

Fig. 58 Radiated Spurious Emission (8DPSK, Ch0, 1 GHz ~3 GHz)

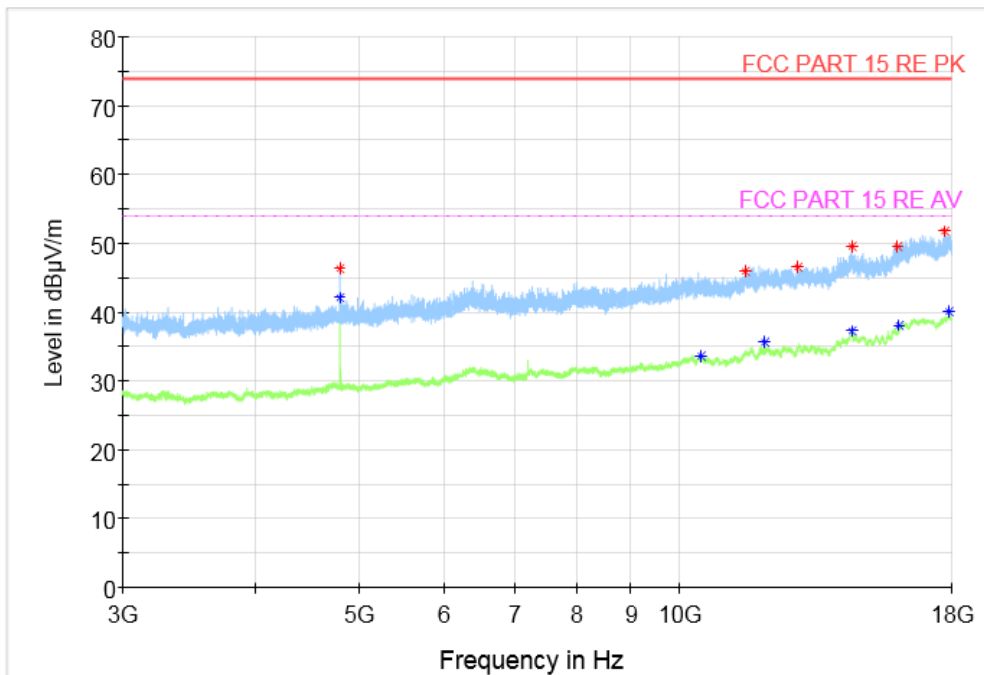


Fig. 59 Radiated Spurious Emission (8DPSK, Ch0, 3 GHz ~18 GHz)

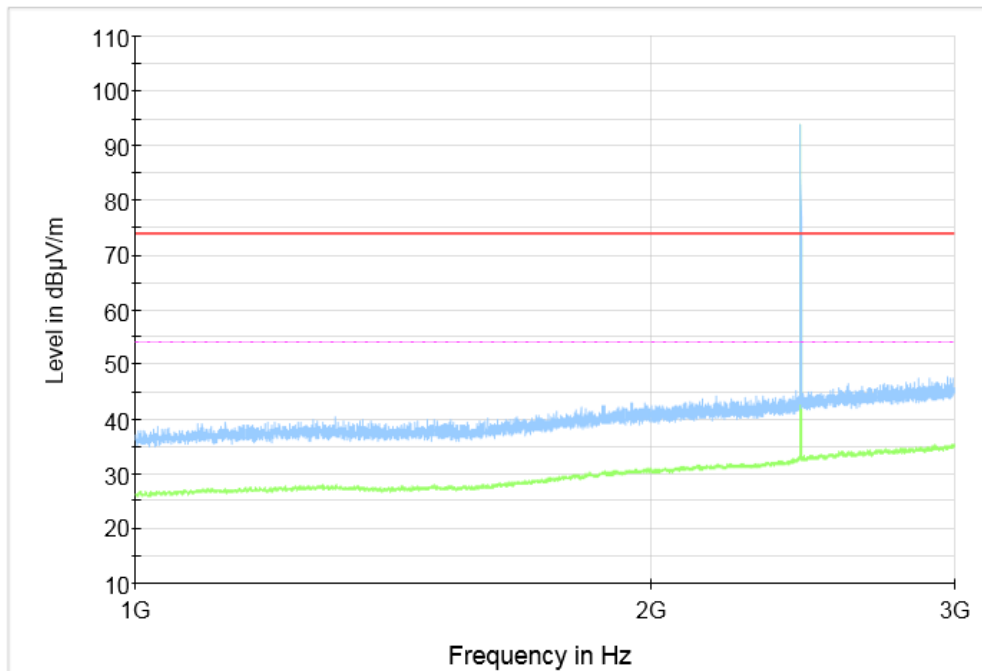


Fig. 60 Radiated Spurious Emission (8DPSK, Ch39, 1 GHz ~3 GHz)

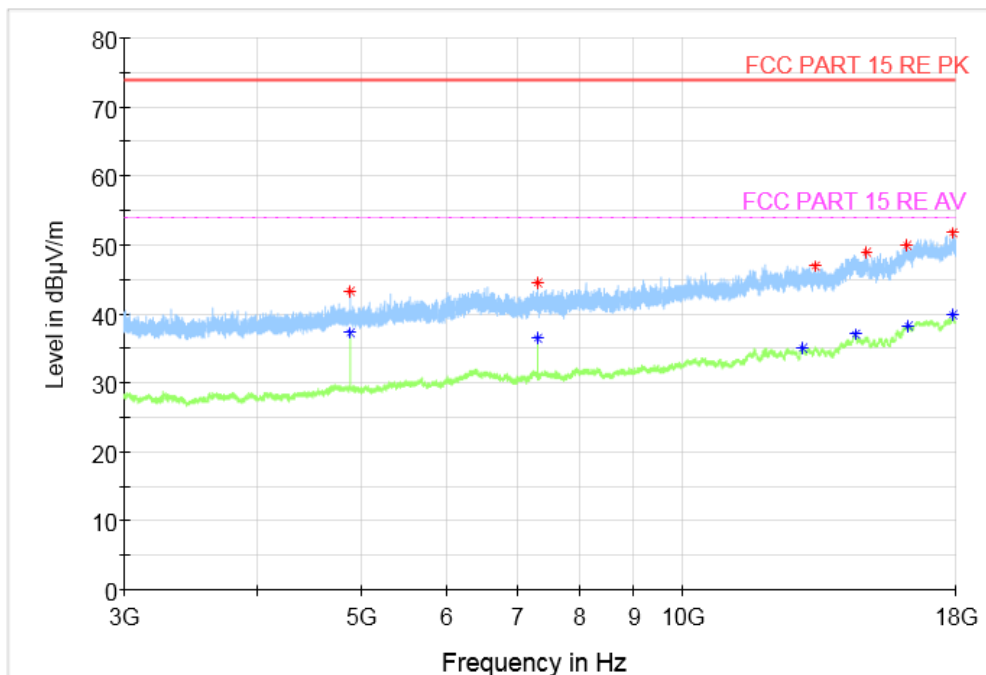


Fig. 61 Radiated Spurious Emission (8DPSK, Ch39, 3 GHz ~18 GHz)

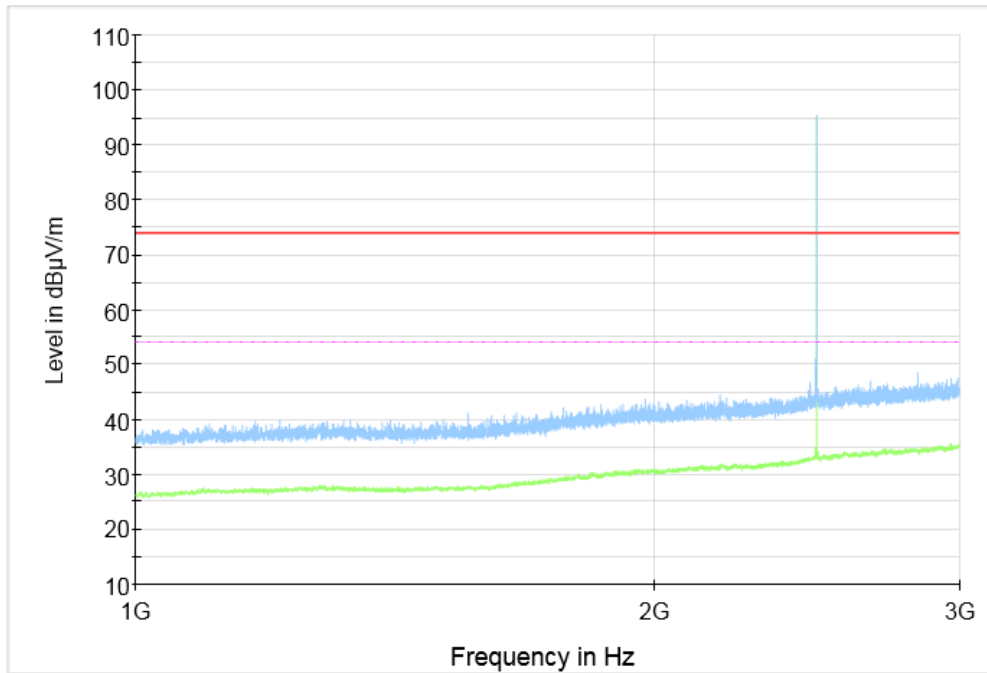


Fig. 62 Radiated Spurious Emission (8DPSK, Ch78, 1 GHz ~3 GHz)

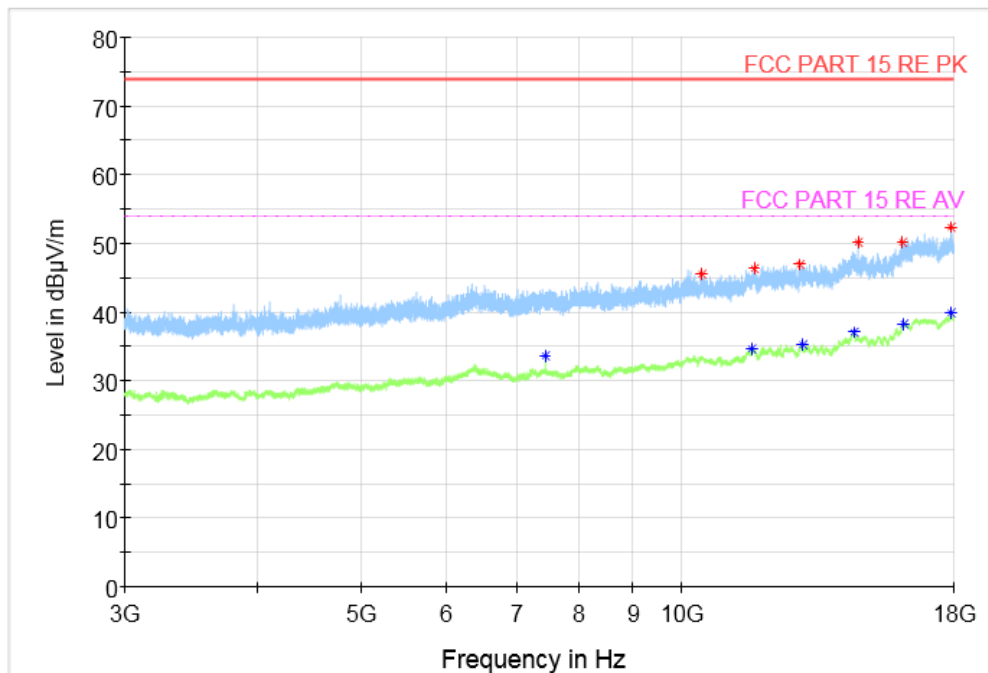


Fig. 63 Radiated Spurious Emission (8DPSK, Ch78, 3 GHz ~18 GHz)

