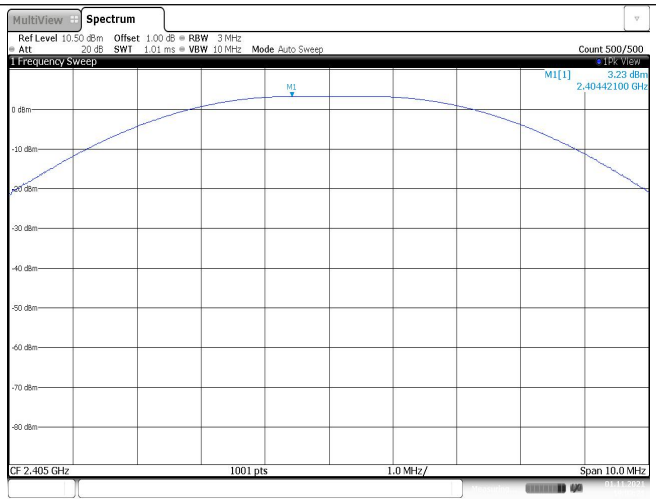
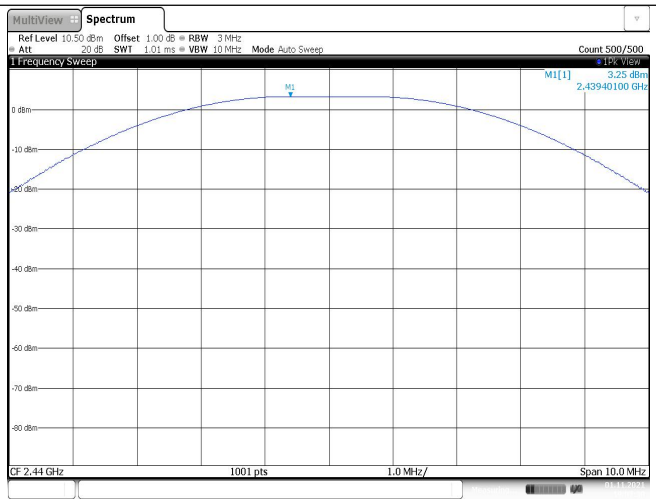
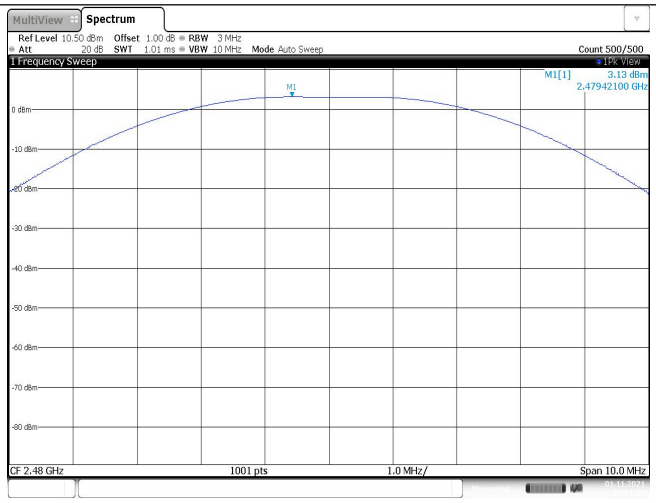
APPENDIX REPORT

Project No.	SHT2108113004EW	Radio Specification	Zigbee
Test sample No.	YPHT21081130002	Model No.	LW-IS-APP-Z
Start test date	2021-11-01	Finish date	2021-11-01
Temperature	25.7℃	Humidity	63%
Test Engineer	Weiyang Xiang	Auditor	Xiaodong Zhao

Appendix clause	Test item	Result
A	Peak Output Power	PASS
B	Power Spectral Density	PASS
C	6 dB Bandwidth	PASS
D	99% Occupied Bandwidth	PASS
E	Duty cycle	PASS
F	Band edge and Spurious Emissions (conducted)	PASS

