

APPENDIX REPORT

Project No.	SHT2206096801EW	Radio Specification	Bluetooth EDR
Test sample No.	YPHT22060968002	Model No.	S301A
Start test date	2022-07-07	Finish date	2022-07-07
Temperature	25.2°C	Humidity	33%
Test Engineer	Xiaoqin Li	Auditor	Xiaodong Zhu

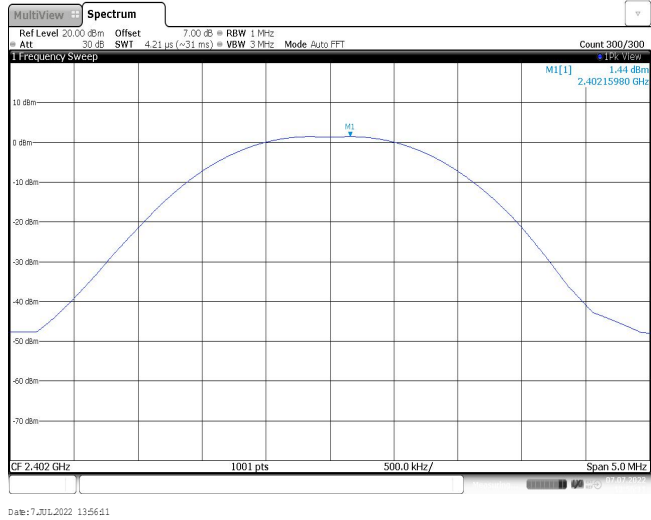
Appendix clause	Test item	Result
A	Peak Output Power	PASS
B	20 dB Bandwidth	PASS
C	99% Occupied Bandwidth	PASS
D	Carrier Frequencies Separation	PASS
E	Hopping Channel Number	PASS
F	Dwell Time	PASS
G	Duty Cycle Correction Factor (DCCF)	PASS
H	Band edge and Spurious Emissions(ducted)	PASS

Appendix A: Peak Output Power

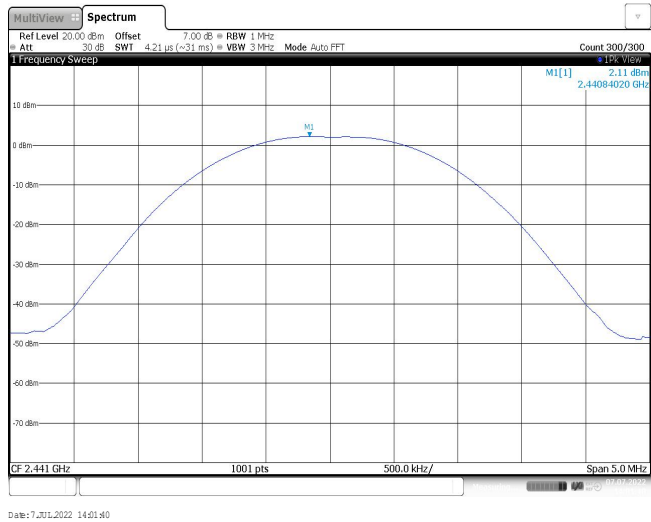
Modulation type	Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
GFSK	00	1.44	1.40	≤ 30.00	Pass
	39	2.11	1.93		
	78	2.48	2.44		
π/4DQPSK	00	2.28	1.72	≤ 21.00	Pass
	39	3.16	2.66		
	78	3.51	2.98		
8DPSK	00	3.13	2.50	≤ 21.00	Pass
	39	4.02	3.39		
	78	4.42	3.82		

