

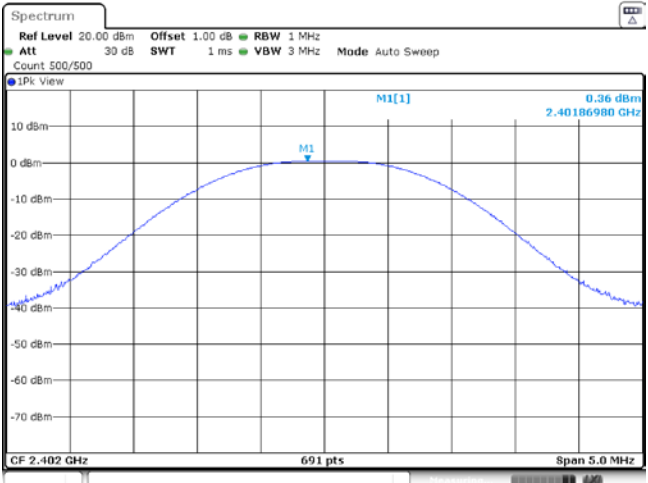
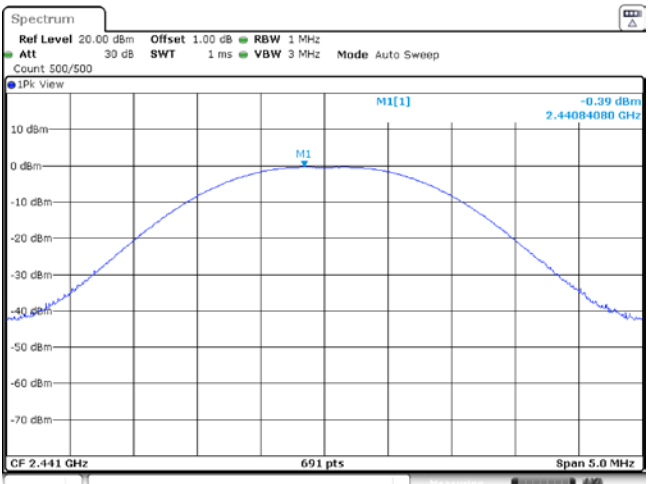
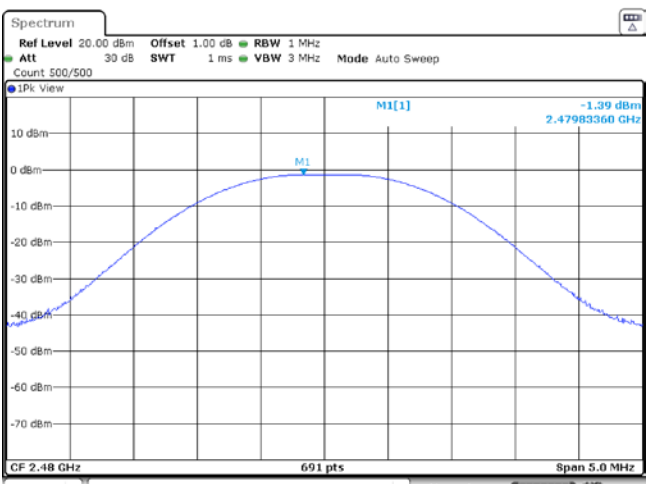
APPENDIX REPORT

Project No.	SHT2006066501EW	Radio Specification	Bluetooth EDR
Test sample No.	YPHT20060665002	Model No.	CT90
Start test date	2020/6/29	Finish date	2020/6/29
Temperature	25°C	Humidity	50%
Test Engineer	Jiongsheng.Feng	Auditor	<i>William.wang</i>