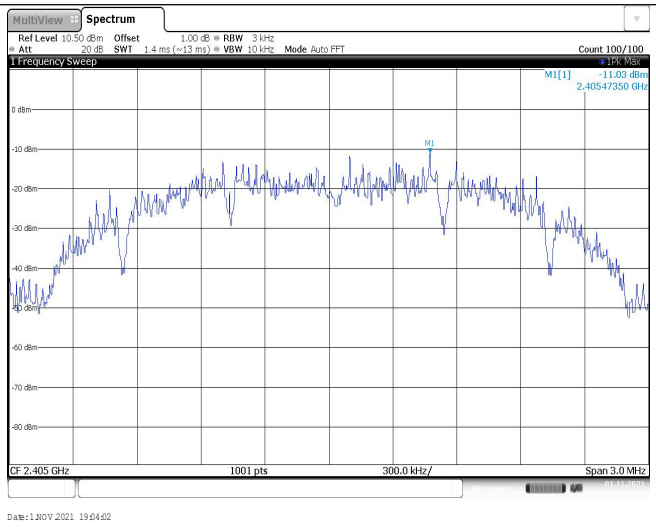
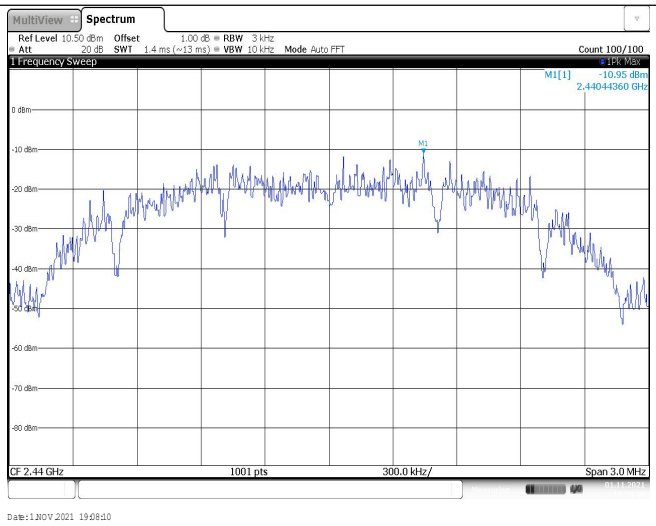
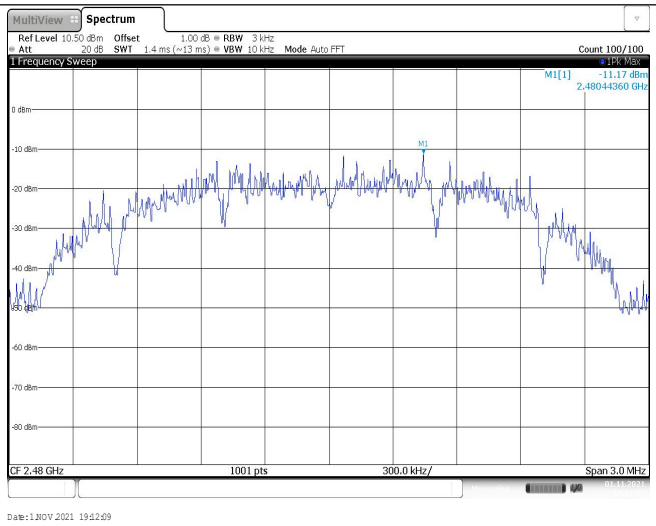
Appendix A：Peak Output Power

Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
CH_L	3.23	3.22	≤ 30.00	Pass
CH_M	3.25	3.24		
CH_H	3.13	3.11		

CH_L	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 3 MHz Att 20 dB SWT 1.01 ms VBW 10 MHz Mode Auto Sweep Count 500/500 1 Frequency Sweep 1Pk View M1[1] 3.23 dBm 2.40442100 GHz CF 2.405 GHz 1001 pts 1.0 MHz/ Span 10.0 MHz Date:1.NOV.2021 19:03:22
CH_M	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 3 MHz Att 20 dB SWT 1.01 ms VBW 10 MHz Mode Auto Sweep Count 500/500 1 Frequency Sweep 1Pk View M1[1] 3.25 dBm 2.43940100 GHz CF 2.44 GHz 1001 pts 1.0 MHz/ Span 10.0 MHz Date:1.NOV.2021 19:07:30
CH_H	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 3 MHz Att 20 dB SWT 1.01 ms VBW 10 MHz Mode Auto Sweep Count 500/500 1 Frequency Sweep 1Pk View M1[1] 3.13 dBm 2.47942100 GHz CF 2.48 GHz 1001 pts 1.0 MHz/ Span 10.0 MHz Date:1.NOV.2021 19:11:33