Modulation Type: GFSK

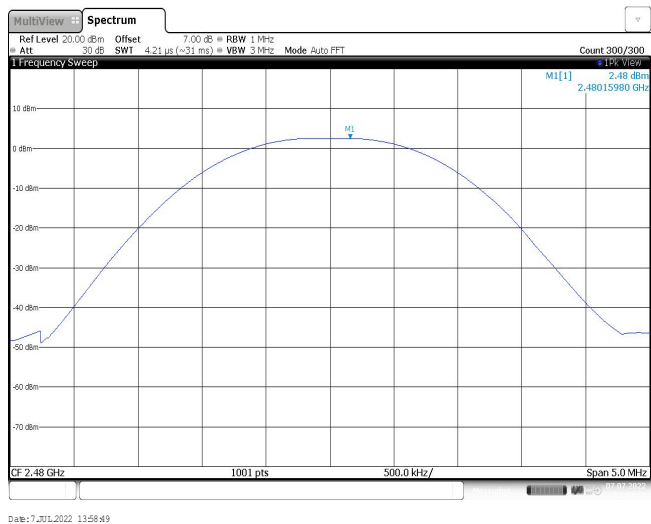
CH00



CH39

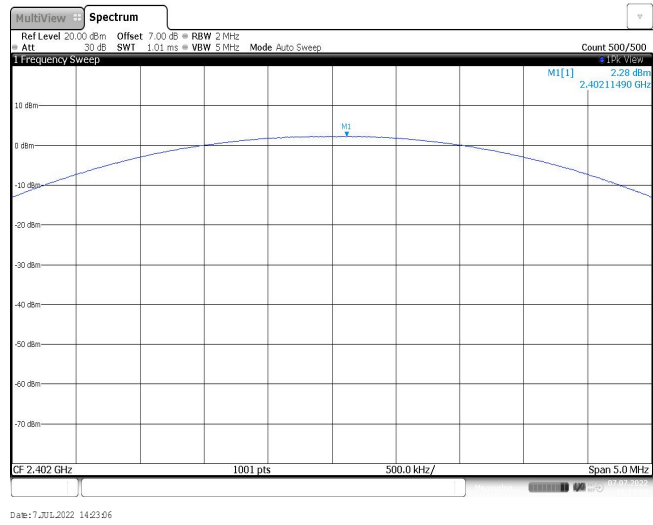


CH78

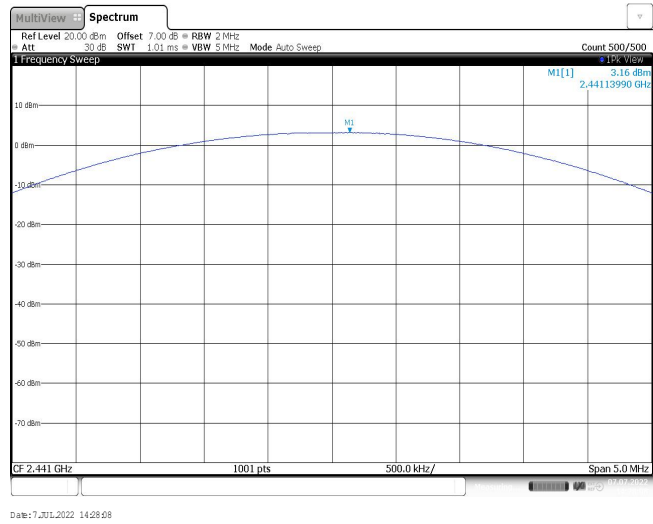


Modulation Type: $\pi/4$ QPSK

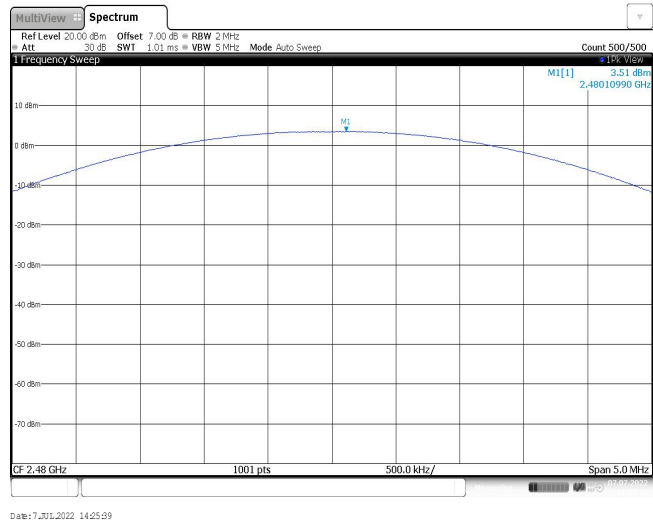
CH00



CH39

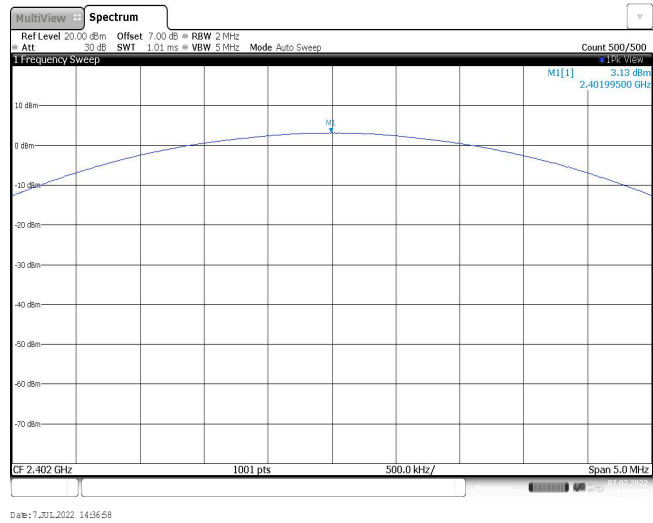


CH78

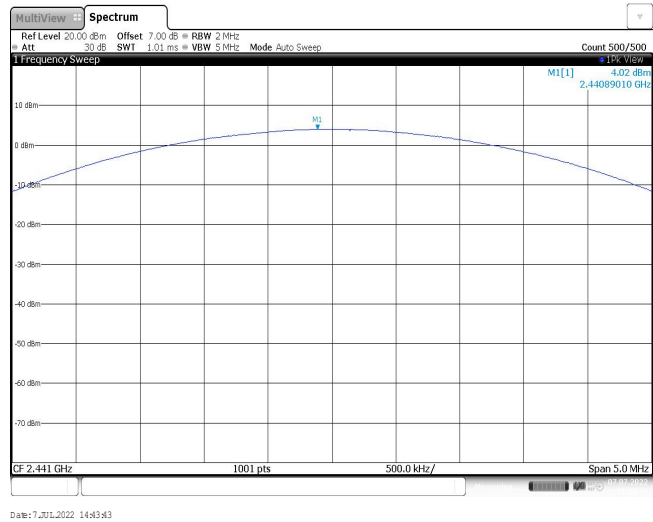


