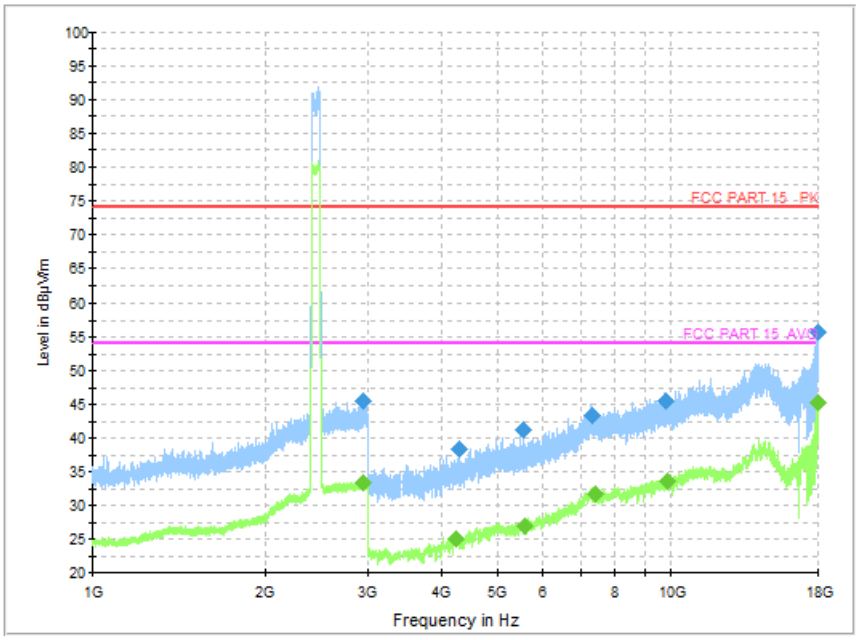

Fig. 48 Radiated Spurious Emission (π/4 DQPSK, Ch39, 1 GHz ~18 GHz)

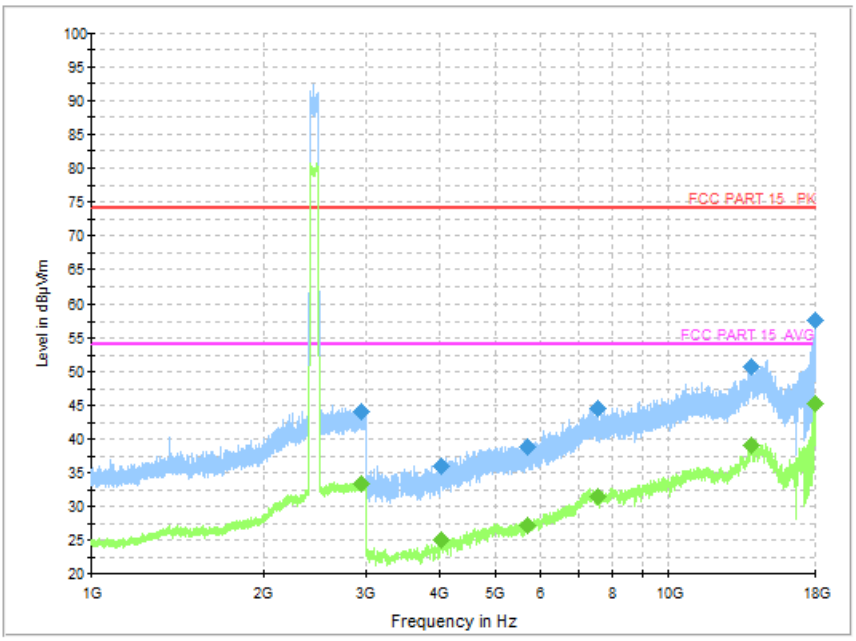

Fig. 49 Radiated Spurious Emission (π/4 DQPSK, Ch78, 1 GHz ~18 GHz)

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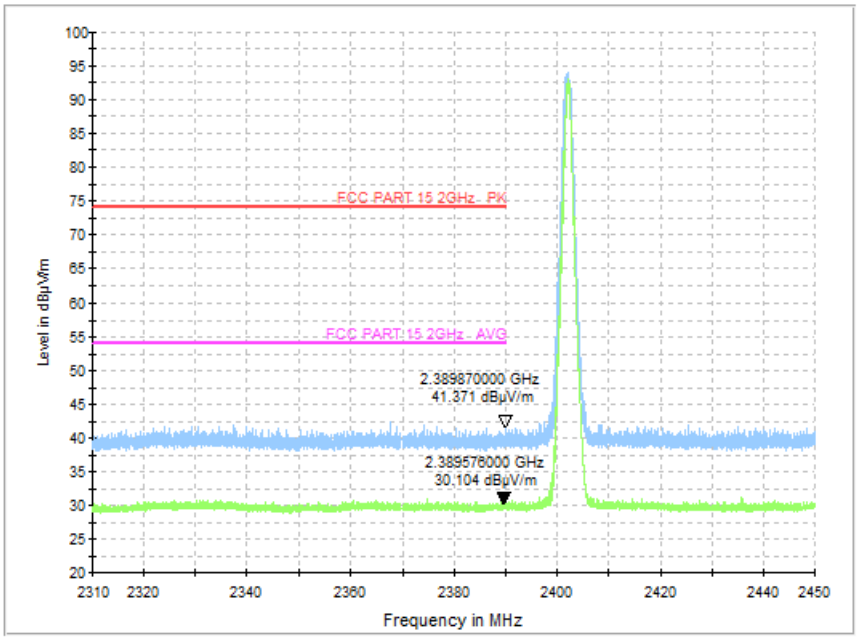

Fig. 50 Radiated Band Edges (π/4 DQPSK, Ch0, 2380GHz~2450GHz)

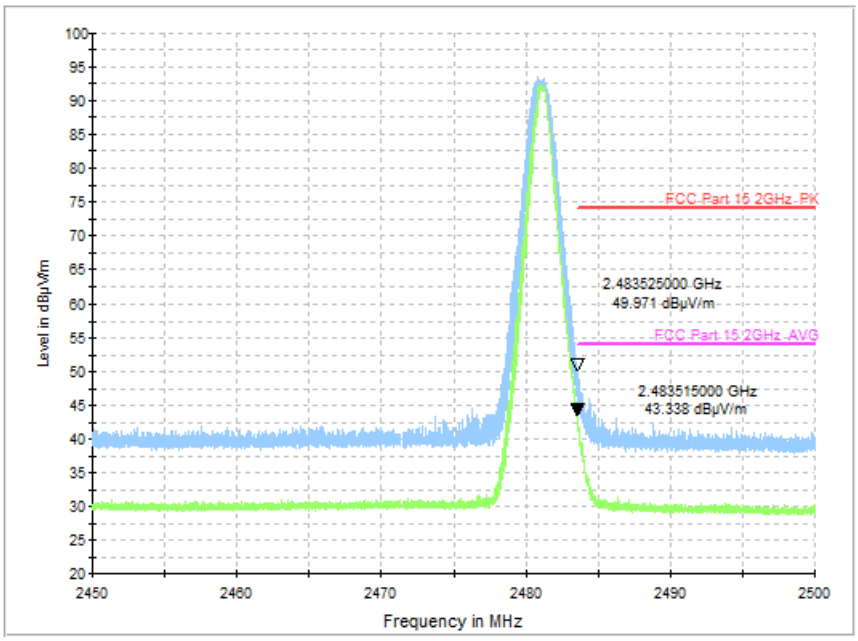

Fig. 51 Radiated Band Edges (π/4 DQPSK, Ch78, 2450GHz~2500GHz)

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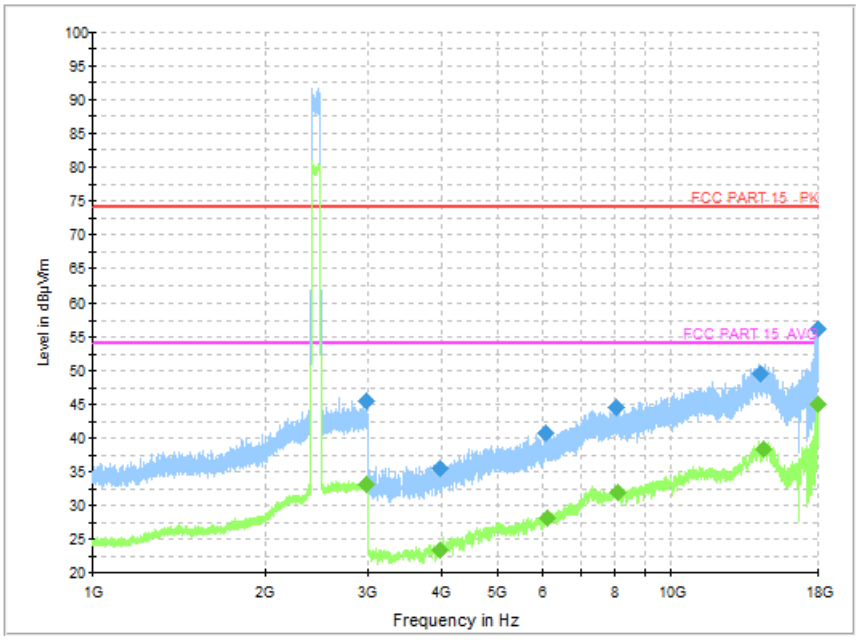

Fig. 52 Radiated Spurious Emission (8DPSK, Ch0, 1 GHz ~18 GHz)

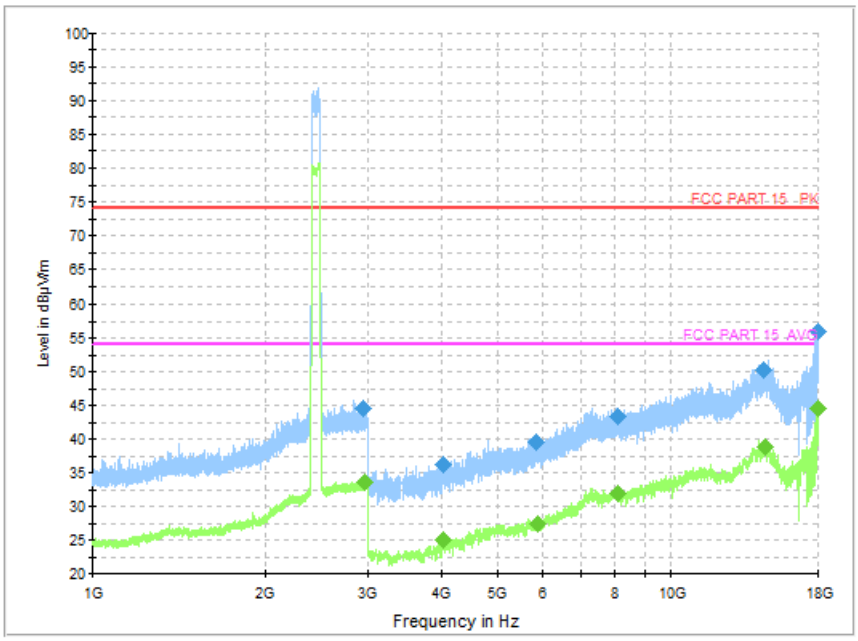

Fig. 53 Radiated Spurious Emission (8DPSK, Ch39, 1 GHz ~18 GHz)