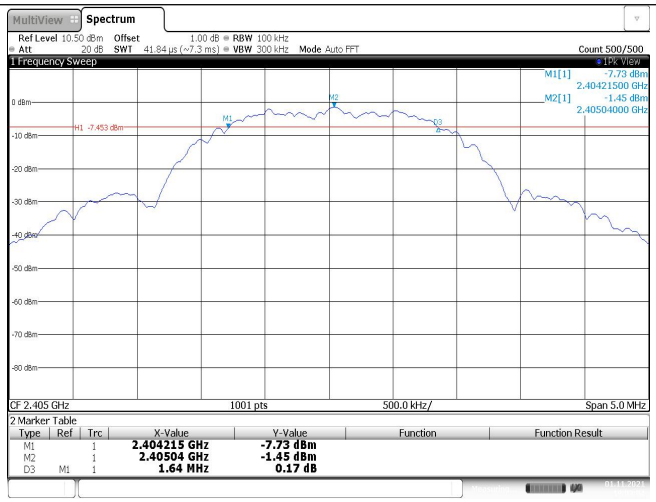
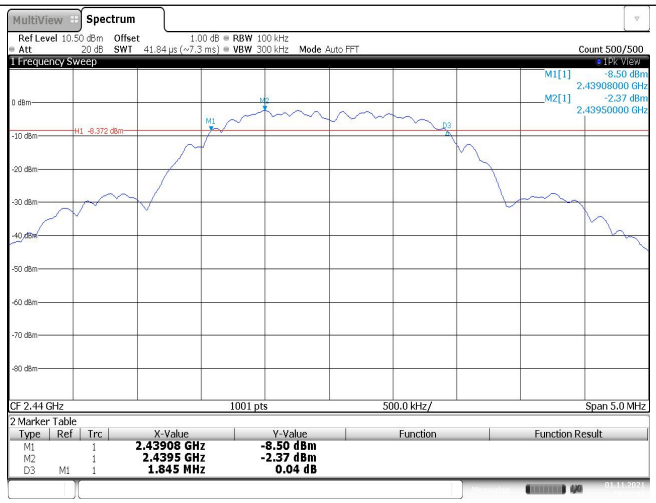
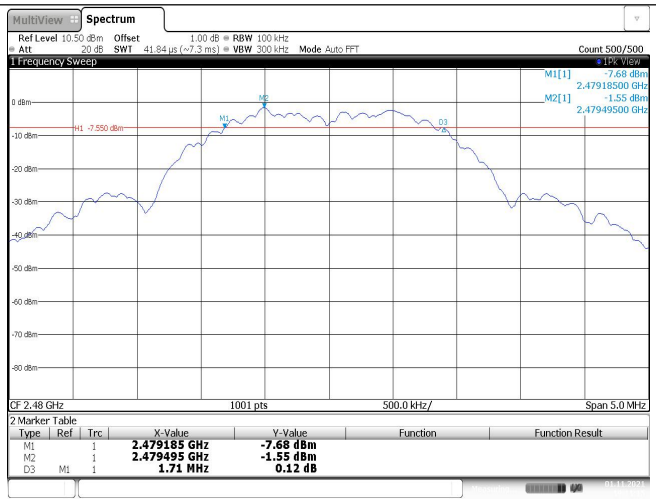
Appendix B：Power Spectral Density

Channel	Power Spectral Density(dBm/3KHz)	Limit (dBm/3KHz)	Result
CH_L	-11.03	≤8.00	Pass
CH_M	-10.95		
CH_H	-11.17		

CH_L	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 3 kHz Att 20 dB SWT 1.4 ms (~13 ms) VBW 10 kHz Mode Auto FFT Count 100/100 1 Frequency Sweep 1Pk Max M1[1] -11.03 dBm 2.40547350 GHz CF 2.405 GHz 1001 pts 300.0 kHz/ Span 3.0 MHz Date:1.NOV.2021 19:04:02
CH_M	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 3 kHz Att 20 dB SWT 1.4 ms (~13 ms) VBW 10 kHz Mode Auto FFT Count 100/100 1 Frequency Sweep 1Pk Max M1[1] -10.95 dBm 2.44044360 GHz CF 2.44 GHz 1001 pts 300.0 kHz/ Span 3.0 MHz Date:1.NOV.2021 19:08:10
CH_H	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 3 kHz Att 20 dB SWT 1.4 ms (~13 ms) VBW 10 kHz Mode Auto FFT Count 100/100 1 Frequency Sweep 1Pk Max M1[1] -11.17 dBm 2.48044360 GHz CF 2.48 GHz 1001 pts 300.0 kHz/ Span 3.0 MHz Date:1.NOV.2021 19:12:09