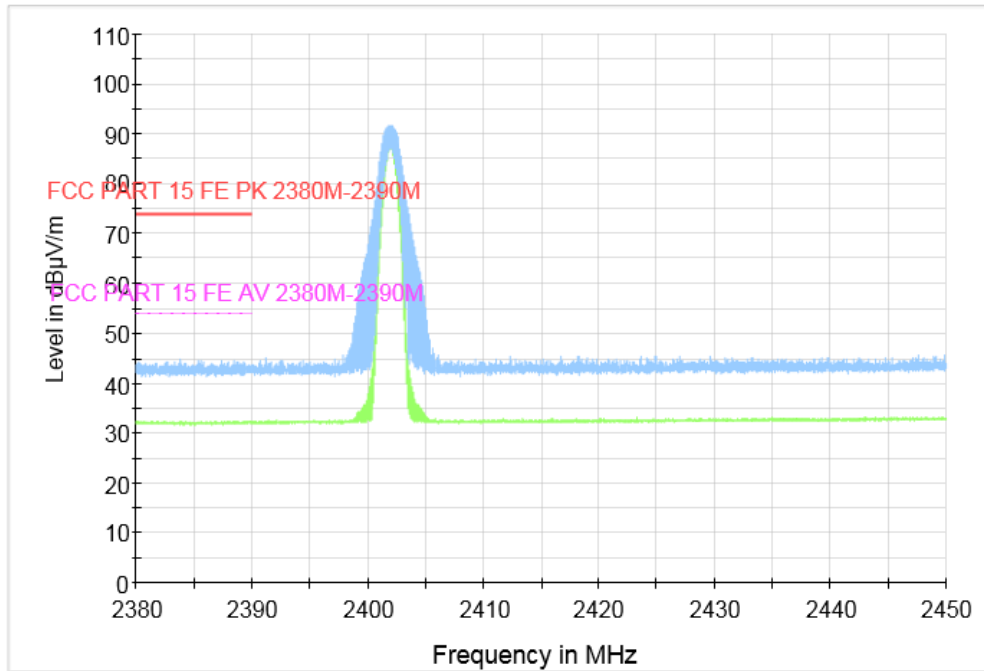


Fig. 64 Radiated Band Edges (8DPSK, Ch0, 2380GHz~2450GHz)

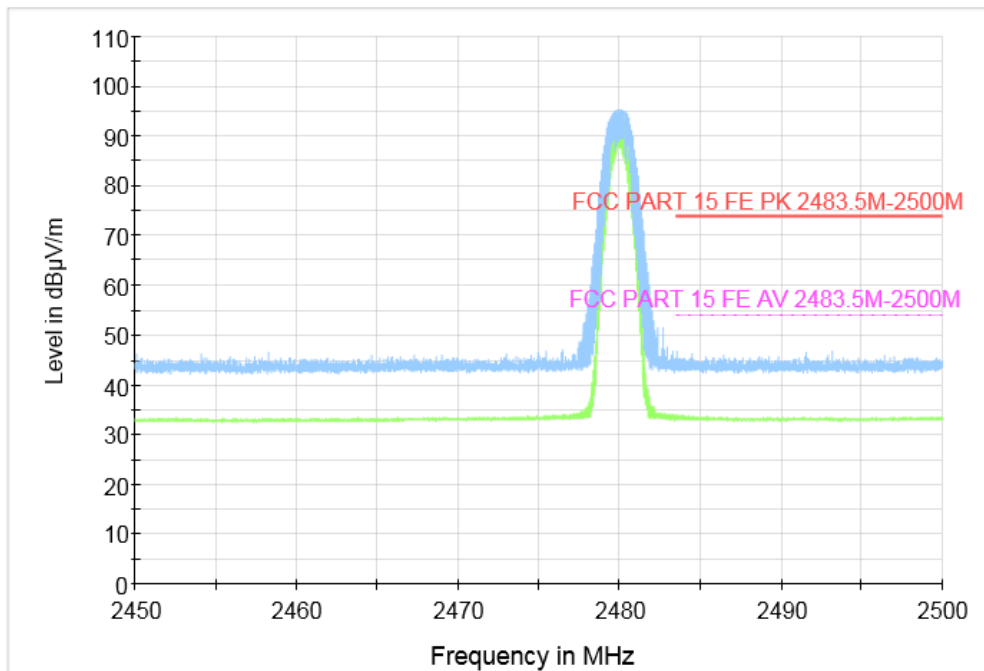


Fig. 65 Radiated Band Edges (8DPSK, Ch78, 2450GHz~2500GHz)

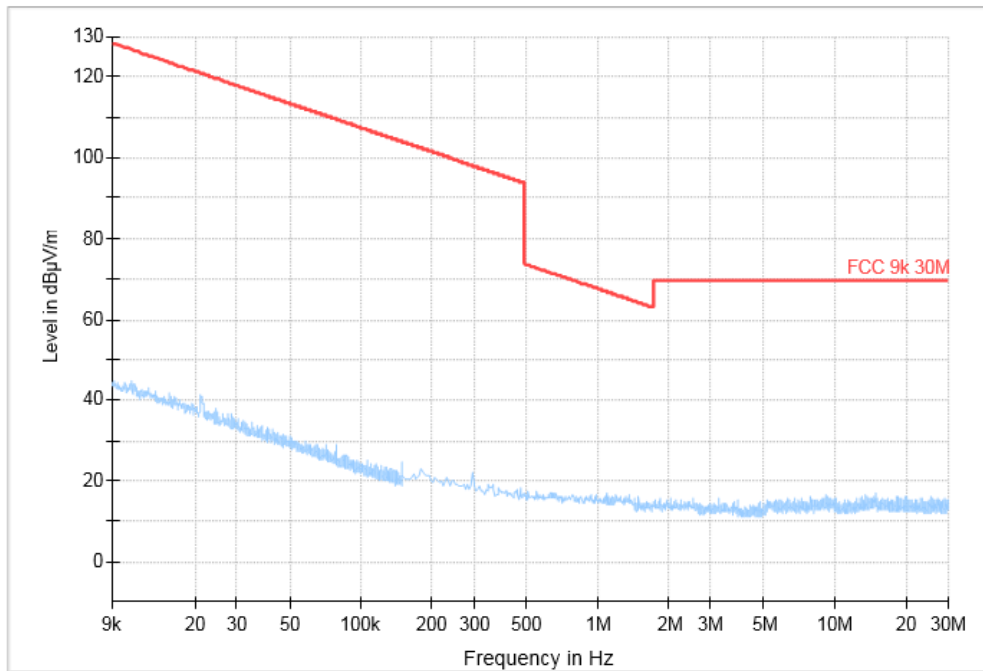


Fig. 66 Radiated Spurious Emission (All Channels, 9 kHz ~30 MHz)

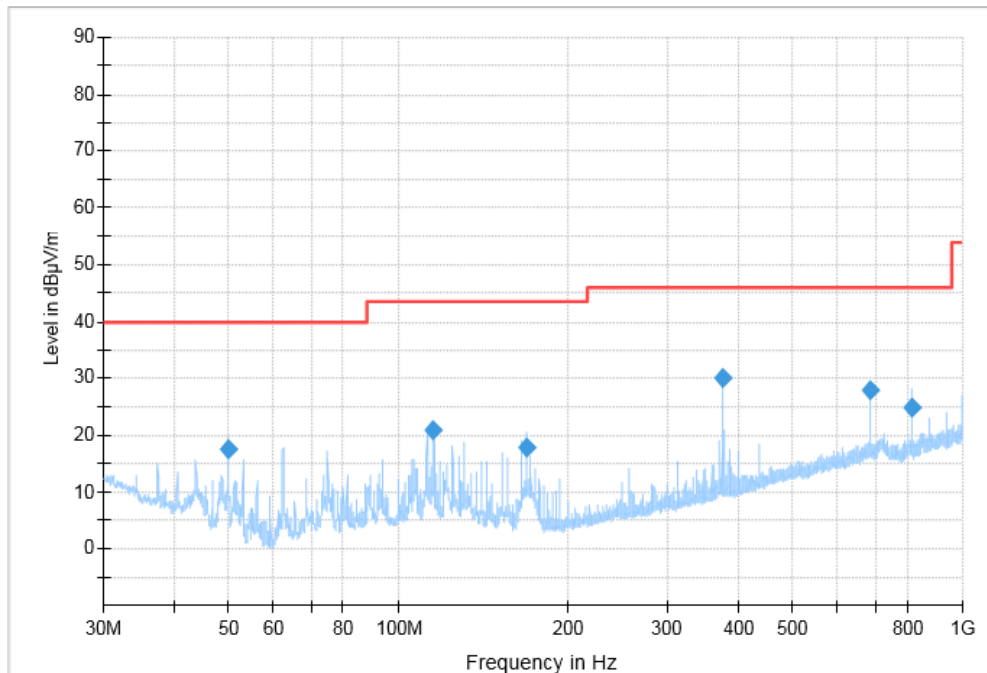


Fig. 67 Radiated Spurious Emission (All Channels, 30 MHz ~1 GHz)

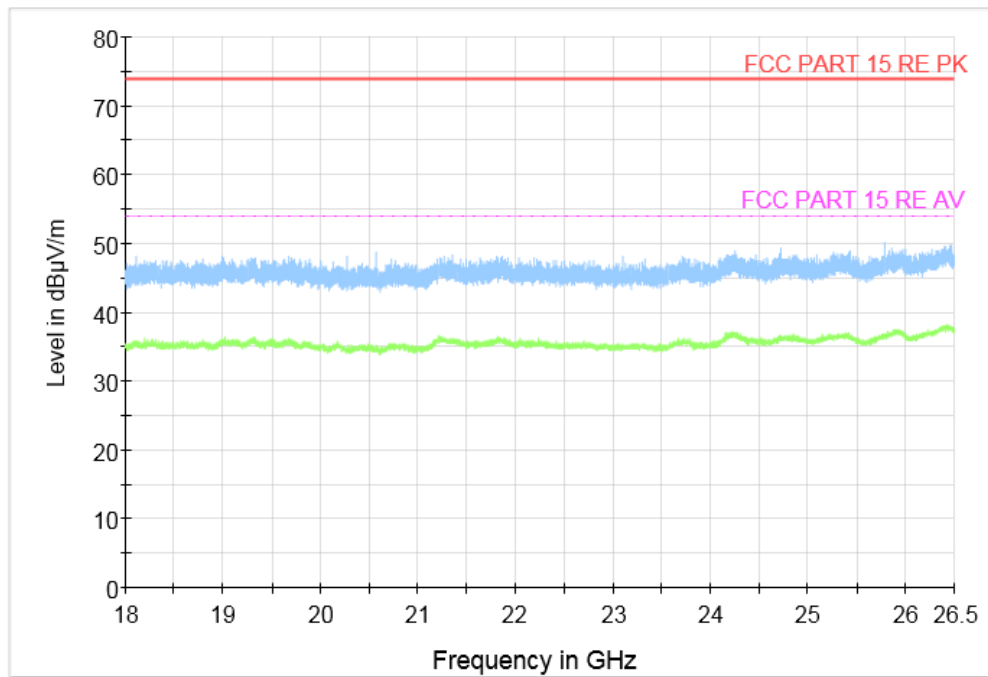


Fig. 68 Radiated Spurious Emission (All Channels, 18 GHz ~26.5 GHz)

A.5 20dB Bandwidth

Measurement Limit:

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

Measurement Result:

Mode	Channel	20dB Bandwidth (KHz)		conclusion
		Fig.	Value	
GFSK	0	Fig.69	969.00	/
	39	Fig.70	966.75	
	78	Fig.71	936.00	
$\pi/4$ DQPSK	0	Fig.72	1281.75	/
	39	Fig.73	1280.25	
	78	Fig.74	1286.25	
8DPSK	0	Fig.75	1275.75	/
	39	Fig.76	1284.75	
	78	Fig.77	1275.75	

See below for test graphs.

