

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

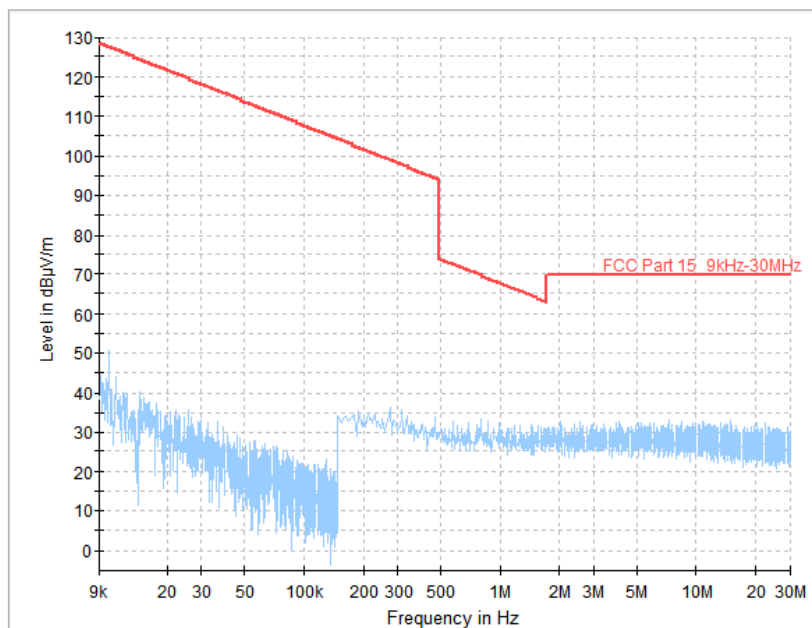


Fig. 57 Radiated Spurious Emission (All Channels, 9kHz ~ 30MHz)

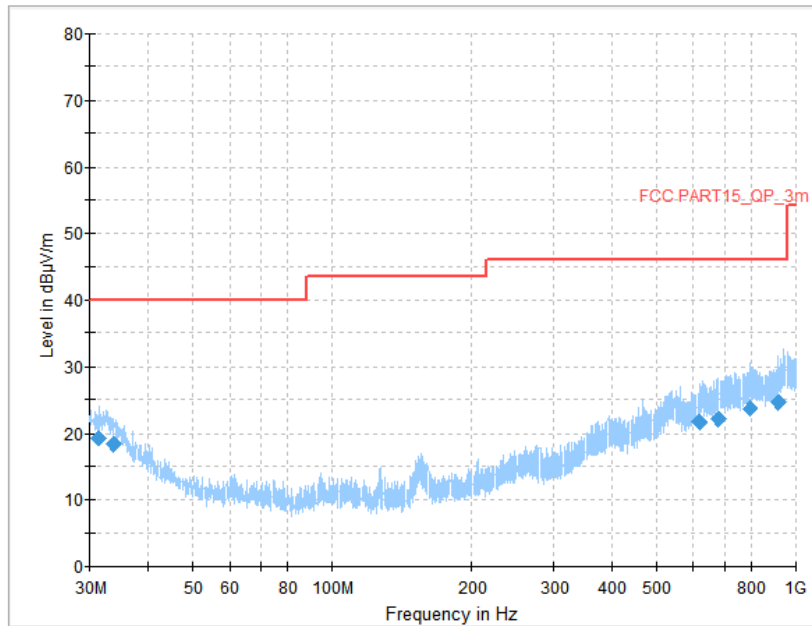


Fig. 58 Radiated Spurious Emission (All Channels, 30MHz ~ 1GHz)

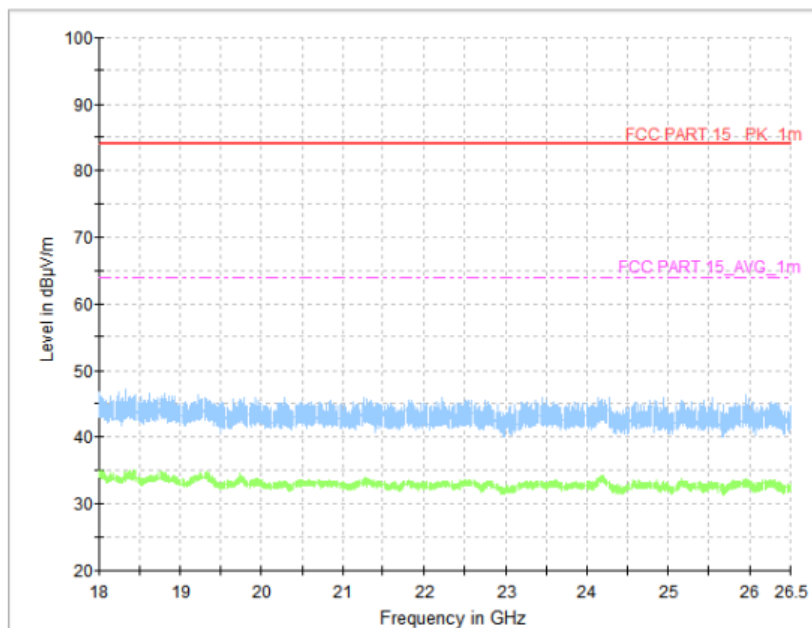


Fig. 59 Radiated Spurious Emission (All Channels, 18GHz ~ 26.5GHz)

### 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	950.25	/
	39	Fig.61	953.25	
	78	Fig.62	946.50	
$\pi/4$ DQPSK	0	Fig.63	1269.00	/
	39	Fig.64	1301.25	
	78	Fig.65	1293.00	
8DPSK	0	Fig.66	1260.75	/
	39	Fig.67	1266.75	
	78	Fig.68	1288.50	

See below for test graphs.

Conclusion: PASS

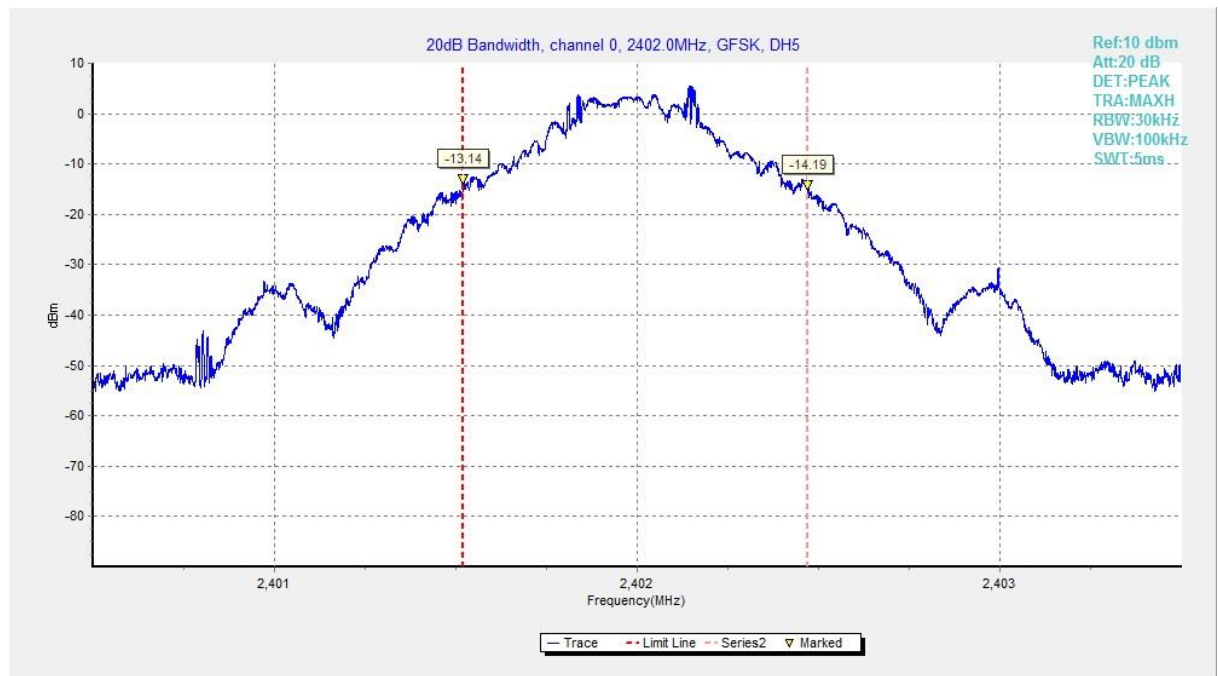


Fig. 60 20dB Bandwidth (GFSK, Ch 0)

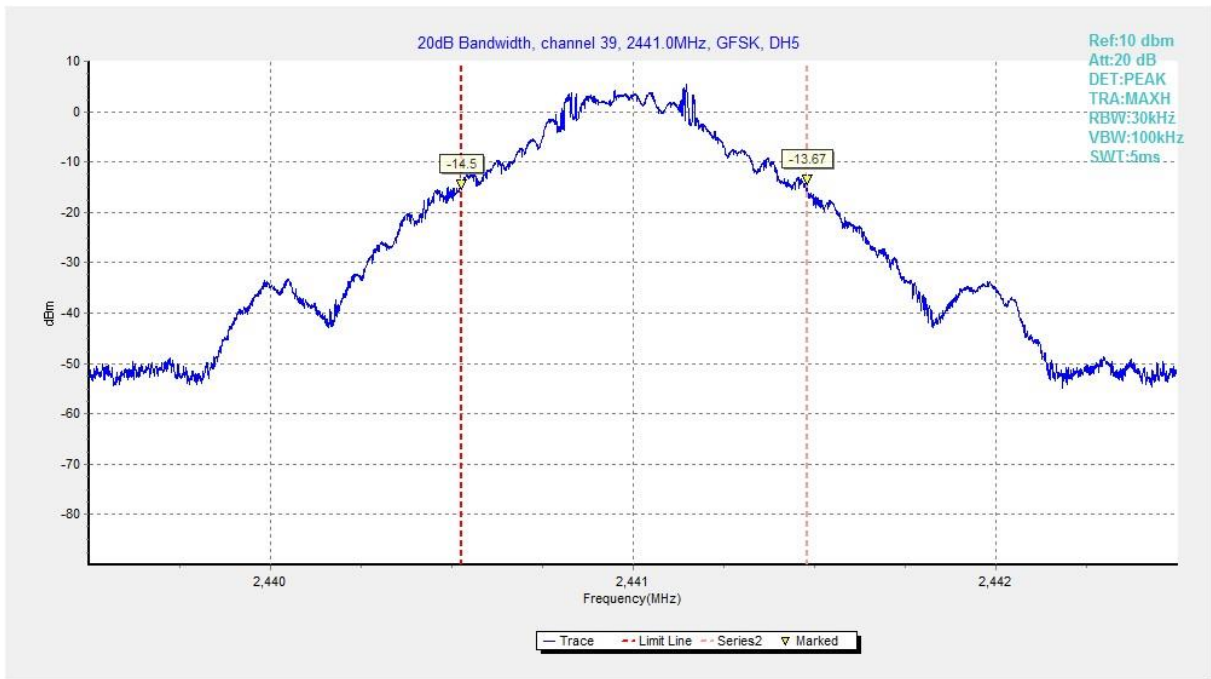


Fig. 61 20dB Bandwidth (GFSK, Ch 39)