Modulation Type: 8DPSK

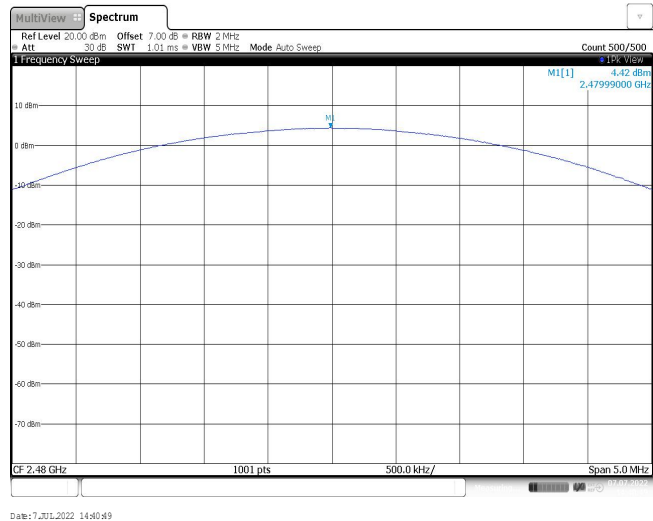
CH00



CH39



CH78

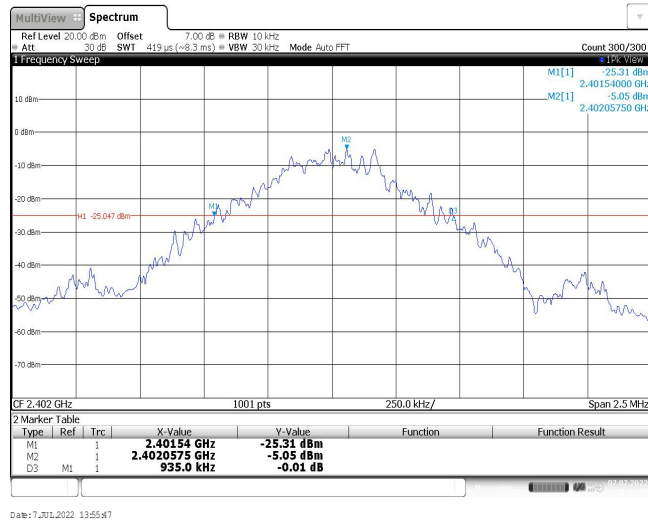


Appendix B : 20 dB Bandwidth

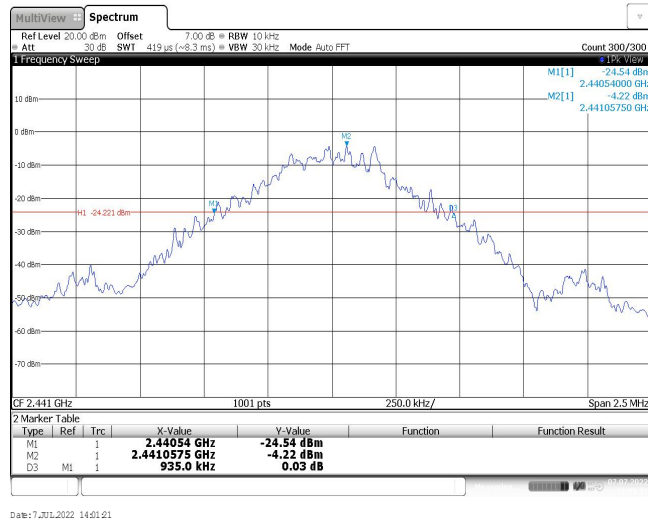
Modulation type	Channel	20 dB Bandwidth (kHz)	Limit (kHz)	Result
GFSK	00	935.00	-	Pass
	39	935.00		
	78	935.00		