Conclusion: PASS

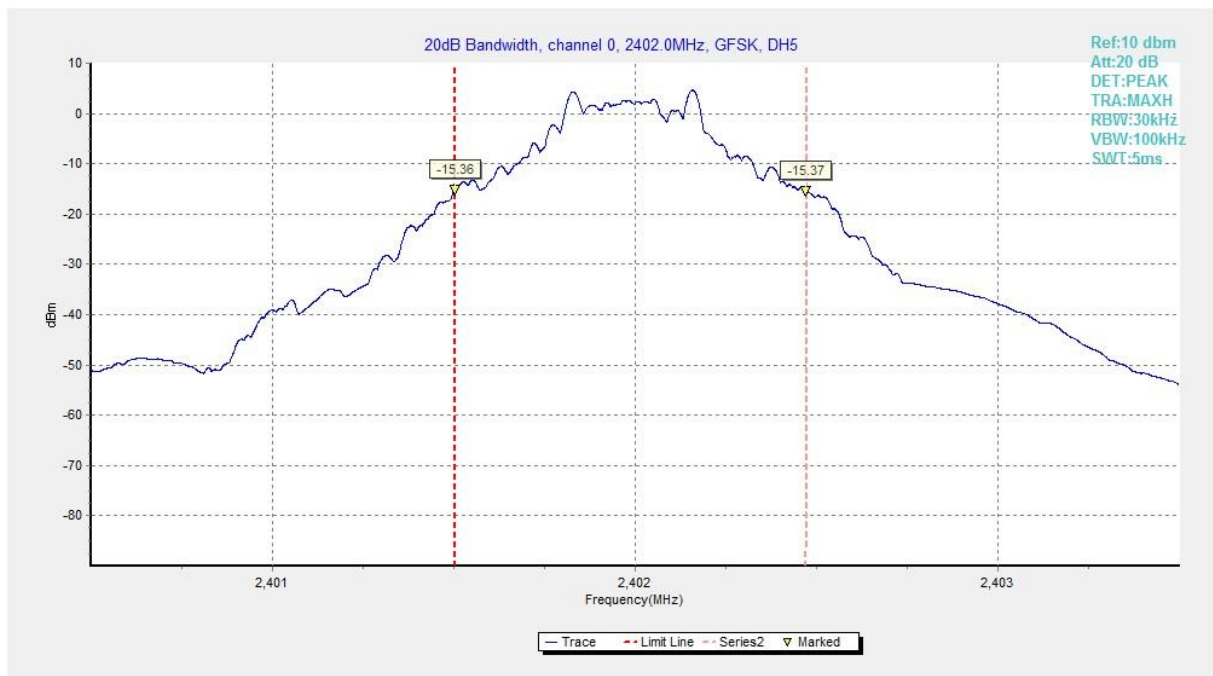


Fig. 69 20dB Bandwidth (GFSK, Ch 0)

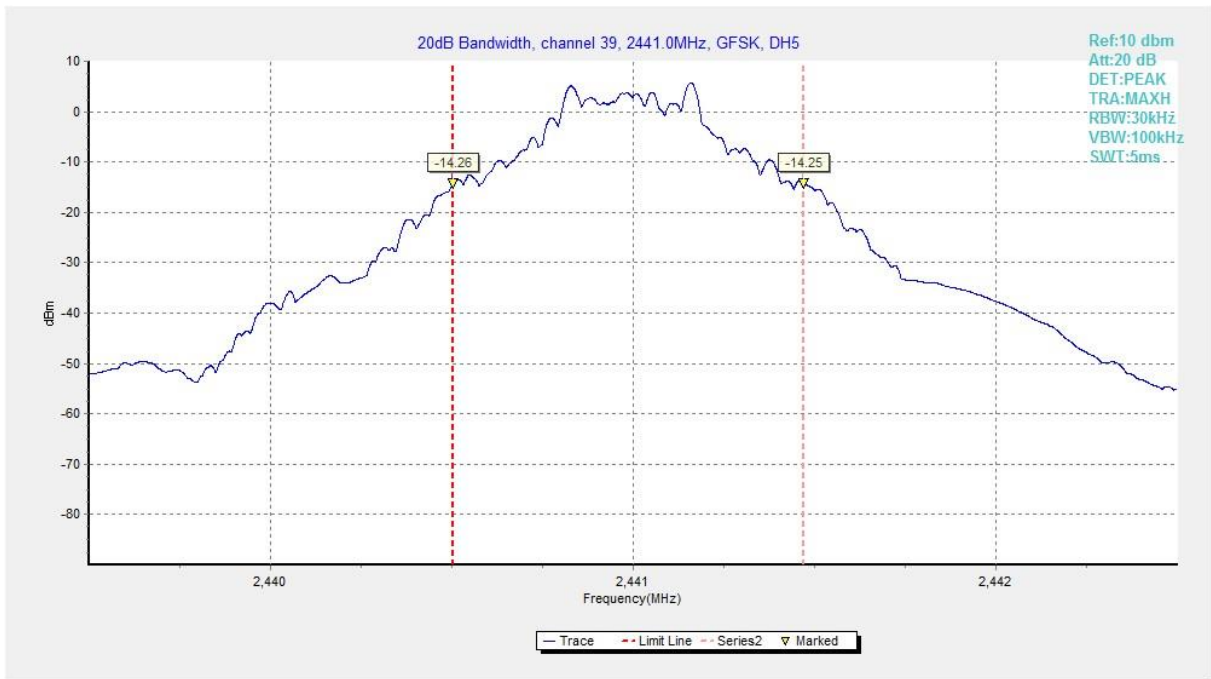


Fig. 70 20dB Bandwidth (GFSK, Ch 39)

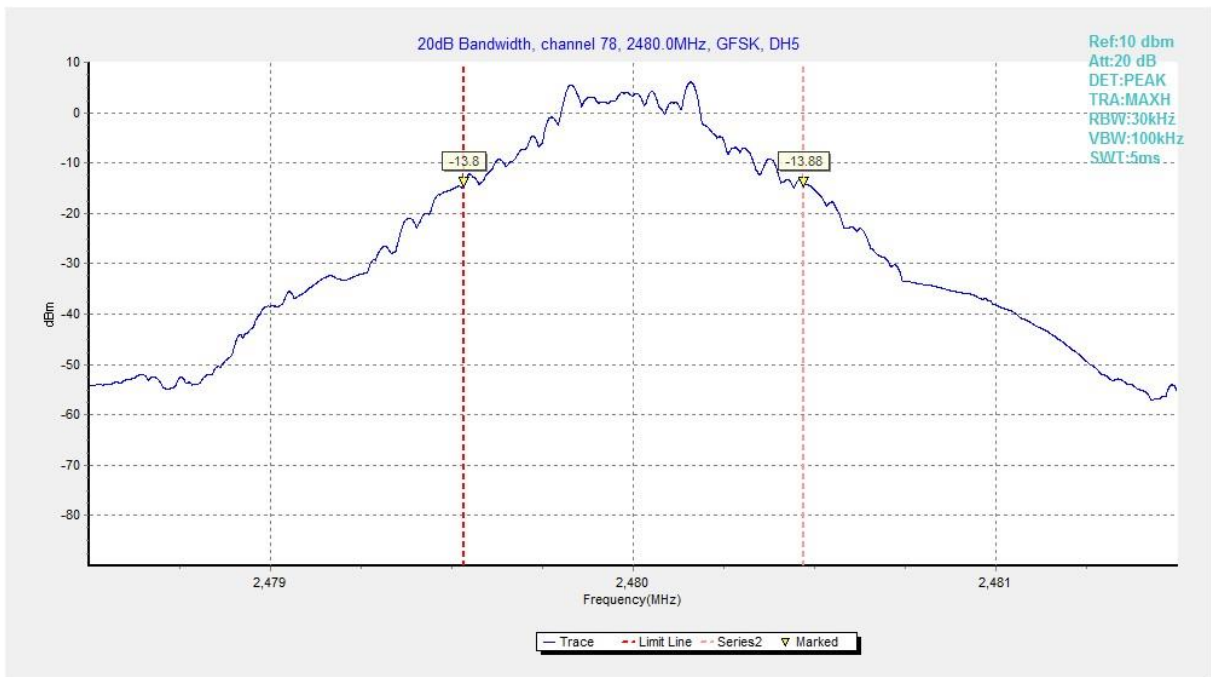


Fig. 71 20dB Bandwidth (GFSK, Ch 78)

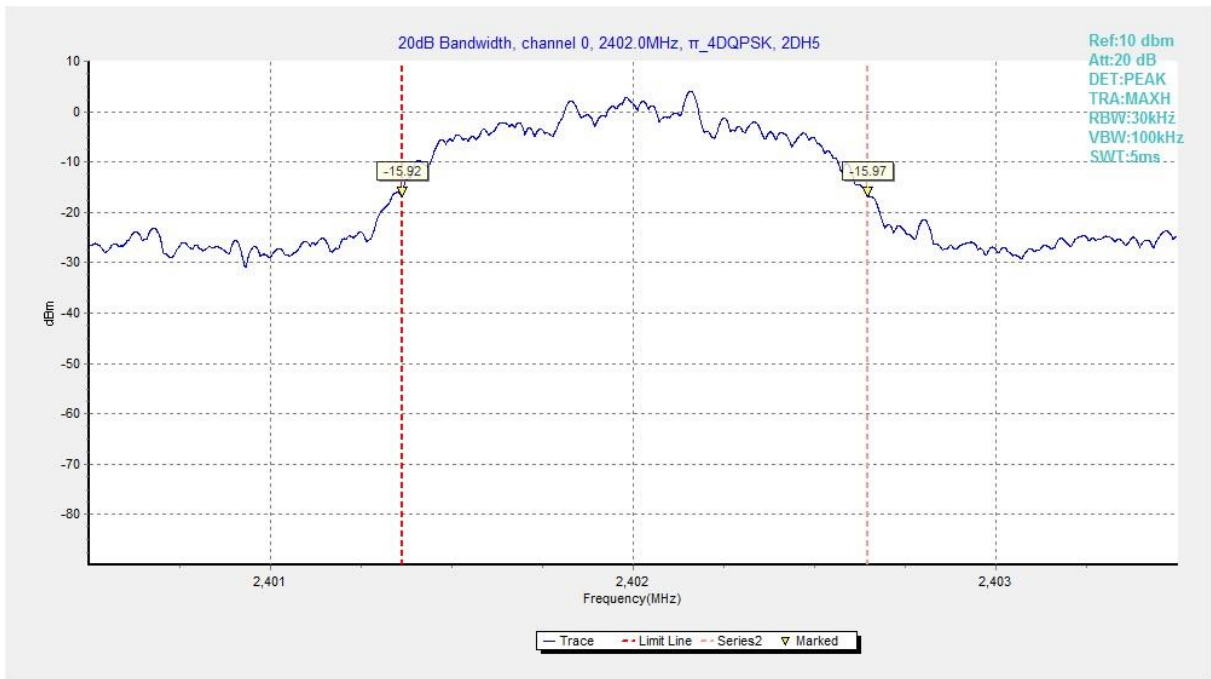


Fig. 72 20dB Bandwidth (π /4 DQPSK, Ch 0)