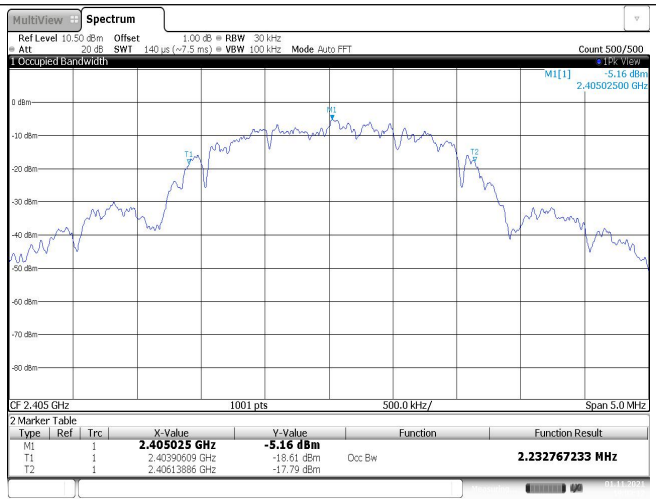
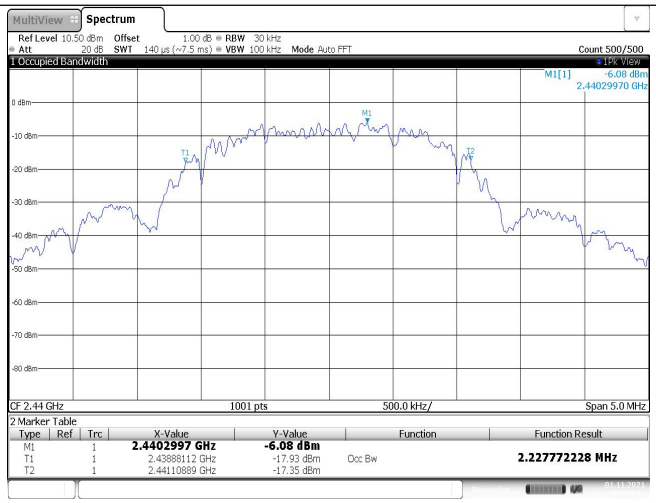
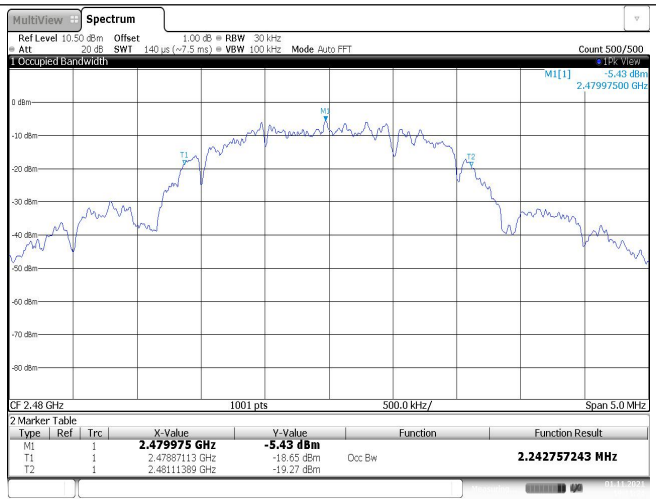
Appendix C：6dB bandwidth

Channel	6dB Bandwidth(kHz)	Limit (kHz)	Result
CH_L	1640.00	≥500	Pass
CH_M	1845.00		
CH_H	1710.00		