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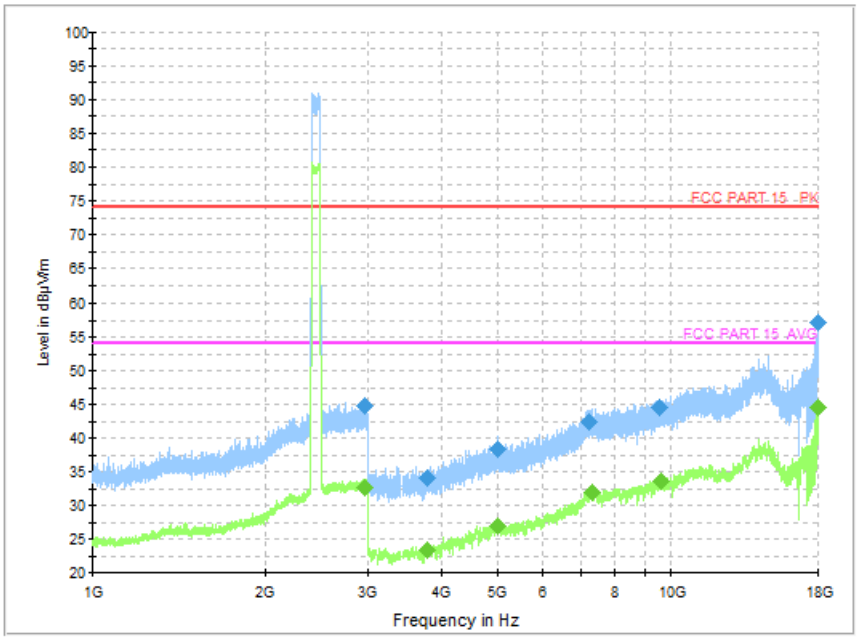

Fig. 54 Radiated Spurious Emission (8DPSK, Ch78, 1 GHz ~18 GHz)

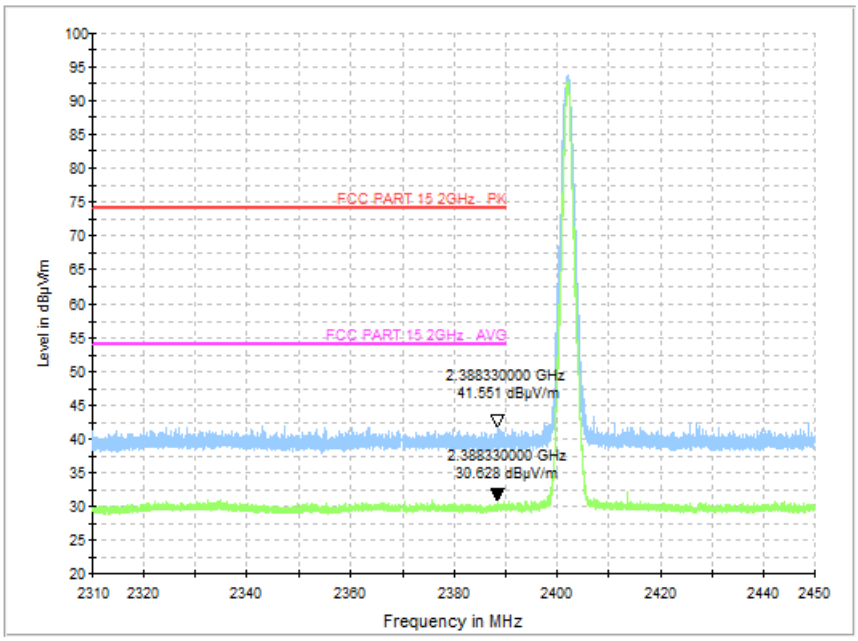

Fig. 55 Radiated Band Edges (8DPSK, Ch0, 2380GHz~2450GHz)

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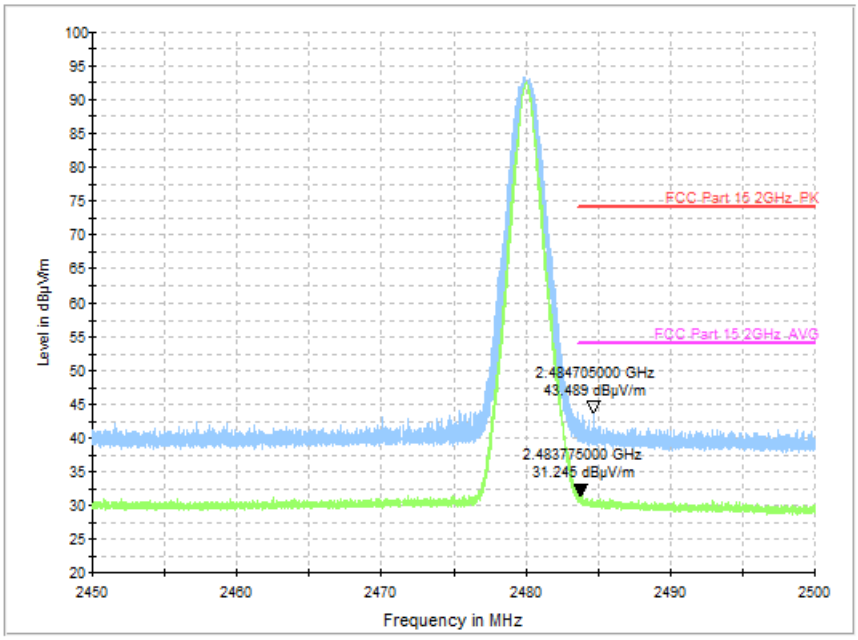

Fig. 56 Radiated Band Edges (8DPSK, Ch78, 2450GHz~2500GHz)

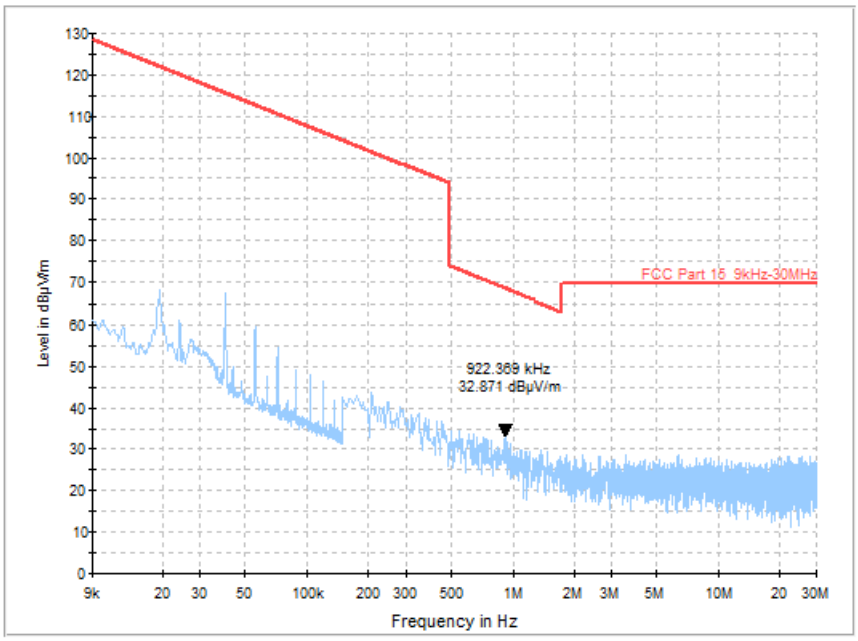

Fig. 57 Radiated Spurious Emission (All Channels, 9 kHz ~30 MHz)

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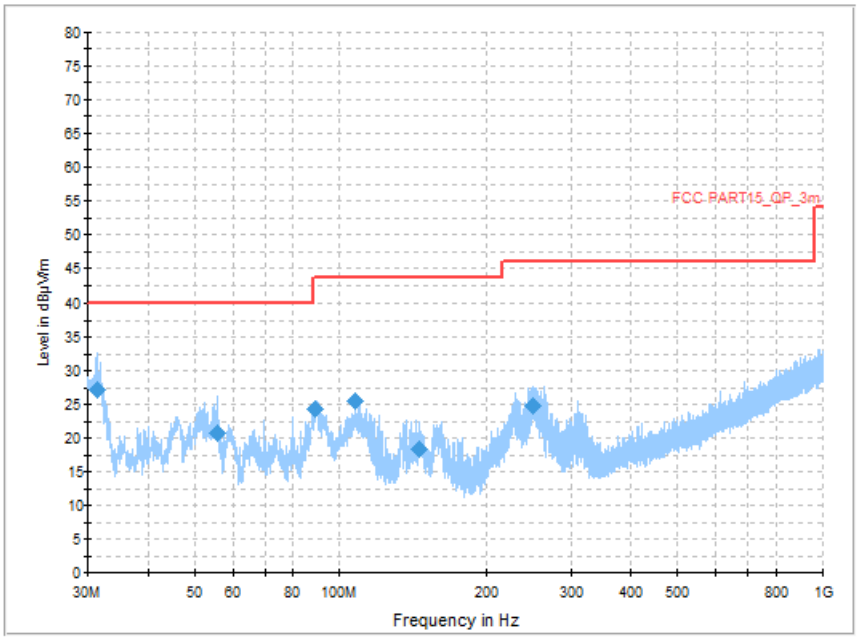

Fig. 58 Radiated Spurious Emission (All Channels, 30 MHz ~1 GHz)

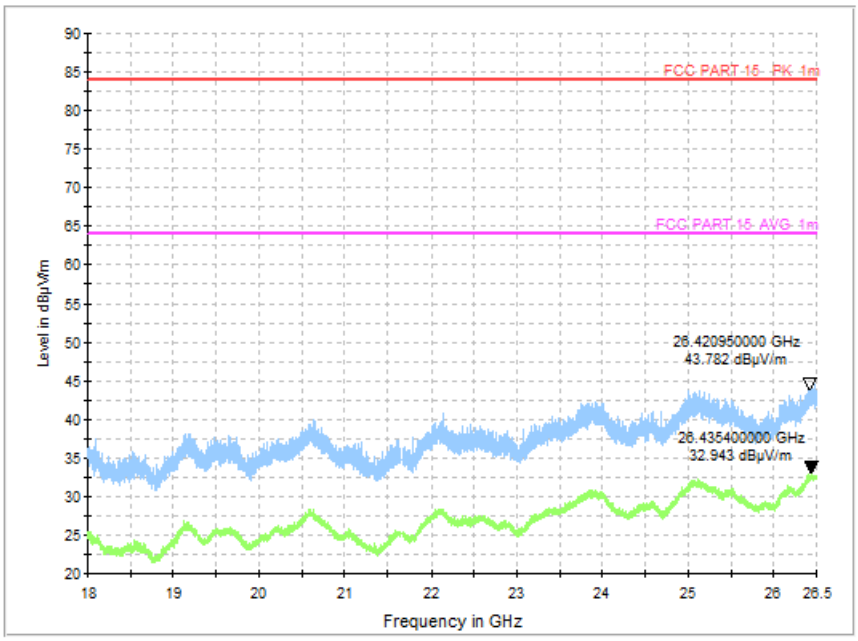

Fig. 59 Radiated Spurious Emission (All Channels, 18 GHz ~26.5 GHz)

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A.5 20dB Bandwidth

Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.247 (a)	/

Measurement Result:

Mode	Channel	20dB Bandwidth (kHz)		conclusion
GFSK	0	Fig.60	951.75	/
	39	Fig.61	936.00	
	78	Fig.62	936.75	
π/4 DQPSK	0	Fig.63	1281.75	/
	39	Fig.64	1281.75	
	78	Fig.65	1281.00	
8DPSK	0	Fig.66	1276.50	/
	39	Fig.67	1276.50	
	78	Fig.68	1275.00	

See below for test graphs.

