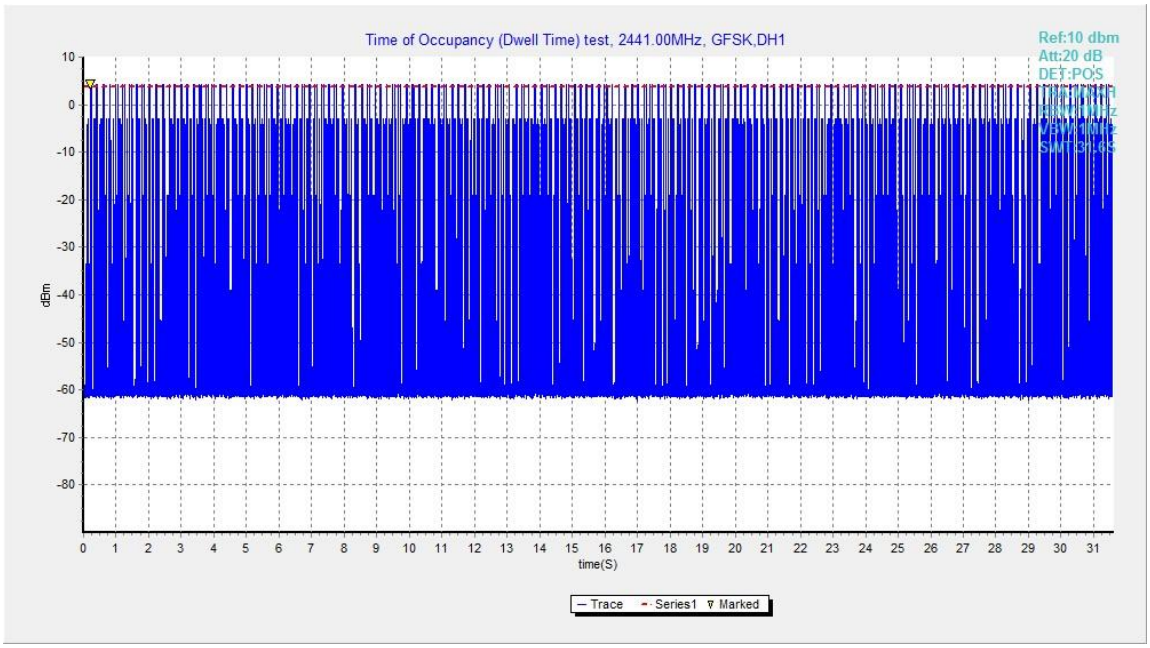

Fig.65. Number of Transmissions Measurement: Channel 39,Packet DH1

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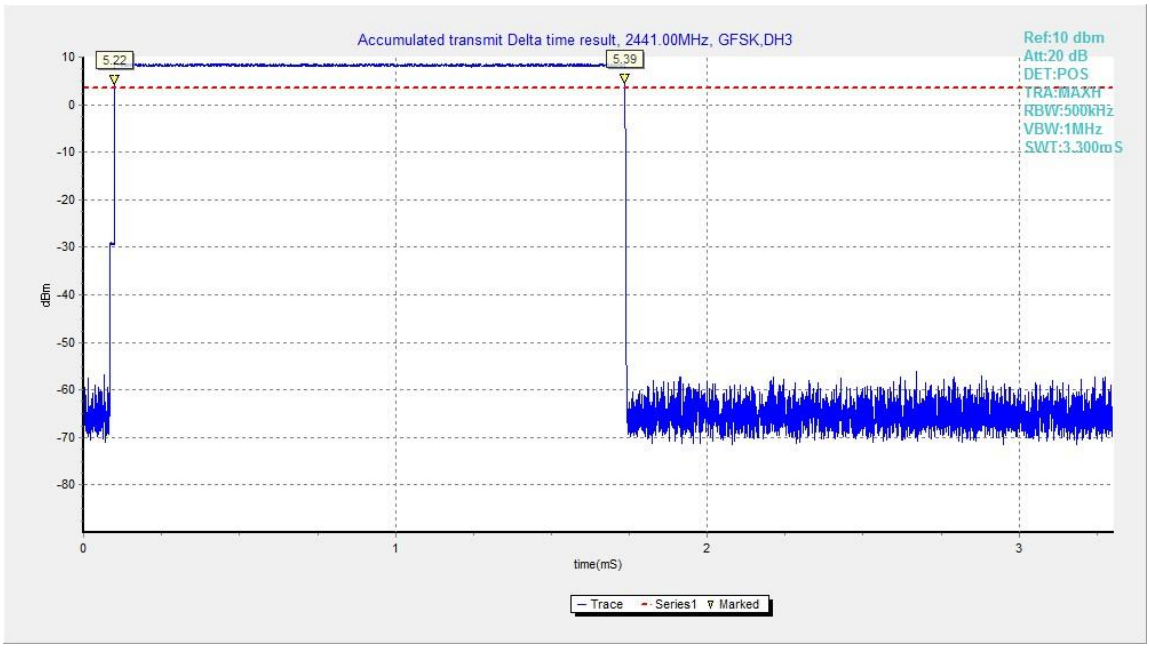