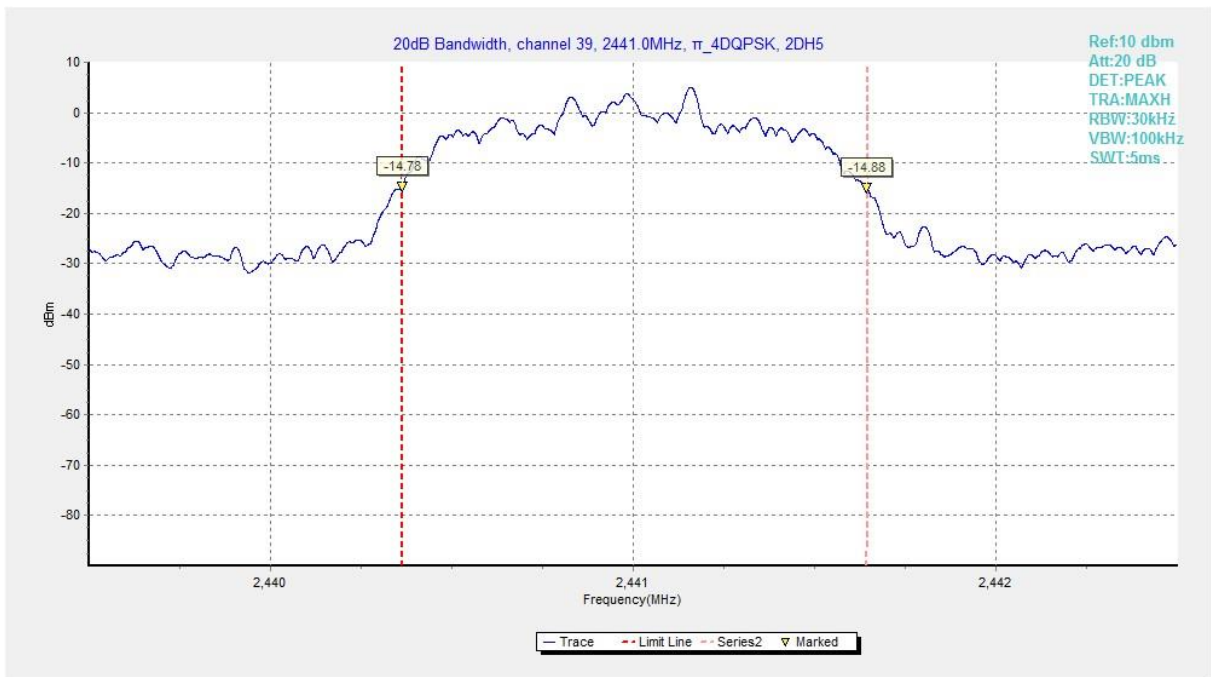


Fig. 73 20dB Bandwidth (π /4 DQPSK, Ch 39)

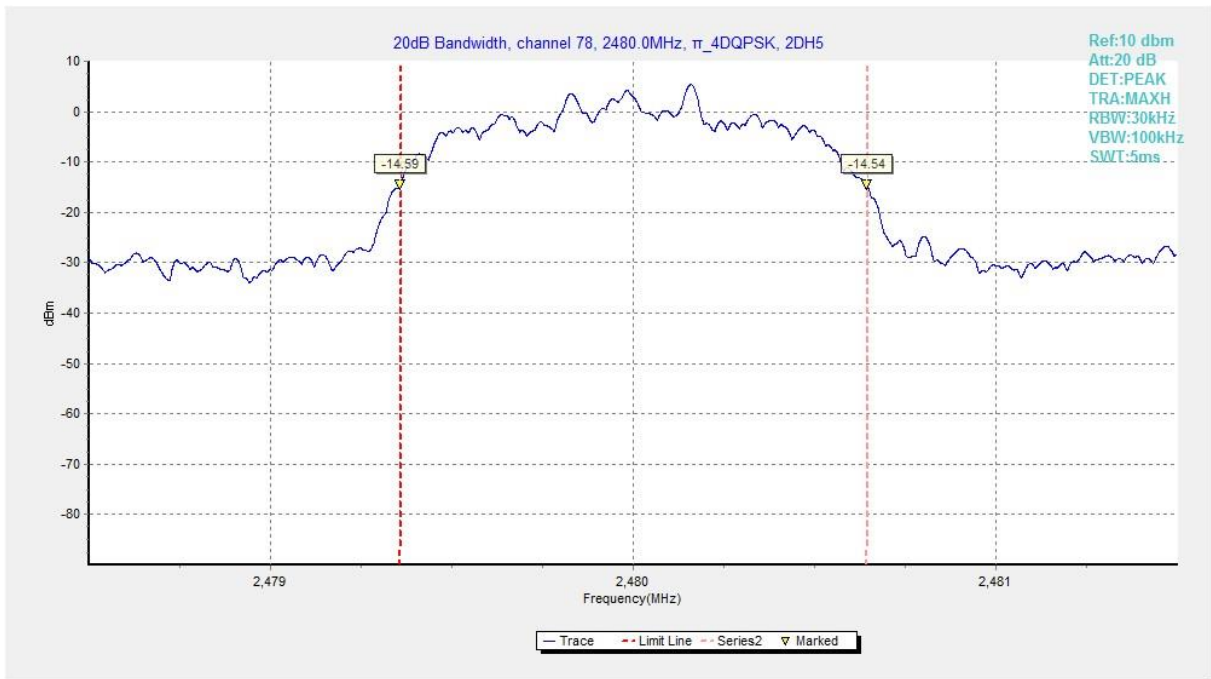


Fig. 74 20dB Bandwidth ($\pi/4$ DQPSK, Ch 78)

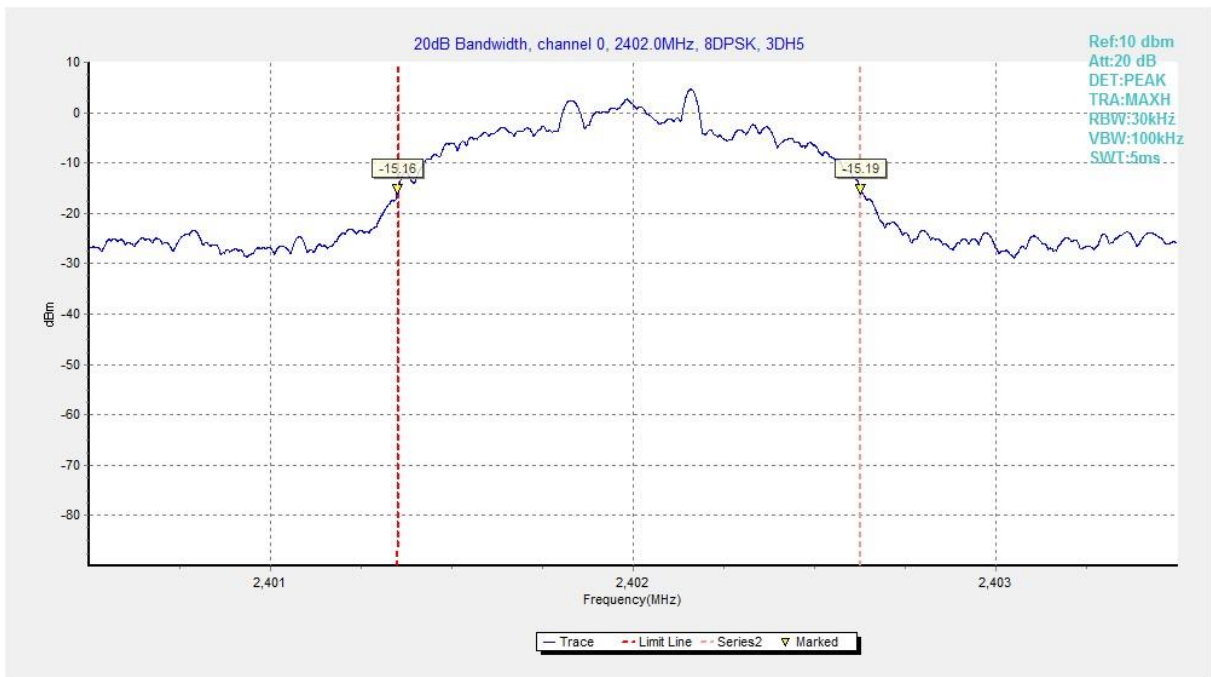


Fig. 75 20dB Bandwidth (8DPSK, Ch 0)

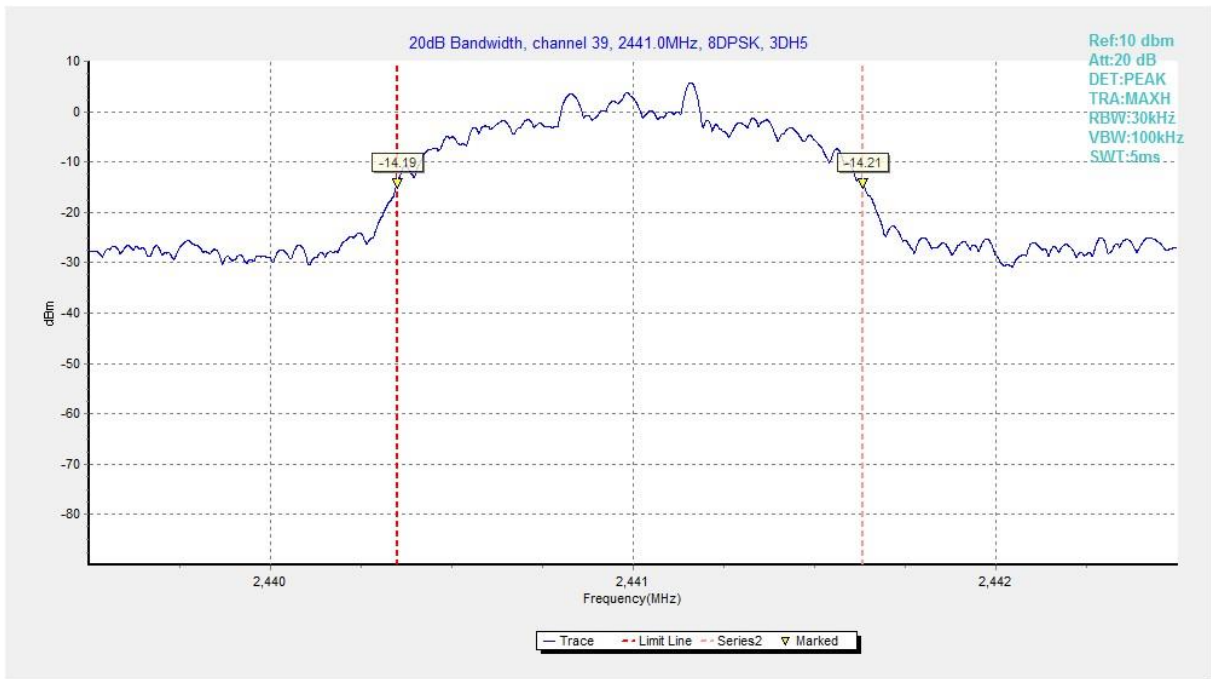


Fig. 76 20dB Bandwidth (8DPSK, Ch 39)

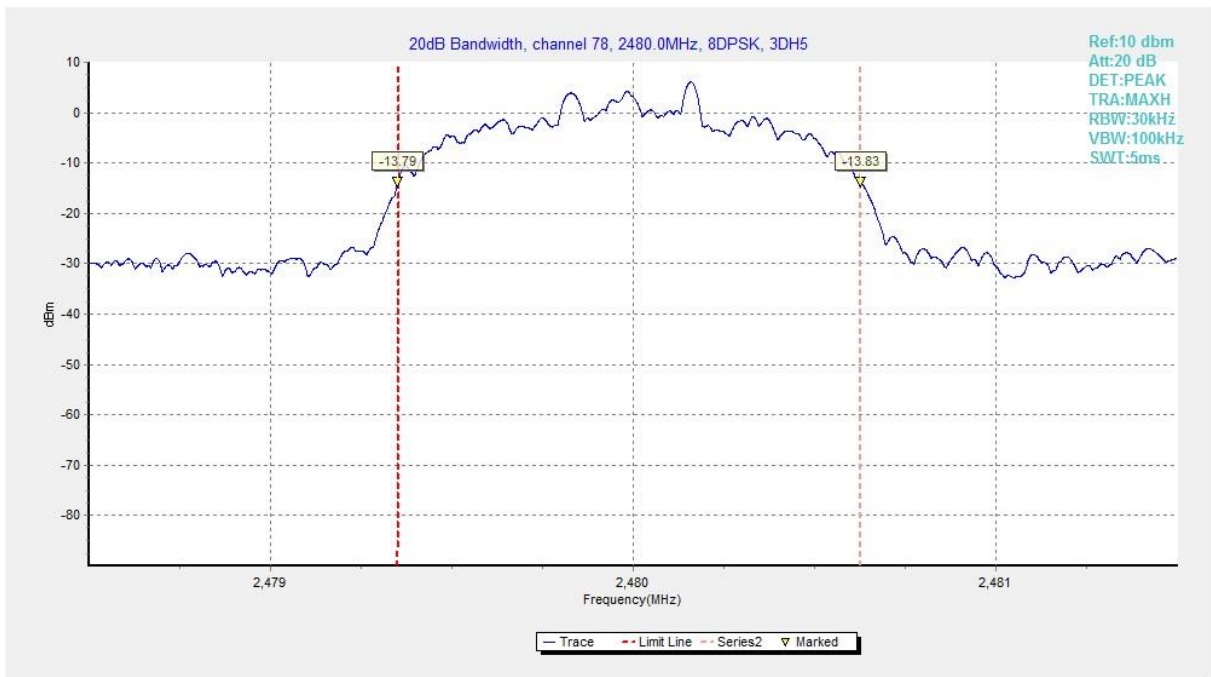


Fig. 77 20dB Bandwidth (8DPSK, Ch 78)



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.78	310.38	P
			Fig.79		
$\pi/4$ DQPSK	39	2-DH5	Fig.80	308.62	P
			Fig.81		
8DPSK	39	3-DH5	Fig.82	309.11	P
			Fig.83		

See below for test graphs.