Conclusion: PASS

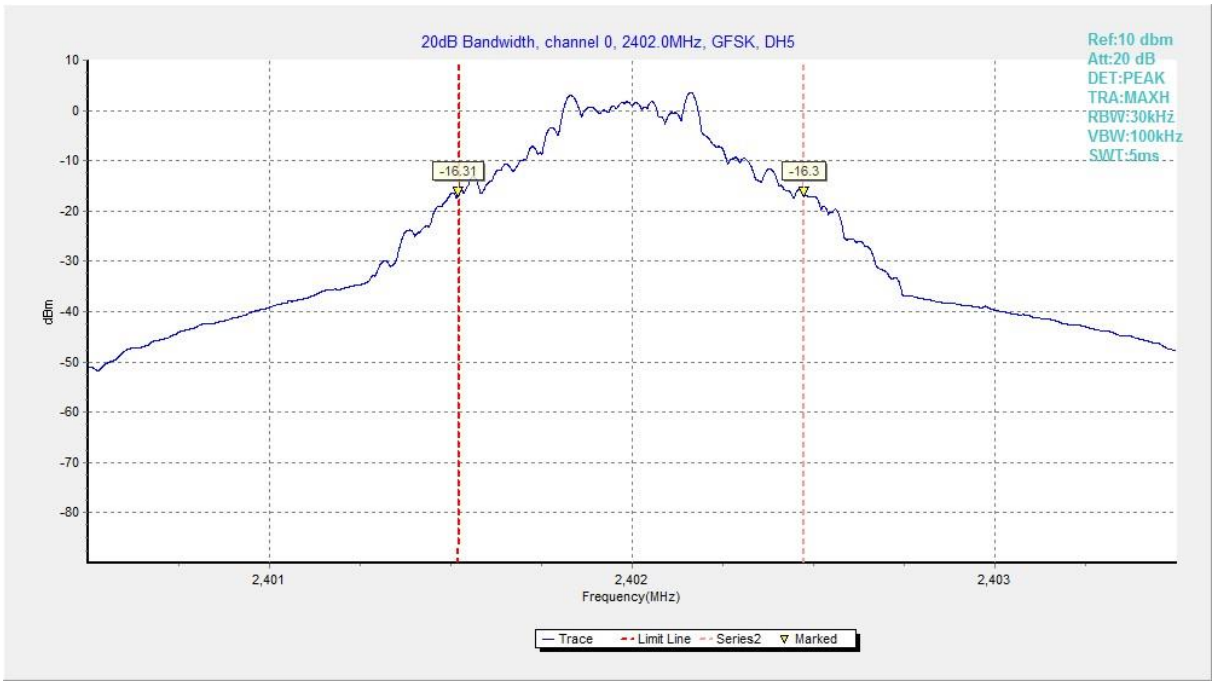

Fig. 60 20dB Bandwidth (GFSK, Ch 0)

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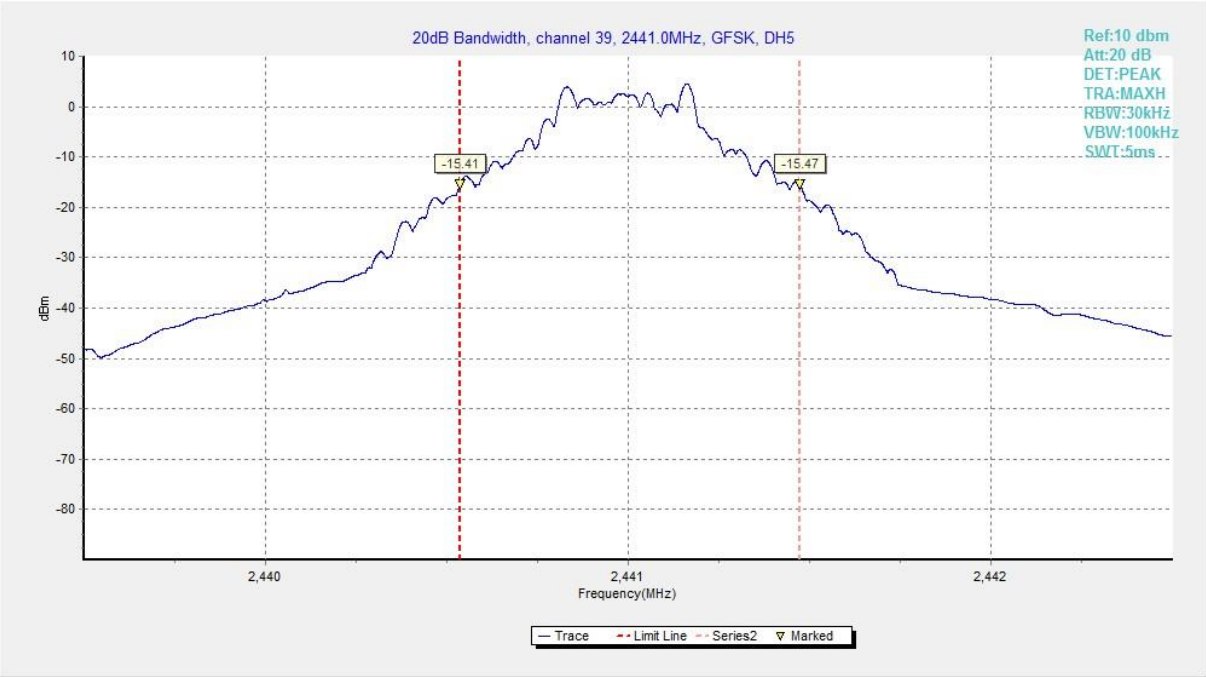

Fig. 61 20dB Bandwidth (GFSK, Ch 39)

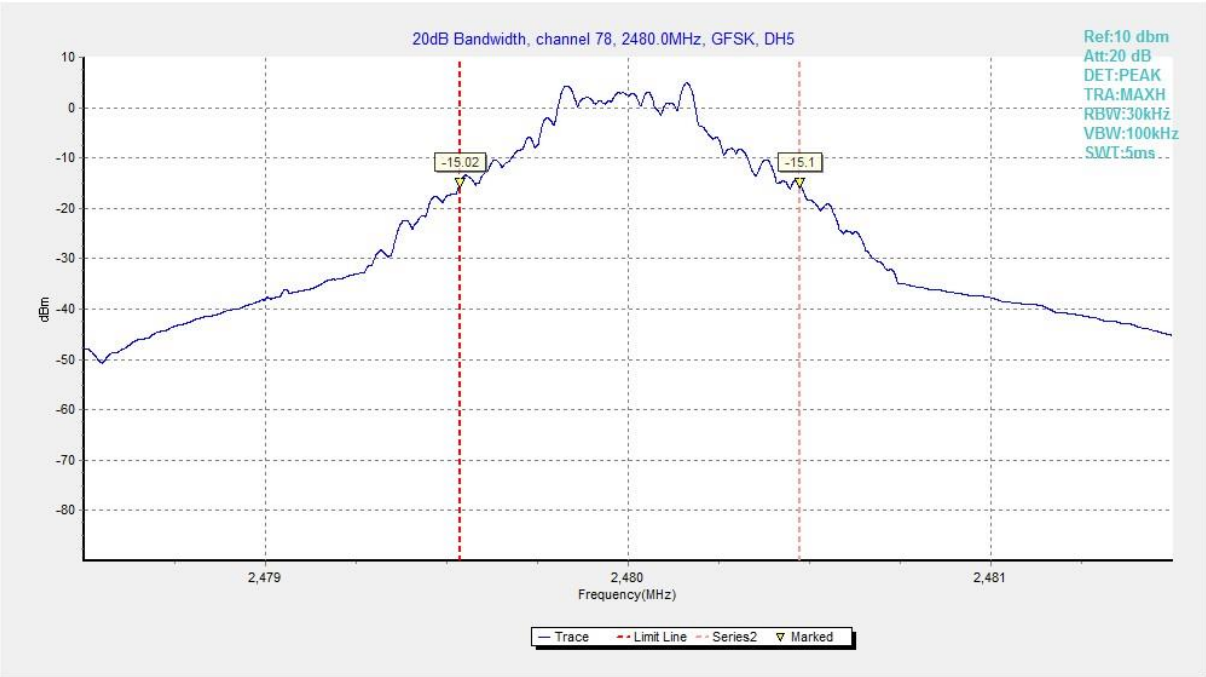

Fig. 62 20dB Bandwidth (GFSK, Ch 78)

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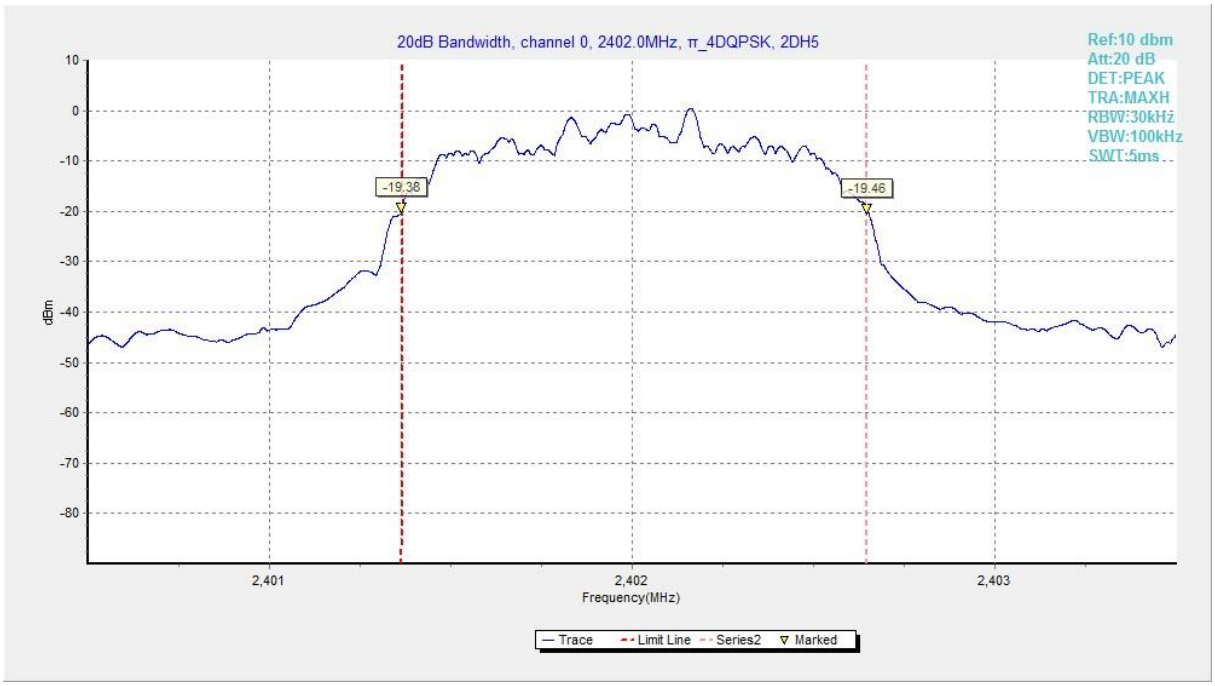

Fig. 63 20dB Bandwidth (π/4 DQPSK, Ch 0)