Fig.66. Time of occupancy (Dwell Time): Channel 39, Packet DH3

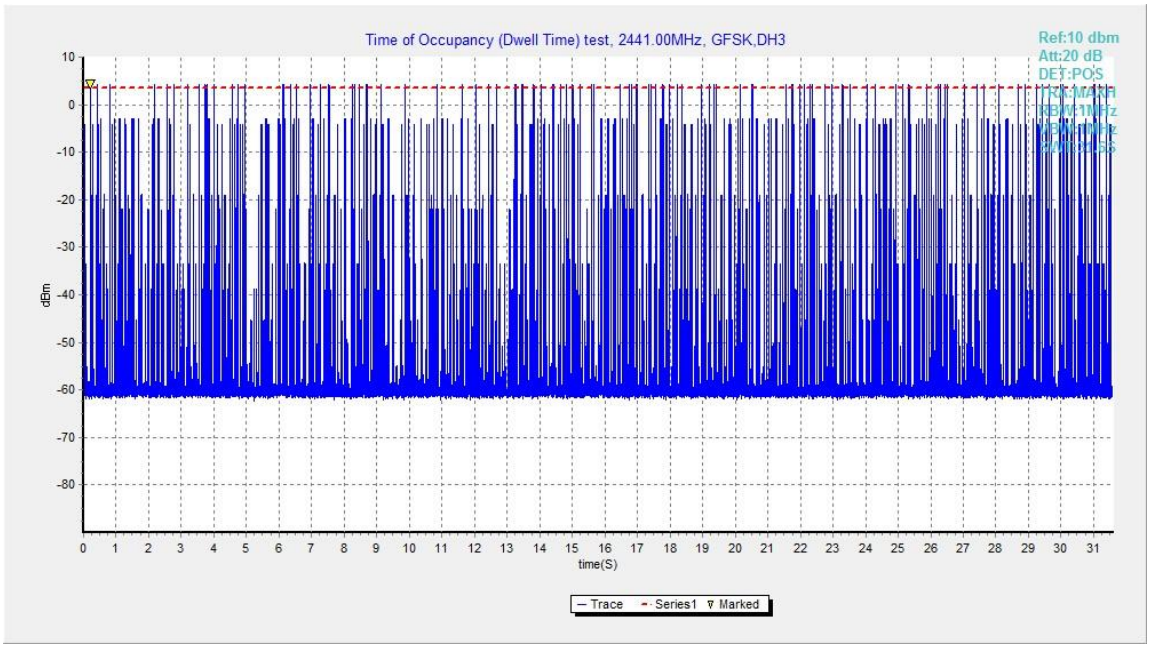

Fig.67. Number of Transmissions Measurement: Channel 39,Packet DH3

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

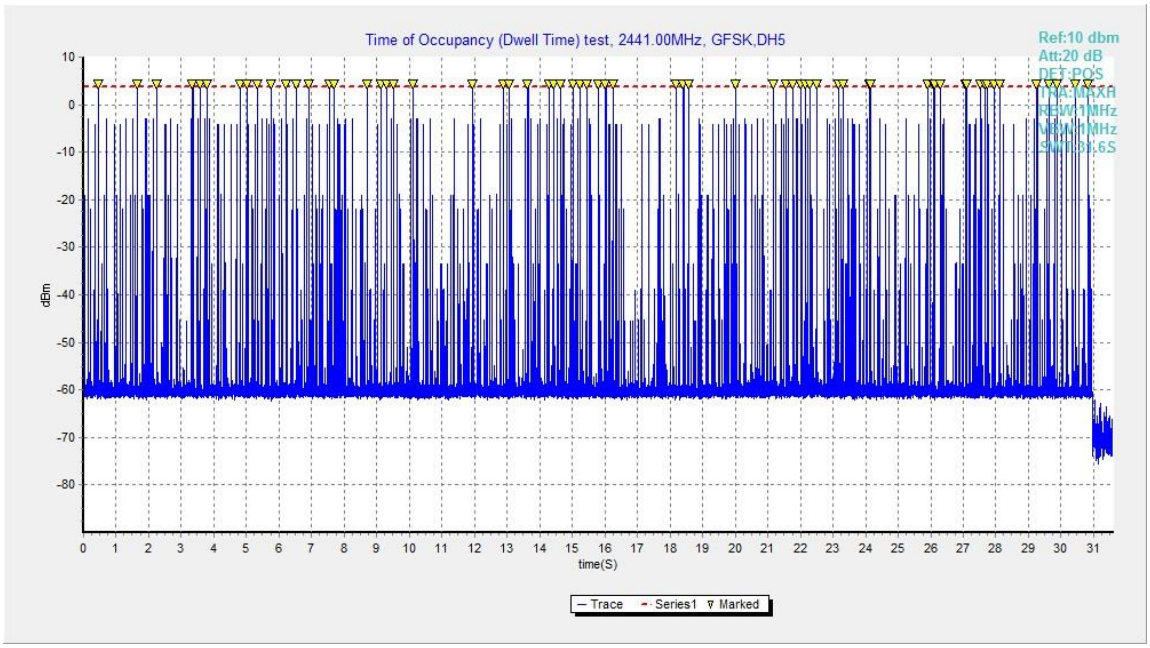

Fig.69. Number of Transmissions Measurement: Channel 39,Packet DH5

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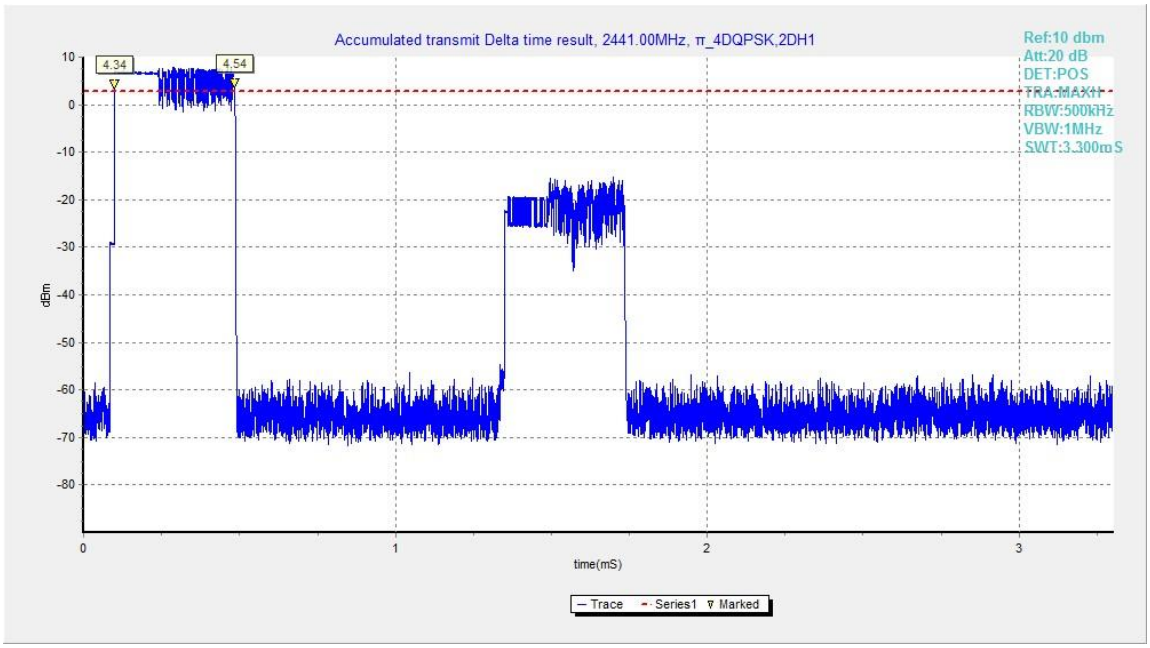

Fig.70. Time of occupancy (Dwell Time): Channel 39, Packet 2-DH1

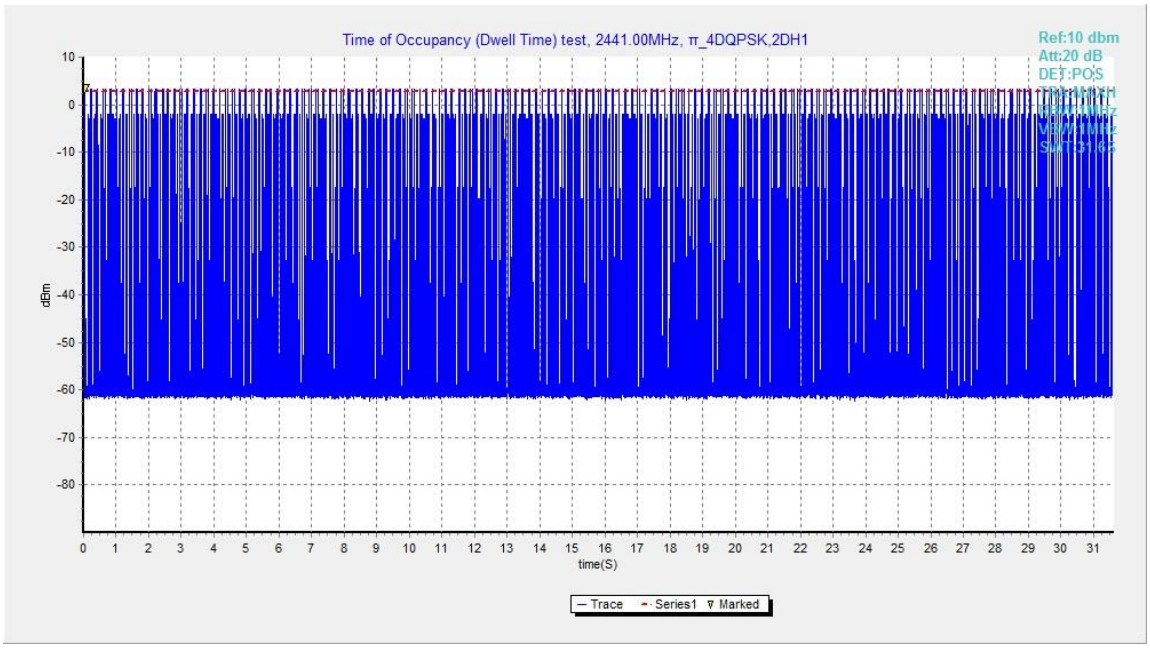

Fig.71. Number of Transmissions Measurement: Channel 39,Packet 2-DH1

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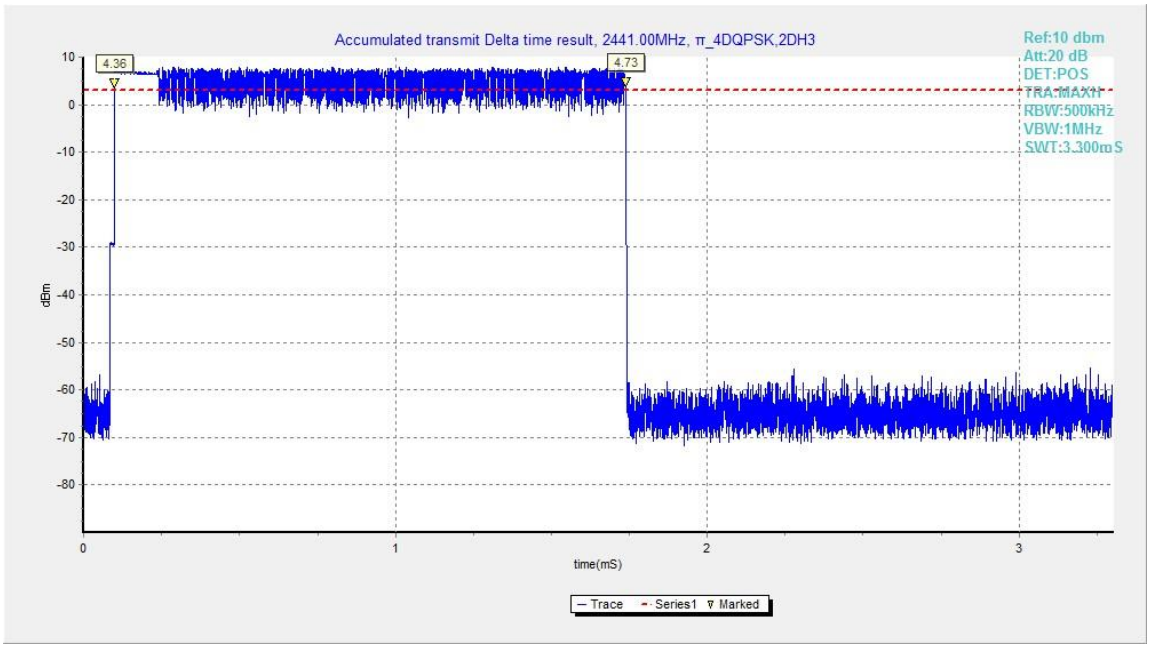

Fig.72. Time of occupancy (Dwell Time): Channel 39, Packet 2-DH3

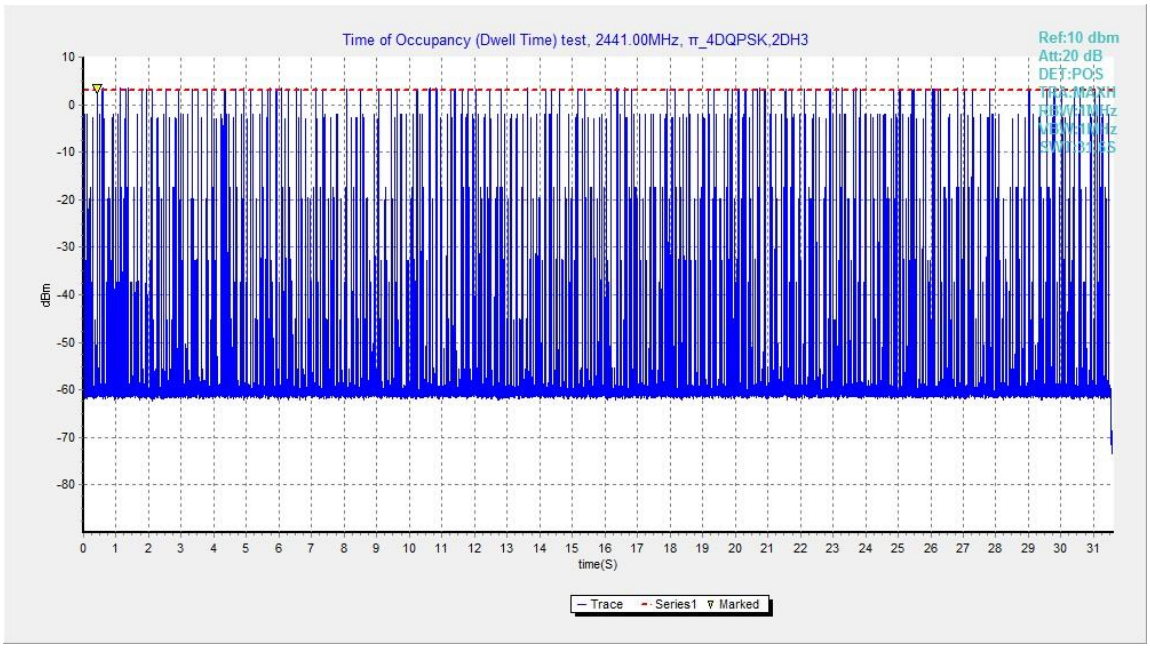

Fig.73. Number of Transmissions Measurement: Channel 39,Packet 2-DH3

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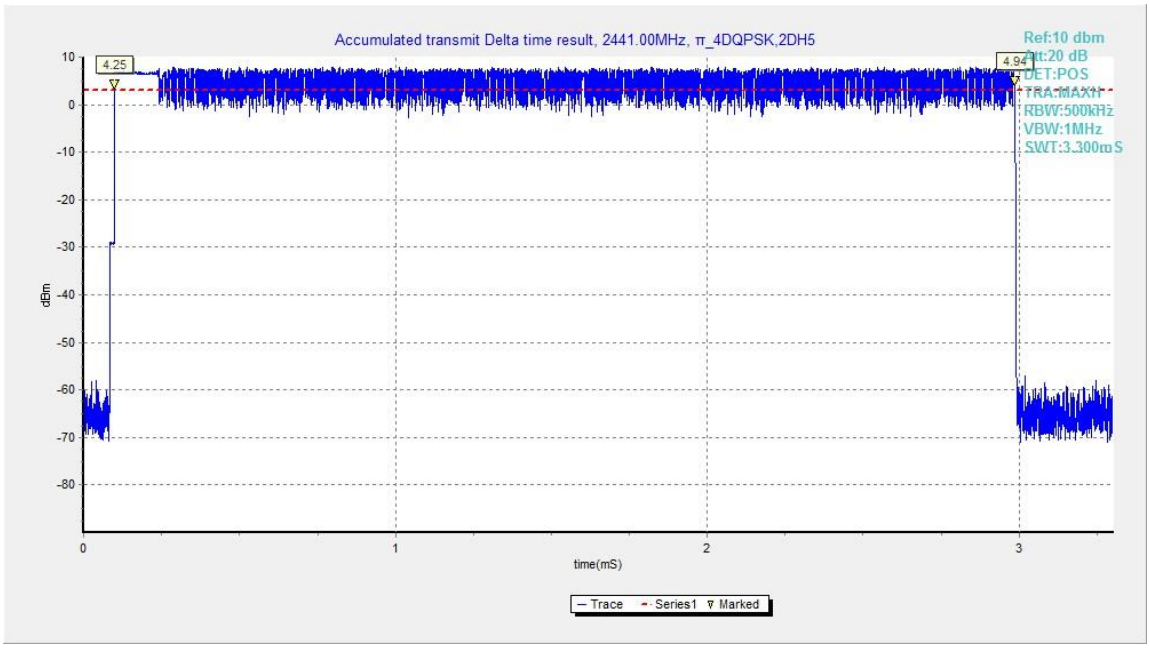