Conclusion: Pass

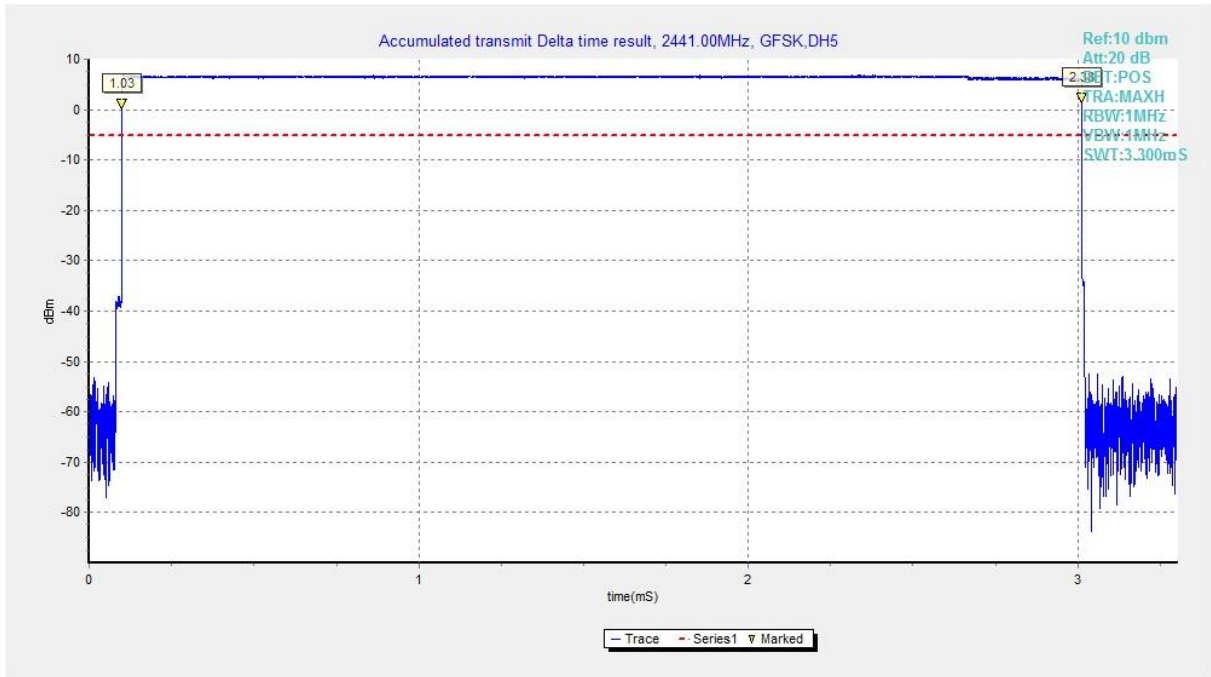


Fig. 78 Time of Occupancy(Dwell Time) (GFSK, Ch39)

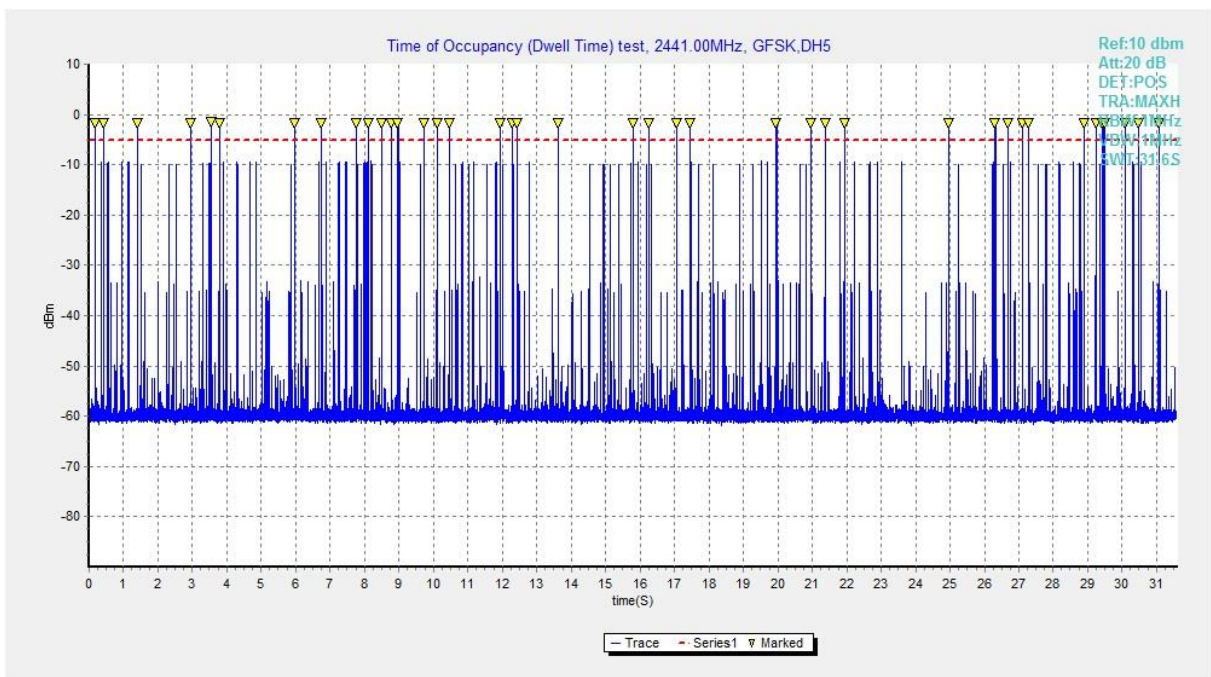


Fig. 79 Time of Occupancy(Dwell Time) (GFSK, Ch39)

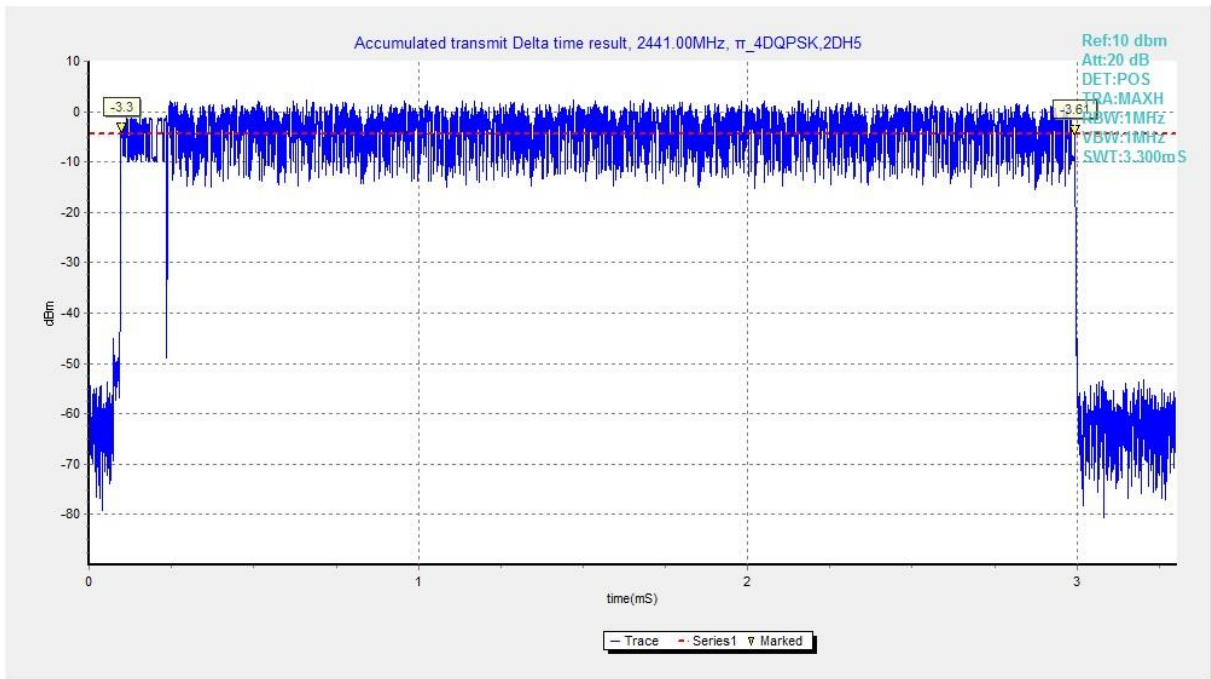


Fig. 80 Time of Occupancy(Dwell Time) (π /4 DQPSK, Ch39)

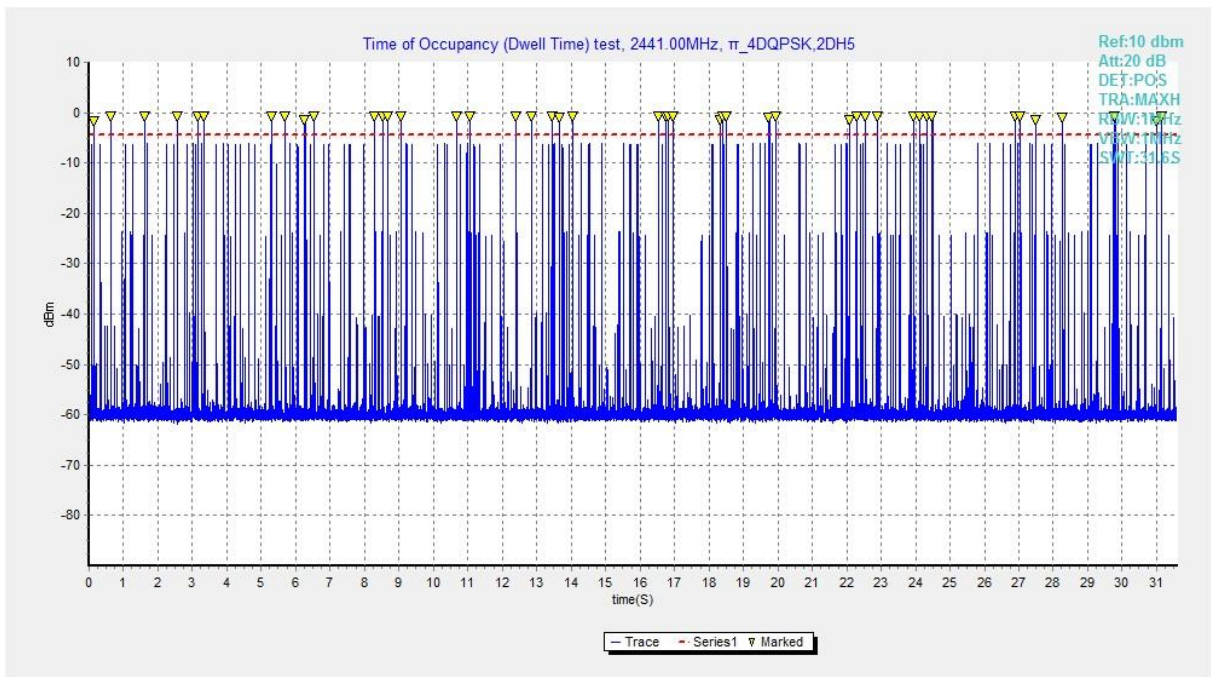


Fig. 81 Time of Occupancy(Dwell Time) (π /4 DQPSK, Ch39)