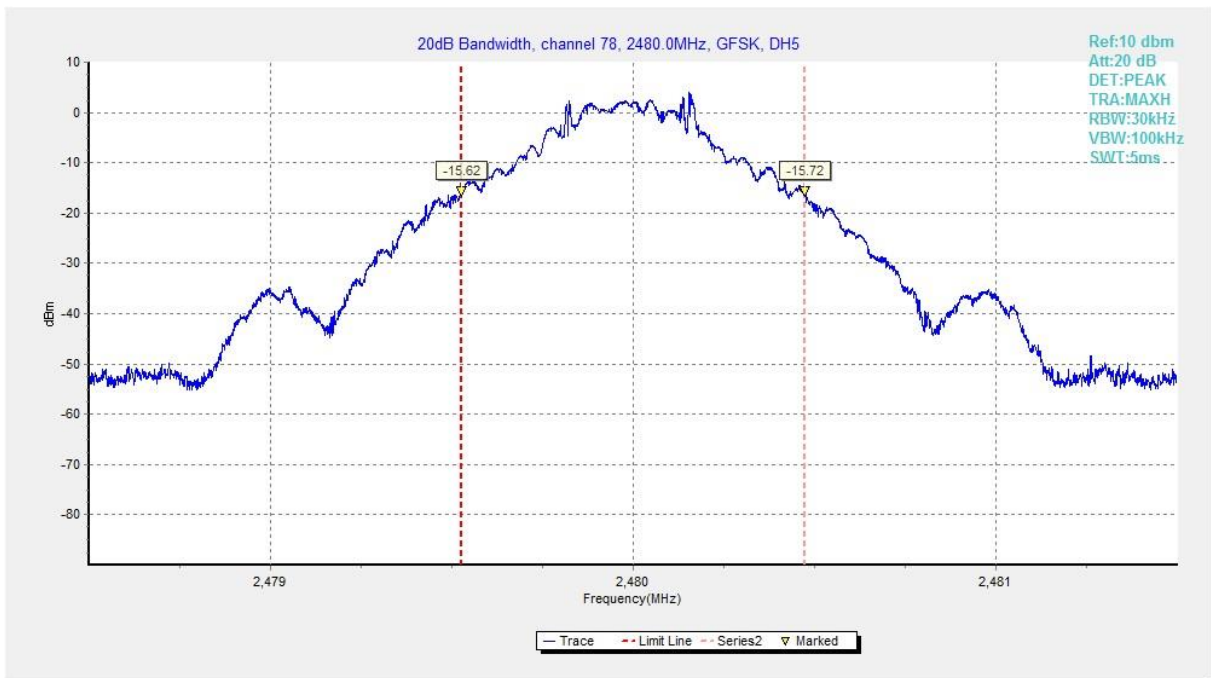


Fig. 62 20dB Bandwidth (GFSK, Ch 78)

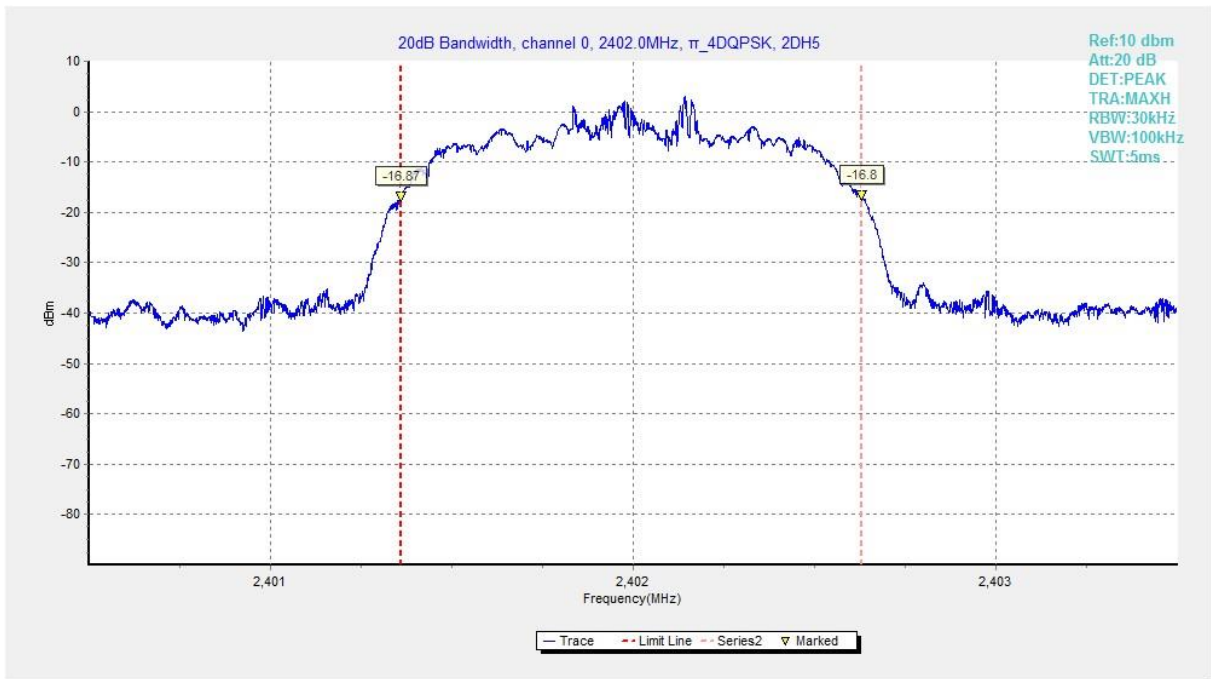


Fig. 63 20dB Bandwidth ( $\pi/4$  DQPSK, Ch 0)

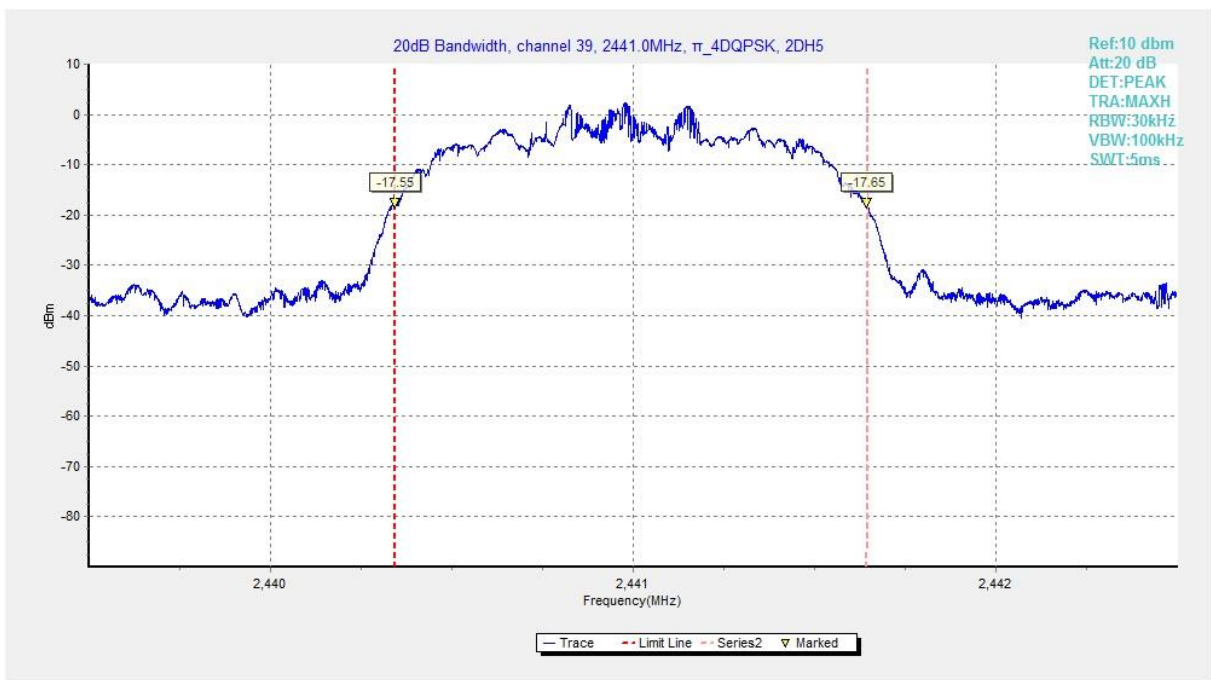


Fig. 64 20dB Bandwidth ( $\pi/4$  DQPSK, Ch 39)