Fig.74. Time of occupancy (Dwell Time): Channel 39, Packet 2-DH5

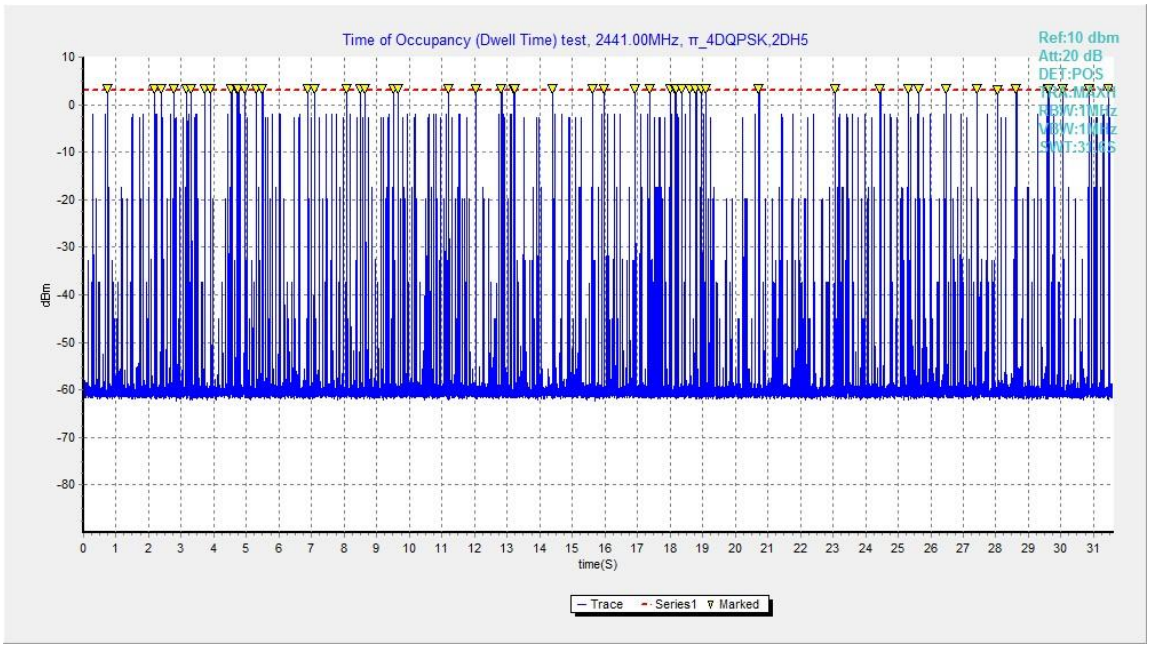

Fig.75. Number of Transmissions Measurement: Channel 39,Packet 2-DH5

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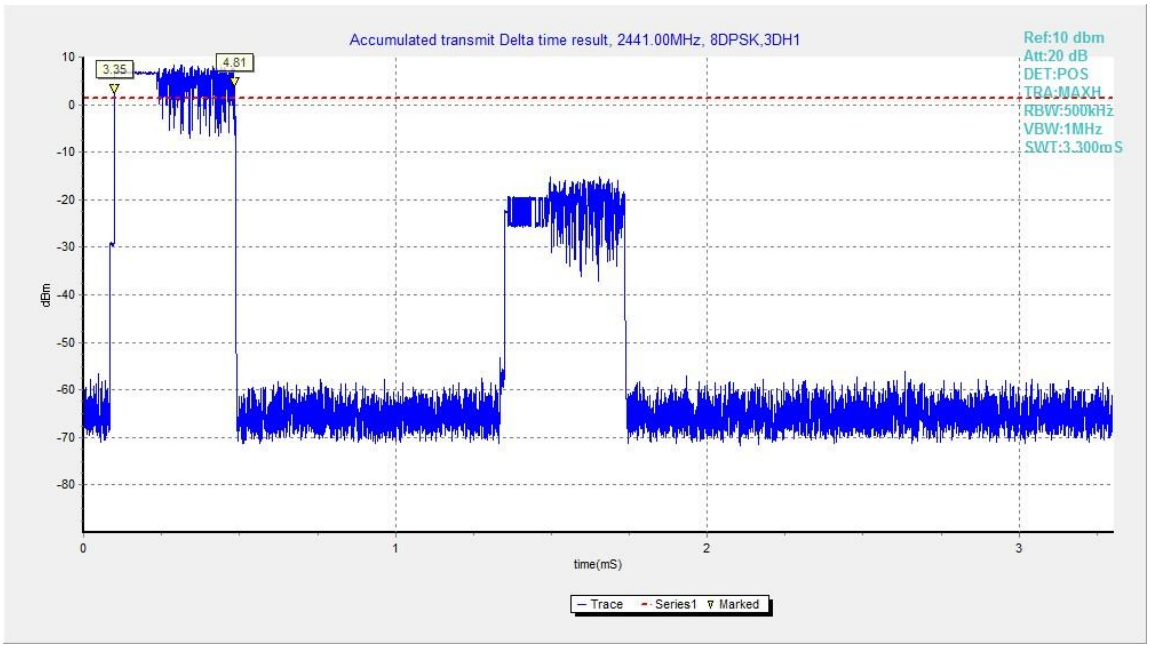

Fig.76. Time of occupancy (Dwell Time): Channel 39, Packet 3-DH1

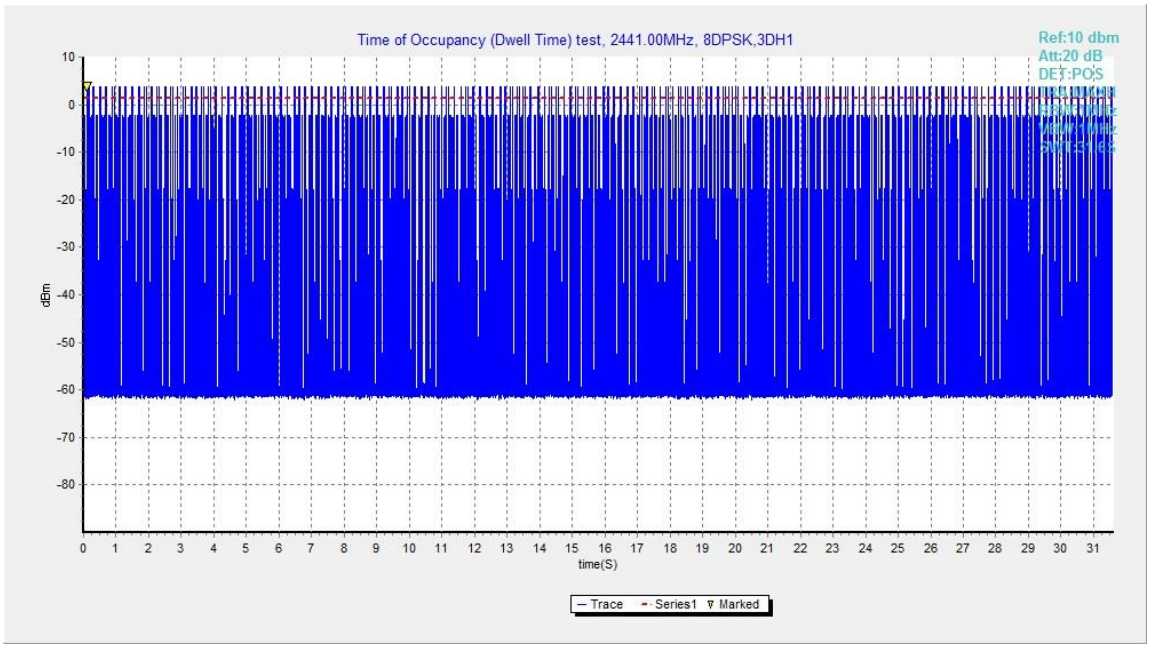

Fig.77. Number of Transmissions Measurement: Channel 39,Packet 3-DH1

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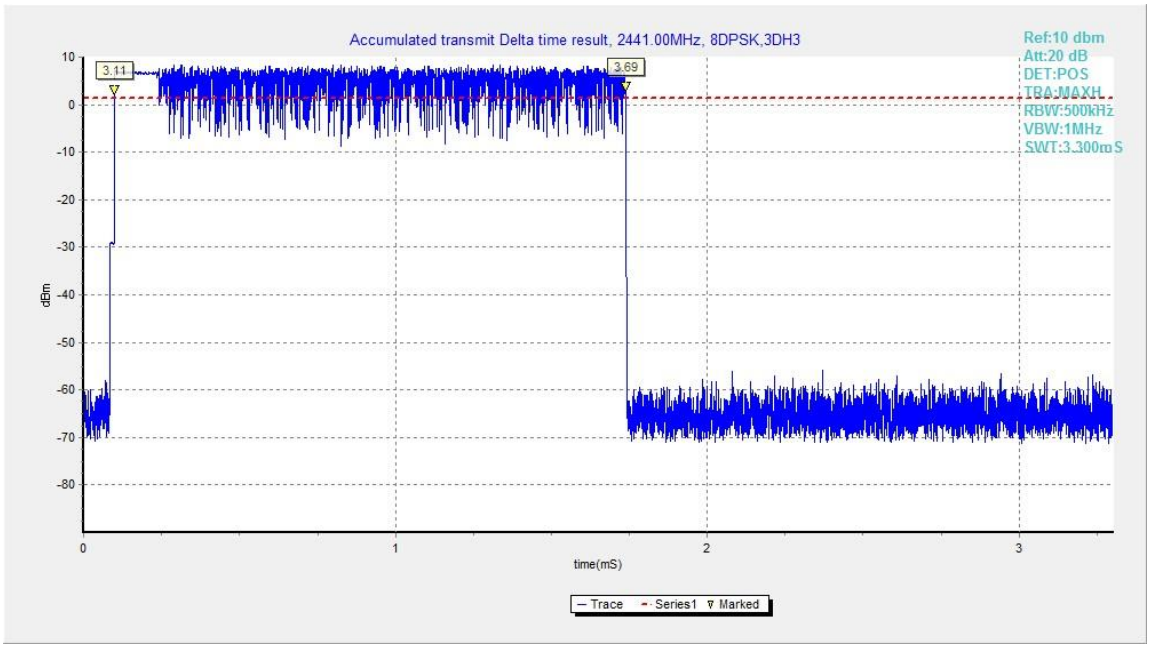