CH_L	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWT 41.84 µs (~7.3 ms) VBW 300 kHz Mode Auto FFT Count 500/500 1 Frequency Sweep 1Pk View M1[1] -7.73 dBm 2.40421500 GHz M2[1] -1.45 dBm 2.40504000 GHz H1 -7.453 dBm CF 2.405 GHz 1001 pts 500.0 kHz/ Span 5.0 MHz 2 Marker Table Type Ref Trc X-Value Y-Value Function Function Result M1 1 2.404215 GHz -7.73 dBm M2 1 2.40504 GHz -1.45 dBm D3 M1 1 1.64 MHz 0.17 dB Date: 1.NOV.2021 19:03:04
CH_M	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWT 41.84 µs (~7.3 ms) VBW 300 kHz Mode Auto FFT Count 500/500 1 Frequency Sweep 1Pk View M1[1] -8.50 dBm 2.43908000 GHz M2[1] -2.37 dBm 2.43950000 GHz H1 -8.372 dBm CF 2.44 GHz 1001 pts 500.0 kHz/ Span 5.0 MHz 2 Marker Table Type Ref Trc X-Value Y-Value Function Function Result M1 1 2.43908 GHz -8.50 dBm M2 1 2.4395 GHz -2.37 dBm D3 M1 1 1.845 MHz 0.04 dB Date: 1.NOV.2021 19:07:12
CH_H	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWT 41.84 µs (~7.3 ms) VBW 300 kHz Mode Auto FFT Count 500/500 1 Frequency Sweep 1Pk View M1[1] -7.68 dBm 2.47918500 GHz M2[1] -1.55 dBm 2.47949500 GHz H1 -7.550 dBm CF 2.48 GHz 1001 pts 500.0 kHz/ Span 5.0 MHz 2 Marker Table Type Ref Trc X-Value Y-Value Function Function Result M1 1 2.479185 GHz -7.68 dBm M2 1 2.479495 GHz -1.55 dBm D3 M1 1 1.71 MHz 0.12 dB Date: 1.NOV.2021 19:11:15

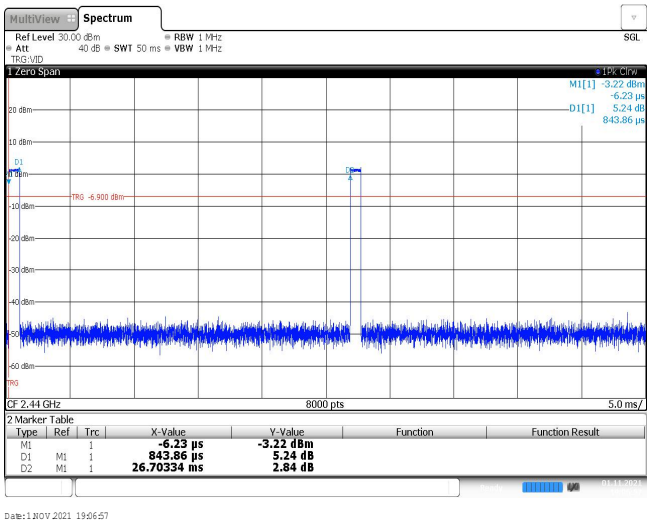
Appendix D：99% Occupied Bandwidth

Channel	99% Occupied Bandwidth(MHz)	Limit (kHz)	Result
CH_L	2.23	-	Pass
CH_M	2.23		
CH_H	2.24		