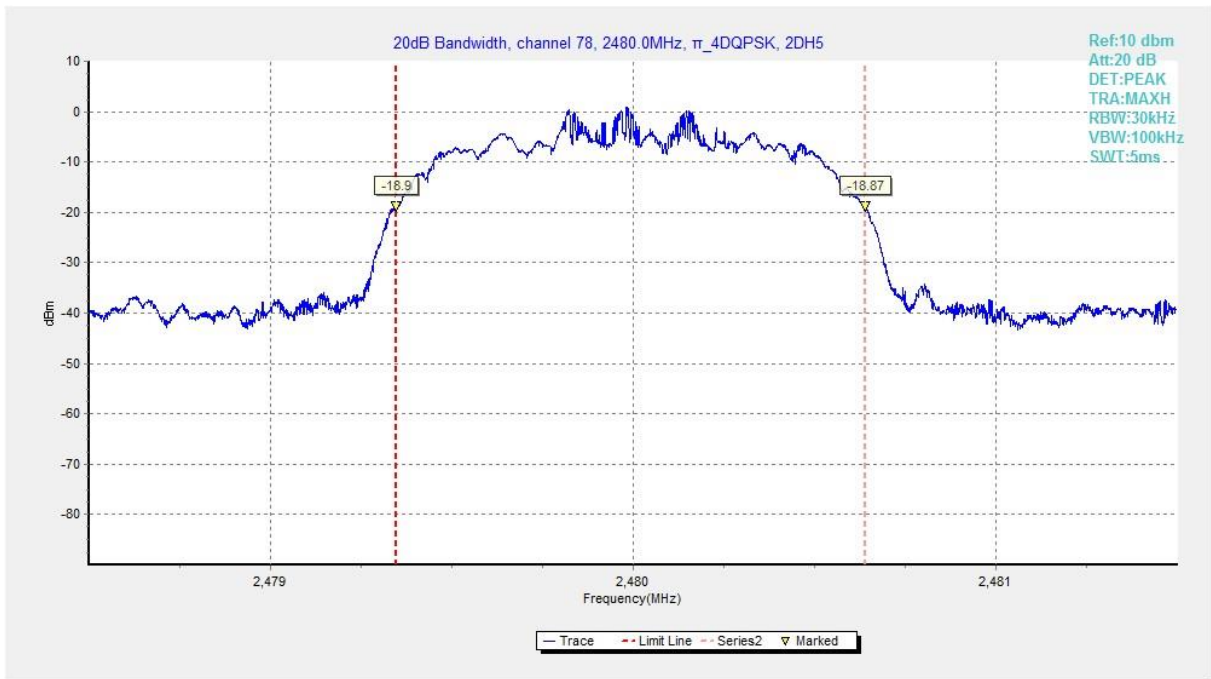


Fig. 65 20dB Bandwidth ( $\pi/4$  DQPSK, Ch 78)

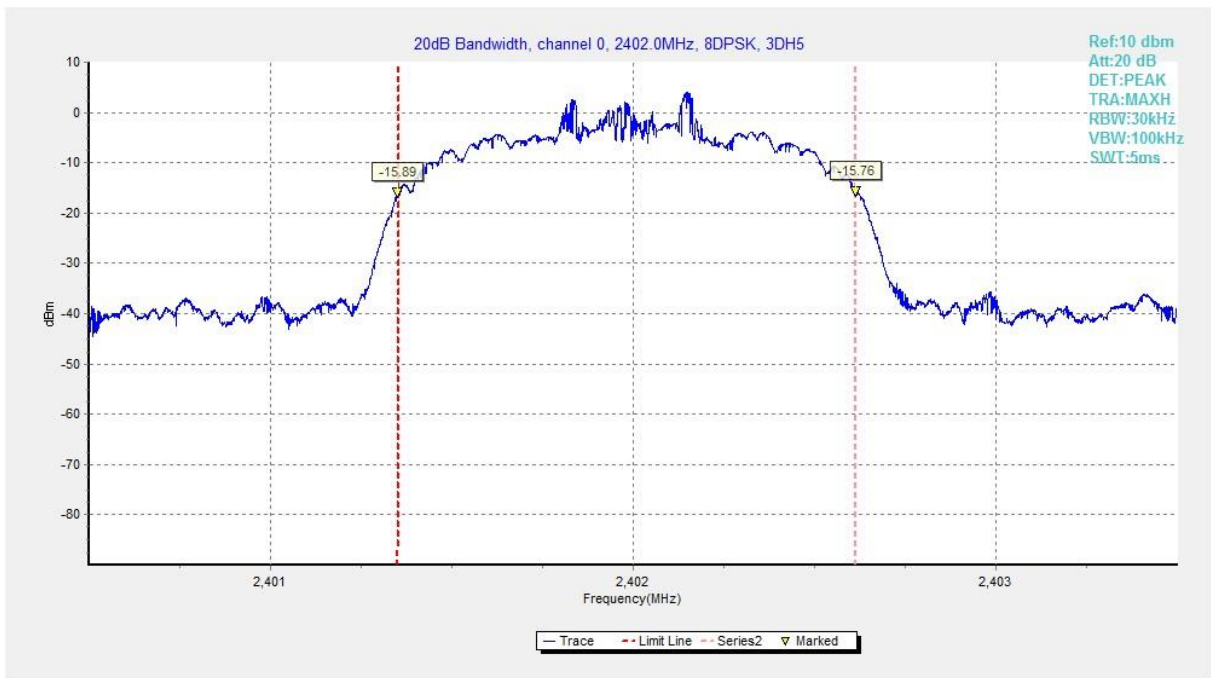


Fig. 66 20dB Bandwidth (8DPSK, Ch 0)

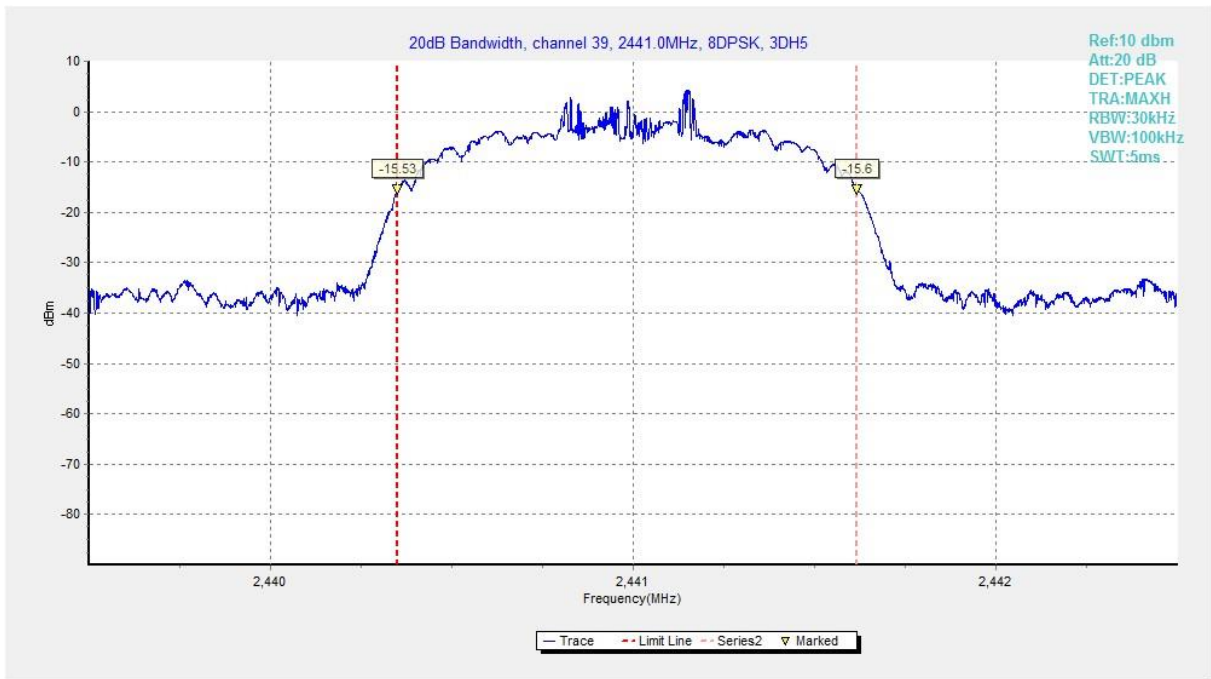


Fig. 67 20dB Bandwidth (8DPSK, Ch 39)

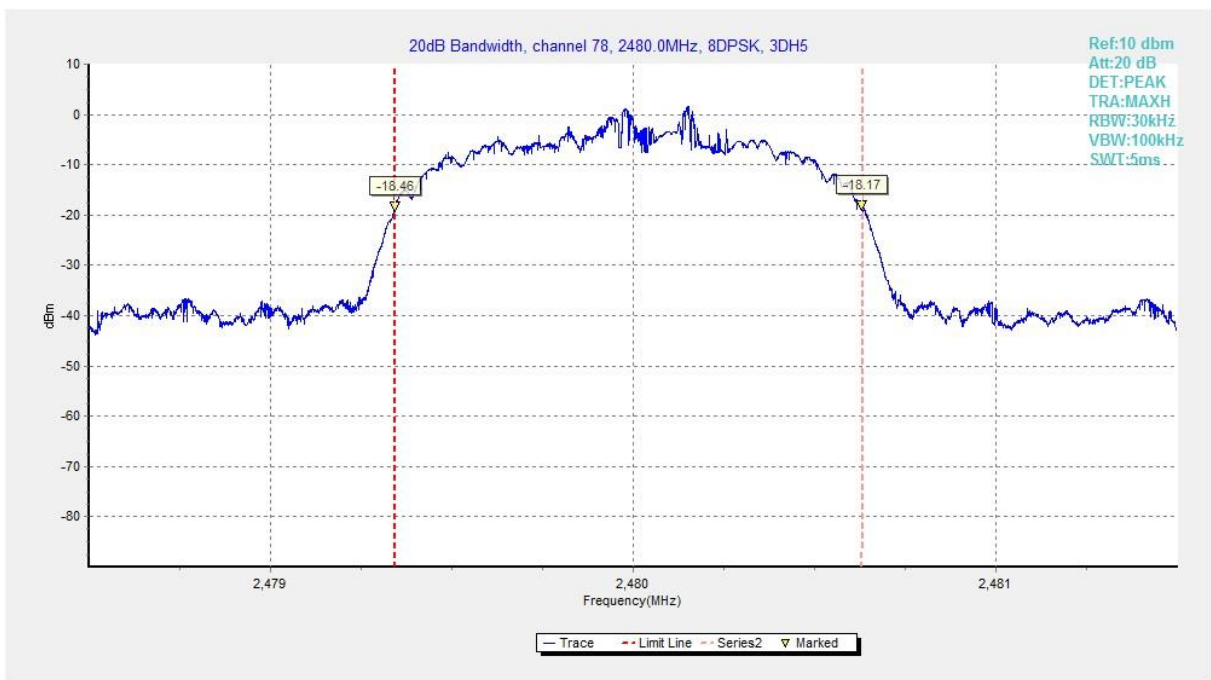


Fig. 68 20dB Bandwidth (8DPSK, Ch 78)





### 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.69	170.03	<b>P</b>
			Fig.70		
$\pi/4$ DQPSK	39	2-DH5	Fig.71	161.39	<b>P</b>
			Fig.72		
8DPSK	39	3-DH5	Fig.73	207.44	<b>P</b>
			Fig.74		

See below for test graphs.