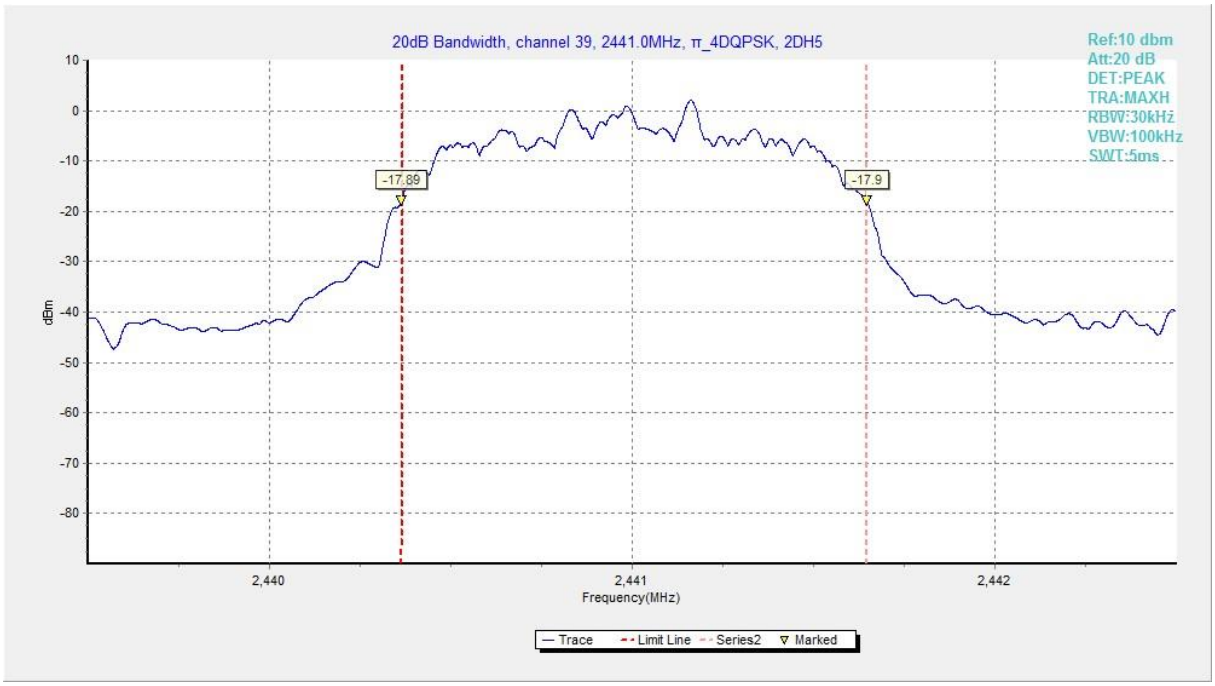

Fig. 64 20dB Bandwidth (π/4 DQPSK, Ch 39)

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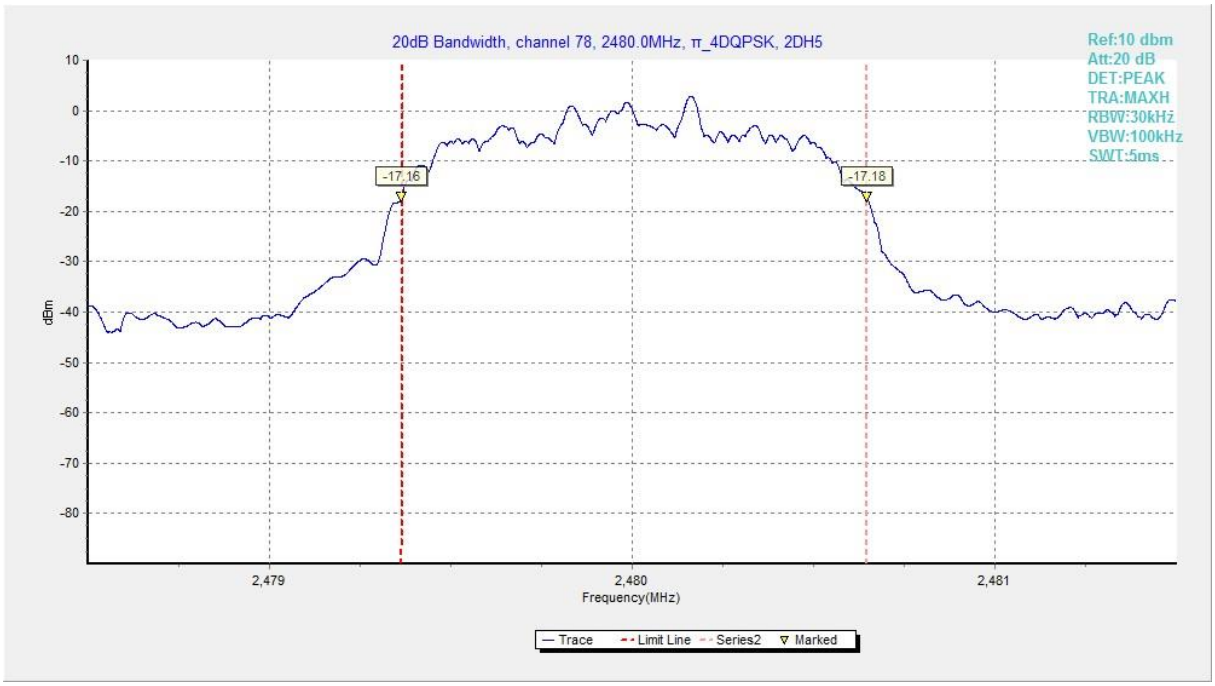

Fig. 65 20dB Bandwidth (π/4 DQPSK, Ch 78)

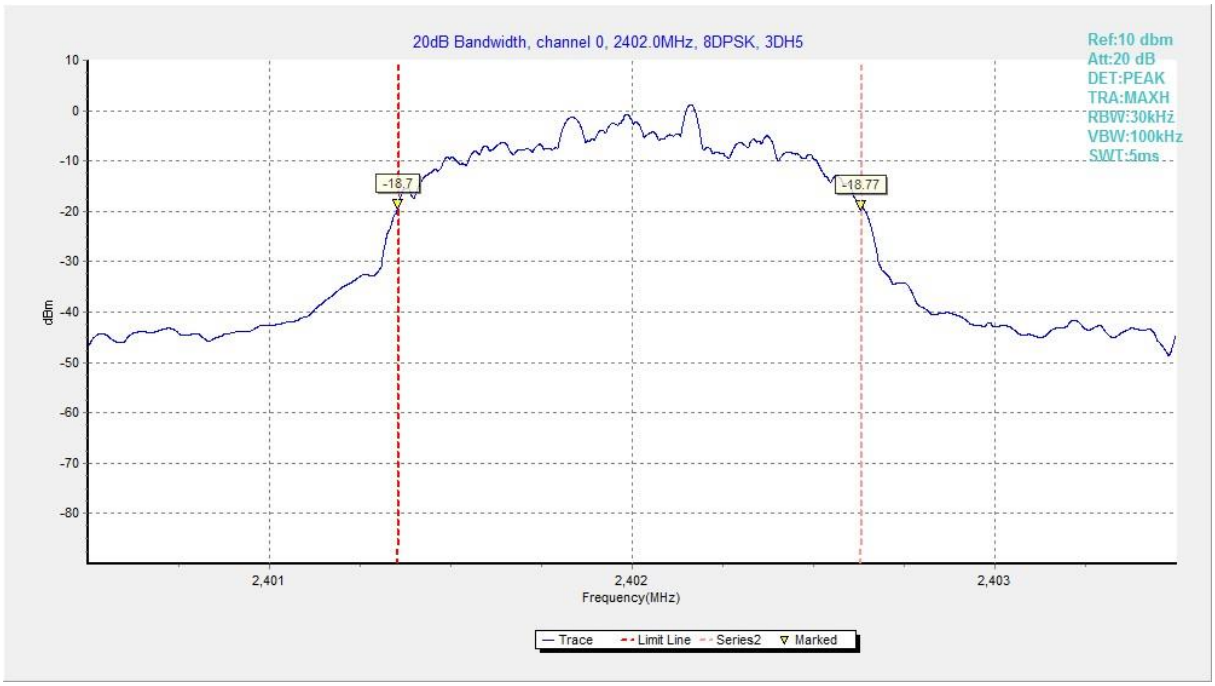

Fig. 66 20dB Bandwidth (8DPSK, Ch 0)

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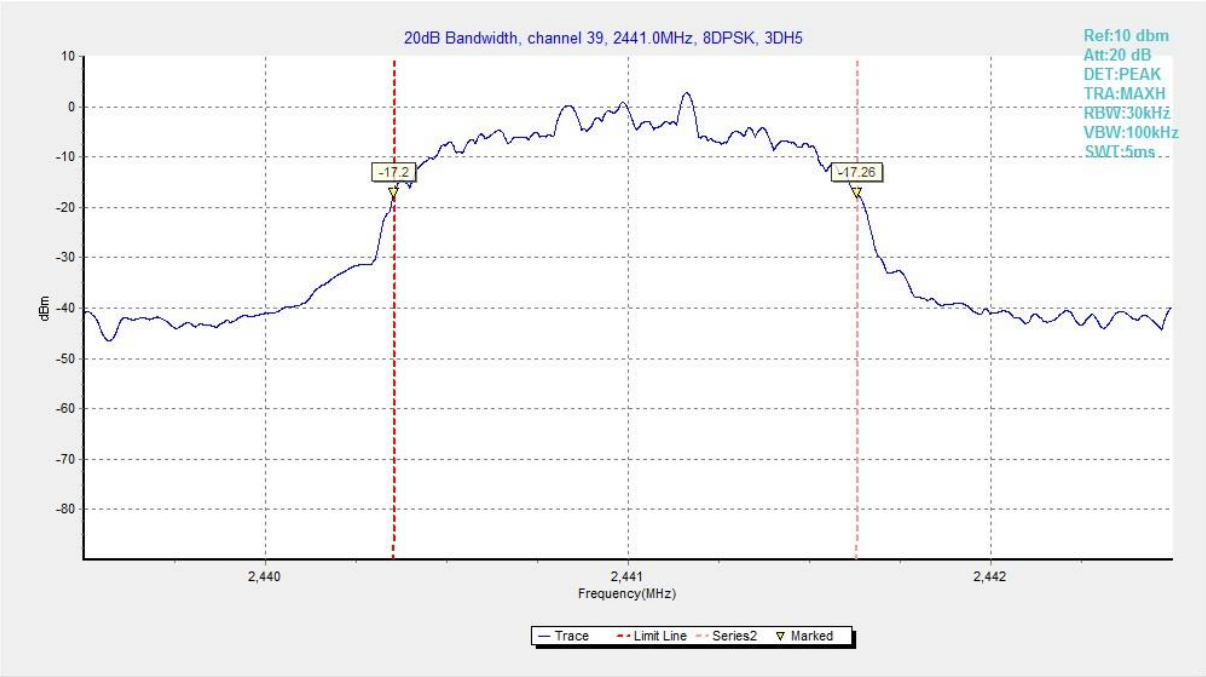

Fig. 67 20dB Bandwidth (8DPSK, Ch 39)