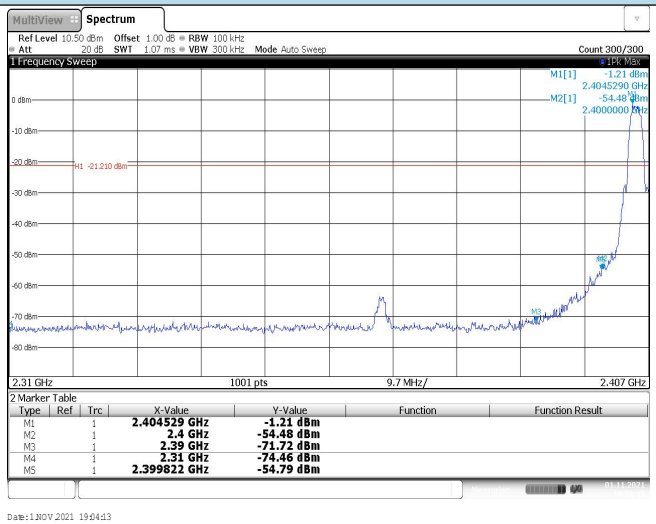
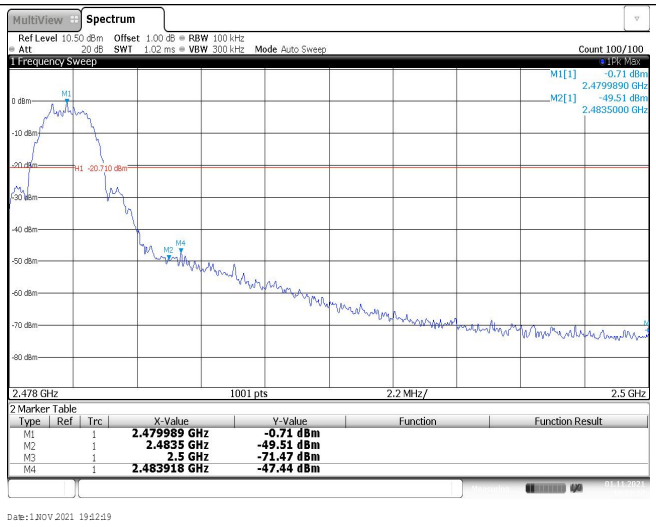
CH_L	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 30 kHz Att 20 dB SWT 140 µs (~7.5 ms) VBW 100 kHz Mode Auto FFT Count 500/500 1 Occupied Bandwidth 1Pk View M1[1] -5.16 dBm 2.40502500 GHz CF 2.405 GHz 1001 pts 500.0 kHz/ Span 5.0 MHz 2 Marker Table Type Ref Trc X-Value Y-Value Function Function Result M1 1 2.405025 GHz -5.16 dBm T1 1 2.40390609 GHz -18.61 dBm Occ Bw 2.232767233 MHz T2 1 2.40613886 GHz -17.79 dBm Date: 1.NOV.2021 19:03:12
CH_M	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 30 kHz Att 20 dB SWT 140 µs (~7.5 ms) VBW 100 kHz Mode Auto FFT Count 500/500 1 Occupied Bandwidth 1Pk View M1[1] -6.08 dBm 2.44029970 GHz CF 2.44 GHz 1001 pts 500.0 kHz/ Span 5.0 MHz 2 Marker Table Type Ref Trc X-Value Y-Value Function Function Result M1 1 2.4402997 GHz -6.08 dBm T1 1 2.43888112 GHz -17.93 dBm Occ Bw 2.227772228 MHz T2 1 2.44110889 GHz -17.35 dBm Date: 1.NOV.2021 19:07:21
CH_H	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 30 kHz Att 20 dB SWT 140 µs (~7.5 ms) VBW 100 kHz Mode Auto FFT Count 500/500 1 Occupied Bandwidth 1Pk View M1[1] -5.43 dBm 2.47997500 GHz CF 2.48 GHz 1001 pts 500.0 kHz/ Span 5.0 MHz 2 Marker Table Type Ref Trc X-Value Y-Value Function Function Result M1 1 2.479975 GHz -5.43 dBm T1 1 2.47887113 GHz -18.65 dBm Occ Bw 2.242757243 MHz T2 1 2.48111389 GHz -19.27 dBm Date: 1.NOV.2021 19:11:24

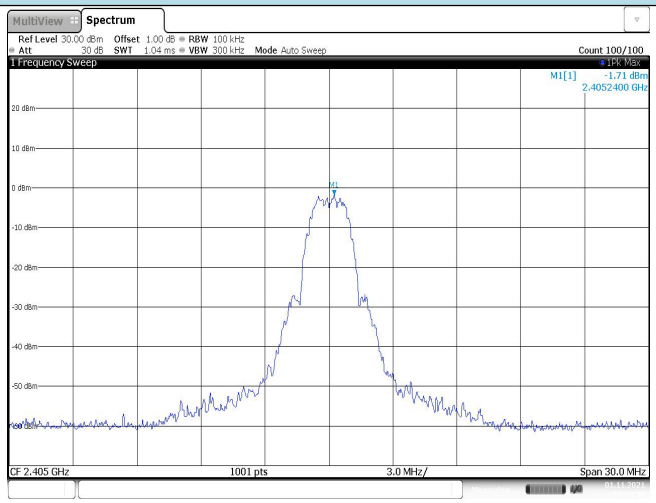
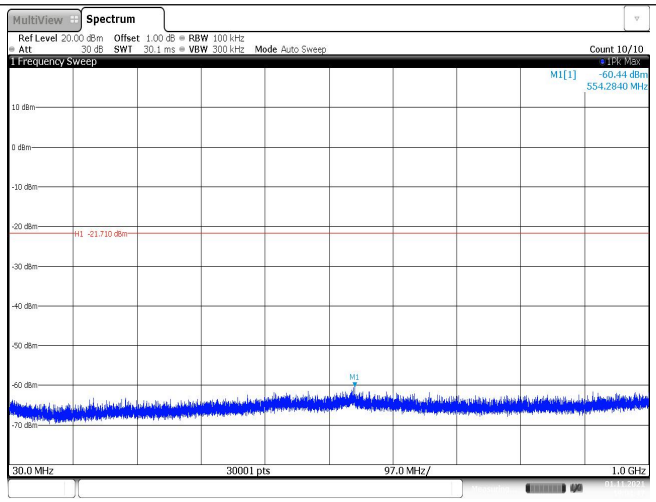
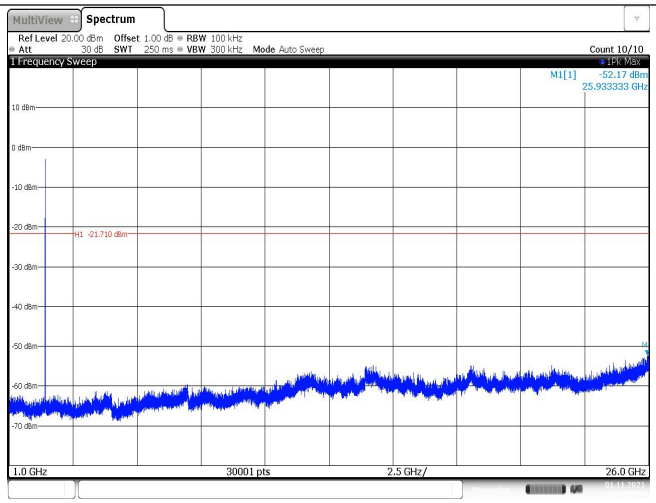
Appendix E：Duty cycle