Conclusion: Pass

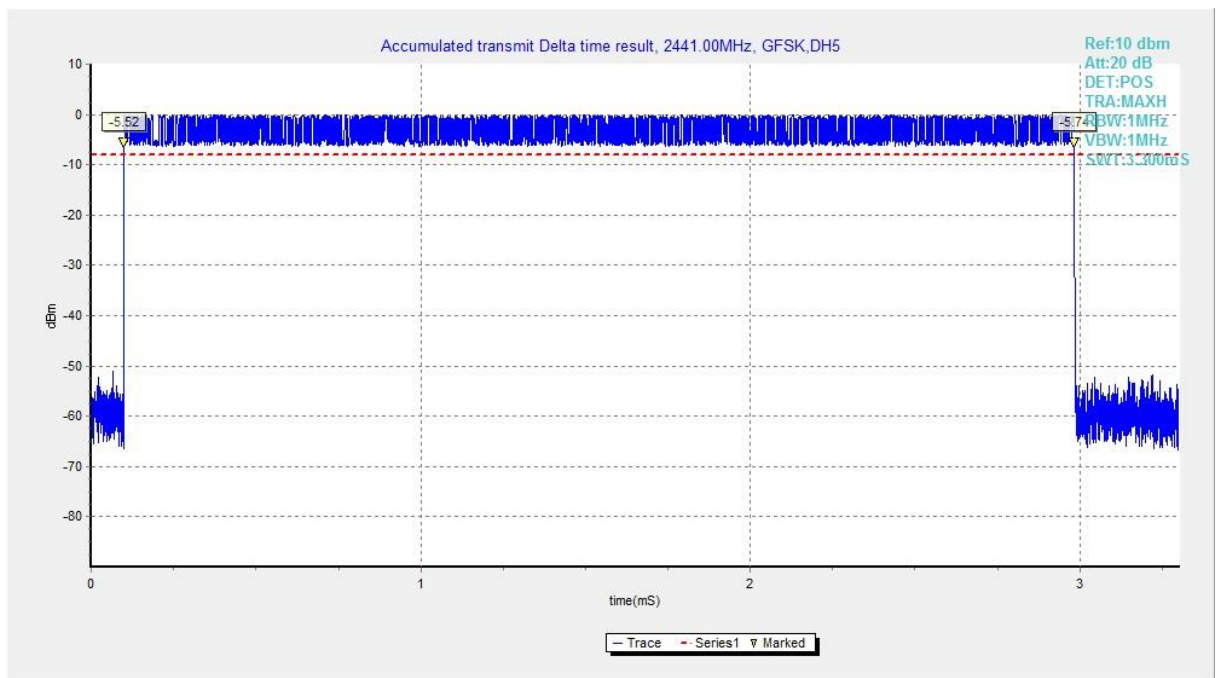


Fig. 69 Time of Occupancy (Dwell Time) (GFSK, Ch39)



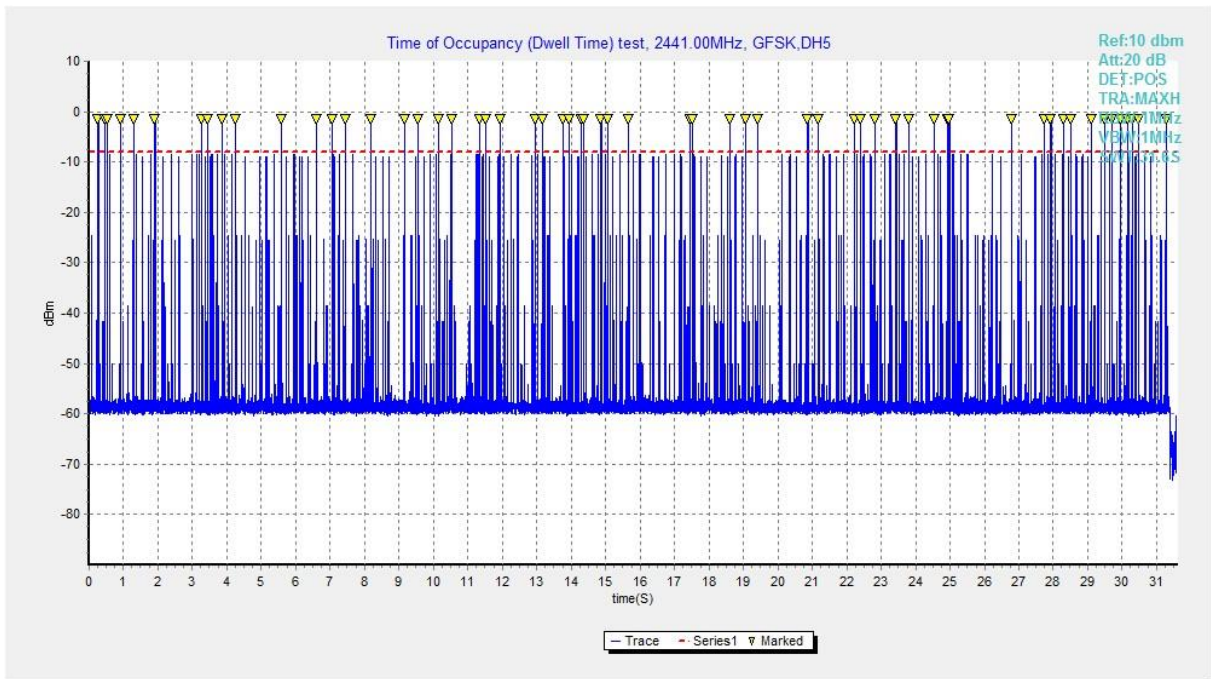


Fig. 70 Time of Occupancy (Dwell Time) (GFSK, Ch39)

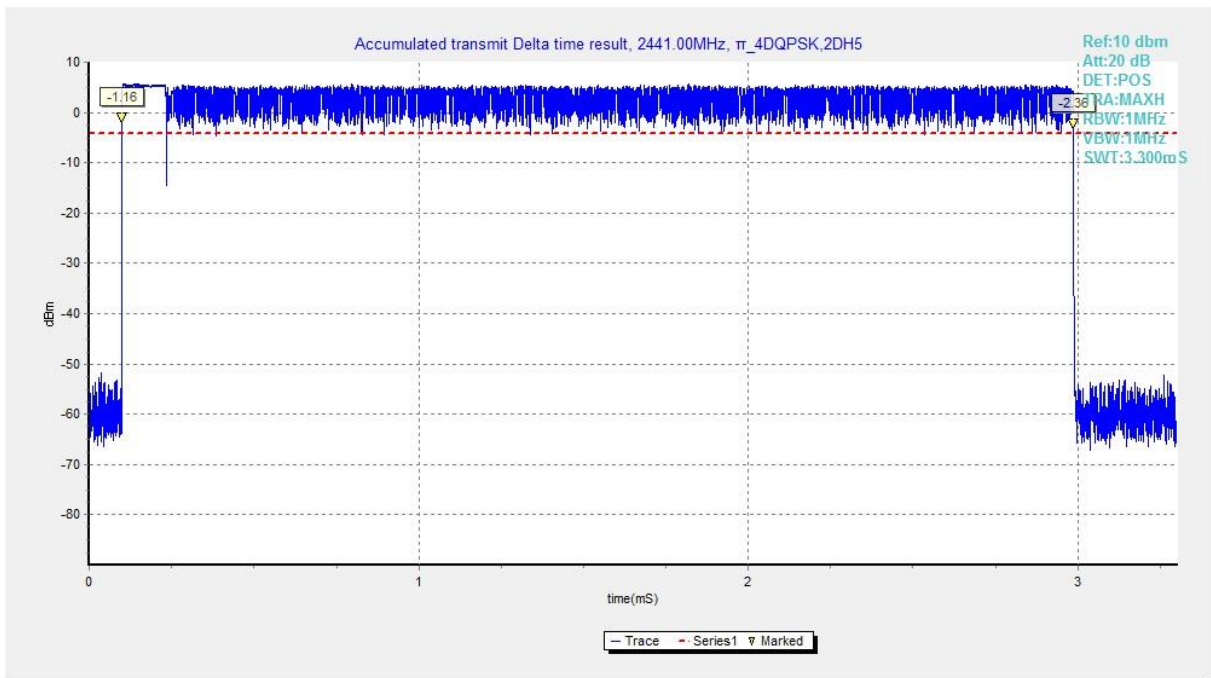


Fig. 71 Time of Occupancy (Dwell Time) ( $\pi/4$  DQPSK, Ch39)