Fig.78. Time of occupancy (Dwell Time): Channel 39, Packet 3-DH3

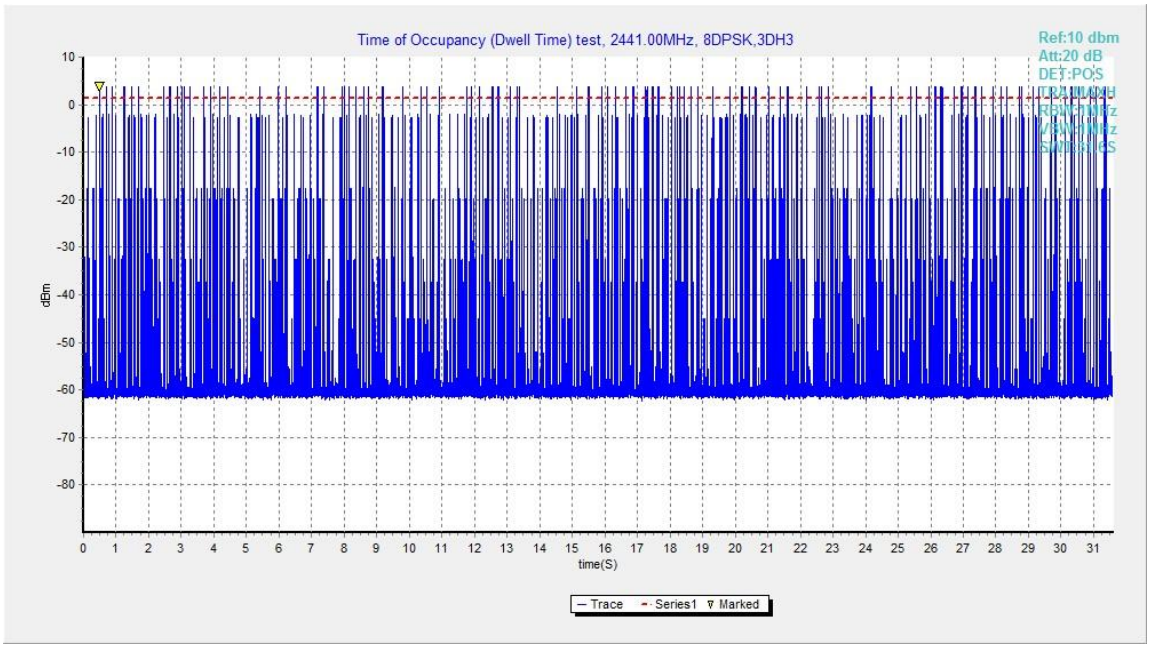

Fig.79. Number of Transmissions Measurement: Channel 39,Packet 3-DH3

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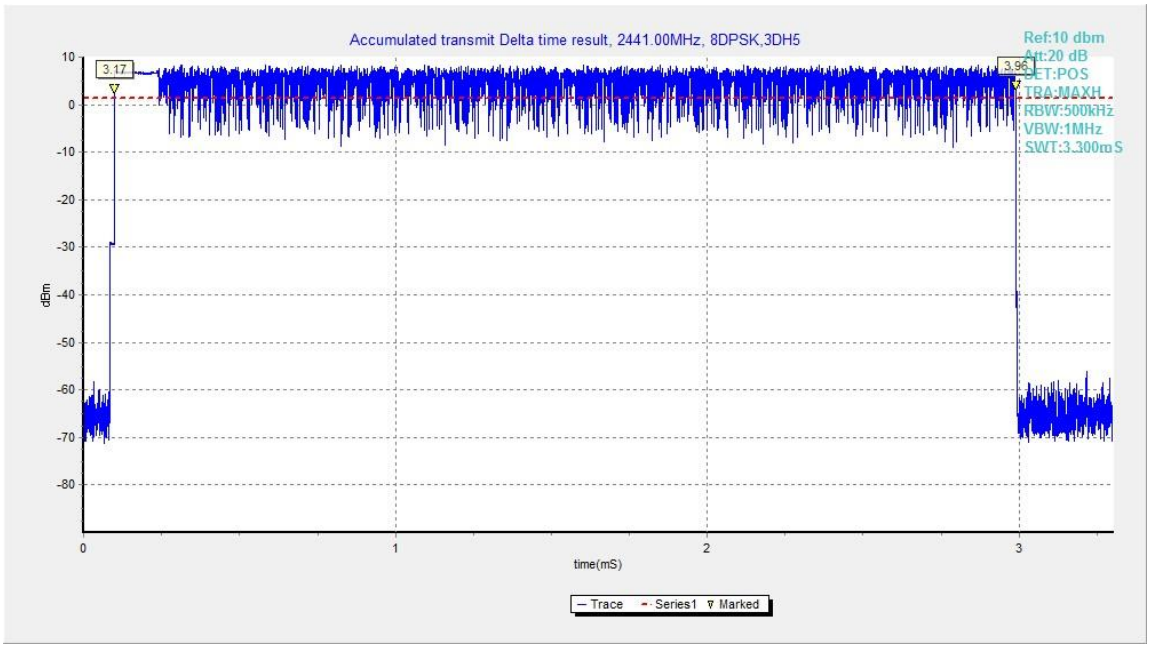

Fig.80. Time of occupancy (Dwell Time): Channel 39, Packet 3-DH5

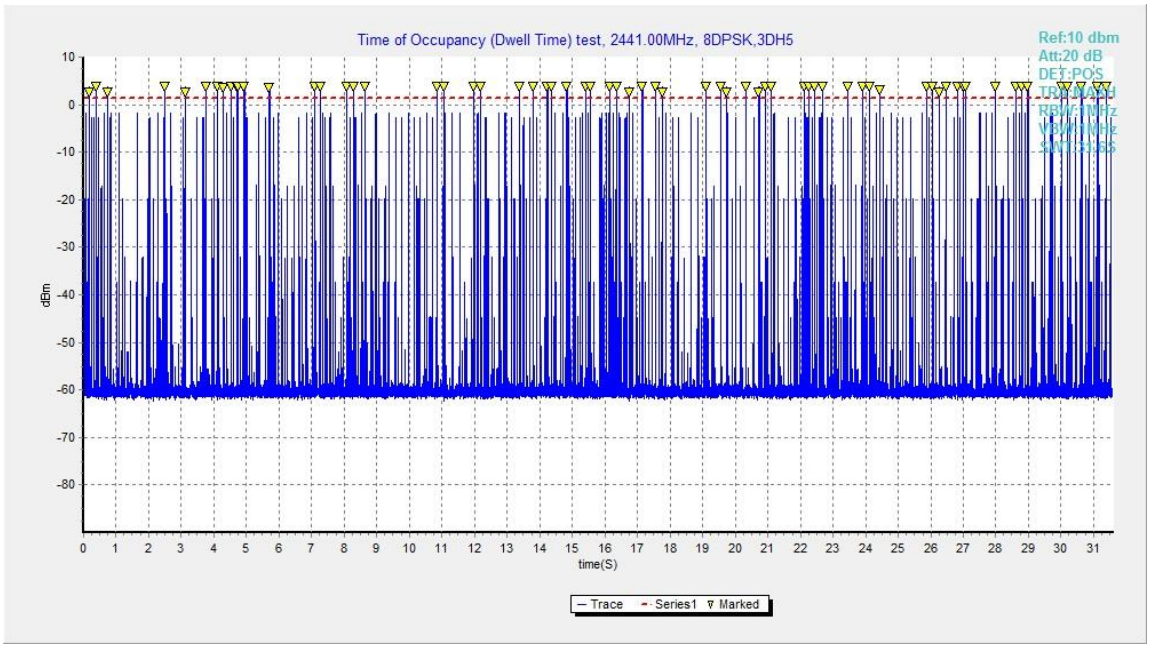

Fig.81. Number of Transmissions Measurement: Channel 39,Packet 3-DH5

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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	938.25	NA
39	Fig.83	945.00	NA
78	Fig.84	939.00	NA

Forπ/4 DQPSK

Channel	20dB Bandwidth (kHz)		Conclusion
0	Fig.85	1320.00	NA
39	Fig.86	1282.50	NA
78	Fig.87	1281.00	NA

For 8DPSK

Channel	20dB Bandwidth (kHz)		Conclusion
0	Fig.88	1278.75	NA
39	Fig.89	1277.25	NA
78	Fig.90	1296.75	NA

Conclusion: NA

Test graphs as below:

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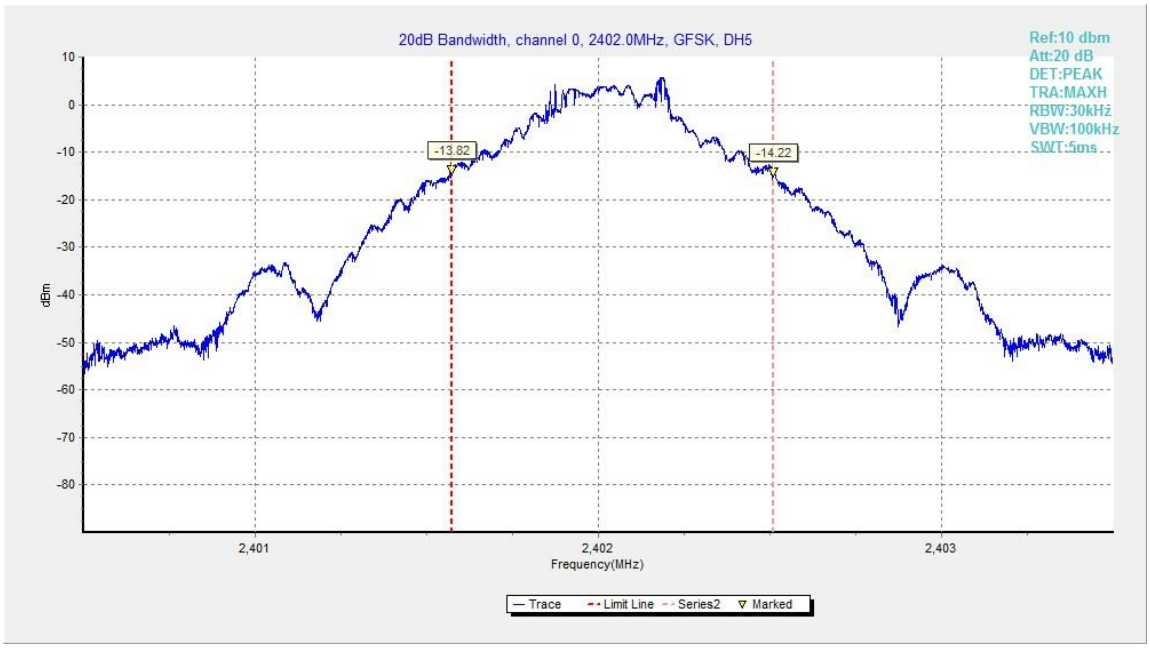