$\pi/4$ DQPSK	00	1340.00	-	Pass
	39	1335.00		
	78	1337.50		
8DPSK	00	1332.50	-	Pass
	39	1332.50		
	78	1332.50		

Modulation Type: GFSK

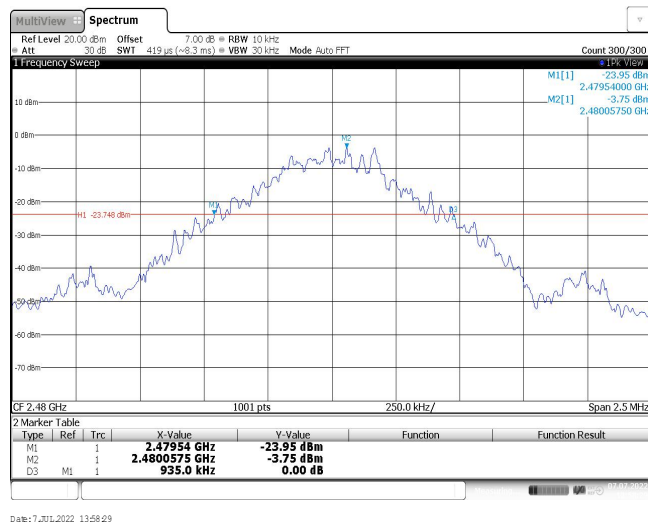
CH00



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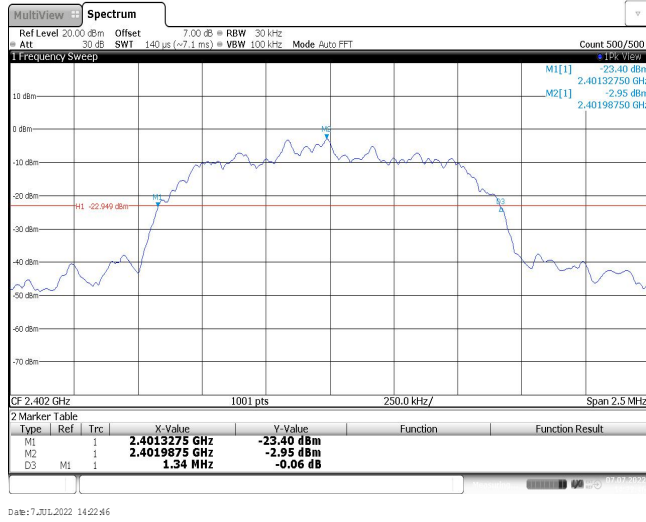
CH78



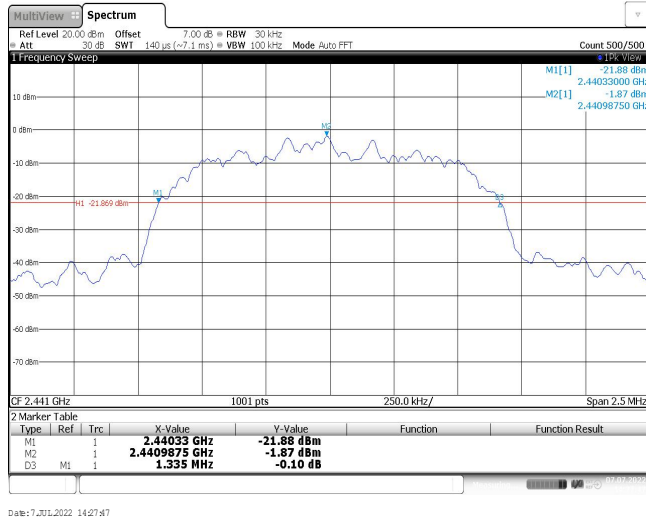
Modulation Type:

$\pi/4$ DQPSK

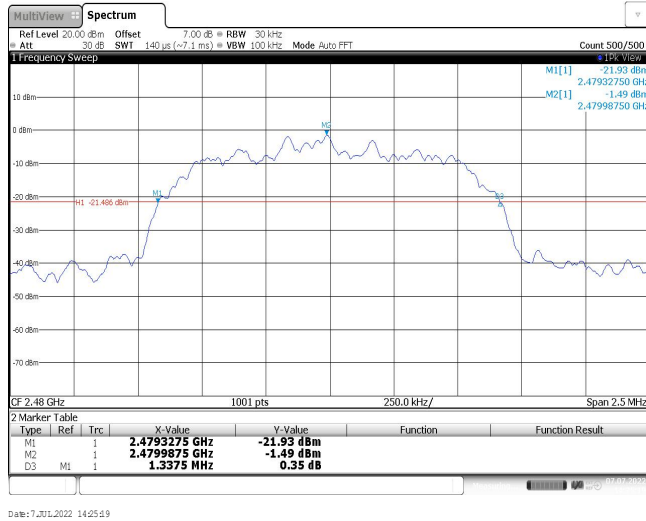
CH00



CH39



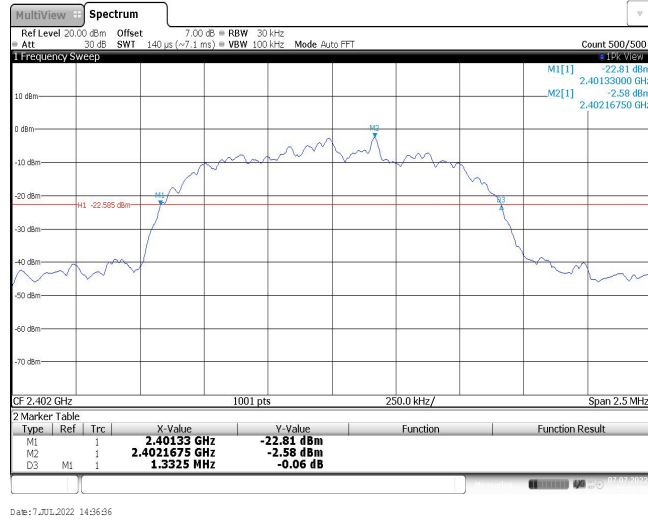
CH78



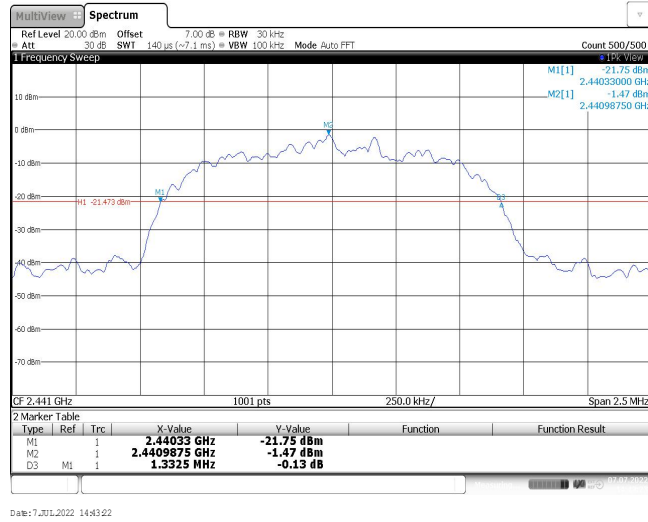
Modulation Type:

8DPSK

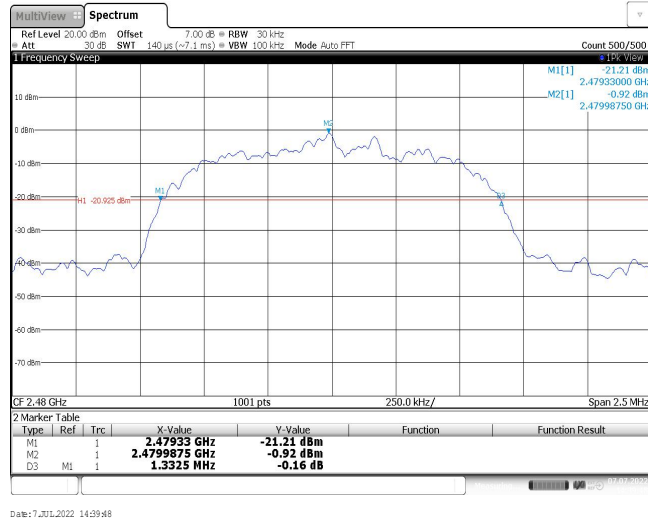
CH00



CH39



CH78

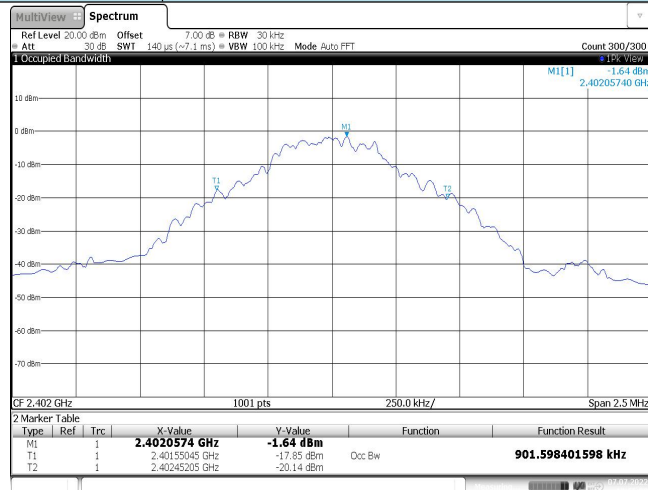


Appendix C: 99% Occupied Bandwidth

Modulation type	Channel	99% Occupied Bandwidth (MHz)	Limit (MHz)	Result
GFSK	00	0.90	-	Pass
	39	0.90		
	78	0.90		
$\pi/4$ DQPSK	00	1.19	-	Pass
	39	1.19		
	78	1.19		
8DPSK	00	1.20	-	Pass
	39	1.20		
	78	1.20		

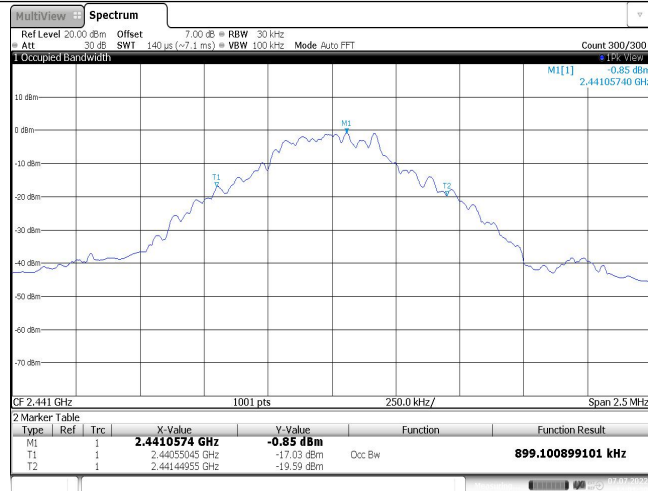
Modulation Type: GFSK

CH00



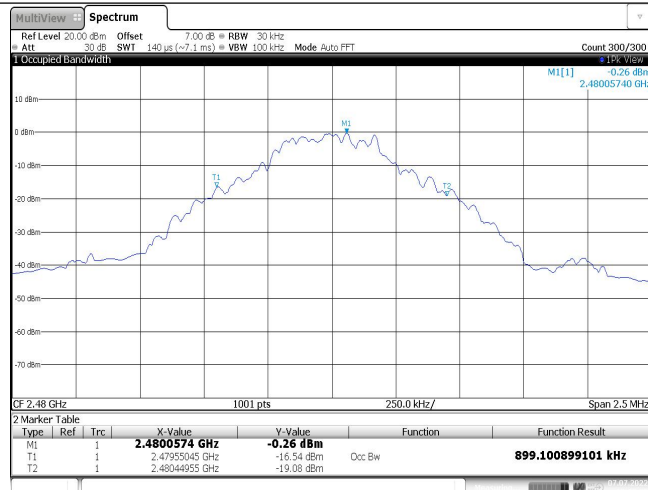
Date: 7/01/2022 13:56:00

CH39



Date: 7/01/2022 14:01:30

CH78



Date: 7/01/2022 13:58:39

Modulation Type:

$\pi/4$ DQPSK

CH00



Date: 7/01/2022 14:22:55

CH39



Date: 7/01/2022 14:27:57

CH78



Date: 7/01/2022 14:25:29

Modulation Type: 8DPSK

CH00



Date: 7/01/2022 14:36:47

CH39



Date: 7/01/2022 14:43:31

CH78



Date: 7/01/2022 14:39:57

Appendix D: Carrier Frequencies Separation

Modulation type	Channel	Carrier Frequencies Separation (MHz)	Limit (kHz) *	Result
GFSK	39	1.00	≥935.00	Pass
π/4DQPSK	39	1.00	≥893.33	Pass
8DPSK	39	1.00	≥888.33	Pass

Note:

*: GFSK limit = The maximum 20 dB Bandwidth for GFSK modulation on the appendix B.