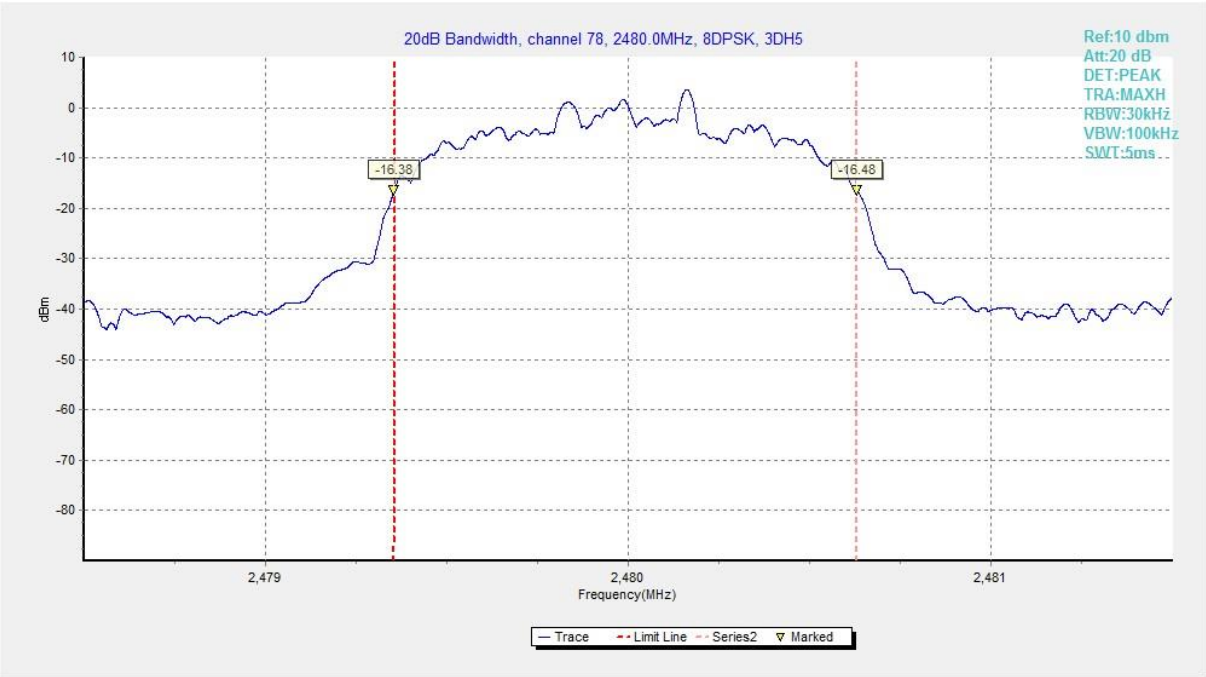

Fig. 68 20dB Bandwidth (8DPSK, Ch 78)

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A.6 Time of Occupancy (Dwell Time)

Measurement Limit:

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

Measurement Results:

Mode	Channel	Packet	Dwell Time(ms)		Conclusion
GFSK	39	DH5	Fig.69	308.63	**P**
			Fig.70		
π/4 DQPSK	39	2-DH5	Fig.71	306.50	**P**
			Fig.72		
8DPSK	39	3-DH5	Fig.73	307.60	**P**
			Fig.74		

See below for test graphs.

Conclusion: Pass

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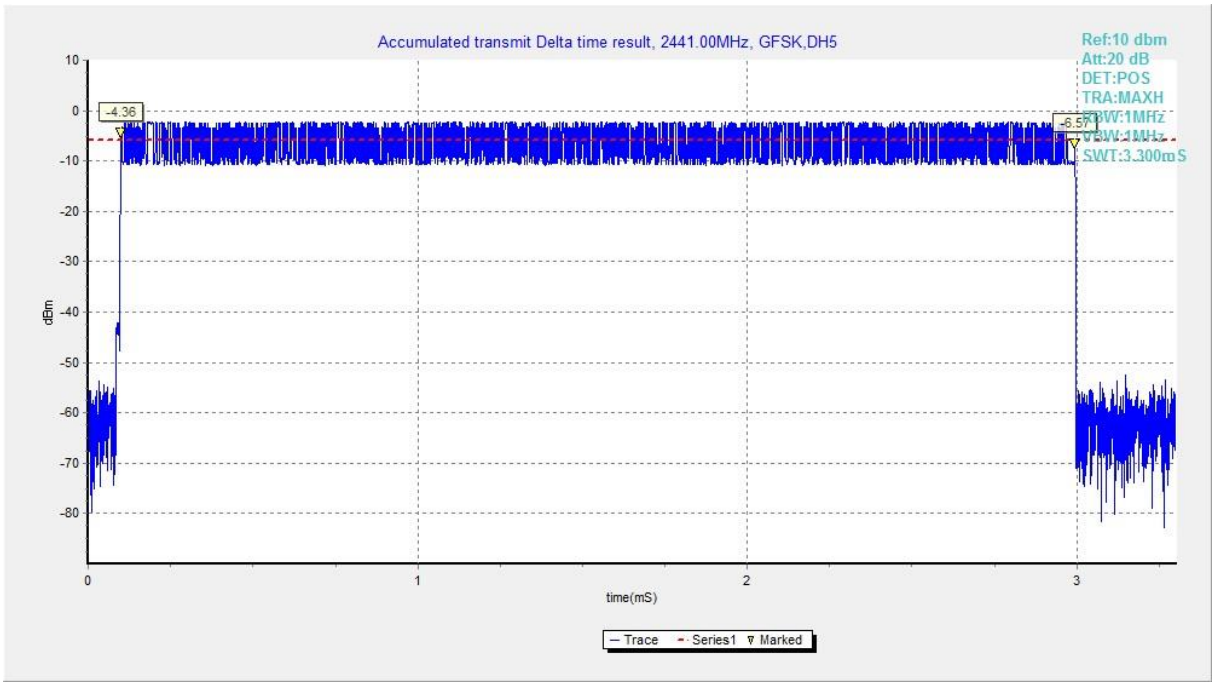

Fig. 69 Time of Occupancy (Dwell Time) (GFSK, Ch39)

Fig. 70 Time of Occupancy (Dwell Time) (GFSK, Ch39)

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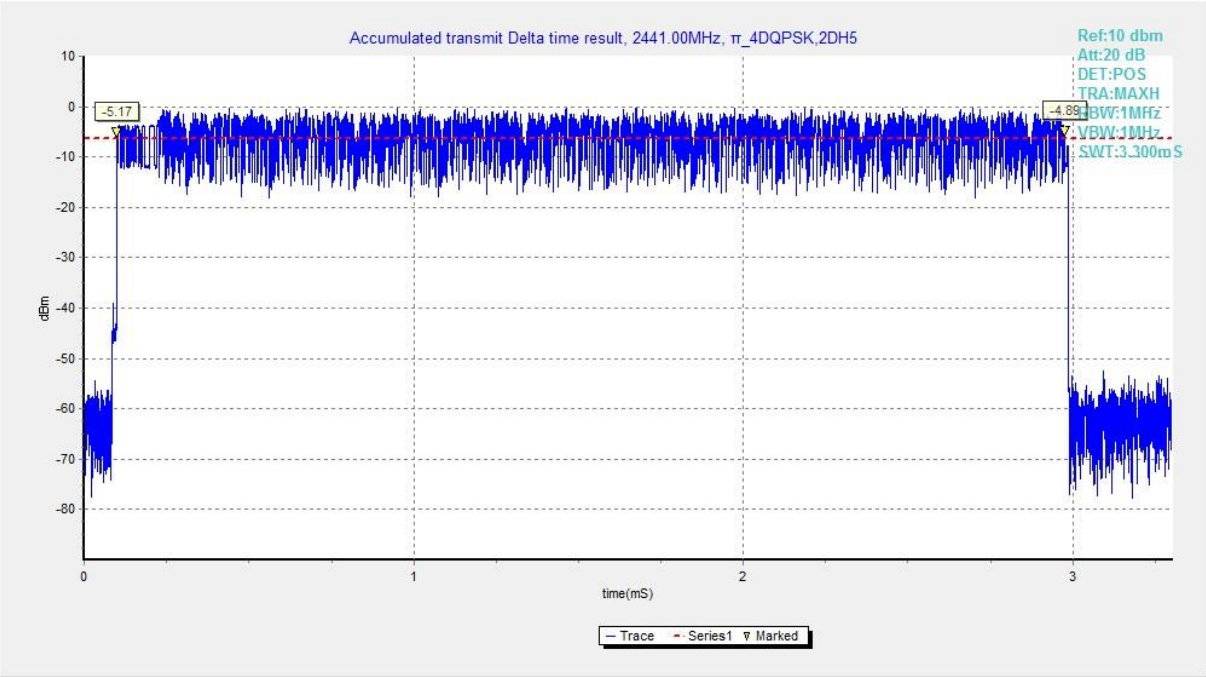

Fig. 71 Time of Occupancy (Dwell Time) (π/4 DQPSK, Ch39)

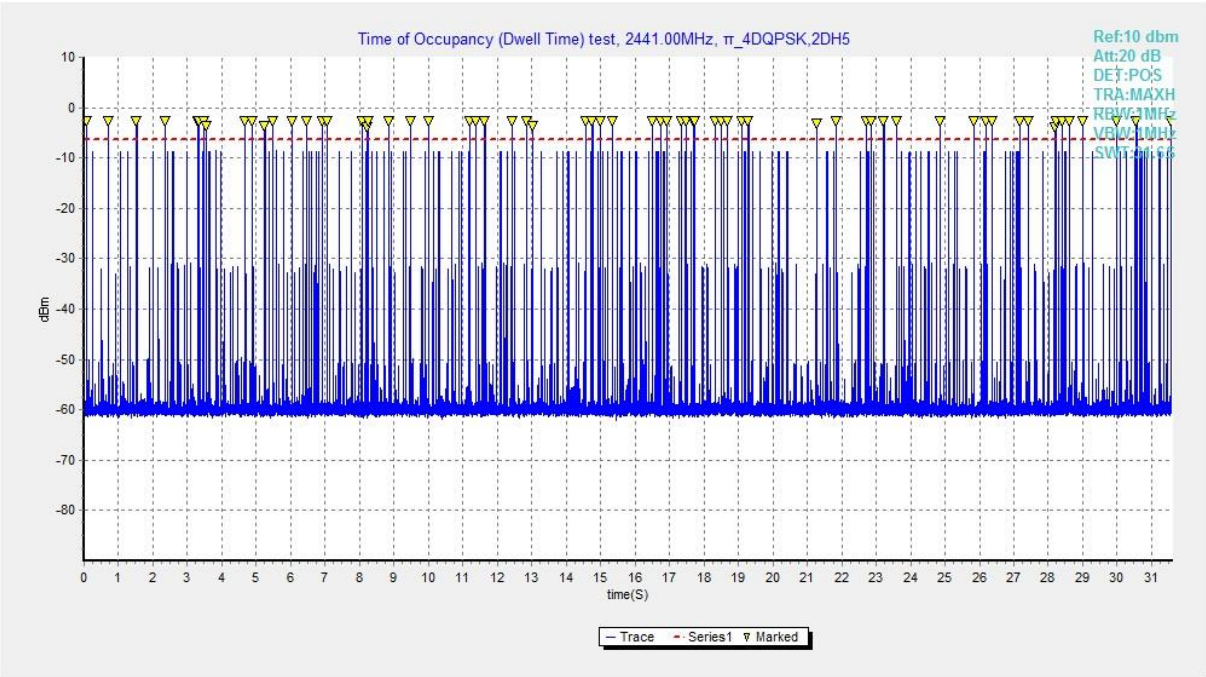

Fig. 72 Time of Occupancy (Dwell Time) (π/4 DQPSK, Ch39)