Fig.82. 20dB Bandwidth: GFSK, Channel 0

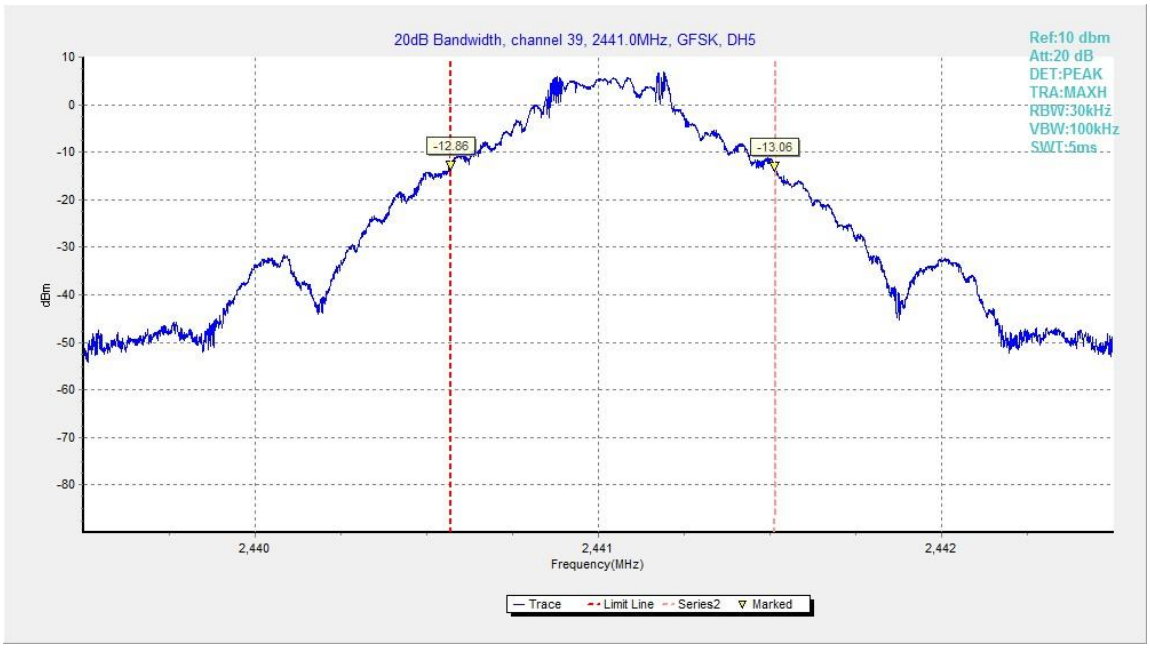

Fig.83. 20dB Bandwidth: GFSK, Channel 39

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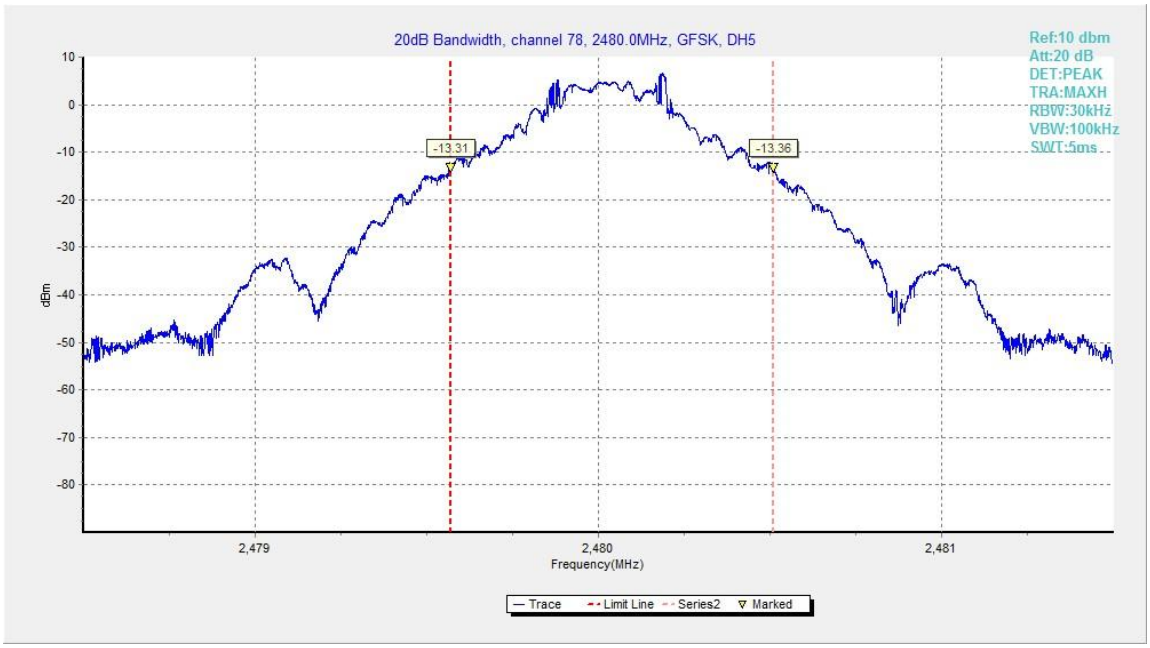

Fig.84. 20dB Bandwidth: GFSK, Channel 78

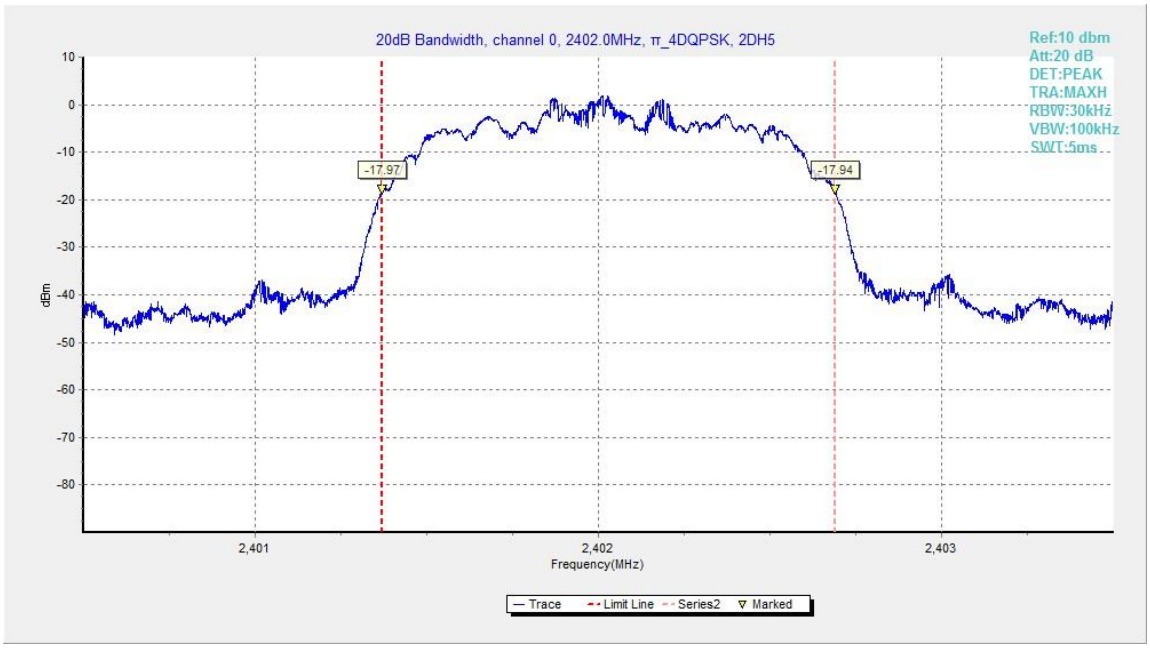

Fig.85. 20dB Bandwidth: π/4 DQPSK, Channel 0

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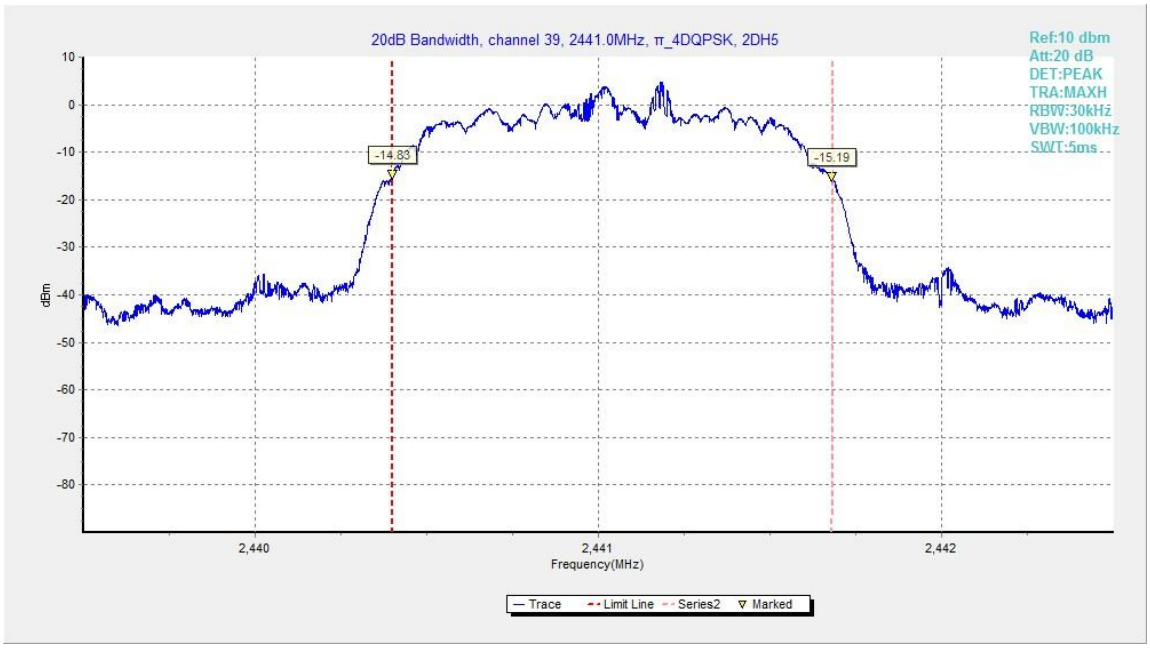