π/4DQPSK limit = 2/3 * The maximum 20 dB Bandwidth for π/4DQPSK modulation on the appendix B.

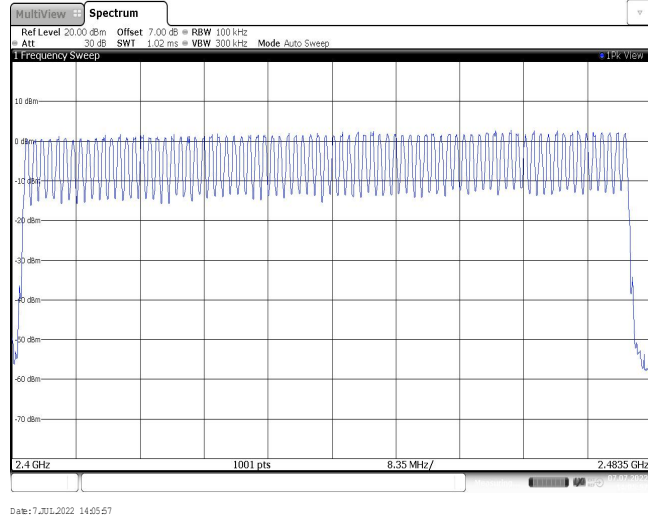
8DPSK limit = 2/3 * The maximum 20 dB Bandwidth for 8DPSK modulation on the appendix B

<p>GFSK</p>	<p>MultiView Spectrum Ref Level 20.00 dBm Offset 7.00 dB RBW 30 kHz Att 30 dB SWI 140 us (<7.0 ms) VBW 100 kHz Mode Auto FFT Count 100/100 1 Frequency Sweep M1[1] -6.86 dBm D1[1] 0.10 dBm 2.44105600 GHz 1.00200 MHz 2.44 GHz 1001 pts 300.0 kHz/ 2.443 GHz Date: 7 Jul 2022 14:04:45</p>
<p>$\pi/4$DQPSK</p>	<p>MultiView Spectrum Ref Level 20.00 dBm Offset 7.00 dB RBW 30 kHz Att 30 dB SWI 140 us (<7.0 ms) VBW 100 kHz Mode Auto FFT Count 100/100 1 Frequency Sweep M1[1] -6.42 dBm D1[1] 4.32 dBm 2.44098670 GHz 999.30 kHz 2.44 GHz 1001 pts 300.0 kHz/ 2.443 GHz Date: 7 Jul 2022 14:02:51</p>
<p>8DPSK</p>	<p>MultiView Spectrum Ref Level 20.00 dBm Offset 7.00 dB RBW 30 kHz Att 30 dB SWI 140 us (<7.0 ms) VBW 100 kHz Mode Auto FFT Count 100/100 1 Frequency Sweep M1[1] -1.31 dBm D1[1] -0.36 dBm 2.44098700 GHz 999.00 kHz 2.44 GHz 1001 pts 300.0 kHz/ 2.443 GHz Date: 7 Jul 2022 14:50:37</p>

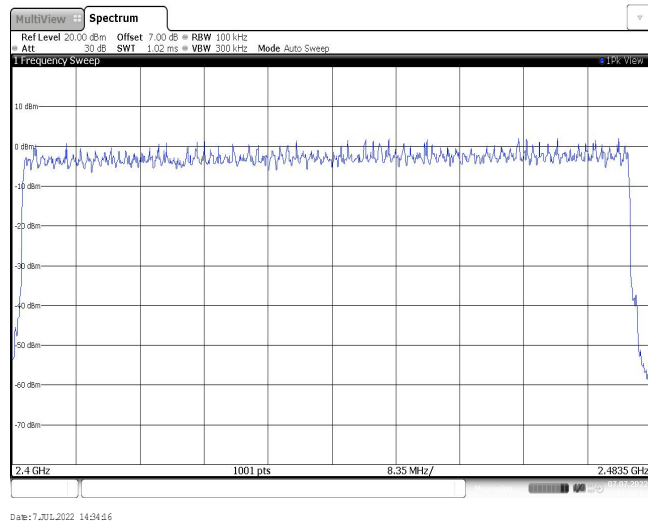
Appendix E: Hopping Channel Number

Modulation type	Channel number	Limit	Result
GFSK	79	≥15.00	Pass
π/4DQPSK	79		
8DPSK	79		