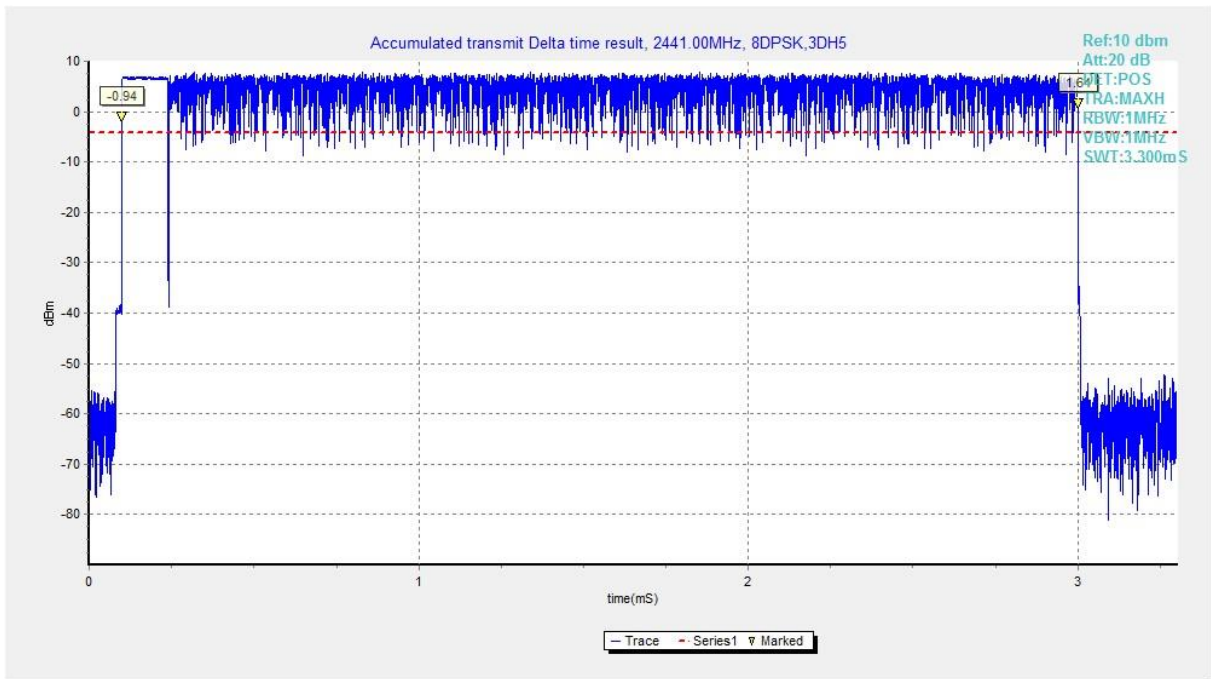


Fig. 82 Time of Occupancy(Dwell Time) (8DPSK, Ch39)

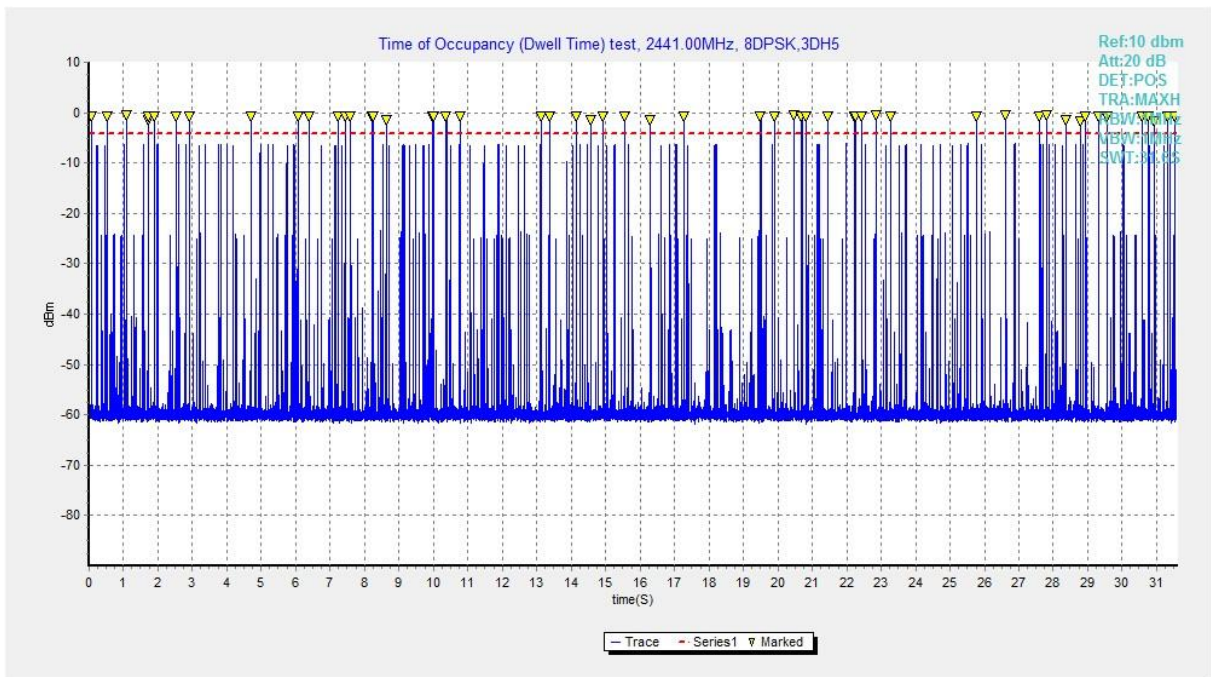


Fig. 83 Time of Occupancy(Dwell Time) (8DPSK, Ch39)



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.84	Fig.85	79	P
$\pi/4$ DQPSK	2-DH5	Fig.86	Fig.87	79	P
8DPSK	3-DH5	Fig.88	Fig.89	79	P

See below for test graphs.

Conclusion: Pass

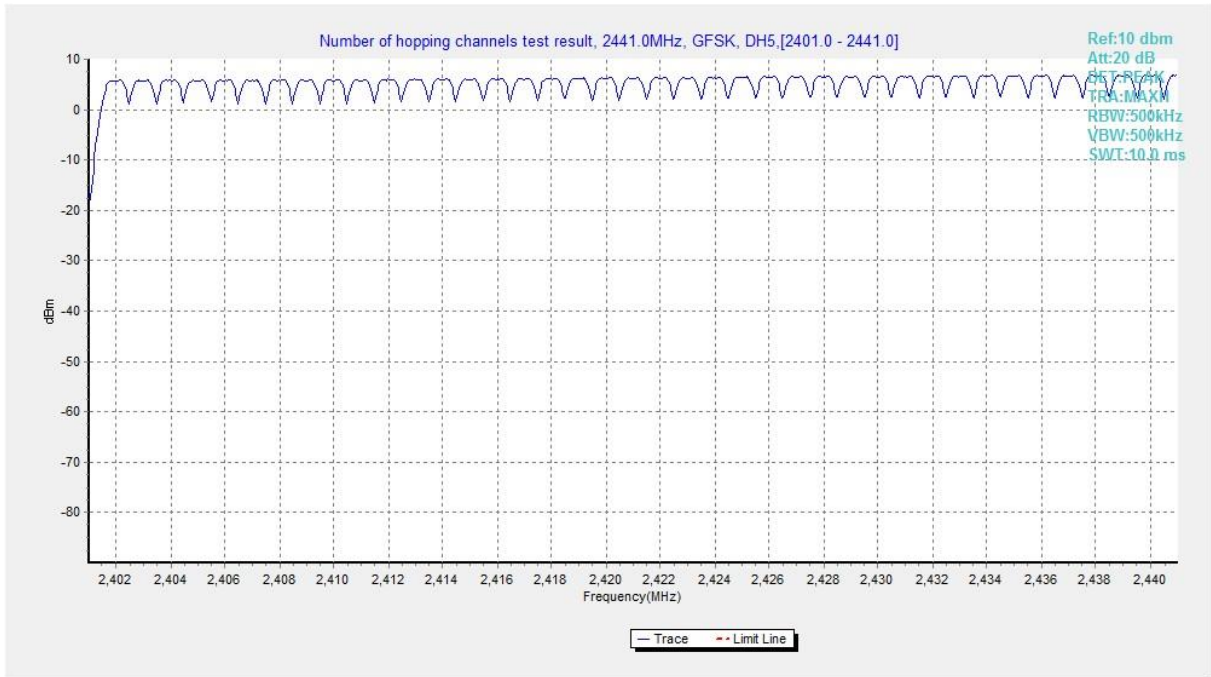


Fig. 84 Hopping channel ch0~39 (GFSK, Ch39)

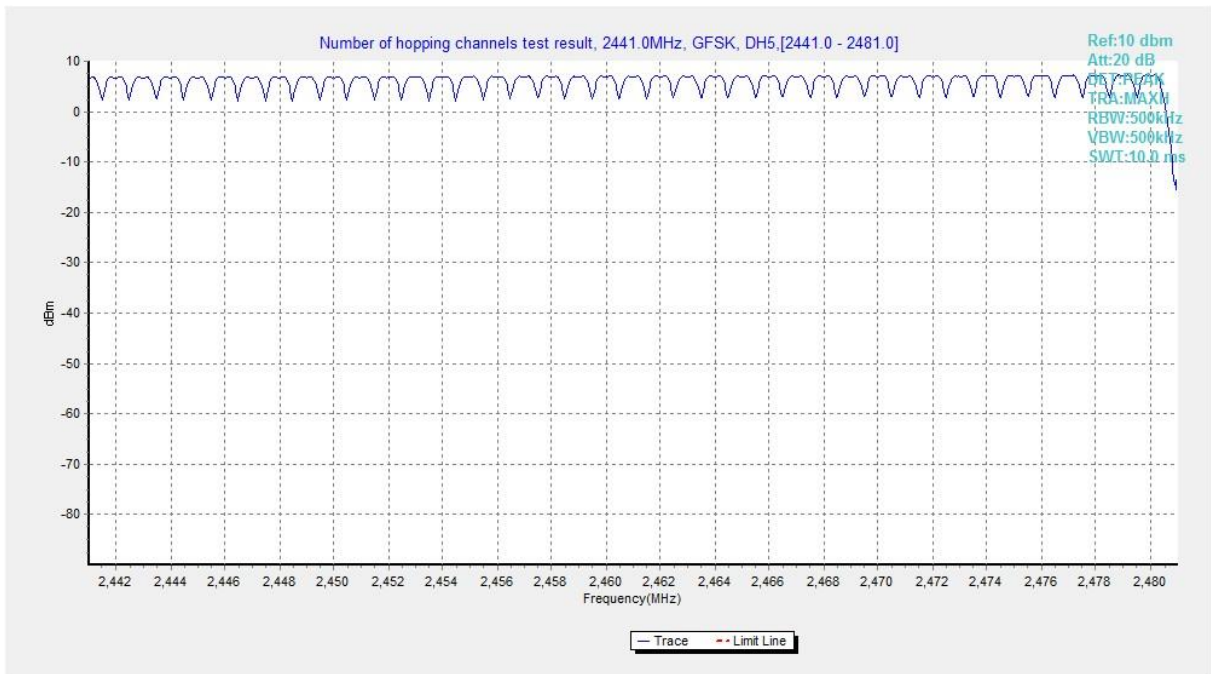


Fig. 85 Hopping channel ch39~78 (GFSK, Ch39)