Fig.86. 20dB Bandwidth: π/4 DQPSK, Channel 39

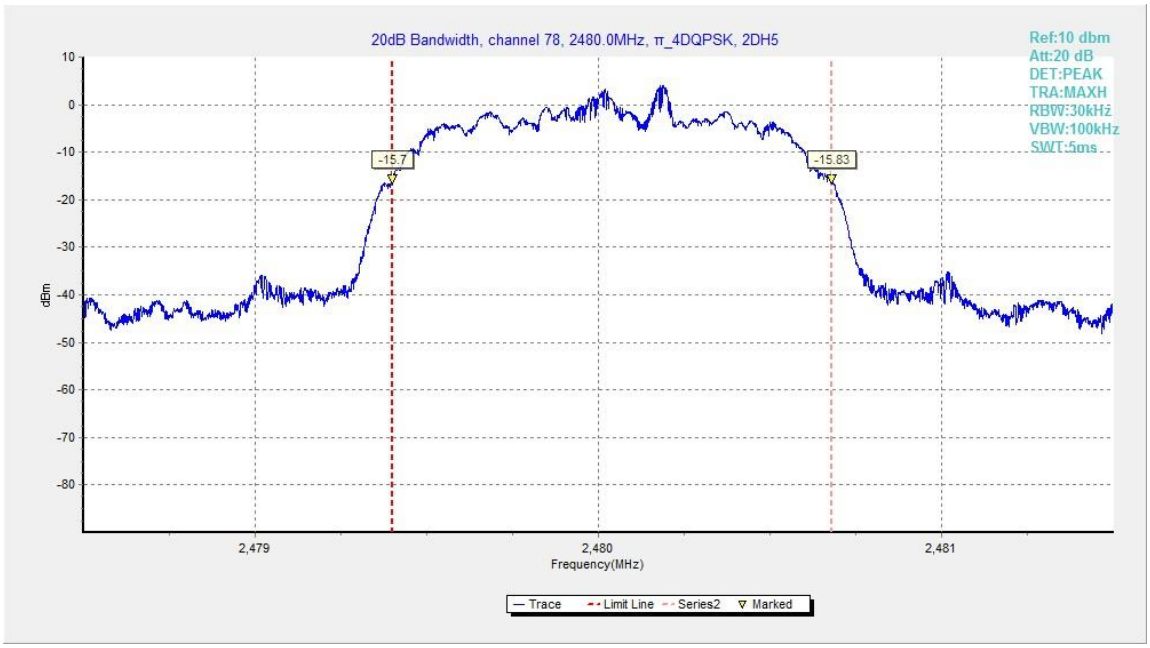

Fig.87. 20dB Bandwidth: π/4 DQPSK, Channel 78

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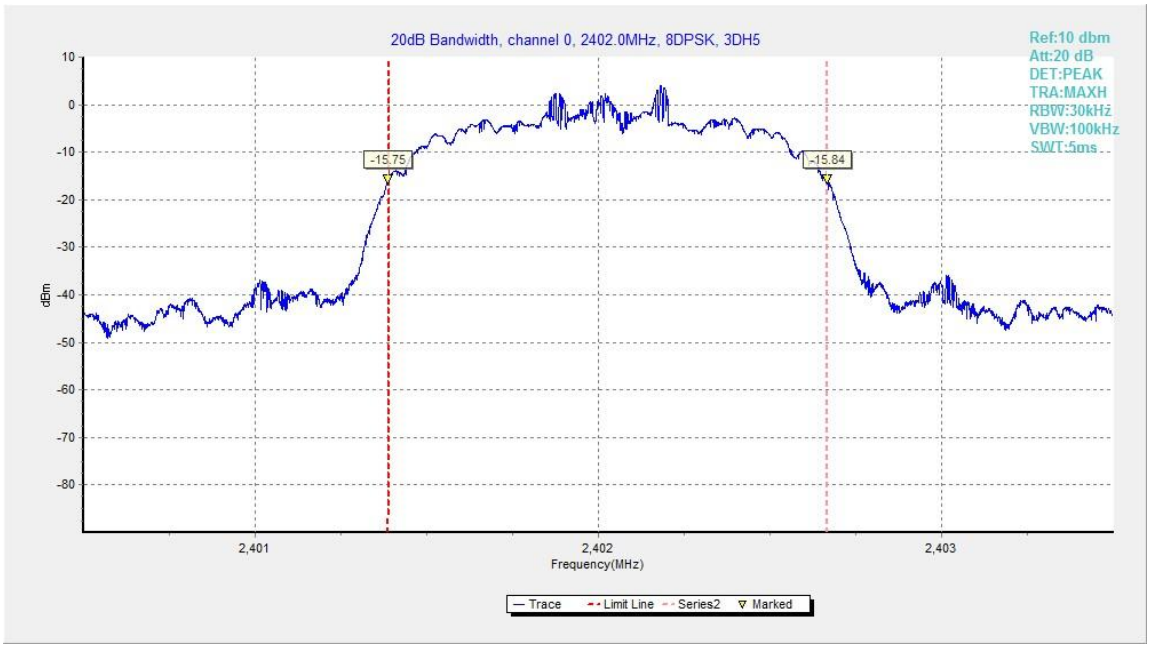

Fig.88. 20dB Bandwidth: 8DPSK, Channel 0

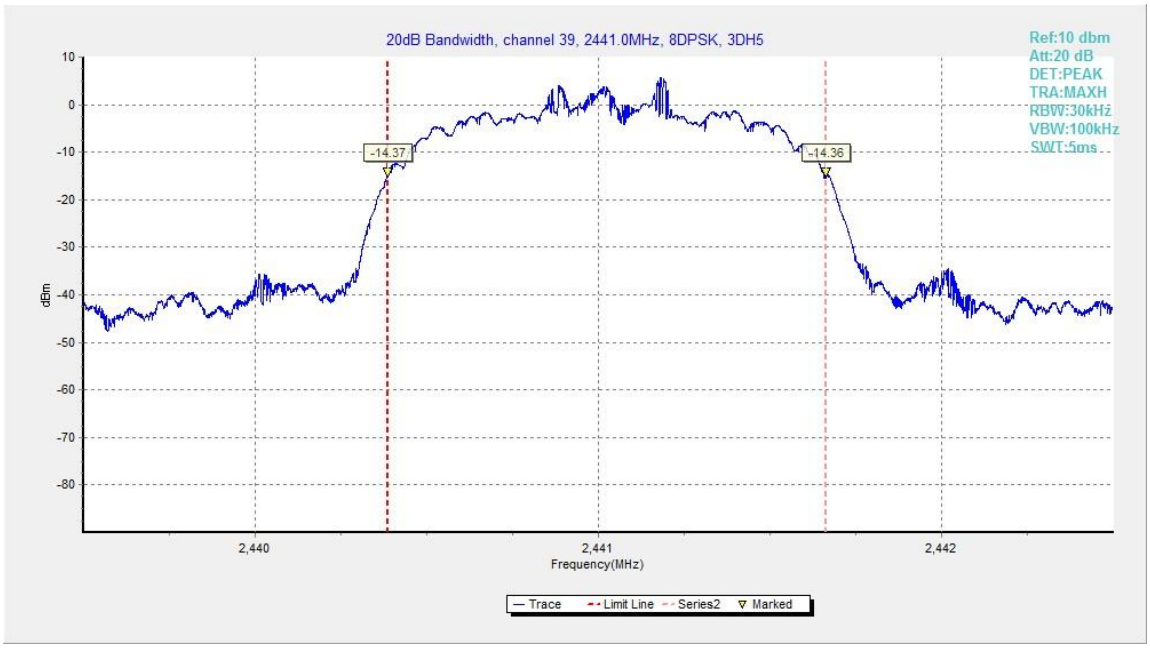

Fig.89. 20dB Bandwidth: 8DPSK, Channel 39

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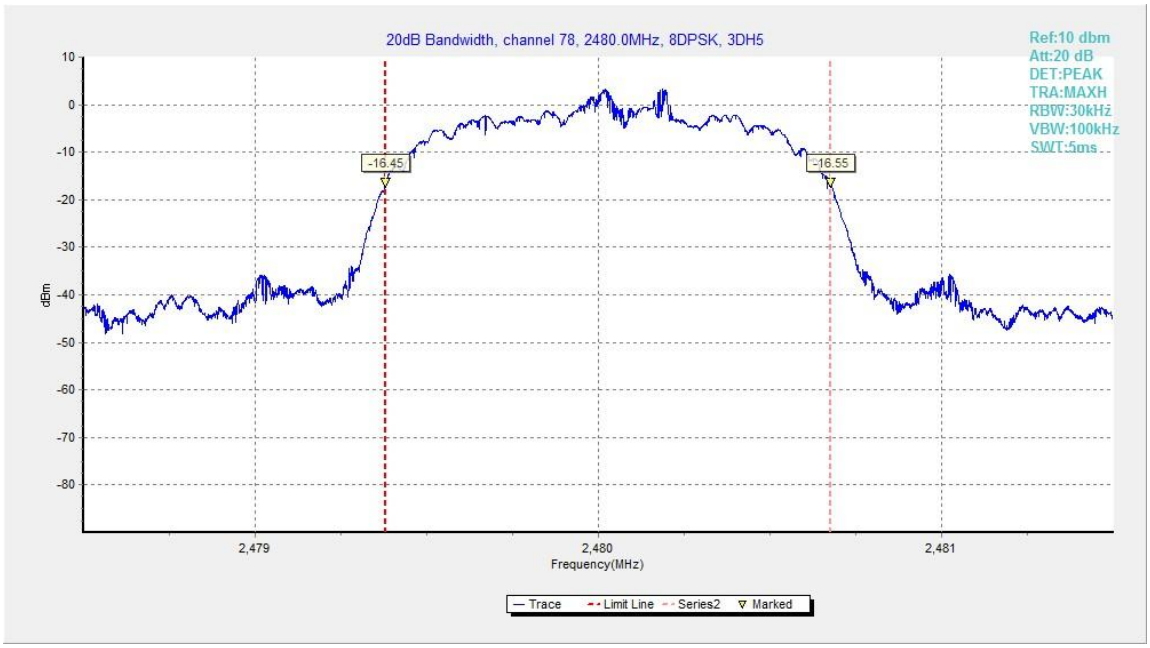

Fig.90. 20dB Bandwidth: 8DPSK, Channel 78

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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) * 20dB bandwidth, whichever is greater.