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(coducted)	PASS

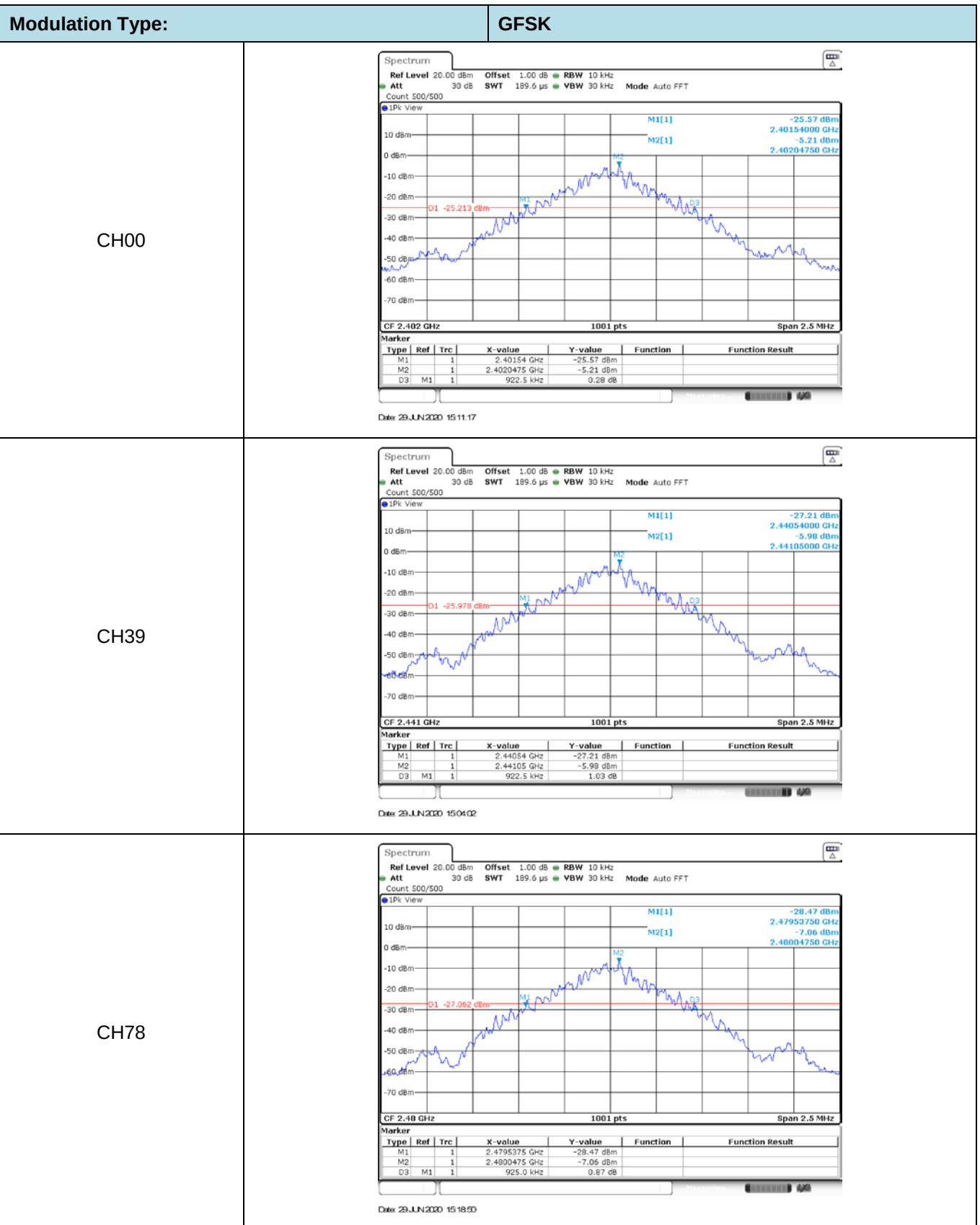
Appendix A: Peak Output Power

Modulation type	Channel	Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
GFSK	00	0.36	0.32	≤ 30.00	Pass
	39	-0.39	-0.40		
	78	-1.39	-1.41		

Modulation Type:	GFSK
CH00	 Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 1 MHz Att 30 dB SWT 1 ms VBW 3 MHz Mode Auto Sweep Count 500/500 1Pk View M1[1] 0.36 dBm 2.40186980 GHz CF 2.402 GHz 691 pts Span 5.0 MHz Date: 29 JUN 2020 15:11:34
CH39	 Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 1 MHz Att 30 dB SWT 1 ms VBW 3 MHz Mode Auto Sweep Count 500/500 1Pk View M1[1] -0.39 dBm 2.44084080 GHz CF 2.441 GHz 691 pts Span 5.0 MHz Date: 29 JUN 2020 15:04:21
CH78	 Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 1 MHz Att 30 dB SWT 1 ms VBW 3 MHz Mode Auto Sweep Count 500/500 1Pk View M1[1] -1.39 dBm 2.47983360 GHz CF 2.48 GHz 691 pts Span 5.0 MHz Date: 29 JUN 2020 15:19:07