Fig. 86 Hopping channel ch0~39 ($\pi/4$ DQPSK, Ch39)

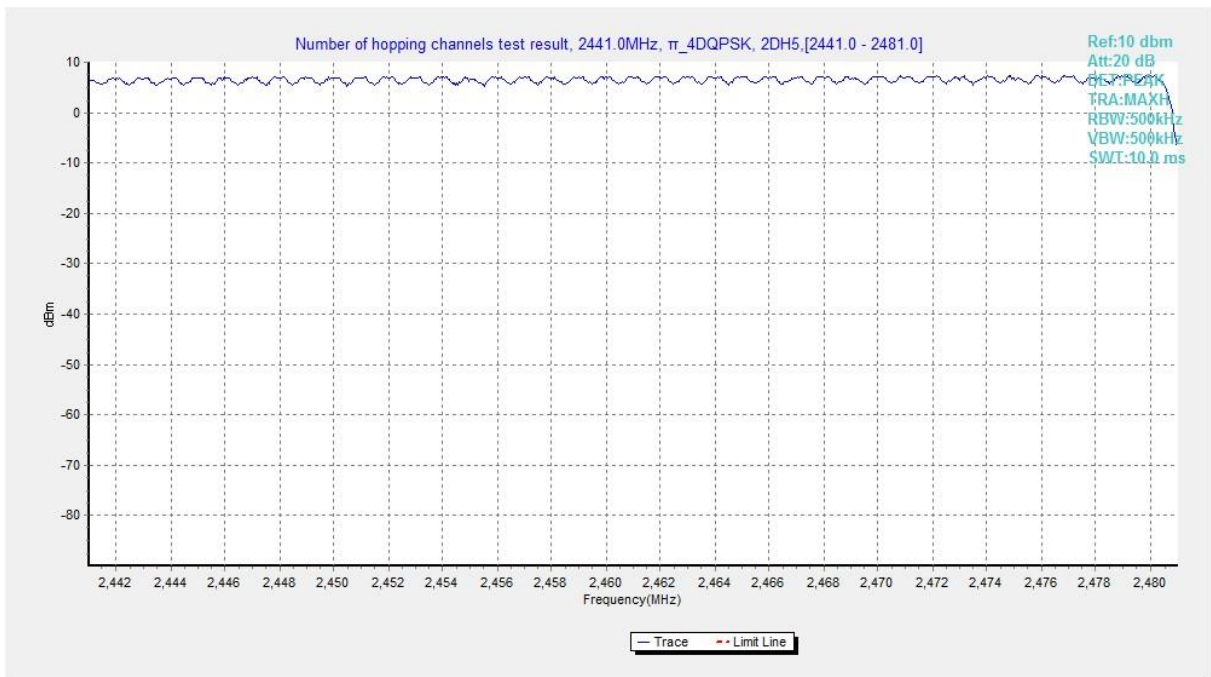


Fig. 87 Hopping channel ch39~78 ($\pi/4$ DQPSK, Ch39)

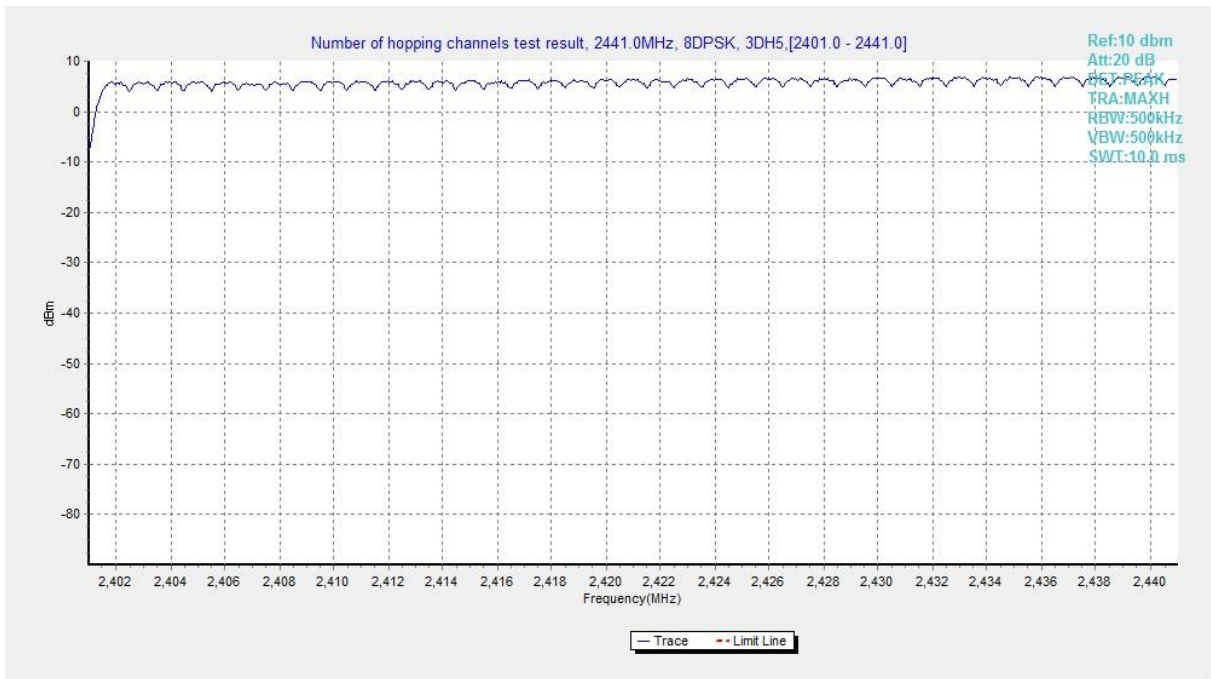


Fig. 88 Hopping channel ch0~39 (8DPSK, Ch39)

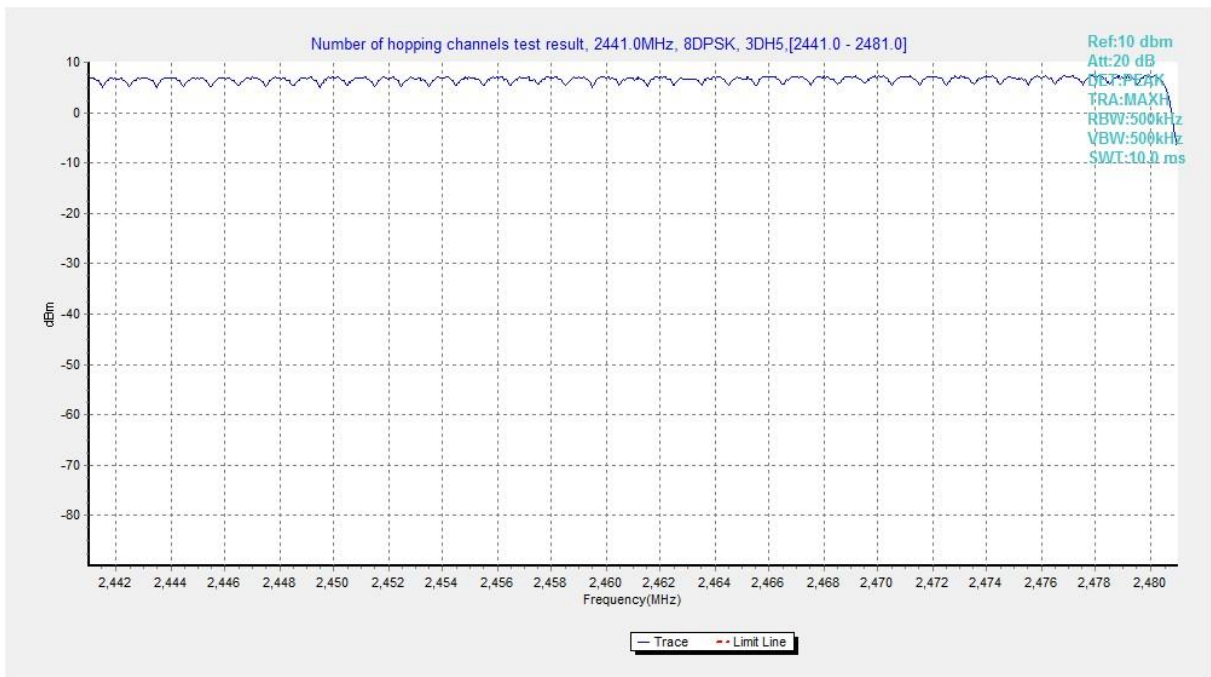


Fig. 89 Hopping channel ch39~78 (8DPSK, Ch39)

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.90	1006.50	P
$\pi/4$ DQPSK	39	2-DH5	Fig.91	999.75	P
8DPSK	39	3-DH5	Fig.92	1007.25	P

See below for test graphs.

Conclusion: Pass

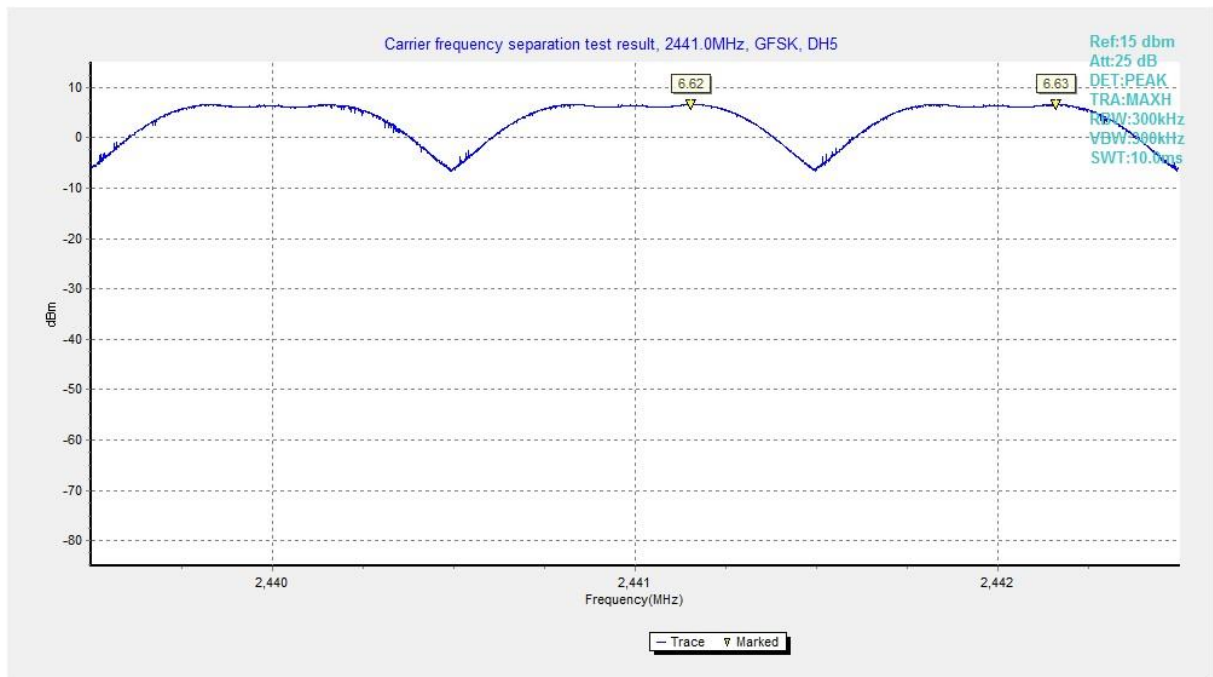


Fig. 90 Carrier Frequency Separation (GFSK, Ch39)