Measurement Limit:

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

Measurement Result:

For GFSK

Channel	Carrier frequency separation (kHz)		Conclusion
39	Fig.91	1167.75	P

For π/4 DQPSK

Channel	Carrier frequency separation (kHz)		Conclusion
39	Fig.92	995.25	P

For 8DPSK

Channel	Carrier frequency separation (kHz)		Conclusion
39	Fig.93	1001.25	P

Conclusion: PASS

Test graphs as below:

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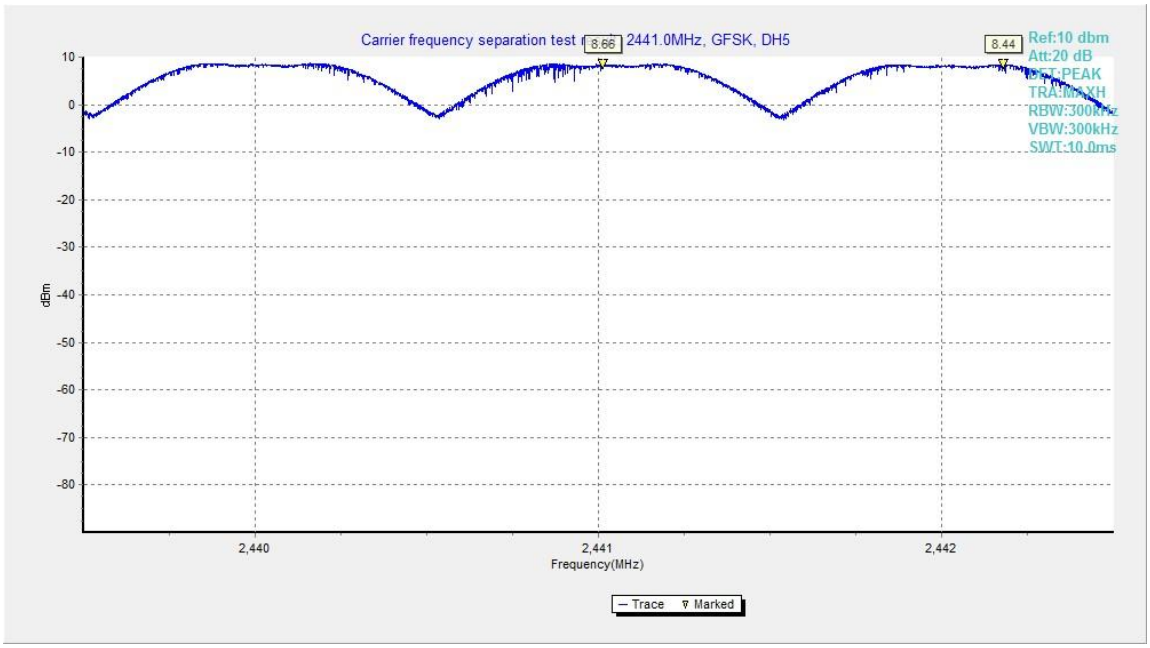

Fig.91. Carrier frequency separation measurement: GFSK, Channel 39

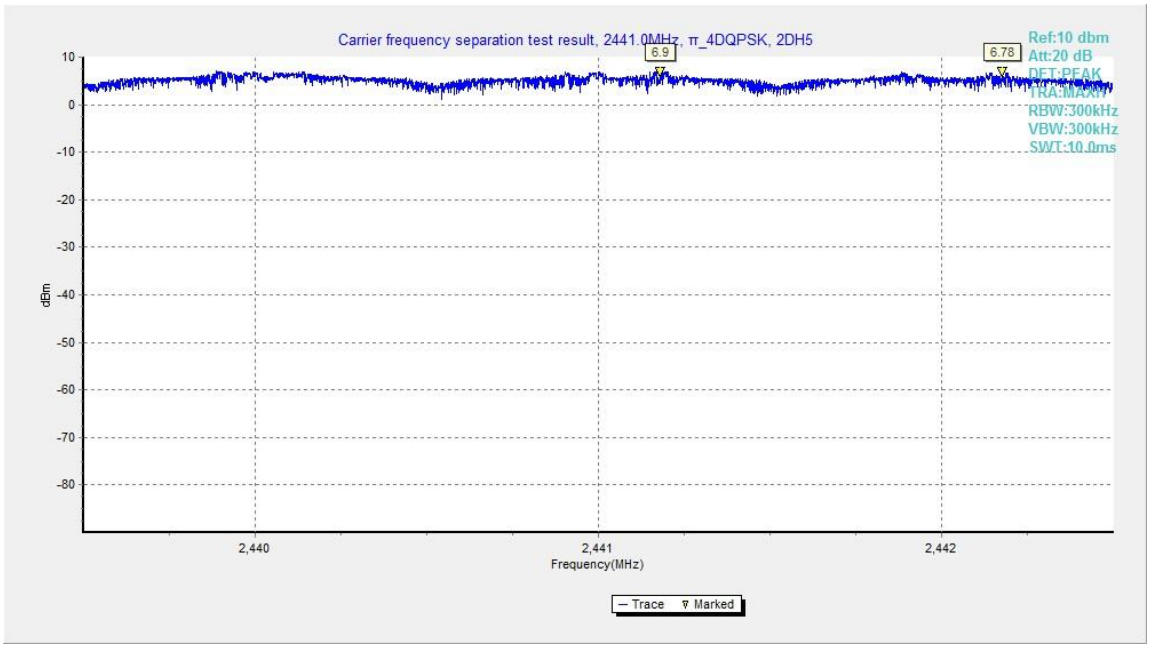

Fig.92. Carrier frequency separation measurement: π/4 DQPSK, Channel 39

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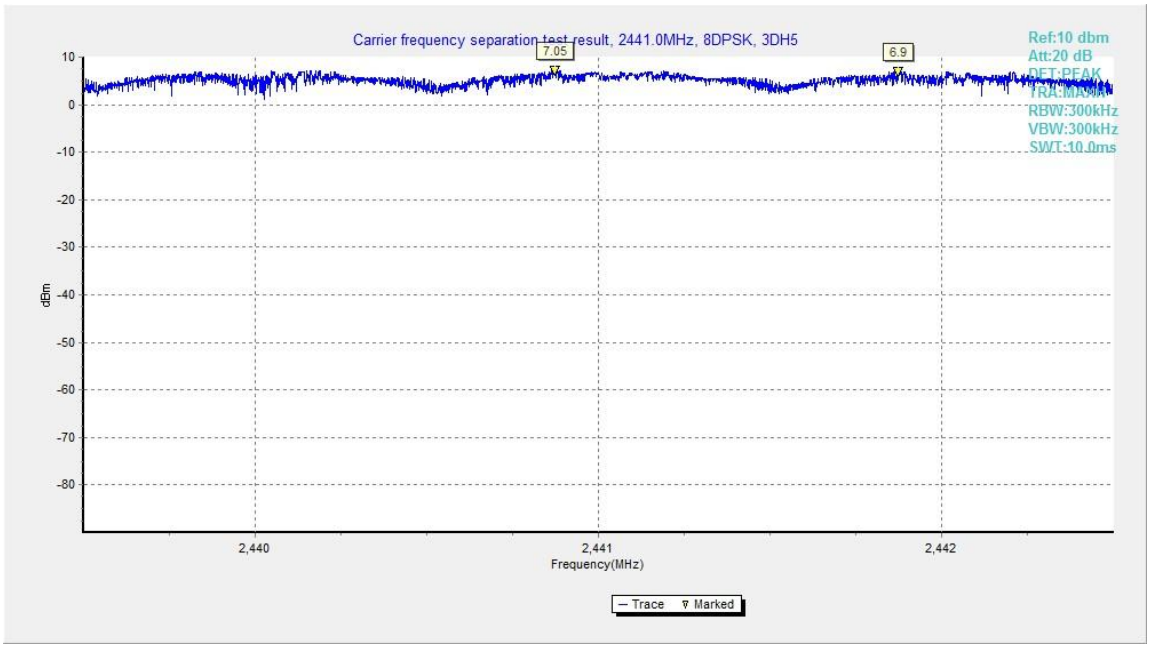

Fig.93. Carrier frequency separation measurement: 8DPSK, Channel 39

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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		

Forπ/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:

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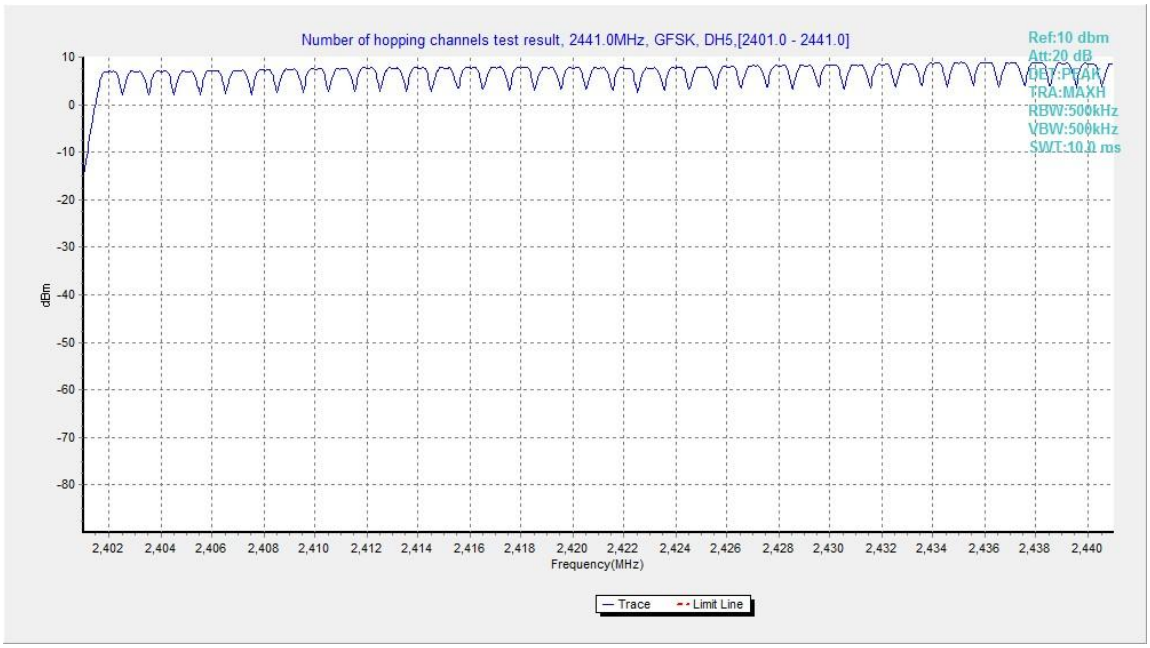