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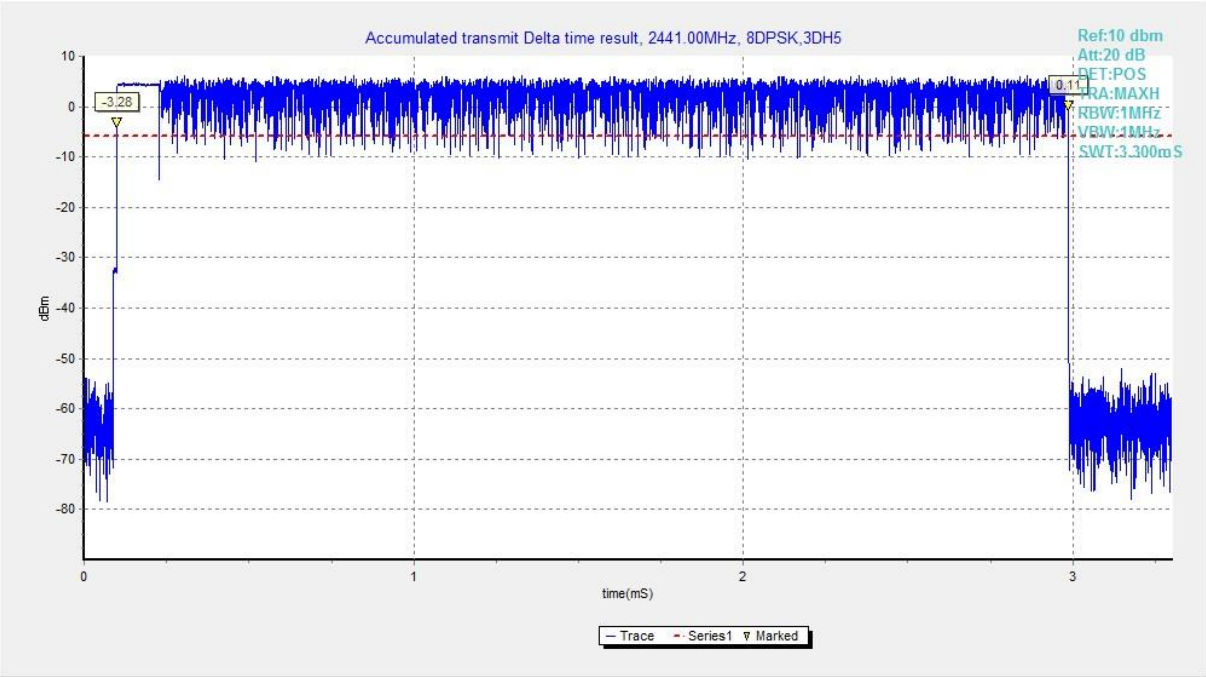

Fig. 73 Time of Occupancy (Dwell Time) (8DPSK, Ch39)

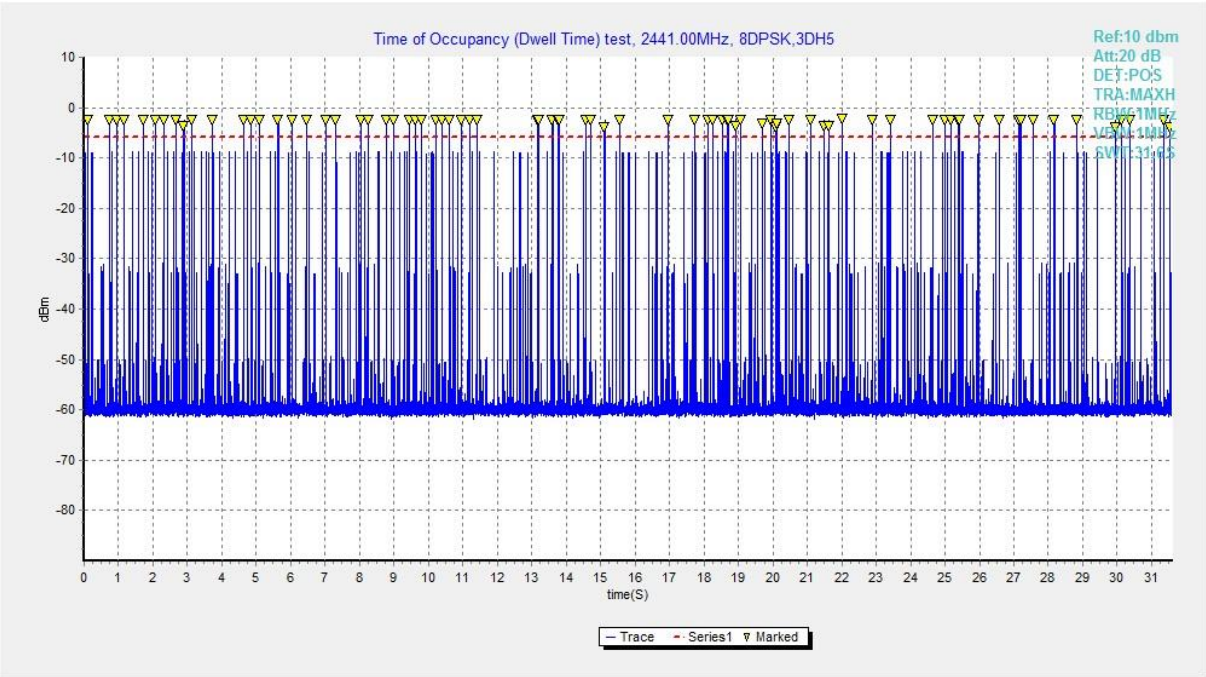

Fig. 74 Time of Occupancy (Dwell Time) (8DPSK, Ch39)

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A.7 Number of Hopping Channels

Measurement Limit:

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

Measurement Results:

Mode	Packet	Number of hopping		Test result	Conclusion
GFSK	DH5	Fig.75	Fig.76	79	**P**
π/4 DQPSK	2-DH5	Fig.77	Fig.78	79	**P**
8DPSK	3-DH5	Fig.79	Fig.80	79	**P**

See below for test graphs.

Conclusion: Pass

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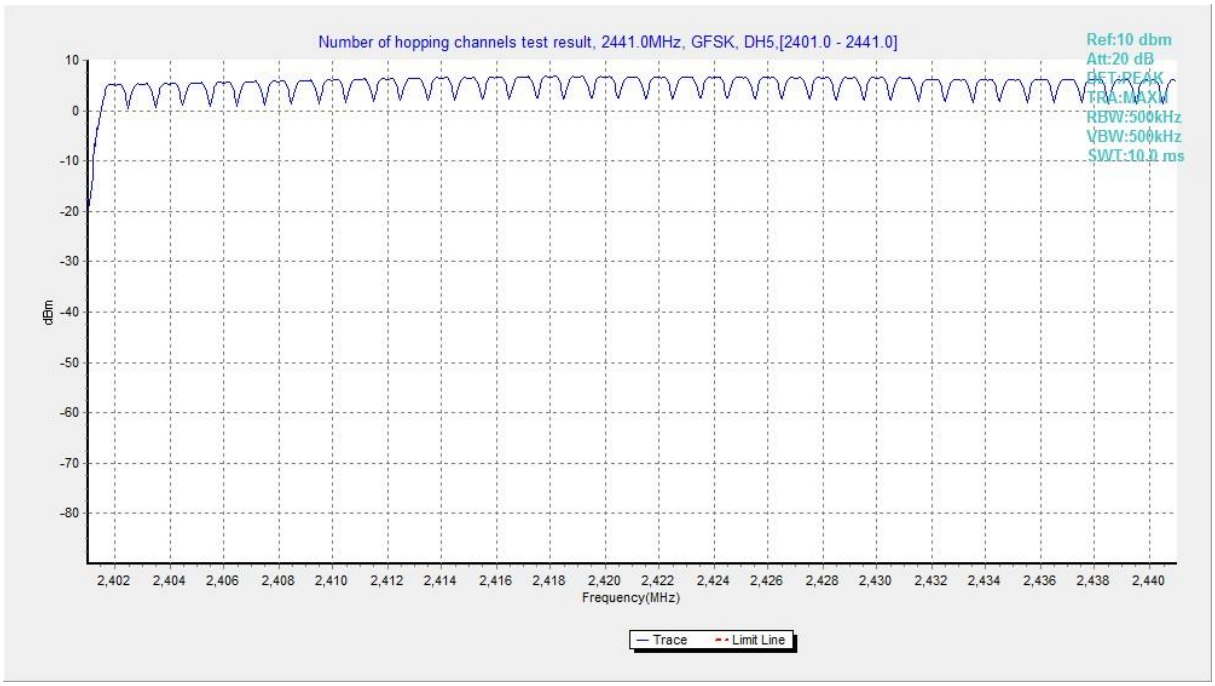

Fig. 75 Hopping channel ch0~39 (GFSK, Ch39)

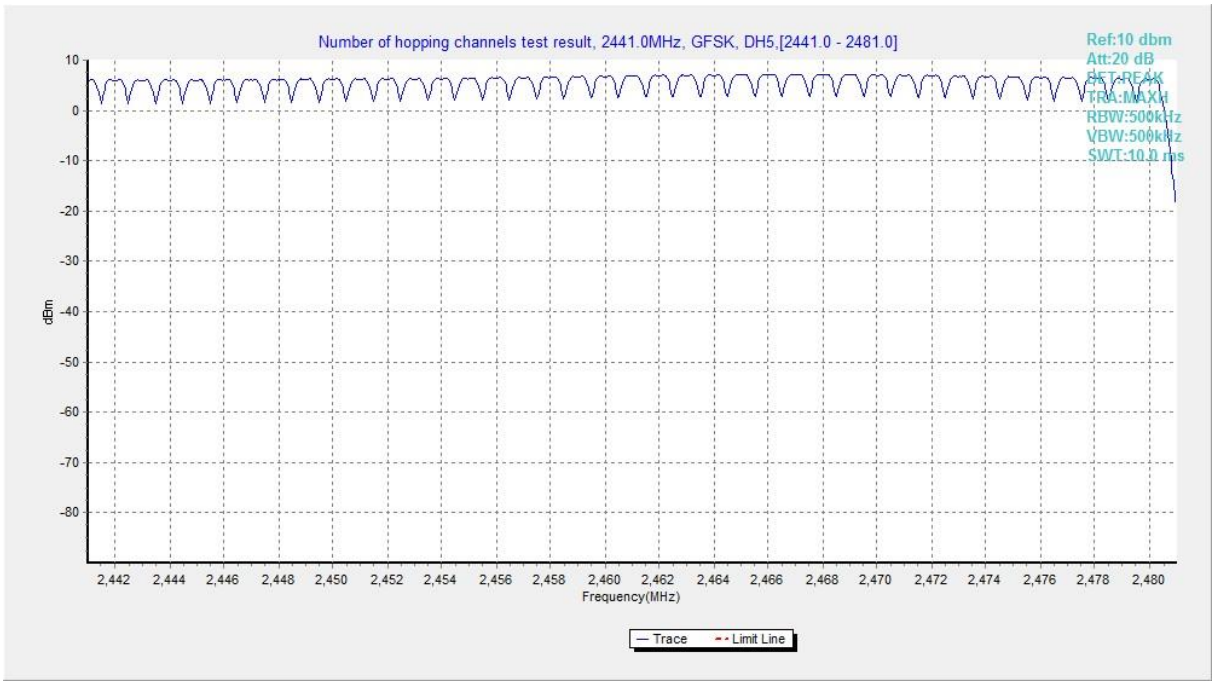

Fig. 76 Hopping channel ch39~78 (GFSK, Ch39)