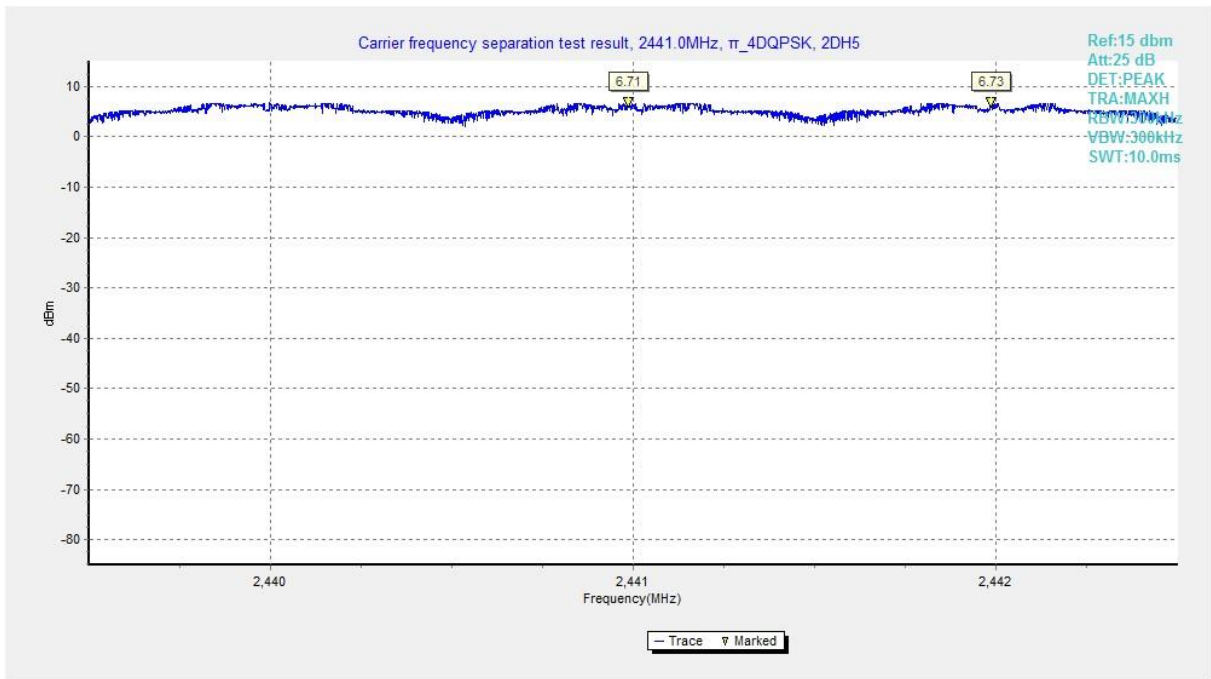


Fig. 91 Carrier Frequency Separation ($\pi/4$ DQPSK, Ch39)

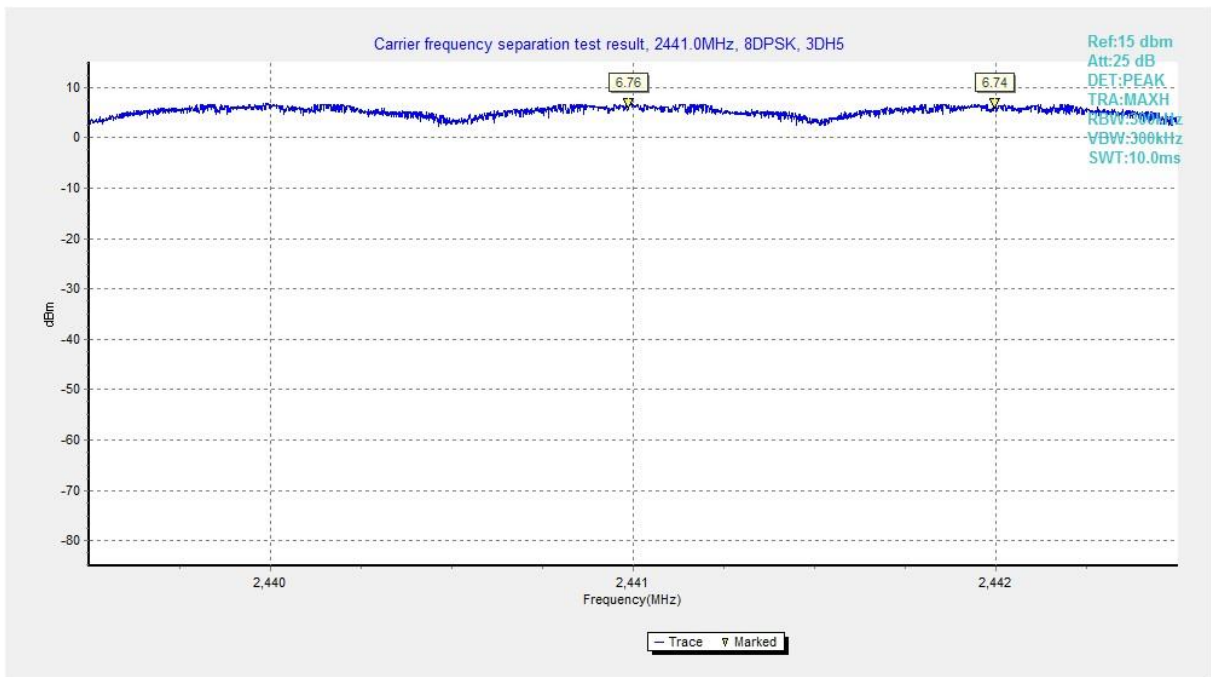


Fig. 92 Carrier Frequency Separation (8DPSK, Ch39)

A.9 AC Power line Conducted Emission

Test Condition:

Voltage (V)	Frequency (Hz)
120	60

Measurement Result and limit:

BT (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dB μ V)	Result (dB μ V)		Conclusion
		Traffic	Idle	
0.15 to 0.5	66 to 56	Fig.93	Fig.94	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)

Frequency range (MHz)	Average-peak Limit (dB μ V)	Result (dB μ V)		Conclusion
		Traffic	Idle	
0.15 to 0.5	56 to 46	Fig.93	Fig.94	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

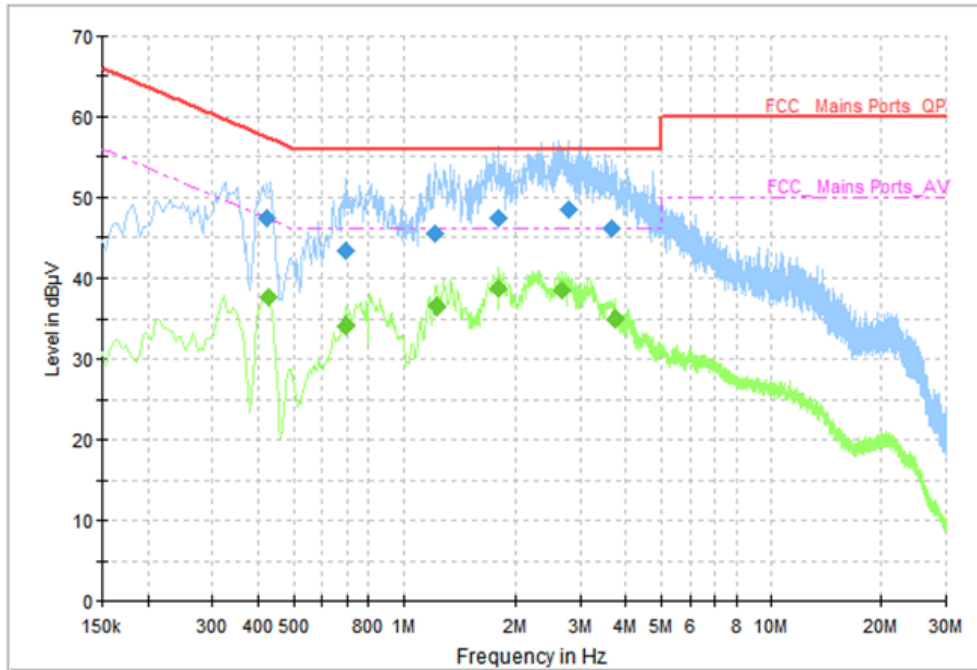


Fig. 93 AC Powerline Conducted Emission (Traffic)

Measurement Results: Quasi Peak

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.422000	47.46	57.41	9.95	N	ON	9.7
0.698000	43.30	56.00	12.70	N	ON	9.7
1.222000	45.37	56.00	10.63	N	ON	9.7
1.794000	47.48	56.00	8.52	N	ON	9.7
2.782000	48.38	56.00	7.62	N	ON	9.7
3.670000	46.06	56.00	9.94	N	ON	9.7

Measurement Results : Average

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.426000	37.47	47.33	9.86	N	ON	9.7
0.698000	34.11	46.00	11.89	N	ON	9.7
1.230000	36.50	46.00	9.50	N	ON	9.7
1.794000	38.64	46.00	7.36	N	ON	9.7
2.682000	38.42	46.00	7.59	N	ON	9.7
3.750000	35.09	46.00	10.91	N	ON	9.7

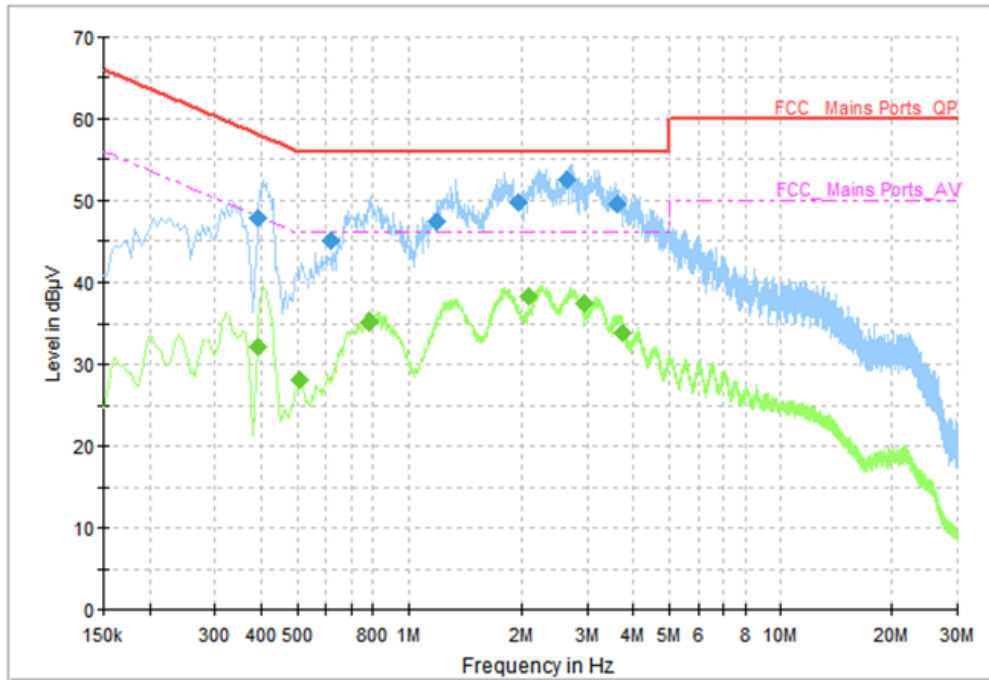


Fig. 94 AC Power line Conducted Emission (Idle)

Measurement Results: Quasi Peak

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.394000	47.90	57.98	10.08	L1	ON	9.7
0.618000	45.01	56.00	10.99	L1	ON	9.7
1.194000	47.28	56.00	8.72	L1	ON	9.7
1.966000	49.81	56.00	6.19	L1	ON	9.7
2.642000	52.44	56.00	3.56	L1	ON	9.7
3.634000	49.43	56.00	6.57	L1	ON	9.7

Measurement Results : Average

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.394000	32.21	47.98	15.77	L1	ON	9.7
0.510000	28.08	46.00	17.92	L1	ON	9.7
0.786000	35.19	46.00	10.82	L1	ON	9.7
2.098000	38.11	46.00	7.89	L1	ON	9.7
2.950000	37.44	46.00	8.56	N	ON	9.7
3.746000	33.90	46.00	12.10	N	ON	9.7

END OF REPORT