Fig.94. Number of hopping frequencies: GFSK, Channel 0 - 39

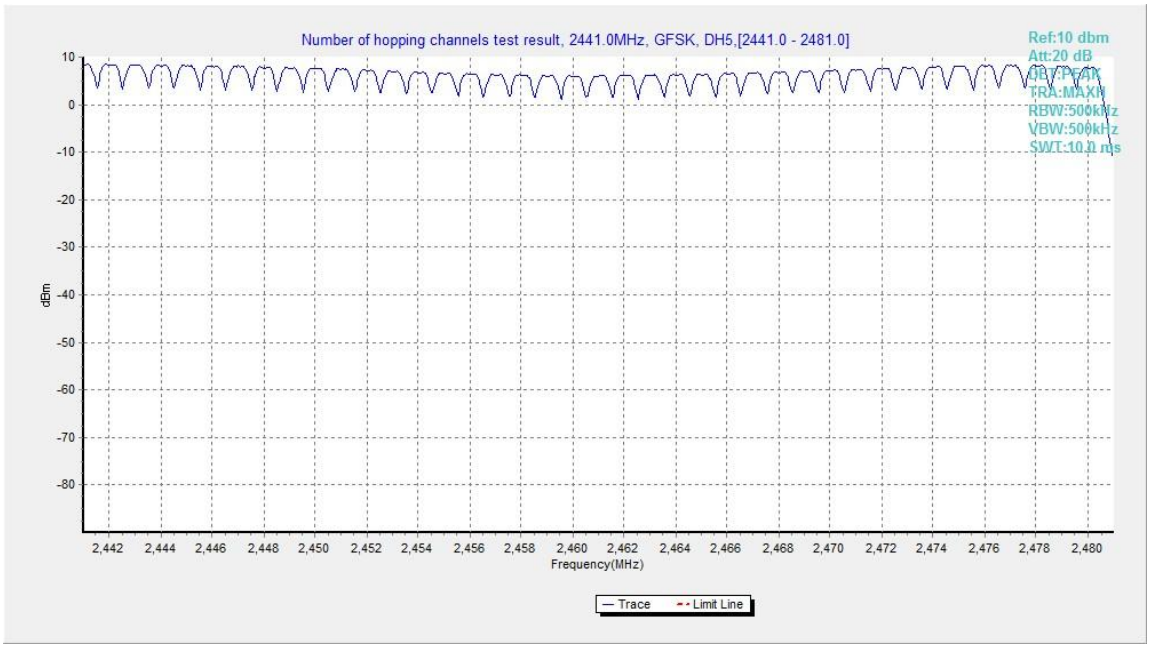

Fig.95. Number of hopping frequencies: GFSK, Channel 40 - 78

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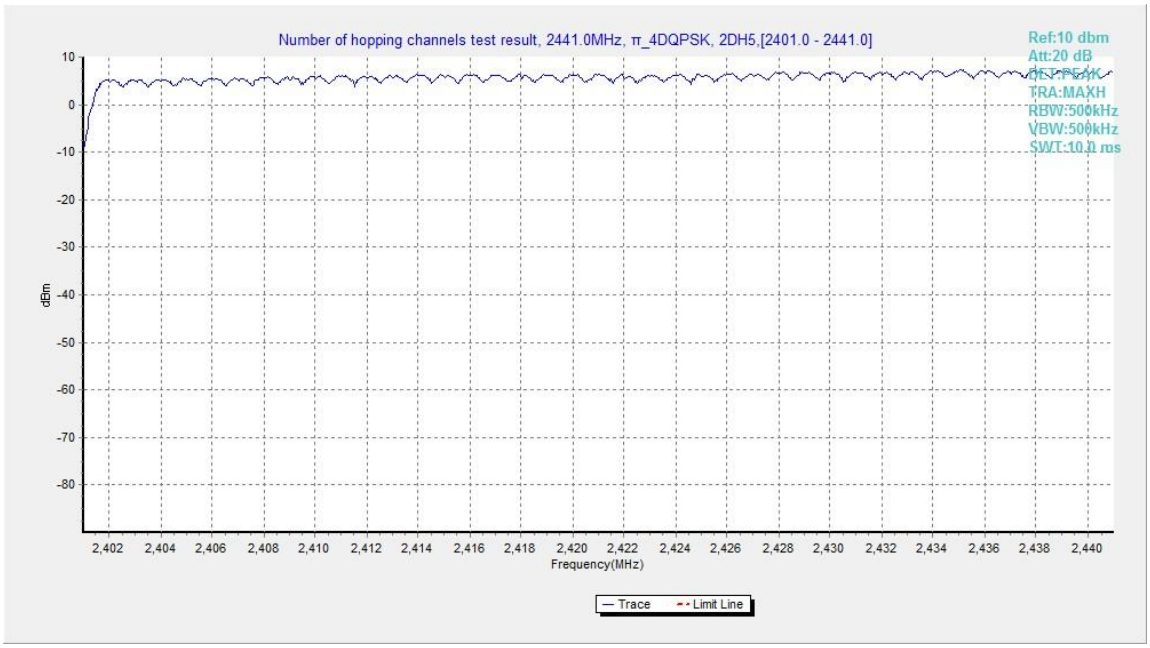

Fig.96. Number of hopping frequencies: π/4 DQPSK, Channel 0 - 39

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

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

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

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A.10. AC Powerline Conducted Emission

Method of Measurement: See ANSI C63.10-clause 6.2

1. the one EUT cable configuration and arrangement and mode of operation that produced the emission with the highest amplitude relative to the limit is selected for the final measurement, while applying the appropriate modulating signal to the EUT.
2. If the EUT is relocated from an exploratory test site to a final test site, the highest emissions shall be remaximized at the final test location before final ac power-line conducted emission measurements are performed.
3. The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment in the system) is then performed for the full frequency range for which the EUT is being tested for compliance without further variation of the EUT arrangement, cable positions, or EUT mode of operation.
4. If the EUT is comprised of equipment units that have their own separate ac power connections, e.g., floor-standing equipment with independent power cords for each shelf that are able to connect directly to the ac power network, each current-carrying conductor of one unit is measured while the other units are connected to a second (or more) LISN(s). All units shall be separately measured. If a power strip is provided by the manufacturer, to supply all of the units making up the EUT, only the conductors in the power cord of the power strip shall be measured.
5. If the EUT uses a detachable antenna, these measurements shall be made with a suitable dummy load connected to the antenna output terminals; otherwise, the tests shall be made with the antenna connected and, if adjustable, fully extended. When measuring the ac conducted emissions from a device that operates between 150 kHz and 30 MHz a non-detachable antenna may be replaced with a dummy load for the measurements within the fundamental emission band of the transmitter, but only for those measurements.36 Record the six highest EUT emissions relative to the limit of each of the current-carrying conductors of the power cords of the equipment that comprises the EUT over the frequency range specified by the procuring or regulatory agency. Diagram or photograph the test setup that was used. See Clause 8 for full reporting requirements.

Test Condition

Voltage（V）	Frequency（Hz）
120	60

Measurement Result and limit:

Bluetooth (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dBμV)	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.		

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Bluetooth (Average Limit)

Frequency range (MHz)	Average Limit (dBμV)	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:

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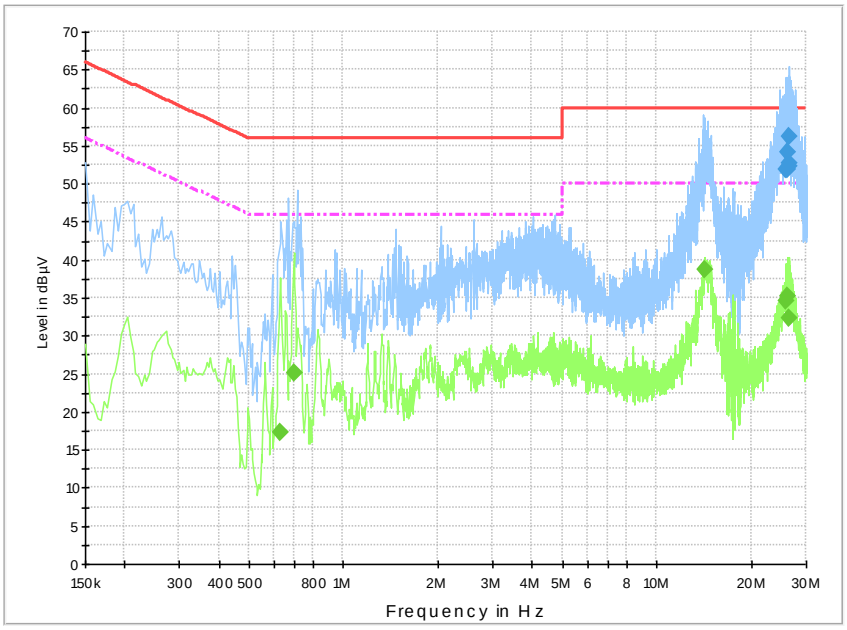
Traffic: Set.10



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
25.980000	51.9	GND	N	11.1	8.1	60.0
26.007000	54.0	GND	L1	11.4	6.0	60.0
26.083500	51.8	GND	L1	11.4	8.2	60.0
26.443500	56.2	GND	N	11.1	3.8	60.0
26.493000	52.4	GND	N	11.1	7.6	60.0
26.565000	52.6	GND	N	11.1	7.4	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.627000	17.3	GND	L1	10.2	28.7	46.0
0.694500	25.1	GND	L1	10.2	20.9	46.0
14.203500	38.6	GND	N	10.8	11.4	50.0
25.980000	34.6	GND	L1	11.4	15.4	50.0
26.079000	35.1	GND	L1	11.4	14.9	50.0
26.565000	32.3	GND	N	11.1	17.7	50.0

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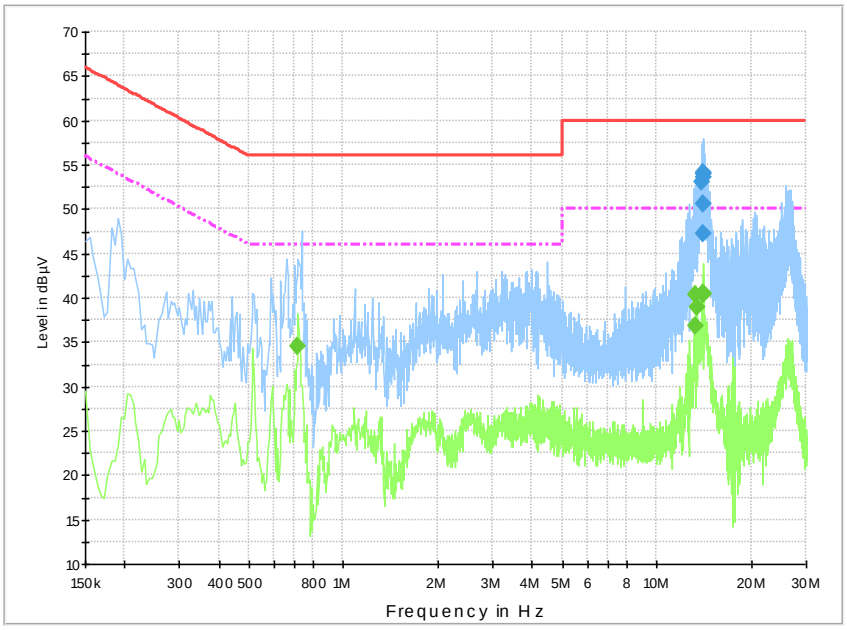
Idle: Set.10



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
13.960500	53.1	GND	L1	10.8	6.9	60.0
14.019000	53.5	GND	L1	10.8	6.5	60.0
14.028000	54.1	GND	L1	10.8	5.9	60.0
14.086500	54.0	GND	L1	10.8	6.0	60.0
14.095500	50.7	GND	L1	10.8	9.3	60.0
14.122500	47.3	GND	L1	10.8	12.7	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.717000	34.4	GND	L1	10.2	11.6	46.0
13.272000	36.8	GND	N	10.8	13.2	50.0
13.335000	40.4	GND	N	10.8	9.6	50.0
13.398000	38.9	GND	N	10.8	11.1	50.0
14.019000	40.4	GND	N	10.8	9.6	50.0
14.082000	40.5	GND	N	10.8	9.5	50.0

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ANNEX E: Accreditation Certificate

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 600118-0

Telecommunication Technology Labs, CAICT
Beijing
China

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Electromagnetic Compatibility & Telecommunications

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2016-09-29 through 2017-09-30
Effective Dates

DEPARTMENT OF COMMERCE · UNITED STATES OF AMERICA

For the National Voluntary Laboratory Accreditation Program

*****END OF REPORT*****

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