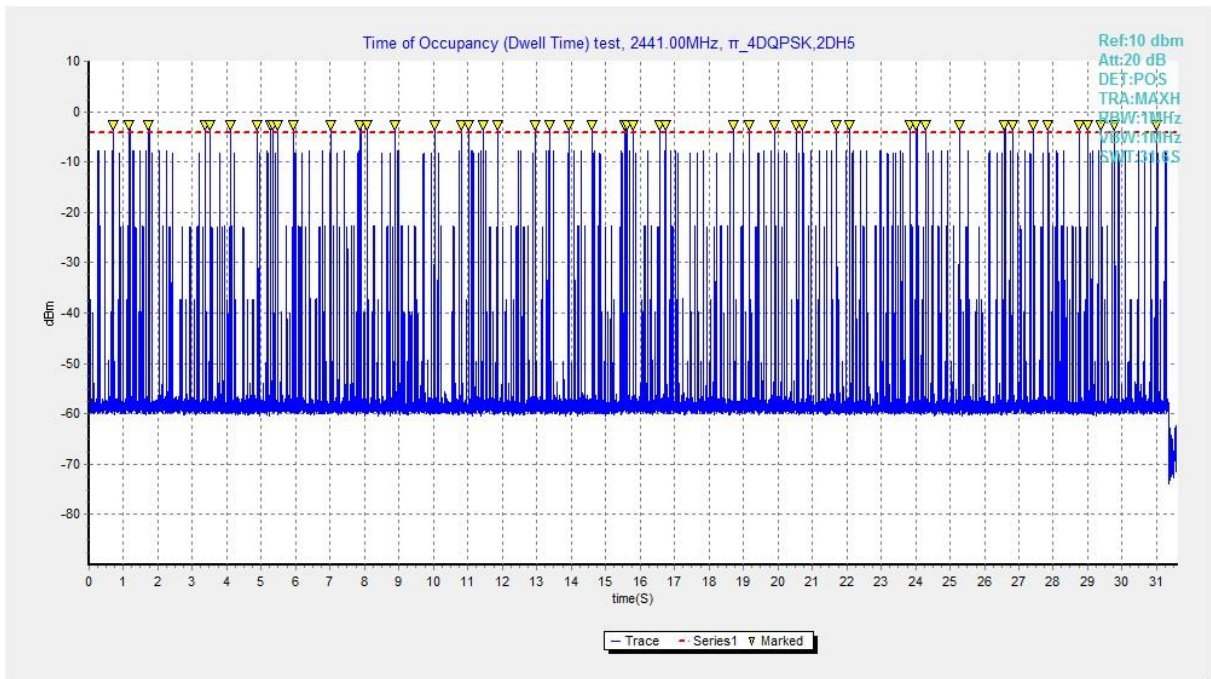


Fig. 72 Time of Occupancy (Dwell Time) ( $\pi/4$  DQPSK, Ch39)

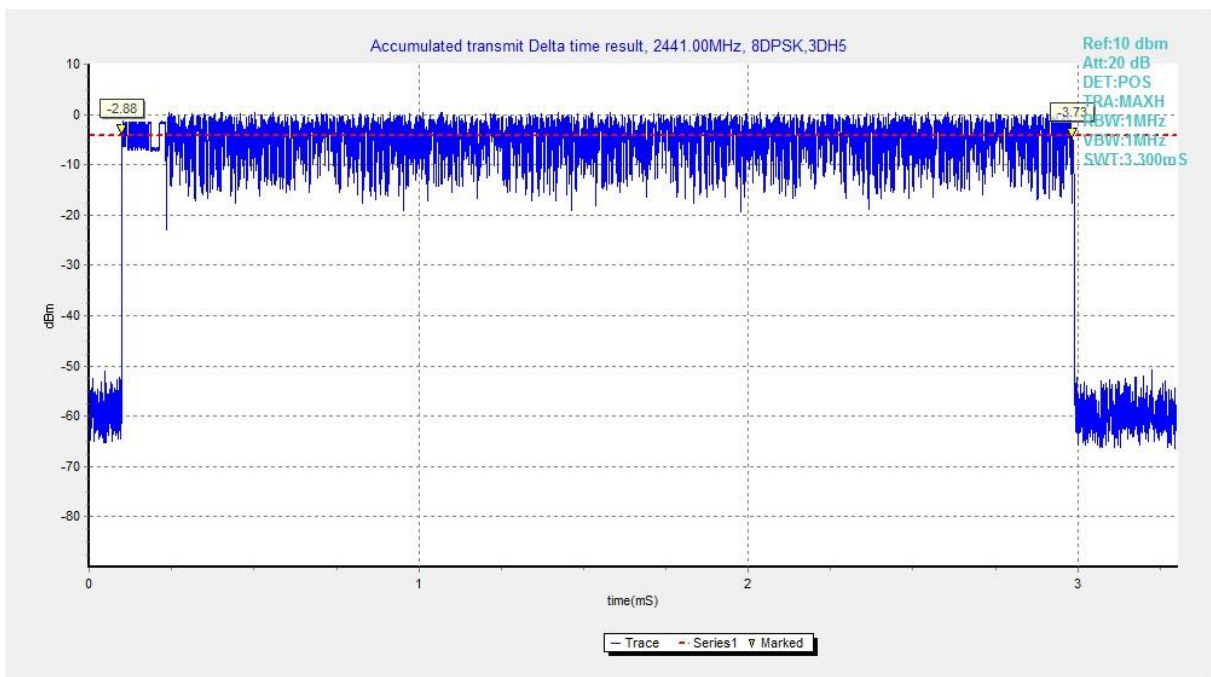


Fig. 73 Time of Occupancy (Dwell Time) (8DPSK, Ch39)

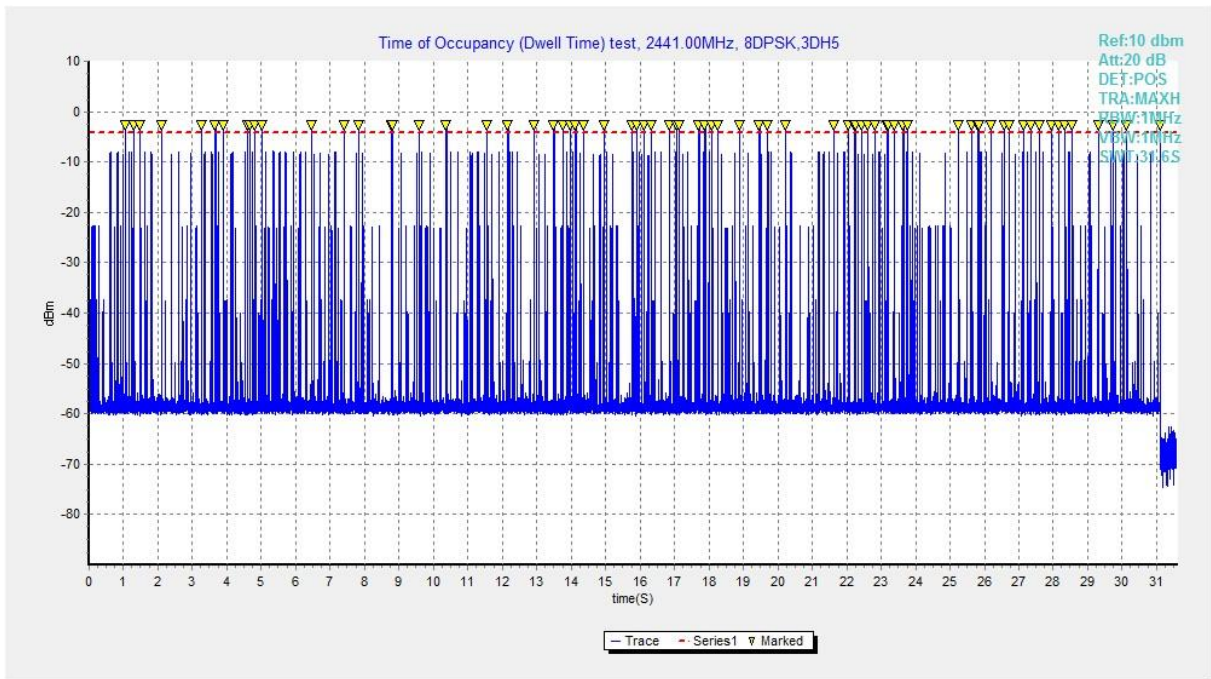


Fig. 74 Time of Occupancy (Dwell Time) (8DPSK, Ch39)

### A.7 Number of Hopping Channels

**Measurement Limit:**

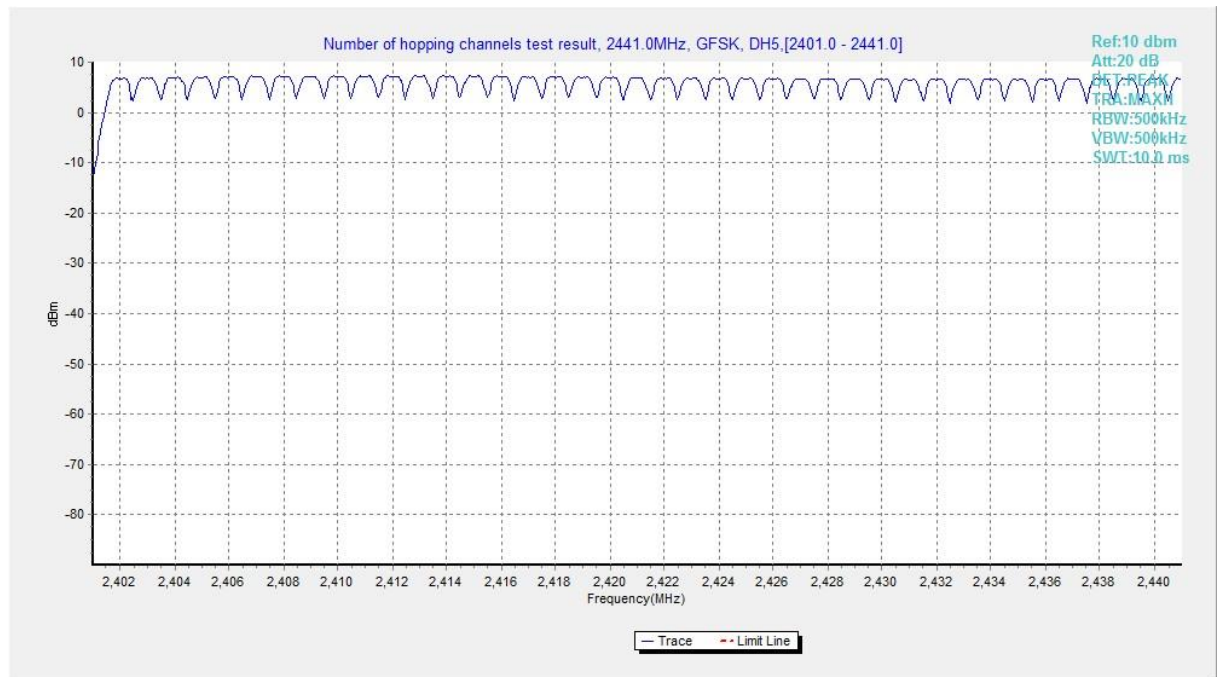
Standard	Limit
FCC 47 CFR Part 15.247(a)	At least 15 non-overlapping channels