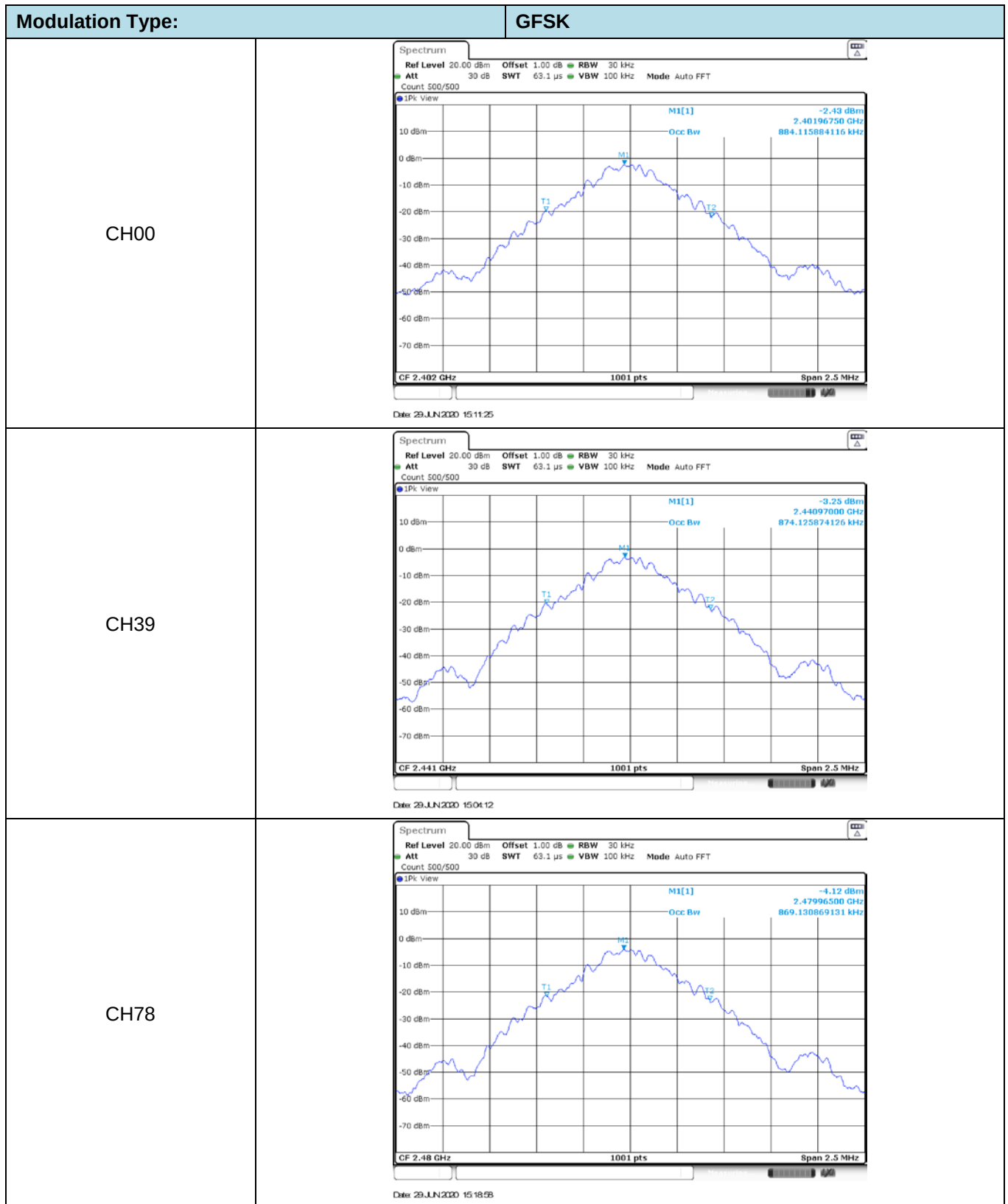
Appendix B : 20 dB Bandwidth

Modulation type	Channel	20 dB Bandwidth (kHz)	Limit (kHz)	Result
GFSK	00	922.50	-	Pass
	39	922.50		
	78	925.00		



Appendix C: 99% Occupied Bandwidth

Modulation type	Channel	99% Occupied Bandwidth (MHz)	Limit (MHz)	Result
GFSK	00	0.88	-	Pass
	39	0.87		
	78	0.87		



Appendix D: Carrier Frequencies Separation

Modulation type	Channel	Carrier Frequencies Separation (MHz)	Limit (kHz) *	Result
GFSK	39	1.00	≥925	Pass

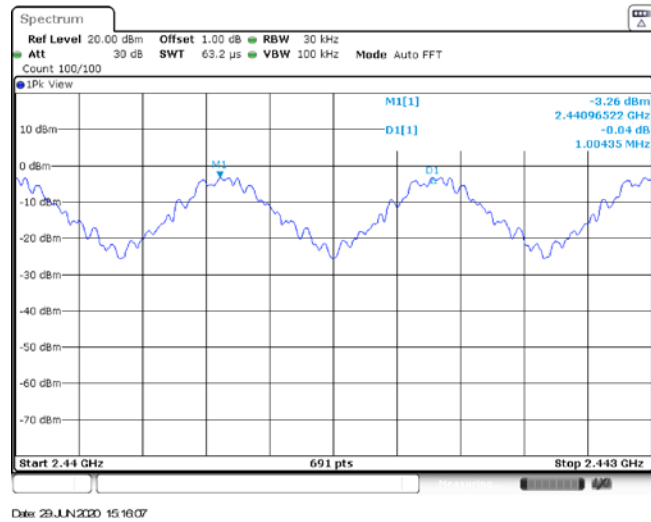
Note:

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

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

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

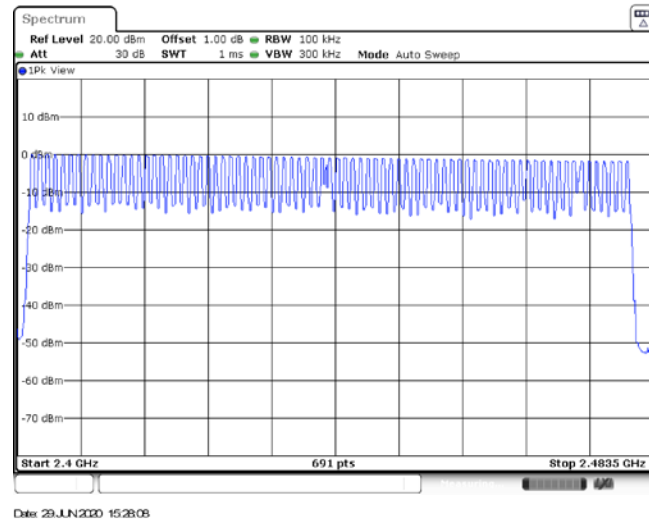
GFSK



Appendix E: Hopping Channel Number

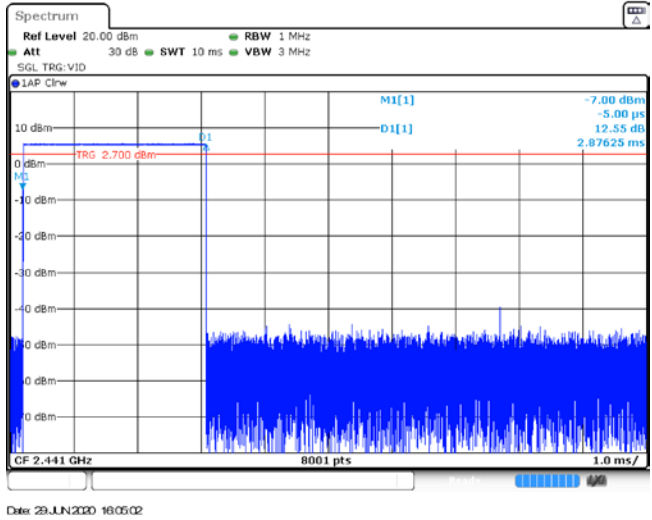
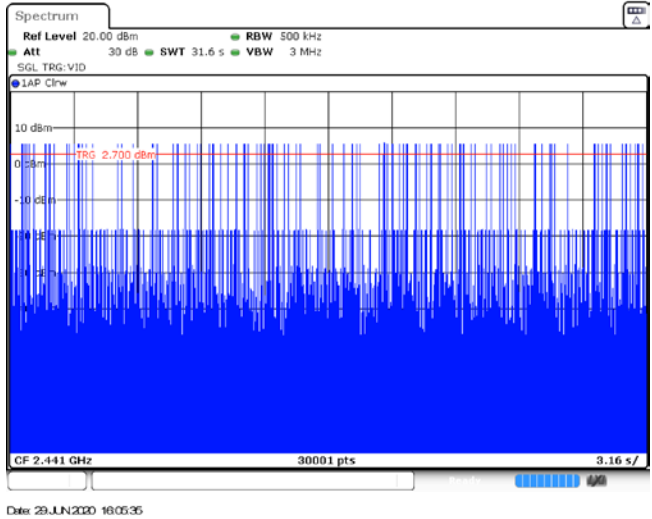
Modulation type	Channel number	Limit	Result
GFSK	79	≥ 15.00	Pass