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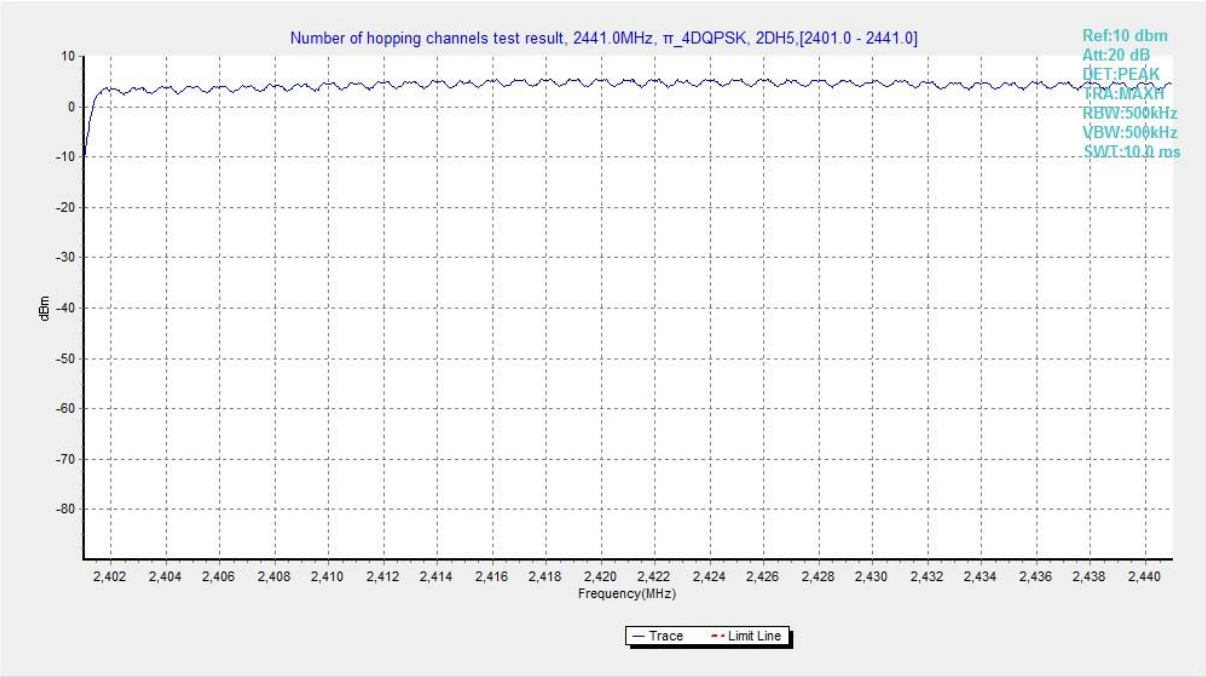

Fig. 77 Hopping channel ch0~39 (π/4 DQPSK, Ch39)

Fig. 78 Hopping channel ch39~78 (π/4 DQPSK, Ch39)

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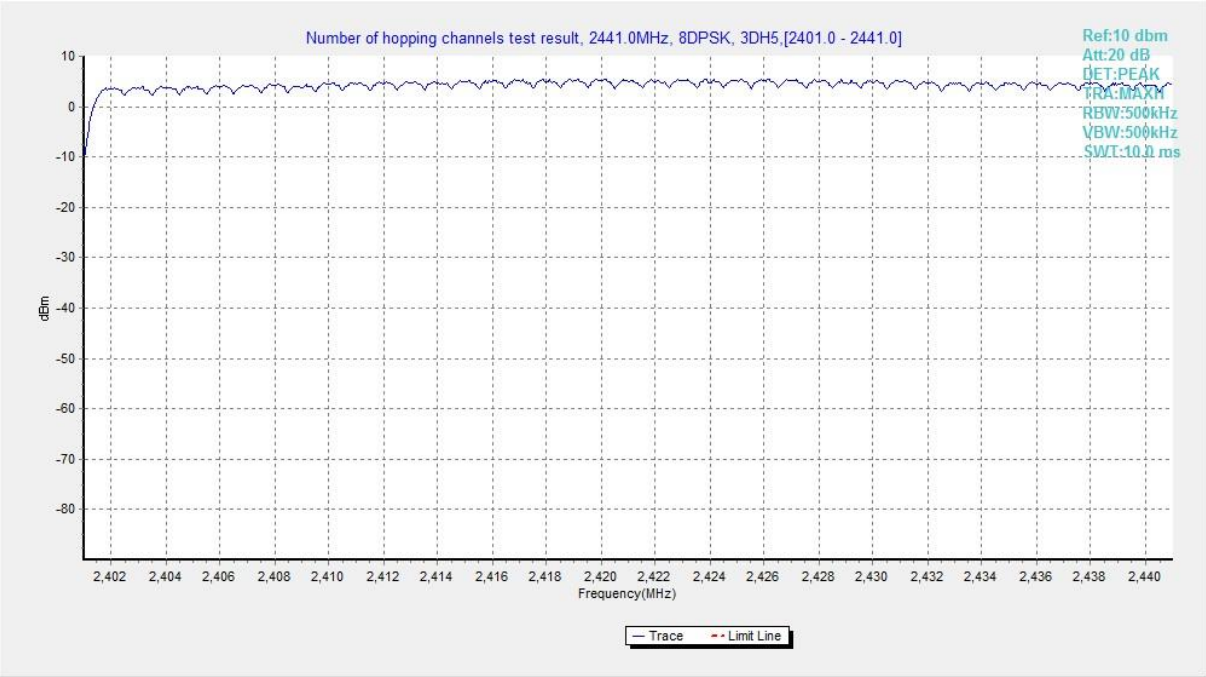

Fig. 79 Hopping channel ch0~39 (8DPSK, Ch39)

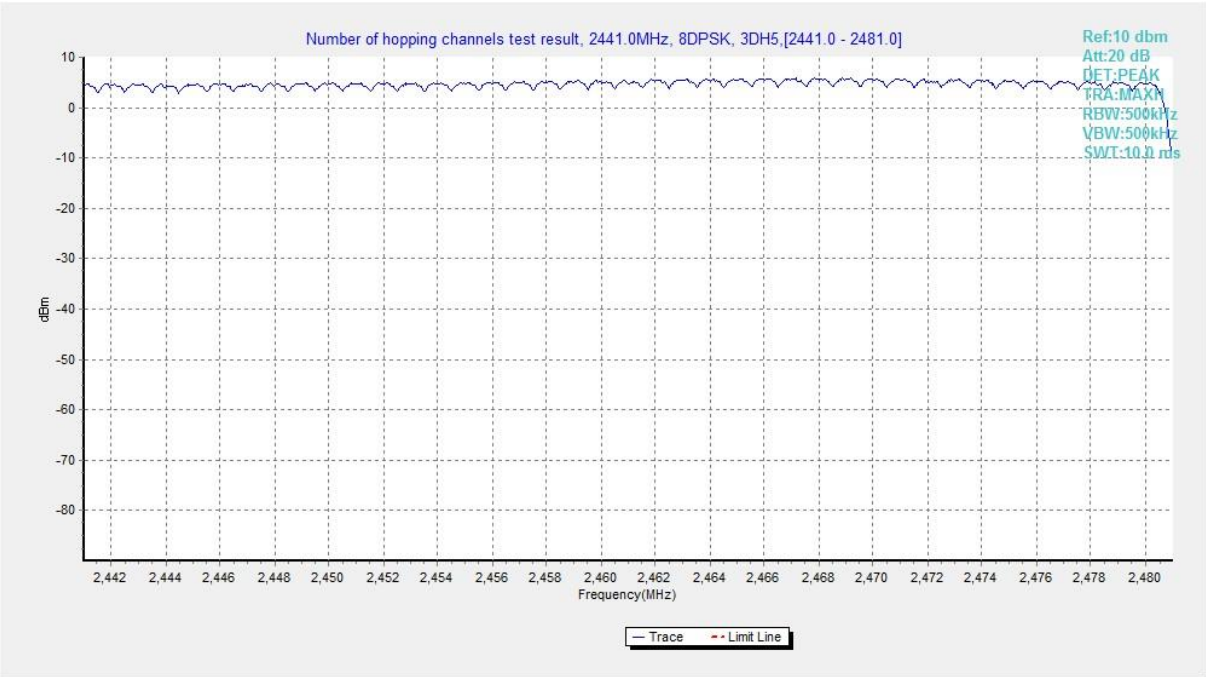

Fig. 80 Hopping channel ch39~78 (8DPSK, Ch39)

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A.8 Carrier Frequency Separation

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247(a)	By a minimum of 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater

Measurement Results:

Mode	Channel	Packet	Separation of hopping channels	Test result (kHz)	Conclusion
GFSK	39	DH5	Fig.81	993.00	**P**
π/4 DQPSK	39	2-DH5	Fig.82	993.75	**P**
8DPSK	39	3-DH5	Fig.83	1004.25	**P**

See below for test graphs.

Conclusion: Pass

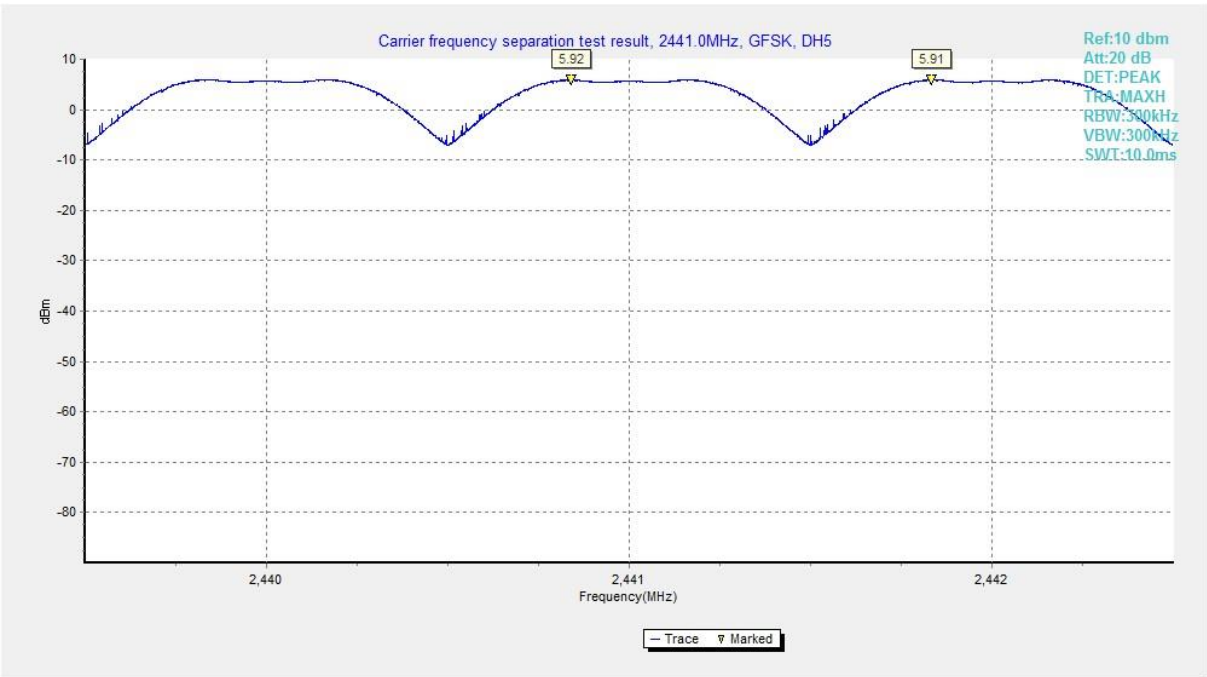

Fig. 81 Carrier Frequency Separation (GFSK, Ch39)