**Measurement Results:**

Mode	Packet	Number of hopping channels		Test result	Conclusion
GFSK	DH5	Fig.75	Fig.76	79	<b>P</b>
$\pi/4$ DQPSK	2-DH5	Fig.77	Fig.78	79	<b>P</b>
8DPSK	3-DH5	Fig.79	Fig.80	79	<b>P</b>

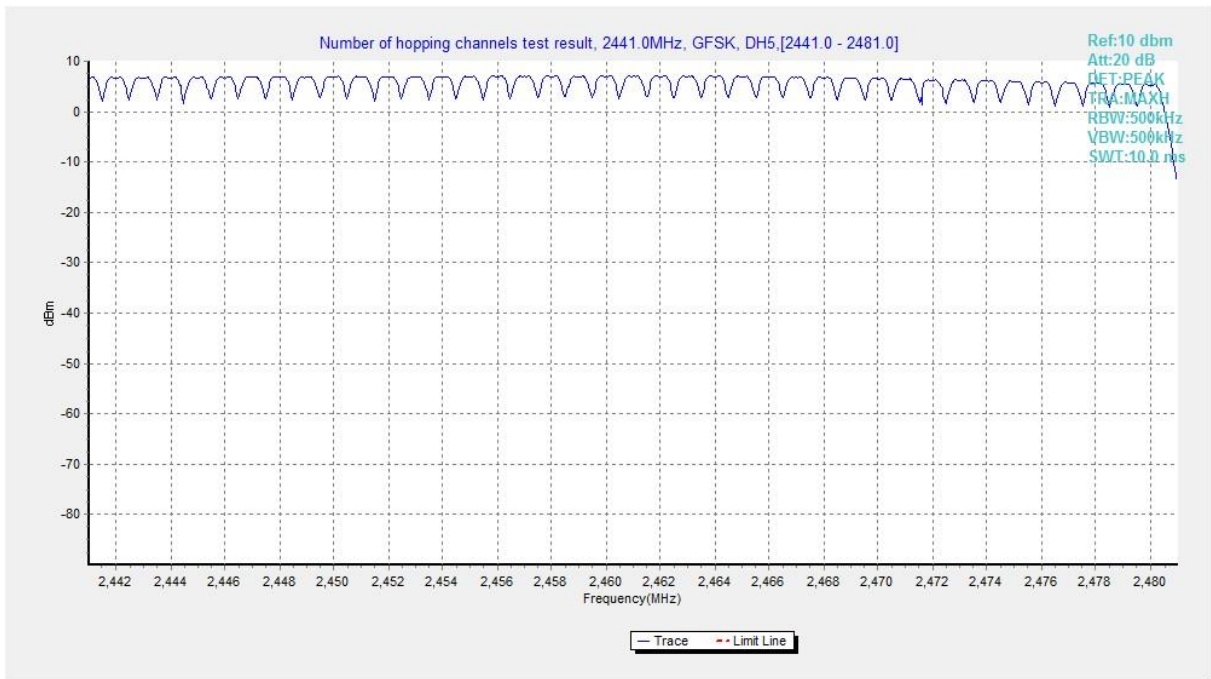
See below for test graphs.

**Conclusion: Pass**

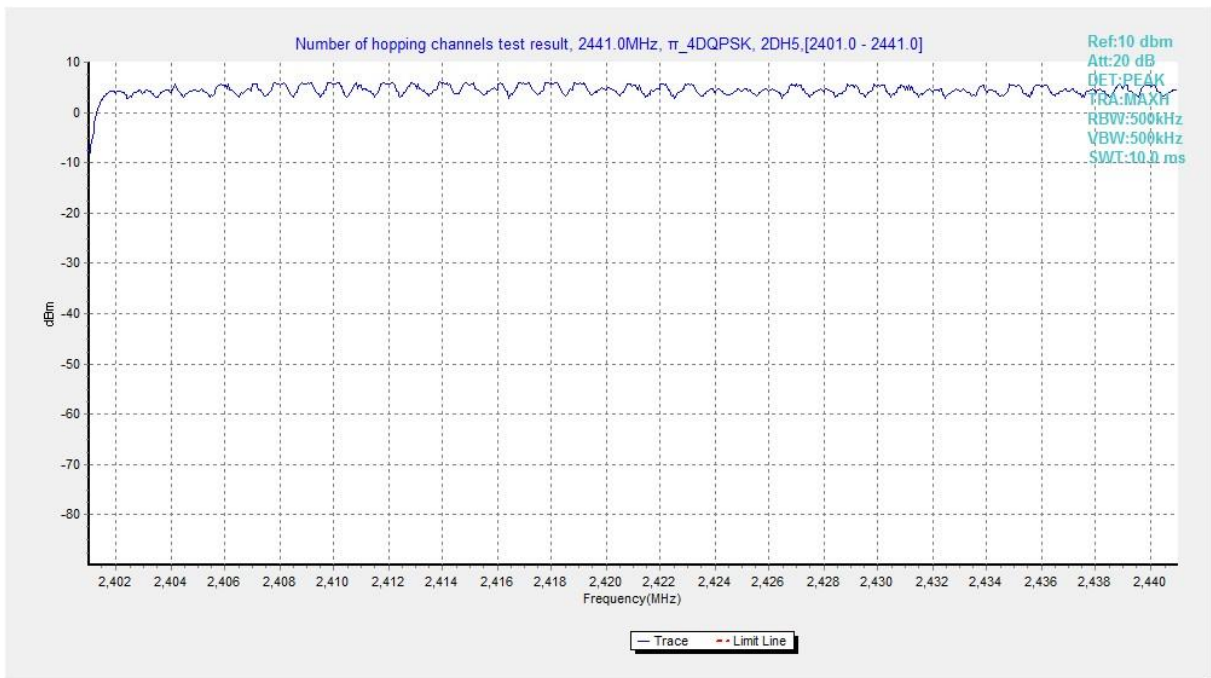


**Fig. 75 Hopping channel ch0~39 (GFSK, Ch39)**





**Fig. 76 Hopping channel ch40~78 (GFSK, Ch39)**



**Fig. 77 Hopping channel ch0~39 ( $\pi/4$  DQPSK, Ch39)**

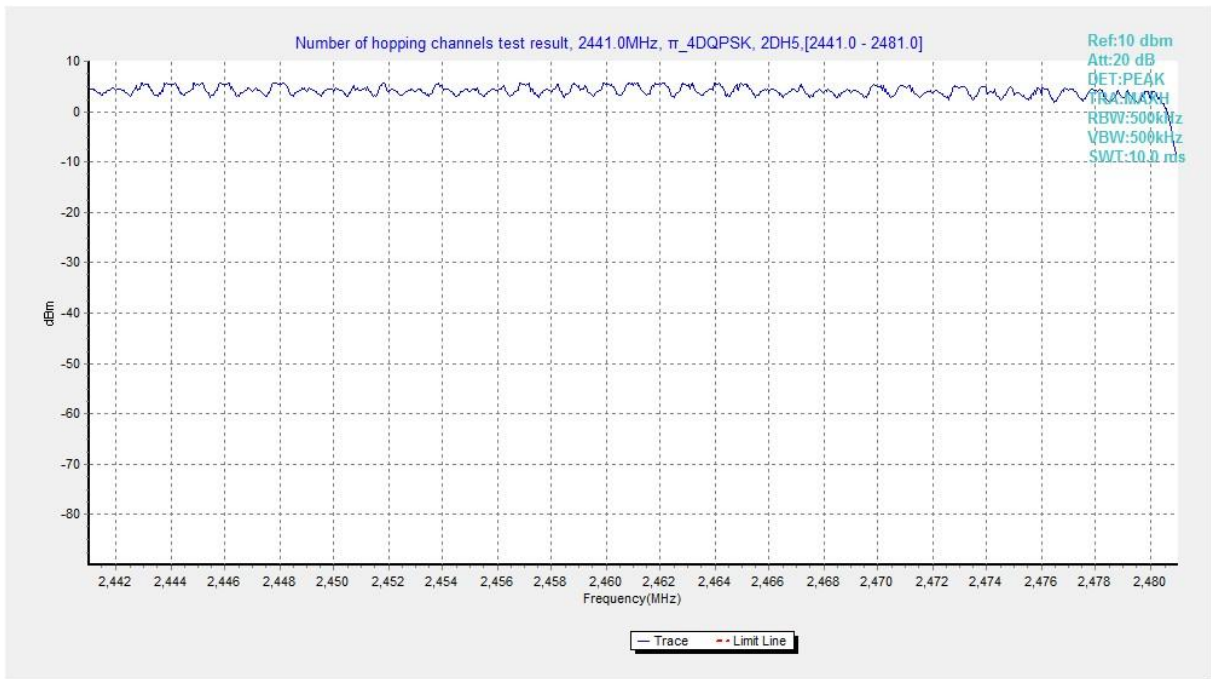


Fig. 78 Hopping channel ch40~78 ( $\pi/4$  DQPSK, Ch39)

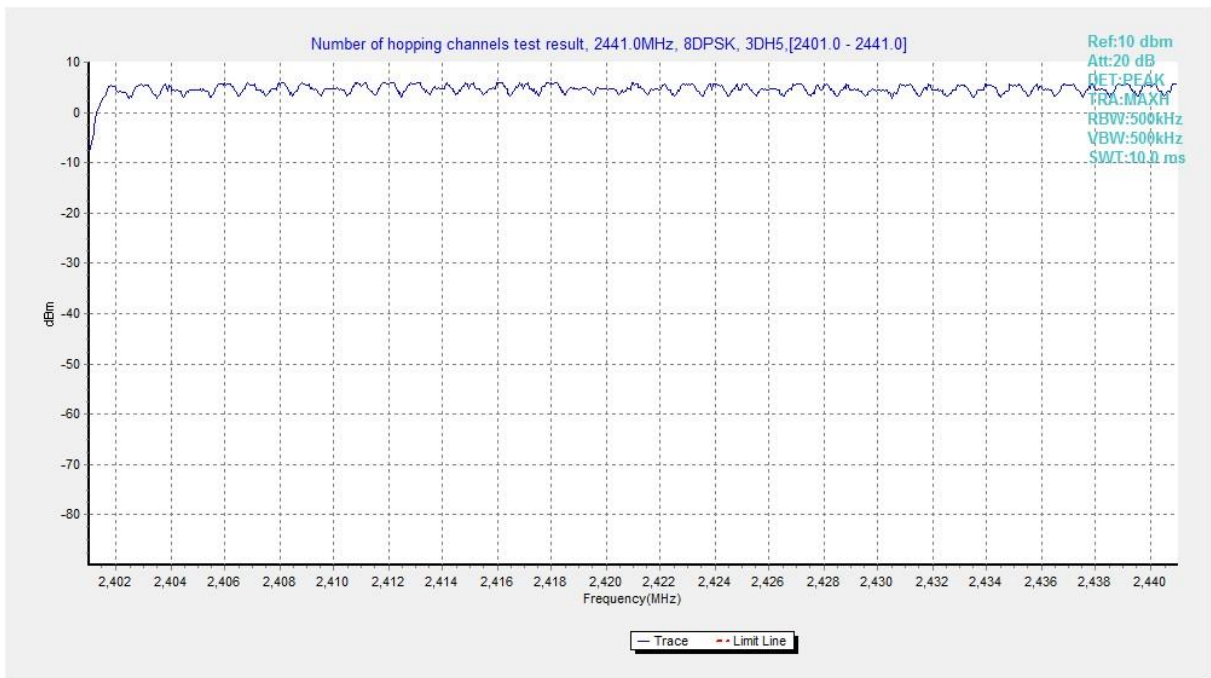


Fig. 79 Hopping channel ch0~39 (8DPSK, Ch39)