GFSK



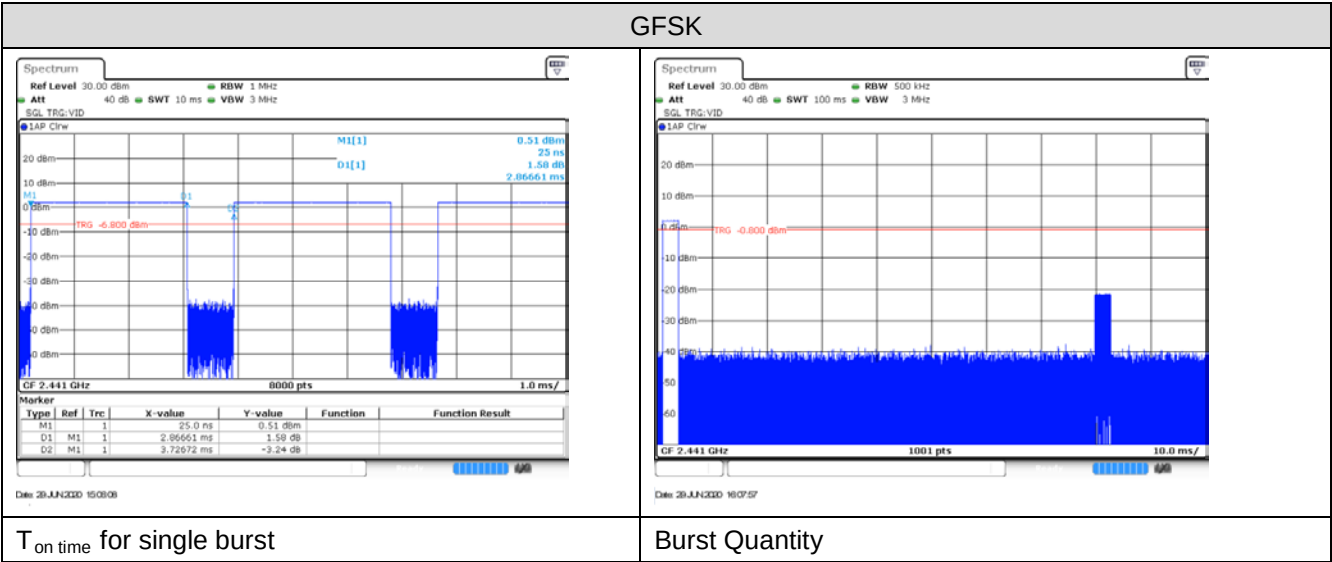
Appendix F: Dwell Time

Modulation type	Packet	Burst Width [ms]	Total Hops[hop*ch]	Dwell time (Second)	Limit (Second)	Result
	DH5	2.88	117.00	0.34	≤ 0.40	PASS

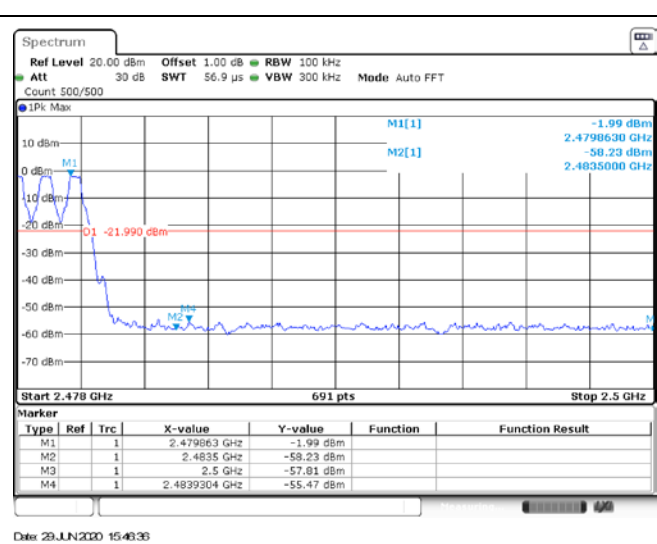
Modulation Type: GFSK	
DH5 Burst width	
DH5 Burst number	

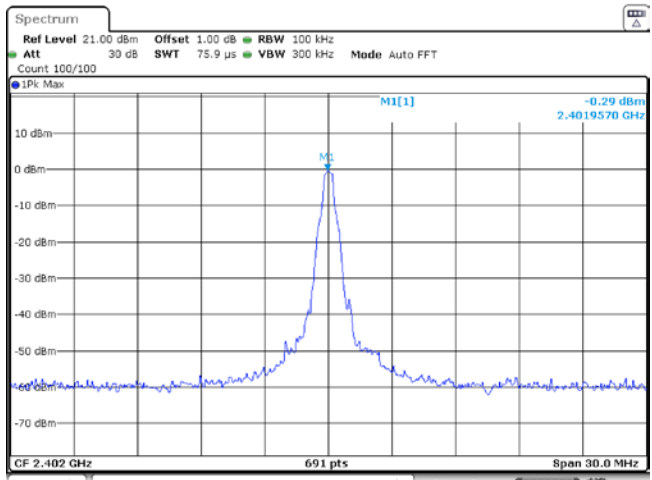
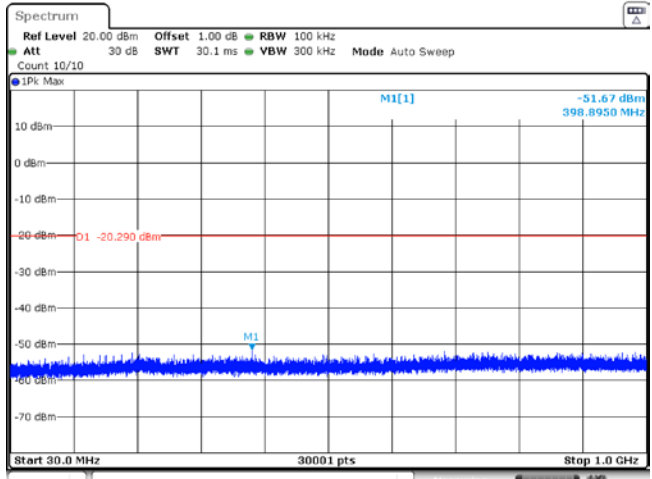
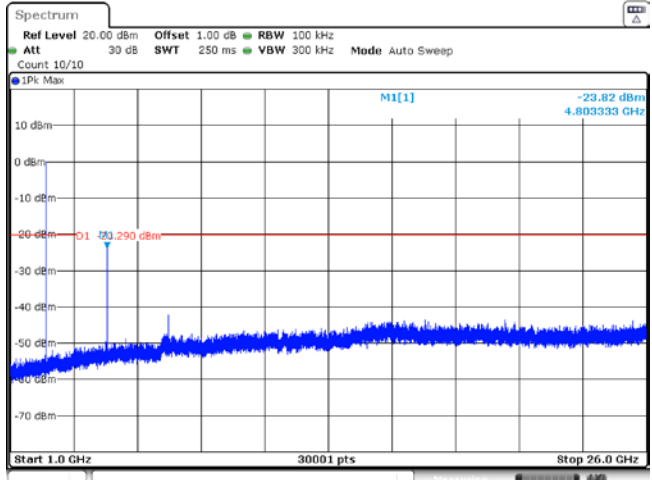
Appendix G: Duty Cycle Correction Factor (DCCF)