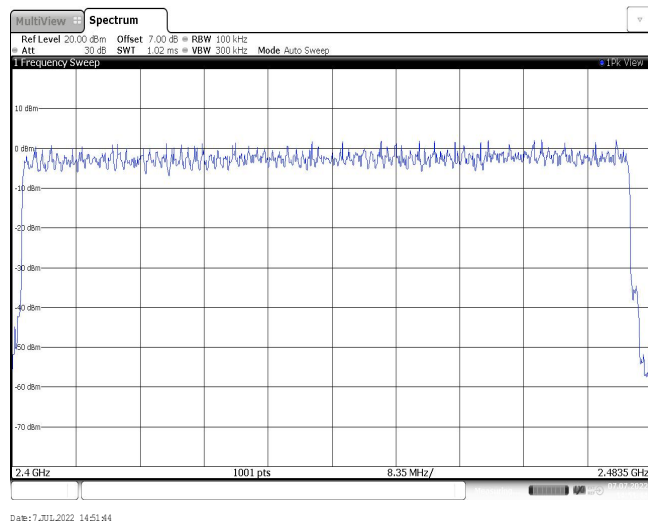
GFSK



$\pi/4$ DQPSK



8DPSK

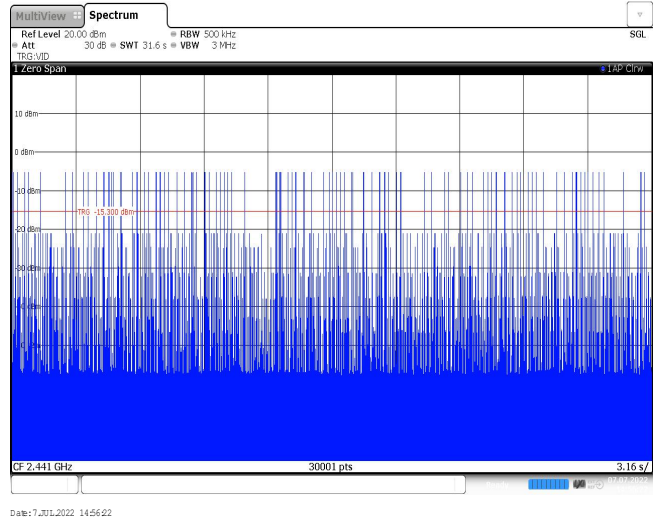


Appendix F: Dwell Time

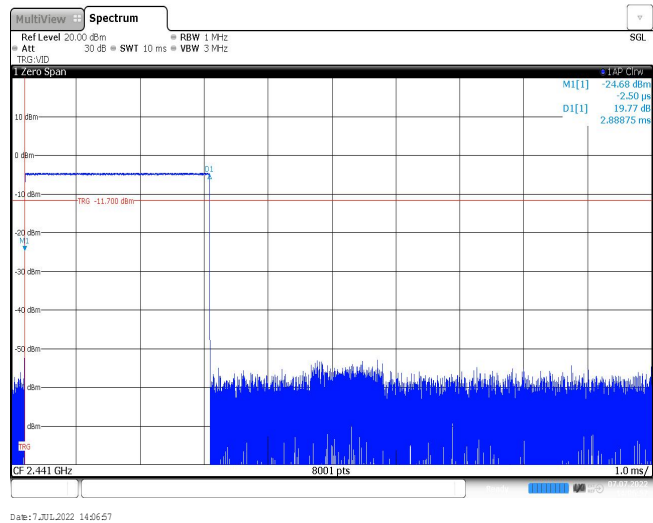
Modulation type	Packet	Burst Width [ms]	Total Hops[hop*ch]	Dwell time (Second)	Limit (Second)	Result
GFSK	DH1	0.38	321	0.12	≤ 0.40	Pass
	DH3	1.64	105	0.17		
	DH5	2.89	61	0.18		
π/4DQPSK	2DH1	0.38	316	0.12	≤ 0.40	Pass
	2DH3	1.64	100	0.16		
	2DH5	2.88	64	0.19		
8DPSK	3DH1	0.38	319	0.12	≤ 0.40	Pass
	3DH3	1.63	107	0.18		
	3DH5	2.88	64	0.19		

Modulation Type: GFSK	
<p>DH1 Burst width</p>	<p>Date: 7 JUL 2022 14:54:51</p>
<p>DH1 Burst number</p>	<p>Date: 7 JUL 2022 14:55:28</p>
<p>DH3 Burst width</p>	<p>Date: 7 JUL 2022 14:55:47</p>

DH3
Burst number



DH5
Burst width



DH5
Burst number