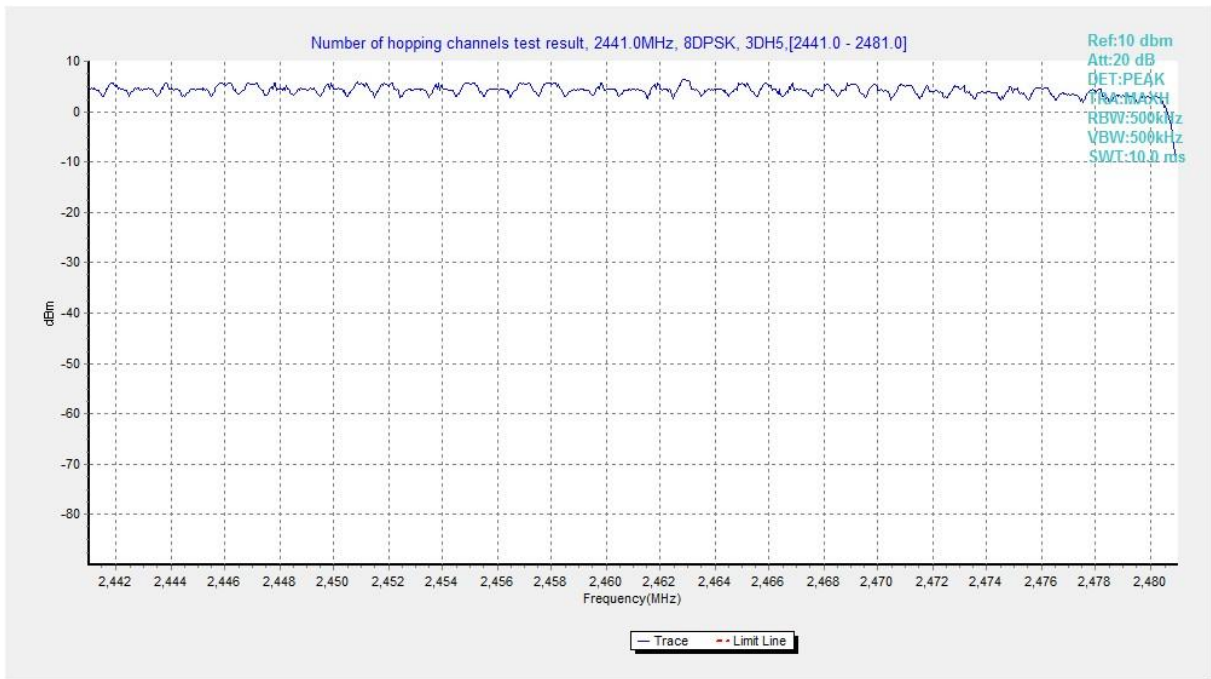


Fig. 80 Hopping channel ch40~78 (8DPSK, Ch39)



### A.8 Carrier Frequency Separation

**Measurement Limit:**

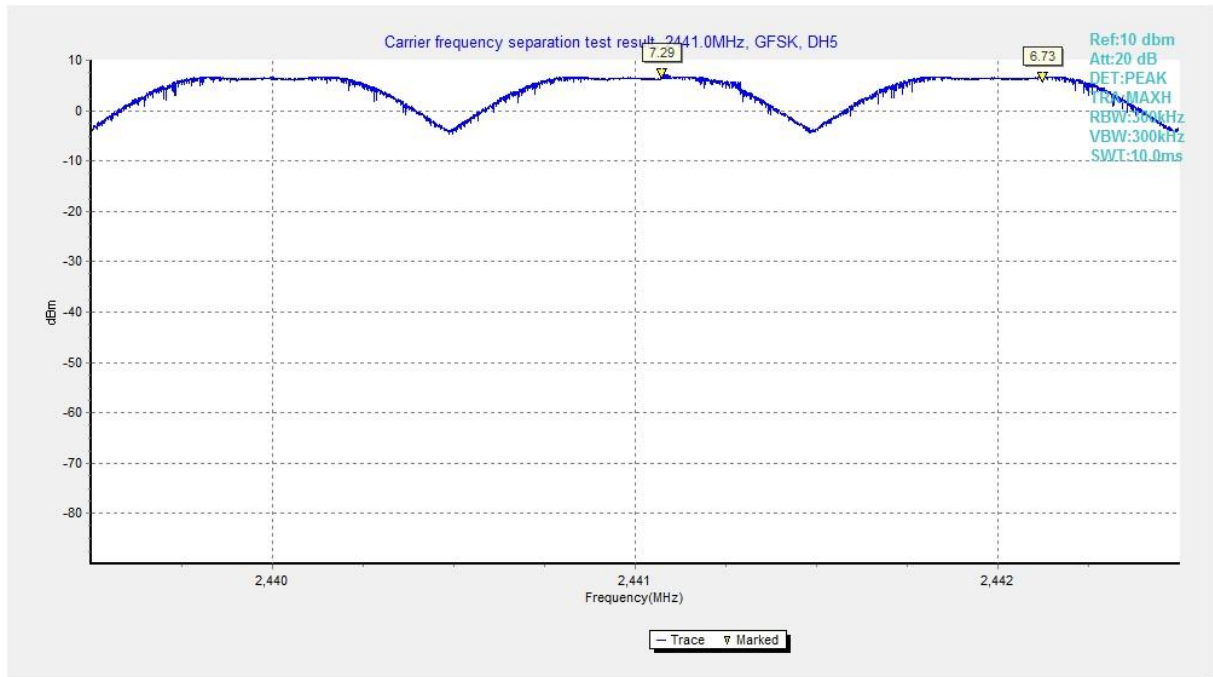
Standard	Limit
FCC 47 CFR Part 15.247(a)	By a minimum of 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater

**Measurement Results:**

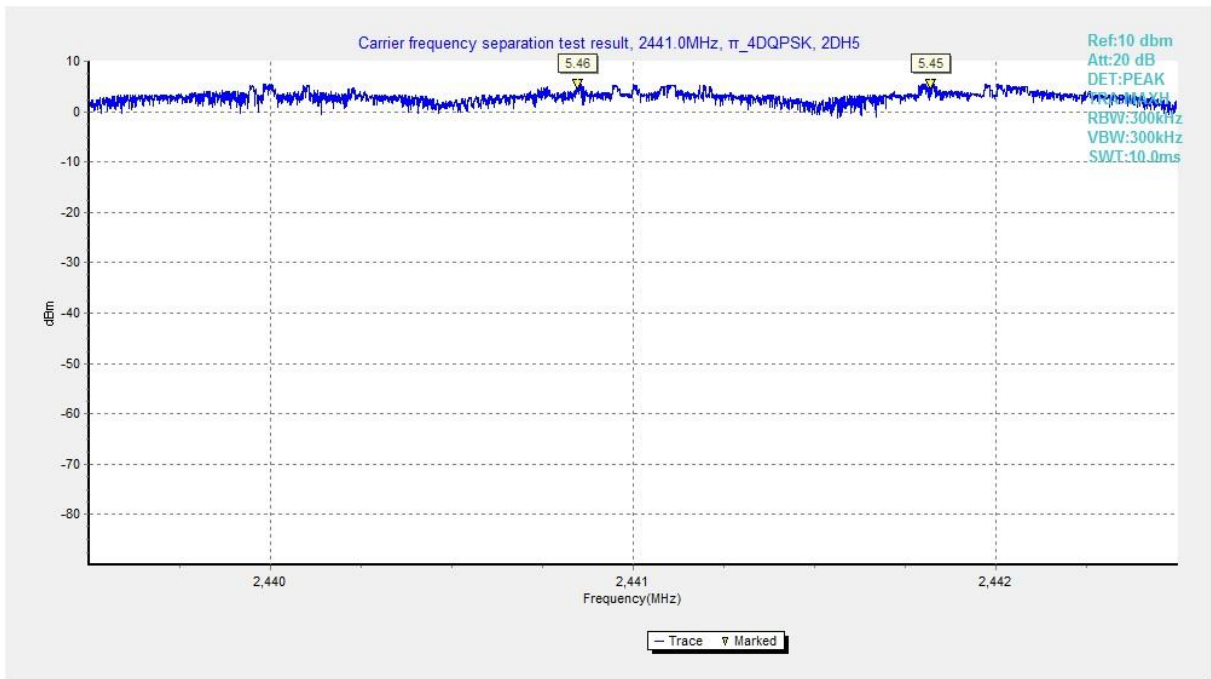
Mode	Channel	Packet	Separation of hopping channels	Test result (kHz)	Conclusion
GFSK	39	DH5	Fig.81	1050.75	<b>P</b>
$\pi/4$ DQPSK	39	2-DH5	Fig.82	974.25	<b>P</b>
8DPSK	39	3-DH5	Fig.83	1008.75	<b>P</b>

See below for test graphs.