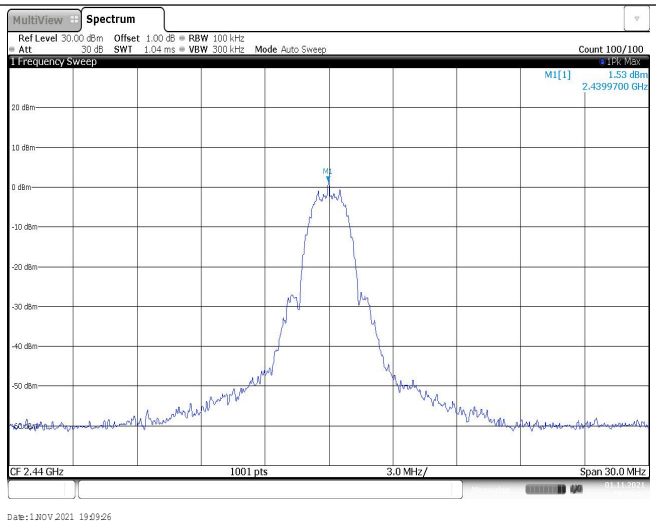
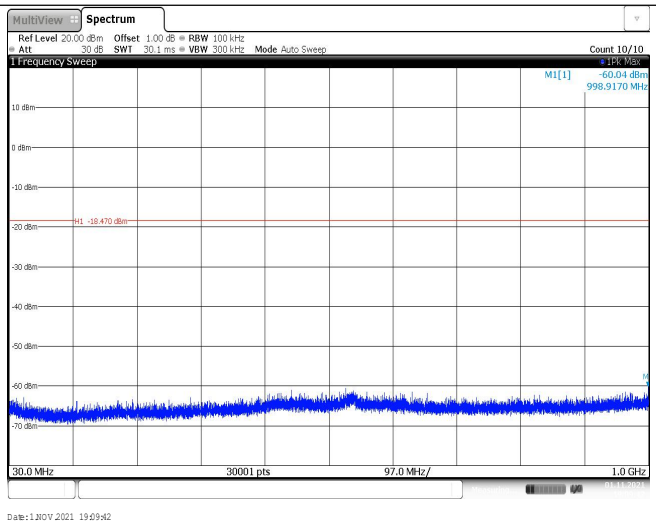
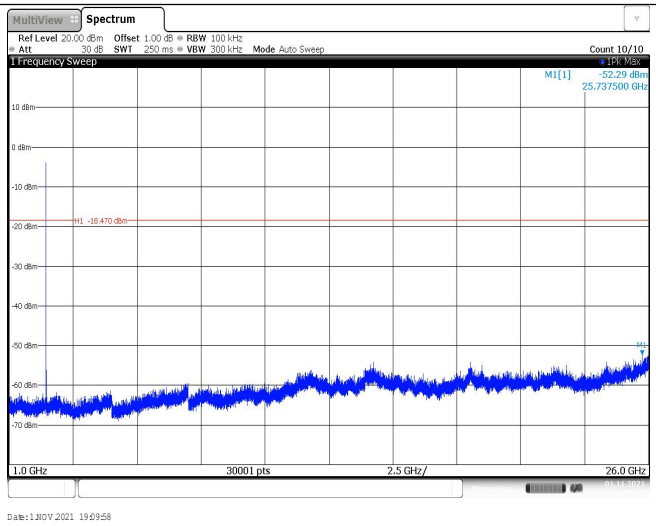
Test Frequency（MHz）	$T_{on\ time}$ for single burst (ms)	T_{period} (ms)	Duty cycle	$1/T_{on\ time}$ (kHz)
2440	0.84	26.70	3.1%	1.2