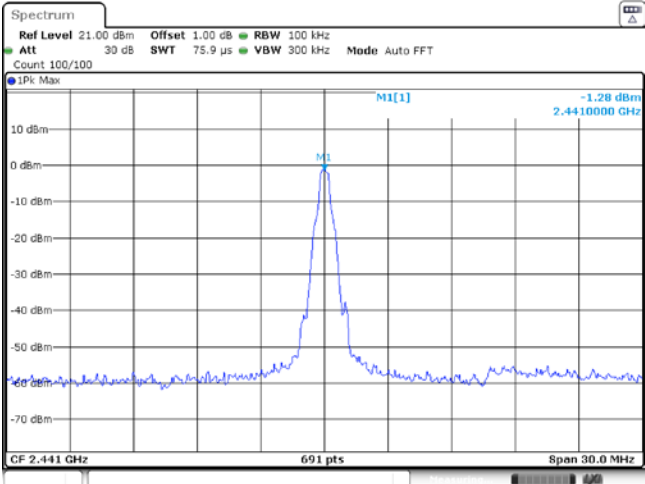
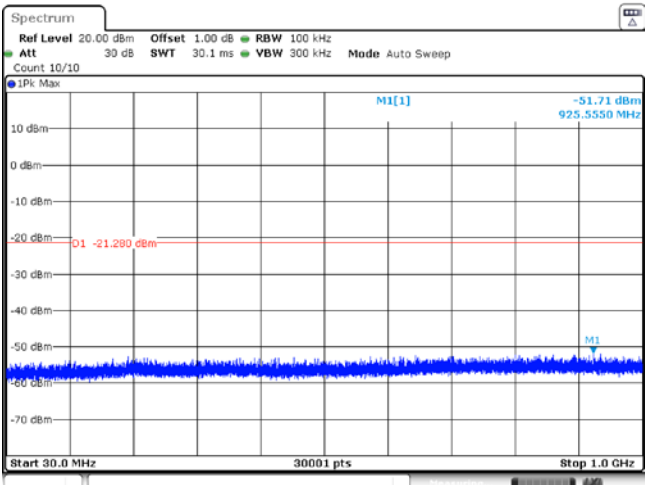
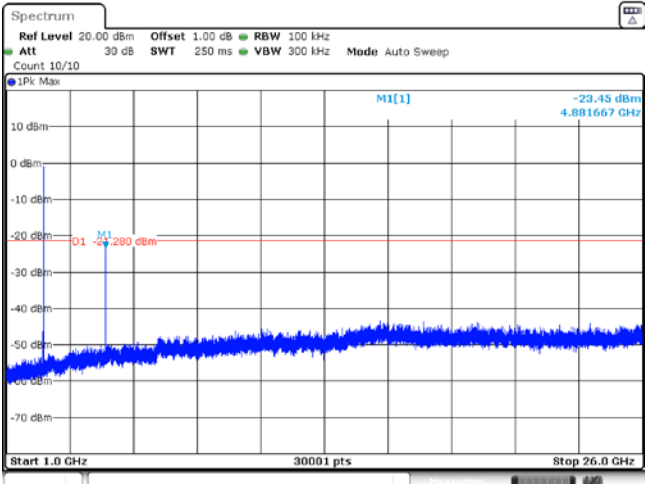
DCCF Calculate Formula					
$DCCF = 20 * \text{Log}(\text{duty cycle}) = 20 * \text{Log}(T_{\text{on time}} / T_{\text{period}})$					
Modulation type	Test Frequency (MHz)	$T_{\text{on time}}$ for single burst [ms]	T_{period} [ms]	Burst Quantity	DCCF [dB]
GFSK	2441	2.87	100	2.00	-24.82