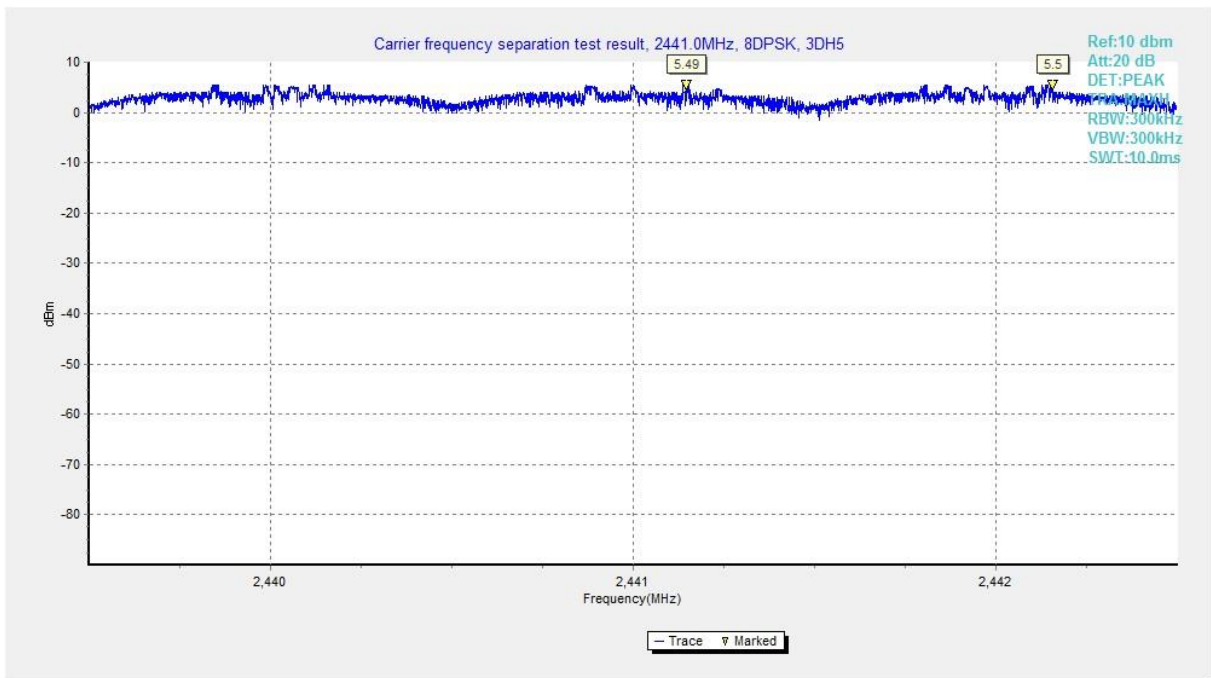
**Conclusion: Pass**



**Fig. 81 Carrier Frequency Separation (GFSK, Ch39)**



**Fig. 82 Carrier Frequency Separation ( $\pi/4$  DQPSK, Ch39)**



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



**A.9 AC Power line Conducted Emission**

**Test Condition:**

<b>Voltage (V)</b>	<b>Frequency (Hz)</b>
120	60

**Measurement Result and limit:**

**BT- AE2, AE3, AE4**

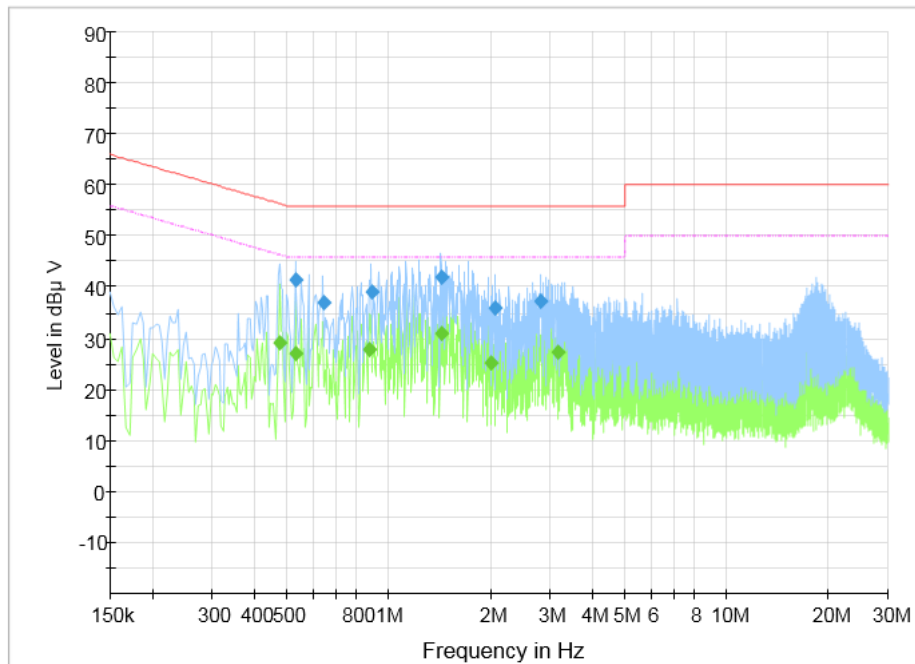
Frequency range (MHz)	Quasi-peak Limit (dBµV)	Average-peak Limit (dBµV)	Result (dBµV)		Conclusion
			Traffic	Idle	
0.15 to 0.5	66 to 56	56 to 46	Fig.84	Fig.85	<b>P</b>
0.5 to 5	56	46			
5 to 30	60	50			

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**



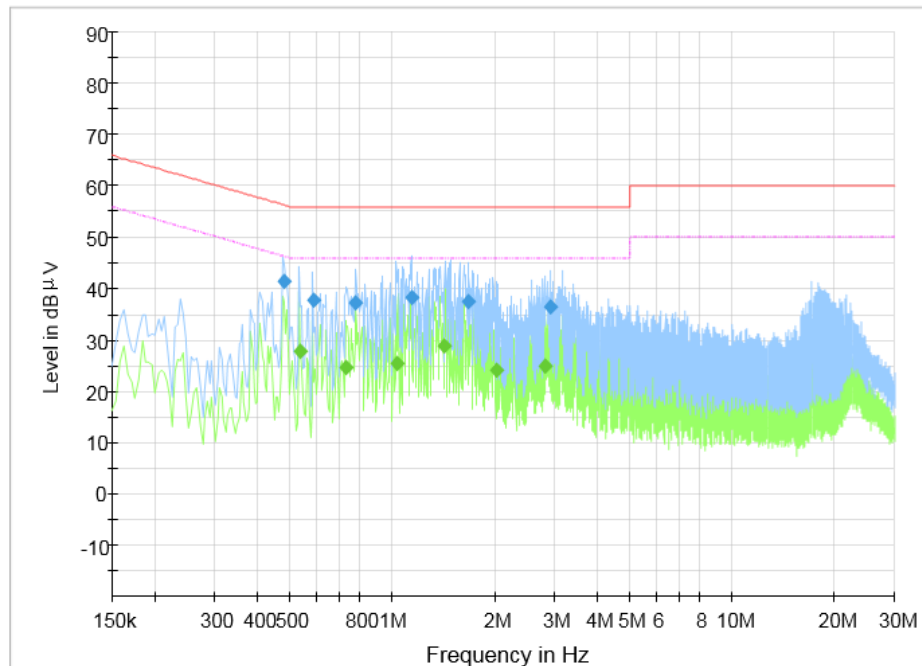
**Fig. 84 AC Power line Conducted Emission (Traffic)**

**Measurement Results: Quasi Peak**

Frequency (MHz)	Quasi Peak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.534021	41.53	56.00	14.47	L1	ON	9.5
0.644893	37.07	56.00	18.93	L1	ON	9.5
0.892221	39.07	56.00	16.93	L1	ON	9.5
1.429521	41.94	56.00	14.06	L1	ON	9.6
2.064429	35.97	56.00	20.03	L1	ON	9.6
2.819443	37.22	56.00	18.78	L1	ON	9.6

**Measurement Results: Average**

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.478350	29.2	46.37	17.17	L1	ON	9.5
0.534021	26.96	46.00	19.04	L1	ON	9.5
0.879429	27.80	46.00	18.20	L1	ON	9.5
1.429521	31.03	46.00	14.97	L1	ON	9.6
2.017521	25.28	46.00	20.72	L1	ON	9.6
3.160350	27.25	46.00	18.75	L1	ON	9.6



**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)
0.482850	41.31	56.29	14.98	L1	ON	9.5
0.589457	37.64	56.00	18.36	L1	ON	9.5
0.781114	37.26	56.00	18.74	L1	ON	9.5
1.139314	38.18	56.00	17.82	L1	ON	9.6
1.672114	37.51	56.00	18.49	L1	ON	9.6
2.926286	36.42	56.00	19.58	L1	ON	9.6

**Measurement Results: Average**

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.538286	27.73	46.00	18.27	L1	ON	9.5
0.734443	24.60	46.00	21.40	L1	ON	9.5
1.032943	25.41	46.00	20.59	L1	ON	9.6
1.424786	28.75	46.00	17.25	L1	ON	9.6
2.021786	23.99	46.00	22.01	L1	ON	9.6
2.814943	24.96	46.00	21.04	L1	ON	9.6

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



## ANNEX- Spot Check of Output Power

**Company Name:** HMD Global Oy

**Product Name:** Smart Phone

**Model Name:** TA-1471(FCC ID: 2AJOTTA-1471)、TA-1446(FCC ID: 2AJOTTA-1446)

### Differences between models

TA-1446 is a variant of TA-1471. The main difference between them is that TA-1471 is dual SIM and TA-1446 is Single SIM.

### Spot Check of Different Mode

Model	Mode	Frequency (MHz)	Conducted Output Power (dBm)
TA-1471	LE 1M	2402(CH0)	6.87
	BR(GFSK)	2402(CH0)	7.31
	802.11b	2437 (CH6)	16.40
TA-1446	LE 1M	2402(CH0)	6.93
	BR(GFSK)	2402(CH0)	7.26
	802.11b	2437 (CH6)	16.11

Note: Spot check test data included for the variants based on worst-case results reported in the original.

From the above data, it can be concluded that the conducted output power of the variant is less than or near to the original. And the variant test data can refer to the original report (**I21N04075**).