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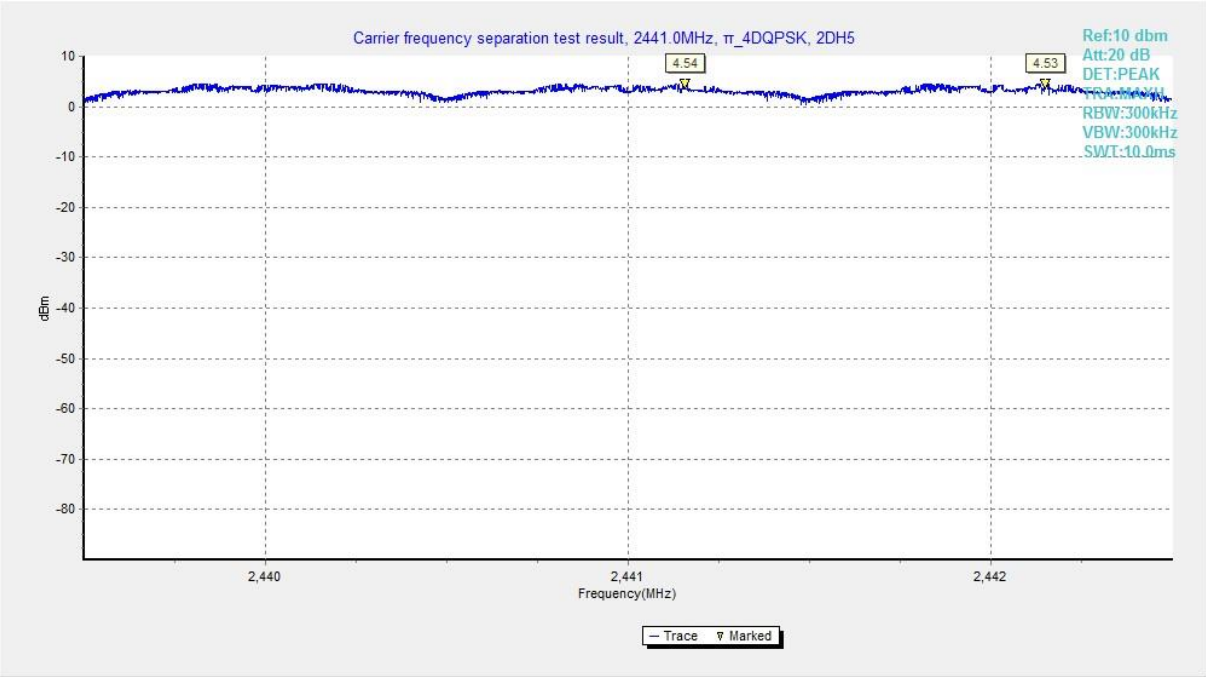

Fig. 82 Carrier Frequency Separation (π/4 DQPSK, Ch39)

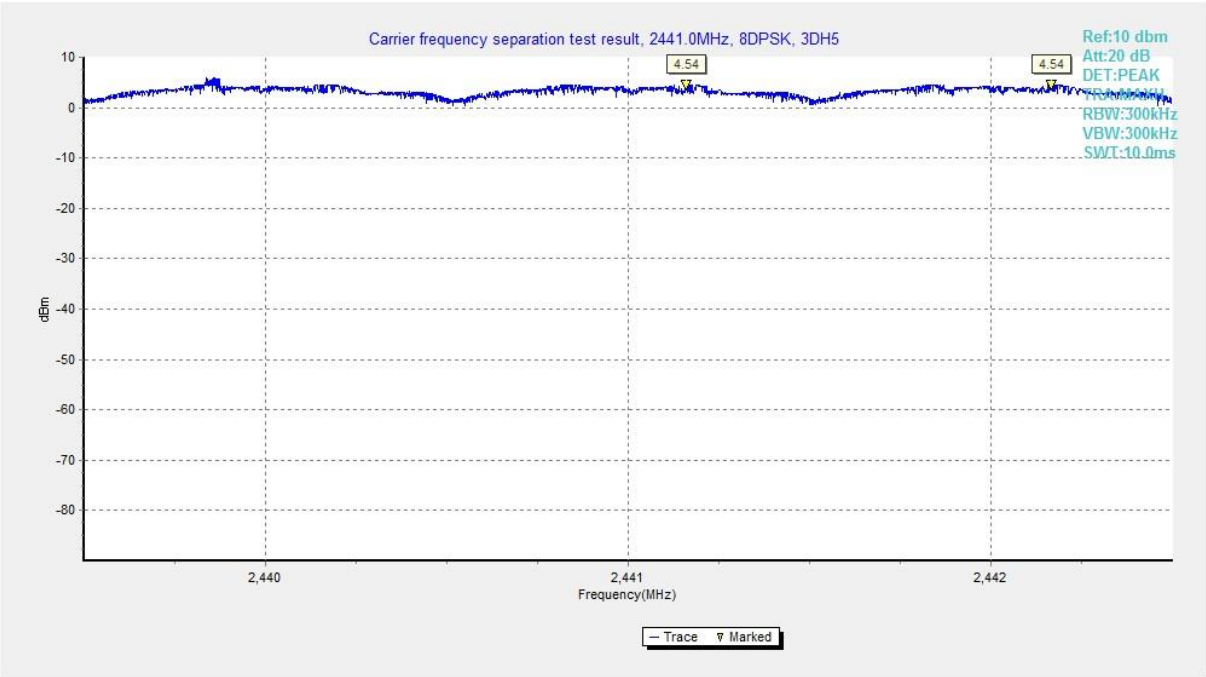

Fig. 83 Carrier Frequency Separation (8DPSK, Ch39)

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A.9 AC Power line Conducted Emission

Test Condition:

Voltage（V）	Frequency（Hz）
120	60

Measurement Result and limit:

BT (Quasi-peak Limit)-A2-1, A3-1

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)		Conclusion
		Traffic	Idle	
0.15 to 0.5	66 to 56	Fig.84	Fig.85	**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.				

BT (Average Limit)-A2-1, A3-1

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV)		Conclusion
		Traffic	Idle	
0.15 to 0.5	56 to 46	Fig.84	Fig.85	**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.				

Note: The measurement results include the L1 and N measurements.

See below for test graphs.

Conclusion: Pass

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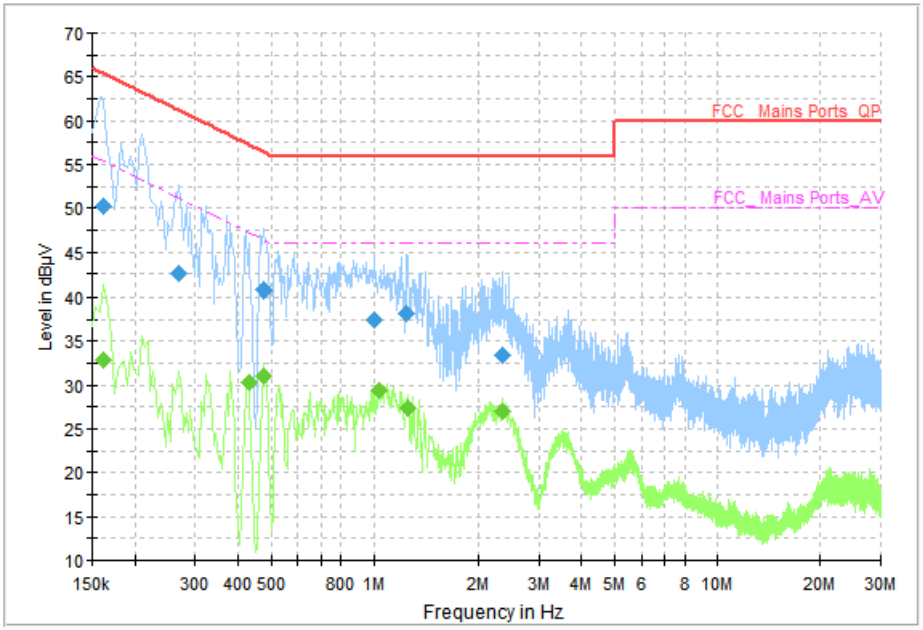

Fig. 84 AC Powerline Conducted Emission (Traffic)

Measurement Results: Quasi Peak

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.162000	50.30	65.36	15.06	N	ON	10
0.270000	42.48	61.12	18.64	N	ON	10
0.474000	40.80	56.44	15.65	N	ON	10
0.998000	37.35	56.00	18.65	L1	ON	10
1.250000	38.08	56.00	17.92	L1	ON	10
2.354000	33.33	56.00	22.67	L1	ON	10

Measurement Results: Average

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.162000	32.84	55.36	22.52	N	ON	10
0.430000	30.37	47.25	16.89	L1	ON	10
0.474000	31.00	46.44	15.45	N	ON	10
1.030000	29.39	46.00	16.61	L1	ON	10
1.254000	27.41	46.00	18.59	L1	ON	10
2.354000	26.95	46.00	19.05	L1	ON	10

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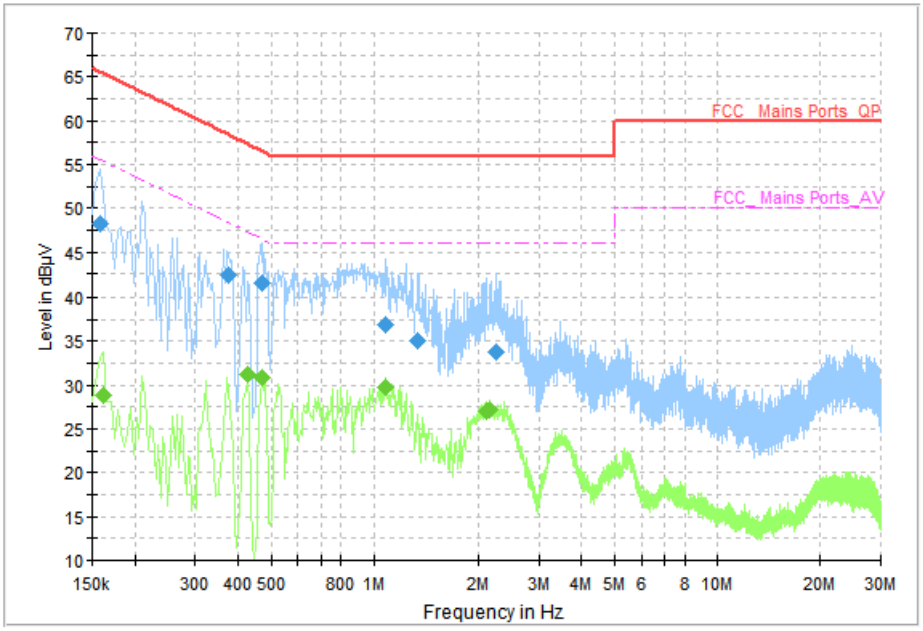

Fig. 85 AC Power line Conducted Emission (Idle)

Measurement Results: Quasi Peak

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.158000	48.30	65.57	17.26	N	ON	10
0.374000	42.37	58.41	16.04	L1	ON	10
0.470000	41.39	56.51	15.12	L1	ON	10
1.086000	36.96	56.00	19.04	L1	ON	10
1.346000	35.07	56.00	20.93	L1	ON	10
2.250000	33.86	56.00	22.14	L1	ON	10

Measurement Results: Average

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.162000	28.90	55.36	26.46	N	ON	10
0.426000	31.16	47.33	16.17	L1	ON	10
0.470000	30.86	46.51	15.66	N	ON	10
1.086000	29.75	46.00	16.25	L1	ON	10
2.102000	26.97	46.00	19.03	L1	ON	10
2.146000	27.23	46.00	18.77	L1	ON	10

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

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