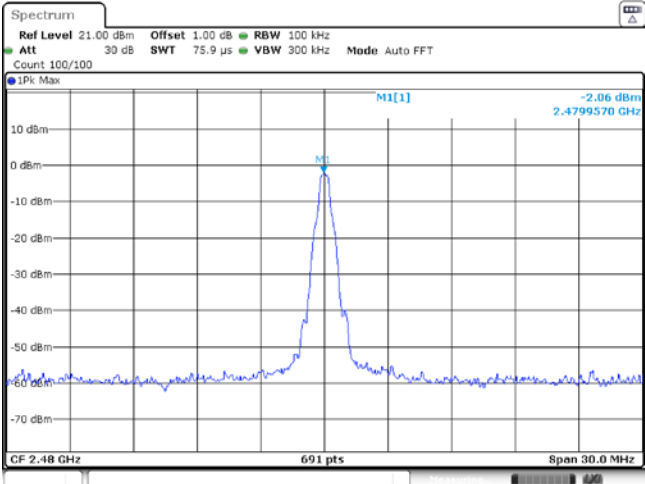
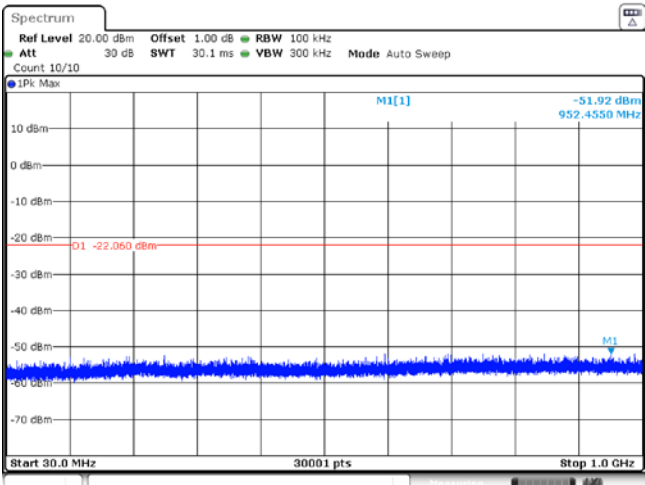
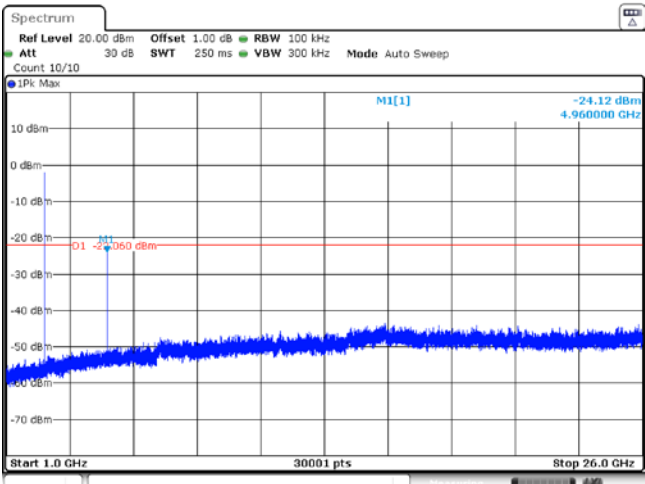


CH78
Hopping mode



Test Item:	Spurious Emission	Modulation type:	GFSK
CH00 Reference level	 Spectrum plot showing a peak at 2.4019570 GHz with a level of -0.29 dBm. The plot is titled 'Spectrum' and includes parameters: Ref Level 21.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30 dB, SWT 75.9 μs, VBW 300 kHz, Mode Auto FFT, Count 100/100. The x-axis is labeled 'CF 2.402 GHz' and the y-axis is labeled '1Pk Max'. The plot shows a sharp peak at 2.4019570 GHz with a level of -0.29 dBm. The baseline is around -60 dBm. The plot is titled 'Spectrum' and includes parameters: Ref Level 21.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30 dB, SWT 75.9 μs, VBW 300 kHz, Mode Auto FFT, Count 100/100. The x-axis is labeled 'CF 2.402 GHz' and the y-axis is labeled '1Pk Max'. The plot shows a sharp peak at 2.4019570 GHz with a level of -0.29 dBm. The baseline is around -60 dBm.		
CH00 30MHz~1000MHz	 Spectrum plot showing a peak at 398.8950 MHz with a level of -51.67 dBm. The plot is titled 'Spectrum' and includes parameters: Ref Level 20.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30 dB, SWT 30.1 ms, VBW 300 kHz, Mode Auto Sweep, Count 10/10. The x-axis is labeled 'Start 30.0 MHz' and the y-axis is labeled '1Pk Max'. The plot shows a sharp peak at 398.8950 MHz with a level of -51.67 dBm. The baseline is around -60 dBm. The plot is titled 'Spectrum' and includes parameters: Ref Level 20.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30 dB, SWT 30.1 ms, VBW 300 kHz, Mode Auto Sweep, Count 10/10. The x-axis is labeled 'Start 30.0 MHz' and the y-axis is labeled '1Pk Max'. The plot shows a sharp peak at 398.8950 MHz with a level of -51.67 dBm. The baseline is around -60 dBm.		
CH00 1GHz~26GHz	 Spectrum plot showing a peak at 4.803333 GHz with a level of -23.82 dBm. The plot is titled 'Spectrum' and includes parameters: Ref Level 20.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30 dB, SWT 250 ms, VBW 300 kHz, Mode Auto Sweep, Count 10/10. The x-axis is labeled 'Start 1.0 GHz' and the y-axis is labeled '1Pk Max'. The plot shows a sharp peak at 4.803333 GHz with a level of -23.82 dBm. The baseline is around -60 dBm. The plot is titled 'Spectrum' and includes parameters: Ref Level 20.00 dBm, Offset 1.00 dB, RBW 100 kHz, Att 30 dB, SWT 250 ms, VBW 300 kHz, Mode Auto Sweep, Count 10/10. The x-axis is labeled 'Start 1.0 GHz' and the y-axis is labeled '1Pk Max'. The plot shows a sharp peak at 4.803333 GHz with a level of -23.82 dBm. The baseline is around -60 dBm.		