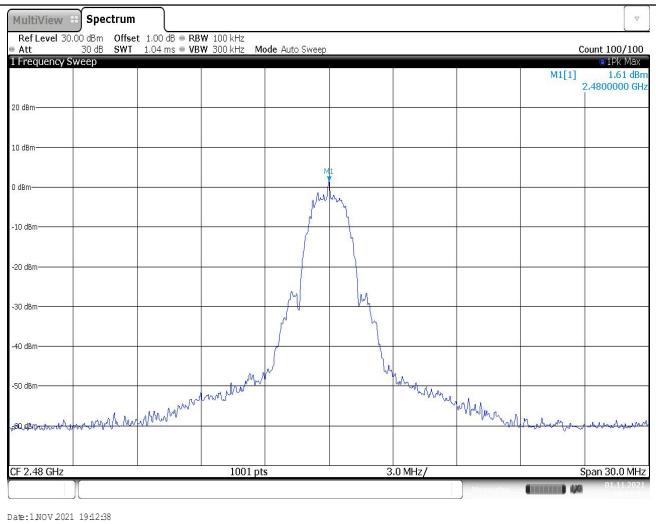
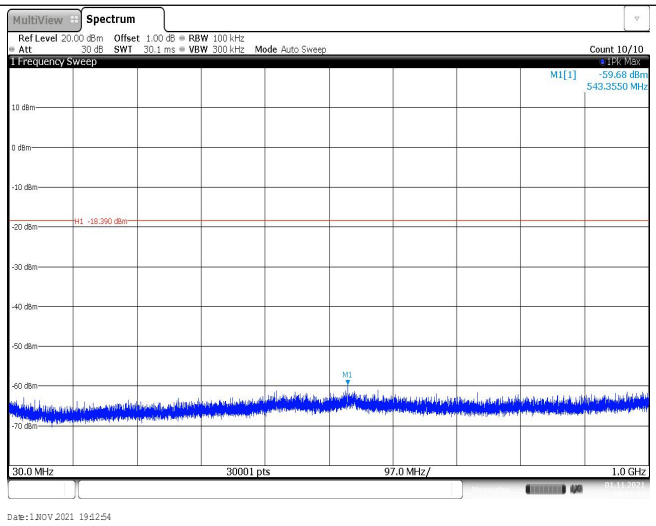
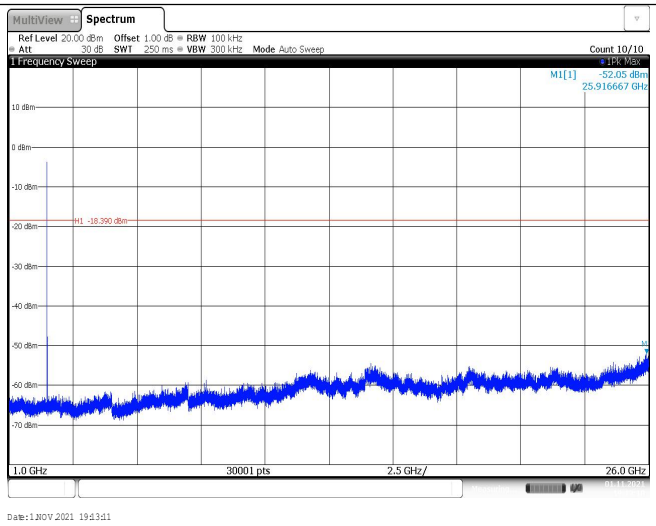


Appendix F：Band edge and Spurious Emissions (conducted)

Test Item:	Band edge
CH_L	
CH_H	

Test Item:	SE
CH_L Reference level	
CH_L 30MHz~1000MHz	
CH_L 1GHz~26GHz	

CH_M Reference level	
CH_M 30MHz~1000MHz	
CH_M 1GHz~26GHz	

CH_H Reference level	
CH_H 30MHz~1000MHz	
CH_H 1GHz~26GHz	

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