CH39 Reference level	 The spectrum plot shows a single sharp peak at 2.441 GHz. The y-axis represents power in dBm, ranging from -70 to 10. The peak is labeled M1[1] with a value of -1.28 dBm. The x-axis shows a span of 30.0 MHz. The plot is titled 'Spectrum' and includes settings: Ref Level 21.00 dBm, Att 30 dB, Offset 1.00 dB, RBW 100 kHz, SWT 75.9 μs, VBW 300 kHz, Mode Auto FFT, Count 100/100, and IPrk Max. The date is 29 JUN 2020 15:04:27.
CH39 30MHz~1000MHz	 The spectrum plot shows a wide range from 30.0 MHz to 1.0 GHz. The y-axis ranges from -70 to 10 dBm. A red horizontal line is drawn at -21.280 dBm. The plot is titled 'Spectrum' and includes settings: Ref Level 20.00 dBm, Att 30 dB, Offset 1.00 dB, RBW 100 kHz, SWT 30.1 ms, VBW 300 kHz, Mode Auto Sweep, Count 10/10, and IPrk Max. The date is 29 JUN 2020 15:04:43.
CH39 1GHz~26GHz	 The spectrum plot shows a wide range from 1.0 GHz to 26.0 GHz. The y-axis ranges from -70 to 10 dBm. A red horizontal line is drawn at -21.280 dBm. The plot is titled 'Spectrum' and includes settings: Ref Level 20.00 dBm, Att 30 dB, Offset 1.00 dB, RBW 100 kHz, SWT 250 ms, VBW 300 kHz, Mode Auto Sweep, Count 10/10, and IPrk Max. The date is 29 JUN 2020 15:05:10.

CH78 Reference level	 The spectrum plot shows a single sharp peak at 2.4799570 GHz with a power level of -2.06 dBm. The y-axis ranges from -70 dBm to 10 dBm, and the x-axis shows a span of 30.0 MHz. The plot is titled 'Spectrum' and includes settings: Ref Level 21.00 dBm, Att 30 dB, Offset 1.00 dB, RBW 100 kHz, SWT 75.9 μs, VBW 300 kHz, Mode Auto FFT, Count 100/100. The peak is labeled M1[1]. Date: 29 JUN 2020 15:19:27
CH78 30MHz~1000MHz	 The spectrum plot shows a noise floor across the 30.0 MHz to 1.0 GHz range. The y-axis ranges from -70 dBm to 10 dBm. A red horizontal line is drawn at -22.060 dBm. The plot is titled 'Spectrum' and includes settings: Ref Level 20.00 dBm, Att 30 dB, Offset 1.00 dB, RBW 100 kHz, SWT 30.1 ms, VBW 300 kHz, Mode Auto Sweep, Count 10/10. The peak is labeled M1[1]. Date: 29 JUN 2020 15:19:42
CH78 1GHz~26GHz	 The spectrum plot shows a noise floor across the 1.0 GHz to 26.0 GHz range. The y-axis ranges from -70 dBm to 10 dBm. A red horizontal line is drawn at -22.060 dBm. The plot is titled 'Spectrum' and includes settings: Ref Level 20.00 dBm, Att 30 dB, Offset 1.00 dB, RBW 100 kHz, SWT 250 ms, VBW 300 kHz, Mode Auto Sweep, Count 10/10. The peak is labeled M1[1]. Date: 29 JUN 2020 15:19:58

-----End of Report-----